



Test Laboratuvarları

## LVT Test Laboratuvarları Ltd. Şti.

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Saray Modern Keresteciler Sanayi Sitesi 4.Cadde No:9 Kazan / ANKARA  
Tel: 0 312 815 13 25-26 Faks: 0 312 815 13 27



AB-0341-T

21-2216-  
R1-N1-1

12-21

### DENEY RAPORU

Test Report

1/52

**Müşteri**

Client

: BSI AYDINLATMA ELEK. ELEKT. SAN. ve TİC. A.Ş.

**Adres**

Address

: KONUTKENT MAH. 3029 CAD. NO:3/91 06810, ÇANKAYA, ANKARA/TÜRKİYE

**İmalatçı**

Manufacturer

: BSI AYDINLATMA ELEK. ELEKT. SAN. ve TİC. A.Ş.

**Deney Numunesi**

Test Sample

: DEKORATİF LED YOL AYDINLATMA ARMATÜRÜ

**Marka**

Trade Mark

: BSI

**Deney Metodu**

Test Method

: IEC 60598-2-3:2002+AMD1:2011 CSV

**Deney Tarihi**

Date of Test

: 01.11.2021 – 22.11.2021

**Toplam Sayfa Sayısı**

Total Number of Pages

: 52

**Basım Tarihi**

Date of Issue

: 02.12.2021

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The test and / or measurements results, the uncertainties (if required) with confidence probability and test methods are given on the following pages which are part of this report.

**Mühür**

Seal

**Deney Sorumlusu**

Person in Charge of Test

**Genel Müdür**

General Manager



Mustafa YETİŞEN

Ata Gürül ARSLANLI

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1. **Numunelerin Tanımı** : **Dekoratif LED Yol Aydınlatma Armatürü**  
*Definition of the Samples* : *Decorative Road LED Lighting Fixture*

1.1 Dekoratif LED Yol Aydınlatma Armatürü

(21-2216-R1-N1)

|                                                            |         |                                                                |
|------------------------------------------------------------|---------|----------------------------------------------------------------|
| Numune Kabul Tarihi<br><i>Date of Receive</i>              | :       | 01.11.2021                                                     |
| Numune Seri No<br><i>Serial No</i>                         | :       | Test Sample                                                    |
| Tip<br><i>Type</i>                                         | :       | iMistral Multi                                                 |
| Kutup Sayısı<br><i>Number of Poles</i>                     | :       | LN + PE                                                        |
| Beyan Gerilimi<br><i>Rated Voltage</i>                     | $U_n$ : | 220 V – 240 V                                                  |
| Beyan Akımı<br><i>Rated Current</i>                        | $I_n$ : | 1050 mA                                                        |
| Beyan Güç<br><i>Rated Power</i>                            | $P_n$ : | 96 W                                                           |
| Beyan Frekans<br><i>Rated Frequency</i>                    | $f_n$ : | 50 – 60 Hz                                                     |
| Beyan Koruma Derecesi<br><i>Rated Degree of Protection</i> | IP :    | 66                                                             |
| Numune Boyutları<br><i>Dimensions of the Sample</i>        | mm :    | 80x150x500                                                     |
| Numune Ağırlığı<br><i>Weight of the Sample</i>             | kg :    | 4.95                                                           |
| Sınıf<br><i>Class</i>                                      | :       | Class I                                                        |
| Cihaz – Malzeme Listesi<br><i>Device – Component List</i>  | :       | Bakınız Firma Dokümanlarına<br><i>See Client Documentation</i> |

2. **Deney Sonuçları**  
*Test Results*

: Deney sonuçları, müşteri tarafından laboratuvara teslim edilen ve sadece deneyi yapılan numuneye aittir.  
*The test results only belong to the tested sample(s) delivered to the laboratory by client.*

| Numune<br><i>Sample</i>                                                            | Uygulanan Deney<br><i>Applied Test</i> | Sonuç<br><i>Result</i>  |
|------------------------------------------------------------------------------------|----------------------------------------|-------------------------|
| Dekoratif Yol Aydınlatma Armatürü<br><i>(Decorative Road LED Lighting Fixture)</i> | IEC 60598-2-3:2002+AMD1:2011 CSV       | OLUMLU<br><i>(PASS)</i> |

3. **Çevre Şartları**  
*Environmental Conditions*

- 3.1 Ortam Sıcaklığı : (20-30) °C  
*Ambient Temperature*
- 3.2 Ortam Nemi : (40-50) %Rh  
*Ambient Moisture*

4. **Deney Metodundan Sapma, Ekleme ve Çıkarmalar**  
*Deviations, Additions & Cutbacks from the Test Method*

: Deneyler; standart deney metoduna göre uygulanmıştır.  
*Tests were made according to the clauses of the relevant standards.*

5. **Şartnamelere Uygunluk (Gerekli Hallerde)**  
*Conformity to Specifications (If Necessary)*

6. **Dağıtım Bilgileri** : BSI AYDINLATMA ELEK. ELEKT. SAN. ve TİC. A.Ş.  
*Distribution Information*

7. **Açıklama** : LED modülü IP66 gereksinimlerini karşılar. Numune muhafazası  
*Explanation* kapsanmamıştır.  
*LED module meets IP66 requirements. The test sample enclosure is not covered.*

8. **Ölçüm Belirsizliği** : Detaylar aşağıdaki tabloda verilmiştir.  
*Uncertainty of Measurement* *The details are mentioned table below.*

Beyan edilen genişletilmiş ölçüm belirsizliği, standart belirsizliğin  $k=2$  olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve % 95 oranında güvenilirlik sağlamaktadır.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$  which for a normal distribution corresponds to a coverage probability of approximately 95 %.

| Deney bilgisi<br><i>Test details</i> | Cihaz kodu<br><i>Device code</i> | Ölçülen değer<br><i>Measured value</i> | Ölçüm belirsizliği<br><i>Measurement uncertainty</i> |
|--------------------------------------|----------------------------------|----------------------------------------|------------------------------------------------------|
| Ambient Temperature                  | LC349                            | See Clause 3.1                         | $\pm 1.18^{\circ}\text{C}$                           |
|                                      |                                  | See Clause 3.2                         | $\pm 5.64\text{ Rh}$                                 |
| Temperature Rise Limits              | LC5                              | See Annex 2                            | $\pm 1.56^{\circ}\text{C}$                           |
| Humidity Conditioning                | LC324                            | 25°C                                   | $\pm 1.27^{\circ}\text{C}$                           |
|                                      |                                  | 94%Rh                                  | $\pm 3.88\text{ Rh}$                                 |
| Electric Strength                    | LC31                             | See Clause 10.2.2                      | $\pm 0.062\text{ kV}$                                |
| Touch Current                        | LC30                             | See Clause 10.3                        | $\pm 0.05\text{ mA}$                                 |
| Clearances                           | LC365                            | See Table 11.2                         | $\pm 0.05$                                           |
| Creepage Distances                   | LC365                            | See Table 11.2                         | $\pm 0.05$                                           |
| Earthing Resistance                  | LC481                            | 0.07 $\Omega$                          | $\pm 12.35$                                          |
| Insulation Resistance                | LC475                            | See Clause 10.2.1                      | $\pm 1.37$                                           |



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## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

### 9. Deney Uygulamaları:

Test Applications

|                                                                                                                                                                                                                                                                                                                                                            |                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>TEST REPORT</b><br><b>IEC 60598-2-3</b><br><b>Luminaires</b><br><b>Part 2: Particular requirements</b><br><b>Section 3: Luminaires for road and street lighting</b>                                                                                                                                                                                     |                                                                                            |
| <b>Test specification:</b>                                                                                                                                                                                                                                                                                                                                 |                                                                                            |
| <b>Standard</b> .....                                                                                                                                                                                                                                                                                                                                      | IEC 60598-2-3:2002, IEC 60598-2-3:2002/AMD1:2011 used in conjunction with IEC 60598-1:2020 |
| <b>Test procedure</b> .....                                                                                                                                                                                                                                                                                                                                | Type Test                                                                                  |
| <b>Non-standard test method</b> .....                                                                                                                                                                                                                                                                                                                      | N/A                                                                                        |
| <b>TRF template used</b> .....                                                                                                                                                                                                                                                                                                                             | IECEE OD-2020-F1:2021, Ed.1.4                                                              |
| <b>Test Report Form No.</b> .....                                                                                                                                                                                                                                                                                                                          | IEC60598_2_3M                                                                              |
| <b>Test Report Form(s) Originator</b> ....                                                                                                                                                                                                                                                                                                                 | Intertek Semko AB                                                                          |
| <b>Master TRF</b> .....                                                                                                                                                                                                                                                                                                                                    | 2021-11-11                                                                                 |
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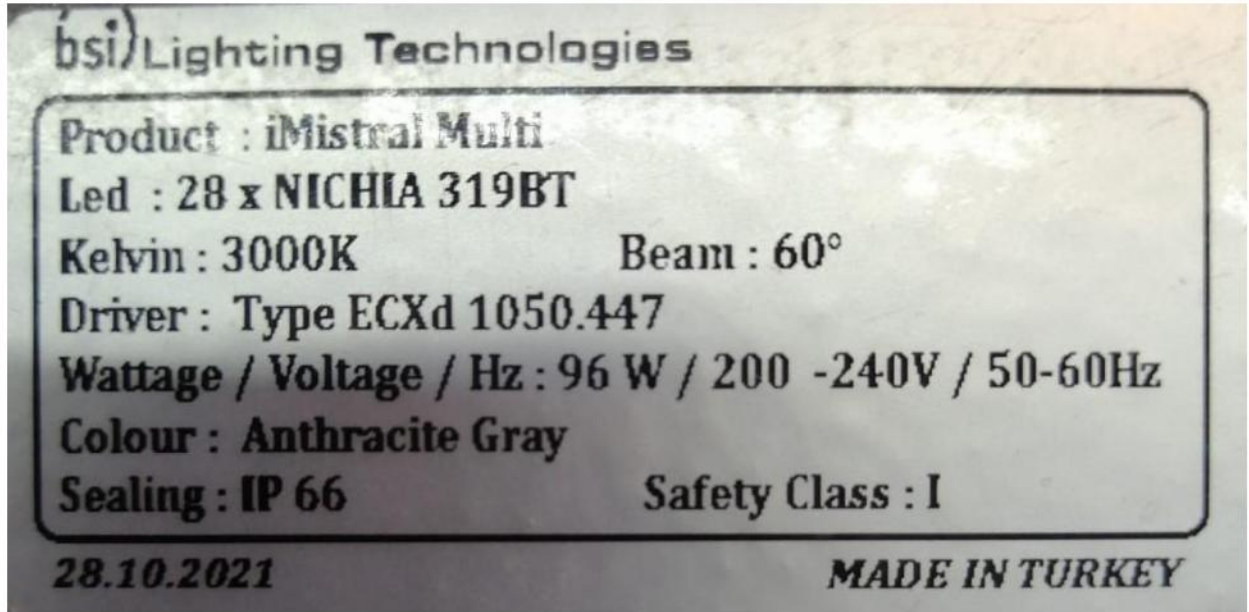
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## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

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Test Laboratuvarları

## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

|                                                                                                                                                  |                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Test item particulars .....                                                                                                                      | :                                |
| Classification of installation and use .....                                                                                                     | : Class I.                       |
| Supply Connection .....                                                                                                                          | : Permanently supply connection. |
| .....                                                                                                                                            | :                                |
| <b>Possible test case verdicts:</b>                                                                                                              |                                  |
| - test case does not apply to the test object .....                                                                                              | : N/A                            |
| - test object does meet the requirement .....                                                                                                    | : P (Pass)                       |
| - test object does not meet the requirement .....                                                                                                | : F (Fail)                       |
| <b>Testing .....</b>                                                                                                                             |                                  |
| Date of receipt of test item .....                                                                                                               | : 01.11.2021                     |
| Date (s) of performance of tests .....                                                                                                           | : 01.11.2021 – 22.11.2021        |
| <b>General remarks:</b>                                                                                                                          |                                  |
| "(See Enclosure #)" refers to additional information appended to the report.<br>"(See appended table)" refers to a table appended to the report. |                                  |
| Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.            |                                  |
| Clause numbers between brackets refer to clauses in IEC 60598-1                                                                                  |                                  |
| <b>General product information:</b>                                                                                                              |                                  |
| Decorative Road LED Lighting Fixture                                                                                                             |                                  |





Test Laboratuvarları

# Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

| IEC 60598-2-3    |                                                                    |                                                                                   |          |
|------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------|
| Clause           | Requirement + Test                                                 | Result - Remark                                                                   | Verdict  |
| <b>3.2 (0)</b>   | <b>GENERAL TEST REQUIREMENTS</b>                                   |                                                                                   | <b>P</b> |
| 3.2 (0.3)        | More sections applicable .....                                     | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Section/s: | —        |
| 3.2 (0.5)        | Components                                                         | (see Annex 1)                                                                     | —        |
| <b>3.2 (0.7)</b> | <b>Information for luminaire design in light sources standards</b> |                                                                                   | —        |
| 3.2 (0.7.2)      | Light source safety standard .....                                 |                                                                                   | —        |
|                  | Luminaire design in the light source safety standard               |                                                                                   | P        |

|                |                                                                            |                                                                     |          |
|----------------|----------------------------------------------------------------------------|---------------------------------------------------------------------|----------|
| <b>3.4 (2)</b> | <b>CLASSIFICATION OF LUMINAIRES</b>                                        |                                                                     | <b>P</b> |
| 3.4 (2.2)      | Type of protection .....                                                   | Class I.                                                            | P        |
| 3.4 (2.3)      | Degree of protection .....                                                 | IP 66.                                                              | P        |
| 3.4 (2.4)      | Luminaire suitable for direct mounting on normally flammable surfaces..... | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | —        |
| 3.4 (2.5)      | Luminaire for normal use .....                                             | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | —        |
|                | Luminaire for rough service .....                                          | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —        |
| 3.4 (-)        | Modes of installation of road or street lighting                           |                                                                     | —        |
|                | a) on a pipe                                                               | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —        |
|                | b) on a mast arm                                                           | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | —        |
|                | c) on a post top                                                           | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —        |
|                | d) on span or suspension wires                                             | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —        |
|                | e) on a wall                                                               | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —        |

|                |                          |                                                             |          |
|----------------|--------------------------|-------------------------------------------------------------|----------|
| <b>3.5 (3)</b> | <b>MARKING</b>           |                                                             | <b>P</b> |
| 3.5 (3.2)      | Mandatory markings       |                                                             | P        |
|                | Position of the marking  |                                                             | P        |
|                | Format of symbols/text   |                                                             | P        |
| 3.5 (3.3)      | Additional information   |                                                             | P        |
|                | Language of instructions | Turkish.                                                    | P        |
| 3.5 (3.3.1)    | Combination luminaires   | The luminaire is not combination luminaire.                 | N/A      |
| 3.5 (3.3.2)    | Nominal frequency in Hz  | 50-60 Hz                                                    | P        |
| 3.5 (3.3.3)    | Operating temperature    | The manufacturer did not declare any operating temperature. | N/A      |





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## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

|              |                                                                                                            |                                                                                                      |     |
|--------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----|
| 3.5 (3.3.5)  | Wiring diagram                                                                                             | The luminaire can be connected directly to the mains.                                                | N/A |
| 3.5 (3.3.6)  | Special conditions                                                                                         |                                                                                                      | P   |
| 3.5 (3.3.7)  | Metal halide lamp luminaire – warning                                                                      | The luminaire does not have metal halide lamp.                                                       | N/A |
| 3.5 (3.3.8)  | Limitation for semi-luminaires                                                                             | The luminaire is not semi-luminaire.                                                                 | N/A |
| 3.5 (3.3.9)  | Power factor and supply current                                                                            |                                                                                                      | P   |
| 3.5 (3.3.10) | Suitability for use indoors                                                                                | The luminaire is not use indoor.                                                                     | N/A |
| 3.5 (3.3.11) | Luminaires with remote control                                                                             | The luminaire does not have remote control.                                                          | N/A |
| 3.5 (3.3.12) | Clip-mounted luminaire – warning                                                                           | Not a clip-mounted luminaire.                                                                        | N/A |
| 3.5 (3.3.13) | Specifications of protective shields                                                                       |                                                                                                      | P   |
| 3.5 (3.3.14) | Symbol for nature of supply                                                                                | For alternating current, the rated frequency in hertz is sufficient to identify the type of current. | P   |
| 3.5 (3.3.15) | Rated current of socket outlet                                                                             | The luminaire does not have socket outlet.                                                           | N/A |
| 3.5 (3.3.16) | Rough service luminaire                                                                                    | Not rough service luminaire.                                                                         | N/A |
| 3.5 (3.3.17) | Mounting instruction for type Y, type Z and some type X attachments                                        | Type Y.                                                                                              | P   |
| 3.5 (3.3.18) | Non-ordinary luminaires with PVC cable                                                                     |                                                                                                      | N/A |
| 3.5 (3.3.19) | Protective conductor current in instruction if applicable                                                  | Supply current is not greater than 20 A.                                                             | N/A |
| 3.5 (3.3.20) | Provided with information if not intended to be mounted within arm's reach                                 |                                                                                                      | N/A |
| 3.5 (3.3.21) | Non replaceable and non-user replaceable light sources information provided                                |                                                                                                      | P   |
| 3.5 (3.3.22) | Controllable luminaires, classification of insulation provided                                             | Not controllable luminaire.                                                                          | N/A |
| 3.5 (3.3.23) | Luminaires without control gear provided with necessary information for selection of appropriate component |                                                                                                      | N/A |
| 3.5 (3.3.24) | If not supplied with terminal block, information on the packaging                                          |                                                                                                      | P   |
| 3.5 (3.3.25) | Luminaires employing light sources emitting UV on mains wiring, information provided                       | No light source emitting UV.                                                                         | N/A |
| 3.5 (3.3.26) | Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided       | The luminaire is mast arm mounted.                                                                   | N/A |
| 3.5 (3.4)    | Test with water                                                                                            | Tried to remove it by rubbing lightly for 15 s with a piece of cloth soaked with water.              | P   |





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## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

|         |                                                    |                                                                          |     |
|---------|----------------------------------------------------|--------------------------------------------------------------------------|-----|
|         | Test with hexane                                   | It was rubbed with petroleum ether for another 15 seconds using a cloth. | P   |
|         | Legible after test                                 | The label can be read after test.                                        | P   |
|         | Label attached                                     |                                                                          | P   |
| 3.5 (-) | Additional information in instruction leaflet      |                                                                          | P   |
|         | a) Design attitude                                 |                                                                          | P   |
|         | b) Weight                                          | 4.95                                                                     | P   |
|         | c) Overall dimensions                              | 8x15x50                                                                  | P   |
|         | d) Maximum projected area if applicable            |                                                                          | N/A |
|         | e) Cross-sectional area of wires if applicable     |                                                                          | N/A |
|         | f) Suitability for indoors use                     |                                                                          | N/A |
|         | g) Dimensions of the compartment                   |                                                                          | N/A |
|         | h) Torque setting to be applied to bolts or screws |                                                                          | P   |
|         | i) Maximum mounting height                         | < 8M                                                                     | P   |

|                  |                                                                                                                          |                                                                                                                                                             |            |
|------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>3.6 (4)</b>   | <b>CONSTRUCTION</b>                                                                                                      |                                                                                                                                                             | <b>P</b>   |
| 3.6 (4.2)        | Components replaceable without difficulty                                                                                | The luminaire is designed with sufficient space to allow replacement of replaceable components or parts without difficulty and without compromising safety. | P          |
| 3.6 (4.3)        | Wireways smooth and free from sharp edges                                                                                | Wireways are smooth and free from sharp edges, burrs, flashes and the like, which might cause abrasion of the insulation of the wiring.                     | P          |
| <b>3.6 (4.4)</b> | <b>Lampholders</b>                                                                                                       |                                                                                                                                                             | <b>N/A</b> |
| 3.6 (4.4.1)      | Integral lampholder                                                                                                      | The luminaire does not have lampholder.                                                                                                                     | N/A        |
| 3.6 (4.4.2)      | Wiring connection                                                                                                        |                                                                                                                                                             | N/A        |
| 3.6 (4.4.3)      | Lampholder for end-to-end mounting                                                                                       |                                                                                                                                                             | N/A        |
| 3.6 (4.4.4)      | Positioning                                                                                                              |                                                                                                                                                             | N/A        |
|                  | - pressure test (N) .....                                                                                                |                                                                                                                                                             | —          |
|                  | After test the lampholder comply with relevant standard sheets and show no damage                                        |                                                                                                                                                             | N/A        |
|                  | After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation |                                                                                                                                                             | N/A        |
|                  | - bending test (N) .....                                                                                                 |                                                                                                                                                             | —          |





Test Laboratuvarları

## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

|                  |                                                                                              |                                                                                                                               |            |
|------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|
|                  | After test the lampholder have not moved from its position and show no permanent deformation |                                                                                                                               | N/A        |
| 3.6 (4.4.5)      | Peak pulse voltage                                                                           |                                                                                                                               | N/A        |
| 3.6 (4.4.6)      | Centre contact                                                                               |                                                                                                                               | N/A        |
| 3.6 (4.4.7)      | Parts in rough service luminaires resistant to tracking                                      |                                                                                                                               | N/A        |
| 3.6 (4.4.8)      | Lamp connectors                                                                              |                                                                                                                               | N/A        |
| 3.6 (4.4.9)      | Caps and bases correctly used                                                                |                                                                                                                               | N/A        |
| 3.6 (4.4.10)     | Light source for lampholder or connection according IEC 60061 not connected another way      |                                                                                                                               | N/A        |
| <b>3.6 (4.5)</b> | <b>Starter holders</b>                                                                       |                                                                                                                               | <b>N/A</b> |
|                  | Starter holder in luminaires other than class II                                             | The luminaire does not have starter holder.                                                                                   | N/A        |
|                  | Starter holder class II construction                                                         |                                                                                                                               | N/A        |
| <b>3.6 (4.6)</b> | <b>Terminal blocks</b>                                                                       |                                                                                                                               | <b>N/A</b> |
|                  | Tails                                                                                        | No such part.                                                                                                                 | N/A        |
|                  | Unsecured blocks                                                                             |                                                                                                                               | N/A        |
| <b>3.6 (4.7)</b> | <b>Terminals and supply connections</b>                                                      |                                                                                                                               | <b>P</b>   |
| 3.6 (4.7.1)      | Contact to metal parts                                                                       | The luminaire is not portable luminaire of class I and II and fixed luminaire of class I and II that are frequently adjusted. | N/A        |
| 3.6 (4.7.2)      | Test 8 mm live conductor                                                                     |                                                                                                                               | P          |
|                  | Test 8 mm earth conductor                                                                    |                                                                                                                               | P          |
| 3.6 (4.7.3)      | Terminals for supply conductors                                                              |                                                                                                                               | P          |
| 3.6 (4.7.3.1)    | Welded method and material                                                                   |                                                                                                                               | N/A        |
|                  | - stranded or solid conductor                                                                | The welding was used only in the enclosure. No welding is used in electrical connections.                                     | N/A        |
|                  | - spot welding                                                                               |                                                                                                                               | N/A        |
|                  | - welding between wires                                                                      |                                                                                                                               | N/A        |
|                  | - Type Z attachment                                                                          |                                                                                                                               | N/A        |
|                  | - mechanical test according to 15.6.2                                                        |                                                                                                                               | N/A        |
|                  | - electrical test according to 15.6.3                                                        |                                                                                                                               | N/A        |
|                  | - heat test according to 15.6.3.2.3 and 15.6.3.2.4                                           |                                                                                                                               | N/A        |
| 3.6 (4.7.4)      | Terminals other than supply connection                                                       |                                                                                                                               | N/A        |
| 3.6 (4.7.5)      | Heat-resistant wiring/sleeves                                                                |                                                                                                                               | N/A        |
| 3.6 (4.7.6)      | Multi-pole plug                                                                              | No multi-pole plug.                                                                                                           | N/A        |
|                  | - test at 30 N                                                                               |                                                                                                                               | N/A        |





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|-------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------|
| <b>3.6 (4.8)</b>  | <b>Switches</b>                                                                                                            |                                                    | <b>N/A</b> |
|                   | - adequate rating                                                                                                          | The luminaire does not have switch.                | N/A        |
|                   | - adequate fixing                                                                                                          |                                                    | N/A        |
|                   | - polarized supply                                                                                                         |                                                    | N/A        |
|                   | - compliance with IEC 61058-1 for electronic switches                                                                      |                                                    | N/A        |
| <b>3.6 (4.9)</b>  | <b>Insulating lining and sleeves</b>                                                                                       |                                                    | <b>P</b>   |
| 3.6 (4.9.1)       | Retainment                                                                                                                 |                                                    | P          |
|                   | Method of fixing ..... :                                                                                                   | Insulating linings are fixed by compression.       | P          |
| 3.6 (4.9.2)       | Insulated linings and sleeves:                                                                                             |                                                    | N/A        |
|                   | Resistant to a temperature > 20 °C to the wire temperature or                                                              | There are no cables reaching extreme temperatures. | N/A        |
|                   | a) & c) Insulation resistance and electric strength                                                                        |                                                    | N/A        |
|                   | b) Ageing test. Temperature (°C)..... :                                                                                    |                                                    | N/A        |
| <b>3.6 (4.10)</b> | <b>Double or reinforced insulation</b>                                                                                     |                                                    | <b>N/A</b> |
| 3.6 (4.10.1)      | No contact, mounting surface – accessible metal parts – wiring of basic insulation                                         | The luminaire is Class I.                          | N/A        |
|                   | Safe installation fixed luminaires                                                                                         |                                                    | N/A        |
|                   | Capacitors and switches                                                                                                    |                                                    | N/A        |
| 3.6 (4.10.2)      | Assembly gaps:                                                                                                             |                                                    | N/A        |
|                   | - not coincidental                                                                                                         |                                                    | N/A        |
|                   | - no straight access with test probe                                                                                       |                                                    | N/A        |
| 3.6 (4.10.3)      | Retainment of insulation:                                                                                                  |                                                    | N/A        |
|                   | - fixed                                                                                                                    |                                                    | N/A        |
|                   | - unable to be replaced; luminaire inoperative                                                                             |                                                    | N/A        |
|                   | - sleeves retained in position                                                                                             |                                                    | N/A        |
|                   | - lining in lampholder                                                                                                     |                                                    | N/A        |
| 3.6 (4.10.4)      | Protective impedance device                                                                                                |                                                    | N/A        |
|                   | Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor                                         |                                                    | N/A        |
|                   | Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor |                                                    | N/A        |
|                   | Capacitors comply with IEC 60384-14                                                                                        |                                                    | N/A        |
|                   | Resistors comply with test (a) in 14.1 of IEC 60065                                                                        |                                                    | N/A        |
| <b>3.6 (4.11)</b> | <b>Electrical connections and current-carrying parts</b>                                                                   |                                                    | <b>P</b>   |
| 3.6 (4.11.1)      | Contact pressure                                                                                                           | There is enough flexibility.                       | P          |





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|-------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 3.6 (4.11.2)      | Screws:                                               |                                                                                                                                                  | P        |
|                   | - self-tapping screws                                 | It is used in earthing.                                                                                                                          | P        |
|                   | - thread-cutting screws                               |                                                                                                                                                  | N/A      |
| 3.6 (4.11.3)      | Screw locking:                                        |                                                                                                                                                  | P        |
|                   | - spring washer                                       | It is used in earthing.                                                                                                                          | P        |
|                   | - rivets                                              | No rivet.                                                                                                                                        | N/A      |
| 3.6 (4.11.4)      | Material of current-carrying parts                    |                                                                                                                                                  | P        |
| 3.6 (4.11.5)      | No contact to wood or mounting surface                | Current-carrying parts are not in direct contact with the mounting surface.                                                                      | P        |
| 3.6 (4.11.6)      | Electro-mechanical contact systems                    |                                                                                                                                                  | N/A      |
| <b>3.6 (4.12)</b> | <b>Screws and connections (mechanical) and glands</b> |                                                                                                                                                  | <b>P</b> |
| 3.6 (4.12.1)      | Screws not made of soft metal                         | Screws and mechanical connections are withstand the mechanical stresses occurring in normal use. The luminaire does not have made of soft metal. | P        |
|                   | Screws of insulating material                         | No such screw.                                                                                                                                   | N/A      |
|                   | Torque test: torque (Nm); part ..... :                |                                                                                                                                                  | N/A      |
|                   | Torque test: torque (Nm); part ..... :                |                                                                                                                                                  | N/A      |
|                   | Torque test: torque (Nm); part ..... :                |                                                                                                                                                  | N/A      |
| 3.6 (4.12.2)      | Screws with diameter < 3 mm screwed into metal        | 4 mm                                                                                                                                             | N/A      |
| 3.6 (4.12.4)      | Locked connections:                                   |                                                                                                                                                  | P        |
|                   | - fixed arms; torque (Nm)..... :                      | 2.5                                                                                                                                              | P        |
|                   | - lampholder; torque (Nm)..... :                      | The luminaire does not have lampholder.                                                                                                          | N/A      |
|                   | - push-button switches; torque 0,8 Nm ..... :         | No such part.                                                                                                                                    | N/A      |
| 3.6 (4.12.5)      | Screwed glands; force (Nm) ..... :                    | 3.25                                                                                                                                             | P        |
| <b>3.6 (4.13)</b> | <b>Mechanical strength</b>                            |                                                                                                                                                  | <b>P</b> |
| 3.6 (4.13.1)      | Impact tests:                                         |                                                                                                                                                  | P        |
|                   | - fragile parts; energy (Nm)..... :                   | 0.5                                                                                                                                              | P        |
|                   | - other parts; energy (Nm) ..... :                    | 0.7                                                                                                                                              | P        |
|                   | 1) live parts                                         |                                                                                                                                                  | P        |
|                   | 2) linings                                            |                                                                                                                                                  | P        |
|                   | 3) protection                                         | IP 66                                                                                                                                            | P        |
|                   | 4) covers                                             |                                                                                                                                                  | P        |
| 3.6 (4.13.2)      | Metal parts have adequate mechanical strength         |                                                                                                                                                  | P        |





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|-------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 3.6 (4.13.3)      | Straight test finger                                                | A flat jointless test finger of the same dimensions as the standard test finger specified in IEC 60529 was used. The finger was pressed against the surface with a force of 30 N. | P        |
| 3.6 (4.13.4)      | Rough service luminaires                                            |                                                                                                                                                                                   | N/A      |
|                   | - IP54 or higher                                                    |                                                                                                                                                                                   | N/A      |
|                   | a) fixed                                                            |                                                                                                                                                                                   | N/A      |
|                   | b) hand-held                                                        |                                                                                                                                                                                   | N/A      |
|                   | c) delivered with a stand                                           |                                                                                                                                                                                   | N/A      |
|                   | d) for temporary installations and suitable for mounting on a stand |                                                                                                                                                                                   | N/A      |
| 3.6 (4.13.6)      | Tumbling barrel                                                     | No socket.                                                                                                                                                                        | N/A      |
| <b>3.6 (4.14)</b> | <b>Suspensions, fixings and means of adjusting</b>                  |                                                                                                                                                                                   | <b>P</b> |
| 3.6 (4.14.1)      | Mechanical load:                                                    |                                                                                                                                                                                   | P        |
|                   | A) four times the weight                                            | Mechanical fixings and connections does have adequate factors of safety.<br>Loaded with 19.6 kg.                                                                                  | P        |
|                   | B) torque 2,5 Nm                                                    | The luminaire is not rigid suspension luminaire.                                                                                                                                  | N/A      |
|                   | C) bracket arm; bending moment (Nm) .....                           |                                                                                                                                                                                   | N/A      |
|                   | D) load track-mounted luminaires                                    | The luminaire is not track-mounted luminaire.                                                                                                                                     | N/A      |
|                   | E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....      | The luminaire is not clip-mounted luminaire.                                                                                                                                      | N/A      |
|                   | Metal rod. diameter (mm) .....                                      |                                                                                                                                                                                   | N/A      |
|                   | Fixed luminaire or independent control gear without fixing devices  |                                                                                                                                                                                   | N/A      |
| 3.6 (4.14.2)      | Load to flexible cables                                             |                                                                                                                                                                                   | N/A      |
|                   | Mass (kg) .....                                                     |                                                                                                                                                                                   | —        |
|                   | Stress in conductors (N/mm <sup>2</sup> ) .....                     |                                                                                                                                                                                   | N/A      |
|                   | Mass (kg) of semi-luminaire .....                                   |                                                                                                                                                                                   | N/A      |
|                   | Bending moment (Nm) of semi-luminaire .....                         |                                                                                                                                                                                   | N/A      |
| 3.6 (4.14.3)      | Adjusting devices:                                                  |                                                                                                                                                                                   | N/A      |
|                   | - flexing test; number of cycles .....                              | No adjusting device.                                                                                                                                                              | N/A      |
|                   | - strands broken.....                                               |                                                                                                                                                                                   | N/A      |
|                   | - electric strength test afterwards                                 |                                                                                                                                                                                   | N/A      |
| 3.6 (4.14.4)      | Telescopic tubes: cords not fixed to tube; no strain on conductors  | No telescopic tube.                                                                                                                                                               | N/A      |





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|-------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------|
| 3.6 (4.14.5)      | Guide pulleys                                                                                              | The luminaire does not have guide pulley.                       | N/A        |
| 3.6 (4.14.6)      | Strain on socket-outlets                                                                                   |                                                                 | N/A        |
| <b>3.6 (4.15)</b> | <b>Flammable materials</b>                                                                                 |                                                                 | <b>N/A</b> |
|                   | - glow-wire test 650°C .....                                                                               | See Test Table 3.15 (13.3.2)<br>Withstood 650°C glow wire test. | N/A        |
|                   | - spacing $\geq 30$ mm                                                                                     |                                                                 | N/A        |
|                   | - screen withstanding test of 13.3.1                                                                       |                                                                 | N/A        |
|                   | - screen dimensions                                                                                        |                                                                 | N/A        |
|                   | - no fiercely burning material                                                                             |                                                                 | N/A        |
|                   | - thermal protection                                                                                       |                                                                 | N/A        |
|                   | - electronic circuits exempted                                                                             |                                                                 | N/A        |
| 3.6 (4.15.2)      | Luminaires made of thermoplastic material with lamp control gear                                           |                                                                 | N/A        |
|                   | a) construction                                                                                            |                                                                 | N/A        |
|                   | b) temperature sensing control                                                                             |                                                                 | N/A        |
|                   | c) surface temperature                                                                                     |                                                                 | N/A        |
| <b>3.6 (4.16)</b> | <b>Luminaires for mounting on normally flammable surfaces</b>                                              |                                                                 | <b>N/A</b> |
|                   | No lamp control gear .....                                                                                 | (compliance with Section 12)                                    | N/A        |
|                   | Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces |                                                                 | N/A        |
| 3.6 (4.16.1)      | Lamp control gear spacing:                                                                                 |                                                                 | N/A        |
|                   | - spacing 35 mm                                                                                            |                                                                 | N/A        |
|                   | - spacing 10 mm                                                                                            |                                                                 | N/A        |
| 3.6 (4.16.2)      | Thermal protection:                                                                                        |                                                                 | N/A        |
|                   | - in lamp control gear                                                                                     |                                                                 | N/A        |
|                   | - external                                                                                                 |                                                                 | N/A        |
|                   | - fixed position                                                                                           |                                                                 | N/A        |
|                   | - temperature marked lamp control gear                                                                     |                                                                 | N/A        |
| 3.6 (4.16.3)      | Design to satisfy the test of 12.6                                                                         | (see clause 12.6)                                               | N/A        |
| <b>3.6 (4.17)</b> | <b>Drain holes</b>                                                                                         |                                                                 | <b>N/A</b> |
|                   | Clearance at least 5 mm                                                                                    | No such part.                                                   | N/A        |
| <b>3.6 (4.18)</b> | <b>Resistance to corrosion</b>                                                                             |                                                                 | <b>P</b>   |
| 3.6 (4.18.1)      | - rust-resistance                                                                                          |                                                                 | P          |
| 3.6 (4.18.2)      | - season cracking in copper                                                                                |                                                                 | N/A        |
| 3.6 (4.18.3)      | - corrosion of aluminium                                                                                   | No aluminium part.                                              | N/A        |
| 3.6 (4.19)        | Ignitors compatible with ballast                                                                           | No such ignitor.                                                | N/A        |
| 3.6 (4.20)        | Rough service vibration                                                                                    |                                                                 | N/A        |





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|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>3.6 (4.21)</b>  | <b>Protective shield</b>                                                                                                                           |                                                                                                                                         | <b>N/A</b>  |
| 3.6 (4.21.1)       | Shield fitted if tungsten halogen lamps or metal halide lamps                                                                                      | The luminaire does not have tungsten halogen lamp or metal halide lamp.                                                                 | N/A         |
|                    | Shield of glass if tungsten halogen lamps                                                                                                          |                                                                                                                                         | N/A         |
| 3.6 (4.21.2)       | Particles from a shattering lamp not impair safety                                                                                                 |                                                                                                                                         | N/A         |
| 3.6 (4.21.3)       | No direct path                                                                                                                                     |                                                                                                                                         | N/A         |
| 3.6 (4.21.4)       | Impact test on shield                                                                                                                              |                                                                                                                                         | N/A         |
|                    | Glow-wire test on lamp compartment .....                                                                                                           | See Test Table 3.15 (13.3.2)                                                                                                            | N/A         |
| 3.6 (4.22)         | Attachments to lamps not cause overheating or damage                                                                                               |                                                                                                                                         | N/A         |
| 3.6 (4.23)         | Semi-luminaires comply Class II                                                                                                                    |                                                                                                                                         | N/A         |
| <b>*3.6 (4.24)</b> | <b>Photobiological hazards</b>                                                                                                                     |                                                                                                                                         | <b>*N/A</b> |
| *3.6 (4.24.1)      | No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)                                                               |                                                                                                                                         | *N/A        |
| *3.6 (4.24.2)      | Retinal blue light hazard                                                                                                                          |                                                                                                                                         | *N/A        |
|                    | Class of risk group assessed according to IEC/TR 62778 .....                                                                                       |                                                                                                                                         | —           |
|                    | Luminaires with $E_{thr}$ :                                                                                                                        |                                                                                                                                         | *N/A        |
|                    | a) Fixed luminaires                                                                                                                                |                                                                                                                                         | *N/A        |
|                    | - distance x m, borderline between RG1 and RG2 .. :                                                                                                |                                                                                                                                         | *N/A        |
|                    | - marking and instruction according 3.2.23                                                                                                         |                                                                                                                                         | *N/A        |
|                    | b) Portable and handheld luminaires                                                                                                                |                                                                                                                                         | *N/A        |
|                    | - marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778                                                                     |                                                                                                                                         | *N/A        |
|                    | Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778 |                                                                                                                                         | *N/A        |
| <b>3.6 (4.25)</b>  | <b>Mechanical hazard</b>                                                                                                                           |                                                                                                                                         | <b>P</b>    |
|                    | No sharp point or edges                                                                                                                            | Luminaire does have no sharp points or edges that could, during installation, normal use, or maintenance, create a hazard for the user. | P           |
| <b>3.6 (4.26)</b>  | <b>Short-circuit protection</b>                                                                                                                    |                                                                                                                                         | <b>N/A</b>  |
| 3.6 (4.26.1)       | Adequate means of uninsulated accessible SELV parts                                                                                                | No SELV or PELV part.                                                                                                                   | N/A         |
| 3.6 (4.26.2)       | Short-circuit test with test chain according 4.26.3                                                                                                |                                                                                                                                         | N/A         |
|                    | Supply source ES1 PSE                                                                                                                              |                                                                                                                                         | N/A         |
|                    | Test chain not melt through                                                                                                                        |                                                                                                                                         | N/A         |
|                    | Test sample not exceed values of Table 12.1 and 12.2                                                                                               |                                                                                                                                         | N/A         |





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| <b>3.6 (4.27)</b>   | <b>Terminal blocks with integrated screwless earthing contacts</b>                                                                                                                  |                                  | <b>N/A</b> |
|                     | Test according Annex V                                                                                                                                                              | No such terminal.                | 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>3.6 (4.28)</b>   | <b>Fixing of thermal sensing control</b>                                                                                                                                            |                                  | <b>N/A</b> |
|                     | Not plug-in or easily replaceable type                                                                                                                                              | No such part.                    | 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>3.6 (4.29)</b>   | <b>Luminaires with non-replaceable light source</b>                                                                                                                                 |                                  | <b>N/A</b> |
|                     | Not possible to replace light source                                                                                                                                                | No non-replaceable light source. | N/A        |
|                     | Live part not accessible after parts have been opened by hand or tools                                                                                                              |                                  | N/A        |
| <b>3.6 (4.30)</b>   | <b>Luminaires with non-user replaceable light source</b>                                                                                                                            |                                  | <b>P</b>   |
|                     | If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:                                                                |                                  | N/A        |
|                     | At least one fixing means requiring use of tool                                                                                                                                     |                                  | P          |
| <b>3.6 (4.31)</b>   | <b>Insulation between circuits</b>                                                                                                                                                  |                                  | <b>P</b>   |
|                     | Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3                                                                                                     |                                  | P          |
|                     | Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3 |                                  | N/A        |
| <b>3.6 (4.31.1)</b> | <b>SELV or PELV circuits</b>                                                                                                                                                        |                                  | <b>N/A</b> |
|                     | Used SELV/PELV source                                                                                                                                                               | No SELV or PELV circuit.         | N/A        |
|                     | Voltage $\leq$ ELV                                                                                                                                                                  |                                  | N/A        |
|                     | Insulating of SELV/PELV circuits from LV supply                                                                                                                                     |                                  | N/A        |
|                     | Insulating of SELV/PELV circuits from other non SELV/PELV circuits                                                                                                                  |                                  | N/A        |
|                     | Insulating of SELV/PELV circuits from FELV                                                                                                                                          |                                  | N/A        |





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|              |                                                                                                            |                  |            |
|--------------|------------------------------------------------------------------------------------------------------------|------------------|------------|
|              | Insulating of SELV/PELV circuits from other SELV/PELV circuits                                             |                  | N/A        |
|              | SELV/PELV circuits insulated from accessible parts according Table X.1                                     |                  | N/A        |
|              | Plugs not able to make any electrical contact with socket-outlets of other voltage systems                 |                  | N/A        |
|              | Socket outlets does not admit plugs of other voltage systems                                               |                  | N/A        |
|              | Plugs and socket-outlets does not have protective conductor contact                                        |                  | N/A        |
| 3.6 (4.31.2) | FELV circuits                                                                                              |                  | N/A        |
|              | Used FELV source                                                                                           | No FELV circuit. | 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 make any electrical contact with socket-outlets of other voltage systems                 |                  | N/A        |
|              | Socket outlets does not admit plugs of other voltage systems                                               |                  | N/A        |
|              | Socket-outlets does not have protective conductor contact                                                  |                  | N/A        |
| 3.6 (4.31.3) | Other circuits                                                                                             |                  | P          |
|              | Other circuits insulated from accessible parts according Table X.1                                         |                  | P          |
|              | Class II construction with equipotential bonding for protection against indirect contacts with live parts: |                  | N/A        |
|              | - conductive parts are connected together                                                                  | No such part.    | N/A        |
|              | - test according 7.2.3                                                                                     |                  | N/A        |
|              | - conductive part not cause an electric shock in case of an insulation fault                               |                  | N/A        |
|              | - equipotential bonding in master/slave applications                                                       |                  | N/A        |
|              | - master luminaire provided with terminal for accessible conductive parts of slave luminaires              |                  | N/A        |
|              | - slave luminaire constructed as class I                                                                   |                  | N/A        |
| 3.6 (4.32)   | <b>Overvoltage protective devices</b>                                                                      |                  | <b>P</b>   |
|              | Comply with IEC 61643-11                                                                                   |                  | P          |
|              | External to controlgear and connected to earth:                                                            |                  | P          |
|              | - only in fixed luminaires                                                                                 |                  | P          |
|              | - only connected to protective earth                                                                       |                  | P          |
| 3.6 (4.33)   | <b>Luminaire powered via information technology communication cabling</b>                                  |                  | <b>N/A</b> |





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|                   |                                                                                              |                                          |            |
|-------------------|----------------------------------------------------------------------------------------------|------------------------------------------|------------|
|                   | Requirements for Class III luminaire                                                         |                                          | N/A        |
|                   | Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector  |                                          | N/A        |
|                   | Luminaire does not create any hazard from overvoltage                                        | (see Annex 2)                            | N/A        |
| <b>3.6 (4.34)</b> | <b>Electromagnetic fields (EMF)</b>                                                          |                                          | <b>N/A</b> |
|                   | No harmful electromagnetic fields                                                            |                                          | N/A        |
| <b>3.6 (4.35)</b> | <b>Protection against moving fan blades</b>                                                  |                                          | <b>N/A</b> |
|                   | Test with a standard test finger                                                             |                                          | N/A        |
|                   | Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire                    |                                          | N/A        |
|                   | Blades rounded with radius $\geq 0.5$ mm and:                                                |                                          | N/A        |
|                   | -hardness less than D60 Shore                                                                |                                          | N/A        |
|                   | -peripheral speed less than 15 m/s                                                           |                                          | N/A        |
|                   | -input power of fan $\leq 2$ W at rated voltage                                              |                                          | N/A        |
| <b>3.6 (4.36)</b> | <b>Track-mounted luminaires</b>                                                              |                                          | <b>N/A</b> |
|                   | Test in accordance with Annex A of IEC60570:2003/AMD2:2019                                   |                                          | N/A        |
| 3.6.1 (-)         | At least IP X3 or X5 respectively. IP .....                                                  | IP X6.                                   | P          |
|                   | Column-integrated luminaires:                                                                |                                          | P          |
|                   | - parts below 2,5 m. IP .....                                                                | IP 6X                                    | P          |
|                   | - parts above 2,5 m. IP .....                                                                |                                          | N/A        |
| 3.6.2 (-)         | Suspension on span wires                                                                     |                                          | N/A        |
| 3.6.3 (-)         | Means for attaching the luminaire or external parts to its support appropriate to the weight |                                          | P          |
| 3.6.3.1 (-)       | Static load test                                                                             |                                          | P          |
|                   | - drag coefficient .....                                                                     | 1.2                                      | P          |
|                   | - loaded area (m <sup>2</sup> ) .....                                                        | 0.04                                     | P          |
|                   | - used load (N) .....                                                                        | 59.5                                     | P          |
|                   | - measured deformation (cm/m) .....                                                          | < 2                                      | P          |
|                   | - no rotation                                                                                |                                          | P          |
| 3.6.4 (-)         | Adjustable lampholders                                                                       | The luminaire does not have lampholder.  | N/A        |
| 3.6.5 (-)         | Luminaires installed above 5 m, glass covers shall be:                                       |                                          | N/A        |
|                   | a) glass that fractures into small pieces (test according to 3.6.5.1), or                    | The luminaire is mounted below 5 meters. | N/A        |
|                   | b) glass having a high impact shock resistance (test according to 3.6.5.2), or               |                                          | N/A        |
|                   | c) protected by any means to retain glass fragments                                          |                                          | N/A        |





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|               |                                                                                                                         |                                          |     |
|---------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----|
|               | For tunnel luminaires 3.6.5.1 apply                                                                                     |                                          | N/A |
|               | Method of protection declared by the manufacturer                                                                       |                                          | N/A |
| 3.6.5.1 (-)   | Protection by the use of glass that fractures into small pieces                                                         |                                          | N/A |
|               | - number of particles is more than 40 .....                                                                             | The luminaire is mounted below 5 meters. | N/A |
| 3.6.5.2 (-)   | Protection by the use of high impact resistant glass                                                                    |                                          | N/A |
| 3.6.5.2.1 (-) | Glass covers have high mechanical strength                                                                              |                                          | N/A |
|               | Test according IEC 62262 with test apparatus according IEC 60068-2-75 with impact energy of 5J on preconditioned sample |                                          | N/A |
| 3.6.5.2.2 (-) | Glass covers not break into large pieces                                                                                |                                          | N/A |
|               | - test according 3.6.5.1, number of particles is more than 20.....                                                      |                                          | N/A |
| 3.6.6 (-)     | Connection compartment of column-integrated luminaire                                                                   |                                          | N/A |
|               | - provides adequate space                                                                                               |                                          | N/A |
|               | - means for attachment                                                                                                  |                                          | N/A |
|               | - means for attachment of metal corrosion-resistant                                                                     |                                          | N/A |
| 3.6.7 (-)     | Compliance with ISO standard or other .....                                                                             |                                          | N/A |
| 3.6.8 (-)     | Doors of column-integrated luminaires:                                                                                  |                                          | N/A |
|               | - corrosion-resistant                                                                                                   |                                          | N/A |
|               | - opening only possible for an authorized person                                                                        |                                          | N/A |
|               | - impact test 5 Nm                                                                                                      |                                          | N/A |
|               | - sample show no damage                                                                                                 |                                          | N/A |
| 3.6.9 (-)     | Column-integrated luminaire:                                                                                            |                                          | N/A |
|               | - dimension of the cable entry slot (mm).....                                                                           |                                          | N/A |
|               | - cable path from the slot to the connection compartment (mm) .....                                                     |                                          | N/A |
|               | - cable path free from obstruction that might cause abrasion of the cable                                               |                                          | N/A |

|                 |                                                                                              |                                                                                       |          |
|-----------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|
| <b>3.7 (11)</b> | <b>CREEPAGE DISTANCES AND CLEARANCES</b>                                                     |                                                                                       | <b>P</b> |
| 3.7 (11.2)      | Creepage distances and clearances .....                                                      | See Table 3.7 (11.2)                                                                  | P        |
|                 | Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)            | Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/> | —        |
|                 | Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1 |                                                                                       | P        |
| 3.7 (11.2.2)    | Creepage distances for frequency up to 30 kHz                                                | See Test Table 3.7 (11.2) I                                                           | P        |
|                 | Creepage distances for frequency over 30 kHz:                                                |                                                                                       | N/A      |





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|              |                                                                                                   |                              |     |
|--------------|---------------------------------------------------------------------------------------------------|------------------------------|-----|
|              | - Controlgear marked with $\dot{U}_{OUT}$ and $f_{OUT}$ according IEC 61347-1, clause 7.1, item w | See Test Table 3.7 (11.2)-II | N/A |
|              | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347                     | See Test Table 3.7 (11.2)-II | N/A |
| 3.7 (11.2.3) | Clearances for frequency up to 30 kHz                                                             | See Test Table 3.7 (11.2) I  | P   |
|              | Clearances distances for frequency over 30 kHz:                                                   |                              | N/A |
|              | - Controlgear marked with $U_P$                                                                   | See Test Table 3.7 (11.2)-II | N/A |
|              | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347                     | See Test Table 3.7 (11.2)-II | N/A |

|                     |                                                                                                 |                                                                               |          |
|---------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------|
| <b>3.8 (7)</b>      | <b>PROVISION FOR EARTHING</b>                                                                   |                                                                               | <b>P</b> |
| 3.8 (7.2.1 + 7.2.3) | Accessible metal parts                                                                          |                                                                               | P        |
|                     | Metal parts in contact with supporting surface                                                  |                                                                               | P        |
|                     | Resistance $< 0,5 \Omega$ .....                                                                 |                                                                               | P        |
|                     | Self-tapping screws used                                                                        | The luminaire does not have self-tapping screw.                               | N/A      |
|                     | Thread-forming screws                                                                           |                                                                               | P        |
|                     | Thread-forming screw used in a groove                                                           |                                                                               | P        |
|                     | Protective earth makes contact first                                                            |                                                                               | P        |
|                     | Terminal blocks with integrated screwless protective earthing contacts tested according Annex V | No such part.                                                                 | N/A      |
|                     | Protective earthing of the luminaire not via built-in control gear                              |                                                                               | N/A      |
| 3.8 (7.2.2 + 7.2.3) | Protective earth continuity in joints, etc.                                                     |                                                                               | P        |
| 3.8 (7.2.4)         | Locking of clamping means                                                                       | For screw terminals, it is not possible to loosen the clamping means by hand. | P        |
|                     | Compliance with 4.7.3                                                                           |                                                                               | P        |
| 3.8 (7.2.5)         | Protective earth terminal integral part of connector socket                                     |                                                                               | N/A      |
| 3.8 (7.2.6)         | Protective earth terminal adjacent to mains terminals                                           |                                                                               | P        |
| 3.8 (7.2.7)         | Electrolytic corrosion of the protective earth terminal                                         |                                                                               | N/A      |
| 3.8 (7.2.8)         | Material of protective earth terminal                                                           |                                                                               | P        |
|                     | Contact surface bare metal                                                                      |                                                                               | P        |
| 3.8 (7.2.10)        | Class II luminaire for looping-in                                                               | Class I luminaire.                                                            | N/A      |
|                     | Double or reinforced insulation to functional earth                                             |                                                                               | N/A      |
| 3.8 (7.2.11)        | Protective earthing core coloured green-yellow                                                  |                                                                               | N/A      |





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|              |                                                                   |                                                      |     |
|--------------|-------------------------------------------------------------------|------------------------------------------------------|-----|
|              | Length of earth conductor                                         | The supply cable is not supplied with the luminaire. | N/A |
| 3.8 (7.2.12) | PELV circuit connected to protective earth for functional purpose | No such circuit.                                     | N/A |

|                 |                                     |               |            |
|-----------------|-------------------------------------|---------------|------------|
| <b>3.9 (14)</b> | <b>SCREW TERMINALS</b>              |               | <b>N/A</b> |
|                 | Separately approved; component list | (see Annex 1) | N/A        |
|                 | Part of the luminaire               | (see Annex 3) | N/A        |

|                 |                                                       |               |          |
|-----------------|-------------------------------------------------------|---------------|----------|
| <b>3.9 (15)</b> | <b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b> |               | <b>P</b> |
|                 | Separately approved; component list .....             | (see Annex 1) | N/A      |
|                 | Part of the luminaire.....                            | (see Annex 4) | P        |

|                   |                                                                                                                                                                                                                          |                                                   |          |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------|
| <b>3.10 (5)</b>   | <b>EXTERNAL AND INTERNAL WIRING</b>                                                                                                                                                                                      |                                                   | <b>P</b> |
| <b>3.10 (5.2)</b> | <b>Supply connection and external wiring</b>                                                                                                                                                                             |                                                   | <b>P</b> |
| 3.10 (5.2.1)      | Means of connection.....                                                                                                                                                                                                 | Terminal.                                         | P        |
|                   | Outdoor luminaire has not PVC insulated external wiring if not Class III or SELV/PELV circuits $\leq 25$ V AC/60 V DC/25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment | No SELV part.                                     | N/A      |
| 3.10 (5.2.2)      | Type of cable .....                                                                                                                                                                                                      | HO5VV-F                                           | P        |
|                   | Nominal cross-sectional area (mm <sup>2</sup> ) .....                                                                                                                                                                    | 3 X 0.75 mm <sup>2</sup>                          | P        |
|                   | Cables equal to IEC 60227 or IEC 60245                                                                                                                                                                                   | The cable does have TS EN 50525-2-11 certificate. | N/A      |
| 3.10 (5.2.3)      | Type of attachment, X, Y or Z                                                                                                                                                                                            | Type Y.                                           | P        |
| 3.10 (5.2.5)      | Type Z not connected to screws                                                                                                                                                                                           |                                                   | N/A      |
| 3.10 (5.2.6)      | Cable entries:                                                                                                                                                                                                           |                                                   | P        |
|                   | - suitable for introduction                                                                                                                                                                                              |                                                   | P        |
|                   | - adequate degree of protection                                                                                                                                                                                          | IP 66.                                            | P        |
| 3.10 (5.2.7)      | Cable entries through rigid material have rounded edges                                                                                                                                                                  |                                                   | P        |
| 3.10 (5.2.8)      | Insulating bushings:                                                                                                                                                                                                     |                                                   | N/A      |
|                   | - suitably fixed                                                                                                                                                                                                         | No insulating bushing.                            | N/A      |
|                   | - material in bushings                                                                                                                                                                                                   |                                                   | N/A      |
|                   | - material not likely to deteriorate                                                                                                                                                                                     |                                                   | N/A      |
|                   | - tubes or guards made of insulating material                                                                                                                                                                            |                                                   | N/A      |
| 3.10 (5.2.9)      | Locking of screwed bushings                                                                                                                                                                                              |                                                   | N/A      |





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|                    |                                                                                       |                    |     |
|--------------------|---------------------------------------------------------------------------------------|--------------------|-----|
| 3.10<br>(5.2.10)   | Cord anchorage:                                                                       |                    | N/A |
|                    | - covering protected from abrasion                                                    | No cord anchorage. | 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 |
| 3.10<br>(5.2.10.1) | Cord anchorage for type X attachment:                                                 |                    | N/A |
|                    | a) at least one part fixed                                                            |                    | N/A |
|                    | b) types of cable                                                                     |                    | N/A |
|                    | c) no damaging of the cable                                                           |                    | N/A |
|                    | d) whole cable can be mounted                                                         |                    | N/A |
|                    | e) no touching of clamping screws                                                     |                    | N/A |
|                    | f) metal screw not directly on cable                                                  |                    | N/A |
|                    | g) replacement without special tool                                                   |                    | N/A |
|                    | Glands not used as anchorage                                                          |                    | N/A |
|                    | Labyrinth type anchorages                                                             |                    | N/A |
| 3.10<br>(5.2.10.2) | Adequate cord anchorage for type Y and type Z attachment                              |                    | N/A |
| 3.10<br>(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 |
|                    | - no movement of conductors                                                           |                    | N/A |
|                    | - no damage of cable or cord                                                          |                    | N/A |
|                    | - function independent of electrical connection                                       |                    | N/A |
| 3.10<br>(5.2.10.4) | Luminaire with/ designed for use with supply cord with maximum current of 2A:         |                    | N/A |
|                    | - Ordinary Class III luminaire supplied with SELV $\leq 25V$ RMS/60V DC               |                    | N/A |
|                    | - Ordinary Class III luminaire supplied with PELV $\leq 12V$ RMS/30V DC               |                    | N/A |
|                    | - Other than ordinary Class III luminaire supplied with voltage $\leq 12V$ RMS/30V DC |                    | N/A |
|                    | Pull test of 30N                                                                      |                    | N/A |





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|-------------------|--------------------------------------------------------------------------------|----------------------------------------|----------|
| 3.10<br>(5.2.11)  | External wiring passing into luminaire                                         |                                        | P        |
| 3.10<br>(5.2.12)  | Looping-in terminals                                                           |                                        | N/A      |
| 3.10<br>(5.2.13)  | Wire ends not tinned                                                           |                                        | P        |
|                   | Wire ends tinned: no cold flow                                                 | The luminaire does not have cold flow. | P        |
| 3.10<br>(5.2.14)  | Mains plug same protection                                                     | No plug.                               | N/A      |
|                   | Class III luminaire plug                                                       |                                        | N/A      |
|                   | No unsafe compatibility                                                        |                                        | N/A      |
| 3.10<br>(5.2.15)  | Connectors for Class III luminaires (IEC 60603 or IEC 62680)                   | The luminaire is Class I luminaire.    | N/A      |
| 3.10<br>(5.2.16)  | Appliance inlets (IEC 60320)                                                   |                                        | N/A      |
|                   | Installation couplers (IEC 61535)                                              |                                        | N/A      |
|                   | Appliance inlet or connector systems (IEC 61984)                               |                                        | N/A      |
| 3.10<br>(5.2.17)  | No standardized interconnecting cables properly assembled                      |                                        | N/A      |
| 3.10<br>(5.2.18)  | Used plug in accordance with                                                   |                                        | N/A      |
|                   | - IEC 60083                                                                    | No plug.                               | N/A      |
|                   | - other standard                                                               |                                        | N/A      |
| <b>3.10 (5.3)</b> | <b>Internal wiring</b>                                                         |                                        | <b>P</b> |
| 3.10 (5.3.1)      | Internal wiring of suitable size and type                                      | HO5VV-F and 3 X 0.75 mm <sup>2</sup> . | P        |
|                   | Through wiring                                                                 |                                        | P        |
|                   | - not delivered/ mounting instruction                                          |                                        | N/A      |
|                   | - factory assembled                                                            |                                        | P        |
|                   | - socket outlet loaded (A)..... :                                              |                                        | N/A      |
|                   | - temperatures ..... :                                                         | (see Annex 2)                          | P        |
|                   | Green-yellow for protective earth only                                         |                                        | P        |
| 3.10<br>(5.3.1.1) | Internal wiring connected directly to fixed wiring                             |                                        | P        |
|                   | Cross-sectional area (mm <sup>2</sup> ) ..... :                                | 3 X 0.75 mm <sup>2</sup>               | P        |
|                   | Insulation thickness                                                           |                                        | N/A      |
|                   | Extra insulation added where necessary                                         |                                        | N/A      |
| 3.10<br>(5.3.1.2) | Internal wiring connected to fixed wiring via internal current-limiting device |                                        | N/A      |





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|                   |                                                                                                          |                                                                                                                                                                              |            |
|-------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                   | Cross-sectional area (mm <sup>2</sup> ) .....                                                            | The luminaire does not have current-limiting device.                                                                                                                         | N/A        |
| 3.10 (5.3.1.3)    | Double or reinforced insulation for class II                                                             | The luminaire is Class I.                                                                                                                                                    | N/A        |
| 3.10 (5.3.1.4)    | Conductors without insulation                                                                            | No such conductor.                                                                                                                                                           | N/A        |
| 3.10 (5.3.1.5)    | SELV/PELV current-carrying parts                                                                         | No SELV or PELV part.                                                                                                                                                        | N/A        |
| 3.10 (5.3.1.6)    | Insulation thickness other than PVC or rubber                                                            | PVC.                                                                                                                                                                         | N/A        |
| 3.10 (5.3.2)      | Sharp edges etc.                                                                                         | Internal wiring is so situated or protected that it cannot be damaged by sharp edges, rivets, screws and similar components, and by moving parts of similar parts.           | P          |
|                   | No moving parts of switches etc.                                                                         | No switch.                                                                                                                                                                   | N/A        |
|                   | Joints, raising/lowering devices                                                                         | No such part.                                                                                                                                                                | N/A        |
|                   | Telescopic tubes etc.                                                                                    | No telescopic tube.                                                                                                                                                          | N/A        |
|                   | No twisting over 360°                                                                                    | Wirings are not twisted along the longitudinal axis of the cable through an angle exceeding 360°                                                                             | P          |
| 3.10 (5.3.3)      | Insulating bushings:                                                                                     |                                                                                                                                                                              | N/A        |
|                   | - suitable fixed                                                                                         | No such part.                                                                                                                                                                | N/A        |
|                   | - material in bushings                                                                                   |                                                                                                                                                                              | N/A        |
|                   | - material not likely to deteriorate                                                                     |                                                                                                                                                                              | N/A        |
|                   | - cables with protective sheath                                                                          |                                                                                                                                                                              | N/A        |
| 3.10 (5.3.4)      | Joints and junctions effectively insulated                                                               | Joints and junctions in internal wiring, excluding terminations on components, are provided with an insulating covering no less effective than the insulation of the wiring. | P          |
| 3.10 (5.3.5)      | Strain on internal wiring                                                                                |                                                                                                                                                                              | N/A        |
| 3.10 (5.3.6)      | Wire carriers                                                                                            |                                                                                                                                                                              | N/A        |
| 3.10 (5.3.7)      | Wire ends not tinned                                                                                     |                                                                                                                                                                              | P          |
|                   | Wire ends tinned: no cold flow                                                                           |                                                                                                                                                                              | N/A        |
| <b>3.10 (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)<br>No such conductor.                                                                                                                                          | N/A        |
|                   | No damage to luminaire wiring after test                                                                 |                                                                                                                                                                              | N/A        |
| 3.10.1 (-)        | Cord anchorage if applicable                                                                             |                                                                                                                                                                              | N/A        |





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|  |                                       |  |     |
|--|---------------------------------------|--|-----|
|  | - pull test: 25 times; pull (N).....: |  | N/A |
|  | - torque test: torque (Nm) .....      |  | N/A |

| 3.11 (8)       | PROTECTION AGAINST ELECTRIC SHOCK                                                                                      |                                                                       | P   |
|----------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----|
| 3.11 (8.2.1)   | Live parts not accessible                                                                                              | During normal use of the luminaire, its live parts cannot be accessed | P   |
|                | Basic insulated parts not used on the outer surface without appropriate protection                                     |                                                                       | N/A |
|                | Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires         |                                                                       | N/A |
|                | Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires                        |                                                                       | P   |
|                | Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements |                                                                       | N/A |
|                | Basic insulation only accessible under lamp or starter replacement                                                     |                                                                       | P   |
|                | Protection in any position                                                                                             |                                                                       | P   |
|                | Double-ended tungsten filament lamp                                                                                    | No such lamp.                                                         | N/A |
|                | Insulation lacquer not reliable                                                                                        |                                                                       | N/A |
|                | Double-ended high pressure discharge lamp                                                                              | No such lamp.                                                         | N/A |
|                | Relevant warning according to 3.2.18 fitted to the luminaire                                                           |                                                                       | N/A |
| 3.11 (8.2.2)   | Portable luminaire adjusted in most unfavourable position                                                              | The luminaire is fixed luminaire.                                     | N/A |
| 3.11 (8.2.3.a) | Class II luminaire:                                                                                                    |                                                                       | N/A |
|                | - basic insulated metal parts not accessible during starter or lamp replacement                                        | Class I luminaire.                                                    | N/A |
|                | - basic insulation not accessible other than during starter or lamp replacement                                        |                                                                       | N/A |
|                | - glass protective shields not used as supplementary insulation                                                        |                                                                       | N/A |
| 3.11 (8.2.3.b) | BC lamp holder of metal in class I luminaires shall be connected to protective earth                                   | No such part.                                                         | N/A |
| 3.11 (8.2.3.c) | SELV circuits with exposed current carrying parts:                                                                     |                                                                       | N/A |
|                | Ordinary luminaire:                                                                                                    |                                                                       | N/A |
|                | - voltage under load/ no-load AC (V) .....                                                                             | No SELV part.                                                         | N/A |
|                | - voltage under load/ no-load DC (V).....:                                                                             |                                                                       | N/A |
|                | - interrupted DC voltage (V) .....                                                                                     |                                                                       | N/A |





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|                   |                                                                                                                           |                                   |     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----|
|                   | - touch current if applicable (mA) .....                                                                                  |                                   | N/A |
|                   | One conductive part insulated if required                                                                                 |                                   | N/A |
|                   | Other than ordinary luminaire:                                                                                            |                                   | N/A |
|                   | - voltage under load/ no-load AC (V) .....                                                                                |                                   | N/A |
|                   | - voltage under load/ no-load DC (V).....                                                                                 |                                   | N/A |
|                   | - interrupted DC voltage (V) .....                                                                                        |                                   | N/A |
|                   | Class III luminaire only for connection to SELV                                                                           |                                   | N/A |
|                   | Class III luminaire not provided with means for protective earthing                                                       |                                   | N/A |
| 3.11<br>(8.2.3.d) | PELV circuits with exposed current carrying parts:                                                                        |                                   | N/A |
|                   | Ordinary luminaire:                                                                                                       |                                   | N/A |
|                   | - voltage under load/ no-load AC (V) .....                                                                                | No PELV part.                     | N/A |
|                   | - voltage under load/ no-load DC (V).....                                                                                 |                                   | N/A |
|                   | Other than ordinary luminaire:                                                                                            |                                   | N/A |
|                   | - voltage under load/ no-load AC (V) .....                                                                                |                                   | N/A |
|                   | - voltage under load/ no-load DC (V).....                                                                                 |                                   | N/A |
|                   | One pole insulated if required                                                                                            |                                   | N/A |
| 3.11 (8.2.4)      | Portable luminaire have protection independent of supporting surface                                                      | The luminaire is fixed luminaire. | N/A |
| 3.11 (8.2.5)      | Compliance with the standard test finger or relevant probe                                                                |                                   | P   |
| 3.11 (8.2.6)      | Covers reliably secured                                                                                                   |                                   | P   |
| 3.11 (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 |

|                    |                                                                                                                |                                 |          |
|--------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------|----------|
| <b>3.12 (12)</b>   | <b>ENDURANCE TEST AND THERMAL TEST</b>                                                                         |                                 | <b>P</b> |
| 3.12 (-)           | If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) as specified in 3.13 |                                 | —        |
| <b>3.12 (12.2)</b> | <b>Selection of lamps and ballasts</b>                                                                         |                                 | —        |
|                    | Lamp used according Annex B                                                                                    | (Lamp used see Annex 2)         | —        |
|                    | Control gear if separate and not supplied                                                                      | (Control gear used see Annex 2) | —        |
| <b>3.12 (12.3)</b> | <b>Endurance test:</b>                                                                                         |                                 | <b>P</b> |





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|                   |                                                                                 |               |     |
|-------------------|---------------------------------------------------------------------------------|---------------|-----|
|                   | a) mounting-position .....                                                      |               | —   |
|                   | b) test temperature (°C).....                                                   |               | —   |
|                   | c) total duration (h) .....                                                     | 240           | —   |
|                   | d) supply voltage (V).....                                                      | 264           | —   |
|                   | d) if not equipped with control gear, constant voltage/current (V) or (A) ..... |               | —   |
| 3.12<br>(12.3.1d) | d) Class III luminaires powered via information technology communication cable: |               | N/A |
|                   | - voltage under normal operation (V).....                                       |               | —   |
|                   | - voltage under abnormal operation (V).....                                     |               | —   |
|                   | e) luminaire ceases to operate                                                  |               | —   |
|                   | f) luminaire with constant light output function                                |               | N/A |
| 3.12<br>(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   |
| 3.12 (12.4)       | <b>Thermal test (normal operation)</b>                                          | (see Annex 2) | P   |
| 3.12 (12.5)       | <b>Thermal test (abnormal operation)</b>                                        | (see Annex 2) | N/A |
| 3.12 (12.6)       | <b>Thermal test (failed lamp control gear condition):</b>                       |               | N/A |
| 3.12<br>(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 |
| 3.12<br>(12.6.2)  | Temperature sensing control                                                     |               | N/A |
|                   | - case of abnormal conditions .....                                             |               | —   |
|                   | - thermal link                                                                  |               | N/A |
|                   | - manual reset cut-out                                                          |               | N/A |
|                   | - auto reset cut-out                                                            |               | N/A |
|                   | - measured mounting surface temperature (°C) .....                              |               | N/A |





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|                    |                                                                                     |                                                                     |            |
|--------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------|
|                    | - track-mounted luminaires                                                          |                                                                     | N/A        |
| <b>3.12 (12.7)</b> | <b>Thermal test (failed lamp control gear in plastic luminaires):</b>               |                                                                     | <b>N/A</b> |
| 3.12 (12.7.1)      | Luminaire without temperature sensing control                                       |                                                                     | N/A        |
| 3.12 (12.7.1.1)    | Luminaire with fluorescent lamp $\leq 70W$                                          |                                                                     | 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 ( $^{\circ}C$ ): at 1,1 Un .....                     |                                                                     | —          |
|                    | - measured temperature of fixing point/exposed part ( $^{\circ}C$ ): at 1,1 Un..... |                                                                     | —          |
|                    | - calculated temperature of fixing point/exposed part ( $^{\circ}C$ ) .....         |                                                                     | —          |
|                    | Ball-pressure test.....                                                             | See Table 3.15 (13.2.1)                                             | N/A        |
| 3.12 (12.7.1.2)    | Luminaire with discharge lamp, fluorescent lamp $> 70W$ , transformer $> 10 VA$     |                                                                     | N/A        |
|                    | - case of abnormal conditions .....                                                 |                                                                     | —          |
|                    | - measured winding temperature ( $^{\circ}C$ ): at 1,1 Un .....                     |                                                                     | —          |
|                    | - measured temperature of fixing point/exposed part ( $^{\circ}C$ ): at 1,1 Un..... |                                                                     | —          |
|                    | - calculated temperature of fixing point/exposed part ( $^{\circ}C$ ) .....         |                                                                     | —          |
|                    | Ball-pressure test.....                                                             | See Table 3.15 (13.2.1)                                             | N/A        |
| 3.12 (12.7.1.3)    | Luminaire with short circuit proof transformers $\leq 10 VA$                        |                                                                     | N/A        |
|                    | - case of abnormal conditions .....                                                 |                                                                     | —          |
|                    | - Components retained in place after the test                                       |                                                                     | N/A        |
|                    | - Test with standard test finger after the test                                     |                                                                     | N/A        |
| 3.12 (12.7.2)      | Luminaire with temperature sensing control                                          |                                                                     | N/A        |
|                    | - thermal link .....                                                                | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —          |
|                    | - manual reset cut-out.....                                                         | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —          |
|                    | - auto reset cut-out .....                                                          | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | —          |





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|            |                                                                                |                         |     |
|------------|--------------------------------------------------------------------------------|-------------------------|-----|
|            | - case of abnormal conditions .....                                            |                         | —   |
|            | - highest measured temperature of fixing point/ exposed part (°C): .....       |                         | —   |
|            | Ball-pressure test: .....                                                      | See Table 3.15 (13.2.1) | N/A |
| 3.12.1 (-) | Temperature reduction if for outdoor use only                                  |                         | P   |
| 3.12.2 (-) | (See above)                                                                    |                         | —   |
| 3.12.3 (-) | Glass covers used within the thermal limits declared by the glass manufacturer | No such part.           | N/A |

|                 |                                                                                                                                                   |                                                                                                 |          |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------|
| <b>3.13 (9)</b> | <b>RESISTANCE TO DUST AND MOISTURE</b>                                                                                                            |                                                                                                 | <b>P</b> |
| 3.13.1 (-)      | If IP > IP 20 the order of tests as specified in clause 3.12                                                                                      |                                                                                                 | P        |
| 3.13 (9.2)      | Tests for ingress of dust, solid objects and moisture:                                                                                            |                                                                                                 | P        |
|                 | - classification according to IP .....                                                                                                            | IP 66. (The LED module does have IP66 protection. The enclosure does not have IP66 protection.) | —        |
|                 | - mounting position during test .....                                                                                                             | Working position.                                                                               | —        |
|                 | - fixing screws tightened; torque (Nm) .....                                                                                                      |                                                                                                 | —        |
|                 | - tests according to clauses .....                                                                                                                |                                                                                                 | —        |
|                 | - electric strength test afterwards                                                                                                               |                                                                                                 | P        |
|                 | a) no deposit in dust-proof luminaire                                                                                                             |                                                                                                 | P        |
|                 | b) no talcum in dust-tight luminaire                                                                                                              | Talcum LED is not in the module, but it is in the enclosure.                                    | P        |
|                 | c) no trace of water on current-carrying parts or on insulation where it could become a hazard                                                    | Water LED is not in the module, but it is in the enclosure.                                     | P        |
|                 | c.1) For luminaires without drain holes – no water entry                                                                                          |                                                                                                 | P        |
|                 | c.2) For luminaires with drain holes – no hazardous water entry                                                                                   | No drain holes.                                                                                 | N/A      |
|                 | d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire |                                                                                                 | P        |
|                 | e) no contact with live parts (IP 2X)                                                                                                             | IP 6X.                                                                                          | N/A      |
|                 | e) no entry into enclosure (IP 3X and IP 4X)                                                                                                      | IP 6X.                                                                                          | N/A      |
|                 | e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)                                                           |                                                                                                 | N/A      |
|                 | f) no trace of water on part of lamp requiring protection from splashing water                                                                    |                                                                                                 | P        |
|                 | g) no damage of protective shield or glass envelope                                                                                               |                                                                                                 | P        |
| 3.13 (9.3)      | Humidity test 48 h                                                                                                                                | %93 Rh, 25°C.                                                                                   | P        |





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| 3.14 (10)     | INSULATION RESISTANCE AND ELECTRIC STRENGTH                                                                                     |                        | P   |
|---------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|
| 3.14 (10.2.1) | Insulation resistance test                                                                                                      |                        | P   |
|               | Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....                                                    |                        | —   |
|               | Insulation resistance (MΩ).....                                                                                                 |                        | —   |
|               | SELV/PELV:                                                                                                                      |                        | N/A |
|               | - between current-carrying parts of different polarity :                                                                        | No SELV or PELV part.  | N/A |
|               | - between current-carrying parts and mounting surface .....                                                                     |                        | N/A |
|               | - between current-carrying parts and metal parts of the luminaire .....                                                         |                        | N/A |
|               | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... |                        | N/A |
|               | - Insulation bushings as described in Section 5 .....                                                                           |                        | N/A |
|               | Other than SELV/PELV:                                                                                                           |                        | P   |
|               | - between live parts of different polarity .....                                                                                | No different polarity. | N/A |
|               | - between live parts and mounting surface .....                                                                                 | Min: 200000 MΩ         | P   |
|               | - between live parts and metal parts.....                                                                                       | Min: 6648 MΩ           | P   |
|               | - between live parts of different polarity through action of a switch.....                                                      | No such 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..... | No such part.          | N/A |
|               | - Insulation bushings as described in Section 5 .....                                                                           | No insulation bushing. | N/A |
| 3.14 (10.2.2) | Electric strength test                                                                                                          |                        | P   |
|               | Dummy lamp                                                                                                                      | No dummy lamp.         | N/A |
|               | Luminaires with ignitors after 24 h test                                                                                        | No ignitor.            | N/A |
|               | Luminaires with manual ignitors                                                                                                 |                        | N/A |
|               | Test voltage (V) .....                                                                                                          |                        | P   |
|               | SELV/PELV:                                                                                                                      |                        | N/A |
|               | - between current-carrying parts of different polarity :                                                                        | No SELV or PELV part.  | N/A |
|               | - between current-carrying parts and mounting surface .....                                                                     |                        | N/A |
|               | - between current-carrying parts and metal parts of the luminaire .....                                                         |                        | N/A |
|               | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... |                        | N/A |





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|             |                                                                                                                                  |           |     |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|-----------|-----|
|             | - Insulation bushings as described in Section 5 .....                                                                            |           | N/A |
|             | Other than SELV/PELV:                                                                                                            |           | P   |
|             | - between live parts of different polarity .....                                                                                 | 1480 V.   | P   |
|             | - between live parts and mounting surface .....                                                                                  | 1480 V.   | P   |
|             | - between live parts and metal parts .....                                                                                       | 1480 V.   |     |
|             | - 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 |
| 3.14 (10.3) | Touch current (mA) .....                                                                                                         | Max: 0.32 | P   |
|             | Protective conductor current (mA) .....                                                                                          | 0.039     | P   |

|                  |                                              |                              |     |
|------------------|----------------------------------------------|------------------------------|-----|
| <b>3.15 (13)</b> | <b>RESISTANCE TO HEAT, FIRE AND TRACKING</b> |                              | N/A |
| 3.15 (13.2.1)    | Ball-pressure test .....                     | See Test Table 3.15 (13.2.1) | N/A |
| 3.15 (13.3.1)    | Needle-flame test (10 s) .....               | See Test Table 3.15 (13.3.1) | N/A |
| 3.15 (13.3.2)    | Glow-wire test (650°C) .....                 | See Test Table 3.15 (13.3.2) | N/A |
| 3.15 (13.4)      | Proof tracking test (IEC 60112) .....        | See Test Table 3.15 (13.4)   | N/A |

|                                                 |                                                                  |                    |           |        |                                      |          |        |
|-------------------------------------------------|------------------------------------------------------------------|--------------------|-----------|--------|--------------------------------------|----------|--------|
| 3.7 (11.2)                                      | TABLE I: Creepage distances and clearances                       |                    |           |        |                                      |          | P      |
|                                                 | Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages |                    |           |        |                                      |          | P      |
|                                                 | Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*  |                    |           |        |                                      |          | P      |
|                                                 | Insulation type **                                               | Measured clearance | Required  |        | Measured creepage                    | Required |        |
|                                                 |                                                                  |                    | clearance | *Table |                                      | creepage | *Table |
| Distance 1:                                     | B                                                                | 1.9                | 1.5       | 11.1.B | 4                                    | 2.5      | 11.1.A |
| Working voltage (V) .....                       |                                                                  |                    |           |        | 220 - 240                            |          | —      |
| PTI.....                                        |                                                                  |                    |           |        | $< 600 \boxtimes$ $\geq 600 \square$ |          | —      |
| Pulse voltage or $U_P$ if applicable (kV) ..... |                                                                  |                    |           |        |                                      |          | —      |
| Supplementary information: LED - Enclosure      |                                                                  |                    |           |        |                                      |          |        |
| Distance 2:                                     |                                                                  |                    |           |        |                                      |          |        |
| Working voltage (V) .....                       |                                                                  |                    |           |        |                                      |          | —      |
| PTI.....                                        |                                                                  |                    |           |        | $< 600 \square$ $\geq 600 \square$   |          | —      |
| Pulse voltage or $U_P$ if applicable (kV) ..... |                                                                  |                    |           |        |                                      |          | —      |
| Supplementary information:                      |                                                                  |                    |           |        |                                      |          |        |





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|                                                 |                                                               |  |  |  |  |  |   |
|-------------------------------------------------|---------------------------------------------------------------|--|--|--|--|--|---|
| 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.

| 3.7 (11.2)                                                                 | TABLE II: Creepage distances and clearances                   |                    |           |        |                   |          |        | N/A |
|----------------------------------------------------------------------------|---------------------------------------------------------------|--------------------|-----------|--------|-------------------|----------|--------|-----|
| Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages     |                                                               |                    |           |        |                   |          |        |     |
| Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2 |                                                               |                    |           |        |                   |          |        |     |
| Distances                                                                  | Insulation type **                                            | Measured clearance | Required  |        | Measured creepage | Required |        |     |
|                                                                            |                                                               |                    | clearance | *Table |                   | creepage | *Table |     |
| Distance 1:                                                                |                                                               |                    |           |        |                   |          |        |     |
| Working voltage (V) .....                                                  |                                                               |                    |           |        |                   |          | —      |     |
| Frequency if applicable (kHz) .....                                        |                                                               |                    |           |        |                   |          | —      |     |
| PTI .....                                                                  | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                    |           |        |                   |          | —      |     |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... |                                                               |                    |           |        |                   |          | —      |     |
| Supplementary information:                                                 |                                                               |                    |           |        |                   |          |        |     |
| Distance 2:                                                                |                                                               |                    |           |        |                   |          |        |     |
| Working voltage (V) .....                                                  |                                                               |                    |           |        |                   |          | —      |     |
| Frequency if applicable (kHz) .....                                        |                                                               |                    |           |        |                   |          | —      |     |
| PTI .....                                                                  | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                    |           |        |                   |          | —      |     |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... |                                                               |                    |           |        |                   |          | —      |     |
| Supplementary information:                                                 |                                                               |                    |           |        |                   |          |        |     |
| Distance 3:                                                                |                                                               |                    |           |        |                   |          |        |     |
| Working voltage (V) .....                                                  |                                                               |                    |           |        |                   |          | —      |     |
| Frequency if applicable (kHz) .....                                        |                                                               |                    |           |        |                   |          | —      |     |
| PTI .....                                                                  | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                    |           |        |                   |          | —      |     |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... |                                                               |                    |           |        |                   |          | —      |     |
| Supplementary information:                                                 |                                                               |                    |           |        |                   |          |        |     |

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





Test Laboratuvarları

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|                                                 |                                             |                       |                          |     |
|-------------------------------------------------|---------------------------------------------|-----------------------|--------------------------|-----|
| 3.15<br>(13.2.1)                                | TABLE: Ball Pressure Test of Thermoplastics |                       |                          | N/A |
| Allowed impression diameter (mm) .....          |                                             | 2                     |                          | —   |
| Object/ Part No./ Material                      | Manufacturer/<br>trademark                  | Test temperature (°C) | Impression diameter (mm) |     |
|                                                 |                                             |                       |                          |     |
|                                                 |                                             |                       |                          |     |
|                                                 |                                             |                       |                          |     |
| Supplementary information: <b>No such part.</b> |                                             |                       |                          |     |

|                                                                              |                                           |                                                       |                                          |                                    |         |
|------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------|------------------------------------------|------------------------------------|---------|
| 3.15<br>(13.3.1)                                                             | TABLE: Needle-flame test (IEC 60695-11-5) |                                                       |                                          |                                    | N/A     |
| 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 |
|                                                                              |                                           |                                                       |                                          |                                    |         |
|                                                                              |                                           |                                                       |                                          |                                    |         |
|                                                                              |                                           |                                                       |                                          |                                    |         |
| Supplementary information: <b>There is no current-carrying plastic part.</b> |                                           |                                                       |                                          |                                    |         |

| 3.15 (13.3.2)                                                                        | TABLE: Resistance to heat and fire - Glow wire tests |                     |    |     |    |     | N/A     |
|--------------------------------------------------------------------------------------|------------------------------------------------------|---------------------|----|-----|----|-----|---------|
| Object/<br>Part No./<br>Material                                                     | Manufacturer/<br>trademark                           | Glow wire test (°C) |    |     |    |     | Verdict |
|                                                                                      |                                                      | 650                 |    | 750 |    | 850 |         |
|                                                                                      |                                                      | te                  | ti | te  | ti |     |         |
|                                                                                      |                                                      |                     |    |     |    |     |         |
|                                                                                      |                                                      |                     |    |     |    |     |         |
| Ignition of the specified layer placed underneath the test specimen (Yes/No) ..... : |                                                      |                     |    |     |    |     |         |
| Supplementary information: <b>No such part.</b>                                      |                                                      |                     |    |     |    |     |         |

|                                                 |                            |                                                                             |   |         |
|-------------------------------------------------|----------------------------|-----------------------------------------------------------------------------|---|---------|
| 3.15 (13.4)                                     | TABLE: Proof tracking test |                                                                             |   | N/A     |
| Test voltage PTI .....                          |                            | 175 V                                                                       | — |         |
| Object/ Part No./ Material                      | Manufacturer/<br>trademark | Withstand 50 drops without failure on three<br>places or on three specimens |   | Verdict |
|                                                 |                            |                                                                             |   |         |
|                                                 |                            |                                                                             |   |         |
|                                                 |                            |                                                                             |   |         |
| Supplementary information: <b>No such part.</b> |                            |                                                                             |   |         |





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| ANNEX 1 TABLE: Critical components information |      |                            |                                                      |                                                                         |                                                                                | P                                      |
|------------------------------------------------|------|----------------------------|------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------|
| Object / part No.                              | Code | Manufacturer/<br>trademark | Type / model                                         | Technical data                                                          | Standard                                                                       | Mark(s) of<br>conformity <sup>1)</sup> |
| LED                                            | C    | Nichia                     | NICHIA 319BT                                         | 30X30 HIGH<br>POWER                                                     | LM80                                                                           | Declared                               |
| DRIVER                                         | C    | VS 187083                  | Type ECXd<br>1050.447                                | Output Current:<br>300 or 700 mA <sub>MAX</sub><br>Output Power:<br>60W | EN 61000-3-2<br>EN61347-1<br>EN 61347-2-13<br>EN 61547<br>EN 62384<br>EN 55015 | Declared                               |
| CABLE                                          | C    | Pamukkale                  | 3 X 0.75 mm <sup>2</sup><br>2 X 0.75 mm <sup>2</sup> | HO5VV-F                                                                 | TS EN 50525-2-<br>11                                                           | Declared                               |

Supplementary information: **See client documentation for other component details and certifications.**

<sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

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

| ANNEX 2 TABLE: Thermal tests of Section 12 |                                                                                                                                                    |                   | P |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---|
|                                            | Type reference .....                                                                                                                               | -                 | — |
|                                            | Lamp used .....                                                                                                                                    | LED               | — |
|                                            | Lamp control gear used .....                                                                                                                       |                   | — |
|                                            | Mounting position of luminaire .....                                                                                                               | Working position. | — |
|                                            | Supply wattage (W) .....                                                                                                                           | 95.12             | — |
|                                            | Supply current (A) .....                                                                                                                           | 0.5               | — |
|                                            | Temperatures in test 1 - 4 below are corrected for<br>ta (°C) .....                                                                                | 20.3 – 24.3       | — |
|                                            | - abnormal operating mode .....                                                                                                                    |                   | — |
| 3.12 (12.4)                                | - test 1: rated voltage .....                                                                                                                      | 240 V             | — |
|                                            | - test 2: 1,06 times rated voltage or 1,05 times rated<br>wattage or 1,1 times constant voltage/current .....                                      | 264 V             | — |
|                                            | - 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 current<br>of A during the test .....                                                              |                   | — |
| 3.12 (12.5)                                | - test 4: 1,1 times rated voltage or 1,05 times rated<br>wattage or 1,1 times constant voltage/current or<br>130/150% of rated input voltage ..... |                   | — |





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| Temperature measurements (°C)                                                                                                                                                                                   |             |                   |        |        |                    |                     |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------|--------|--------|--------------------|---------------------|-------|
| Part                                                                                                                                                                                                            | Ambient     | Cl. 12.4 – normal |        |        |                    | Cl. 12.5 – abnormal |       |
|                                                                                                                                                                                                                 |             | test 1            | test 2 | test 3 | limit              | test 4              | limit |
| Power Supply                                                                                                                                                                                                    | 20.3 - 24.3 | 76.5              | 72.5   | -      | 90                 | -                   | -     |
| LED Module                                                                                                                                                                                                      | 20.3 - 24.3 | 85.2              | 81.0   | -      | Information Degree | -                   | -     |
| Gland                                                                                                                                                                                                           | 20.3 - 24.3 | 82.8              | 79.1   | -      | 120                | -                   | -     |
| Cable (Inner)                                                                                                                                                                                                   | 20.3 - 24.3 | 52.5              | 47.7   | -      | 90                 | -                   | -     |
| Cable (Out)                                                                                                                                                                                                     | 20.3 - 24.3 | 59.8              | 54.8   | -      | 90                 | -                   | -     |
| Mounting Surface                                                                                                                                                                                                | 20.3 - 24.3 | 40.2              | 35.4   | -      | 90                 | -                   | -     |
| Illuminated Surface                                                                                                                                                                                             | 20.3 - 24.3 | 24.5              | 21.0   | -      | 130                | -                   | -     |
| Enclosure                                                                                                                                                                                                       | 20.3 - 24.3 | 49.5              | 45.2   | -      | 90                 | -                   | -     |
| Supplementary information: <b>The tests were carried out at the highest declared values. The highest values are noted. You can reach values at different frequency values in the experimental oscillograms.</b> |             |                   |        |        |                    |                     |       |

| ANNEX 3    | Screw terminals (part of the luminaire)              |   | N/A |
|------------|------------------------------------------------------|---|-----|
| (14)       | <b>SCREW TERMINALS</b>                               |   | N/A |
| (14.2)     | Type of terminal .....                               |   | —   |
|            | Rated current (A) .....                              |   | —   |
| (14.3.2.1) | One or more conductors                               |   | N/A |
| (14.3.2.2) | Special preparation                                  |   | N/A |
| (14.3.2.3) | Terminal size                                        |   | N/A |
|            | Cross-sectional area (mm <sup>2</sup> ) .....        |   | —   |
| (14.3.3)   | Conductor space (mm) .....                           |   | N/A |
| (14.4)     | Mechanical tests                                     |   | N/A |
| (14.4.1)   | Minimum distance                                     |   | N/A |
| (14.4.2)   | Cannot slip out                                      |   | N/A |
| (14.4.3)   | Special preparation                                  |   | N/A |
| (14.4.4)   | Nominal diameter of thread (metric ISO thread) ..... | M | N/A |
|            | External wiring                                      |   | N/A |
|            | No soft metal                                        |   | N/A |
| (14.4.5)   | Corrosion                                            |   | N/A |
| (14.4.6)   | Nominal diameter of thread (mm) .....                |   | N/A |
|            | Torque (Nm) .....                                    |   | N/A |
| (14.4.7)   | Between metal surfaces                               |   | N/A |





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|                |                                                                               |  |            |
|----------------|-------------------------------------------------------------------------------|--|------------|
|                | Lug terminal                                                                  |  | N/A        |
|                | Mantle terminal                                                               |  | N/A        |
|                | Pull test; pull (N) .....                                                     |  | N/A        |
| (14.4.8)       | Without undue damage                                                          |  | N/A        |
| <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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|            |                                                                                   |     |
|------------|-----------------------------------------------------------------------------------|-----|
| (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)                               |                                                            |   |   |   |   |   |   |   |   |    |     |
|                                                 |                                                            |   |   |   |   |   |   |   |   |    |     |
| Supplementary information: <b>No such part.</b> |                                                            |   |   |   |   |   |   |   |   |    |     |





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## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

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### 10. Deney ve Ölçüm Bilgileri:

Test And Measuring Arrangement

| Cihaz<br>Device              | İmalatçı<br>Manufacturer | Seri No. / Kod<br>Serial No / Code | Sertifika No<br>Certificate No | Kalibrasyon Tarihi<br>Calibration Date |
|------------------------------|--------------------------|------------------------------------|--------------------------------|----------------------------------------|
| Humidity Temperature Meter   | CEM                      | LC349                              | 3825                           | January/2022                           |
| Temperature Rise Data Logger | ELİMKO                   | LC63                               | 20SC0536                       | March/2022                             |
| Portable Variac              | VARSAN                   | LC380                              | 19EL1052                       | April/2023                             |
| Digital Caliper              | ACCUD                    | LC365                              | 3805                           | January/2022                           |
| Gauge Stick                  | LVT                      | LC166                              | 20KD2645                       | July/2022                              |
| Torque Meter                 | BMS                      | LC316                              | 8TK1517                        | December/2021                          |
| Humidity Cabinet             | LVT                      | LC324                              | 20EL4823                       | December/2021                          |
| Dielectric Test Equipment    | REK                      | LC482                              | 105801                         | April/2022                             |
| Oscilloscope                 | RİGOL                    | LC30                               | 20EL0955                       | April/2022                             |
| Touch Current Simulator      | CSK                      | LC88                               | 146402                         | October/2023                           |
| Test Finger                  | -                        | LC205                              | 17M01856                       | July/2023                              |
| Newtonmeter                  | NK-500                   | LC204                              | 2073113                        | July/2023                              |
| Multimeter                   | FLUKE                    | LC361                              | 3811                           | January/2022                           |
| Spring Hammer (0,5J)         | -                        | LC220                              | 63403                          | April/2023                             |
| Spring Hammer (0,7J)         | -                        | LC221                              | 63404                          | April/2023                             |
| Digital Scales               | DENSİ                    | LC33                               | 20TR0457                       | November/2022                          |
| Steel Rod                    | LVT                      | LC390                              | 19KD2136                       | May/2022                               |
| Test Finger                  | LVT                      | LC366                              | 19KD1057                       | March/2022                             |
| Earthing Continuity          | REK                      | LC481                              | 105802                         | April/2022                             |
| Insulation resistance tests  | WUHAN                    | LC475                              | 30703                          | February/2022                          |
| IP Dusting Container         | -                        | LC148                              | -                              | No need to calibrate                   |
| IPX6 Nozzle                  | -                        | LC156                              | 20KD4034                       | December/2023                          |





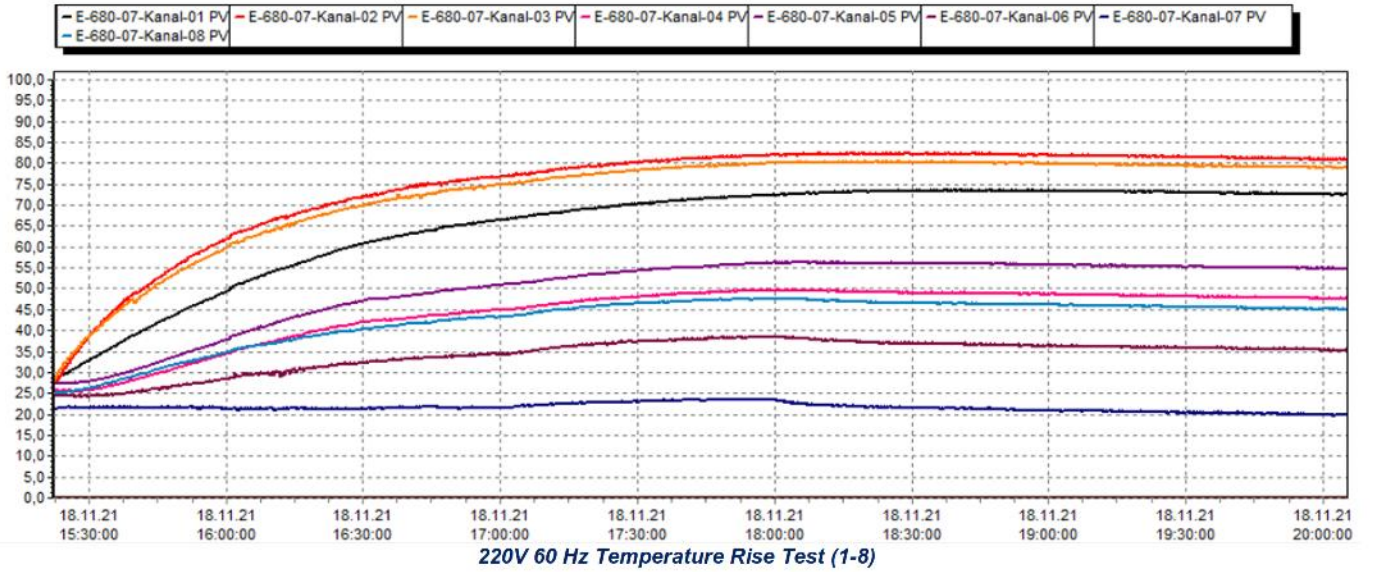
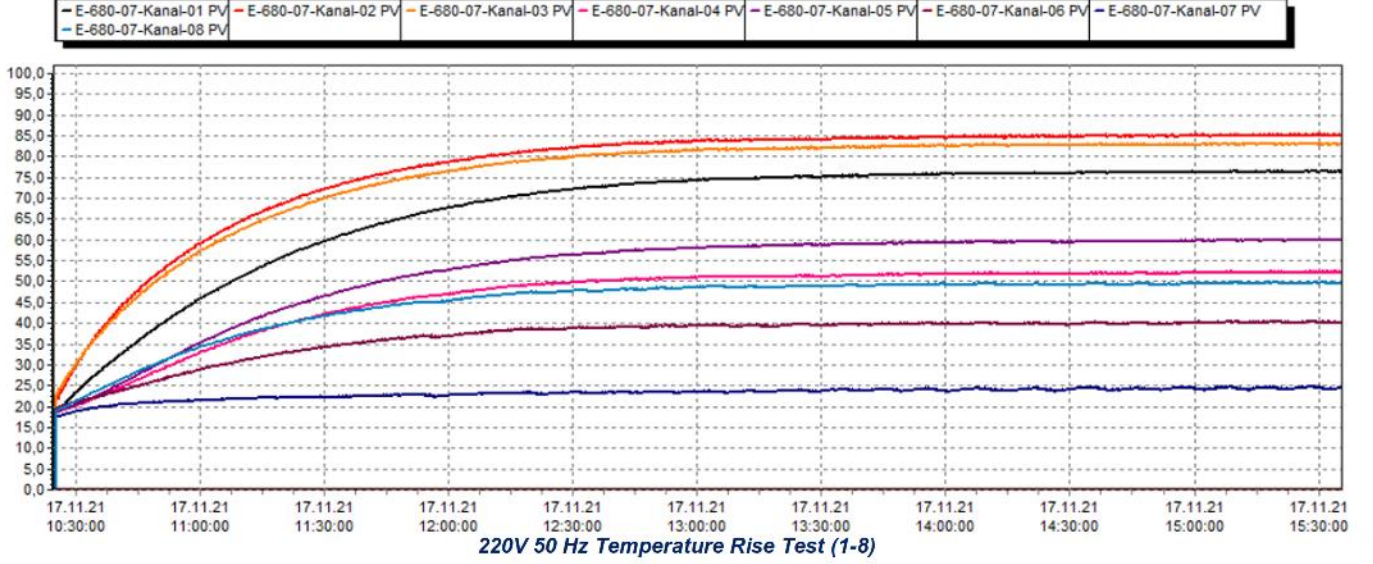
Test Laboratuvarları

## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

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### 11. Deney Osilogramları:

Test Oscillograms

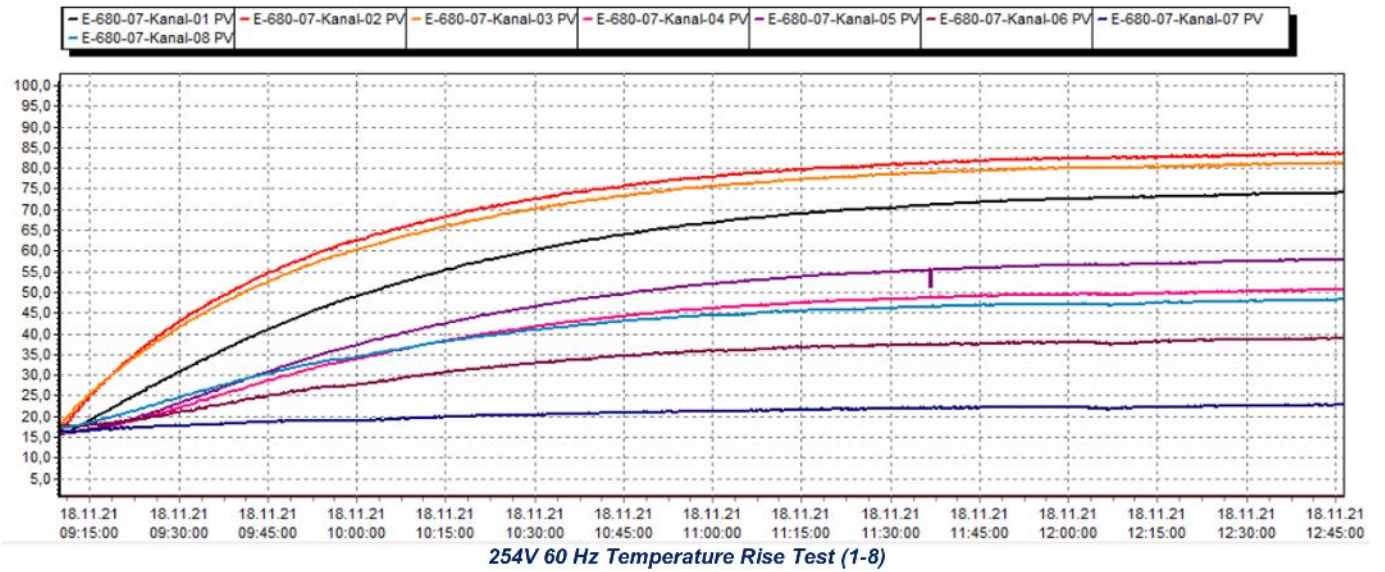
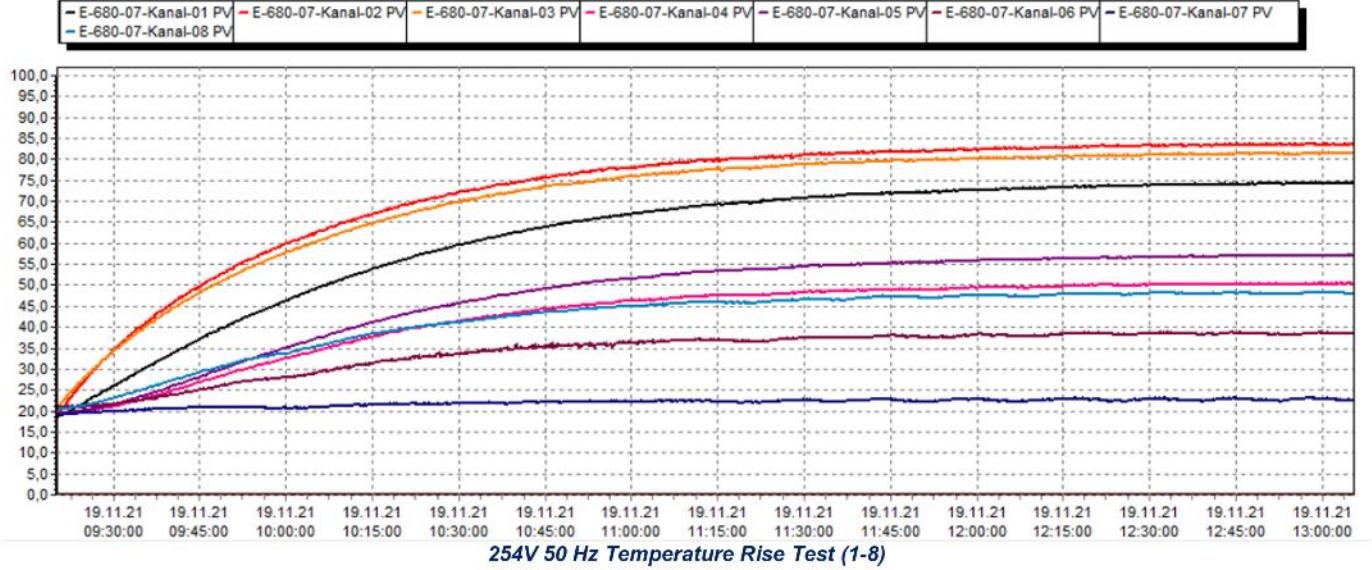




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Luminaires Safety Tests  
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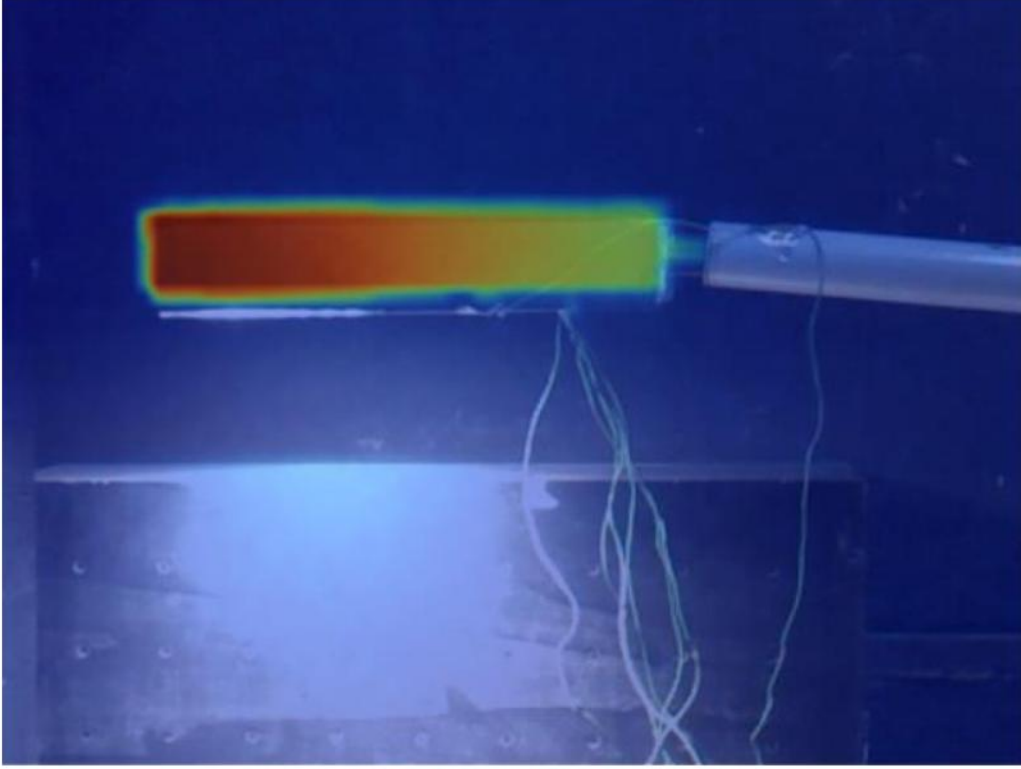


## Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

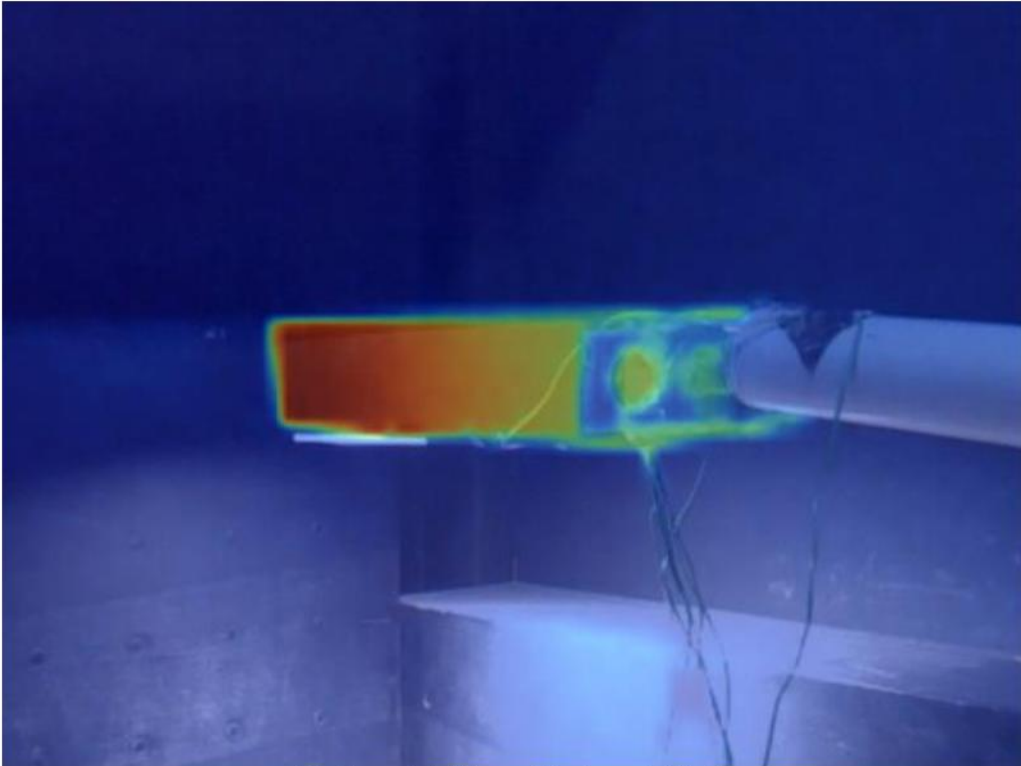
Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

### 12. Deney Fotoğrafları:

*Test Photographs*



*Photograph 1: Thermal Photograph (Left)*



*Photograph 2: Thermal Photograph (Back)*



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Photograph 3: General View



Photograph 4: LED



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Photograph 5: LED Connection



Photograph 6: LED Connector

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Photograph 7: Driver

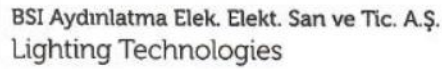


Photograph 7: Driver



Luminaires Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

## Documentary of Client



### Critical Component List

**bsi AYDINLATMA**  
ELEK. ELEKT. SAN. VE TİC. A.Ş.  
Konukent Mah. 3029. Cad. No:3/1 06810  
Cankaya, Ankara, TÜRKİYE Telefon: V.D. 187 066 2962  
Tic. Sic. No:359371 Mersis No: 7601317700000136  
Web: [bsilighting.com](http://bsilighting.com) Email: [info@bsilighting.com](mailto:info@bsilighting.com)

AB-0341-T / 21-2216-R1-N1-1 / 12-21





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### TÜRK STANDARDLARI ENSTİTÜSÜ TÜRK STANDARDLARINA UYGUNLUK BELGESİ TURKISH STANDARDS INSTITUTION CERTIFICATE OF CONFORMITY TO TURKISH STANDARDS

Markanın Tanımı Description of the Mark  
TSE veya/ve TSE veya/ve TSE

**BELGE NUMARASI**  
REFERENCE NUMBER OF LICENCE

001025-TSE-08/01

**BELGENİN İLK VERİLİŞ TARİHİ**  
DATE OF FIRST ISSUE OF LICENCE

25.03.1999

**BELGENİN SON GEÇERLİLİK TARİHİ**  
LICENCE VALID UNTIL

28.08.2020

**BELGE SAHİBİ KURULUŞUN ADI**  
NAME OF THE LICENCE HOLDER

PAMUKKALE KABLO SANAYİ VE TİC. A.Ş.

**BELGE SAHİBİ KURULUŞUN ADRESİ**  
ADDRESS OF THE LICENCE HOLDER

HACİEYÜPLÜ MAH. MENDERES BULVARI NO:5 MERKEZEFENDİ  
DENİZLİ/TÜRKİYE

**ÜRETİM YERİ ADI**  
NAME OF THE MANUFACTURING PLACE

PAMUKKALE KABLO SANAYİ VE TİC. A.Ş.

**ÜRETİM YERİ ADRESİ**  
ADDRESS OF THE MANUFACTURING PLACE

HACİEYÜPLÜ MAH. MENDERES BULVARI NO:5 MERKEZEFENDİ  
DENİZLİ / TÜRKİYE

**İPTAL EDİLEN BELGE NUMARASI (Varsa)**  
INDICATION OF SUPERSEDED LICENCE (if any)

14.0.10.0.01.00/TSE-65282

**TESCİLLİ TİCARİ MARKASI**  
REGISTERED TRADE MARK

PAMUKKALE KABLO

**İLGİLİ TÜRK STANDARDI**  
RELATED TURKISH STANDARD

TS EN 50525-2-11:2011 / 22.11.2011

**BELGE KAPSAMI**  
SCOPE OF LICENCE

OLAĞAN PVC KILIFLI KABLOLAR(KORDONLAR).

H05VV-F



e-imza ile signed

08.08.2019

Belgelendirme Merkezi Başkanı Adına  
GÜRSEL ERATAK

ELEKTROTEKNİK SEKTÖRÜ MÜDÜRÜ

\*Bu belge, belgelendirilen ürünün, Üretim yerinin Enstitümüzün belirlediği şartları karşıladığını da gösterir.

\*Bu belge, hiçbir surette tahrif edilmez, kısımları veya okunmasını zorlaştıracak şekilde çoğaltılamaz, kopyası ve stenti yapılamaz.

\*TSE ELEKTROTEKNİK SEKTÖRÜ MÜDÜRLÜĞÜ \* Adres: Necatiboy Cad.No:112 06100 Bakanlıklar/ANKARA \* Telefon: 0312 416 63 56\* Faks: 0312 416 66 17

\*TSE BELGELENDİRME MERKEZİ BAŞKANLIĞI Adres: Hicazboy Cad. No:112 06100 Bakanlıklar/ANKARA \* Telefon: 0 312 416 64 51 / 416 64 27, Faks: 0 312 416 66 17 E-posta: tse@tse.org.tr, web : www.tse.org.tr

<https://cvrakkontrol.tse.org.tr/BelgeDogrulama.aspx?p=0da9b7m3> adresinden belgenin doğruluğunu ve geçerliliğini sorgulayınız.



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## LED Drivers – ComfortLine Prog S-1-10 V 100 V IP

### ComfortLine Prog S 100 V 1-10 V IP

#### Product features

- Compact casing shape

#### Functions

- Selectable current output via offline programming
- Programmable via USB interface
  - MidNight function
  - Constant Lumen Output (CLO)

#### Electrical features

- Mains voltage: 100-277 V  $\pm 10\%$
- Mains frequency: 50/60 Hz
- Pre-assembled connection leads:
  - primary: 3x1 mm<sup>2</sup> (AWG17), length: 300 mm
  - secondary: 2x1 mm<sup>2</sup> (AWG17), 1-10 V and programming: 2x0.35 mm<sup>2</sup> (AWG22), length: 300 mm
- Power factor at full load: > 0.97
- Open circuit voltage ( $U_{max}$ ) / Max. working voltage ( $U_{curt}$ ):

| Ref. No. | $U_{max}$ (V) | $U_{curt}$ (V) |
|----------|---------------|----------------|
| 187082   | 108           | —              |
| 187083   | —             | 150            |
| 187084   | —             | 214            |
| 187085   | —             | 285            |
| 187086   | —             | 343            |
| 187087   | —             | 457            |

- Secondary side switching of LED modules is not allowed.

#### Safety features

- Protection against transient main peaks up to 5 kV (between L and N) and up to 10 kV (between L/N and PE)
- Electronic short-circuit protection
- Overload protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP67
- Protection class I
- SELV (only for 187082)

#### Packaging units

| Ref. No. | Packaging unit |                  | Weight g |
|----------|----------------|------------------|----------|
|          | Pieces per box | Boxes per pallet |          |
| 187082   | 10             | 49               | 550      |
| 187083   | 10             | 49               | 700      |
| 187084   | 10             | 49               | 800      |
| 187085   | 10             | 42               | 950      |
| 187086   | 10             | 42               | 1150     |
| 187087   | 8              | 42               | 1550     |



#### Applied standards

- EN 61000-3-2
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384
- EN 55015

#### Dimensions

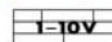
| Ref. No. | Casing | length mm | Width mm | Height mm |
|----------|--------|-----------|----------|-----------|
| 187082   | M87.1  | 128.6     | 68       | 37        |
| 187083   | M88.1  | 153.6     | 68       | 37        |
| 187084   | M89.1  | 173.6     | 68       | 37        |
| 187085   | M90.1  | 193.6     | 68       | 39        |
| 187086   | M91.1  | 208.6     | 68       | 39        |
| 187087   | M92.1  | 231       | 98       | 42        |

#### Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage ([www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.



#### Dimming



#### Current adjustment





Test Laboratuvarları

# Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

Luminaries Safety Tests  
Luminaires for Road and Street Lighting  
Luminaires for flood lighting

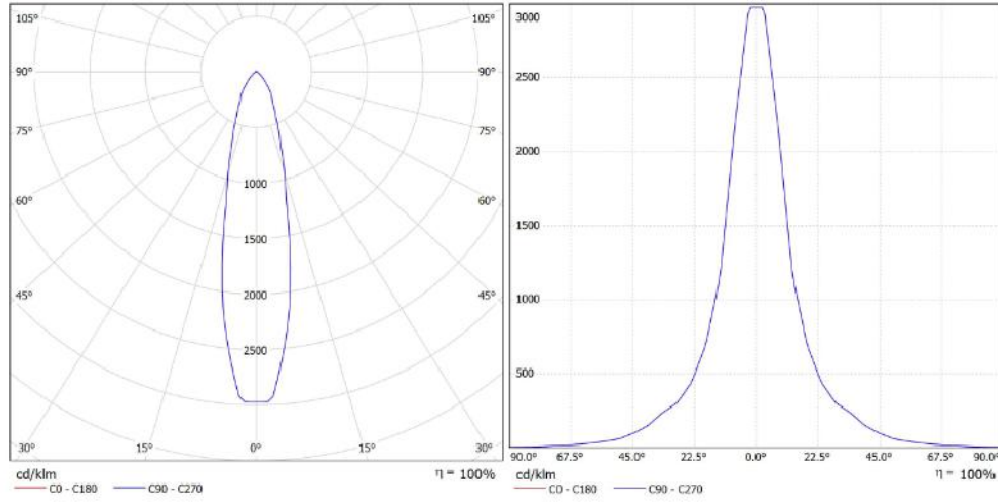
PRODUCT PICTURE



GENERAL SPECIFICATIONS

|                       |                       |
|-----------------------|-----------------------|
| Product Code          | TLS01NI-D12-12-Tape   |
| Description           | Flood Lighting        |
| Degree (FWHM)         | 12°                   |
| Efficiency            | 90%                   |
| Size (mm) D x H       | Ø 13 x H 6,9 mm       |
| Material              | Lens: PMMA Holder: PC |
| Fastening             | Tape                  |
| Box Size (mm) WxLxH   | 630x260x300           |
| Box Quantity          | 17920 pcs             |
| Box Weight (g)        | 18000                 |
| Rohs Complaint        | Yes                   |
| Operating Temperature | -40 °C ~ + 90 °C max  |
| Storage Temperature   | 0 °C ~ 40 °C max      |

PHOTOMETRIC SPECIFICATIONS



APPLICATION NOTES

## Directions for use

- Please use some soft paper or pure water to clean lens ( reflector)
- Don't use any industrial solvent to clean lens surface , such as alcohol
- Storage environment : Temperature 0°C ~ +40°C , Humidity 30% ~ 95%
- This kind of lens can make the lighting more concentrated, and it's made from transparent material, so please do not open the packages until you use them, in case of the dust and other pollutions.

LIMBUS is registered trademark of TO Lighting Solutions.  
www.tlstechnoloji.com



# Aydınlatma Armatürleri Güvenlik Deneyleri Yol ve Cadde Aydınlatma Armatürleri

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**Rek san**

## Ürün Özellikleri

Diş normları : PG DIN 46320

: Metrik EN 60423

: NPT ANSI B1.20.1

: GAS ISO 228

Sızdırmazlık : IP 68

Isıya dayanımı : -40° C +80° C

Hammadesi : Pirinç (MS 58) Nikel Kaplama



## Standart Seri Pirinç/Nikel Kablo Rakorları

| Anma Ölçüsü | Kod No     | Montaj Çap "Ø" | Diş Boyu | Kablo Çapı "Ø" |      | Kutu |
|-------------|------------|----------------|----------|----------------|------|------|
|             |            | (mm)           |          | Min            | Max  |      |
| PG-7        | REK.06.412 | 12,5           | 6,0      | 3,0            | 6,5  | 50,0 |
| PG-7        | REK.06.413 | 12,5           | 6,0      | 4,0            | 8,0  | 50,0 |
| PG-9        | REK.06.416 | 15,5           | 7,0      | 4,0            | 8,0  | 50,0 |
| PG-9        | REK.06.417 | 15,5           | 7,0      | 5,0            | 10,0 | 50,0 |
| PG-11       | REK.06.418 | 19,0           | 7,0      | 5,0            | 10,0 | 50,0 |
| PG-11       | REK.06.419 | 19,0           | 7,0      | 6,0            | 12,0 | 50,0 |
| PG-13,5     | REK.06.420 | 20,5           | 7,0      | 6,0            | 12,0 | 50,0 |
| PG-13,5     | REK.06.421 | 20,5           | 7,0      | 10,0           | 14,0 | 50,0 |
| PG-16       | REK.06.425 | 22,5           | 8,0      | 10,0           | 14,0 | 50,0 |
| PG-16       | REK.06.426 | 22,5           | 8,0      | 13,0           | 18,0 | 50,0 |
| PG-21       | REK.06.432 | 28,5           | 8,0      | 13,0           | 18,0 | 25,0 |
| PG-21       | REK.06.433 | 28,5           | 8,0      | 18,0           | 24,0 | 25,0 |
| PG-29       | REK.06.440 | 37,5           | 10,0     | 18,0           | 25,0 | 20,0 |
| PG-29       | REK.06.441 | 37,5           | 10,0     | 22,0           | 32,0 | 20,0 |
| PG-36       | REK.06.450 | 47,0           | 10,0     | 22,0           | 32,0 | 10,0 |
| PG-36       | REK.06.451 | 47,0           | 10,0     | 30,0           | 38,0 | 10,0 |
| PG-42       | REK.06.456 | 55,0           | 12,0     | 30,0           | 38,0 | 10,0 |
| PG-42       | REK.06.457 | 55,0           | 12,0     | 34,0           | 44,0 | 10,0 |
| PG-48       | REK.06.462 | 60,0           | 14,0     | 30,0           | 38,0 | 10,0 |
| PG-48       | REK.06.463 | 60,0           | 14,0     | 34,0           | 44,0 | 10,0 |

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Test Laboratuvarları

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Page 1 of 66



Report No. : SQETMN558501

## LM-80 Test Report NF2L757DR

**Issue Date:** June 6, 2016 **Revision Date:** -  
**Test Initiation Date:** April 24, 2013 **Test Completion Date:** June 30, 2014  
**Test Duration:** 10,000 hours **Report Number:** SQETMN558501

### Customer Information:

**Company Name:** Nichia Corporation  
**Address:** 491-100, Oka, Kaminaka-cho, Anan-shi, Tokushima, 774-8601, JAPAN

### Description of Test Samples:

**Classification:** LED Package  
**Model Name:** Warm White LED  
**Model Number:** NF2L757DR (Nominal CCT: 2700 K)

### Test Summary:

| Data Set | Case Temperature [T <sub>c</sub> ] | Ambient Temperature [T <sub>a</sub> ] | Drive Current [I <sub>f</sub> ] | Lumen Maintenance at 10,000 hours | Chromaticity Shift (Δu'v') at 10,000 hours | TM-21 Projection L <sub>90</sub> (10K) | TM-21 Projection L <sub>80</sub> (10K) | TM-21 Projection L <sub>70</sub> (10K) |
|----------|------------------------------------|---------------------------------------|---------------------------------|-----------------------------------|--------------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| 1        | 55 °C                              | > 50 °C                               | 100 mA                          | 98.1 %                            | 0.0014                                     | > 60600 hours                          | > 60600 hours                          | > 60600 hours                          |
| 2        | 55 °C                              | > 50 °C                               | 150 mA                          | 98.3 %                            | 0.0017                                     | > 60400 hours                          | > 60400 hours                          | > 60400 hours                          |
| 3        | 55 °C                              | > 50 °C                               | 200 mA                          | 98.2 %                            | 0.0020                                     | > 60500 hours                          | > 60500 hours                          | 48300 hours                            |
| 4        | 85 °C                              | > 80 °C                               | 100 mA                          | 96.4 %                            | 0.0014                                     | > 60600 hours                          | > 60600 hours                          | 52500 hours                            |
| 5        | 85 °C                              | > 80 °C                               | 150 mA                          | 96.3 %                            | 0.0020                                     | > 60400 hours                          | > 60400 hours                          | 38800 hours                            |
| 6        | 85 °C                              | > 80 °C                               | 200 mA                          | 93.9 %                            | 0.0035                                     | 55900 hours                            | 35300 hours                            | 17100 hours                            |
| 7        | 105 °C                             | > 100 °C                              | 100 mA                          | 92.3 %                            | 0.0019                                     | > 60600 hours                          | 43700 hours                            | 15500 hours                            |
| 8        | 105 °C                             | > 100 °C                              | 150 mA                          | 93.4 %                            | 0.0027                                     | > 60400 hours                          | 57800 hours                            | 21000 hours                            |
| 9        | 105 °C                             | > 100 °C                              | 200 mA                          | 90.7 %                            | 0.0034                                     | 42800 hours                            | 26200 hours                            | 11600 hours                            |



Approved Signatory:

*Hitoshi TOHYAMA*

Hitoshi TOHYAMA, Lab Manager

**Nichia Corporation LED Testing Laboratory**

1-1, Tatsumi-Cho, Anan-Shi, TOKUSHIMA 774-0001, JAPAN

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The laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.





Test Laboratuvarları

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BSI Aydınlatma Elek. Elekt. San ve Tic. A.Ş.  
Lighting Technologies

29/11/2021

### AYNİYET BEYANI

#### IDENTITY DECLARATION

iMistral Multi 96W, iMistral Multi 72W model ürünlerin bütün teknik özelliklerinin (örn. tasarım, konstrüksüyon, özellikler, kritik komponentler) aynı olduğunu beyan ederiz.

We declare that the product(s) is (are) identical in all technical respects (e.g. design, construction, properties, critical components).

Model/Type Ref: iMistral Multi 96W, iMistral Multi 72W



**BSI AYDINLATMA ELEK. ELEKT. SAN VE TİC. A.Ş.**  
Konutkent Mah. 3029 Cad. No:3/91 06810 Çankaya, Ankara, TURKEY  
T: +90 312 472 42 50 F: +90 312 502 74 75

