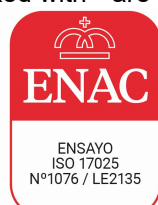





<b>TEST REPORT</b> <b>IEC 60598-2-2</b> <b>Part 2: Particular requirements</b> <b>Section 2: Recessed luminaires</b>	
<b>Report Number</b> .....	SAFEONOKT210333
<b>Date of issue</b> .....	2022-09-30
<b>Total number of pages</b> .....	110 (including attachments)
<b>Name of Testing Laboratory preparing the Report</b> .....	IMQ Tecnocrea, S.L. C/ Sèquia de Benàger, 23. Pol. Ind. Alquería de Moret 46210 Picanya (Valencia) - Spain
<b>Applicant's name</b> .....	ONOK LUZ TÉCNICA, S.L.
<b>Address</b> .....	Polígono Industrial B, parcela 3. 46800 Xàtiva (Valencia) - Spain
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60598-2-2:2011 used in conjunction with IEC 60598-1:2020
<b>Test procedure</b> .....	CE Safe
<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_2G
<b>Test Report Form(s) Originator</b> ....	Intertek Semko AB
<b>Master TRF</b> .....	Dated 2021-08-20
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<b>This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
<b>General disclaimer:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory.	

The tests marked with \* are not covered by the accreditation of ENAC



<b>Test item description</b> ..... :	Recessed luminaire	
<b>Trade Mark(s)</b> .....	ONOK	
<b>Manufacturer</b> .....	ONOK LUZ TÉCNICA, S.L.	
<b>Model/Type reference</b> .....	Refer to “General product information” for details	
<b>Ratings</b> .....	Refer to “General product information” for details	
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	<b>IMQ Tecnocea, S.L.</b>
<b>Testing location/ address</b> ..... :	C/ Sèquia de Benàger, 23. Pol. Ind. Alquería de Moret 46210 Picanya (Valencia) - Spain	
<b>Tested by (name, function, signature)</b> ..... :	<b>David Martínez</b> [Laboratory Technician]	
<b>Approved by (name, function, signature)</b> ... :	<b>David Latorre</b> [Technical Director]	

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

Attachment No. 1: Photo document, total 45 pages.

Attachment No. 2: European Group Differences and National Differences of EN 60598-1 and EN 60598-2-1, total 2 pages.

Attachment No. 3: LED modules for general lighting – Safety specification IEC 62031 and EN IEC 62031, total 5 pages.

**Summary of testing:**

This Test Report covers the evaluation on references: Refer to “General product information” for details.

Following technical evaluation all tests have been carried out on models:

- DOTTA10D43ABS
- FCS4A40D42ABS
- TPB2A25N42RBS

Partial tests have been carried out on the other models of the series as follows:

- DOTXA10N43ABS (Clauses: 10 and 12.4 tc only)
- DOTXA03N43ABS (Clauses: 10 and 12.4 tc only)
- FCS5A55D42ABS (Clauses: 4, 10 and 12)
- FCS5A55N42ABS (Clauses: 10 and 12.4 tc only)
- FCS4A40N42ABS (Clauses: 10 and 12.4 tc only)
- FCS2A25D22ABS (Clauses: 10 and 12.4 tc only)
- FCS2A25N22ABS (Clauses: 10 and 12.4 tc only)
- OPE1A07D34BWS (Clauses: 4, 10 and 12.4 tc only)
- OPT1A07N34BWS (Clauses: 10 and 12.4 tc only)
- RB11A10N41BBS (Clauses: 4, 10 and 12)
- BL2PA55N49RBS (Clauses: 4, 5, 10 and 12.4 tc only)

**Tests performed (name of test and test clause):****Test Report No. SAFEONOKT210333**

- §2.3 (0)- General test requirements
- §2.5 (2)- Classification of luminaires
- §2.6 (3)- Marking
- §2.7 (4)- Construction
- §2.8 (11)- Creepage distances and clearances
- §2.9 (7)- Provision for earthing
- §2.10 (14)- Screw terminals
- §2.10 (15)- Screwless terminals and electrical connections
- §2.11 (5)- External and internal wiring
- §2.12 (8)- Protection against electric shock
- §2.13 (12)- Endurance test and thermal test
- §2.14 (9)- Resistance to dust and moisture
- §2.15 (10)- Insulation resistance and electric strength
- §2.16 (13)- Resistance to heat, fire and tracking

**Testing location:**

IMQ TECNOCREA, S.L.  
C/ Sèquia de Benàger, 23  
Pol. Ind. Alquería de Moret  
46210 Picanya (Valencia) – Spain

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

- EU European Group Differences

 **The product fulfils the requirements of**

- EN 60598-2-2:2012 used in conjunction with EN IEC 60598-1:2021 + A11:2022

**Use of uncertainty of measurement for decisions on conformity (decision rule):**

No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method"). In this case, the risk of false acceptance (or false reject) is up to 50%.

 **Other:**

The *accuracy method* (decision rule) defined in IEC GUIDE 115 edition 2.0 "Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector" is applied for tests related with the scope of the mentioned document. In any other case the binary statement for simple acceptance (or reject) rule is applied ( $w=0$ ). In this case, the risk of false acceptance (or false reject) is up to 50%.

Uncertainties of measurements are calculated and available to the client. Uncertainties of tests out of the scope of the IEC GUIDE 115, if any, are indicated in the test report.

**Information on uncertainty of measurement:**

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing

Uncertainties of measurements are calculated and available to the customer.

**Statement of conformity**


The statement of compliance with specification (or requirements) is based on a 95% coverage probability for the expanded uncertainty of the measurements results on which the decision of compliance is based. The statement of compliance relates only to the test sample as tested and no to the simples/items which the test sample was drawn.

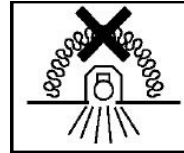
This Test Report is the result of testing a sample of the product submitted, in accordance with the provisions of the specified Technical Specification(s)/Standard(s). It does not imply any judgment on the production and it does not permit the use of a mark of conformity.

**Copy of marking plate:**

**The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.**

DOT TILT 10 / DOTTA10D43ABS


DOTTA10D43ABS LED 24W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

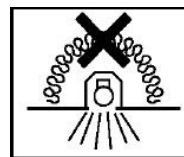
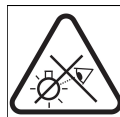


Location: Luminaire

Location: Wire cord

DOT 10 P / DOTXA10N43ABS


DOTXA10N43ABS LED 24W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

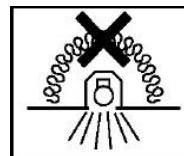
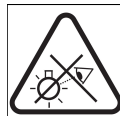


Location: Luminaire

Location: Wire cord

DOT 03 P / DOTXA03N43ABS

DOTXA03N43ABS LED 06W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

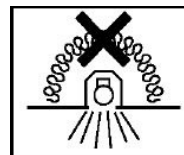
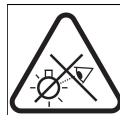


Location: Luminaire

Location: Wire cord

FOCUS 55 / FCS5A55D42ABS


FCS5A55D42ABS LED 14W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

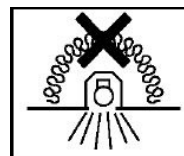
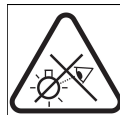


Location: Luminaire

Location: Wire cord

FOCUS 55 / FCS5A55N42ABS


FCS5A55N42ABS LED 14W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

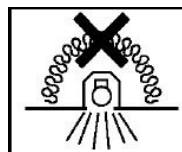


Location: Luminaire

Location: Wire cord

## FOCUS 40 / FCS4A40D42ABS

FCS4A40D42ABS LED 09W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

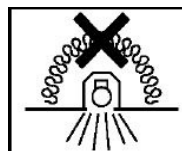


Location: Luminaire

Location: Wire cord

## FOCUS 40 / FCS4A40N42ABS


FCS4A40N42ABS LED 09W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

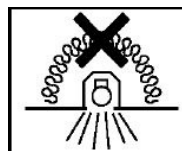


Location: Luminaire

Location: Wire cord

## FOCUS 25 / FCS2A25D22ABS

FCS2A25D22ABS LED 07W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

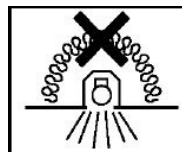


Location: Luminaire

Location: Wire cord

## FOCUS 25 / FCS2A25N22ABS

FCS2A25N22ABS LED 07W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

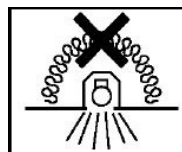


Location: Luminaire

Location: Wire cord

## TUBE 25 / TPB2A25N42RBS

TPB2A25N42RBS LED 07W  
 IP20EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz

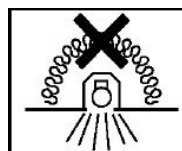


Location: Luminaire

Location: Wire cord

## OPTIK I IP55 / OPE1A07D34BWS

OPE1A07D34BWS LED 07W  
 IP55EXT - IP20 INT O.05/21  
 220-240V~50/60 Hz



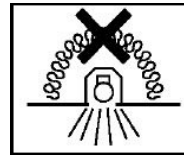
Location: Luminaire

Location: Wire cord

OPTIK I / OPT1A07N34BWS


OPT1A07N34BWS LED 07W  
 IP43EXT - IP20 INT 0.05/21  
 220-240V~50/60 Hz

Location: Luminaire

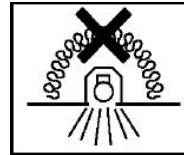


Location: Wire cord

RINGO BOX 1 / RB11A10N41BBS

RB11A10N41BBS LED 11W  
 IP20EXT - IP20 INT 0.05/21  
 220-240V~50/60 Hz

Location: Luminaire

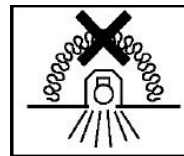
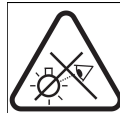


Location: Wire cord

BALO PENDANT-SEMIREC / BL2PA55N49RBS

BL2PA55N49SBS LED 11W  
 IP20EXT - IP20 INT 0.05/21  
 220-240V~50/60 Hz

Location: Luminaire



Location: Wire cord

<b>Test item particulars</b> .....	Recessed luminaire
<b>Classification of installation and use</b> .....	Suitable for direct mounting on normally flammable surfaces, not suitable for covering with thermally insulating material, indoor use
<b>Supply Connection</b> .....	Convertor terminals
.....	N/A
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
<b>Testing</b> ..... :	
<b>Date of receipt of test item</b> .....	2022-04-21
<b>Date (s) of performance of tests</b> .....	2022-07-18 to 2022-09-28
<b>General remarks:</b>	
<p>"(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>The ability or reliability of this product to perform its intended function in a particular application has not been investigated.</p> <p>Unless otherwise specified, warnings, installation instructions and/or user manual provided with the sample have been checked in Spanish or English version only.</p> <p>Testing laboratory accepts no responsibility for the information provided by the applicant.</p> <p><input type="checkbox"/> This Test Report Form contains requirements according to IEC/ISO ..... Standard dated ..... and includes Corrigendum dated .....</p> <p>(Note: The above text maybe removed if not applicable)</p>	
<b>General product information and other remarks:</b>	
<p>1. Maximum CCT <b>4000K</b>.</p> <p>2. LED component according EN 62471 classification risk group:  <input type="checkbox"/> RG0 <input type="checkbox"/> RG1 <input checked="" type="checkbox"/> RG2 <input type="checkbox"/> RG3          (The EN 62471 information is based on data sheet N° Comfort COB Gen.2 – Residential, Retail and Industrial Lighting). For references FCS5A55D42ABS and RB11A10N41BBS.</p> <p>3. Maximum CCT <b>3000K</b>.</p> <p>4. LED component according EN 62471 classification risk group:  <input type="checkbox"/> RG0 <input checked="" type="checkbox"/> RG1 <input type="checkbox"/> RG2 <input type="checkbox"/> RG3          (The EN 62471 information is based in the test report N° IE210178). For references FCS2A25D32ABS, FCS2A25N32ABS, OPE1A07D34BWS and OPT1A07N34BWS.</p>	



5. Maximum CCT **4000K**.
6. LED component according EN 62471 classification risk group:  
 RG0  RG1  RG2  RG3  
 (The EN 62471 information is based in the test report N° 15-04-01). For references DOTTA10D43ABS, DOTXA10N43ABS, DOTXA03N43ABS, FCS5A55N42BBS and BL2PA55N49RBS.
7. Maximum CCT **4000K**.
8. LED component according EN 62471 classification risk group:  
 RG0  RG1  RG2  RG3  
 (The EN 62471 information is based on data sheet N° CLD-AP34 REV 34). For references FCS4A40D42ABS, FCS4A40N42ABS and TPB2A25N42RBS.

## References tested:

Model/Type reference	Sample ID	Ratings
DOT TILT 10 / DOTTA10D43ABS	EBP_SAFEONOKT210333	220-240V~50/60Hz. Class II. LED. 24W. IP20.
DOT 10 P / DOTXA10N43ABS	EBP_SAFEONOKT210334	220-240V~50/60Hz. Class II. LED. 24W. IP20.
DOT 03 P / DOTXA03N43ABS	EBP_SAFEONOKT210335	220-240V~50/60Hz. Class II. LED. 6W. IP20.
FOCUS 55 / FCS5A55D42ABS	EBP_SAFEONOKT210336	220-240V~50/60Hz. Class II. LED. 14W. IP20.
FOCUS 55 / FCS5A55N42ABS	EBP_SAFEONOKT210337	220-240V~50/60Hz. Class II. LED. 14W. IP20.
FOCUS 40 / FCS4A40D42ABS	EBP_SAFEONOKT210338	220-240V~50/60Hz. Class II. LED. 9W. IP20.
FOCUS 40 / FCS4A40N42ABS	EBP_SAFEONOKT210339	220-240V~50/60Hz. Class II. LED. 9W. IP20.
FOCUS 25 / FCS2A25D32ABS	EBP_SAFEONOKT210340	220-240V~50/60Hz. Class II. LED. 7W. IP20.
FOCUS 25 / FCS2A25N32ABS	EBP_SAFEONOKT210341	220-240V~50/60Hz. Class II. LED. 7W. IP20.
TUBE 25 / TPB2A25N42RBS	EBP_SAFEONOKT210342	220-240V~50/60Hz. Class II. LED. 7W. IP20.
OPTIK I IP55 / OPE1A07D34BWS	EBP_SAFEONOKT210343	220-240V~50/60Hz. Class II. LED. 7W. IP20 interior / IP55 exterior.
OPTIK I IP43 / OPT1A07N34BWS	EBP_SAFEONOKT210344	220-240V~50/60Hz. Class II. LED. 7W. IP20 interior / IP43 exterior.
RINGO BOX 1 / RB11A10N41BBS	EBP_SAFEONOKT210345	220-240V~50/60Hz. Class II. LED. 11W. IP20.
BALO PENDANT-SEMIREC / BL2PA55N39RBS	EBP_SAFEONOKT210346	220-240V~50/60Hz. Class II. LED. 11W. IP20.

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

2.3 (0)	GENERAL TEST REQUIREMENTS		P
2.3 (0.3)	More sections applicable .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	—
2.3 (0.5)	Components	(see Annex 1)	—
2.3 (0.7)	Information for luminaire design in light sources standards		—
2.3 (0.7.2)	Light source safety standard .....	IEC/EN 62031	—
	Luminaire design in the light source safety standard		P

2.5 (2)	CLASSIFICATION OF LUMINAIRES		P
2.5 (2.2)	Type of protection .....	Class II	P
2.5 (2.3)	Degree of protection .....	See "General product information" for details	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
2.5 (2.5)	Luminaire for normal use .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

2.6 (3)	MARKING		P
2.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.6 (3.3)	Additional information		P
	Language of instructions		P
2.6 (3.3.1)	Combination luminaires		N/A
2.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
2.6 (3.3.3)	Operating temperature		N/A
2.6 (3.3.5)	Wiring diagram		N/A
2.6 (3.3.6)	Special conditions		N/A
2.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
2.6 (3.3.8)	Limitation for semi-luminaires		N/A
2.6 (3.3.9)	Power factor and supply current		N/A
2.6 (3.3.10)	Suitability for use indoors		N/A
2.6 (3.3.11)	Luminaires with remote control		N/A
2.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
2.6 (3.3.13)	Specifications of protective shields		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.6 (3.3.14)	Symbol for nature of supply	~	P
2.6 (3.3.15)	Rated current of socket outlet		N/A
2.6 (3.3.16)	Rough service luminaire		N/A
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
2.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
2.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided	Non-user replaceable	P
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided		P
2.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
2.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
2.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
2.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0,3 m, information provided		N/A
2.6 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P

<b>2.7 (4)</b>	<b>CONSTRUCTION</b>		<b>P</b>
2.7 (4.2)	Components replaceable without difficulty		P
2.7 (4.3)	Wireways smooth and free from sharp edges		P
<b>2.7 (4.4)</b>	<b>Lampholders</b>		<b>N/A</b>
2.7 (4.4.1)	Integral lampholder		N/A
2.7 (4.4.2)	Wiring connection		N/A
2.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
2.7 (4.4.4)	Positioning		N/A
	- pressure test (N) .....		—

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
2.7 (4.4.5)	Peak pulse voltage		N/A
2.7 (4.4.6)	Centre contact		N/A
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
2.7 (4.4.8)	Lamp connectors		N/A
2.7 (4.4.9)	Caps and bases correctly used		N/A
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
<b>2.7 (4.5)</b>	<b>Starter holders</b>		<b>N/A</b>
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
<b>2.7 (4.6)</b>	<b>Terminal blocks</b>		<b>N/A</b>
	Tails		N/A
	Unsecured blocks		N/A
<b>2.7 (4.7)</b>	<b>Terminals and supply connections</b>		<b>P</b>
2.7 (4.7.1)	Contact to metal parts		P
2.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		N/A
2.7 (4.7.3)	Terminals for supply conductors		P
2.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
2.7 (4.7.4)	Terminals other than supply connection		N/A
2.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
<b>2.7 (4.8)</b>	<b>Switches</b>		<b>N/A</b>
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
<b>2.7 (4.9)</b>	<b>Insulating lining and sleeves</b>		<b>P</b>
2.7 (4.9.1)	Retainment		P
	Method of fixing .....	Mechanical (FCS4A40D42ABS), (TPB2A25N42RBS), (BLXPA04N49RBS)	P
2.7 (4.9.2)	Insulated linings and sleeves:		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		P
	b) Ageing test. Temperature (°C).....		N/A
<b>2.7 (4.10)</b>	<b>Double or reinforced insulation</b>		<b>P</b>
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
2.7 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
2.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
2.7 (4.10.4)	Protective impedance device		N/A
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		N/A
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A
<b>2.7 (4.11)</b>	<b>Electrical connections and current-carrying parts</b>		<b>P</b>
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		P
2.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
2.7 (4.11.4)	Material of current-carrying parts		P
2.7 (4.11.5)	No contact to wood or mounting surface		P
2.7 (4.11.6)	Electro-mechanical contact systems		N/A
<b>2.7 (4.12)</b>	<b>Screws and connections (mechanical) and glands</b>		<b>P</b>
2.7 (4.12.1)	Screws not made of soft metal	(DOTTA10D43ABS), (TPB2A25N42RBS), (BL2PA55N49RBS)	P
	Screws of insulating material		P
	Torque test: torque (Nm); part .....	0,8; convertor cord anchorage screws (DOTTA10D43ABS), (FCS5A55D42ABS), (FCS4A40D42ABS), (BL2PA55N49RBS)	P
	Torque test: torque (Nm); part .....	0,5; convertor cord anchorage screw (TPB2A25N42RBS)	P
	Torque test: torque (Nm); part .....		P
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
2.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
2.7 (4.12.5)	Screwed glands; force (Nm) .....		N/A
<b>2.7 (4.13)</b>	<b>Mechanical strength</b>		<b>P</b>
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....	Diffuser; 0,2 (OPE1A07D34BWS)	P
	- other parts; energy (Nm) .....	Luminaire enclosure; 0,35	P

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Clause	Requirement + Test	Result - Remark	Verdict
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
2.7 (4.13.2)	Metal parts have adequate mechanical strength		P
2.7 (4.13.3)	Straight test finger	30N	P
2.7 (4.13.4)*	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
2.7 (4.13.6)	Tumbling barrel		N/A
<b>2.7 (4.14)</b>	<b>Suspensions, fixings and means of adjusting</b>		<b>P</b>
2.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	3,2kg = 0,8kg x 4 (DOTTA10D43ABS) 1,4kg = 0,35kg x 4 (FCS5A55D42ABS) (RB11A10N41BBS) 1kg = 0,25kg x 4 (FCS4A40D42ABS) 1,2kg = 0,3kg x 4 (TPB2A25N42RBS) 0,4kg = 0,1kg x 4 (OPE1A07D34BWS)	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm) .....		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....		N/A
	Metal rod. diameter (mm) .....		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
2.7 (4.14.2)	Load to flexible cables		P
	Mass (kg) .....	0,3 (TPB2A25N42RBS) (BL2PA55N49RBS)	—

\* The tests marked with \* are not enshrined by ENAC accreditation.

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Clause	Requirement + Test	Result - Remark	Verdict
	Stress in conductors (N/mm <sup>2</sup> ) .....	6,7 (TPB2A25N42RBS), (BL2PA55N49RBS)	P
	Mass (kg) of semi-luminaire .....		N/A
	Bending moment (Nm) of semi-luminaire .....		N/A
2.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....	150 (DOTTA10D43ABS), (DOTTA10D43ABS), (FCS4A40D42ABS)	P
	- strands broken .....	No stands broken	P
	- electric strength test afterwards		P
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
2.7 (4.14.5)	Guide pulleys		N/A
2.7 (4.14.6)	Strain on socket-outlets		N/A
	*		
<b>2.7 (4.15)</b>	<b>Flammable materials</b>		<b>P</b>
	- glow-wire test 650°C.....	See Test Table 2.16 (13.3.2)	P
	- spacing $\geq 30$ mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
<b>2.7 (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
2.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
2.7 (4.16.2)	Thermal protection:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
<b>2.7 (4.17)</b>	<b>Drain holes</b>		<b>N/A</b>
	Clearance at least 5 mm		N/A
<b>2.7 (4.18)</b>	<b>Resistance to corrosion</b>		<b>P</b>
2.7 (4.18.1)	- rust-resistance	(OPE1A07D34BWS)	P
2.7 (4.18.2)	- season cracking in copper	(OPE1A07D34BWS)	P
2.7 (4.18.3)	- corrosion of aluminium	(OPE1A07D34BWS)	P
2.7 (4.19)	Igniters compatible with ballast		N/A
2.7 (4.20) *	Rough service vibration		N/A
<b>2.7 (4.21)</b>	<b>Protective shield</b>		<b>N/A</b>
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
2.7 (4.21.3)	No direct path		N/A
2.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment .....	See Test Table 2.16 (13.3.2)	N/A
2.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
2.7 (4.23)	Semi-luminaires comply Class II		N/A
<b>2.7 (4.24)</b>	<b>Photobiological hazards</b>		<b>P</b>
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
2.7 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778 .....	RG1 (OPE1A07D34BWS) RG2 (DOTTA10D43ABS), (FCS5A55D42ABS), (FCS4A40D42ABS), (TPB2A25N42RBS), (RB11A10N41BBS), (BL2PA55N49RBS)	—
	Luminaires with $E_{thr}$ :		P
	a) Fixed luminaires		P

\* The tests marked with \* are not enshrined by ENAC accreditation.

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Clause	Requirement + Test	Result - Remark	Verdict
	- distance x m, borderline between RG1 and RG2 :	2,6m (DOTTA10D43ABS), 2,3m (FCS5A55D42ABS), 2,1m (FCS4A40D42ABS), 1,5m (TPB2A25N42RBS), 1,7m (RB11A10N41BBS), 0,25m (BL2PA55N49RBS)	P
	- marking and instruction according 3.2.23		P
	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>2.7 (4.25)</b>	<b>Mechanical hazard</b>		<b>P</b>
	No sharp point or edges		P
<b>2.7 (4.26)</b>	<b>Short-circuit protection</b>		<b>N/A</b>
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV or PELV parts		N/A
2.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
<b>2.7 (4.27)</b>	<b>Terminal blocks with integrated screwless earthing contacts</b>		<b>N/A</b>
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 ·		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 ·		N/A
	Voltage drop test, resistance < 0,05 ·		N/A
<b>2.7 (4.28)</b>	<b>Fixing of thermal sensing control</b>		<b>N/A</b>
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) .....		—
	100 cycles between t min and t max		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature sensing control still in position		N/A
<b>2.7 (4.29)</b>	<b>Luminaires with non-replaceable light source</b>		<b>N/A</b>
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
<b>2.7 (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
	One fixing means requiring the use of a tool for its removal		N/A
<b>2.7 (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	IEC 61347-1	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
2.7 (4.31.1)	SELV or PELV circuits		P
	Used SELV or PELV source		P
	Voltage $\leq$ ELV		P
	PELV circuit shall have one pole connected to functional earth		P
	The connection between PELV and earth shall comply with functional earth		N/A
	Insulating of SELV or PELV circuits from LV supply		P
	Insulating of SELV or PELV circuits from other non SELV circuits		N/A
	Insulating of SELV or PELV circuits from FELV		P
	Insulating of SELV or PELV circuits from other SELV or PELV circuits		N/A
	SELV or PELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to make any electrical contact 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
2.7 (4.31.2)	FELV circuits		P
	Used FELV source		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage $\leq$ ELV		P
	Insulating of FELV circuits from LV supply		P
	FELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to make any electrical contact 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
2.7 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
<b>2.7 (4.32)</b>	<b>Overvoltage protective devices</b>		<b>N/A</b>
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
<b>2.7(4.33)</b>	<b>Luminaire powered via information technology communication cabling</b>		<b>N/A</b>
	Luminaire shall fulfil the requirement for Class III		N/A
	Rated voltage of luminaire shall be within range of ES1, not exceed maximum voltage rated to used connector		N/A
	The luminaire shall be designed in line with the limits of the electrical parameters of a PSE.		N/A
	No hazard with 130% rated input voltage minimum 7.5VDC for circuit greater than 5VDC		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No hazard with 150% rated input voltage for circuit equal to or less than 5VDC		N/A
<b>2.7 (4.34)</b>	<b>Electromagnetic field (EMF)</b>		<b>P</b>
	Compliance to IEC 62493:2015		P
<b>2.7 (4.35)</b>	<b>Protection against moving fan blades</b>		<b>N/A</b>
	Fan blades not accessible when installed and wired as in normal use and replacing light sources or components		N/A
	This test is not necessary for fans have leading edges and tips rounded with a radius of not less than 0,5mm and:		N/A
	Hardness less than D60 Shore, or		N/A
	Peripheral speed less than 15m/s supplied with rated voltage, or		N/A
	Fan has input power not exceeding 2W supplied with rated voltage.		N/A
<b>2.7 (4.36)</b>	<b>Track-mounted luminaires</b>		<b>N/A</b>
	Tested according to Annex A of IEC 60570		N/A

<b>2.8 (11)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
2.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	.
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
2.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and $f_{UOUT}$ according IEC 61347-1, clause 7.1, item w	See Test Table 2.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A
2.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $U_P$	See Test Table 2.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A

<b>2.9 (7)</b>	<b>PROVISION FOR EARTHING</b>		<b>N/A</b>
2.9 (7.2.1 + 7.2.3)	Accessible metal parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5Ω .....		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
2.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
2.9 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
2.9 (7.2.5)	Earth terminal integral part of connector socket		N/A
2.9 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
2.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
2.9 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
2.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
2.9 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
2.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

<b>2.10 (14)</b>	<b>SCREW TERMINALS</b>		<b>P</b>
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 3)	N/A

<b>2.10 (15)</b>	<b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b>		<b>N/A</b>
	Separately approved; component list .....	(see Annex 1)	N/A
	Part of the luminaire.....	(see Annex 4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>2.11 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		<b>P</b>
<b>2.11 (5.2)</b>	<b>Supply connection and external wiring</b>		<b>P</b>
2.11 (5.2.1)	Means of connection.....: Converter terminals		P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV $\leq 25$ V a.c./60 V d.c./25V peak interrupted DC voltage with frequency between 10Hz and 200Hz or protected from outdoor environment		N/A
2.11 (5.2.2)	Type of cable .....		N/A
	Nominal cross-sectional area (mm <sup>2</sup> ).....		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
2.11 (5.2.3)	Type of attachment, X, Y or Z		N/A
2.11 (5.2.5)	Type Z not connected to screws		N/A
2.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
2.11 (5.2.7)	Cable entries through rigid material have rounded edges		P
2.11 (5.2.8)	Insulating bushings:		P
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
2.11 (5.2.9)	Locking of screwed bushings		N/A
2.11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
2.11 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
2.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) .....	30 (DOTTA10D43ABS), (FCS4A40D42ABS), (TPB2A25N42RBS), (BL2PA55N49RBS)	P
	- torque test: torque (Nm) .....	0,08 (DOTTA10D43ABS), (FCS4A40D42ABS), (TPB2A25N42RBS), (BL2PA55N49RBS)	P
	- displacement $\leq 2$ mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
2.11 (5.2.10.4)	Exemption from cord anchorage test in 5.2.10.3 if maximum current 2A, including short circuit current.		N/A
	Prior to the operation of an overcurrent limiting device and the following conditions and test requirements are met		N/A
	Ordinary SELV Class III luminaire at voltage not exceeding 25Vrms or 60VDC		N/A
	Ordinary PELV Class III luminaire at voltage not exceeding 12Vrms or 30VDC		N/A
	Other than ordinary Class III luminaire at voltage not exceeding 12Vrms or 30VDC		N/A
	Pull test 30N for 1min		N/A
2.11 (5.2.11)	External wiring passing into luminaire		P
2.11 (5.2.12)	Looping-in terminals		N/A
2.11 (5.2.13)	Wire ends not tinned		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	Wire ends tinned: no cold flow		N/A
2.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
2.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	For appliance inlet or connector systems according to IEC 61984, additional requirements apply:		N/A
	a) Polarization		N/A
	b) Protection against electric shock		N/A
	c) Mechanical locking		N/A
	d) Early contact making		N/A
	e) Protection against short circuit poles		N/A
	f) Cable Clamp		N/A
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
2.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
<b>2.11 (5.3)</b>	<b>Internal wiring</b>		<b>P</b>
2.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures .....: (see Annex 2)		N/A
	Green-yellow for earth only		N/A
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Insulation thickness (mm) .....		N/A
	Extra insulation added where necessary		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm <sup>2</sup> ) ..... : (see Annex 1)		P
2.11 (5.3.1.3)	Double or reinforced insulation for class II		P
2.11 (5.3.1.4)	Conductors without insulation		N/A
2.11 (5.3.1.5)	SELV current-carrying parts		N/A
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
2.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
2.11 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
2.11 (5.3.4)	Joints and junctions effectively insulated		P
2.11 (5.3.5)	Strain on internal wiring		N/A
2.11 (5.3.6)	Wire carriers		N/A
2.11 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
<b>2.11 (5.4)</b>	<b>Test to determine suitability of conductors having a reduced cross-sectional area</b>		<b>P</b>
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2) (DOTTA10D43ABS), (FCS5A55D42ABS), (FCS4A40D42ABS), (TPB2A25N42RBS), (RB11A10N41BBS)	P
	No damage to luminaire wiring after test		P
<b>2.12 (8)</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		<b>P</b>
2.12 (8.2.1)	Live parts not accessible		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	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		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
2.12 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		P
	- basic insulation not accessible other than during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation		N/A
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
2.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V) .....		N/A
	- no-load voltage (V) .....		N/A
	- touch current if applicable (mA) .....		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V) .....		N/A
	Class III luminaire only for connection to SELV		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Class III luminaire not provided with means for protective earthing		N/A
2.12 (8.2.3.d)	PELV circuit may have exposed current carrying parts under the following conditions:		N/A
	For ordinary luminaires voltage not exceed 12 VRMS or 30VDC (under load and no load)		N/A
	For other than ordinary, voltage nor exceed 12 VRMS or 30VDC (under load and no load)		N/A
	If voltage exceed, only the earthed pole may be accessible, other pole shall be insulated accordance with 10.2.2		N/A
	Class III luminaires are accepted by connection to SELV source or PELV source		N/A
2.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.12 (8.2.6)	Covers reliably secured		N/A
2.12 (8.2.7)	Luminaire other than below with capacitor > 0,1 $\mu$ 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
2.12 (-)	Parts within the ceiling space provide same degree of protection against electric shock as parts below the ceiling space		N/A

<b>2.13 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>		<b>P</b>
2.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 2.14		—
<b>2.13 (12.2)</b>	<b>Selection of lamps and ballasts</b>		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
<b>2.13 (12.3)</b>	<b>Endurance test</b>		<b>P</b>
	a) mounting-position .....		—
	b) test temperature ( $^{\circ}$ C) .....	35 $^{\circ}$ C = 25 $^{\circ}$ C + 10 $^{\circ}$ C	—
	c) total duration (h) .....	240h	—

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Clause	Requirement + Test	Result - Remark	Verdict
	d) supply voltage (V) .....	264V = 240V x 1,0	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) .....		—
	e) luminaire ceases to operate		—
2.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
<b>2.13 (12.4)</b>	<b>Thermal test (normal operation)</b>	(see Annex 2)	<b>P</b>
<b>2.13 (12.5)</b>	<b>Thermal test (abnormal operation)</b>	(see Annex 2)	<b>P</b>
<b>2.13 (12.6)</b>	<b>Thermal test (failed lamp control gear condition):</b>		
2.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) .....		—
	- case of abnormal conditions.....		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un ...		—
	- measured mounting surface temperature (°C) at 1,1 Un .....		N/A
	- calculated mounting surface temperature (°C) ...		N/A
	- track-mounted luminaires		N/A
2.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) ...		N/A
	- track-mounted luminaires		N/A
<b>2.13 (12.7)</b>	<b>Thermal test (failed lamp control gear in plastic luminaires):</b>		<b>N/A</b>
2.13 (12.7.1)	Luminaire without temperature sensing control		N/A
2.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V) .....		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....		—
	Ball-pressure test.....:	See Test Table 2.16 (13.2.1)	N/A
2.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....		—
	Ball-pressure test.....:	See Test Table 2.16 (13.2.1)	N/A
2.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions.....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
2.13 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link .....	Yes <input type="checkbox"/> No <input type="checkbox"/>	.
	- manual reset cut-out.....:	Yes <input type="checkbox"/> No <input type="checkbox"/>	.
	- auto reset cut-out.....:	Yes <input type="checkbox"/> No <input type="checkbox"/>	.
	- case of abnormal conditions.....:		.
	- highest measured temperature of fixing point/exposed part (°C).....:		.
	Ball-pressure test:.....:	See Test Table 2.16 (13.2.1)	N/A
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- measured temperature of the cable (°C) .....	see Annex 2	P

2.14 (9)	RESISTANCE TO DUST AND MOISTURE		P
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.13		P
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP .....	IP20, IP43 (OPT1A07N34BWS), IP55 (OPE1A07D34BWS)	—
	- mounting position during test.....	(according instructions)	—
	- fixing screws tightened; torque (Nm).....	2/3 torque	—
	- tests according to clauses .....	9.2.0, 9.2.1 and 9.2.6	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire	(OPE1A07D34BWS)	P
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire or high pressure and temperature water jet-proof luminaire or high pressure and cold water jet-proof luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)	(OPT1A07N34BWS)	P
	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
2.14 (9.3)	Humidity test 48 h	25°C / 93%	P

2.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
2.15 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....		—
	Insulation resistance (MΩ).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	SELV/PELV		P
	- between current-carrying parts of different polarity .....		N/A
	- between current-carrying parts and mounting surface .....	>1,3M $\Omega$ (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between current-carrying parts and metal parts of the luminaire .....	>1,3M $\Omega$ (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 ...		N/A
	Other than SELV/PELV		P
	- between live parts of different polarity .....		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts and mounting surface..... :	>5,2MΩ (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between live parts and metal parts..... :	>5,2MΩ (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between live parts of different polarity through action of a switch .....		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 .. :		N/A
2.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V) .....		N/A
	SELV/PELV		P
	- between current-carrying parts of different polarity .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and mounting surface .....	500V (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between current-carrying parts and metal parts of the luminaire .....	500V (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 ..		N/A
	Other than SELV/PELV		P
	- between live parts of different polarity .....		N/A
	- between live parts and mounting surface .....	2960V (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts and metal parts..... :	2960V (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P
	- between live parts of different polarity through action of a switch .....		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 .. :		N/A
2.15 (10.3)	Touch current or protective conductor current (mA) .....	0,1 (DOTTA10D43ABS), (DOTXA10N43ABS), (DOTXA03N43ABS), (FCS5A55D42ABS), (FCS5A55N42ABS), (FCS4A40D42ABS), (FCS4A40N42ABS), (FCS2A25D32ABS), (FCS2A25N32ABS), (TPB2A25N42RBS), (OPE1A07D34BWS), (OPT1A07N34BWS), (RB11A10N41BBS), (BL2PA55N49RBS)	P

<b>2.16 (13)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		<b>P</b>
2.16 (13.2.1)	Ball-pressure test.....	See Test Table 2.16 (13.2.1)	N/A
2.16 (13.3.1)	Needle-flame test (10 s) .....	See Test Table 2.16 (13.3.1)	N/A
2.16 (13.3.2)	Glow-wire test (650°C).....	See Test Table 2.16 (13.3.2)	P
2.16 (13.4)	Proof tracking test (IEC 60112) .....	See Test Table 2.16 (13.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.8 (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:	R	21,5	2,5	11.1.B	26	5	11.1.A
Working voltage (V).....:					240V AC		.
PTI.....:					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		.
Pulse voltage or $U_P$ if applicable (kV).....:					N/A		.
Supplementary information: Between convertor terminals and conductive parts. (DOTTA10D43ABS)							
Distance 2:	B	--	N/A	11.1.B	--	N/A	11.1.A
Working voltage (V).....:					29,7V DC		.
PTI.....:					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		.
Pulse voltage or $U_P$ if applicable (kV).....:					N/A		.
Supplementary information: Between LED module and conductive parts. SELV convertor. (DOTTA10D43ABS)							
Distance 3:	R	16,7	2,5	11.1.B	20,5	5	11.1.A
Working voltage (V).....:					240V AC		.
PTI.....:					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		.
Pulse voltage or $U_P$ if applicable (kV).....:					N/A		.
Supplementary information: Between convertor terminals and conductive parts. (DOTTA10D43ABS)							
Distance 4:	B	--	N/A	11.1.B	--	N/A	11.1.A
Working voltage (V).....:					11,8V DC		.
PTI.....:					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		.
Pulse voltage or $U_P$ if applicable (kV).....:					N/A		.
Supplementary information: Between LED module and conductive parts. (FCS4A40D42ABS)							
Distance 5:	B	21,8	2,5	11.1.B	24,3	5	11.1.A
Working voltage (V).....:					240V AC		.
PTI.....:					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		.
Pulse voltage or $U_P$ if applicable (kV).....:					N/A		.
Supplementary information: Between convertor terminals and conductive parts. (TPB2A25N42RBS)							
Distance 6:	R	--	N/A	11.1.B	--	N/A	11.1.A
Working voltage (V).....:					11,7V DC		.

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Clause	Requirement + Test	Result - Remark	Verdict
PTI .....		< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	.
Pulse voltage or $U_P$ if applicable (kV) .....		N/A	.
Supplementary information: Between LED module and conductive parts. SELV convertor. (TPB2A25N42RBS)			

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

2.8 (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.

IEC 60598-2-2					
Clause	Requirement + Test			Result - Remark	Verdict
<b>2.16 (13.2.1)</b>	<b>TABLE: Ball Pressure Test of Thermoplastics</b>				<b>N/A</b>
<b>Allowed impression diameter (mm) .....</b>				2	.
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)		
Supplementary information:					

<b>2.16 (13.3.1)</b>	<b>TABLE: Needle-flame test (IEC 60695-11-5)</b>				<b>N/A</b>
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information:					

<b>2.16 (13.3.2)</b>	<b>TABLE: Glow-wire test (IEC 60695-2-11)</b>				<b>P</b>
<b>Glow wire temperature .....</b>				650°C	.
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
Lens (33)	-	No	No burning	P	
Diffuser (36)	-	No	No burning	P	
Diffuser (38)	-	No	No burning	P	
Lens (42)	-	No	No burning	P	
Lens (43)	-	No	No burning	P	
Diffuser (45)	-	No	No burning	P	
Supplementary information:					

<b>2.16 (13.4)</b>	<b>TABLE: Proof tracking test (IEC 60112)</b>				<b>N/A</b>
<b>Test voltage PTI .....</b>				175 V	.
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

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

ANNEX 1		TABLE: Critical components information <sup>2</sup>					
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
LED module	B	Vossloh	VCA2-123	34,3-36,6V DC. 250-500mA. 18,2W max. tc 115°C max. RG2. Ethr 1464 lux up to 4000K.	EN IEC 62031	TÜV SÜD (N5A 041027 0002 Rev. 00)	
LED module	C	Bridgelux	BXKH- 30G0500-A	36,8V DC. 3,1W. tc 105°C. RG1.	IEC 60598-1 EN 62471	Tested with appliance CANDELTEC (IE210178)	
LED	C	Samsung Electronics	LH351B	2,8V. 1,5A. RG2.	IEC 62471 IEC 60598-1	Samsung (15-04-01) Tested with appliance	
PCB	C	Cipsacircuits	PCB02.385	V-0	UL94 IEC 60598-1	UL (160716) Tested with appliance	
PCB terminals	B	Wago	2060-452/998- 404	130V. 9A. T105.	EN 60998-1 EN 60998-2- 2	DEKRA (71-109040) Tested with appliance	
LED	C	Cree	XHP50A-00- 0000- 0D0HG430G	12V DC. 1,5A. RG2.	UL 8750 EN 62471 IEC 60598-1	UL (E349212) Tested with appliance	
PCB	C	Cipsacircuits	PCB02.381	V-0	UL94 IEC 60598-1	UL (160716) Tested with appliance	
Convertor	B	TCI	DC JOLLY DALI	In: 220-240V. 50/60Hz. Out: 12/24V DC. 55V DC max. 250-700mA. 32W max. tc 75°C.	EN 61347-1 EN 61347-2- 13, AMD1	ENEC 05 DEKRA (81-122996)	
Convertor	B	ELT	LC 125/700-A- UN	In: 220-240V. 50/60Hz. Out: 12-36V DC. 48V DC max. 700mA. 8,5-25W. tc 80°C. SELV.	EN 61347-1 EN 61347-2- 13	ENEC 01 AENOR (ENEC/00105 2)	

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Convertor	B	ELT	LC 110/700-B	In: 220-240V. 50/60Hz. Out: 12-36V DC. 48V DC max. 700mA. 8,5-25W. tc 80°C. SELV.	EN 61347-1 EN 61347-2-13	ENEC 01 AENOR (ENEC/000983)
Convertor	B	TCI	DC MINI JOLLY LC DALI	In: 220-240V. 50/60Hz. Out: 24V DC. 100-380mA. 20W max. tc 75°C.	EN 61347-1 EN 61347-2-13, AMD1	ENEC 05 DEKRA (81-122996)
Convertor	B	Kegu Power Electronics GmbH	CC12W300CG A1	In: 220-240V. 50/60Hz. Out: 25-40V DC. 300mA. No load 55V DC. 12W max. tc 75°C.	EN 61347-1, AMD1 EN 61347-2-13, AMD1	TÜV SÜD (Z1 076089 0143 Rev. 00)
Convertor	B	Eaglerise	LS-6-150 SI	In: 220-240V. 50/60Hz. Out: 8,5-40V DC. 59V DC max. 150mA. 6W max. tc 80°C.	EN 61347-1 EN 61347-2-13, AMD1	ENEC 05 DEKRA (35-113360)
Convertor	B	ELT	LC 110/500-B	In: 220-240V. 50/60Hz. Out: 9-21V DC. 500mA. 10W. tc 75°C. SELV.	EN 61347-1 EN 61347-2-13	ENEC 01 AENOR (ENEC/000983)
Convertor	B	Shenzhen Ledfriend Optoelectronics	LF- GIR009YS020 0H	In: 220-240V. 50/60Hz. Out: 25-42V DC. 200mA. 8,4W. tc 75°C. SELV.	EN 61347-1, AMD2 EN 61347-2-13	TÜV SÜD (B 16 09 7450 070)
Convertor	B	TCI	DC 6W 500mA BULL/U	In: 100-240V. 50/60Hz. Out: 12,7V DC. 500mA. 6W. tc 75°C. SELV.	EN 61347-1 EN 61347-2-13, AMID1	ENEC 05 DEKRA (81-114384)
Connection box	B	Techno	TH110	450V. 24A. T85.	EN 60998-1 EN 60998-2-1	ENEC 03 IMQ (CA02.01777)
Wire	B	Colosio	FEP	300/500V. 0,25mm <sup>2</sup> . T180.	DIN 5725	VDE (107602)
Wire cord	B	Salcavi Technic Spa Italy	FR5FDR105	PVC. 300/500V. 2xAWG22 (0,32mm <sup>2</sup> ). T105.	IEC 60598-1	Tested with appliance



IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Wire cord	B	Guangzhou Kaiheng New Material	K-102	300V. T125.	IEC 60598-1	UL (E321827) Tested with appliance
Wire cord	C	Dongguan Changan Huawei Wire	1569	300V. 2x22AWG (0,32mm <sup>2</sup> ). T105.	UL 758 IEC 60598-1	UL (E320244) Tested with appliance
Wire cord	B	Conductores Eléctricos Cemi	H03VV-F	PVC. 300/300V. 2x0,22mm <sup>2</sup> . T70.	EN 50525-2-11	EU Declaration of conformity
Wire cord	B	Colosio	BV57T	300/500V. 5x0,75mm <sup>2</sup> . FEP. T180. PVC. T90	CEI 20-20/1	IMQ (01SE00045)
Wire cord	C	Huizhou inda	2464	300V. T80. 2x24AWG.	IEC 60598-1	Tested with appliance
Wire cord	B	Conductores Eléctricos Cemi	H03VV-F	PVC. 300/300V. 2x0,22mm <sup>2</sup> . T70.	EN 50525-2-11	EU Declaration of Conformity
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance.						
2) This information has been provided by the applicant						
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						

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
<b>ANNEX 2</b>	<b>TABLE: Thermal tests of Section 12</b>						<b>P</b>
	Type reference .....	DOTTA10D43ABS				—	
	Lamp used .....	LH351B				—	
	Lamp control gear used .....	DC JOLLY DALI				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	24,4				—	
	Supply current (A) .....	0,11				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
<b>Temperature measurements (°C)</b>							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	66,5	-	-	80	-	-
Convertor (tc)	25,0	52,4	-	-	75	-	-
Supply cable	25,0	-	42,5	-	90	-	-
LED module wire	25,0	-	54,5	-	105	-	-
LED module wire (Clause 5.4 max output current 700mA)	25,0	-	28,9	-	105	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	25,7	-	105	-	-
Mounting surface	25,0	-	44,0	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	25,7	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	DOTXA10N43ABS				—	
	Lamp used .....	LH351B				—	
	Lamp control gear used .....	LC 125/700-A-UN				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	24,3				—	
	Supply current (A) .....	0,12				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	62,9	-	-	80	-	-
Convertor (tc)	25,0	46,8	-	-	80	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	DOTXA03N43ABS				—	
	Lamp used .....	LH351B				—	
	Lamp control gear used .....	LC 110/700-B				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	7,7				—	
	Supply current (A) .....	0,04				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	51,1	-	-	80	-	-
Convertor (tc)	25,0	42,0	-	-	75	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	FCS5A55D42ABS				—	
	Lamp used .....	VCA2-123				—	
	Lamp control gear used .....	DC MINI JOLLY LC DALI				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	13,6				—	
	Supply current (A) .....	0,06				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	82,2	-	-	110	-	-
Convertor (tc)	25,0	39,2	-	-	85	-	-
Supply cable	25,0	-	34,4	-	90	-	-
LED module wire	25,0	-	65,8	-	105	-	-
LED module wire (Clause 5.4 max output current 300mA)	25,0	-	27,4	-	105	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	26,1	-	105	-	-
Diffuser	25,0	-	-	-	80	-	-
Adjusting means	25,0	-	50,4	-	60	-	-
Mounting surface	25,0	-	30,2	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	27,1	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	FCS5A55N31BBS				—	
	Lamp used .....	LH351B				—	
	Lamp control gear used .....	CC12W300CGA1				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	12,6				—	
	Supply current (A) .....	0,11				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	62,9	-	-	110	-	-
Convertor (tc)	25,0	46,8	-	-	75	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	FCS4A40D42ABS				—	
	Lamp used .....	XHP50A-00-0000-D0HG430G				—	
	Lamp control gear used .....	DC MINI JOLLY LC DALI				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	11,0				—	
	Supply current (A) .....	0,05				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	76,3	-	-	80	-	-
Convertor (tc)	25,0	47,3	-	-	75	-	-
Supply cable	25,0	-	34,9	-	90	-	-
LED module wire	25,0	-	60,1	-	105	-	-
LED module wire (Clause 5.4 max output current 700mA)	25,0	-	25,3	-	105	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	27,1	-	105	-	-
Diffuser	25,0	-	73,2	-	90	-	-
Adjusting means	25,0	-	51,4	-	60	-	-
Mounting surface	25,0	-	33,1	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	26,3	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	FCS4A40N42ABS				—	
	Lamp used .....	XHP50A-00-0000-D0HG430G				—	
	Lamp control gear used .....	LC 110/700-B				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	10,2				—	
	Supply current (A) .....	0,05				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	75,9	-	-	80	-	-
Convertor (tc)	25,0	47,8	-	-	75	-	-
Supplementary information:							



IEC 60598-2-2							
Clause	Requirement + Test			Result - Remark		Verdict	
	Type reference .....			FCS2A25D32ABS		—	
	Lamp used .....			BXKH-30G0500-A		—	
	Lamp control gear used .....			DC MINI JOLLY LC DALI		—	
	Mounting position of luminaire .....			(according to instructions)		—	
	Supply wattage (W).....			6,8		—	
	Supply current (A) .....			0,03		—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....			25		—	
	- abnormal operating mode.....			N/A		—	
1.12 (12.4)	- test 1: rated voltage .....			240V = 240V x 1,0		—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....			N/A		—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....			N/A		—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....			N/A		—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....			N/A		—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	63,1	-	-	105	-	-
Convertor (tc)	25,0	46,4	-	-	75	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	FCS2A25N32ABS				—	
	Lamp used .....	BXKH-30G0500-A				—	
	Lamp control gear used .....	LS-6-150 SI				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	6,3				—	
	Supply current (A) .....	0,05				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	65,4	-	-	105	-	-
Convertor (tc)	25,0	43,4	-	-	80	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	TPB2A25N42RBS				—	
	Lamp used .....	XHP50A-00-0000-D0HG430G				—	
	Lamp control gear used .....	LC 110/500-B				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	6,9				—	
	Supply current (A) .....	0,04				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	56,9	-	-	80	-	-
Convertor (tc)	25,0	28,8	-	-	75	-	-
Supply cable	25,0	-	32,9	-	90	-	-
LED module wire	25,0	-	52,1	-	70	-	-
LED module wire (Clause 5.4 max output current 500mA)	25,0	-	26,3	-	70	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	25,2	-	70	-	-
Diffuser	25,0	-	63,3	-	90	-	-
Connection box	25,0	-	35,3	-	90	-	-
Mounting surface	25,0	-	33,5	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	25,4	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	OPE1A07D34BWS				—	
	Lamp used .....	VCA2-123				—	
	Lamp control gear used .....	DC MINI JOLLY LC DALI				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	8,4				—	
	Supply current (A) .....	0,04				—	
	Temperatures in test 1 - 4 below are corrected for $t_a$ (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	94,1	-	-	105	-	-
Convertor (tc)	25,0	52,3	-	-	75	-	-
Supply cable	25,0	-	35,9	-	90	-	-
LED module wire	25,0	-	82,1	-	80	-	-
LED module wire (Clause 5.4 max output current 180mA)	25,0	-	25,4	-	80	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	25,3	-	80	-	-
Diffuser	25,0	-	70,2	-	90	-	-
Connection box	25,0	-	37,3	-	90	-	-
Mounting surface	25,0	-	38,9	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	28,7	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	OPT1A07N34BWS				—	
	Lamp used .....	VCA2-123				—	
	Lamp control gear used .....	LF-GIR009YS0200H				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	9,1				—	
	Supply current (A) .....	0,07				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	93,8	-	-	105	-	-
Convertor (tc)	25,0	64,9	-	-	75	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	RB11A10N41BBS				—	
	Lamp used .....	VCA2-123				—	
	Lamp control gear used .....	CC12W300CGA1				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	12,5				—	
	Supply current (A) .....	0,11				—	
	Temperatures in test 1 - 4 below are corrected for $t_a$ (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	83,6	-	-	105	-	-
Convertor (tc)	25,0	52,0	-	-	75	-	-
Supply cable	25,0	-	36,1	-	90	-	-
LED module wire	25,0	-	64,8	-	80	-	-
LED module wire (Clause 5.4 max output current 300mA)	25,0	-	26,4	-	80	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	25,6	-	80	-	-
Diffuser	25,0	-	60,2	-	90	-	-
Mounting surface	25,0	-	31,1	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	29,1	-	90	-	-
Supplementary information:							

IEC 60598-2-2							
Clause	Requirement + Test	Result - Remark				Verdict	
	Type reference .....	BL2PA55N49RBS				—	
	Lamp used .....	LH351B				—	
	Lamp control gear used .....	DC 6W 500mA BULL/U				—	
	Mounting position of luminaire .....	(according to instructions)				—	
	Supply wattage (W).....	6,4				—	
	Supply current (A) .....	0,06				—	
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....	25				—	
	- abnormal operating mode.....	N/A				—	
1.12 (12.4)	- test 1: rated voltage .....	240V = 240V x 1,0				—	
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	254,4V = 240 x 1,06				—	
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	N/A				—	
	Through wiring or looping-in wiring loaded by a current of A during the test .....	N/A				—	
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....	N/A				—	
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED module (tc)	25,0	64,1	-	-	80	-	-
Convertor (tc)	25,0	52,8	-	-	85	-	-
Supply cable	25,0	-	34,5	-	90	-	-
LED module wire	25,0	-	62,1	-	180	-	-
LED module wire (Clause 5.4 max output current 500mA)	25,0	-	26,4	-	180	-	-
LED module wire (Clause 5.4 short-circuit)	25,0	-	25,7	-	180	-	-
Mounting surface	25,0	-	30,4	-	90	-	-
Illuminated objects distance (10cm)	25,0	-	27,4	-	90	-	-
Supplementary information:							

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ANNEX 3</b>	<b>Screw terminals (part of the luminaire)</b>		<b>N/A</b>
<b>(14)</b>	<b>SCREW TERMINALS</b>		<b>N/A</b>
(14.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm <sup>2</sup> )..... :		—
(14.3.3)	Conductor space (mm)..... :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) ... :	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) .....		N/A
	Torque (Nm) .....		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)..... :		N/A
(14.4.8)	Without undue damage		N/A



IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ANNEX 4</b>	<b>Screwless terminals (part of the luminaire)</b>		<b>N/A</b>
<b>(15)</b>	<b>SCREWLESS TERMINALS</b>		<b>N/A</b>
(15.2)	Type of terminal .....		—
	Rated current (A).....		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples) .....		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples) .....		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
(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

<b>(15.6.3.1)</b> <b>(15.6.3.2)</b>	<b>TABLE: Contact resistance test / Heating tests</b>										<b>N/A</b>
	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>Attachment No. 1</b>	<b>Photo document</b>	Reference: DOTTA10D43ABS .
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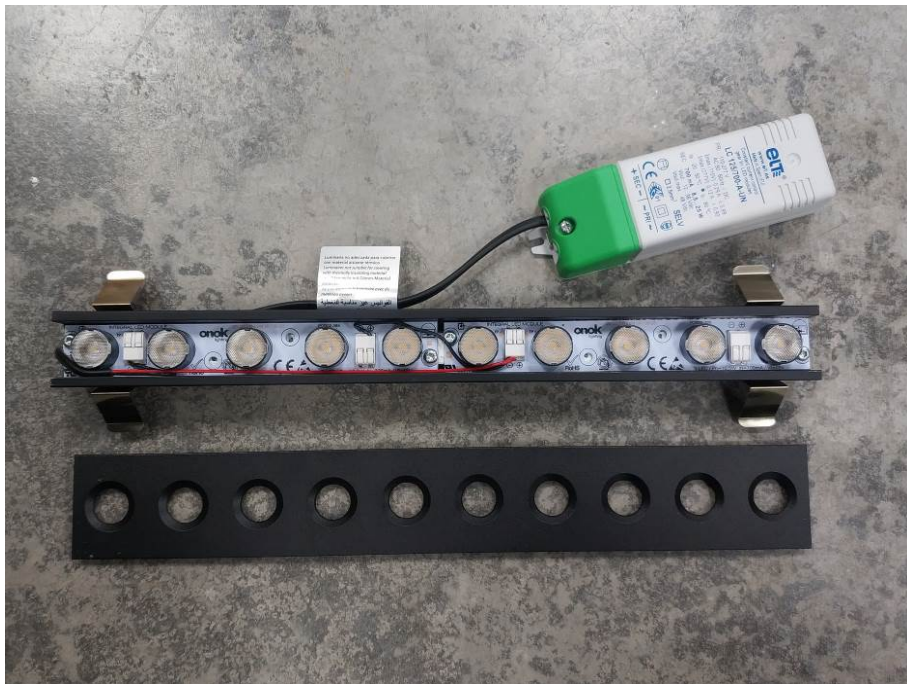




Photo document

Reference: DOTXA10N43ABS













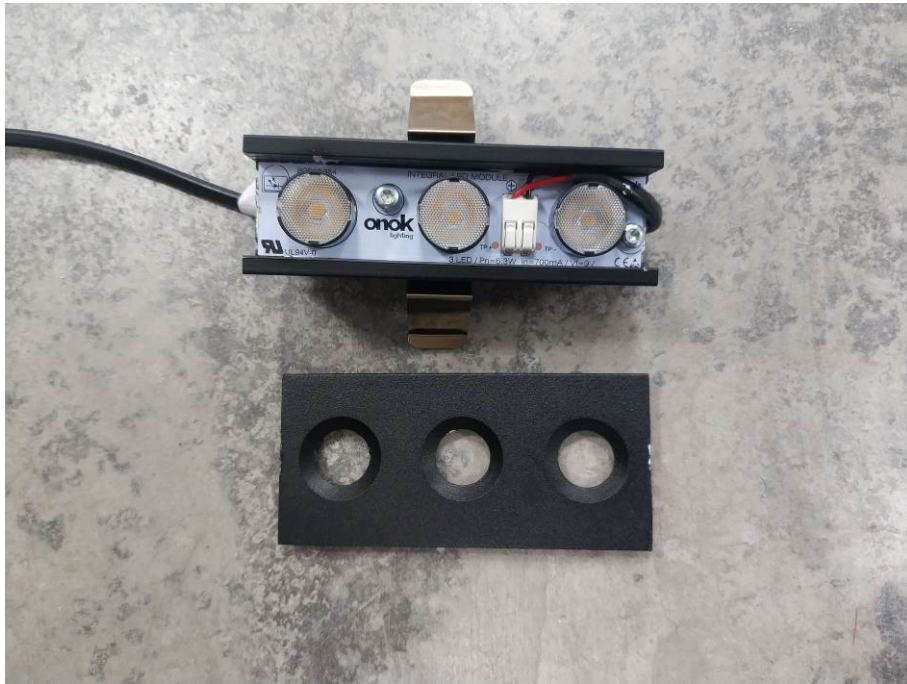
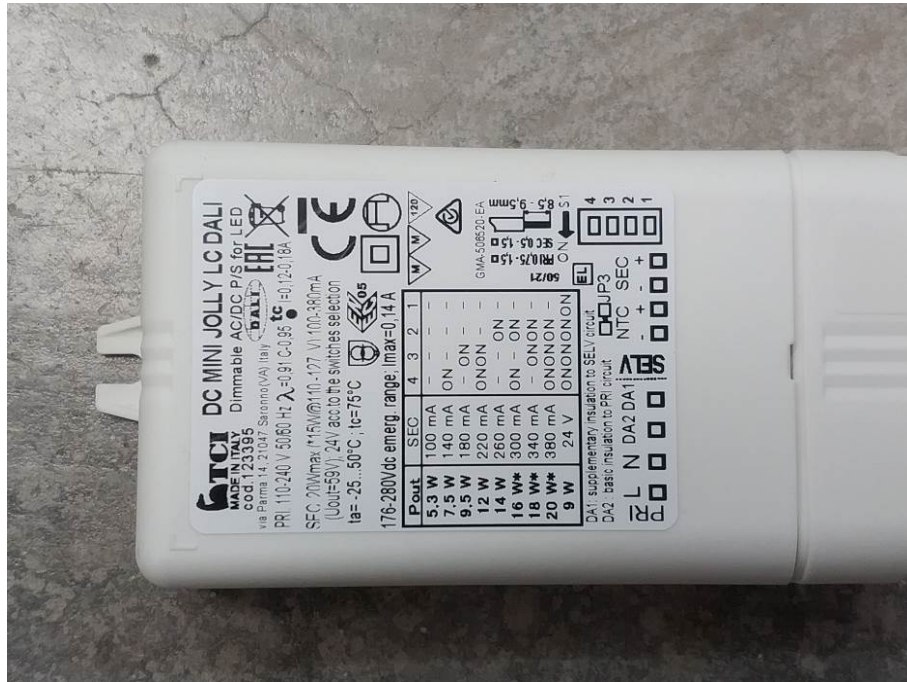


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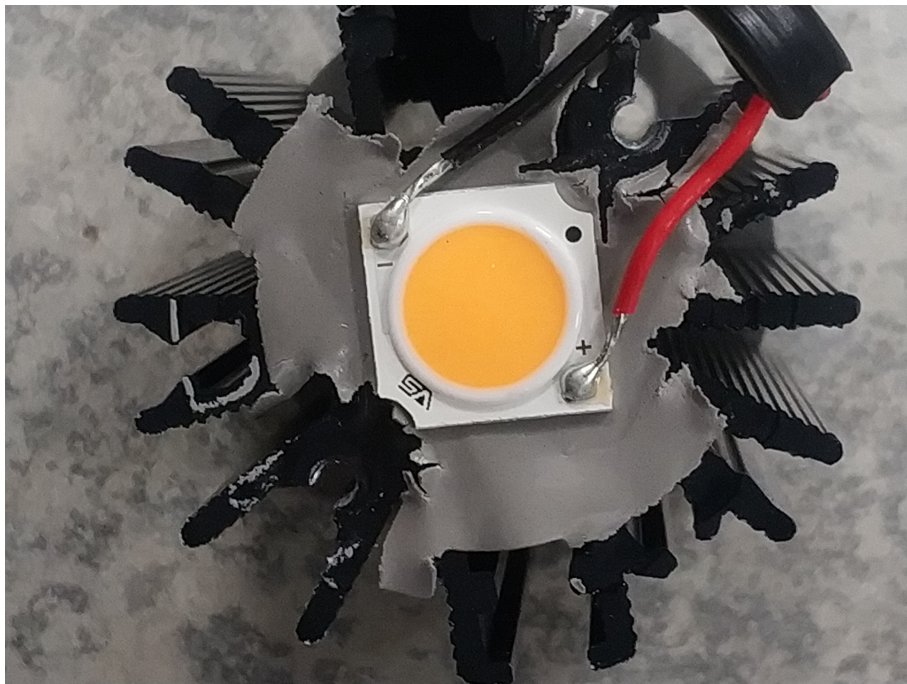




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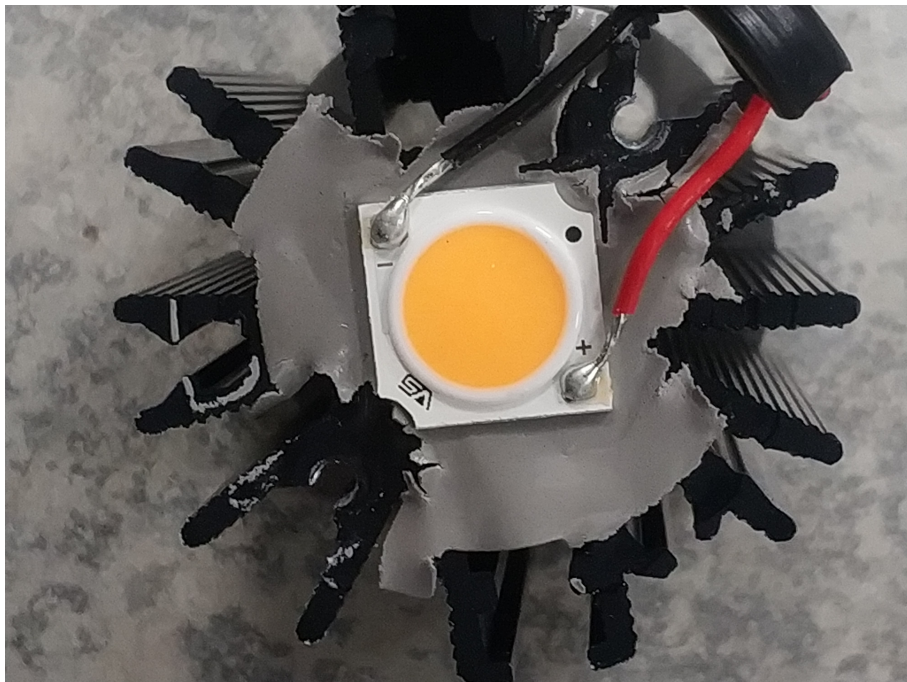


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Photo document

Reference: FCS4A40N42ABS









Photo document

Reference: FCS2A25D32ABS

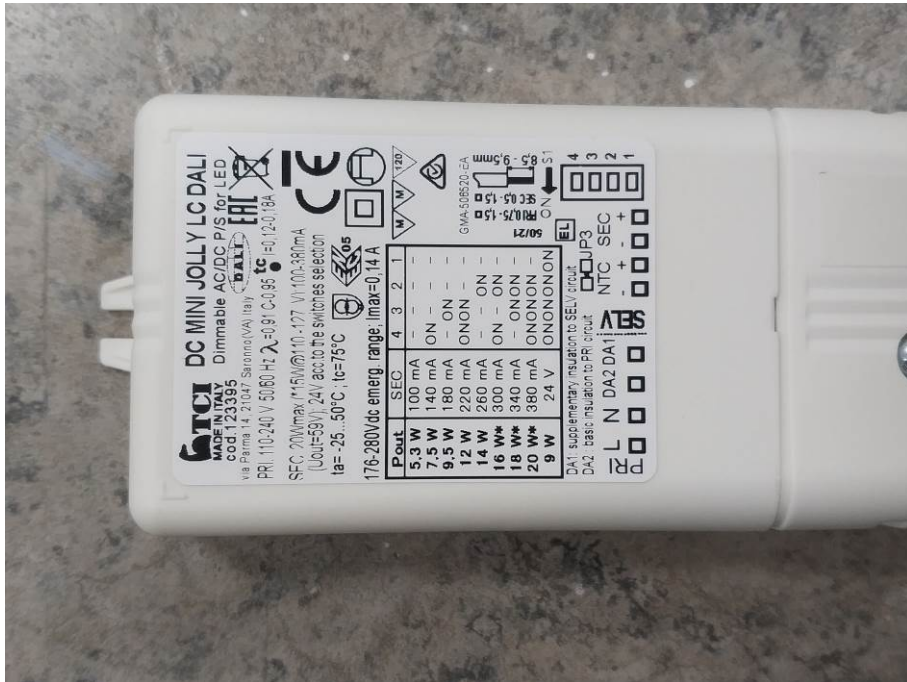




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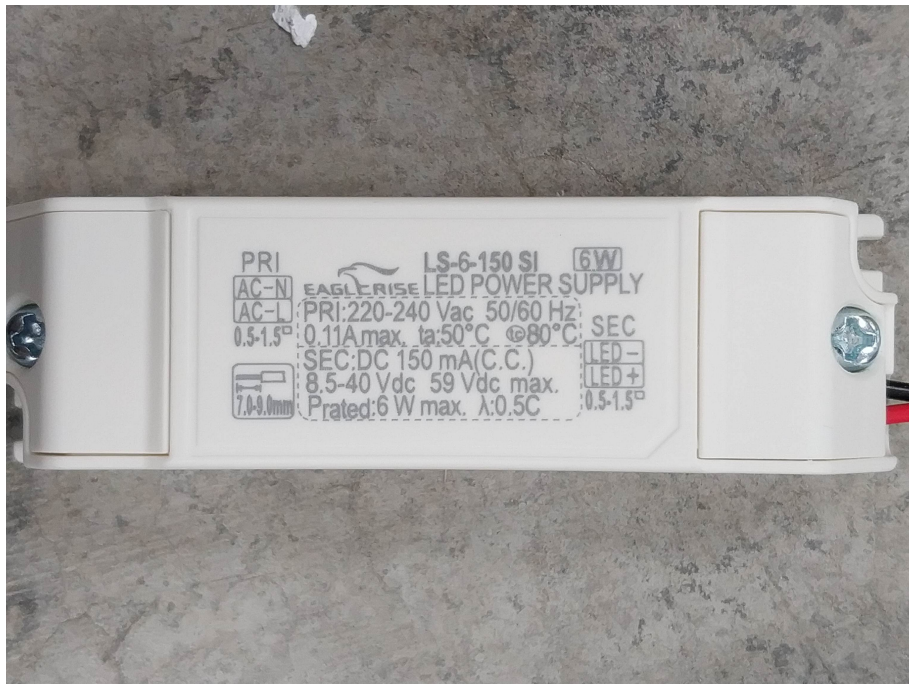
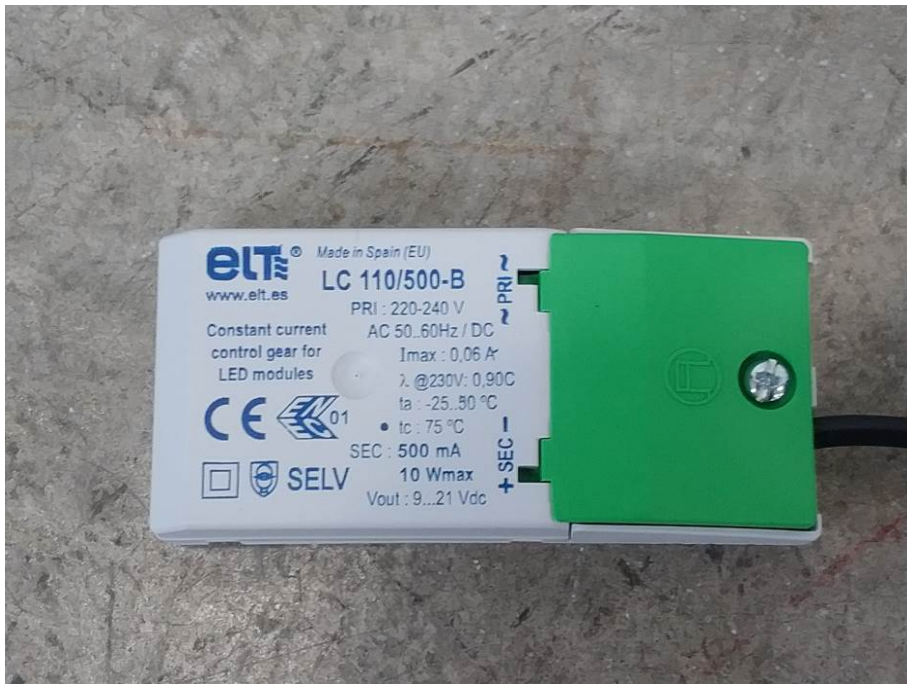




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Reference: TPB2A25N42RBS







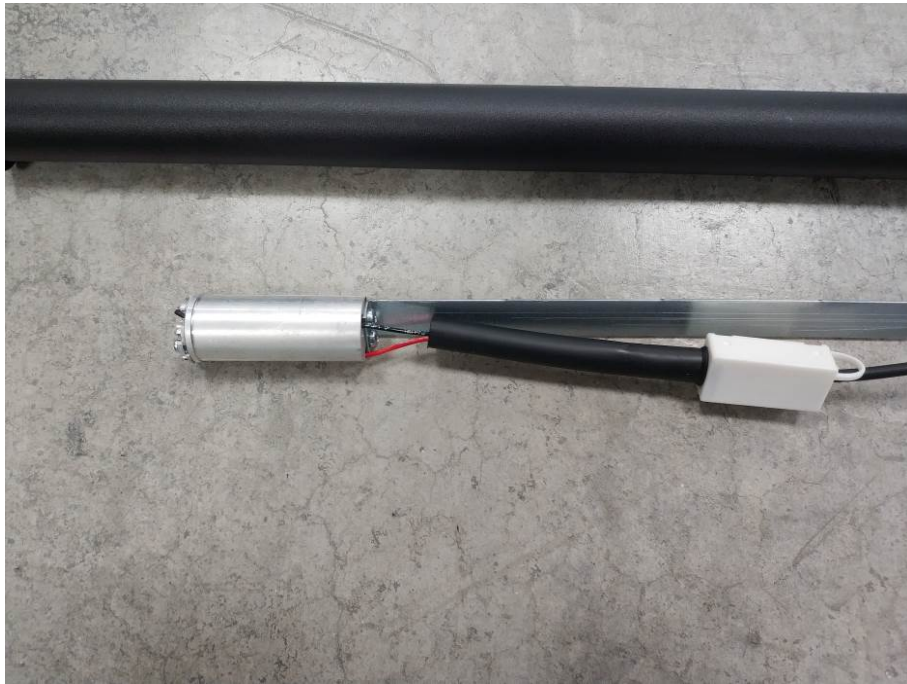
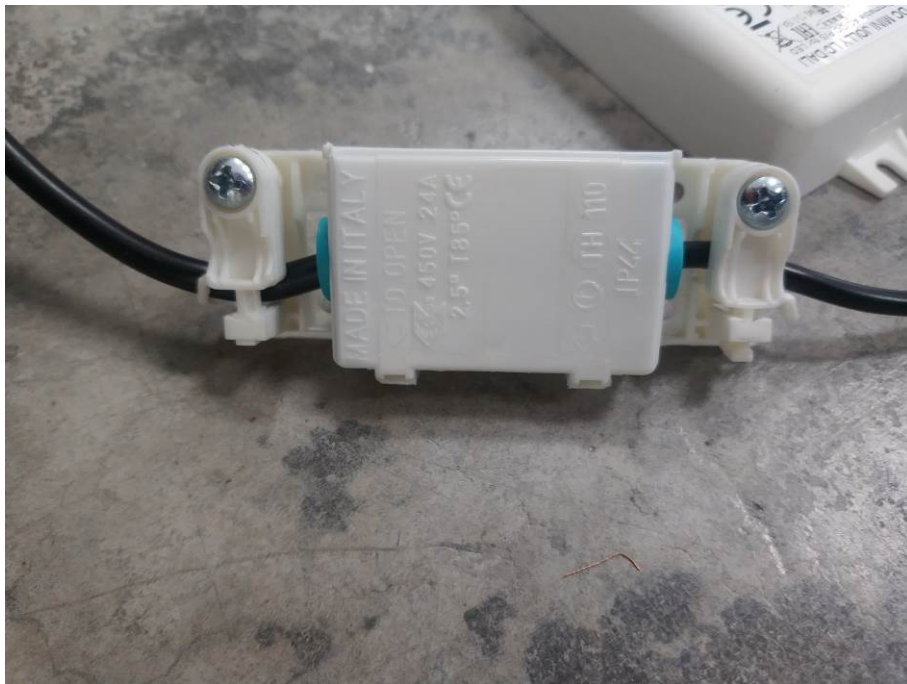




Photo document

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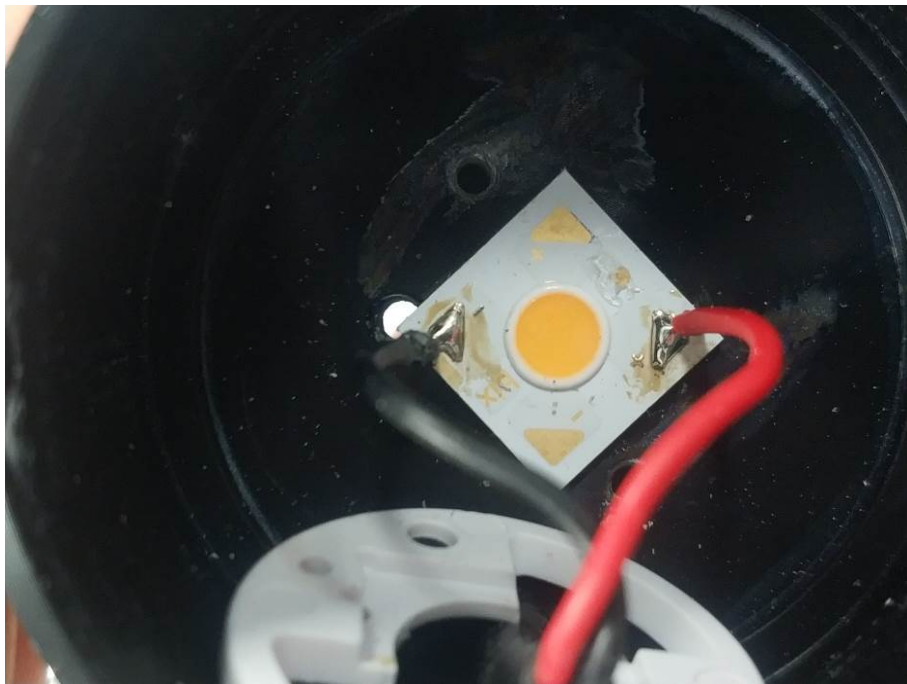


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Reference: OPT1A07N34BWS





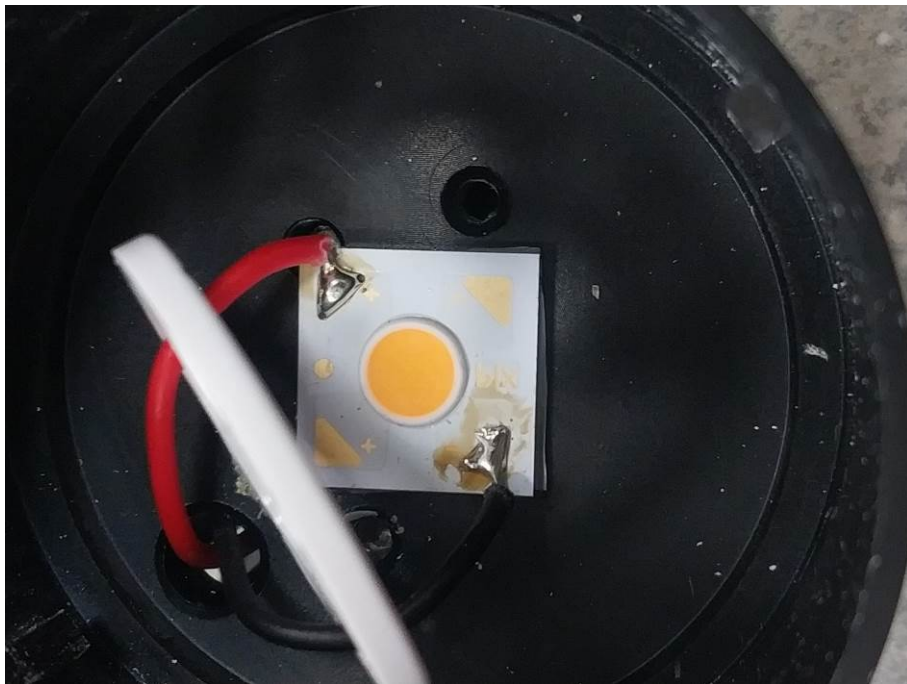




Photo document

Reference: RB11A10N41BBS









Photo document

Reference: BL2PA55N49RBS







IEC60598_2_2G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 60598-2-2</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Luminaires Part 2: Particular requirements Section 2: Recessed luminaires			
<b>Differences according to.....:</b>		EN 60598-2-2:2012 used in conjunction with EN IEC 60598-1:2021 + A11:2022	
<b>TRF template used .....</b>		IECEE OD-2020-F2:2020, Ed. 1.1	
<b>Attachment Form No.....:</b>		EU_GD_IEC60598_2_2G	
<b>Attachment Originator .....</b>		UL(Demko)	
<b>Master Attachment.....:</b>		2022-05-23	
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		<b>CENELEC COMMON MODIFICATIONS (EN)</b>	
<b>2.6 (3)</b>	<b>MARKING</b>		<b>N/A</b>
2.6 (3.2.12)	Note 4 deleted		N/A
<b>2.7 (4)</b>	<b>CONSTRUCTION</b>		N/A
2.7 (4.11.6)	Electro-mechanical contact systems: electric strength test at 1 500 V		N/A
<b>2.11 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		<b>P</b>
2.11 (5.2.2)	Cables equal to EN 50525 (all parts)		P
	Paragraph 2 deleted		P
	Replace table 5.1 – Supply cord		P
<b>2.13 (12)</b>	<b>ENDURANCE TESTS AND THERMAL TESTS</b>		<b>P</b>
2.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		P
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		<b>N/A</b>
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(5.2.1)	CY, DK, FI, UK: type of plug		N/A
(5.2.18)	DK: socket-outlets		N/A
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>N/A</b>
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A



IEC60598_2_2G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	FR: Safety requirements for high buildings <i>(Decree of 30 December 2011 on safety regulations for the construction of high-rise buildings and their protection against fire and panic risks; Section VIII; Article GH 48, Lighting)</i>  Glow-wire test for outer parts of luminaires:		N/A
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
	UK: Requirements according to United Kingdom Building Regulation		N/A

<b>Attachment No. 3</b>	<b>LED modules for general lighting – Safety specifications</b> <b>Test according to IEC 62031:2018 (Second edition) &amp; EN IEC 62031:2020.</b> <b>(clauses number between brackets refer to clause in IEC 61347-1)</b>	—
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<b>4</b>	<b>GENERAL REQUIREMENTS</b>		—
4.2	Classification		
	Built-in module .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Independent module.....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral module .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A

<b>6</b>	<b>MARKING</b>		—
<b>6.5</b>	<b>Marking of integral LED modules</b>		<b>P</b>
	- information in 6.2 a) to g) in data sheet, leaflet or website		P

<b>7</b>	<b>TERMINALS</b>		—
	Evaluated in final product		<b>P</b>

<b>8 (9)</b>	<b>EARTHING</b>		—
	Evaluated in final product		<b>N/A</b>

<b>10 (10)</b>	<b>PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS</b>		—
- (10.1)	Controlgear protected against accidental contact with live parts		N/A
- (A2)	Voltage measured with 50 k $\Omega$	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device	(see Annex A)	N/A

<b>10 (11)</b>	<b>MOISTURE RESISTANCE AND INSULATION</b>		—
	Evaluated in final product		P

<b>11 (12)</b>	<b>ELECTRICAL STRENGTH</b>		—
	Immediately after clause 11 electric strength test for 1 min		P

	Basic insulation for SELV, test voltage 500 V	Refer to main report subclause 2.15 (10.2.2)	P
	Working voltage $\leq 50$ V, test voltage 500 V		N/A
	Working voltage $> 50$ V $\leq 1000$ V, test voltage (V):		P
	Basic insulation, $2U + 1000$ V		N/A
	Supplementary insulation, $2U + 1000$ V		N/A
	Double or reinforced insulation, $4U + 2000$ V	Refer to main report subclause 2.15 (10.2.2)	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

<b>12 (14)</b>	<b>FAULT CONDITIONS</b>		—
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		P
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
	Short-circuit or interruption of SPDs	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1$ M $\Omega$ .....	1,3M $\Omega$	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—

<b>12.2</b>	<b>Overpower condition</b>		<b>P</b>
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		N/A

<b>14 (15)</b>	<b>CONSTRUCTION</b>		—
<b>- (15.1)</b>	<b>Wood, cotton, silk, paper and similar fibrous material</b>		<b>P</b>
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
<b>- (15.2)</b>	<b>Printed circuits</b>		<b>N/A</b>
	Printed circuits used as internal connections complies with clause 14		N/A

<b>15 (16)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		—
	Evaluated in final product		<b>P</b>

<b>16 (17)</b>	<b>SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS</b>		—
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
	Evaluated in final product		—

<b>17 (18)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		—
<b>- (18.1)</b>	Ball-pressure test .....	See Test Table 17 (18.1)	N/A

<b>18</b>	<b>RESISTANCE TO CORROSION</b>		—
	Comply with requirements according 4.18 of IEC 60598-1		N/A

<b>20</b>	<b>HEAT MANAGEMENT</b>		—
<b>20.1</b>	<b>General</b>		<b>N/A</b>
	Fulfil clause 20 if replaceable LED module and when heat conducting thermal interface is needed.		N/A
<b>20.2</b>	<b>Thermal interface material</b>		<b>N/A</b>
	Thermal interface material delivered with the module if necessary		N/A

<b>20.3</b>	<b>Heat protection</b>	<b>N/A</b>
	Not impair safety when operated under poor heat-conduction conditions according Annex D	N/A

<b>22</b>	<b>PHOTOBIOLOGICAL SAFETY</b>	—
<b>22.1</b>	<b>UV radiation</b>	<b>N/A</b>
	Luminous radiation not exceed 2mW/klm	N/A
<b>22.2</b>	<b>Blue light hazard</b>	<b>P</b>
	Assessed according to IEC TR 62778	RG2 (DOTTA10D43ABS), (FCS4A40D42ABS)
<b>22.3</b>	<b>Infrared radiation</b>	<b>N/A</b>
	Requirements for infrared radiation when required	N/A

<b>A</b>	<b>ANNEX A - TESTS</b>	—
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable	P

<b>12 (14)</b>	<b>TABLE: tests of fault conditions</b>	—
Part	Simulated fault	Hazard
LD1	Open-circuit	YES / NO
LD1	Short-circuit	YES / NO

<b>17 (18.1)</b>	<b>TABLE: Ball Pressure Test of Thermoplastics</b>	<b>N/A</b>	
<b>Allowed impression diameter (mm) .....</b>	<b>2</b>	—	
<b>Object/ Part No./ Material</b>	<b>Manufacturer/ trademark</b>	<b>Test temperature (°C)</b>	<b>Impression diameter (mm)</b>
Supplementary information: -			

<b>(A)</b>	<b>ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK</b>	—
(A.1)	Comply with A.2 or A.3	P
(A.2)	Voltage $\leq 35$ V peak or $\leq 60$ Vd.c .....	0V DC; 6,6V AC (DOTTA10D43ABS), 0V DC; 3,2V AC (FCS4A40D42ABS)
(A.3)	If voltage $> 35$ V peak or $> 60$ Vd.c. or protective impedance device; touch current does not exceed 0,7 mA (peak) or 2 mAd.c. ....	N/A

	Comply with annex G of IEC 60598-1		N/A
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<b>ANNEX 1</b>	<b>LED MODULES WITH INTEGRAL CONTROLGEAR PROVIDING SELV</b>		—
	Evaluated in final product		N/A