Test Report issued under the responsibility of:

TEST REPORT
IEC 60598-2-2
Luminaires
Part 2: Particular requirements
Section 2: Recessed luminaires and recessed air-handling luminaires

Report Number.....:	AOC250609001S
Date of issue.....:	2025-06-23
Total number of pages.....:	47 Pages
Name of Testing Laboratory preparing the Report.....:	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name.....:	Zhongshan Bidanli Lighting Co.,Ltd
Address.....:	No.215 Eastern Bank Road, Haizhou , Zhongshan, Guangdong Province, China
Test specification:	
Standard.....:	☒ IEC 60598-2-2:2023 used in conjunction with IEC 60598-1:2024 ☒ European Group Differences And National Differences
Test procedure.....:	Type testing
Non-standard test method.....:	N/A
TRF template used.....:	IECEE OD-2020-F1:2022, Ed.1.5
Test Report Form No.....:	IEC60598_2_2H
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	Dated 2023-02-21

General disclaimer:

The test results presented in this report relate only to the object tested.
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The authenticity of this Test Report and its contents can be verified by contacting the test laboratory, responsible for this Test Report.

Test item description.....:	LED DOWN LIGHT FIXTURE
Trade Mark(s).....:	BIDANLI
Manufacturer.....:	Zhongshan Bidanli Lighting Co.,Ltd No.215 Eastern Bank Road, Haizhou , Zhongshan, Guangdong Province, China
Model/Type reference.....:	BDL-DL-07, BDL-DL-06, BDL-SL-01, BDL-SL-02, BDL-DLS-01, BDL-DLS-02, BDL-DLS-03, BDL-DLS-04, BDL-DLS-05, BDL-DLS-06, BDL-DLS-07, BDL-DLS-08, BDL-DLS-09, BDL-DLS-10, BDL-DLS-11
Ratings.....:	220-240 V~, 50/60 Hz, 6 W, Class II, IP 44, ta: 25℃

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	Shenzhen AOCE Electronic Technology Service Co., Ltd	
Testing location/ address.....:		Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature).....:		ZhiCong Xian Technical Engineer	ZhiCong X
Approved by (name, function, signature)... :		Robin Liu Technical Manager	Robin. Li
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)... :			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)... :			
☐	**Testing procedure: CTF Stage 3:**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)... :			
Supervised by (name, function, signature) :			

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

Attachment No.1: European Group Differences And National Differences
Attachment No.2: Clause 13 of EN IEC 62031
Attachment No.3: IEC TR 62778
Attachment No.4: Photo document.

Summary of testing:

Tests performed (name of test, test clause and date test performed):	**Testing location: (CBTL, SPTL, CTF, Subcontractor)**
- EN IEC 60598-2-2:2024 - EN IEC 60598-1:2021+A11:2022 - Clause 13 of EN IEC 62031:2020+A11:2021 - IEC TR 62778:2014	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

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

European Group Differences And National Differences.

☒ **The product fulfils the requirements of** EN 60598-2-2:2012 & 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").

☐ Other: … (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

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 NCB and testing laboratory that conducted the testing.

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.

BIDANLI

LED DOWN LIGHT FIXTURE

Model No.: BDL-DL-07

220-240 V~, 50/60 Hz, 6 W

Zhongshan Bidanli Lighting Co.,Ltd

Made in China

Remark:

1. The marking of other models are identical with the marking of model BDL-DL-07 , except model designation and rated power.
2. The above mark is the minimum requirements required by the safety standard. For the final production, the additional mark which do not give rise to misunderstanding may be added.
3. The size of marking 'Luminaires not suitable for covering with thermally insulating material' not less than 25mm each side.

Test item particulars..... :	
Classification of installation and use.....:	Recessed Luminaire
Supply Connection.....:	Supply cords
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing..... :	
Date of receipt of test item.....:	2025-05-26
Date (s) of performance of tests.....:	2025-05-26 to 2025-06-23

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

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

Name and address of factory (ies).....:	Same as manufacturer

General product information:

Class II luminaires, LED light source

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.4 (0)	**GENERAL TEST REQUIREMENTS**		—
2.4 (-)	Measurement of ambient temperature according to Annex A		—
2.4 (0.3)	More sections applicable.....:	Yes ☐ No ☒ Section/s:	—
2.4 (0.5)	Components	(See Annex 1)	—
2.4 (0.7)	**Information for luminaire design in light sources standards**		—
2.4 (0.7.2)	Light source safety standard .....:		—
	Luminaire design in the light source safety standard		P
2.5 (2)	**CLASSIFICATION OF LUMINAIRES**		—
2.5 (2.2)	Type of protection .....:	Class II	P
2.5 (2.3)	Degree of protection.....:	IP 44	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☒ No ☐	—
2.5 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—
2.6 (3)	**MARKING**		—
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		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		P

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
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
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		P
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		P
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
2.6 (3.3.23)	Luminaire without control gear 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		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
2.6.2 (-)	Luminaires with two IP ratings		N/A
2.6.3 (-)	Symbol "not suitable for direct mounting on normally flammable surface", if applicable		N/A
2.6.4 (-)	Symbol "not suitable for covering with thermally insulated material", if applicable		P

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4)	**CONSTRUCTION**		—
2.7 (4.2)	Components replaceable without difficulty		P
2.7 (4.3)	Wireways smooth and free from sharp edges		P
2.7 (4.4)	**Lamp holders**		N/A
2.7 (4.4.1)	Integral lamp holder		N/A
2.7 (4.4.2)	Wiring connection		N/A
2.7 (4.4.3)	Lamp holder for end-to-end mounting		N/A
2.7 (4.4.4)	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lamp holder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lamp holder the lamp holder has not moved from its position and shows no permanent deformation		N/A
	- bending test (N) .....:		—
	After test the lamp holder 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 lamp holder or connection according to IEC 60061 not connected another way		N/A
2.7 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
2.7 (4.6)	**Terminal blocks**		N/A
	Tails		N/A
	Unsecured blocks		N/A
2.7 (4.7)	**Terminals and supply connections**		P
2.7 (4.7.1)	Contact to metal parts		N/A
2.7 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
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
2.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
2.7 (4.8)	**Switches**		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
2.7 (4.9)	**Insulating lining and sleeves**		N/A
2.7 (4.9.1)	Retainment		N/A
	Method of fixing.....:		N/A
2.7 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
2.7 (4.10)	**Double or reinforced insulation**		P
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
2.7 (4.10.2)	Assembly gaps:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- not coincidental		N/A
	- no straight access with test probe		N/A
2.7 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N/A
	- lining in lamp holder		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
	Capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A
2.7 (4.11)	**Electrical connections and current-carrying parts**		**P**
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A
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
2.7 (4.12)	**Screws and connections (mechanical) and glands**		**P**
2.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	Fixed enclosure screw: 0.5Nm (φ2.82mm)	P
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
	- lamp holder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
2.7 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
2.7 (4.13)	**Mechanical strength**		**P**
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm)..... :	0.35 Nm	P
	1) live parts		P
	2) linings		N/A
	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		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
2.7 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
2.7 (4.14.1)	Mechanical load:		P
	A) four times the weight		P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track- mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N/A
	Metal rod. diameter (mm) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Fixed luminaire or independent control gear without fixing devices		N/A
2.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
2.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken..... :		N/A
	- electric strength test afterwards		N/A
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
2.7 (4.15)	**Flammable materials**		**P**
	- glow- wire test 650°C..... :	See Test Table 2.16 (13.3.2)	P
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
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
2.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	- spacing 10 mm		N/A
2.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
2.7 (4.16.3)	Design to satisfy the test of 12.6	(See clause 12.6)	N/A
2.7 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
2.7 (4.18)	**Resistance to corrosion**		N/A
2.7 (4.18.1)	- rust- resistance		N/A
2.7 (4.18.2)	- season cracking in copper		N/A
2.7 (4.18.3)	- corrosion of aluminium		N/A
2.7 (4.19)	Ignitors compatible with ballast		N/A
2.7 (4.20)	Rough service vibration		N/A
2.7 (4.21)	**Protective shield**		N/A
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
***2.7 (4.24)**	**Photobiological hazards**		**P**
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 .....:		—
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- distance x m, borderline between RG1 and RG2... :		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
2.7 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
2.7 (4.26)	**Short-circuit protection**		N/A
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
2.7 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
2.7 (4.28)	**Fixing of thermal sensing control**		**N/A**
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.29)	**Luminaires with non-replaceable light source**		**N/A**
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
2.7 (4.30)	**Luminaires with non-user replaceable light source**		P
	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		P
2.7 (4.31)	**Insulation between circuits**		**P**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
2.7 (4.31.1)	SELV or PELV circuits		P
	Used SELV or PELV source		P
	Voltage ≤ ELV		P
	PELV circuit shall have one pole connected to functional earth		N/A
	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		N/A
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to make any electrical contact 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		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- 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
2.7 (4.32)	**Overvoltage protective devices**		N/A
	Comply with IEC 61643-11		N/A
	External to control gear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
2.7(4.33)	**Luminaire powered via information technology communication cabling**		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	No hazard with 130% rated input voltage minimum 7.5VDC for circuit greater than 5VDC		N/A
	No hazard with 150% rated input voltage for circuit equal to or less than 5VDC		N/A
2.7(4.34)	**Electromagnetic field (EMF)**		P
	Compliance to IEC 62493:2015		P
2.7(4.35)	**Protection against moving fan blades**		N/A
	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
2.7(4.36)	**Track-mounted luminaires**		N/A
	Tested according to Annex A of IEC 60570		N/A

2.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		—
2.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according to 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
	- Control gear marked with $\hat{U}_{OUT}$ and f_{UOUT} according to IEC 61347-1, clause 7.1, item w	See Test Table 2.8 (11.2) II	N/A
	- Requirements according to IEC 60664-4 for control gear 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
	- Control gear marked with U_P	See Test Table 2.8 (11.2) II	N/A
	- Requirements according to IEC 60664-4 for control gear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.9 (7)	**PROVISION FOR EARTHING**		—
2.9 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω.....:		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according to 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 to 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
2.10 (14)	**SCREW TERMINALS**		—
	Separately approved; component list	(See Annex 1)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part of the luminaire	(See Annex 3)	N/A
2.10 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		—
	Separately approved; component list.....:	(See Annex 1)	N/A
	Part of the luminaire.....:	(See Annex 4)	N/A
2.11 (5)	**EXTERNAL AND INTERNAL WIRING**		—
2.11 (5.2)	**Supply connection and external wiring**		**P**
2.11 (5.2.1)	Means of connection.....:	Supply cords	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 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.....:		P
	Nominal cross-sectional area (mm²)..... :		P
	Cables equal to IEC 60227 or IEC 60245		P
2.11 (5.2.3)	Type of attachment, X, Y or Z		P
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:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
	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		P
2.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)..... :		P
	- torque test: torque (Nm)..... :		P
	- displacement ≤ 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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
2.11 (5.2.12)	Looping-in terminals		N/A
2.11 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
2.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
2.11 (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
2.11 (5.3)	**Internal wiring**		**P**
2.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 (mm²)..... :		N/A
	Insulation thickness (mm) ..... :		N/A
	Extra insulation added where necessary		N/A
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm²)..... :	> 0.5 mm^2	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		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
2.11 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
2.11 (5.3.4)	Joints and junctions effectively insulated		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	Wire ends tinned: no cold flow		P
2.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(See Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
2.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		—
2.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starter holders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
2.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.12 (8.2.3.b)	BC lamp holder 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
	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 > 0,5 μF not exceed 50 V 1 min after disconnection		P
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.12 (-)	Parts within celling space provide same degree of protection against electric shock as parts below celling space		P
2.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		—
2.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) specified in 2.14		—
2.13.2 (-)	Luminaire mounted and tested according to Annex B		—
2.13 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according to Annex B	(Lamp used see Annex 2)	—
	Control gear if separate and not supplied	(Control gear used see Annex 2)	—
2.13 (12.3)	**Endurance test**		**P**
	a) mounting- position .....:	Recessed mounting	—
	b) test temperature (°C).....:	35 °C	—
	c) total duration (h) .....:	240 h	—
	d) supply voltage (V).....:	264 V	—
	d) if not equipped with control gear, 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		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
2.13 (12.4)	**Thermal test (normal operation)**	(See Annex 2)	P
2.13 (12.5)	**Thermal test (abnormal operation)**	(See Annex 2)	N/A
2.13 (12.6)	**Thermal test (failed lamp control gear condition):**		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
2.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		N/A
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 .....:		—
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 ☐ No ☐	—
	- manual reset cut-out.....:	Yes ☐ No ☐	—
	- auto reset cut-out.....:	Yes ☐ No ☐	—
	- 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
2.13.3 (-)	Wiring, for connection to the supply, not reach unsafe temperature		N/A
	- measured temperature of the cable (°C) .....:		N/A
2.13. 4(-)	Test for air-handling luminaires under static operating conditions:		N/A
	-Normal operation		N/A
	-Abnormal operation		N/A

2.14 (9)	**RESISTANCE TO DUST AND MOISTURE**		—
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.....:	IP 44	—
	- mounting position during test.....:		—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust- tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire 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)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		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		N/A
	g) no damage of protective shield or glass envelope		N/A
2.14 (9.3)	Humidity test 48 h		P
2.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		—
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)..... :		—
	SELV/PELV		P
	- between current-carrying parts of different polarity:	>100 MΩ	P
	- between current-carrying parts and mounting surface.....:	>100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire.....:	>100 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 .....:		N/A
	Other than SELV/PELV		P
	- between live parts of different polarity.....:	>100 MΩ	P
	- between live parts and mounting surface.....:	>100 MΩ	P
	- between live parts and metal parts.....:	>100 MΩ	P
	- 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:	500 V	P
	- between current-carrying parts and mounting surface.....:	500 V	P
	- between current-carrying parts and metal parts of the luminaire.....:	500 V	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.....:	1480 V	P
	- between live parts and mounting surface.....:	2960 V	P
	- between live parts and metal parts.....:	2960 V	P
	- between live parts of different polarity through action of a switch.....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 ..... :		N/A
2.15 (10.3)	Touch current or protective conductor current (mA).:	Touch current: 0.02 mA	P
2.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		—
2.16 (13.2.1)	Ball-pressure test..... :	See Test Table 2.16 (13.2.1)	P
2.16 (13.3.1)	Needle-flame test (10 s).....:	See Test Table 2.16 (13.3.1)	P
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:	B	>1.5	1.5	11.1B		> 2.5	2.5	11.1A
Working voltage (V)						240 V		—
PTI						< 600 ☒	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)						-		—
Supplementary information: Between L and N before								
Distance 2:	R	>3.0	3.0	11.1B		> 5.0	5.0	11.1A
Working voltage (V)						240 V		—
PTI						< 600 ☒	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)						-		—
Supplementary information: Between live part and accessible								
Distance 3:	R	>3.0	3.0	11.1B		> 5.0	5.0	11.1A
Working voltage (V)						240 V		—
PTI						< 600 ☒	≥ 600 ☐	—
Pulse voltage or U_P if applicable (kV)						-		—
Supplementary information: Between live part and mounting surface								

** 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 ☐	≥ 600 ☐	—

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

Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)								—
Supplementary information:								
Distance 2:								
Working voltage (V).....								—
Frequency if applicable (kHz).....								—
PTI.....					< 600 ☐		≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)								—
Supplementary information:								
Distance 3:								
Working voltage (V).....								—
Frequency if applicable (kHz).....								—
PTI.....					< 600 ☐		≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)								—
Supplementary information:								

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

2.16 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**		**P**
Allowed impression diameter (mm) ……:		2	—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
LED cover	See Annex 1	75	0.8
LED PCB	See Annex 1	125	0.6
Supplementary information:			

2.16 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**				**P**
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
LED PCB	See Annex 1	0	0	0	pass

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			

2.16 (13.3.2)	**TABLE: Resistance to heat and fire - Glow wire tests**				**P**
Object/ Part No./ Material	Manufacturer/ trademark	GWT (°C): 650			Verdict
		t_E (s)	t_I (s)	t_R (s)	
LED cover	See Annex 1	0	0	0	pass
Ignition of the specified layer placed underneath the test specimen (Yes/No).....:					No
Supplementary information:					

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

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

ANNEX 1	**TABLE: Critical components information**					**P**
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
LED Driver	B	OSRAM	HM-T80V300TGA	Input: 110-240V～ 50/60Hz, Output(C.C): 0.3, 54-80VDC，Max.108VDC 24W, ta: 45°C, tc 80°C Independent type	IEC/EN 61347-2-13; IEC/EN 61347-1	CE
LED Chips	C	Luminus	MTXB-2837WB-MXX	If：150mA Vf：3V Ra：80 CCT：3000K/6000K	IEC TR 62778	Test with appliance
LED PCB	D	SHENZHEN NAIPU CIRCUIT TECHNOLOGY CO LTD	LD-6; NP001; NP002; NP003; YSL-L	V-0; 90°C or 110°C	IEC/EN 60598-2-2; IEC/EN 60598-1	Test with appliance &UL

Supplementary information:

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

The codes above have the following meaning:

A- The component is replaceable with another one, also certified, with equivalent characteristics

B- The component is replaceable if authorised by the test house

C- Integrated component tested together with the appliance

D- Alternative component

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

ANNEX 2 a	**TABLE: Thermal tests of Section 12**		P
	Type reference.....:	BDL-DL-07	—
	Lamp used.....:	LEDs	—
	Lamp control gear used.....:	-	—
	Mounting position of luminaire.....:	Recessed mounting	—
	Supply wattage (W).....:	6 W	—
	Supply current (A)..... :		—
	Temperatures in test 1 – 4 below are corrected for ta (°C) .....:	25 °C	—
	- abnormal operating mode.....:	-	—
2.13 (12.4)	- test 1: rated voltage .....:	-	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1.06×240V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	-	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	-	—
2.13 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	-	—

Temperature measurements (°C)

Part	Ambient	**Cl. 12.4 – normal**				**Cl. 12.5 – abnormal**	
		test 1	test 2	test 3	limit	test 4	limit
LED driver tc	40	-	72.3	-	80	-	-
Supply cord	40	-	43.5	-	90	-	-
Internal wire	40	-	44.1	-	90	-	-
LED PCB	40	-	89.5	-	Cl.13.1	-	-
Mounting surface	40	-	67.3	-	90	-	-
Test recess	40	-	49.7	-	90	-	-

Supplementary information:

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

ANNEX 3	**Screw terminals (part of the luminaire)**		N/A
(14)	**SCREW TERMINALS**		N/A
(14.2)	Type of terminal..... :		—
	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 (mm²)..... :		—
(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

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

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

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

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

Supplementary information:

Attachment No.1 IEC60598_2_ 2F ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT
IEC 60598-2-2
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
LUMINAIRES
PART 2: PARTICULAR REQUIREMENTS
SECTION 2: RECESSED LUMINAIRES

Differences according to.....:	EN 60598-2-2:2012 used in conjunction with EN IEC 60598-1:2021 + A11:2022
TRF template used.....:	IECEE OD-2020-F2:2020, Ed. 1.1
Attachment Form No.....:	EU_GD_IEC60598_2_2G
Attachment Originator.....:	UL(Demko)
Master Attachment.....:	2022-05-23

	CENELEC COMMON MODIFICATIONS (EN)		-
2.6 (3)	**MARKING**		P
2.6 (3.2.12)	Note 4 deleted		P
2.7 (4)	**CONSTRUCTION**		-
2.7 (4.11.6)	Electro-mechanical contact systems: electric strength test at 1 500 V		N/A
2.11 (5)	**EXTERNAL AND INTERNAL WIRING**		P
2.11 (5.2.2)	Cables equal to EN 50525 (all parts)		P
	Paragraph 2 deleted		N/A
	Replace table 5.1 – Supply cord		P
2.13 (12)	**ENDURANCE TESTS AND THERMAL TESTS**		-
2.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		-
(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

Attachment No.1 IEC60598_2_ 2F ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings *(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)* 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

Attachment No.2 EN IEC 62031

Clause	Requirement + Test	Result - Remark	Verdict
13 (14)	**FAULT CONDITIONS**		**P**
- (14.1)	In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		N/A
	When operated under fault conditions the LED module:		N/A
	- does not emit flames or molten material		N/A
	- does not produce flammable gases		N/A
	- protection against accidental contact not impaired		N/A
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected		N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)		N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.3)	Short-circuit or interruption of semiconductor devices		N/A
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.5)	Short-circuit across electrolytic capacitors		N/A
- (14.6)	After the tests has been carried out on three samples:		N/A
	The insulation resistance ≥ 1 MΩ ..... :		N/A
	No flammable gases		N/A
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
- (14.7)	Relevant fault condition tests with high-power supply		N/A
13.2	**Overpower condition**		**P**
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P

Attachment No.3 IEC TR 62778

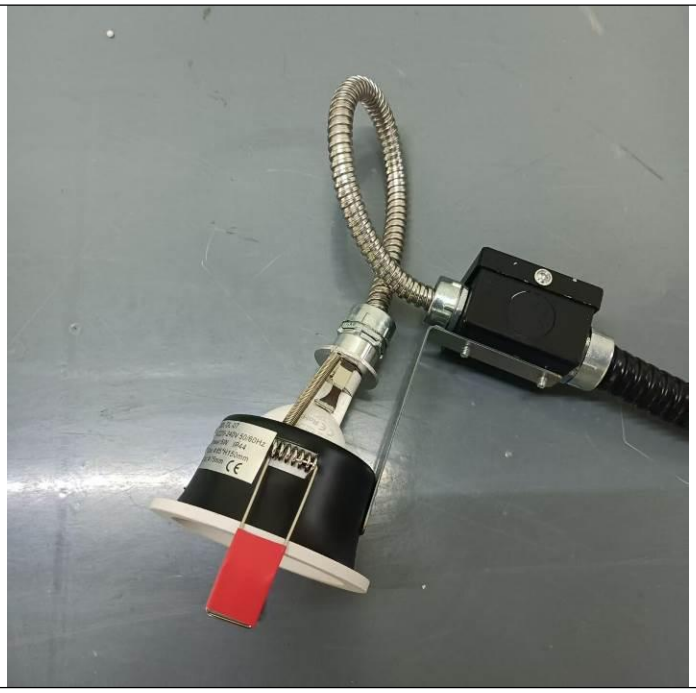
Clause	Requirement + Test	Result - Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								—
	Photobiological safety of lamps and lamp systems (LED bulb emit white light)								P
Risk	Action spectrum	Symbol	Units	Emission limits					
				Exempt	Result	Low risk	Result	Mod risk	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$mW \cdot m^{-2}$	0,001	1.002E-06	0.003	--	--	--
Near UV	--	E_{UVA}	$W \cdot m^{-2}$	0,33	3.455E-04	33	--	--	--
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	3.087E+00	10000	--	4000000	--
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	1,0*	--	--	--	400	--
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	1.006E+03	1.011E+06	--	71000/α	--
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	--				
					--				
IR radiation, eye	--	E_{IR}	$W \cdot m^{-2}$	6000/α 0,011≤ α ≤ 0,1	0.000E+00	570	--	3200	--
* Small source defined as one with α < 0,011radian. Averaging field of view at 10000 s is 0.1radian. ** Involves evaluation of non-GLS source NOTE 1. Angular subtense of apparent source: α=77.53 mrad 2. Measure distance is 200mm.									
Blue light	B(λ)	LB	$W \cdot m^{-2} \cdot sr^{-1}$	100	3.746E+00	10000	--	4000000	--
NOTE Angular subtense of apparent source: α= 77.53 mrad. Measure distance 200mm.									

Attachment No.4 **Product Photos**

Details of: Fig. 1

Details of: Fig. 2



Attachment No.4 **Product Photos**

Details of: Fig. 3

Details of: Fig. 4

Attachment No.4 **Product Photos**

Details of: Fig. 5

- End of test report –