	Test Report issued under the responsibility of: **NCB TÜV SÜD PSB Pte. Ltd.** **15 International Business Park** **TÜV SÜD @ IBP** **Singapore 609937**	PSB Singapore

TEST REPORT
IEC 60598-2-2
Part 2: Particular requirements
Section 2: Recessed luminaires

Report Number. .....:	085-220236601-000
Date of issue .....:	2022-09-23
Total number of pages .....:	38 (excluding attachments)
Name of Testing Laboratory preparing the Report .....:	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
Applicant's name.....:	S.I. SPOTLIGHT INTERNATIONAL LTD
Address .....:	45 kibutz Galuyot St. Tel-Aviv, Israel
Test specification:	
Standard .....:	IEC 60598-2-2:2011 used in conjunction with IEC 60598-1:2020
Test procedure.....:	CB Scheme
Non-standard test method.....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC60598_2_2G
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF .....:	Dated 2021-08-20

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	LED downlight
Trade Mark(s)..... :	N/A
Manufacturer ..... :	Room 301, Factory Building, Fangqun Food Company, North Lvke Road, Chuangyeer Road, Xingdong Community, Xin 'an Street, Baoan District, Shenzhen
Model/Type reference ..... :	NIC M
Ratings ..... :	220-240V~, 50/60Hz, Class II, IP65. Other details see 'General product information'

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch	
Testing location/ address.....:		5F&8F East, Communication Building, No. 163 Pingyun Road, Huangpu Ave. West, Guangzhou 501656 China	
Tested by (name, function, signature).....:		Felix Chen Project Handler	
Approved by (name, function, signature)...:		Leo Wang Designated Reviewer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
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 1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES between IEC 60598-2-2:2020 used in conjunction with IEC 60598-1:2020 and EN IEC 60598-2-2:2021 used in conjunction with EN IEC 60598-1:2021+A11:2022 (2 pages);;

Attachment 2: Requirements of IEC/TR 62471:2008 (10 pages);

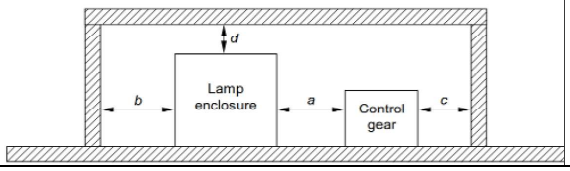
Attachment 3: EN 61347-2-13:2014+A1:2017and EN 61347-1:2015+A1:2021(25pages).

Photo documentation (24 pages)

Summary of testing:

Tests performed (name of test and test clause):

1. 'NIC M' have been fully tested.
2. The tested samples fulfilled the requirements of specified standards:
   IEC 60598-1:2020;
   IEC 60598-2-2:2011.
3. Remark: the sides and top of the box shall be spaced from the luminaire in accordance with the manufacturer's instructions supplied with the luminaires: a=b=c=d=50mm.



Testing location:

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch

5F&8F East, Communication Building, No. 163 Pingyun Road, Huangpu Ave. West, Guangzhou 501656 China

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

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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").

☒ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

ITC-TT_W_09.05E, 2020-11-16, Interpretation and Documentation of Measurement Results.

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.

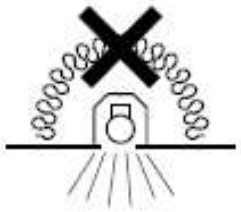
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing

Copy of marking plate:

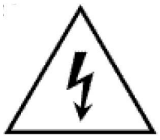
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Model: NIC M
Input: 220-240V~ 50/60Hz
Power: 12W

LA LUCE LIGHTING
MADE IN CHINA



Attached on external surface



Attached near lamp cover

Remark:

1. The marking labels for other models are identical as above expect the model name and power.
2. The height of the letters is not less than 2mm.
3. The height of the WEEE symbol is less than 7mm.
4. The height of symbol ‘caution, electric shock risk’ shall not be less than 15mm.
5. The height of other symbols shall not be less than 5mm.

Test item particulars .....:	Recessed luminaires
Classification of installation and use .....:	Class II indoor use only
Supply Connection.....:	Connecting leads
.....:	
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 .....:	2022-08-21
Date (s) of performance of tests.....:	2022-08-21 to 2022-09-23

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 and other remarks:

1. The products are Class II recessed luminaires, for indoor use only.
2. The models can be divided to two series according to the circuit design. One is operated with independent SELV driver, the other is operated with mains input LED modules.
3. Rated voltage and frequency: 220-240V~, 50/60Hz, ta=25°C. For more details, see model list below.

Model list:

Model	Rated voltage and rated frequency	Power (W)	LED driver	LED module	Blue light risk group
NIC M	220-240V~, 50/60Hz	12	CTL21026L	K-1507S	RG1

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 ☐ No ☒	—
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 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	—
2.5 (2.3)	Degree of protection ..... :	IP65	—
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		
	Position of the marking		
	Format of symbols/text		
2.6 (3.3)	Additional information		
	Language of instructions		
2.6 (3.3.1)	Combination luminaires		
2.6 (3.3.2)	Nominal frequency in Hz		
2.6 (3.3.3)	Operating temperature		
2.6 (3.3.5)	Wiring diagram		
2.6 (3.3.6)	Special conditions		
2.6 (3.3.7)	Metal halide lamp luminaire – warning		
2.6 (3.3.8)	Limitation for semi-luminaires		
2.6 (3.3.9)	Power factor and supply current		
2.6 (3.3.10)	Suitability for use indoors		
2.6 (3.3.11)	Luminaires with remote control		
2.6 (3.3.12)	Clip-mounted luminaire – warning		
2.6 (3.3.13)	Specifications of protective shields		
2.6 (3.3.14)	Symbol for nature of supply	~	

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.6 (3.3.15)	Rated current of socket outlet		
2.6 (3.3.16)	Rough service luminaire		
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable		
2.6 (3.3.19)	Protective conductor current in instruction if applicable		
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		
2.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided		
2.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		
2.6 (3.3.24)	If not supplied with terminal block, information on the packaging		
2.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		
2.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		
2.6 (3.4)	Test with water	15s	
	Test with hexane	15s	
	Legible after test		
	Label attached		

2.7 (4)	**CONSTRUCTION**		
2.7 (4.2)	Components replaceable without difficulty		
2.7 (4.3)	Wireways smooth and free from sharp edges		
2.7 (4.4)	**Lampholders**		
2.7 (4.4.1)	Integral lampholder		
2.7 (4.4.2)	Wiring connection		
2.7 (4.4.3)	Lampholder for end-to-end mounting		
2.7 (4.4.4)	Positioning		
	- pressure test (N) .....:		
	After test the lampholder comply with relevant standard sheets and show no damage		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		
	- bending test (N) ..... :		
	After test the lampholder have not moved from its position and show no permanent deformation		
2.7 (4.4.5)	Peak pulse voltage		
2.7 (4.4.6)	Centre contact		
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		
2.7 (4.4.8)	Lamp connectors		
2.7 (4.4.9)	Caps and bases correctly used		
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		
2.7 (4.5)	**Starter holders**		
	Starter holder in luminaires other than class II		
	Starter holder class II construction		
2.7 (4.6)	**Terminal blocks**		
	Tails		
	Unsecured blocks		
2.7 (4.7)	**Terminals and supply connections**		
2.7 (4.7.1)	Contact to metal parts		
2.7 (4.7.2)	Test 8 mm live conductor		
	Test 8 mm earth conductor		
2.7 (4.7.3)	Terminals for supply conductors		
2.7 (4.7.3.1)	Welded method and material		
	- stranded or solid conductor		
	- spot welding		
	- welding between wires		
	- Type Z attachment		
	- mechanical test according to 15.6.2		
	- electrical test according to 15.6.3		
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		
2.7 (4.7.4)	Terminals other than supply connection		
2.7 (4.7.5)	Heat-resistant wiring/sleeves		
2.7 (4.7.6)	Multi-pole plug		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- test at 30 N		
2.7 (4.8)	**Switches**		
	- adequate rating		
	- adequate fixing		
	- polarized supply		
	- compliance with IEC 61058-1 for electronic switches		
2.7 (4.9)	**Insulating lining and sleeves**		
2.7 (4.9.1)	Retainment		
	Method of fixing ..... :	Heat shrinkable	
2.7 (4.9.2)	Insulated linings and sleeves:		
	Resistant to a temperature > 20 °C to the wire temperature or		
	a) & c) Insulation resistance and electric strength		
	b) Ageing test. Temperature (°C) ..... :		
2.7 (4.10)	**Double or reinforced insulation**		
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		
	Safe installation fixed luminaires		
	Capacitors and switches		
2.7 (4.10.2)	Assembly gaps:		
	- not coincidental		
	- no straight access with test probe		
2.7 (4.10.3)	Retainment of insulation:		
	- fixed		
	- unable to be replaced; luminaire inoperative		
	- sleeves retained in position		
	- lining in lampholder		
2.7 (4.10.4)	Protective impedance device		
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		
	Capacitors comply with IEC 60384-14		
	Resistors comply with test (a) in 14.2 of IEC 60065		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.11)	**Electrical connections and current-carrying parts**		
2.7 (4.11.1)	Contact pressure		
2.7 (4.11.2)	Screws:		
	- self-tapping screws		
	- thread-cutting screws		
2.7 (4.11.3)	Screw locking:		
	- spring washer		
	- rivets		
2.7 (4.11.4)	Material of current-carrying parts		
2.7 (4.11.5)	No contact to wood or mounting surface		
2.7 (4.11.6)	Electro-mechanical contact systems		
2.7 (4.12)	**Screws and connections (mechanical) and glands**		
2.7 (4.12.1)	Screws not made of soft metal		
	Screws of insulating material		
	Torque test: torque (Nm); part.....:	Fix enclosure: 0.5Nm;	
	Torque test: torque (Nm); part.....:	Fix bracket:0.4Nm	
	Torque test: torque (Nm); part.....:		
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		
2.7 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm) .....:	6.25Nm	
	- lampholder; torque (Nm) .....:		
	- push-button switches; torque 0,8 Nm .....:		
2.7 (4.12.5)	Screwed glands; force (Nm).....:		
2.7 (4.13)	**Mechanical strength**		
2.7 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm) .....:		
	- other parts; energy (Nm).....:	0.35Nm	
	1) live parts		
	2) linings		
	3) protection		
	4) covers		
2.7 (4.13.2)	Metal parts have adequate mechanical strength		
2.7 (4.13.3)	Straight test finger		
2.7 (4.13.4)	Rough service luminaires		
	- IP54 or higher		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	a) fixed		
	b) hand-held		
	c) delivered with a stand		
	d) for temporary installations and suitable for mounting on a stand		
2.7 (4.13.6)	Tumbling barrel		
2.7 (4.14)	**Suspensions, fixings and means of adjusting**		
2.7 (4.14.1)	Mechanical load:		
	A) four times the weight	0.256×4=1.024	
	B) torque 2,5 Nm		
	C) bracket arm; bending moment (Nm)..... :		
	D) load track-mounted luminaires		
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		
	Metal rod. diameter (mm) ..... :		
	Fixed luminaire or independent control gear without fixing devices		
2.7 (4.14.2)	Load to flexible cables		
	Mass (kg) ..... :		
	Stress in conductors (N/mm²) ..... :		
	Mass (kg) of semi-luminaire ..... :		
	Bending moment (Nm) of semi-luminaire ..... :		
2.7 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles..... :		
	- strands broken..... :		
	- electric strength test afterwards		
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		
2.7 (4.14.5)	Guide pulleys		
2.7 (4.14.6)	Strain on socket-outlets		
2.7 (4.15)	**Flammable materials**		
	- glow-wire test 650°C ..... :	See Test Table 2.16 (13.3.2)	
	- spacing ≥30 mm		
	- screen withstanding test of 13.3.1		
	- screen dimensions		
	- no fiercely burning material		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	- thermal protection		
	- electronic circuits exempted		
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		
	b) temperature sensing control		
	c) surface temperature		
2.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		
	No lamp control gear ..... :	(compliance with Section 12)	
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		
2.7 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		
	- spacing 10 mm		
2.7 (4.16.2)	Thermal protection:		
	- in lamp control gear		
	- external		
	- fixed position		
	- temperature marked lamp control gear		
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	
2.7 (4.17)	**Drain holes**		
	Clearance at least 5 mm		
2.7 (4.18)	**Resistance to corrosion**		
2.7 (4.18.1)	- rust-resistance		
2.7 (4.18.2)	- season cracking in copper		
2.7 (4.18.3)	- corrosion of aluminium		
2.7 (4.19)	Ignitors compatible with ballast		
2.7 (4.20)	Rough service vibration		
2.7 (4.21)	**Protective shield**		
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		
	Shield of glass if tungsten halogen lamps		
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		
2.7 (4.21.3)	No direct path		
2.7 (4.21.4)	Impact test on shield		
	Glow-wire test on lamp compartment..... :	See Test Table 2.16 (13.3.2)	

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.22)	Attachments to lamps not cause overheating or damage		
2.7 (4.23)	Semi-luminaires comply Class II		
2.7 (4.24)	**Photobiological hazards**		
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		
2.7 (4.24.2)	Retinal blue light hazard		
	Class of risk group assessed according to IEC/TR 62778 ..... :	See model list	
	Luminaires with E_{thr} :		
	a) Fixed luminaires		
	- distance x m, borderline between RG1 and RG2 .. :		
	- marking and instruction according 3.2.23		
	b) Portable and handheld luminaires		
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		
	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		
2.7 (4.25)	**Mechanical hazard**		
	No sharp point or edges		
2.7 (4.26)	**Short-circuit protection**		
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV or PELV parts		
2.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		
	Test chain not melt through		
	Test sample not exceed values of Table 12.1 and 12.2		
2.7 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		
	Test according Annex V		
	Pull test of terminal fixing (20 N)		
	After test, resistance < 0,05 Ω		
	Pull test of mechanical connection (50 N)		
	After test, resistance < 0,05 Ω		
	Voltage drop test, resistance < 0,05 Ω		
2.7 (4.28)	**Fixing of thermal sensing control**		
	Not plug-in or easily replaceable type		
	Reliably kept in position		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		
	Not outside the luminaire enclosure		
	Test of adhesive fixing:		
	Max. temperature on adhesive material (°C) .....:		
	100 cycles between t min and t max		
	Temperature sensing control still in position		
2.7 (4.29)	**Luminaires with non-replaceable light source**		
	Not possible to replace light source		
	Live part not accessible after parts have been opened by hand or tools		
2.7 (4.30)	**Luminaires with non-user replaceable light source**		
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		
	One fixing means requiring the use of a tool for its removal		
2.7 (4.31)	**Insulation between circuits**		
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		
	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		
2.7 (4.31.1)	SELV or PELV circuits		
	Used SELV or PELV source		
	Voltage ≤ ELV		
	PELV circuit shall have one pole connected to functional earth		
	The connection between PELV and earth shall comply with functional earth		
	Insulating of SELV or PELV circuits from LV supply		
	Insulating of SELV or PELV circuits from other non SELV circuits		
	Insulating of SELV or PELV circuits from FELV		
	Insulating of SELV or PELV circuits from other SELV or PELV circuits		
	SELV or PELV circuits insulated from accessible parts according Table X.1		
	Plugs not able to make any electrical contact socket-outlets of other voltage systems		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		
	Plugs and socket-outlets does not have protective conductor contact		
2.7 (4.31.2)	FELV circuits		
	Used FELV source		
	Voltage ≤ ELV		
	Insulating of FELV circuits from LV supply		
	FELV circuits insulated from accessible parts according Table X.1		
	Plugs not able to make any electrical contact socket-outlets of other voltage systems		
	Socket outlets does not admit plugs of other voltage systems		
	Socket-outlets does not have protective conductor contact		
2.7 (4.31.3)	Other circuits		
	Other circuits insulated from accessible parts according Table X.1		
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		
	- conductive parts are connected together		
	- test according 7.2.3		
	- conductive part not cause an electric shock in case of an insulation fault		
	- equipotential bonding in master/slave applications		
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		
	- slave luminaire constructed as class I		
2.7 (4.32)	**Overvoltage protective devices**		
	Comply with IEC 61643-11		
	External to controlgear and connected to earth:		
	- only in fixed luminaires		
	- only connected to protective earth		
2.7(4.33)	Luminaire powered via information technology communication cabling		
	Luminaire shall fulfil the requirement for Class III		
	Rated voltage of luminaire shall be within range of ES1, not exceed maximum voltage rated to used connector		

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	The luminaire shall be designed in line with the limits of the electrical parameters of a PSE.		
	No hazard with 130% rated input voltage minimum 7.5VDC for circuit greater than 5VDC		
	No hazard with 150% rated input voltage for circuit equal to or less than 5VDC		
2.7(4.34)	Electromagnetic field (EMF)		
	Compliance to IEC 62493:2015		
2.7(4.35)	Protection against moving fan blades		
	Fan blades not accessible when installed and wired as in normal use and replacing light sources or components		
	This test is not necessary for fans have leading edges and tips rounded with a radius of not less than 0,5mm and:		
	Hardness less than D60 Shore, or		
	Peripheral speed less than 15m/s supplied with rated voltage, or		
	Fan has input power not exceeding 2W supplied with rated voltage.		
2.7(4.36)	Track-mounted luminaires		
	Tested according to Annex A of IEC 60570		

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 Annex U		
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		
2.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	
	Creepage distances for frequency over 30 kHz:		
	- 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	
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	
2.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	
	Clearances distances for frequency over 30 kHz:		
	- Controlgear marked with U_P	See Test Table 2.8 (11.2) II	
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	

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

2.10 (14)	**SCREW TERMINALS**		
	Separately approved; component list	(see Annex 1)	
	Part of the luminaire	(see Annex 3)	

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Clause	Requirement + Test	Result - Remark	Verdict

2.10 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		
	Separately approved; component list ..... :	(see Annex 1)	
	Part of the luminaire ..... :	(see Annex 4)	

2.11 (5)	**EXTERNAL AND INTERNAL WIRING**		
2.11 (5.2)	**Supply connection and external wiring**		
2.11 (5.2.1)	Means of connection ..... :	Connecting leads	
	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		
2.11 (5.2.2)	Type of cable ..... :	(see Annex 1)	
	Nominal cross-sectional area (mm²) ..... :	(see Annex 1)	
	Cables equal to IEC 60227 or IEC 60245	IEC 60227	
2.11 (5.2.3)	Type of attachment, X, Y or Z	Type Y	
2.11 (5.2.5)	Type Z not connected to screws		
2.11 (5.2.6)	Cable entries:		
	- suitable for introduction		
	- adequate degree of protection		
2.11 (5.2.7)	Cable entries through rigid material have rounded edges		
2.11 (5.2.8)	Insulating bushings:		
	- suitably fixed		
	- material in bushings		
	- material not likely to deteriorate		
	- tubes or guards made of insulating material		
2.11 (5.2.9)	Locking of screwed bushings		
2.11 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		
	- clear how to be effective		
	- no mechanical or thermal stress		
	- no tying of cables into knots etc.		
	- insulating material or lining		
2.11 (5.2.10.1)	Cord anchorage for type X attachment:		
	a) at least one part fixed		

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Clause	Requirement + Test	Result - Remark	Verdict
	b) types of cable		
	c) no damaging of the cable		
	d) whole cable can be mounted		
	e) no touching of clamping screws		
	f) metal screw not directly on cable		
	g) replacement without special tool		
	Glands not used as anchorage		
	Labyrinth type anchorages		
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		
2.11 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		
	- pull test: 25 times; pull (N):	60	
	- torque test: torque (Nm):	0.15	
	- displacement ≤ 2 mm		
	- no movement of conductors		
	- no damage of cable or cord		
	- function independent of electrical connection		
2.11 (5.2.10.4)	Exemption from cord anchorage test in 5.2.10.3 if maximum current 2A, including short circuit current.		
	Prior to the operation of an overcurrent limiting device and the following conditions and test requirements are met		
	Ordinary SELV Class III luminaire at voltage not exceeding 25Vrms or 60VDC	For 600056 and 600057	
	Ordinary PELV Class III luminaire at voltage not exceeding 12Vrms or 30VDC		
	Other than ordinary Class III luminaire at voltage not exceeding 12Vrms or 30VDC		
	Pull test 30N for 1min		
2.11 (5.2.11)	External wiring passing into luminaire		
2.11 (5.2.12)	Looping-in terminals		
2.11 (5.2.13)	Wire ends not tinned		
	Wire ends tinned: no cold flow		

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Clause	Requirement + Test	Result - Remark	Verdict
2.11 (5.2.14)	Mains plug same protection		
	Class III luminaire plug		
	No unsafe compatibility		
1.10 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		
2.11 (5.2.16)	Appliance inlets (IEC 60320)		
	Installation couplers (IEC 61535)		
	For appliance inlet or connector systems according to IEC 61984, additional requirements apply:		
	a) Polarization		
	b) Protection against electric shock		
	c) Mechanical locking		
	d) Early contact making		
	e) Protection against short circuit poles		
	f) Cable Clamp		
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		
2.11 (5.2.18)	Used plug in accordance with		
	- IEC 60083		
	- other standard		
2.11 (5.3)	**Internal wiring**		
2.11 (5.3.1)	Internal wiring of suitable size and type		
	Through wiring		
	- not delivered/ mounting instruction		
	- factory assembled		
	- socket outlet loaded (A) .....:		
	- temperatures .....:	(see Annex 2)	
	Green-yellow for earth only		
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm²).....:	(see Annex 1)	
	Insulation thickness (mm) .....:	>0.5	
	Extra insulation added where necessary		
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		

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Clause	Requirement + Test	Result - Remark	Verdict
	Cross-sectional area (mm²)..... :	(see Annex 1)	
2.11 (5.3.1.3)	Double or reinforced insulation for class II		
2.11 (5.3.1.4)	Conductors without insulation		
2.11 (5.3.1.5)	SELV current-carrying parts		
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		
2.11 (5.3.2)	Sharp edges etc.		
	No moving parts of switches etc.		
	Joints, raising/lowering devices		
	Telescopic tubes etc.		
	No twisting over 360°		
2.11 (5.3.3)	Insulating bushings:		
	- suitable fixed		
	- material in bushings		
	- material not likely to deteriorate		
	- cables with protective sheath		
2.11 (5.3.4)	Joints and junctions effectively insulated		
2.11 (5.3.5)	Strain on internal wiring		
2.11 (5.3.6)	Wire carriers		
2.11 (5.3.7)	Wire ends not tinned		
	Wire ends tinned: no cold flow		
2.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	
	No damage to luminaire wiring after test		

2.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		
2.12 (8.2.1)	Live parts not accessible		
	Basic insulated parts not used on the outer surface without appropriate protection		
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		

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Clause	Requirement + Test	Result - Remark	Verdict
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		
	Basic insulation only accessible under lamp or starter replacement		
	Protection in any position		
	Double-ended tungsten filament lamp		
	Insulation lacquer not reliable		
	Double-ended high-pressure discharge lamp		
	Relevant warning according to 3.2.18 fitted to the luminaire		
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		
2.12 (8.2.3.a)	Class II luminaire:		
	- basic insulated metal parts not accessible during starter or lamp replacement		
	- basic insulation not accessible other than during starter or lamp replacement		
	- glass protective shields not used as supplementary insulation		
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		
2.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		
	Ordinary luminaire:		
	- voltage under load (V).....:		
	- no-load voltage (V).....:		
	- touch current if applicable (mA) .....:		
	One conductive part insulated if required		
	Other than ordinary luminaire:		
	- nominal voltage (V) .....:		
	Class III luminaire only for connection to SELV		
	Class III luminaire not provided with means for protective earthing		
2.12 (8.2.3.d)	PELV circuit may have exposed current carrying parts under the following conditions:		
	For ordinary luminaires voltage not exceed 12 VRMS or 30VDC (under load and no load)		

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Clause	Requirement + Test	Result - Remark	Verdict
	For other than ordinary, voltage nor exceed 12 VRMS or 30VDC (under load and no load)		
	If voltage exceed, only the earthed pole may be accessible, other pole shall be insulated accordance with 10.2.2		
	Class III luminaires are accepted by connection to SELV source or PELV source		
2.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		
2.12 (8.2.6)	Covers reliably secured		
2.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection	Max. 1.8V (after 1s)	
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		
2.12 (-)	Parts within the celling space provide same degree of protection against electric shock as parts below the celling space		

2.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		
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		
2.13 (12.2)	**Selection of lamps and ballasts**		
	Lamp used according Annex B	(Lamp used see Annex 2)	
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	
2.13 (12.3)	**Endurance test**		
	a) mounting-position .....:	As normal use	
	b) test temperature (°C).....:	35	
	c) total duration (h) .....:	240	
	d) supply voltage (V) .....:	264	
	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:		
	- no part unserviceable		

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Clause	Requirement + Test	Result - Remark	Verdict
	- luminaire not unsafe		
	- no damage to track system		
	- marking legible		
	- no cracks, deformation etc.		
2.13 (12.4)	**Thermal test (normal operation)**	(see Annex 2)	
2.13 (12.5)	**Thermal test (abnormal operation)**	(see Annex 2)	
2.13 (12.6)	**Thermal test (failed lamp control gear condition):**		
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		
	- measured winding temperature (°C): at 1,1 Un ....:		
	- measured mounting surface temperature (°C) at 1,1 Un .....:		
	- calculated mounting surface temperature (°C) .....:		
	- track-mounted luminaires		
2.13 (12.6.2)	Temperature sensing control		
	- case of abnormal conditions .....:		
	- thermal link		
	- manual reset cut-out		
	- auto reset cut-out		
	- measured mounting surface temperature (°C) .....:		
	- track-mounted luminaires		
2.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		
2.13 (12.7.1)	Luminaire without temperature sensing control		
2.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		
	Test method 12.7.1.1 or Annex W .....:		
	Test according to 12.7.1.1:		
	- case of abnormal conditions .....:		
	- Ballast failure at supply voltage (V) .....:		
	- Components retained in place after the test		
	- Test with standard test finger after the test		
	Test according to Annex W:		
	- case of abnormal conditions .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- measured winding temperature (°C): at 1,1 Un ..... :		
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		
	- calculated temperature of fixing point/exposed part (°C) ..... :		
	Ball-pressure test..... :	See Test Table 2.16 (13.2.1)	
2.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		
	- 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)	
2.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		
	- case of abnormal conditions ..... :		
	- Components retained in place after the test		
	- Test with standard test finger after the test		
2.13 (12.7.2)	Luminaire with temperature sensing control		
	- 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)	
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		
	- measured temperature of the cable (°C) ..... :	(see Annex 2)	

2.14 (9)	**RESISTANCE TO DUST AND MOISTURE**	
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.13	
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:	
	- classification according to IP..... :	IP65
	- mounting position during test ..... :	As normal use

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Clause	Requirement + Test	Result - Remark	Verdict
	- fixing screws tightened; torque (Nm) ..... :	2/3 value of clause 4.12	—
	- tests according to clauses..... :	9.2.0	—
	- electric strength test afterwards		
	a) no deposit in dust-proof luminaire		
	b) no talcum in dust-tight luminaire		
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		
	c.1) For luminaires without drain holes – no water entry		
	c.2) For luminaires with drain holes – no hazardous water entry		
	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		
	e) no contact with live parts (IP 2X)		
	e) no entry into enclosure (IP 3X and IP 4X)		
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		
	f) no trace of water on part of lamp requiring protection from splashing water		
	g) no damage of protective shield or glass envelope		
2.14 (9.3)	Humidity test 48 h	25°C, 93%	

2.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
2.15 (10.2.1)	Insulation resistance test		
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø ..... :	Metal foil	
	Insulation resistance (MΩ) ..... :		
	SELV/PELV		
	- between current-carrying parts of different polarity ..... :		
	- between current-carrying parts and mounting surface..... :	>100 MΩ	
	- between current-carrying parts and metal parts of the luminaire..... :	>100 MΩ	
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	>100 MΩ	

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 .....:		
	Other than SELV/PELV		
	- between live parts of different polarity .....:		
	- between live parts and mounting surface .....:		
	- between live parts and metal parts .....:		
	- between live parts of different polarity through action of a switch.....:		
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		
	- Insulation bushings as described in Section 5 .....:		
2.15 (10.2.2)	Electric strength test		
	Dummy lamp		
	Luminaires with ignitors after 24 h test		
	Luminaires with manual ignitors		
	Test voltage (V).....:		
	SELV/PELV		
	- between current-carrying parts of different polarity .....:		
	- between current-carrying parts and mounting surface.....:		
	- between current-carrying parts and metal parts of the luminaire.....:		
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		
	- Insulation bushings as described in Section 5 .....:		
	Other than SELV/PELV		
	- between live parts of different polarity .....:		
	- between live parts and mounting surface .....:		
	- between live parts and metal parts .....:		
	- between live parts of different polarity through action of a switch.....:		
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		
	- Insulation bushings as described in Section 5 .....:		
2.15 (10.3)	Touch current or protective conductor current (mA).:		

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Clause	Requirement + Test	Result - Remark	Verdict

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)	
2.16 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 2.16 (13.3.1)	
2.16 (13.3.2)	Glow-wire test (650°C) ..... :	See Test Table 2.16 (13.3.2)	
2.16 (13.4)	Proof tracking test (IEC 60112)..... :	See Test Table 2.16 (13.4)	

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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	3.6	1.5	11.1.B	3.6	2.5	11.1.A
Working voltage (V) .....:					240		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between L and N before fuse (for models using DOB-6W-D27.5)							
Distance 2:	B	3.2	1.5	11.1.B	3.2	2.5	11.1.A
Working voltage (V) .....:					240		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between two pins of fuse (for models using DOB-6W-D27.5)							
Distance 3:	R	5.4	3.0	11.1.B	5.4	5.0	11.1.A
Working voltage (V) .....:					240		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between live parts and enclosure (for models using DOB-6W-D27.5.							
Distance 4:	B	Certified LED driver	1.5	11.1.B	Certified LED driver	2.5	11.1.A
Working voltage (V) .....:					240		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between different polarity (for other models)							
Distance 5:	R	Certified LED driver	3.0	11.1.B	Certified LED driver	5.0	11.1.A
Working voltage (V) .....:					240		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between live parts and enclosure (for other models).							
Distance 6:	B	2.0	0.2	11.1.B	2.0	1.32	11.1.A
Working voltage (V) .....:					80		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—

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Clause	Requirement + Test	Result - Remark	Verdict

Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between SELV parts and enclosure (for models using LF-GIR009YS series and LF-GIR013 series).							
Distance 7:	B	No limit	No limit	11.1.B	No limit	No limit	11.1.A
Working voltage (V) .....:					55		—
PTI .....:					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					--		—
Supplementary information: between SELV parts and enclosure (for other models).							

** 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 ☐		—
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:							

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

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Clause	Requirement + Test	Result - Remark	Verdict

2.16 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**		**N/A**
Allowed impression diameter (mm) .....:			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Supplementary information: N/A			

2.16 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**				**N/A**
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
	(see Annex 1)				
	(see Annex 1)				
	(see Annex 1)				
Supplementary information: N/A					

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

2.16 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**	**P**

Glow wire temperature .....:	650°C	—

Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Lamp cover	(see Annex 1)	No	0	P
LED bracket	(see Annex 1)	No	0	P
reflector	(see Annex 1)	No	0	P

Supplementary information: N/A

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: N/A

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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)]**
Supply cord	B	Zhongshan Henglan Boyi Electrical Appliance Factory	H03VVH2-F	2x0.75mm^2	EN 50525-2-21	VDE (40036714)*
LED driver	B	Lifud Technology Co., Ltd	LF-GIR003YS0700H	Input: 220-240V~, 50/60Hz; output: 2-4VDC, 700mA, Max. 16V, SELV; independent, Class II, IP20, ta=50°C, tc=75°C	IEC 61347-1 IEC 61347-2-13	CB NL-77189
Lead wire to LED module	B	Guangdong Jiaqixing Electric Tech Co., Ltd.	JQX308	300/500V, 20AWG, 180°C, double-insulated	VDE 0250 Teil 106	VDE (40035706)*
LED module	B	Bridge,Inc.	LK1507	36-39Vdc, 24W	IEC 62031 IEC TR 62778	Tested with appliance#

Supplementary information:

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

*License available upon request

#Please refer summary of testing in TRF for the test standard publication year

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

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	**TABLE: Thermal tests of Section 12**		P
	Type reference ..... :	NIC M	—
	Lamp used ..... :	LED module	—
	Lamp control gear used ..... :	--	—
	Mounting position of luminaire ..... :	As normal use	—
	Supply wattage (W)..... :	12W	—
	Supply current (A) ..... :		—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode..... :	--	—
1.12 (12.4)	- test 1: rated voltage ..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1.06Un=254.4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :		—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord (clamped)	25	--		--	75	--	--
Tc of LED driver	25	--		--	Ref.	--	--
Lead wire to LED module	25	--		--	180	--	--
LED module	25	--		--	Ref.	--	--
Mounting surface	25	--		--	90	--	--
Lighted surface (10cm)	25	--		--	90	--	--
Supplementary information: during abnormal condition, temperature is not higher than normal condition.							

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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)... :		N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) ..... :		N/A
	Torque (Nm)..... :		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)..... :		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A

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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

(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)										
Supplementary information: N/A										