

TEST REPORT

IEC 60598-2-5

Luminaires

Part 2-5: Particular requirements- Floodlights

Report reference No. : 65.11.26.0354.01

Date of issue : 2026-07-23

Testing laboratory : Guangzhou Quality Technology Service Co., Ltd.

Address : Room 106, R&D Center, No.11, Nanyunwu Road, High-tech Industry Development Zone, Guangzhou, Guangdong, China

Testing location : As above

Applicant : Zhongshan Sunde Lighting Co., Ltd.

Address : No.11 Yuxiang Dongdi Street Henglan Town, Zhongshan City Guangdong Province ,528478 China

Standard : IEC 60598-2-5:2015 used in conjunction with IEC 60598-1:2024

Test Result The a. m. test item passed

Test procedure : CE (LVD)

Procedure deviation : N. A.

Non-standard test method : N. A.

Test Report Form No. : IEC60598_2_5H

Test Report Form(s) Originator : Intertek Semko AB

Master TRF : Dated 2025-09-04

Number of pages (Report) : 39

Number of pages (Attachments) : 2+8+1+8+2+5

Tested by : Hank Kang

Approved by : Helen Li

Hank Kang

Signature



Signature

This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

Type of test object..... :	LED Floodlight
Trademark	N/A
Model and/or type reference..... :	See model list
Manufacturer	Same as applicant
Rating(s)	165-265VAC, 50/60Hz, IP66, Class I, ta: 45°C, others see model list.

Copy of marking plate:

LED Floodlight

Model: SD-SF22902-5

Input: 165-265VAC, 50/60Hz

Power: 400W

ta: 45°C

Zhongshan Sunde Lighting Co., Ltd.

No.11 Yuxiang Dongdi Street Henglan Town, Zhongshan City Guangdong Province ,528478 China

IP66 **CE** 

Note 1: The height of letters and numerals shall not be less than 2mm;

Note 2: The height of graphical symbols shall not be less than 5 mm;

Note 3: The others' rating labels are only different from the model name and electrical parameter.

Test items particulars:	
Classification of installation and use	Class I, Fixed
Supply Connection	Supply cord

Testing:	
Date of receipt of test item	2026-07-13
Date (s) of performance of tests	2026-07-13 to 2026-07-23

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

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

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

Attachment 1: EN 60598-2-5:2015 and EN IEC 60598-1:2024+A11:2024 (2 pages)

Attachment 2: IEC 62031:2018. (8 of pages)

Attachment 3: EN IEC 62031:2020+A11:2021. (1 of page)

Attachment 4: EN 62493:2015+A1:2022 (8 of Pages)

Attachment 5: IEC TR 62778:2014 (2 of Pages)

Attachment 6: Photos(5 of Pages)

Summary of testing:

All tests are performed comply with the requirements of EN 60598-2-5:2015 and EN IEC 60598-1:2024+A11:2024.

General product information:

These products are Class I LED Floodlight for outdoor use. Degree of protection is IP66.

All models only different in appearance and power. We choose model SD-SF22902-5 for full test.

Factory Name and Location:

Zhongshan Sunde Lighting Co., Ltd.

No.11 Yuxiang Dongdi Street Henglan Town, Zhongshan City Guangdong Province ,528478 China

Model list

No.	Model	Rated voltage and frequency	Rated power
1	SD-SF22902-1	165-265V~, 50/60Hz	50W
2	SD-SF22902-2	165-265V~, 50/60Hz	100W
3	SD-SF22902-3	165-265V~, 50/60Hz	200W
4	SD-SF22902-4	165-265V~, 50/60Hz	300W
5	SD-SF22902-5	165-265V~, 50/60Hz	400W

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.2 (4)	GENERAL TEST REQUIREMENTS		P
5.2 (4.1.2)	More parts of IEC 60598-2 series applicable	Yes ☐ No ☒	—
	Part(s)		—
5.2 (4.2)	Batteries or EDLCs operated luminaire	(see ANNEX 5)	N/A
5.2 (4.3)	Components	(see ANNEX 1)	—
5.2 (4.4)	Information for luminaire design in light sources standards		—
5.2 (4.4.2)	Light source and/or controlgear safety standard		—
	Luminaire design in the light source and/or controlgear safety standard		P

5.4 (5)	CLASSIFICATION OF LUMINAIRES		P
5.4 (5.2)	Type of protection	Class I	P
5.4 (5.3)	Degree of protection	IP66	—
5.4 (5.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes ☒ No ☐	—
5.4 (5.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☐	—

5.5 (6)	MARKING		P
5.5 (6.1)	Language of instructions		P
5.5 (6.2)	Marking on luminaire		P
	Position of the marking		P
	Format of symbols/text		P
5.5 (6.3)	Information on luminaire		P
5.5 (6.4)	Additional information		P
5.5 (6.4.2)	Combination luminaires		N/A
5.5 (6.4.3)	Rated frequency in Hz		P
5.5 (6.4.4)	Operating temperature		P
5.5 (6.4.5)	Wiring diagram		N/A
5.5 (6.4.6)	Special conditions		N/A
5.5 (6.4.7)	Metal halide lamp luminaire – warning		N/A
5.5 (6.4.8)	Limitation for semi-luminaires		N/A
5.5 (6.4.9)	Power factor and supply current		N/A
5.5 (6.4.10)	Luminaires using remote controlgear		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.5 (6.4.11)	Clip-mounted luminaire – warning		N/A
5.5 (6.4.12)	Specifications of protective shields		N/A
5.5 (6.4.13)	Rough service luminaire		N/A
5.5 (6.4.14)	Mounting instruction for type Y, type Z and some type X attachments		P
5.5 (6.4.15)	Non-ordinary luminaires with PVC cable		N/A
5.5 (6.4.16)	Protective conductor current in instruction if applicable		N/A
5.5 (6.4.17)	Provided with information if not intended to be mounted within arm's reach		P
5.5 (6.4.18)	Non replaceable and non-user replaceable light sources information provided	Non replaceable	P
5.5 (6.4.19)	Controllable luminaires, classification of insulation provided		N/A
5.5 (6.4.20)	Luminaires without controlgear provided with necessary information for selection of appropriate component		N/A
5.5 (6.4.21)	If not supplied with terminal block, information on the packaging		N/A
5.5 (6.4.22)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
5.5 (6.4.23)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N/A
5.5 (6.4.24)	Information for replacement or non-replacement of controlgear provided		P
	a) Non-serviceable controlgear		P
	b) Non-user serviceable controlgear		N/A
	c) Serviceable controlgear		N/A
5.5 (6.5)	Test of marking		P
	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
5.5 (-)	Additional information if applicable		P
	a) Operation position		P
	b) Weight and dimensions		P

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Clause	Requirement – Test	Result - Remark	Verdict
	c) Maximum protected area		P
	d) Limitation of use indoors and/or outdoor		P
	e) Maximum mounting height if ≤ 5 m		P

5.6 (7)	CONSTRUCTION		P
5.6 (7.2)	Components replaceable or serviceable without difficulty		P
5.6 (7.3)	Wireways smooth and free from sharp edges		P
5.6 (7.4)	Lamp holders		N/A
5.6 (7.4.1)	Integral lamp holder		N/A
5.6 (7.4.2)	Wiring connection		N/A
5.6 (7.4.3)	Lamp holder for end-to-end mounting		N/A
5.6 (7.4.4)	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 show no permanent deformation		N/A
	- bending test (N)		—
	After test the lamp holder has not moved from its position and show no permanent deformation		N/A
5.6 (7.4.5)	Peak pulse voltage		N/A
5.6 (7.4.6)	Centre contact		N/A
5.6 (7.4.7)	Parts in rough service luminaires resistant to tracking		N/A
5.6 (7.4.8)	Lamp connectors		N/A
5.6 (7.4.9)	Caps and bases correctly used		N/A
5.6 (7.4.10)	Light source for lamp holder or connection according to IEC 60061 not connected another way		N/A
5.6 (7.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
5.6 (7.6)	Terminal blocks		N/A
	Connecting leads (tails)		N/A
	Unsecured blocks		N/A
5.6 (7.7)	Terminals and supply connections		P
5.6 (7.7.1)	Contact to metal parts		P

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.6 (7.7.2)	Test 8 mm hazardous live conductor		N/A
	Test 8 mm earth conductor		N/A
5.6 (7.7.3)	Terminals for supply conductors		P
5.6 (7.7.4)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- type Y and Z attachment		N/A
	- mechanical test according to 17.5.2		N/A
	- electrical test according to 17.5.3		N/A
	- heat test according to 17.5.3.3.4 and 17.5.3.3.5		N/A
5.6 (7.7.5)	Terminals other than supply connection		P
5.6 (7.7.6)	Heat-resistant wiring/sleeves		N/A
5.6 (7.7.7)	Multi-pole plug		N/A
	- test at 30 N		N/A
5.6 (7.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1-1 or IEC 60669-1 for mechanical switches		N/A
	- compliance with IEC 61058-1-2 or IEC 60669-1 for electronic switches		N/A
	- compliance with IEC 61058-2-1 for cord switches		N/A
5.6 (7.9)	Insulating lining and sleeves		N/A
5.6 (7.9.1)	Retainment		N/A
	Method of fixing :		N/A
5.6 (7.9.2)	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
5.6 (7.10)	Double or reinforced insulation		N/A
5.6 (7.10.1)	No contact, mounting surface – accessible metal parts –basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.6 (7.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
5.6 (7.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lamp holder		N/A
5.6 (7.10.4)	Protective impedance device:		N/A
	Basic or 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 IEC 62368-1:2018, Clause G.10.		N/A
5.6 (7.11)	Electrical connections and current-carrying parts		P
5.6 (7.11.1)	Contact pressure		P
5.6 (7.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
5.6 (7.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
5.6 (7.11.4)	Material of current-carrying parts		N/A
	FELV, SELV or PELV supplying circuits:		N/A
	- load less than 15 W		N/A
	- load (including short-circuit) not higher than 2 A		N/A
5.6 (7.11.5)	No contact to wood or mounting surface		P
5.6 (7.11.6)	Electro-mechanical contact systems		N/A
5.6 (7.12)	Screws and connections (mechanical) and glands		P
5.6 (7.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	Fixed screw lamp cover: 1.2	P
	Torque test: torque (Nm); part.....:	Fixed screw for LED PCB: 0.6	P
	Torque test: torque (Nm); part.....:		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
5.6 (7.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
5.6 (7.12.3)	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
5.6 (7.12.4)	Screwed glands; force (Nm).....	6.25	P
5.6 (7.13)	Mechanical strength		P
5.6 (7.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		P
	- other parts; energy (Nm)		P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
5.6 (7.13.2)	Metal parts have adequate mechanical strength		P
5.6 (7.13.3)	Test with straight unjointed test finger		N/A
5.6 (7.13.4)	Tumbling barrel		N/A
5.6 (7.14)	Suspensions, fixings and means of adjusting		P
5.6 (7.14.1)	Mechanical load:		P
	A) four times the weight		P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm).....		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent controlgear without fixing devices		N/A
	Magnets not used as the primary fixing		N/A
5.6 (7.14.2)	Load to flexible cables:		N/A
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Special cable or cord, force applied (N)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.6 (7.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken :		N/A
	- insulation resistance and electric strength tests afterwards		N/A
5.6 (7.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
5.6 (7.14.5)	Guide pulleys		N/A
5.6 (7.14.6)	Strain on socket-outlets		N/A
5.6 (7.15)	Flammable materials		P
	- glow-wire test 650°C :	See Test Table 5.15 (15.3.3)	N/A
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 15.3.2		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
5.6 (7.15.2)	Luminaires made of thermoplastic material with controlgear:		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
5.6 (7.16)	Luminaires for mounting on normally flammable surfaces		P
5.6 (7.16.1)	No controlgear :	(compliance with Clause 14)	P
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
5.6 (7.16.2)	Controlgear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
5.6 (7.16.3)	Thermal protection:		N/A
	- in controlgear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked controlgear		N/A
5.6 (7.16.4)	Design to satisfy the test of 14.6	(see 14.6)	N/A
5.6 (7.17)	Drain holes		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
	Clearance at least 5 mm		N/A
5.6 (7.18)	Resistance to corrosion		P
5.6 (7.18.1)	- rust-resistance		P
5.6 (7.18.2)	- season cracking in copper		P
5.6 (7.18.3)	- corrosion of aluminium		N/A
5.6 (7.19)	Ignitors compatible with ballast		N/A
5.6 (7.20)	Rough service luminaires		N/A
5.6 (7.20.1)	Resistance to vibrations		N/A
5.6 (7.20.2)	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
5.6 (7.21)	Protective shield		N/A
5.6 (7.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
5.6 (7.21.2)	Particles from a shattering lamp not impair safety		N/A
5.6 (7.21.3)	No direct path		N/A
5.6 (7.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	See Test Table 5.15 (15.3.3)	N/A
5.6 (7.22)	Attachments to lamps		N/A
	Attachments to lamps do not cause overheating or damage		N/A
5.6 (7.23)	Semi-luminaires		N/A
	Semi-luminaires comply Class II		N/A
5.6 (7.24)	Photobiological hazards		P
5.6 (7.24.1)	Actinic UV hazards for skin and eye 200 nm to 400 nm)		N/A
	No excessive UV radiation: luminaires used with:		N/A
	- self-shielded lamps or light sources having a UV emission $\leq 2 \text{ mW} \cdot \text{klm}^{-1}$		N/A
	- light sources emitting $\leq 6 \text{ mW} \cdot \text{klm}^{-1}$ and having a glass cover		N/A
	- light sources emitting $> 6 \text{ mW} \cdot \text{klm}^{-1}$, compliance with Annex M		N/A
5.6 (7.24.2)	UV-A hazard for the eye lens (315 nm to 400 nm)		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
	No excessive UV-A radiation		N/A
5.6 (7.24.3)	Retinal blue light hazard		N/A
5.6 (7.24.3.2)	Luminaire assessment according to IEC 62471-7:2023		N/A
	Luminaire application group : ☐ BLH-A ☐ BLH-B ☐ BLH-C		—
	Blue light radiance emission limit not exceeded for application group at applicable assessment distance		N/A
	Increased assessment distance for fixed luminaire based on luminaire application applied		N/A
	Assessment distance used (m).....:		—
	Information according to clause 6.3.22 a) provided		N/A
	Luminaire assessment based on light source data		N/A
	Light source application group : ☐ BLH-A ☐ BLH-B ☐ BLH-C		—
	Data in accordance with luminaire application group emission limit		N/A
5.6 (7.24.3.3)	Luminaire assessment according to IEC TR 62778:2014		P
	Class of risk group assessed according to IEC TR 62778 : Luminaires with E_{thr} :	RG1	—
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 ..:		N/A
	- marking and instruction according 6.3.22		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 6.3.22 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 TR 62778		N/A
5.6 (7.24.4)	Retinal thermal hazard (380 nm to 1400 nm)		P
	Not exceeding retinal thermal radiance limits		P
5.6 (7.24.5)	Infrared hazard for the eye (780 nm to 3000 nm)		P
	Not exceeding limits for IR radiation		P
5.6 (7.24.6)	Thermal hazard for the skin (380 nm to 3000 nm)		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Not exceeding exposure limit		P
5.6 (7.25)	Mechanical hazard		P
	No sharp point or edges		P
5.6 (7.26)	Short-circuit protection		N/A
5.6 (7.26.1)	Means preventing impairing of safety of uninsulated accessible SELV / PELV parts		N/A
	Short-circuit test with test chain according 7.26.2:		N/A
	Supply source ES1 PSE		N/A
	Test chain does not melt through		N/A
	Test sample does not exceed values of Table 21 and 22		N/A
5.6 (7.27)	Terminal blocks with integrated screwless protective earthing contacts		N/A
	Test according to Annex R		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
5.6 (7.28)	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 light source 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
5.6 (7.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source		P
	Hazardous live part not accessible after parts have been opened by hand or tools		P
5.6 (7.30)	Luminaires with non-user replaceable light source and non-user serviceable components		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	At least one fixing means requiring use of tool		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.6 (7.31)	Insulation between circuits		N/A
5.6 (7.31.1)	Circuits insulated from mains supply fulfil requirements according 7.31.2 – 7.31.4		N/A
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and mains supply fulfil requirements according 7.31.2 – 7.31.4		N/A
5.6 (7.31.2)	SELV or PELV circuits		N/A
	Used SELV/PELV source		N/A
	Voltage $\leq$ ELV		N/A
	PELV connected to earth		N/A
	Insulation of SELV/PELV circuits from mains supply		N/A
	Insulation of SELV/PELV circuits from other non SELV/PELV circuits		N/A
	Insulation of SELV/PELV circuits from FELV		N/A
	Insulation of SELV/PELV circuits from other SELV/PELV circuits		N/A
	SELV/PELV circuits insulated from accessible parts according Table T.1		N/A
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets do not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets do not have protective conductor contact		N/A
5.6 (7.31.3)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from mains supply		N/A
	FELV circuits insulated from accessible parts according Table T.1		N/A
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets do not admit plugs of other voltage systems		N/A
	Socket-outlets have protective conductor contact		N/A
5.6 (7.31.4)	Other circuits		P
	Other circuits insulated from accessible conductive parts according Table T.1		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Class II construction with equipotential bonding for protection against indirect contacts with hazardous live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 9.2.3		N/A
	- conductive part does not cause electric shock in case of insulation fault		N/A
	- equipotential bonding used in applications when one or more luminaires supplied by another		N/A
	- supplying luminaire provided with terminal for accessible conductive parts of other luminaires		N/A
	- other luminaire constructed as class I		N/A
5.6 (7.31.5)	Additional requirements for luminaires using controllable controlgear providing SELV output(s)		N/A
	Insulation between SELV output(s) of controlgear and control port meets requirements of IEC 61347-1 for interconnected controlgear		N/A
5.6 (7.32)	Overvoltage protective devices external to controlgear		N/A
5.6 (7.32.1)	SPDs comply with requirements in 7.32.2		N/A
	SPCs comply with requirements in 7.31.3		N/A
	SPDs requiring connection to earth:		N/A
	- only used in fixed luminaires		N/A
	- only connected to protective earth		N/A
5.6 (7.32.2)	Surge protective devices (SPDs)		N/A
	Compliance with IEC 61643-11		N/A
	Rated ambient temperature verified according to test in 14.4		N/A
5.6 (7.32.3)	Surge protective components (SPCs)		N/A
5.6 (7.32.3.1)	Only connected across the mains (L to L or L to N)		N/A
	Compliance with IEC 61051-2:2021 or IEC 61643-331:2020		N/A
	Compliance with requirements in 7.32.3.2 – 7.32.3.6		N/A
5.6 (7.32.3.2)	Climatic conditions		N/A
	Climatic conditions according to:		N/A
	- Option A		N/A
	- Option B		N/A
5.6 (7.32.3.3)	Maximum continuous voltage		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	At least 1.25 times rated voltage of luminaire / upper voltage of rated voltage range		N/A
5.6 (7.32.3.4)	Surge capability		N/A
	Mains supply voltage (V) :		—
5.6 (7.32.3.5)	SPC resistance to fire		N/A
	Needle flame test	See Test Table 5.15 (15.3.2)	N/A
5.6 (7.32.3.6)	SPC overload test		N/A
5.6 (7.33)	Luminaire powered via information technology communication cabling		N/A
	Requirements for Class III luminaire		N/A
	Rated voltage does not exceed maximum voltage of used connector		N/A
	Luminaire does not create any hazard from overvoltage	(see Annex 2)	N/A
5.6 (7.34)	Electromagnetic fields (EMF)		P
	No harmful electromagnetic fields		P
5.6 (7.35)	Protection against moving fan blades		N/A
	Test with a standard test finger		N/A
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	Blades rounded with radius ≥ 0.5 mm and:		N/A
	-hardness less than D60 Shore		N/A
	-peripheral speed less than 15 m/s		N/A
	-input power of fan ≤ 2 W at rated voltage		N/A
5.6 (7.36)	Track-mounted luminaires		N/A
	Test in accordance with Annex A of IEC 60570:2003/AMD2:2019		N/A
5.6.1 (-)	At least IPX3 if for outdoor use		N/A
5.6.2 (-)	Lamp holder brackets and lamp supports		N/A
5.6.3 (-)	Adjusting means		N/A
5.6.4 (-)	Controlling components		N/A
5.6.5 (-)	Fixing device		N/A
	Wind force test		N/A
5.6.6 (-)	Locking of angular adjustment		N/A
5.6.7 (-)	Vibration resistance		N/A
5.6.8 (-)	Requirement on glass cover if mounting height > 5 m		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	Method of protection		—

5.7 (13)	CREEPAGE DISTANCES AND CLEARANCES		P
5.7 (13.2.1)	Impulse withstand category (Normal category II)	Category II ☐ Category III ☐	—
	Category III according to Annex Q		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1:2015		N/A
5.7 (13.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 5.7 (13) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according to IEC 61347-1:2015, clause 7.1, item w	See Test Table 5.7 (13) II	N/A
	- Requirements according to IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 5.7 (13) II	N/A
5.7 (13.2.3)	Clearances for frequency up to 30 kHz	See Test Table 5.7 (13) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 5.7 (13) II	N/A
	- Requirements according to IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 5.7 (13) II	N/A

5.8 (9)	PROVISION FOR EARTHING		P
5.8 (9.2.1 + 9.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	Max. 0.032	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Protective earth makes contact first		P
	Terminal blocks with integrated screwless protective earthing contacts tested according to Annex R		N/A
	Protective earthing of the luminaire not via built-in controlgear		P
5.8 (9.2.2 + 9.2.3)	Protective earth continuity in joints, etc.		P
5.8 (9.2.4)	Locking of clamping means		P
	Compliance with 7.7.3		P
5.8 (9.2.5)	Protective earth terminal integral part of connector socket		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
5.8 (9.2.6)	Protective earth terminal adjacent to mains terminals		P
5.8 (9.2.7)	Electrolytic corrosion of the protective earth terminal		P
5.8 (9.2.8)	Material of protective earth terminal		P
	Contact surface bare metal		P
5.8 (9.2.10)	Class II luminaire for looping-in or through wiring		N/A
	Double or reinforced insulation to functional earth		N/A
5.8 (9.2.11)	Protective earthing core coloured green-yellow		P
	Length of protective earthing conductor		P
5.8 (9.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

5.9 (16)	SCREW TERMINALS		N/A
	Separately approved; component list	(See Annex 1)	N/A
	Part of the luminaire	(See Annex 3)	N/A

5.9 (17)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N/A
	Separately approved; component list	(See Annex 1)	N/A
	Part of the luminaire	(See Annex 4)	N/A

5.10 (8)	EXTERNAL AND INTERNAL WIRING		P
5.10 (8.2)	Supply connection and external wiring		P
5.10 (8.2.1)	Means of connection	Power cord	P
	Outdoor luminaire without PVC insulated external wiring unless Class III or SELV/PELV circuits ≤ 25 V AC or 60 V DC or 25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment		N/A
5.10 (8.2.2)	Type of cable	(see Annex 1)	P
	Nominal cross-sectional area (mm ²)	(see Annex 1)	P
	Cables equal to IEC 60227 or IEC 60245		P
5.10 (8.2.3)	Type of attachment, X, Y or Z	type Z	P
5.10 (8.2.5)	Type Z not connected to screws		P

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Clause	Requirement – Test	Result - Remark	Verdict
5.10 (8.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
5.10 (8.2.7)	Cable entries through rigid material have rounded edges		P
5.10 (8.2.8)	Insulating bushings:		P
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
5.10 (8.2.9)	Locking of screwed bushings		N/A
5.10 (8.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
5.10 (8.2.10.2)	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
5.10 (8.2.10.3)	Adequate cord anchorage for type Y and type Z attachment		P
5.10 (8.2.10.4)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....:		P

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Clause	Requirement – Test	Result - Remark	Verdict
	- 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
5.10 (8.2.10.5)	Luminaire with/designed for use with supply cord with maximum current of 2A:		N/A
	- Ordinary Class III luminaire supplied with SELV ≤ 25 V RMS or 60 V DC		N/A
	- Ordinary Class III luminaire supplied with PELV ≤ 12 V RMS or 30 V DC		N/A
	- Other than ordinary Class III luminaire supplied with voltage ≤ 12 V RMS or 30 V DC		N/A
	Pull test of 30 N		N/A
5.10 (8.2.11)	External wiring passing into luminaire		P
5.10 (8.2.12)	Looping-in terminals		N/A
5.10 (8.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
5.10 (8.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
5.10 (8.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
5.10 (8.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Appliance inlet or connector systems (IEC 61984)		N/A
5.10 (8.2.17)	No standardized interconnecting cables properly assembled		N/A
5.10 (8.2.18)	Used plug in accordance with:		N/A
	- IEC 60083		N/A
	- other standard		N/A
5.10 (8.3)	Internal wiring		P

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Clause	Requirement – Test	Result - Remark	Verdict
5.10 (8.3.1.1)	Internal wiring of suitable size and type		P
	Through wiring:		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	Green-yellow for protective earth only		P
5.10 (8.3.1.2)	Internal wiring connected directly to fixed wiring:		P
	Cross-sectional area (mm ²)		P
	Insulation thickness (mm)		P
	Extra insulation added where necessary		P
5.10 (8.3.1.3)	Internal wiring connected to fixed wiring via internal current-limiting device:		N/A
	Cross-sectional area (mm ²)		N/A
5.10 (8.3.1.4)	Double or reinforced insulation for class II		N/A
5.10 (8.3.1.5)	Conductors without insulation		N/A
5.10 (8.3.1.6)	SELV/PELV current-carrying parts		N/A
5.10 (8.3.1.7)	Insulation thickness other than PVC or rubber		N/A
5.10 (8.3.2)	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
5.10 (8.3.3)	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
5.10 (8.3.4)	Joints and junctions effectively insulated		N/A
5.10 (8.3.5)	Strain on internal wiring		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
5.10 (8.3.6)	Wire carriers		N/A
5.10 (8.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
5.10 (8.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation does not exceed the limits stated in Table 22	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A

5.11 (10)	PROTECTION AGAINST ELECTRIC SHOCK		P
5.11 (10.2.1)	Hazardous live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starter holders in portable, settable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under light source/ starter replacement or for accessing serviceable components		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp or equivalent lamps		N/A
	Insulation lacquer not reliable		P
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 6.3.18 fitted to the luminaire		N/A
5.11 (10.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
5.11 (10.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible		N/A
	- required insulation from hazardous live parts in compliance with Table T.1		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	- glass protective shields not used as supplementary insulation		N/A
5.11 (10.2.3.b)	BC lamp holder of metal in class I luminaires shall be connected to protective earth		N/A
5.11 (10.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	- interrupted DC voltage (V)		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	- Interrupted DC ($f < 10\text{Hz}$ or $f > 200\text{Hz}$) (mA).....:		N/A
	- Interrupted DC ($10\text{Hz} \leq f \leq 200\text{Hz}$) (mA).....:		N/A
	Class III luminaire only for connection to SELV/PELV		N/A
5.11 (10.2.3.d)	PELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	One pole insulated if required		N/A
5.11 (10.2.4)	Portable luminaire has protection independent of mounting surface		N/A
5.11 (10.2.5)	Compliance with the standard test finger or relevant probe		P
5.11 (10.2.6)	Covers reliably secured		P
5.11 (10.2.7)	Luminaire other than below with capacitor $> 0,5\text{ }\mu\text{F}$ does not exceed 50 V, 1 min after disconnection		P
	Portable luminaire with capacitor $> 0,1\text{ }\mu\text{F}$ (0.25) not exceed 34 V, 1 s after disconnection		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	Other luminaires with capacitor > 0,1 µF (0.25) with plug and track adaptors do not exceed 60 V, 5 s after disconnection		N/A

5.12 (14)	ENDURANCE TEST AND THERMAL TEST		P
5.12 (-)	If IP > IP 20 relevant test of (14.4), (14.5), (14.6) and (14.7) after (11.2) before (11.3) specified in 5.13		—
5.12 (14.2)	Selection of lamps and controlgear		—
	Lamp used according to Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
5.12 (14.3)	Endurance test		P
5.12 (14.3.2)	a) mounting-position	Normal mounting	—
	b) test temperature (°C).....	55	—
	c) total duration (h)	240h	—
	d) supply voltage (V).....	291.5V	—
	d) if not equipped with control gear, constant voltage/current (V) or (A)		—
	d) Class III luminaires powered via information technology communication cable:		N/A
	- voltage under normal operation (V).....		—
	- voltage under abnormal operation (V).....		—
	e) luminaire ceases to operate		—
	f) luminaire with constant light output function		N/A
5.12 (14.3.3)	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
5.12 (14.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12 (14.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
5.12 (14.6)	Thermal test (failed windings in controlgear):		N/A
5.12 (14.6.2)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....		—
	- electronic controlgear		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
5.12 (14.6.3)	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
5.12 (14.7)	Thermal test in regard to fault conditions in controlgear or electronic devices incorporated in thermoplastic luminaires		N/A
5.12 (14.7.2)	Luminaire without temperature sensing control		N/A
5.12 (14.7.2.1)	Luminaire with fluorescent lamp ≤ 70W:		N/A
	Test method 14.7.1.1 or Annex S		—
	Test according to 14.7.1.1:		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 S:		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 5.15 (15.2.2)	N/A
5.12 (14.7.2.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA:		N/A
	- case of abnormal conditions.....		—
	- measured winding temperature (°C): at 1,1 Un		—

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Clause	Requirement – Test	Result - Remark	Verdict
	- 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 5.15 (15.2.2)	N/A
5.12 (14.7.2.3)	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
5.12 (14.7.3)	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 5.15 (15.2.2)	N/A
5.12.1 (-)	Reduction 10°C of measured temperature if for outdoor use		—
5.12.2 (-)	Glass covers used within the thermal limits declared by the glass manufacturer		N/A

5.13 (11)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
5.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 5.12		P
5.13 (11.2.1)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP:	IP66	—
	- mounting position during test:	As in normal	—
	- fixing screws tightened; torque (Nm):	2/3 of the value of clause 7.12	—
	- tests according to clauses:	11.2.3&11.2.9	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P

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Clause	Requirement – Test	Result - Remark	Verdict
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold-water jet-proof luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and 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
5.13 (11.3)	Humidity test 48 h	25°C, 93%RH	P

5.14 (12)	INSULATION RESISTANCE AND ELECTRIC STRENGTH, TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT		P
5.14 (12.2.2)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ):		N/A
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Clause 8		N/A
	Other than SELV/PELV:		P
	- between hazardous live parts of different polarity..:	>100 MΩ	P
	- between hazardous live parts and mounting surface :	>100 MΩ	P
	- between hazardous live parts and metal parts.....:	>100 MΩ	P
	- between hazardous 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 Clause 8		N/A
5.14 (12.2.3)	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):		P
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Clause 8		N/A
	Other than SELV/PELV:		P
	- between hazardous live parts of different polarity ..	1530V	P
	- between hazardous live parts and mounting surface :	1530V	P
	- between hazardous live parts and metal parts.....	1530V	P
	- between hazardous 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 Clause 8		N/A
5.14 (12.3)	Touch current, protective conductor current and electric burn		P
5.14 (12.3)	Touch current (mA).....	Max.0.008	P
	Protective conductor current (mA).....	Max.1.459	P

5.15 (15)	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A
5.15 (15.2.2)	Ball-pressure test.....	See Test Table 5.15 (15.2.2)	N/A
5.15 (15.3.2)	Needle-flame test (10 s)	See Test Table 5.15 (15.3.2)	N/A
5.15 (15.3.3)	Glow-wire test (650°C)	See Test Table 5.15 (15.3.3)	N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
5.15 (15.4.2)	Proof tracking test (IEC 60112)	See Test Table 5.15 (15.4.2)	N/A

5.7 (13)	TABLE I: Creepage distances and clearances							P
	Minimum distances (mm) for AC up to 30 kHz sinusoidal voltages							P
	Applicable part of IEC 60598-1 Table 18*, 19* and 20*							P
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	3.0	1.5	19	3.0	2.65	18	
Working voltage (V).....:					265V		—	
PTI.....:					< 600 ☒ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)					--		—	
Supplementary information: Different polarity of L and N								
Distance 2:	B	2.8	1.5	19	2.8	2.65	18	
Working voltage (V).....:					265V		—	
PTI.....:					< 600 ☒ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)					--		—	
Supplementary information: Live part and earthing								
Distance 3:	R	8.0	3.0	19	8.0	5.3	18	
Working voltage (V).....:					265V		—	
PTI.....:					< 600 ☒ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)					--		—	
Supplementary information: Live part and accessible parts								

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

5.7 (13)	TABLE II: Creepage distances and clearances						N/A
	Minimum distances (mm) for AC higher than 30 kHz sinusoidal voltages						N/A
	Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2						N/A
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 60598-2-5							
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 ☐ $\geq$ 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 ☐ $\geq$ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)							—
Supplementary information:							

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

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict

5.15 (15.2.2)	TABLE: Ball Pressure Test of Thermoplastics			N/A
Allowed impression diameter (mm) :		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

5.15 (15.3.2)	TABLE: Needle-flame test				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
Lamp cover	See ANNEX 1	10	No	0	P
Supplementary information: --					

5.15 (15.3.3)	TABLE: Resistance to heat and fire - Glow wire tests					P
Object/ Part No./ Material	Manufacturer/ trademark	GWT (°C) : 650			Ignition of specified layer	Verdict
		t_E (s)	t_I (s)	t_R (s)	Yes/No	
Lamp cover	See ANNEX 1	0	0	0	No	Pass
Supplementary information:						

5.15 (15.4.2)	TABLE: Proof tracking test				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 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information (see CDF for detail)	P
----------------	--	---

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Supply Cord	Zhongshancity Defang Wire & Cable Co., Ltd.	H05RN-F	3 x 1.0mm ²	EN 50525-2-21	VDE 40049745
Fuse	Xuyi Sanwei Electric Co. Ltd.	RXF	10R±5% 1/2W	EN 62368-1	VDE 40037299*
LED module	Hongli Zhihui Group Co.,Ltd.	SMD3030	6V1W 150mA Max.6500K	IEC/TR 62778	Tested with appliance#
PCB of LED module	GUANGDONG WAYLAM ENGINEERING PLASTICS Co., LTD	PC-F2805	V-0, 130°C	--	UL
Lamp cover	FOSHAN NANHAI POLMA ENGINEERING PLASTICS CO LTD	PC-1025	PC, V-0	--	UL E241821

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 14		
	Type reference :	SD-SF22902-5	—
	Light source used :	LED module	—
	Controlgear used :	--	—
	Battery/EDLC used :	--	—
	Mounting position of luminaire :	Normal position	—
	Supply wattage (W) :	404.3	—
	Supply current (A) :	1.65	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) :	45	—
	- abnormal operating mode :	--	—
5.12 (14.4)	- 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 x 240V=280.9V~	—
	- 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 :	--	—
5.12 (14.5)	- test 4: 1,1 times rated voltage, or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage :	--	—

Temperature measurements (°C)

Part	Ambient	Sub-cl. 14.4 – normal				Sub-cl. 14.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Power cord		--	73.0	--	90	--	--
E2-cap		--	103.1	--	105	--	--
PCB near Q1			111.9		130		
LED module		--	125.2	--	Ref.	--	--
PCB of LED module		--	115.0	--	130	--	--
lighting cover (outside)		--	58.9	--	Ref.	--	--
Mounting Surface		--	49.8	--	90	--	--
Light object(10cm)		--	49.9	--	90	--	--
Ambient		--	45.0	--	--	--	--

Supplementary information:

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(16)	SCREW TERMINALS		N/A
(16.2)	Type of terminal		—
	Rated current (A)		—
(16.2.2.2)	One or more conductors		N/A
(16.2.2.3)	Special preparation		N/A
(16.2.2.4)	Terminal size		N/A
	Cross-sectional area (mm ²)		—
(16.2.3)	Conductor space (mm)		N/A
(16.3)	Mechanical requirements and tests		N/A
(16.3.1)	Minimum distance		N/A
(16.3.2)	Cannot slip out		N/A
(16.3.3)	Special preparation		N/A
(16.3.4)	Nominal diameter of thread (metric ISO thread)	M	N/A
	External wiring		N/A
	No soft metal		N/A
(16.3.5)	Corrosion		N/A
(16.3.6)	Nominal diameter of thread (mm)		N/A
	Torque (Nm)		N/A
(16.3.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)		N/A
(16.3.8)	Without undue damage		N/A

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(17)	SCREWLESS TERMINALS		N/A
(17.2)	Type of terminal		—
	Rated current (A)		—
(17.2.1)	Material		N/A
(17.2.2)	Clamping		N/A
(17.2.3)	Stop		N/A
(17.2.4)	Unprepared conductors		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
(17.2.5)	Pressure on insulating material		N/A
(17.2.6)	Clear connection method		N/A
(17.2.7)	Clamping independently		N/A
(17.2.8)	Fixed in position		N/A
(17.2.10)	Conductor size		N/A
	Type of conductor		N/A
(17.4)	Terminals and connections for internal wiring		N/A
(17.4.1)	Mechanical tests		N/A
(17.4.1.2.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(17.4.1.2.3)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(17.4.1.3)	Permanent connections: pull-off test (20 N)		N/A
(17.4.2)	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
(17.5)	Terminals and connections for external wiring		N/A
(17.5.1)	Conductors		N/A
	Terminal size and rating		N/A
17.5.2	Mechanical tests		N/A
(17.5.2.2)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(17.5.2.3)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(17.5.3)	Electrical tests		N/A
	Tests according 17.5.3.2 + 17.5.3.3 in IEC 60598-1		N/A

IEC 60598-2-5											
Clause	Requirement – Test						Result - Remark				Verdict
(17.5.3.2) (17.5.3.3)	TABLE: Contact resistance test / Heating tests										
	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:											

ANNEX 5	Battery/EDLC-operated luminaires	
(Annex W)	Battery/EDLC-operated luminaires	N/A
(W.3)	Marking	N/A
(W.3.2)	Luminaires with replaceable battery	N/A
	Relevant information and warnings provided	N/A
(W.3.3)	Coin and button batteries	N/A
	Relevant information, warnings and marking provided	N/A
(W.3.4)	Other standardized batteries	N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
	Compartment and polarity correctly marked		N/A
	Compartment marked with the shape of the batteries		N/A
(W.3.5)	Luminaires with non-standardized replaceable rechargeable battery		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.6)	Luminaires with non-user replaceable battery/EDLC		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.7)	Luminaires with non-replaceable battery/EDLC		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.8)	Luminaires supplied by external dedicated power supply units		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.9)	Rechargeable luminaires other than ordinary		N/A
	Relevant information provided		N/A
(W.3.10)	Conditions for charging		N/A
	Relevant information provided		N/A
(W.4)	Construction		N/A
(W.4.1)	Luminaires with a replaceable battery/EDLC, the compartment is designed to reduce the possibility of children removing the battery:		—
	- tool required		N/A
	- two independent and simultaneous movements required		N/A
	Luminaires with a non-replaceable battery/EDLC, no access to the battery or EDLC		N/A
	No recharging function for luminaires intended for non-rechargeable and rechargeable batteries		N/A
(W.4.2)	Small batteries		N/A
	Batteries that fit within the small parts cylinder not removable without a tool		N/A
	Parts that fit within the small parts cylinder not removable without a tool		N/A
	Battery compartment has adequate mechanical strength		N/A
(W.4.3)	Battery compartment fasteners for small batteries and other standardized batteries		N/A
	Screws or fasteners are captive		N/A
(W.4.4)	Battery/EDLC chargers incorporated in luminaires		N/A
	Electronic circuits used in battery or EDLC chargers comply with IEC 61347-2-11		N/A
	Battery or EDLC charger considered a controlgear and comply with		N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
(W.4.5)	Short-circuit protection		N/A
	The luminaire is operated under the following fault conditions:		—
	- cord short-circuited		N/A
	- battery terminals short-circuited		N/A
	- simultaneously accessible charging terminal short-circuited		N/A
	Appliance does not emit flames, molten metal, or ignitable gas		N/A
	No explosion or ignition of the battery		N/A
	Venting of the cells		N/A
(W.4.6)	Electrical parameters of batteries operation		N/A
(W.4.6.2)	Normal charging of lithium-ion systems		N/A
	Specified operating region for charging not exceeded		N/A
	- min. temperature (°C).....:		—
	- max. temperature (°C).....:		—
	Imbalanced battery		N/A
(W.4.7)	Protection against overpressure for Li-ion batteries used in luminaires		N/A
	The battery enclosure or compartment withstands the pressure generated when a cell vents during failure:		N/A
	- capacity of the single Li-ion cell (Ah).....:		—
	a) area of the unobstructed openings (mm ²).....:		N/A
	b) volume of air injected (ml)		N/A
(W.4.8)	Protection against the consequence of failure of cells or EDLCs		N/A
	Vents of cells not obstructed		N/A
	Space provided to allow EDLC expansion		N/A
(W.5)	Protection against electric shock		N/A
	Hazardous live parts not accessible when the luminaire is opened for replacing batteries		N/A
	Protective cover provided		N/A
(W.6)	Endurance test and thermal test		N/A
(W.6.1)	Endurance test		N/A
	Luminaires with charging function:	Yes ☐ No ☐	—
	c) total duration (h)		—
	d) supply voltage (V).....:		—
(W.6.2)	Thermal test (normal operation)	(see Annex 2)	N/A
(W.6.3)	Thermal test (abnormal operation)	(see Annex 2)	N/A

IEC 60598-2-5			
Clause	Requirement – Test	Result - Remark	Verdict
(W.6.4)	Lithium-ion charging systems – Fault conditions		N/A
	a) electronic components in the charging system of the luminaire subjected to the fault condition test according to IEC 61347-1:2015, Clause 14		N/A
	b) series configured battery charged with a deliberate imbalance		N/A
	c) one cell shorted		N/A
	No explosion during the test		N/A
	No charring or burning of the gauze or tissue paper		N/A
	No evidence of damage to any cell vent		N/A
	Upper limit charging voltage not exceeded		N/A
	Charging system permanently disabled		N/A
	Hazardous live parts shall not become accessible		N/A

(W.6.4)	TABLE: Lithium-ion charging systems – Fault conditions	N/A
Part	Simulated fault	Hazard
		YES/NO

Attachment 1

IEC60598_2_5 ATTACHMENT			
Clause	Requirement – Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-5 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2-5: Particular requirements – Floodlights	
Differences according to	EN 60598-2-5:2015 used in conjunction with EN IEC 60598-1:2024 + A11:2024
TRF template used.....	IECEE OD-2020-F2:2025, Ed. 2.1
Attachment Form No.	EU_GD_IEC60598-2-5_2015A
Attachment Originator.....	UL Solutions (Demko)
Master Attachment	Dated 2025-10-09
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	CENELEC COMMON MODIFICATIONS		
5.10 (8)	EXTERNAL AND INTERNAL WIRING		P
5.10 (8.2.2)	Cables equal to EN 50525 series		P
	Paragraph 2 deleted		P
	Replace table 11 – Supply cord		P
5.12 (14)	ENDURANCE TESTS AND THERMAL TESTS		N/A
5.12 (14.4.3 c)	Thermal test (normal operation) see footnote c to table 22 relating to unsleeved fixed wiring		N/A
	ANNEX ZB, SPECIAL NATIONAL CONDITIONS		N/A
(6.4)	DK: power supply cords of class I luminaires with label		N/A
(8.2.1)	CY, DK, FI, UK: type of plug		N/A
(8.2.18)	DK: socket-outlets		N/A
	ANNEX ZC, NATIONAL DEVIATIONS		N/A
(7 & 8)	FR: Shuttered socket-outlets 10/16A		N/A

Attachment 1

IEC60598_2_5 ATTACHMENT			
Clause	Requirement – Test	Result - Remark	Verdict
	FR: Safety requirements for high buildings <i>(Decree of 30 December 2011 on safety regulations for the construction of high-rise buildings and their protection against fire and panic risks; Section VIII; Article GH 48, Lighting)</i> Glow-wire test for outer parts of luminaires:		N/A
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
	UK: Requirements according to United Kingdom Building Regulation		N/A

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.2	Classification		P
	Built-in module : Yes ☐ No ☒		--
	Independent module : Yes ☐ No ☒		--
	Integral module : Yes ☒ No ☐		--
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A

6	MARKING		N/A
6.2	Contents of marking for built-in and for independent LED modules		N/A
	a) mark of origin		N/A
	b) model number, type reference		N/A
	c1) constant voltage module; rated supply voltage and supply frequency		N/A
	c2) constant current module; rated supply current and supply frequency		N/A
	d) rated power		N/A
	e) indication of connections, wiring diagram		N/A
	f) value of tc and place on the module		N/A
	g) Ethr if required		N/A
	h) symbol for built-in modules		N/A
	i) heat transfer temperature td		N/A
	j) power for heat-conduction Pd		N/A
	k) working voltage for insulation		N/A
6.3	Location of marking for built-in LED modules		N/A
	- marking of a) and b) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
6.4	Location of marking for independent LED modules		N/A
	- marking of a), b), c) and f) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
6.5	Marking of integral LED modules		N/A
	- information in 6.2 a) to g) in data sheet, leaflet or website		N/A
6.6	Durable and legibility of marking		N/A

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict
	- marking on the LED module legible after test with water		N/A
	- marking not on the LED module legible		N/A

7	TERMINALS		N/A
	Requirements not applicable to the evaluated product.		N/A

8 (9)	EARTHING		N/A
	Requirements not applicable to the evaluated product.		N/A

9 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
	Requirements not applicable to the evaluated product.		P

10 (11)	MOISTURE RESISTANCE AND INSULATION		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation 2 MΩ..... :	>500 MΩ	P
	For double or reinforced insulation 4 MΩ..... :		N/A
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

11 (12)	ELECTRIC STRENGTH		P
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	1480V	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V		N/A
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

12 (14)	FAULT CONDITIONS		P
- (14.1)	When operated under fault conditions the controlgear:		P

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
	Short-circuit or interruption of SPDs	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$:		P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		N/A
12.2	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

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

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict

15 (16)	CREEPAGE DISTANCES AND CLEARANCES	P
	Requirements not applicable to the evaluated product.	N/A

16 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS	P
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)	P
(4.11)	Electrical connections	P
(4.11.1)	Contact pressure	P
(4.11.2)	Screws:	N/A
	- self-tapping screws	N/A
	- thread-cutting screws	N/A
(4.11.3)	Screw locking:	N/A
	- spring washer	N/A
	- rivets	N/A
(4.11.4)	Material of current-carrying parts	P
(4.11.5)	No contact to wood or mounting surface	P
(4.11.6)	Electro-mechanical contact systems	P
(4.12)	Mechanical connections and glands	N/A
(4.12.1)	Screws not made of soft metal	N/A
	Screws of insulating material	N/A
	Torque test: torque (Nm); part.....:	N/A
	Torque test: torque (Nm); part.....:	N/A
	Torque test: torque (Nm); part.....:	N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal	N/A
(4.12.4)	Locked connections:	N/A
	- fixed arms; torque (Nm)	N/A
	- lampholder; torque (Nm).....:	N/A
	- push-button switches; torque 0,8 Nm.....:	N/A
(4.12.5)	Screwed glands; force (Nm).....:	N/A

17 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A
- (18.1)	Ball-pressure test	See Test Table 17 (18.1)	N/A
- (18.2)	Test of printed boards	See Test Table 17 (18.2)	N/A
- (18.3)	Glow-wire test (650°C)	See Test Table 17 (18.3)	N/A
- (18.4)	Needle-flame test (10 s)	See Test Table 17 (18.4)	N/A
- (18.5)	Proof tracking test	See Test Table 17 (18.5)	N/A

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict

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

20	HEAT MANAGEMENT		N/A
20.1	Requirements not applicable to the evaluated product.		N/A

22	PHOTOBIOLOGICAL SAFETY		P
22.1	UV radiation		N/A
	Luminous radiation not exceed 2mW/klm		N/A
22.2	Blue light hazard		P
	Assessed according to IEC TR 62778		P
22.3	Infrared radiation		N/A
	Requirements for infrared radiation when required		N/A

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

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK		N/A
	Requirements not applicable to the evaluated product.		N/A

ANNEX 1	LED MODULES WITH INTEGRAL CONTROLGEAR PROVIDING SELV		N/A
	Requirements not applicable to the evaluated product.		N/A

12 (14)	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
S/C DB1	Fuse opened immediately		YES /NO
S/C U1(VCC-GND)	Fuse opened immediately		YES /NO
S/C Q1(G-D)	Fuse opened immediately		YES /NO
S/C Q1(D-S)	Fuse opened immediately		YES /NO
S/C Q1(G-S)	Protected, recoverable		YES /NO
S/C D1	Protected, recoverable		YES /NO

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict
S/C LED module	Working as normal		YES/NO
O/C LED module	Working as normal		YES/NO

5 (16)	TABLE: clearance and creepage distance measurements (mm) (See main report)							N/A
Applicable part of IEC 61347-1 Table 7 – 11*								
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)							—	
Pulse voltage 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)							—	
Pulse voltage 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)							—	
Pulse voltage if applicable (kV)							—	
Supplementary information:								

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

Attachment 2

IEC 62031			
Clause	Requirement – Test	Result - Remark	Verdict

17 (18.1)	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:				

17 (18.2)	TABLE: Test of printed boards				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Supplementary information:					

17 (18.3)	TABLE: Glow-wire test				N/A
Glow wire temperature		650°C			—
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
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No)					
Supplementary information:					

17 (18.4)	TABLE: Needle-flame test				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
Supplementary information:					

Attachment 2

IEC 62031					
Clause	Requirement – Test			Result - Remark	Verdict
17 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI					—
Object/ Part No./ Material		Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens		Verdict
Supplementary information:					

Attachment 3

IEC62031F-ATTACHMENT			
Clause	Requirement – Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62031:2018 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (LED modules for general lighting - Safety specifications)		
Differences according to: EN IEC 62031: 2020 + A11: 2021		
TRF template used: IEC EE OD-2020-F2:2022, Ed. 1.2		
Attachment Form No.: EU_GD_IEC62031F		
Attachment Originator: UL Solutions (Demko)		
Master Attachment: Dated 2022-09-30		
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.		
	CENELEC COMMON MODIFICATIONS (EN)	
	No Common modifications	P
ZA	ANNEX ZA, NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	P
ZZ	ANNEX ZZ, RELATIONSHIP BETWEEN THIS EUROPEAN STANDARD AND THE SAFETY OBJECTIVES OF DIRECTIVE 2014/35/EU [2014 OJ L96] AIMED TO BE COVERED	N/A

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
EN 62493			
Assessment of lighting equipment related to human exposure to electromagnetic field			

General description of test item

Note: The information in this section has been provided by the applicant.

Photo(s) of the test item

Photo 错误!文档中没有指定样式的文字。.1 :	see photo documentation

Photo 错误!文档中没有指定样式的文字。.2 :	see photo documentation

Test item(s)

No.	Test item name	Unique identification / type / description	Extent of test
1		<i>All models</i>	<i>No tested</i>
2			
Engineering statement for untested variants / product family:			
Supplementary information: --			

Port(s)

No.	Port Name	Type	Cable		
			Specified length in m	Attached during test	Shielded
1	Enclosure	Enclosure	-	-	-
2				☐	☐
Supplementary information: --					

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict

Power rating(s)

Power supply type :	☒	AC, 1 phase
	☐	AC, 2 phases
	☐	AC, 3 phases
	☒	Neutral
	☐	Protective Earth
	☐	DC
	☐	Battery, not rechargeable in the device
	☐	Battery, rechargeable in the device
Rated voltage :	See main report	
Rated frequency :	See main report	
Rated power :	See main report	

Additional parameters

Protection class :	See main report	
Clock frequencies :	N/A	
Other parameters :	N/A	
Software version :	N/A	
Hardware version :	N/A	
Dimensions (W x H x D) :	See main report	
Mounting position :	☐	Table-top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☒	Other: independent

Operating mode(s)

No.	Abbreviation	Detailed description of the operating mode	Used for testing	
			Emission	Immunity
1			☐	☐
2			☐	☐

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
Supplementary information: --			

Auxiliary equipment

Advice to the TRF User: Include accessories which are not to be considered test items.

No.	Aux Item Name	Type and description	Manufacturer (if not the same)
1			
2			
Supplementary information: --			

Documents as provided by the applicant

No.	Document ref.	Type and description	Doc date
1		See main report	
2			
Supplementary information: --			

Modifications to the test item during testing

☐	No modifications done during testing	
☐	Modifications done during testing (see details below)	
No.	Description of modification (if any)	Date of modification
1		
2		
Supplementary information: --		

Verdict summary section

Rationale for verdicts, including N/A (Not Applicable), are listed on each test sheet.

If applicable test was not performed then CB Test Certificate cannot be issued.

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
Table/ Clause	Requirement – Test case	Basic standard	Verdict
6.6	Calculation of the results	IEC 62493: 2022	N/A
7.2	Low-power exclusion method	IEC 62493: 2022	N/A
7.3	Application of the EMF product standard for body worn-equipment	IEC 62209-2: 2010	N/A
7.4	Application of the EMF product standard for base stations	IEC 62232: 2011	N/A
7.5	Application of another EMF standard	IEC 62311: 2007	N/A
Supplementary information (e.g. detailed information to verdicts):			

Test setups

Figure 错误!文档中没有指定样式的文字。3 :	Test setup 1

Figure 错误!文档中没有指定样式的文字。4 :	Test setup 2

Limits

General

Devices must either be inherently compliant in 4.2.2 or comply with Van der Hoofden test limit in 4.2.3 and pass assessment procedure for intentional radiators in 4.3

Unintentional radiating part of lighting equipment

Lighting equipment deemed to comply with the Van der Hoofden test without testing

Name :	See main report
Date :	See main report
Rationale for verdict N/A :	Considering submitted samples were LED-light-source technology, they were found to comply with the requirement of IEC 62493:2015/AMD1:2022 and EN 62493:2015+A1:2022 without test.

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict

Lighting equipment is deemed to comply with the requirements of this standard without testing if it fulfils one of the following inherent-compliance conditions:	☒	electronic controlgear
	☐	incandescent-lamp technology
	☐	LED-light-source technology
	☐	OLED-light-source technology
	☐	high-pressure discharge lamp LED-light-source technologies
	☐	low-pressure discharge lamp technologies with exposure distance ≥ 50 cm
	☐	independent auxiliary
Supplementary information	:	--

Application of limits

Name :	N/A
Date :	N/A
Rationale for verdict N/A :	N/A

☐	Lighting equipment does not inherently comply with the Van der Hoofden test without testing but the compliance factor F is ≤ 1
Supplementary information	:

Measurement uncertainty

Where relevant, the following measurement instrumentation uncertainty levels have been estimated for tests performed on the apparatus:

Type of disturbance / Test method	Calculated expanded uncertainty U_{Lab}	U_{basic}
Van der Hoofden Test		30%

Decision rule

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
If the uncertainty calculated with the instrumentation actually used for the test (U_{lab}) is less than or equal to the uncertainty given in 5.6 (U_{basic}) then: – compliance is deemed if the measurement result does not exceed the applicable limit; – non-compliance is deemed to occur if the measurement result exceeds the applicable limit. If the uncertainty calculated with the instrumentation used for the test () is higher than the uncertainty given in 5.6 (U_{basic}) then: – compliance is deemed to occur if the measurement result, increased by ($U_{lab} - U_{basic}$), does not exceed the applicable limit. – non-compliance is deemed to occur if the measurement result, increased by ($U_{lab} - U_{basic}$), exceeds the applicable limit.			

Operating Conditions

Name :	--
Date :	--
Rationale for verdict N/A :	--

Test location (stand) :	--	
Stabilization Time :	☐	15 minutes for low-pressure discharge lamps
	☐	30 minutes for all other discharge lamps
	☐	Other (minutes):
Operating Conditions: :	☐	Specified by the manufacturer (ref. cl. 1.6)
	☐	Multiple lamp lighting equipment with all lamps operated simultaneously
	☐	Self-contained emergency lighting operated from mains
	☐	Lighting equipment with light regulation measured at the minimum and maximum limit of light regulation.
Measurement Distance :	--	
Supplementary information :	--	

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
Photo 错误!文档中没有指定样式的文字。 .5		Test Setup – Van der Hoofden	

Test results for Induced internal electric field	
Test item no(s) ref. cl. 1.2 :	--
Operating mode no(s) ref. cl. 1.6 :	--
Test setup no(s) ref. cl. 3.2:	--

Assessment procedure intentional radiators

Name :	--
Date :	--
Rationale for verdict N/A :	--

Low-power exclusion method

Input $P_{\text{int,rad}}$:	--	
Exclusion level P_{max} :	--	
Input power $P_{\text{int,rad}} < \text{exclusion level } P_{\text{max}}$	☐	Yes
	☐	No
Supplementary information :		

Application of the EMF product standard for body worn-equipment

If low-power exclusion is not met and exposure distance ≤ 0.05 m, does device comply with IEC 62209-2	☐	Yes
	☐	No
Supplementary information :	--	

Application of the EMF product standard for base stations

If low-power exclusion is not met and intentional radiator is a base station, does device comply with IEC 62232	☐	Yes
	☐	No

Attachment 4

EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict
Supplementary information		:	--

Application of another EMF standard

If low-power exclusion is not met and intentional radiator is not considered as body-worn equipment or base station equipment, does device comply with IEC 62311	☐	Yes
	☐	No
Supplementary information		:

List of test equipment

Reference to test stand or test name (ID):			
Equipment ID	Equipment description	Last Calibration date	Calibration due date
--	--	--	--

Attachment 5

IEC 62778			
Clause	Requirement – Test	Result - Remark	Verdict
7	MEASUREMENT INFORMATION FLOW		P
7.1	Basic flow		P
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	Conditions for the radiance measurement		P
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
7.3	Special cases (I): Replacement by a lamp or LED module of another type		N/A
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	Special cases (II): Arrays and clusters of primary light sources		N/A
	LED package is evaluated as: ☐ RG0 unlimited ☐ RG1 unlimited		N/A
	E_{thr} of LED package applies to array		N/A
8	RISK GROUP CLASSIFICATION		P
	Risk group achieved:		P
	- .. Risk Group 0 unlimited		N/A
	- .. Risk Group 1 unlimited		P
	- E_{thr} (lx): Distance to reach RG1 (m):		N/A

	TABLE: Spectroradiometric measurement		P
	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire	
	Model	SD-SF22902-5	
	Test voltage (V)	265VAC	—

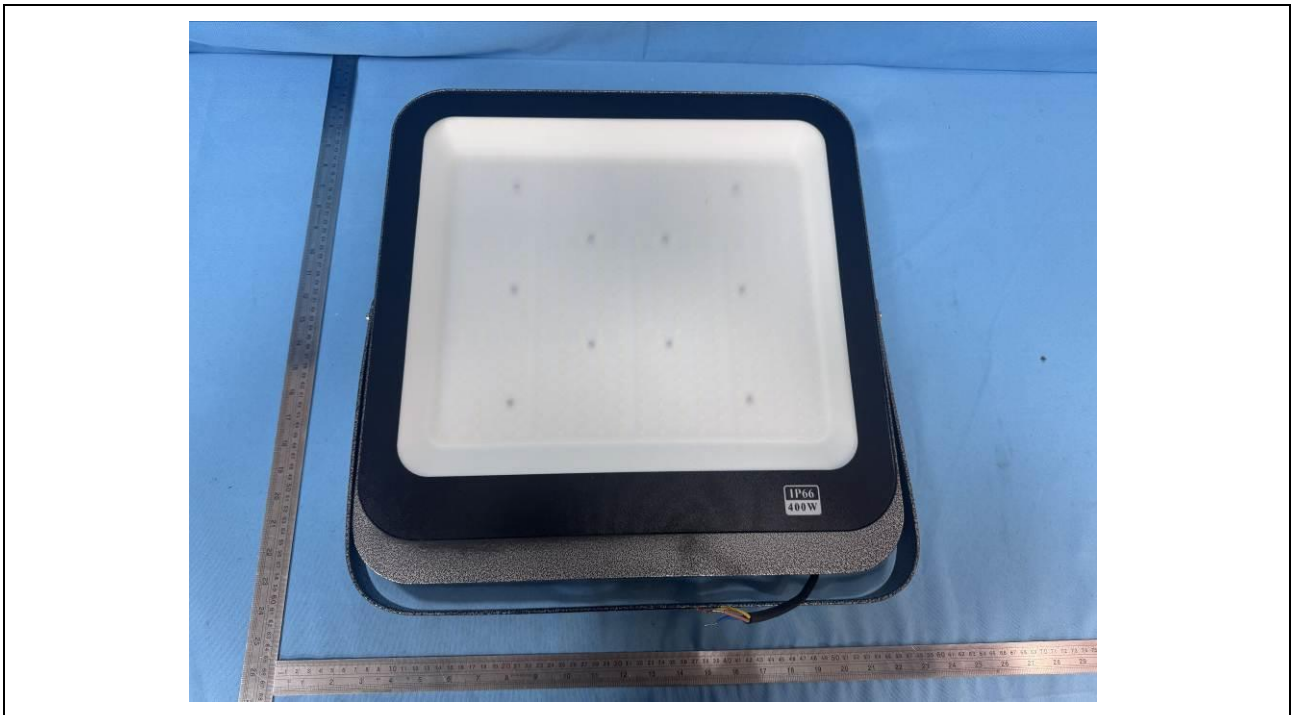
Attachment 5

IEC 62778				
Clause	Requirement – Test		Result - Remark	Verdict
	Test current (mA)	1650		—
	Test frequency (Hz)	50		—
	Ambient, t (°C)	45		—
	Measurement distance	☒ 20 cm ☐ ... cm		—
	Source size	☒ Non-small ☐ Small :.... mm		—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	6500	
x/y colour coordinates			/	
Blue light hazard radiance	L _B	W/(m ² •sr ¹)	356.2	
Blue light hazard irradiance	E _B	W/m ²	/	
Luminance	L	cd/m ²	/	
Illuminance	E	lx	/	
Supplementary information:				

Attachment 6

Photos

Details of: General view of SD-SF22902-5



Details of: General view of SD-SF22902-5



Attachment 6

Details of: General view of SD-SF22902-5

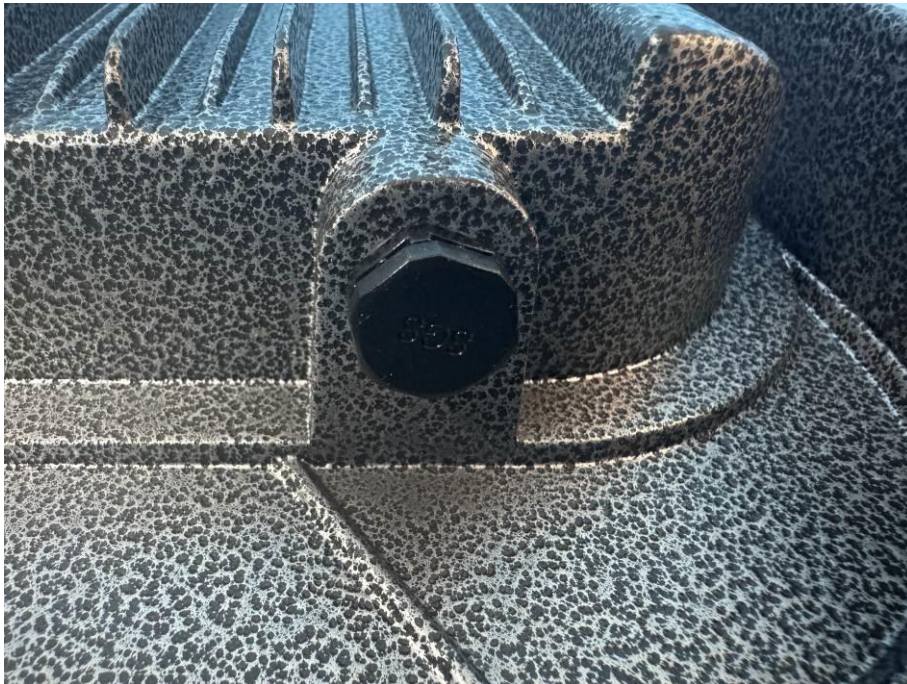


Details of: General view of SD-SF22902-5



Attachment 6

Details of: General view of SD-SF22902-5

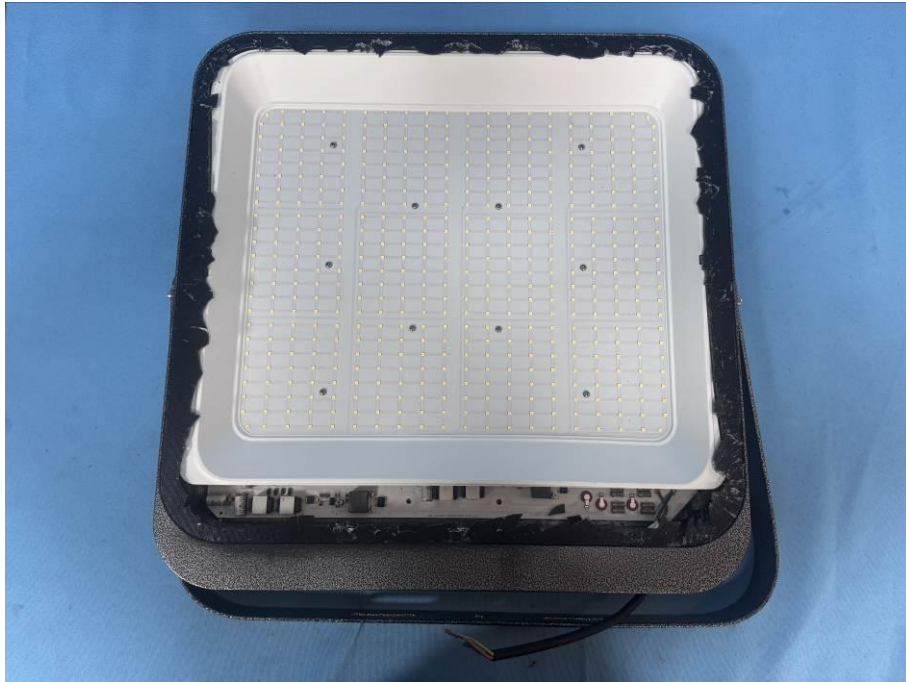


Details of: General view of SD-SF22902-5

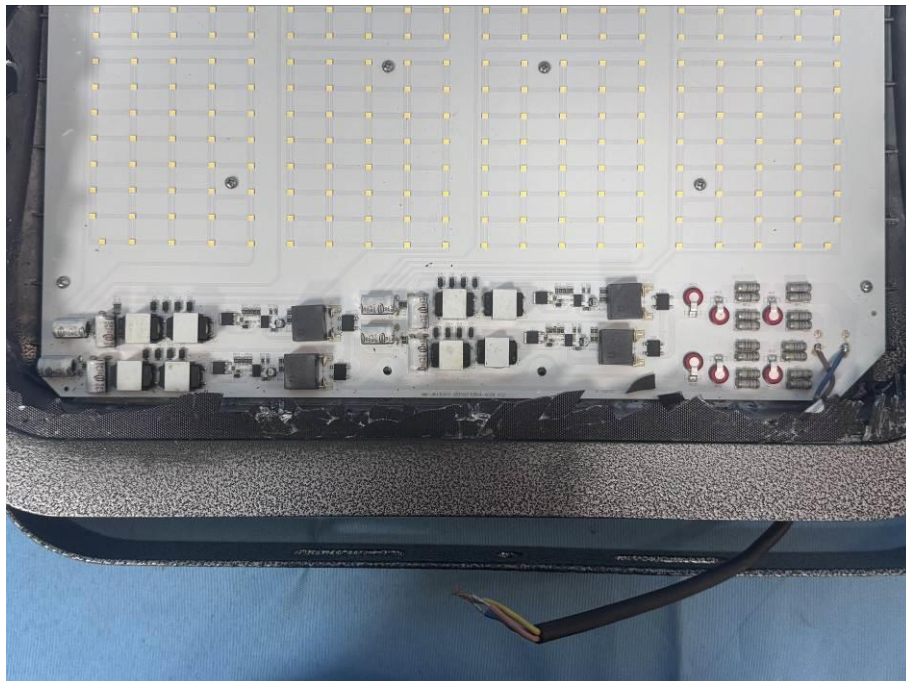


Attachment 6

Details of: Internal view of SD-SF22902-5

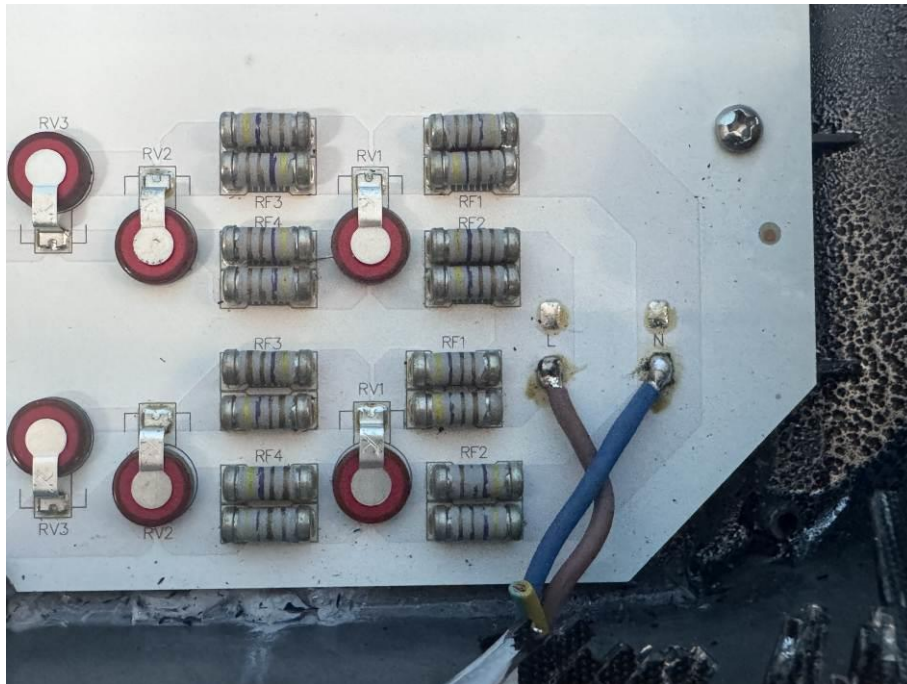


Details of: Internal view of SD-SF22902-5

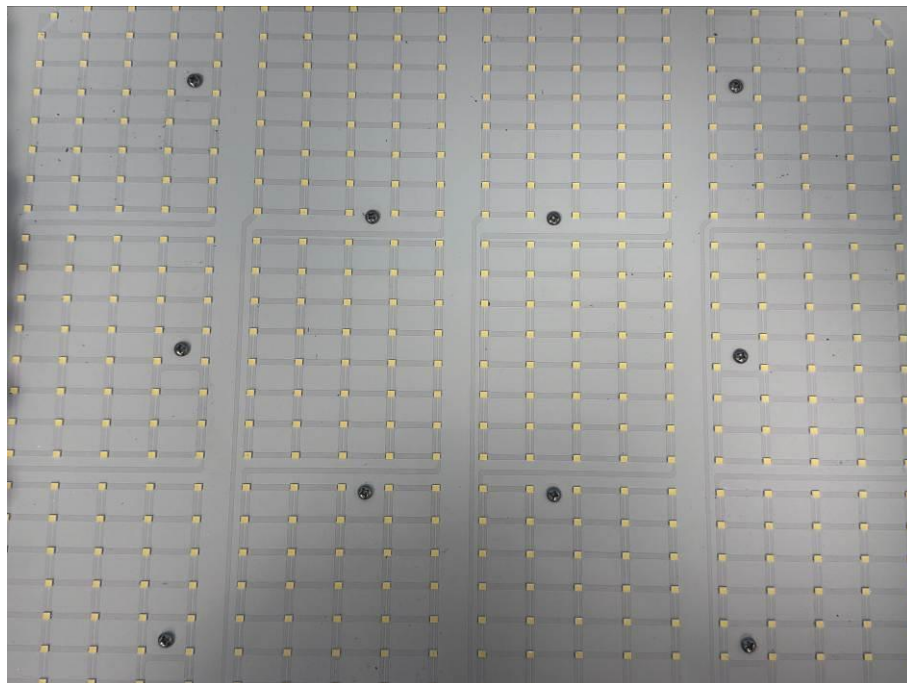


Attachment 6

Details of: Internal view of SD-SF22902-5



Details of: LED model of SD-SF22902-5



---- End of the report ----