APPLICATION FOR LOW VOLTAGE DIRECTIVE
On Behalf of
Shenzhen Qinhan Lighting Co.,Ltd
LED Flood Light
Model: QH-FLXH01-50W, QH-FLXH02-100W, QH-FLXH03-150W, QH-FLXH04-200W, QH-FLXH06-300W, QH-FLXH08-400W

Prepared For : **Shenzhen Qinhan Lighting Co.,Ltd**
5/F, Building B, Ideemonto Industrial Park, Shutianpu Community, Gongming Town, Guangming New District, Shenzhen City, Guangdong, China

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Date of Test:	**Sep. 13, 2016 to Sep. 23, 2016**
Date of Report:	**Sep. 23, 2016**
Report Number:	**R011607605S-1**

TEST REPORT
EN 60598-2-5
Part 2: Particular requirements:
Section Five – Floodlights

Report	
Report reference No. ..... :	R011607605S-1
Compiled by..... :	Toya Zhang
Approved by..... :	Luson Xiao
Date of issue ..... :	Sep. 23, 2016
Contents..... :	55 pages report
Testing laboratory	
Name ..... :	Shenzhen Anbotek Compliance Laboratory Limited
Address ..... :	1/F., Building 1, SEC Industrial Park, No. 0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China
Testing location ..... :	Same as above
Applicant	
Name ..... :	Shenzhen Qinhan Lighting Co.,Ltd
Address..... :	5/F, Building B, Ideemonto Industrial Park, Shutianpu Community, Gongming Town, Guangming New District, Shenzhen City, Guangdong, China
Test specification	
Standard ..... :	EN 60598-2-5:1998 EN 60598-1:2015
Procedure deviation ..... :	N.A.
Non-standard test method ..... :	N.A.
Test item Description	
Product name ..... :	LED Flood Light
Trademark ..... :	Qinhan
Manufactory ..... :	Shenzhen Qinhan Lighting Co.,Ltd
Address..... :	5/F, Building B, Ideemonto Industrial Park, Shutianpu Community, Gongming Town, Guangming New District, Shenzhen City, Guangdong, China
Factory ..... :	Shenzhen Qinhan Lighting Co.,Ltd
Address..... :	5/F, Building B, Ideemonto Industrial Park, Shutianpu Community, Gongming Town, Guangming New District, Shenzhen City, Guangdong, China
Model and/or type reference ..... :	QH-FLXH01-50W, QH-FLXH02-100W, QH-FLXH03-150W, QH-FLXH04-200W, QH-FLXH06-300W, QH-FLXH08-400W
Rating(s) ..... :	100-277V~, 50/60Hz, See the attachment on page 4

Test item particulars	
Classification of installation and use ..……...:	Fixed luminaire for floodlighting
Supply connection ……...……..……:	Power cord
Protection class…… :	I
Degree of protection ……..……:	IP65
Test case verdicts	
Test case does not apply to the test object .....:	N(.A.)
Test item does meet the requirement .....:	P(ass)
Test item does not meet the requirement …….:	F(ail)
Testing	
Date of receipt of test item……...:	Sep. 13, 2016
Date(s) of performance of test ……:	Sep. 13, 2016 to Sep. 23, 2016

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

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

Clause numbers between brackets refer to clauses in EN 60598-1.

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

"(see Annex #)" refers to an annex appended to the report.

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

According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.

Copy of marking plate

Formed as following:

LED Flood Light

Model No.: QH-FLXH08-400W

Rating: 100-277V~, 50/60Hz, 400W IP65

Manfuacturer: Shenzhen Qinhan Lighting Co.,Ltd
Address: 5/F, Building B, Ideemonto Industrial Park, Shutianpu Community, Gongming Town, Guangming New District, Shenzhen City, Guangdong, China
Importer: XXX
Address: XXX

Location: Sticking on the enclosure.

(Size: height of CE mark at least 5mm, height of WEEE mark at least 7mm, height of letters and numerals at least 2mm.)

Attachment

Model No:	Rating power
QH-FLXH01-50W	50W
QH-FLXH02-100W	100W
QH-FLXH03-150W	150W
QH-FLXH04-200W	200W
QH-FLXH06-300W	300W
QH-FLXH08-400W	400W

General product information

1. The lamp is for indoor and outdoor use, the degree of protection is IP65.
3. The lamp can operate at universal position.

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Clause	Requirement + Test	Result - Remark	Verdict
5.2 (0)	**GENERAL TEST REQUIREMENTS**		—
5.2 (0.1)	Information for luminaire design considered.....:	Yes ☒ No ☐	—
5.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒	—
5.4 (2)	**CLASSIFICATION**		—
5.4 (2.2)	Type of protection .....:	Class I	—
5.4 (2.3)	Degree of protection .....:	IP65	—
5.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....:	Yes ☒ No ☐	—
5.4 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—
5.5 (3)	**MARKING**		—
5.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
5.5 (3.3)	Additional information		P
	Language of instructions		P
5.5 (3.3.1)	Combination luminaires		N
5.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
5.5 (3.3.3)	Operating temperature		N
5.5 (3.3.4)	Symbol or warning notice		N
5.5 (3.3.5)	Wiring diagram		N
5.5 (3.3.6)	Special conditions		N
5.5 (3.3.7)	Metal halide lamp luminaire – warning		N
5.5 (3.3.8)	Limitation for semi-luminaires		N
5.5 (3.3.9)	Power factor and supply current		N
5.5 (3.3.10)	Suitability for use indoors		P
5.5 (3.3.11)	Luminaires with remote control		N
5.5 (3.3.12)	Clip-mounted luminaire – warning		N
5.5 (3.3.13)	Specifications of protective shields		N
5.5 (3.3.14)	Symbol for nature of supply	~	P
5.5 (3.3.15)	Rated current of socket outlet		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.5 (3.3.16)	Rough service luminaire		N
5.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	type Y	P
5.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N
5.5 (3.3.19)	Protective conductor current in instruction if applicable		N
5.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N
5.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		N
	Cautionary symbol		N
5.5 (3.3.22)	Controllable luminaires, insulation		N
5.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
5.5 (-)	Additional necessary marking		P
	Operation position		N
	Weight and dimensions		P
	Maximum protected area		P
	Range of mounting heights		P
	Suitability for indoor use		P

5.6 (4)	**CONSTRUCTION**		—
5.6.1 (-)	At least IPx3	IP65	P
5.6.2 (-)	Lampholder brackets		N
5.6.3 (-)	Adjusting means		N
5.6.4 (-)	Controlling components		P
5.6.5 (-)	Fixing device		P
	Wind force test		P
5.6.6 (-)	Locking system		P
5.6.7 (-)	Vibration resistance		P
5.6.8 (-)	Glass cover		N
5.6 (4.2)	Components replaceable without difficulty		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.3)	Wireways smooth and free from sharp edges		P
5.6 (4.4)	Lampholders		N
5.6 (4.4.1)	Integral lampholder		N
5.6 (4.4.2)	Wiring connection		N
5.6 (4.4.3)	Lampholder for end-to-end mounting		N
5.6 (4.4.4)	Positioning		N
	- pressure test (N) .....:		—
	After test the lampholder comply with relevant standard sheets and show no damage		N
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N
	- bending test (Nm) .....:		—
	After test the lampholder have not moved from its position and show no permanent deformation		N
5.6 (4.4.5)	Peak pulse voltage		N
5.6 (4.4.6)	Centre contact		N
5.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
5.6 (4.4.8)	Lamp connectors		N
5.6 (4.4.9)	Caps and bases correctly used		N
5.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N
5.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
5.6 (4.6)	Terminal blocks		P
	Tails		N
	Unsecured blocks		N
5.6 (4.7)	Terminals and supply connections		P
5.6 (4.7.1)	Contact to metal parts		N
5.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		N
5.6 (4.7.3)	Terminals for supply conductors		P
5.6 (4.7.3.1)	Welded connections:		N
	- stranded or solid conductor		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- spot welding		N
	- welding between wires		N
	- Type Z attachment		N
	- mechanical test according to 15.8.2		N
	- electrical test according to 15.9		N
	- heat test according to 15.9.2.3 and 15.9.2.4		N
5.6 (4.7.4)	Terminals other than supply connection		P
5.6 (4.7.5)	Heat-resistant wiring/sleeves		N
5.6 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N
5.6 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with IEC 61058-1 for electronic switches		N
5.6 (4.9)	Insulating lining and sleeves		P
5.6 (4.9.1)	Retainment		P
	Method of fixing.....:		—
5.6 (4.9.2)	Insulated linings and sleeves		N
	Resistant to a temperature > 20 °C to the wire temperature or		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C).....:		N
5.6 (4.10)	Double or reinforced insulation		N
5.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14		N
5.6 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
5.6 (4.10.3)	Retainment of insulation:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		P
5.6 (4.11)	Electrical connections and current-carrying parts		P
5.6 (4.11.1)	Contact pressure		P
5.6 (4.11.2)	Screws:		N
	- self-tapping screws		N
	- thread-cutting screws		N
5.6 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
5.6 (4.11.4)	Material of current-carrying parts		P
5.6 (4.11.5)	No contact to wood or mounting surface		N
5.6 (4.11.6)	Electro-mechanical contact systems		N
5.6 (4.12)	Screws and connections (mechanical) and glands		P
5.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part .....:	Screw for fixing stents:8,0Nm	P
	Torque test: torque (Nm); part .....:	Screw for fixing lamp cover:0,5Nm	P
	Torque test: torque (Nm); part .....:	Screw for fixing LED driver:1,2Nm	P
	Torque test: torque (Nm); part .....:	Screw for fixing PCB:0,5Nm	P
5.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
5.6 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm).....:		N
	- lampholder; torque (Nm).....:		N
	- push-button switches; torque 0,8 Nm .....:		N
5.6 (4.12.5)	Screwed glands; force (Nm) .....:		N
5.6 (4.13)	Mechanical strength		P
5.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:	Glass cover: 0,5Nm	P
	- other parts; energy (Nm) .....:	Metal enclosure; 0,7Nm;	P

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Clause	Requirement + Test	Result - Remark	Verdict
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
5.6 (4.13.3)	Straight test finger		N
5.6 (4.13.4)	Rough service luminaires		N
	- IP54 or higher		N
	a) fixed		N
	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
5.6 (4.13.6)	Tumbling barrel		N
5.6 (4.14)	Suspensions, fixings and means of adjusting		P
5.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	4x4.574Kg=18.296Kg	P
	B) torque 2,5 Nm		N
	C) bracket arm; bending moment (Nm) .....:		N
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....:		N
	Metal rod. diameter (mm) .....:		N
	Fixed luminaire or independent control gear without fixing devices		N
5.6 (4.14.2)	Load to flexible cables		N
	Mass (kg) .....:		—
	Stress in conductors (N/mm²) .....:		N
	Mass (kg) of semi-luminaire .....:		—
	Bending moment (Nm) of semi-luminaire .....:		N
5.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles .....:		P
	- strands broken.....:		P
	- electric strength test afterwards		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
5.6 (4.14.5)	Guide pulleys		N
5.6 (4.14.6)	Strain on socket-outlets		N
5.6 (4.15)	Flammable materials:		P
	- glow-wire test 650°C.....:	See Test Table 4.15 (13.3.2)	P
	- spacing ≥30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
5.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
5.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear .....:	(compliance with Section 12)	N
5.6 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
5.6 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
5.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N
5.6 (4.17)	Drain holes		N
	Clearance at least 5 mm		N
5.6 (4.18)	Resistance to corrosion:		N
5.6 (4.18.1)	- rust-resistance		N
5.6 (4.18.2)	- season cracking in copper		N
5.6 (4.18.3)	- corrosion of aluminium		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.19)	Igniters compatible with ballast		N
5.6 (4.20)	Rough service vibration		N
5.6 (4.21)	Protective shield:		N
5.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N
	Shield of glass if tungsten halogen lamps		N
5.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
5.6 (4.21.3)	No direct path		N
5.6 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment .....:	See Test Table 4.15 (13.3.2)	N
5.6 (4.22)	Attachments to lamps		N
5.6 (4.23)	Semi-luminaires comply Class II		N
5.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N
5.6 (4.24.2)	Retinal blue light hazard		N
	Luminaires with E_{thr}		N
	a) Fixed luminaires		N
	- distance x m, borderline between RG1 and RG2 .. :		N
	- marking and instruction according 3.2.23		N
	b) Portable and handheld luminaires		N
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N
5.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		N
5.6 (4.26)	Short-circuit protection:		N
5.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N
5.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N
	Test chain not melt through		N
	Test sample not exceed values of Table 12.1 and 12.2		N
5.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test according Annex V		P
	Pull test of terminal fixing (20 N)		P
	After test, resistance < 0,05 Ω	0.02 Ω	P
	Pull test of mechanical connection (50 N)		N
	After test, resistance < 0,05 Ω		N
	Voltage drop test, resistance < 0,05 Ω		N
5.6 (4.28)	Fixing of thermal sensing control		N
	Not plug-in or easily replaceable type		N
	Reliably kept in position		N
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N
	Not outside the luminaire enclosure		N
	Test of adhesive fixing:		N
	Max. temperature on adhesive material (□ C) ..... :		N
	100 cycles between t min and t max		N
	Temperature sensing control still in position		N
5.6 (4.29)	Luminaires with non-replaceable light source		N
	Not possible to replace light source		N
	Live part not accessible after parts have been opened by hand or tools		N
5.6 (4.30)	Luminaires with non-user replaceable light source		P
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		P
	Minimum two fixing means		P
5.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		P
5.6 (4.31.1)	SELV circuits		P
	Used SELV source		N
	Voltage ≤ ELV		N
	Insulating of SELV circuits from LV supply		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulating of SELV circuits from other non SELV circuits		N
	Insulating of SELV circuits from FELV		N
	Insulating of SELV circuits from other SELV circuits		N
	SELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to enter socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Plugs and socket-outlets does not have protective conductor contact		N
5.6 (4.31.2)	FELV circuits		N
	Used FELV source		N
	Voltage ≤ ELV		N
	Insulating of FELV circuits from LV supply		N
	FELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to enter socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Socket-outlets does not have protective conductor contact		N
5.6 (4.31.3)	Other circuits		N
	Other circuits insulated from accessible parts according Table X.1		N
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N
	- conductive parts are connected together		N
	- test according 7.2.3 of above		N
	- conductive part not cause an electric shock in case of an insulation fault		N
	- equipotential bonding in master/slave applications		N
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N
	- slave luminaire constructed as class I		P
5.6 (4.32)	Overvoltage protective devices		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Comply with IEC 61643-11		N
	External to control gear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N
5.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		—
5.7 (11.2)	Creepage distances and clearances .....:	See Table 4.7 (11.2)	—
	Working voltage (V) .....:	100-277V	—
	Rated pulse voltage (kV).....:	--	—
	Voltage form .....:	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI .....:	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
5.8 (7)	**PROVISION FOR EARTHING**		—
5.8 (7.2.1 + 7.2.3)	Accessible metal parts		N
	Metal parts in contact with supporting surface		N
	Resistance < 0,5 Ω .....:		N
	Self-tapping screws used		N
	Thread-forming screws		N
	Thread-forming screw used in a grove		N
	Earth makes contact first		N
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
	Built-in control gear		N
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
4.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
5.8 (7.2.5)	Earth terminal integral part of connector socket		N
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N
5.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
5.8 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
5.8 (7.2.11)	Earthing core coloured green-yellow		N
	Length of earth conductor		N
5.9 (14)	**SCREW TERMINALS**		—
	Separately approved; component list.....:	(see Annex 1)	N
	Part of the luminaire.....:	(see Annex 3)	N
5.9 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		—
	Separately approved; component list.....:	(see Annex 1)	P
	Part of the luminaire.....:	(see Annex 4)	N
5.10 (5)	**EXTERNAL AND INTERNAL WIRING**		—
5.10 (5.2)	Supply connection and external wiring		P
5.10 (5.2.1)	Means of connection.....:	Supply cords	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
5.10 (5.2.2)	Type of cable .....:	3 x0.824mm²	P
	Nominal cross-sectional area (mm²).....:		P
	Cables equal to IEC 60227 or IEC 60245		P
5.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
5.10 (5.2.5)	Type Z not connected to screws		N
5.10 (5.2.6)	Cable entries:		N
	- suitable for introduction		N
	- adequate degree of protection		N
5.10 (5.2.7)	Cable entries through rigid material have rounded edges		N
5.10 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made of insulating material		N
5.10 (5.2.9)	Locking of screwed bushings		N
5.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N
5.10 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N
	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
5.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
5.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) .....:	60N	P
	- torque test: torque (Nm) .....:	0,35Nm	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
5.10 (5.2.11)	External wiring passing into luminaire		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.10 (5.2.12)	Looping-in terminals		N
5.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N
5.10 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
	No unsafe compatibility		N
5.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Installation couplers (IEC 61535)		N
	Other appliance inlet or connector		N
	Relevant IEC standard		N
5.10 (5.2.17)	No standardized interconnecting cables properly assembled		N
1.10 (5.2.18)	Used plug in accordance with		N
	- IEC 60083		N
	- other standard		N
5.10 (5.3)	Internal wiring		P
5.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A) .....:		N
	- temperatures .....:	(see Annex 2)	N
	Green-yellow for earth only		P
5.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N
	Cross-sectional area (mm²) .....:		N
	Insulation thickness		N
	Extra insulation added where necessary		N
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Adequate cross-sectional area and insulation thickness		P
5.10 (5.3.1.3)	Double or reinforced insulation for class II		N
5.10 (5.3.1.4)	Conductors without insulation		N
5.10 (5.3.1.5)	SELV current-carrying parts		P
5.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
5.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		P
5.10 (5.3.3)	Insulating bushings:		N
	- suitable fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- cables with protective sheath		N
5.10 (5.3.4)	Joints and junctions effectively insulated		N
5.10 (5.3.5)	Strain on internal wiring		P
5.10 (5.3.6)	Wire carriers		N
5.10 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		P

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Clause	Requirement + Test	Result - Remark	Verdict

5.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		—
5.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N
	Lampholder and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N
	Basic insulation only accessible under lamp or starter replacement		N
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		N
	Double-ended high pressure discharge lamp		N
	Relevant warning according to 3.2.18 fitted to the luminaire		N
5.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
5.11 (8.2.3.a)	Class II luminaire:		N
	- basic insulated metal parts not accessible during starter or lamp replacement		N
	- basic insulation not accessible other than during starter or lamp replacement		N
	- glass protective shields not used as supplementary insulation		N
5.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		P
5.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		P
	Ordinary luminaire:		N
	- touch current .....:		N
	- no-load voltage .....:		N
	Other than ordinary luminaire:		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- nominal voltage .....:		N
5.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N
5.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
5.11 (8.2.6)	Covers reliably secured		P
5.11 (8.2.7)	Discharging of capacitors ≥ 0,5 µF		N
	Portable plug connected luminaire with capacitor		N
	Other plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N
5.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		—
5.12 (12.3)	Endurance test:		P
	- mounting-position .....:	As in normal use	—
	- test temperature (°C) .....:	35	—
	- total duration (h).....:	240	—
	- supply voltage: Un factor; calculated voltage (V)....:	1,1x277V=304.7V	—
	- lamp used .....:		—
5.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible		P
	- no cracks, deformation etc.		N
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12.1 (-)	Temperature reduction		
5.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N
5.12 (12.6)	Thermal test (failed lamp control gear condition):		N
5.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) .....:		—
	- case of abnormal conditions.....:		—
	- electronic lamp control gear		N

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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
	- calculated mounting surface temperature (°C) .....:		N
	- track-mounted luminaires		N
5.12 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions.....:		—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C).....:		N
	- track-mounted luminaires		N
5.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N
5.12 (12.7.1)	Luminaire without temperature sensing control		N
5.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N
	Test method 12.7.1.1 or Annex W .....:		—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V) .....:		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex W:		N
	- 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 Table 4.15 (13.2.1)	N
5.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N
	- 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 Table 4.15 (13.2.1)	N
5.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N
	- case of abnormal conditions.....:		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
5.12 (12.7.2)	Luminaire with temperature sensing control		N
	- 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 Table 4.15 (13.2.1)	N

5.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		—
5.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP .....:	IP65	—
	- mounting position during test.....:	As in normal use	—
	- fixing screws tightened; torque (Nm) .....:	--	—
	- tests according to clauses .....:	Clause 9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		P
	d) i) For luminaires without drain holes – no water entry		P

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Clause	Requirement + Test	Result - Remark	Verdict
	d) ii) For luminaires with drain holes – no hazardous water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		N
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		P
5.13 (9.3)	Humidity test 48 h	25°C; 93% R.H.	P
5.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		—
5.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....:		—
	Insulation resistance (MΩ):		—
	SELV		N
	- between current-carrying parts of different polarity :		N
	- between current-carrying parts and mounting surface .....:		N
	- between current-carrying parts and metal parts of the luminaire .....:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N
	- Insulation bushings as described in Section 5 .....:		N
	Other than SELV		P
	- between live parts of different polarity .....:	100MΩ	P
	- between live parts and mounting surface .....:	100MΩ	P
	- between live parts and metal parts .....:	100MΩ	P
	- between live parts of different polarity through action of a switch .....:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N
	- Insulation bushings as described in Section 5 .....:		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		—
	SELV		N
	- between current-carrying parts of different polarity :		N
	- between current-carrying parts and mounting surface .....:		N
	- between current-carrying parts and metal parts of the luminaire .....:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N
	- Insulation bushings as described in Section 5 .....:		N
	Other than SELV		P
	- between live parts of different polarity .....:		P
	- between live parts and mounting surface .....:		P
	- between live parts and metal parts .....:		P
	- between live parts of different polarity through action of a switch .....:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N
	- Insulation bushings as described in Section 5 .....:		N
5.14 (10.3)	Touch current or protective conductor current (mA).:	0.23mA	P
5.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		—
5.15 (13.2.1)	Ball-pressure test.....:	See Test Table 4.15 (13.2.1)	P
5.15 (13.3.1)	Needle-flame test (10 s) .....:	See Test Table 4.15 (13.3.1)	P
5.15 (13.3.2)	Glow-wire test (650°C).....:	See Test Table 4.15 (13.3.2)	P
5.15 (13.4.1)	Proof tracking test (IEC 60112) .....:		N

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Clause	Requirement + Test	Result - Remark	Verdict

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS**		—
(3.3)	DK: power supply cord with label		N
	IT: warning label on Class 0 luminaire		N
(4.5.1)	DK: socket-outlets		N
(4.5.1)	FR: socket-outlets		N
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N
ZC	**ANNEX ZC, NATIONAL DEVIATIONS**		—
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N
(13.3)	FR: Glow-wire test 850℃ alt. 750℃ for luminaires in premises open to public or 960℃ for luminaires in emergency exits		N
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N

5.7 (11.2)	**TABLE: Clearance and creepage distance measurements**						P
Class of luminaire ..... :	Class I ☒ Class II ☐ Class III ☐						—
Impulse withstand category ..... :	Category II ☒ Category III ☐						—
Clearance (cl) and creepage distance (cr) at/of/between:	Insulation type	U peak (V)	U r.m.s. (V)	Required cl (mm)	Measured cl (mm)	Required cr (mm)	Measured cr (mm)
Current-carrying parts of different polarity:	S	--	277	1,7	>3.0	2,8	>3.0
Current-carrying parts and accessible parts:	S	--	277	1,7	>3.0	2,8	>3.0
Current-carrying parts and supporting surface:	R	--	277	3,4	>6.0	5,1	>6.0
Supplementary information: B – Basic; S – Supplementary; R – Reinforced							

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Clause	Requirement + Test	Result - Remark	Verdict

5.15 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**				P
Allowed impression diameter (mm) .....:		2mm			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)		
Terminal	--	125	0,6		
Lamp cover	---	75	1,2		
Supplementary information:--					

5.15 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**					P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
Terminal	--	10	No	0	P	
Lamp cover	---	10	No	0	P	
Supplementary information:--						

5.15 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**					N
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	
Lamp cover	---	30	No	0	P	
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~~) .....:					Yes	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1:	Components	P

object/part No.	manufacturer/ trademark	type/model	technical data	mark(s) of conformity
Supply cords	DONGGUAN EVER UNITED ELECTRIC WIRE & CABLE CO LTD	SJTW	3X0.824mm²;105℃	E156549
Internal wiring	NIZING ELECTRIC CO LTD	1332	Min.24AWG, 200℃	UL E215834
LED driver	MEAN WELL ENTERPRISES CO.,LTD	CLG-150-36A	Input :100-240V~（277V~ for north America only）;50/60Hz；Tc:90℃； Ta:50℃	CE
Output wire	DONGGUAN EVER UNITED ELECTRIC WIRE & CABLE CO LTD	SJTW	3X0.824mm²;105℃	E156549
PCB of LED module	SHENZHEN YUGU SCIENCE AND TECHNOLOGY CO LTD	MK-D	V-0,130℃	UL 796
LED	Philips	3030SMD	IF: 20mA; Vf: 2,7-3,3V; view angle 120□ CCT: 7000K-8000K	Tested with appliance
Terminal	Cixi Kaifeng Electronic Co., Ltd.	KF10H	400, 500V, T100	VDE 40025775
Lamp cover	CHANG CHUN CHEMICAL (ZHANGZHOU) CO LTD	4815	V-0; 75°C	UL E304813

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference .....:		—
	Lamp used .....:		—
	Lamp control gear used .....:		—
	Mounting position of luminaire .....:	As in normal use	—
	Supply wattage (W).....:		—
	Supply current (A) .....:		—
	Calculated power factor .....:		—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode.....:		—
	- test 1: rated voltage .....:	277V	—

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Clause	Requirement + Test	Result - Remark	Verdict

	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	A:1,06x277V=293.6V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....:		—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:		—
	Through wiring or looping-in wiring loaded by a current of A during the test .....:		—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal			Clause 12.5 – abnormal	
		test 2 B	test 3	limit	test 4	limit
Supply cord	25	49.2	--	105	--	--
Internal wire	25	49.2	--	80	--	--
Tc of LED driver 1	25	52.8	--	70	--	--
Tc of LED driver 1	25	53.5	--	70	--	--
Reflective surface	25	80.8	--	Ref.	--	--
Supplementary information: both voltages were tests, max. value recorded.						

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		N
(14)	**SCREW TERMINALS**		N
(14.2)	Type of terminal ..... :		—
	Rated current (A)..... :		—
(14.3.2.1)	One or more conductors		N
(14.3.2.2)	Special preparation		N
(14.3.2.3)	Terminal size		N
	Cross-sectional area (mm²) ..... :		—
(14.3.3)	Conductor space (mm) ..... :		N
(14.4)	Mechanical tests		N
(14.4.1)	Minimum distance		N
(14.4.2)	Cannot slip out		N
(14.4.3)	Special preparation		N
(14.4.4)	Nominal diameter of thread (metric ISO thread)..... :		N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.1.6)	Nominal diameter of thread (mm) ..... :		N
	Torque (Nm)..... :		N
(14.4.7)	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N)..... :		N
(14.4.8)	Without undue damage		N

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

	Pull test pin or tab terminals (4 samples); pull (N) ..... :										N
(15.6.3.1)	**TABLE: Contact resistance test**										N
	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										N
	Voltage drop after 10th alt. 25th cycle										N
	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										N
	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										N
	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										N
	Max. allowed voltage drop (mV) .....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
Supplementary information:--											

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Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		—
4.4	Integral modules tested assembled in the luminaire		P
4.5	Independent modules complies with requirements in IEC 60598-1		N
5	**GENERAL TEST REQUIREMENTS**		—
5.5	SELV-operated LED modules comply with Annex I of IEC 61347-2-13	see Annex 1)	N
	General conditions for tests in Annex A	(see Annex A)	P
6	**CLASSIFICATION**		—
	Modules are classified, according to the method of installation, as:		—
	– Built-in module	Yes ☐ No ☒	—
	– independent module	Yes ☐ No ☒	—
	– integral module	Yes ☒ No ☐	—
	For Integral module; Note to 1.2.1 in IEC 60598-1 applies.		
7	**MARKING**		N
7.1	Requirements not applicable to the evaluated product.		—
8	**TERMINALS**		N
	Requirements not applicable to the evaluated product.		—
9 (9)	**PROVISIONS FOR PROTECTIVE EARTHING**		N
	Requirements not applicable to the evaluated product.		—
10 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		N
	Requirements not applicable to the evaluated product.		—
11 (11)	**MOISTURE RESISTANCE AND INSULATION**		—
	After storage 48 h at 91-95% relative humidity and 20-30 □ C measuring of insulation resistance with d.c. 500 V (M□):		P
	For basic insulation □. 2 M□	100 MΩ	P
	For double or reinforced insulation □. 4 M□		N
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N
12 (12)	**ELECTRIC STRENGTH**		—
	Immediately after the measurement of the insulation resistance		P
	Basic insulation for SELV, test voltage 500 V		P
	Working voltage □. 50 V, test voltage 500 V		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage > 50 V □. 1000 V, test voltage (V):		N
	Basic insulation, 2U + 1000 V		N
	Supplementary insulation, 2U + 1000 V		N
	Double or reinforced insulation, 4U + 2000 V		N
	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
13 (14)	**FAULT CONDITIONS**		—
- (14)	When operated under fault conditions the controlgear:		—
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental not impared		N
	Thermally protected controlgear does not exceed the marked temperature value		N
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	N
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance □. 1 M□	100M□	P
	No flammable gases		P
	No accessible parts have become live		N
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.6)	Relevant fault condition tests with high-power supply		N
13.2	**Overpower condition**		P
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N

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Clause	Requirement + Test	Result - Remark	Verdict
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P
15	**CONSTRUCTION**		—
	Wood, cotton, silk, paper and similar fibrous material shall not be used as insulation		P
16 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		—
	The requirements of EN 60598-1, Section 1.7, apply.		N
17 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		—
	Cl. 17 refer to Cl. 17 of IEC 61347-1 which refer to Cl. 4.11 and 4.12 of IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N
	- self-tapping screws		N
	- thread-cutting screws		N
	- at least two self-tapping screws		N
(4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood		P
(4.12)	Mechanical connections and glands		N
(4.12.1)	Mechanical stress		N
	Screws not made of soft metal		N
	Screws of insulating material		N
	Torque test: part; torque (Nm)		N
	Torque test: part; torque (Nm)		N
	Torque test: part; torque (Nm)		N
(4.12.2)	Screw diameter < 3mm screwed into metal		N
(4.12.3)	Void		N
(4.12.4)	Locked connections		N
(4.12.5)	Screwed glands: force (N)		N
18 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		—

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Clause	Requirement + Test	Result - Remark	Verdict
- (18.1)	Ball-pressure tes		N
- (18.3)	Glow-wire test (650□ C)		N
- (18.4)	Needle-flame test (10 s)		N
- (18.5)	Proof tracking test		N
19 (19)	**RESISTANCE TO CORROSION**		—
	- test according 4.18.1 of IEC 60598-1		N
	- adequate varnish on the outer surface		N
20	**INFORMATION FOR LUMINAIRE DESIGN**		—
	Information in Annex D (informative)		—
21	**HEAT MANAGEMENT**		—
21.1	**General**		N
	Exchangeability is safeguarded by cap or base		N
21.2	**Heat-conducting foil and paste**		N
	Heat-conducting foil delivered with the module if necessary		N
22	**PHOTOBIOLOGICAL SAFETY**		□
22.1	**UV radiation**		□
	Luminous radiation not exceed 2Mw/klm		N
22.2	**Blue light hazard**		□
	Assessed according to IEC TR 62778		N
22.3	**Infrared radiation**		□
	Requirements for infrared radiation when required		N
A	**ANNEX A – TESTS**		□
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		P
ANNEX 1	**SELV-operated LED modules**		N
	Requirements not applicable to the evaluated product.		□
13	**TABLE: tests of fault conditions**		**P**
Part	Simulated fault		Hazard

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Clause	Requirement + Test	Result - Remark	Verdict

4	**EXPOSURE LIMITS**		—
4.1	General		N
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		N
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds 10^4 cd·m^{-2}		N
4.3	Hazard exposure limits		N
4.3.1	Actinic UV hazard exposure limit for the skin and eye		N
	The exposure limit for effective radiant exposure is 30 J·m^{-2} within any 8-hour period		N
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broadband source, the effective integrated spectral irradiance , E_S, of the light source shall not exceed the levels defined by:		N
	$E_s \cdot t = \sum_{200}^{400} \sum_{t} E_\lambda(\lambda,t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 30$ J·m^{-2}		N
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		N
	$t_{max} = \frac{30}{E_s}$ s		N
4.3.2	Near-UV hazard exposure limit for eye		N
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed 10000 J·m^{-2} for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA}, shall not exceed 10 W·m^{-2}.		N
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		N
	$t_{max} \le \frac{10\,000}{E_{UVA}}$ s		N
4.3.3	Retinal blue light hazard exposure limit		N
	To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, B(λ), i.e., the blue-light weighted radiance , L_B, shall not exceed the levels defined by:		N

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Clause	Requirement + Test	Result - Remark	Verdict
	$L_B \cdot t = \sum_{300}^{700} \sum_{t} L_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 10^6$ $J \cdot m^{-2} \cdot sr^{-1}$	for $t \le 10^4$ s $t_{max} = \frac{10^6}{L_B}$	N
	$L_B = \sum_{300}^{700} L_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 100$ $W \cdot m^{-2} \cdot sr^{-1}$	for $t > 10^4$ s	N
4.3.4	Retinal blue light hazard exposure limit - small source		N
	Thus the spectral irradiance at the eye E_λ, weighted against the blue-light hazard function B(λ) shall not exceed the levels defined by:	see table 4.2	N
	$E_B \cdot t = \sum_{300}^{700} \sum_{t} E_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 100$ $J \cdot m^{-2}$	for $t \le 100$ s	N
	$E_B = \sum_{300}^{700} E_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 1$ $W \cdot m^{-2}$	for $t > 100$ s	N
4.3.5	Retinal thermal hazard exposure limit		N
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_λ, weighted by the burn hazard weighting function $R(\lambda)$ (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		N
	$L_R = \sum_{380}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{50\,000}{\alpha \cdot t^{0,25}}$ $W \cdot m^{-2} \cdot sr^{-1}$	(10 µs ≤ t ≤ 10 s)	N
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR}, as viewed by the eye for exposure times greater than 10 s shall be limited to:		N
	$L_{IR} = \sum_{780}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{6\,000}{\alpha}$ $W \cdot m^{-2} \cdot sr^{-1}$	t > 10 s	N
4.3.7	Infrared radiation hazard exposure limits for the eye		N
	The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis), ocular exposure to infrared radiation, E_{IR}, over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		N
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 18\,000 \cdot t^{-0,75}$ $W \cdot m^{-2}$	t ≤ 1000 s	N
	For times greater than 1000 s the limit becomes:		N

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Clause	Requirement + Test	Result - Remark	Verdict
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 100 \quad W \cdot m^{-2}$	t > 1000 s	N
4.3.8	Thermal hazard exposure limit for the skin		N
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		N
	$E_H \cdot t = \sum_{380}^{3\,000} \sum_{t} E_\lambda(\lambda,t) \cdot \Delta t \cdot \Delta\lambda \le 20\,000 \cdot t^{0,25} \quad J \cdot m^{-2}$		N
5	**MEASUREMENT OF LAMPS AND LAMP SYSTEMS**		—
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		N
	– the manufacturer' s recommendation		P
5.1.5	Lamp system operation		N
	The power source for operation of the test lamp shall be provided in accordance with:		N
	– the appropriate IEC standard, or		N
	– the manufacturer' s recommendation		N
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.		P
	Maximum aperture diameter 50 mm.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P
5.2.2.2	Alternative method		N
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N
5.2.3	Measurement of source size		P
	The determination of α, the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N
	The determination of Δt, the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.		P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.		P
6	**LAMP CLASSIFICATION**		—
	For the purposes of this standard it was decided that the values shall be reported as follows:		P
	– for lamps intended for general lighting service, the hazard values shall be reported as either		P

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Clause	Requirement + Test	Result - Remark	Verdict
	irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm		
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		N
6.1	Continuous wave lamps		P
6.1.1	Except Group		P
	In the except group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 8-hours exposure (30000 s), nor		P
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		P
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		P
6.1.2	Risk Group 1 (Low-Risk)		N
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		N
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		N
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N
	– a retinal blue-light hazard (L_B) within 100 s, nor		N
	– a retinal thermal hazard (L_R) within 10 s, nor		N
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 100 s are in Risk Group 1.		N
6.1.3	Risk Group 2 (Moderate-Risk)		N
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		N
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N

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Clause	Requirement + Test	Result - Remark	Verdict
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 10 s are in Risk Group 2.		N
6.1.4	Risk Group 3 (High-Risk)		N
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N
6.2	Pulsed lamps		N
	Pulse lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 s.		N
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manufacturer.		N
	The risk group determination of the lamp being tested shall be made as follows:		N
	– a lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk)		N
	– for single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance does is below the EL shall be classified as belonging to the Exempt Group		N
	– for repetitively pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL, shall be evaluated using the continuous wave risk criteria discussed in clause 6.1, using time averaged values of the pulsed emission		N

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Clause	Requirement + Test	Result - Remark	Verdict

Table 4.1	Spectral weighting function for assessing ultraviolet hazards for skin and eye		P
Wavelength[1] λ, nm	**UV hazard function $S_{UV}(\lambda)$**	**Wavelength λ, nm**	**UV hazard function $S_{UV}(\lambda)$**
200	0,030	313*	0,006
205	0,051	315	0,003
210	0,075	316	0,0024
215	0,095	317	0,0020
220	0,120	318	0,0016
225	0,150	319	0,0012
230	0,190	320	0,0010
235	0,240	322	0,00067
240	0,300	323	0,00054
245	0,360	325	0,00050
250	0,430	328	0,00044
254*	0,500	330	0,00041
255	0,520	333*	0,00037
260	0,650	335	0,00034
265	0,810	340	0,00028
270	1,000	345	0,00024
275	0,960	350	0,00020
280*	0,880	355	0,00016
285	0,770	360	0,00013
290	0,640	365*	0,00011
295	0,540	370	0,000093
297*	0,460	375	0,000077
300	0,300	380	0,000064
303*	0,120	385	0,000053
305	0,060	390	0,000044
308	0,026	395	0,000036
310	0,015	400	0,000030

[1] Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths.
* Emission lines of a mercury discharge spectrum.

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Clause	Requirement + Test	Result - Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources	P

Wavelength nm	Blue-light hazard function B (λ)	Burn hazard function R (λ)
300	0,01	—
305	0,01	—
310	0,01	—
315	0,01	—
320	0,01	—
325	0,01	—
330	0,01	—
335	0,01	—
340	0,01	—
345	0,01	—
350	0,01	—
355	0,01	—
360	0,01	—
365	0,01	—
370	0,01	—
375	0,01	—
380	0,01	0,1
385	0,013	0,13
390	0,025	0,25
395	0,05	0,5
400	0,10	1,0
405	0,20	2,0
410	0,40	4,0
415	0,80	8,0
420	0,90	9,0
425	0,95	9,5
430	0,98	9,8
435	1,00	10,0
440	1,00	10,0
445	0,97	9,7
450	0,94	9,4
455	0,90	9,0
460	0,80	8,0

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Clause	Requirement + Test	Result - Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources	P
465	0,70	7,0
470	0,62	6,2
475	0,55	5,5
480	0,45	4,5
485	0,40	4,0
490	0,22	2,2
495	0,16	1,6
500-600	$10^{[(450-\lambda)/50]}$	1,0
600-700	0,001	1,0
700-1050	—	$10^{[(700-\lambda)/500]}$
1050-1150	—	0,2
1150-1200	—	$0{,}2 \cdot 10^{0{,}02(1150-\lambda)}$
1200-1400	—	0,02

Table 5.4	Summary of the ELs for the surface of the skin or cornea (irradiance based values)				N
Hazard Name	**Relevant equation**	**Wavelength range nm**	**Exposure duration sec**	**Limiting aperture rad (deg)**	**EL in terms of constant irradiance $W \cdot m^{-2}$**
Actinic UV skin & eye	$E_S = \sum E_\lambda \cdot S(\lambda) \cdot \Delta\lambda$	200 – 400	< 30000	1,4 (80)	30/t
Eye UV-A	$E_{UVA} = \sum E_\lambda \cdot \Delta\lambda$	315 – 400	≤1000 >1000	1,4 (80)	10000/t 10
Blue-light small source	$E_B = \sum E_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	≤100 >100	< 0,011	100/t 1,0
Eye IR	$E_{IR} = \sum E_\lambda \cdot \Delta\lambda$	780 –3000	≤1000 >1000	1,4 (80)	$18000/t^{0,75}$ 100
Skin thermal	$E_H = \sum E_\lambda \cdot \Delta\lambda$	380 – 3000	< 10	2π sr	$20000/t^{0,75}$

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Clause	Requirement + Test	Result - Remark	Verdict

Table 5.5	Summary of the ELs for the retina (radiance based values)	N

Hazard Name	**Relevant equation**	**Wavelength range nm**	**Exposure duration sec**	**Field of view radians**	**EL in terms of constant radiance $W \cdot m^{-2} \cdot sr^{-1}$)**
Blue light	$L_B = \sum L_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	0,25 – 10 10-100 100-10000 ≥ 10000	$0{,}011 \cdot \sqrt{(t/10)}$ 0,011 $0{,}0011 \cdot \sqrt{t}$ 0,1	$10^6/t$ $10^6/t$ $10^6/t$ 100
Retinal thermal	$L_R = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	380 – 1400	< 0,25 0,25 – 10	0,0017 $0{,}011 \cdot \sqrt{(t/10)}$	$50000/(\alpha \cdot t^{0,25})$ $50000/(\alpha \cdot t^{0,25})$
Retinal thermal (weak visual stimulus)	$L_{IR} = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	780 – 1400	> 10	0,011	$6000/\alpha$

Attachment II: Attached report of EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0	—	—	—	—	
Near UV		E_{UVA}	$W \cdot m^{-2}$	0,33	0,04766	—	—	—	—	
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	53,2	10500	—	4000000	—	
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	0,01*	0,00423	1,0	—	400	—	
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	1041	31000/α	—	71000/α	—	
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	—					
				6000/α 0,011≤ α ≤ 0,1	—					
IR radiation, eye	—	E_{IR}	$W \cdot m^{-2}$	100	2,5789	570	—	3200	—	

* Small source defined as one with α < 0,011 radian. Averaging field of view at 10000 s is 0,1 radian.
** Involves evaluation of non-GLS source

Appendix I: Attached report of EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict

4.2	**APPLICATION OF LIMITS (Test summary)**		—
	Specific absorption rate (SAR)		—
a)	CISPR 15 clause 4.3.1 Disturbance voltage mains terminals 20 kHz – 30 MHz	*)	P
b)	CISPR 15 clause 4.4 Radiated electromagnetic disturbances 100 kHz – 30 MHz	*)	P
c)	CISPR 15 clause 4.4.2 Radiated electromagnetic disturbances 30 MHz – 300 MHz	*)	P
*)	☒ See separate Test Report for measurements of a), b) and c) above Test Report with Ref. No.: R011601856E ☐ Only measurement of d) below. See measurement results below. In this case this test report does not show compliance with IEC 62493.		—
	Induced current density		P
d)	Induced current density 20 kHz – 10 MHz	See measurement results below	P
4.2.d	**INDUCED CURRENT DENSITY**		—
	Power supply system utilised:		—
	Voltage ..... :	100-277V~	—
	Frequency ..... :	50/60Hz	—
	Environmental conditions:		—
	Temperature ..... :	25°C	—
	Humidity ..... :	52% R.H.	—
	EuT operation mode:		—
	☒ Normal operation		—
	☐ Other operation:		—
4.2.d	**MEASUREMENT RESULTS**		—
	Measuring with “Van der Hoofden” test head		—

Location of EuT	Measuring distance	Result (F)	Limit (F)	Verdict
Front of EuT	30 cm	0,14	0,85	P

Appendix I: Attached report of EN 62493			
Clause	Requirement – Test	Result - Remark	Verdict

Rear of EuT	30 cm	0,20	0,85	P
Side of EuT	30 cm	0,24	0,85	P

Photo documentation

Photo 1 Outside view	

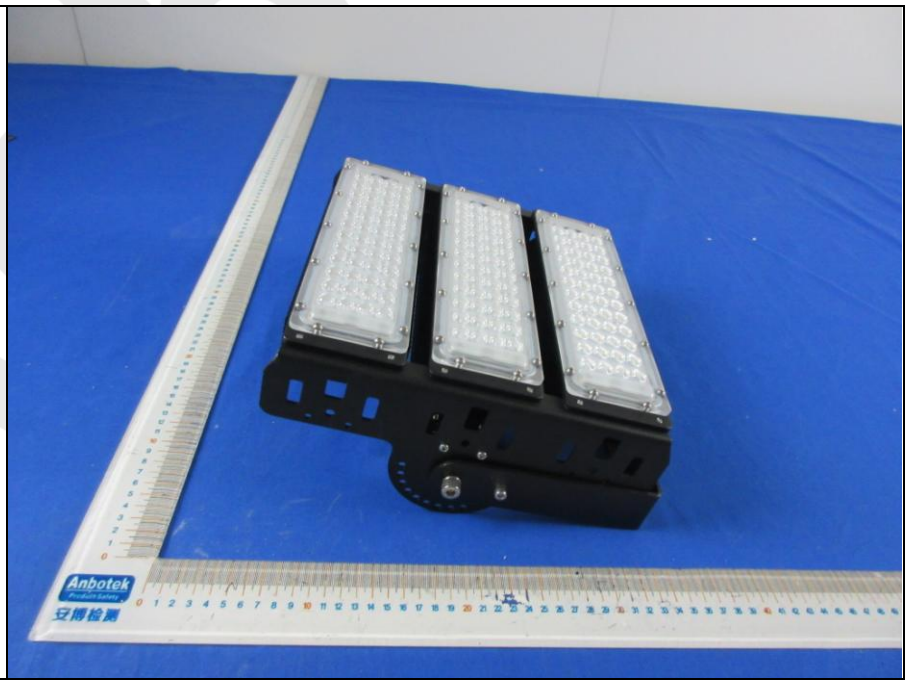
Photo 2 Outside view	

Photo documentation

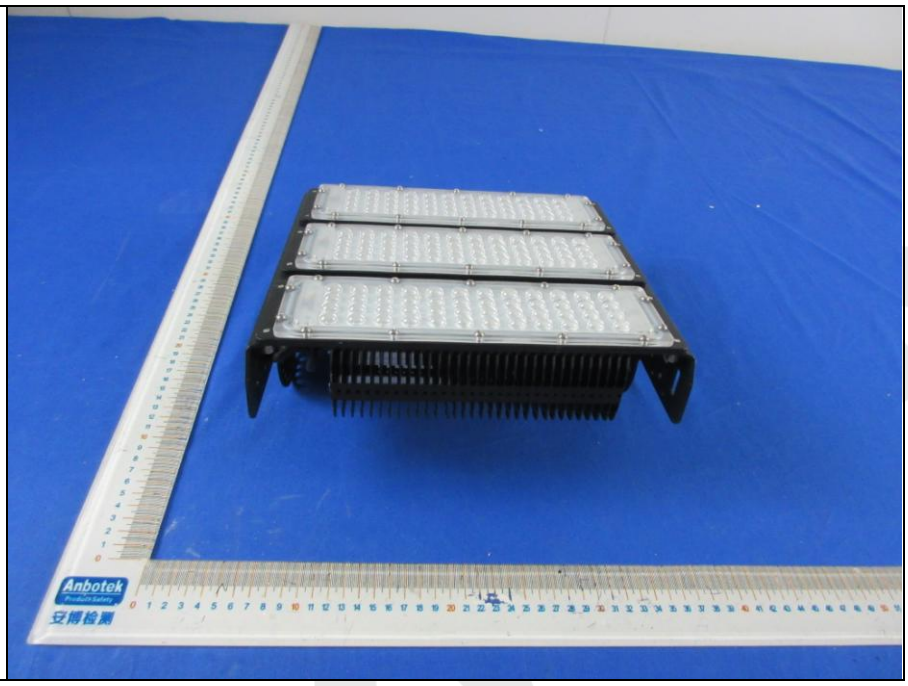
Photo 3 Outside view	

Photo 4 Bottom view	

Photo documentation

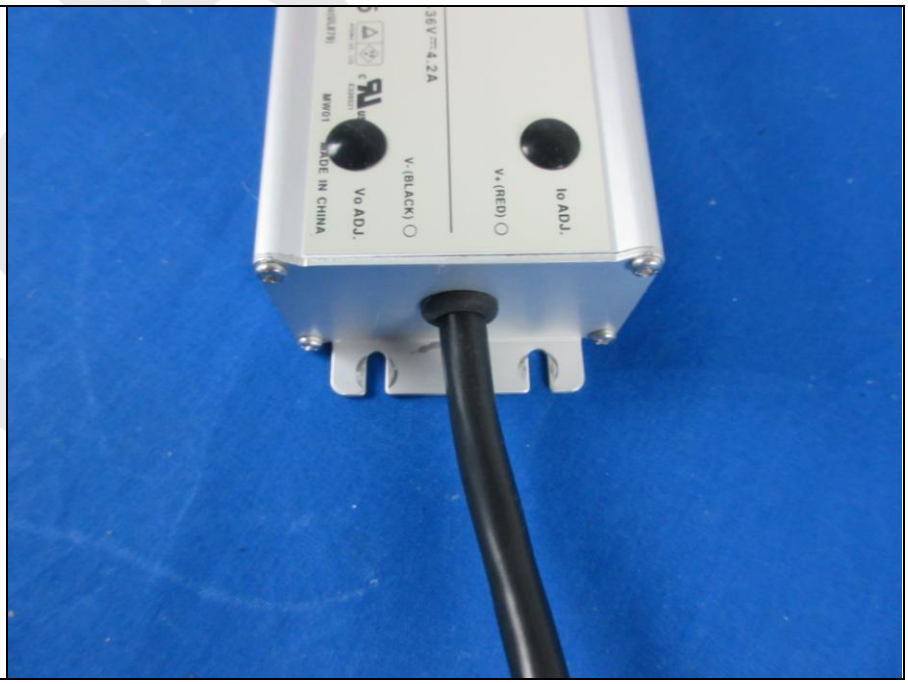
Photo 5 Interior view	
Photo 6 Interior view	

Photo documentation

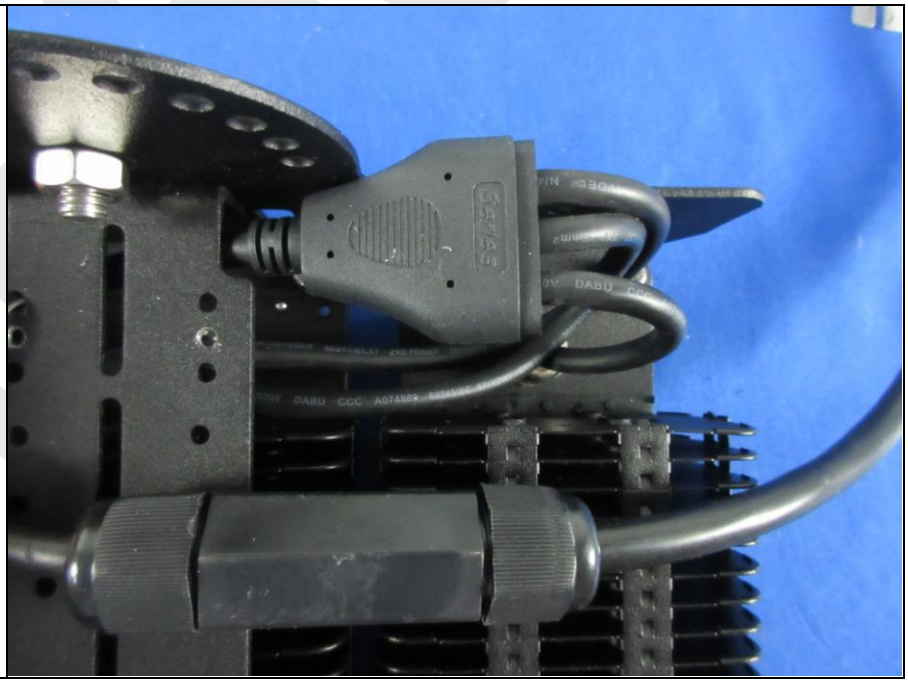
Photo 7 Interior view	
Photo 8 Bottom view	

Photo documentation

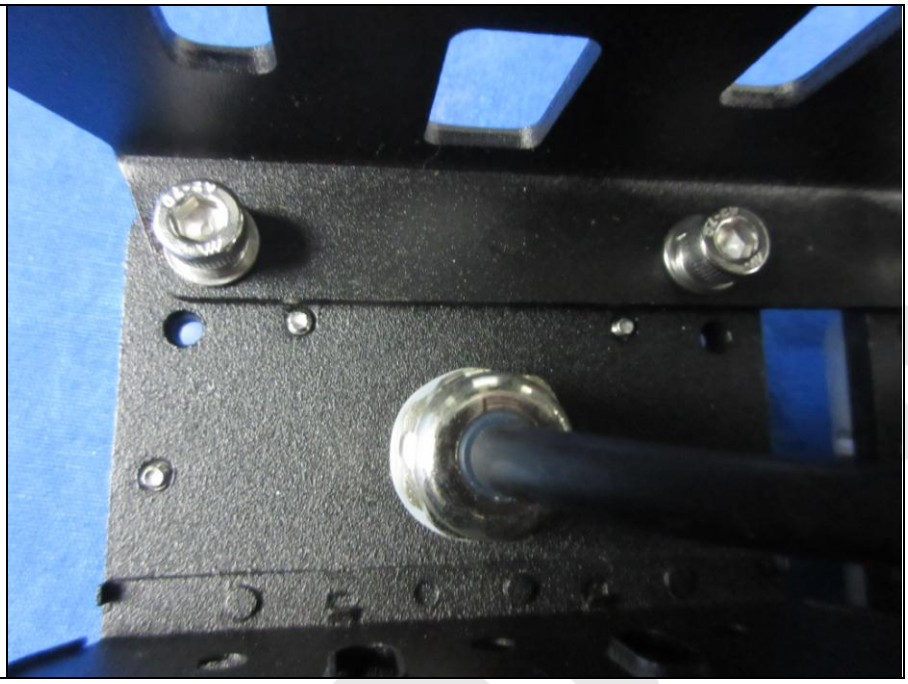
Photo 9 Interior view	

Photo 10 Interior view	

Photo documentation

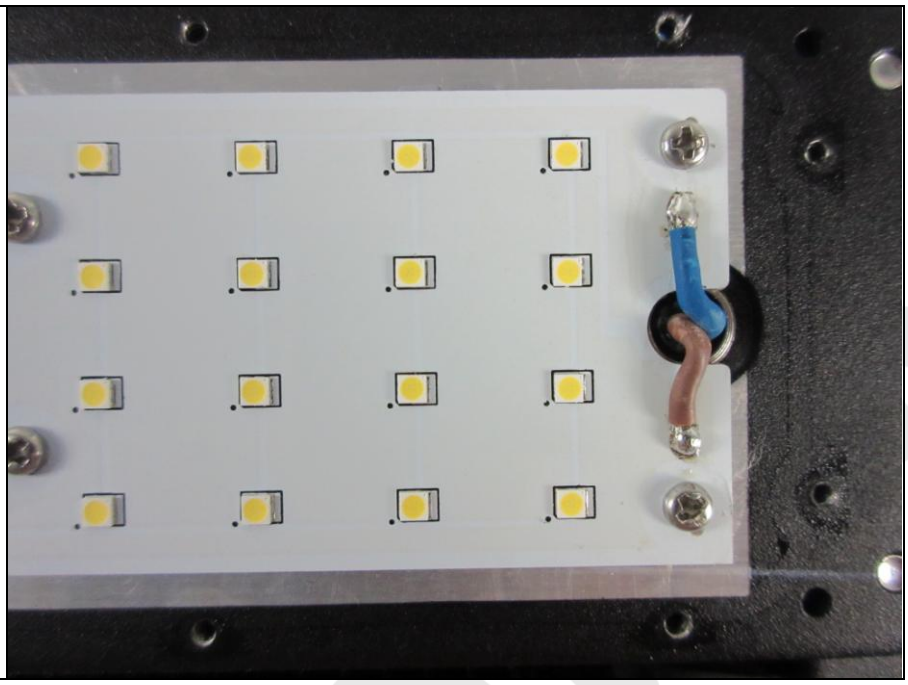
Photo 11 Interior view	

Photo 12 Interior view