CE

TEST REPORT

On Behalf of

Shenzhen Qinhan Lighting Co., Ltd

LED Flood Light

Model: QH-FLTG-150W, QH-FLTG-30W, QH-FLTG-50W, QH-FLTG-80W, QH-FLTG-100W, QH-FLTG-150W, QH-FLTG-200W

Prepared for : **NINGBO TAPAN INTELLIGENCE TECHNOLOGY CO., LTD**
No. 85 Luyuan Road, Xiaowangmiao Street, Fenghua, Zhejiang, China.

Prepared by : **TMC Testing Services(Shenzhen) Co., Ltd.**
5/F, Building E, Guanghao Industrial Park, Yunfeng Road, Longhua District, Shenzhen, Guangdong, P.R. China
Tel: +86-755- 86642861
Fax: +86-755-86642996
Web: www.tmc-lab.com
E-mail：Cert@tmc-lab. Com

Date of Test :	March 28, 2018 to April 13, 2018
Date of Report :	April 16, 2018
Report Number :	TMC180410117-S

TEST REPORT

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

Report Number.....:	TMC180410117-S
Compiled by (name + signature).....:	Neo Wang
Approved by (name + signature).....:	Lemon Rao
Date of issue.....:	April 16, 2018
Total number of pages.....:	36
Testing Laboratory.....:	TMC Testing Services(Shenzhen) Co., Ltd.
Address.....:	5/F, Building E, Guanghao Industrial Park, Yunfeng Road, Longhua District, Shenzhen, Guangdong, P.R. China
Testing location.....:	(Same as above)
Applicant's name.....:	Shenzhen Qinhan Lighting Co., Ltd.
Address.....:	5th Floor, Building B, Ideemonto Industrial Park, Gongming Town, Guangming New Area, Shenzhen, China
Test specification:	
Standard.....:	EN 60598-2-5:2015 used in conjunction with EN 60598-1:2015
Test procedure.....:	LVD
Non-standard test method.....:	N/A
Test Report Form No.....:	EN60598_2_5E
Test Report Form(s) Originator.....:	SIT
Master TRF.....:	Dated 2016-02
Test item description.....:	LED Flood Light
Trade Mark.....:	QINHAN
Manufacturer.....:	Same as applicant
Model/Type reference.....:	QH-FLTG-150W, QH-FLTG-30W, QH-FLTG-50W, QH-FLTG-80W, QH-FLTG-100W, QH-FLTG-150W, QH-FLTG-200W
Ratings.....:	230V~, 60Hz, 150W, Class I

List of Attachments:

- EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015;
- Attachment No. 1: Clause 13 of EN 62031:2008+A1:2013+A2:2015;
- Attachment No. 2: EN 62471:2008 and IEC TR 62778:2012;
- Attachment No. 3: Photo Documentation

Summary of testing:

The submitted samples were found to comply with requirements of standards:

- EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015;
- Clause 13 of EN 62031:2008+A1:2013+A2:2015(See Attachment No. 1);
- EN 62471:2008 and IEC TR 62778:2012 (See Attachment No. 2) ;

Copy of marking plate:

- The artwork below may be only a draft.
- The under markings are the minimum requirements required by the safety standard. For the production samples, the additional markings which do not give rise to misunderstanding may be added.
- Due to similarity of the rating labels,only below labels are listed.

LED Flood Light
Model: QH-FLTG-150W
Input: 230V~, 60Hz
Power:150W
IP Rating:IP65

Shenzhen Qinhan Lighting Co., Ltd.
Made In China

Remark:

Location: Rating label be stuck on enclosure.
(height of CE mark at least 5mm, height of WEEE mark at least 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.)

Test item particulars.....:	
Classification of installation and use..... :	Class I, Fixed luminaires
Supply Connection..... :	Supply cord
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement..... :	P(Pass)
- test object does not meet the requirement.....:	F(Fail)
Testing.....:	
Date of receipt of test item..... :	March 28, 2018
Date (s) of performance of tests.....:	March 28, 2018 to April 13, 2018

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

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

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

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

General product information:

All models have the same mechanical and electrical construction, except model name is different.

According to these differences, if there is no special description, all the tests are performed on the main model QH-FLTG-150W

EN 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

5.2 (0)	**GENERAL TEST REQUIREMENTS**		P
5.2 (0.1)	Information for luminaire design considered..... :	Standard Yes ☒ No ☐	—
5.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒	—

5.4 (2)	**CLASSIFICATION**		P
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**		P
5.5 (3.2)	Mandatory markings		P
	Position of the marking	On the enclosure	P
	Format of symbols/text	See marking plate	P
5.5 (3.3)	Additional information		P
	Language of instructions	In English	P
5.5 (3.3.1)	Combination luminaires		N/A
5.5 (3.3.2)	Nominal frequency in Hz	60Hz	P
5.5 (3.3.3)	Operating temperature		N/A
5.5 (3.3.4)	Symbol or warning notice		N/A
5.5 (3.3.5)	Wiring diagram		N/A
5.5 (3.3.6)	Special conditions		N/A
5.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
5.5 (3.3.8)	Limitation for semi-luminaires		N/A
5.5 (3.3.9)	Power factor and supply current		N/A
5.5 (3.3.10)	Suitability for use indoors		N/A
5.5 (3.3.11)	Luminaires with remote control		N/A
5.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
5.5 (3.3.13)	Specifications of protective shields		P
5.5 (3.3.14)	Symbol for nature of supply		P
5.5 (3.3.15)	Rated current of socket outlet		N/A
5.5 (3.3.16)	Rough service luminaire		N/A

EN 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	P
5.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
5.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
5.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
5.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
	Cautionary symbol		P
5.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
5.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P
5.5 (-)	Additional necessary marking		P
	a) Operation position		P
	b) Weight and dimensions		P
	c) Maximum projected area		P
	d) Range of mounting heights		P
	e) Suitability for indoor use		N/A
5.6 (4)	**CONSTRUCTION**		P
5.6 (4.2)	Components replaceable without difficulty		N/A
5.6 (4.3)	Wireways smooth and free from sharp edges		P
5.6 (4.4)	Lampholders		N/A
5.6 (4.4.1)	Integral lampholder		N/A
5.6 (4.4.2)	Wiring connection		N/A
5.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
5.6 (4.4.4)	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
5.6 (4.4.5)	Peak pulse voltage		N/A
5.6 (4.4.6)	Centre contact		N/A
5.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
5.6 (4.4.8)	Lamp connectors		N/A
5.6 (4.4.9)	Caps and bases correctly used		N/A
5.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
5.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
5.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
5.6 (4.7)	Terminals and supply connections		N/A
5.6 (4.7.1)	Contact to metal parts		N/A
5.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
5.6 (4.7.3)	Terminals for supply conductors		N/A
5.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
5.6 (4.7.4)	Terminals other than supply connection		N/A
5.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
5.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
5.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- compliance with IEC 61058-1 for electronic switches		N/A
5.6 (4.9)	Insulating lining and sleeves		N/A
5.6 (4.9.1)	Retainment		N/A
	Method of fixing.....:		N/A
5.6 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
5.6 (4.10)	Double or reinforced insulation		N/A
5.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Class I luminaires	N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
5.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
5.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
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/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A
5.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
5.6 (4.11.4)	Material of current-carrying parts		P
5.6 (4.11.5)	No contact to wood or mounting surface		P
5.6 (4.11.6)	Electro-mechanical contact systems		N/A
5.6 (4.12)	Screws and connections (mechanical) and glands		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material	Metal screws	N/A
	Torque test: torque (Nm); part.....:		P
	Torque test: torque (Nm); part.....:	Screw for fixing the earthing terminal: 2.92mm, 0.50 Nm	P
	Torque test: torque (Nm); part.....:	Screw for fixing PCB: 2.72mm, 0.40 Nm	P
	Torque test: torque (Nm); part.....:		N/A
5.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
5.6 (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
5.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
5.6 (4.13)	Mechanical strength		P
5.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :	0.5 Nm for glass cover	P
	- other parts; energy (Nm)..... :	0.7 Nm for metal enclosure	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
5.6 (4.13.3)	Straight test finger	Test finger pressed against on the metal enclosure with 30 N, not touch live parts.	P
5.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
5.6 (4.13.6)	Tumbling barrel		N/A
5.6 (4.14)	Suspensions, fixings and means of adjusting		P
5.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	4.74x 4 = 121kg	P
	B) torque 2,5 Nm		P

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Clause	Requirement + Test	Result - Remark	Verdict
	C) bracket arm; bending moment (Nm)..... :	2.5N, 1min	P
	D) load track- mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N/A
	Metal rod. diameter (mm) .....:		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
5.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) .....:		—
	Stress in conductors (N/mm²) .....:		N/A
	Mass (kg) of semi-luminaire .....:		—
	Bending moment (Nm) of semi-luminaire .....:		N/A
5.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles..... :	Adjusting device of mounting means: 45 times	P
	- strands broken..... :	No broken	P
	- electric strength test afterwards		P
5.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
5.6 (4.14.5)	Guide pulleys		N/A
5.6 (4.14.6)	Strain on socket-outlets		N/A
5.6 (4.15)	Flammable materials		N/A
	- glow- wire test 650°C..... :	See Test Table 5.15 (13.3.2)	N/A
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
5.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
5.6 (4.16)	Luminaires for mounting on normally flammable surfaces		—
	No lamp control gear.....:	(compliance with Section 12)	N/A
5.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- spacing 10 mm		N/A
5.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
5.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
5.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
5.6 (4.18)	Resistance to corrosion		P
5.6 (4.18.1)	- rust- resistance		P
5.6 (4.18.2)	- season cracking in copper		P
5.6 (4.18.3)	- corrosion of aluminium		P
5.6 (4.19)	Igniters compatible with ballast		N/A
5.6 (4.20)	Rough service vibration		N/A
5.6 (4.21)	Protective shield		N/A
5.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
5.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
5.6 (4.21.3)	No direct path		N/A
5.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....:		N/A
5.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
5.6 (4.23)	Semi-luminaires comply Class II		N/A
5.6 (4.24)	Photobiological hazards		P
5.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
5.6 (4.24.2)	Retinal blue light hazard		P
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2... :		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
5.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
5.6 (4.26)	Short-circuit protection		N/A
5.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
5.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
5.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
5.6 (4.28)	Fixing of thermal sensing control		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C)..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
5.6 (4.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
5.6 (4.31.1)	SELV circuits		N/A
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
5.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
5.6 (4.31.3)	Other circuits		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3 of above		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
5.6 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
5.6.1 (-)	At least IPX3 if for outdoor use		P
5.6.2 (-)	Lampholder 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		P
	Wind force test	no failure, no deformation	P
5.6.6 (-)	Locking of angular adjustment		P
5.6.7 (-)	Vibration resistance		P
5.6.8 (-)	Glass cover	Min. 65 > 60 pieces	P

5.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		P
5.7 (11.2)	Creepage distances and clearances.....:	See Table 5.7 (11.2)	P
	Working voltage (V).....:	230V	—
	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**		P
5.8 (7.2.1 + 7.2.3)	Accessible metal parts	Class I	P
	Metal parts in contact with supporting surface		P
	Resistance <0,5Ω.....:		P
	Self-tapping screws used		N/A
	Thread-forming screws		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
5.8 (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/A
5.8 (7.2.5)	Earth terminal integral part of connector socket		P
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
5.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
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/A
	Double or reinforced insulation to functional earth		N/A
5.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
5.9 (14)	**SCREW TERMINALS**		N/A
	Separately approved; component list.....:	(see Annex 1)	N/A
	Part of the luminaire.....:	(see Annex 3)	N/A
5.9 (15)	**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 (5)	**EXTERNAL AND INTERNAL WIRING**		P
5.10 (5.2)	Supply connection and external wiring		P
5.10 (5.2.1)	Means of connection.....:	Supply cord without plug	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.....:	(see Annex 1)	P
	Nominal cross-sectional area (mm²)..... :	(see Annex 1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Cables equal to IEC 60227 or IEC 60245	(see Annex 1)	P
5.10 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P
5.10 (5.2.5)	Type Z not connected to screws		P
5.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
5.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
5.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
5.10 (5.2.9)	Locking of screwed bushings		P
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		P
5.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
5.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Z	P
5.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)..... :	60N	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- torque test: torque (Nm)..... :	0.25	P
	- displacement ≤ 2 mm	1.5mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
5.10 (5.2.11)	External wiring passing into luminaire		P
5.10 (5.2.12)	Looping- in terminals		N/A
5.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
5.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
5.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
5.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
5.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
5.10 (5.3)	Internal wiring		P
5.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction	(See Annex 1)	N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures.....:	(See Annex 2)	P
	Green- yellow for earth only		P
5.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²)..... :		N/A
	Insulation thickness		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Extra insulation added where necessary		N/A
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
5.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
5.10 (5.3.1.4)	Conductors without insulation		P
5.10 (5.3.1.5)	SELV current-carrying parts		N/A
5.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
5.10 (5.3.2)	Sharp edges etc.	No sharp edges.	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 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.10 (5.3.4)	Joints and junctions effectively insulated		N/A
5.10 (5.3.5)	Strain on internal wiring		P
5.10 (5.3.6)	Wire carriers		N/A
5.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
5.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
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		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable	No insulation lacquer	P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
5.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
5.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
5.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
5.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- touch current .....:		N/A
	- no-load voltage.....:		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage .....:		N/A
5.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
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/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
5.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 5.13		—
5.12 (12.3)	Endurance test:		P
	- mounting- position..... :	According the user's manual.	—
	- test temperature (°C)..... :	50°C	—
	- total duration (h).....:	240h	—
	- supply voltage: Un factor; calculated voltage (V)...:	253V	—
	- lamp used..... :	Integrated LED module	—
5.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
5.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
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/A
	- measured winding temperature (°C): at 1,1 Un .....:		—
	- measured mounting surface temperature (°C) at 1,1 Un.....:		N/A
	- calculated mounting surface temperature (°C) .....:		N/A
	- track- mounted luminaires		N/A
5.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....:		—
	- thermal link		N/A
	- manual reset cut- out		N/A
	- auto reset cut- out		N/A
	- measured mounting surface temperature (°C)..... :		N/A
	- track- mounted luminaires		N/A
5.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.12 (12.7.1)	Luminaire without temperature sensing control		N/A
5.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W .....:		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V) .....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1Un.....:		—
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test.....:		N/A
5.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test.....:		N/A
5.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions.....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
5.12 (12.7.2)	Luminaire with temperature sensing control		—
	- thermal link.....:	Yes ☐ No ☐	—
	- manual reset cut-out.....:	Yes ☐ No ☐	—
	- auto reset cut-out.....:	Yes ☐ No ☐	—
	- case of abnormal conditions.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- highest measured temperature of fixing point/ exposed part (°C):..... :		—
	Ball-pressure test:.....:		N/A
5.12.1 (-)	Temperature reduction if for outdoor use only		N/A
5.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		P
5.13 (-)	If IP > IP 20 the order of tests as specified in clause 5.12		P
5.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP..... :	IP65	—
	- mounting position during test.....:	On the most unfavourable position	—
	- fixing screws tightened; torque (Nm).....:	---	—
	- tests according to clauses.....:	Cl.9.2.2 and Cl. 9.2.6	—
	- 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
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		P
5.13 (9.3)	Humidity test 48 h	25 °C, 93%R.H. for 48 h	P
5.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
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/A
	- between current-carrying parts of different polarity:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and mounting surface.....:		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 Section 5 .....:		N/A
	Other than SELV		P
	- between live parts of different polarity..... :	>100 MΩ	P
	- between live parts and mounting surface.....:	>100 MΩ	P
	- between live parts and metal parts.....:	>100 MΩ	P
	- between live parts of different polarity through action of a switch.....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 .....:		N/A
5.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V).....:		N/A
	SELV		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 Section 5 .....:		N/A
	Other than SELV		P
	- between live parts of different polarity..... :	2U+1000V=1460V	P
	- between live parts and mounting surface.....:	4U+2000V=2920V	P
	- between live parts and metal parts.....:	4U+2000V=2920V	P
	- between live parts of different polarity through action of a switch.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
5.14 (10.3)	Touch current or protective conductor current (mA). :	Touch current: Max. 0.12mA < 0.7 mA;	P

5.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		p
5.15 (13.2.1)	Ball-pressure test..... :		N/A
5.15 (13.3.1)	Needle-flame test (10 s)..... :		N/A
5.15 (13.3.2)	Glow- wire test (650°C)..... :	See Test Table 5.15 (13.3.2)	P
5.15 (13.4)	Proof tracking test (IEC 60112)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.7 (11.2)	TABLE: Creepage distances and clearances							P
	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages							P
	Applicable part of IEC 60598-1 Table 11.1* and 11.2*							P
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	>1.5	1.5	11.1	>2.5	2.5	11.1	
Working voltage (V)..... :					240			—
PTI..... :					< 600 ☒	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:					--			—
Supplementary information: Between L and N								
Supplementary information: Between live parts and metal enclosure								

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

5.15 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**			N/A
Allowed impression diameter (mm) .....:				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

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

5.15 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**			P
Glow wire temperature .....:	650 °C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED cover	SABIC INNOVATIVE	No	0	P

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Clause	Requirement + Test	Result - Remark	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).....:	Yes
Supplementary information:	

5.15 (13.4)	**TABLE: Proof tracking test (IEC 60112)**				N/A
Test voltage PTI .....:		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 1: components					P
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Power cord	B	Ningbo Yaoyang Electron Cable Co., Ltd.	H07RN-F	3 x 1.5mm^2	EN 50525-2-21	VDE
PCB	B	HUBEI ZHONGPEI ELECTRONICS TECHNOLOGY CO LTD	ZP-2	130°C, V-0	--	Tested with appliance (UL)
LED driver	C	MW	HLG-240H-48A	Input: 100-240V~, 50/60Hz, 2.0A; Output: 36VDC, 4.2A;ta=50°C; tc=90°C; IP65	EN 61347-2-13 EN 61347-1	TUV
LED	C	Lattice Power (Jiangxi) Corporation	WR-PC3020UW-GS	DC2.75-3.35V 60mA	--	Tested with appliance
LED cover	C	SABIC INNOVATIVE	LUX2614	PC	--	Tested with appliance

Supplementary information:

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

The codes above have the following meaning:

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

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

C - Integrated component tested together with the appliance

D - Alternative component

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
	Type reference.....:	QH-FLTG-150W	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	HLG-240H-48A	—
	Mounting position of luminaire.....:	As normal used	—
	Supply wattage (W).....:	153W	—
	Supply current (A)..... :	0.55	—
	Calculated power factor.....:	---	—
	Table: measured temperatures corrected for ta = 40°C:		P
	- abnormal operating mode.....:		—
	- test 1: rated voltage.....:		—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	1.06*230V=243.8V	—
	- 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 (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cord	---	64.7	---	90	---	---
LED cover	---	61.4		Ref.		
PCB near LED	---	69.0	---	130	---	---
Internal wire	---	71.7	---	90	---	---
Mounting surface	---	68.3	---	90	---	---
tc of LED driver	---	79.1	---	90	---	---
Ambient	---	40	---	---	---	---
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

Attachment No.1: EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

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

Attachment 2: EN 62471 and IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps(Based on EU Directive 2006/25/EC)								P
Risk	Action spectrum	Symbol	Units	Emission limits					
				Exempt	Result	Low risk	Result	Mod risk	Result
Actinic UV, Es	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0.001	0.001	--	--	--	--
Near UV, Euva	--	E_{UVA}	$W \cdot m^{-2}$	0.33	0.33	--	--	--	--
Blue light, Lb	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	100	10000	--	4000000	--
Blue light, small source, Eb	B(λ)	E_B	$W \cdot m^{-2}$	1.0*	1.0*	1,0	--	400	--
Retinal thermal, Lr	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	3.834E+03	28000/α	--	71000/α	--
Retinal thermal, weak visual stimulus**	R(λ)	LIR	W•m-2•sr-1	545000 0.0017≤ α ≤ 0.011	---				
				6000/α 0.011≤ α ≤ 0.1	0.000E+00				
IR radiation, eye	--	E_{ir}	$W \cdot m^{-2}$	100	0.000E+00	570	--	3200	--
* Small source defined as one with α < 0.011radian. Averaging field of view at 10000 s is 0.1radian. ** Involves evaluation of non-GLS source NOTE: Angular subtense of apparent source: α= 61.70mrad, measurement distance: 2651mm									
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	--	10000	1.125E+04	4000000	--
NOTE Angular subtense of apparent source: α=11mrad. Measure distance 200mm.									

Attachment 3:

Photo documents

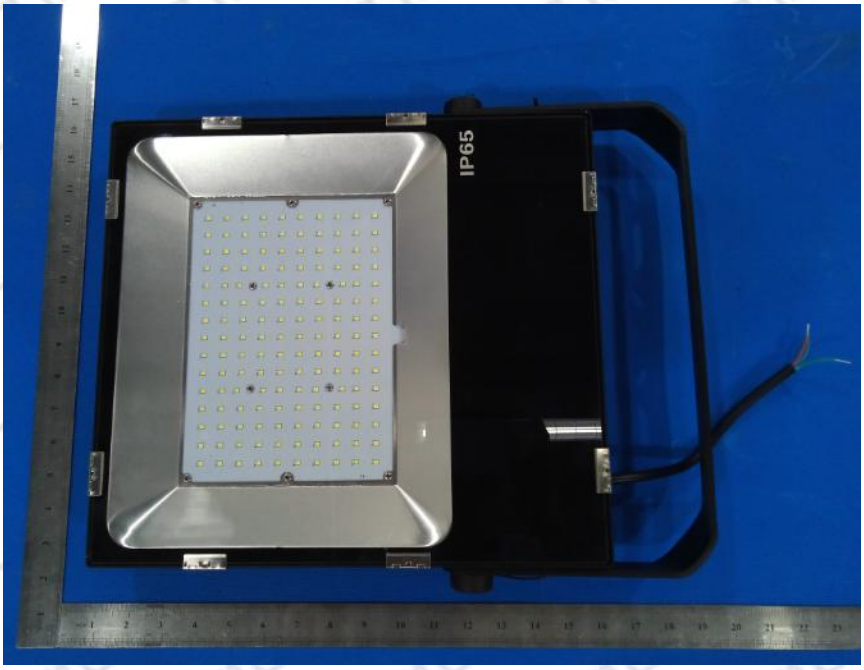

Fig.1 – General view

Fig.2 – General view

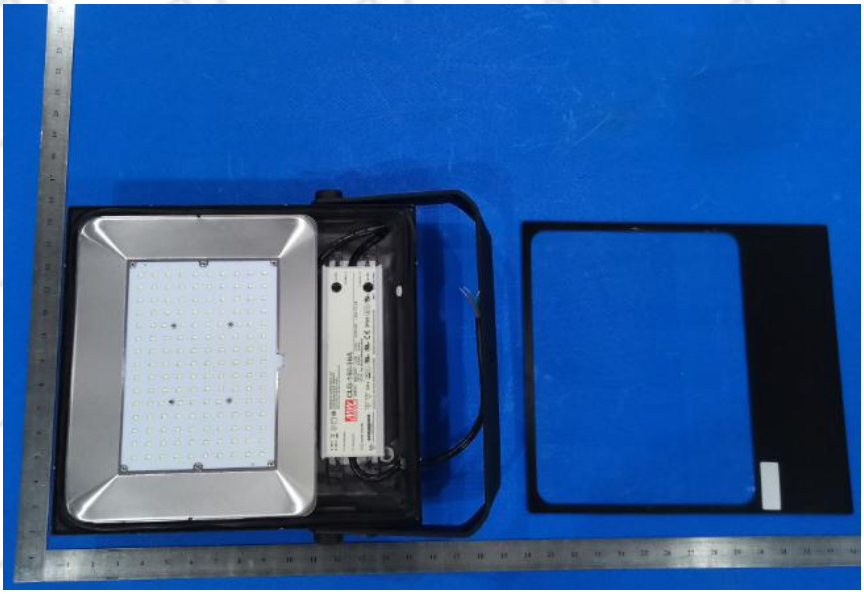

Fig.2 – Inner view

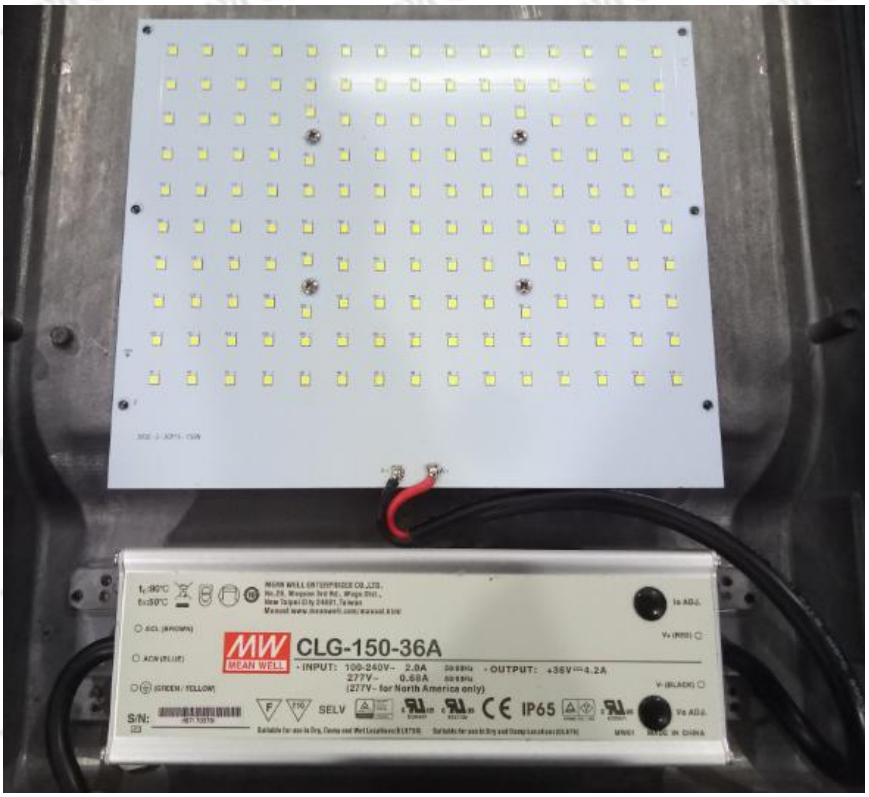

Fig.3 – Inner view

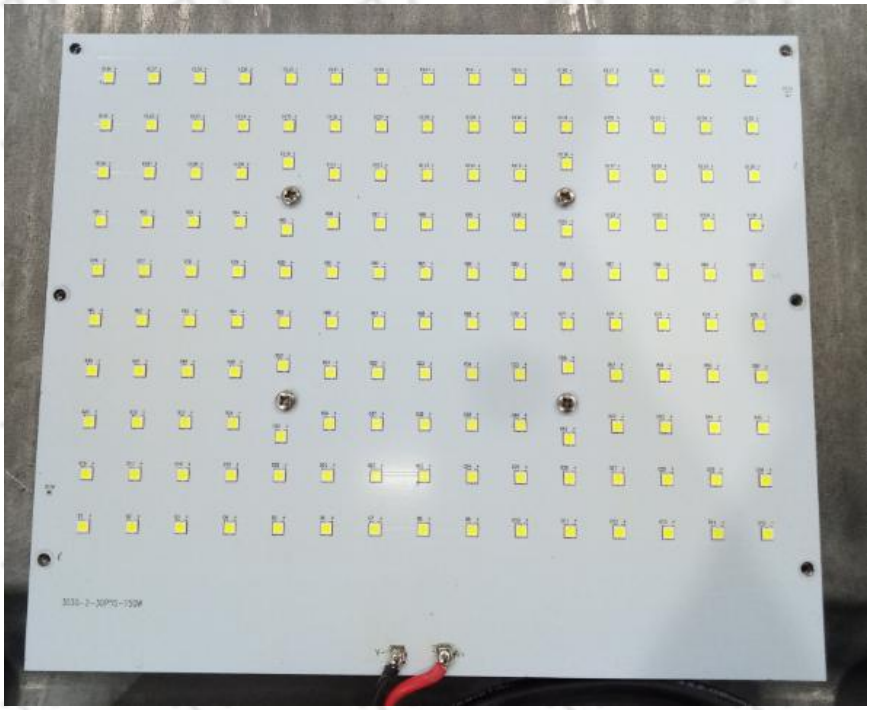

Fig.5 – Inner view

***** End of Report *****