



TMC Testing Services(Shenzhen) Co., Ltd.

Report No.: TMC180923112-S

APPLICATION FOR IEC REPORT

On Behalf of

Shenzhen Qinhan Lighting Co.,Limited

led flood light

Model: QH-FLXH04-180W

Prepared For :

Shenzhen Qinhan Lighting Co.,Limited

A building, Chuangze Industrial City, Dalang Town, Dongguan,
Guangdong, China.

Prepared By :

TMC Testing Services(Shenzhen) Co., Ltd.

1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park,
No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen,
China

Tel: +86-755- 86642861

Web: www.tmc-lab.com

E-mail: Cert@tmc-lab. Com

TEST REPORT
IEC 60598-2-5
Luminaires
Part 2: Particular requirements -
Section 5: Floodlights

Report

Reference **Number** : TMC180923112-S

Tested by (Engineer) : Bart Deng

Bart Deng

Approved by (Manager) : Lemon Rao

Date of issue : September. 30, 2018

Contents : 36 pages

Testing laboratory

Name : TMC Testing Services(Shenzhen) Co., Ltd.

Address : 1st Floor, Block A1, Zone A, Xinshidai Gongrong Industrial Park, No. 2, Shihuan Road, Shiyuan Street, Baoan District, Shenzhen, China

Testing location : Same as above

Applicant's name : Shenzhen Qinhan Lighting Co., Limited

Address..... : A building, Chuangze Industrial City, Dalang Town, Dongguan, Guangdong, China.

Test specification:

Standard : IEC 60598-2-5:2015 used in conjunction with IEC 60598-1:2014

Test procedure..... : IEC

Non-standard test method : N/A

Test item description..... : LED flood light

Trade Mark..... :



Manufacturer..... : Shenzhen Qinhan Lighting Co., Limited

Address..... : A building, Chuangze Industrial City, Dalang Town, Dongguan, Guangdong, China.

Model/Type reference..... : QH-FLXH04-180W

Ratings..... : 230V ~ ,50/60Hz , 180W

Test item and test requirement particulars

Operating condition..... Continuous
 Equipment mobility Fixed luminaire
 Class of equipment..... Class I
 Degree of protection IP65
 Power factor..... 0.97

Possible test case verdicts

- test case does not apply to the test object N (not applicable)
 - test object does meet the requirement P (Pass)
 - test object does not meet the requirement F (Fail)

Testing

Date of receipt of test item(sample) September. 23, 2018
 Date (s) of performance of tests..... September. 23, 2018 - September. 30, 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.

General product information:

- All models have the same layout and construction except the model name and power.
 - All tests were performed by model QH-FLXH04-180W to represent the other identical models.

Copy o marking plate:



IEC 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
5.2 (0.3)	More sections applicable..... :	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

5.4 (2)	CLASSIFICATION		P
5.4 (2.2)	Type o protection	Class I	—
5.4 (2.3)	Degree o protection..... :	IP65	—
5.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
5.4 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

5.5 (3)	MARKING		P
5.5 (3.2)	Mandatory markings		P
	Position o the marking		P
	Format o symbols/text		P
5.5 (3.3)	Additional information		P
	Language o instructions	English	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		P
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		N
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 o protective shields		N
5.5 (3.3.14)	Symbol for nature o supply	~	P
5.5 (3.3.15)	Rated current o socket outlet		N

IEC 60598-2-5			
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 Z	P
5.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N
5.5 (3.3.19)	Protective conductor current in instruction i applicable		N
5.5 (3.3.20)	Provided with information i 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, classification o insulation provided		P
5.5 (3.4)	Test with water	15S	P
	Test with hexane	15S	P
	Legible after test		P
	Label attached	No curling	P
5.5 (-)	Additional necessary marking		--
	a) Operation position		P
	b) Weight and dimensions		P
	c) Maximum protected area		P
	d) Range o mounting heights		P
	e) Suitability for indoor use or outdoor		P

5.6 (4)	CONSTRUCTION		P
5.6 (4.2)	Components replaceable without difficulty		P
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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N
	- bending test (N)		—
	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		N
	Tails		N
	Unsecured blocks		N
5.6 (4.7)	Terminals and supply connections		N
5.6 (4.7.1)	Contact to metal parts		N
5.6 (4.7.2)	Test 8 mm live conductor		N
	Test 8 mm earth conductor		N
5.6 (4.7.3)	Terminals for supply conductors		N
5.6 (4.7.3.1)	Welded method and material		N
	- stranded or solid conductor		N
	- 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		N
5.6 (4.7.5)	Heat-resistant wiring/sleeves		N
5.6 (4.7.6)	Multi-pole plug		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		N
5.6 (4.9.1)	Retainment		N
	Method o 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 o basic insulation		N
	Safe installation fixed luminaires		N
	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 o insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lampholder		N
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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
5.6 (4.11.4)	Material o 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
5.6 (4.12)	Screws and connections (mechanical) and glands		P
5.6 (4.12.1)	Screws not made o soft metal		P
	Screws o insulating material		N
	Torque test: torque (Nm); part..... :	Enclosure: ϕ 3.87mm, 1.2Nm	P
	Torque test: torque (Nm); part..... :	LED Model: ϕ 2.50mm, 0.40Nm	P
	Torque test: torque (Nm); part..... :	LED Driver: ϕ 4.10mm, 1.2Nm	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) :	0.5Nm	P
	- other parts; energy (Nm) :	0.7Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
5.6 (4.13.3)	Straight test finger		P
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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.13.6)	Tumbling barrel		N
5.6 (4.14)	Suspensions, fixings and means o adjusting		P
5.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	4.26Kg X 4	P
	B) torque 2,5 Nm		P
	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/mm ²)		N
	Mass (kg) o semi-luminaire		—
	Bending moment (Nm) o semi-luminaire		N
5.6 (4.14.3)	Adjusting devices:		N
	- flexing test; number o cycles..... :		N
	- strands broken		N
	- electric strength test afterwards		N
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 5.15 (13.3.2)	P
	- spacing ≥30 mm		N
	- screen withstanding test o 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 o thermoplastic material with lamp control gear		N
	a) construction		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	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:		P
	- spacing 35 mm		N
	- spacing 10 mm		P
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 o 12.6	(see clause 12.6)	P
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 o aluminium		N
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 i tungsten halogen lamps or metal halide lamps		N
	Shield o glass i 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 5.15 (13.3.2)	N
5.6 (4.22)	Attachments to lamps not cause overheating or damage		N
5.6 (4.23)	Semi-luminaires comply Class II		N
5.6 (4.24)	Photobiological hazards		N
5.6 (4.24.1)	No excessive UV radiation i tungsten halogen lamps and metal halide lamps (Annex P)		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
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 i 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		P
5.6 (4.26)	Short-circuit protection		N
5.6 (4.26.1)	Adequate means o 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 o Table 12.1 and 12.2		N
5.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		N
	Test according Annex V		N
	Pull test o terminal fixing (20 N)		N
	After test, resistance < 0,05 Ω		N
	Pull test o 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 o thermal sensing control		N
	Not plug-in or easily replaceable type		N
	Reliably kept in position		N
	No adhesive fixing i UV radiations from a lamp can degrade the fixing		N
	Not outside the luminaire enclosure		N
	Test o adhesive fixing:		N
	Max. temperature on adhesive material ($^{\circ}\text{C}$) :		—
	100 cycles between t min and t max		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Temperature sensing control still in position		N
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		N
	I protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		N
	Minimum two fixing means		N
5.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N
	Controllable luminaires requiring same level o insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N
5.6 (4.31.1)	SELV circuits		P
	Used SELV source		N
	Voltage \leq ELV		N
	Insulating o SELV circuits from LV supply		P
	Insulating o SELV circuits from other non SELV circuits		N
	Insulating o SELV circuits from FELV		N
	Insulating o 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 o other voltage systems		N
	Socket outlets does not admit plugs o 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 \leq ELV		N
	Insulating o FELV circuits from LV supply		N
	FELV circuits insulated from accessible parts according Table X.1		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Plugs not able to enter socket-outlets o other voltage systems		N
	Socket outlets does not admit plugs o 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 o above		N
	- conductive part not cause an electric shock in case o an insulation fault		N
	- equipotential bonding in master/slave applications		N
	- master luminaire provided with terminal for accessible conductive parts o slave luminaires		N
	- slave luminaire constructed as class I		N
5.6 (4.32)	Overvoltage protective devices		N
	Comply with IEC 61643-11		N
	External to controlgear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N
5.6.1 (-)	At least IPX3 i for outdoor use		P
5.6.2 (-)	Lampholder brackets and lamp supports		N
5.6.3 (-)	Adjusting means		N
5.6.4 (-)	Controlling components		N
5.6.5 (-)	Fixing device		P
	Wind force test		P
5.6.6 (-)	Locking o angular adjustment		N
5.6.7 (-)	Vibration resistance		N
5.6.8 (-)	Glass cover		P
5.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
5.7 (11.2)	Creepage distances and clearances..... :	See Table 5.7 (11.2)	P

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage (V)..... :	230V	—
	Rated pulse voltage (kV)..... :	--	—
	Voltage form..... :	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI..... :	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—

5.8 (7)	PROVISION FOR EARTHING		P
5.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω..... :	0.038Ω	P
	Self-tapping screws used		N
	Thread-forming screws		P
	Thread-forming screw used in a groove		N
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
	Protective earthing o the luminaire not via built-in control gear		N
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
5.8 (7.2.4)	Locking o 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 o connector socket		N
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		N
5.8 (7.2.7)	Electrolytic corrosion o the earth terminal		P
5.8 (7.2.8)	Material o 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		P
	Length o earth conductor		P

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

5.9 (14)	SCREW TERMINALS		N
	Separately approved; component list..... :	(see Annex 1)	N
	Part o the luminaire	(see Annex 3)	N

5.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N
	Separately approved; component list..... :	(see Annex 1)	N
	Part o the luminaire	(see Annex 4)	N

5.10 (5)	EXTERNAL AND INTERNAL WIRING		P
5.10 (5.2)	Supply connection and external wiring		P
5.10 (5.2.1)	Means o connection	Connecting leads	P
	Outdoor luminaire has not PVC insulated external wiring i not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N
5.10 (5.2.2)	Type o cable..... :		P
	Nominal cross-sectional area (mm ²)		P
	Cables equal to IEC 60227 or IEC 60245	IEC 60245	P
5.10 (5.2.3)	Type o 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 o protection		P
5.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
5.10 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made o insulating material		N
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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- no mechanical or thermal stress		P
	- no tying o cables into knots etc.		P
	- insulating material or lining		P
5.10 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	b) types o cable		N
	c) no damaging o the cable		N
	d) whole cable can be mounted		N
	e) no touching o 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		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)..... :	0.25Nm	P
	- displacement ≤ 2 mm	0.8mm	P
	- no movement o conductors		P
	- no damage o cable or cord		P
	- function independent o electrical connection		N
5.10 (5.2.11)	External wiring passing into luminaire		N
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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Installation couplers (IEC 61535)		N
	Other appliance inlet or connector according relevant IEC standard		N
5.10 (5.2.17)	No standardized interconnecting cables properly assembled		N
5.10 (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 o suitable size and type		P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		P
	- 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		P
	Cross-sectional area (mm ²).....	0.75mm ²	P
	Insulation thickness	0.5mm	P
	Extra insulation added where necessary		N
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
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		P
5.10 (5.3.2)	Sharp edges etc.		P
	No moving parts o switches etc.		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		P
5.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		N
5.10 (5.3.4)	Joints and junctions effectively insulated		P
5.10 (5.3.5)	Strain on internal wiring		N
5.10 (5.3.6)	Wire carriers		N
5.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N

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		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types o luminaires		P
	Lamp 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		P
	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

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
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 o metal in class I luminaires shall be earthed		N
5.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N
	Ordinary luminaire:		N
	- touch current		N
	- no-load voltage.....		N
	Other than ordinary luminaire:		N
	- nominal voltage		N
5.11 (8.2.4)	Portable luminaire have protection independent o 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 o capacitors $\geq 0,5 \mu\text{F}$		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		P
5.12 (-)	I IP > IP 20 relevant test o (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.....	Normal	—
	- test temperature (°C)	35°C	—
	- total duration (h)	240h	—
	- supply voltage: Un factor; calculated voltage (V)...	264V	—
	- lamp used.....	LED	—

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
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.		P
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
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 I_o (A)		—
	- case of abnormal conditions	(see Annex 2)	—
	- electronic lamp control gear		N
	- measured winding temperature ($^{\circ}\text{C}$): at $1,1 U_n$	(see Annex 2)	—
	- measured mounting surface temperature ($^{\circ}\text{C}$) at $1,1 U_n$	(see Annex 2)	N
	- calculated mounting surface temperature ($^{\circ}\text{C}$)		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 ($^{\circ}\text{C}$)		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 $\leq 70\text{W}$		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)		—

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex W:		N
	- case o abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature o fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature o fixing point/exposed part (°C)		—
	Ball-pressure test	See Table 5.15 (13.2.1)	N
5.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N
	- case o abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature o fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature o fixing point/exposed part (°C)		—
	Ball-pressure test	See Table 5.15 (13.2.1)	N
5.12 (12.7.1.3)	Luminaire with short circuit proo transformers ≤ 10 VA		N
	- case o 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 <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case o abnormal conditions		—
	- highest measured temperature o fixing point/ exposed part (°C):		—
	Ball-pressure test:	See Table 5.15 (13.2.1)	N
5.12.1 (-)	Temperature reduction i for outdoor use only		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
5.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
5.13 (-)	I IP > IP 20 the order o tests as specified in clause 5.12		N
5.13 (9.2)	Tests for ingress o dust, solid objects and moisture:		—
	- classification according to IP..... :	IP65	—
	- mounting position during test..... :	Normal	—
	- fixing screws tightened; torque (Nm)..... :		—
	- tests according to clauses..... :		—
	- electric strength test afterwards		N
	a) no deposit in dust-proo luminaire		N
	b) no talcum in dust-tight luminaire		P
	c) no trace o water on current-carrying parts or on insulation where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		P
	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		P
	h) no damage of protective shield or glass envelope		N
5.13 (9.3)	Humidity test 48 h	95%R.H 30°C	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 o mm Ø..... :		—
	Insulation resistance (MΩ)..... :		—
	SELV		P
	- between current-carrying parts o different polarity :		N
	- between current-carrying parts and mounting surface..... :	>1MΩ	P

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and metal parts o the luminaire..... :	>1MΩ	P
	- between the outer surface o 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	N
	- between live parts and mounting surface :	>100MΩ	P
	- between live parts and metal parts :	>100MΩ	P
	- between live parts of different polarity through action o 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..... :	>100MΩ	P
	- Insulation bushings as described in Section 5 :		N
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)..... :		P
	SELV		P
	- between current-carrying parts of different polarity :	500V, No broken	N
	- between current-carrying parts and mounting surface..... :	500V, No broken	P
	- between current-carrying parts and metal parts o the luminaire..... :	500V, No broken	P
	- between the outer surface o 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 o different polarity :	1480V, No broken	N
	- between live parts and mounting surface :	1480V, No broken	P
	- between live parts and metal parts :	1480V, No broken	P
	- between live parts o different polarity through action o a switch..... :		N

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- between the outer surface o a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	1480V, No broken	P
	- Insulation bushings as described in Section 5 :		N
5.14 (10.3)	Touch current or protective conductor current (mA) :	1.17mA limits:3.5mA	P

5.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		N
5.15 (13.2.1)	Ball-pressure test		N
5.15 (13.3.1)	Needle-flame test (10 s)..... :		N
5.15 (13.3.2)	Glow-wire test (650°C)..... :		N
5.15 (13.4)	Proo tracking test (IEC 60112)..... :		N

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

5.7 (11.2)	TABLES: Creepage distances and clearances						P
Table 11.1	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages						P
RMS working voltage (V) not exceeding	50	150	250	500	750	1000	
Creepage distances							
Required basic insulation, PTI \geq 600	0,6	0,8	1,5	3	4	5,5	
Measured							
Required basic insulation, PTI < 600	1,2	1,6	2,5	5	8	10	
Measured Live part to enclosure			>2.5				
Required supplementary insulation PTI \geq 600	-	0,8	1,5	3	4	5,5	
Measured							
Required supplementary insulation PTI < 600	-	1,6	2,5	5	8	10	
Measured							
Required reinforced insulation	-	3,2	5	6	8	11	
Measured							
Clearances							
Required basic insulation	0,2	0,8	1,5	3	4	5,5	
Measured Live part to enclosure			>1.5				
Required supplementary insulation	-	0,8	1,5	3	4	5,5	
Measured							
Required reinforced insulation	-	1,6	3	6	8	11	
Measured							
Table 11.2	Minimum distances (mm) for non-sinusoidal pulse voltages						

IEC 60598-2-5							
Clause	Requirement + Test						Verdict
Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured							
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured							
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-
Required clearances	75	90	130	170	-	-	-
Measured							

5.15 (13.2.1)	TABLE: Ball Pressure Test o Thermoplastics				N
Allowed impression diameter (mm)				<2mm	—
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
Object/ Part No./ Material	Manufacturer/ trademark	Duration o application o test flame (ta); (s)	Ignition o specified layer Yes/No	Duration o burning (tb) (s)	Verdict
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
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 o application o test flame (ta); (s)	Ignition o specified layer Yes/No	Duration o burning (tb) (s)	Verdict
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
Any flame or glowing o the sample extinguished within 30 s o withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No)..... :					
Supplementary information:					

5.15 (13.4)	TABLE: Proo tracking test (IEC 60112)				N
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:					

ANNEX 1	TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) o conformity¹⁾	
LED	B	PHILIPS LUMILEDS	SMD 3030	VF:5.8-6.0,IF=150mA ,C CT=6500K	random test	UL	
Supplementary information:							
¹⁾ Provided evidence ensures the agreed level o 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 i authorised by the test house C - Integrated component tested together with the appliance D - Alternative component							

ANNEX 2	TABLE: Temperature measurements, thermal tests o Section 12			P			
	Type reference	:	QH-FLXH04-180W	—			
	Lamp used.....	:	LED module	—			
	Lamp control gear used.....	:	-	—			
	Mounting position o luminaire	:	Normal	—			
	Supply wattage (W)	:	1.05*240W	—			
	Supply current (A)	:	1.78	—			
	Calculated power factor.....	:	0.97	—			
	Table: measured temperatures corrected for ta = 25 °C:						
	- abnormal operating mode	:	--	—			
	- test 1: rated voltage.....	:	--	—			
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	:	254.4V	—			
	- 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 o A during the test	:	--	—			
Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc (LED driver)	25.2	--	65.1	--	85	--	--
Enclosure surface	25.2	--	49.5	--	90	--	--
Supply wire	25.2	--	30.6	--	105	--	--
Internal wire	25.2	--	82.2	--	90	--	--
LED	25.2	--	132.9	--	Ref.	--	--
Supplementary information:							

ANNEX 3	Screw terminals (part o the luminaire)		N
(14)	SCREW TERMINALS		N
(14.2)	Type o 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 (mm ²)..... :		—
(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 o thread (metric ISO thread) :		N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.4.6)	Nominal diameter o 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

ANNEX 4	Screwless terminals (part o the luminaire)		N
(15)	SCREWLESS TERMINALS		N
(15.2)	Type o 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 o 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-of test (20 N)		N
(15.5.2)	Electrical tests		N
	Voltage drop (mV) after 1 h (4 samples)		N
	Voltage drop o two inseparable joints		N
	Number o 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 10th 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
	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 o two inseparable joints											
Voltage drop after 10th alt. 25th cycle											
Max. allowed voltage drop (mV)											—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
Voltage drop after 50th alt. 100th cycle											
Max. allowed voltage drop (mV)											—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
Continued ageing: voltage drop after 10th alt. 25th cycle											
Max. allowed voltage drop (mV)											—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
Continued ageing: voltage drop after 50th alt. 100th cycle											
Max. allowed voltage drop (mV)											—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
Supplementary information:											



Fig. 1



Fig. 2



Fig. 3



Fig. 4

*****END OF REPORT*****