



CE LVD TEST REPORT

**For
LED FLOOD LIGHT**

Model No.: VT-4011, VT-4021, VT-4031, VT-4051, VT-40101

Applicant : V-TAC EXPORTS LIMITED
ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD
CENTRAL, CENTRAL, HONGKONG

Manufacturer : V-TAC EXPORTS LIMITED
ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD
CENTRAL, CENTRAL, HONGKONG

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Note:

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Test Report EN 60598-1:2008+A11:2009 Luminaires — Part 1: General requirements and tests EN 60598-2-5:1998 Luminaires - Part 2-5: Particular requirements - Floodlights	
Report reference No.:	J02.06.0178S
Testing laboratory	Global-Standard Testing Service Co., Ltd.
Location.....:	Room 1911-1914, Noble Plaza, Qian Jin 1st Road, Bao An district, Shenzhen, Guangdong, China.
Applicant.....:	V-TAC EXPORTS LIMITED
Address:.....:	ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL, CENTRAL, HONGKONG
Manufacturer.....:	V-TAC EXPORTS LIMITED
Address:.....:	ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL, CENTRAL, HONGKONG
Standards.....:	EN 60598-2-5:2015 EN 60598-1: 2015 EN 61347-1:2015 EN 61347-2-13:2014 EN 62471:2008 EN 62493:2015 EN 62031: 2008+A1:2013+A2:2015
Procedure deviation.....:	N/A
Non-standard test method.....:	N/A
Type of test equipment	LED FLOOD LIGHT
Trade mark.....:	
Model/Type designation.....:	VT-4011, VT-4021, VT-4031, VT-4051, VT-40101
Rating.....:	AC200-240V, 50/60Hz, 100W Max. Class I
Test item particulars:	--
Operating Condition	Continuous
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A.
Protection against ingress of water	IP65


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

Name and address of the testing laboratory :

Global-Standard Testing Service Co., Ltd.
 Room 1911-1914, Noble Plaza, Qian Jin 1st Road, Bao An District,
 Shenzhen, Guangdong, China.

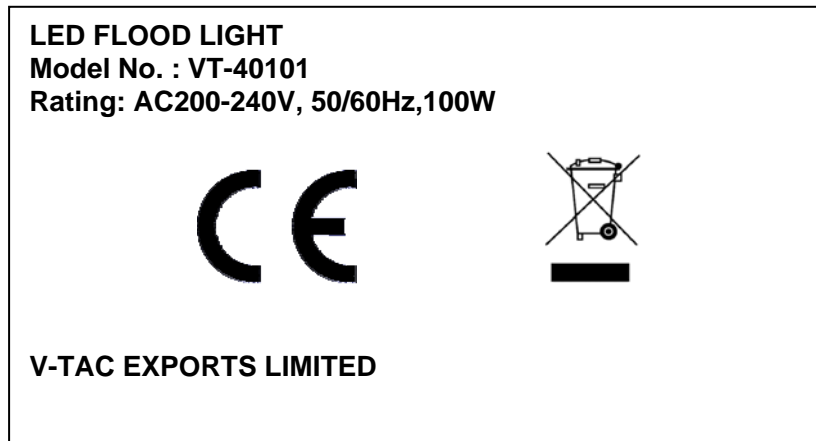
Tested by : Sean Xiao July 24, 2017
 Signature Date
Sean Xiao / Engineer
 Name/title

Reviewed by : king Li August 01, 2017
 Signature Date
King Li /Supervisor
 Name/title

Approved by :  August 01, 2017
 Signature Date
Tim Sun / Manager
 Name/title

<p>General remarks:</p> <p>Clause number between brackets refer to clauses in IEC 60598-1</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>Unless otherwise specified, test are made under normal conditions at an ambient temperature within the range of 15°C to 35°C, RH45% to 75% and an air pressure of 860mbar of 1060mbar</p>	<p>Attachment with:</p> <p>Annex 1: List of critical components ANNEX 2: temperature measurement Annex 3: SCREW TERMINALS Annex 4: SCREWLESS TERMINALS Annex 5: Photo Documents</p>
<p>General remarks:</p> <p>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.</p> <p>Clause numbers between brackets refer to clauses in IEC 60598-1</p> <p>LED sensor flood light with different power depended on lamp control gear with output components parameter , LED numbers and LED power.</p> <p>All tests were performed by model VT-40101 to represent the other identical models.</p> <p>The Safety specifications of LED modules for general lighting was evaluated with reference to EN 62031</p> <p>LED sensor flood light were supplied by SELV equipment controlgear isolated electrical control gear, between live parts of control gear and lamp enclosure was separated by double or reinforce insulation SELV equipment controlgear are approved by CB</p> <p>The European standard IEC 62471 for LED laser product requirement has considered.</p> <p>The European standard IEC 62493 for requirement has considered.</p>	

Representative Label



IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

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 checked="" type="checkbox"/> No <input type="checkbox"/>	—

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 only suitable for non-combustible surfaces	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Luminaire suitable for normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire suitable to be covered by insulating materials	Yes <input type="checkbox"/> No <input checked="" 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 of the marking	On the enclosure	P
	Format of symbols/text		P
5.5 (3.3)	Additional information		P
	Language of instructions	English	P
5.5 (3.3.1)	Combination luminaires		N/A
5.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
5.5 (3.3.3)	Operating temperature		N/A
5.5 (3.3.4)	Symbol or warning notice	See marking label	P
5.5 (3.3.5)	Wiring diagram		P
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		P
5.5 (3.3.10)	Suitability for use indoors	Indoors and outdoors	P
5.5 (3.3.11)	Luminaires with remote control		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
5.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
5.5 (3.3.13)	Specifications of protective shields		N/A
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
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	PVC cable	P
5.5 (3.4)	Test with water	15s with water	P
	Test with hexane	15s with hexane	P
	Legible after test	The marking is legible	P
	Label attached	The marking not be easily removable and shows no curling	P

5.6 (4)	CONSTRUCTION		P
5.6.1 (-)	At least IPx3	IP65	P
5.6.2 (-)	Lampholder brackets		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		P
5.6.6 (-)	Locking system		P
5.6.7 (-)	Vibration resistance		P
5.6.8 (-)	Glass cover		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)		N/A
	- bending test (Nm)		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
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 (4.5)	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		P
5.6 (4.7.1)	Contact to metal parts		P
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 connections:		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		P
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
5.6 (4.9)	Insulating lining and sleeves		P
5.6 (4.9.1)	Retainment		P
	Method of fixing.....:		P
5.6 (4.9.2)	Insulated linings and sleeves		P

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
5.6 (4.10)	Insulation of Class II luminaires		N/A
5.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		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)	Retention of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		N/A
5.6 (4.11)	Electrical connections		P
5.6 (4.11.1)	Contact pressure		P
5.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N/A
	- at least two self-tapping screws		P
5.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
5.6 (4.11.4)	Material of current-carrying parts		P
5.6 (4.11.5)	No contact to wood		P
5.6 (4.11.6)	Electro-mechanical contact systems		N/A
5.6 (4.12)	Mechanical connections and glands		N/A
5.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
	Torque test: torque (Nm); part		P
	Torque test: torque (Nm); part		N/A
	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 (N)		N/A
5.6 (4.13)	Mechanical strength		P
5.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)	0.50Nm	P
	- other parts; energy (Nm).....	0.70Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
5.6 (4.13.3)	Straight test finger		N/A
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 and adjusting devices		P
5.6 (4.14.1)	Mechanical load:		P
(-)	A) Four times the weight		P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm)		P
	D) load track-mounted luminaires		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	metal rod. diameter (mm)		N/A
5.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		N/A
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
5.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
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		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	Metal material	N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
5.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N/A
5.6 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		P
	- spacing 10 mm		N/A
5.6	Thermal protection:		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
(4.16.2)			
	- 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)	Measured the test of 12.6	(see 12.6)	P
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		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		N/A
5.6 (4.23)	Semi-luminaires comply Class II		N/A
5.6 (4.24)	UV radiation, metal halide lamps		N/A
5.6 (4.25)	No sharp point or edges		P
5.6 (4.26)	Short-circuit protection:		N/A
5.6 (4.26.1)	Uninsulated accessible SELV parts		N/A
5.6 (4.26.2)	Short-circuit test		N/A
5.6 (4.26.3)	Test chain according to Figure 29		N/A
5.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	Working voltage (V).....:	240V	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Rated pulse voltage (kV).....:		—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....:	Between L and N, cr>3.0mm, cl>2.0mm required cr: 3.0mm, cl: 2.0mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....:	Between Current-carrying parts and metal shell, cr>3.0mm, cl>2.0mm required cr:3.0mm, cl:2.0mm	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....:		N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....:		N/A
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....:		P

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	0.035 Ω	P
	Two self-tapping screws used		P
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		P
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
5.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
5.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
5.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
5.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
5.8	Class II luminaire for looping-in		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
(7.2.10)			
	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		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A
(-)	Springtype screwless terminals of the Type b shall not be used		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.....:		P
	Connecting leads (EN)		P
	- without a means for connection to the supply		P
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
5.10 (5.2.2)	Type of cable.....:	PVC	P
	Cables equal to HD 21 S2 or HD22 S2 (EN)		P
	Nominal cross-sectional area (mm ²).....:	3*0.75 mm ²	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/A
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

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
5.10 (5.2.8)	Insulating bushings:		P
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
5.10 (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:		P
	a) at least one part fixed		P
	b) types of cable		P
	c) no damaging of the cable		P
	d) whole cable can be mounted		P
	e) no touching of clamping screws		P
	f) metal screw not directly on cable		P
	g) replacement without special tool		P
	Glands not used as anchorage		P
	Labyrinth type anchorages		P
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).....	0.15Nm	P
	- displacement ≤ 2 mm	0.5mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
5.10 (5.2.11)	External wiring passing into luminaire		P
5.10 (5.2.12)	Looping-in terminals		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
5.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
5.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
5.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
5.10 (5.2.17)	Non 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		P
	- not delivered/ mounting instruction		P
	- factory assembled		P
	- 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		P
	Cross-sectional area (mm ²).....:		P
	Insulation thickness		P
	Extra insulation added where necessary		P
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
5.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
5.10 (5.3.1.4)	Conductors without insulation		N/A
5.10 (5.3.1.5)	SELV current-carrying parts		P
5.10 (5.3.1.6)	Insulation thickness other than PVC or rubber	PVC	P

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
5.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
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		P
5.10 (5.3.4)	Joints and junctions effectively insulated		P
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		N/A
	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
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	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)	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

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	- glass protective shields not used as supplementary insulation		N/A
	Class I luminaire with BC lampholder		N/A
5.11 (8.2.4)	Portable luminaire:		N/A
	- protection independent of supporting surface		N/A
	- terminal block completely covered		N/A
5.11 (8.2.5)	Compliance with the standard test finger or relevant probe		N/A
5.11 (8.2.6)	Covers reliably secured		P
5.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		P
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		P
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		P

5.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
5.12 (12.3)	Endurance test:		P
	- mounting-position.....:	Normal condition	—
	- test temperature (°C)	35 °C	—
	- total duration (h).....:	240 h	—
	- supply voltage: Un factor; calculated voltage (V)		—
	- lamp used	LED	—
5.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12.1 (-)	Temperature reduction		N/A
5.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
5.12 (12.6)	Thermal test (failed lamp control gear condition):		P
5.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.
	- electronic lamp control gear		P
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un.....:		P
	- 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
5.12 (12.7.1.1)	Test for luminaires incorporating fluorescent lamps ≤ 70 W		N/A
5.12 (12.7.1.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....:		—
	- test for 4h at 1.1 Un		N/A
	If more than one ballast is used inside the luminaire		N/A
	- only one in fault condition, until ballast failure occurs, test voltage.....:		N/A
	Following the test		—
	- the components have been retained in place		N/A
	- Parts of the luminaire enclosure continue to protect live parts against access with the standard test finger		N/A
5.12 (12.7.1.2)	Test for luminaires with discharge lamps, fluorescent lamps >70 W, transformers >10 VA		—
5.12 (12.7.1.2)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....:		—
5.12 (12.7.1.2)	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/ exposed part (°C): at 1,1 Un		N/A
	- calculated temperature of fixing point/ exposed		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	part (°C).....:		
	The thermoplastic material is then subjected to the ball pressure test as described in 13.2.1 at the estimated temperature determined by linear regression, but not less than 75 °C.		—
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
5.12 (12.7.1.3)	Test for luminaires with short circuit proof transformers ≤ 10 VA		N/A
5.12 (12.7.1.3)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....:		—
	Following the test		—
	- Parts of the luminaire enclosure continue to protect live parts against access with the standard test finger		N/A
5.12 (12.7.2)	Temperature sensing control		N/A
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured temperature of fixing point/ exposed part (°C):		N/A

5.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
5.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP 65	—
	- mounting position during test.....:		—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses		—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		P
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or 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		P
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	f) no contact with live parts (IP 3X and IP 4X)		N/A
5.13 (9.3)	Humidity test 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
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire.....		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
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
	Other than SELV:		P
	- between live parts of different polarity	1500V	P
	- between live parts and mounting surface	1500V	P
	- between live parts and metal parts	1500V	P
	- between live parts of different polarity through action of a switch.....		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

5.14 (10.3.1)	Leakage current (mA)	0.15mA<0.7mA	P
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5.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
5.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C)..... :	PCB:125°C	P
	- part tested; temperature (°C)..... :	Lamp control gear has approved	N/A
5.15 (13.3.1)	Needle flame test (10 s):		P
	- part tested	PCB	P
	- part tested		N/A
5.15 (13.3.2)	Glow-wire test (650°C):		N/A
	- part tested		N/A
	- part tested		N/A
5.15 (13.4.1)	Tracking test: part tested		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

Annex as stated in the standards

V	ANNEX V, Alternative thermal test for thermoplastic luminaires		N/A
V.1	Thermal test in regard to fault conditions in lamp controlgear or electronic devices without temperature sensing controls in thermoplastic luminaires for fluorescent lamps $\leq 70W$		—
	Thermal test (failed lamp control gear in plastic luminaires):		
	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....		—
	- measured winding temperature ($^{\circ}C$): at 1,1 Un....		—
	- measured temperature of fixing point/ exposed part ($^{\circ}C$): at 1,1 Un.....		N/A
	- calculated temperature of fixing point/ exposed part ($^{\circ}C$).....		N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
(2.2)	Class 0 not accepted		N/A
(3.3)	DK: power supply cord with label		N/A
	IT: warning label on Class 0 luminaire		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
(13.3)	DK: Needle flame test during 30 s		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A
(13.3.2)	FR: Glow-wire test 850 $^{\circ}C$ alt. 750 $^{\circ}C$ for luminaires in premises open to public or 960 $^{\circ}C$ for luminaires in emergency exits		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

Tables

ANNEX 1: components	P
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TABLE	List of critical components and materials			
Component	manufacturers / trademark	Type / model	Value / rating	Approval/ Reference
Power cord	Ningbo Qiaopu Electric Co.ltd	H05VV-F	3X0.75mm ²	VDE
LED driver	V-TAC EXPORTS LIMITED	VT series	Input: 100-240VAC, 50/60Hz, 1A; Output: 12-45VDC, Max. 3A	CE
LED driver input cord	--	H05VV-F	3X0.75mm ² , 500V,	VDE
LED driver output cord	--	H05VV-F	2X0.75mm ² , 500V,	VDE
Output wire connected to LED	--	--	VW-1, 300V, 80°C, 24AWG min.	UL
Alt.	--	--	VW-1, 300V, 80°C, 24AWG	UL
Heat-shrinkable tube	--	--	VW-1, 600V, 125°C	UL
PCB	Heshan Dongli Electronic Technologies Co Ltd	EPA-M2	Min.V-0, 130°C	UL

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	ANNEX 2: temperature measurements, thermal tests of Section 12	P
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Type reference.....	VT-40101	—
Lamp used	LED	—
Lamp control gear used	LED driver	—
Mounting position of luminaire	Normal position	—
Supply wattage (W).....	97.5	—
Supply current (A)	0.83	—
Calculated power factor	0.785	—
Table: measured temperatures corrected for $t_a = 25\text{ }^\circ\text{C}$:		P
- abnormal operating mode.....		—
- test 1: rated voltage		—
- test 2: 1,06 times rated voltage or 1,05 times rated wattage	1,06 times rated voltage	—
- 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 ($^\circ\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cord		43.6		75		
Tc of LED driver		54.7		75		
LED driver input cord		36.8		75		
LED driver output cord		43.4		75		
Output wire connected to LED		58.4		80		
Metal enclosure inside		47.3		90		
Metal enclosure outside		40.4		90		
LED PCB		74.9		130		
LED		97.3		Ref.		
Ambient		25.0		--		

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	ANNEX 3: screw terminals (part of the luminaire)	N/A
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(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal	Cross	—
	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 (mm ²)	0.75mm ²	N/A
(14.3.3)	Conductor space (mm)		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....		N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm)		N/A
	Torque (Nm).....		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

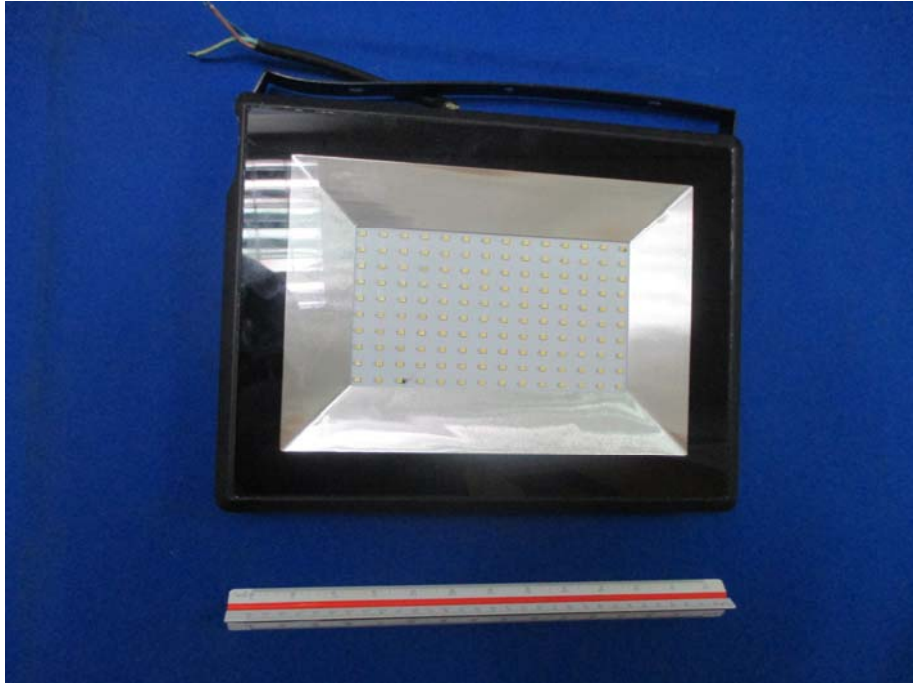
	ANNEX 4: screwless terminals (part of the luminaire)	N/A
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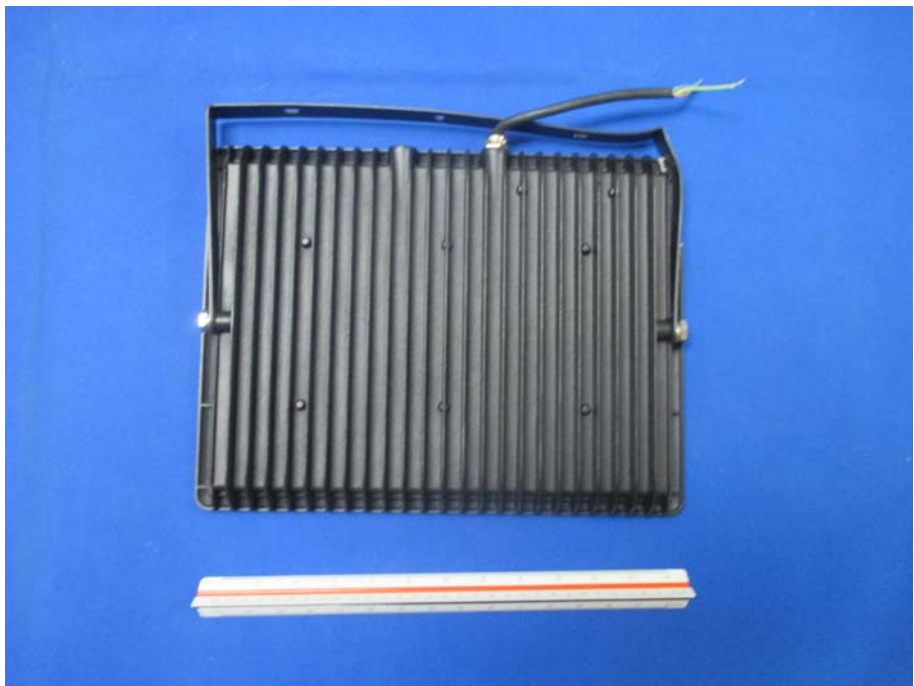
(15)	SCREWLESS TERMINALS	N/A
(15.2)	Type of terminal.....:	—
	Rated current (A).....:	—
(15.3.1)	Material	N/A
(15.3.2)	Clamping	N/A
(15.3.3)	Stop	N/A
(15.3.4)	Unprepared conductors	N/A
(15.3.5)	Pressure on insulating material	N/A
(15.3.6)	Clear connection method	N/A
(15.3.7)	Clamping independently	N/A
(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
(15.5.2)	Permanent connections: pull-off test (20 N)	N/A
(15.6)	Electrical tests	N/A
	Voltage drop (mV) after 1 h (4 samples).....:	N/A
	Voltage drop of two inseparable joints	N/A
	Number of cycles	—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:	N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:	N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)	N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)	N/A
(15.7)	Terminals external wiring	N/A
	Terminal size and rating	N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)	N/A


IEC 60598-2-5			
Clause	Requirement+ Test	Result - Remark	Verd.

	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.9)	Contact resistance test		N/A
	Voltage drop (mV) after 1 h		N/A

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)										

<p>Photo 1</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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<p>Photo 2</p> <p>View:</p> <p><input type="checkbox"/> Front</p> <p><input checked="" type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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<p>Photo 3</p> <p>View:</p> <p><input type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input checked="" type="checkbox"/> Internal</p>	
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