



CE LVD TEST REPORT

For

LED TUBE BATTERN FITTING

Model No.: VT-1517, VT-18011, VT-12011, VT-6040

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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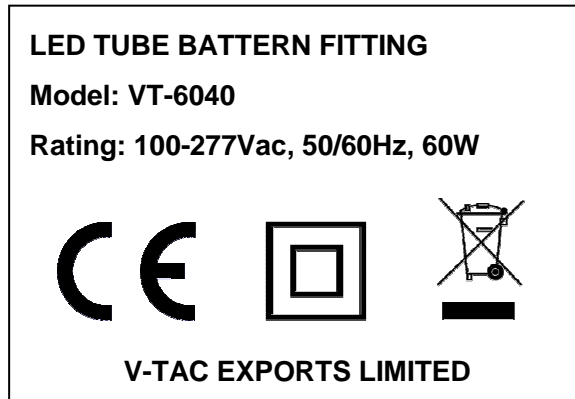
TEST REPORT EN 60598-1 Luminaires — Part 1: General requirements and tests EN 60598-2-1 Luminaires Part 2: Particular requirements: Section One – Fixed general purpose luminaires	
Report reference No.:	GST1406300416S
Testing laboratory	Global-Standard Testing Service Co., Ltd.
Location.....:	Room 1911-1914, 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 60598-1:2008+A11:2009 EN 60598-2-1:1989 EN 61347-1:2008+A11:2011 EN 61347-2-13:2006 EN 62031:2008 EN 62471:2008
Type of test equipment	LED TUBE BATTERN FITTING
Trade mark.....:	
Model/Type designation.....:	VT-1517, VT-18011, VT-12011, VT-6040
Rating.....:	100-277Vac, 50/60Hz, 60W
Operating Condition	Continuous
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A.
Class of equipment	Class II equipment
Protection against ingress of water	IP20

General remarks:	
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<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>Until otherwise specified, all tests are done under normal ambient condition $25^{\circ}\text{C}\pm 10^{\circ}\text{C}$, Max RH: 75% and air pressure of 860 mbar to 1060 mbar.</p>	<p>Attached with:</p> <p>Attachment - A. Photo Documentation</p>
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<p>Brief description of the test sample:</p> <p>The test samples were pre-production samples without serial numbers. This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <ol style="list-style-type: none"> 1. The equipment with models VT-1517, VT-18011, VT-12011, VT-6040 are class II Integration LED Tri-Proof Lighting 2. All the models are the identical except power with different parameters of led light and product size. 3. Model VT-6040 was selected as representative sample 4. The European standard EN 62471 for LED laser product requirement has considered. 5. The Safety specifications of LED modules for general lighting was evaluated with reference to EN 62031
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Copy of marking plate



Note: Due to similarity of the labels, only above label was listed.

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered	Standard EN60598-2-1 Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
1.2 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection	Class II	—
1.4 (2.3)	Degree of protection (Requirement: Ordinary)	IP20	—
1.4 (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 material	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
1.4 (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"/>	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	Plaster on the outer surface	P
	Format of symbols/text	See attached rating label	P
1.5 (3.3)	Additional information		P
	Language of instructions	In English	P
1.5 (3.3.1)	Combination luminaires		N
1.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
1.5 (3.3.3)	Operating temperature		N
1.5 (3.3.4)	Symbol or warning notice		N
1.5 (3.3.5)	Wiring diagram	Statement in instruction	P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N
1.5 (3.3.8)	Limitation for semi-luminaires		N
1.5 (3.3.9)	Power factor and supply current		N
1.5 (3.3.10)	Suitability for use indoors		P
1.5 (3.3.11)	Luminaires with remote control	No remote control used	N
1.5 (3.3.12)	Clip-mounted luminaire – warning		N
1.5 (3.3.13)	Specifications of protective shields		N
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet	No socket outlet used	N
1.5 (3.3.16)	Rough service luminaire		N
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N
1.5 (3.4)	Test with water	15S	P
	Test with hexane	15S	P
	Legible after test		P
	Label attached		P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N
1.6 (4.4.1)	Integral lampholder		N
1.6 (4.4.2)	Wiring connection		N
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- pressure test (N)		N
	- bending test (N)		N
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
1.6 (4.4.8)	Lamp connectors	No lamp connectors	N
1.6 (4.4.9)	Caps and bases correctly used		N
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II	No Starter holders used	N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
1.6 (4.7)	Terminals and supply connections		P
1.6 (4.7.1)	Contact to metal parts		P
1.6 (4.7.2)	Test 8 mm live conductor		N
	Test 8 mm earth conductor		N
1.6 (4.7.3)	Terminals for supply conductors		N
1.6 (4.7.3.1)	Welded connections:		P
	- stranded or solid conductor		P
	- spot welding		P
	- 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

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.7.4)	Terminals other than supply connection		N
1.6 (4.7.5)	Heat-resistant wiring/sleeves		P
1.6 (4.7.6)	Multi-pole plug	No such plug used	N
	- test at 30 N		N
1.6 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with 61058-1 for electronic switches		N
1.6 (4.9)	Insulating lining and sleeves		P
1.6 (4.9.1)	Retainment		P
	Method of fixing.....:		P
1.6 (4.9.2)	Insulated linings and sleeves		P
	a) & c) Insulation resistance and electric strength	Approved sleeving used	P
	b) Ageing test. Temperature (°C).....:		N
1.6 (4.10)	Insulation of Class II luminaires		P
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Class II construction	P
	Safe installation fixed luminaires		P
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14		P
1.6 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
1.6 (4.10.3)	Retainment of insulation:		P
	- fixed		P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		N
1.6 (4.11)	Electrical connections		P
1.6 (4.11.1)	Contact pressure		N
1.6 (4.11.2)	Screws:		N
	- self-tapping screws		N
	- thread-cutting screws		N
	- at least two self-tapping screws		N
1.6 (4.11.3)	Screw locking:		N
	- spring washer	spring washer used	N
	- rivets	No rivets used	N
1.6 (4.11.4)	Material of current-carrying parts	Copper used	P
1.6 (4.11.5)	No contact to wood	No wood used	P
1.6 (4.11.6)	Electro-mechanical contact systems		N
1.6 (4.12)	Mechanical connections and glands		N
1.6 (4.12.1)	Screws not made of soft metal		N
	Screws of insulating material		N
	Torque test: torque (Nm); part		N
	Torque test: torque (Nm); part		N
	Torque test: torque (Nm); part		N
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
1.6 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm)		N
	- lampholder; torque (Nm)		N
	- push-button switches; torque 0,8 Nm		N
1.6 (4.12.5)	Screwed glands; force (N)		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		P
	- other parts; energy (Nm).....	Plastic enclosure: 0.35Nm, 3 times	P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
1.6 (4.13.3)	Straight test finger	30N	P
1.6 (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
1.6 (4.13.6)	Tumbling barrel		N
1.6 (4.14)	Suspensions and adjusting devices		N
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight		P
	B) torque 2,5 Nm		N
	C) bracket arm; bending moment (Nm)		N
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N
	Metal rod. diameter (mm)		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fixed luminaire or independent control gear without fixing devices		N
1.6 (4.14.2)	Load to flexible cables		N
	Mass (kg)		N
	Stress in conductors (N/mm ²)		N
	Mass (kg) of semi-luminaire		N
	Bending moment (Nm) of semi-luminaire		N
1.6 (4.14.3)	Adjusting devices:		N
	- flexing test; number of cycles		N
	- strands broken		N
	- electric strength test afterwards		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No Telescopic tubes used	N
1.6 (4.14.5)	Guide pulleys	No Guide Pulleys used	N
1.6 (4.14.6)	Strain on socket-outlets	No socket-outlets used	N
1.6 (4.15)	Flammable materials:		N
	- glow-wire test 650 °C		N
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.16)	Luminaires marked with F-symbol		P
	No lamp control gear	(compliance with Section 12)	N
1.6 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		P
	- spacing 10 mm		N
1.6 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	"F" curve measured	(see 12.6)	P
1.6 (4.17)	Drain holes		N
	Clearance at least 5 mm		N
1.6 (4.18)	Resistance to corrosion:		P
1.6 (4.18.1)	- rust-resistance		P
1.6 (4.18.2)	- season cracking in copper		N
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Ignitors compatible with ballast		N
1.6 (4.20)	Rough service vibration		N
1.6 (4.21)	Protective shield:		P
1.6 (4.21.1)	Shield fitted		P
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
1.6 (4.21.3)	No direct path		N
1.6 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
1.6 (4.22)	Attachments to lamps		N
1.6 (4.23)	Semi-luminaires comply Class II		P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.24)	UV radiation, metal halide lamps		N
1.6 (4.25)	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection:		N
1.6 (4.26.1)	Uninsulated accessible SELV parts		N
1.6 (4.26.2)	Short-circuit test		N
1.6 (4.26.3)	Test chain according to Figure 29		N

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)		—
	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).....	Opposite polarity live Part: Cr>Cl>2.5mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....	Between live part and accessible part: Cr>Cl>5.0mm Transformer primary to secondary: Cr>Cl>5.0 mm	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....		N
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		N
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....	Cr>Cl>5.0mm between live part and supporting surface	P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω		P
	Two self-tapping screws used		P
	Thread-forming screws		N
	Thread-forming screw used in a groove		N
	Earth makes contact first		P
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
1.8 (7.2.5)	Earth terminal integral part of connector socket		P
12.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		P
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P

1.9 (14)	SCREW TERMINALS		N
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 3)	N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 4)	N

1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection.....:	Lamp inlet	P
1.10 (5.2.2)	Type of cable.....:		N
	Nominal cross-sectional area (mm ²).....:		N
	Cables equal to IEC 60227 or IEC 60245		N
1.10 (5.2.3)	Type of attachment, X, Y or Z		N
1.10 (5.2.5)	Type Z not connected to screws		N
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N
1.10 (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
1.10 (5.2.9)	Locking of screwed bushings		N
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N
	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N
1.10 (5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N)		N
	- torque test: torque (Nm).....		N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		N
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N
1.10 (5.2.18)	Used plug in accordance with		N
	- IEC 60083		N
	- other standard		N
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type	0.5mm ²	P
	Through wiring		P
	- not delivered/ mounting instruction		N
	- factory assembled		P
	- socket outlet loaded (A)		N
	- temperatures.....		N
	Green-yellow for earth only		N
1.10 (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		N
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		P
1.10 (5.3.1.4)	Conductors without insulation		N
1.10 (5.3.1.5)	SELV current-carrying parts		P

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
1.10 (5.3.4)	Joints and junctions effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		N
1.10 (5.3.6)	Wire carriers		N
1.10 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection	Class II construction	P
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		N
	Double-ended high pressure discharge lamp		N
	Relevant warning according to 3.2.18 fitted to the luminaire		N

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
1.11 (8.2.3)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement	Class II construction	P
	- basic insulation not accessible other than during starter or lamp replacement		N
	- glass protective shields not used as supplementary insulation		N
	Class I luminaire with BC lampholder		N
1.11 (8.2.4)	Portable luminaire:		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		P
	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

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (12.3)	Endurance test:		P
	- mounting-position		—
	- test temperature (°C)	35	—
	- total duration (h).....	240h	—
	- supply voltage: Un factor; calculated voltage (V):		—

IEC/EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- lamp used	LED Lamp	—
1.12 (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
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N
	- measured winding temperature (°C): at 1,1 Un :		—
	- measured mounting surface temperature (°C) at 1,1 Un.....		N
	- calculated mounting surface temperature (°C) ..		N
	- track-mounted luminaires		N
1.12 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions		—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C)		N
	- track-mounted luminaires		N
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N

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Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12.7.1)	Luminaire without temperature sensing control		N
1.12 (12.7.1.1)	Luminaire with fluorescent lamp $\leq 70W$		N
	Test method 12.7.1.1 or Annex V		—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex V:		N
	- 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.....:		—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$).....:		—
	Ball-pressure test:		N
	- part tested; temperature ($^{\circ}C$)		N
	- part tested; temperature ($^{\circ}C$)		N
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp $> 70W$, transformer $> 10 VA$		N
	- 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.....:		—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$).....:		—
	Ball-pressure test:		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- part tested; temperature (°C)		N
	- part tested; temperature (°C)		N
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N
	- case of abnormal conditions		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
1.12 (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 of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):		—
	Ball-pressure test:		N
	- part tested; temperature (°C)		N
	- part tested; temperature (°C)		N

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP20	—
	- mounting position during test.....		—
	- fixing screws tightened; torque (Nm)		—
	- tests according to clauses		—
	- electric strength test afterwards		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N

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Clause	Requirement + Test	Result - Remark	Verdict
	c) no trace of water on current-carrying parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)	IP20	P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
1.13 (9.3)	Humidity test 48 h		P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ)		—
	SELV:		N
	- between current-carrying parts of different polarity.....		N
	- between current-carrying parts and mounting surface		N
	- between current-carrying parts and metal parts of the luminaire.....		N
	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
1.14 (10.2.2)	Electric strength test		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		N
	SELV:		N
	- between current-carrying parts of different polarity.....:		N
	- between current-carrying parts and mounting surface		N
	- between current-carrying parts and metal parts of the luminaire.....:		N
	Other than SELV:		P
	- between live parts of different polarity	1500VAC	P
	- between live parts and mounting surface	3000VAC	P
	- between live parts and metal parts	3000VAC	P
	- between live parts of different polarity through action of a switch.....:		N
1.14 (10.3)	Leakage current (mA)		P

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C)		P
	- part tested; temperature (°C)	PCB: 125°C, 1.3mm	P
	- part tested; temperature (°C)		N
	- part tested; temperature (°C)		N
1.15 (13.3.1)	Needle flame test (10 s):		P
	- part tested	Lamp Terminal	P
	- part tested		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- part tested	PCB	P
	- part tested		N
1.15 (13.3.2)	Glow-wire test (650°C):		P
	- part tested		N
	- part tested		N
1.15 (13.4.1)	Tracking test: part tested		N

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE	List of critical components and materials			
Component	manufacturers / trademark	Type / model	Value / rating	Approval/ Reference
Terminal	--	--	250V, 5A	VDE
LED Driver	TESLUX LIGHTING S.R.O	CN50	Input:100-277V~, 50/60Hz Output: DC 39V, 1.4A	CE
PCB	Shikibo Electronics Co Ltd	E4	V-0, 130°C	UL
Alt.	--	--	V-0, 130°C	UL
Output wire	--	1007	VW-1, 300V, 80°C, 22AWG	UL
Alt.	--	3239	VW-1, 300V, 80°C, 22AWG	UL

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
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	Type reference	VT-6040	—
	Lamp used.....	LED Lamp	—
	Lamp control gear used.....		—
	Mounting position of luminaire.....	normal	—
	Supply wattage (W)	60W	—
	Supply current (A).....		—
	Calculated power factor.....		—
	Table: measured temperatures corrected for $t_a = 25\text{ }^\circ\text{C}$:		P
	- abnormal operating mode		—
	- test 1: rated voltage.....	N/A	—
	- 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.....	N/A	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test	N/A	—

temperature ($^\circ\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	Test 3	limit	test 4	limit
PCB	--	58.4	--	130	--	--
Terminal	--	42.5	--	125	--	--
PCB near LED	--	68.3	--	130	--	--
Power supply insulation tube inside	--	49.6	--	--	--	--

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Clause	Requirement + Test				Result - Remark		Verdict
Plastical enclosure outside above LED	--	49.7	--	90	--	--	
Ambient	--	25.2	--	--	--	--	

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminal size and rating		N
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N
	Pull test pin or tab terminals (4 samples); pull (N)		N
(15.9)	Contact resistance test		N
	Voltage drop (mV) after 1 h		N

Attachment – A

Photo Documentation

<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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--End--