



# CE LVD TEST REPORT

For

LED PANEL LIGHTS

**Model No.:** VT-6060, VT-6060 D, VT-3030, VT-6061, VT-12030, VT-12030 M, VT-3030 M, VT-6061 M, VT-12061, VT-3031, VT-3032, VT-6067, VT-6068, VT-6037, VT-6129, VT-12031, VT-6148

**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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**Report Number :** J01.06.0226S

**Issued Date :** September 28, 2015

**Date of Report :** September 28, 2015

**Note:**

1. The test data and result is based on the tested sample only.
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<b>LVD Report</b> <b>EN60598-1</b> <b>Luminaires—Part 1 :General requirements and tests</b>  <b>EN60598-2-1</b> <b>Part 2-1: Particular requirements</b> <b>Section 1: Fixed general purpose luminaires</b>	
Report reference No. ....:	J01.06.0226S
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 60598-1:2015 EN 60598-2-1:1989 EN 62031: 2008+A1+A2_2015 EN 62471:2008 EN 62493: 2015
Procedure deviation.....:	N/A
Non-standard test method.....:	N/A
Type of test equipment .....	LED PANEL LIGHTS
Trade mark.....:	
Model/Type designation.....:	VT-6060, VT-6060 D, VT-3030, VT-6061, VT-12030, VT-12030 M, VT-3030 M, VT-6061 M, VT-12061, VT-3031, VT-3032, VT-6067, VT-6068, VT-6037, VT-6129, VT-12031, VT-6148
Rating.....:	220-240V~, 50/60Hz, 54W Max.
Copyright blank test report:	Global-Standard Testing Service Co., Ltd.
Test item particulars:	--
Operating Condition	Continuous
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A.
Class of equipment	Class II equipment and Recessed equipment

Protection against ingress of water	IP20
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 June 22, 2016  
 Signature Date

Sean Xiao / Test Engineer  
 Name/title

**Reviewed by :** Peter Chen June 27, 2016  
 Signature Date

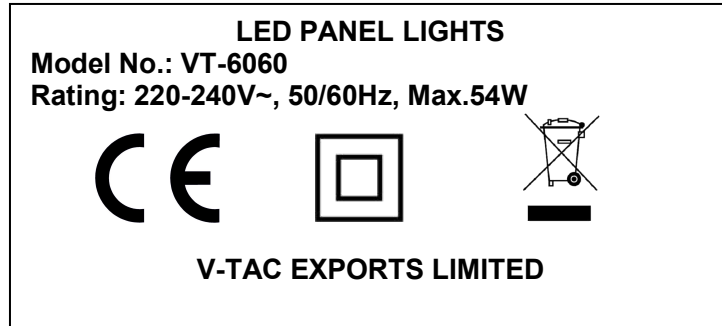
Peter Chen / Project Engineer  
 Name/title

**Approved by :**  June 27, 2016  
 Signature Date

Tim Sun / Manager  
 Name/title

<p><b>General remarks:</b></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>1) Photo documentation</p>
<ol style="list-style-type: none"> <li>1. the equipment with model VT-6060, VT-6060 D, VT-3030, VT-6061, VT-12030, VT-12030 M, VT-3030 M, VT-6061 M, VT-12061, VT-3031, VT-3032, VT-6067, VT-6068, VT-6037, VT-6129, VT-12031, VT-6148 are class II LED PANEL LIGHTS used for Fixing luminaries;</li> <li>2. VT-6060 was selected as representative sample;</li> <li>3. The control gear matched lamp has be approved CE;</li> <li>4. The test result presented in this report relate only to the object tested. The samples tested comply with the requirements of this standard;</li> <li>5. This report is based on report J01.06.0226S, dated September 28, 2015.</li> </ol>	

**Label**



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

EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
<b>1.1 (0)</b>	<b>SCOPE</b>		---
1.1 (0.2)	More sections applicable.....	No	---
<b>1.4 (2)</b>	<b>CLASSIFICATION</b>		---
1.4 (2.2)	Type of protection.....	Class II	---
1.4 (2.3)	Degree of protection.....		---
1.4 (2.4)	Portable and handheld luminaire .....	No	---
	Fixed luminaire suitable for normally flammable surfaces.....	Yes	---
	Fixed luminaire suitable for non-combustible materials only .....	No	---
1.4 (2.5)	Luminaire for normal use .....	Yes	---
	Luminaire for rough service .....	No	---
<b>1.5 (3)</b>	<b>MARKING</b>		---
1.5 (3.2)	Mandatory markings	Manufacturer: V-TAC EXPORTS LIMITED Rated voltage: 220-240V~ Type reference: VT-6060 Rated wattage: 54W Max	P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaries		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	Suitable for mounting on a normally flammable surface, no such requirements	N
1.5 (3.3.5)	Wiring diagram	Suitable for direct connection to the mains supply	N
1.5 (3.3.6)	Special conditions	Separately used	N
1.5 (3.3.7)	Metal halid lamp luminaire – warning	Intended for ordinary tungsten filament lamps	N
1.5 (3.3.8)	Limitation for semi-luminaires		N
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors		P

EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
1.5 (3.3.11)	Luminaires with remote control	No remote control	N
1.5 (3.3.12)	Clip-mounted luminaire – warning	Mounted on the ceiling	N
1.5 (3.3.13)	Specifications of protective shields	No special protective shields used	N
1.5 (3.3.14)	Symbol for nature of supply	Not necessary for such requirement	N
1.5 (3.3.15)	Rated current of socket outlet	No socket outlet incorporated in the luminaire	N
1.5 (3.3.16)	Rough service luminaire	Normal used luminaire	N
1.5 (3.3.17)	The mounting instructions for luminaires with type X, Y or Z attachments	Supply cord not provided by manufacturer	N
1.5 (3.3.18)	Information of luminaires provided with a PVC non-detachable cable or cord	As above	N
1.5 (3.4)	Test of marking		---
	Test with water	Rubbed lightly for 15 s with a piece of cloth soaked with water	P
	Test with hexane	For a further 15 s	P
	Legible after test		P
	Label attached		P
<b>1.6 (4)</b>	<b>CONSTRUCTION</b>		---
1.6 (4.2)	Components replaceable without difficulty	Replacement of lamps without difficulty and without impairing safety	P
1.6 (4.3)	Wireways smooth and free from sharp edges	Insulating sheath used in such position, and no metal set screws protruded into wireways	P
1.6 (4.4)	Lampholders		---
1.6 (4.4.1)	Integral lampholder	Separate lampholders used, no such requirement	N
1.6 (4.4.2)	Wiring connection	As above	N
1.6 (4.4.3)	Lampholder for end- to-end mounting		N
1.6 (4.4.4)	Positioning	Put into position by the luminaire manufacturer	N
1.6 (4.4.5)	Peak pulse voltage	Without ignitors	N
1.6 (4.4.6)	Centre contact	As above	N
1.6 (4.4.7)	Rough service luminaires	normal use luminaires	N

EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
1.6 (4.4.8)	Lamp connectors	Lampholder provided	N
1.6 (4.5)	Starter holders		---
	Starter holder in luminaires other than class II	Without starter	N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		---
	Tails		N
	Unsecured blocks		N
1.6 (4.7)	Terminals and supply connections		---
1.6 (4.7.1)	Contact to metal parts		N
1.6 (4.7.2)	Location stranded wires		N
	8 mm test live conductor		N
	8 mm test earth conductor		N
1.6 (4.7.3)	Terminals for supply conductors	Suitable for connection to be made by means of screws	N
1.6 (4.7.4)	Terminals other than supply connection	Screwless terminals used for multiple connection of internal wiring, not used for the connection of external wiring	N
1.6 (4.7.5)	Heat-resistant wiring/sleeves		P
1.6 (4.7.6)	Multi-pole plug	No plug used	N
1.6 (4.8)	Switches:		---
	- adequate rating	No switch used	N
	- adequate fixing		N
	- polarized supply		N
1.6 (4.9)	Insulating lining and sleeves		---
1.6 (4.9.1)	Retainment		P
	Method of fixing..... :		P
1.6 (4.9.2)	Insulated linings and sleeves		---
	a) & c) Insulation resistance and electric strength		P
	b) Ageing test. Temperature (°C) .....		N
1.6 (4.10)	Insulation of Class II luminaires		---
1.6 (4.10.1)	No contact, mounting surface - accessible metal parts - wiring of basic insulation		P
	Safe installation fixed luminaires		P



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Cl.	Requirement Test	Result-Remark	Verdict
	Capacitors	No capacitors used	N
	Interference suppression capacitors according to IEC 60384-14		P
1.6 (4.10.2)	Assembly joints:		---
	- not coincidental		N
	- no straight access		N
	- degree of protection		N
1.6 (4.10.3)	Retention of insulation:		---
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N
	- lining in lampholder		N
1.6 (4.11)	Electrical connections		---
1.6 (4.11.1)	Contact pressure	Contact pressure transmitted through metal parts	P
1.6 (4.11.2)	Screws:		---
	- spaced threaded screws	No specified screws used	N
	- thread-cutting screws		N
	- earth continuity		N
	- at least two screws		N
1.6 (4.11.3)	Screw locking:		---
	- spring washer	No screws or rivets serve as electrical as well as mechanical connections	N
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood		P
1.6 (4.11.6)	Electro-mechanical contact systems	No electro-mechanical contact systems	N
1.6 (4.12)	Mechanical connections and glands		---
1.6 (4.12.1)	Mechanical stress		N
	Not made of soft metal		N
	Screws of insulating material		N
	Torque test: torque (Nm); part.....:		N

EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
	Torque test: torque (Nm); part.....:		N
	Torque test: torque (Nm); part.....:		N
1.6 (4.12.2)	Screw diameter up to 3 mm		N
1.6 (4.12.3)	Screws in insulation		N
1.6 (4.12.4)	Locked connections:		---
	- fixed arms; torque (Nm).....:		N
	- lampholder; torque (Nm).....:		N
	- push-button switches; torque (Nm).....:		N
1.6 (4.12.5)	Screwed glands; force (N).....:		N
1.6 (4.13)	Mechanical strength		---
1.6 (4.13.1)	Impact tests:		---
	- fragile parts; energy (Nm).....:	0,2Nm	P
	- other parts; energy (Nm).....:	0,35Nm	P
	1) live parts	Not became accessible	P
	2) linings	Effectiveness not been impaired	P
	3) protection	In accordance with its classification	P
	4) covers		P
1.6 (4.13.3)	Straight test finger	Pressed against the surface with a force of 30 N, metal parts not touched live parts	P
1.6 (4.13.4)	Rough service luminaires		---
	a) fixed	Normal use luminaires, no such requirements	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	Ceiling mounted luminaires, not socket-outlet-mounted luminaires	N
1.6 (4.14)	Suspensions and adjusting devices		---
1.6 (4.14.1)	Mechanical load:		---
	A) four times the weight		N
	B) torque 2,5 Nm		N

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Cl.	Requirement Test	Result-Remark	Verdict
	C) bracket arm; force (N)..... :	No bracket arm	N
	D) load track- mounted luminaires	Ceiling mounted luminaires	N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....	As above	N
	metal rod. Diameter (mm) .....		N
1.6 (4.14.2)	Load to flexible cables		---
	Mass (kg)..... :		N
	Stress in conductors (N/mm <sup>2</sup> )..... :	Does not exceed 15 N/mm <sup>2</sup>	N
	Semi-luminaires – mass (kg) .....	Not semi-luminaires	N
	Semi-luminaires – bending moment (Nm).. :		N
1.6 (4.14.3)	Adjusting devices:		---
	- rotating test; number of cycles..... :	No adjusting devices	N
	- strands broken		N
	- high voltage test		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No telescopic tubes	N
1.6 (4.14.5)	Guide pulleys	No such parts	N
1.6 (4.14.6)	Strain on socket-outlets	Ceiling mounted, not socket-outlet-mounted	N
1.6 (4.15)	Flammable materials:		---
	- glow- wire test 650 °C		P
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		P
	- thermal protection		N
	- electronic circuits exempted		N
1.6 (4.15.2)	Luminaires made of thermoplastic material		---
	a) construction		P
	b) temperature sensing control		N
	c) surface temperature		N
1.6 (4.16)	Luminaires marked with "F" symbol		---
	No lamp control gear		N
1.6 (4.16.1)	Lamp control gear spacing:		---

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Cl.	Requirement Test	Result-Remark	Verdict
	- spacing 35 mm		N
	- spacing 10 mm		N
1.6 (4.16.2)	Thermal protection:		---
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	"F" curve measured		N
1.6 (4.17)	Drain holes		N
	Clearance at least 5 mm	Ordinary luminaire, no such requirement	N
1.6 (4.18)	Resistance to corrosion:		---
1.6 (4.18.1)	- rust-resistance	As above	N
1.6 (4.18.2)	- season cracking in copper		P
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Igniters compatible with ballast	No igniters	N
1.6 (4.20)	Rough service vibration.....:	Normal use luminaire	N
1.6 (4.21)	Protective shield:		---
1.6 (4.21.1)	Shield fitted	Not tungsten halogen lamp, no such requirements	N
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	Not incorporate attachments to lamps which might cause overheating or damage to the lamps, lamps caps or holders	P
1.6 (4.23)	Semi-luminaires comply class II	Not semi-luminaires	N
1.6 (4.24)	UV radiation, metal halide lamps	No metal halide lamps	N
1.6 (4.25)	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection:		---
1.6 (4.26.1)	Uninsulated accessible SELV parts	No SELV parts	N
1.6 (4.26.2)	Short-circuit test		N

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Cl.	Requirement Test	Result-Remark	Verdict
1.6 (4.26.3)	Test chain according to IEC 61032		N
<b>1.7 (11)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		---
	Class of protection.....:	Class II	---
	Working voltage (V).....:	220-240V~	---
	Voltage form	Sinusoidal [ $\sqrt{\quad}$ ] Non-sinusoidal [ $\quad$ ]	---
	PTI	< 600 [ $\sqrt{\quad}$ ] $\geq$ 600 [ $\quad$ ]	---
	Rated pulse voltage (kV) .....		---
	(1) Live parts of different polarity: cr (mm); cl (mm).....:	Cr: $\geq$ Cl: > 2,5mm	P
	(2) Live parts and accessible parts: cr (mm); cl (mm).....:	Cr: $\geq$ Cl: > 6,5mm	P
	(3) Parts becoming live: cr (mm); cl (mm)....:		N
	(4) Outer surface of cable: cr (mm); cl (mm) .....:		N
	(5) Live parts of switches: cr (mm); cl (mm):	No switches	N
	(6) Live parts and supporting surface: cr (mm); cl (mm).....:	Cr: $\geq$ Cl: > 8mm	P
<b>1.8 (7)</b>	<b>PROVISION FOR EARTHING</b>		---
1.8 (7.2.1 + 7.2.3)	Metal parts		N
	Accessible metal parts		N
	Metal parts and supporting surface		N
	Resistance < 0,5 $\Omega$		N
	Two spaced threaded screws used		N
	Thread-forming screws	As above	N
	Connector earthing first	Not provided by manufacturer	N
1.8 (7.2.2 + 7.2.3)	Earth continuity		N
1.8 (7.2.4)	Locking of clamping means	Screw terminal	N
	Compliance with 4.7.3		N
	Adequate locking		N
	Loosening of clamping means	Not be possible to loosen the clamping means by hand	N
1.8 (7.2.5 + 7.2.9)	Connector socket	Terminal block provided	N

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Cl.	Requirement Test	Result-Remark	Verdict
1.8 (7.2.6 + 7.2.9)	Position of the earth terminal		N
1.8 (7.2.7 + 7.2.9)	Corrosion of the earth terminal	Ordinary luminaire, no such requirements	N
1.8 (7.2.8 + 7.2.9)	Material of earth terminal	Non-rusting metal	P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		N
<b>1.9 (14)</b>	<b>SCREW TERMINALS</b>		---
	Separately approved; component list	See below	P
	Part of the luminaire		N
<b>1.9 (15)</b>	<b>SCREWLESS TERMINALS</b>		---
	Separately approved; component list	See below	P
	Part of the luminaire		N
<b>1.10 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		---
1.10 (5.2)	Supply connection and external wiring		---
1.10 (5.2.1 + 5.2.4)	Means of connection.....:	Adapters for engagement with supply tracks	P
1.10 (5.2.2 + 5.2.4)	Type of cable.....:		N
	Nominal cross-sectional area (mm <sup>2</sup> ).....:		N
1.10 (5.2.3 + 5.2.4)	Replacement of non-detachable cable and cords		N
1.10 (5.2.5)	Non-rewirable connection		N
1.10 (5.2.6)	Cable entries:		---
	- suitable for introduction		N
	- adequate degree of protection		N
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N
1.10 (5.2.8)	Insulating bushings:		---
	- suitably fixed		N
	- material in bushings		N
	- tubes or guards made of insulating material		N

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Cl.	Requirement Test	Result-Remark	Verdict
1.10 (5.2.9)	Locking of bushings		N
1.10 (5.2.10)	Cord anchorage:		---
	- covering protected from abrasion		N
	- clear how to be effective		N
	- no mechanical or thermal stress		N
	- no tying of cables into knots etc.		N
	- insulating material or lining		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 (5.2.10.1)	Tests:		---
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N)..... :		N
	- torque test: torque (Nm)..... :		N
	- displacement $\leq 2$ mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
1.10 (5.2.11)	External wiring passing into luminaire		N
1.10 (5.2.12)	Looping-in terminals	Not for looping-in	N
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.10 (5.2.14)	Mains plug same protection	Intended to be connected to the fixed wiring, no mains plug used	N
	Class III luminaire plug		N
1.10 (5.2.15)	Colour code low voltage	Mains supply voltage, no low voltage	N
1.10 (5.2.16)	Appliance inlets (IEC 60320)		P

EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
	Appliance couplers of class II type		N
1.10 (5.3)	Internal wiring		---
1.10 (5.3.1)	Cross-sectional area (mm <sup>2</sup> )..... : 0,75mm <sup>2</sup>		P
	Insulation thickness		P
	Temperature resistant		P
	Sleeves suitable for hot spots		P
	Green- yellow for earth only		N
	Through wiring		---
	- cross-sectional area (mm <sup>2</sup> )..... :		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A)..... :		N
	- temperatures..... :		N
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.	No such parts	N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360 <sup>0</sup>		N
1.10 (5.3.3)	Openings		P
	Bushings not removable		P
	Bushings in sharp openings		P
	Cables with protective sheath		P
1.10 (5.3.4)	Joints and junctions:		---
	- easily accessible		P
	- effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers		N
1.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N
<b>1.11 (8)</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		---
1.11 (8.2.1 + 8.2.5)	Live parts not accessible		P
	Protection in any position		P
	Insulation lacquer not reliable		P



EN 60598-2-1			
Cl.	Requirement Test	Result-Remark	Verdict
	Double-ended tungsten filament lamp		N
	Double-ended high pressure discharge lamp		N
1.11 (8.2.2 + 8.2.5)	Portable luminaire	Fixed luminaire	N
1.11 (8.2.3 + 8.2.5)	Class II luminaire:		---
	- insulation-encased, reinforced insulation		N
	- metal-encased, double insulation		N
	- basic insulated metal parts or basic insulated live conductors only accessible during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation		N
	Class I luminaire with BC lampholder	No BC lampholder	N
1.11 (8.2.4 + 8.2.5)	Portable luminaire:		---
	- non-detachable cable	Fixed luminaire	N
	- terminal block completely covered		N
1.11 (8.2.6)	Covers have adequate strength		P
	Covers reliably secured		P
1.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$	No capacitors used, No such requirements	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
<b>1.12 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>		---
1.12 (12.3)	Endurance test:		---
	- mounting-position..... : (see Annex 2)		---
	- test temperature ( $^{\circ}\text{C}$ )..... : 35		---
	- total duration (h)..... : 240h		---
	- supply voltage: Un factor; calculated voltage (V)..... :		---
	- lamp used..... : (see Annex 2)		---
1.12 (12.3.2)	After endurance test:		---
	- no part unserviceable		P

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Cl.	Requirement Test	Result-Remark	Verdict
	- luminaire not unsafe		P
	- no damage to track system	Not track-mounted luminaires	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)		N
1.12 (12.6)	Thermal test (failed lamp control gear condition):		---
1.12 (12.6.1)	- case of abnormal conditions.....:	No control gear used	N
	- electronic lamp control gear		N
	- measured winding temperature (°C) at 1,1 Un.....:		N
	- 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		---
	- 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):		---
	- case of abnormal conditions.....:	As above	N
1.12 (12.7.1)	- measured winding temperature (°C) at 1,1 Un.....:		N
	- measured temperature of fixing point/ exposed part (°C) at 1,1 Un.....:		N
	- calculated temperature of fixing point/ exposed part (°C).....:		N
1.12 (12.7.2)	Temperature sensing control		---
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N

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Cl.	Requirement Test	Result-Remark	Verdict
	- measured temperature of fixing point/ exposed part (°C) .....		N
<b>1.13 (9)</b>	<b>RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE</b>		---
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		---
	- classification according to IP.....		---
	- mounting position during test.....		---
	- fixing screws tightened; torque (Nm).....		---
	- tests according to clauses.....		---
	- electric strength		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on live parts		N
	d) no accumulation of water in waterproof luminaire		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N
1.13 (9.3)	Humidity test 48 h	Humidity: 93% Temperature: 25°C	P
<b>1.14 (10)</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		---
1.14 (10.2.1)	Insulation resistance test:		---
	Class of protection.....	Class II	---
	Insulation resistance (MΩ):		---
	SELV:		---
	- between current-carrying parts of different polarity.....	No SELV parts	N
	- between current-carrying parts and mounting surface.....		N
	- between current-carrying parts and metal parts of the luminaire.....		N
	Other than SELV:		---
	- between live parts of different polarity.....	More than 100 MΩ	P
	- between live parts and mounting surface :	More than 100 MΩ	P
	- between live parts and metal parts.....	More than 100 MΩ	P

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Cl.	Requirement Test	Result-Remark	Verdict
	- between live parts of different polarity through action of a switch.....:	No such switch	N
1.14 (10.2.2)	Electric strength test		---
	Class of protection.....:	Class II	---
	Dummy lamp		N
	Luminaires with ignitors after 24 h test	No ignitor	N
	Luminaires with manual ignitors	As above	N
	Test voltage (V):		---
	SELV:		---
	- between current carrying parts of different polarity.....:	No SELV parts	N
	- between current carrying parts and mounting surface.....:		N
	- between carrying parts parts and metal parts of the luminaire.....:		N
	Other than SELV:		---
	- between live parts of different polarity.....:	2 x 240 +1000	P
	- between live parts and mounting surface :	4 x 240 +2750	P
	- between live parts and metal parts.....:	4 x 240 +2750	P
	- between live parts of different polarity through action of a switch.....:	No such switch	N
1.14 (10.3.1)	Leakage current (mA).....:	Measured value: 0,05mA	P
<b>1.15 (13)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		---
1.15 (13.2.1)	Ball-pressure test:		---
	- part tested; temperature (°C).....:	PCB: 125°C (impression diameter: 0,75mm)	P
	- part tested; temperature (°C).....:	Plastic enclosure: 75°C (impression diameter: 1,29mm)	P
1.15 (13.3.1)	Needle flame test (10 s):		---
	- part tested.....:		N
	- part tested.....:		N
1.15 (13.3.2)	Glow wire test (650 °C):		---
	- part tested.....:		N
	- part tested.....:		N
1.15 (13.4.1)	Tracking test: part tested.....:		N

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Cl.	Requirement Test	Result-Remark	Verdict
	<b>COMMON MODIFICATIONS</b>		---
(5.2.2)	Cables equal to HD 21 S2 or HD 22 S2		Not checked
(5.2.15)	Colour code low voltage		Not checked
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS</b>		---
(2.2)	Class 0 not accepted		N
(3.3)	DK: power supply cord with label		N
	IT: warning label on Class 0 luminaire		N
(4.5.1)	DK: socket-outlets		N
(4.5.1)	FR: socket-outlets		N
(5.2.1)	DK, FI, SE, GB: type of plug		N
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS</b>		---
(13.3)	DK: Needle flame test or glow-wire test 750° for luminaires in access routes		N
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N
(13.3.2)	FR: Glow-wire test 850° alt. 750° for luminaires in premises open to public and workers		N

ANNEX 1		components				P	
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity		
Tube	GUANGZHOU KAIHENG NEW MATERIAL CO., LTD	K-102	125°C	UL 224	UL		
Internal wire	CHUANGLIZHI ELECTRICITY (SHENZHEN) CO LTD	1015	18AWG, 105°C	UL 758	UL		
	NIZING ELECTRIC CO LTD	3239	24AWG, 150°C	UL 758	UL		
LED Drive	EAGL CRISE	ELP040C1000L S	Input: AC100- 240, 50/60Hz, 0.45A Output: DC20-40V, 1000mA	EN 61347	CE		
Transformer	Various	Various	Class B, 130°C	EN 61347-1 EN 61347-2- 13	Test with appliance		
Plastic Enclosure	Various	Various	Min. V-2, 80°C	UL 94	UL		
No.	mark of conformity	No.	mark of conformity	No.	mark of conformity	No.	mark of conformity
1		2	VDE	3	SEV	4	ÖVE
5	DEMKO	6	SEMKO	7	NEMKO	8	FIMKO
9	BSI	10	UL	11	CSA	12	UTE
13	IMQ	14	BNL	15	CEBEC	16	KEMA

ANNEX 2	Temperature measurements, thermal tests of Section 12				P	
Type reference.....	VT-6060				---	
Lamp used.....	;LED Lamp				---	
Ballast used.....	No				---	
Mounting position of luminaire.....	Ceiling				---	
Supply wattage (W).....	54W				---	
Supply current (A).....	0,58A				---	
Calculated power factor.....	0,86				---	
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.....	240V×1,06				---	
- 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.....					---	
temperature (°C) of part	clause 12.4 – normal				clause 12.5 – abnormal	
	test 1	test 2	test 3	limits	test 4	Limit
Supply cord		25.6°C		75°C		
Enclosure (metal)		48.5°C		Ref.		
Transformer		94.2°C		130°C		
PCB		67.3°C		130°C		
Winding		84.6°C		130°C		
X Capacitor		64.7°C		110°C		
Y Capacitor		51.9°C		110°C		
Input Terminal		42.5°C		75°C		
Plastic Enclosure(Inside)		51.2°C		75°C		
LED body		78.3°C		Ref.		
Ambient		24.3,°C		10-35°C		

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Cl.	Requirement Test	Result-Remark	Verdict

<b>ANNEX 3</b>	<b>Screw terminals (part of the luminaire)</b>		---
<b>(14)</b>	<b>SCREW TERMINALS</b>		---
(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 <sup>2</sup> )..... :		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)..... :		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

<b>ANNEX 4</b>	<b>Screwless terminals (part of the luminaire)</b>		---
<b>(15)</b>	<b>SCREWLESS TERMINALS</b>		---
(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



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Cl.	Requirement Test					Result-Remark				Verdict
(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									--
	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
	Terminal size and rating									N
(15.8.1)	Pull test spring-type terminals (4 samples); pull (N)									N
	Pull test pin or tab terminals (4 samples); pull (N)									N
(15.9)	Contact resistance test									--
	Voltage drop (mV) after 1 h									---
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									--

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Cl.	Requirement Test					Result-Remark				Verdict
	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)										

## **Appendix 1**

### Photo Documentation

<p><b>Photo 1</b></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 checked="" type="checkbox"/> top</p> <p><input type="checkbox"/> bottom</p> <p><input type="checkbox"/> internal</p>	
---	---

<p><b>Photo 2</b></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>	
---	--

**Photo 3**

View:

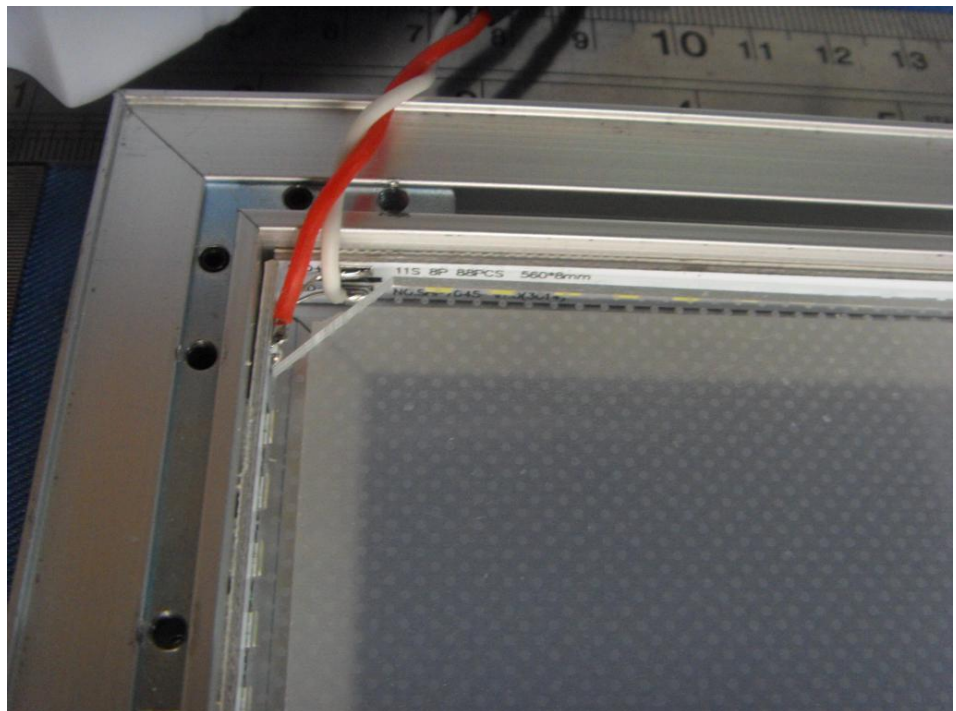
- front
- rear
- right side
- left side
- top
- bottom
- internal



**Photo 4**

View:

- front
- rear
- right side
- left side
- top
- bottom
- internal

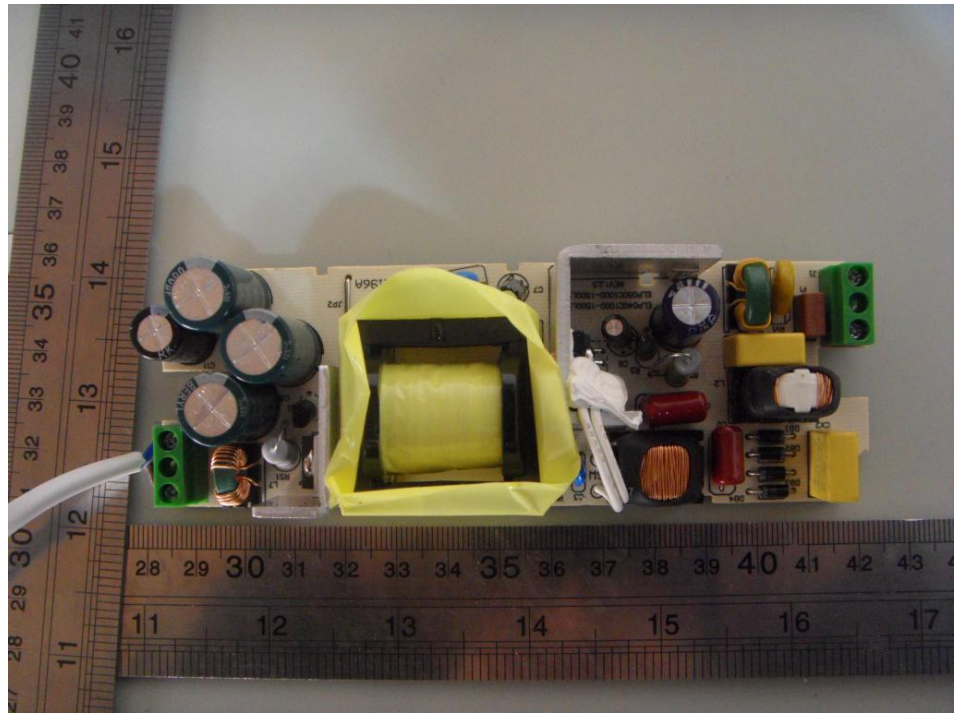




**Photo 5**

View:

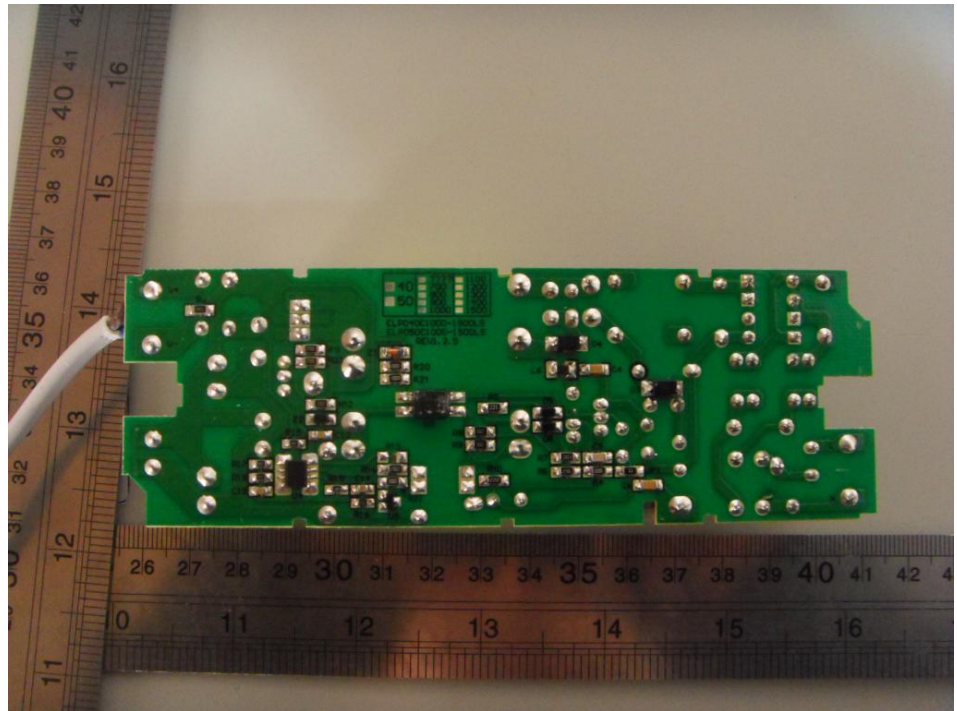
- front
- rear
- right side
- left side
- top
- bottom
- internal



**Photo 6**

View:

- front
- rear
- right side
- left side
- top
- bottom
- internal



END.