

**BRAYTRON S.R.L****CE LVD REPORT**

Applicant:	BRAYTRON S.R.L B.DUL IULIU MANIU, NR.616, CORP B, ETAJ 1 SECTOR 6, 061129, BUCHAREST, ROMANIA
Product Name:	LED OUTDOOR LIGHTING FIXTURE
Trade Name:	<b>BRAYTRON</b>
Main Test Model:	BT07-61530
Additional Model:	See Annex B
Prepared By :	BST Testing(Shenzhen) Co., Ltd.
	No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China
Test Date:	Jan.07,2022–Jan.14,2022
Date of Report :	Jan.14,2022
Report No.:	BSTXD220121058901SR

**TEST REPORT****EN 60598-2-1****Luminaires****Part 2: Particular requirements****Section One – Fixed general purpose luminaires**

Testing Laboratory Name .....	BST Testing(Shenzhen) Co., Ltd.
Address .....	No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China
Testing location .....	BST Testing(Shenzhen) Co., Ltd.
Applicant's Name .....	BRAYTRON S.R.L
Address .....	B.DUL IULIU MANIU, NR.616, CORP B, ETAJ 1 SECTOR 6, 061129,BUCHAREST,ROMANIA
Manufacturer .....	DEMGRUP INTERNATIONAL LIGHTING LIMITED
Address .....	UNIT D 16/F, ONE CAPITAL PLACE, 18 LUARD ROAD, WAN CHAI, HONG KONG
Test specification	
Standard.....	EN 60598-2-1:2021 EN 60598-1:2021
Trade Name.....	N/A
Procedure deviation .....	N/A
Non-standard test method .....	N/A
Test item description .....	LED OUTDOOR LIGHTING FIXTURE
Model and/or type reference .....	BT07-61530
Rating(s).....	220-240Vac, 50/60Hz, 85W
Test case verdicts	
Test case does not apply to the test object ... :	N/A
Test item does meet the requirement .....	P(ass)
Test item does not meet the requirement .....	F(ail)



General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

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

Throughout this report a comma is used as the decimal separator.

General product information:

(Note: the series products have the same circuit diagram, pcb layout and functionality. The differences are the model name, so, we select BT07-61530 to test.)

Copy of marking plate:



Prepared by :

*Fade Zhan*

Engineer

Reviewer :

*Jacky Zhang*

Supervisor

Approved & Authorized Signer :



Manager



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict

1.1 (0)	SCOPE		P
1.1 (0.1)	More sections applicable.....:	Yes [ <input checked="" type="checkbox"/> ]      No [ <input type="checkbox"/> ]	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection.....:	Class II	—
1.4 (2.3)	Degree of protection.....:		—
1.4 (2.4)	Luminaire only suitable for non-combustible materials .....	No	—
	Luminaire suitable for normally flammable surfaces.....:	Yes	—
	Luminaire suitable to be covered by insulating material.....:	No	—
1.4 (2.5)	Luminaire for normal use .....	Yes	—
	Luminaire for rough service .....	No	—

1.5 (3)	MARKING		P
1.5 (3.2)	Marking on luminaires		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 luminaires		N
1.5 (3.3.2)	Nominal frequency in Hz		N
1.5 (3.3.3)	Operating temperature		P
1.5 (3.3.4)	Symbol or warning notice		P
1.5 (3.3.5)	Wiring diagram		N
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halid lamp luminaire – warning		N
1.5 (3.3.8)	Limitation for semi-luminaires	Not semi-luminaires	N
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors	use outdoors	N
1.5 (3.3.11)	Luminaires with remote control	No remote control	N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
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		N
1.5 (3.3.16)	Rough service luminaire	Ordinary 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	Ordinary luminaire	N
1.5(3.3.19)	Protective conductor current in instruction if applicable		N
1.5(3.3.20)	Provided with information if not intended to be mounted within arms reach		P
1.5 (3.3.101)	Terminal block is not supplied with luminaire		P
1.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test	The marking is legible	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		P
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		N
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Rough service luminaires	Ordinary luminaires	N
1.6 (4.4.8)	Lamp connectors		P
1.6 (4.4.9)	Caps and bases correctly used		N



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Cl.	Requirement – Test	Result	Verdict
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		P
	Tails		P
	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		P
	Test 8 mm earth conductor		N
1.6 (4.7.3)	Terminals for supply conductors		P
1.6 (4.7.4)	Terminals other than supply connection		N
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N
1.6 (4.7.6)	Multi-pole plug		N
1.6 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		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		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		P
	Safe installation fixed luminaires		P
	Capacitors		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



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.10.3)	Retention of insulation:		P
	- fixed	Cannot remove easily	P
	- 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	Not transmitted through insulating material	P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N
	- at least two self-tapping screws		N
1.6 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood	No wood material in the luminaire	P
1.6 (4.11.6)	Electro-mechanical contact systems	No such systems	N
1.6 (4.12)	Mechanical connections and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		P
	Torque test: torque (Nm); part.....: 2 Nm,Fixed Screw		P
	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



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.12.5)	Screwed glands; force (N).....:	No screwed gland	N
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:		N
	- other parts; energy (Nm)..... :	0.35 Nm	P
	1) live parts	Not access	P
	2) linings		P
	3) protection	Continue to afford the degree of protection against ingress of dust, solid objects and moisture	P
	4) covers	No break	P
1.6 (4.13.3)	Straight test finger	Can't touch with live part with 30N	P
1.6 (4.13.4)	Rough service luminaires		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:		N
	A) four times the weight		N
	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
1.6 (4.14.2)	Load to flexible cables		N
	Mass (kg).....:		N





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Cl.	Requirement – Test	Result	Verdict
	Stress in conductors (N/mm <sup>2</sup> ).....:		N
	Semi-luminaires – mass (kg) .....		N
	Semi-luminaires – bending moment (Nm).....:		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	N
1.6 (4.14.5)	Guide pulleys	No guide pulleys	N
1.6 (4.14.6)	Strain on socket-outlets	No socket-outlet	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		P
	a) construction		P
	b) temperature sensing control		N
	c) surface temperature		N
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N
1.6 (4.16.1)	Electronic lamp control gear		P
	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



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Cl.	Requirement – Test	Result	Verdict
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	The test of 12.6.	(see 12.6)	N
1.6 (4.17)	Drain holes	Ordinary luminaire	N
	Clearance at least 5 mm		N
1.6 (4.18)	Resistance to corrosion:		P
1.6 (4.18.1)	- rust-resistance	Ordinary luminaire	N
1.6 (4.18.2)	- season cracking in copper		P
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Ignitors compatible with ballast	No ignitors	N
1.6 (4.20)	Rough service vibration..... :	Ordinary luminaire	N
1.6 (4.21)	Protective shield:		N
1.6 (4.21.1)	Shield fitted		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	No attachments	N
1.6 (4.23)	Semi-luminaires comply class II		N
1.6 (4.24)	UV radiation		N
1.6 (4.25)	No sharp point or edges	No sharp points or edges	P
1.6 (4.26)	Short-circuit protection:		N
1.6 (4.26.1)	Uninsulated accessible SELV parts		P
1.6 (4.26.2)	Short-circuit test		N
1.6 (4.26.3)	Test chain according to Figure 29		P



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)..... :	220-240V	—
	Voltage form	Sinusoidal	—
	PTI	< 600V	—
	Rated pulse voltage (kV) ..... :		—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)..... :	Cr >2.5mm, Cl>1.5mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)..... :	Cr >5.0mm, Cl>3.0mm	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) Current-carrying parts of switches and metal parts, after removal of insulation: cr (mm); cl (mm)..... :		N
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)..... :	Cr >5.0mm, Cl>3.0mm	P

1.8 (7)	PROVISION FOR EARTHING		N
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		N
	Metal parts in contact with supporting surface		N
	Resistance < 0,5 Ω		N
	Self-tapping screws used		N
	Thread-forming screws		N
	Connector earthing first		N
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		N
1.8 (7.2.4)	Locking of clamping means		N
	Compliance with 4.7.3		N
1.8 (7.2.5)	Earth terminal integral part of connector socket		N
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N
1.8 (7.2.8)	Material of earth terminal		N
	Contact surface bare metal		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.8 (7.2.10)	Class II luminaire for looping-in		N
1.8 (7.2.11)	Earthing core coloured green-yellow		N
	Length of earth conductor		N
1.9 (14)	SCREW TERMINALS		N
	Separately approved; component list		N
	Part of the luminaire		N
1.9 (15)	SCREWLESS TERMINALS		N
	Separately approved; component list		N
	Part of the luminaire		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..... : Wire leader		P
1.10 (5.2.2)	Type of cable..... :		P
	Nominal cross-sectional area (mm <sup>2</sup> )..... :		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
1.10 (5.2.5)	Type Z not connected to screws		N
1.10 (5.2.6)	Cable entries:		N
	- 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:		N
	- suitably fixed		N
	- material in bushings		N
	- tubes or guards made of insulating material		N
1.10 (5.2.9)	Locking of screwed bushings		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
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
	- no tying of cables into knots etc.		P
	- insulating material or lining		N
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	type Y	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....: 60N		P
	- torque test: torque (Nm).....: 0.25Nm		P
	- displacement ≤ 2 mm	0.5mm<2mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
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		P
	Wire ends tinned: no cold flow		P
1.10 (5.2.14)	Mains plug same protection		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	Class III luminaire plug		N
1.10 (5.2.16)	Appliance inlets (IEC 60320)	No appliance inlet	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		P
	Through wiring		P
	- not delivered/ mounting instruction		P
	- factory assembled		N
	- socket outlet loaded (A).....:		N
	- temperatures.....:	180°C	P
	Green- yellow for earth only		N
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm <sup>2</sup> ).....:	2x0.75mm <sup>2</sup>	P
	Insulation thickness	0.1 mm	P
	Extra insulation added where necessary		N
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
1.10 (5.3.1.3)	Double or reinforced insulation for class II		P
1.10 (5.3.1.4)	Conductors without insulation	No such conductors	N
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		P
1.10 (5.3.2)	Sharp edges etc.		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	No moving parts of switches etc.	No such part	N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.	No such device	N
	No twisting over 360°		N
1.10 (5.3.3)	Openings		N
	Bushings not removable		N
	Bushings in sharp openings		N
	Cables with protective sheath		N
1.10 (5.3.4)	Joints and junctions 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 may be 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	No access of live part in normal use	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
	Insulation lacquer not reliable	No insulation lacquer	N
	Double-ended high pressure discharge lamp		N
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		N
	- basic insulation not accessible other than during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	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 $\geq 0,5 \mu\text{F}$		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

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (12.3)	Endurance test:		P
	- mounting- position.....: Normal position		—
	- test temperature (°C).....: 35°C		—
	- total duration (h).....: 240h		—
	- supply voltage: Un factor; calculated voltage (V).....: —		—
	- lamp used.....: LED		—
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)		N
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N
1.12 (12.6.1)	- case of abnormal conditions.....: —		—
	- electronic lamp control gear		N





EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	- 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
	- case of abnormal conditions..... :		—
1.12 (12.7.1)	- measured winding temperature (°C) at 1,1 Un. :		—
	- 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		N
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured temperature of fixing point/ exposed part (°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.....:	IP65	—
	- mounting position during test.....:		—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses.....:		—
	- electric strength test afterwards		P



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	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
	e) no water in watertight luminaire		P
	f) no contact with live parts (IP 2X)		N
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP 3X and IP 4X)		N
1.13 (9.3)	Humidity test 48 h	R.H.:95% T:25°C	P
1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	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..... :	>2MΩ	P
	- between live parts and mounting surface..... :	>4MΩ	P
	- between live parts and enclosure..... :	>4MΩ	P
	- between live parts of different polarity through action of a switch..... :	No switch	N
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	Test voltage (V):		P
	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..... :	1480 V	P
	- between live parts and mounting surface..... :	2960 V	P
	- between live parts and enclosure..... :	2960 V	P
	- between live parts of different polarity through action of a switch..... :		N
1.14 (10.3.1)	Leakage current (mA)..... :	0.09mA < 0.7mA	P
1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C)..... :	Terminal block, 125°C, 0.83mm Limit: 2mm	P
	- part tested; temperature (°C)..... :		N
1.15 (13.3.1)	Needle flame test (10 s):		P
	- part tested..... :	Terminal block	P
1.15 (13.3.2)	Glow wire test (650°C):		P
	- part tested..... :	Terminal block	P
1.15 (13.4.1)	Tracking test: part tested..... :		N
	COMMON MODIFICATIONS		N
(3.3.101 + 5.2.1)	For luminaires connected by tails, information about terminal block		N
(5.2.2)	Cables equal to HD 21 S2 or HD 22 S2		N
(5.2.15)	Colour code low voltage		N



EN 60598-2-1			
Cl.	Requirement – Test	Result	Verdict
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS		N
(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

ZC	ANNEX ZC, NATIONAL DEVIATIONS		N
(13.3)	DK: Needle flame test or glow-wire test 750°C 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°C alt. 750°C for luminaires in premises open to public and workers		N

	ANNEX 1: temperature measurements, thermal tests of Section 12		P
	Type reference.....	See page 2	—
	Lamp used.....	LED	—
	Lamp control gear used.....		—
	Mounting position of luminaire.....	Normal position	—
	Supply wattage (W).....	85W	—
	Supply current (A).....		—
	Calculated power factor.....	PF>0.5	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode.....	--	—
	- test 1: rated voltage.....	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....		—
	- 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
Terminal		46.5		125		
Enclosure		45.7		130		
Mounting surface		47.2		90		
Ambient		24.7		--		
ANNEX 2: screw terminals (part of the luminaire)						N
(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 <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
	Mantle terminal					N
	Pull test; pull (N)..... :					N
(14.4.8)	Without undue damage					N
ANNEX 3: SCREWLESS TERMINALS (PART OF THE LUMINAIRE)						N
(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
	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		N
	Voltage drop (mV) after 1 h		N



terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
		Voltage drop of two inseparable joints								
		Voltage drop after 10th alt. 25th cycle								
		Max. allowed voltage drop (mV)..... :					—			
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
		Voltage drop after 50th alt. 100th cycle								
		Max. allowed voltage drop (mV)..... :					—			
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
		Continued ageing: voltage drop after 10th alt. 25th cycle								
		Max. allowed voltage drop (mV)..... :					—			
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
		Continued ageing: voltage drop after 50th alt. 100th cycle								
		Max. allowed voltage drop (mV)..... :					—			
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

ANNEX 3:Components					
Object/Part No.	Manufacturer/Trademark	Type/Model	Technical Data	Standard	Mark(s) of Conformity <sup>1)</sup>
LED Chip	Guangzhou Hongli Opto-Electronic Co., Ltd.	2835	0.2W,2.9-3.1V, 6500K Ra>80		CE
LED PCB	XIAMEN TOPSUN ELECTRONIC TECHNOLOGY CO LTD	TS-002	V-0, 130C		UL(E252242)
Internal Wire	XINYA ELECTRONIC CO LTD	3266	24AWG,300V,1 25°C	IEC 62560: 2011+ A1:2015	E170689
Fuse(F1)	Shenzhen Great Electronics Co., Ltd.		0.47Ω/1W		E301541



ANNEX 3:Components					
Object/Part No.	Manufacturer/Trademark	Type/Model	Technical Data	Standard	Mark(s) of Conformity <sup>1)</sup>
Led Power Supply	SEE Lighting	S211216-TC7855 CEM-1 1.0mm 35um CTI600V	80W, 220-240V, 50/60Hz		CE
Plastic enclosure	FuJian HuaSu Innovative Plastics Materials Co., Ltd	HS5314-WT707H	PC/ABS; V-0; 125 °C	IEC 62560 AS/NZS 60968	UL (E171666)
PCB for LED Driver	XIAMEN TOPSUN ELECTRONIC TECHNOLOGY CO LTD	AL-01	V-0; 130 °C	UL	UL (E313009)
Insulation tape	Chang Chun Plastics Co.,Ltd	T357	V-0;150°C	IEC / EN 62560 AS/NZS 60968	UL (E59481)
Winding	Wuxi Jufeng Compound Line Co.,Ltd.	xUEWH*\$	Pri.winding:N1:φ 0.21mm;	IEC / EN 62560 AS/NZS 60968	UL (E206882) Tested with appliance
Bobbin	Chang Chun Plastics Co.,Ltd	T357	V-0;150°C	IEC / EN 62560 AS/NZS 60968	UL (E59481) Tested with appliance





## **ANNEX A:**

### **Photo-documentation**



**Photo 1 General Appearance of the EUT**



**Photo 2 General Appearance of the EUT**



**Annex B**

**Additional Model :**

BT01-001XX BT01-002XX BT01-003XX BT01-004XX BT01-005XX BT01-006XX BT01-007XX BT01-008XX  
BT01-009XX BT01-010XX BT01-011XX BT01-012XX BT01-013XX BT01-014XX BT01-015XX BT01-016XX  
BT01-017XX BT01-018XX BT01-019XX BT01-020XX BT01-021XX BT01-022XX BT01-023XX BT01-024XX  
BT01-025XX BT01-026XX BT01-027XX BT01-028XX BT01-029XX BT01-030XX BT01-031XX BT01-032XX  
BT01-033XX BT01-034XX BT01-035XX BT01-036XX BT01-037XX BT01-038XX BT01-039XX BT01-040XX  
BT02-006XX BT02-012XX BT02-015XX BT03-006XX BT03-012XX BT03-015XX BT04-006XX BT04-012XX  
BT04-015XX BT06-006XX BT06-012XX BT06-015XX BT04-106XX BT04-112XX BT04-115XX BT06-106XX  
BT06-112XX BT06-115XX BT04-206XX BT04-212XX BT04-215XX BT06-206XX BT06-212XX BT06-215XX  
BT04-306XX BT04-312XX BT04-315XX BT06-306XX BT06-312XX BT06-315XX BT04-406XX BT04-412XX  
BT04-415XX BT06-406XX BT06-412XX BT06-415XX BT04-406XX BT04-412XX BT04-415XX BT06-406XX  
BT07-006XX BT07-009XX BT07-012XX BT07-015XX BT07-106XX BT07-109XX BT07-112XX BT07-115XX  
BT07-206XX BT07-209XX BT07-212XX BT07-215XX BT07-306XX BT07-309XX BT07-312XX BT07-315XX  
BT07-406XX BT07-409XX BT07-412XX BT07-415XX BT07-506XX BT07-509XX BT07-512XX BT07-515XX  
BT07-606XX BT07-609XX BT07-612XX BT07-615XX BT07-706XX BT07-709XX BT07-712XX BT07-715XX  
BT07-806XX BT07-809XX BT07-812XX BT07-815XX BT07-906XX BT07-909XX BT07-912XX BT07-915XX  
BT08-006XX BT08-009XX BT08-012XX BT08-015XX BT08-106XX BT08-109XX BT08-112XX BT08-115XX  
BT08-206XX BT08-209XX BT08-212XX BT08-215XX BT08-306XX BT08-309XX BT08-312XX BT08-315XX  
BT08-406XX BT08-409XX BT08-412XX BT08-415XX BT08-506XX BT08-509XX BT08-512XX BT08-515XX  
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BT09-206XX BT09-209XX BT09-212XX BT09-215XX BT09-306XX BT09-309XX BT09-312XX BT09-315XX  
BT09-406XX BT09-409XX BT09-412XX BT09-415XX BT09-506XX BT09-509XX BT09-512XX BT09-515XX  
BT09-606XX BT09-609XX BT09-612XX BT09-615XX BT09-706XX BT09-709XX BT09-712XX BT09-715XX  
BT09-806XX BT09-809XX BT09-812XX BT09-815XX BT09-906XX BT09-909XX BT09-912XX BT09-915XX  
(X=0,1,2,3,4,5,6,7,8,9)