



# LVD TEST REPORT

**Applicant:** BRAYTRON S.R.L.  
**Address of Applicant:** B.DUL IULIU MANIU, NR.616, CORP B, ETAJ 1 SECTOR 6,  
061129, BUCHAREST, ROMANIA

## Equipment Under Test (EUT)

**Product Name:** LED LIGHTING FIXTURE  
**Brand Name:** **Braytron**  
**Model No.:** Please refer to page 5-7  
**Applicable standards:** EN 60598-2-2:2012  
EN IEC 60598-1:2021+A11:2022  
**Date of sample receipt:** June 5, 2024  
**Date of Test:** June 5, 2024 To June 12, 2024  
**Date of report issued:** June 12, 2024  
**Test Result :** PASS

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.

Authorized Signature

Kevin Wang  
Laboratory Manager





**TEST REPORT**  
**EN 60598-2-2**  
**Luminaires**  
**Part 2: Particular requirements**  
**Section 2: Recessed luminaires**

**Report Reference No.** .....: EBO2406016-E051

**Tested by (name + signature)**.....: Bernie Xia *Bernie Xia*

**Approved by (name + signature)** .....: Kevin Wang *Kevin Wang*

**Date of issue** .....: June 12, 2024

**Testing Laboratory** .....: Shenzhen EBO Testing Center

**Address**.....: 2F, Qiaohongsheng Cultural Creative Park, Yintian Industrial Zone, Xixiang Street, Bao 'an District, Shenzhen

**Total number of pages**.....: 37 pages



**Applicant's name** .....: BRAYTRON S.R.L.

**Address**.....: B.DUL IULIU MANIU, NR.616, CORP B, ETAJ 1 SECTOR 6, 061129, BUCHAREST, ROMANIA

**Manufacturer's name**.....: DEMGRUP INTERNATIONAL LIGHTING LIMITED

**Address**.....: UNIT D 16/F, ONE CAPITAL PLACE, 18 LUARD ROAD, WAN CHAI, HONG KONG

**Test specification:**

**Standard** .....: EN 60598-2-2:2012 used in conjunction with  
 EN IEC 60598-1:2021+A11:2022

**Test procedure**.....: LVD

**Non-standard test method**.....: N/A

**Test Report Form No.** .....: IEC60598\_2\_2H

**Test Report Form(s) Originator** .....: Intertek Semko AB

**Master TRF** .....: Dated 2023-02-21

**Test item description**.....: LED LIGHTING FIXTURE

**Trade Mark** .....: **Braytron**

**Model/Type reference**.....: Please refer to page 5-7

**Test Model No.** .....: BP01-62410

**Ratings**.....: AC 220-240V, 24W, 50/60Hz

**Summary of testing:**

**Testing location:**

Shenzhen EBO Testing Center  
2F, Qiaohongsheng Cultural Creative Park, Yintian Industrial Zone, Xixiang Street, Bao 'an District, Shenzhen

**Tests performed (name of test and test clause):**




EN 60598-2-2:2012  
EN IEC 60598-1:2021+A11:2022

The submitted samples were found to comply with the requirements of above specification.

**Summary of compliance with National Differences:**

Compliance with the National requirements of CENELEC common modification.

**Copy of marking plates:**

Product Name: LED LIGHTING FIXTURE		
Model no.: BP01-62410	ta=40°C	
AC 220-240V, 24W, 50/60Hz		
DEMGRUP INTERNATIONAL LIGHTING LIMITED		
UNIT D 16/F, ONE CAPITAL PLACE, 18 LUARD ROAD, WAN CHAI, HONG KONG		
		
S/N:XXXXXX	Importer:XXXXXX	Address:XXXXXX
Made In China		

**Remark:**

1. The marking plates of the other models are of the same pattern.



<b>Test item particulars</b> ..... :	
Equipment mobility .....	--
Supply Connection.....	Connecting leads
Protection class .....	Class II (Recessed luminaire)
Ddegree of protection .....	IP40
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	N (N/A)
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing</b> ..... :	
Date of receipt of test item.....	June 5, 2024
Date(s) of performance of tests .....	June 5, 2024 To June 12, 2024
<b>General remarks:</b>	
<p>The test results presented in this report relate only to the object tested.          This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.          "(see Enclosure #)" refers to additional information appended to the report.          "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a point is used as the decimal separator.</p> <p>This document is issued by the company under its General Conditions of Service accessible at <a href="http://www.ebotest.com">www.ebotest.com</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 1 month. This document cannot be reproduced except in full, without prior approval of the company.</p>	
<b>General product information:</b>	
The models BP01-62410 were selected representative models to perform all tests	



Model No.:

BP01-62410	BP01-603X0	BP01-604X0	BP01-606X0
BP01-609X0	BP01-612X0	BP01-615X0	BP01-618X0
BP01-620X0	BP01-624X0	BP01-630X0	BP02-603X0
BP02-604X0	BP02-606X0	BP02-609X0	BP02-612X0
BP02-615X0	BP02-618X0	BP02-620X0	BP02-624X0
BP02-630X0	BP03-606X0	BP03-609X0	BP03-612X0
BP03-615X0	BP03-618X0	BP03-620X0	BP03-624X0
BP03-630X0	BP04-606X0	BP04-609X0	BP04-612X0
BP04-615X0	BP04-618X0	BP04-620X0	BP04-624X0
BP04-630X0	BP04-636X0	BP04-640X0	BP04-645X0
BP04-648X0	BP04-650X0	BP04-655X0	BP04-660X0
BP04-665X0	BP01-X03XX	BP01-X04XX	BP01-X06XX
BP01-X08XX	BP01-X09XX	BP01-X10XX	BP01-X12XX
BP01-X16XX	BP01-X18XX	BP01-X20XX	BP01-X24XX
BP01-X30XX	BP01-X32XX	BP01-X36XX	BP01-X40XX
BP01-X45XX	BP01-X50XX	BP01-X55XX	BP01-X60XX
BP01-X65XX	BP01-X70XX	BP01-X75XX	BP02-X03XX
BP02-X04XX	BP02-X06XX	BP02-X08XX	BP02-X09XX
BP02-X10XX	BP02-X12XX	BP02-X16XX	BP02-X18XX
BP02-X20XX	BP02-X24XX	BP02-X30XX	BP02-X32XX
BP02-X36XX	BP02-X40XX	BP02-X45XX	BP02-X50XX
BP02-X55XX	BP02-X60XX	BP02-X65XX	BP02-X70XX
BP02-X75XX	BP03-X03XX	BP03-X04XX	BP03-X06XX
BP03-X08XX	BP03-X09XX	BP03-X10XX	BP03-X12XX
BP03-X16XX	BP03-X18XX	BP03-X20XX	BP03-X24XX
BP03-X30XX	BP03-X32XX	BP03-X36XX	BP03-X40XX
BP03-X45XX	BP03-X50XX	BP03-X55XX	BP03-X60XX
BP03-X65XX	BP03-X70XX	BP03-X75XX	BP04-X03XX
BP04-X04XX	BP04-X06XX	BP04-X08XX	BP04-X09XX
BP04-X10XX	BP04-X12XX	BP04-X16XX	BP04-X18XX
BP04-X20XX	BP04-X24XX	BP04-X30XX	BP04-X32XX
BP04-X36XX	BP04-X40XX	BP04-X45XX	BP04-X50XX
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BP05-X65XX	BP05-X70XX	BP05-X75XX	BP06-X03XX
BP06-X04XX	BP06-X06XX	BP06-X08XX	BP06-X09XX
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BP08-X55XX	BP08-X60XX	BP08-X65XX	BP08-X70XX
BP08-X75XX	BP09-X03XX	BP09-X04XX	BP09-X06XX
BP09-X08XX	BP09-X09XX	BP09-X10XX	BP09-X12XX
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BP09-X30XX	BP09-X32XX	BP09-X36XX	BP09-X40XX
BP09-X45XX	BP09-X50XX	BP09-X55XX	BP09-X60XX
BP09-X65XX	BP09-X70XX	BP09-X75XX	BP10-X03XX
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BP10-X36XX	BP10-X40XX	BP10-X45XX	BP10-X50XX
BP10-X55XX	BP10-X60XX	BP10-X65XX	BP10-X70XX
BP10-X75XX	BP11-X03XX	BP11-X04XX	BP11-X06XX
BP11-X08XX	BP11-X09XX	BP11-X10XX	BP11-X12XX
BP11-X16XX	BP11-X18XX	BP11-X20XX	BP11-X24XX
BP11-X30XX	BP11-X32XX	BP11-X36XX	BP11-X40XX
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BP11-X65XX	BP11-X70XX	BP11-X75XX	BP12-X03XX
BP12-X04XX	BP12-X06XX	BP12-X08XX	BP12-X09XX



BP12-X10XX	BP12-X12XX	BP12-X16XX	BP12-X18XX
BP12-X20XX	BP12-X24XX	BP12-X30XX	BP12-X32XX
BP12-X36XX	BP12-X40XX	BP12-X45XX	BP12-X50XX
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BP12-X75XX	BP13-X03XX	BP13-X04XX	BP13-X06XX
BP13-X08XX	BP13-X09XX	BP13-X10XX	BP13-X12XX
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BP13-X30XX	BP13-X32XX	BP13-X36XX	BP13-X40XX
BP13-X45XX	BP13-X50XX	BP13-X55XX	BP13-X60XX
BP13-X65XX	BP13-X70XX	BP13-X75XX	BP14-X03XX
BP14-X04XX	BP14-X06XX	BP14-X08XX	BP14-X09XX
BP14-X10XX	BP14-X12XX	BP14-X16XX	BP14-X18XX
BP14-X20XX	BP14-X24XX	BP14-X30XX	BP14-X32XX
BP14-X36XX	BP14-X40XX	BP14-X45XX	BP14-X50XX
BP14-X55XX	BP14-X60XX	BP14-X65XX	BP14-X70XX
BP14-X75XX			

X=0,1,2,3,4,5,6,7,8,9

Remark: All models are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the model name and appearance color for commercial purpose.



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

2.4 (0)	GENERAL TEST REQUIREMENTS		P
2.4 (-)	Measurement of ambient temperature according to Annex A		—
2.4 (0.3)	More sections applicable..... :	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Section/s:	—
2.4 (0.5)	Components	(See Annex 1)	—
2.4 (0.7)	Information for luminaire design in light sources standards		—
2.4 (0.7.2)	Light source safety standard .....		—
	Luminaire design in the light source safety standard		P

2.5 (2)	CLASSIFICATION OF LUMINAIRES		P
2.5 (2.2)	Type of protection .....	Class II luminaires	—
2.5 (2.3)	Degree of protection .....	IP40	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
2.5 (2.5)	Luminaire for normal use .....	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service .....	Yes <input type="checkbox"/> No <input type="checkbox"/>	—

2.6 (3)	MARKING		—
2.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.6 (3.3)	Additional information		P
	Language of instructions	English	P
2.6 (3.3.1)	Combination luminaires		N
2.6 (3.3.2)	Nominal frequency in Hz		N
2.6 (3.3.3)	Operating temperature		N
2.6 (3.3.4)	Symbol or warning notice		N
2.6 (3.3.5)	Wiring diagram		N
2.6 (3.3.6)	Special conditions		N
2.6 (3.3.7)	Metal halide lamp luminaire – warning		N
2.6 (3.3.8)	Limitation for semi-luminaires		N
2.6 (3.3.9)	Power factor and supply current		N
2.6 (3.3.10)	Suitability for use indoors		N
2.6 (3.3.11)	Luminaires with remote control		N





EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
2.6 (3.3.12)	Clip-mounted luminaire – warning		N
2.6 (3.3.13)	Specifications of protective shields		N
2.6 (3.3.14)	Symbol for nature of supply	~	P
2.6 (3.3.15)	Rated current of socket outlet		N
2.6 (3.3.16)	Rough service luminaire		N
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N
2.6 (3.3.19)	Protective conductor current in instruction if applicable		N
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N
2.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
	Cautionary symbol		N
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N
2.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

<b>2.7 (4)</b>	<b>CONSTRUCTION</b>		—
2.7 (4.2)	Components replaceable without difficulty		P
2.7 (4.3)	Wireways smooth and free from sharp edges		P
<b>2.7 (4.4)</b>	<b>Lampholders</b>		<b>N</b>
2.7 (4.4.1)	Integral lampholder		N
2.7 (4.4.2)	Wiring connection		N
2.7 (4.4.3)	Lampholder for end-to-end mounting		N
2.7 (4.4.4)	Positioning		N
	- pressure test (N) .....		—
	After test the lampholder comply with relevant standard sheets and show no damage		N
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N



<b>EN 60598-2-2</b>			
Cl.	Requirement – Test	Result	Verdict
	- bending test (N) .....		—
	After test the lampholder have not moved from its position and show no permanent deformation		N
2.7 (4.4.5)	Peak pulse voltage		N
2.7 (4.4.6)	Centre contact		N
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
2.7 (4.4.8)	Lamp connectors		N
2.7 (4.4.9)	Caps and bases correctly used		N
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N
<b>2.7 (4.5)</b>	<b>Starter holders</b>		<b>N</b>
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
<b>2.7 (4.6)</b>	<b>Terminal blocks</b>		<b>N</b>
	Tails		N
	Unsecured blocks		N
<b>2.7 (4.7)</b>	<b>Terminals and supply connections</b>		<b>P</b>
2.7 (4.7.1)	Contact to metal parts		N
2.7 (4.7.2)	Test 8 mm live conductor		N
	Test 8 mm earth conductor		N
2.7 (4.7.3)	Terminals for supply conductors		P
2.7 (4.7.3.1)	Welded method and material		N
	- stranded or solid conductor		N
	- spot welding		N
	- welding between wires		N
	- Type Z attachment		N
	- mechanical test according to 15.8.2		N
	- electrical test according to 15.9		N
	- heat test according to 15.9.2.3 and 15.9.2.4		N
2.7 (4.7.4)	Terminals other than supply connection		P
2.7 (4.7.5)	Heat-resistant wiring/sleeves		N
2.7 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
<b>2.7 (4.8)</b>	<b>Switches</b>		<b>N</b>
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with IEC 61058-1 for electronic switches		N
<b>2.7 (4.9)</b>	<b>Insulating lining and sleeves</b>		<b>N</b>
2.7 (4.9.1)	Retainment		N
	Method of fixing .....		—
2.7 (4.9.2)	Insulated linings and sleeves:		N
	Resistant to a temperature > 20 °C to the wire temperature or		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C) .....		N
<b>2.7 (4.10)</b>	<b>Double or reinforced insulation</b>		<b>P</b>
2.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14		N
2.7 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
2.7 (4.10.3)	Retainment of insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lampholder		N
<b>2.7 (4.11)</b>	<b>Electrical connections and current-carrying parts</b>		<b>P</b>
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		N
	- self-tapping screws		N
	- thread-cutting screws		N
2.7 (4.11.3)	Screw locking:		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	- spring washer		N
	- rivets		N
2.7 (4.11.4)	Material of current-carrying parts		P
2.7 (4.11.5)	No contact to wood or mounting surface		P
2.7 (4.11.6)	Electro-mechanical contact systems		P
<b>2.7 (4.12)</b>	<b>Screws and connections (mechanical) and glands</b>		<b>P</b>
2.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part.....: Screw fixed wire: 0.5Nm		P
	Torque test: torque (Nm); part.....:		N
	Torque test: torque (Nm); part.....:		N
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
2.7 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm).....:		N
	- lampholder; torque (Nm) .....:		N
	- push-button switches; torque 0,8 Nm.....:		N
2.7 (4.12.5)	Screwed glands; force (Nm) .....:		N
<b>2.7 (4.13)</b>	<b>Mechanical strength</b>		<b>P</b>
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....: Glass: 0.2Nm		P
	- other parts; energy (Nm) .....: Metal enclosure: 0.35Nm		P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
2.7 (4.13.3)	Straight test finger		N
2.7 (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
2.7 (4.13.6)	Tumbling barrel		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
<b>2.7 (4.14)</b>	<b>Suspensions, fixings and means of adjusting</b>		<b>P</b>
2.7 (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
	Fixed luminaire or independent control gear without fixing devices		N
2.7 (4.14.2)	Load to flexible cables		N
	Mass (kg) .....		—
	Stress in conductors (N/mm <sup>2</sup> ) .....		N
	Mass (kg) of semi-luminaire .....		—
	Bending moment (Nm) of semi-luminaire .....		N
2.7 (4.14.3)	Adjusting devices:		N
	- flexing test; number of cycles .....		N
	- strands broken.....		N
	- electric strength test afterwards		N
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
2.7 (4.14.5)	Guide pulleys		N
2.7 (4.14.6)	Strain on socket-outlets		N
<b>2.7 (4.15)</b>	<b>Flammable materials</b>		<b>P</b>
	- glow-wire test 650°C .....	See Test Table 2.16 (13.3.2)	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
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	b) temperature sensing control		N
	c) surface temperature		N
<b>2.7 (4.16)</b>	<b>Luminaires for mounting on normally flammable surfaces</b>		<b>N</b>
	No lamp control gear .....	(compliance with Section 12)	N
2.7 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
2.7 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N
<b>2.7 (4.17)</b>	<b>Drain holes</b>		<b>N</b>
	Clearance at least 5 mm		N
<b>2.7 (4.18)</b>	<b>Resistance to corrosion</b>		<b>N</b>
2.7 (4.18.1)	- rust-resistance		N
2.7 (4.18.2)	- season cracking in copper		N
2.7 (4.18.3)	- corrosion of aluminium		N
2.7 (4.19)	Igniters compatible with ballast		N
2.7 (4.20)	Rough service vibration		N
<b>2.7 (4.21)</b>	<b>Protective shield</b>		<b>N</b>
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N
	Shield of glass if tungsten halogen lamps		N
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		N
2.7 (4.21.3)	No direct path		N
2.7 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment .....	See Test Table 2.16 (13.3.2)	N
2.7 (4.22)	Attachments to lamps not cause overheating or damage		N
2.7 (4.23)	Semi-luminaires comply Class II		N
<b>2.7 (4.24)</b>	<b>Photobiological hazards</b>		<b>P</b>
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	lamps and metal halide lamps (Annex P)		
2.7 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778..... :	RG0	P
	Luminaires with $E_{thr}$ :		N
	a) Fixed luminaires		N
	- distance x m, borderline between RG1 and RG2...:		N
	- marking and instruction according 3.2.23		N
	b) Portable and handheld luminaires		N
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N
<b>2.7 (4.25)</b>	<b>Mechanical hazard</b>		<b>P</b>
	No sharp point or edges		P
<b>2.7 (4.26)</b>	<b>Short-circuit protection</b>		<b>N</b>
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N
2.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N
	Test chain not melt through		N
	Test sample not exceed values of Table 12.1 and 12.2		N
<b>2.7 (4.27)</b>	<b>Terminal blocks with integrated screwless earthing contacts</b>		<b>N</b>
	Test according Annex V		N
	Pull test of terminal fixing (20 N)		N
	After test, resistance < 0,05 $\Omega$		N
	Pull test of mechanical connection (50 N)		N
	After test, resistance < 0,05 $\Omega$		N
	Voltage drop test, resistance < 0,05 $\Omega$		N
<b>2.7 (4.28)</b>	<b>Fixing of thermal sensing control</b>		<b>N</b>
	Not plug-in or easily replaceable type		N
	Reliably kept in position		N
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N
	Not outside the luminaire enclosure		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	Test of adhesive fixing:		N
	Max. temperature on adhesive material (°C).....:		—
	100 cycles between t min and t max		N
	Temperature sensing control still in position		N
<b>2.7 (4.29)</b>	<b>Luminaires with non-replaceable light source</b>		<b>N</b>
	Not possible to replace light source		N
	Live part not accessible after parts have been opened by hand or tools		N
<b>2.7 (4.30)</b>	<b>Luminaires with non-user replaceable light source</b>		<b>N</b>
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N
	Minimum two fixing means		N
<b>2.7 (4.31)</b>	<b>Insulation between circuits</b>		<b>P</b>
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N
<b>2.7 (4.31.1)</b>	<b>SELV circuits</b>		<b>P</b>
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N
	Insulating of SELV circuits from FELV		N
	Insulating of SELV circuits from other SELV circuits		N
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		P
	Socket outlets does not admit plugs of other voltage systems		P
	Plugs and socket-outlets does not have protective conductor contact		P
<b>2.7 (4.31.2)</b>	<b>FELV circuits</b>		<b>N</b>
	Used FELV source		N





EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	Voltage ≤ ELV		N
	Insulating of FELV circuits from LV supply		N
	FELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to enter socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Socket-outlets does not have protective conductor contact		N
2.7 (4.31.3)	Other circuits		N
	Other circuits insulated from accessible parts according Table X.1		N
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N
	- conductive parts are connected together		N
	- test according 7.2.3 of above		N
	- conductive part not cause an electric shock in case of an insulation fault		N
	- equipotential bonding in master/slave applications		N
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N
	- slave luminaire constructed as class I		N
2.7 (4.32)	<b>Overvoltage protective devices</b>		<b>N</b>
	Comply with IEC 61643-11		N
	External to controlgear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N

<b>2.8 (11)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		—
2.8 (11.2)	Creepage distances and clearances .....	See Table 1.7 (11.2)	P
	Working voltage (V) .....	See" General product information" for detail.	—
	Rated pulse voltage (kV) .....	--	—
	Voltage form .....	Sinusoidal <input type="checkbox"/> Non-sinusoidal <input checked="" type="checkbox"/>	—



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

	PTI .....	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—

2.9 (7)	PROVISION FOR EARTHING		—
2.9 (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
	Thread-forming screw used in a groove		N
	Earth makes contact first		N
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
	Protective earthing of the luminaire not via built-in control gear		N
2.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N
2.9 (7.2.4)	Locking of clamping means		N
	Compliance with 4.7.3		N
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
2.9 (7.2.5)	Earth terminal integral part of connector socket		N
2.9 (7.2.6)	Earth terminal adjacent to mains terminals		N
2.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N
2.9 (7.2.8)	Material of earth terminal		N
	Contact surface bare metal		N
2.9 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
2.9 (7.2.11)	Earthing core coloured green-yellow		N
	Length of earth conductor		N

2.10 (14)	SCREW TERMINALS		—
	Separately approved; component list .....	(see Annex 1)	N



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

	Part of the luminaire .....	(see Annex 3)	N
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<b>2.10 (15)</b>	<b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b>		—
	Separately approved; component list .....	(see Annex 1)	N
	Part of the luminaire .....	(see Annex 4)	N

<b>2.11 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		—
<b>2.11 (5.2)</b>	<b>Supply connection and external wiring</b>		<b>P</b>
2.11 (5.2.1)	Means of connection .....	DC connector	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N
2.11 (5.2.2)	Type of cable .....	2464	P
	Nominal cross-sectional area (mm <sup>2</sup> ) .....	0.5 mm <sup>2</sup> (20AWG)	P
	Cables equal to IEC 60227 or IEC 60245		N
2.11 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
2.11 (5.2.5)	Type Z not connected to screws		N
2.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
2.11 (5.2.7)	Cable entries through rigid material have rounded edges		P
2.11 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made of insulating material		N
2.11 (5.2.9)	Locking of screwed bushings		N
2.11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
2.11 (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
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
2.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....: 60N		P
	- torque test: torque (Nm) .....: 0.15Nm		P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
2.11 (5.2.11)	External wiring passing into luminaire		P
2.11 (5.2.12)	Looping-in terminals		N
2.11 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		P
2.11 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		P
	No unsafe compatibility		P
2.11 (5.2.16)	Appliance inlets (IEC 60320)		N
	Installation couplers (IEC 61535)		N



<b>EN 60598-2-2</b>			
Cl.	Requirement – Test	Result	Verdict
	Other appliance inlet or connector according relevant IEC standard		N
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		N
2.11 (5.2.18)	Used plug in accordance with		N
	- IEC 60083		N
	- other standard		N
<b>2.11 (5.3)</b>	<b>Internal wiring</b>		<b>P</b>
2.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A).....:		N
	- temperatures .....: (see Annex 2)		N
	Green-yellow for earth only		N
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N
	Cross-sectional area (mm <sup>2</sup> ) .....		N
	Insulation thickness		N
	Extra insulation added where necessary		N
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
2.11 (5.3.1.3)	Double or reinforced insulation for class II		N
2.11 (5.3.1.4)	Conductors without insulation		N
2.11 (5.3.1.5)	SELV current-carrying parts		P
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
2.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N
	Joints, raising/lowering devices		N



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	Telescopic tubes etc.		N
	No twisting over 360°		P
2.11 (5.3.3)	Insulating bushings:		N
	- suitable fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- cables with protective sheath		N
2.11 (5.3.4)	Joints and junctions effectively insulated		N
2.11 (5.3.5)	Strain on internal wiring		P
2.11 (5.3.6)	Wire carriers		N
2.11 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		P

<b>2.12 (8)</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		—
2.12 (8.2.1)	Live parts not accessible		N
	Basic insulated parts not used on the outer surface without appropriate protection		N
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N
	Basic insulation only accessible under lamp or starter replacement		N
	Protection in any position		N
	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
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
2.12	Class II luminaire:		N



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

(8.2.3.a)			
	- basic insulated metal parts not accessible during starter or lamp replacement		N
	- basic insulation not accessible other than during starter or lamp replacement		N
	- glass protective shields not used as supplementary insulation		N
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N
2.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N
	Ordinary luminaire:		N
	- touch current .....		N
	- no-load voltage .....		N
	Other than ordinary luminaire:		N
	- nominal voltage .....		N
2.12 (8.2.4)	Portable luminaire have protection independent of supporting surface		
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		N
2.12 (8.2.6)	Covers reliably secured		N
2.12 (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

<b>2.13 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>		—
2.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 4.13		—
2.13 (12.3)	Endurance test:		P
	- mounting-position .....	As noemal use	—
	- test temperature (°C).....	55°C	—
	- total duration (h) .....	240h	—
	- supply voltage: Un factor; calculated voltage (V) ...:	264Vac	—
	- lamp used .....	LED	—



EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
2.13 (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
2.13 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
2.13 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N
2.13 (12.6)	Thermal test (failed lamp control gear condition):		N
2.13 (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
2.13 (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
2.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N
2.13 (12.7.1)	Luminaire without temperature sensing control		N
2.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N
	Test method 12.7.1.1 or Annex W .....		—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions.....		—





EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	- 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 W:		N
	- case of abnormal conditions.....		—
	- measured winding temperature (°C): at 1,1 Un .....		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....		—
	- calculated temperature of fixing point/exposed part (°C) .....		—
	Ball-pressure test.....	See Table 2.16 (13.2.1)	N
2.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N
	- case of abnormal conditions.....		—
	- measured winding temperature (°C): at 1,1 Un .....		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....		—
	- calculated temperature of fixing point/exposed part (°C) .....		—
	Ball-pressure test.....	See Table 2.16 (13.2.1)	N
2.13 (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
2.13 (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:.....	See Table 2.16 (13.2.1)	N
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		N



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

	- measured temperature of the cable (°C) .....		N
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2.14 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		—
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.12		P
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP .....	IP40	—
	- mounting position during test .....	As in normal use	—
	- fixing screws tightened; torque (Nm).....	--	—
	- tests according to clauses .....	Clause 9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation 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		N
	f) no contact with live parts (IP 2X)		N
	f) no entry into enclosure (IP 3X and IP 4X)		P
	f) no contact with live parts (IP3X and IP4X)		P
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		P
2.14 (9.3)	Humidity test 48 h	25°C, 93%R.H	P

2.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		—
2.15 (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		P
	- between current-carrying parts of different polarity :		N



<b>EN 60598-2-2</b>			
Cl.	Requirement – Test	Result	Verdict
	- between current-carrying parts and mounting surface .....	100 MΩ(Required:1 MΩ)	P
	- between current-carrying parts and metal parts of the luminaire .....	100 MΩ(Required:1 MΩ)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N
	- Insulation bushings as described in Section 5 .....		N
	Other than SELV		P
	- between live parts of different polarity.....		N
	- between live parts and mounting surface.....	100 MΩ(Required:4 MΩ)(Tested with specified LED driver)	P
	- between live parts and metal parts .....	100 MΩ(Required:4 MΩ)(Tested with specified LED driver)	P
	- between live parts of different polarity through action of a switch .....		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N
	- Insulation bushings as described in Section 5 .....		N
2.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V) .....		N
	SELV		P
	- between current-carrying parts of different polarity :		N
	- between current-carrying parts and mounting surface .....	500V	P
	- between current-carrying parts and metal parts of the luminaire .....	500V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N
	- Insulation bushings as described in Section 5 .....		N



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

	Other than SELV		P
	- between live parts of different polarity.....:		N
	- between live parts and mounting surface.....:	2960V(Tested with specified LED driver)	P
	- between live parts and metal parts .....	2960V(Tested with specified LED driver)	P
	- between live parts of different polarity through action of a switch .....		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....	1480V	N
	- Insulation bushings as described in Section 5 .....		N
2.15 (10.3)	Touch current or protective conductor current (mA):	Touch current: max.0.24mA(limit:0.7mA) (Tested with specified LED driver)	P

2.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
2.16 (13.2.1)	Ball-pressure test.....:	See Test Table 2.16 (13.2.1)	P
2.16 (13.3.1)	Needle-flame test (10 s) .....	See Test Table 2.16 (13.3.1)	P
2.16 (13.3.2)	Glow-wire test (650°C) .....	See Test Table 2.16 (13.3.2)	P
2.16 (13.4)	Proof tracking test (IEC 60112) .....	See Test Table 2.16 (13.4)	N



<b>2.8 (11.2)</b>	<b>TABLES: Creepage distances and clearances</b>						N
<b>Table 11.1</b>	<b>Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages</b>						N
RMS working voltage (V) not exceeding	50	150	250	500	750	1000	
<b>Creepage distances</b>							
Required basic insulation, PTI $\geq$ 600	0,6	0,8	1,5	3	4	5,5	
Measured	--	--	--	--	--	--	
Required basic insulation, PTI $<$ 600	1,2	1,6	2,5	5	8	10	
Measured	--	--	--	--	--	--	
Required supplementary insulation PTI $\geq$ 600	--	0,8	1,5	3	4	5,5	
Measured	--	--	--	--	--	--	
Required supplementary insulation PTI $<$ 600	--	1,6	2,5	5	8	10	
Measured	--	--	--	--	--	--	
Required reinforced insulation	--	3,2	5	6	8	11	
Measured	--	--	--	--	--	--	
<b>Clearances</b>							
Required basic insulation	0,2	0,8	1,5	3	4	5,5	
Measured	--	--	--	--	--	--	
Required supplementary insulation	--	0,8	1,5	3	4	5,5	
Measured	--	--	--	--	--	--	
Required reinforced insulation	--	1,6	3	6	8	11	
Measured	--	--	--	--	--	--	
<b>Table 11.2</b>	<b>Minimum distances (mm) for non-sinusoidal pulse voltages</b>						
Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured	--	--	--	--	--	--	--
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured	--	--	--	--	--	--	--
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-
Required clearances	75	90	130	170	-	-	-
Measured	--	--	--	--	--	--	--



2.16 (13.2.1)	<b>TABLE: Ball Pressure Test of Thermoplastics</b>			<b>P</b>
<b>Allowed impression diameter (mm) .....</b>				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
DC connector	BRAYTRON S.R.L.	125°C	1.3	
Supplementary information:--				

2.16 (13.3.1)	<b>TABLE: Needle-flame test (IEC 60695-11-5)</b>				<b>P</b>
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
DC connector	BRAYTRON S.R.L.	10	No	0	P
Supplementary information:--					

2.16 (13.3.2)	<b>TABLE: Glow-wire test (IEC 60695-2-11)</b>				<b>P</b>
<b>Glow wire temperature .....</b>				650°C	—
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
DC connector	BRAYTRON S.R.L.	30	No	0	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No).....:					Yes
Supplementary information:--					

2.16 (13.4)	<b>TABLE: Proof tracking test (IEC 60112)</b>			<b>N</b>	
<b>Test voltage PTI .....</b>				175 V	—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
--	--	--	--	--	--
Supplementary information:--					



ANNEX 1		TABLE: Critical components information					
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
LED Driver	B	SEE Lighting	S90509-MA2866	I/P:220-240VAC, 50/60Hz, 24W ta:55°C; tc:85°C Independent; Class II	EN 61347-1 EN 61347-2-13	CE	
Output cord for LED driver	B	Interchangeable	2464	300Vac, 80°C	UL	UL	
LED	B	Guangzhou Hongli Opto-Electronic Co., Ltd.	2835	0.2W, 3.0-3.1V, 6000K, Ra>80	EN 62471	Tested with appliance	
LED PCB	B	XIAMEN TOPSUN ELECTRONIC TECHNOLOGY CO LTD	TS-002	V-0, 130C	UL 94	UL	

Supplementary information:

<sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference .....	BP01-62410	—
	Lamp used.....	LED	—
	Lamp control gear used .....	2835	—
	Mounting position of luminaire .....	As in normal use	—
	Supply wattage (W) .....	24W	—
	Supply current (A) .....		—
	Calculated power factor .....		—
	Table: measured temperatures corrected for ta = 45 °C:		P
	- abnormal operating mode .....		—
	- test 1: rated voltage .....	220V; 240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1.06X220=233.2V; 1.06X240=254.4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....		—



	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :		—				
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :		—				
Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Test voltage:	--	--	233.2V	254.4V	--	--	--
tc of LED driver	45	64.6	64.4	65.4	--	85	--
DC connector	45	--	47.3	47.0		Ref.	--
Output wire of driver	45	--	59.1	59.6	--	85	--
Input wire near LED module	45	--	80.7	81.2	--	85	--
LED module PCB	45	--	95.2	93.8	--	Ref.	--
Metal enclosure	45	--	77.0	76.6	--	Ref.	--
Supplementary information:							

ANNEX 3	Screw terminals (part of the luminaire)	—
<b>(14)</b>	<b>SCREW TERMINALS</b>	<b>N</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> ) ..... :	—
(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		P

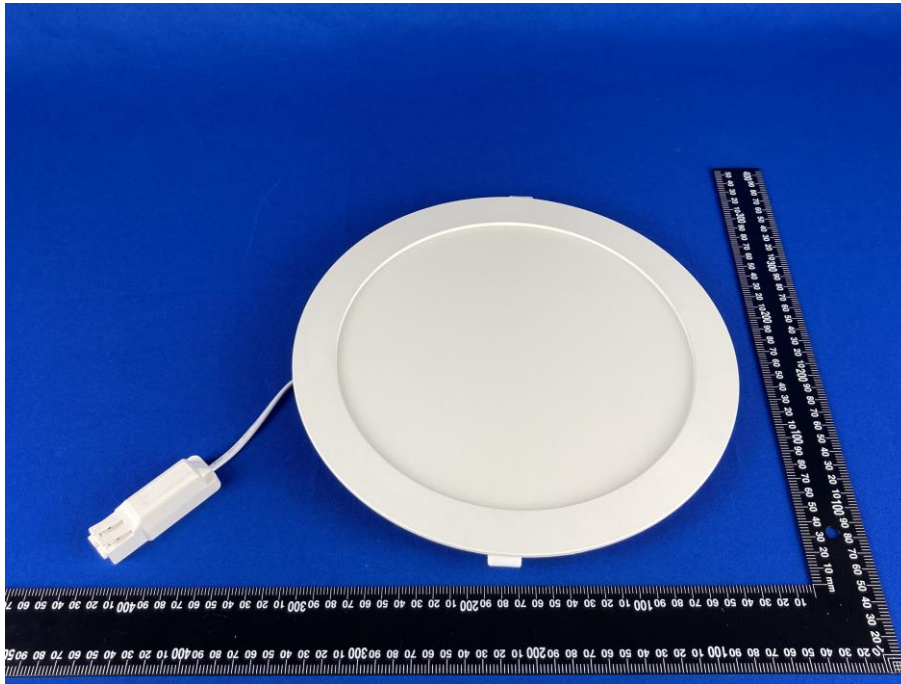


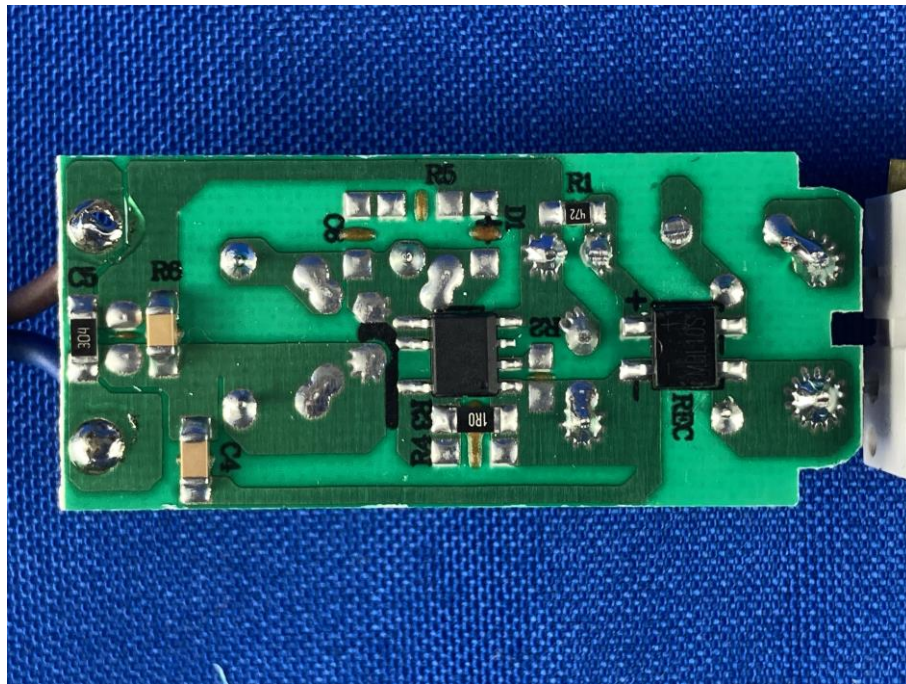
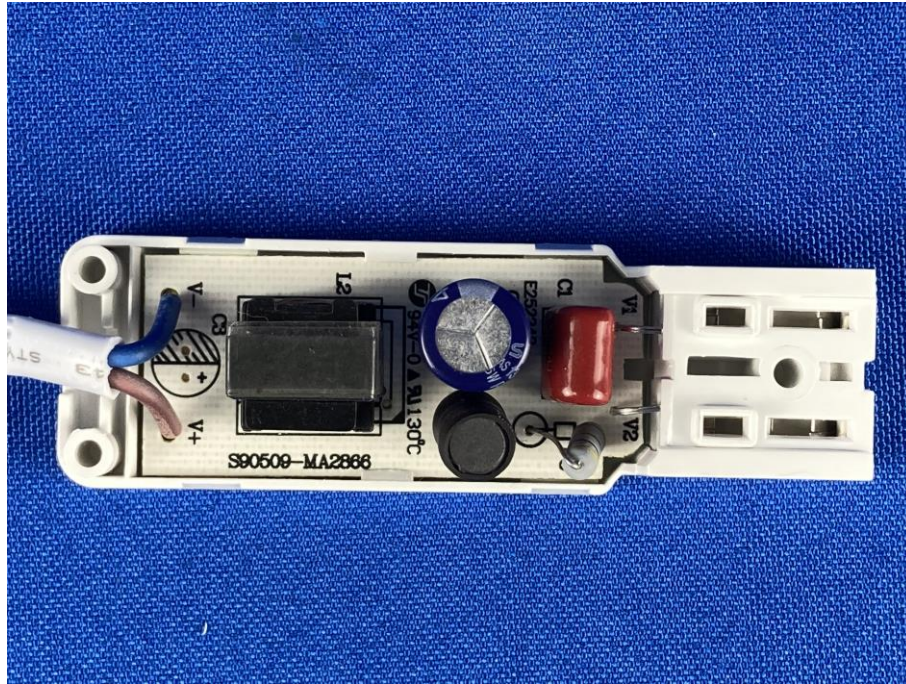
<b>ANNEX 4</b>	<b>Screwless terminals (part of the luminaire)</b>		—
<b>(15)</b>	<b>SCREWLESS TERMINALS</b>		<b>N</b>
(15.2)	Type of terminal .....		—
	Rated current (A) .....		—
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N
(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
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N
(15.5.2)	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
(15.6)	Terminals external wiring		N
	Terminal size and rating		N
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....		N
	Pull test pin or tab terminals (4 samples); pull (N) .....		N

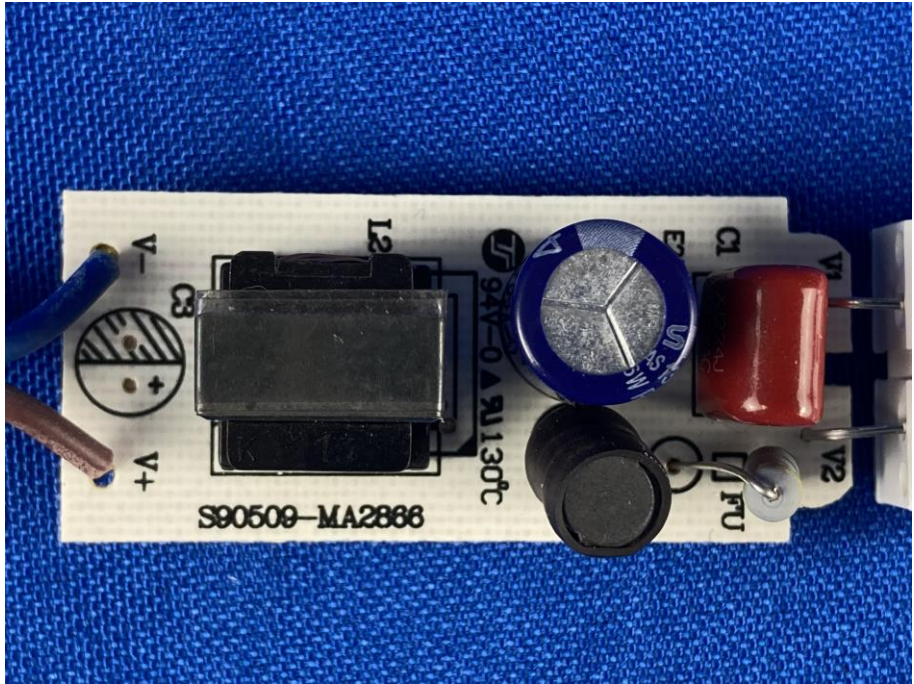


<b>(15.6.3.1) TABLE: Contact resistance test</b>											N
Voltage drop (mV) after 1 h										—	
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N	
Voltage drop of two inseparable joints										N	
Voltage drop after 10th alt. 25th cycle										N	
Max. allowed voltage drop (mV).....:										—	
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N	
Voltage drop after 50th alt. 100th cycle										N	
Max. allowed voltage drop (mV).....:										—	
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N	
Continued ageing: voltage drop after 10th alt. 25th cycle										N	
Max. allowed voltage drop (mV).....:										—	
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N	
Continued ageing: voltage drop after 50th alt. 100th cycle										N	
Max. allowed voltage drop (mV).....:										—	
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)										N	
										N	
Supplementary information:											

### Attachment – Photos







(EBO authenticate the photo on original report only)  
\*\*\* End of Report \*\*\*