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 5-6.
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-E054
Tested by (name + signature)..... :	Bernie Xia
Approved by (name + signature) ..... :	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 ..... :	31 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 5-6.
Test Model No. ..... :	BP28-56630
Ratings ..... :	AC220-240V, 50/60Hz, 50W

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:

LED LIGHTING FIXTURE

Model: BP28-56630

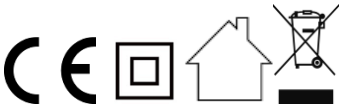
Input: AC220-240V, 50/60Hz, 50W

DEMGRUP INTERNATIONAL LIGHTING LIMITED

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

Importer name: xxx Importer address: xxx

MADE IN CHINA



Remark:

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

Test item particulars..... :	
Equipment mobility .....:	--
Supply Connection.....:	Connecting leads
Protection class .....:	Class II (Recessed luminaire)
Ddegree of protection .....:	IP20
Possible test case verdicts:	
- 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)
Testing.....:	
Date of receipt of test item.....:	June 5, 2024
Date(s) of performance of tests.....:	June 5, 2024 To June 12, 2024

General remarks:

The test results presented in this report relate only to the object tested.
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"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

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

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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.

General product information:

The submitted unit is a class II LED LIGHTING FIXTURE, comprised of LED module, independent LED driver and AC Connecting leads; for indoor use only. The models BP28-56630 were selected representative models to perform all tests

Model No.:

BP28-56630	BP15-030X0	BP15-031X0	BP15-062X0
BP15-066X0	BP15-330X0	BP15-331X0	BP15-362X0
BP15-366X0	BP15-430X0	BP15-431X0	BP15-462X0
BP15-466X0	BP15-530X0	BP15-531X0	BP15-562X0
BP15-566X0	BP15-630X0	BP15-631X0	BP15-662X0
BP15-666X0	BP16-030X0	BP16-031X0	BP16-062X0
BP16-066X0	BP16-330X0	BP16-331X0	BP16-362X0
BP16-366X0	BP16-430X0	BP16-431X0	BP16-462X0
BP16-466X0	BP16-530X0	BP16-531X0	BP16-562X0
BP16-566X0	BP16-630X0	BP16-631X0	BP16-662X0
BP16-666X0	BP21-030X0	BP21-031X0	BP21-062X0
BP21-066X0	BP21-330X0	BP21-331X0	BP21-362X0
BP21-366X0	BP21-430X0	BP21-431X0	BP21-462X0
BP21-466X0	BP21-530X0	BP21-531X0	BP21-562X0
BP21-566X0	BP21-630X0	BP21-631X0	BP21-662X0
BP21-666X0	BP22-030X0	BP22-031X0	BP22-062X0
BP22-066X0	BP22-330X0	BP22-331X0	BP22-362X0
BP22-366X0	BP22-430X0	BP22-431X0	BP22-462X0
BP22-466X0	BP22-530X0	BP22-531X0	BP22-562X0
BP22-566X0	BP22-630X0	BP22-631X0	BP22-662X0
BP22-666X0	BP23-030X0	BP23-031X0	BP23-062X0
BP23-066X0	BP23-330X0	BP23-331X0	BP23-362X0
BP23-366X0	BP23-430X0	BP23-431X0	BP23-462X0
BP23-466X0	BP23-530X0	BP23-531X0	BP23-562X0
BP23-566X0	BP23-630X0	BP23-631X0	BP23-662X0
BP23-666X0	BP24-030X0	BP24-031X0	BP24-062X0
BP24-066X0	BP24-330X0	BP24-331X0	BP24-362X0
BP24-366X0	BP24-430X0	BP24-431X0	BP24-462X0
BP24-466X0	BP24-530X0	BP24-531X0	BP24-562X0
BP24-566X0	BP24-630X0	BP24-631X0	BP24-662X0
BP24-666X0	BP25-030X0	BP25-031X0	BP25-062X0
BP25-066X0	BP25-330X0	BP25-331X0	BP25-362X0
BP25-366X0	BP25-430X0	BP25-431X0	BP25-462X0
BP25-466X0	BP25-530X0	BP25-531X0	BP25-562X0

BP25-566X0	BP25-630X0	BP25-631X0	BP25-662X0
BP25-666X0	BP27-030X0	BP27-031X0	BP27-062X0
BP27-066X0	BP27-330X0	BP27-331X0	BP27-362X0
BP27-366X0	BP27-430X0	BP27-431X0	BP27-462X0
BP27-466X0	BP27-530X0	BP27-531X0	BP27-562X0
BP27-566X0	BP27-630X0	BP27-631X0	BP27-662X0
BP27-666X0	BP28-030X0	BP28-031X0	BP28-062X0
BP28-066X0	BP28-330X0	BP28-331X0	BP28-362X0
BP28-366X0	BP28-430X0	BP28-431X0	BP28-462X0
BP28-466X0	BP28-530X0	BP28-531X0	BP28-562X0
BP28-566X0	BP28-630X0	BP28-631X0	BP28-662X0
BP28-666X0	BP15-X30XX	BP15-X31XX	BP15-X62XX
BP15-X66XX	BP16-X30XX	BP16-X31XX	BP16-X62XX
BP16-X66XX	BP17-X30XX	BP17-X31XX	BP17-X62XX
BP17-X66XX	BP18-X30XX	BP18-X31XX	BP18-X62XX
BP18-X66XX	BP19-X30XX	BP19-X31XX	BP19-X62XX
BP19-X66XX	BP20-X30XX	BP20-X31XX	BP20-X62XX
BP20-X66XX	BP21-X30XX	BP21-X31XX	BP21-X62XX
BP21-X66XX	BP22-X30XX	BP22-X31XX	BP22-X62XX
BP22-X66XX	BP23-X30XX	BP23-X31XX	BP23-X62XX
BP23-X66XX	BP24-X30XX	BP24-X31XX	BP24-X62XX
BP24-X66XX	BP25-X30XX	BP25-X31XX	BP25-X62XX
BP25-X66XX	BP26-X30XX	BP26-X31XX	BP26-X62XX
BP26-X66XX	BP27-X30XX	BP27-X31XX	BP27-X62XX
BP27-X66XX	BP28-X30XX	BP28-X31XX	BP28-X62XX
BP28-X66XX	BP29-X30XX	BP29-X31XX	BP29-X62XX
BP29-X66XX			
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 ☒ No ☐ 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 .....:	IP20	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....:	Yes ☐ No ☐	—
2.5 (2.5)	Luminaire for normal use .....:	Yes ☐ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☐	—
2.6(3)	**MARKING**		**P**
2.6 (3.2)	Mandatory markings		P
	Position of the marking	Marking on outside surface of luminaire	P
	Format of symbols/text		P
2.6 (3.3)	Additional information		P
	Language of instructions	English version checked. Instructions shall be in a language acceptable for the country where the equipment is to be used.	P
2.6 (3.3.1)	Combination luminaires		N
2.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
2.6 (3.3.3)	Operating temperature		N
2.6 (3.3.4)	Symbol or warning notice		P
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		P
2.6 (3.3.11)	Luminaires with remote control	No this devices	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	See marking label	P
2.6 (3.3.15)	Rated current of socket outlet	No socket outlet	N
2.6 (3.3.16)	Rough service luminaire	For normal use	N
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable	Ordinary luminaire	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 arms reach		N
2.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
	Cautionary symbol		P
2.6(3.3.22)	Controllable luminaires, classification of insulation provided		N
2.6 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P
2.6.1 (-)	Warning notice, if not suitable for insulating ceiling	See specification	P
2.6.3 (-)	Symbol “not suitable for direct mounting on normally flammable surface”, if applicable		P
2.6.4 (-)	Symbol “not suitable for covering with thermally insulated material”, if applicable		P
2.7 (4)	**CONSTRUCTION**		**P**
2.7 (4.2)	Components replaceable without difficulty	Without such components	N
2.7 (4.3)	Wireways smooth and free from sharp edges		N
2.7 (4.4)	Lampholders		P
2.7 (4.4.1)	Integral lampholder		N
2.7 (4.4.2)	Wiring connection		P
2.7 (4.4.3)	Lampholder for end-to-end mounting		N
2.7 (4.4.4)	Positioning		N
	- pressure test (N) ..... :		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
	- bending test (N) ..... :		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

EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
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
2.7 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
2.7 (4.6)	Terminal blocks		N
	Tails	No such terminal block use	N
	Unsecured blocks		N
2.7 (4.7)	Terminals and supply connections		P
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	Terminals is within driver and approved	N
2.7 (4.7.3.1)	Welded connections:		N
	- stranded or solid conductor		P
	- 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		N
2.7 (4.7.5)	Heat-resistant wiring/sleeves		N
2.7 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N
2.7 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with 61058-1 for electronic switches		N
2.7 (4.9)	Insulating lining and sleeves		P
2.7 (4.9.1)	Retainement		P
	Method of fixing ..... :		P
2.7 (4.9.2)	Insulated linings and sleeves		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C) ..... :		N
2.7 (4.10)	Insulation of Class II luminaires		P
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:		P

EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		N
2.7 (4.10.4)	Protective impedance device		P
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor	LED driver approved	P
	Y1 or Y2 capacitors comply with IEC 60384-14		P
	Resistors comply with test (a) in 14.1 of IEC 60065		N
2.7 (4.11)	Electrical connections		P
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		P
	- self-tapping screws		N
	- thread-cutting screws		P
2.7 (4.11.3)	Screw locking:		N
	- 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		N
2.7 (4.12)	Mechanical connections and glands		P
2.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		P
	Torque test: torque (Nm); part..... :	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
2.7 (4.13)	Mechanical strength		P
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :	0.20Nm	P
	- other parts; energy (Nm) ..... :	0.35Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
2.7 (4.13.3)	Straight test finger	Can’t touch the live part	P
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

EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
	d) for temporary installations and suitable for mounting on a stand		N
2.7 (4.13.6)	Tumbling barrel		N
2.7 (4.14)	Suspensions and adjusting devices		P
2.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	After test, no damaged	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) ..... :		N
	Stress in conductors (N/mm²) ..... :		N
	Mass (kg) of semi-luminaire ..... :		N
	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
2.7 (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
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
2.7 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N
2.7 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		P
	- 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 12.6)	N

EN 60598-2-2			
Cl.	Requirement – Test	Result	Verdict
2.7 (4.17)	Drain holes		N
	Clearance at least 5 mm		N
2.7 (4.18)	Resistance to corrosion:		N
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)	Ignitors compatible with ballast		N
2.7 (4.20)	Rough service vibration		N
2.7 (4.21)	Protective shield:		N
2.7 (4.21.1)	Shield fitted		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		P
	Glow-wire test on lamp compartment		N
2.7 (4.22)	Attachments to lamps		N
2.7 (4.23)	Semi-luminaires comply Class II		P
2.7 (4.24)	Photobiological hazards		N
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N
2.7 (4.24.2)	Retinal blue light hazard		N
	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
2.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
2.7 (4.26)	Short-circuit protection:		N
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
2.7 (4.27)	Terminal blocks with integrated screwless earthing contacts		N
	Test according Annex V		N
	Pull test of terminal fixing (20 N)		N
	After test, resistance < 0,05 Ω		N
	Pull test of mechanical connection (50 N)		N

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Cl.	Requirement – Test	Result	Verdict
	After test, resistance < 0,05 Ω		N
	Voltage drop test, resistance < 0,05 Ω		N
2.7(4.28)	Fixing of thermal sensing control		N
	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
	Test of adhesive fixing:		N
	Max. temperature on adhesive material (°C).....:		N
	100 cycles between t min and t max		N
	Temperature sensing control still in position		N
2.7(4.29)	Luminaires with non-replaceable light source		N
	Not possible to replace light source		N
	Live part not accessible after parts have been opened by hand or tools		N
2.7 (4.30)	Luminaires with non-user replaceable light source		P
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		P
	Minimum two fixing means		P
2.7 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N
	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
2.7(4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		N
	Insulating of SELV circuits from other non SELV circuits		P
	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		N

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Cl.	Requirement – Test	Result	Verdict
	Socket outlets does not admit plugs of other voltage systems		N
	Plugs and socket-outlets does not have protective conductor contact		N
2.7 (4.31.2)	FELV circuits		N
	Used FELV source		N
	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)	Overvoltage protective devices		N
	Comply with IEC 61643-11		N
	External to control gear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N
2.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Working voltage (V) ..... :	220-230V	—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ ≥ 600 ☐	—

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Cl.	Requirement – Test	Result	Verdict
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☐ Category III ☐	—
	Rated pulse voltage (kV) ..... :	2.5kV	—
2.9 (7)	**PROVISION FOR EARTHING**		**N**
2.9 (7.2.1 + 7.2.3)	Accessible metal parts	Class II product	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 grove		N
	Earth makes contact first		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
2.9.1 (-)	Attachment prevented from rotation		N
2.10 (14)	***SCREW TERMINALS***		**N**
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 3)	N
2.10 (15)	***SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS***		**N**
	Separately approved; component list		N
	Part of the luminaire		N
2.11 (5)	***EXTERNAL AND INTERNAL WIRING***		**P**
2.11 (5.2)	Supply connection and external wiring		P
2.11 (5.2.1)	Means of connection ..... :	Connecting leads	P
2.11 (5.2.2)	Type of cable ..... :	H03VVH2-F	P
	Nominal cross-sectional area (mm²) ..... :	0.75 mm²	P
	Cables equal to IEC 60227 or IEC 60245	IEC 60227	P
2.11 (5.2.3)	Type of attachment, X, Y or Z		N
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		N
2.11 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N

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Cl.	Requirement – Test	Result	Verdict
	- 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
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		N
2.11 (5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N)..... :		N
	- torque test: torque (Nm) ..... :		N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
2.11 (5.2.11)	External wiring passing into luminaire		N
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		N
2.11 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
2.11 (5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		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
2.11 (5.3)	Internal wiring		P
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)	P

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Cl.	Requirement – Test	Result	Verdict
	Green-yellow for earth only		N
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²) ..... :	0.75 mm²	P
	Insulation thickness		P
	Extra insulation added where necessary	Insulation tube used	P
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal		N
	Adequate cross-sectional area and insulation thickness		N
2.11 (5.3.1.3)	Double or reinforced insulation for class II		P
2.11 (5.3.1.4)	Conductors without insulation		N
2.11 (5.3.1.5)	SELV current-carrying parts		N
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.		P
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		P
	No twisting over 360°		P
2.11 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- 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		P
	Wire ends tinned: no cold flow		N
2.12 (8)	***PROTECTION AGAINST ELECTRIC SHOCK***		**P**
2.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arm's reach, on wall-mounted luminaires		P
	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		P
	Double-ended tungsten filament lamp		P
	Insulation lacquer not reliable		P
	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	Recessed downlight	N
2.12 (8.2.3.a)	Class II luminaire:		P

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Cl.	Requirement – Test	Result	Verdict
	- basic insulated metal parts not accessible during starter or lamp replacement		P
	- basic insulation not accessible other than during starter or lamp replacement		P
	- 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)	Class III luminaires with exposed SELV 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		N
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.12 (8.2.6)	Covers reliably secured		P
2.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection	No such capacitor used	N
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N
2.13 (12)	***ENDURANCE TEST AND THERMAL TEST***		**P**
2.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 4.13		N
2.13 (12.3)	Endurance test:		P
	- mounting-position ..... :	Recessed ceiling mounted luminaires	—
	- test temperature (°C)..... :	35°C	—
	- total duration (h) ..... :	240h	—
	- supply voltage: Un factor; calculated voltage (V):	1.1*240V=264V	—
	- lamp used..... :	LED lamp	—
2.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
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 :		—

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Cl.	Requirement – Test	Result	Verdict
	- 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		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex V:		N
	- case of abnormal conditions		—
	- measured winding temperature (°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:		N
	- part tested; temperature (°C) ..... :		N
	- part tested; temperature (°C) ..... :		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:		N
	- part tested; temperature (°C) ..... :		N
	- part tested; temperature (°C) ..... :		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 ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—

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Cl.	Requirement – Test	Result	Verdict
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):..... :		—
	Ball-pressure test:		N
	- part tested; temperature (°C) ..... :		N
	- part tested; temperature (°C) ..... :		N
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		N
	- measured temperature of the cable (°C) ..... :		N
2.14 (9)	***RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE***		**P**
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		N
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP ..... :	IP20	—
	- mounting position during test ..... :	Ceiling mounting	—
	- fixing screws tightened; torque (Nm)..... :		—
	- tests according to clauses ..... :		—
	- electric strength test afterwards		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	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)	IP20	P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		N
2.14 (9.3)	Humidity test 48 h	93%, 30°C, 48hours	P
2.14 (-)	Tests order for luminaires with > IP 20		—
2.15 (10)	***INSULATION RESISTANCE AND ELECTRIC STRENGTH***		**P**
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:		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
	Insulation bushings as described in Section 5 ....:		N

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Cl.	Requirement – Test	Result	Verdict
	Other than SELV:		P
	- between live parts of different polarity..... :	>100MΩ(Limited≥2 MΩ)	P
	- between live parts and mounting surface..... :	>100MΩ(Limited≥2 MΩ)	P
	- between live parts and metal parts ..... :	>100MΩ(Limited≥2 MΩ)	P
	- between input wire and metal enclosure ..... :	>100MΩ(Limited≥2 MΩ)	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):	See below	—
	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
	- 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..... :	4U+2000V=2960V	P
	- between live parts and mounting surface..... :	4U+2000V=2960V	P
	- between live parts and metal parts ..... :	4U+2000V=2960V	P
	between input wire and metal enclosure ..... :	4U+2000V=2960V	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 (10.3)	Touch current or protective conductor current (mA) :	0.031mA	P
2.16 (13)	***RESISTANCE TO HEAT, FIRE AND TRACKING***		**P**
2.16 (13.2.1)	Ball-pressure test:	See test table 2.16 (13.2.1)	N
2.16 (13.3.1)	Needle flame test (°C):	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)	N
2.16 (13.4.1)	Tracking test:	See test table 2.16 (13.4)	N

2.8 (11.2)	**TABLES: Creepage distances and clearances**						**P**
Table 11.1	**Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages**						P
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
Creepage distances							
Required basic insulation, PTI ≥ 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		--	--	--	4.0	--	--
Required supplementary insulation PTI ≥ 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		--	--	--	6.0	--	--
Clearances							
Required basic insulation		0,2	0,8	1,5	3	4	5,5
Measured		--	--	--	4.0	--	--
Required supplementary insulation		-	0,8	1,5	3	4	5,5
Measured		--	--	--	--	--	--
Required reinforced insulation		-	1,6	3	6	8	11
Measured		--	--	--	6.0	--	--

Table 11.2	**Minimum distances (mm) for non-sinusoidal pulse voltages**						
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)	**TABLE: Ball Pressure Test of Thermoplastics**	**N**

Allowed impression diameter (mm) ..... :			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
--	--	--	--
Supplementary information:			

2.16 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**				**P**
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
LED PCB	See CDF	10	No	0	P
PCB of LED driver	See CDF	10	No	0	P
Supplementary information:					

2.16 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**				**N**
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
--	--	--	--	--	--
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)……:					
Supplementary information:					

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

	ANNEX 1: components	**P**

object/part No.	code	manufacturer/ trademark	type/model	technical data	stan-dard	mark(s) of conformity
LED Chip	C	ZhongShan MLS-Electronic Co., Ltd.	3535	2W， 12.4-12.6V, 6500K, Ra>80	EN 60598-2-2	CE Tested with appliance
LED PCB	A	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-95	V-0, 130°C	UL 796	UL E141940
Internal Wire	A	Zhongshan Guo Pin Electrical Cable Co., Ltd.	H03VVH2-F	2*0.75mm²	UL 510	VDE 40050956
Fuse(F1)	A	Zhongshan Yuetai Electronics Co., Ltd.	RXF	3.9Ω, 1W	IEC/EN 60127-1 IEC/EN 60127-3	VDE E495497
Led Power Supply	C	ZHONGSHAN XIONGYUAN LIGHTING CO., Ltd.	XNL050C0300SGAP-X13-00	24W, 220-240V, 50/60Hz	EN 60598-2-2	CE Tested with appliance
X2 Capacitor (CX1)	A	Fuxin Pan Ocean Electronic Ltd.	MPX-2	0.1uF/310V	IEC/EN 60348-14	VDE 40015756
Varistor (RV1,RV2)	A	Cerglass MFG Inc	07D511K	125℃	IEC 61051-1; IEC 61051-2; IEC 61051-2-2	VDE 40028836
Inductance (T1)	C	ZHONGSHAN JIANGWEI ELECTRONICS CO LTD	EFD20	760uH±5% (2-8)0.25mm*2P*141Ts	EN 60598-2-2	CE Tested with appliance
Bobbin	A	CHANG CHUN PLASTICS CO., LTD.	PM9820	94V-0, 150℃	-	UL E59481
Enameled Wire	A	SIHUI HENGHUI ELECTRICAL APPLIANCES CO LTD	2UEW/155	155℃	-	UL E337948
Tape	A	SUZHOU MAILADUONA ELECTRIC MATERIAL CO., LTD.	1350-1	130℃	-	UL 188295

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: temperature measurements, thermal tests of Section 12	**P**

	Type reference .....:	BP28-56630	—
	Lamp used.....:	LED lamp	—
	Lamp control gear used .....:	LED driver	—
	Mounting position of luminaire .....:	Recessed ceiling mounted	—
	Supply wattage (W).....:	50W	—
	Supply current (A) .....:	0.217A	—
	Calculated power factor .....:		—
	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.....:	1.06 times rated voltage	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....:		—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:		—
	Through wiring or looping-in wiring loaded by a current of A during the test .....:		—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	Limit (°C)	test 4	limit
Power cord	--	27.9	--	75	--	--
Power supply enclosure Tc	--	55.6	--	70	--	--
Power supply output wire	--	49.7	--	75	--	--
E-Cap. (C2)	--	60.2	--	105	--	--
L3	--	80.1	--	110	--	--
PCB near REC	--	743	--	130	--	--
Transformer（T1）coil		98.8		110		
Transformer（T1）core		79.2		Ref.		
X-cap(C10)		77.7		100		
Varistor (R3)		75.1		85		
PCB near D3		89.2		130		
Metal enclosure outside	--	56.4	--	Ref.	--	--

LED cover outside	--	47.4	--	Ref.	--	--
Mounting surface	--	37.4	--	90	--	--
Ambient	--	25.4	--	--	--	--

	ANNEX 3: screw terminals (part of the luminaire)	**N**

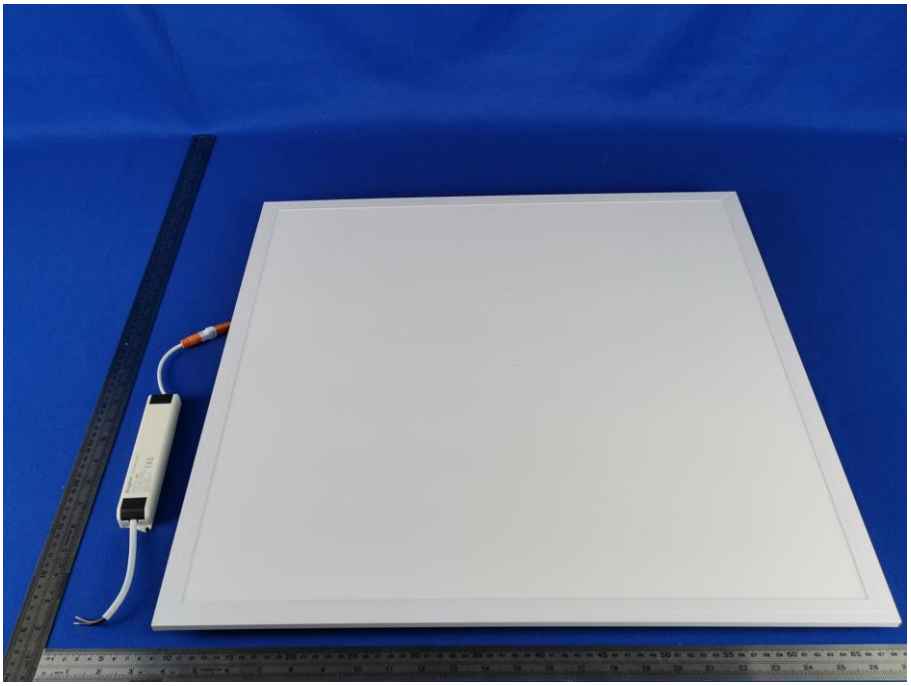
(14)	***SCREW TERMINALS***		N
(14.2)	Type of terminal .....:	No such terminals	—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N
(14.3.2.2)	Special preparation		N
(14.3.2.3)	Terminal size		N
	Cross-sectional area (mm²) .....:		N
(14.3.3)	Conductor space (mm) .....:		N
(14.4)	Mechanical 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

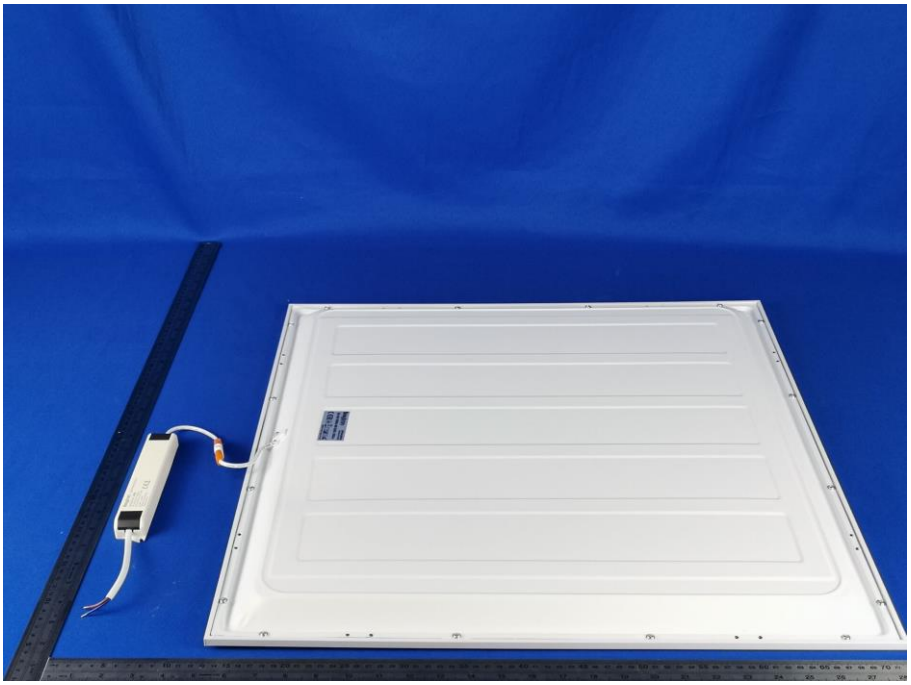
	ANNEX 4: screwless terminals (part of the luminaire)	**N**

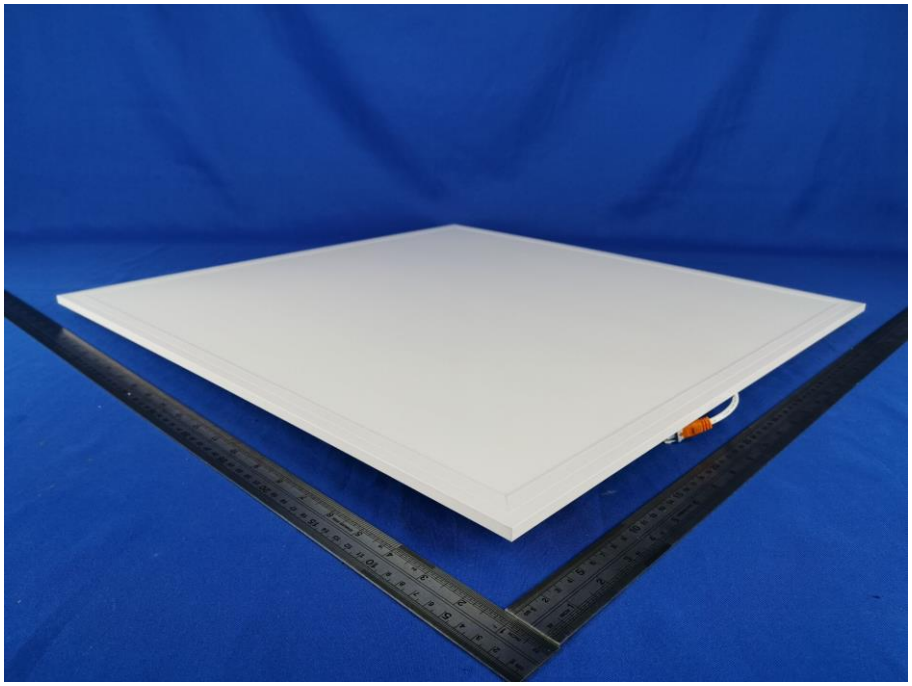
(15)	***SCREWLESS TERMINALS***		N
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N
(15.3.6)	Clear connection method		N
(15.3.7)	Clamping independently		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
(15.5.1.2)	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
(15.6.3.1)	**TABLE: Contact resistance test**		**N**
	Voltage drop (mV) after 1 h		—

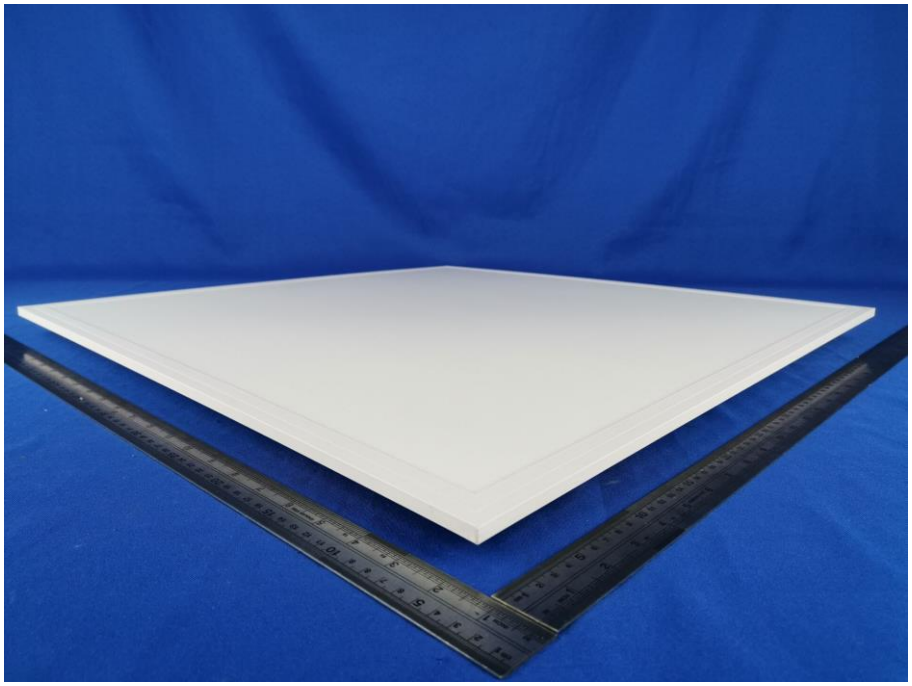
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th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

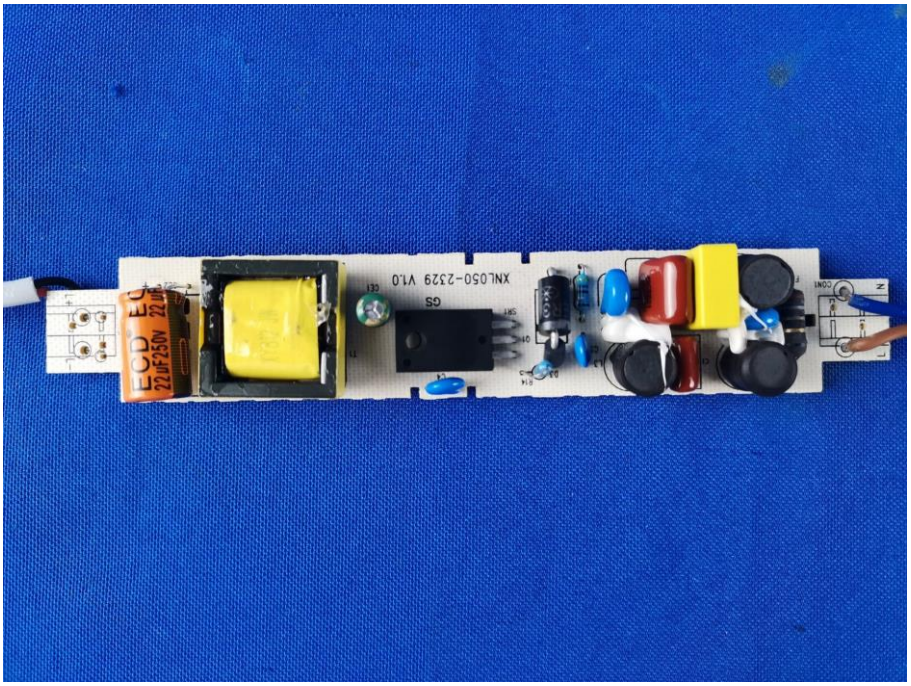
Attachment – Photos

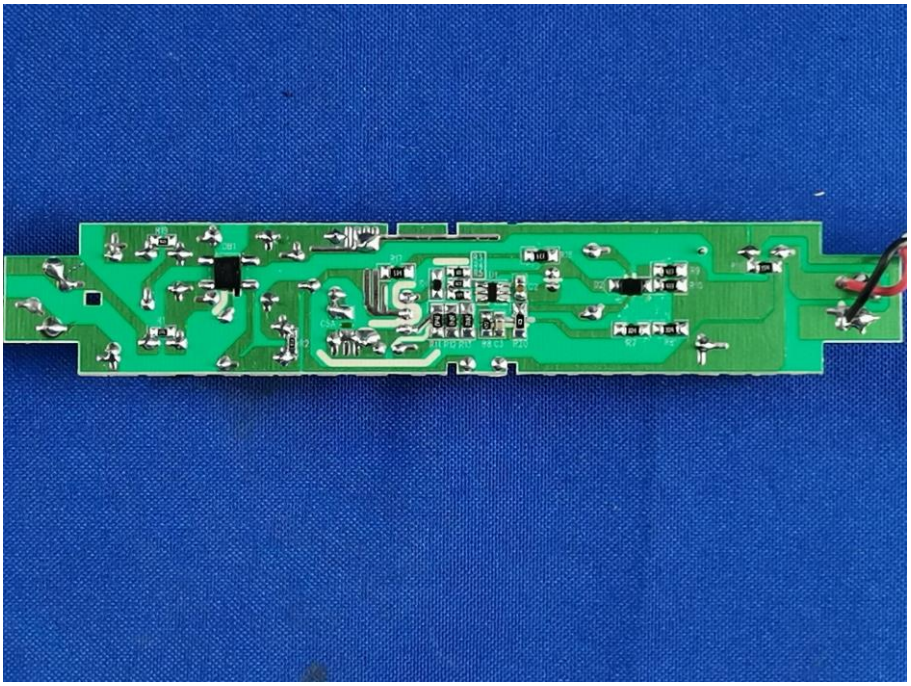












(EBO authenticate the photo on original report only)
*** End of Report ***