

# TEST REPORT

**Product Name** : LED table lamp

**Model Number** : See model list

Prepared for : Power beauty (Dong guan) Industrial Co., Ltd  
Address : No.1, Eastern Industry Park, Shujiu Village, Changping  
Town, Dongguan City, China

Prepared by : EMTEK(DONGGUAN) CO., LTD.  
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Report Number : ED210430087L  
Date(s) of Tests : May 06, 2021 to May 17, 2021  
Date of issue : August 13, 2021

<b>TEST REPORT</b> <b>IEC 60598-2-4</b> <b>Luminaires, Part 2: Particular requirements</b> <b>Section 4: Portable general purpose luminaires</b>	
<b>Report Number</b> ..... :	ED210430087L
<b>Compiled by (+ signature)</b> ..... :	Park Zeng
<b>Approved by (+ signature)</b> ..... :	June Luo
<b>Date of issue</b> ..... :	August 13, 2021
<b>Total number of pages</b> .....	65 pages (including 7 attachments)
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<b>Applicant's name</b> .....	Power beauty (Dong guan) Industrial Co., Ltd
<b>Address</b> ..... :	No.1, Eastern Industry Park, Shujiu Village, Changping Town, Dongguan City, China
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60598-2-4:2017 used in conjunction with IEC 60598-1:2014, AMD1:2017
<b>Test procedure</b> .....	Test report
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC60598_2_4H
<b>Test Report Form(s) Originator</b> .... :	UL(US)
<b>Master TRF</b> .....	2020-02-14
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<b>Test item description .....</b>	LED table lamp
<b>Trade Mark.....</b>	N/A
<b>Manufacturer .....</b>	Power beauty (Dong guan) Industrial Co., Ltd No.1, Eastern Industry Park, Shujiu Village, Changqing Town, Dongguan City, China
<b>Model/Type reference.....</b>	See model list
<b>Ratings.....</b>	5V <sup>---</sup> , 1A, Max. 5W, Class III, IP54, ta:25°C

List of Attachments (including a total number of pages in each attachment):

**Attachment No. 1:**

European Group Difference and National Differences for EN 60598-2-4:2018 used in conjunction with EN 60598-1:2015+A1:2018 (2 pages);

**Attachment No. 2:**

IEC 61347-2-11:2001+A1:2017 used in conjunction with IEC 61347-1:2015 for driver (6 pages);

**Attachment No. 3:**

European Group Difference and National Differences for EN 61347-2-11:2001+A1:2019 used in conjunction with EN 61347-1:2015 (1 page);

**Attachment No. 4:**

Test report for IEC 62031:2018 for LED module (5 pages);

**Attachment No. 5:**

European Group Difference and National Differences for EN IEC 62031:2020 for LED module (1 page);

**Attachment No. 6:**

Test report for IEC TR 62778:2014 for light sources (2 pages);

**Attachment No. 7:**

Photo documentation (10 pages)

**Summary of testing:**

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

All applicable tests as described in the compliance checklist were performed at EMTEK(DONGGUAN) CO., LTD.

-1&2F, Building 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, No.9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China

**Testing location:**

EMTEK(DONGGUAN) CO., LTD.

-1&2F, Building 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, No.9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China

**Summary of compliance with National Differences (List of countries addressed):**

**The product fulfils the requirements of EN 60598-2-4:2018 used in conjunction with EN 60598-1:2015+A1:2018**

**Statement concerning the uncertainty of the measurement systems used for the tests**

(may be required by the product standard or client)

Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Statement not required by the standard used for type testing

**Copy of marking plate:**

The artwork below may be only a draft.



**Remark:**

1. The above mark is the minimum requirements of the safety standard. For the final production, the additional marks, which do not give rise to misunderstanding, may be added.
2. Manufacturers shall indicate on the product their name, registered trade name or registered trade mark and postal address at which they can be contacted.
3. Importers shall indicate on the product their name, registered trade name or registered trade mark and postal address at which they can be contacted.
4. The height of graphical symbols shall not be less than 5mm, except for symbols for Class III classification which may be reduced to a minimum of 3mm where the space available for marking is restricted. The height of WEEE symbol shall not be less than 7mm.

<b>Test item particulars</b> ..... :			
<b>Classification of installation and use</b> ..... : Portable luminaires and for indoor use only			
<b>Supply Connection</b> ..... : USB port			
..... :			
<b>Possible test case verdicts:</b>			
- test case does not apply to the test object ..... : N/A			
- test object does meet the requirement..... : P (Pass)			
- test object does not meet the requirement ..... : F (Fail)			
<b>Testing</b> ..... :			
<b>Date of receipt of test item</b> ..... : May 06, 2021			
<b>Date (s) of performance of tests</b> ..... : May 06, 2021 to May 17, 2021			
<b>General remarks:</b>			
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. <b>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</b> Clause numbers between brackets refer to clauses in IEC 60598-1			
<b>When differences exist; they shall be identified in the General product information section.</b>			
<b>Name and address of factory (ies)</b> ..... : Power beauty (Dong guan) Industrial Co., Ltd No.1, Eastern Industry Park, Shujiu Village, Changping Town, Dongguan City, China			
<b>General product information and other remarks:</b>			
These products are class III portable luminaires, IP54, ta: 25°C, suitable for mounting on normal flammable surface. When the product is charged, it can only be charged and used indoors. When it is not charged, it can be used indoors and outdoors.			
All models have different appearance and color, the other parts are the same.			
Model list:			
PBG-1230, Sally, PBG-1230-1, PBG-1230-2, PBG-1230-3, PBG-1230-4, PBG-1238, PBG-1238-1, PBG-1238-2, PBG-1238-4, PBG-1626, PBG-1626-1, PBG-2728, PBG-2123, PBG-200, PBG-250, PBG-300, PBG-350, PBG-400, PBG-500, PBG-600, PBG-2223, PBG-2817, PBG-3520, PBG-3527, PBG-1626T, PBG-1620, PBG-1434, PBG-1625, PBG-1420, PBG-1220, PBG-1220-1, PBG-1220-2, PBG-1515, PBG-1621, PBG-2020, PBG-3030, PBG-3535, PBG-4040, PBG-1522, PBG-1225, PBG-1115A, PBG-1115B, PBG-1115C, PBG-1421, PBG-2734, PBG-3430, PBG-40150, PBG-2030, PBG-2031, PBG-2034, PBG-2036, PBG-2045.			
When the product is used with a controlgear, the controlgear must be SELV.			
According to customer's request, chosen PBG-1230, Sally to perform all tests.			
This product was found to comply with the requirements of "Risk Group 1" according to standard IEC TR 62778:2014.			

<b>Modified History:</b>			
Version	Report No.	Revision date	Summary
Ver. 1.0	ED210430087L V1.0	May 26, 2021	Original Report
Ver. 2.0	ED210430087L V2.0	June 01, 2021	Changed model number from "PBG-1230" to "PBG-1230, Sally"

Ver. 3.0	ED210430087L V3.0	August 13, 2021	Changed Using the environment from 'only indoor use' to ' When the product is charged, it can only be charged and used indoors. When it is not charged, it can be used indoors and outdoors'
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EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.4 (0)</b>	<b>GENERAL TEST REQUIREMENTS</b>		P
4.4 (0.3)	More sections applicable .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	—
<b>4.4 (0.7)</b>	<b>Information for luminaire design in light sources standards</b>		—
4.4 (0.7.2)	Light source safety standard .....		—
	Luminaire design in the light source safety standard	EN 62031 IEC TR 62778	P
<b>4.5 (2)</b>	<b>CLASSIFICATION OF LUMINAIRES</b>		P
4.5 (2.2)	Type of protection .....	Class III	P
4.5 (2.3)	Degree of protection .....	IP54	P
4.5 (2.5)	Luminaire for normal use .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
4.5.1 (-)	Ordinary luminaire.....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
4.5.2 (-)	Portable luminaire for outdoor use.....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Classified IPX4 or higher		N/A
4.5.3 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
<b>4.6 (3)</b>	<b>MARKING</b>		P
4.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
4.6 (3.3)	Additional information		P
	Language of instructions	English	P
4.6 (3.3.1)	Combination luminaires		N/A
4.6 (3.3.2)	Nominal frequency in Hz		N/A
4.6 (3.3.3)	Operating temperature		N/A
4.6 (3.3.5)	Wiring diagram		N/A
4.6 (3.3.6)	Special conditions		N/A
4.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
4.6 (3.3.8)	Limitation for semi-luminaires		N/A
4.6 (3.3.9)	Power factor and supply current	1A	P
4.6 (3.3.10)	Suitability for use indoors		N/A
4.6 (3.3.11)	Luminaires with remote control		N/A
4.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
4.6 (3.3.13)	Specifications of protective shields		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.6 (3.3.14)	Symbol for nature of supply	---	P
4.6 (3.3.15)	Rated current of socket outlet		N/A
4.6 (3.3.16)	Rough service luminaire		N/A
4.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
4.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
4.6 (3.3.19)	Protective conductor current in instructions, if applicable		N/A
4.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
4.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
	Cautionary symbol		N/A
4.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
4.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component	Controlgear must be SELV	P
4.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
4.6 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P
4.6.1 (-)	Luminaire not suitable for outdoor application		N/A
	Required symbol		N/A
	Information in the instructions		N/A
4.6.2 (-)	Outdoor use, socket outlet incorporated in the luminaire		N/A
	Maximum power rating marked		N/A
	Position of the marking		N/A
<b>4.7 (4)</b>	<b>CONSTRUCTION</b>		<b>P</b>
4.7 (4.2)	Components replaceable without difficulty		N/A
4.7 (4.3)	Wireways smooth and free from sharp edges		P
<b>4.7 (4.4)</b>	<b>Lampholders</b>		<b>N/A</b>
4.7 (4.4.1)	Integral lampholder		N/A
4.7 (4.4.2)	Wiring connection		N/A
4.7 (4.4.3)	Lampholder for end-to-end mounting		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.4.4)	Positioning		N/A
	- pressure test (N) .....		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
4.7 (4.4.5)	Peak pulse voltage		N/A
4.7 (4.4.6)	Centre contact		N/A
4.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
4.7 (4.4.8)	Lamp connectors		N/A
4.7 (4.4.9)	Caps and bases correctly used		N/A
4.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
<b>4.7 (4.5)</b>	<b>Starter holders</b>		<b>N/A</b>
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
<b>4.7 (4.6)</b>	<b>Terminal blocks</b>		<b>N/A</b>
	Tails		N/A
	Unsecured blocks		N/A
<b>4.7 (4.7)</b>	<b>Terminals and supply connections</b>		<b>N/A</b>
4.7 (4.7.1)	Contact to metal parts		N/A
4.7 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
4.7 (4.7.3)	Terminals for supply conductors		N/A
4.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.7.4)	Terminals other than supply connection		N/A
4.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
4.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
<b>4.7 (4.8)</b>	<b>Switches</b>		<b>P</b>
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches	10000 cycles	P
<b>4.7 (4.9)</b>	<b>Insulating lining and sleeves</b>		<b>N/A</b>
4.7 (4.9.1)	Retainment		N/A
	Method of fixing.....:		N/A
4.7 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
<b>4.7 (4.10)</b>	<b>Double or reinforced insulation</b>		<b>N/A</b>
4.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
4.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
4.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
4.7 (4.10.4)	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
<b>4.7 (4.11)</b>	<b>Electrical connections and current-carrying parts</b>		<b>P</b>
4.7 (4.11.1)	Contact pressure		P
4.7 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
4.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
4.7 (4.11.4)	Material of current-carrying parts		P
4.7 (4.11.5)	No contact to wood or mounting surface		P
4.7 (4.11.6)	Electro-mechanical contact systems		N/A
<b>4.7 (4.12)</b>	<b>Screws and connections (mechanical) and glands</b>		<b>P</b>
4.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....	Screw for fixing plastic enclosure: 2,26mm, 0,4Nm	P
	Torque test: torque (Nm); part .....	Screw for fixing PCB of touch switch: 2,31mm, 0,4Nm	P
	Torque test: torque (Nm); part .....	Screw for fixing LED board: 2,19mm, 0,4Nm	P
4.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
4.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
4.7 (4.12.5)	Screwed glands; force (Nm) .....		N/A
<b>4.7 (4.13)</b>	<b>Mechanical strength</b>		<b>P</b>
4.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....		N/A
	- other parts; energy (Nm) .....	All parts: 0,5Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.13.3)	Straight test finger		P
4.7 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
4.7 (4.13.6)	Tumbling barrel		N/A
<b>4.7 (4.14)</b>	<b>Suspensions, fixings and means of adjusting</b>		<b>N/A</b>
4.7 (4.14.1)	Mechanical load:		N/A
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm) .....		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....		—
	Metal rod. diameter (mm) .....		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
4.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) .....		—
	Stress in conductors (N/mm <sup>2</sup> ) .....		N/A
	Mass (kg) of semi-luminaire .....		N/A
	Bending moment (Nm) of semi-luminaire .....		N/A
4.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....		N/A
	- strands broken .....		N/A
	- electric strength test afterwards		N/A
4.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
4.7 (4.14.5)	Guide pulleys		N/A
4.7 (4.14.6)	Strain on socket-outlets		N/A
<b>4.7 (4.15)</b>	<b>Flammable materials</b>		<b>P</b>
	- glow-wire test 650°C.....	See Test Table 4.15 (13.3.2)	P
	- spacing $\geq 30$ mm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
4.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
<b>4.7 (4.16)</b>	<b>Luminaires for mounting on normally flammable surfaces</b>		<b>P</b>
	No lamp control gear .....	(compliance with Section 12)	P
4.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
4.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
4.7 (4.16.3)	Design to satisfy the test of 12.6.....	(see clause 12.6)	N/A
<b>4.7 (4.17)</b>	<b>Drain holes</b>		<b>N/A</b>
	Clearance at least 5 mm		N/A
<b>4.7 (4.18)</b>	<b>Resistance to corrosion</b>		<b>P</b>
4.7 (4.18.1)	- rust-resistance		P
4.7 (4.18.2)	- season cracking in copper		N/A
4.7 (4.18.3)	- corrosion of aluminium		N/A
4.7 (4.19)	Igniters compatible with ballast		N/A
4.7 (4.20)	Rough service vibration		N/A
<b>4.7 (4.21)</b>	<b>Protective shield</b>		<b>N/A</b>
4.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
4.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
4.7 (4.21.3)	No direct path		N/A
4.7 (4.21.4)	Impact test on shield		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Glow-wire test on lamp compartment .....	See Test Table 4.15 (13.3.2)	N/A
4.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
4.7 (4.23)	Semi-luminaires comply Class II		N/A
<b>4.7 (4.24)</b>	<b>Photobiological hazards</b>		<b>P</b>
4.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
4.7 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778 .....	RG1	—
	Luminaires with $E_{thr}$ :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2...:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	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/A
<b>4.7 (4.25)</b>	<b>Mechanical hazard</b>		<b>P</b>
	No sharp point or edges		P
<b>4.7 (4.26)</b>	<b>Short-circuit protection</b>		<b>N/A</b>
4.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
4.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
<b>4.7 (4.27)</b>	<b>Terminal blocks with integrated screwless earthing contacts</b>		<b>N/A</b>
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 $\Omega$		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 $\Omega$		N/A
	Voltage drop test, resistance < 0,05 $\Omega$		N/A
<b>4.7 (4.28)</b>	<b>Fixing of thermal sensing control</b>		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) .....		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
<b>4.7 (4.29)</b>	<b>Luminaires with non-replaceable light source</b>		<b>N/A</b>
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
<b>4.7 (4.30)</b>	<b>Luminaires with non-user replaceable light source</b>		<b>N/A</b>
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
<b>4.7 (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/A
<b>4.7 (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		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Plugs and socket-outlets does not have protective conductor contact		N/A
4.7 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
4.7 (4.31.3)	Other circuits		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
<b>4.7 (4.32)</b>	<b>Overvoltage protective devices</b>		<b>N/A</b>
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
4.7.1 (-)	Insulation not damaged when moving, adjusting or placing on support		P
4.7.2 (-)	Wiring fixed, to avoid rubbing		P
	Carrier or clips of insulation material or with insulating lining		N/A
4.7.3 (-)	Luminaire not overturn at angle 6°		P
	Outdoor use luminaire not overturn at an angle 15°		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.4 (-)	Candlestick luminaires with E5 or E10 lampholders provided with a switch		N/A
	Switch part of the luminaire or within 300 mm of the luminaire if with cord		N/A
4.7.5 (-)	Voltage not exceeding 25 V for E5 lampholders		N/A
	E10 lampholder voltage:		N/A
	- not exceeding 60 V for series connection) or		N/A
	- not exceeding 250 V for parallel connections		N/A
	Maximum rated wattage not exceed 100 W		N/A
4.7.6 (-)	Portable luminaires for outdoor use tails not provided		N/A
4.7.7 (-)	Portable luminaires for outdoor use, cable entries		N/A
4.7.8 (-)	Portable luminaires for outdoor use, socket-outlet degree of protection at least same as the luminaire but not less than IPX4.		N/A
	Degree of protection maintained with or without a plug inserted into the socket-outlet.		N/A
	Class II luminaires, mains socket-outlets comply with the standard and only allow connection to Class II luminaires		N/A
	Class I luminaires, mains socket-outlets comply with the standard and only allow connection to Class I or Class II luminaires		N/A
4.7.9 (-)	Portable luminaires for outdoor use, lampholders and plugs are of material resistant to tracking		N/A
	Compliance to clause 13.4		N/A
<b>4.8 (11)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
	Impulse withstand category (Normal category II) (Category III Annex U, Table U.1) .....	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
4.8 (11.2.1)	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
4.7 (11.2.2)	Creepage distances for frequency up to 30 kHz .....	See Test Table 4.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and $f_{UOUT}$ according IEC 61347-1, clause 7.1, item w).....	See Test Table 4.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 .....	See Test Table 4.7 (11.2) II	N/A
4.7 (11.2.3)	Clearances for frequency up to 30 kHz .....	See Test Table 4.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $U_P$ .....	See Test Table 4.7 (11.2) II	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 .....	See Test Table 4.7 (11.2) II	N/A

<b>4.9 (7)</b>	<b>PROVISION FOR EARTHING</b>		N/A
4.9 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω .....		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
4.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
4.9 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
4.9 (7.2.5)	Earth terminal integral part of connector socket		N/A
4.9 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
4.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
4.9 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
4.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
4.9 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
<b>4.10 (14)</b>	<b>SCREW TERMINALS</b>		N/A
	Separately approved; component list .....	(see Annex 1)	N/A
	Part of the luminaire .....	(see Annex 3)	N/A
<b>4.10 (15)</b>	<b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b>		N/A
	Separately approved; component list .....	(see Annex 1)	N/A
	Part of the luminaire .....	(see Annex 4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>4.11 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		<b>P</b>
<b>4.11 (5.2)</b>	<b>Supply connection and external wiring</b>		<b>P</b>
4.11 (5.2.1)	Means of connection.....:	USB port	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/A
4.11 (5.2.2)	Type of cable .....	(see Annex 1)	P
	Nominal cross-sectional area (mm <sup>2</sup> ).....:	(see Annex 1)	P
	Cables equal to IEC 60227 or IEC 60245		P
4.11 (5.2.3)	Type of attachment, X, Y or Z.....:	Type X	P
4.11 (5.2.5)	Type Z not connected to screws		N/A
4.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
4.11 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
4.11 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
4.11 (5.2.9)	Locking of screwed bushings		N/A
4.11 (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
4.11 (5.2.10.1)	Cord anchorage for type X attachment:		P
	a) at least one part fixed		P
	b) types of cable		P
	c) no damaging of the cable		P
	d) whole cable can be mounted		P
	e) no touching of clamping screws		P
	f) metal screw not directly on cable		P

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Clause	Requirement + Test	Result - Remark	Verdict
	g) replacement without special tool		P
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
4.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
4.11 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) .....		N/A
	- torque test: torque (Nm) .....		N/A
	- displacement $\leq 2$ mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
4.11 (5.2.11)	External wiring passing into luminaire		N/A
4.11 (5.2.12)	Looping-in terminals		N/A
4.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
4.11 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		P
	No unsafe compatibility		P
4.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
4.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
4.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
<b>4.11 (5.3)</b>	<b>Internal wiring</b>		<b>P</b>
4.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- socket outlet loaded (A).....:		N/A
	- temperatures.....:	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
4.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm <sup>2</sup> ) .....	(see Annex 1)	N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
4.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm <sup>2</sup> ) .....	(see Annex 1)	P
4.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A
4.11 (5.3.1.4)	Conductors without insulation		N/A
4.11 (5.3.1.5)	SELV current-carrying parts		P
4.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
4.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
4.11 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
4.11 (5.3.4)	Joints and junctions effectively insulated		N/A
4.11 (5.3.5)	Strain on internal wiring		N/A
4.11 (5.3.6)	Wire carriers		N/A
4.11 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
<b>4.11 (5.4)</b>	<b>Test to determine suitability of conductors having a reduced cross-sectional area</b>		<b>N/A</b>
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No damage to luminaire wiring after test		N/A
4.11.1 (-)	Indoor use luminaire The requirement of one part of cord anchorage to be fixed to the luminaire not applied for table lamps of glass or ceramic		—
4.11.2 (-)	Class I and class II indoor use Luminaire with a mass less than 1 kg the current $\leq 2,5$ A and cable $\leq 2$ m and conductor $\geq 0,5$ mm <sup>2</sup>	Class III	N/A
4.11.3 (-)	Terminals, a cord anchorage and an inlet opening for the proper connection of the flexible cable or cord if for outdoor use and delivered without a flexible cable or cord and a plug.		N/A
4.11.4 (-)	Portable luminaires for outdoor use Insulation class I and class II, non-detachable flexible cables or cords at least type 245 IEC 57.		N/A
<b>4.12 (8)</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		P
4.12 (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, settable and adjustable luminaires		P
	Basic insulated parts not accessible with $\varnothing 50$ mm probe from outside, other types of luminaires		N/A
	Lamp and starter holders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
4.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		P
4.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
4.12 (8.2.3.b)	BC lampholder of metal in class I luminaires is earthed		N/A
4.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		P
	Ordinary luminaire:		N/A
	- voltage under load (V) .....		N/A
	- no-load voltage (V) .....		N/A
	- touch current if applicable (mA) .....		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		P
	- nominal voltage (V) .....	5VDC	P
	Class III luminaire only for connection to SELV		P
	Class III luminaire not provided with means for protective earthing		P
4.12 (8.2.4)	Portable luminaire have protection independent of supporting surface		P
4.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
4.12 (8.2.6)	Covers reliably secured		P
4.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 $\mu$ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 $\mu$ F (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 $\mu$ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
4.12. (-)	Class I luminaire with bayonet lampholder:		N/A
	1) cap not accessible with test finger		N/A
	2) metal lampholder is earthed		N/A

<b>4.13 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>		P
4.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) specified in 4.13		—
<b>4.13 (12.2)</b>	<b>Selection of lamps and ballasts</b>		—
	Lamp used according Annex B.....	See Annex 2 for lamp used	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Controlgear if separate and not supplied.....:	See Annex 2 for controlgear used	—
4.13 (12.3)	Endurance test:		P
	a) mounting-position .....	As normal use	—
	b) test temperature (°C).....:	35°C	—
	c) total duration (h).....:	240h	—
	d) supply voltage (V).....:	--	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) .....	5,5VDC	—
	e) luminaire ceases to operate	--	—
4.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
4.13 (12.4)	Thermal test (normal operation).....:	(see Annex 2)	P
4.13 (12.5)	Thermal test (abnormal operation) .....	(see Annex 2)	N/A
4.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A
4.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) .....		—
	- case of abnormal conditions.....:		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .....		—
	- measured mounting surface temperature (°C) at 1,1 Un .....		N/A
	- calculated mounting surface temperature (°C) .....		N/A
	- track-mounted luminaires		N/A
4.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....:		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- track-mounted luminaires		N/A
<b>4.13 (12.7)</b>	<b>Thermal test (failed lamp control gear in plastic luminaires):</b>		N/A
4.13 (12.7.1)	Luminaire without temperature sensing control		N/A
4.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W .....		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions .....		—
	- Ballast failure at supply voltage (V) .....		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- 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 4.15 (13.2.1)	N/A
4.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- 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 4.15 (13.2.1)	N/A
4.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions .....		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
4.13 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link .....	Yes <input type="checkbox"/> No <input type="checkbox"/>	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 4.15 (13.2.1)	N/A
4.13 (-)	Indoor use luminaire, Test overturned position (overturns < 15°)	Not overturn	N/A
<b>4.14 (9)</b>	<b>RESISTANCE TO DUST AND MOISTURE</b>		<b>P</b>
4.14 (-)	If IP > IP 20 the order of tests as specified in clause 4.12		N/A
4.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		<b>P</b>
	- classification according to IP .....	IP54	—
	- mounting position during test.....:	As normal use	—
	- fixing screws tightened; torque (Nm) .....	--	—
	- tests according to clauses .....	Clause 9.2.1 and 9.2.5	—
	- electric strength test afterwards		<b>P</b>
	a) no deposit in dust-proof luminaire		<b>P</b>
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		<b>P</b>
	c.1) For luminaires without drain holes – no water entry		<b>P</b>
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		<b>P</b>
	g) no damage of protective shield or glass envelope		N/A
4.14 (9.3)	Humidity test 48 h	25°C, 93%RH	<b>P</b>
4-14 (-)	Portable luminaire for outdoor use tested in the most unfavourable of the overturned positions likely to occur		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.15 (10)</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		P
4.15 (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/A
	- between current-carrying parts and mounting surface .....	>100MΩ	P
	- between current-carrying parts and metal parts of the luminaire .....	>100MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 .....		N/A
	Other than SELV		N/A
	- between live parts of different polarity .....		N/A
	- between live parts and mounting surface .....		N/A
	- between live parts and metal parts .....		N/A
	- between live parts of different polarity through action of a switch .....		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 .....		N/A
4.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V) .....		P
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- 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/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 .....		N/A
	Other than SELV		N/A
	- between live parts of different polarity .....		N/A
	- between live parts and mounting surface .....		N/A
	- between live parts and metal parts .....		N/A
	- between live parts of different polarity through action of a switch .....		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....		N/A
	- Insulation bushings as described in Section 5 .....		N/A
4.15 (10.3)	Touch current or protective conductor current (mA):		N/A
<b>4.16 (13)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		P
4.16 (13.2.1)	Ball-pressure test .....	See Test Table 4.15 (13.2.1)	P
4.16 (13.3.1)	Needle-flame test (10 s) .....	See Test Table 4.15 (13.3.1)	P
4.16 (13.3.2)	Glow-wire test (650°C) .....	See Test Table 4.15 (13.3.2)	P
4.16 (13.4)	Proof tracking test (IEC 60112) .....	See Test Table 4.15 (13.4)	P

EN 60598-2-4							
Clause	Requirement + Test				Result - Remark		Verdict
<b>4.7 (11.2)</b>	<b>TABLE I: Creepage distances and clearances</b>						<b>P</b>
	<b>Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages</b>						<b>P</b>
	<b>Applicable part of IEC 60598-1 Table 11.1A*, 11.1B* and 11.2*</b>						<b>P</b>
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	
Pulse voltage if applicable (kV) .....					--	---	
Supplementary information: <i>No values are specified for working voltages below 25 V RMS and 60 V DC as the electric strength test is considered sufficient.</i>							
Distance 2:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	
Pulse voltage if applicable (kV) .....					--	---	
Supplementary information: --							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	
Pulse voltage if applicable (kV) .....					--	---	
Supplementary information: --							
** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.							

<b>4.7 (11.2)</b>	<b>TABLE II: Creepage distances and clearances</b>						<b>N/A</b>
<b>Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages</b>							
<b>Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2</b>							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
Frequency if applicable (kHz) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	≥ 600 <input type="checkbox"/>	
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....					--	---	
Supplementary information:--							

EN 60598-2-4							
Clause	Requirement + Test				Result - Remark		Verdict
Distance 2:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
Frequency if applicable (kHz) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	>= 600 <input type="checkbox"/>	---
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....					--	---	
Supplementary information:--							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V) .....					--	---	
Frequency if applicable (kHz) .....					--	---	
PTI.....					< 600 <input type="checkbox"/>	>= 600 <input type="checkbox"/>	---
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....					--	---	
Supplementary information: ** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.							

4.15a (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) .....	2mm			---
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB of touch switch	See Annex 1	125	0,88	
PCB of USB port	See Annex 1	125	0,88	
LED board	See Annex 1	125	0,97	
Internal connector	See Annex 1	125	1,34	
Supplementary information:--				

4.15b (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
PCB of touch switch	See Annex 1	10	No	0	P
PCB of USB port	See Annex 1	10	No	4	P
LED board	See Annex 1	10	No	0	P
Internal connector	See Annex 1	10	No	10	P
Supplementary information:--					

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

4.15c (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	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Plastic cover near LED	See Annex 1	No	0	P
Plastic enclosure	See Annex 1	No	0	P
Supplementary information:--				

4.15d (13.4)	<b>TABLE: Proof tracking test (IEC 60112)</b>			<b>P</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
Enclosure	See Annex 1	Yes	Yes	Yes	P
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information:--					

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
USB port	C	Shenzhen shengtuxin Electronic Co., Ltd	USB	--	EN 60598-1 EN 60598-2-4	Test with appliance	
USB wire	C	SHENZHEN RUNQI WIRE CO LTD	1007	22AWG, 80°C, 300Vac	UL 758	UL E495994 and test with appliance	
Micro USB port	C	Shenzhen shengtuxin Electronic Co., Ltd	Micro 5p	--	EN 60598-1 EN 60598-2-4	Test with appliance	
PCB of USB port on lamp	C	YIYANG MINGXINGDA ELECTRONIC CO LTD	MXD-D; MXD-M	V-0, 130°C	UL 94 UL 746 UL 796	UL E491226 and test with appliance	
Internal wire for touch switch	C	Shenzhen Dingyu Electrical Technology Co Ltd	1007	24AWG, 300V, 80°C	UL 758	UL E365423 and test with appliance	
Internal connector	C	Power beauty (Dong guan) Industrial Co., Ltd	--	--	EN 60598-1 EN 60598-2-4	Test with appliance	
PCB of touch switch	C	YIYANG MINGXINGDA ELECTRONIC CO LTD	MXD-D; MXD-M	V-0, 130°C	UL 94 UL 746 UL 796	UL E491226 and test with appliance	
Battery package	C	DONG GUAN SHI RUIFENG ENERGY TECHNOLOGY Co., Ltd.	RF 18650 4000mAh	4000mAh, 14,8Wh, 3,7V	IEC 62133-2	天溯® Tian Su Report number: TCTTJ20210 303054ZB-BR01	
Input wire for LED board	C	Shenzhen Yilong Electronics Co., Ltd	2468	26AWG, 300V, 80°C	EN 60598-1 EN 60598-2-4	Test with appliance	
LED board	C	YIYANG MINGXINGDA ELECTRONIC CO LTD	MXD-D; MXD-M	V-0, 130°C	UL 94 UL 746 UL 796	UL E491226 and test with appliance	
LED	C	Shenzhen jiahaoguang Lighting Technology Co., Ltd	M-2835-0.2W3V	Vf: 3,1-3,3V; If: 60mA; Power: 0,2W CCT: 2700-2900K	IEC TR 62778	Test with appliance	

EN 60598-2-4				
Clause	Requirement + Test		Result - Remark	Verdict

Plastic cover near LED	C	DongGuan haodong Technology Co., Ltd	--	PC	EN 60598-1 EN 60598-2-4	Test with appliance
Plastic enclosure	C	DongGuan haodong Technology Co., Ltd	--	ABS	EN 60598-1 EN 60598-2-4	Test with appliance
LED diffuser	C	DongGuan haodong Technology Co., Ltd	--	PC	EN 60598-1 EN 60598-2-4	Test with appliance

Supplementary information:

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

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference.....:	PBG-1230, Sally	—
	Lamp used.....:	LED	—
	Lamp control gear used.....:	--	—
	Mounting position of luminaire.....:	As normal use	—
	Supply wattage (W).....:	3,894W	—
	Supply current (A).....:	0,708A	—
	Calculated power factor.....:	--	—
	Temperatures in test 1 - 4 below are corrected for ta (°C).....:	25.0	—
	- abnormal operating mode.....:		—
4.12 (12.4)	- test 1: rated voltage.....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	For luminaire for constant voltage: 1,1x5=5,5VDC	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test.....:	--	—
4.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

### Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Plastic of USB input port on USB wire	25,0	--	35,8	--	Ref.	--	--
USB wire	25,0	--	29,2	--	80	--	--
Plastic of USB output port on USB wire	25,0	--	32,4	--	Ref.	--	--
Plastic of USB port on lamp	25,0	--	33,6	--	Ref.	--	--
PCB of USB port on lamp	25,0	--	36,8	--	130	--	--
connector for USB port on lamp	25,0	--	50,0	--	Ref.	--	--

EN 60598-2-4							
Clause	Requirement + Test				Result - Remark		Verdict
PCB of touch switch (near LED)	25,0	--	54,7	--	130	--	--
connector for battery package	25,0	--	41,9	--	Ref.	--	--
connector for LED board (near touch switch PCB)	25,0	--	41,9	--	Ref.	--	--
internal wire for battery package	25,0	--	39,5	--	80	--	--
internal wire for LED board	25,0	--	44,4	--	80	--	--
connector for LED board (near LED board)	25,0	--	49,1	--	Ref.	--	--
Battery package	25,0	--	41,3	--	Ref.	--	--
LED board	25,0	--	32,9	--	130	--	--
plastic cover near LED	25,0	--	42,1	--	Ref.	--	--
Plastic enclosure, inside	25,0	--	41,7	--	Ref.	--	--
Plastic enclosure, outside	25,0	--	33,8	--	Ref.	--	--
metal enclosure	25,0	--	31,1	--	60	--	--
mounting surface	25,0	--	28,5	--	90	--	--
Ambient	25,0	--	25,0	--	--	--	--
Supplementary information: The luminaire has three modes for working: Mode A: Recharge the battery and the light doesn't work; Mode B: Don't recharge the battery and only the light work; Mode C: Recharge the battery and the light work. Mode A and Mode B, the temperature is lower than Mode C, so only the Node C's data record.							

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ANNEX 3</b>	<b>Screw terminals (part of the luminaire)</b>		N/A
<b>(14)</b>	<b>SCREW TERMINALS</b>		N/A
(14.2)	Type of terminal .....		—
	Rated current (A) .....		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm <sup>2</sup> ) .....		—
(14.3.3)	Conductor space (mm) .....		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) .....		N/A
	Torque (Nm).....		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....		N/A
(14.4.8)	Without undue damage		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ANNEX 4</b>	<b>Screwless terminals (part of the luminaire)</b>		N/A
<b>(15)</b>	<b>SCREWLESS TERMINALS</b>		N/A
(15.2)	Type of terminal .....		—
	Rated current (A) .....		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)..... :		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)..... :		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples) .....		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A

EN 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	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					--					N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	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										N/A
	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										N/A
	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										N/A
	Max. allowed voltage drop (mV).....					--					---
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
Supplementary information:--											

Attachment No. 1

IEC60598_2_4H ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 60598-2-4</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Luminaires Part 2: Particular requirements Section 4: Portable general purpose luminaires			
<b>Differences according to</b> ..... : EN 60598-2-4:2018 used in conjunction with EN 60598-1:2015 + A1:2018			
<b>Annex Form No.</b> ..... : EU_GD_IEC60598_2_4H			
<b>Annex Form Originator</b> ..... : OVE			
<b>Master Annex Form</b> ..... : 2020-07-09			
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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>		P
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<b>4.5 (3)</b>	<b>MARKING</b>		<b>N/A</b>
4.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

<b>4.6 (4)</b>	<b>CONSTRUCTION</b>		<b>N/A</b>
4.6 (4.11.6)	Electro-mechanical contact systems		N/A

<b>4.10 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>		<b>N/A</b>
4.10 (5.2.1)	Connecting leads		N/A
	- without a means for connection to the supply		N/A
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
4.10 (5.2.2)	Cables equal to EN 50525		N/A
	Replace table 5.1 – Supply cord		N/A

<b>4.12 (12)</b>	<b>ENDURANCE TESTS AND THERMAL TESTS</b>		<b>N/A</b>
4.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		<b>N/A</b>
(3.3)	DK: power supply cords of class I luminaires with label		N/A

Attachment No. 1

IEC60598_2_4H ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>N/A</b>
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		N/A
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

## Attachment No. 2

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4 (4)</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
- (4)	<u>Insulation materials</u> for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	Compliance of <u>independent controlgear enclosure</u> with IEC 60598-1		N/A
- (4)	<u>Built-in magnetic ballast</u> with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	<u>Built-in electronic controlgear</u> with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
- (4)	<u>SELV controlgear</u> comply with Annex L of IEC 61347-1	(see Annex L)	N/A
<b>6 (6)</b>	<b>CLASSIFICATION</b>		<b>P</b>
	Built-in controlgear .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Independent controlgear .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral controlgear .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
<b>7 (7)</b>	<b>MARKING</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>8 (10)</b>	<b>PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>9 (8)</b>	<b>TERMINALS</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>10 (9)</b>	<b>PROVISION FOR EARTHING</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>11 (11)</b>	<b>MOISTURE RESISTANCE AND INSULATION</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>12 (12)</b>	<b>ELECTRIC STRENGTH</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>14 (14)</b>	<b>FAULT CONDITIONS</b>		<b>P</b>
- (14.1)	When operated under fault conditions the controlgear:		<b>P</b>
	- does not emit flames or molten material		<b>P</b>
	- does not produce flammable gases		<b>P</b>

## Attachment No. 2

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$ .....		P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—

<b>15 (15)</b>	<b>CONSTRUCTION</b>		<b>P</b>
- (15.1)	<b>Wood, cotton, silk, paper and similar fibrous material</b>		<b>P</b>
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	<b>Printed circuits</b>		<b>P</b>
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	<b>Plugs and socket-outlets used in SELV or ELV circuits</b>		<b>N/A</b>
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV $\leq 3 \text{ A}$ , $\leq 25 \text{ V r.m.s.}$ or $\leq 60 \text{ V d.c.}$ and $\leq 72 \text{ W}$ comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A

## Attachment No. 2

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
<b>- (15.4)</b>	<b>Insulation between circuits and accessible parts</b>		<b>P</b>
- (15.4.2)	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		P
	- another source		N/A
	Voltage in the circuit not higher than ELV		P
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		P
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		P
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A

## Attachment No. 2

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		N/A
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
<b>16 (16)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>17 (17)</b>	<b>SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>18 (18)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		<b>P</b>
- (18.1)	Ball-pressure test .....	See 60598-2-4 report	P
- (18.2)	Test of printed boards .....	See 60598-2-4 report	P
- (18.3)	Glow-wire test .....	See 60598-2-4 report	P
- (18.4)	Needle flame test .....	See 60598-2-4 report	P
- (18.5)	Tracking test .....		N/A
<b>19 (19)</b>	<b>RESISTANCE TO CORROSION</b>		<b>N/A</b>
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A
<b>20 (-)</b>	<b>ANNEXES</b>		<b>N/A</b>
	Comply with appropriate annexes of IEC 61347-1	(see Annexes)	N/A

Attachment No. 2

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: tests of fault conditions	P
Part	Simulated fault	Hazard
U4(1-8)	Unit shut down, recoverable	NO
U6(2-8)	Unit work normal, recoverable	NO
U11(1-4)	Unit work normal, recoverable	NO
Q1 (G-S)	Unit shut down, recoverable	NO
Q1 (G-D)	Lamp dimming, recoverable	NO

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK	P
(A.1)	Comply with A.2 or A.3	P
(A.2)	Voltage $\leq 35$ V peak or $\leq 60$ V d.c ..... :	5VDC P
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .... :	N/A

(C)	ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING	N/A
	Requirements not applicable to the evaluated product.	—

(D)	ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR	N/A
	Requirements not applicable to the evaluated product.	—

(F)	ANNEX F - DRAUGHT-PROOF ENCLOSURE	N/A
	Requirements not applicable to the evaluated product.	—

(H)	ANNEX H - TESTS	N/A
	Requirements not applicable to the evaluated product.	—

(I)	ANNEX I – ADDITIONAL REQUIREMENTS FOR BUILT-IN MAGNETIC BALLASTS WITH DOUBLE OR REINFORCED INSULATION	N/A
(I.6)	Requirements not applicable to the evaluated product.	—

Attachment No. 2

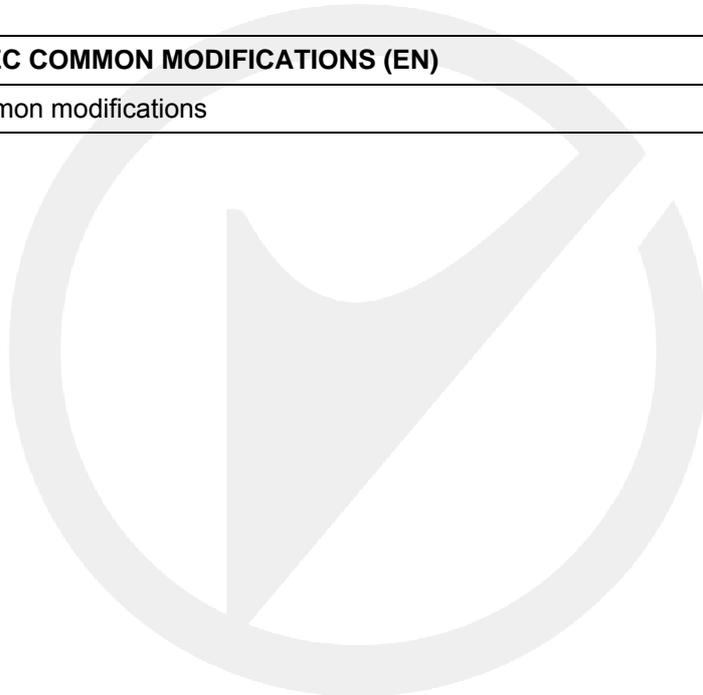
IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
(L)	<b>ANNEX L - PARTICULAR ADDITIONAL REQUIREMENTS FOR CONTROLGEARS PROVIDING SELV</b>		N/A
	Requirements not applicable to the evaluated product.		—
(N)	<b>ANNEX N - REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION</b>		N/A
	Requirements not applicable to the evaluated product.		—
(O)	<b>ANNEX O - ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION</b>		N/A
	Requirements not applicable to the evaluated product.		—
(P)	<b>ANNEX P - Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting</b>		N/A
	Requirements not applicable to the evaluated product.		—

Attachment No. 3

IEC61347_2_11F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 61347-2-11</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Part 2: Particular requirements Section Eleven – Miscellaneous electronic circuits used with luminaires			
<b>Differences according to</b> .....		EN 61347-2-11:2001+A1:2019 used in conjunction with EN 61347-1:2015	
<b>Attachment Form No.</b> .....		UK_GD_IEC61347_2_11F	
<b>Attachment Originator</b> .....		EMTEK	
<b>Master Attachment</b> .....		Date 2021-05	

	<b>CENELEC COMMON MODIFICATIONS (EN)</b>	P
	No Common modifications	P



Attachment No. 4

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
4.2	Classification		—
	Built-in module .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Independent module.....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral module .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A
<b>6</b>	<b>MARKING</b>		<b>P</b>
<b>6.2</b>	<b>Contents of marking for built-in and for independent LED modules</b>		<b>N/A</b>
	a) mark of origin		N/A
	b) model number, type reference		N/A
	c1) constant voltage module; rated supply voltage and supply frequency		N/A
	c2) constant current module; rated supply current and supply frequency		N/A
	d) rated power		N/A
	e) indication of connections, wiring diagram		N/A
	f) value of $t_c$ and place on the module		N/A
	g) $E_{thr}$ if required		N/A
	h) symbol for built-in modules		N/A
	i) heat transfer temperature $t_d$		N/A
	j) power for heat-conduction $P_d$		N/A
	k) working voltage for insulation		N/A
<b>6.3</b>	<b>Location of marking for built-in LED modules</b>		<b>N/A</b>
	- marking of a) and b) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
<b>6.4</b>	<b>Location of marking for independent LED modules</b>		<b>N/A</b>
	- marking of a), b), c) and f) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
<b>6.5</b>	<b>Marking of integral LED modules</b>		<b>P</b>
	- information in 6.2 a) to g) in data sheet, leaflet or website		P

Attachment No. 4

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
<b>6.6</b>	<b>Durable and legibility of marking</b>		<b>P</b>
	- marking on the LED module legible after test with water		N/A
	- marking not on the LED module legible		P
<b>7</b>	<b>TERMINALS</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>8 (9)</b>	<b>EARTHING</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>9 (10)</b>	<b>PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS</b>		<b>P</b>
- (10.1)	Controlgear protected against accidental contact with live parts		P
<b>10 (11)</b>	<b>MOISTURE RESISTANCE AND INSULATION</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>11 (12)</b>	<b>ELECTRIC STRENGTH</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>12 (14)</b>	<b>FAULT CONDITIONS</b>		<b>P</b>
- (14.1)	When operated under fault conditions the controlgear:		N/A
	- does not emit flames or molten material		N/A
	- does not produce flammable gases		N/A
	- protection against accidental contact not impaired		N/A
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	N/A
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
	Short-circuit or interruption of SPDs	(see appended table)	N/A

Attachment No. 4

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.6)	After the tests has been carried out on three samples:		N/A
	The insulation resistance $\geq 1 \text{ M}\Omega$ .....		N/A
	No flammable gases		N/A
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—
<b>12.2</b>	<b>Overpower condition</b>		<b>P</b>
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P
<b>14 (15)</b>	<b>CONSTRUCTION</b>		<b>P</b>
- (15.1)	<b>Wood, cotton, silk, paper and similar fibrous material</b>		<b>P</b>
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	<b>Printed circuits</b>		<b>P</b>
	Printed circuits used as internal connections complies with clause 14		P
<b>15 (16)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>		<b>N/A</b>
	Requirements not applicable to the evaluated product.		—
<b>16 (17)</b>	<b>SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS</b>		<b>P</b>
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
<b>(4.11)</b>	<b>Electrical connections</b>		<b>P</b>
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A

## Attachment No. 4

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
<b>(4.12)</b>	<b>Mechanical connections and glands</b>		<b>N/A</b>
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) .....		N/A
	- lampholder; torque (Nm) .....		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm).....:		N/A
<b>17 (18)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		<b>P</b>
- (18.1)	Ball-pressure test .....	See 60598-2-4 report	P
- (18.2)	Test of printed boards .....	See 60598-2-4 report	P
- (18.3)	Glow-wire test (650°C) .....	See 60598-2-4 report	P
- (18.4)	Needle-flame test (10 s) .....	See 60598-2-4 report	P
- (18.5)	Proof tracking test .....		N/A
<b>18</b>	<b>RESISTANCE TO CORROSION</b>		<b>N/A</b>
	Comply with requirements according 4.18 of IEC 60598-1		N/A
<b>20</b>	<b>HEAT MANAGEMENT</b>		<b>N/A</b>
<b>20.1</b>	<b>General</b>		<b>N/A</b>
	Fulfil clause 20 if replaceable LED module and when heat conducting thermal interface is needed.		N/A
<b>20.2</b>	<b>Thermal interface material</b>		<b>N/A</b>
	Thermal interface material delivered with the module if necessary		N/A
<b>20.3</b>	<b>Heat protection</b>		<b>N/A</b>
	Not impair safety when operated under poor heat-conduction conditions according Annex D		N/A

Attachment No. 4

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
<b>22</b>	<b>PHOTOBIOLOGICAL SAFETY</b>		<b>P</b>
<b>22.1</b>	<b>UV radiation</b>		<b>N/A</b>
	Luminous radiation not exceed 2mW/klm	LED modules not relying on the conversion of UV radiation are not expected to exceed the maximum allowed ultraviolet hazard efficacy of luminous radiation	N/A
<b>22.2</b>	<b>Blue light hazard</b>		<b>P</b>
	Assessed according to IEC TR 62778	See IEC TR 62778 report	P
<b>22.3</b>	<b>Infrared radiation</b>		<b>N/A</b>
	Requirements for infrared radiation when required		N/A
<b>A</b>	<b>ANNEX A - TESTS</b>		<b>N/A</b>
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		N/A

Attachment No. 5

IEC62031F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 62031</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> LED modules for general lighting – Safety specifications			
<b>Differences according to .....</b>		EN IEC 62031:2020	
<b>Attachment Form No.....</b>		UK_GD_IEC62031F	
<b>Attachment Originator .....</b>		EMTEK	
<b>Master Attachment.....</b>		2021-05	

	<b>CENELEC COMMON MODIFICATIONS (EN)</b>	<b>P</b>
	No Common modifications	P

<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>	<b>P</b>
	No special National conditions	P

<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>	<b>P</b>
	No National deviations	P

Attachment No. 6

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
<b>7</b>	<b>MEASUREMENT INFORMATION FLOW</b>		<b>P</b>
<b>7.1</b>	<b>Basic flow</b>		<b>P</b>
	'Law of conservation of luminance' applied		N/A
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	In case $E_{thr}$ value for RG2 was established the peak value was derived from angular light distribution		N/A
<b>7.2</b>	<b>Conditions for the radiance measurement</b>		<b>P</b>
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
<b>7.3</b>	<b>Special cases (I): Replacement by a lamp or LED module of another type</b>		<b>N/A</b>
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
<b>7.4</b>	<b>Special cases (II): Arrays and clusters of primary light sources</b>		<b>N/A</b>
	LED package is evaluated as .....	<input type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited	N/A
	$E_{thr}$ of LED package applies to array		N/A
<b>8</b>	<b>RISK GROUP CLASSIFICATION</b>		<b>P</b>
	Risk group achieved:		P
	-...Risk Group 0 unlimited		N/A
	-...Risk Group 1 unlimited		P
	- $E_{thr}$ ..... (lx) : Distance to reach RG1..... (m) :		N/A

Attachment No. 6

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Spectroradiometric measurement			P	
	Measurement performed on:	<input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input checked="" type="checkbox"/> Luminaire	—	
	Model number .....	PBG-1230, Sally	—	
	Test voltage (V) .....	3,7VDC	—	
	Test current (mA) .....	--	—	
	Test frequency (Hz) .....	--	—	
	Ambient, t (°C) .....	25	—	
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm	—	
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small : .... mm	—	
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)	—	
Item	Symbol	Units	Result	Remark
Correlated colour temperature	CCT	K	3348	--
x/y colour coordinates	--	--	/	--
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	2,652E+02	RG1
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	--
Luminance	L	cd/m <sup>2</sup>	6,908E+05	--
Illuminance	E	lx	1807	--
Supplementary information:--				

Attachment No. 7

Photo documentation



Figure 1: Whole view

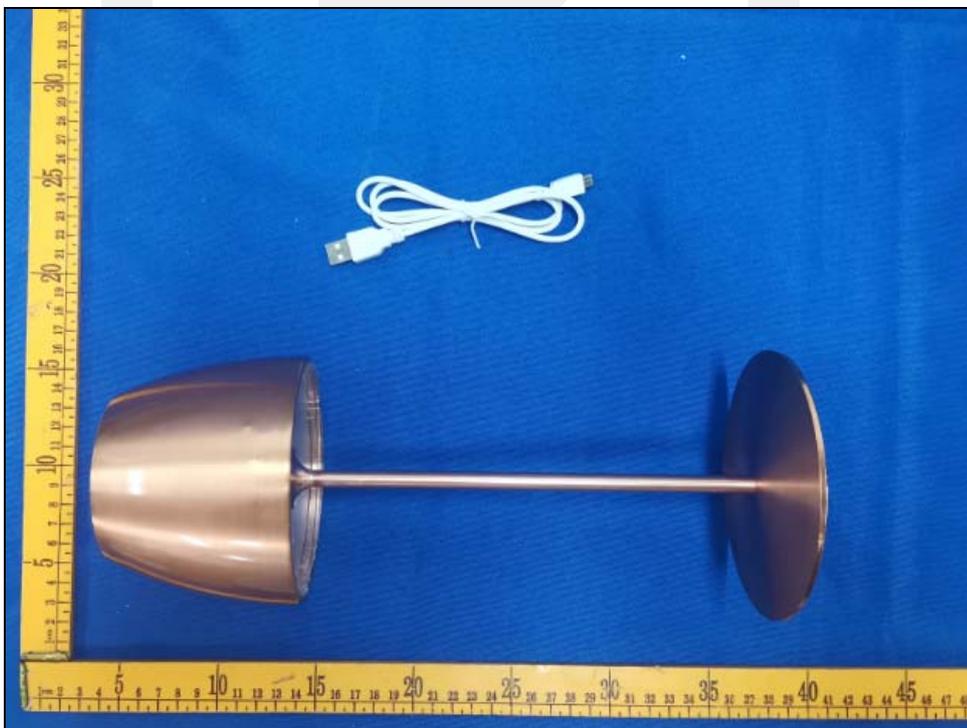


Figure 2: Overview for model PBG-1230, Sally

Attachment No. 7

Photo documentation



Figure 3: Overview for model PBG-1230, Sally



Figure 4: Bottom view for model PBG-1230, Sally

Attachment No. 7

Photo documentation



Figure 5: USB port on lamp



Figure 6: Separated view for model PBG-1230, Sally

Attachment No. 7

Photo documentation



Figure 7: Internal view for model PBG-1230, Sally

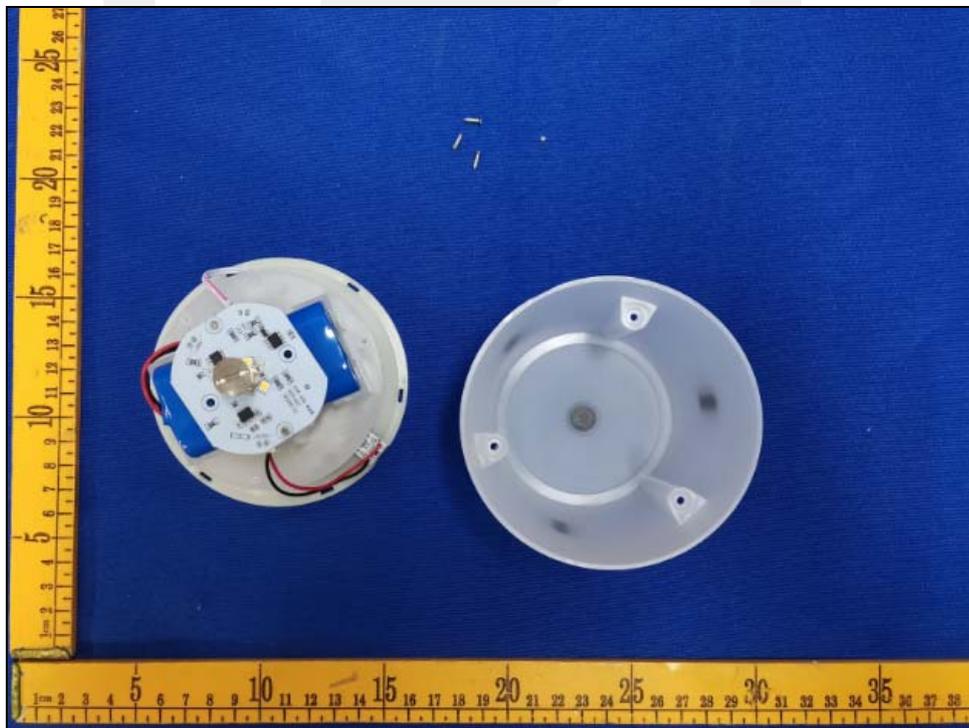


Figure 8: Internal view of model PBG-1230, Sally

Attachment No. 7

Photo documentation

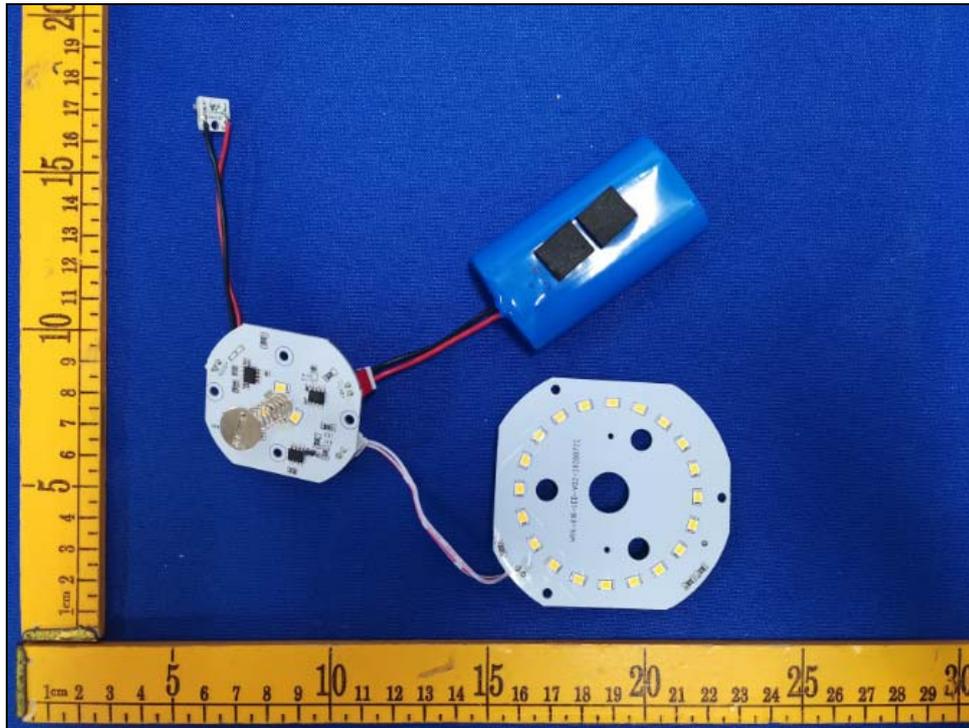


Figure 9: Internal view of model PBG-1230, Sally

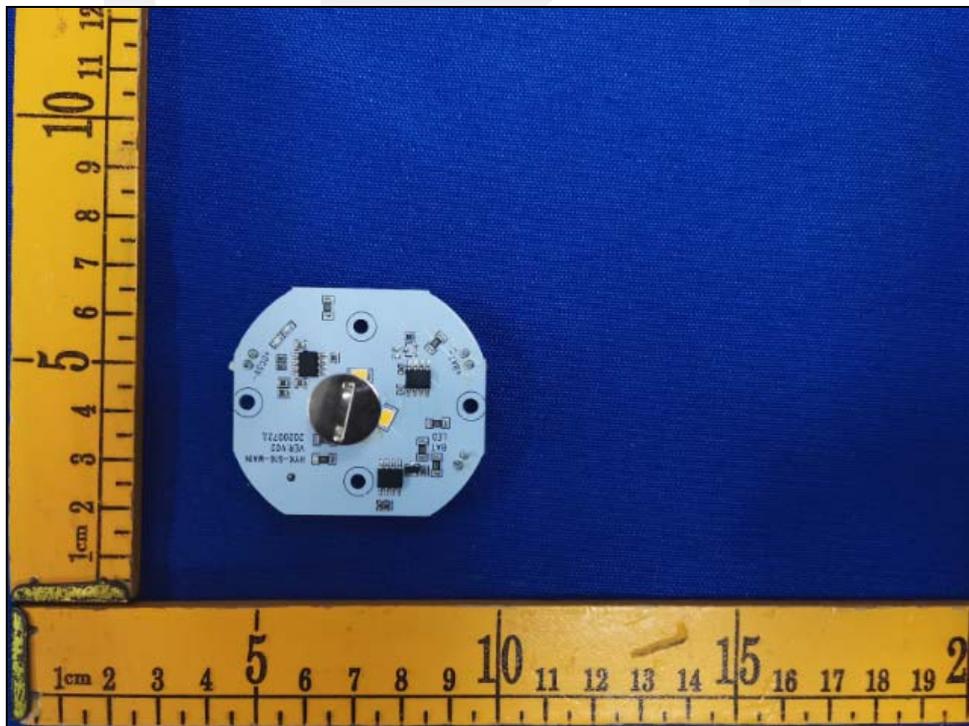


Figure 10: Top view of touch switch PCB

Attachment No. 7

Photo documentation

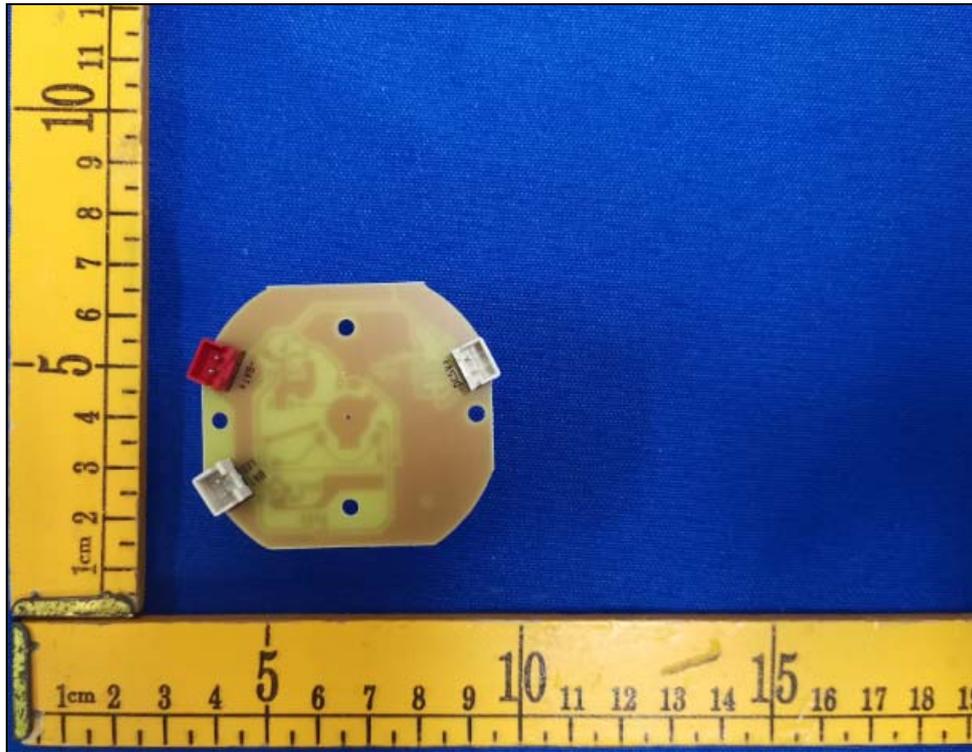


Figure 11: Bottom view of touch switch PCB

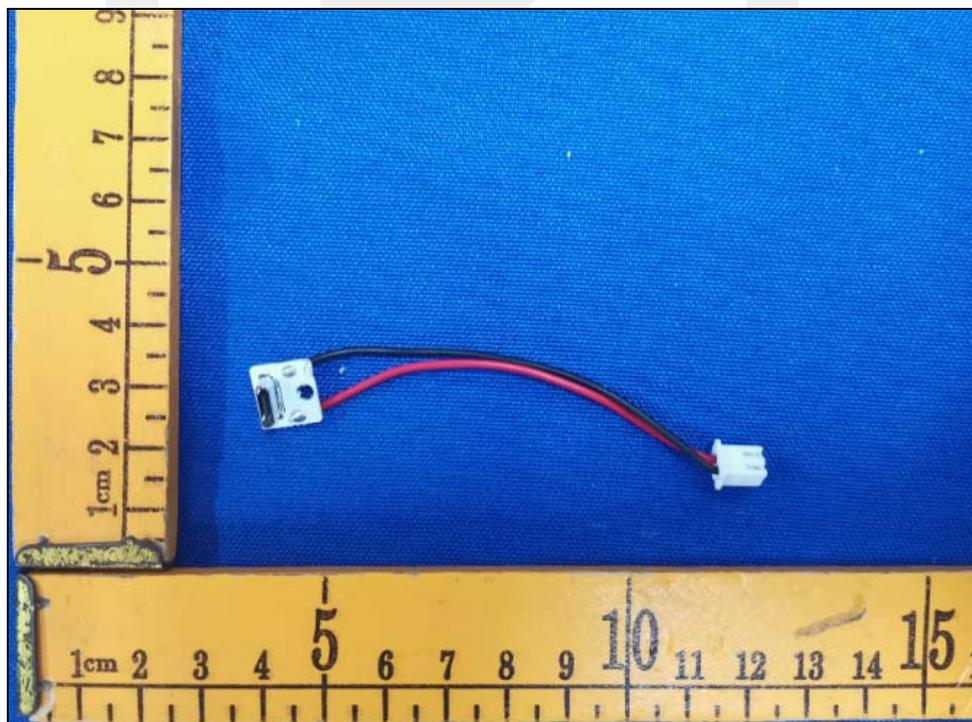


Figure 12: Top view of USB port PCB

Attachment No. 7

Photo documentation

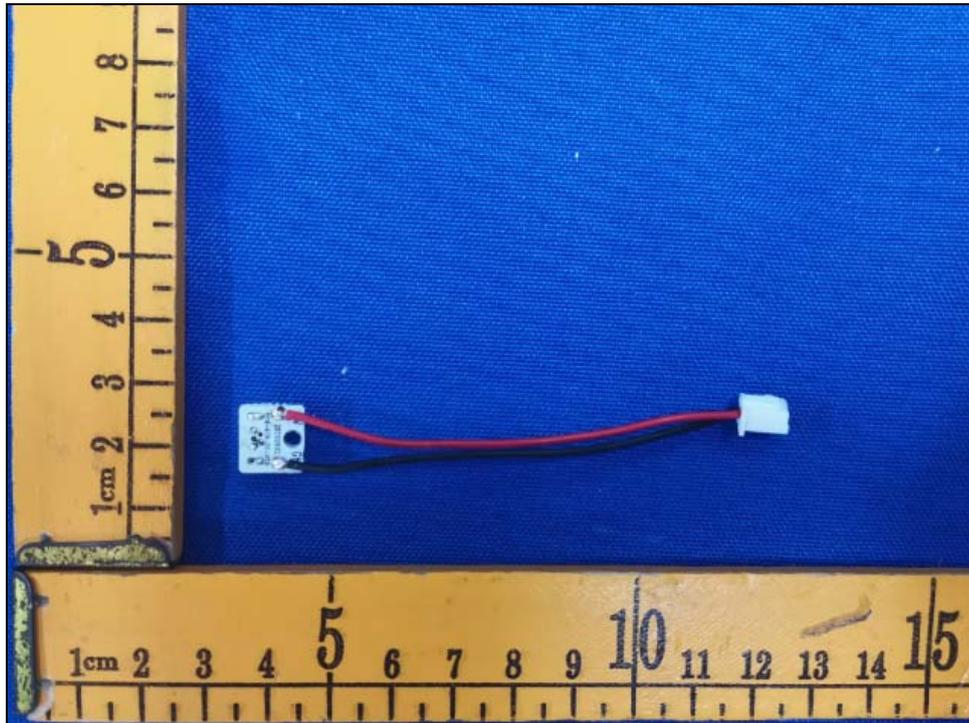


Figure 13: Bottom view of USB port PCB

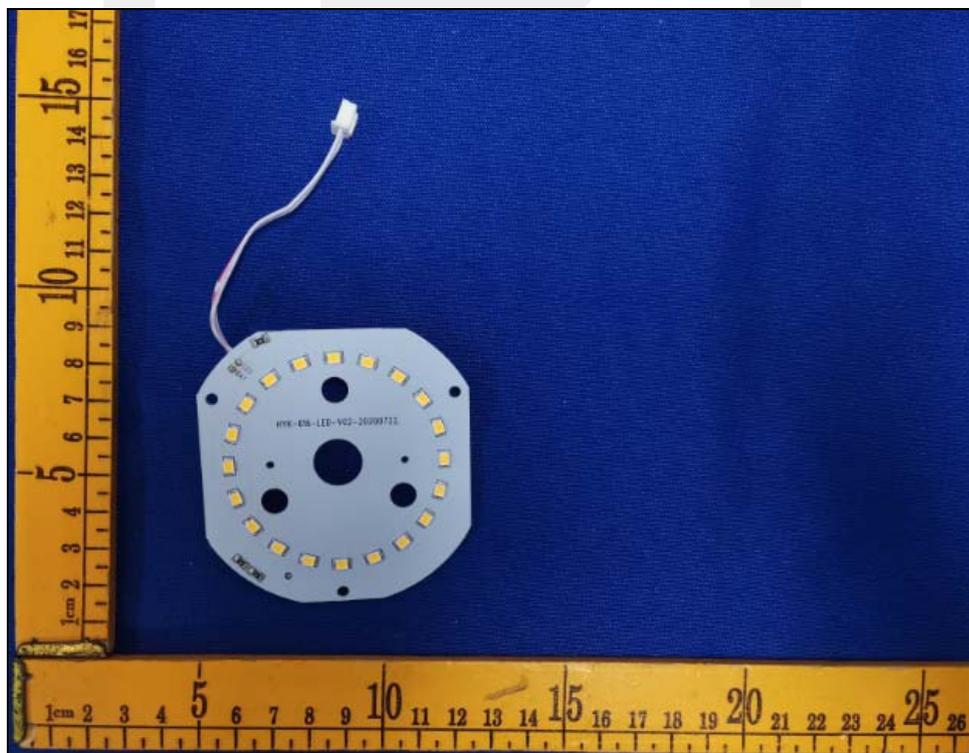


Figure 14: Top view of LED board

Attachment No. 7

Photo documentation

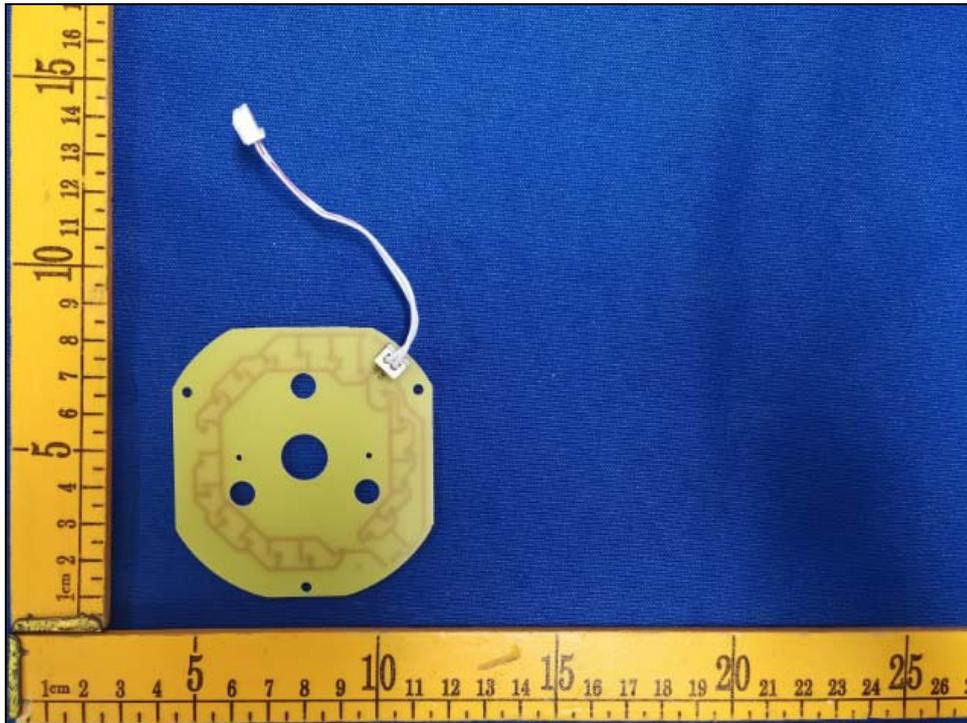


Figure 15: Bottom view of LED board

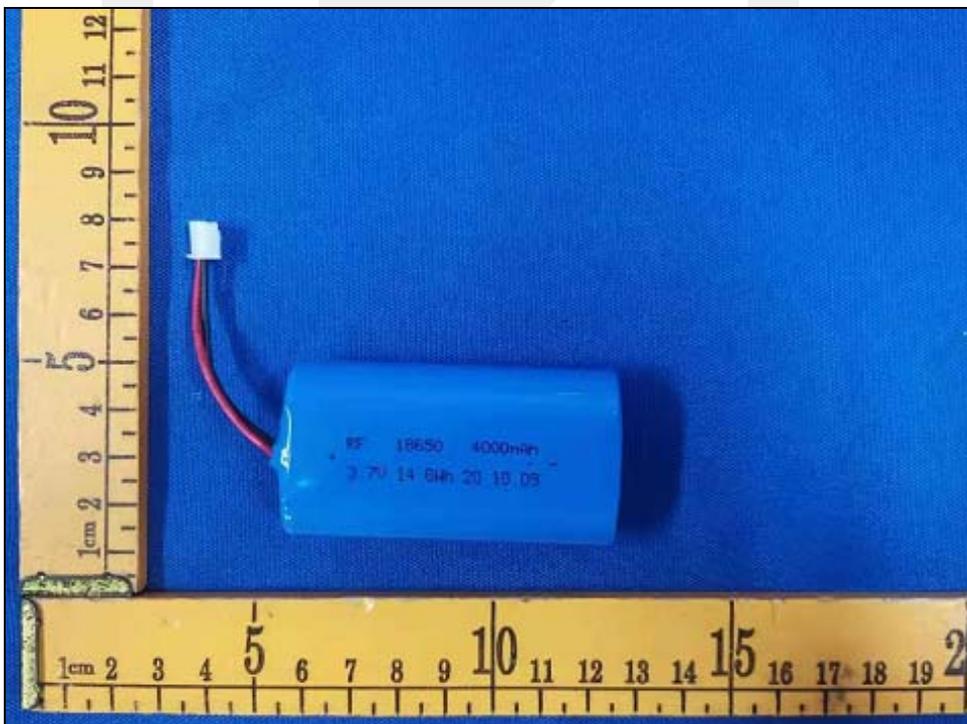


Figure 16: Battery package

Attachment No. 7

Photo documentation



Figure 17: USB wire

\*\*\*End of Report\*\*\*

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