

Test Report issued under the responsibility of:



TEST REPORT
IEC 60598-2-4
Luminaires, Part 2: Particular requirements
Section 4: Portable general purpose luminaires

Report Number : SHES200100091201

Date of issue..... : 2020-04-23

Total number of pages : 36

Name of Testing Laboratory preparing the Report : SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Applicant's name..... : Bestway (Hongkong) International Ltd.

Address..... : Suite 713, 7/Floor, East Wing, Tsim Sha Tsui Centre, 66 Mody Road, Kowloon, Hongkong

Test specification:

Standard : IEC 60598-2-4:2017 used in conjunction with IEC 60598-1:2014, AMD1:2017

Test procedure : SGS CSTC

Non-standard test method : N/A

Test Report Form No...... : IEC60598_2_4H

Test Report Form(s) Originator.... : UL(US)

Master TRF..... : 2020-02-14

Copyright © 2020 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

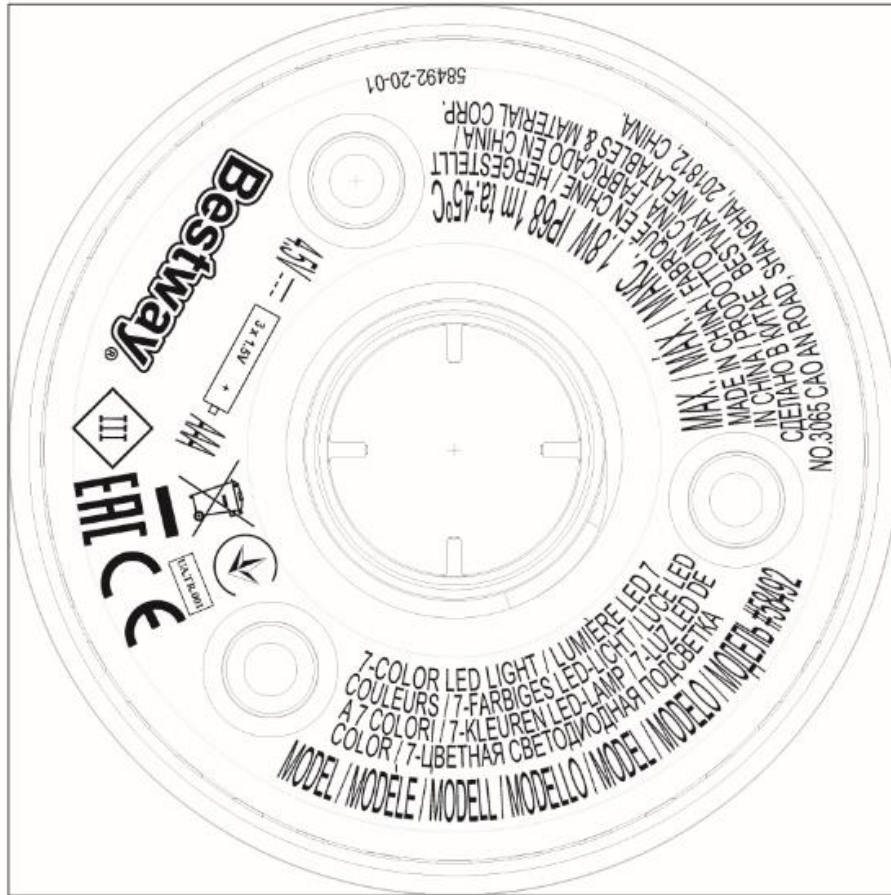
Test item description..... :	LED Light	
Trade Mark..... :	BESTWAY	
Manufacturer..... :	Same as applicant	
Model/Type reference..... :	58492/60303	
Ratings..... :	4,5 V DC; 1,8 W; IP68 (1m); Class III; ta: 45°C	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/> CB Testing Laboratory:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.	
Testing location/ address.....:	588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China	
Tested by (name, function, signature)..... :	Lisa Li	<i>Lisa Li</i>
Approved by (name, function, signature).. :	Henry Hu	<i>Henry Hu</i>
<input type="checkbox"/> Testing procedure: CTF Stage 1:	N/A	
Testing location/ address.....:	N/A	
Tested by (name, function, signature).....:	N/A	
Approved by (name, function, signature)....:	N/A	
<input type="checkbox"/> Testing procedure: CTF Stage 2:	N/A	
Testing location/ address.....:	N/A	
Tested by (name + signature)	N/A	
Witnessed by (name, function, signature)..:	N/A	
Approved by (name, function, signature)....:	N/A	
<input type="checkbox"/> Testing procedure: CTF Stage 3:	N/A	
<input type="checkbox"/> Testing procedure: CTF Stage 4:	N/A	
Testing location/ address.....:	N/A	
Tested by (name, function, signature).....:	N/A	
Witnessed by (name, function, signature)..:	N/A	
Approved by (name, function, signature)....:	N/A	
Supervised by (name, function, signature) :	N/A	



<p>List of Attachments (including a total number of pages in each attachment): Attachment A: EU group difference (2 pages in total) Attachment B: Pictures (4 pages)</p>	
<p>Summary of testing:</p>	
<p>Tests performed (name of test and test clause): All clause</p>	<p>Testing location: 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.</p>
<p>Summary of compliance with National Differences (List of countries addressed): EU Group difference: Yes</p> <p><input checked="" type="checkbox"/> The product fulfils the requirements of EN 60598-2-4: 2018 EN 60598-1: 2015 /A1: 2018 EN 62493: 2015</p>	
<p>Statement concerning the uncertainty of the measurement systems used for the tests (may be required by the product standard or client)</p> <p><input type="checkbox"/> Internal procedure used for type testing through which traceability of the measuring uncertainty has been established: Procedure number, issue date and title:</p> <p>Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.</p> <p><input checked="" type="checkbox"/> Statement not required by the standard used for type testing <small>(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)</small></p>	

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective National Certification Body that own these marks.



Test item particulars	
Classification of installation and use..... : IP68	
Supply Connection : Battery	
.....	
Possible test case verdicts:	
- 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)	
Testing	
Date of receipt of test item..... : 2020-01-15	
Date (s) of performance of tests : 2020-01-15 to 2020-04-20	
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>This document is issued by the Company subject to its General Conditions of Service, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 1 month only.</p> <p>Clause numbers between brackets refer to clauses in IEC 60598-1</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	

Name and address of factory (ies)..... : Bestway (Nantong) Recreation corp
No. 8 Hui Min West Road, Economic Development
Zone, Rugao, Jiangsu 226500, P.R. China.

General product information and other remarks:

The LED lights were supplied by 3 x AAA battery

The products deemed to comply with EN 62493: 2015.

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.4 (0)	GENERAL TEST REQUIREMENTS		P
4.4 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Section/s:	—
4.4 (0.7)	Information for luminaire design in light sources standards		—
4.4 (0.7.2)	Light source safety standard	EN 62031	—
	Luminaire design in the light source safety standard		P
4.5 (2)	CLASSIFICATION OF LUMINAIRES		P
4.5 (2.2)	Type of protection	Class III	P
4.5 (2.3)	Degree of protection	IP 68	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 checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Classified IPX4 or higher		P
4.5.3 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
4.6 (3)	MARKING		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		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		N/A
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
4.6 (3.3.14)	Symbol for nature of supply		P

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
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		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		N/A
4.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
4.6 (3.4)	Test with water		P
	Test with hexane		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
4.7 (4)	CONSTRUCTION		P
4.7 (4.2)	Components replaceable without difficulty		N/A
4.7 (4.3)	Wireways smooth and free from sharp edges		P
4.7 (4.4)	Lampholders		N/A
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

IEC 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
4.7 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
4.7 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
4.7 (4.7)	Terminals and supply connections		P
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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.7.4)	Terminals other than supply connection		P
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
4.7 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
4.7 (4.9)	Insulating lining and sleeves		N/A
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
4.7 (4.10)	Double or reinforced insulation		N/A
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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
4.7 (4.11)	Electrical connections and current-carrying parts		P
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
4.7 (4.12)	Screws and connections (mechanical) and glands		P
4.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	1,2; Fixed enclosure	P
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
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
4.7 (4.13)	Mechanical strength		P
4.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:		N/A
	- other parts; energy (Nm).....:	0,5	P
	1) live parts		N/A
	2) linings		N/A
	3) protection		P

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	4) covers		P
4.7 (4.13.3)	Straight test finger		N/A
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
4.7 (4.14)	Suspensions, fixings and means of adjusting		N/A
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 ²)		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
4.7 (4.15)	Flammable materials		P
	- glow-wire test 650°C.....	See Test Table 4.15 (13.3.2)	P

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- 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
4.7 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N/A
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
4.7 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
4.7 (4.18)	Resistance to corrosion		N/A
4.7 (4.18.1)	- rust-resistance		N/A
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)	Ignitors compatible with ballast		N/A
4.7 (4.20)	Rough service vibration		N/A
4.7 (4.21)	Protective shield		N/A
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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.21.4)	Impact test on shield		N/A
	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
4.7 (4.24)	Photobiological hazards		P
4.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		P
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
4.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
4.7 (4.26)	Short-circuit protection		N/A
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
4.7 (4.27)	Terminal blocks with integrated screwless earthing contacts		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.28)	Fixing of thermal sensing control		N/A
	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)		N/A
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
4.7 (4.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source	Glued	P
	Live part not accessible after parts have been opened by hand or tools		P
4.7 (4.30)	Luminaires with non-user replaceable light source		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
4.7 (4.31)	Insulation between circuits		P
	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
4.7 (4.31.1)	SELV circuits		P
	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		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	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
4.7 (4.32)	Overvoltage protective devices		N/A
	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		N/A
	Carrier or clips of insulation material or with insulating lining		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3 (-)	Luminaire not overturn at angle 6°		P
	Outdoor use luminaire not overturn at an angle 15°		P
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
4.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		N/A
	Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)	Category II <input type="checkbox"/> Category III <input type="checkbox"/>	—

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
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
4.8 (11.2.2)	Creepage distances for frequency up to 30 kHz.....:	See Test Table 4.7 (11.2) I	N/A
	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
4.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 4.7 (11.2) I	N/A
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P:	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
4.9 (7)	PROVISION FOR EARTHING		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
4.9 (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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	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
4.10 (14)	SCREW TERMINALS		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
4.10 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A
4.11 (5)	EXTERNAL AND INTERNAL WIRING		N/A
4.11 (5.2)	Supply connection and external wiring		N/A
4.11 (5.2.1)	Means of connection.....		N/A
	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.....		N/A
	Nominal cross-sectional area (mm ²).....		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
4.11 (5.2.3)	Type of attachment, X, Y or Z		N/A
4.11 (5.2.5)	Type Z not connected to screws		N/A
4.11 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
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:		N/A
	- covering protected from abrasion		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
4.11 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	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 ≤ 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		N/A
	Wire ends tinned: no cold flow		N/A
4.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
4.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	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
4.11 (5.3)	Internal wiring		N/A
4.11 (5.3.1)	Internal wiring of suitable size and type		N/A
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- 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 ²)		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		N/A
	Cross-sectional area (mm ²)		N/A
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		N/A
4.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
4.11 (5.3.2)	Sharp edges etc.		N/A
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
	Wire ends tinned: no cold flow		N/A
4.11 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	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 ≤ 2 m and conductor $\geq 0,5$ mm ²		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
4.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	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
	- 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:		N/A
	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:		N/A
	- nominal voltage (V)		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
4.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
4.12 (8.2.5)	Compliance with the standard test finger or relevant probe		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.12 (8.2.6)	Covers reliably secured		P
4.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 µF not exceed 50 V 1 min after disconnection		P
	Portable luminaire with capacitor > 0,1 µF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 µF (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
4.13 (12)	ENDURANCE TEST AND THERMAL TEST		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		—
4.13 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	See Annex 2 for lamp used	—
	Controlgear if separate and not supplied.....	See Annex 2 for controlgear used	—
4.13 (12.3)	Endurance test:		P
	a) mounting-position	Normal	—
	b) test temperature (°C).....	55	—
	c) total duration (h)	240	—
	d) supply voltage (V).....	3 x 1,5 V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)		—
	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)	P
4.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
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
	- track-mounted luminaires		N/A
4.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
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"/>	—
	- 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°)		N/A
4.14 (9)	RESISTANCE TO DUST AND MOISTURE		P
4.14 (-)	If IP > IP 20 the order of tests as specified in clause 4.12		P
4.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP.....	IP68 (1m)	—
	- mounting position during test	Normal position	—
	- fixing screws tightened; torque (Nm).....	0,8	—
	- tests according to clauses	9.2.2 and 9.2.9	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		P
	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		P
	g) no damage of protective shield or glass envelope		P
4.14 (9.3)	Humidity test 48 h		P
4-14 (-)	Portable luminaire for outdoor use tested in the most unfavourable of the overturned positions likely to occur		P
4.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		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	Covered by metal foil	—
	Insulation resistance (MΩ)		—
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface	> 2 MΩ	P
	- between current-carrying parts and metal parts of the luminaire.....		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
	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

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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	500 V	P
	- between current-carrying parts and metal parts of the luminaire.....:		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
	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
4.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		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)	N/A

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

4.7 (11.2)	TABLE I: Creepage distances and clearances						N/A
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						N/A
	Applicable part of IEC 60598-1 Table 11.1A*, 11.1B* and 11.2*						N/A
	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:							
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.							

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

4.7 (11.2)	TABLE II: Creepage distances and clearances						N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages							
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							
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:							
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)		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Enclosure	See annex 1	75	0,8	
Battery box	See annex 1	125	1,91	
LED cover	See annex 1	75	0,9	
PCB	See annex 1	125	1,1	

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

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	See annex 1	15	No	0	P
Battery box	See annex 1	15	No	0	P
Supplementary information: N/A					

4.15c (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)				P
Glow wire temperature		650°C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
LED cover	See annex 1	No	0	P	
Battery box	See annex 1	No	0	P	
Supplementary information: N/A					

4.15d (13.4)	TABLE: Proof tracking test (IEC 60112)				N/A
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

IEC 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 ¹⁾
Black ring	C	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries	V-0 150 °C	EN60598-2-4	Tested with appliance UL E231325
Plastic enclosure	C	FORMOSA CHEMICALS& FIBRP PLASTICS DIV	AG15E1	HB, 60 °C	EN60598-2-4	Tested with appliance UL E162823
LED cover	C	Covestro Deutschland AG [PC Resins]	FR6005 + (z)	PC, V-1, 105°C, Min.thickness: 1,2mm	EN60598-2-4	Tested with appliance UL E41613
Battery box	C	HANWHA TOTAL PETROCHEMIC A L	HJ730+	HB, 115 °C	EN60598-2-4	Tested with appliance UL E140331
PCB	C	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-68(G)F	V-1	EN60598-2-4	Tested with appliance UL E141940

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

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

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

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12	P	
	Type reference	58492	—
	Lamp used.....	LED module	—
	Lamp control gear used	-	—
	Mounting position of luminaire.....	Normal operation	—
	Supply wattage (W)	-	—
	Supply current (A).....	-	—
	Temperatures in test 1 - 4 below are corrected for ta (°C)	45	—
	- abnormal operating mode	Short circuit	—
4.12 (12.4)	- test 1: rated voltage	-	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	3 x 1,5 V (battery supplied)	—
	- 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.....	3 x 1,5 V (battery supplied)	—

Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Enclosure	45	—	49,6	—	90	—	—
LED cover	45	—	51,1	—	90	—	—
PCB	45	—	53,0	—	90	—	—
Battery box	45	—	53,2	—	90	—	—
Mounting surface	45	—	46,1	—	90	45,4	90

Supplementary information: N/A

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

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		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 ²)..... :		—
(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

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

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		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

IEC 60598-2-4											
Clause	Requirement + Test									Result - Remark	Verdict
	Terminal size and rating										N/A
15.6.2	Mechanical tests										N/A
(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										
	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:											

-End of Main Report-

Page 1 of 2	Report No.: SHES200100091201
IEC60598_2_4S2 ATTACHMENT	

Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 60598-2-4 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 4: Portable general purpose luminaires			
Differences according to..... EN 60598-2-4:2018 used in conjunction with EN 60598-1:2015 + A1:2018			
Annex Form No..... EU_GD_IEC60598_2_4H Annex Form Originator SGS Master Annex Form..... 2020-04			
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			

	CENELEC COMMON MODIFICATIONS (EN)	P
--	--	----------

4.5 (3)	MARKING		P
4.11.4	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

4.6 (4)	CONSTRUCTION		P
4.6 (4.11.6)	Electro-mechanical contact systems		N/A

4.10 (5)	EXTERNAL AND INTERNAL WIRING		P
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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
 NO.588 West Jindu Road, Songjiang District, Shanghai, China 201612 t (86-21) 61915666 f (86-21) 61915678 www.sgsgroup.com.cn
 中国·上海·松江区金都西路588号 邮编: 201612 t (86-21) 61915666 f (86-21) 61915678 e sgs.china@sgs.com

4.11.4	For class I and class II portable luminaires for outdoor use, non-detachable flexible cables or cords shall be not lighter than cords for the type H05RN-F		N/A
--------	--	--	-----

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

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A
4.4.4	DK: In Denmark, luminaires for outdoor use shall be classified as class II or class III		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
(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

---End of Test Report---

Attachment B

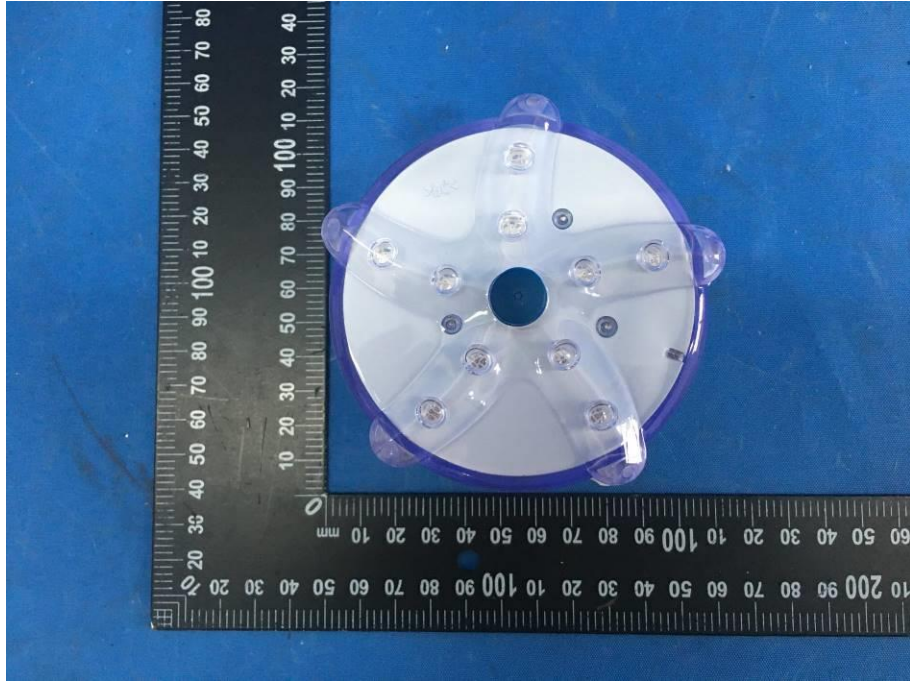
Photo documentation

Type of equipment, model: See main report

Details of: Overview

View:

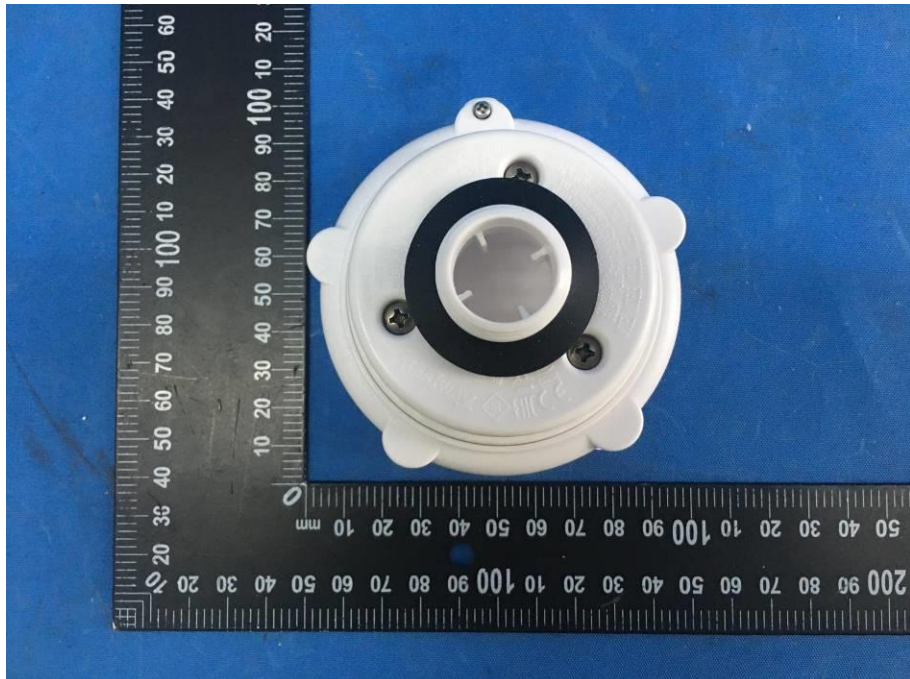
- general
- front
- rear
- right
- left
- top
- bottom



Details of: Overview

View:

- general
- front
- rear
- right
- left
- top
- bottom

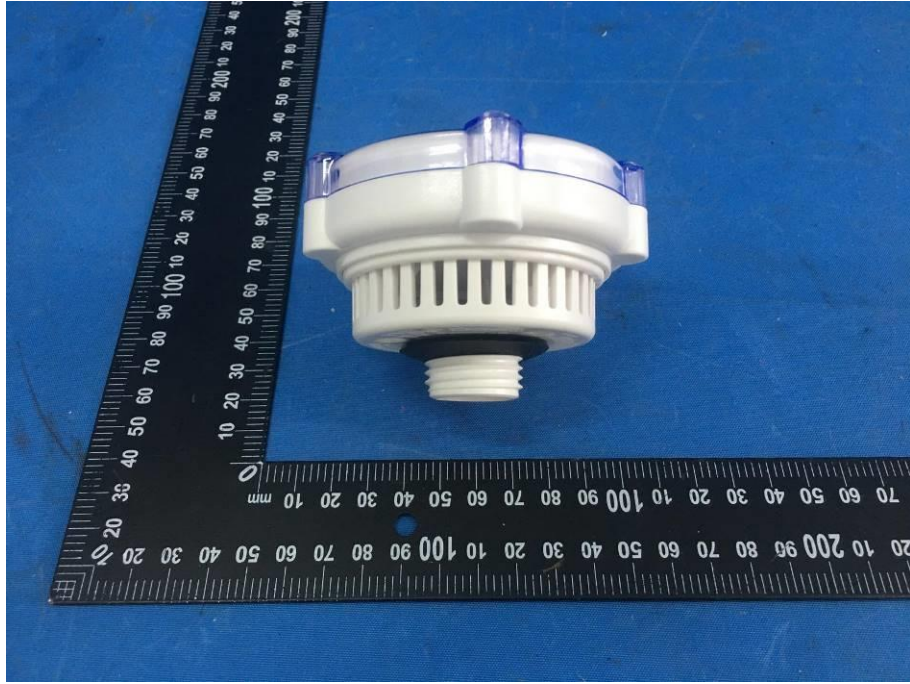


Attachment B

Details of: Overview

View:

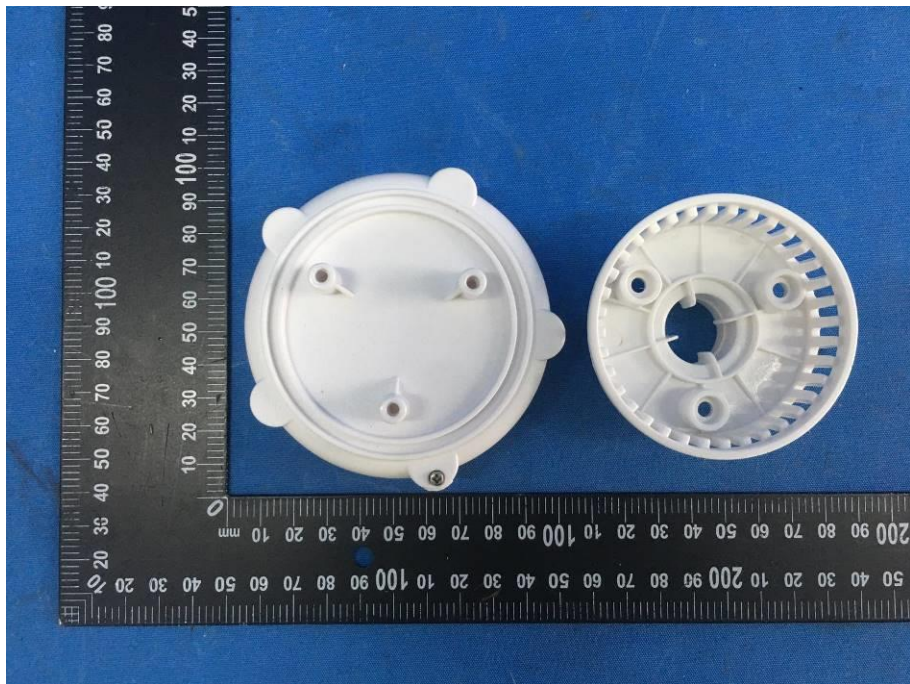
- general
- front
- rear
- right
- left
- top
- bottom



Details of: Internal view

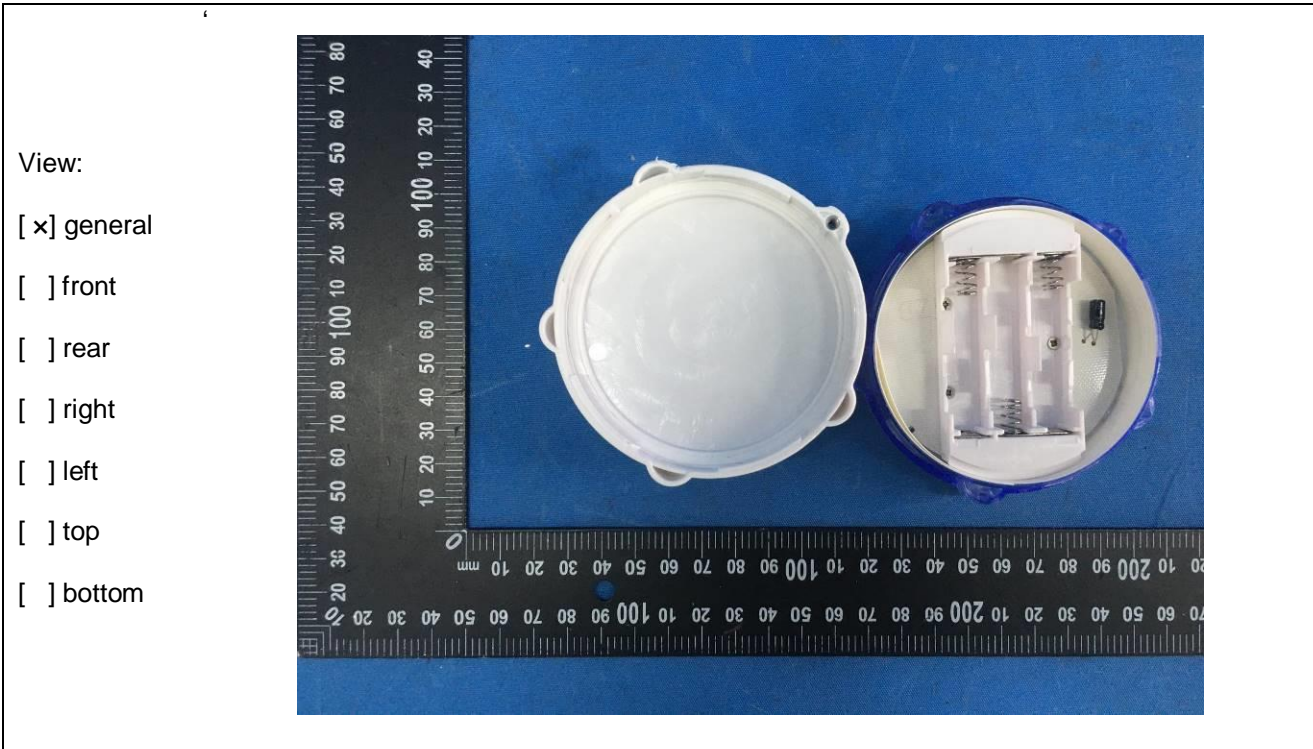
View:

- general
- front
- rear
- right
- left
- top
- bottom

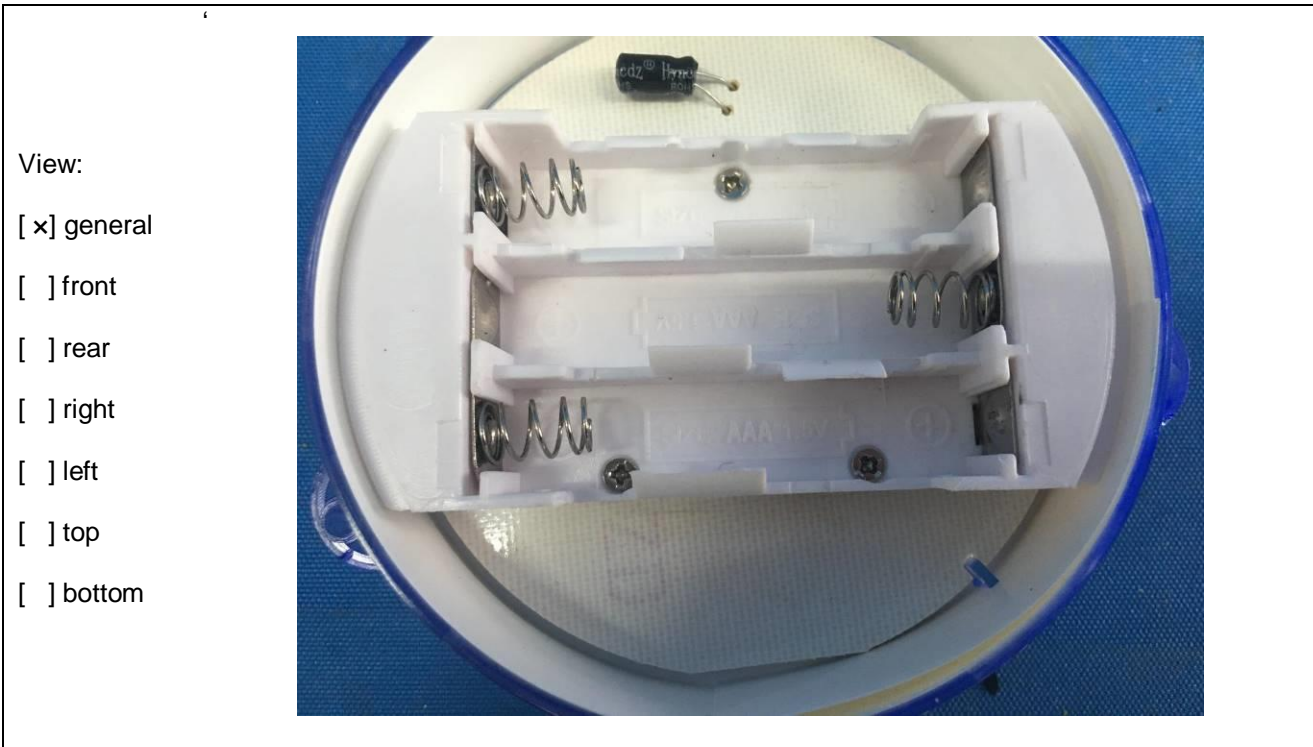


Attachment B

Details of: Internal view

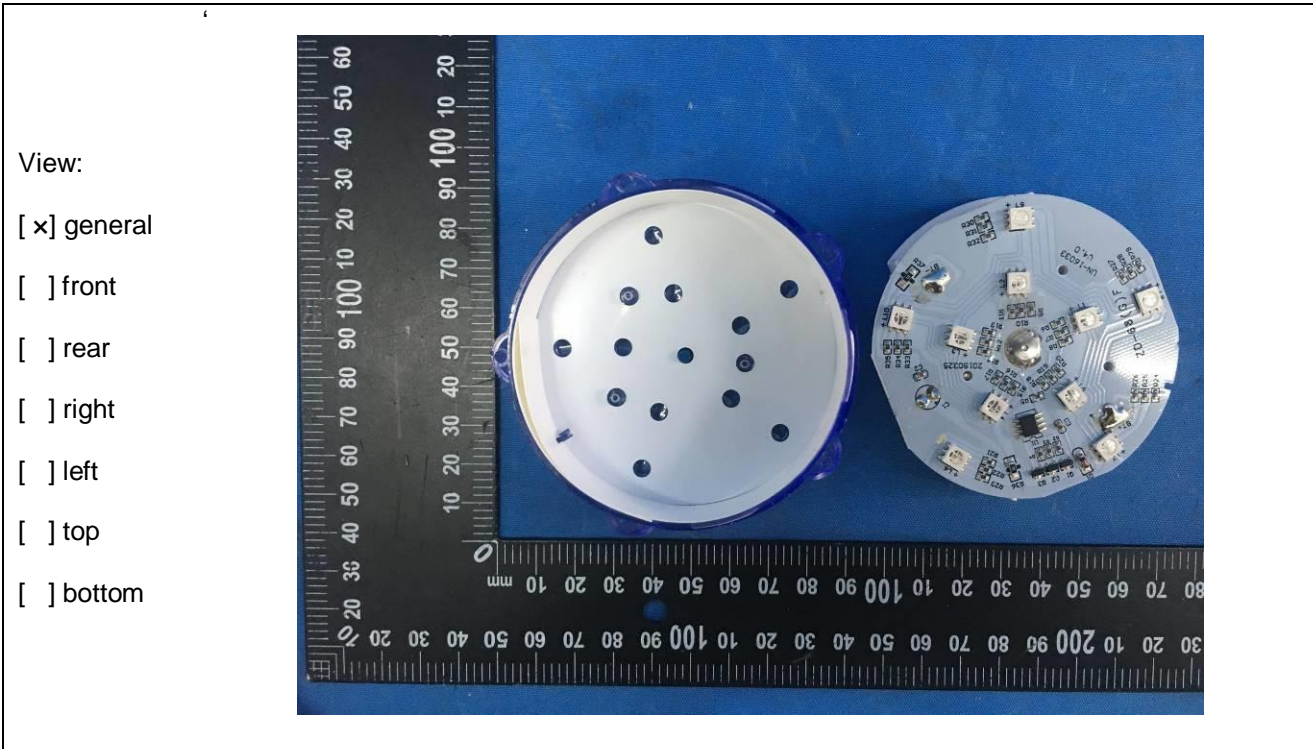


Details of: Battery box



Attachment B

Details of: Internal view



Details of: LED Module

