Test Report issued under the responsibility of:

TEST REPORT
IEC 60598-2-18
Luminaires
Part 2: Particular requirements
Section 18: Luminaires for swimming pools and similar applications

Report Number. ..... :	SHES190101045001
Date of issue ..... :	2019-02-28
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 60598-2-18:1993/AMD1:2011 used in conjunction with IEC 60598-1:2014
Test procedure ..... :	SGS CSTC
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60598_2_18D
Test Report Form(s) Originator .... :	Intertek Semko AB
Master TRF ..... :	2017-02

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.....:	-
Manufacturer.....:	Same as applicant
Model/Type reference.....:	58471
Ratings.....:	4,2 V; Max. 0,4 W; IP68 (1m); ta: 45 ℃; Class III

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**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	Lisa Li
Approved by (name, function, signature)...:		Henry HU	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

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

Attachment A: European Group Differences and National Differences (2 pages)

Attachment B: Photos (4 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests according to requirements from customer	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Summary of compliance with National Differences:

List of countries addressed

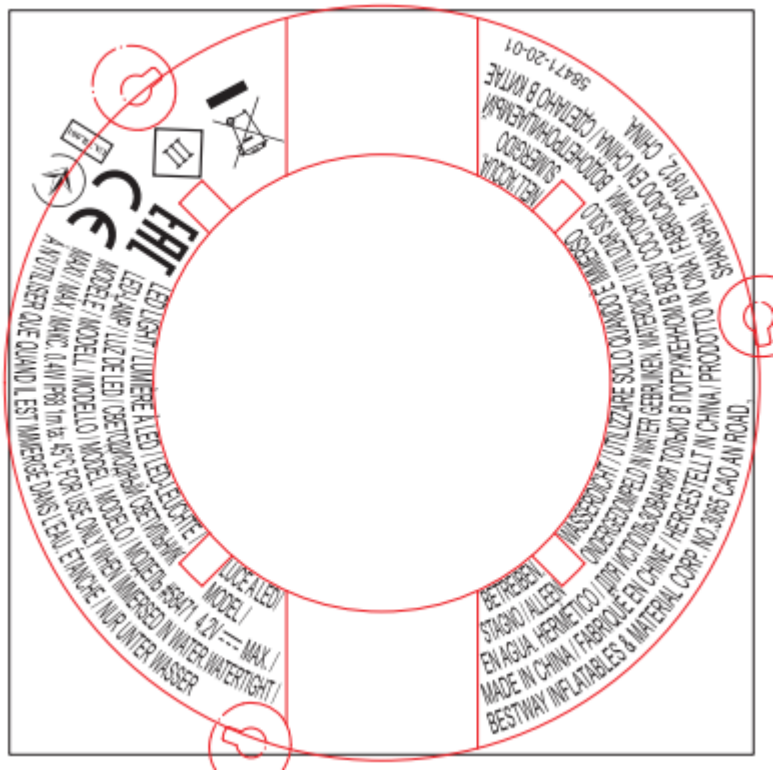
European Group Differences: Yes

☒ **The product fulfils the requirements of**

EN 60598-2-18: 1994 + A1: 2012
EN 60598-1: 2015
EN 62493: 2015

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.....:	Use only when immersed in water
Supply Connection.....:	
.....:	
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 .....:	2019-01-25
Date (s) of performance of tests.....:	2019-01-25 to 2019-02-26

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

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.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 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 ..... :	☐ **Yes** ☒ **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 Zoe, Rugao, Jiangsu 226500, P.R.China

General product information:

The luminaire used only when immersed in water, it is supplied by water pressure.

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.2 (0)	**GENERAL TEST REQUIREMENTS**		P
18.2 (0.1)	Information for luminaire design considered ..... :	Yes ☒ No ☐ Lamp standard: IEC 62031	—
18.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—
18.4 (2)	**CLASSIFICATION**		P
18.4 (2.2)	Type of protection ..... :	Class III	P
18.4 (2.3)	Degree of protection..... :	IP68 (1m)	P
18.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ..... :	Yes ☒ No ☐	—
18.4 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—
18.4.1 (-)	Class III and external and internal voltages ≤ 12V AC or ≤ 30V DC		N/A
18.4.2 (-)	Degree of protection:		P
18.4.2.1 (-)	Parts in contact with water IP X8		P
18.4.2.2 (-)	Parts not in contact with water at least IP 54		N/A
18.4.3 (-)	Classification of mounting, lamp changing and supply connection:		N/A
18.4.3.1 (-)	Category A. Supply connection and lamp replacement on the side not in contact with water ... :	Yes ☐ No ☒	—
18.4.3.2 (-)	Category B. Lamp replacement on the side in contact with water ..... :	Yes ☐ No ☒	—
18.4.3.3 (-)	Category C. Luminaire removed from water for lamp replacement..... :	Yes ☐ No ☒	—
18.5 (3)	**MARKING**		**P**
18.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
18.5 (3.3)	Additional information		P
	Language of instructions		P
18.5 (3.3.1)	Combination luminaires		N/A
18.5 (3.3.2)	Nominal frequency in Hz		N/A
18.5 (3.3.3)	Operating temperature		N/A
18.5 (3.3.4)	Symbol or warning notice		N/A
18.5 (3.3.5)	Wiring diagram		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.5 (3.3.6)	Special conditions		N/A
18.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
18.5 (3.3.8)	Limitation for semi-luminaires		N/A
18.5 (3.3.9)	Power factor and supply current		N/A
18.5 (3.3.10)	Suitability for use indoors		N/A
18.5 (3.3.11)	Luminaires with remote control		N/A
18.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
18.5 (3.3.13)	Specifications of protective shields		N/A
18.5 (3.3.14)	Symbol for nature of supply		P
18.5 (3.3.15)	Rated current of socket outlet		N/A
18.5 (3.3.16)	Rough service luminaire		N/A
18.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
18.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
18.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
18.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
18.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	SELV	N/A
	Cautionary symbol		N/A
18.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
18.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
18.5.1 (-)	Marking of luminaires for use only in water		P
18.5.2 (-)	Marking of luminaires for use only with safety isolating transformer		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
	Output in voltamperes on the luminaire or in leaflet with the luminaire		N/A
18.5.3 (-)	Installation instructions with the luminaire		P
18.5.4 (-)	Instruction provide advice regard to corrosion		P
	Information of correct installation according IEC 364-7-702		P
18.6 (4)	**CONSTRUCTION**		P
18.6 (4.2)	Components replaceable without difficulty		N/A
18.6 (4.3)	Wireways smooth and free from sharp edges		P
18.6 (4.4)	**Lampholders**		**N/A**
18.6 (4.4.1)	Integral lampholder		N/A
18.6 (4.4.2)	Wiring connection		N/A
18.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
18.6 (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
18.6 (4.4.5)	Peak pulse voltage		N/A
18.6 (4.4.6)	Centre contact		N/A
18.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
18.6 (4.4.8)	Lamp connectors		N/A
18.6 (4.4.9)	Caps and bases correctly used		N/A
18.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
18.6 (4.5)	**Starter holders**		**N/A**
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
18.6 (4.6)	**Terminal blocks**		**N/A**
	Tails		N/A
	Unsecured blocks		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.6 (4.7)	**Terminals and supply connections**		**N/A**
18.6 (4.7.1)	Contact to metal parts		N/A
18.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
18.6 (4.7.3)	Terminals for supply conductors		N/A
18.6 (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
18.6 (4.7.4)	Terminals other than supply connection		N/A
18.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
18.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
18.6 (4.8)	**Switches**		**P**
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
18.6 (4.9)	**Insulating lining and sleeves**		**N/A**
18.6 (4.9.1)	Retainment		N/A
	Method of fixing ..... :		N/A
18.6 (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
18.6 (4.10)	**Double or reinforced insulation**		**N/A**
18.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
18.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
18.6 (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
18.6 (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
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
18.6 (4.11)	**Electrical connections and current-carrying parts**		**P**
18.6 (4.11.1)	Contact pressure		P
18.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
18.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
18.6 (4.11.4)	Material of current-carrying parts		P
18.6 (4.11.5)	No contact to wood or mounting surface		P
18.6 (4.11.6)	Electro-mechanical contact systems		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.6 (4.12)	**Screws and connections (mechanical) and glands**		**P**
18.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	Fixed enclosure; 0,4	P
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
18.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
18.6 (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
18.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
18.6 (4.13)	**Mechanical strength**		**P**
18.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :		N/A
	- other parts; energy (Nm)..... :	0,7	P
	1) live parts		N/A
	2) linings		N/A
	3) protection		N/A
	4) covers		P
18.6 (4.13.3)	Straight test finger		N/A
18.6 (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
18.6 (4.13.6)	Tumbling barrel		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
18.6 (4.14)	**Suspensions, fixings and means of adjusting**		**N/A**
18.6 (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) ..... :		N/A
	Metal rod. diameter (mm) ..... :		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
18.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
18.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken ..... :		N/A
	- electric strength test afterwards		N/A
18.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
18.6 (4.14.5)	Guide pulleys		N/A
18.6 (4.14.6)	Strain on socket-outlets		N/A
18.6 (4.15)	**Flammable materials**		**P**
	- glow-wire test 650°C ..... :	See Test Table 18.15 (13.3.2)	P
	- spacing ≥30 mm		N/A
	- 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

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.6 (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
18.6 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear ..... :	(compliance with Section 12)	P
18.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
18.6 (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
18.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
18.6 (4.17)	**Drain holes**		**N/A**
	Clearance at least 5 mm		N/A
18.6 (4.18)	**Resistance to corrosion**		**N/A**
18.6 (4.18.1)	- rust-resistance		N/A
18.6 (4.18.2)	- season cracking in copper		N/A
18.6 (4.18.3)	- corrosion of aluminium		N/A
18.6 (4.19)	Ignitors compatible with ballast		N/A
18.6 4.20)	Rough service vibration		N/A
18.6 (4.21)	**Protective shield**		**N/A**
18.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
18.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
18.6 (4.21.3)	No direct path		N/A

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
18.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	See Test Table 18.15 (13.3.2)	N/A
18.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
18.6 (4.23)	Semi-luminaires comply Class II		N/A
18.6 (4.24)	**Photobiological hazards**		**P**
18.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
18.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778 ..... :	RG0	—
	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		P
	- 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
18.6 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
18.6 (4.26)	**Short-circuit protection**		**N/A**
18.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
18.6 (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
18.6 (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

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
18.6 (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) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
18.6 (4.29)	**Luminaires with non-replaceable light source**		**P**
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
18.6 (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
18.6 (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
18.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/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

IEC 60598-2-18			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	Plugs and socket-outlets does not have protective conductor contact		N/A
18.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ 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
18.6 (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
18.6 (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

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Clause	Requirement + Test	Result - Remark	Verdict
18.6.1 (-)	Impact test with the energy 0,7 Nm of parts in contact with water		N/A
18.6.2 (-)	Corrosion test of parts in contact with water		N/A
18.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		N/A
18.7(11.2)	Creepage distances and clearances ..... :	See Table 18.7 (11.2)	N/A
	Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)	Category II ☐ Category III ☐	—
18.9 (14)	**SCREW TERMINALS**		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
18.9.1 (-)	Allow conductors 1,5 – 4 mm^2		N/A
18.9 (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
18.9.1 (-)	Allow conductors 1,5 – 4 mm2		N/A
18.10 (5)	**EXTERNAL AND INTERNAL WIRING**		P
18.10 (5.2)	**Supply connection and external wiring**		**N/A**
18.10 (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
18.10 (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
18.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
18.10 (5.2.5)	Type Z not connected to screws		N/A
18.10 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- adequate degree of protection		N/A
18.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
18.10 (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
18.10 (5.2.9)	Locking of screwed bushings		N/A
18.10 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- 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
18.10 (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
18.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
18.10 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
18.10 (5.2.11)	External wiring passing into luminaire		N/A
18.10 (5.2.12)	Looping-in terminals		N/A
18.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
18.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
18.10 (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
18.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
18.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
18.10 (5.3)	**Internal wiring**		**P**
18.10 (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
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
18.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²)..... :		N/A
	Insulation thickness		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Extra insulation added where necessary		N/A
18.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
18.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
18.10 (5.3.1.4)	Conductors without insulation		N/A
18.10 (5.3.1.5)	SELV current-carrying parts		N/A
18.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
18.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
18.10 (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
18.10 (5.3.4)	Joints and junctions effectively insulated		N/A
18.10 (5.3.5)	Strain on internal wiring		N/A
18.10 (5.3.6)	Wire carriers		N/A
18.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
18.10.1 (-)	Not connecting leads (tails)		N/A
18.10.2 (-)	No switches in flexible cables or cords		N/A
18.10.3 (-)	Conductors in external cables or cords not less than (mm^2) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
18.10.4 (-)	Provided with non-detachable flexible cable or cord at least equivalent to 60245 IEC 57 in category B luminaire		N/A
18.10.5 (-)	Any non-detachable flexible cable or cord at least equivalent to 60245 IEC 57 in category C luminaire		N/A
18.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
18.11 (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 Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders 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
18.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		P
18.11 (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
18.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
18.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
18.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		P
18.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
18.11 (8.2.6)	Covers reliably secured		P
18.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection		N/A
	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
18.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
18.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 18.13		—
18.12 (12.3)	Endurance test:		P
	- mounting-position..... :	Normal position	—
	- test temperature (°C) ..... :	55	—
	- total duration (h)..... :	240	—
	- supply voltage: Un factor; calculated voltage (V)... :	-	—
	- lamp used..... :	LED module	—
18.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
18.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
18.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
18.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
18.12 (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
18.12 (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
18.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
18.12 (12.7.1)	Luminaire without temperature sensing control		N/A
18.12 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 18.15 (13.2.1)	N/A
18.12 (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 18.15 (13.2.1)	N/A
18.12 (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
18.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link..... :	Yes ☐ No ☐	—
	- manual reset cut-out ..... :	Yes ☐ No ☐	—
	- auto reset cut-out ..... :	Yes ☐ No ☐	—
	- case of abnormal conditions ..... :		—
	- highest measured temperature of fixing point/ exposed part (°C): ..... :		—
	Ball-pressure test: ..... :	See Table 18.15 (13.2.1)	N/A
18.12.1 (-)	Luminaire mounted for most unfavourable temperature		P

18.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**	P
18.13 (-)	If IP > IP 20 the order of tests as specified in clause 18.12	—

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Clause	Requirement + Test	Result - Remark	Verdict
18.13 (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) ..... :		—
	- 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		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	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
18.13 (9.3)	Humidity test 48 h		P
18.13.1 (-)	Thermal shock test precede those of (9)		—
18.13 (-)	Dismantled and reassembled before tests of (9)		—

18.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
18.14 (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..... :	500	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
18.14 (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 ..... :		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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
18.14 (10.3)	Touch current or protective conductor current (mA).:		N/A
18.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
18.15 (13.2.1)	Ball-pressure test ..... :	See Test Table 18.15 (13.2.1)	P
18.15 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 18.15 (13.3.1)	P
18.15 (13.3.2)	Glow-wire test (650°C) ..... :	See Test Table 18.15 (13.3.2)	P
18.15 (13.4)	Proof tracking test (IEC 60112)..... :	See Test Table 18.15 (13.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

18.7 (11.2)	TABLE: Creepage distances and clearances							N/A
	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages							
	Applicable part of IEC 60598-1 Table 11.1* and 11.2*							
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Supplementary information:								
Distance 2:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Supplementary information:								
Distance 3:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Supplementary information:								

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

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Clause	Requirement + Test	Result - Remark	Verdict

18.15 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**	**P**

Allowed impression diameter (mm) ..... :			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Enclosure	See annex 1	75	0,8
PCB	See annex 1	125	1,0
Supplementary information: N/A			

18.15 (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	0	No	0	P
Supplementary information: N/A					

18.15 (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
Enclosure	See annex 1	No	0	P
PCB	See annex 1	No	0	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No) ..... :				Y
Supplementary information: N/A				

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Clause	Requirement + Test	Result - Remark	Verdict

18.15 (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:						

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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)]**
Enclosure	C	COVESTRO DEUTSCHLAND AG [PC RESINS]	2807 + (z)(f1)	PC; HB 2,5 mm	EN 60598-2-18	Tested with appliance UL E41613
Internal wiring	C	NEW SQUARE CO LTD	1571	28 AWG; 80℃ 30 V ac	EN 60598-2-18	Tested with appliance UL E235479
Internal wiring (alternative)	D	SHENZHEN HONGGUANSHENG SCIENCE AND TECHNOLOGY CO LTD	1571	28 AWG; 80℃ 30 V ac	EN 60598-2-18	Tested with appliance UL E465814
LED	C	SHENZHEN BRILLIANT LED TECHNOLOGY CO., LTD	ZJY-500RGBWE	IF = 20 mA; VR = 5 V	EN 60598-2-18	Tested with appliance
LED (alternative)	D	SHENZHEN MAIKE PHOTO-ELECTRIC CO., LTD.	50JCH-RBGC	IF = 20 mA; VR = 5 V	EN 60598-2-18	Tested with appliance
PCB	C	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-68(G)F1	V-0; 130 ℃ 1.0 mm	EN 60598-2-18	Tested with appliance UL E141940
Moto	C	SHENZHEN HUIYUAN GENERATOR CO., Ltd.	2008H	3-25 V AC	EN 60598-2-18	Tested with appliance
Switch	C	ZHEJIANG CHUANGYE ELECTRONICS CO., LTD.	CY-0102	12 V DC, 50 mA	EN 60598-2-18	Tested with appliance

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

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference ..... :	58471	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	-	—
	Mounting position of luminaire ..... :	Normal	—
	Supply wattage (W) ..... :	-	—
	Supply current (A) ..... :	-	—
	Calculated power factor..... :	-	—
	Table: measured temperatures corrected for ta = 45 °C:		P
	- abnormal operating mode ..... :	-	—
	- test 1: rated voltage..... :	-	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	-	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	-	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage ..... :	-	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	-	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Enclosure	45	—	45,3	—	90	—	—
Switch	45	—	46,4	—	For ref.	—	—
Internal wiring	45	—	45,1	—	90	—	—
PCB	45	—	47,0	—	125	—	—
LED	45	—	45,1	—	For ref.	—	—
Moto	45	—	45,1	—	For ref.	—	—
Mounting surface	45	—	45,3	—	90	—	—

Supplementary information: operated by water pressure

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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 (mm²).....:		—
(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 60598-2-18			
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 60598-2-18			
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**									
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
Supplementary information:										

-End of Main Report-

IEC60598_2_18D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 660598-2-18
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Luminaires
Part 2: Particular Requirements
Section 18: Luminaires for swimming pools
and similar applications

Differences according to.....:	EN 60598-2-18:1994/A1:2012 used in conjunction with EN 60598-1:2015
Attachment Form No.....:	EU_GD_IEC60598_2_18D
Attachment Originator .....:	Intertek Semko AB
Master Attachment.....:	2017-02

	CENELEC COMMON MODIFICATIONS (EN)	P

18.5 (3)	**MARKING**		**N/A**
18.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

18.6 (4)	**CONSTRUCTION**		**N/A**
18.6 (4.11.6)	Electro-mechanical contact systems		N/A

18.10 (5)	**EXTERNAL AND INTERNAL WIRING**		**N/A**
18.10 (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
18.10 (5.2.2)	Cables equal to EN 50525		N/A
	Replace table 5.1 – Supply cord		N/A

18.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		**N/A**
18.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

IEC60598_2_18D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		**N/A**
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	GB: Requirements according to United Kingdom Building Regulation		N/A

-End of Attachment A-

Attachment B

Photo documentation

Type of equipment, model: 58471

Details of: Overview:

View:

[×] general

[ ] front

[ ] rear

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Details of: Overview:

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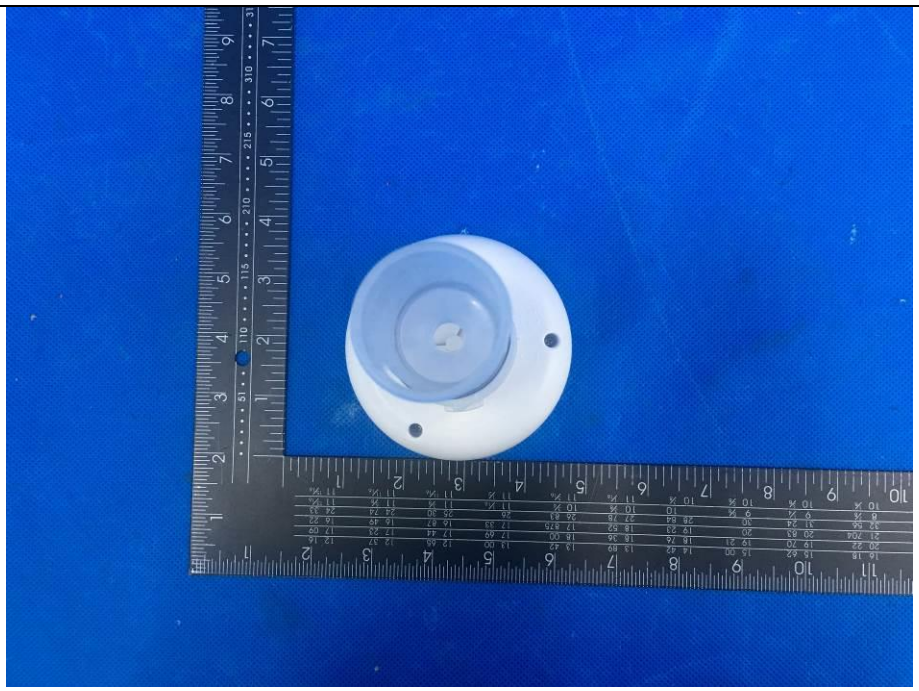

Attachment B

Details of: Overview:

View:

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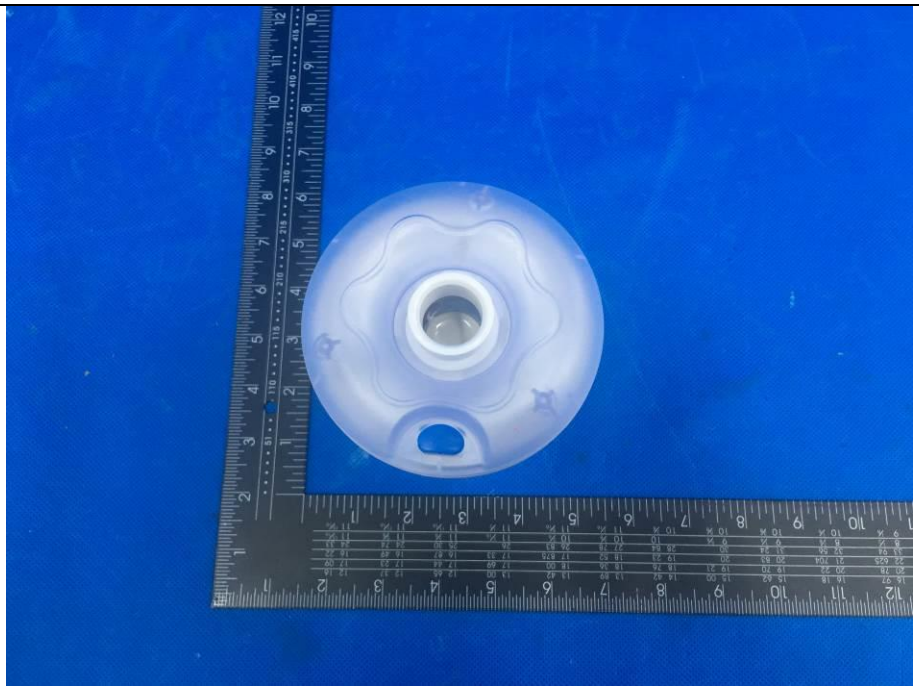

Details of: Internal view:

View:

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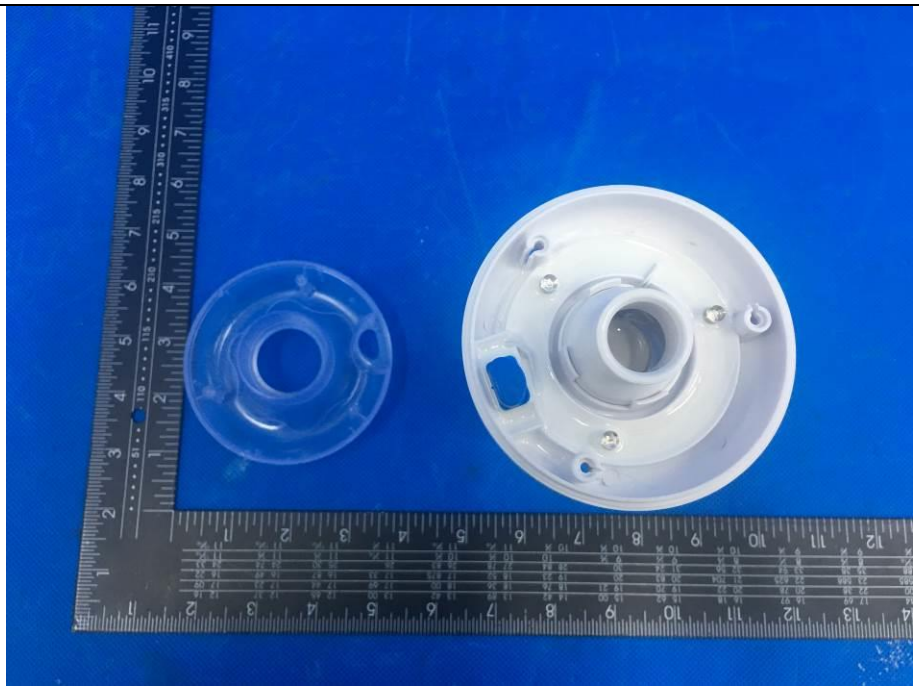

Attachment B

Details of: Internal view:

View:

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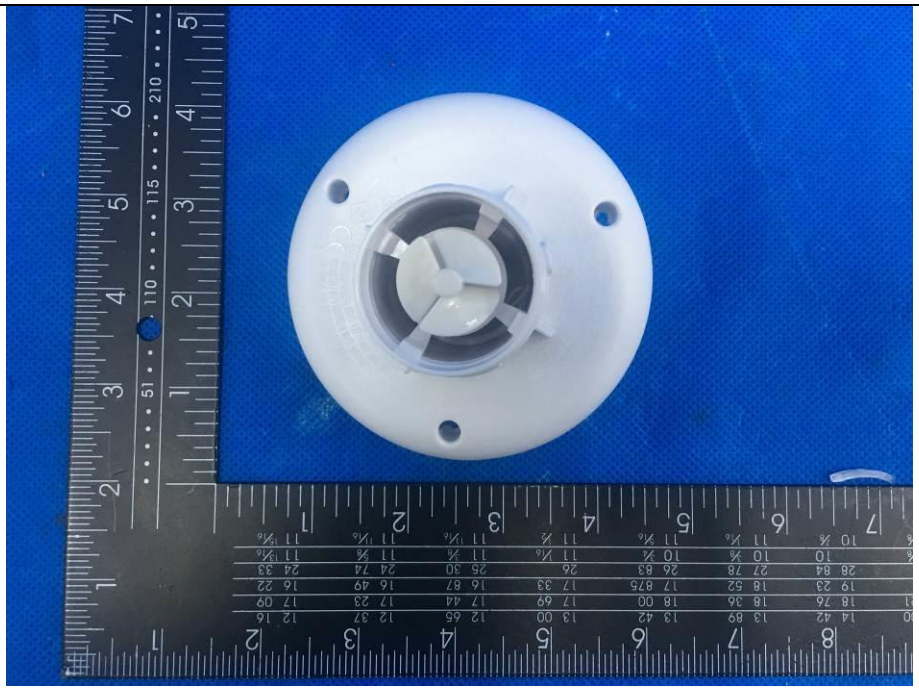

Details of: Internal view

View:

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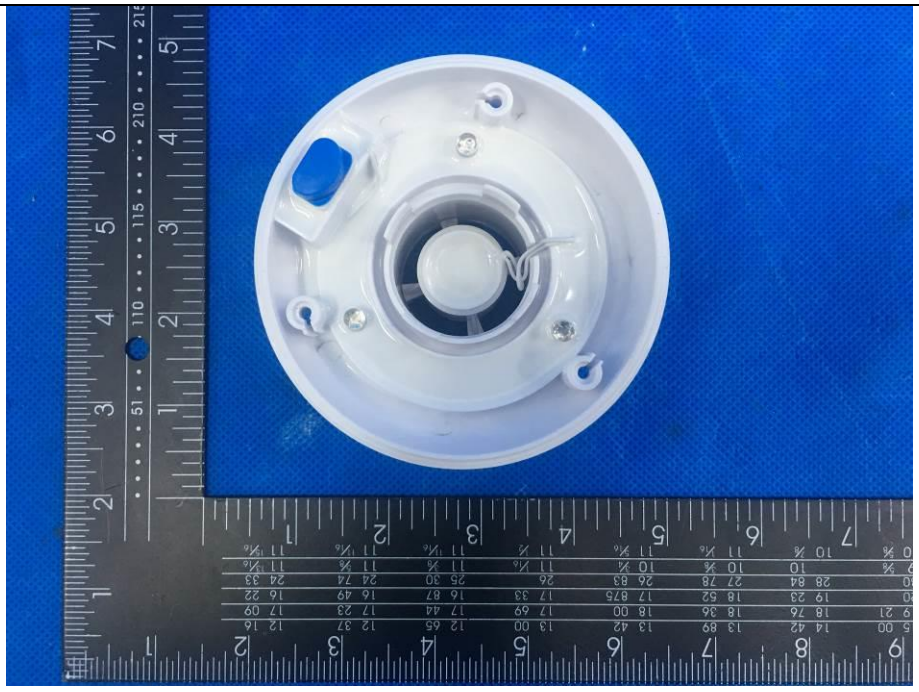

Attachment B

Details of: PCB

View:

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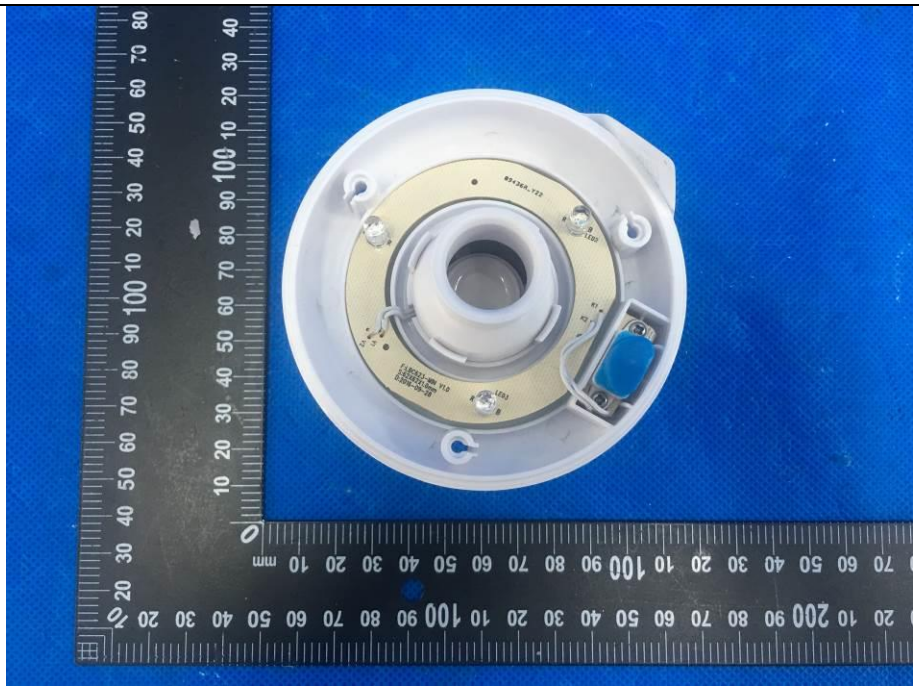

Details of: PCB

View:

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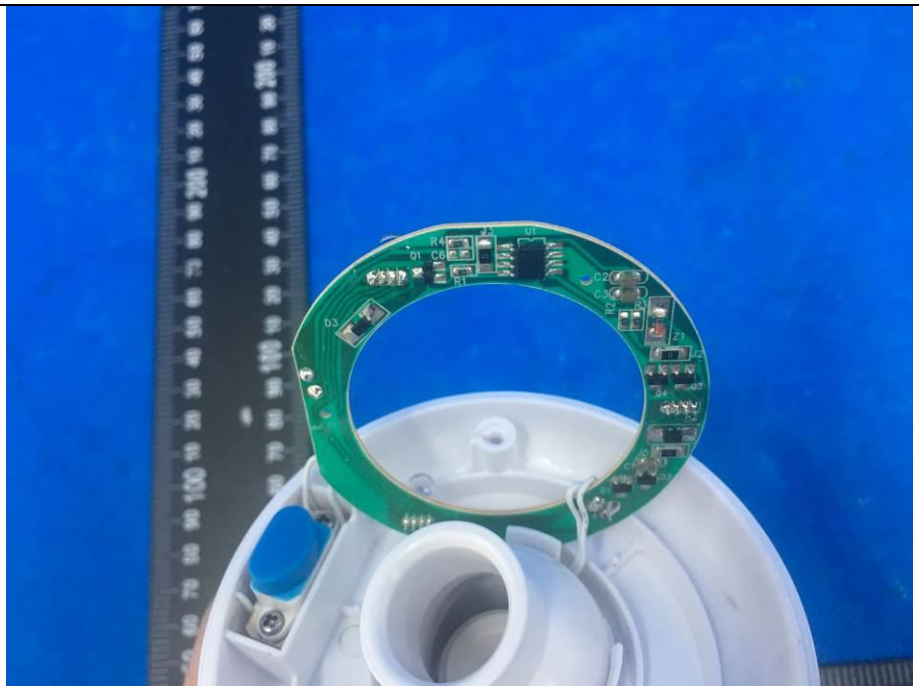

— End of Attachment B—