TEST REPORT

Architectural Flexible Linear Lighting

Test Model: FlexWash-06_3525

Additional Models: See “General product information”

Report Number	:	LCSB04216101S
Applicant	:	Shanghai Jingtou Intelligent Technology Co., Ltd.
Address	:	Building 1, No.5601, Yanqian Highway, Fengxian District, Shanghai, China 201414
Manufacturer	:	Shanghai Jingtou Intelligent Technology Co., Ltd.
Address	:	Building 1, No.5601, Yanqian Highway, Fengxian District, Shanghai, China 201414
Prepared by	:	Shenzhen Southern LCS Compliance Testing Co., Ltd.
Address	:	101-201, Building 39, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Date of receipt sample	:	April 21, 2026
Date of test	:	April 21, 2026 - May 15, 2026
Date of issue	:	May 25, 2026

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full. without prior written permission of the company, The report would be invalid without specific stamp of test institute and the signatures of approver.

TEST REPORT
IEC 60598-2-21
Luminaires
Part 2-21: Particular requirements- Rope Lights

Report Number.....:	LCSB04216101S
Date of issue.....:	May 25, 2026
Total number of pages.....	63 pages
Name of Testing Laboratory preparing the Report..... :	**Shenzhen Southern LCS Compliance Testing Co., Ltd.**
Applicant's name.....:	**Shanghai Jingtou Intelligent Technology Co., Ltd.**
Address.....:	Building 1, No.5601, Yanqian Highway, Fengxian District, Shanghai, China 201414
Test specification:	
Standard..... :	IEC 60598-2-21:2014 used in conjunction with IEC 60598-1:2024
Test procedure.....:	Type Test
Non-standard test method.....:	N/A
TRF template used.....:	IECEE OD-2020-F1:2024, Ed.1.8
Test Report Form No.....:	IEC60598_2_21E
Test Report Form(s) Originator..... :	DEKRA Certification B.V.
Master TRF.....:	Dated 2026-04-23

This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to an IECEE 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 Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the Testing Laboratory, responsible for this Test Report.

Test item description.....:	Architectural Flexible Linear Lighting
Trade Mark.....:	N/A
Manufacturer.....:	Shanghai Jingtou Intelligent Technology Co., Ltd.
Address.....:	Building 1, No.5601, Yanqian Highway, Fengxian District, Shanghai, China 201414
Model/Type reference.....:	See "General product information"
Ratings.....:	See "General product information"

☒	**Testing Laboratory:**		
Testing location/ address.....:	Shenzhen Southern LCS Compliance Testing Co., Ltd. 101-201, Building 39, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China		
Tested by.....:	Lisa Zeng (Engineer)		
Check by.....:	Torres He (Director)		
Approved by.....:	Jesse Liu (Manager)		

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

Attachment No. 1: European group differences and national differences according to EN 60598-2-21:2015 used in conjunction with EN IEC 60598-1:2021+A11:2022

Attachment No. 2: Report IEC/EN IEC 62031.

Attachment No. 3: Report IEC TR 62778.

Attachment No. 4: Photo documentation.

Summary of testing:

Tests performed (name of test and test clause): IEC 60598-2-21:2014 IEC 60598-1:2024 IEC TR 62778:2014 IEC 62031:2018 IEC 62493:2015+A1:2022	**Testing location:** Shenzhen Southern LCS Compliance Testing Co., Ltd. 101-201, Building 39, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Summary of compliance with National Differences:

List of countries addressed

European Group differences

☒ The product fulfils the requirements of

EN 60598-2-21:2015; EN IEC 60598-1:2021+A11:2022; EN 62493:2015+A1:2022; EN IEC 62031:2020+A11:2021

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 NCBs that own these marks.

Architectural Flexible Linear Lighting
Model: FlexWash-06_3525
DC24V, 48W, Max.144W
Max. Interconnected Load: 3pcs

IP67 ta40°C
Shanghai Jingtou Intelligent Technology Co., Ltd.
Importer: xxxxxxxx
Address: xxxxxxxx

MADE IN CHINA

Remarks:

1. Representative markings of FlexWash-06_3525, markings of all models are identical except for the model name rating.
2. Height of CE mark at least 5mm, height of WEEE symbol should not less than 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.

Test item particulars..... :	
Classification of installation and use.....:	Rope Lights
Supply Connection.....:	Supply cord
Protection Class.....:	Class III
Degree of Protection.....:	IP67
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.....:	April 21, 2026
Date (s) of performance of tests.....:	April 21, 2026 - May 15, 2026

General remarks:

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

"(See appended table)" refers to a table appended to the report.

Clause numbers with "*" were not within the scope of CNAS recognition.

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

The general information of applicant and manufacturer (such as the name and address), product name, model/type reference, trademark and other similar information contained in this report are all provided by the applicant, the laboratory is not responsible for verifying its authenticity.

No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

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

According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.

Modified Information

Version	Report No.	Revision Date	Summary
V1.0	LCSB04216101S	/	Original Version

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).....:	Same as manufacturer

General product information:

- All models have similar appearance and structure except power are difference.
- The lighting chains equipped with non-replaceable lighting source, and all models use same type LED.
- Unless otherwise specified, the model FlexWash-06_3525 was chosen as representative model to perform all test.

Model List:

Model	Rating	Max. Interconnected Load
FlexWash-06_3525	DC24V, 48W, Max.144W, IP67, ta40°C	3pcs
FlexWash-06_2527	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
FlexWash-06_2620	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
FlexWash-06_2222	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
FlexWash-06_2020	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
FlexWash-06_1616	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
FlexWash-06_1615	DC24V, 24W, Max.120W, IP67, ta40°C	5pcs
NeonLine-01_2222	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-01_2020	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-01_1617	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-01_1616	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-01_1615	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-01_1212	DC24V, 12W, Max.60W, IP67, ta40°C	5pcs
NeonLine-01_1010	DC24V, 10W, Max.50W, IP67, ta40°C	5pcs
NeonLine-03_1220	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs
NeonLine-03_1225	DC24V, 15W, Max.75W, IP67, ta40°C	5pcs

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.4 (4)	**GENERAL TEST REQUIREMENTS**		**P**
21.4 (4.1.2)	More parts of IEC 60598-2 series applicable.....:	Yes ☐ No ☒	—
	Part(s).....:		—
21.4 (4.2)	Batteries or EDLCs operated luminaire	(see ANNEX 5)	—
21.4 (4.3)	Components	(see ANNEX 1)	—
21.4 (4.4)	**Information for luminaire design in light sources standards**		—
21.4 (4.4.2)	Light source and/or controlgear safety standard .....:	IEC/EN IEC 62031	—
	Luminaire design in the light source and/or controlgear safety standard		N/A

21.5 (5)	**CLASSIFICATION OF LUMINAIRES**		**P**
21.5 (5.2)	Type of protection .....:	Class III	P
21.5 (5.3)	Degree of protection.....:	IP67	—
21.5 (5.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☒ No ☐	—
21.5 (5.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—
21.5.2 (-)	Class II or Class III	Class III	P
21.5.3 (-)	Rope lights for outdoor use shall be IP44 or higher	IP67	P

21.6 (6)	**MARKING**		**P**
21.6 (6.1)	Language of instructions	English	P
21.6 (6.2)	**Marking on luminaire**		P
	Position of the marking		P
	Format of symbols/text		P
21.6 (6.3)	Information on luminaire		P
21.6 (6.4)	**Additional information**		P
21.6 (6.4.2)	Combination luminaires		N/A
21.6 (6.4.3)	Rated frequency in Hz		N/A
21.6 (6.4.4)	Operating temperature		N/A
21.6 (6.4.5)	Wiring diagram		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.6 (6.4.6)	Special conditions		N/A
21.6 (6.4.7)	Metal halide lamp luminaire – warning		N/A
21.6 (6.4.8)	Limitation for semi-luminaires		N/A
21.6 (6.4.9)	Power factor and supply current		P
21.6 (6.4.10)	Luminaires using remote controlgear		N/A
21.6 (6.4.11)	Clip-mounted luminaire – warning		N/A
21.6 (6.4.12)	Specifications of protective shields		N/A
21.6 (6.4.13)	Rough service luminaire		N/A
21.6 (6.4.14)	Mounting instruction for type Y, type Z and some type X attachments	Type Z for input wire of LED	P
21.6 (6.4.15)	Non-ordinary luminaires with PVC cable		N/A
21.6 (6.4.16)	Protective conductor current in instruction if applicable		N/A
21.6 (6.4.17)	Provided with information if not intended to be mounted within arm's reach		N/A
21.6 (6.4.18)	Non replaceable and non-user replaceable light sources information provided	Non replaceable light sources	P
21.6 (6.4.19)	Controllable luminaires, classification of insulation provided		N/A
21.6 (6.4.20)	Luminaires without controlgear provided with necessary information for selection of appropriate component		N/A
21.6 (6.4.21)	If not supplied with terminal block, information on the packaging		N/A
21.6 (6.4.22)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
21.6 (6.4.23)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N/A
21.6 (6.4.24)	Information for replacement or non-replacement of controlgear provided:		N/A
	a) Non-serviceable controlgear		N/A
	b) Non-user serviceable controlgear		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Serviceable controlgear		N/A
21.6 (6.5)	**Test of marking**		P
	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
21.6.2 (-)	**Rope light marking**		**P**
	Rated voltage and wattage marked on the rope light		P
	Durable non-removable label if information on the cable		P
21.6.3 (-)	**Rope light and packing marking**		N/A
	Marking if only for indoor use		N/A
21.6.4 (-)	**Marking on the packing or instructions**		**P**
	Marking a) – e)		P
21.7 (7)	**CONSTRUCTION**		**P**
21.7 (7.2)	Components replaceable or serviceable without difficulty		N/A
21.7 (7.3)	Wireways smooth and free from sharp edges		P
21.7 (7.4)	**Lamp holders**		N/A
21.7 (7.4.1)	Integral lamp holder		N/A
21.7 (7.4.2)	Wiring connection		N/A
21.7 (7.4.3)	Lamp holder for end-to-end mounting		N/A
21.7 (7.4.4)	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lamp holder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lamp holder the lamp holder has not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....:		—
	After test the lamp holder has not moved from its position and show no permanent deformation		N/A
21.7 (7.4.5)	Peak pulse voltage		N/A
21.7 (7.4.6)	Centre contact		N/A
21.7 (7.4.7)	Parts in rough service luminaires resistant to tracking		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.4.8)	Lamp connectors		N/A
21.7 (7.4.9)	Caps and bases correctly used		N/A
21.7 (7.4.10)	Light source for lamp holder or connection according to IEC 60061 not connected another way		N/A
21.7 (7.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
21.7 (7.6)	**Terminal blocks**		N/A
	Connecting leads (tails)		N/A
	Unsecured blocks		N/A
21.7 (7.7)	**Terminals and supply connections**		N/A
21.7 (7.7.1)	Contact to metal parts		N/A
21.7 (7.7.2)	Test 8 mm hazardous live conductor		N/A
	Test 8 mm earth conductor		N/A
21.7 (7.7.3)	Terminals for supply conductors		N/A
21.7 (7.7.4)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- type Y and Z attachment		N/A
	- mechanical test according to 17.5.2		N/A
	- electrical test according to 17.5.3		N/A
	- heat test according to 17.5.3.3.4 and 17.5.3.3.5		N/A
21.7 (7.7.5)	Terminals other than supply connection		N/A
21.7 (7.7.6)	Heat-resistant wiring/sleeves		N/A
21.7 (7.7.7)	Multi-pole plug		N/A
	- test at 30 N		N/A
21.7 (7.8)	**Switches**		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1-1 or IEC 60669-1 for mechanical switches		N/A
	- compliance with IEC 61058-1-2 or IEC 60669-2-1 for electronic switches		N/A
	- compliance with IEC 61058-2-1 for cord switches		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.9)	**Insulating lining and sleeves**		N/A
21.7 (7.9.1)	Retainment		N/A
	Method of fixing.....:		N/A
21.7 (7.9.2)	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
21.7 (7.10)	**Double or reinforced insulation**		N/A
21.7 (7.10.1)	No contact, mounting surface – accessible metal parts –basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
21.7 (7.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
21.7 (7.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lamp holder		N/A
21.7 (7.10.4)	Protective impedance device:		N/A
	Basic or supplementary insulation bridged by resistor(s) or appropriate capacitor		N/A
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N/A
21.7 (7.11)	**Electrical connections and current-carrying parts**		**P**
21.7 (7.11.1)	Contact pressure		P
21.7 (7.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
21.7 (7.11.4)	Material of current-carrying parts		P
	FELV, SELV or PELV supplying circuits:		N/A
	- load less than 15 W		N/A
	- load (including short-circuit) not higher than 2 A		N/A
21.7 (7.11.5)	No contact to wood or mounting surface		P
21.7 (7.11.6)	Electro-mechanical contact systems		N/A
21.7 (7.12)	**Screws and connections (mechanical) and glands**		N/A
21.7 (7.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
21.7 (7.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
21.7 (7.12.3)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lamp holder; torque (Nm).....:		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
21.7 (7.12.4)	Screwed glands; force (Nm)..... :		N/A
21.7 (7.13)	**Mechanical strength**		**P**
21.7 (7.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm)..... :	0.5Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	4) covers		P
21.7 (7.13.2)	Metal parts have adequate mechanical strength		N/A
21.7 (7.13.3)	Test with straight unjointed test finger		N/A
21.7 (7.13.4)	Tumbling barrel		N/A
21.7 (7.14)	**Suspensions, fixings and means of adjusting**		N/A
21.7 (7.14.1)	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 controlgear without fixing devices		N/A
	Magnets not used as the primary fixing		N/A
21.7 (7.14.2)	Load to flexible cables:		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) .....:		N/A
	Special cable or cord, force applied (N).....:		N/A
	Mass (kg) of semi-luminaire .....:		N/A
	Bending moment (Nm) of semi-luminaire .....:		N/A
21.7 (7.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken..... :		N/A
	- insulation resistance and electric strength tests afterwards		N/A
21.7 (7.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
21.7 (7.14.5)	Guide pulleys		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.14.6)	Strain on socket-outlets		N/A
21.7 (7.15)	**Flammable materials**		**P**
	- glow-wire test 650°C..... :	See Test Table 21.16 (15.3.3)	P
	- spacing ≥30 mm		N/A
	- screen withstanding test of 15.3.2		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
21.7 (7.15.2)	Luminaires made of thermoplastic material with controlgear:		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
21.7 (7.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
21.7 (7.16.1)	No controlgear.....:	(compliance with Clause 14)	P
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
21.7 (7.16.2)	Controlgear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
21.7 (7.16.3)	Thermal protection:		N/A
	- in controlgear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked controlgear		N/A
21.7 (7.16.4)	Design to satisfy the test of 14.6	(see 14.6)	N/A
21.7 (7.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
21.7 (7.18)	**Resistance to corrosion**		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.18.1)	- rust- resistance		N/A
21.7 (7.18.2)	- season cracking in copper		N/A
21.7 (7.18.3)	- corrosion of aluminium		N/A
21.7 (7.19)	Ignitors compatible with ballast		N/A
21.7 (7.20)	**Rough service luminaires**		N/A
21.7 (7.20.1)	Resistance to vibrations		N/A
21.7 (7.20.2)	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
21.7 (7.21)	**Protective shield**		N/A
21.7 (7.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
21.7 (7.21.2)	Particles from a shattering lamp not impair safety		N/A
21.7 (7.21.3)	No direct path		N/A
21.7 (7.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....:	See Test Table 21.16 (15.3.3)	N/A
21.7 (7.22)	**Attachments to lamps**		N/A
	Attachments to lamps do not cause overheating or damage		N/A
21.7 (7.23)	**Semi-luminaires**		N/A
	Semi-luminaires comply Class II		N/A
21.7 (7.24)	**Photobiological hazards**		**P**
21.7 (7.24.1)	**Actinic UV hazards for skin and eye 200 nm to 400 nm)**		**P**
	No excessive UV radiation; luminaires used with:		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- self-shielded lamps or light sources having a UV emission ≤ 2 mW · klm^{-1}		N/A
	- light sources emitting ≤ 6 mW · klm^{-1} and having a glass cover		N/A
	- light sources emitting > 6 mW · klm^{-1}, compliance with Annex M		N/A
21.7 (7.24.2)	**UV-A hazard for the eye lens (315 nm to 400 nm)**		P
	No excessive UV-A radiation		P
21.7 (7.24.3)	**Retinal blue light hazard**		P
21.7 (7.24.3.2)	**Luminaire assessment according to IEC 62471-7:2023**		N/A
	Luminaire application group.....:	☐ BLH-A ☐ BLH-B ☐ BLH-C	–
	Blue light radiance emission limit not exceeded for application group at applicable assessment distance		N/A
	Increased assessment distance for fixed luminaire based on luminaire application applied		N/A
	Assessment distance used (m).....:		—
	Information according to clause 6.3.22 a) provided		N/A
	Luminaire assessment based on light source data		N/A
	Light source application group.....:	☐ BLH-A ☐ BLH-B ☐ BLH-C	—
	Data in accordance with luminaire application group emission limit		N/A
21.7 (7.24.3.3)	**Luminaire assessment according to IEC TR 62778:2014**		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 6.3.22		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 6.3.22 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 TR 62778		N/A
21.7 (7.24.4)	**Retinal thermal hazard (380 nm to 1400 nm)**		P
	Not exceeding retinal thermal radiance limits	≤ 280 000 W · m^{-2} · sr^{-1}	P
21.7 (7.24.5)	**Infrared hazard for the eye (780 nm to 3000 nm)**		P
	Not exceeding limits for IR radiation	no IR radiation is intentionally added to the visible light	P
21.7 (7.24.6)	**Thermal hazard for the skin (380 nm to 3000 nm)**		P
	Not exceeding exposure limit		—
21.7 (7.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
21.7 (7.26)	**Short-circuit protection**		N/A
21.7 (7.26.1)	Means preventing impairing of safety of uninsulated accessible SELV / PELV parts		N/A
	Short-circuit test with test chain according 7.26.2:		N/A
	Supply source ES1 PSE		N/A
	Test chain does not melt through		N/A
	Test sample does not exceed values of Table 21 and 22		N/A
21.7 (7.27)	**Terminal blocks with integrated screwless protective earthing contacts**		N/A
	Test according to Annex R		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
21.7 (7.28)	**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 light source can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
21.7 (7.29)	**Luminaires with non-replaceable light source**		**P**
	Not possible to replace light source		P
	Hazardous live part not accessible after parts have been opened by hand or tools		N/A
21.7 (7.30)	**Luminaires with non-user replaceable light source and non-user serviceable components**		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	At least one fixing means requiring use of tool		N/A
21.7 (7.31)	**Insulation between circuits**		**P**
21.7 (7.31.1)	Circuits insulated from mains supply fulfil requirements according 7.31.2 – 7.31.4		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and mains supply fulfil requirements according 7.31.2 – 7.31.4		N/A
21.7 (7.31.2)	**SELV or PELV circuits**		P
	Used SELV/PELV source		P
	Voltage ≤ ELV		P
	PELV connected to earth		N/A
	Insulation of SELV/PELV circuits from mains supply		P
	Insulation of SELV/PELV circuits from other non SELV/PELV circuits		N/A
	Insulation of SELV/PELV circuits from FELV		N/A
	Insulation of SELV/PELV circuits from other SELV/PELV circuits		N/A
	SELV/PELV circuits insulated from accessible parts according Table T.1		P
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets do not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets do not have protective conductor contact		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.31.3)	**FELV circuits**		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from mains supply		N/A
	FELV circuits insulated from accessible parts according Table T.1		N/A
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets do not admit plugs of other voltage systems		N/A
	Socket-outlets have protective conductor contact		N/A
21.7 (7.31.4)	**Other circuits**		N/A
	Other circuits insulated from accessible conductive parts according Table T.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with hazardous live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 9.2.3		N/A
	- conductive part does not cause electric shock in case of insulation fault		N/A
	- equipotential bonding used in applications when one or more luminaires supplied by another		N/A
	- supplying luminaire provided with terminal for accessible conductive parts of other luminaires		N/A
	- other luminaire constructed as class I		N/A
21.7 (7.31.5)	**Additional requirements for luminaires using controllable controlgear providing SELV output(s)**		N/A
	Insulation between SELV output(s) of controlgear and control port meets requirements of IEC 61347-1 for interconnected controlgear		N/A
21.7 (7.32)	**Overvoltage protective devices external to controlgear**		N/A
21.7 (7.32.1)	SPDs comply with requirements in 7.32.2		N/A
	SPCs comply with requirements in 7.32.3		N/A
	SPDs or SPCs requiring connection to earth:		N/A
	- only used in fixed luminaires		N/A
	- only connected to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
21.7 (7.32.2)	**Surge protective devices (SPDs)**		N/A
	Compliance with IEC 61643-11		N/A
	Rated ambient temperature verified according to test in 14.4		N/A
21.7 (7.32.3)	**Surge protective components (SPCs)**		N/A
21.7 (7.32.3.1)	Only connected across the mains (L to L or L to N)		N/A
	Compliance with IEC 61051-2:2021 or IEC 61643-331:2020		N/A
	Compliance with requirements in 7.32.3.2 – 7.32.3.6		N/A
21.7 (7.32.3.2)	**Climatic conditions**		N/A
	Climatic conditions according to:		N/A
	- Option A		N/A
	- Option B		N/A
21.7 (7.32.3.3)	**Maximum continuous voltage**		N/A
	At least 1.25 times rated voltage of luminaire / upper voltage of rated voltage range		N/A
21.7 (7.32.3.4)	**Surge capability**		N/A
	Mains supply voltage (V)..... :		—
21.7 (7.32.3.5)	**SPC resistance to fire**		N/A
	Needle flame test	See Test Table 2 1.16 (15.3.2)	N/A
21.7 (7.32.3.6)	**SPC overload test**		N/A
21.7 (7.33)	**Luminaire powered via information technology communication cabling**		N/A
	Requirements for Class III luminaire		N/A
	Rated voltage does not exceed maximum voltage of used connector		N/A
	Luminaire does not create any hazard from overvoltage	(see Annex 2)	N/A
21.7 (7.34)	**Electromagnetic fields (EMF)**		P
	No harmful electromagnetic fields		P
21.7 (7.35)	**Protection against moving fan blades**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test with a standard test finger		N/A
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	Blades rounded with radius ≥ 0.5 mm and:		N/A
	-hardness less than D60 Shore		N/A
	-peripheral speed less than 15 m/s		N/A
	-input power of fan ≤ 2 W at rated voltage		N/A
21.7 (7.36)	**Track-mounted luminaires**		N/A
	Test in accordance with Annex A of IEC 60570:2003/AMD2:2019		N/A
21.7.2 (-)	**Terminal blocks**		N/A
	Clause 4.6 of IEC 60598-1 referring to terminal blocks does not apply		—
21.7.3 (-)	**Terminals and supply connections**		N/A
	Comply with Annex A		N/A
21.7.4 (-)	**Control units**		N/A
	Forming an integral part enclosed in non-flammable insulating material tested according 21.16		N/A
	Securely fixed to the cable		N/A
	Electronic control device comply with IEC 61347-2-11		N/A
	LED driver comply with IEC 61347-2-13		N/A
21.7.5 (-)	**Mechanical strength**		N/A
	a) Rigid rope lights		N/A
	1) Pull test: force 60 N		N/A
	2) Torque test: torque 0,15 Nm		N/A
	b) Flexible rope lights		P
	1) Pull test: force 60 N		P
	2) Torque test: torque 0,15 Nm		P
	3) Cylinder 150 mm @ 10 times at 25 °C ± 2 °C		P
	For rope lights having an IP number over X0 Additionally: Cylinder 150 mm @ 10 times at -15 °C ± 2 °C		P
	4) Mandrel of between 4 and 5 times the diameter of test piece		P
	c) Impact test at low temperature of -15 °C ± 5 °C		P

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Clause	Requirement + Test	Result - Remark	Verdict

21.8 (13)	CREEPAGE DISTANCES AND CLEARANCES		N/A
21.8 (13.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according to Annex Q		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1:2015		N/A
21.8 (13.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 21.8 (13) I	N/A
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according to IEC 61347-1:2015, clause 7.1, item w	See Test Table 21.8 (13) II	N/A
	- Requirements according to IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 21.8 (13) II	N/A
21.8 (13.2.3)	Clearances for frequency up to 30 kHz	See Test Table 21.8 (13) I	N/A
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 21.8 (13) II	N/A
	- Requirements according to IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 21.8 (13) II	N/A

21.9 (9)	PROVISION FOR EARTHING		N/A
21.9 (9.2.1 + 9.2.3)	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 grove		N/A
	Protective earth makes contact first		N/A
	Terminal blocks with integrated screwless protective earthing contacts tested according to Annex R		N/A
	Protective earthing of the luminaire not via built-in controlgear		N/A
21.9 (9.2.2 + 9.2.3)	Protective earth continuity in joints, etc.		N/A
21.9 (9.2.4)	Locking of clamping means		N/A
	Compliance with 7.7.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
21.9 (9.2.5)	Protective earth terminal integral part of connector socket		N/A
21.9 (9.2.6)	Protective earth terminal adjacent to mains terminals		N/A
21.9 (9.2.7)	Electrolytic corrosion of the protective earth terminal		N/A
21.9 (9.2.8)	Material of protective earth terminal		N/A
	Contact surface bare metal		N/A
21.9 (9.2.10)	Class II luminaire for looping-in or through wiring		N/A
	Double or reinforced insulation to functional earth		N/A
21.9 (9.2.11)	Protective earthing core coloured green-yellow		N/A
	Length of protective earthing conductor		N/A
21.9 (9.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

21.10 (16)	**SCREW TERMINALS**		**N/A**
	Separately approved; component list	(See Annex 1)	N/A
	Part of the luminaire	(See Annex 3)	N/A

21.10 (17)	**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

21.11 (8)	**EXTERNAL AND INTERNAL WIRING**		**P**
21.11 (8.2)	**Supply connection and external wiring**		**P**
21.11 (8.2.1)	Means of connection.....:	Supply cord	P
	Outdoor luminaire without PVC insulated external wiring unless Class III or SELV/PELV circuits ≤ 25 V AC or 60 V DC or 25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment		N/A
21.11 (8.2.2)	Type of cable.....:	See annex 1	P
	Nominal cross-sectional area (mm²)..... :	See annex 1	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Cables equal to IEC 60227 or IEC 60245		P
21.11 (8.2.3)	Type of attachment, X, Y or Z	Type Z for input wire of LED	P
21.11 (8.2.5)	Type Z not connected to screws		P
21.11 (8.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
21.11 (8.2.7)	Cable entries through rigid material have rounded edges		N/A
21.11 (8.2.8)	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
21.11 (8.2.9)	Locking of screwed bushings		N/A
21.11 (8.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
21.11 (8.2.10.2)	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

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Clause	Requirement + Test	Result - Remark	Verdict
21.11 (8.2.10.3)	Adequate cord anchorage for type Y and type Z attachment		P
21.11 (8.2.10.4)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)..... :	60N	P
	- torque test: torque (Nm)..... :	0.15Nm	P
	- displacement ≤ 2 mm	0.5mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
21.11 (8.2.10.5)	Luminaire with/designed for use with supply cord with maximum current of 2A:		N/A
	- Ordinary Class III luminaire supplied with SELV ≤ 25 V RMS or 60 V DC		N/A
	- Ordinary Class III luminaire supplied with PELV ≤12 V RMS or 30 V DC		N/A
	- Other than ordinary Class III luminaire supplied with voltage ≤12 V RMS or 30 V DC		N/A
	Pull test of 30 N		N/A
21.11 (8.2.11)	External wiring passing into luminaire		P
21.11 (8.2.12)	Looping- in terminals		N/A
21.11 (8.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
21.11 (8.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
21.11 (8.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
21.11 (8.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Appliance inlet or connector systems (IEC 61984)		P

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Clause	Requirement + Test	Result - Remark	Verdict
21.11 (8.2.17)	No standardized interconnecting cables properly assembled		N/A
21.11 (8.2.18)	Used plug in accordance with:		N/A
	- IEC 60083		N/A
	- other standard		N/A
21.11 (8.3)	**Internal wiring**		N/A
21.11 (8.3.1.1)	Internal wiring of suitable size and type		N/A
	Through wiring:		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	Green- yellow for protective earth only		N/A
21.11 (8.3.1.2)	Internal wiring connected directly to fixed wiring:		N/A
	Cross-sectional area (mm²)..... :		N/A
	Insulation thickness (mm) ..... :		N/A
	Extra insulation added where necessary		N/A
21.11 (8.3.1.3)	Internal wiring connected to fixed wiring via internal current-limiting device:		N/A
	Cross-sectional area (mm²)..... :		N/A
21.11 (8.3.1.4)	Double or reinforced insulation for class II		N/A
21.11 (8.3.1.5)	Conductors without insulation		N/A
21.11 (8.3.1.6)	SELV/PELV current-carrying parts		N/A
21.11 (8.3.1.7)	Insulation thickness other than PVC or rubber		N/A
21.11 (8.3.2)	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
21.11 (8.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
21.11 (8.3.4)	Joints and junctions effectively insulated		N/A
21.11 (8.3.5)	Strain on internal wiring		N/A
21.11 (8.3.6)	Wire carriers		N/A
21.11 (8.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
21.11 (8.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation does not exceed the limits stated in Table 22	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
21.11.2 (-)	**Cables for rope lights**		**P**
	Type of cable.....:	See annex 1	P
	Cables not lighter than IEC 60227 or IEC 60245 for class II rope lights		N/A
	Cables not lighter than insulation according to 5.3.1 of part 1 for class III rope lights		P
	Nominal cross-sectional area (mm²)..... :	See annex 1	P
	Mechanical properties according 4.14.1 and 4.14.2 of part 1		P
21.11.3 (-)	**Cord anchorage test**		N/A
	Pull test 30 N 25 times on single-core cable		N/A
21.11.4 (-)	**Plugs and cable length**		N/A
	Splash-proof plug or permanent connection if for outdoor use		N/A
	Length of the cable between the plug and the connection to the rope light not less than 1,5 m		N/A
21.11.5 (-)	**Maximum length of extendable class II rope lights**		N/A
	Maximum length 100 m for 0,5 mm² cable		N/A
	Maximum length 150 m for 0,75 mm² cable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

21.12 (10)	**PROTECTION AGAINST ELECTRIC SHOCK**		**N/A**
21.12 (10.2.1)	Hazardous live parts not accessible		N/A
	Basic insulated parts not used on the outer surface without appropriate protection		N/A
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starter holders in portable, settable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under light source/ starter replacement or for accessing serviceable components		N/A
	Protection in any position		N/A
	Double-ended tungsten filament lamp or equivalent lamps		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 6.3.18 fitted to the luminaire		N/A
21.12 (10.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
21.12 (10.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible		N/A
	- required insulation from hazardous live parts in compliance with Table T.1		N/A
	- glass protective shields not used as supplementary insulation		N/A
21.12 (10.2.3.b)	BC lamp holder of metal in class I luminaires shall be connected to protective earth		N/A
21.12 (10.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V)……...:		N/A
	- interrupted DC voltage (V) ……:		N/A
	- touch current if applicable (mA) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V)……..:		N/A
	- Interrupted DC (f<10Hz or f >200Hz) (mA)……..:		N/A
	- Interrupted DC (10Hz ≤ f ≤ 200 Hz) (mA)…..:		N/A
	Class III luminaire only for connection to SELV/PELV		N/A
21.12 (10.2.3.d)	PELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V)……..:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V)……..:		N/A
	One pole insulated if required		N/A
21.12 (10.2.4)	Portable luminaire has protection independent of mounting surface		N/A
21.12 (10.2.5)	Compliance with the standard test finger or relevant probe		N/A
21.12 (10.2.6)	Covers reliably secured		N/A
21.12 (10.2.7)	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

21.13 (14)	**ENDURANCE TEST AND THERMAL TEST**		**P**
21.13.1 (-)	If IP > IP 20 relevant test of (14.4), (14.5), (14.6) and (14.7) after (11.2) before (11.3) as specified in 21.13.1		—
21.13 (14.2)	**Selection of lamps and controlgear**		**—**
	Lamp used according to Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—

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Clause	Requirement + Test	Result - Remark	Verdict
21.13 (14.3)	**Endurance test**		**P**
21.13 (14.3.2)	a) mounting- position .....:	As normal used	—
	b) test temperature (°C).....:	40°C+10°C	—
	c) total duration (h) .....:	240h	—
	d) supply voltage (V).....:	--	—
	d) if not equipped with control gear, constant voltage/current (V) or (A) .....:	1.1x24Vdc	—
	d) Class III luminaires powered via information technology communication cable:		N/A
	- voltage under normal operation (V)……..:		—
	- voltage under abnormal operation (V)……..:		—
	e) luminaire ceases to operate		—
	f) luminaire with constant light output function		N/A
21.13 (14.3.3)	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
21.13 (14.4)	**Thermal test (normal operation)**	(see Annex 2)	P
21.13 (14.5)	**Thermal test (abnormal operation)**	(see Annex 2)	N/A
21.13 (14.6)	**Thermal test (failed windings in controlgear):**		N/A
21.13 (14.6.2)	Through wiring or looping-in wiring loaded by a current of (A) .....:		—
	- case of abnormal conditions.....:		—
	- electronic controlgear		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

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Clause	Requirement + Test	Result - Remark	Verdict
21.13 (14.6.3)	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
21.13 (14.7)	**Thermal test in regard to fault conditions in controlgear or electronic devices incorporated in thermoplastic luminaires**		N/A
21.13 (14.7.2)	**Luminaire without temperature sensing control**		N/A
21.13 (14.7.2.1)	Luminaire with fluorescent lamp ≤ 70W:		N/A
	Test method 14.7.1.1 or Annex S .....:		—
	Test according to 14.7.1.1:		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 S:		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 Test Table 1.16 (15.2.2)	N/A
21.13 (14.7.2.2)	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).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test.....:	See Test Table 1.16 (15.2.2)	N/A
21.13 (14.7.2.3)	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
21.13 (14.7.3)	**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 Test Table 1.16 (15.2.2)	N/A
21.13.2 (-)	**Test voltage**		N/A
	Provision of 12.3.1 d) of part 1 and if class III rope lights 1,1 x rated voltage of transformer/convertor		—
	Provision of 12.4.1 d) of part 1 and if class III rope lights 1,06 x rated voltage of transformer/convertor		—
21.13.3 (-)	**Short-circuit test of rectifier**		**P**
	No emission of flames or molten material or production of flammable gases and no live parts accessible when short-circuit output of the rectifier		P

21.14 (11)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
21.14 (-)	If IP > IP 20 the order of tests as specified in clause 21.13.1		P
21.14 (11.2.1)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP.....:	IP67	—
	- mounting position during test.....:	As normal use	—
	- fixing screws tightened; torque (Nm).....:	--	—
	- tests according to clauses.....:	See clauses 11.2.3 & 11.2.10	—
	- electric strength test afterwards	Details see clause 12.2.3	P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust- tight luminaire		P

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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, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold-water jet-proof 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
21.14 (11.3)	Humidity test 48 h	25°C, 93%RH	P

21.15 (12)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH, TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT**		**P**
21.15 (12.2.2)	**Insulation resistance test**		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....:		—
	Insulation resistance (MΩ):		P
	SELV/PELV:		P
	- between current-carrying parts of different polarity:	>100 MΩ	P
	- between current-carrying parts and mounting surface .....:	>100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire.....:	>100 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Clause 8 .....:		N/A
	Other than SELV/PELV:		N/A
	- between hazardous live parts of different polarity..:		N/A
	- between hazardous live parts and mounting surface:		N/A
	- between hazardous live parts and metal parts.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between hazardous 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 Clause 8 .....:		N/A
21.15 (12.2.3)	**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/PELV:		P
	- between current-carrying parts of different polarity:	500V	P
	- between current-carrying parts and mounting surface .....:	500V	P
	- between current-carrying parts and metal parts of the luminaire.....:	500V	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 Clause 8 .....:		N/A
	Other than SELV/PELV:		N/A
	- between hazardous live parts of different polarity..:		N/A
	- between hazardous live parts and mounting surface:		N/A
	- between hazardous live parts and metal parts.....:		N/A
	- between hazardous 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 Clause 8 .....:		N/A
21.15 (12.3)	**Touch current, protective conductor current and electric burn**		N/A
21.15 (12.3)	Touch current (mA).....:		N/A
	Protective conductor current (mA).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
21.16 (15)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
21.16 (15.2.2)	Ball-pressure test..... :	See Test Table 21.16 (15.2.2)	P
21.16 (15.3.2)	Needle-flame test (10 s)..... :	See Test Table 21.16 (15.3.2)	P
21.16 (15.3.3)	Glow- wire test (650°C)..... :	See Test Table 21.16 (15.3.3)	P
21.16 (15.4.2)	Proof tracking test (IEC 60112)..... :	See Test Table 21.16 (15.4.2)	N/A
21.16 (-)	Flexible pipes of rope lights in compliance with IEC 60811-508		P

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Clause	Requirement + Test	Result - Remark	Verdict

21.8 (13)	**TABLE I: Creepage distances and clearances**							**N/A**
	Minimum distances (mm) for AC up to 30 kHz sinusoidal voltages							N/A
	Applicable part of IEC 60598-1 Table 18*, 19* and 20*							N/A
	Insulation type **	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:	--	--	--	Table 19	--	--	Table 18	
Distance 2:	--	--	--	Table 19	--	--	Table 18	
Distance 3:	--	--	--	Table 19	--	--	Table 18	
Working voltage (V)..... :					--			—
PTI..... :					< 600 ☒	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :					--			—
Supplementary information: The working voltages are less than 60Vdc, No values are specified for working voltages below 25 V a.c. and 60 V ripple free d.c., The test voltages for such working voltages are given in Clause 12.2.3, the specimen passed Clause 12.2.3 deem to fulfil this requirement.								

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

21.8 (13)	**TABLE II: Creepage distances and clearances**							**N/A**
	Minimum distances (mm) for AC higher than 30 kHz sinusoidal voltages							**N/A**
	Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							**N/A**
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage Ûout if applicable (kV) ..... :								—
Supplementary information:								
Distance 2:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage Ûout if applicable (kV) ..... :								—
Supplementary information:								

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Clause	Requirement + Test	Result - Remark	Verdict

Distance 3:							
Working voltage (V)..... :							—
Frequency if applicable (kHz)..... :							—
PTI..... :	< 600 ☐	≥ 600 ☐					—
Peak value of the working voltage Ûout if applicable (kV) ..... :							—
Supplementary information:							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

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Clause	Requirement + Test	Result - Remark	Verdict

21.16 (15.2.2)	**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 of lighting chains	See Annex 1	80°C	1.1mm	
Connector	See Annex 1	125°C	0.8mm	
Supplementary information:				

21.16 (15.3.2)	**TABLE: Needle-flame test**				**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
Connector	See Annex 1	10s	No	0s	P
Supplementary information:					

21.16 (15.3.3)	**TABLE: Resistance to heat and fire - Glow wire tests**					**P**
Object/ Part No./ Material	Manufacturer/ trademark	GWT (°C) : 650			Ignition of specified layer	Verdict
		t_E (s)	t_i (s)	t_R (s)	Yes/No	
Enclosure of lighting chains	See Annex 1	not ignited	not ignited	0s	No	P
LED lens	See Annex 1	not ignited	not ignited	0s	No	P
Supplementary information:						

21.16 (15.4.2)	**TABLE: Proof tracking test**				**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
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX A	**Requirements for interconnecting connectors for use in rope lights**		**N/A**
	This Annex A consist relevant requirements and modifications of IEC 61984		N/A
5.2	**Classification according to protection against electric shock**		N/A
	Only enclosed connectors		N/A
5.3	**Classification according to the style of connector**		N/A
	Only free connectors		N/A
5.4	**Classification according to additional characteristics of connectors**		N/A
	According to b), d), e), f), h), and j)		N/A
6.2.1	**Identification**		N/A
	According to a) and b)		N/A
6.4.1	**Non accessibility of live parts**		N/A
	Test with test finger on class II rope lights		N/A
6.9.1	**Polarisation**		N/A
	Improper connection of mating parts is prevented		N/A
	No unsafe compatibility between connectors for class II and class III rope lights of the same manufacturer		N/A
	Male part of class III rope lights not make contact in the female contact of low voltage connectors (e.g. IEC 60320)		N/A
	Manufacturer designed connectors, no unsafe compatibility with systems according IEC 60320 and IEC 60906 and national domestic plug and socket-outlet systems in the country where the rope light is placed on the market		N/A
6.9.3	**Connection of conductors**		N/A
	Cross sectional area of the contact making part of the interconnecting coupler not less than the corresponding conductor in the interconnected cable		N/A
6.10	**Design of a CBC**		N/A
	Adequate breaking capacity		N/A
	Female part at the end of the rope light, other than ordinary, provided with sealing device securely fixed to the coupler		N/A
6.13	**Dielectric strength**		N/A
	Test according clause 21.15 of this standard		N/A
6.14.2	**Electrical endurance (CBC)**		N/A
	Meet the specified breaking capacity		N/A
	Number of cycles 50		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Test according 7.3.5		N/A
6.14.3	**Bendings (non-rewirable connectors)**		N/A
	Meet the specified number of bendings		N/A
	Number of cycles 1000		—
	Test according 7.3.10		N/A
6.17	**Cable clamp**		N/A
	Test according clause 21.11.3 of this standard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Supply cord	C	DONGGUAN HAOQUAN WIRE & CABLE CO LTD	3977	20AWG, 300 Vac, 200°C	--	UL E527035
Input wire of LED	C	DONGGUAN HAOQUAN WIRE & CABLE CO LTD	3977	20AWG, 300 Vac, 200°C	--	UL E527035
Enclosure of lighting chains	C	Kingfa SCI & Tech Co., Ltd.	PVC-1018(f1)	125°C; V-0	--	UL E171666
LED lens	C	Fujian Huasu Innovative Plastics Material Co Ltd	HS12(aa)T (f1)	PC, V-0, 130°C	--	UL E477366
Connector	B	Shenzhen Lilutong Electronic Technology Co.,Ltd	LLT-M14-15 series	250V, 15A, IP67, 105°C	EN 61984	No. B150390230002
LED PCB	C	Shenzhen Mingsihai Electronic Technology Co Ltd	MSH-L	V-0, 130°C, Single layer metal base	--	UL E495831
Internal wire	C	Shenzhen Xinlian Wire&Cable Co Ltd	1007	300 Vac, 80°C, 20AWG	--	UL E502584
LED	C	Guangzhou Tianxin photoelectric Co.,Ltd	TX-3535W10FCA3-NG4CH-01H90	VF: 8-9V, IF: 350mA	IEC TR 62778	Test 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: Thermal tests of Section 14		P
	Type reference..... :	FlexWash-06_3525	—
	Light source used..... :	LED	—
	Controlgear used..... :	--	—
	Battery/EDLC used.....:	--	—
	Mounting position of luminaire..... :	See product manual	—
	Supply wattage (W) .....:	55.7W	—
	Supply current (A) .....:	2.11A	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	40°C	—
	- abnormal operating mode.....:	--	—
21.13 (14.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage, or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1.1x24Vdc	—
	- 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 ..... :	--	—
21.13 (14.5)	- test 4: 1,1 times rated voltage, or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage..... :	--	—

Temperature measurements (°C)

Part	Ambient	Sub-cl. 14.4 – normal				Sub-cl. 14.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	40	--	44.3	--	200	--	--
Internal wire near LED	40	--	58.7	--	80	--	--
LED PCB	40	--	63.3	--	130	--	--
Enclosure of lighting chains	40	--	54.8	--	Ref.	--	--
LED lens	40	--	60.2	--	Ref.	--	--
Connector	40	--	45.3	--	105	--	--
Mounting surface	40	--	43.6	--	90	--	--

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		**N/A**
(16)	**SCREW TERMINALS**		N/A
(16.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(16.2.2.2)	One or more conductors		N/A
(16.2.2.3)	Special preparation		N/A
(16.2.2.4)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(16.2.3)	Conductor space (mm).....:		N/A
(16.3)	**Mechanical requirements and tests**		N/A
(16.3.1)	Minimum distance		N/A
(16.3.2)	Cannot slip out		N/A
(16.3.3)	Special preparation		N/A
(16.3.4)	Nominal diameter of thread (metric ISO thread).....:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(16.3.5)	Corrosion		N/A
(16.3.6)	Nominal diameter of thread (mm).....:		N/A
	Torque (Nm).....:		N/A
(16.3.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(16.3.8)	Without undue damage		N/A

ANNEX 4	**Screwless terminals (part of the luminaire)**		**N/A**
(17)	**SCREWLESS TERMINALS**		N/A
(17.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(17.2.1)	Material		N/A
(17.2.2)	Clamping		N/A
(17.2.3)	Stop		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(17.2.4)	Unprepared conductors		N/A
(17.2.5)	Pressure on insulating material		N/A
(17.2.6)	Clear connection method		N/A
(17.2.7)	Clamping independently		N/A
(17.2.8)	Fixed in position		N/A
(17.2.10)	Conductor size		N/A
	Type of conductor		N/A
(17.4)	**Terminals and connections for internal wiring**		N/A
(17.4.1)	Mechanical tests		N/A
(17.4.1.2.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(17.4.1.2.3)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(17.4.1.3)	Permanent connections: pull-off test (20 N)		N/A
(17.4.2)	**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
(17.5)	**Terminals and connections for external wiring**		N/A
(17.5.1)	Conductors		N/A
	Terminal size and rating		N/A
17.5.2	Mechanical tests		N/A
(17.5.2.2)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		N/A
(17.5.2.3)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(17.5.3)	**Electrical tests**		N/A
	Tests according 17.5.3.2 + 17.5.3.3 in IEC 60598-1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(17.5.3.2) (17.5.3.3)	**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									
	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:										

ANNEX 5	**Battery/EDLC-operated luminaires**	**N/A**
(Annex W)	**Battery/EDLC-operated luminaires**	N/A
(W.3)	**Marking**	N/A
(W.3.2)	Luminaires with replaceable battery	N/A
	Relevant information and warnings provided	N/A
(W.3.3)	Coin and button batteries	N/A
	Relevant information, warnings and marking provided	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(W.3.4)	Other standardized batteries		N/A
	Compartment and polarity correctly marked		N/A
	Compartment marked with the shape of the batteries		N/A
(W.3.5)	Luminaires with non-standardized replaceable rechargeable battery		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.6)	Luminaires with non-user replaceable battery/EDLC		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.7)	Luminaires with non-replaceable battery/EDLC		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.8)	Luminaires supplied by external dedicated power supply units		N/A
	Relevant information, warnings and marking provided		N/A
(W.3.9)	Rechargeable luminaires other than ordinary		N/A
	Relevant information provided		N/A
(W.3.10)	Conditions for charging		N/A
	Relevant information provided		N/A
(W.4)	**Construction**		N/A
(W.4.1)	Luminaires with a replaceable battery/EDLC, the compartment is designed to reduce the possibility of children removing the battery:		—
	- tool required		N/A
	- two independent and simultaneous movements required		N/A
	Luminaires with a non-replaceable battery/EDLC, no access to the battery or EDLC		N/A
	No recharging function for luminaires intended for non-rechargeable and rechargeable batteries		N/A
(W.4.2)	Small batteries		N/A
	Batteries that fit within the small parts cylinder not removable without a tool		N/A
	Parts that fit within the small parts cylinder not removable without a tool		N/A
	Battery compartment has adequate mechanical strength		N/A
(W.4.3)	Battery compartment fasteners for small batteries and other standardized batteries		N/A
	Screws or fasteners are captive		N/A
(W.4.4)	Battery/EDLC chargers incorporated in luminaires		N/A
	Electronic circuits used in battery or EDLC chargers comply with IEC 61347-2-11		N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	Battery or EDLC charger considered a controlgear and comply with.....:		N/A
(W.4.5)	Short-circuit protection		N/A
	The luminaire is operated under the following fault conditions:		—
	- cord short-circuited		N/A
	- battery terminals short-circuited		N/A
	- simultaneously accessible charging terminal short-circuited		N/A
	Appliance does not emit flames, molten metal, or ignitable gas		N/A
	No explosion or ignition of the battery		N/A
	Venting of the cells		N/A
(W.4.6)	Electrical parameters of batteries operation		N/A
(W.4.6.2)	Normal charging of lithium-ion systems		N/A
	Specified operating region for charging not exceeded		N/A
	- min. temperature (°C).....:		—
	- max. temperature (°C).....:		—
	Imbalanced battery		N/A
(W.4.7)	Protection against overpressure for Li-ion batteries used in luminaires		N/A
	The battery enclosure or compartment withstands the pressure generated when a cell vents during failure:		N/A
	- capacity of the single Li-ion cell (Ah).....:		—
	a) area of the unobstructed openings (mm^2).....:		N/A
	b) volume of air injected (ml).....:		N/A
(W.4.8)	Protection against the consequence of failure of cells or EDLCs		N/A
	Vents of cells not obstructed		N/A
	Space provided to allow EDLC expansion		N/A
(W.5)	**Protection against electric shock**		N/A
	Hazardous live parts not accessible when the luminaire is opened for replacing batteries		N/A
	Protective cover provided		N/A
(W.6)	**Endurance test and thermal test**		N/A
(W.6.1)	Endurance test		N/A
	Luminaires with charging function:	Yes ☐ No ☐	—
	c) total duration (h) .....:		—

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	d) supply voltage (V).....:		—
(W.6.2)	Thermal test (normal operation)	(see Annex 2)	N/A
(W.6.3)	Thermal test (abnormal operation)	(see Annex 2)	N/A
(W.6.4)	Lithium-ion charging systems – Fault conditions		N/A
	a) electronic components in the charging system of the luminaire subjected to the fault condition test according to IEC 61347-1:2015, Clause 14		N/A
	b) series configured battery charged with a deliberate imbalance		N/A
	c) one cell shorted		N/A
	No explosion during the test		N/A
	No charring or burning of the gauze or tissue paper		N/A
	No evidence of damage to any cell vent		N/A
	Upper limit charging voltage not exceeded		N/A
	Charging system permanently disabled		N/A
	Hazardous live parts shall not become accessible		N/A

(W.6.4)	**TABLE: Lithium-ion charging systems – Fault conditions**	**N/A**
Part	Simulated fault	Hazard
		YES/NO

ANNEX 6	**EMF test result according to IEC/EN 62493**		**P**
4	**LIMITS**		P
4.1	**General**		P
	Comply with Van der Hoofden test limit in 4.2.3 or inherently compliant in 4.2.2 and pass assessment procedure for intentional radiators in 4.3		P
4.2	**Unintentional radiating part of lighting equipment**		P
4.2.2	Lighting equipment deemed to comply with the Van der Hoofden test without testing		P
	1) electronic controlgear	Yes ☐ No ☒	—
	2) incandescent-lamp technology	Yes ☐ No ☒	—
	3) LED-light-source technology	Yes ☒ No ☐	—
	4) OLED-light-source technology	Yes ☐ No ☒	—

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	5) high-pressure discharge lamp LED-light-source technologies	Yes ☐ No ☒	—
	6) low-pressure discharge lamp technologies with exposure distance ≥ 50 cm	Yes ☐ No ☒	—
	7) independent auxiliary	Yes ☐ No ☒	—
	Not fulfil any of 1-7 above subject to 4.2.3		—
4.2.3	Applications of limits		N/A
	Not fulfil any of 1-7 in 4.2.2 but the compliance factor *F* is ≤ 1		N/A
4.3	**Intentional radiating part of lighting equipment**		N/A
	Comply with one of methods in Clause 7 if intentional radiator		N/A

6	**MEASUREMENT PROCEDURE FOR THE VAN DER HOOFDEN TEST**		N/A
6.1	**General**		N/A
	Measurements carried out under conditions according Clause 6.1 – 6.6	See Table 6	N/A

7	**ASSESSMENT PROCEDURE INTENTIONAL RADIATORS**		N/A
7.2	**Low-power exclusion method**		N/A
7.2.1	Input $P_{int,rad}$.....:		—
	Exclusion level P_{max}.....:		—
	Input power $P_{int,rad}$ < exclusion level P_{max}		N/A
7.3	**Application of the EMF product standard for body worn-equipment**		N/A
	If not Clause 7.2 is met and expose distance ≤ 0.05 m, comply with IEC 62209-2		N/A
7.4	**Application of the EMF product standard for base stations**		N/A
	If not Clause 7.2 is met and if intentional radiator is base station, comply with IEC 62232		N/A
7.5	**Application of another EMF standard**		N/A
	If not Clause 7.2 is met and if intentional radiator cannot be considered as in Clause 7.3 or 7.4, comply with IEC 62311		N/A

6	**TABLE: Measurement results with Van der Hoofden test head**				N/A
Location of EUT	Test model	Measuring distance	Result(F)	Limit(F)	Verdict
Reference Annex B of	--	--	--	≤1.0	N/A

IEC 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

IEC/EN 62493:2015+A1:2022					

Attachment No.1

IEC60598_2_21E-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-21
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Luminaires

Part 2: Particular requirements

Section 21: Rope Lights

Differences according to..... : EN 60598-2-21:2015 used in conjunction with EN IEC 60598-1:2021+A11:2022

	CENELEC COMMON MODIFICATIONS (EN)	P

21.6 (6)	**MARKING**		N/A
21.6 (6.4.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

21.7 (7)	**CONSTRUCTION**		N/A
21.7 (7.11.6)	Electro-mechanical contact systems		N/A

21.11 (8)	**EXTERNAL AND INTERNAL WIRING**		N/A
21.11 (8.2.1)	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 7.6, 7.7.1, 7.7.2, 7.10.1, 13.2, 14 and 15.2 of Part 1		N/A
21.11 (8.2.2)	Cables equal to EN 50525		N/A
	Replace table 11 – Supply cord		N/A

21.13 (14)	**ENDURANCE TESTS AND THERMAL TESTS**		**P**
21.13 (14.4.3c)	Thermal test (normal operation) see footnote c to table 22 relating to unsleeved fixed wiring		P

Attachment No.1

IEC60598_2_21E-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
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		N/A
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

Attachment No.2

IEC/EN IEC 62031 LED modules for general lighting - Safety specifications			
Clause	Requirement + Test	Result - Remark	Verdict
4.2	Classification		---
	Built-in……:	Yes ☐ No ☒	—
	Independent……..…:	Yes ☐ No ☒	—
	Integral……..:	Yes ☒ No ☐	—
4.6	Independent modules comply with requirements in IEC 60598-1:2024		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A
6	Marking		N/A
6.2	Contents of marking for built-in and for independent LED modules		N/A
6.3	Location of marking for built-in LED modules		N/A
6.4	Location of marking for independent LED modules		N/A
6.5	Marking of integral LED modules		P
6.6	Durability and legibility of marking		N/A
7	Terminals		N/A
8 (9)	EARTHING		N/A
9 (10)	Protection against accidental contact with live parts		N/A
10 (11)	Moisture resistance and insulation		P
11 (12)	Electric strength		P
12 (14)	Fault conditions		P
12.1	Fault conditions according to IEC 61347-1, Clause 14		P
12.2	Overpower condition	No damage	P
14 (15)	Construction		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
15 (16)	Creepage distances and clearances		N/A
16 (17)	Screws, current-carrying parts and connections		N/A

Attachment No.2

IEC/EN IEC 62031 LED modules for general lighting - Safety specifications			
Clause	Requirement + Test	Result - Remark	Verdict
17 (18)	Resistance to heat, fire and tracking		N/A
18	Resistance to corrosion		N/A
20	Heat management		N/A
22	Photobiological safety		P
22.1	UV radiation		N/A
22.2	Blue light hazard		P
	Assessed according to IEC TR 62778		P
22.3	Infrared radiation		N/A

Attachment No.3

IEC TR 62778 Photobiological safety of lamps and lamp systems			
Clause	Requirement + Test	Result - Remark	Verdict

Table 21.7 (7.24.3.3)	**Spectroradiometric measurement (IEC 62778)**		--
	Measurement performed on:	**Luminaire**	--
	Model number.....	FlexWash-06_3525	--
	Test voltage (V).....	24Vdc	--
	Test current (mA).....	--	--
	Test frequency (Hz).....	--	--
	Ambient, t (°C).....	25.0	--
	Measurement distance.....	☒ 20 cm ☐ ... cm	--
	Source size	☒ Non-small ☐ Small : .... mm	--
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	--

Item	Symbol	Units	Result	Risk Group
Correlated colour temperature	CCT	K	--	--
x/y colour coordinates	--	--	--	--
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	12	☒ RG0: <100 ☐ RG1: <10000 ☐ RG2: <4000000
Blue light hazard irradiance	E_B	W/m^2	--	--
Luminance	L	cd/m^2	--	--
Illuminance	E	lx	--	--
Supplementary information:				

Attachment No.4

Photo Documentation

Model: FlexWash-06_3525

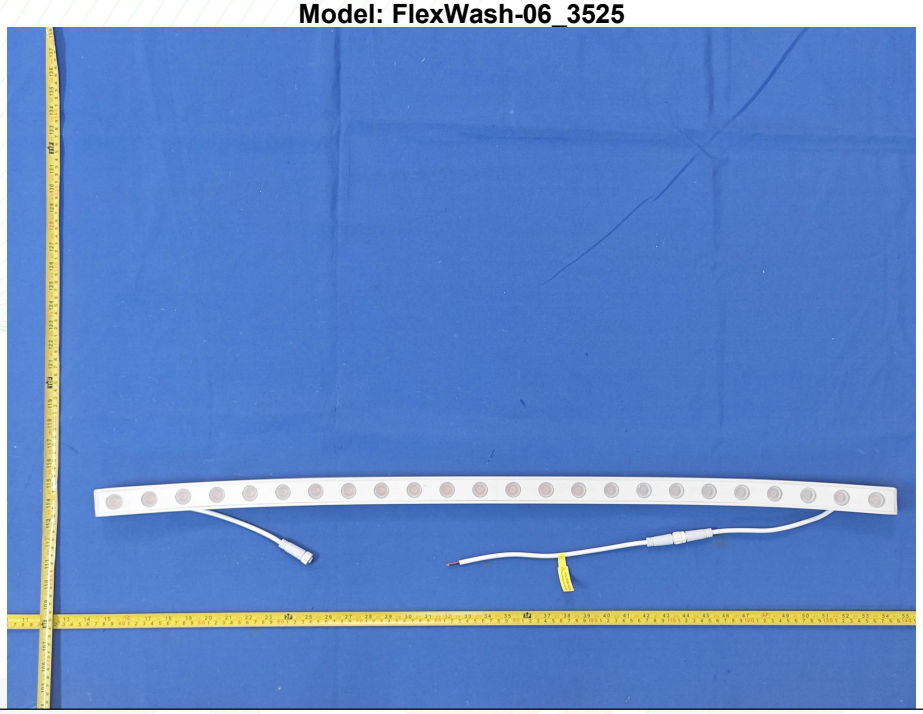


Photo 1

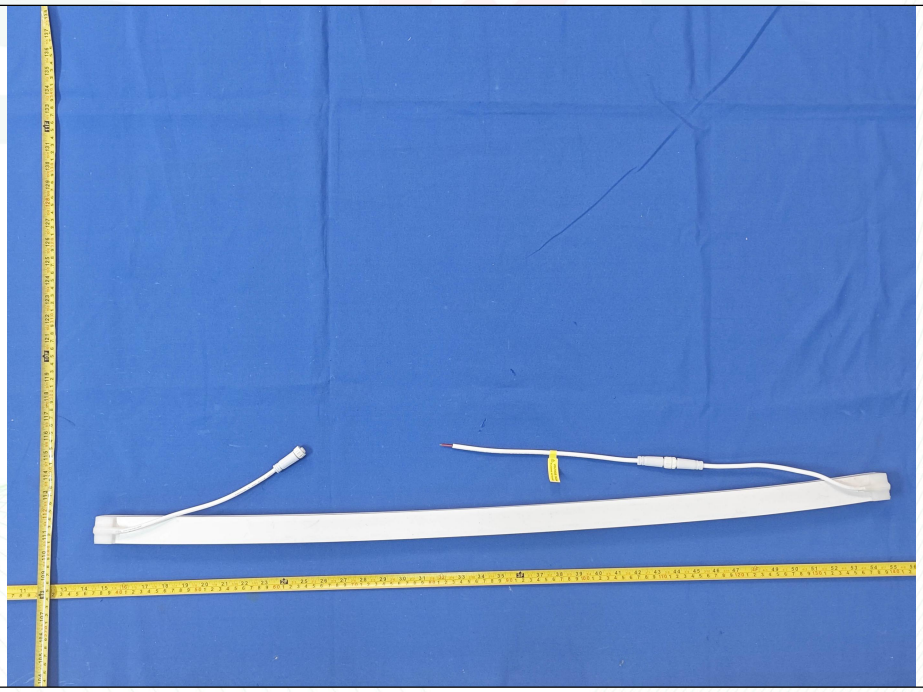


Photo 2

Attachment No.4

Photo Documentation

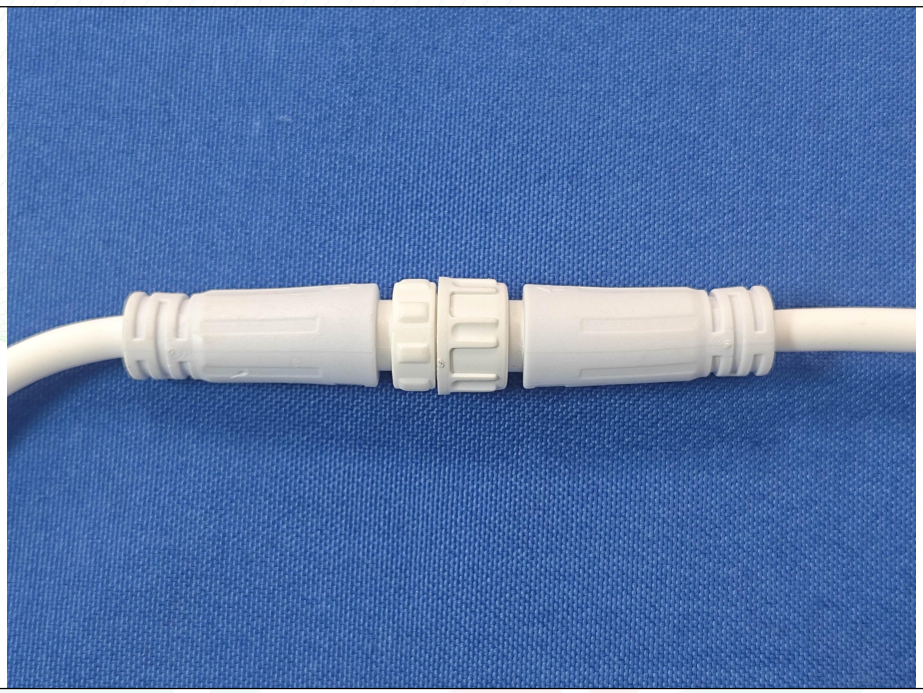


Photo 3

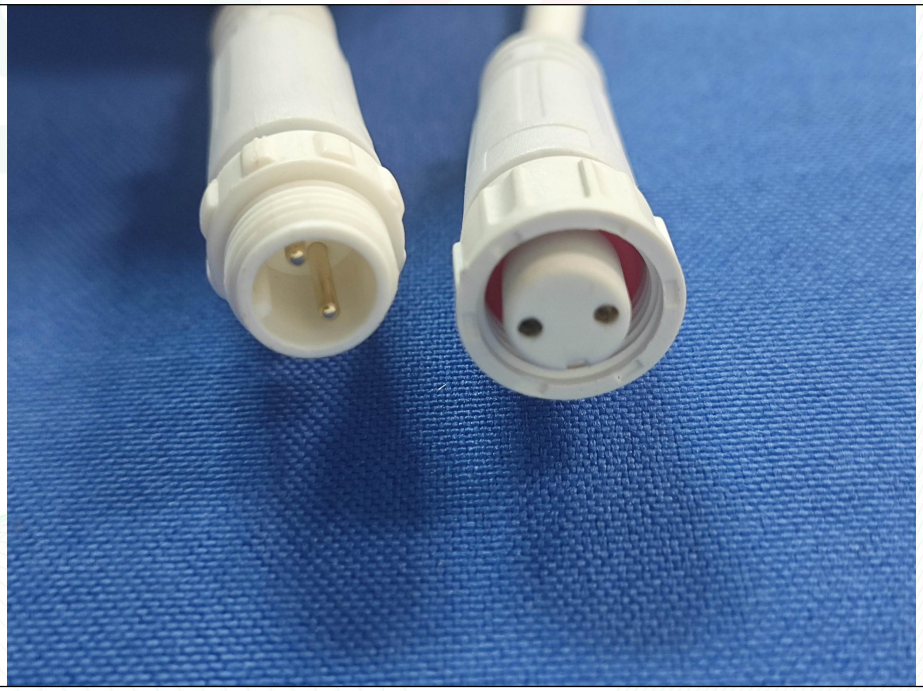
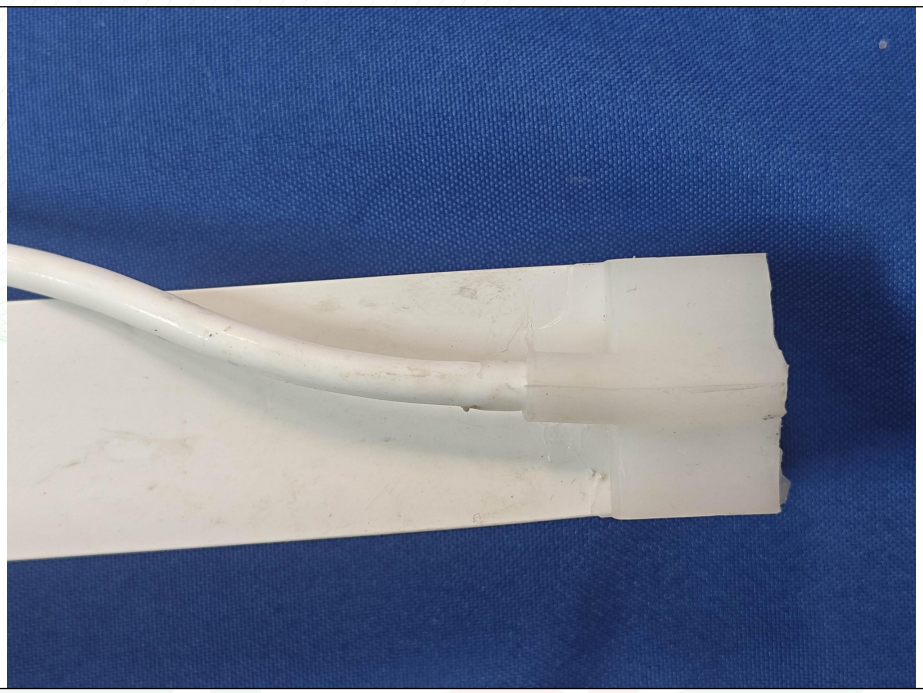


Photo 4

Attachment No.4

Photo Documentation



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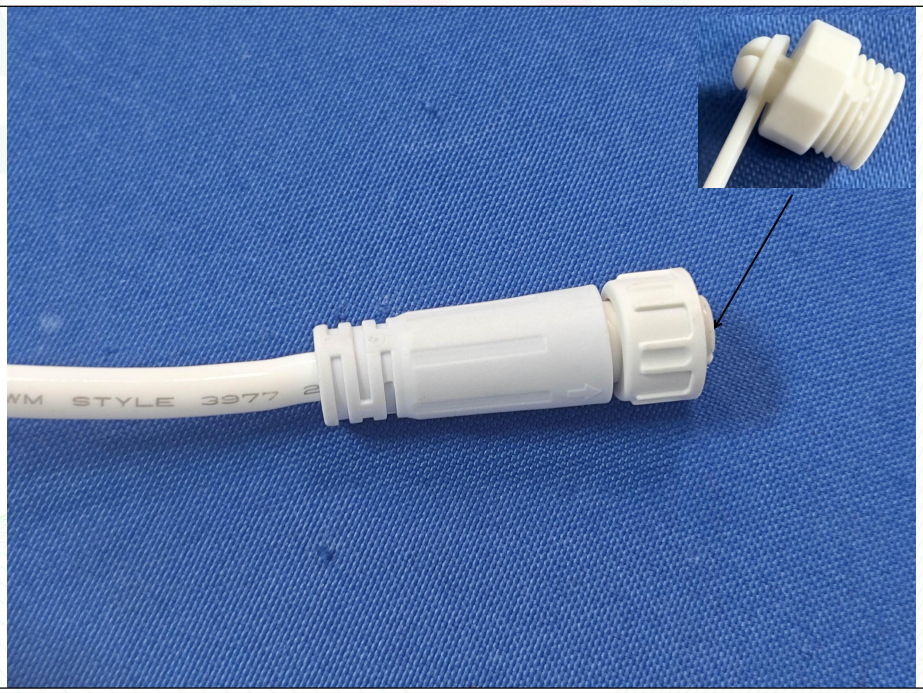

Photo 6

Attachment No.4

Photo Documentation

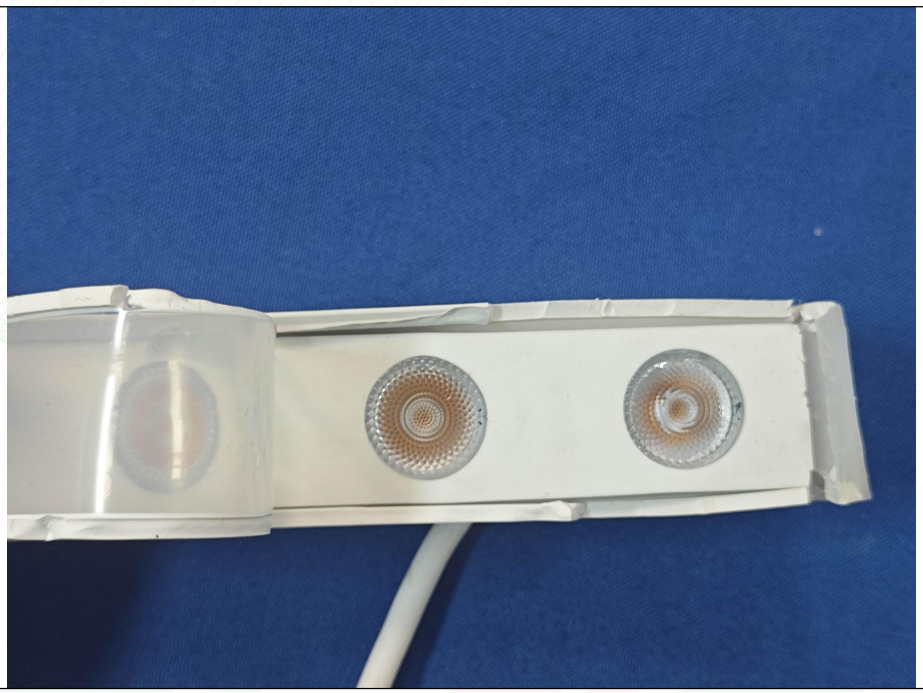

Photo 7

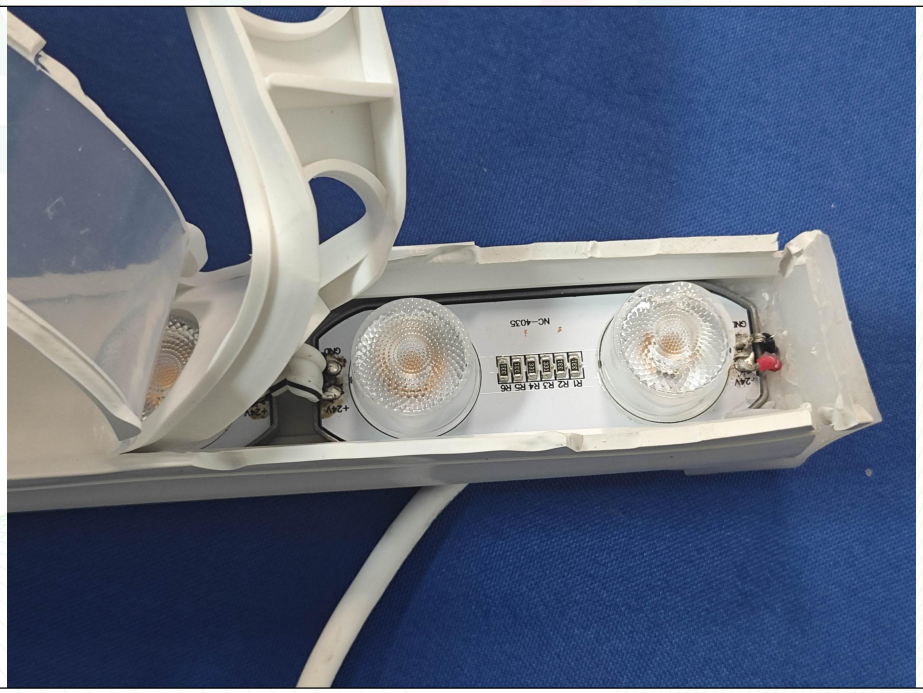

Photo 8

Attachment No.4

Photo Documentation

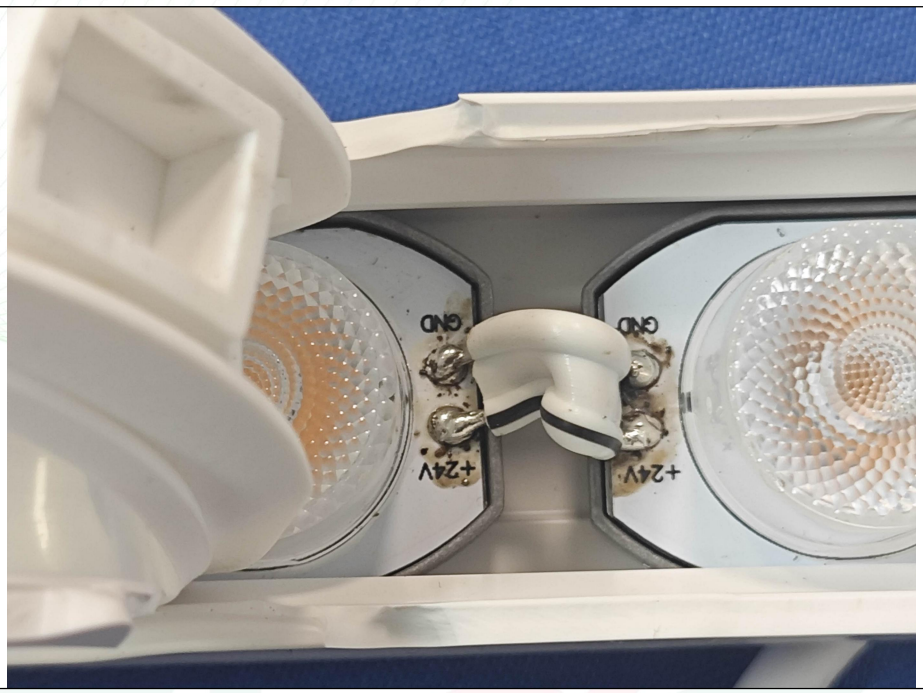

Photo 9

Photo 10

Attachment No.4

Photo Documentation

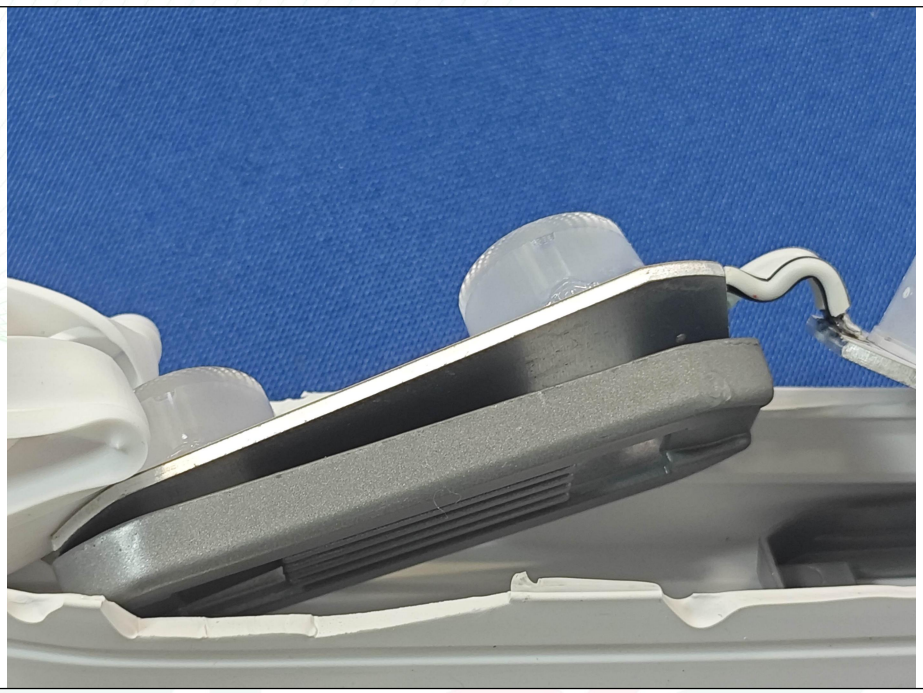

Photo 11

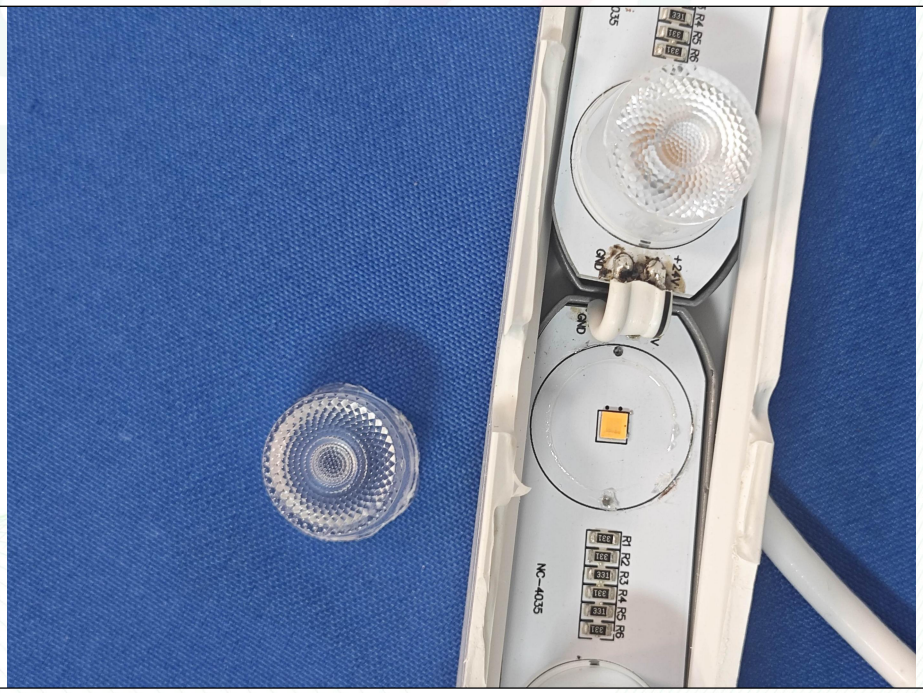

Photo 12

Attachment No.4

Photo Documentation

Photo 13

----------End of Test Report----------