Test Report issued under the responsibility of:

TEST REPORT
IEC 60598-2-1
Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Report Number. .....:	GZES190701967501
Date of issue .....:	2020-08-05
Total number of pages	40
Name of Testing Laboratory preparing the Report.....:	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Applicant's name.....:	Blueview Elec-optic Tech Co., Ltd.
Address .....:	1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu, Chengdu, Sichuan, China
Test specification:	
Standard.....:	IEC 60598-2-1:1979, AMD1:1987 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure .....:	CB scheme + SGS-CSTC / CE_LVD
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60598_2_1F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	Dated 2017-10

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.
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Test item description .....:	Fixed luminaire
Trade Mark .....:	**Blueview**
Manufacturer.....:	Same as applicant
Model/Type reference.....:	ASN2-RGB
Ratings .....:	220 V a.c.- 240 V a.c.; 50 Hz; Max.545 W; Class I; IP68(1m); Ta: 60 °C;

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch	
Testing location/ address.....:		198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China	
Tested by (name, function, signature) .....:		Freddy Chen / Project Engineer	freddy chen
Approved by (name, function, signature)...:		Mon Liang / Reviewer	mon liang
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature) .....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
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 1: European Group Differences and National Differences for IEC 60598-2-1 (Total: 2 pages)

Attachment 2: Additional requirement of IEC/EN 60598-2-21 (Total: 24 pages)

Attachment 3: Additional requirement of IEC/EN 61347-2-13 (Total: 16 pages)

Attachment 4: Additional requirement of IEC/EN 62031 (Total: 7 pages)

Attachment 5: Additional requirement of EN 62493: 2015 (Total: 1 page)

Attachment 6: Diagram circuit and PCB layout (Total: 2 pages)

Attachment 7: Photo documentations (Total: 9 pages)

Summary of testing:

1. The submitted sample was found to be in compliance with the requirement of standards IEC 60598-2-1:1979 + A1:1987, IEC 60598-1: 2014 + A1: 2017, EN 60598-2-1: 1989, EN 60598-1: 2015 + A1: 2018.
2. Lighting chain was tested with appliance according to IEC 60598-2-21: 2014 and EN 60598-2-21: 2015, and test result was positive.
3. The LED driver was tested in appliance according to IEC 61347-1: 2015 + A1: 2017, IEC 61347-2-13: 2014 + A1: 2016, EN 61347-1: 2015 and EN 61347-2-13: 2014 + A1: 2017, and test result was positive.
4. The LED module has been tested according to the standard IEC 62031: 2018 and EN IEC 62031: 2020.
5. The submitted sample was found to be in compliance with the requirement of the standard EN 62493: 2015 according to the clause 4.2.2.
6. Retinal blue light hazard measurements have been tested according to Technical report IEC/TR 62778: 2014 (Ed 2). According to the test results, the product belongs to RG0 and therefore no markings are required on the product or in the instructions.
7. After review, model ASN2-RGB was selected to performed full tests.

Tests performed (name of test and test clause):	**Testing location:**
1.5 Marking 1.6 Construction 1.7 Creepage distances and clearance 1.8 Provision for earthing 1.9 Terminals 1.10 External and internal wiring 1.11 Protection against electric shock 1.12 Endurance tests and thermal tests 1.13 Resistance to dust and moisture 1.14 Insulation resistance and electric strength 1.15 Resistance to heat, fire and tracking	198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China

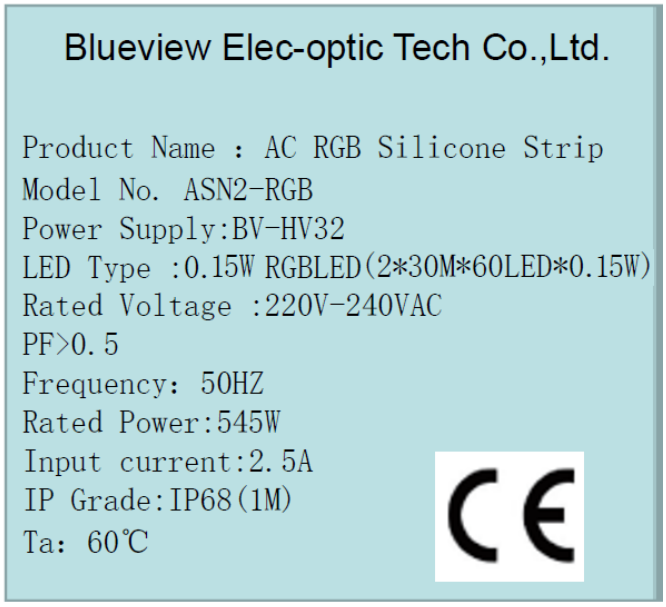
Summary of compliance with National Differences:

The EU Group Differences were taken into account.

☒ The product fulfils the requirements of EN 60598-2-1: 1989, EN 60598-1: 2015 + A1: 2018.

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.



Location: attached on enclosure

Remark:

1. The height of graphical symbols and CE logo are not less than 5 mm;
2. The height of letters and numerals is not less than 2 mm;
3. According to the standard, warning and text required by the standard should be written in the official language(s) of the country in which the appliance is to be sold. The applicant should ensure that the samples in future production fulfill the requirement;
4. As declared by the applicant, the importer **(and manufacturer, if it is different)**'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities;
5. Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.

Test item particulars.....:	
Classification of installation and use .....:	Fixed
Supply Connection .....:	Supply cord
Class of equipment.....:	Class I
Degree of protection.....:	IP20
Mass of the equipment.....:	Max. 11 kg
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 .....:	2019-07-10
Date (s) of performance of tests .....:	2019-07-10 to 2020-04-25

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.
When determining for test conclusion, measurement uncertainty of tests has been considered.

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

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 applicant
General product information: Fixed luminaires, connected to mains supply via supply cord, non-replaceable LED used, IP68, Class I.	

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.2 (0)	**GENERAL TEST REQUIREMENTS**		
1.2 (0.3)	More sections applicable.....:	Yes ☐ No ☒	—
1.2 (0.5)	Components	(see Annex 1)	—
1.2 (0.7)	**Information for luminaire design in light sources standards**		—
1.2 (0.7.2)	Light source safety standard .....:	IEC/EN 62031	—
	Luminaire design in the light source safety standard		P
1.4 (2)	**CLASSIFICATION OF LUMINAIRES**		
1.4 (2.2)	Type of protection .....:	Class I	—
1.4 (2.3)	Degree of protection .....:	IP68 (1 m)	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....:	Yes ☒ No ☐	—
1.4 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—
1.5 (3)	**MARKING**		
1.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz		P
1.5 (3.3.3)	Operating temperature		N/A
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply		N/A
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	type Z	P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non replaceable light sources	P
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
1.5 (3.3.24)	If not supplied with terminal block, information on the packaging		P
1.5 (3.4)	Test with water	15 s	P
	Test with hexane	15 s	P
	Legible after test		P
	Label attached		P
1.6 (4)	**CONSTRUCTION**		
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	**Lampholders**		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (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
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	**Terminal blocks**		**N/A**
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	**Terminals and supply connections**		**N/A**
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		N/A
1.6 (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
1.6 (4.7.4)	Terminals other than supply connection		P
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	**Switches**		**N/A**
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	**Insulating lining and sleeves**		**P**
1.6 (4.9.1)	Retainment		P
	Method of fixing .....:	Heat shrinkable tube: by construction	P
1.6 (4.9.2)	Insulated linings and sleeves:		P
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		P
	b) Ageing test. Temperature (°C) .....:		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.10)	**Double or reinforced insulation**		P
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		N/A
1.6 (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
1.6 (4.11)	**Electrical connections and current-carrying parts**		**P**
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	**Screws and connections (mechanical) and glands**		**P**
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....:	0,5; Fixed enclosure of LED driver	P
	Torque test: torque (Nm); part .....:		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (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
1.6 (4.12.5)	Screwed glands; force (Nm).....:		N/A
1.6 (4.13)	**Mechanical strength**		**P**
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:		N/A
	- other parts; energy (Nm) .....:	Enclosure; 0,35 Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
1.6 (4.13.2)	Metal parts have adequate mechanical strength		P
1.6 (4.13.3)	Straight test finger		P
1.6 (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
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	11 kg x 4 = 44 kg	P
	B) torque 2,5 Nm		P
	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
1.6 (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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Bending moment (Nm) of semi-luminaire .....:		N/A
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....:		N/A
	- strands broken.....:		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	**Flammable materials**		**P**
	- glow-wire test 650°C .....:	See Test Table 1.15 (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
1.6 (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
1.6 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear .....:	Compliance with Section 12	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (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
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.6 (4.17)	**Drain holes**		**N/A**
	Clearance at least 5 mm		N/A
1.6 (4.18)	**Resistance to corrosion**		**P**
1.6 (4.18.1)	- rust-resistance		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.18.2)	- season cracking in copper		P
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	**Protective shield**		N/A
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment .....:	See Test Table 1.15 (13.3.2)	N/A
1.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	**Photobiological hazards**		**P**
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (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		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
1.6 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
1.6 (4.26)	**Short-circuit protection**		N/A
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
1.6 (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
1.6 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test according Annex V		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
1.6 (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
1.6 (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
1.6 (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
1.6 (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
1.6 (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		P

IEC 60598-2-1			
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
1.6 (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
1.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	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
1.6 (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

1.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		P
1.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w		N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347		N/A
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P		N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347		N/A
1.8 (7)	**PROVISION FOR EARTHING**		
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω.....:	0,13 Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P

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Clause	Requirement + Test	Result - Remark	Verdict

1.9 (14)	**SCREW TERMINALS**		
	Separately approved; component list		N/A
	Part of the luminaire		N/A

1.9 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		
	Separately approved; component list .....:	(see Annex 1)	P
	Part of the luminaire .....:		N/A

1.10 (5)	**EXTERNAL AND INTERNAL WIRING**		
1.10 (5.2)	**Supply connection and external wiring**		**P**
1.10 (5.2.1)	Means of connection .....:	Supply cord	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
1.10 (5.2.2)	Type of cable .....:	H05RN-F	P
	Nominal cross-sectional area (mm²).....:	3 x 1,0 mm^2	P
	Cables equal to IEC 60227 or IEC 60245		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P
1.10 (5.2.5)	Type Z not connected to screws		P
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
1.10 (5.2.8)	Insulating bushings:		P
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		P
1.10 (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
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....:	80	P
	- torque test: torque (Nm) .....:	0,35	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Other appliance inlet or connector according relevant IEC standard	EN 61984	P
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	**Internal wiring**		**P**
1.10 (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 .....:		N/A
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²).....:	4 x 1,0 mm²	P
	Insulation thickness (mm) .....:	>0,5 mm	P
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Cross-sectional area (mm²).....:		N/A
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		N/A
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (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°		N/A
1.10 (5.3.3)	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
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		N/A
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		**N/A**
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
1.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		
1.11 (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		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	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		P
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		P
	Ordinary luminaire:		N/A
	- voltage under load (V) .....:		N/A
	- no-load voltage (V) .....:		N/A
	- touch current if applicable (mA) .....:		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		P
	- nominal voltage (V) .....:	24	P
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection	4 V	P
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

1.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according Annex B		—
	Controlgear if separate and not supplied		—
1.12 (12.3)	**Endurance test**		**P**
	a) mounting-position .....:	As normal use	—
	b) test temperature (°C).....:	70	—
	c) total duration (h) .....:	240	—

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Clause	Requirement + Test	Result - Remark	Verdict
	d) supply voltage (V).....:	264	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) .....:	—	—
	e) luminaire ceases to operate		—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	**Thermal test (normal operation)**	(see Annex 2)	P
1.12 (12.5)	**Thermal test (abnormal operation)**	(see Annex 2)	P
1.12 (12.6)	**Thermal test (failed lamp control gear condition):**		N/A
1.12 (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
1.12 (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
1.12 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (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.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- Ballast failure at supply voltage (V) .....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....:		—
	Ball-pressure test .....:		N/A
1.12 (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.....:		N/A
1.12 (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
1.12 (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:.....:		N/A

1.13 (9)	**RESISTANCE TO DUST AND MOISTURE**		
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP .....:	IP68 (1 m)	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- mounting position during test .....:	Suspended as normal use	—
	- fixing screws tightened; torque (Nm).....:	—	—
	- tests according to clauses .....:	The clause 9.2.2 & 9.2.9 of IEC/EN 60598-1	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	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		N/A
	g) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	25 °C; 93% Rh	P

1.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
1.14 (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		
	- between current-carrying parts of different polarity:	> 20 MΩ for WIFI module	P
	- between current-carrying parts and mounting surface .....:	> 20 MΩ for WIFI module	P
	- between current-carrying parts and metal parts of the luminaire .....:	> 20 MΩ for WIFI module	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings as described in Section 5 .....:	> 20 MΩ for WIFI module	P
	Other than SELV		P
	- between live parts of different polarity.....:	> 20 MΩ	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts and mounting surface.....:	> 20 MΩ	P
	- between live parts and metal parts.....:	> 20 MΩ	P
	- 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.....:	> 20 MΩ	P
	- Insulation bushings as described in Section 5 .....:	> 20 MΩ	P
1.14 (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:	500 V for WIFI module	P
	- between current-carrying parts and mounting surface .....:	500 V for WIFI module	P
	- between current-carrying parts and metal parts of the luminaire .....:	500 V for WIFI module	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings as described in Section 5 .....:	500 V for WIFI module	P
	Other than SELV		P
	- between live parts of different polarity.....:	1480 V for LED driver 2960 V for LED lighting chain	P
	- between live parts and mounting surface.....:	1480 V for LED driver 2960 V for LED lighting chain	P
	- between live parts and metal parts.....:	1480 V	P
	- 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.....:	1480 V	P
	- Insulation bushings as described in Section 5 .....:	1480 V	P
1.14 (10.3)	Touch current or protective conductor current (mA).:	Touch current: 0,094 mA; Limit: 0,7 mA; Protective conductor: 0,05 mA; Limit: 3,5 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		
1.15 (13.2.1)	Ball-pressure test .....:	See Test Table 1.15 (13.2.1)	P
1.15 (13.3.1)	Needle-flame test (10 s) .....:	See Test Table 1.15 (13.3.1)	P
1.15 (13.3.2)	Glow-wire test (650°C) .....:	See Test Table 1.15 (13.3.2)	P
1.15 (13.4)	Proof tracking test (IEC 60112) .....:	See Test Table 1.15 (13.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict

1.7 (11.2)	**TABLE I: Creepage distances and clearances**							**P**
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages							**P**
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*							**P**
	Insulation type **	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:	R	> 6,5	3	11.1B	> 6,5	5	11.1A	
Working voltage (V).....:					240			—
PTI.....:					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:					—			—
Supplementary information: Between live part and accessible parts of LED lighting chain								
Distance 2:	R	> 6,5	3	11.1B	> 6,5	5	11.1A	
Working voltage (V).....:					240			—
PTI.....:					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:					—			—
Supplementary information: Between live part and mounting surface of LED lighting chain								
Distance 3:	B	>2,0	1,5	11.1B	>3,3	2,5	11.1A	
Working voltage (V).....:					240			—
PTI.....:					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:					—			—
Supplementary information: between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.								

** 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

1.7 (11.2)	TABLE II: Creepage distances and clearances							N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages								
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2								
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:								
Working voltage (V).....:								—
Frequency if applicable (kHz).....:								—
PTI.....:					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								
Distance 2:								
Working voltage (V).....:								—
Frequency if applicable (kHz).....:								—
PTI.....:					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								
Distance 3:								
Working voltage (V).....:								—
Frequency if applicable (kHz).....:								—
PTI.....:					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								

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

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) .....:		≤ 2,0		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB for LED driver	See Annex 1	125	1,1	
PCB for WIFI module	See Annex 1	125	1,2	
Connector for LED driver and LED	See Annex 1	125	0,8	
Connector for WIFI module	See Annex 1	125	0,5	
Insulating gasket for WIFI connector	See Annex 1	125	0,7	
Potting glue connection point of lighting chain	See Annex 1	89	1,2	
Supplementary information: —				

1.15 (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 for LED driver	See Annex 1	10	No	0	P
PCB for LED WIFI module	See Annex 1	10	No	0	P
Connector for LED driver and LED	See Annex 1	10	No	0	P
Connector for WIFI module	See Annex 1	10	No	0	P
Insulating gasket for WIFI connector	See Annex 1	10	No	0	P
Supplementary information: —					

1.15 (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
Mylar	See Annex 1	No	0	P
Potting glue for lighting chain and connection point of lighting chain	See Annex 1	No	0	P
Potting glue for LED driver	See Annex 1	No	0	P
Heat shrinkable tube	See Annex 1	No	0	P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information: —

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.4)	TABLE: Proof tracking test (IEC 60112)				P
Test voltage PTI .....:		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
PCB for LED driver	See Annex 1	Yes	Yes	Yes	P
PCB for WIFI module	See Annex 1	Yes	Yes	Yes	P
Potting glue for lighting chain	See Annex 1	Yes	Yes	Yes	P
Potting glue for LED driver	See Annex 1	Yes	Yes	Yes	P
Connector for LED driver and LED	See Annex 1	Yes	Yes	Yes	P
Connector for WIFI module	See Annex 1	Yes	Yes	Yes	P
Insulating gasket for WIFI connector	See Annex 1	Yes	Yes	Yes	P
Supplementary information: —					

IEC 60598-2-1			
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	B	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F	3 x 1,0 mm^2	EN 50525-2-21:2011	VDE 40015999
Output wire for LED driver and LED wire	B	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F	4 x 1,0 mm^2;	EN 50525-2-21:2011	VDE 40015999
Connector for LED driver and LED	B	Shenzhen Lilutong Electronic Technology Co., Ltd.	LLT-M15-15 series	250 V; 15 A; 4 poles; 1,0 mm^2	EN 61984: 2009	TUV SUD B 16 03 90230 006
Plastic use in switch	B	Yueqing Pingxing Electronic Co., Ltd.	PX12C1-P10Y-E-S	PPT	IEC 60598-2-1: 1979+A1 IEC 60598-1: 2014 + A1: 2017 EN 60598-2-1: 1989 EN 60598-1: 2015 + A1: 2018	Tested in appliance
Connector for WIFI module		Shenzhen Yixinshi Technology Development Co., Ltd.	—	PTFE	IEC 60598-2-1: 1979+A1; IEC 60598-1: 2014 + A1: 2017 EN 60598-2-1: 1989; EN 60598-1: 2015 + A1: 2018	Tested in appliance
LED	B	Blueview Elec-optic Tech Co., Ltd.	ASN2-RGB	R: 2,0 V; 20 mA; G & B: 3,0 V; 20 mA	IEC 60598-2-1: 1979+A1 IEC 60598-1: 2014 + A1: 2017 EN 60598-2-1: 1989 EN 60598-1: 2015 + A1: 2018	Tested in appliance
Lighting chain	B	Blueview Elec-optic Tech Co., Ltd.	—	Input: 220 Vdc; 2 x Max.270 W; 2 x 30 m	IEC 60598-2-1: 1979+A1 IEC 60598-1: 2014 + A1: 2017 EN 60598-2-1: 1989 EN 60598-1: 2015 + A1: 2018	Tested in appliance
Potting glue for lighting chain (including connection poin)	B	Chengdu zequn Insulation Material Co., Ltd.	XS1110-ZA	Silica	IEC 60598-2-1: 1979+A1 IEC 60598-1: 2014 + A1: 2017 EN 60598-2-1: 1989 EN 60598-1: 2015 + A1: 2018	Tested in appliance

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

LED driver	B	Blueview Elec-optic Tech Co., Ltd.	—	Input: 220-240 Vac; 50 Hz; output: 220-240 Vdc; Max.540 W	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
-PCB for driver	B	Chengdu Tianmu Electronics Equipment Co., Ltd.	—	Glass fiber epoxy resin copper clad laminate	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
-PCB for WIFI module	B	Shen Zheng WE-Smart Electronics Equipment Co., Ltd.	—	Glass fiber epoxy resin copper clad laminate	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
-internal wire for WIFI module	B	Shenzhen Yixinshi Technology Development Co., Ltd.	—	FEP; Φ1,13 mm	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
-internal wire for switch	B	Shenzhen Jieshuo Wire Co., Ltd.	—	24 AWG; PVC	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
- Heat shrinkable tube	B	Shenzhen Woer Heat-Shrinkable Material Co., Ltd.	—	600 V; 125 °C	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017 UL 224 (ed.3): 2006	UL E203950 & Tested in appliance
-opto-couplers	B	Everlight Electronics Co., Ltd.	EL817	55/110/21; 6000 V; Creepage distance and clearance of input and output >7,6 mm;	DIN EN 60747-5-5 (0884-5):2015-11 EN 60747-5-5:2011; A1:2015	VDE 132249

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

-X-capacitor	B	Guangdong JURCC electronics Co., Ltd.	MPX	40/110/56; 0,47uF; AC 310 V	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE 40034920
-Y-capacitor	B	JYH HSU (JEC) Electronics Ltd	JD	40/085/21; 400 V; 2200 PF	DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04; EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 DIN EN 60384-14 (VDE 0565-1-1):2014-04; EN 60384-14:2013-08	VDE40038642
- mylar	B	Dupont Teijin Films U S L P	Mylar iGuard 300	Photovoltaic Polymeric Materials	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017 UL 746C (ed.7): 2018	UL E93687 & Tested in appliance

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

-fuse	B	Shenzhen Lanson Electronics Co., Ltd.	3K T6.3A250V	T6,3 A; 250 V	DIN EN 60127-3 (VDE 0820-3):2015-11; EN 60127-3:2015 IEC 60127-1:2006 IEC 60127-1:2006/AMD1:2011 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 DIN EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011 +A2:2015	VDE 40010682
- Insulating gasket for WIFI connector	B	Formosa Chemicals & Fibre Corp Plastics DIV	—	PC+ABS	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
- Potting glue	B	Wanhua Chemical Group Co., Ltd.	SD626A/B	Thermal conductive silicone electronic potting adhesive	IEC 61347-1: 2015 + A1: 2017 IEC 61347-2-13: 2014 + A1: 2016 EN 61347-1: 2015 EN 61347-2-13: 2014 + A1: 2017	Tested in appliance
-Switching Power Supply	B	Mean Well Enterprises Co., Ltd.	IRM-03-5	Input: AC 100-240 V; 50 /60 Hz; 70 mA; Class II; Output: 5 Vdc; 600 mA;	IEC 62368-1: 2014	TUV Rheinland JPTUV-098516

Supplementary information:

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

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference.....:	ASN2-RGB	—
	Lamp used.....:	non-replaceable LED	—
	Lamp control gear used.....:	—	—
	Mounting position of luminaire.....:	As normal use	—
	Supply wattage (W).....:	634	—
	Supply current (A).....:	3,06	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	60	—
	- abnormal operating mode.....:	LEDs short-circuited	—
1.12 (12.4)	- test 1: rated voltage .....:	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	1,06 x 240 = 254,4 V	—
	- 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 .....:	—	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	1,1 x 240 = 264 V	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Input wire of LED driver	56,9	—	64,0	—	90	—	—
Internal wire for driver	56,9	—	67,5	—	90	—	—
Wire for LED	56,9	—	63,6	—	90	—	—
Wire be clamped	56,9	—	63,4	—	75	—	—
Connector	56,9	—	63,7	—	Ref.	—	—
LED	56,9	—	69,2	—	Ref.	—	—
Potting glue for lighting chain	56,9	—	63,7	—	Ref.	—	—
Enclosure of driver(inner)	56,9	—	62,9	—	Ref.	—	—
Fuse	56,9	—	71,0	—	Ref.	—	—
PCB for driver	56,9	—	80,0	—	Ref.	—	—
PCB for LED	56,9	—	65,5	—	Ref.	—	—
PCB for WIFI module	56,9	—	66,1	—	Ref.	—	—
X capacitor	56,9	—	68,2	—	110	69,2	120
Y capacitor	56,9	—	73,7	—	85	74,0	95
Relay	56,9	—	65,5	—	Ref.	—	—

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

Electrolytic capacitor	56,9	—	90,1	—	105	89,8	115
Opto-coupler	56,9	—	84,5	—	110	—	—
Inductor	56,9	—	67,5	—	Ref.	—	—
Internal wifi wire	56,9	—	68,3	—	80	—	—
Plastic use in switch	56,9	—	63,0	—	Ref.	—	—
Mounting surface	56,9	—	64,0	—	90	64,2	130
Lighting objected (0,1 m)	56,9	—	63,8	—	90	63,8	175
Supplementary information: —							

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		
(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) .....:		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 60598-2-1			
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
	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

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Clause	Requirement + Test	Result - Remark	Verdict

(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)										N/A
	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)										N/A
	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)										N/A
	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)										N/A
	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)										N/A
Supplementary information:										

-- End of Main Report ---

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IEC60598_2_1F ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Differences according to..... EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015 + A1:2018

Annex Form No..... EU_GD_IEC60598_2_1F

Annex Form Originator..... IMQ S.p.A.

Master Annex Form..... 2018-08-28

	CENELEC COMMON MODIFICATIONS (EN)		
1.5 (3)	**MARKING**		
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		P
1.6 (4)	**CONSTRUCTION**		
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.10 (5)	**EXTERNAL AND INTERNAL WIRING**		
1.10 (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
1.10 (5.2.2)	Cables equal to EN 50525		P
	Replace table 5.1 – Supply cord		P
1.12 (12)	**ENDURANCE TESTS AND THERMAL TESTS**		
1.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

Attachment 1: European group differences and national differences for IEC 60598-2-1

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

- - - End of attachment 1 - - -

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.5 (2)	**CLASSIFICATION**		
21.5 (2.2)	Type of protection .....:	Class II construction for Lighting chain	
21.5 (2.3)	Degree of protection .....:	IP68 (1 m)	
21.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....:	Yes ☒ No ☐	—
21.5 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—
21.5.2 (-)	Class II or Class III		P
21.5.3 (-)	Rope lights for outdoor use shall be IP44 or higher		P

21.6 (3)	**MARKING**	N/A

21.7 (4)	**CONSTRUCTION**		
21.7 (4.2)	Components replaceable without difficulty		N/A
21.7 (4.3)	Wireways smooth and free from sharp edges		P
21.7 (4.4)	**Lampholders**		N/A
21.7 (4.4.1)	Integral lampholder		N/A
21.7 (4.4.2)	Wiring connection		N/A
21.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
21.7 (4.4.4)	Positioning		N/A
	- pressure test (N) .....:		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) .....:		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
21.7 (4.4.5)	Peak pulse voltage		N/A
21.7 (4.4.6)	Centre contact		N/A
21.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
21.7 (4.4.8)	Lamp connectors		N/A
21.7 (4.4.9)	Caps and bases correctly used		N/A
21.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
21.7 (4.7)	**Terminals and supply connections**		**P**
21.7 (4.7.1)	Contact to metal parts		P
21.7 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
21.7 (4.7.3)	Terminals for supply conductors		N/A
21.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.2.3 and 15.6.2.4		N/A
21.7 (4.7.4)	Terminals other than supply connection		N/A
21.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
21.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
21.7 (4.8)	**Switches**		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
21.7 (4.9)	**Insulating lining and sleeves**		N/A
21.7 (4.9.1)	Retainment		N/A
	Method of fixing .....:		N/A
21.7 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C) .....:		N/A
21.7 (4.10)	**Double or reinforced insulation**		**P**

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
21.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
21.7 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
21.7 (4.10.4)	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
21.7 (4.11)	**Electrical connections and current-carrying parts**		**P**
21.7 (4.11.1)	Contact pressure		P
21.7 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
21.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
21.7 (4.11.4)	Material of current-carrying parts		P
21.7 (4.11.5)	No contact to wood or mounting surface		P

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (4.11.6)	Electro-mechanical contact systems		N/A
21.7 (4.12)	**Screws and connections (mechanical) and glands**		N/A
21.7 (4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
21.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
21.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....:		N/A
	- lampholder; torque (Nm) .....:		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
21.7 (4.12.5)	Screwed glands; force (Nm).....:		N/A
21.7 (4.13)	**Mechanical strength**		**N/A**
21.7 (4.13.1)	Impact tests:		N/A
	- fragile parts; energy (Nm).....:		N/A
	- other parts; energy (Nm) .....:		N/A
	1) live parts		N/A
	2) linings		N/A
	3) protection		N/A
	4) covers		N/A
21.7 (4.13.3)	Straight test finger		N/A
21.7 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
21.7 (4.13.6)	Tumbling barrel		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.7 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
21.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	4 x 10kg = 40 kg for Lighting chain	P
	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
21.7 (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
21.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....:		N/A
	- strands broken.....:		N/A
	- electric strength test afterwards		N/A
21.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
21.7 (4.14.5)	Guide pulleys		N/A
21.7 (4.14.6)	Strain on socket-outlets		N/A
21.7 (4.15)	**Flammable materials**		**P**
	- glow-wire test 650°C .....:	See Test Table 21.16 (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

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
21.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear .....:	(compliance with Section 12)	N/A
21.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
21.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
21.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
21.7 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
21.7 (4.18)	**Resistance to corrosion**		P
21.7 (4.18.1)	- rust-resistance		N/A
21.7 (4.18.2)	- season cracking in copper		P
21.7 (4.18.3)	- corrosion of aluminium		N/A
21.7 (4.19)	Ignitors compatible with ballast		N/A
21.7 (4.20)	Rough service vibration		N/A
21.7 (4.21)	**Protective shield**		N/A
21.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
21.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
21.7 (4.21.3)	No direct path		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment .....:	See Test Table 21.16 (13.3.2)	N/A
21.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
21.7 (4.23)	Semi-luminaires comply Class II		N/A
21.7 (4.24)	**Photobiological hazards**		**P**
21.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
21.7 (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		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
21.7 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
21.7 (4.26)	**Short-circuit protection**		N/A
21.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
21.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
21.7 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop test, resistance < 0,05 Ω		N/A
21.7 (4.28)	**Fixing of thermal sensing control**		**N/A**
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C).....:		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
21.7 (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
21.7 (4.30)	**Luminaires with non-user replaceable light source**		**N/A**
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
21.7 (4.31)	**Insulation between circuits**		**P**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
21.7 (4.31.1)	SELV circuits		N/A
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
21.7 (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
21.7 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	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
21.7 (4.32)	**Overvoltage protective devices**		**N/A**
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
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**

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	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**		**P**
	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

21.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		
21.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
1.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 1.7 (11.2) II	N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
21.10 (14)	**SCREW TERMINALS**		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
21.10 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		
	Separately approved; component list .....:	(see Annex 1)	P
	Part of the luminaire .....:	(see Annex 4)	N/A
21.11 (5)	**EXTERNAL AND INTERNAL WIRING**		
21.11 (5.2)	**Supply connection and external wiring**		**P**
21.11 (5.2.1)	Means of connection .....:	Connector	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		P
21.11 (5.2.2)	Type of cable .....:	H05RN-F	—
	Nominal cross-sectional area (mm²).....:	4 x 1,0 mm²	—
	Cables equal to IEC 60227 or IEC 60245		—
21.11 (5.2.3)	Type of attachment, X, Y or Z	Type Z	P
21.11 (5.2.5)	Type Z not connected to screws		P
21.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
21.11 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
21.11 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.11 (5.2.9)	Locking of screwed bushings		N/A
21.11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
21.11 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
21.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
21.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....:	80	P
	- torque test: torque (Nm) .....:	0,35	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
21.11 (5.2.11)	External wiring passing into luminaire		P
21.11 (5.2.12)	Looping-in terminals		N/A
21.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
21.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		P
21.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
21.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
21.11 (5.3)	**Internal wiring**		**P**
21.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures .....:	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
21.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²) .....:		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
21.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
21.11 (5.3.1.3)	Double or reinforced insulation for class II		P
21.11 (5.3.1.4)	Conductors without insulation		N/A
21.11 (5.3.1.5)	SELV current-carrying parts		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
21.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
21.11 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
21.11 (5.3.4)	Joints and junctions effectively insulated		N/A
21.11 (5.3.5)	Strain on internal wiring		N/A
21.11 (5.3.6)	Wire carriers		N/A
21.11 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
21.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
21.11.2 (-)	**Cables for rope lights**		**P**
	Type of cable .....:	H05RN-F	P
	Cables not lighter than IEC 60227 or IEC 60245 for class II rope lights		P
	Cables not lighter than insulation according to 5.3.1 of part 1 for class III rope lights		N/A
	Nominal cross-sectional area (mm²) .....:	4 x 1,0 mm^2	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

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

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

21.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		
21.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	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		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
21.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
21.12 (8.2.3.a)	Class II luminaire:		P
	- 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

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
21.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
21.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- touch current .....:		N/A
	- no-load voltage .....:		N/A
	- touch current if applicable (mA) .....:		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage .....:		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
21.12 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
21.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
21.12 (8.2.6)	Covers reliably secured		P
21.12 (8.2.7)	Discharging of capacitors ≥ 0,5 μF		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

21.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		
21.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 21.14		—
21.13 (12.3)	**Endurance test:**		P
	- mounting-position .....:	As normal use	—
	- test temperature (°C).....:	70	—
	- total duration (h) .....:	240	—
	- supply voltage: Un factor; calculated voltage (V) ...:	264	—
	- lamp used.....:	non-replaceable LED	—
21.13 (12.3.2)	After endurance test:		P

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 (12.4)	**Thermal test (normal operation)**	**(see Annex 2)**	**P**
21.13 (12.5)	**Thermal test (abnormal operation)**	**(see Annex 2)**	**P**
21.13 (12.6)	**Thermal test (failed lamp control gear condition):**		N/A
21.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) .....:		—
	- case of abnormal conditions.....:		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .....:		—
	- measured mounting surface temperature (°C) at 1,1 Un .....:		N/A
	- calculated mounting surface temperature (°C) .....:		N/A
	- track-mounted luminaires		N/A
21.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....:		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C).....:		N/A
	- track-mounted luminaires		N/A
21.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		N/A
21.13 (12.7.1)	Luminaire without temperature sensing control		N/A
21.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W .....:		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V) .....:		—

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....:		—
	Ball-pressure test .....:	See Table 21.16 (13.2.1)	N/A
21.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....:		—
	Ball-pressure test.....:	See Table 21.16 (13.2.1)	N/A
21.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions.....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
21.13 (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 21.16 (13.2.1)	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		—

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.13.3 (-)	**Short-circuit test of rectifier**		N/A
	No emission of flames or molten material or production of flammable gases and no live parts accessible when short-circuit output of the rectifier		N/A

21.14 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		
21.14 (-)	If IP > IP 20 the order of tests as specified in clause 21.13		—
21.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP .....:	IP68 (1 m)	—
	- mounting position during test .....:	Suspended as normal use	—
	- fixing screws tightened; torque (Nm).....:	—	—
	- tests according to clauses .....:	The clause 9.2.2 & 9.2.9 of IEC/EN 60598-1	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c) i) For luminaires without drain holes – no water entry		N/A
	c) ii) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in 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 (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		P
21.14 (9.3)	Humidity test 48 h	25 °C; 93% Rh	P

21.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
21.15 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....:	Covered by metal foil	—
	Insulation resistance (MΩ).....:	—	—
	SELV		N/A

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:		N/A
	- 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		P
	- between live parts of different polarity.....:	> 20 MΩ	P
	- between live parts and mounting surface.....:	> 20 MΩ	P
	- between live parts and metal parts.....:	> 20 MΩ	P
	- 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
21.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V).....:	—	P
	SELV		N/A
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:		N/A
	- 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		P
	- between live parts of different polarity.....:	1480 V	P
	- between live parts and mounting surface.....:	2986 V	P
	- between live parts and metal parts.....:	2986 V	P

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts of different polarity through action of a switch .....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts .....:		N/A
	- Insulation bushings as described in Section 5 .....:		N/A
21.15 (10.3)	Touch current or protective conductor current (mA).:	Touch current: 0,07 mA; Limit: 0,7 mA	P

21.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		
21.16 (13.2.1)	Ball-pressure test .....:	See Test Table 21.16 (13.2.1)	P
21.16 (13.3.1)	Needle-flame test (10 s) .....:	See Test Table 21.16 (13.3.1)	N/A
21.16 (13.3.2)	Glow-wire test (650°C) .....:	See Test Table 21.16 (13.3.2)	P
21.16 (13.4)	Proof tracking test (IEC 60112) .....:	See Test Table 21.16 (13.4)	P
20.16 (-)	Flexible pipes of rope lights in compliance with IEC 60811-508		P

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.8 (11.2)	TABLE I: Creepage distances and clearances							P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages							P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*							P
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	R	> 3,9	3	11.1B	> 6,5	5	11.1A	
Working voltage (V).....:					240 V			—
PTI.....:					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:								—
Supplementary information: Between live part and accessible parts for LED lighting chain								
Distance 2:	R	> 3,9	3	11.1B	> 6,5	5	11.1A	
Working voltage (V).....:					240 V			—
PTI.....:					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:								—
Supplementary information: Between live part and mounting surface for LED lighting chain								
Distance 3:								
Working voltage (V).....:								—
PTI.....:					< 600 ☐ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) .....:								—
Supplementary information:								

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

21.8 (11.2)	TABLE II: Creepage distances and clearances						N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages							
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:							—

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:							
Distance 2:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:	< 600 ☐ ≥ 600 ☐						—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:							—
Supplementary information:							
Distance 3:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:	< 600 ☐ ≥ 600 ☐						—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:							—
Supplementary information:							

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

21.16 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm) .....:		≤ 2,0	—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Potting glue connection point of lighting chain	See Annex 1	89	1,2
Supplementary information:—			

21.16 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				N/A
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
Supplementary information:					

Attachment 2: Additional requirement of IEC/EN 60598-2-21			
Clause	Requirement + Test	Result - Remark	Verdict

21.16 (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
Potting glue for lighting chain	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).....:					Yes
Supplementary information: —					

21.16 (13.4)	**TABLE: Proof tracking test (IEC 60112)**				**P**
Test voltage PTI .....:		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Potting glue for lighting chain	See Annex 1	Yes	Yes	Yes	P
Supplementary information: —					

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**

ANNEX 3	**Screw terminals (part of the luminaire)**	N/A
(14)	**SCREW TERMINALS**	N/A

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

- - - End of attachment 2 - - -

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

4 (4)	**GENERAL REQUIREMENTS**		
- (4)	Insulation materials according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	Compliance of independent controlgear enclosure with IEC 60598-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
4 (4)	SELV controlgear comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	P
4 (-)	Transformer comply with IEC 61558		N/A
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage ≤ 300 V		N/A

6 (6)	**CLASSIFICATION**		**P**
	Built-in controlgear .....:	Yes ☐ No ☒	—
	Independent controlgear .....:	Yes ☐ No ☒	—
	Integral controlgear .....:	Yes ☒ No ☐	—
6 (-)	Auto-wound controlgear .....:	Yes ☐ No ☒	—
	Separating controlgear .....:	Yes ☐ No ☒	—
	Isolating controlgear .....:	Yes ☐ No ☒	—
	SELV controlgear .....:	Yes ☐ No ☒	—

7 (7)	**MARKING**	**N/A**

8 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V :	4 V	P
- (10.3)	**Controlgear providing SELV**		**P**

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		P
	No connection between output circuit and the body or protective earthing circuit		P
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	P
- (10.4)	**Accessible conductive parts in SELV circuits**		P
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		P
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. :		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		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
9 (8)	**TERMINALS**		**N/A**
10 (9)	**PROVISION FOR PROTECTIVE EARTHING**		
- (9.1)	**Provisions for protective earthing**		P
	Terminal complying with clause 8		P
	Locked against loosening and not possible to loosen by hand		P
	Not possible to loosen clamping means unintentionally on screwless terminals		P
	All parts of material minimizing the danger of electrolytic corrosion		P

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	Made of brass or equivalent material		P
	Contact surface bare metal		P
	Test according 7.2.3 of IEC 60598-1		P
- (9.2)	**Provision for functional earthing**		N/A
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A
- (9.3)	**Lamp controlgear with conductors for protective earthing by tracks on printed circuit board**		N/A
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω :		N/A
- (9.4)	**Earthing of built-in lamp controlgear**		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	**Earthing via independent controlgear**		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	**MOISTURE RESISTANCE AND INSULATION**		**P**
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P
	For basic insulation ≥ 2 MΩ .....:	> 20 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ .....:	See Annex L	P

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

12 (12)	**ELECTRIC STRENGTH**		**P**
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		P
	Working voltage ≤ 50 V, test voltage 500 V	For WIFI module	P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	1480 V	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	See Annex L for WIFI module	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

14 (14)	**FAULT CONDITIONS**		**P**
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	N/A

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ .....:	> 20 MΩ	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A
15 (-)	**TRANSFORMER HEATING**		**N/A**
16 (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
- (15.3)	**Plugs and socket-outlets used in SELV or ELV circuits**		**N/A**
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	**Insulation between circuits and accessible parts**		**P**
- (15.4.2)	SELV circuits		N/A
	Source used to supply SELV circuits:		N/A

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	Voltage in the circuit not higher than ELV		N/A
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
- (15.4.4)	Other circuits		P
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		P
- (15.4.5)	Insulation between circuits and accessible conductive parts		P
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		P
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
17 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
- (16)	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	P
- (16.2)	**Creepage distances**		**N/A**
- (16.2.2)	Minimum creepage distances for working voltages		N/A
	Creepage distances according to Table 7	(see appended table)	N/A
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	**Clearances**		**N/A**
- (16.3.2)	Clearances for working voltages		N/A
	Clearances distances according to Table 9	(see appended table)	N/A
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A
18 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		P
(4.11)	**Electrical connections**		**P**
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	**Mechanical connections and glands**		**P**
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part ….:	0,5; fixed enclosure of LED driver	P
	Torque test: torque (Nm); part ….:		N/A
	Torque test: torque (Nm); part ….:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) ….:		N/A
	- lampholder; torque (Nm) ….:		N/A
	- push-button switches; torque 0,8 Nm ….:		N/A
(4.12.5)	Screwed glands; force (Nm) ….:		N/A

19 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
- (18.1)	Ball-pressure test ….:	See Test Table 19 (18.1)	P
- (18.2)	Test of printed boards ….:	See Test Table 19 (18.2)	P
- (18.3)	Glow-wire test ….:	See Test Table 19 (18.3)	P
- (18.4)	Needle flame test ….:	See Test Table 19 (18.4)	P
- (18.5)	Tracking test ….:	See Test Table 19 (18.5)	P

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

20 (19)	RESISTANCE TO CORROSION	N/A

21 (-)	MAXIMUM WORKING VOLTAGE (Uout) IN ANY LOAD CONDITION	N/A

14	TABLE: tests of fault conditions	
Part	Simulated fault	Hazard
BD1	Shorted circuit;	NO
BD3	Shorted circuit;	NO
C22	Shorted circuit;	NO
C22	Opened circuit;	NO
C5	Shorted circuit;	NO
U9	Shorted circuit;	NO
Q4	Shorted circuit;	NO
C9	Shorted circuit;	NO
U6	Shorted circuit;	NO
D3	Shorted circuit;	NO
D9	Shorted circuit;	NO
D9	Opened circuit;	NO
Z3	Shorted circuit;	NO
Output of driver	Shorted circuit;	NO
Output of driver	Opened circuit;	NO
Output of WIFI	Shorted circuit;	NO

17 (16)	TABLE: clearance and creepage distance measurements (mm)						N/A
Applicable part of IEC 61347-1 Table 7 – 11*							
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 $\hat{U}_{out}$ if applicable (kV) .....:					—		—
Pulse voltage if applicable (kV) .....:					—		—

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:							
Distance 2:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:					—		—
PTI.....:					< 600 ☐	≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:					—		—
Pulse voltage if applicable (kV) .....:					—		—
Supplementary information:							
Distance 3:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:					—		—
PTI.....:					< 600 ☐	≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:					—		—
Pulse voltage if applicable (kV) .....:					—		—
Supplementary information:							

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

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

19 (18.1)	TABLE: Ball Pressure Test			P
Allowed impression diameter (mm) .....:		≤ 2,0		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB for driver	See Annex 1	125	1,1	
PCB for WIFI module	See Annex 1	125	1,2	
Connector for driver	See Annex 1	125	0,8	
Connector for WIFI module	See Annex 1	125	0,5	
Insulating gasket for WIFI connector	See Annex 1	125	0,7	
Supplementary information: —				

19 (18.2)	TABLE: Test of printed boards				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
PCB for driver	See Annex 1	30	No	0	P
PCB for WIFI module	See Annex 1	30	No	0	P
Supplementary information: —					

19 (18.3)	TABLE: Glow-wire test			P
Glow wire temperature .....:		650°C		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Mylar	See Annex 1	No	0	P
Potting glue	See Annex 1	No	0	P
Heat shrinkable tube	See Annex 1	No	0	P
Supplementary information: —				

Attachment 3: Additional requirement of IEC 61347-1: 2015 + A1: 2017 and IEC 61347-2-13: 2014 + A1: 2016 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

19 (18.4)	TABLE: Needle-flame test				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
PCB for driver	See Annex 1	10	No	0	P
PCB for WIFI module	See Annex 1	10	No	0	P
Connector for driver	See Annex 1	10	No	0	P
Connector for WIFI module	See Annex 1	10	No	0	P
Insulating gasket for WIFI connector	See Annex 1	10	No	0	P
Supplementary information: —					

19 (18.5)	TABLE: Proof tracking test				P
Test voltage PTI .....:	175 V				—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
PCB for driver	See Annex 1	Yes	Yes	Yes	P
PCB for WIFI module	See Annex 1	Yes	Yes	Yes	P
Potting glue	See Annex 1	Yes	Yes	Yes	P
Connector for driver and LED	See Annex 1	Yes	Yes	Yes	P
Connector for WIFI module	See Annex 1	Yes	Yes	Yes	P
Insulating gasket for WIFI connector	See Annex 1	Yes	Yes	Yes	P
Supplementary information: —					

Attachment 3: Additional requirement of IEC/EN 61347-1 and IEC/EN 61347-2-13 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

(A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		
(A.1)	Comply with A.2 or A.3		P
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:	24 V d.c	P
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
	Comply with Annex G.2 of IEC 60598-1		N/A

(C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**	**N/A**

(D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**	**N/A**

(F)	**ANNEX F – DRAUGHT-PROOF ENCOSURE**	**P**

(H)	**ANNEX H - TESTS**	**P**

I (L)	**ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES**		P
(L.3)	**Classification**		**P**
	Class I	Yes ☐ No ☒	—
	Class II	Yes ☐ No ☒	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☐ No ☒	—
	inherently short circuit proof controlgear	Yes ☒ No ☐	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	**Marking**		N/A
	Adequate symbols are used		N/A
(L.5)	**Protection against electric shock**		**N/A**
	Comply with clause 9.2 of IEC 61558-1		N/A
(L.6)	**Heating**		**N/A**
	No excessive temperatures in normal use		N/A
	Value if capacitor t_c marked .....:		—
	Winding insulation classified as Class .....:	—	—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A

Attachment 3: Additional requirement of IEC/EN 61347-1 and IEC/EN 61347-2-13 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

(L.7)	**Short-circuit and overload protection**		**N/A**
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N/A
(L.8)	**Insulation resistance and electric strength**		**P**
(L.8.1)	Conditioned 48 h between 91 % and 95 %		P
(L.8.2)	Insulation resistance		P
	Between input- and output circuits not less than 5 MΩ .....:	>20 MΩ	P
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ .....:		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ .....:		N/A
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits .....:	3000	P
	2) Over basic or supplementary insulation between:		N/A
	a) live parts having different polarity .....:	1500	P
	b) live parts and body if intended to be connected to protective earth .....:	1500	P
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord .....:		N/A
	d) live parts and an intermediate metal part .....:		N/A
	e) intermediate metal parts and the body .....:		N/A
	f) each input circuit and all other input circuits ....:		N/A
	3) Over reinforced insulation between the body and live parts .....:	3000 V	P
(L.9)	**Construction**		**N/A**
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	**Components**		**N/A**
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	**Creepage distances, clearances and distances through insulation**		**N/A**
	Creepage distances and clearances not less than in Clause 16	(see Annex P)	N/A
	Distance through insulation according Table L.5 in IEC 61347-1		N/A
	1) Basic distance through insulation		N/A
	Required distance (mm) .....:		—

Attachment 3: Additional requirement of IEC/EN 61347-1 and IEC/EN 61347-2-13 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict

	Measured (mm) .....:		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) .....:		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) .....:		N/A
	Supplementary information		—

J (-)	**ANNEX J IN THIS PART 2 – PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING**	**N/A**

(N)	**ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**	**N/A**

(O)	**ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**	**N/A**

- (P)	**ANNEX P IN PART 1: Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting**		P
- (P.1)	**General**		**P**
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		P
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		P
- (P.2)	**Creepage distances**		**P**
- (P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		P
	Basic or supplementary insulation:		P
	Required creepage .....:	0,56	—
	Measured .....:	>2	P
	Supplementary information	Between live part and accessible parts	—
	Reinforced insulation:		P
	Required creepage .....:	1,12	—
	Measured .....:	>5	P
	Supplementary information	Between live part and WIFI module	—
- (P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A

Attachment 3: Additional requirement of IEC/EN 61347-1 and IEC/EN 61347-2-13 for integral LED driver			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage $\hat{U}_{out}$ kV .....:	—	—
	Frequency .....:	—	—
	Required distance .....:	—	—
	Measured .....:	—	N/A
	Supplementary information		—
- (P.2.4)	Compliance with the required creepage distances		P
- (P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		P
- (P.2.4.3)	Electrical tests after conditioning		P
- (P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		P
- (P.3)	**Distance through isolation**		**P**
- (P.3.4)	Electrical tests after conditioning		P
- (P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		P
- (P.3.4.2)	Impulse voltage dielectrical test		P
	Basic or supplementary insulation:		P
	Working/rated voltage .....:	240 V	—
	Impulse voltage .....:	3000 V	P
	Supplementary information	Between live part and accessible parts	—
	Reinforced insulation:		P
	Working/rated voltage .....:	240 V	—
	Impulse voltage .....:	5000 V	P
	Supplementary information	Between live part and WIFI module	—

--- End of Attachment 3 ---

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		
4.2	Classification		P
	Built-in module .....:	Yes ☐ No ☒	—
	Independent module.....:	Yes ☐ No ☒	—
	Integral module .....:	Yes ☒ No ☐	—
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A

6	**MARKING**		
6.2	**Contents of marking for built-in and for independent LED modules**		N/A

7	**TERMINALS**		
7.1	**Integral terminals**		N/A
	Screw terminals comply with section 14 of IEC 60598-1	(see Annex 3)	N/A
	Screwless terminals comply with section 15 of IEC 60598-1	(see Annex 4)	N/A
7.2	**Terminals other than integral terminals**		N/A
	Separately approved; component list	(see Annex 2)	N/A
	Ratings suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A

8 (9)	**EARTHING**		**N/A**
- (9.1)	**Provisions for protective earthing**		N/A

9 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V .....:		N/A
- (10.3)	Controlgear providing SELV		N/A
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated from earth by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		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

10 (11)	**MOISTURE RESISTANCE AND INSULATION**		
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ .....:		N/A
	For double or reinforced insulation ≥ 4 MΩ .....:	20 MΩ	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

11 (12)	**ELECTRIC STRENGTH**		
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		N/A
	Basic insulation, 2U + 1000 V		N/A
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V		P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

12 (14)	**FAULT CONDITIONS**		
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
	Short-circuit or interruption of SPDs	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ .....:	>20 MΩ	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—
12.2	**Overpower condition**		**P**
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P
14 (15)	**CONSTRUCTION**		
- (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**		**N/A**
	Printed circuits used as internal connections complies with clause 14		N/A
15 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		
- (16.1)	**General**		P
	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		N/A
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P		N/A
- (16.2)	**Creepage distances**		P
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	**Clearances**		P
- (16.3.2)	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10		N/A
	Clearances distances for reinforced insulation according to Table 11		N/A

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

16 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
(4.11)	**Electrical connections**		**P**
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	**Mechanical connections and glands**		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) .....:		N/A
	- lampholder; torque (Nm) .....:		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm).....:		N/A

17 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		
- (18.1)	Ball-pressure test .....:		N/A
- (18.2)	Test of printed boards .....:		N/A
- (18.3)	Glow-wire test (650°C) .....:	See Test Table 17 (18.3)	P
- (18.4)	Needle-flame test (10 s) .....:		N/A
- (18.5)	Proof tracking test .....:		N/A

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

18	**RESISTANCE TO CORROSION**		
	Comply with requirements according 4.18 of IEC 60598-1		P

20	**HEAT MANAGEMENT**	**N/A**

22	**PHOTOBIOLOGICAL SAFETY**		
22.1	**UV radiation**		P
	Luminous radiation not exceed 2mW/klm		P
22.2	**Blue light hazard**		**P**
	Assessed according to IEC TR 62778	RG0	P
22.3	**Infrared radiation**		N/A
	Requirements for infrared radiation when required		N/A

A	**ANNEX A - TESTS**		
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		P

12 (14)	**TABLE: tests of fault conditions**	
Part	**Simulated fault**	**Hazard**
One LED	Short circuit	No
One LED	Open circuit	No

15 (16)	**TABLE: clearance and creepage distance measurements (mm)**						**P**
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**	
			clearance	***Table**		**creepage**	***Table**
Distance 1:	R	> 6,5	3	9	> 6,5	5	7
Working voltage (V).....:					240 V		—
Frequency if applicable (kHz).....:					—		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:					—		—
Pulse voltage if applicable (kV) .....:					—		—
Supplementary information: Between live part and accessible parts							
Distance 2:	R	> 6,5	3	9	> 6,5	5	7
Working voltage (V).....:					240 V		—

Attachment 4: Additional requirement of IEC/EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

Frequency if applicable (kHz).....:	—	—
PTI.....:	< 600 ☒ ≥ 600 ☐	—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:	—	—
Pulse voltage if applicable (kV) .....:	—	—
Supplementary information: Between live part and mounting surface		

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

17 (18.1)	**TABLE: Ball Pressure Test of Thermoplastics**	N/A

17 (18.2)	**TABLE: Test of printed boards**	**N/A**

17 (18.3)	**TABLE: Glow-wire test**				**P**
Glow wire temperature .....:	650°C				—
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
Potting glue for lighting chain	See Annex 1	30	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).....:					Yes
Supplementary information: —					

17 (18.4)	**TABLE: Needle-flame test**	N/A

17 (18.5)	**TABLE: Proof tracking test**	**N/A**

(A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**	**N/A**

ANNEX 1	**LED MODULES WITH INTEGRAL CONTROLGEAR PROVIDING SELV**	**N/A**

--- End of Attachment 4---

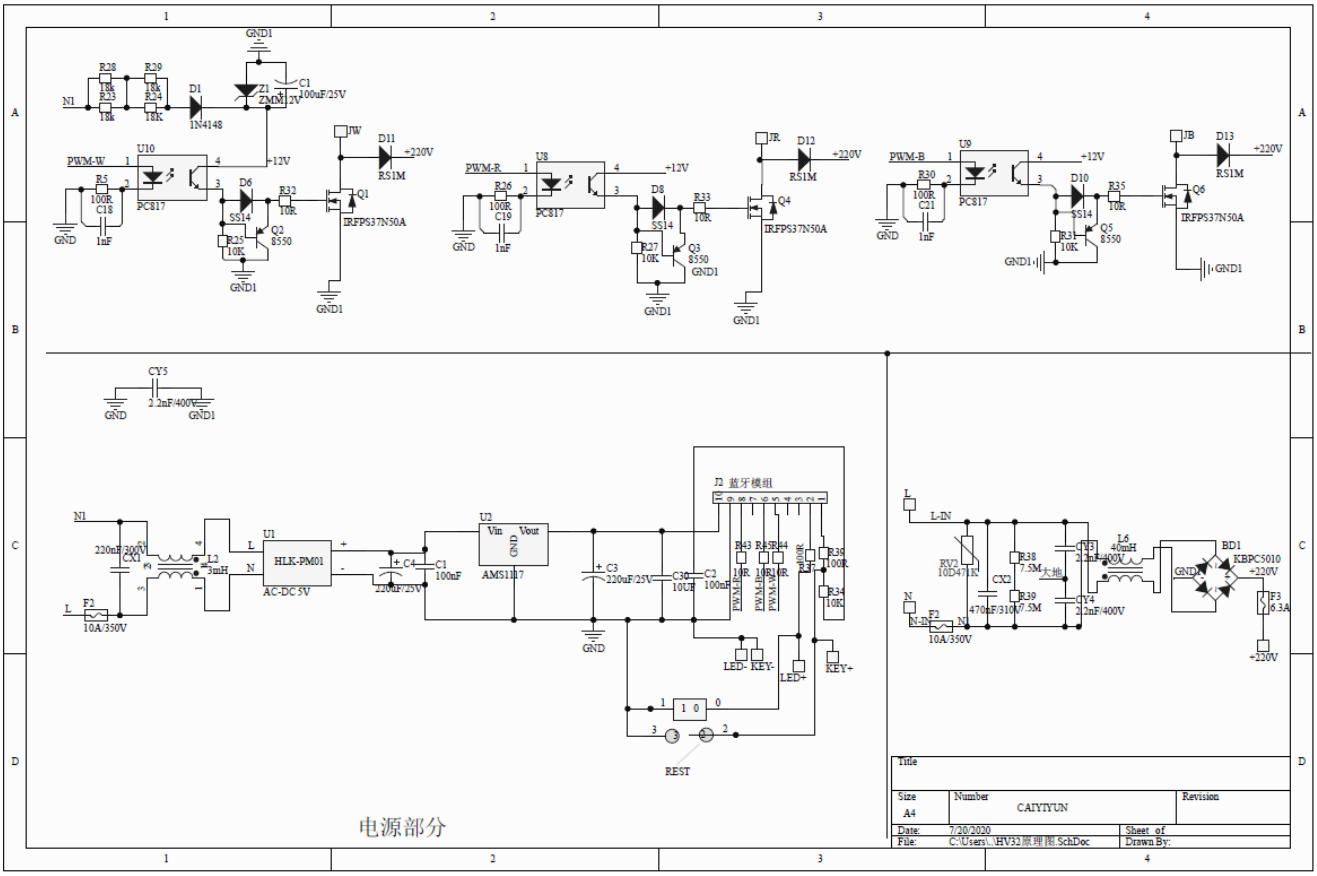
Attachment 5: Additional test for EN 62493: 2015			
Clause	Requirement + Test	Result - Remark	Verdict

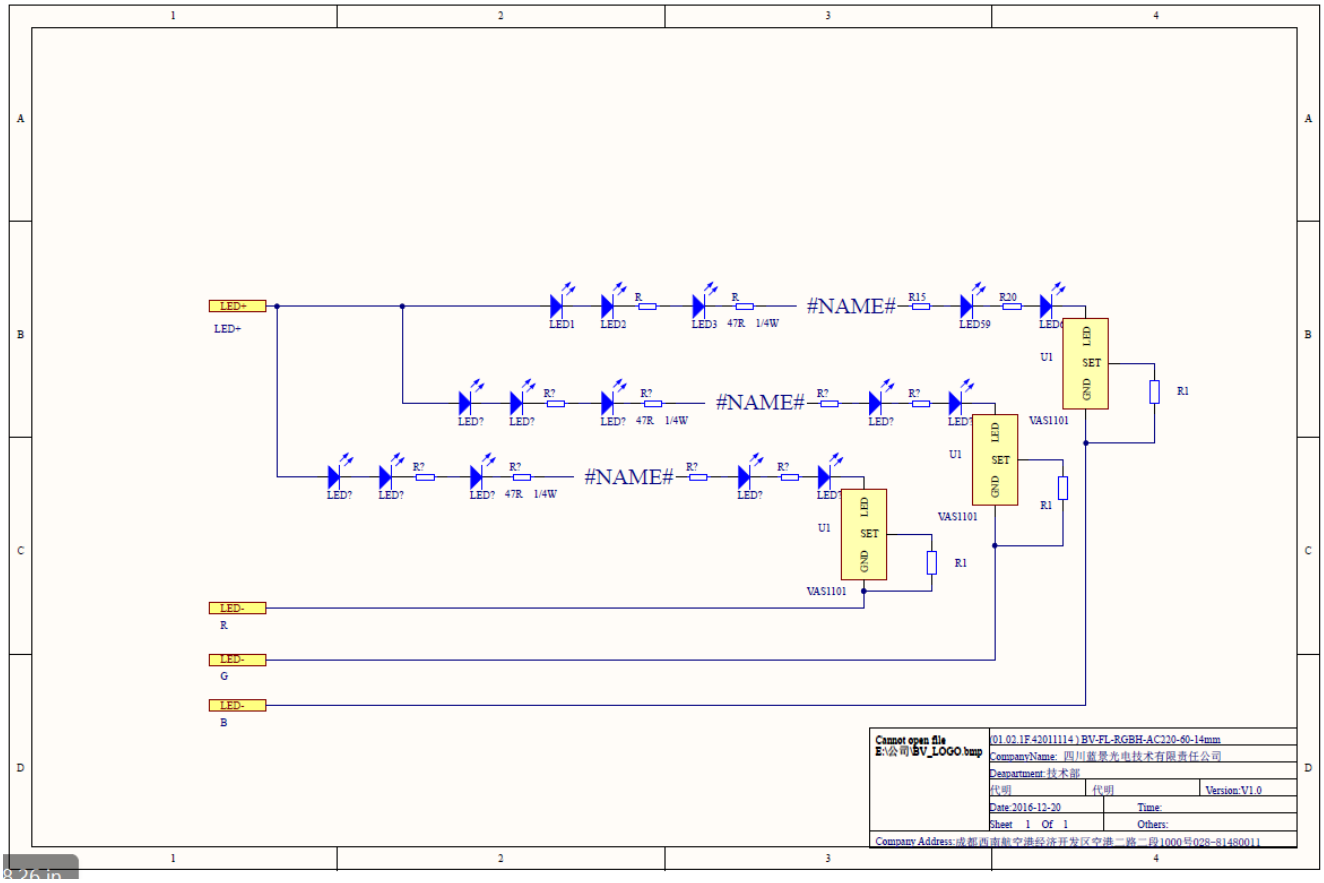
4	LIMITS (Test summary)		P
4.2.2	Lighting equipment deemed to comply with the Van der Hoofden test without testing		P
4.2.3	Unintentional radiating part of lighting equipment	factor F ≤ 1	N/A
4.3	Intentional radiating part of lighting equipment	No intentional radiating from EUT	N/A

- - - - End of attachment 5 - - -

Attachment 6: Schematic circuit diagram and PCB layout

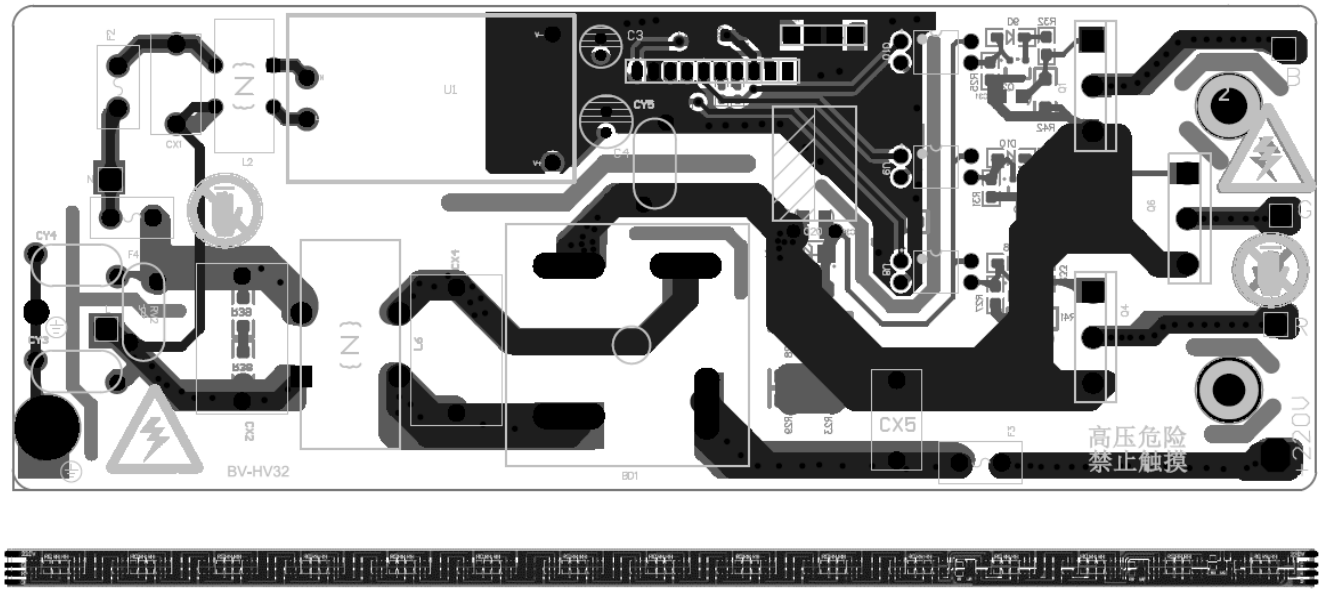
Diagram circuit:





Attachment 6: Schematic circuit diagram and PCB layout

PCB layout:



- - - End of attachment 6 - - -

Attachment 7: Photo documentations

Details of: General view for ASN2-RGB (luminaire part)

View:

[x] general

[ ] front

[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom

Details of: Connector view (it is glued with flexible pipe)

View:

[x] general

[ ] front

[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom

Attachment 7: Photo documentations

Details of: End cover view (it is glued with flexible pipe)

View:
[x] general
[ ] front
[ ] rear
[ ] right
[ ] left
[ ] top
[ ] bottom

Details of: LED view

View:
[x] general
[ ] front
[ ] rear
[ ] right
[ ] left
[ ] top
[ ] bottom

Attachment 7: Photo documentations

Details of: General view for ASN2-RGB (LED driver part)

View:

[x] general

[ ] front

[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom

Details of: General view for ASN2-RGB (LED driver part)

View:

[x] general

[ ] front

[ ] rear

[ ] right

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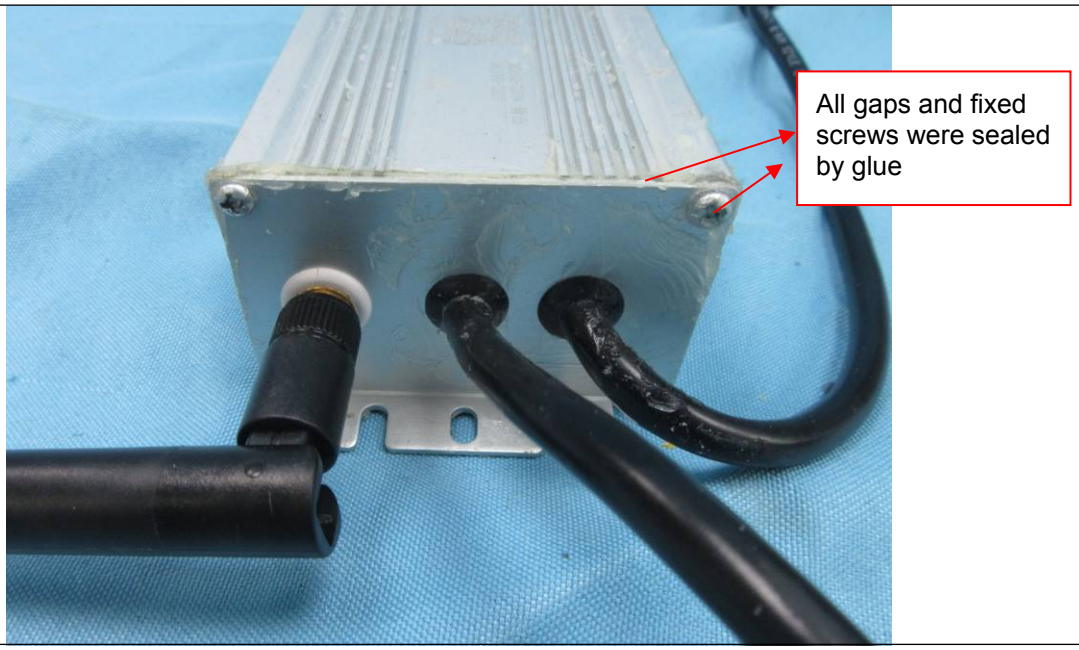

Attachment 7: Photo documentations

Details of: Detail view for wifi terminal

View:

[x] general

[ ] front

[ ] rear

[ ] right

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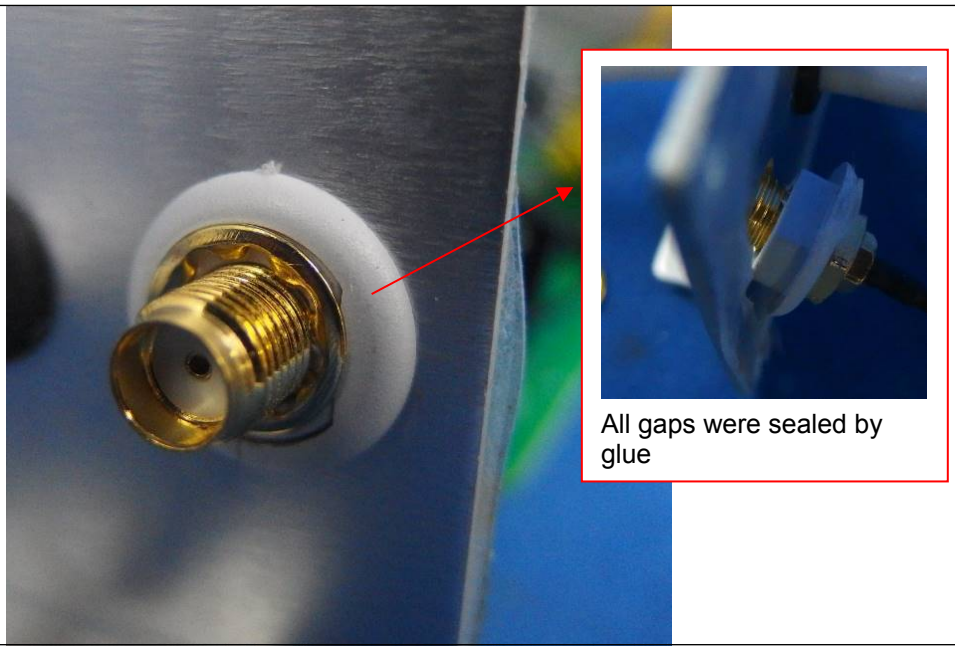
[ ] top

[ ] bottom



Details of: General view for ASN2-RGB (LED driver part)

View:

[x] general

[ ] front

[ ] rear

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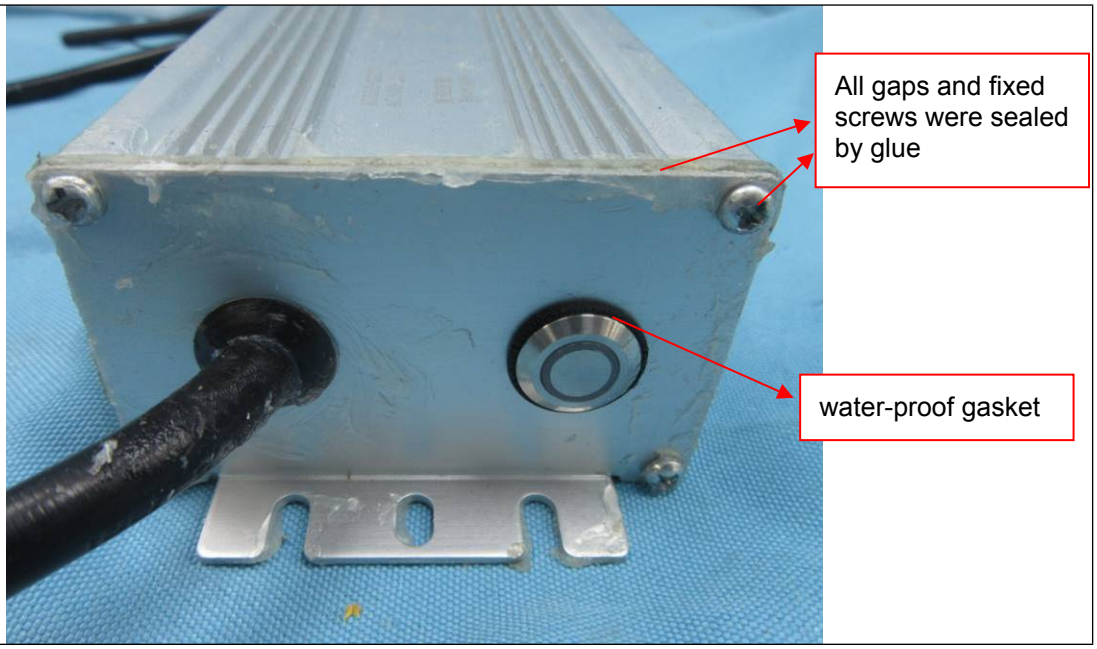
[ ] bottom



Attachment 7: Photo documentations

Details of: Internal view for switch

View:

[x] general

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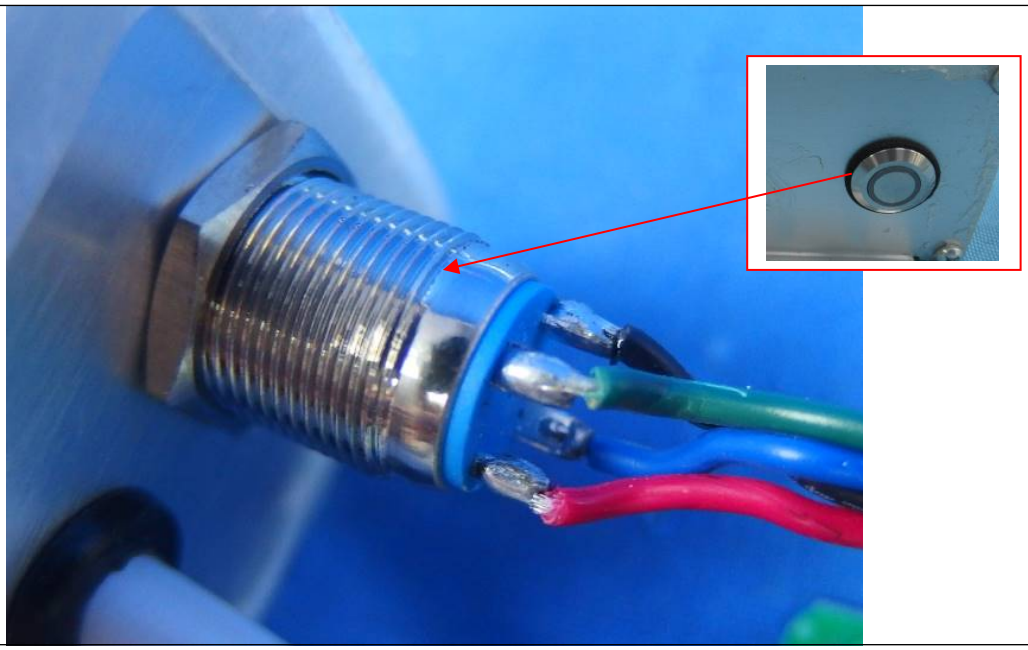

Details of: General view for ASN2-RGB (LED driver part)

View:

[x] general

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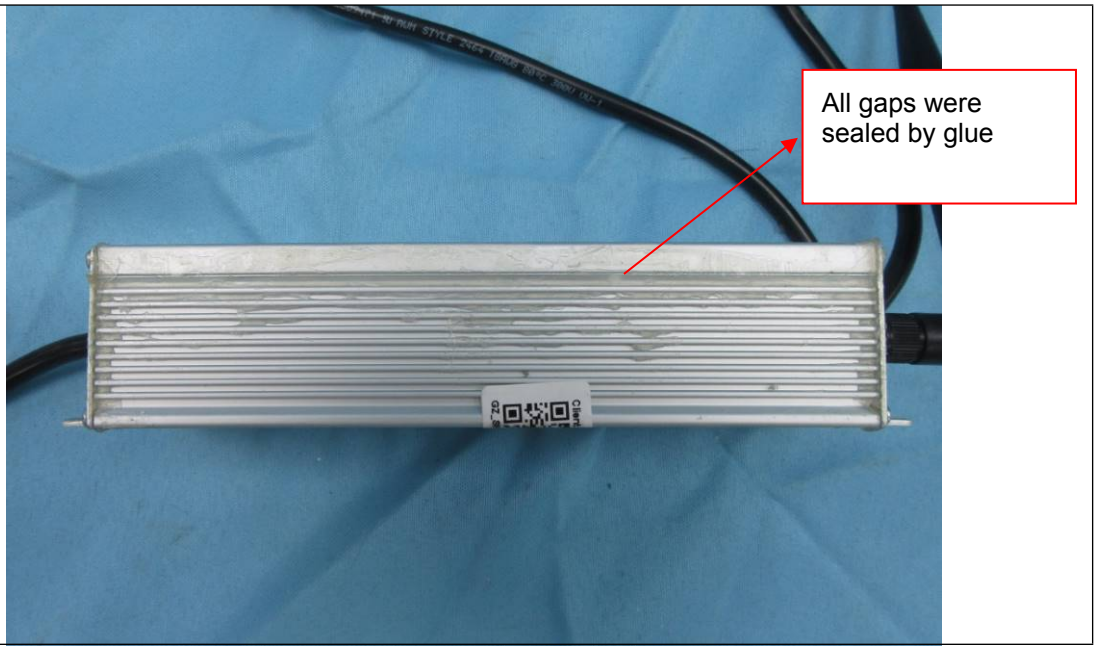

Attachment 7: Photo documentations

Details of: Internal view for ASN2-RGB (LED driver part)

View:

[x] general

[ ] front

[ ] rear

[ ] right

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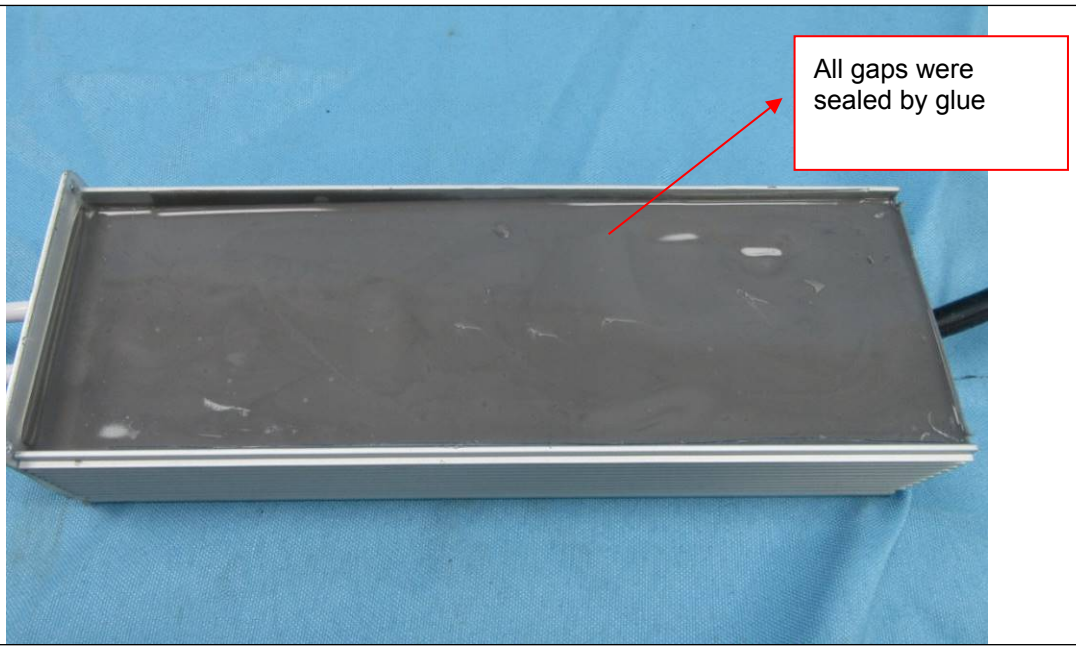
[ ] bottom



Details of: Internal view for ASN2-RGB (LED driver part)

View:

[x] general

[ ] front

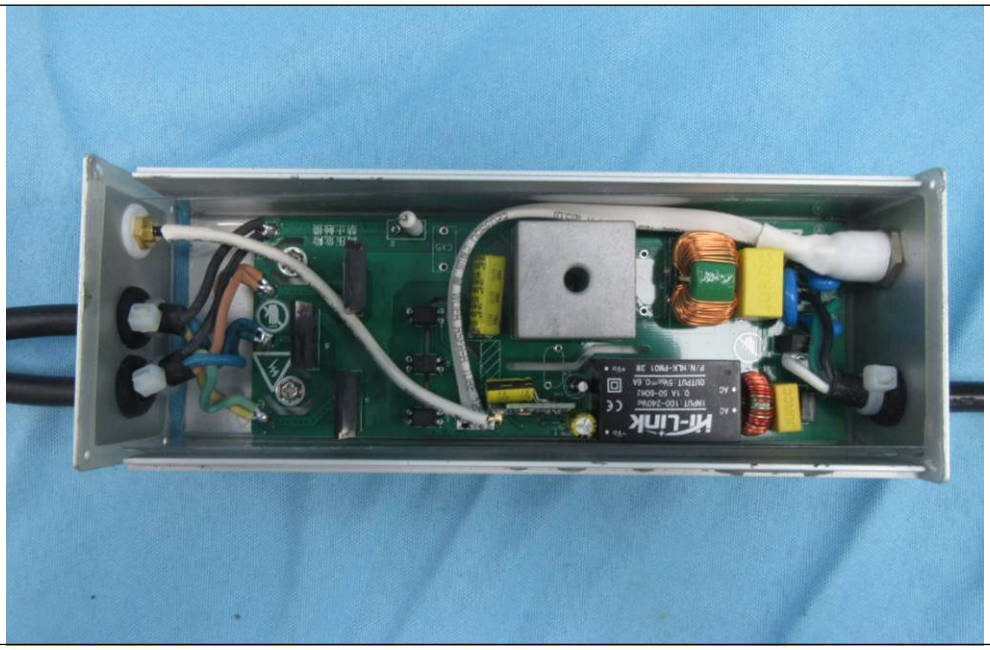
[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom



Attachment 7: Photo documentations

Details of: Enclosure for LED driver

View:

[x] general

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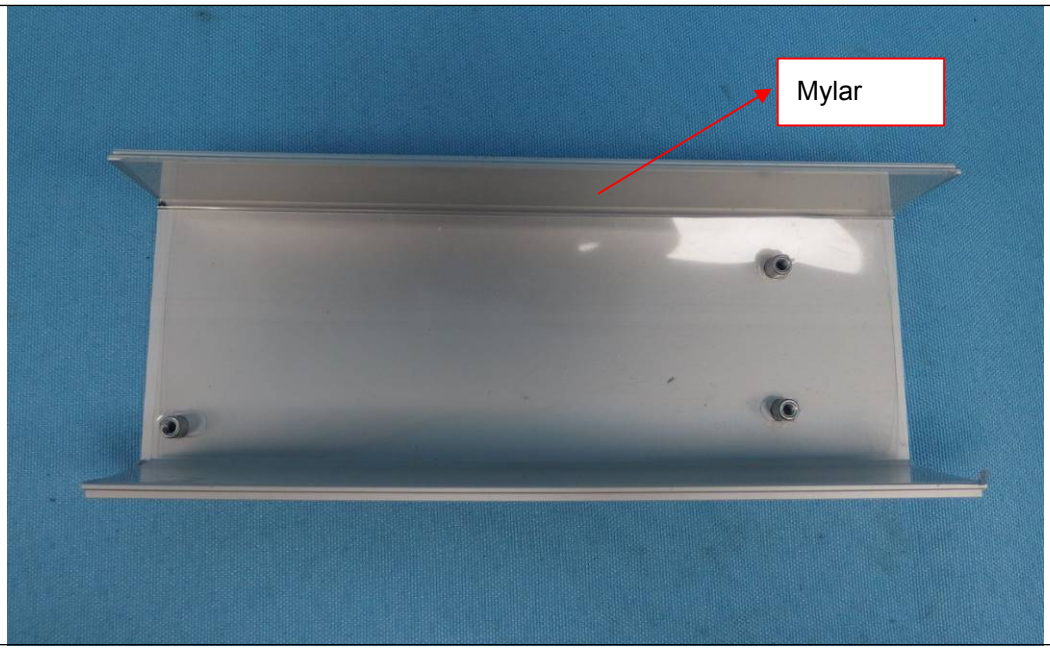

Details of: PCB for LED driver

View:

[x] general

[ ] front

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[ ] right

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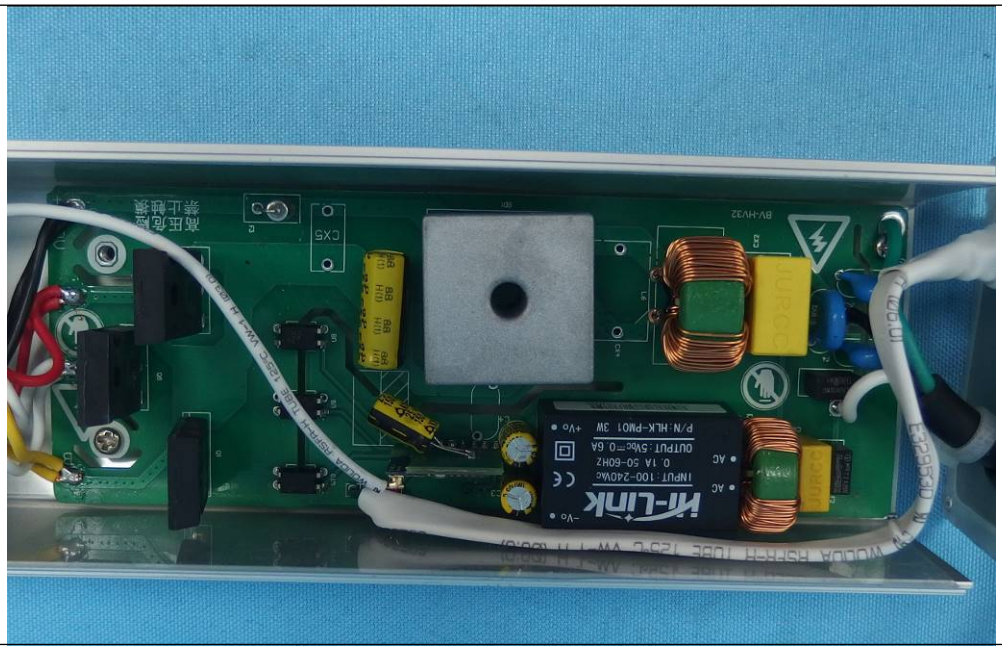
[ ] bottom



Attachment 7: Photo documentations

Details of: PCB for LED driver

View:

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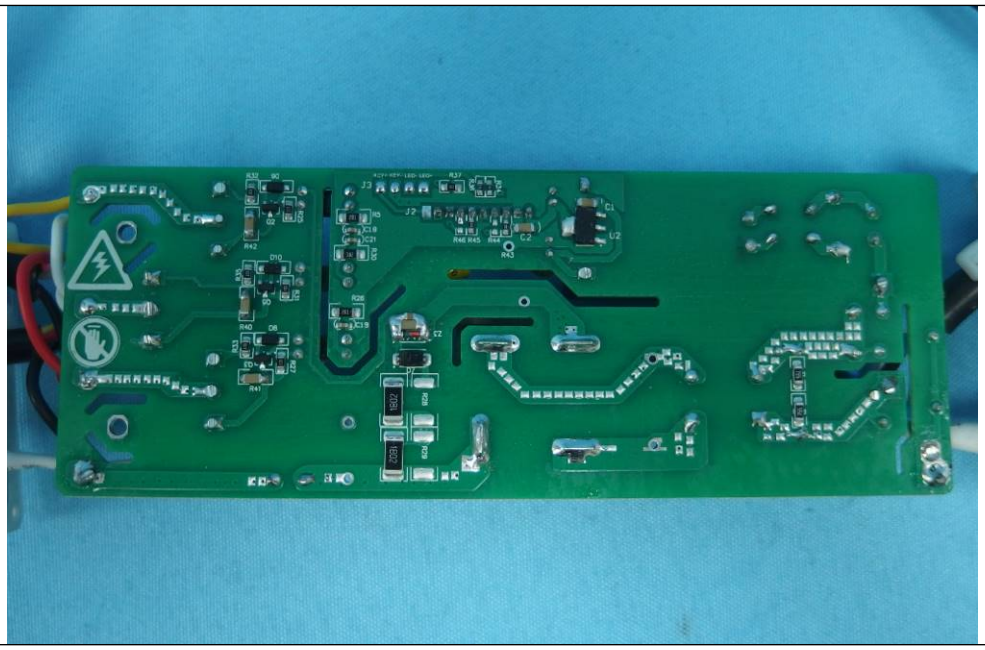

Details of: Connector view

View:

[x] general

[ ] front

[ ] rear

[ ] right

[ ] left

[ ] top

[ ] bottom

Attachment 7: Photo documentations

Details of: Supply cord

View:

[x] general

[ ] front

[ ] rear

[ ] right

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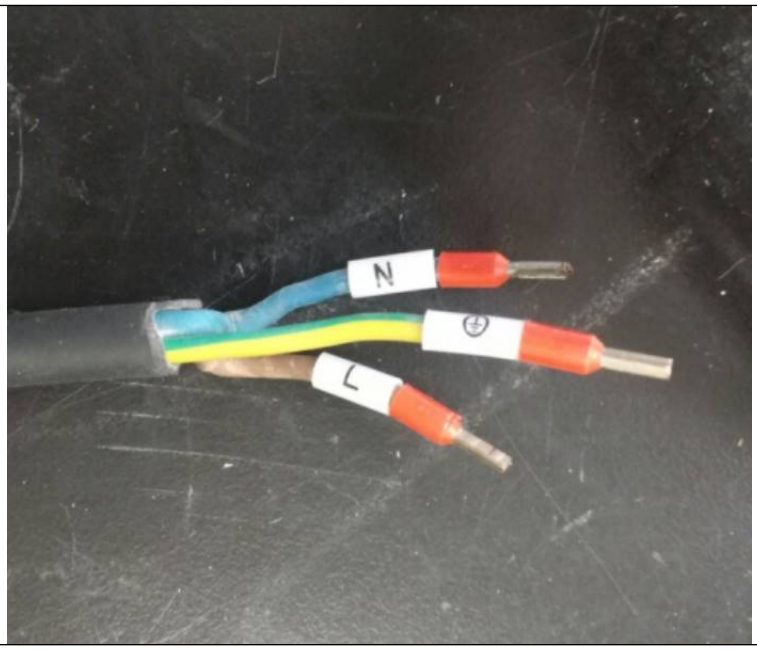
[ ] bottom



Details of: Earthing terminal

View:

[x] general

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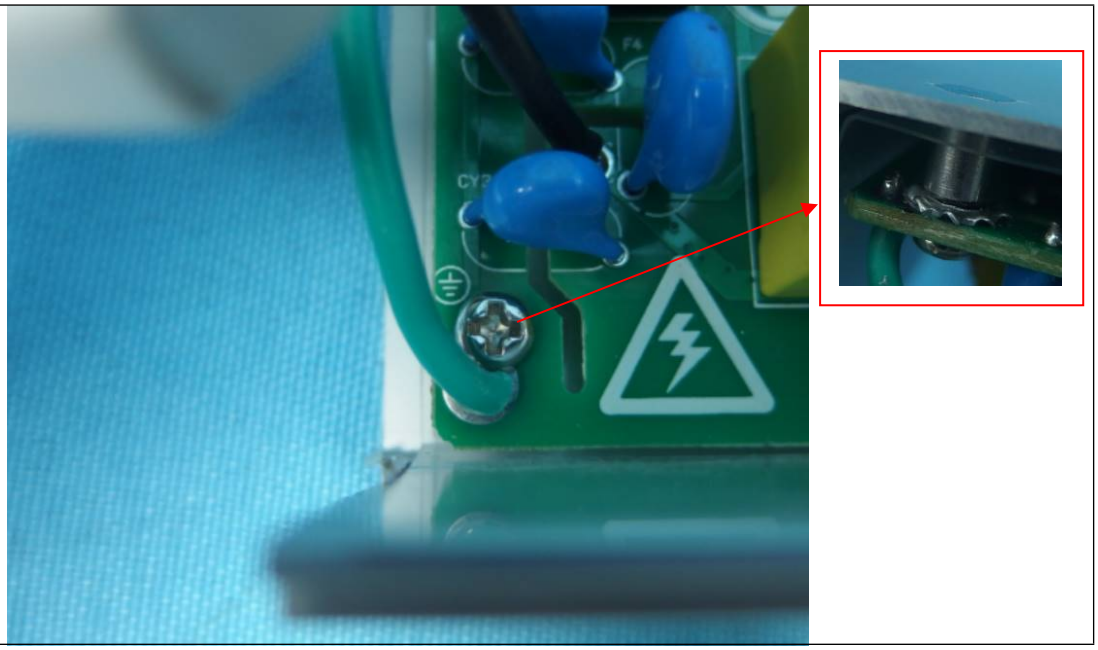

- - - End of attachment 7 - - -