LVD REPORT
EN 60598-2-21
Luminaires
Part 2: Particular requirements
Section 21: Rope Lights

Report Reference No...... :	DER2102340229137
Compiled by (+ signature)..... :	Qinguangfei
Reviewed by (+ signature)..... :	Baron He
Approved by (+ signature)..... :	Tony lin
Date of issue……..... :	March 31, 2021

Lab Supervisor

Testing Laboratory..... :	Shenzhen DE-Testing Detection Co., Ltd.
Address..... :	3/F., Building 4, 3rd Industrial Zone, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Testing location..... :	Same as above
Applicant's name..... :	SHENZHEN LEDMY CO., LTD.
Address..... :	15F 03-05,Merlin Excellence Center Plaza, Building 2,Futian District, Hong Road,Shenzhen City,China
Test specification:	
Standard..... :	☒ EN 60598-2-21:2014 used in conjunction with EN 60598-1:2015+A1:2018 ☐ Australian/New Zealand deviation
Test procedure..... :	LVD report
Non-standard test method..... :	N/A
Test item description..... :	LED Strip
Trade Mark..... :	N/A
Manufacturer..... :	DONGGUAN LEDMY CO., LTD. No. 9,Industrial Zone Longbei Tongren,Tangxia Town,Dongguan city,Guangdong province.
Model/Type reference..... :	See product information
Ratings..... :	See product information

Summary of testing:

Tests performed (name of test and test clause):

The submitted samples were found to comply with requirements of standards:

-- EN 60598-2-21:2014;

-- EN 60598-1:2015+A1:2018;

-- EN IEC 62031:2020(See attachment No. 1);

-- Photobiological safety according to EN 62471:2008 and IEC TR 62778:2014(See attachment No.2);

-- EMF Assessment according to EN 62493:2015(See attachment No.3);

-- Photo documentation(See attachment No.4).

Summary of compliance with National Differences:

List of countries addressed

N/A

☐ **The product fulfils the requirements of**

Copy of marking plate:

On the enclosure

On the package

Manufacturer: DONGGUAN LEDMY CO., LTD.
Address: No. 9,Industrial Zone Longbei Tongren,Tangxia Town,Dongguan city,Guangdong province.
Importer: XXXX
Address: XXXX

Note: Due to similarity of the rating labels, only above lable is listed(IP20 numbers for degree of protection against ingress of dust does not required on the label).

Remark:

The above mark is the minimum requirements of the safety standard. For the final production, the additional mark which do not give rise to misunderstanding may be added.

Test item particulars..... :	LED Strip
Classification of installation and use..... :	Class III, outdoor and indoor use
Supply Connection..... :	Supply cord
..... :	
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..... :	March 5, 2021
Date (s) of performance of tests..... :	March 8, 2021 to March 18, 2021

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.
The tested sample(s) and the sample information are provided by the client.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

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

Clause numbers between brackets refer to clauses in EN 60598-1.
The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.
When determining for test conclusion, measurement uncertainty of tests has been considered.

Name and address of factory (ies)..... :	DONGGUAN LEDMY CO., LTD. No. 9,Industrial Zone Longbei Tongren,Tangxia Town,Dongguan city,Guangdong province.

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Clause	Requirement + Test	Result - Remark	Verdict

General product information:

1.These products are class III luminaire, for outdoor or indoor use, suitable for directly mounting on normally flammable surfaces.

2.All models have similar electrical construction and appearance except the rating; length; LED type and quantity; IP rating.

3.All products above IP20 required sealant at the input and output.

4.Series name:Fabxxcd-Py-GzYYefghhpVi###jkkLmmnn

Fa represent Segmentation type; can be FP; FH and FE: FP = Flex Premium, FH = Flex Honor and FE = Flex Essential;
b represent Sub-Segment; can be Blank and N: Blank = Normal versions and N = Neon;
xx represent power consumption; can be any letters but not exceed 100W Max.;
c represent Classification Color Control; can be W, D and C; W = Pure White; D = Digital control; C= Color Mixed
d represent Light Emitting Direction; can be Blank; S and R; Blank = Top Emitting/Bending; S = Side Emitting/Bending and R=360° Round neon strip;
Py represent IP level; can be P0; P2; P5; P7 and P8; P0 = IP20; P2 = IP62; P5 = IP65; P7 = IP67 and P8 = IP68;
Gz represent Generation; can be G1; G2 or any other number.
YY represent LED type, can be 06; 14; 18; 21; 22; 27; 28; 30; 31; 35; 38; 50; 57; COB; 06=0603; 14 = 3014; 21=2110; 22=2216; 27 = 3527; 28 = 2835; 30=3030; 31 = 315; 35=3528; 38=3838; COB=COB Module; 50 = 5050 and 57=5730.
e represent LED Spec; can be H; L and Blank; H = 60mA; L = 20mA; H2=Dual chip and Blank for only one LED rating
f represent LED Classification or LED manufacturer; can be any letter;
g represent CRI; can be blank; 8; 9 and F; blank = Not available; 8 = CRI>80; 9= CRI>90 and F = full spectrum;
hh represent CCT or color of LED. It can be any numbers or letters. For example: 30; 40; 2765; RGB; RG; R; G; Y and B; 30 = 3000K; 40=4000K; 2765=2700K~6500K; RGB=Mixed color; R= Red; G= Green; Y=Yellow and B= Blue or any other letter;
p represent voltage; P=05; 12 and 24;
i represent CC mode, can be blank; C and T; Blank for constant voltage; C= IC constant current and T=Triodes constant current;
###= three numbers indicate number of LED per meter; can be 24; 30; 56; 60; 64; 80; 96; 120; 140; 160; 180; 210; 240; 280; 300; 320; 350; 378; 420; 480; 512; 560; 700 or any other number; Suffix Can be added S; D; T; F; S represents single line; D represents Double lines; T represents Tribble line; F represents Four lines;
j represent PCB color of normal versions; can be W and Blank; W=White; Blank for Neon version;
kk represent PCB width for normal versions or cross-sectional dimensions for Neon version, For normal versions, it can be 03; 04; 08; 10; 12; 03=3mm; 04=4mm; 08=8mm; 10=10mm and 12=12mm and; For Neon version, it can be two number by two number to represent the width and height of the cross-section. For example: 0816=8mm width by 16mm height or other numbers;
mm represent length per reel, can be any letters but max length not exceed 100W;
nn represent Brand, can be blank, NILED;

According to these differences, if there is no special description, all the tests are performed on the main model FEN19WS-P7-G150ZRGB8X24V60S1018L05; FE14C-P8-G138XRGB24V144SW10L05; FH14D-P5-G150B1RGB5V60SW10L05; FE18C-P5-G2 21X92721X96024V560DW10L05; FHN11WR-P5-G1 06LZY24V360D15L05; FE18W-P0-G1-18X930 24V350SW10L05; FE15W-P5-G1 COB93024V480S W10L05; FEN19CS-P7-G2 28HZ92728HZ960 24V240S 1018L05; FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°.

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Clause	Requirement + Test	Result - Remark	Verdict

21.4 (0)	**GENERAL TEST REQUIREMENTS**		P
21.4 (0.3)	More sections applicable.....:	Yes ☐ No ☒ Section/s:	—
21.4 (0.5)	Components	(see Annex 1)	—
21.4 (0.7)	**Information for luminaire design in light sources standards**		—
21.4 (0.7.2)	Light source safety standard ..... :	IEC/EN 62031 IEC TR 62778	—
	Luminaire design in the light source safety standard		P

21.5 (2)	**CLASSIFICATION**		P
21.5 (2.2)	Type of protection .....:	class III	P
21.5 (2.3)	Degree of protection.....:	See general product information	P
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	class III	P
21.5.3 (-)	Rope lights for outdoor use shall be IP44 or higher		P

21.6 (3)	**MARKING**		P
21.6 (3.2)	Mandatory markings	See “Copy of marking plate”	P
	Position of the marking	On supply cable of product	P
	Format of symbols/text		P
21.6 (3.3)	Additional information		P
	Language of instructions	English	P
21.6 (3.3.1)	Combination luminaires		N/A
21.6 (3.3.2)	Nominal frequency in Hz		N/A
21.6 (3.3.3)	Operating temperature		N/A
21.6 (3.3.4)	Symbol or warning notice		N/A
21.6 (3.3.5)	Wiring diagram		N/A
21.6 (3.3.6)	Special conditions		N/A
21.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
21.6 (3.3.8)	Limitation for semi-luminaires		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
21.6 (3.3.9)	Power factor and supply current		N/A
21.6 (3.3.10)	Suitability for use indoors		N/A
21.6 (3.3.11)	Luminaires with remote control		N/A
21.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
21.6 (3.3.13)	Specifications of protective shields		N/A
21.6 (3.3.14)	Symbol for nature of supply	⎓	P
21.6 (3.3.15)	Rated current of socket outlet		N/A
21.6 (3.3.16)	Rough service luminaire		N/A
21.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	P
21.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
21.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
21.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
21.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	non-user replaceable light sources for IP20 models; other are Non replaceable	P
	Cautionary symbol		N/A
21.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
21.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
21.6.2 (-)	**Rope light marking**		**P**
	Rated voltage and wattage marked on the rope light	See "Copy of marking plate"	P
	Durable non-removable label if information on the cable		P
21.6.3 (-)	**Rope light and packing marking**		**N/A**
	Marking if only for indoor use	Outdoor and indoor use	N/A
21.6.4 (-)	**Marking on the packing or instructions**		**P**
	Marking a) – e)		P

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Clause	Requirement + Test	Result - Remark	Verdict

21.7 (4)	**CONSTRUCTION**		**P**
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
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		N/A
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		P
21.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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**
21.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
21.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
21.7 (4.11.6)	Electro-mechanical contact systems		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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**		**P**
21.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm)..... :	0,5Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
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
21.7 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
21.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	FFHN11WR-P5-G1 06LZY 24V360D15L01 4×1,0kg=4,0kg	P
	B) torque 2,5 Nm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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**		N/A
21.7 (4.18.1)	- rust- resistance		N/A
21.7 (4.18.2)	- season cracking in copper		N/A
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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 .....:	See attachment 2	—
	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
	Voltage drop test, resistance < 0,05 Ω		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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**		**P**
	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		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		P
	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

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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
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		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict

21.7.2 (-)	**Terminal blocks**		N/A
	Clause 4.6 of IEC 60598-1 referring to terminal blocks does not apply		—
21.7.3 (-)	**Terminals and supply connections**		N/A
	Comply with Annex A		N/A
21.7.4 (-)	**Control units**		N/A
	Forming an integral part enclosed in non-flammable insulating material tested according 21.16		N/A
	Securely fixed to the cable		N/A
	Electronic control device comply with IEC 61347-2-11		N/A
	LED driver comply with IEC 61347-2-13		N/A
21.7.5 (-)	**Mechanical strength**		**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**		N/A
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	N/A
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.7 (11.2) II	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	—
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	N/A
	Clearances distances for frequency over 30 kHz:		—
	- Controlgear marked with U_P	See Test Table 1.7 (11.2) II	—
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	—

21.10 (14)	**SCREW TERMINALS**		**N/A**
	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**		N/A
	Separately approved; component list.....:	(see Annex 1)	N/A
	Part of the luminaire.....:	(see Annex 4) Connector for light input	N/A

21.11 (5)	**EXTERNAL AND INTERNAL WIRING**		P
21.11 (5.2)	**Supply connection and external wiring**		**P**
21.11 (5.2.1)	Means of connection.....:	Class III	N/A
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
21.11 (5.2.2)	Type of cable.....:	Replaced by 21.11.2	—
	Nominal cross-sectional area (mm²)..... :	Replaced by 21.11.2	—
	Cables equal to IEC 60227 or IEC 60245	Replaced by 21.11.2	—
21.11 (5.2.3)	Type of attachment, X, Y or Z		N/A
21.11 (5.2.5)	Type Z not connected to screws		N/A
21.11 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
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		P
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)..... :	60N	P
	- torque test: torque (Nm)..... :	0,25Nm	P
	- displacement ≤ 2 mm	No movement	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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		N/A
	Wire ends tinned: no cold flow		N/A
21.11 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N/A
	No unsafe compatibility		P
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		N/A
21.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
21.11 (5.2.18)	Used plug in accordance with		P
	- IEC 60083		N/A
	- other standard		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	Adequate cross-sectional area and insulation thickness		P
21.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A
21.11 (5.3.1.4)	Conductors without insulation		N/A
21.11 (5.3.1.5)	SELV current-carrying parts		P
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°		P
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		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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.....:	See annex 1	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)..... :	Min. 24AWG	P
	Mechanical properties according 4.14.1 and 4.14.2 of part 1		P
21.11.3 (-)	**Cord anchorage test**		P
	Pull test 30 N 25 times on single-core cable		P
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**		N/A
21.12 (8.2.1)	Live parts not accessible		N/A
	Basic insulated parts not used on the outer surface without appropriate protection		N/A
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Protection in any position		N/A
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
21.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
21.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
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		N/A
21.12 (8.2.6)	Covers reliably secured		N/A
21.12 (8.2.7)	Discharging of capacitors ≥ 0,5 μF		N/A
	Portable plug connected luminaire with capacitor		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	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**		P
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..... :	Normal use	—
	- test temperature (°C)..... :	50°C	—
	- total duration (h)..... :	240h	—
	- supply voltage: Un factor; calculated voltage (V)... :	264,4V(use led driver)	—
	- lamp used..... :	Integral LED module	—
21.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
21.13 (12.4)	**Thermal test (normal operation)**	**(see Annex 2)**	**P**
21.13 (12.5)	**Thermal test (abnormal operation)**	**(see Annex 2)**	N/A
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..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

	- 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) ..... :		—
	- 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..... :		—

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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
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		—
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**		P
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.....:	General product information	—
	- mounting position during test.....:	As in normal operation	—
	- fixing screws tightened; torque (Nm).....:	--	—
	- tests according to clauses.....:	Clause 9.2.0; 9.2.2 to 9.2.9	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust- tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c) i) For luminaires without drain holes – no water entry		P

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Clause	Requirement + Test	Result - Remark	Verdict

	c) ii) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)		P
	e) no contact with live parts (IP3X and IP4X)		P
	f) no trace of water on part of lamp requiring protection from splashing water		P
	g) no damage of protective shield or glass envelope		N/A
21.14 (9.3)	Humidity test 48 h		P

21.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
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 ..... :		—
	Insulation resistance (MΩ)..... :		—
	SELV		P
	- between current-carrying parts of different polarity..... :		N/A
	- between current-carrying parts and mounting surface..... :	＞100MΩ	P
	- between current-carrying parts and metal parts of the luminaire..... :	＞100MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	＞100MΩ	P
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		N/A
	- between live parts of different polarity..... :		N/A
	- between live parts and mounting surface..... :		N/A
	- between live parts and metal parts..... :		N/A
	- between live parts of different polarity through action of a switch..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
	- between current-carrying parts of different polarity..... :		N/A
	- between current-carrying parts and mounting surface..... :	500V	P
	- between current-carrying parts and metal parts of the luminaire..... :	500V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	500V	P
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		N/A
	- between live parts of different polarity..... :		N/A
	- between live parts and mounting surface..... :		N/A
	- between live parts and metal parts..... :		N/A
	- between live parts of different polarity through action of a switch..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
21.15 (10.3)	Touch current or protective conductor current (mA).. :		N/A

21.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
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)	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
20.16 (-)	Flexible pipes of rope lights in compliance with IEC 60811-508	Enclosure of lighting	P

21.8 (11.2)	TABLE I: Creepage distances and clearances							N/A
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages							N/A
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*							N/A
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	R	--	3,0	11.1.B	--	5,0	11.1.A	
Working voltage (V) :					--			—
PTI :					< 600 ☐ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) :					--			—
Supplementary information:live part to accessible enclosure								
Distance 2:	B	--	1,5	11.1.B	--	2,5	11.1.A	
Working voltage (V) :					--			—
PTI :					< 600 ☐ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) :					--			—
Supplementary information: L-N before fuse								

** 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		

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Clause	Requirement + Test	Result - Remark	Verdict

Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	--	--	--	--	--	--	--
Working voltage (V)..... :					--		—
Frequency if applicable (kHz)..... :					--		—
PTI..... :					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage Ûout if applicable (kV) ..... :					--		—
Supplementary information:							

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

21.16 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics		N/A
Allowed impression diameter (mm) ..... :			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
PCB	See annex 1	125	1,1
Supplementary information:--			

21.16 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
PCB	See annex 1	10	No	0	P
Supplementary information:--					

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
Enclosure of lighting	See annex 1	No	1,1	P

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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
Enclosure of lighting	See annex 1	No flame; over-current does not operate	No flame; over-current does not operate	No flame; over-current does not operate	P
Supplementary information:--					

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Clause	Requirement + Test	Result - Remark	Verdict

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

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6.14.2	**Electrical endurance (CBC)**		N/A
	Meet the specified breaking capacity		N/A
	Number of cycles 50		—
	Test according 7.3.5		N/A
6.14.3	**Bendings (non-rewirable connectors)**		N/A
	Meet the specified number of bendings		N/A
	Number of cycles 1000		—
	Test according 7.3.10		N/A
6.17	**Cable clamp**		N/A
	Test according clause 21.11.3 of this standard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Description:	For luminaire					
Enclosure of lighting	C	Guangdong Qilong Technology Co., Ltd	PVC-DD-TM3	PVC	--	Test with appliance
PCB of LED	C	HUIZHOU CHUANLIAN ELECTRONIC TECHNOLOGY CO LTD	CL-Y	Single layer flexible materials; V-0; 105° C	--	UL E362158
LED	C	--	0603	Vf:3,5V; Max. 20mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	1808	Vf:3,5V; Max. 20mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	3014	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	2110	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	2216	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	2835	Vf:3,5V; Max. 20mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	2835	Vf:3,5V; Max. 60mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	3030	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	3527	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

LED	C	--	2216	Vf:3,5V; Max. 20mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	3528	Vf:3,5V; Max. 20mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	3838	Vf:3,5V; Max. 60mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	5050	Vf:3,5V; Max. 60mA; CCT:6500K Max	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	2835	Vf:3,5V; Max. 60mA; CCT:6500K Max	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	315	Vf:3,5V; Max. 30mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
LED	C	--	5730	Vf:3,5V; Max. 80mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
COB	C	--	COB-512-5W	Vf:23-25V; Max. 210mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
COB	C	--	COB-480-7.5W	Vf:23-25V; Max. 310mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
COB	C	--	COB-420-6W	Vf:23-25V; Max. 250mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
COB	C	--	COB-320-4W	Vf:23-25V; Max. 170mA; CCT:6500K Max.	IEC/EN 62031, IEC TR 62778	Test with appliance
Input wire	C	DONGGUAN MENGCHANG ELECTRONIC PRODUCTS CO LTD	2464	(2; 3; 4; 5) core; Min. 22AWG	--	UL E504888

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-Alt.	C	SHENZHEN DONGZHANWANG ELECTRONIC CO LTD	1007	Min. 22AWG; 80℃	--	UL E362344
Heat-shrinkable tube	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WKZM-x-yz	125; 600V	--	UL E203950

Supplementary information:

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

The codes above have the following meaning:

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

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

C - Integrated component tested together with the appliance

D - Alternative component

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
1/9	Type reference.....:	FHN11WR-P5-G1 06LZY 24V360D15L01	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	LED driver	—
	Mounting position of luminaire.....:	According to manual	—
	Supply wattage (W).....:	108,04	—
	Supply current (A).....:	0,42	—
	Calculated power factor.....:	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode.....:	--	—
	- test 1: rated voltage.....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....:	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED PCB	40,0	--	96,9	--	130	--	--
LED	40,0	--	106,5	--	Ref.	--	--
Input wire	40,0	--	76,7	--	90	--	--
Silicon Rubber of input port	40,0	--	72,1	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	64,8	--	Ref.	--	--
Silicon Rubber（inside）	40,0	--	70,5	--	90	--	--
Output wire	40,0	--	69,4	--	90	--	--
Mounting surface	40,0	--	64,5	--	90	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Marking	40,0	--	72,6	--	Ref.	--	--
Supplementary information:--							

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
2/9	Type reference..... :	FEN19WS-P7-G150ZRGB8X24V60S1018L01	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	112,21	—
	Supply current (A)..... :	0,44	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber（inside）	40,0	--	85,5	--	Ref.	--	--
LED	40,0	--	95,3	--	Ref.	--	--
LED PCB	40,0	--	93,0	--	130	--	--
Silicon Rubber of input port	40,0	--	84,3	--	Ref.	--	--
Silicon Rubber of input port	40,0	--	84,3	--	Ref.	--	--
Input wire	40,0	--	68,9	--	90	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Output wire	40,0	--	51,5	--	90	--	--
Mounting surface	40,0	--	84,8	--	90	--	--
Marking	40,0	--	53,6	--	Ref.	--	--
Supplementary information:--							

ANNEX 2	**TABLE: Temperature measurements, thermal tests of Section 12**		P
3/9	Type reference..... :	FE18C-P5-G221X92721X96024V560D W10L01	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	105,2	—
	Supply current (A)..... :	0,41	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Marking	40,0	--	48,6	--	90	--	--
Silicon Rubber of input port	40,0	--	52,4	--	Ref.	--	--
LED	40,0	--	71,3	--	Ref.	--	--
LED PCB	40,0	--	69,5	--	130	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Mounting surface	40,0	--	72,5	--	90	--	--
Input wire	40,0	--	55,5	--	90	--	--
Silicon Rubber（inside）	40,0	--	67,8	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	66,9	--	Ref.	--	--
Output wire	40,0	--	50,4	--	90	--	--
Supplementary information:--							

ANNEX 2	**TABLE: Temperature measurements, thermal tests of Section 12**		P
4/9	Type reference..... :	FE14C-P8-G138XRGB24V144SW10L05	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	106,1	—
	Supply current (A)..... :	0,41	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber of input port	40,0	--	54,6	--	Ref.	--	--
Input wire	40,0	--	62,6	--	90	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

LED	40,0	--	70,5	--	Ref.	--	--
LED PCB	40,0	--	72,4	--	130	--	--
Silicon Rubber（inside）	40,0	--	45,7	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	64,9	--	Ref.	--	--
Marking	40,0	--	49,7	--	90	--	--
Output wire	40,0	--	53,7	--	90	--	--
Mounting Surface	40,0	--	67,5	--	90	--	--
Supplementary information:--							

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
5/9	Type reference..... :	FH14D-P5-G150B1RGB5V60S W10L01	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	111,1	—
	Supply current (A)..... :	0,43	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit

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Clause	Requirement + Test	Result - Remark	Verdict

Input wire	40,0	--	62,8	--	90	--	--
LED	40,0	--	84,3	--	Ref.	--	--
LED PCB	40,0	--	82,5	--	130	--	--
Silicon Rubber（inside）	40,0	--	77,8	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	81,8	--	Ref.	--	--
Output wire	40,0	--	53,2	--	90	--	--
Marking	40,0	--	54,4	--	90	--	--
Mounting surface	40,0	--	40,4	--	90	--	--
Supplementary information:--							

ANNEX 2	**TABLE: Temperature measurements, thermal tests of Section 12**		P
6/9	Type reference..... :	FE18W-P0-G1-18X930 24V350S W10L05	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	115,1	—
	Supply current (A)..... :	0,45	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)			
Part	Ambient	Clause 12.4 – normal	Clause 12.5 – abnormal

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Clause	Requirement + Test	Result - Remark	Verdict

		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber of input port	40,0	--	52,5	--	Ref.	--	--
Input wire	40,0	--	60,6	--	90	--	--
LED	40,0	--	80,5	--	Ref.	--	--
LED PCB	40,0	--	82,8	--	130	--	--
Silicon Rubber（inside）	40,0	--	78,4	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	80,9	--	Ref.	--	--
Output wire	40,0	--	55,7	--	90	--	--
Marking	40,0	--	56,6	--	90	--	--
Mounting surface	40,0	--	40,4	--	90	--	--
Supplementary information:--							

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
7/9	Type reference..... :	FE15W-P0-G1-COB930 24V480S W10L05	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire..... :	According to manual	—
	Supply wattage (W)..... :	112,4	—
	Supply current (A)..... :	0,44	—
	Calculated power factor..... :	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode..... :	--	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

Temperature measurements, (°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber of input port	40,0	--	54,1	--	Ref.	--	--
Input wire	40,0	--	62,3	--	90	--	--
LED	40,0	--	84,1	--	Ref.	--	--
LED PCB	40,0	--	83,3	--	130	--	--
Silicon Rubber（inside）	40,0	--	78,7	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	81,5	--	Ref.	--	--
Output wire	40,0	--	56,8	--	90	--	--
Marking	40,0	--	56,2	--	90	--	--
Mounting surface	40,0	--	40,4	--	90	--	--
Supplementary information:--							

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
8/9	Type reference.....:	FPN15W-P7-G1 28AS930 24V140S 1616L20	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	LED driver	—
	Mounting position of luminaire.....:	According to manual	—
	Supply wattage (W).....:	116,2	—
	Supply current (A).....:	0,45	—
	Calculated power factor.....:	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode.....:	--	—
	- test 1: rated voltage.....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber of input port	40,0	--	54,8	--	Ref.	--	--
Input wire	40,0	--	63,7	--	90	--	--
LED	40,0	--	82,6	--	Ref.	--	--
LED PCB	40,0	--	81,7	--	130	--	--
Silicon Rubber（inside）	40,0	--	76,4	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	83,7	--	Ref.	--	--
Output wire	40,0	--	55,1	--	90	--	--
Marking	40,0	--	54,3	--	90	--	--
Mounting surface	40,0	--	40,4	--	90	--	--

Supplementary information:--

ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
9/9	Type reference.....:	FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	LED driver	—
	Mounting position of luminaire.....:	According to manual	—
	Supply wattage (W).....:	112,6	—
	Supply current (A)..... :	0,44	—
	Calculated power factor.....:	0,9	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode.....:	--	—
	- test 1: rated voltage..... :	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	1,06×240V=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Silicon Rubber of input port	40,0	--	51,7	--	Ref.	--	--
Input wire	40,0	--	66,2	--	90	--	--
Connector(male)	40,0	--	51.2	--	Ref.		
Connector(female)	40,0	--	51.5	--	Ref.		
LED	40,0	--	80,1	--	Ref.	--	--
LED PCB	40,0	--	79,8	--	130	--	--
Lens(Inside)	40,0	--	77.8	--	Ref.		
Lens(outside)	40,0	--	73.5	--	Ref.		
Internal silicone rubber	40,0	--	76.2	--	Ref.		
Top silicon rubber（outside）	40,0	--	74.3	--	Ref.		
Top silicon rubber（inside）	40,0	--	75.2	--	Ref.		
Silicon Rubber（inside）	40,0	--	77,4	--	Ref.	--	--
Silicon Rubber（outside）	40,0	--	79,7	--	Ref.	--	--
Output wire	40,0	--	56,5	--	90	--	--
Marking	40,0	--	54,5	--	90	--	--
Mounting surface	40,0	--	40,4	--	90	--	--

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

Supplementary information:--

ANNEX 3	**Screw terminals (part of the luminaire)**		N/A
(14)	**SCREW TERMINALS**		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....:		N/A
	Torque (Nm).....:		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(14.4.8)	Without undue damage		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict

(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

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Clause	Requirement + Test	Result - Remark	Verdict

(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....:		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	**TABLE: Contact resistance test / Heating tests**									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop of two inseparable joints									N/A
	Voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV).....:	--								—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV).....:	--								—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Continued ageing: voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV).....:	--								—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV).....:	--								—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
Supplementary information:--										

EN 60598-2-21			
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
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N. 4 samples).....:		N/A
(15.5.1.2)	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 external wiring		N/A
	Terminal size and rating		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
	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A

(15.6.3.1)	**TABLE: Contact resistance test**										N/A
	Voltage drop (mV) after 1 h										—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
	Voltage drop of two inseparable joints										
	Voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV).....										—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
	Voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV).....										—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV).....										—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
	Continued ageing: voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV).....										—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											
Supplementary information:											

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Clause	Requirement + Test	Result - Remark	Verdict

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

21	**PHOTOBIOLOGICAL SAFETY**	**P**
21.1	**UV radiation**	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	Luminous radiation not exceed 2mW/klm	LED modules not relying on the conversion of UV radiation are not expected to exceed the maximum allowed ultraviolet hazard efficacy of luminous radiation	N/A
21.2	**Blue light hazard**		**P**
	Assessed according to IEC TR 62778	Tested as a part of luminaire, on model as follows Test result: Low Risk (RG1 group). Details see attachment no. 2	P
21.3	**Infrared radiation**		**N/A**
	Requirements for infrared radiation when required		N/A

Attachment No. 1
EN IEC 62031:2020

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

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21	**PHOTOBIOLOGICAL SAFETY**		**P**
21.1	**UV radiation**		**N/A**
	Luminous radiation not exceed 2mW/klm	LED modules not relying on the conversion of UV radiation are not expected to exceed the maximum allowed ultraviolet hazard efficacy of luminous radiation	N/A
21.2	**Blue light hazard**		**P**
	Assessed according to IEC TR 62778		P
21.3	**Infrared radiation**		**N/A**
	Requirements for infrared radiation when required		N/A

Attachment No. 2
EN 62471:2014 and IEC TR 62778:2014

1/9	Measurement performed on:	☐LED package ☐LED module ☐Lamp ☒Luminaire	
	Model number .....:	FHN11WR-P5-G106LZY24V360D15L01	—
	LED model.....:	0603	
	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	792mA	—
	Test frequency (Hz).....:	--	—
	Ambient, t (° °C).....:	25.4	—
	Measurement distance .....:	☒ 20 cm ☐ cm	—
	Source size.....:	☒ Non-small ☐ Small : .... mm	
	Field of view.....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	75	RG0
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	1574	
Illuminance	E	lx	/	

2/9	Measurement performed on:	☐LED package ☐LED module ☐Lamp ☒Luminaire	
	Model number .....:	FEN19WS-P7-G150ZRGB8X24V60S1018L01	—
	LED model.....:	5050	

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EN 62471:2014 and IEC TR 62778:2014

	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	800mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small ☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	65	RG0
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	3947	
Illuminance	E	lx	/	

3/9	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire	
	Model number ..... :	FE18C-P0-G121X92721X96024V560DW10L05	—
	LED model..... :	3527	
	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	750mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—

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	Source size.....:	☒ Non-small ☐ Small : .... mm	
	Field of view.....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	41	RG0
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	70050	
Illuminance	E	lx	/	

4/9	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire	
	Model number .....:	FH14C-P0-G150ZRGB24V60SW10L01	—
	LED model.....:	5050	
	Test voltage (V).....:	DC 24V	—
	Test current (mA) .....:	600mA	—
	Test frequency (Hz).....:	--	—
	Ambient, t (° °C).....:	25.4	—
	Measurement distance .....:	☒ 20 cm ☐ cm	—
	Source size.....:	☒ Non-small ☐ Small : .... mm	
	Field of view.....:	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	

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x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	372	RG1
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	101500	
Illuminance	E	lx	/	

5/9	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire	
	Model number ..... :	FH14C-P0-G150ZRGB24V60SW10L01	—
	LED model..... :	5050	
	Test voltage (V)..... :	DC 5V	—
	Test current (mA) ..... :	2880mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small ☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	213	RG1
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	70050	
Illuminance	E	lx	/	

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6/9	Measurement performed on:	☐LED package ☐LED module ☐Lamp ☒Luminaire	
	Model number ..... :	FE18W-P0-G1-18X930 24V350S W10L05	—
	LED model..... :	1808	
	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	760mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small ☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	120	RG1
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	337200	
Illuminance	E	lx	/	

7/9	Measurement performed on:	☐LED package ☐LED module ☐Lamp ☒Luminaire	
	Model number ..... :	FE15W-P5-G1 COB930 24V480S W10L05	—
	LED model..... :	COB	
	Test voltage (V)..... :	DC 24V	—

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	Test current (mA) ..... :	637mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small ☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	17,49	RG0
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	56500	
Illuminance	E	lx	/	

8/9	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaire	
	Model number ..... :	FEN19CS-P7-G2 28HZ92728HZ960 24V240S 1018L05	—
	LED model..... :	2835	
	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	861mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small	

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		☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	3,943	RG0
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	13650	
Illuminance	E	lx	/	

9/9	Measurement performed on:	☐LED package ☐LED module ☐Lamp ☒Luminaire	
	Model number ..... :	FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°	—
	LED model..... :	5050	
	Test voltage (V)..... :	DC 24V	—
	Test current (mA) ..... :	900mA	—
	Test frequency (Hz)..... :	--	—
	Ambient, t (° °C)..... :	25.4	—
	Measurement distance ..... :	☒ 20 cm ☐ cm	—
	Source size..... :	☒ Non-small ☐ Small : .... mm	
	Field of view..... :	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	

Item	Symbol	Units	Results	Remark
Correlated colour temperature	CCT	K	/	

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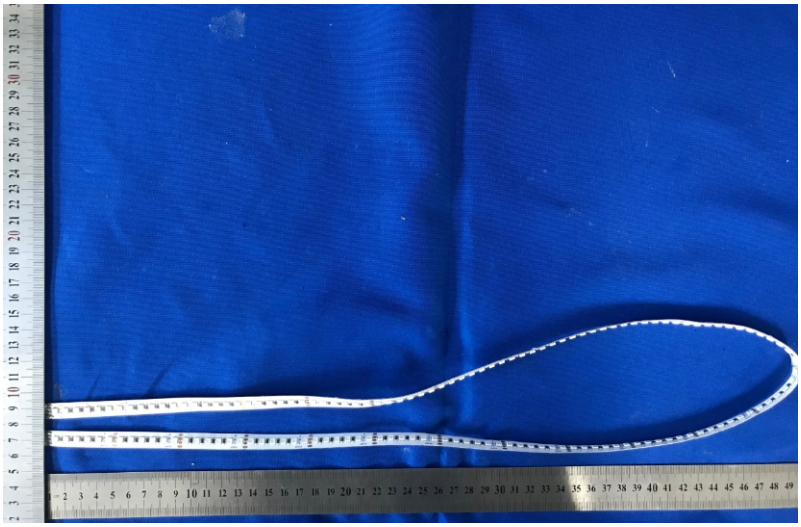
x/y colour coordinates	/	/	/	
Blue light hazard radiance	LB	$W \cdot m^{-2} \cdot sr^{-1}$	613,1	RG1
Blue light hazard irradiance	EB	W/m 2	/	
Luminance	L	cd/m 2	1801000	
Illuminance	E	lx	/	

Attachment No. 3
EMF Assessment according to EN 62493:2015

Procedure	Products are applications with	If No	If yes
a)	Non-electronic control gear?	☒ see Procedure b)	☐ Pass
b)	Incandescent-lamp technology or halogen?	☒ see Procedure c)	☐ see Procedure h)
c)	LED light-source technology?	☐ see Procedure d)	☒ see Procedure h)
d)	OLED light-source technology?	☐ see Procedure e)	☐ see Procedure h)
e)	High-pressure discharge lamp technology?	☐ see Procedure f)	☐ see Procedure h)
f)	Low-pressure discharge lamp technologies with an exposure distance larger than or equal to 50cm (Distance for Hand lights, table lightings and Self-ballasted lamps is less than 50cm)	☐ see Procedure g)	☐ see Procedure h)
g)	Independent auxiliary?	☐ see Procedure i)	☐ see Procedure h)
h)	Non-wireless technology (exclude infra-red)?	☐ see Procedure i)	☒ Pass
i)	Additional test is performed and result is Pass Test Report with No.: ……..	☐ see Procedure b)	☐ Pass

Attachment No. 4
Photo documentation

Photo 1



Whole view of model FE14C-P0-G138XRGB24V144SW10L01

Photo 2

3838 LED module

Attachment No. 4
Photo documentation

Photo 3

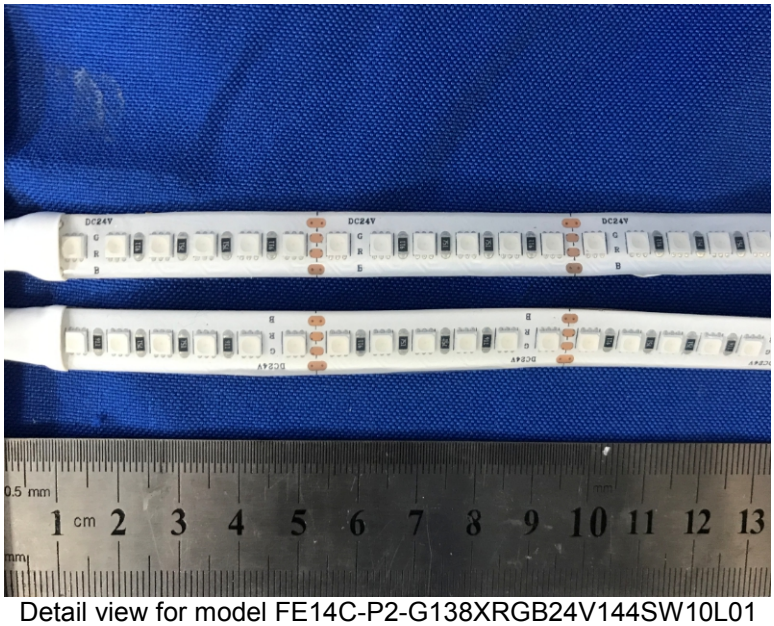
Detail view for model FE14C-P0-G138XRGB24V144SW10L01

Photo 4

Whole view of model FE14C-P2-G138XRGB24V144SW10L01

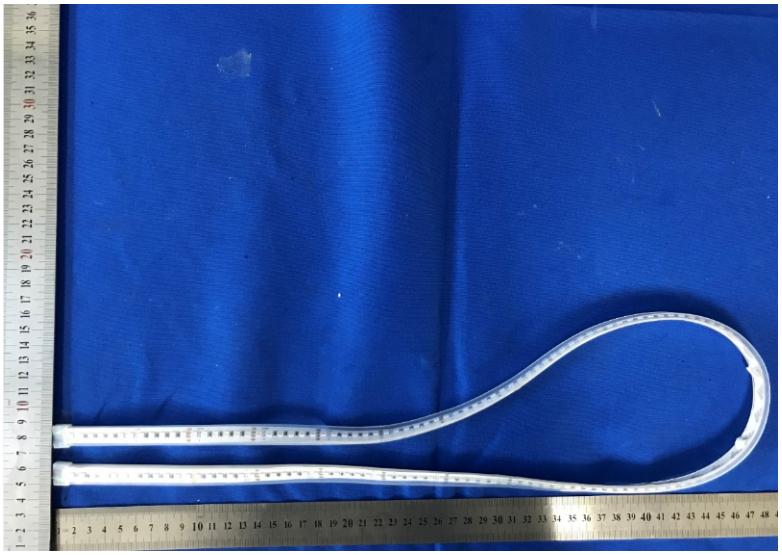
Attachment No. 4
Photo documentation

Photo 5



Detail view for model FE14C-P2-G138XRGB24V144SW10L01

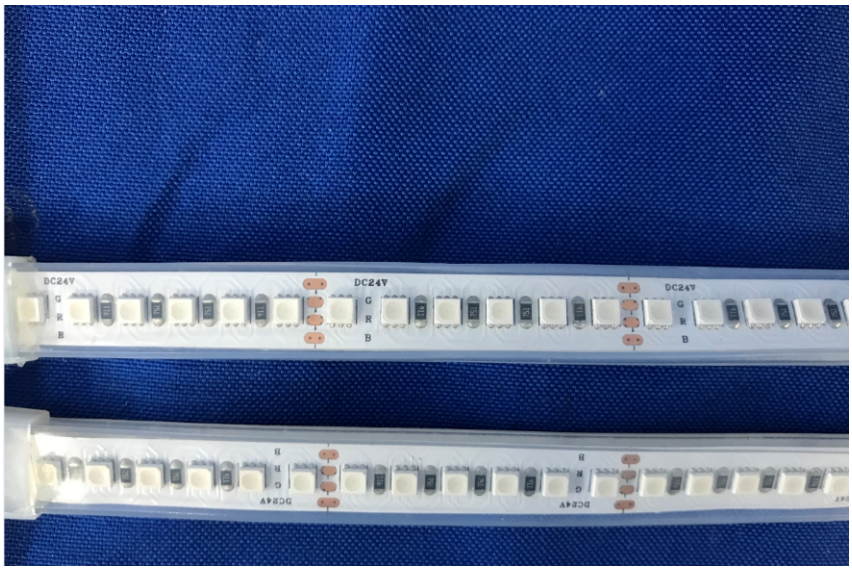
Photo 6



Whole view of model FE14C-P5-G138XRGB24V144SW10L01

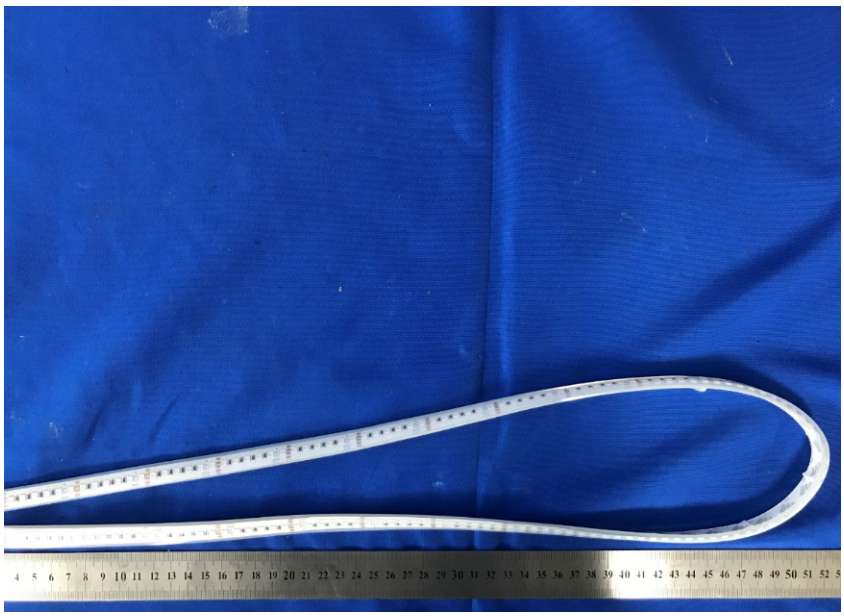
Attachment No. 4
Photo documentation

Photo 7



Detail view for model FE14C-P5-G138XRGB24V144SW10L01

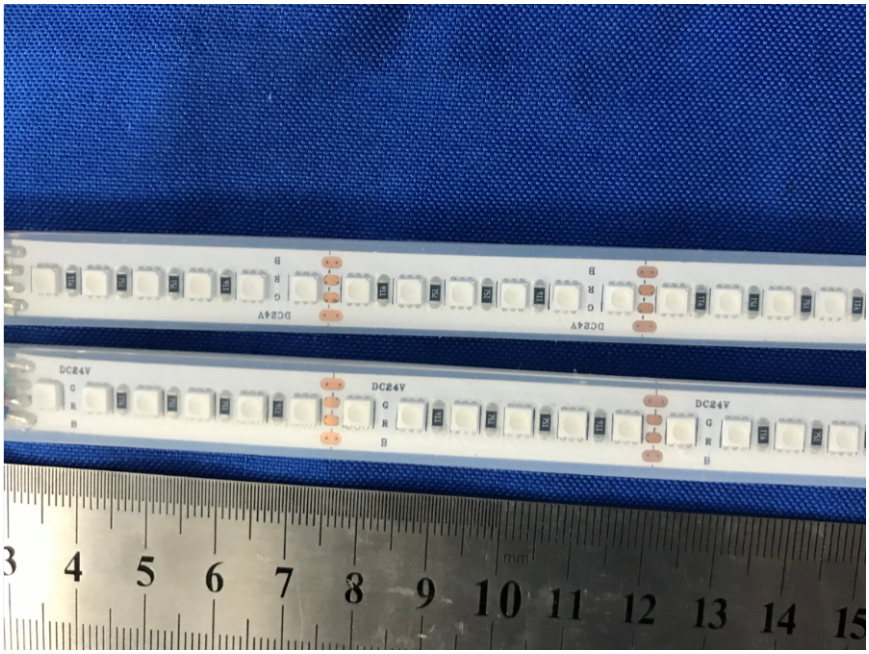
Photo 8



Whole view of model FE14C-P8-G138XRGB24V144SW10L01

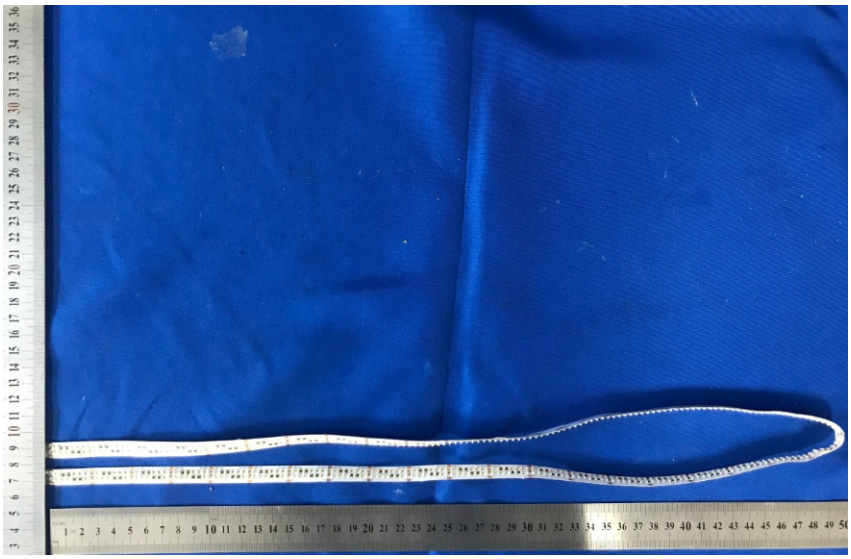
Attachment No. 4
Photo documentation

Photo 9



Detail view for model FE14C-P8-G138XRGB24V144SW10L01

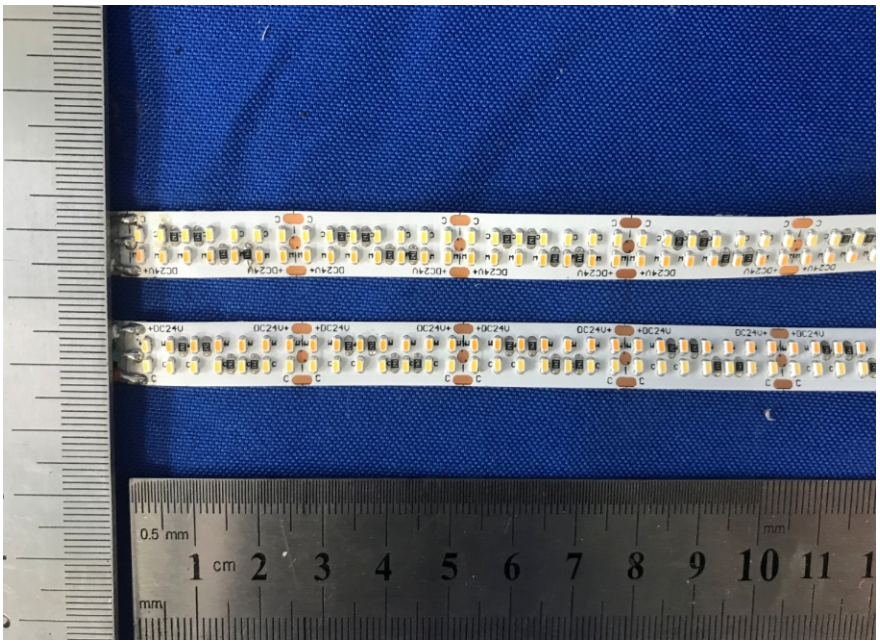
Photo 10



Whole view of model FE18C-P0-G121X92721X96024V560DW10L01

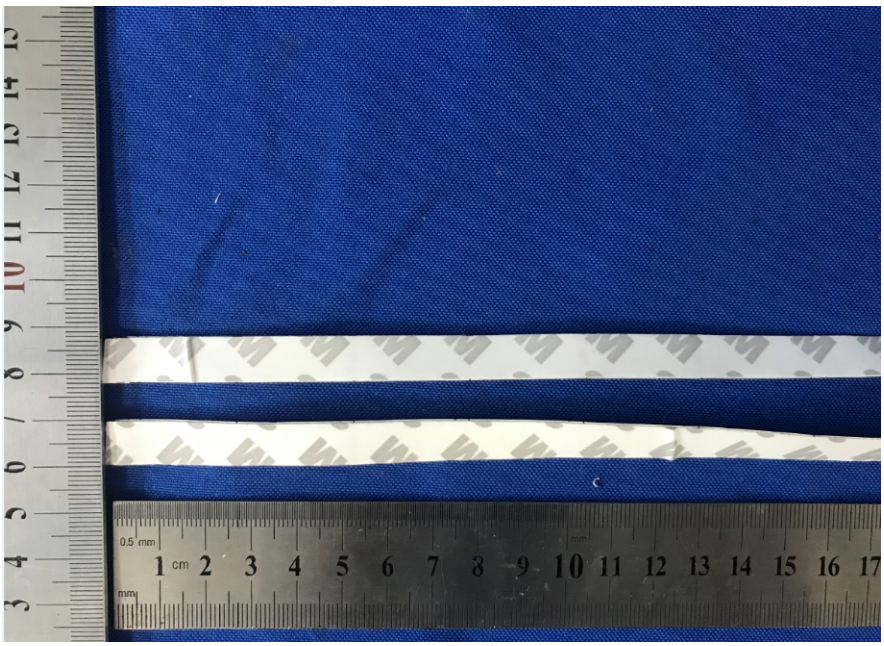
Attachment No. 4
Photo documentation

Photo 11



2110 LED module

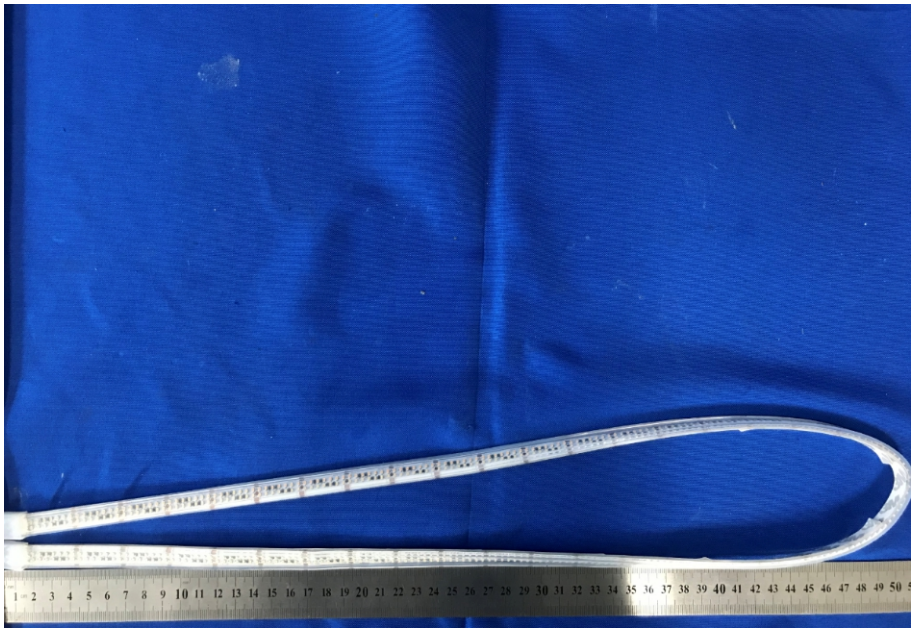
Photo 12



Detail view for model FE18C-P0-G121X92721X96024V560DW10L01

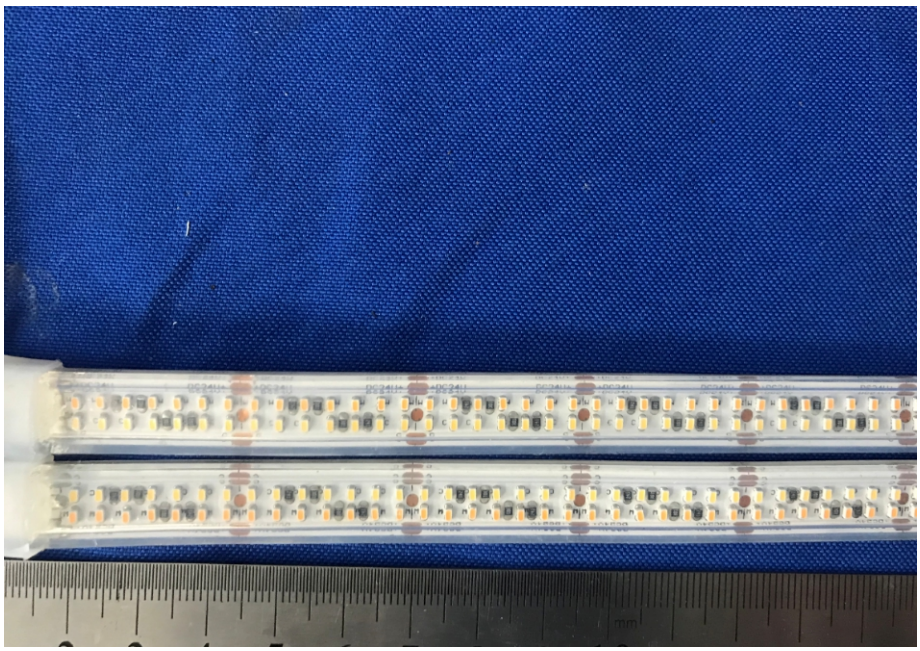
Attachment No. 4
Photo documentation

Photo 13



Whole view of model FE18C-P5-G221X92721X96024V650DW10L01

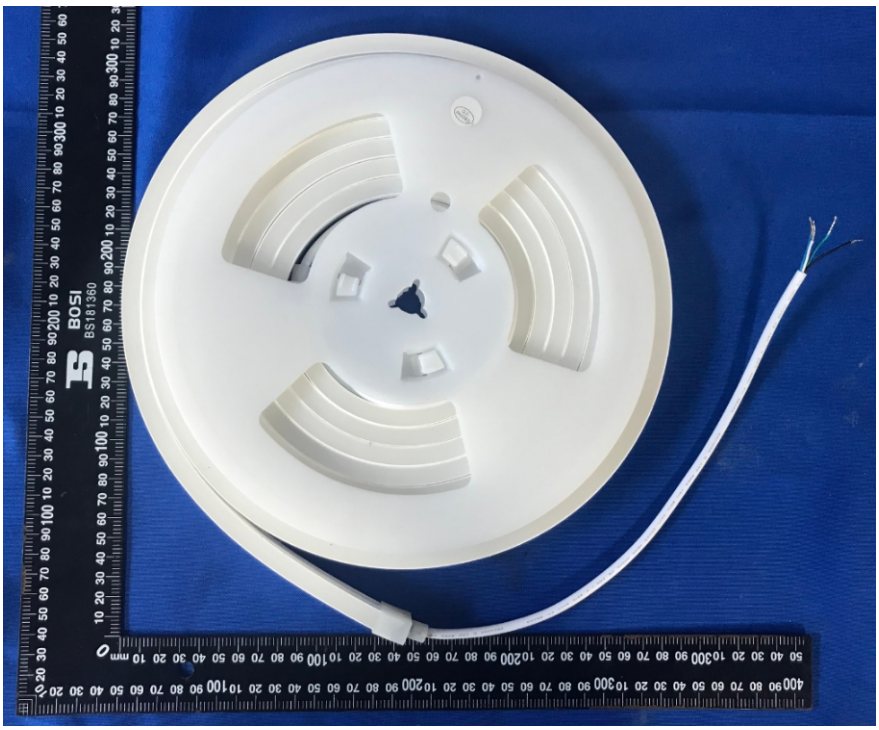
Photo 14



Detail view of model FE18C-P5-G221X92721X96024V650DW10L01

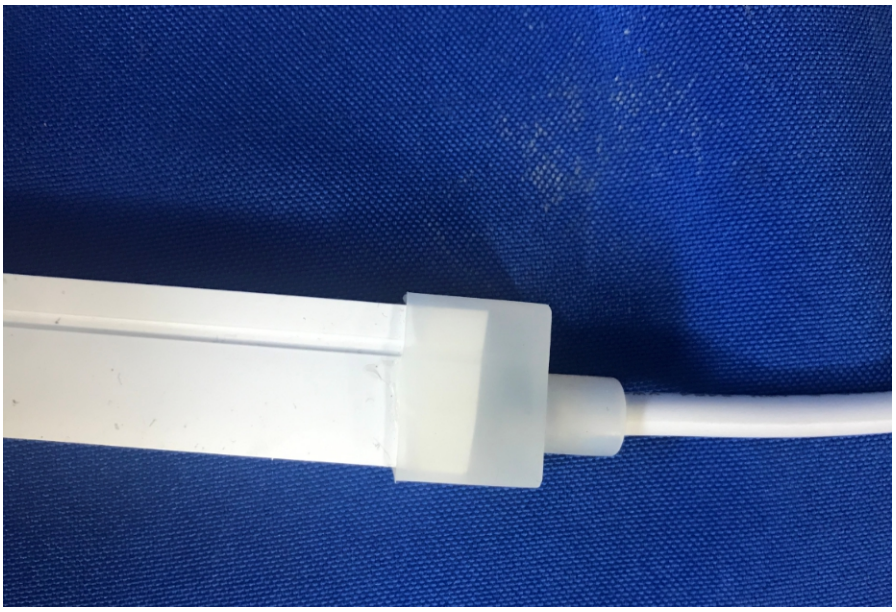
Attachment No. 4
Photo documentation

Photo 15



Whole view of model FEN19WS-P7-G150ZRGB8X24V60S1018L03

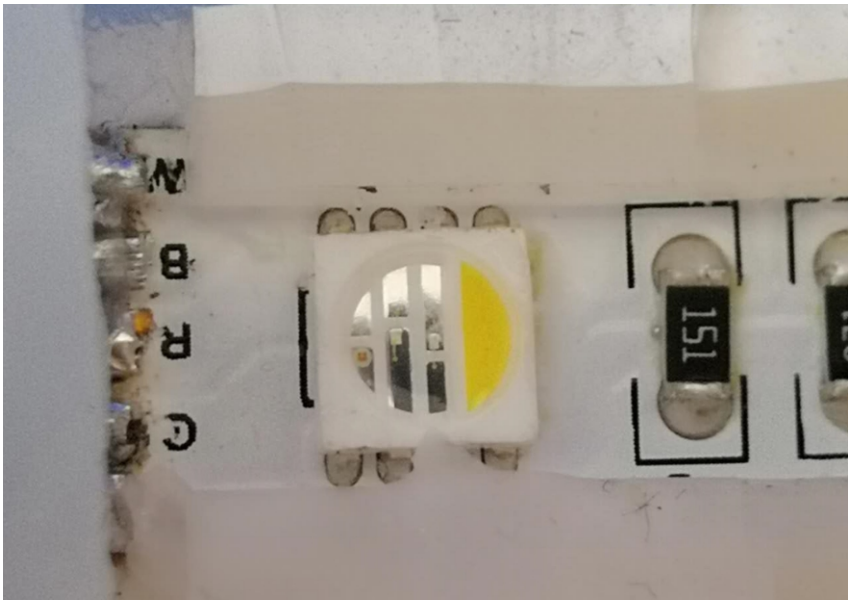
Photo 16



Detail view of model FEN19WS-P7-G150ZRGB8X24V60S1018L03

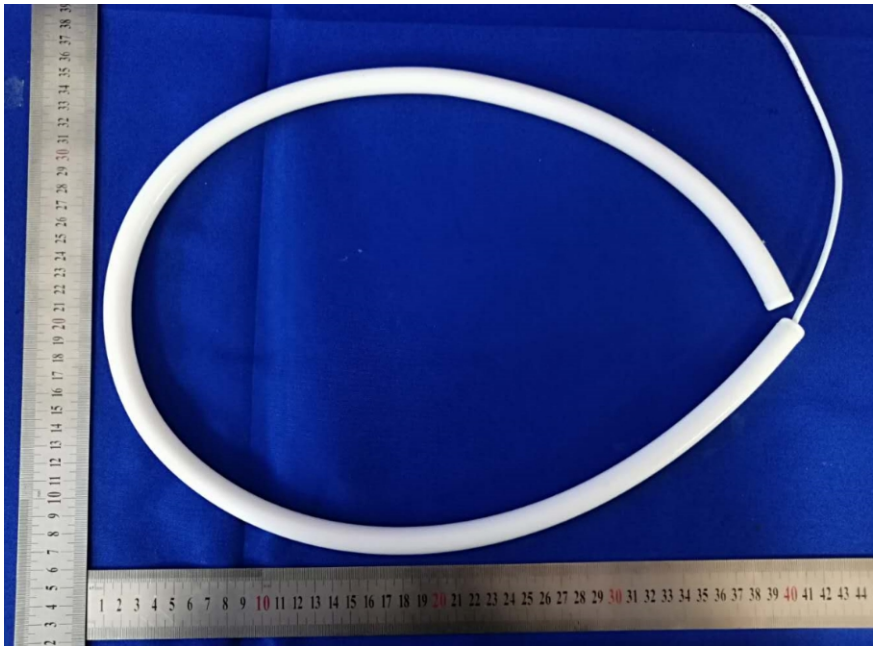
Attachment No. 4
Photo documentation

Photo 17



5050LED module

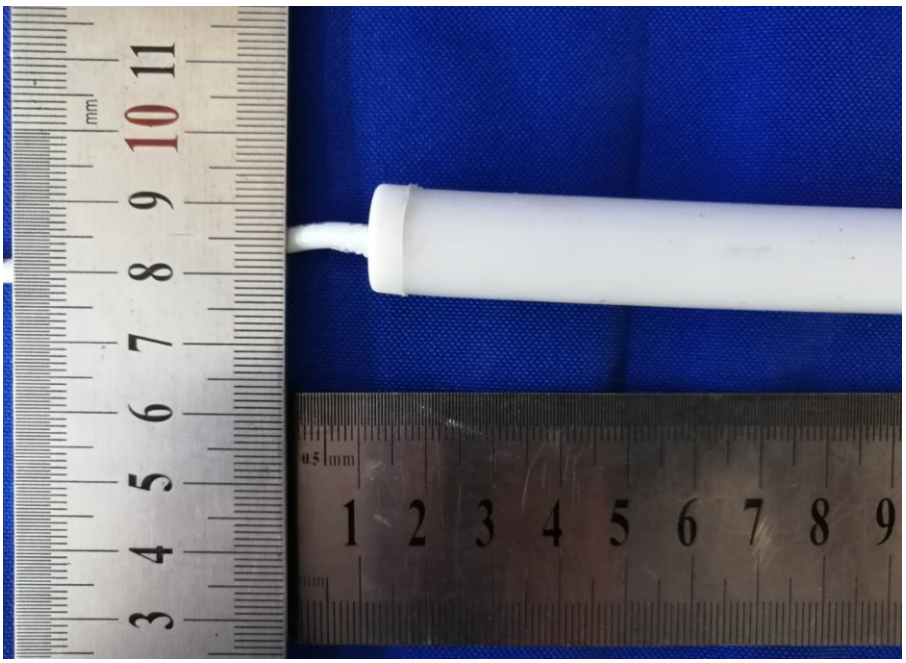
Photo 18



Whole view of model FHN11WR-P5-G106LZ84024V360D15L01

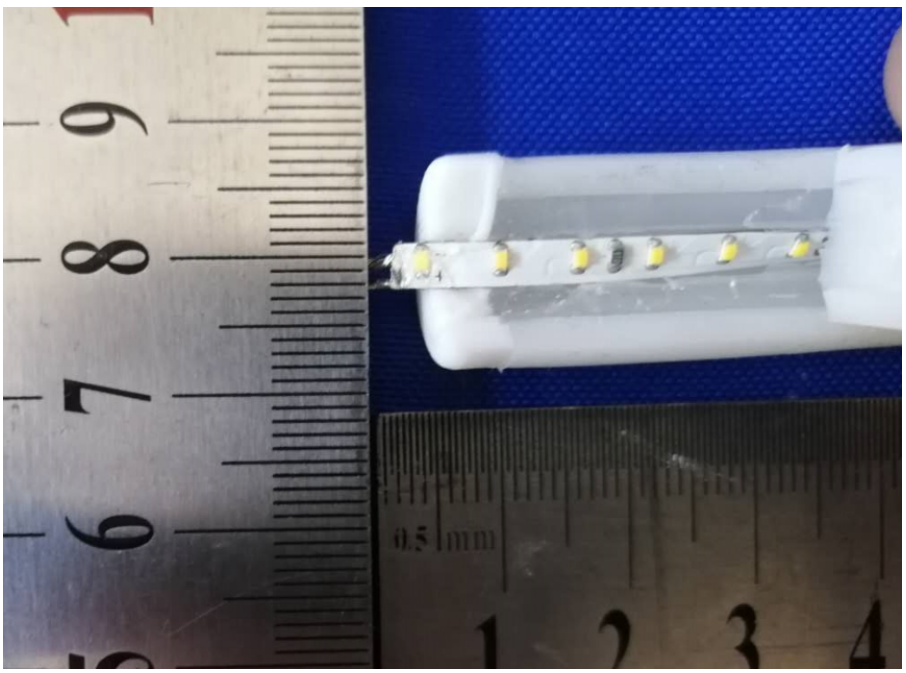
Attachment No. 4
Photo documentation

Photo 19



Detail view of model FHN11WR-P5-G106LZ84024V360D15L01

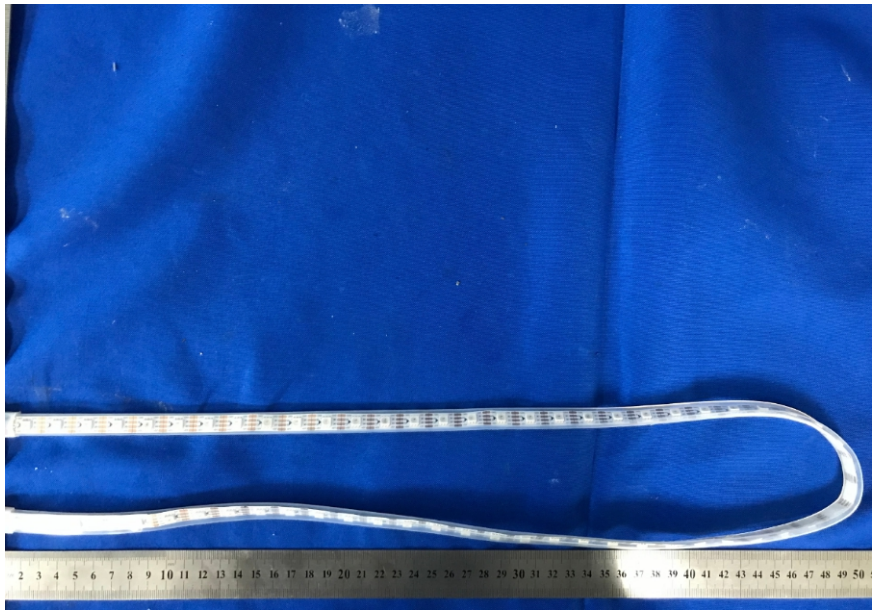
Photo 20



0603 LED module

Attachment No. 4
Photo documentation

Photo 21



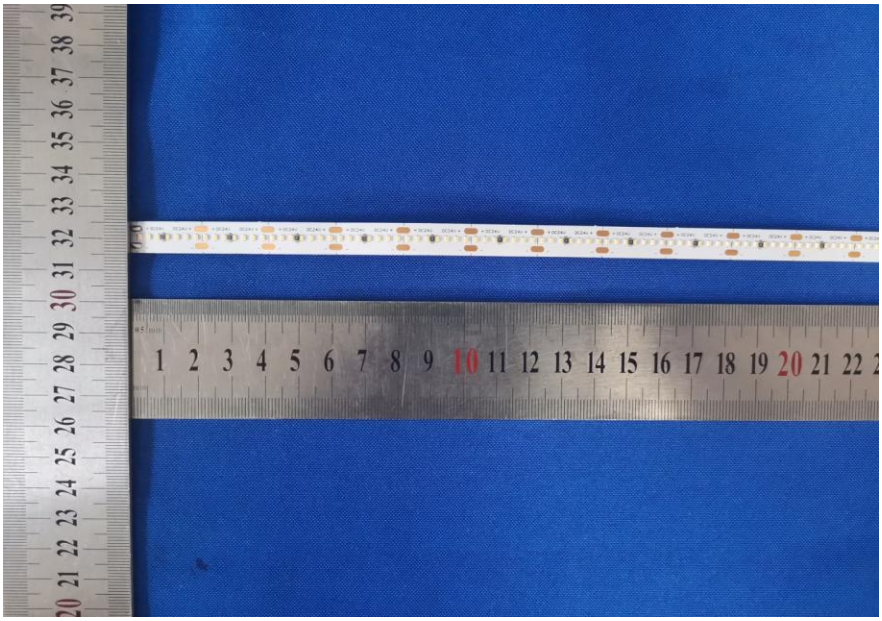
Wholel view of model FH14D-P5-G150B1RGB5V60SW10L01

Photo 22

Detail view of model FH14D-P5-G150B1RGB5V60SW10L01

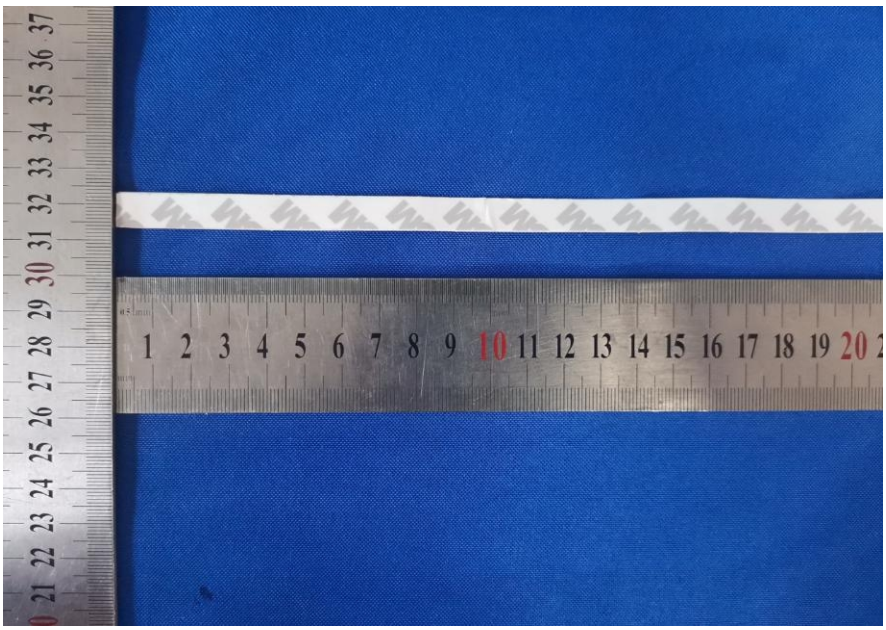
Attachment No. 4
Photo documentation

Photo 23



Detail view of model FE18W-P0-G1 18X940 24V350S W10L05

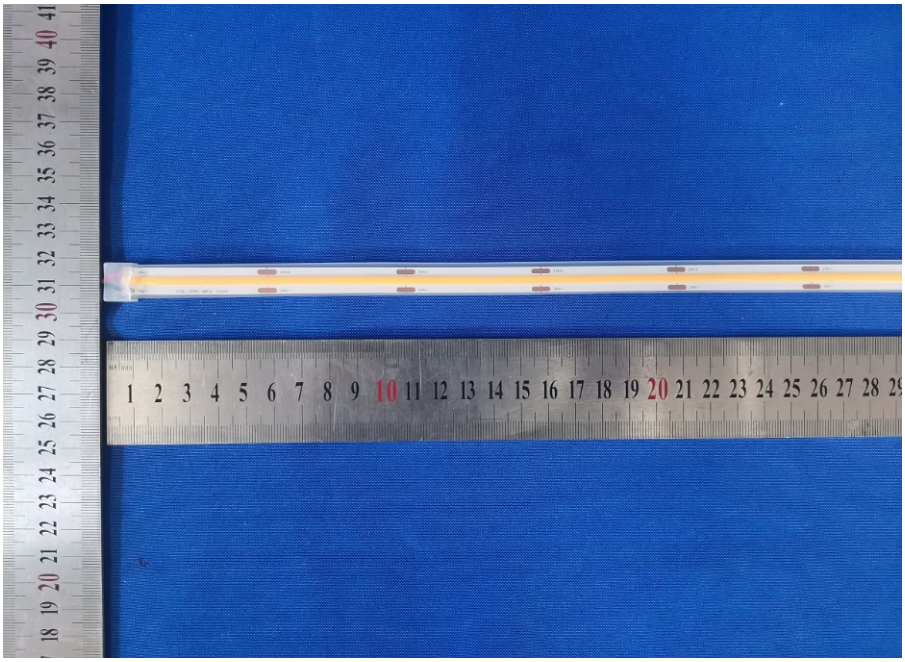
Photo 24



Detail view of model FE18W-P0-G1 18X940 24V350S W10L05

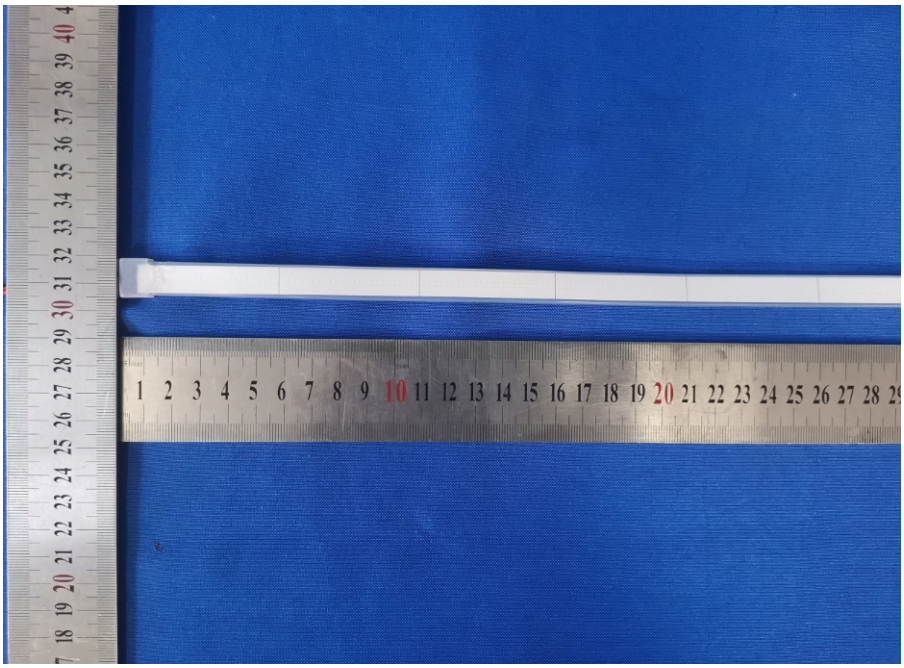
Attachment No. 4
Photo documentation

Photo 25



Detail view of model FE15W-P5-G1 COB930 24V480S W10L05

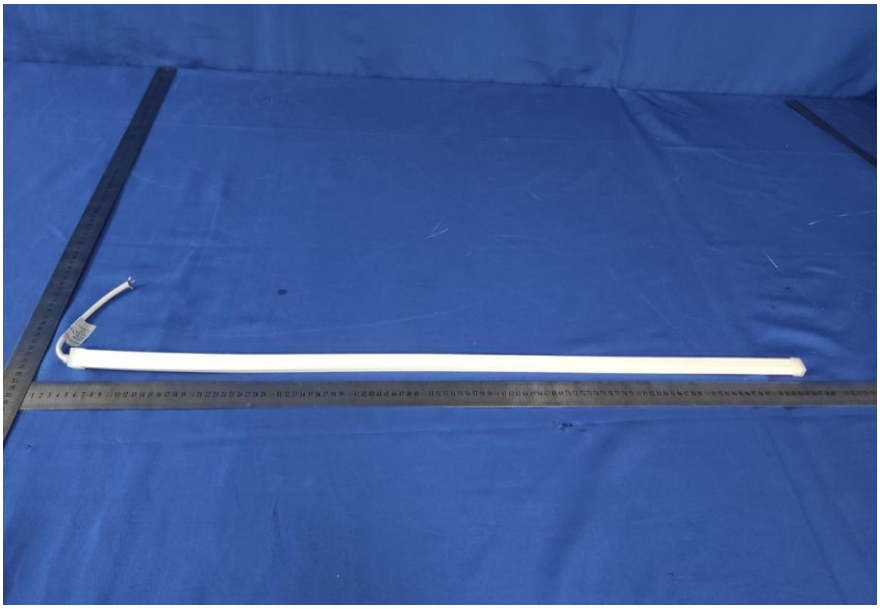
Photo 26



Detail view of model FE15W-P5-G1 COB930 24V480S W10L05

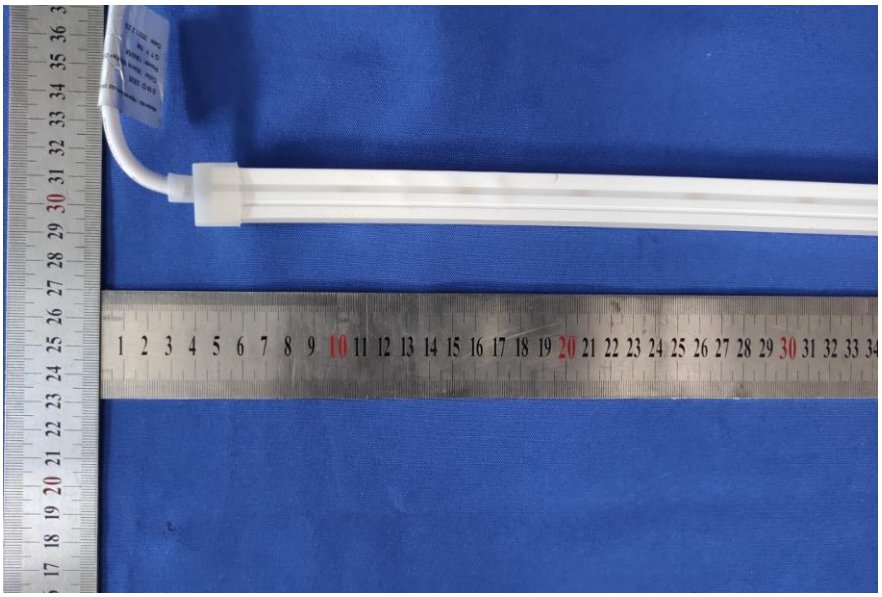
Attachment No. 4
Photo documentation

Photo 27



Wholel view of model FENE9CS-P7-G2 28HZ92728HZ960 24V240S 1018L05L

Photo 28



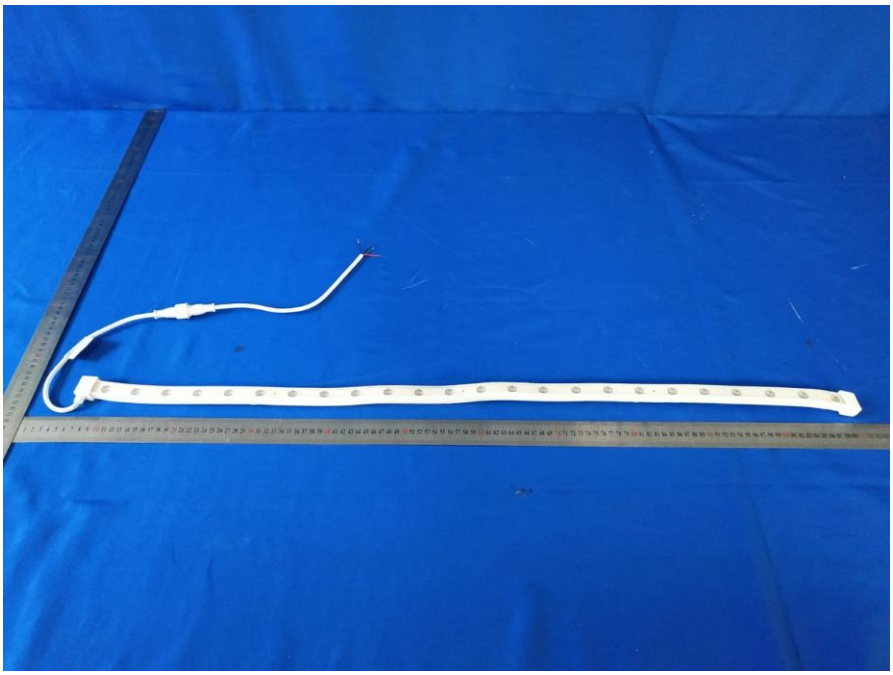
Detail view of model FENE9CS-P7-G2 28HZ92728HZ960 24V240S 1018L05L

Attachment No. 4
Photo documentation

Photo 29

Internal view of model FENE9CS-P7-G2 28HZ92728HZ960 24V240S 1018L05L

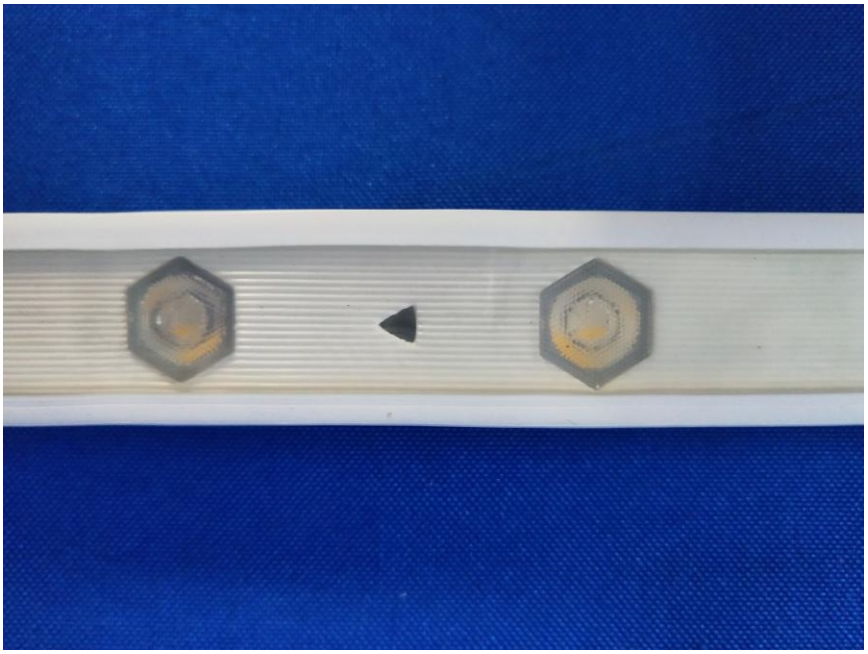
Photo 30



Wholel view of model FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°

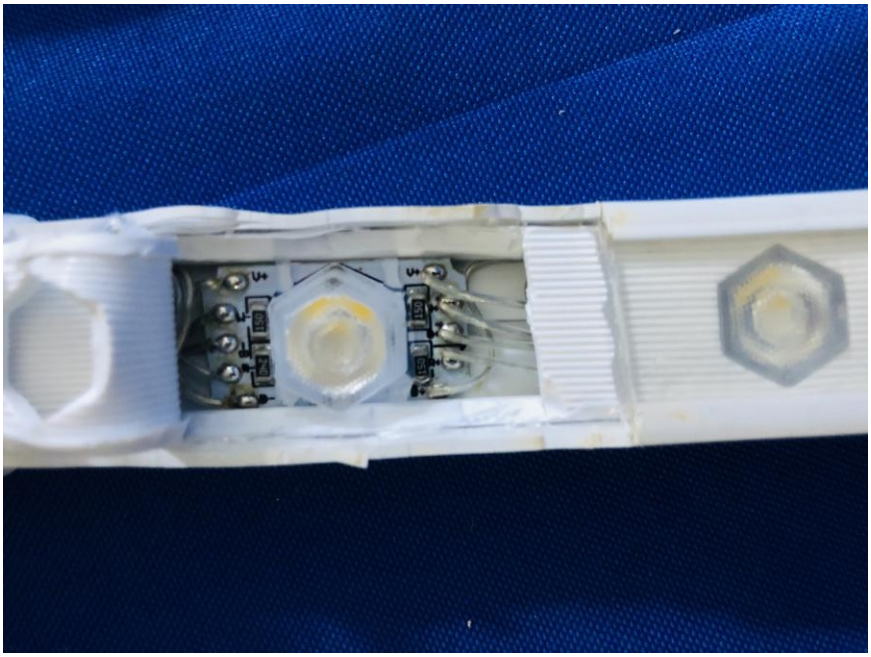
Attachment No. 4
Photo documentation

Photo 31



Detail view of model FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°

Photo 32



Internal view of model FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°

Attachment No. 4
Photo documentation

Photo 33

Connector view of model FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°

Photo 34

Connector view of model FEN20D-P5-G1 50AXRGBW 24V24S 1222L10 25°