

TEST REPORT
IEC 60598-2-2
Luminaires
Part 2: Particular requirements
Section 2: Recessed luminaires

Report Number.: 64.142.19.50071.01
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Name of Testing Laboratory
preparing the Report.....: TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch

Applicant's name.....: Sundopt Led Lighting Co., Ltd.
Address: 8-6 Building, Tongfuyu Industrial Park,
Aiqun Road, Shangwu Community, Shiyan Street,
518108 Shenzhen,
PEOPLE'S REPUBLIC OF CHINA

Test specification:

Standard: IEC 60598-2-2:2011 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure: ENEC Scheme
Non-standard test method: N/A

Test Report Form No......: IEC60598_2_2F
Test Report Form(s) Originator: Intertek Semko AB
Master TRF.....: Dated 2017-12-21

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Test item description..... :	LED Linear Lights
Trade Mark..... :	
Manufacturer :	Same as applicant
Model/Type reference :	PLF1-D120-032A-XX; PLF1-D120-032B-XX; PLF1-D120-032C-XX; PLF1-D120-032D-XX; PLF1-D120-024A-XX; PLF1-D120-024B-XX; PLF1-D120-024C-XX; PLF1-D120-024D-XX; PLF1-D150-040A-XX; PLF1-D150-040B-XX; PLF1-D150-040C-XX; PLF1-D150-040D-XX; PLF1-D150-030A-XX; PLF1-D150-030B-XX; PLF1-D150-030C-XX; PLF1-D150-030D-XX; PLF1-D300-080A-XX; PLF1-D300-080B-XX; PLF1-D300-080C-XX; PLF1-D300-060A-XX; PLF1-D300-060B-XX; PLF1-D300-060C-XX; PLF1-I120-040A-XX; PLF1-I120-040B-XX; PLF1-I120-040C-XX; PLF1-I120-040D-XX; PLF1-I150-050A-XX; PLF1-I150-050B-XX; PLF1-I150-050C-XX; PLF1-I150-050D-XX; PLF1-I300-100A-XX; PLF1-I300-100B-XX; PLF1-I300-100C-XX; VLF1-D120-032A-XX; VLF1-D120-032B-XX; VLF1-D120-032C-XX; VLF1-D120-032D-XX; VLF1-D120-028A-XX; VLF1-D120-028B-XX; VLF1-D120-028C-XX; VLF1-D120-028D-XX; VLF1-D150-040A-XX; VLF1-D150-040B-XX; VLF1-D150-040C-XX; VLF1-D150-040D-XX; VLF1-D150-034A-XX; VLF1-D150-034B-XX; VLF1-D150-034C-XX; VLF1-D150-034D-XX; VLF1-D300-080A-XX; VLF1-D300-080B-XX; VLF1-D300-080C-XX; VLF1-D300-068A-XX; VLF1-D300-068B-XX; VLF1-D300-068C-XX; VLF1-I120-040A-XX; VLF1-I120-040B-XX; VLF1-I120-040C-XX; VLF1-I120-040D-XX; VLF1-I150-050A-XX; VLF1-I150-050B-XX; VLF1-I150-050C-XX; VLF1-I150-050D-XX; VLF1-I300-100A-XX; VLF1-I300-100B-XX [‘XX’ can be I0, C1, C2, C3, I0 denotes individual type; C1 denotes continuous start, C2 denotes continuous middle, C3 denotes continuous end.]
Ratings..... :	220-240VAC; 50/60Hz; Other ratings see “General product information” for details.



Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
Testing location/ address.....:		5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou 510656, P. R. China
Tested by (name, function, signature).....:		Annie Wang Project Handler
Approved by (name, function, signature)....:		Kenny Chen Designated Reviewer
		
Testing procedure: CTF Stage 1:		
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Approved by (name, function, signature)....:		
Testing procedure: CTF Stage 2:		
Testing location/ address.....:		
Tested by (name + signature)		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)....:		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)....:		
Supervised by (name, function, signature) :		

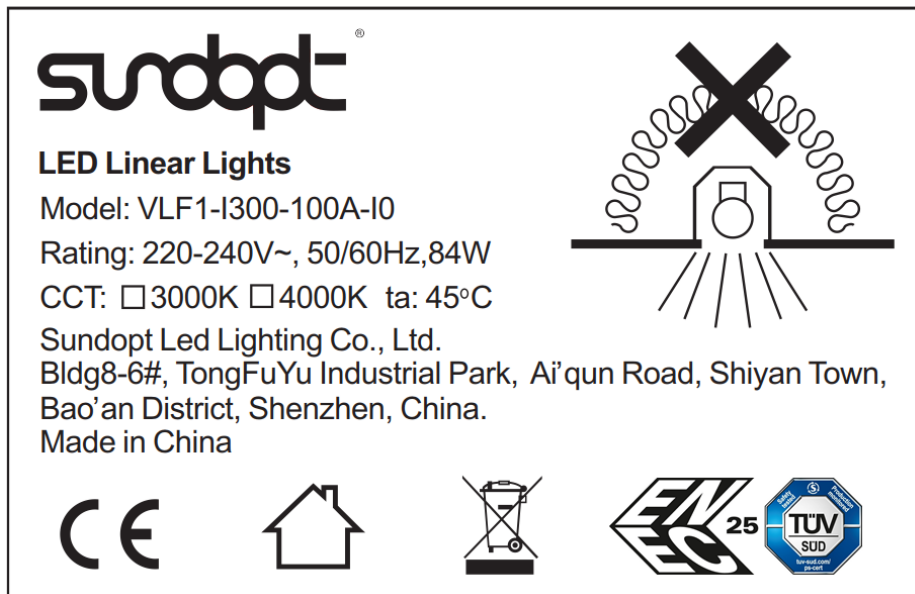
List of Attachments (including a total number of pages in each attachment): Attachment No. 1: - 2 pages of test report of European group differences and National differences; Attachment No. 2: - 2 pages of test report for EN 60598-2-1:1989; Attachment No. 3: - 6 pages of test report for EN 62031:2008+A1:2013+A2:2015 (for LED module); Attachment No. 4: - 2 pages of test report for IEC TR 62778:2014 (for blue light risk); Attachment No. 5: - 33 pages of photo documentation.	
Summary of testing:	
Tests performed (name of test and test clause): EN 60598-2-2:2012 EN 60598-2-1:1989 EN 60598-1:2015+A1:2018 The LED modules in products were found to comply with the requirements of EN 62031:2008+A1:2013+A2:2015. The submitted samples were classified as RG1 according to IEC TR 62778:2014. The submitted samples were found to comply with the requirements of above test specification.	Testing location: 5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou 510656, P. R. China
Summary of compliance with National Differences: European Group difference The product fulfils the requirements of below standards: EN 60598-2-2:2012; EN 60598-2-1:1989; EN 60598-1:2015+A1:2018	

Copy of marking plate:

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

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

For model VLF1-I300-100A-I0 (representative model)



Location: Sticking on the front metal enclosure of luminaires (size: 80x60mm)

(The CCT on the label will be ticked by factory, not ticked by installer or user)

Remark:

Rating labels of other models are similar as above label, except model no., CCT and rated power are different.

Height of letters and numerals at least 2mm, height of WEEE symbol at least 7mm, height of other symbols at least 5mm.

Test item particulars:	
Classification of installation and use.....:	LED Linear Lights for recessed mounting or surface mounting or pendant mounting and for indoor use only
Supply Connection	Supply cord without plug
Protection Class	I
Degree of Protection.....:	IP20
ta	45°C
Possible test case verdicts:	
- test case does not apply to the test object..... : N/A	
- test object does meet the requirement..... : P (Pass)	
- test object does not meet the requirement..... : F (Fail)	
Testing:	
Date of receipt of test item	2019-07-01
Date (s) of performance of tests	2019-07-01 to 2019-09-24

General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 60598-1. The manufacturer/ Importer has to ensure the appliance placing on the EU market conforms to the applicable EU directives which provide the affixing of the CE marking, such as LVD, EMC, RoHS, ErP, and so on.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Same as applicant	

General product information:

The products covered in this report are class I, equipped with non-user replaceable light sources, with following Installation method which for indoor use only.

All models have similar electrical and mechanical structures.

Installation method:

Series	Installation method.
For models suffixed with I0	Ceiling or pendent or recessed.
For models suffixed with C1, C2 and C3	Ceiling or pendent or recessed. Whole luminaires connection as below: C1+ n x C2+ C3. The maximum total input current is 12A. The maximum total rated power is 2640W.

Model list:

Model No.	Rated Power (W)	LED Driver type	Length(m)	LED Qty.	Weight (g)
For series 1					
PLF1-D120-032A-XX	27	LC 38W 500-700mA flexC Ip ADV	1,2	272	3080
PLF1-D120-032B-XX		LCA 35W 150-700mA one4all Ip PRE			3070
PLF1-D120-032C-XX		BK-BHL040-0500BD			3100
PLF1-D120-032D-XX		LCA 50W 350-1050mA DT8 Ip PRE			3120
PLF1-D120-024A-XX	19	LC 19W 250-350mA flexC Ip ADV			3060
PLF1-D120-024B-XX		LCA 35W 150-700mA one4all Ip PRE			3070
PLF1-D120-024C-XX		BK-BHL040-0350BD			3080
PLF1-D120-024D-XX		LCA 50W 350-1050mA DT8 Ip PRE			3120
PLF1-D150-040A-XX	34	LC 38W 500-700mA flexC Ip ADV	1,5	340	4150
PLF1-D150-040B-XX		LCA 35W 150-700mA one4all Ip PRE			4130
PLF1-D150-040C-XX		BK-BHL040-0650BD			4150
PLF1-D150-040D-XX		LCA 50W 350-1050mA DT8 Ip PRE			4170
PLF1-D150-030A-XX	27	LC 38W 500-700mA flexC Ip ADV			4150
PLF1-D150-030B-XX		LCA 35W 150-700mA one4all Ip PRE			4130
PLF1-D150-030C-XX		BK-BHL040-0500BD			4140
PLF1-D150-030D-XX		LCA 50W 350-1050mA DT8 Ip PRE			4170
PLF1-D300-080A-XX	68	LC 81W 1200-1750mA flexC Ip ADV	3,0	680	7180
PLF1-D300-080B-XX		LCA 75W 900-1800mA one4all Ip PRE			7190
PLF1-D300-080C-XX		BK-BHL070-1400BD			7220
PLF1-D300-060A-XX	48	LC 57W 800-1050mA flexC Ip ADV			7190
PLF1-D300-060B-XX		LCA 50W 350-1050mA one4all Ip PRE			7190
PLF1-D300-060C-XX		BK-BHL060-0950BD			7220
PLF1-I120-040A-XX	32	LC 38W 500-700mA flexC Ip ADV	1,2	459	3520
PLF1-I120-040B-XX		LCA 35W 150-700mA one4all Ip PRE			3530
PLF1-I120-040C-XX		BK-BHL040-0600BD			3530
PLF1-I120-040D-XX		LCA 50W 350-1050mA DT8 Ip PRE			3550

PLF1-I150-050A-XX	42	LC 57W 800-1050mA flexC lp ADV	1,5	578	4290
PLF1-I150-050B-XX		LCA 50W 350-1050mA one4all lp PRE			4300
PLF1-I150-050C-XX		BK-BHL050-0800BD			4290
PLF1-I150-050D-XX		LCA 50W 350-1050mA DT8 lp PRE			4320
PLF1-I300-100A-XX	80	LC 81W 1200-1750mA flexC lp ADV	3,0	1156	7610
PLF1-I300-100B-XX		LCA 75W 900-1800mA one4all lp PRE			7590
PLF1-I300-100C-XX		BK-BHL070-1500BD			7610
For series 2					
VLF1-D120-032A-XX	30	LC 38W 500-700mA flexC lp ADV	1,2	80	3520
VLF1-D120-032B-XX		LCA 35W 150-700mA one4all lp PRE			3500
VLF1-D120-032C-XX		BK-BHL040-0600BD			3520
VLF1-D120-032D-XX		LCA 50W 350-1050mA DT8 lp PRE			3530
VLF1-D120-028A-XX	25	LC 38W 500-700mA flexC lp ADV			3520
VLF1-D120-028B-XX		LCA 35W 150-700mA one4all lp PRE			3500
VLF1-D120-028C-XX		BK-BHL040-0500BD			3520
VLF1-D120-028D-XX		LCA 50W 350-1050mA DT8 lp PRE			3530
VLF1-D150-040A-XX	39	LC 57W 800-1050mA flexC lp ADV	1,5	100	4090
VLF1-D150-040B-XX		LCA 50W 350-1050mA one4all lp PRE			4100
VLF1-D150-040C-XX		BK-BHL050-0850BD			4100
VLF1-D150-040D-XX		LCA 50W 350-1050mA DT8 lp PRE			4120
VLF1-D150-034A-XX	27	LC 38W 500-700mA flexC lp ADV			4080
VLF1-D150-034B-XX		LCA 35W 150-700mA one4all lp PRE			4100
VLF1-D150-034C-XX		BK-BHL040-0550BD			4100
VLF1-D150-034D-XX		LCA 50W 350-1050mA DT8 lp PRE			4110
VLF1-D300-080A-XX	76	LC 81W 1200-1750mA flexC lp ADV	3,0	200	7920
VLF1-D300-080B-XX		LCA 75W 900-1800mA one4all lp PRE			7930
VLF1-D300-080C-XX		BK-BHL070-1500BD			7920
VLF1-D300-068A-XX	52	LC 57W 800-1050mA flexC lp ADV			7920
VLF1-D300-068B-XX		LCA 50W 350-1050mA one4all lp PRE			7940
VLF1-D300-068C-XX		BK-BHL060-1200BD			7920
VLF1-I120-040A-XX	34	LC 38W 500-700mA flexC lp ADV	1,2	130	3460
VLF1-I120-040B-XX		LCA 35W 150-700mA one4all lp PRE			3480
VLF1-I120-040C-XX		BK-BHL040-0700BD			3470
VLF1-I120-040D-XX		LCA 50W 350-1050mA DT8 lp PRE			3470
VLF1-I150-050A-XX	42	LC 57W 800-1050mA flexC lp ADV	1,5	160	4480
VLF1-I150-050B-XX		LCA 50W 350-1050mA one4all lp PRE			4510
VLF1-I150-050C-XX		BK-BHL050-0800BD			4500
VLF1-I150-050D-XX		LCA 50W 350-1050mA DT8 lp PRE			4480
VLF1-I300-100A-XX	84	LC 81W 1200-1750mA flexC lp ADV	3,0	325	8420
VLF1-I300-100B-XX		LCA 75W 900-1800mA one4all lp PRE			8410

For LED driver parameter see below:

Model No.	LED driver ratings		
LC 19W 250-350mA flexC Ip ADV	Input: 220-240VAC; 50/60Hz	Output: 250-350mA, 19W, Uout: 60Vdc	ta: 50°C; tc: 65°C; SELV; CC; Built-in, without DALI dimming
LC 38W 500-700mA flexC Ip ADV	Input: 220-240VAC; 50/60Hz	Output: 500-700mA, 38W, Uout: 60Vdc	ta: 50°C; tc: 70°C; SELV; CC; Built-in, without DALI dimming
LC 57W 800-1050mA flexC Ip ADV	Input: 220-240VAC; 50/60Hz	Output: 800-1050mA, 57W, Uout: 60Vdc	ta: 55°C; tc: 85°C SELV; CC; Built-in, without DALI dimming
LC 81W 1200-1750mA flexC Ip AD	Input: 220-240VAC; 50/60Hz	Output: 1200-1750mA, 80,5W, Uout: 60Vdc	ta: 50°C; tc: 80°C SELV; CC; Built-in, without DALI dimming
LCA 35W 150-700mA one4all Ip PRE	Input: 220-240VAC; 50/60Hz	Output: 150-700mA, 35W, Uout: 60Vdc	ta: 60°C; tc: 75°C SELV; CC; Built-in, with DALI dimming
LCA 50W 350-1050mA one4all Ip PRE	Input: 220-240VAC; 50/60Hz	Output: 350-1050mA, 50W, Uout: 60Vdc	ta: 65°C; tc: 80°C SELV; CC; Built-in, with DALI dimming
LCA 50W 350-1050mA DT8 Ip PRE	Input: 220-240VAC; 50/60Hz	Output: 350-1050mA, 50W, Uout: 60Vdc	ta: 50°C; tc: 75°C SELV; CC; Built-in, with DALI dimming
LCA 75W 900-1800mA one4all Ip PRE	Input: 220-240VAC; 50/60Hz	Output: 900-1800mA, 75W, Uout: 60Vdc	ta: 55°C; tc: 85°C SELV; CC; Built-in, with DALI dimming
BK-BHL040-0350BD	Input: 220-240VAC; 50/60Hz; Max. 0,3A	Output: 3-54Vdc, 350mA, 18,9W, Uout: 63Vdc	ta: 60°C; tc: 90°C; SELV; CC; Built-in, with DALI dimming
BK-BHL040-0500BD		Output: 3-54Vdc, 500mA, 27W, Uout: 63Vdc	
BK-BHL040-0550BD		Output: 3-54Vdc, 550mA, 29,7W, Uout: 63Vdc	
BK-BHL040-0600BD		Output: 3-54Vdc, 600mA, 32,4W., Uout: 63Vdc	
BK-BHL040-0650BD		Output: 3-54Vdc, 650mA, 35,1W, Uout: 63Vdc	
BK-BHL040-0700BD		Output: 3-54Vdc, 700mA, 37,8W, Uout: 63Vdc	
BK-BHL050-0800BD	Input: 220-240VAC; 50/60Hz; Max. 0,35A	Output: 3-54Vdc, 800mA, 43,2W, Uout: 63Vdc	ta: 60°C; tc: 90°C; SELV; CC; Built-in, with DALI dimming
BK-BHL050-0850BD		Output: 3-54Vdc, 850mA, 45,9W, Uout: 63Vdc	
BK-BHL060-0950BD	Input: 220-240VAC; 50/60Hz; Max. 0,4A	Output: 3-54Vdc, 950mA, 51,3W, Uout: 63Vdc	ta: 60°C; tc: 90°C; SELV; CC; Built-in, with DALI dimming
BK-BHL060-1200BD		Output: 3-50Vdc, 1200mA, 60W, Uout: 63Vdc	
BK-BHL070-1400BD	Input: 220-240VAC; 50/60Hz; Max. 0,5A	Output: 3-50Vdc, 1400mA, 70W, Uout: 63Vdc	ta: 60°C; tc: 90°C; SELV; CC; Built-in, with DALI dimming
BK-BHL070-1500BD		Output: 3-46Vdc, 1500mA, 69W, Uout: 63Vdc	

For models with dimmable LED drivers,

- Reinforced insulation was maintained between LV circuit and output circuit;
- Supplementary insulation was maintained between output circuit and DALI circuits (FELV).
- Basic insulation was maintained between LV circuit and DALI circuits (FELV).

Unless otherwise specified, the model VLF1-I300-100B-I0 was chosen as representative model to perform all the tests, the models PLF1-I300-100B-I0 and VLF1-I300-100B-I0 were chosen as representative models to perform blue light risk assessment.

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
2.3 (0)	GENERAL TEST REQUIREMENTS		—
2.3 (0.3)	More sections applicable..... :	Yes ☒ No ☐ EN 60598-2-1	—
2.3 (0.5)	Components	(see Annex 1)	—
2.3 (0.7)	Information for luminaire design in light sources standards		—
2.3 (0.7.2)	Light source safety standard	EN 62031	—
	Luminaire design in the light source safety standard		P
2.5 (2)	CLASSIFICATION OF LUMINAIRES		—
2.5 (2.2)	Type of protection	Class I	P
2.5 (2.3)	Degree of protection..... :	IP20	—
2.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
2.5 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
2.6 (3)	MARKING		—
2.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
2.6 (3.3)	Additional information		P
	Language of instructions	English	P
2.6 (3.3.1)	Combination luminaires	For models suffixed with C1, C2 and C3	P
2.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
2.6 (3.3.3)	Operating temperature		N/A
2.6 (3.3.5)	Wiring diagram	For models suffixed with C1, C2 and C3	P
2.6 (3.3.6)	Special conditions		N/A
2.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
2.6 (3.3.8)	Limitation for semi-luminaires		N/A
2.6 (3.3.9)	Power factor and supply current		N/A
2.6 (3.3.10)	Suitability for use indoors		N/A
2.6 (3.3.11)	Luminaires with remote control		N/A
2.6 (3.3.12)	Clip-mounted luminaire – warning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6 (3.3.13)	Specifications of protective shields		N/A
2.6 (3.3.14)	Symbol for nature of supply	~	P
2.6 (3.3.15)	Rated current of socket outlet		N/A
2.6 (3.3.16)	Rough service luminaire		N/A
2.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
2.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
2.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
2.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
2.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
2.6 (3.3.22)	Controllable luminaires, classification of insulation provided	For models with dimming function	P
2.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
2.6 (3.3.24)	If not supplied with terminal block, information on the packaging		P
2.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

2.7 (4)	CONSTRUCTION		—
2.7 (4.2)	Components replaceable without difficulty		P
2.7 (4.3)	Wireways smooth and free from sharp edges		P
2.7 (4.4)	Lampholders		N/A
2.7 (4.4.1)	Integral lampholder		N/A
2.7 (4.4.2)	Wiring connection		N/A
2.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
2.7 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
	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
2.7 (4.4.5)	Peak pulse voltage		N/A
2.7 (4.4.6)	Centre contact		N/A
2.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
2.7 (4.4.8)	Lamp connectors		N/A
2.7 (4.4.9)	Caps and bases correctly used		N/A
2.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
2.7 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
2.7 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
2.7 (4.7)	Terminals and supply connections		P
2.7 (4.7.1)	Contact to metal parts		P
2.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
2.7 (4.7.3)	Terminals for supply conductors		P
2.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
2.7 (4.7.4)	Terminals other than supply connection		P
2.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
2.7 (4.7.6)	Multi-pole plug		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- test at 30 N		N/A
2.7 (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
2.7 (4.9)	Insulating lining and sleeves		N/A
2.7 (4.9.1)	Retainment		N/A
	Method of fixing :		N/A
2.7 (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
2.7 (4.10)	Double or reinforced insulation		N/A
2.7 (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
2.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
2.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
2.7 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
2.7 (4.11)	Electrical connections and current-carrying parts		P
2.7 (4.11.1)	Contact pressure		P
2.7 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
2.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
2.7 (4.11.4)	Material of current-carrying parts		P
2.7 (4.11.5)	No contact to wood or mounting surface		P
2.7 (4.11.6)	Electro-mechanical contact systems		P
2.7 (4.12)	Screws and connections (mechanical) and glands		P
2.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	Screw for earthing: 0,5Nm	P
	Torque test: torque (Nm); part..... :	Screw for fixing metal enclosure: 1,2Nm	P
	Torque test: torque (Nm); part..... :	Screw for fixing LED driver: 0,5Nm	P
	Torque test: torque (Nm); part..... :	Screw for hanging wire: 0,5Nm	P
2.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
2.7 (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
2.7 (4.12.5)	Screwed glands; force (Nm)..... :	Metal glands; 6,25Nm	P
2.7 (4.13)	Mechanical strength		P
2.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)	Translucent cover; 0,2Nm	P
	- other parts; energy (Nm)..... :	Metal enclosure; 0,35Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P

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Clause	Requirement + Test	Result - Remark	Verdict
	4) covers		P
2.7 (4.13.2)	Metal parts have adequate mechanical strength		P
2.7 (4.13.3)	Straight test finger		P
2.7 (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
2.7 (4.13.6)	Tumbling barrel		N/A
2.7 (4.14)	Suspensions, fixings and means of adjusting		P
2.7 (4.14.1)	Mechanical load:		P
	A) four times the weight		P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
2.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
2.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
2.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
2.7 (4.14.5)	Guide pulleys		N/A
2.7 (4.14.6)	Strain on socket-outlets		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.15)	Flammable materials		P
	- glow-wire test 650°C	See Test Table 2.16 (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
2.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
2.7 (4.16)	Luminaires for mounting on normally flammable surfaces		N/A
	No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
2.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm	Electronic control gears are exempt from the requirements of this clause	N/A
	- spacing 10 mm		N/A
2.7 (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
2.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
2.7 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
2.7 (4.18)	Resistance to corrosion		N/A
2.7 (4.18.1)	- rust-resistance		N/A
2.7 (4.18.2)	- season cracking in copper		N/A
2.7 (4.18.3)	- corrosion of aluminium		N/A
2.7 (4.19)	Ignitors compatible with ballast		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7 (4.20)	Rough service vibration		N/A
2.7 (4.21)	Protective shield		N/A
2.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
2.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
2.7 (4.21.3)	No direct path		N/A
2.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	See Test Table 2.16 (13.3.2)	N/A
2.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
2.7 (4.23)	Semi-luminaires comply Class II		N/A
2.7 (4.24)	Photobiological hazards		P
2.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
2.7 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778	RG1	—
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 .. :		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
2.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
2.7 (4.26)	Short-circuit protection		N/A
2.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
2.7 (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

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Clause	Requirement + Test	Result - Remark	Verdict
2.7 (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
2.7 (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
2.7 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
2.7 (4.30)	Luminaires with non-user replaceable light source		N/A
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
2.7 (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	For models with dimming function	P
2.7 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage $\leq$ ELV		P
	Insulating of SELV circuits from LV supply		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		P
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to enter socket-outlets of other voltage systems		P
	Socket outlets does not admit plugs of other voltage systems		P
	Plugs and socket-outlets does not have protective conductor contact		P
2.7 (4.31.2)	FELV circuits		P
	Used FELV source	For models with dimming function	P
	Voltage $\leq$ ELV		P
	Insulating of FELV circuits from LV supply		P
	FELV circuits insulated from accessible parts according Table X.1		P
	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
2.7 (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
2.7 (4.32)	Overvoltage protective devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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

2.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		—
2.8 (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
2.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 2.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A
2.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 2.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 2.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 2.8 (11.2) II	N/A

2.9 (7)	PROVISION FOR EARTHING		—
2.9 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω : Max. 0,098 Ω		P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		P
2.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.9 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
2.9 (7.2.5)	Earth terminal integral part of connector socket		N/A
2.9 (7.2.6)	Earth terminal adjacent to mains terminals		P
2.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
2.9 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
2.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
2.9 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P

2.10 (14)	SCREW TERMINALS		—
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A

2.10 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		—
	Separately approved; component list..... :	(see Annex 1)	P
	Part of the luminaire :	(see Annex 4)	N/A

2.11 (5)	EXTERNAL AND INTERNAL WIRING		—
2.11 (5.2)	Supply connection and external wiring		P
2.11 (5.2.1)	Means of connection	Supply cord without plug	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
2.11 (5.2.2)	Type of cable	See Annex 1	P
	Nominal cross-sectional area (mm ²)	See Annex 1	P
	Cables equal to IEC 60227 or IEC 60245		P
2.11 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
2.11 (5.2.5)	Type Z not connected to screws		N/A
2.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- adequate degree of protection		P
2.11 (5.2.7)	Cable entries through rigid material have rounded edges		P
2.11 (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
2.11 (5.2.9)	Locking of screwed bushings		N/A
2.11 (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
2.11 (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
2.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
2.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) :	Max. 120N for 5x1,5mm ² ; Min. 60N for 2x0,75mm ²	P
	- torque test: torque (Nm) :	0,35Nm for 5x1,5mm ² ; 0,15Nm for 2x0,75mm ²	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
2.11 (5.2.11)	External wiring passing into luminaire		P
2.11 (5.2.12)	Looping-in terminals		P
2.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
2.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		P
	No unsafe compatibility		P
2.11 (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
2.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
2.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
2.11 (5.3)	Internal wiring		P
2.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		P
	- not delivered/ mounting instruction		N/A
	- factory assembled		P
	- socket outlet loaded (A)		N/A
	- temperatures	(see Annex 2)	N/A
	Green-yellow for earth only		P
2.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²).....	See Annex 1	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation thickness (mm) :	Approved cable	P
	Extra insulation added where necessary		N/A
2.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm ²)..... :	See Annex 1	P
2.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A
2.11 (5.3.1.4)	Conductors without insulation		N/A
2.11 (5.3.1.5)	SELV current-carrying parts		P
2.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
2.11 (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
2.11 (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
2.11 (5.3.4)	Joints and junctions effectively insulated		N/A
2.11 (5.3.5)	Strain on internal wiring		N/A
2.11 (5.3.6)	Wire carriers		N/A
2.11 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
2.11 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
2.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		—
2.12 (8.2.1)	Live parts not accessible		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
2.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
2.12 (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
2.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
2.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)..... :		N/A
	- no-load voltage (V)..... :		N/A
	- touch current if applicable (mA) :		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
2.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
2.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
2.12 (8.2.6)	Covers reliably secured		P
2.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		P
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
2.12 (-)	Parts within the ceiling space provide same degree of protection against electric shock as parts below the ceiling space		P

2.13 (12)	ENDURANCE TEST AND THERMAL TEST		—
2.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 2.14		—
2.13 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
2.13 (12.3)	Endurance test		P
	a) mounting-position	As in normal use	—
	b) test temperature (°C)	55°C	—
	c) total duration (h)	240h	—
	d) supply voltage (V)	264VAC	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	--	—
	e) luminaire ceases to operate		—
2.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- marking legible		P
	- no cracks, deformation etc.		P
2.13 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
2.13 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
2.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A
2.13 (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
2.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
2.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
2.13 (12.7.1)	Luminaire without temperature sensing control		N/A
2.13 (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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test	See Test Table 2.16 (13.2.1)	N/A
2.13 (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 Test Table 2.16 (13.2.1)	N/A
2.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
2.13 (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 Test Table 2.16 (13.2.1)	N/A
2.13.1 (-)	Wiring, for connection to the supply, not reach unsafe temperature		P
	- measured temperature of the cable (°C)	51,4°C (limit: 90°C)	P

2.14 (9)	RESISTANCE TO DUST AND MOISTURE		—
2.14 (-)	If IP > IP 20 the order of tests as specified in clause 2.13		N/A
2.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP20	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- mounting position during test	As in normal use	—
	- fixing screws tightened; torque (Nm)	--	—
	- tests according to clauses.....	Clause.9.2.0	—
	- electric strength test afterwards		N/A
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
2.14 (9.3)	Humidity test 48 h	25°C; 93%R.H	P

2.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		—
2.15 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø	Metal foil	—
	Insulation resistance (MΩ)		—
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface.....	100MΩ (required: 1MΩ)	P
	- between current-carrying parts and metal parts of the luminaire	100MΩ (required: 1MΩ)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5 :		N/A
	Other than SELV		P
	- between live parts of different polarity :		N/A
	- between live parts and mounting surface :	100MΩ (required: 2MΩ)	P
	- between live parts and metal parts :	100MΩ (required: 2MΩ)	P
	- between live parts of different polarity through action of a switch..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 :		N/A
2.15 (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) :		N/A
	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..... :		N/A
	- Insulation bushings as described in Section 5 :		N/A
	Other than SELV		P
	- between live parts of different polarity :		N/A
	- between live parts and mounting surface :	1480V	P
	- between live parts and metal parts :	1480V	P
	- between live parts of different polarity through action of a switch..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.15 (10.3)	Touch current or protective conductor current (mA):	Protective conductor current: Max. 0,441mA (limit 3,5mA)	P
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2.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
2.16 (13.2.1)	Ball-pressure test	See Test Table 2.16 (13.2.1)	P
2.16 (13.3.1)	Needle-flame test (10 s)	See Test Table 2.16 (13.3.1)	N/A
2.16 (13.3.2)	Glow-wire test (650°C)	See Test Table 2.16 (13.3.2)	P
2.16 (13.4)	Proof tracking test (IEC 60112)	See Test Table 2.16 (13.4)	N/A

2.8 (11.2)	TABLE I: Creepage distances and clearances						P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						P
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	B	3,1	05	11.1B	3,1	1,26	11.1A
Distance 2:	B	1,4	0,5	11.1B	1,4	1,26	11.1A
Distance 3:	B	1,4	0,5	11.1B	1,4	1,26	11.1A
Distance 4:	B	4,0	1,5	11.1B	4,0	2,5	11.1A
Distance 5:	B	4,0	1,5	11.1B	4,0	2,5	11.1A
Working voltage (V)					1-3 distance: Max. 63VDC (input LED module); 4-5 distance: 240VAC		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					--		—
Supplementary information: Distance 1: current-carrying parts in internal DC connector and metal enclosure for all models Distance 2: current-carrying parts in LED module (below) and metal enclosure for all models Distance 3: current-carrying parts in LED module (above) and metal enclosure for models Distance 4: live parts in input terminal of LED drivers and metal enclosure. Distance 5: live parts in AC connector and metal enclosure.							
Supplementary information: - minimum values were recorded. - Approved connectors and built in SELV LED drivers were used. ** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.							

IEC 60598-2-2							
Clause	Requirement + Test				Result - Remark		Verdict
2.8 (11.2)	TABLE II: Creepage distances and clearances						N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages							
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	--	--	--	--	--	--	--
Working voltage (V)					--		—
Frequency if applicable (kHz)					--		—
PTI					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Supplementary information: --							

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

2.16 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics				P
Allowed impression diameter (mm) :			≤ 2mm		—
Object/ Part No./ Material		Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Plastic enclosure of DC wire bifurcation		GUANGDONG QILONG TECHNOLOGY CO LTD	125	1,0	
Supplementary information: --					

2.16 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)					N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict	
--	--	--	--	--	--	
Supplementary information: --						

IEC 60598-2-2				
Clause	Requirement + Test		Result - Remark	Verdict
2.16 (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
Translucent cover	SABIC INNOVATIVE PLASTICS B V	No	0	Pass
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	No	0	Pass
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	No	0	Pass
Black grid cove (for VLF1 series only)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	No	0	Pass
Reflective sheet (for PLF1 series only)	SKC CO LTD	No	0	Pass
Plastic enclosure of DC wire bifurcation	GUANGDONG QILONG TECHNOLOGY CO LTD	No	0	Pass
Supplementary information: --				

2.16 (13.4)	TABLE: Proof tracking test (IEC 60112)			N/A
Test voltage PTI		175 V		—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens		Verdict
--	--	--	--	--
Supplementary information: --				

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

ANNEX 1	TABLE: Critical components information	P
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Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Supply cord and dimming cord for models suffixed with C1	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	5x1,5mm ²	EN 50525-2-11	VDE 40043059*
Supply cord for models suffixed with C1	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	3x1,5mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	3x1,5mm ²	EN 50525-2-11	VDE 40043104*
Supply cord and dimming cord for models suffixed with I0	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	5x0,75mm ²	EN 50525-2-11	VDE 40043059*
Supply cord for models suffixed with I0	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan Hongfuwei Cable Technology Co., Ltd	H03VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043104*
Alt.	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H03VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043104*
Dimming cord for models suffixed with C1 (for used with LED driver LCA 50W 350-1050mA DT8 Ip PRE)	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	3x1,5mm ²	EN 50525-2-11	VDE 40043059*

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	B	Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	3x1,5mm ²	EN 50525-2-11	VDE 40043104*
Dimming cord for models suffixed with C1 for other LED drivers	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	2x1,5mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	2x1,5mm ²	EN 50525-2-11	VDE 40043104*
Dimming cord for models suffixed with I0 (for used with LED driver LCA 50W 350-1050mA DT8 Ip PRE)	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	3 x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H03VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.		Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043104*
Alt.		Dongguan Hongfuwei Cable Technology Co., Ltd	H03VV-F	3x0,75mm ²	EN 50525-2-11	VDE 40043104*
Dimming cord for models suffixed with I0 (for other LED drivers	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	2x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.	B	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H03VV-F	2x0,75mm ²	EN 50525-2-11	VDE 40043059*
Alt.		Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	2x0,75mm ²	EN 50525-2-11	VDE 40043104*
Alt.		Dongguan Hongfuwei Cable Technology Co., Ltd	H03VV-F	2x0,75mm ²	EN 50525-2-11	VDE 40043104*

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Through wiring	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1015	14AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1015	14AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#
AC coupler and interconnection connector	B	WAGO Kontakttechnik GmbH & Co. KG	267-501 (female) 267-510 (male)	500V; 16A; 88°C; 1,5-2,5mm ²	EN 61984	VDE 40032309*
Alt.	B	WAGO Kontakttechnik GmbH & Co. KG	267-502 (female) 267-519 (male)	500V; 16A; 88°C; 1,5-2,5mm ²	EN 61984	VDE 40032309*
Input cord between AC coupler and AC connector	B	GUANGDONG DONGJU WIRE & CABLE CO LTD	SVT	18AWG; 300V; 105°C	UL62; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E189672*+ Tested with appliance#
AC connector connected to input wire of LED driver	B	WAGO Kontakttechnik GmbH & Co. KG	873-903	240VAC; 6A; 105°C; 0,75-4,0 mm ²	EN 61984	Dekra Certificate No.: 2178521.01*
Input wire of LED driver	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#
Dimming cord between AC coupler and dimming connector	B	GUANGDONG DONGJU WIRE & CABLE CO LTD	SVT	18AWG; 300V; 105°C	UL 62; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E189672*+ Tested with appliance#
Dimming connector connected to dimming wire of LED driver	B	Cixi Ding Li Plastic Co., Ltd.	DL250-2-1-F; DL250-2-1-M (for models used with all LED drivers except LCA 50W 350-1050mA DT8 Ip PRE)	500V; 6A; 120°C; 0,5-0,75mm ²	EN 61984	VDE 40043553*

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	B	Cixi Ding Li Plastic Co., Ltd.	DL250-3-1-F; DL250-3-1-M (For all the models)	500V; 6A; 120°C; 0,5-0,75mm ²	EN 61984	VDE 40043553*
Dimming wire for LED driver	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#
Output wire of LED driver	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1015	20AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	GUANGDONG DONGJU WIRE & CABLE CO LTD	SVT	20AWG; 300V; 105°C	UL 62; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E189672*+ Tested with appliance#
- Plastic enclosure of DC wire bifurcation (for use SVT output wire of LED driver)	B	GUANGDONG QILONG TECHNOLOGY CO LTD	QL80A	V-0	UL 94; UL 746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E351522*+ Tested with appliance#
Earthing wire	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1015	18AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#
Input wire of LED module	B	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	2464	20AWG; 300V; 80°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E320244*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1015	20AWG; 300V; 105°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	B	DONGGUAN ZHIHE ELECTRICAL CABLE TECH CO LTD	1332	20AWG; 300V; 200°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E258239*+ Tested with appliance#
Alt.	B	QIFURUI ELECTRONICS CO	1332	20AWG; 300V; 200°C	UL 758; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E211048*+ Tested with appliance#
Translucent cover	B	SABIC INNOVATIVE PLASTICS B V	LUX9610(f2)	PC; V-0; 115°C	UL94; UL746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E45329*+ Tested with appliance#
Alt.	B	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	ML-7500Z(#)(f1)	PC; V-0; 125°C	UL94; UL746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E244324*+ Tested with appliance#
Alt.	B	TEIJIN LIMITED RESIN AND PLASTIC	MN-4800(##)	PC; V-0; 125°C	UL94; UL746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E98529*+ Tested with appliance
Black grid cove (for VLF1 series only)	B	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC310(+)	PC; V-0; 85°C	UL94; UL746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E162823*+ Tested with appliance#
Reflective sheet (for PLF1 series only)	B	SKC CO LTD	SH(b)(@)	PET; VTM-2; 105°C	UL94; UL746; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E74359*+ Tested with appliance#
DC connector connected to output wire of LED driver	B	WAGO Kontakttechnik GmbH & Co. KG	222-412; 222-413	2,5 to 4mm ² / 400 V; 2,5mm ² r/f 24A and 4mm ² f 32A	EN 60998-1; EN 60998-2-2	ENEC-01360*
Alt.	B	Cixi Ding Li Plastic Co., Ltd.	DL250-2-1-F; DL250-2-1-M	500V; 6A; 120°C; 0,5-0,75mm ²	EN 61984	VDE 40043553*
SMD PCB connector on LED module	B	WAGO Kontakttechnik GmbH & Co. KG	2060-452	130V; 9A; 105°C; 0,2-0,75mm ²	EN 60998-1; EN 60998-2-2	Dekra Certificate No.: 2192329.01*
LED module PCB	B	LIANMENG ELECTRONICS HUIYANG CO LTD	LM-6	V-0; 130°C	UL 94; UL 796; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E469262*+ Tested with appliance#

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	B	SHENZHEN NAIPUCIRCUIT TECHNOLOGY CO LTD	NP001	V-0; 110°C	UL 94; UL 796; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E366053*+ Tested with appliance#
Alt.	B	LOMBER CIRCUITS (HUIZHOU) LTD	LB-01	V-0; 100°C	UL 94; UL 796; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E314348*+ Tested with appliance#
Alt.	B	JUCHUANG OPTOELECTRONIC CO LTD	JC-1	V-0; 90°C	UL 94; UL 796; EN 60598-1; EN 60598-2-1; EN 60598-2-2	UL E503117*+ Tested with appliance#
LED (for PLF1 series only)	B	Samsung	2835 (LM281B)	V _F : 2,8-3,3V; I _F : 150mA; CCT: 2700K-6500K; Beam Angle: 120°	IEC TR 62778	Tested with appliance#
LED (for VLF1 series only)	B	Samsung	2835 (LM283B)	V _F : 8.8-10.0V; I _F : 100mA; CCT: 2700K-6500K; Beam Angle: 120°	IEC TR 62778	Tested with appliance#
LED Driver	B	DONGGUAN BOKE LED DRIVERS CO., LTD.	BK-BHL040-0350BD; BK-BHL040-0500BD; BK-BHL040-0550BD; BK-BHL040-0600BD; BK-BHL040-0650BD; BK-BHL040-0700BD; BK-BHL050-0800BD; BK-BHL050-0850BD; BK-BHL060-0950BD; BK-BHL060-1200BD; BK-BHL070-1400BD; BK-BHL070-1500BD	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 25 No. U6 18 03 89086 054 (TÜV SÜD)*

IEC 60598-2-2						
Clause	Requirement + Test			Result - Remark		Verdict
LED Driver	B	Tridonic GmbH & Co KG	LC 19W 250-350mA flexC lp ADV	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-194 (OVE) *
LED Driver	B	Tridonic GmbH & Co KG	LC 38W 500-700mA flexC lp ADV	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-217 (OVE) *
LED Driver	B	Tridonic GmbH & Co KG	LC 57W 800-1050mA flexC lp ADV	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-217 (OVE) *
LED Driver	B	Tridonic GmbH & Co KG	LC 81W 1200-1750mA flexC lp AD	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-217 (OVE) *
LED Driver	B	Tridonic GmbH & Co KG	LCA 35W 150-700mA one4all lp PRE	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-195 (OVE) *
LED Driver	B	Tridonic Australia Pty Ltd.	LCA 50W 350-1050mA one4all lp PRE	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-164 (OVE) *
LED Driver	B	Tridonic Australia Pty Ltd.	LCA 50W 350-1050mA DT8 lp PRE	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-145 (OVE) *
LED Driver	B	Tridonic Australia Pty Ltd.	LCA 75W 900-1800mA one4all lp PRE	See 'General product information' for details	EN 62384 EN 61347-1 EN 61347-2-13	ENEC 11 No.7590-164 (OVE) *
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. *License available upon request #Please refer summary of testing in TRF for the test standard publication year The codes above have the following meaning: A - The component is replaceable with another one, also certified, with equivalent characteristics B - The component is replaceable if authorised by the test house C - Integrated component tested together with the appliance D - Alternative component						

IEC 60598-2-2							
Clause	Requirement + Test				Result - Remark		Verdict
ANNEX 2	TABLE: Thermal tests of Section 12						P
	Type reference :				VLF1-I300-100B-I0		—
	Lamp used..... :				LED		—
	Lamp control gear used..... :				LCA 75W 900-1800mA one4all lp PRE		—
	Mounting position of luminaire :				As in normal use		—
	Supply wattage (W) :				80,5W (240V)		—
	Supply current (A) :				0,345A (240V)		—
	Temperatures in test 1 - 4 below are corrected for ta (°C) :				45°C		—
	- abnormal operating mode :				LED driver output shorted circuit, output shutdown immediately		—
1.12 (12.4)	- test 1: rated voltage :				240V		—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :				1,06x240V=254,4V		—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage :				--		—
	Through wiring or looping-in wiring loaded by a current of A during the test :				12A		—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current :				1,1x240V=264V		—
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	45	--	48,2	--	90	--	--
AC coupler terminal	45	--	53,4	--	88	--	--
AC connector	45	--	48,1	--	105	--	--
Input wire of LED driver	45	--	57,9	--	105	--	--
Output wire of LED driver	45	--	54,0	--	105	--	--
tc of LED driver	45	80,1	--	--	85	--	--
Through wiring	45	--	81,4	--	105	--	--
Input wire near LED module	45	--	50,9	--	80	--	--
DC connector	45	--	55,7	--	Ref.	--	--
Translucent cover	45	--	53,3	--	Ref.	--	--
Metal enclosure	45	--	51,4	--	Ref.	--	--

IEC 60598-2-2							
Clause	Requirement + Test			Result - Remark			Verdict
Mounting surface	45	--	51,1	--	90	--	--
Dimming cord	45	--	47,7	--	90	--	--
Dimming connector	45	--	48,4	--	120	--	--
LED module PCB	45	--	86,0	--	90	--	--
SMD PCB connector	45	--	80,8	--	105	--	--
Supplementary information: Tested at maximum number of luminaires can be interconnected.							

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference	1. PLF1-D120-032C-I0; 2. PLF1-D120-024C-I0; 3. PLF1-D150-040C-I0; 4. PLF1-D300-080C-I0; 5. PLF1-D300-060C-I0; 6. PLF1-I120-040C-I0; 7. PLF1-I300-100C-I0; 8. VLF1-D150-040C-I0; 9. VLF1-D150-034C-I0; 10. VLF1-D300-068C-I0; 11. VLF1-I120-040C-I0; 12. VLF1-I150-050C-I0;	—
	Lamp used.....	LED	—
	Lamp control gear used.....	1. BK-BHL040-0500BD; 2. BK-BHL040-0350BD; 3. BK-BHL040-0650BD; 4. BK-BHL070-1400BD; 5. BK-BHL060-0950BD; 6. BK-BHL040-0600BD; 7. BK-BHL070-1500BD; 8. BK-BHL050-0850BD; 9. BK-BHL040-0550BD; 10. BK-BHL060-1200BD; 11. BK-BHL040-0700BD; 12. BK-BHL050-0800BD	—
	Mounting position of luminaire	As in normal use	—
	Supply wattage (W)	1. 27,5W [240V]; 2. 19,0W [240V]; 3. 34,4W [240V]; 4. 73,5W [240V]; 5. 46,6W [240V]; 6. 30,7W [240V]; 7. 77,1W [240V]; 8. 40,6W [240V]; 9. 26,7W [240V]; 10. 48,5W [240V]; 11. 34,2W [240V]; 12. 41,5W [240V]	—
	Supply current (A)	1. 0,126A [240V]; 2. 0,087A [240V]; 3. 0,151A [240V]; 4. 0,311A [240V]; 5. 0,200A [240V]; 6. 0,133A [240V]; 7. 0,328A [240V]; 8. 0,179A [240V]; 9. 0,117A [240V]; 10. 0,207A [240V]; 11. 0,151A [240V]; 12. 0,182A [240V]	—

IEC 60598-2-2							
Clause	Requirement + Test				Result - Remark		Verdict
	Temperatures in test 1 - 4 below are corrected for ta (°C) :				45°C		—
	- abnormal operating mode :				LED driver output shorted circuit, output shutdown immediately, the temperature rise of components are lower than temperature rise of components at normal heating test		—
1.12 (12.4)	- test 1: rated voltage :				240V		—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage :				--		—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage :				--		—
	Through wiring or looping-in wiring loaded by a current of A during the test :				--		—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage :				264V		—
Temperature measurements, (max.°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
tc of LED driver 1	45	63,1	--	--	90	--	--
tc of LED driver 2	45	61,5	--	--	90	--	--
tc of LED driver 3	45	66,7	--	--	90	--	--
tc of LED driver 4	45	79,5	--	--	90	--	--
tc of LED driver 5	45	74,5	--	--	90	--	--
tc of LED driver 6	45	67,7	--	--	90	--	--
tc of LED driver 7	45	81,5	--	--	90	--	--
tc of LED driver 8	45	68,3	--	--	90	--	--
tc of LED driver 9	45	66,4	--	--	90	--	--
tc of LED driver 10	45	72,0	--	--	90	--	--
tc of LED driver 11	45	66,4	--	--	90	--	--
tc of LED driver 12	45	71,3	--	--	90	--	--
Supplementary information: maximum temperature values were recorded.							
Tested at maximum number of luminaires can be interconnected.							

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 2	TABLE: Temperature measurements, thermal tests of Section 12		P
	Type reference	1. PLF1-D120-024A-I0; 2. PLF1-I150-050D-I0; 3. VLF1-D300-068A-I0; 4. VLF1-D300-068B-I0; 5. VLF1-I120-040A-I0; 6. VLF1-I120-040B-I0; 7. VLF1-I300-100A-I0	—
	Lamp used.....	LED	—
	Lamp control gear used.....	1. LC 19W 250-350mA flexC Ip ADV; 2. LCA 50W 350-1050mA DT8 Ip PRE; 3. LC 57W 800-1050mA flexC Ip ADV; 4. LCA 50W 350-1050mA one4all Ip PRE; 5. LC 38W 500-700mA flexC Ip ADV; 6. LCA 35W 150-700mA one4all Ip PRE; 7. LC 81W 1200-1750mA flexC Ip ADV;	—
	Mounting position of luminaire	As in normal use	—
	Supply wattage (W)	1. 18,8W [240V]; 2. 40,2W [240V]; 3. 48,2W [240V]; 4. 47,7W [240V]; 5. 34,0W [240V]; 6. 33,7W [240V]; 7. 79,5W [240V]	—
	Supply current (A)	1. 0,088A [240V]; 2. 0,183A [240V]; 3. 0,211A [240V]; 4. 0,206A [240V]; 5. 0,153A [240V]; 6. 0,149A [240V]; 7. 0,338A [240V]	—
	Temperatures in test 1 - 4 below are corrected for ta (°C)	45°C	—
	- abnormal operating mode	LED driver output shorted circuit, output shutdown immediately, the temperature rise of components are lower than temperature rise of components at normal heating test	—
1.12 (12.4)	- test 1: rated voltage.....	240V	—

IEC 60598-2-2							
Clause	Requirement + Test				Result - Remark		Verdict
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage :				--		—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage :				--		—
	Through wiring or looping-in wiring loaded by a current of A during the test :				--		—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage :				264V		—
Temperature measurements, (max.°C)							
Part	Ambient	Clause 12.4 – normal				Clause 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
tc of LED driver 1	45	60,5	--	--	65	--	--
tc of LED driver 2	45	69,0	--	--	75	--	--
tc of LED driver 3	45	69,3	--	--	90	--	--
tc of LED driver 4	45	70,6	--	--	85	--	--
tc of LED driver 5	45	68,9	--	--	80	--	--
tc of LED driver 6	45	66,5	--	--	75	--	--
tc of LED driver 7	45	82,7	--	--	90	--	--
Supplementary information: maximum temperature values were recorded. Tested at maximum number of luminaires can be interconnected.							

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

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		—
(14.2)	Type of terminal..... :		—
	Rated current (A)..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²)..... :		—
(14.3.3)	Conductor space (mm)..... :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) :	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) :		N/A
	Torque (Nm) :		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N) :		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-2			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		—
(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

IEC 60598-2-2										
Clause	Requirement + Test					Result - Remark				Verdict
15.6.2	Mechanical tests									N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) :									N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) :									N/A
(15.6.3)	Electrical tests									N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1									N/A
(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop of two inseparable joints									N/A
	Voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV) :					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV) :					--				—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Continued ageing: voltage drop after 10th alt. 25th cycle									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: --										



Attachment No. 1

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IEC60598_2_2F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-2 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 2: Recessed luminaires			
Differences according to: EN 60598-2-2:2012 used in conjunction with EN 60598-1:2015 + A1:2018			
Annex Form No: EU_GD_IEC60598_2_2F			
Annex Form Originator: OVE			
Master Annex Form: 2019-01-24			
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	CENELEC COMMON MODIFICATIONS (EN)	—
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2.6 (3)	MARKING	—
2.6 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	P

2.7 (4)	CONSTRUCTION	—
2.7 (4.11.6)	Electro-mechanical contact systems	P

2.11 (5)	EXTERNAL AND INTERNAL WIRING	—
2.11 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
2.11 (5.2.2)	Cables equal to EN 50525	P
	Replace table 5.1 – Supply cord	P

2.13 (12)	ENDURANCE TEST AND THERMAL TESTS	—
2.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring	P



Attachment No. 1

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IEC60598_2_2F ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		—
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A

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

Attachment No. 2

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

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

1.2 (0)	GENERAL TEST REQUIREMENTS		—
1.2 (0.3)	More sections applicable	Yes ☒ No ☐ (EN 60598-2-2)	—
1.2 (0.5)	Components	(see Annex 1)	—
1.2 (0.7)	Information for luminaire design in light sources standards		—
1.2 (0.7.2)	Light source safety standard	EN 62031	—
	Luminaire design in the light source safety standard		P
1.4 (2)	CLASSIFICATION		—
1.4 (2.2)	Type of protection	Class I	—
1.4 (2.3)	Degree of protection.....	IP20	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
1.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
1.5 (3)	MARKING		P
1.6 (4)	CONSTRUCTION		P
1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
1.8 (7)	PROVISION FOR EARTHING		P
1.9 (14)	SCREW TERMINALS		N/A
1.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		P
1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P

Attachment No. 2

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EN 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P

Attachment No. 3

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Report No.: 64.142.19.50071.01

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

TEST REPORT EN 62031 LED modules for general lighting – Safety specifications			
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	GENERAL REQUIREMENTS		—
4.4	Integral modules tested assembled in the luminaire		P
4.5	Independent modules comply with requirements in IEC 60598-1		N/A

5	GENERAL TEST REQUIREMENTS		—
5.5	SELV-operated LED modules comply with Annex I of IEC 61347-2-13	(see Annex 1)	N/A
	General conditions for tests in Annex A	(see Annex A)	P

6	CLASSIFICATION		—
	Built-in module : Yes ☐ No ☒		—
	Independent module..... : Yes ☐ No ☒		—
	Integral module : Yes ☒ No ☐		—
	For Integral module; Note to 1.2.1 in IEC 60598-1 applies.		—

7	MARKING		N/A
	Requirements not applicable to the evaluated product.		—

8	TERMINALS		N/A
	Requirements not applicable to the evaluated product.		—

9 (9)	PROVISION FOR PROTECTIVE EARTHING		N/A
	Requirements not applicable to the evaluated product.		—

10 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		—
- (10.1)	Controlgear protected against accidental contact with live parts		N/A
- (A2)	The current flowing between the part concerned and earth is measured and does not exceed 0,7 mA (peak) or 2 mA d.c.:		N/A

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EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (A2)	For frequencies above 1 kHz, the current does not exceed 0,7 mA (peak) multiplied by the value of the frequency in kilohertz or 70 mA (peak)		N/A
- (A3)	The voltage between the part concerned and any accessible part is measured and does not exceed 34 V (peak)		N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V		N/A
- (10.3)	Controlgear providing SELV		N/A
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
11 (11)	MOISTURE RESISTANCE AND INSULATION		—
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (M Ω):		P

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EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	For basic insulation $\geq 2 \text{ M}\Omega$	100M Ω	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$		N/A
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

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

13 (14)	FAULT CONDITIONS	—	
- (14)	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
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	N/A
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	N/A

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EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.5)	After the tests has been carried out on three samples:		N/A
	The insulation resistance $\geq 1 \text{ M}\Omega$		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
- (14.6)	Relevant fault condition tests with high-power supply		N/A
13.2	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
15	CONSTRUCTION		—
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
16 (16)	CREEPAGE DISTANCES AND CLEARANCES		—
- (16)	Creepage and distances and clearances in compliance with IEC 61347-1	(see appended table)	N/A
	Insulating lining of metallic enclosures		N/A
	Basic insulation on printed boards tested according to clause 14		N/A
	Distances subjected to both sinusoidal voltage as non-sinusoidal pulses not less than value in Table 16		N/A
	Creepage distances not less than minimum clearance		N/A
16 (-)	Conductive accessible parts in compliance with applicable parts of IEC 60598-1	(see table 2.8 (11.2) of IEC 60598-2-2)	P
17 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		—
	Cl. 17 refer to Cl. 17 of IEC 61347-1 which refer to Cl. 4.11 and 4.12 of IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A

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EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) :		N/A
	- lampholder; torque (Nm) :		N/A
	- push-button switches; torque 0,8 Nm :		N/A
(4.12.5)	Screwed glands; force (Nm)..... :		N/A
18 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
- (18.1)	Ball-pressure test :	See Test Table 18 (18.1)	N/A
- (18.2)	Test of printed boards :	See Test Table 18 (18.2)	N/A
- (18.3)	Glow-wire test (650°C) :	See Test Table 18 (18.3)	N/A
- (18.4)	Needle-flame test (10 s) :	See Test Table 18 (18.4)	N/A
- (18.5)	Proof tracking test :	See Test Table 18 (18.5)	N/A
19 (19)	RESISTANCE TO CORROSION		—
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A
20	INFORMATION FOR LUMINAIRE DESIGN		—
	Information in Annex D (informative)		—
21	HEAT MANAGEMENT		—
21.1	General		N/A

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EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	Exchangeability is safeguarded by cap or base		N/A
21.2	Heat-conducting foil and paste		N/A
	Heat-conducting foil delivered with the module if necessary		N/A
22	PHOTOBIOLOGICAL SAFETY		—
22.1	UV radiation		N/A
	Luminous radiation not exceed 2mW/klm		N/A
22.2	Blue light hazard		P
	Assessed according to IEC TR 62778	RG1	P
22.3	Infrared radiation		N/A
	Requirements for infrared radiation when required		N/A
A	ANNEX A - TESTS		—
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		P
ANNEX 1	SELV-operated LED modules		N/A
	Requirements not applicable to the evaluated product.		—

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IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires			
--	--	--	--

7	MEASUREMENT INFORMATION FLOW		—
7.1	Basic flow		P
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	Conditions for the radiance measurement		P
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
7.3	Special cases (I): Replacement by a lamp or LED module of another type		N/A
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	Special cases (II): Arrays and clusters of primary light sources		N/A
	LED package is evaluated as	☐ RG0 unlimited ☐ RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A

8	RISK GROUP CLASSIFICATION		—
	Risk group achieved:		P
	- ..Risk Group 0 unlimited		N/A
	- ..Risk Group 1 unlimited		P
	- E_{thr} (lx) : Distance to reach RG1 (m) :		N/A

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IEC TR 62778				
Clause	Requirement + Test		Result - Remark	Verdict
	TABLE: Spectroradiometric measurement			P
	Measurement performed on:	☐ LED package ☐ LED module ☐ Lamp ☒ Luminaires		
	Model number	1. PLF1-I300-100B-I0 2. VLF1-I300-100B-I0		
	Test voltage (V)	240VAC		—
	Test current (mA)	--		—
	Test frequency (Hz)	50Hz		—
	Ambient, t(°C)	24.5°C		—
	Measurement distance	☒ 20 cm ☐ ... cm		—
	Source size	☒ Non-small ☐ Small: mm		—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)		—
Item	Symbol	Units	Result	Remark
Correlated colour temperature	CCT	K	/	--
x/y colour coordinates		--	/	--
Blue light hazard radiance	L _B	W/(m ² •sr ¹)	1. 100,024 2. 354,366	RG1
Blue light hazard irradiance	E _B	W/m ²	/	--
Luminance	L	cd/m ²	1. 1,13E+05 2. 5,86E+05	--
Illuminance	E	lx	/	--
Supplementary information: --				

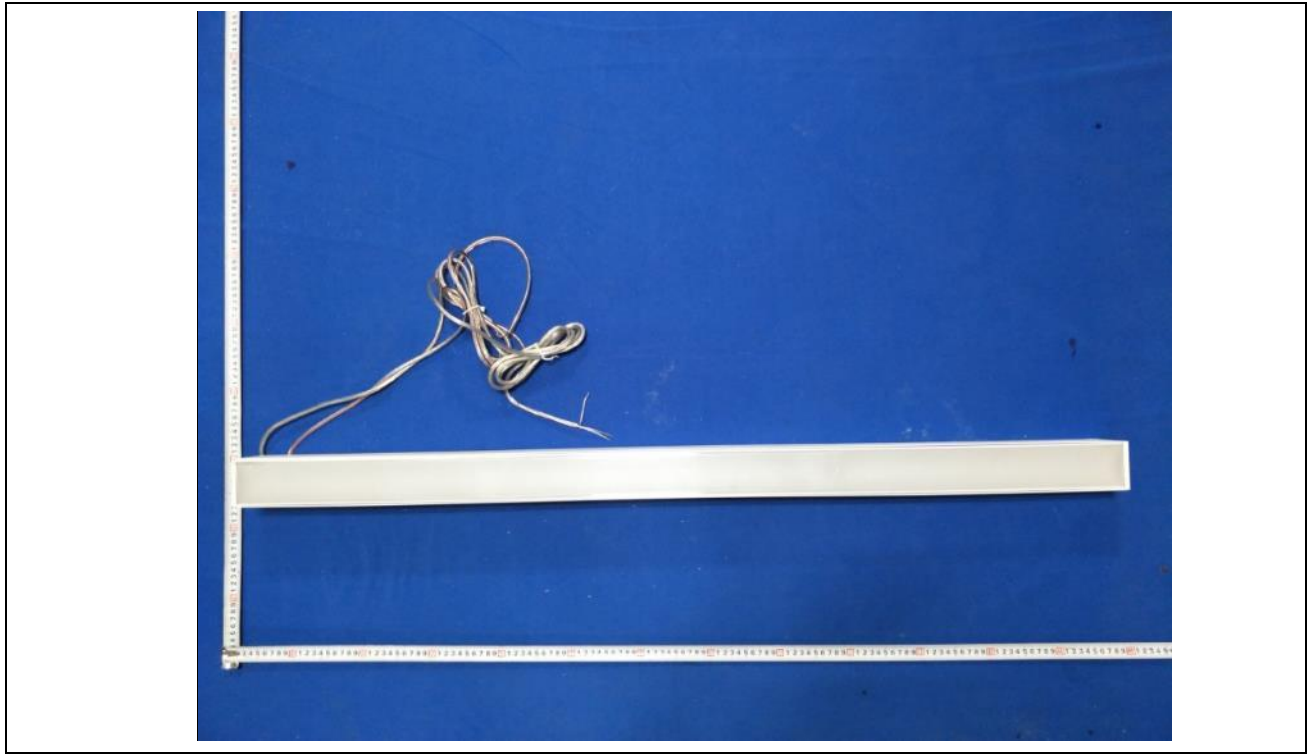
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Photo documentation

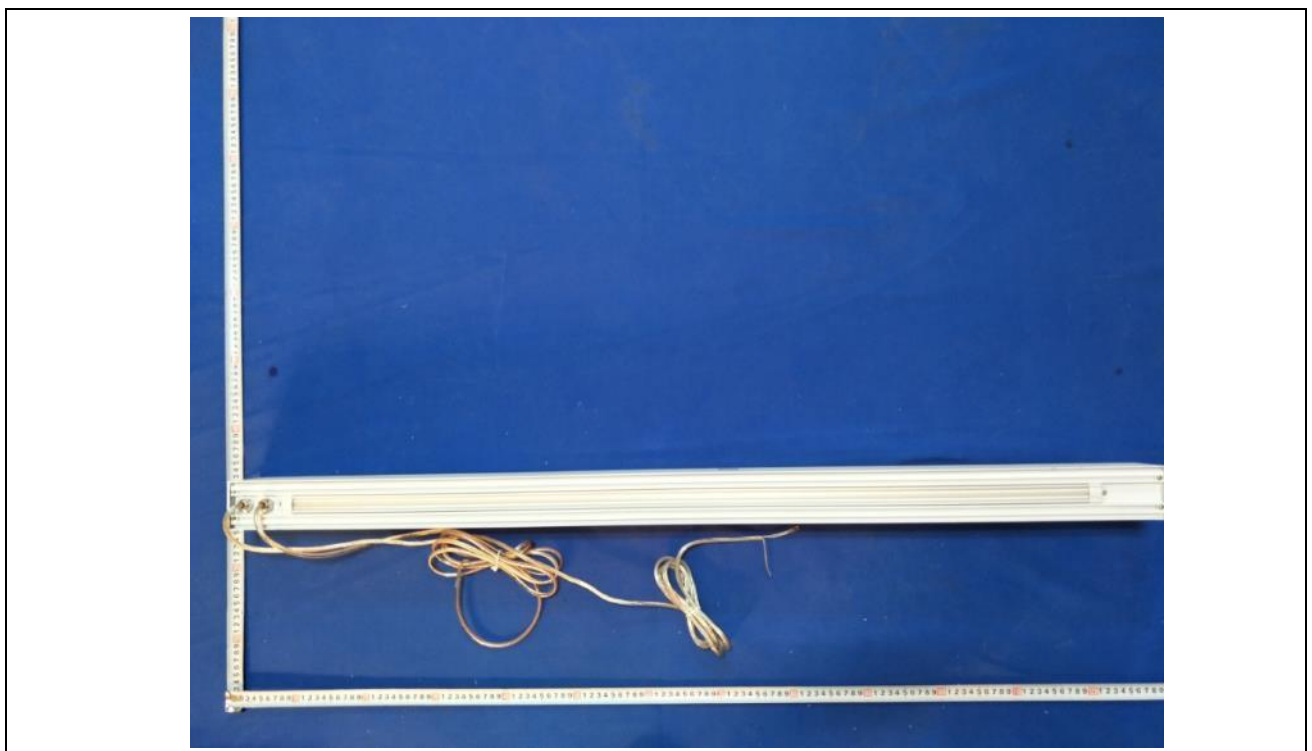
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Details of: Outlook view for PLF1-I120-040B-XX suffixed with I0



Details of: Back view for PLF1-I120-040B-XX suffixed with I0



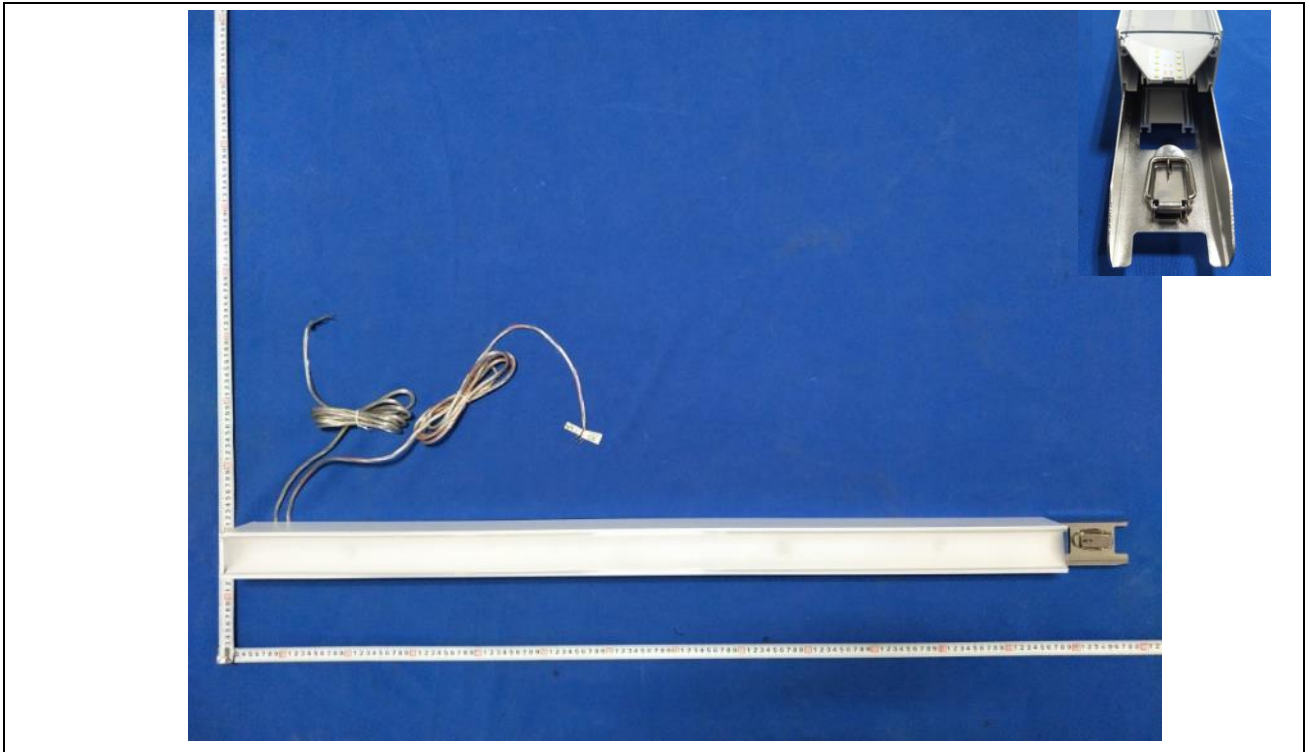
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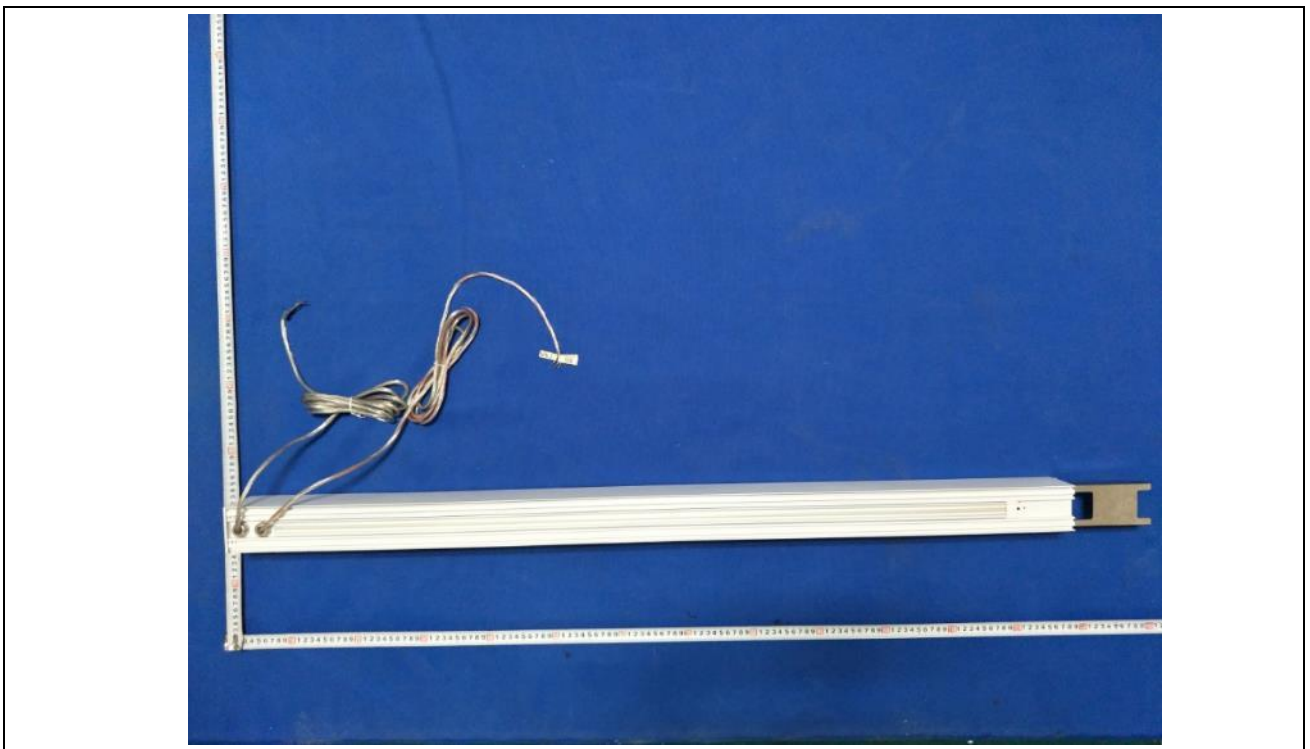
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Report No.: 64.142.19.50071.01

Details of: Outlook view for PLF1-I120-040B-XX suffixed with C1



Details of: Back view for PLF1-I120-040B-XX suffixed with C1



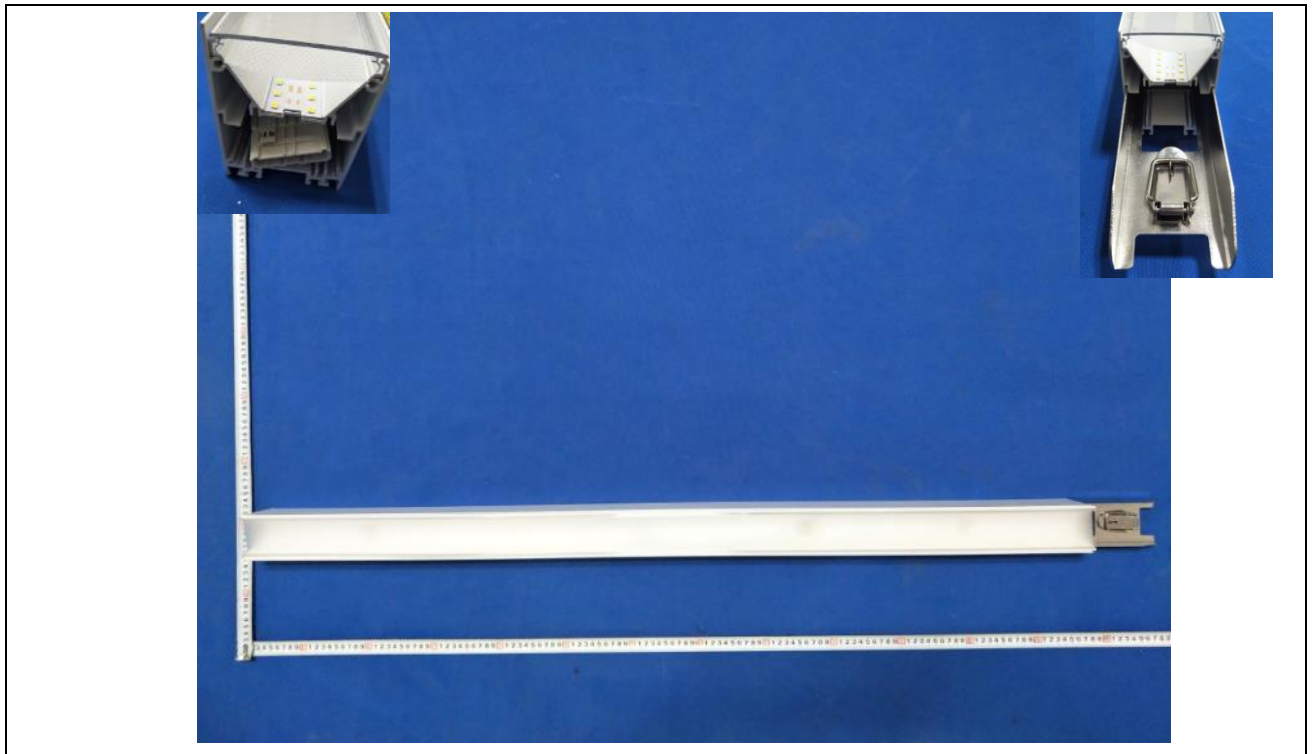
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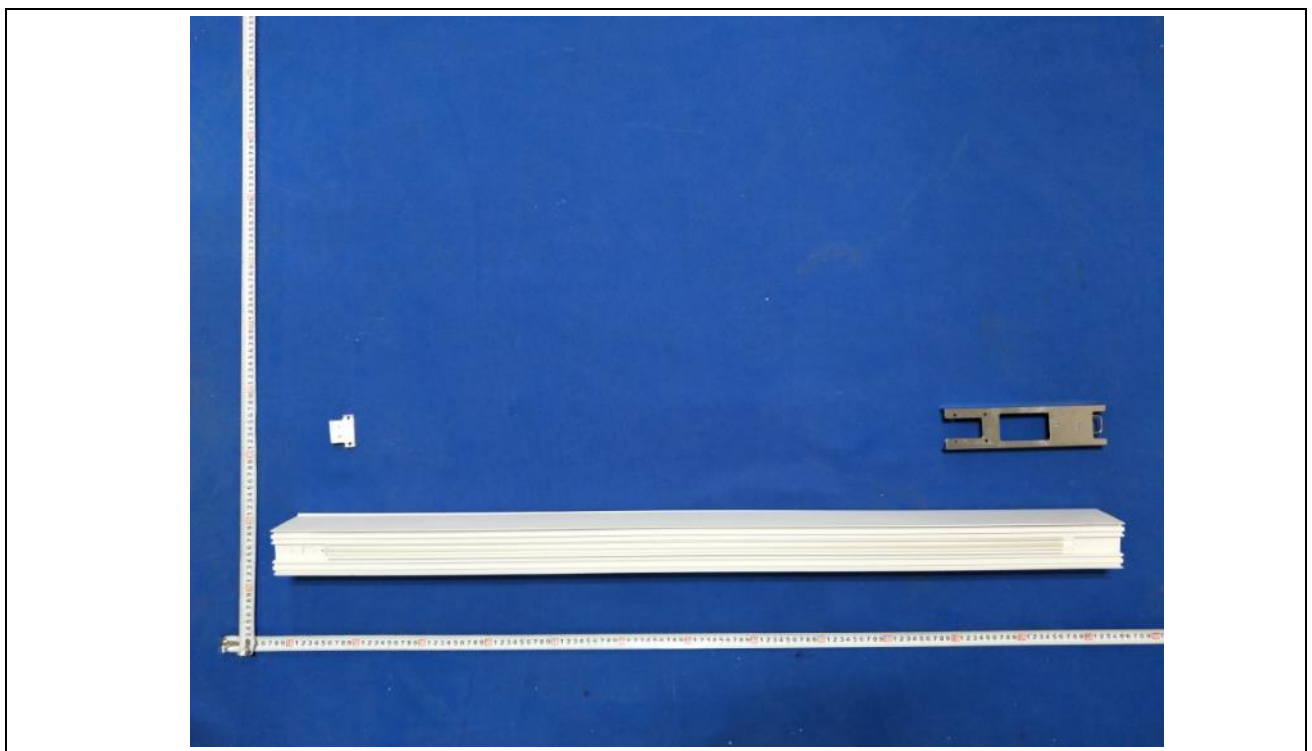
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Details of: Outlook view for PLF1-I120-040B-XX suffixed with C2



Details of: Back view for PLF1-I120-040B-XX suffixed with C2



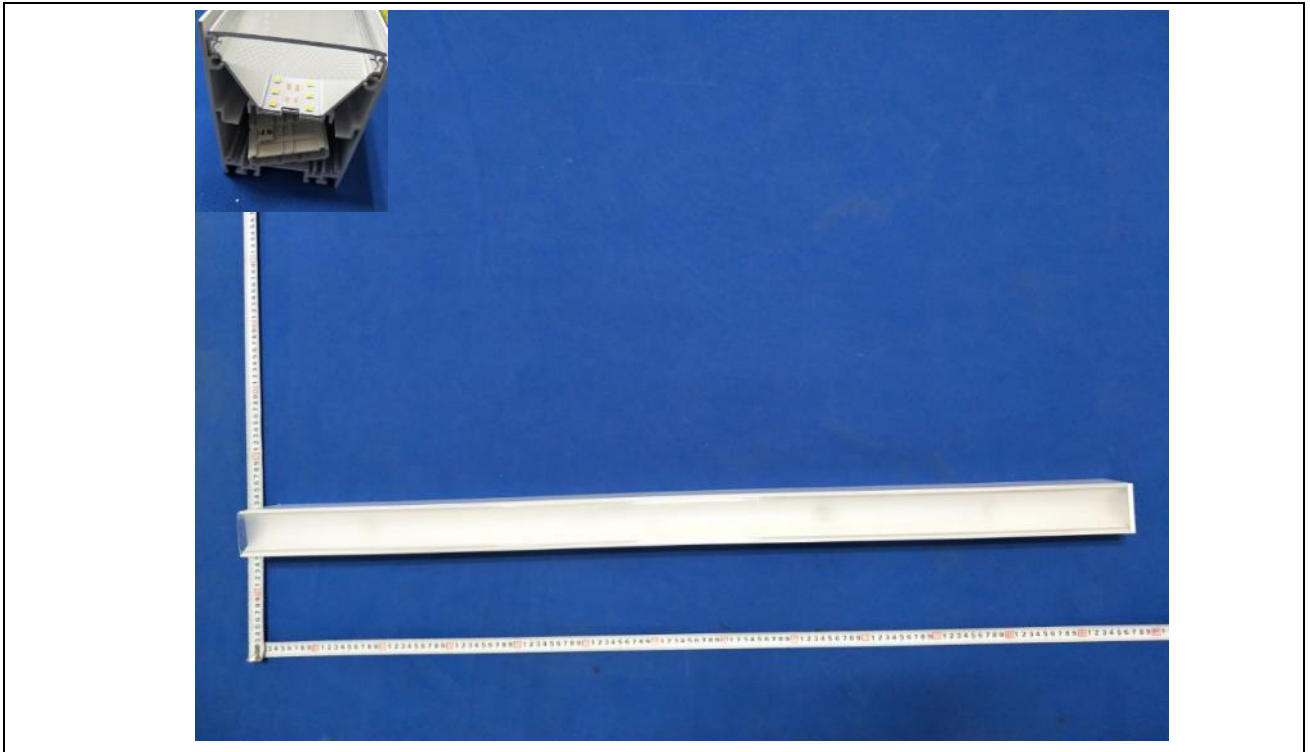
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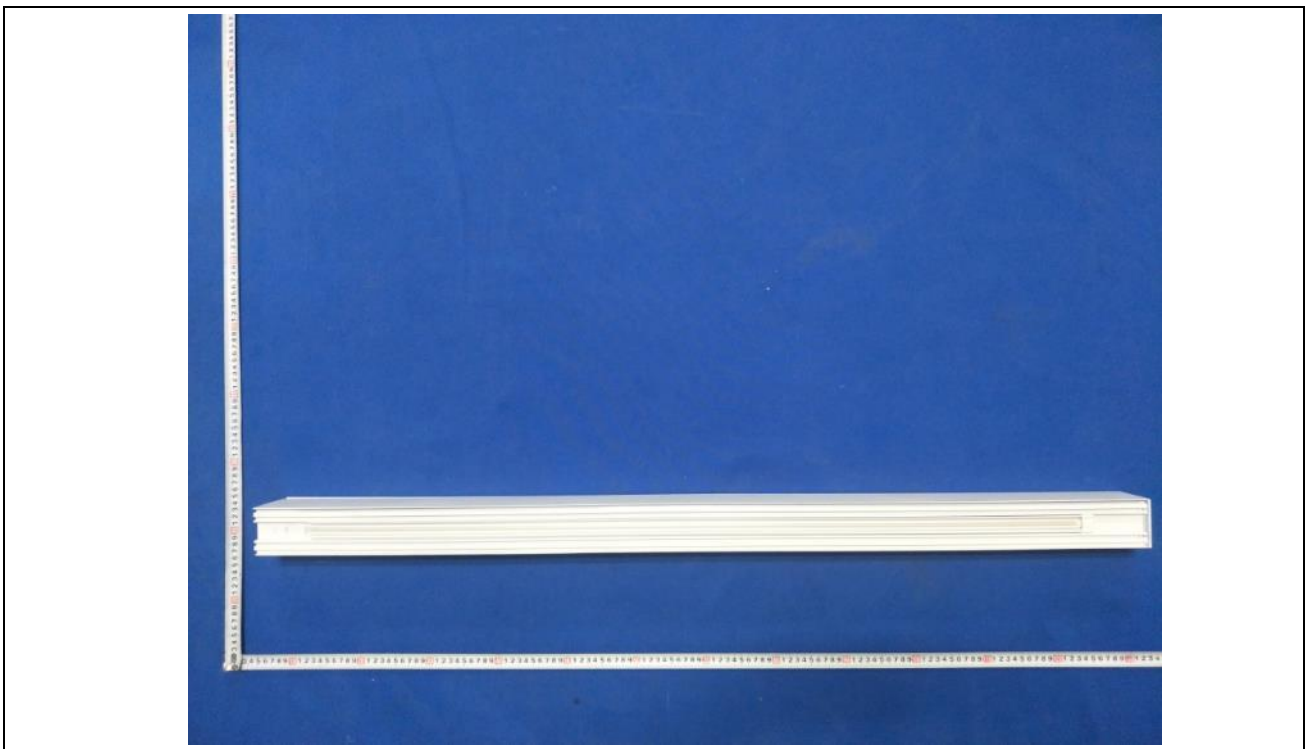
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Details of: Outlook view for PLF1-I120-040B-XX suffixed with C3



Details of: Back view for PLF1-I120-040B-XX suffixed with C3



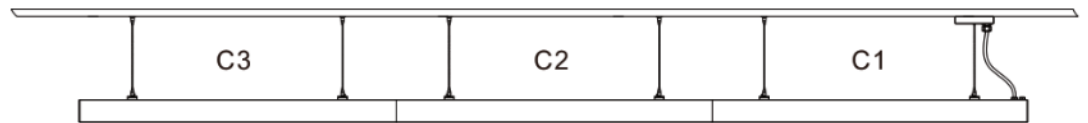
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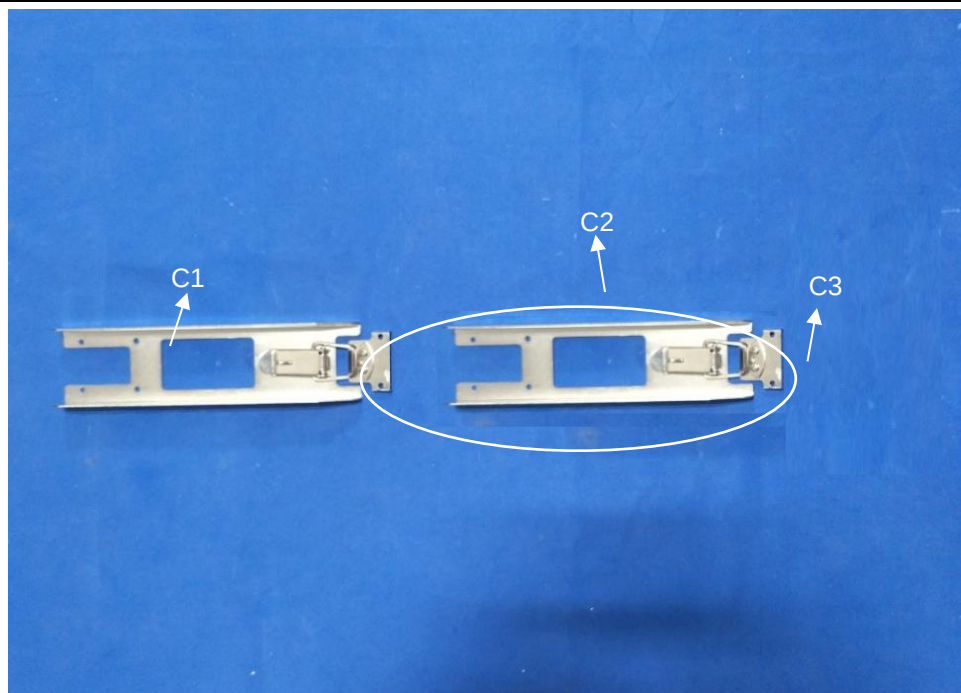
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Details of: Continuous connection.



Details of: Continuous connection.



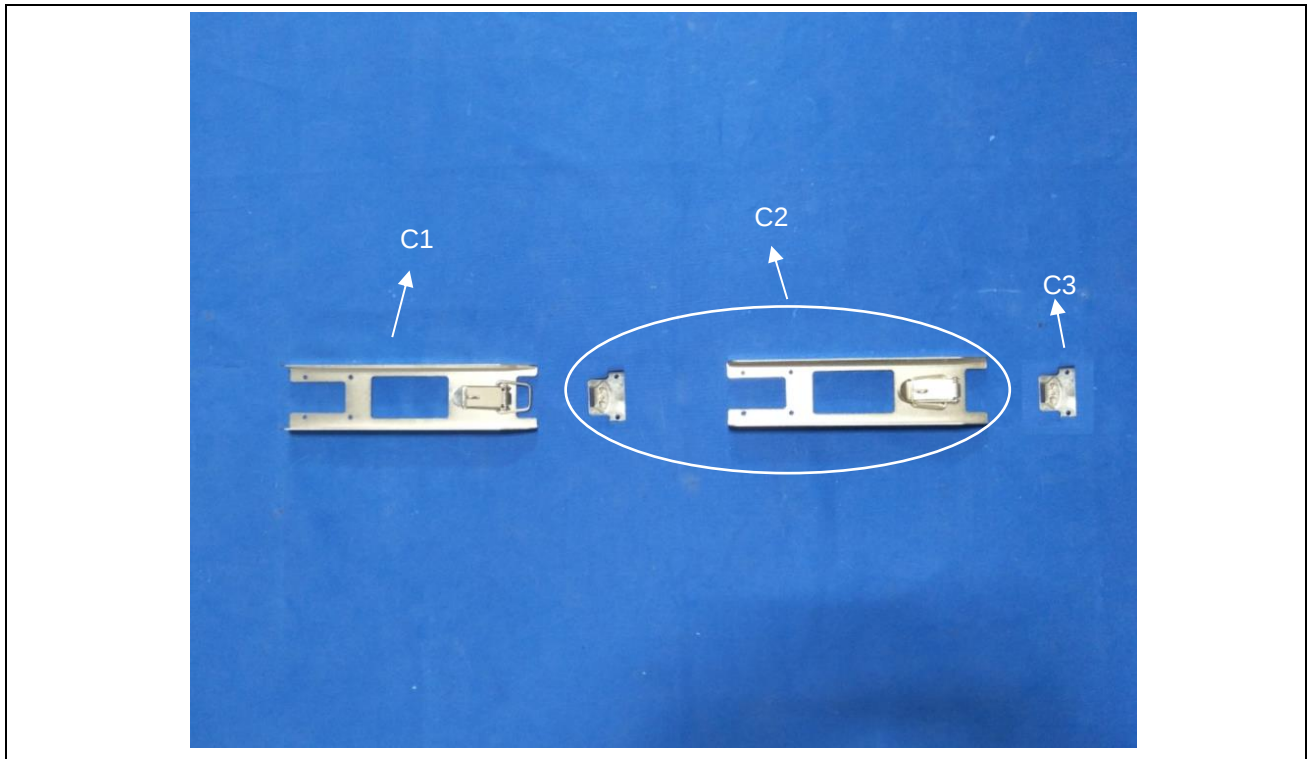
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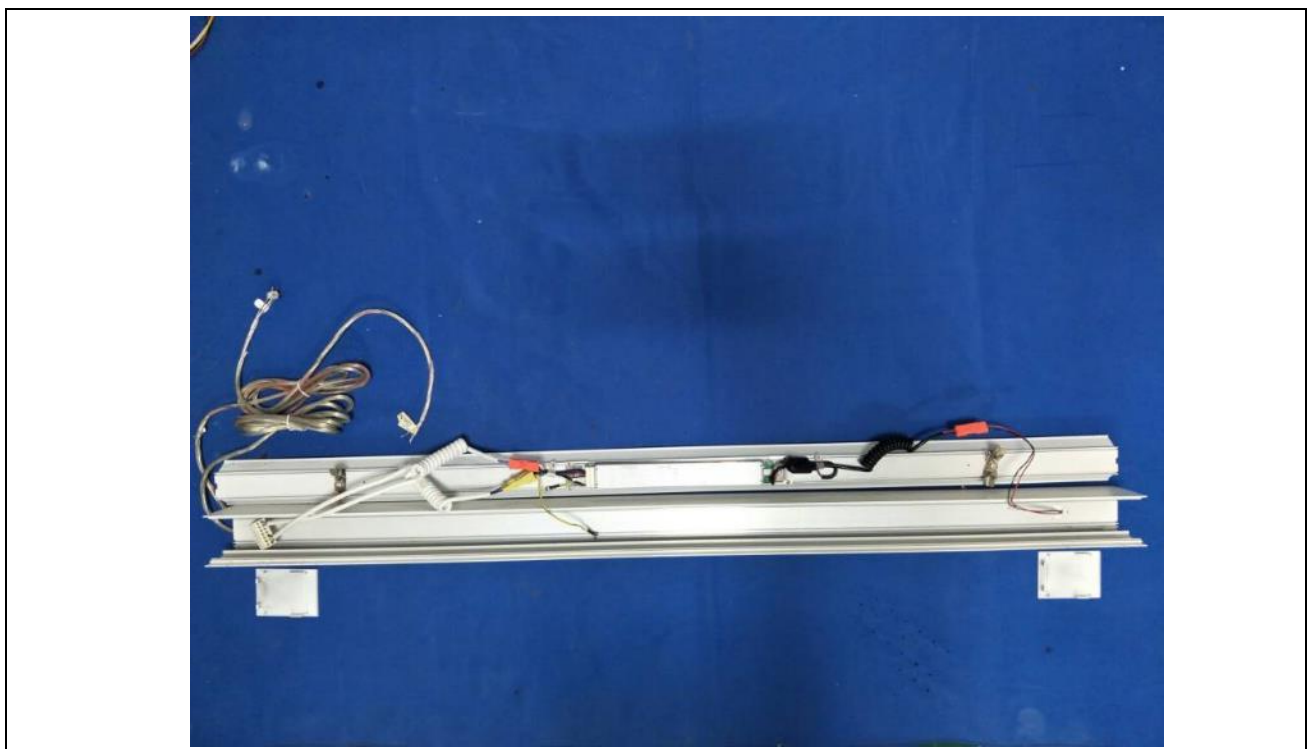
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Details of: Continuous connection.



Details of: Internal view for PLF1-I120-040B-XX suffixed with I0



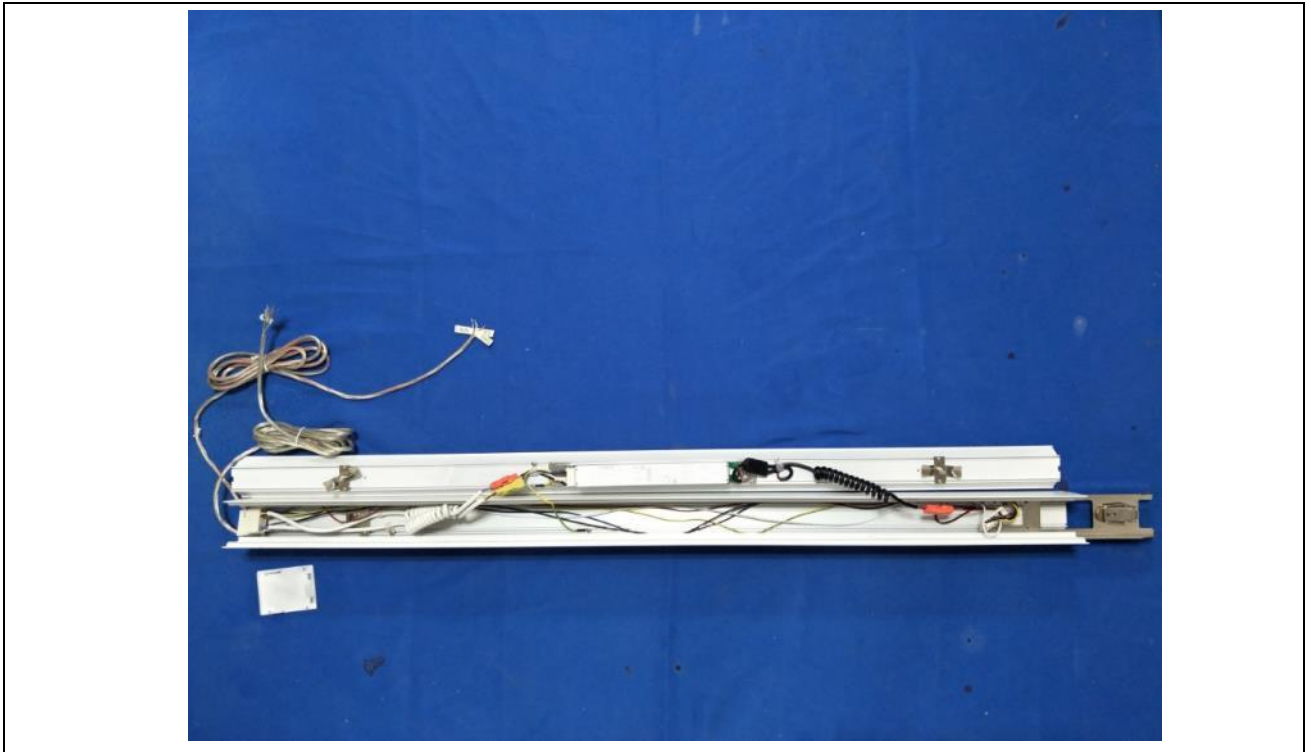
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Photo documentation

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Details of: Internal view for PLF1-I120-040B-XX suffixed with C1



Details of: Gland used as cord anchorage for all models in PLF1 series.



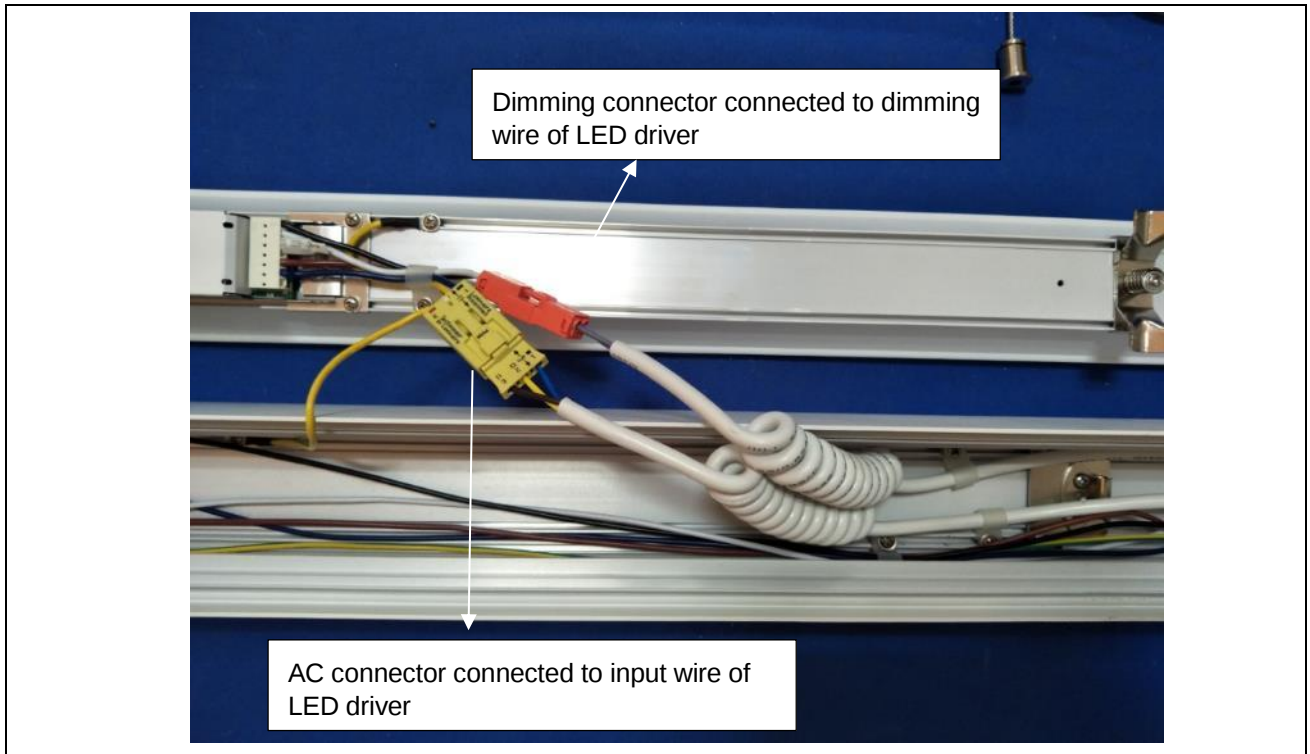
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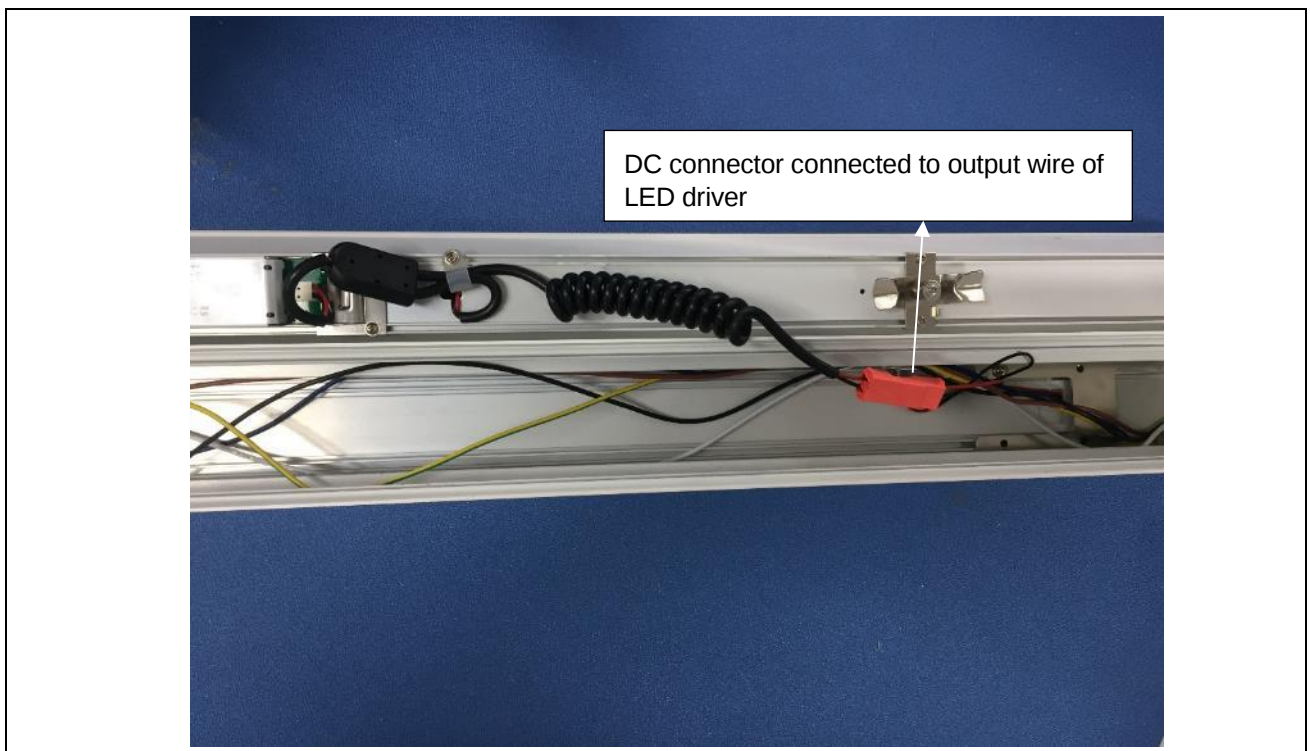
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Details of: Input side view for PLF1-I120-040B-XX suffixed with C1



Details of: Output side view for PLF1-I120-040B-XX suffixed with C1



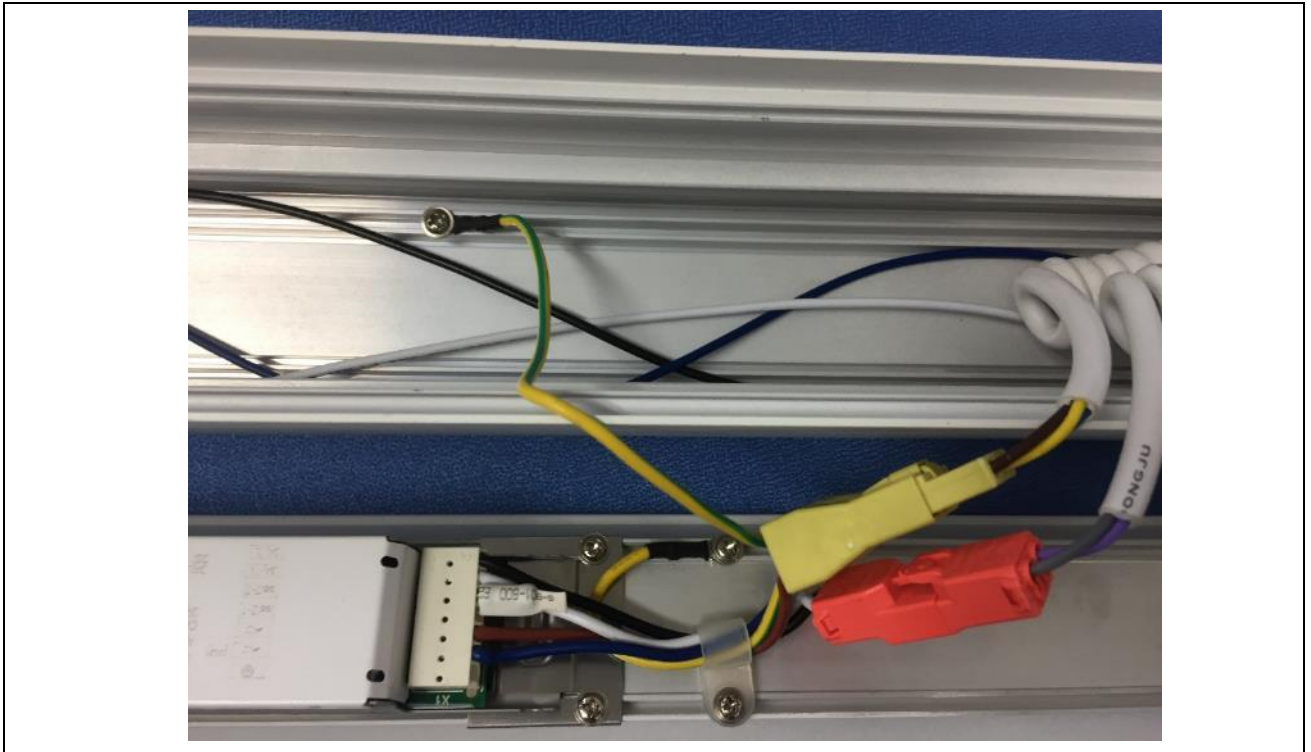
Attachment No. 5

Photo documentation

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Details of: Earthing construction for PLF1-I120-040B-XX suffixed with C1



Details of: LED module above for PLF1-I120-040B-XX



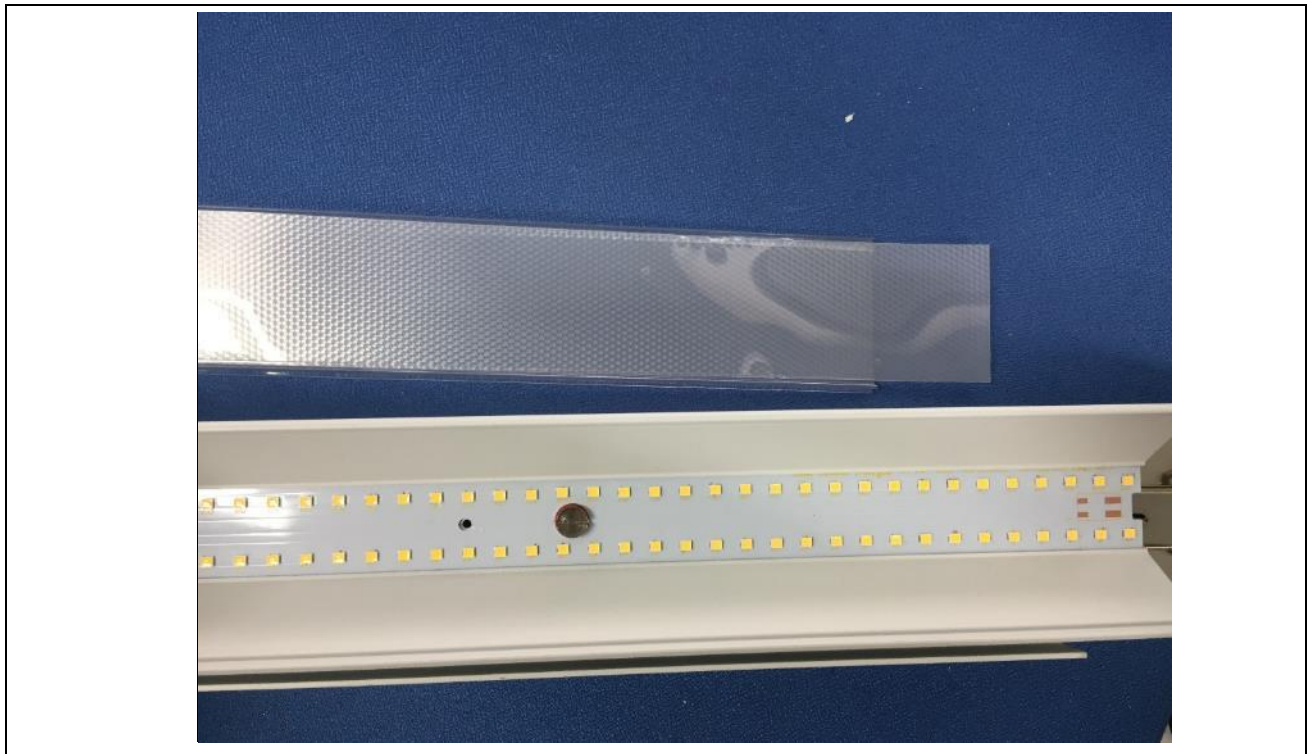
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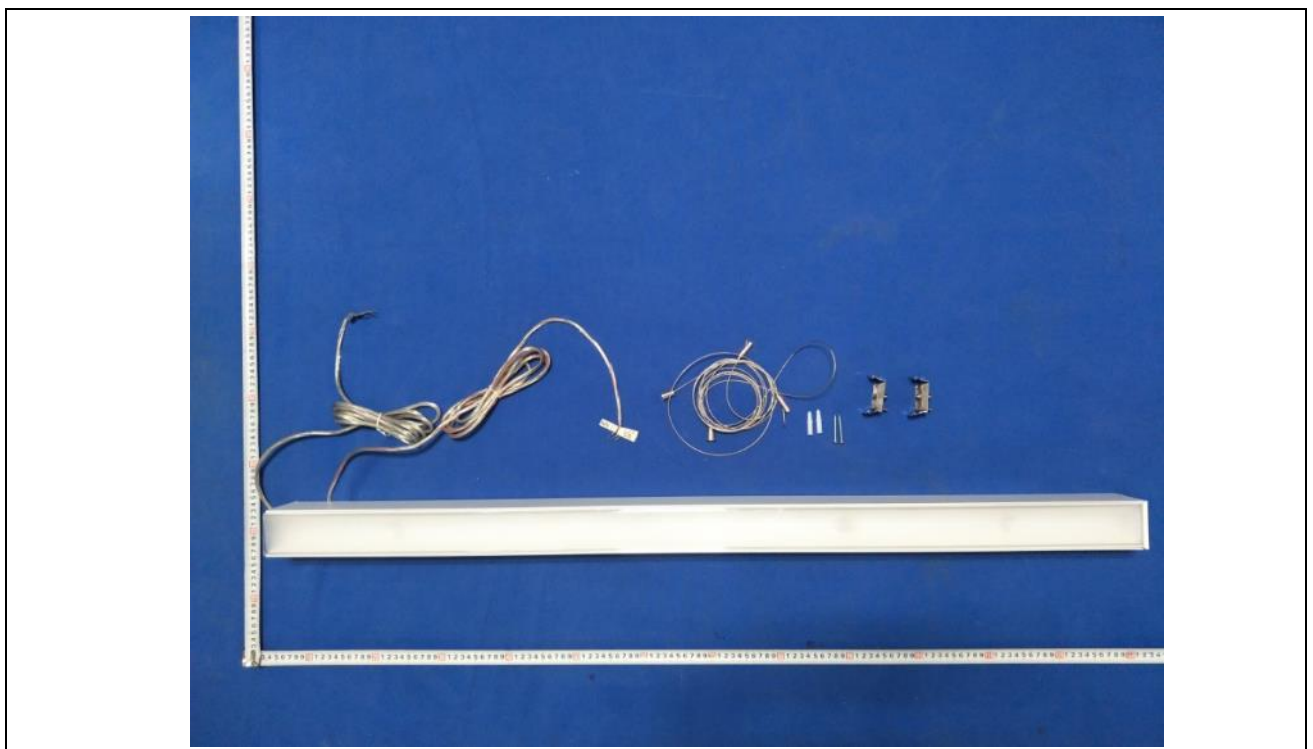
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Details of: LED module below for PLF1-I120-040B-XX



Details of: Cord pendant mounting



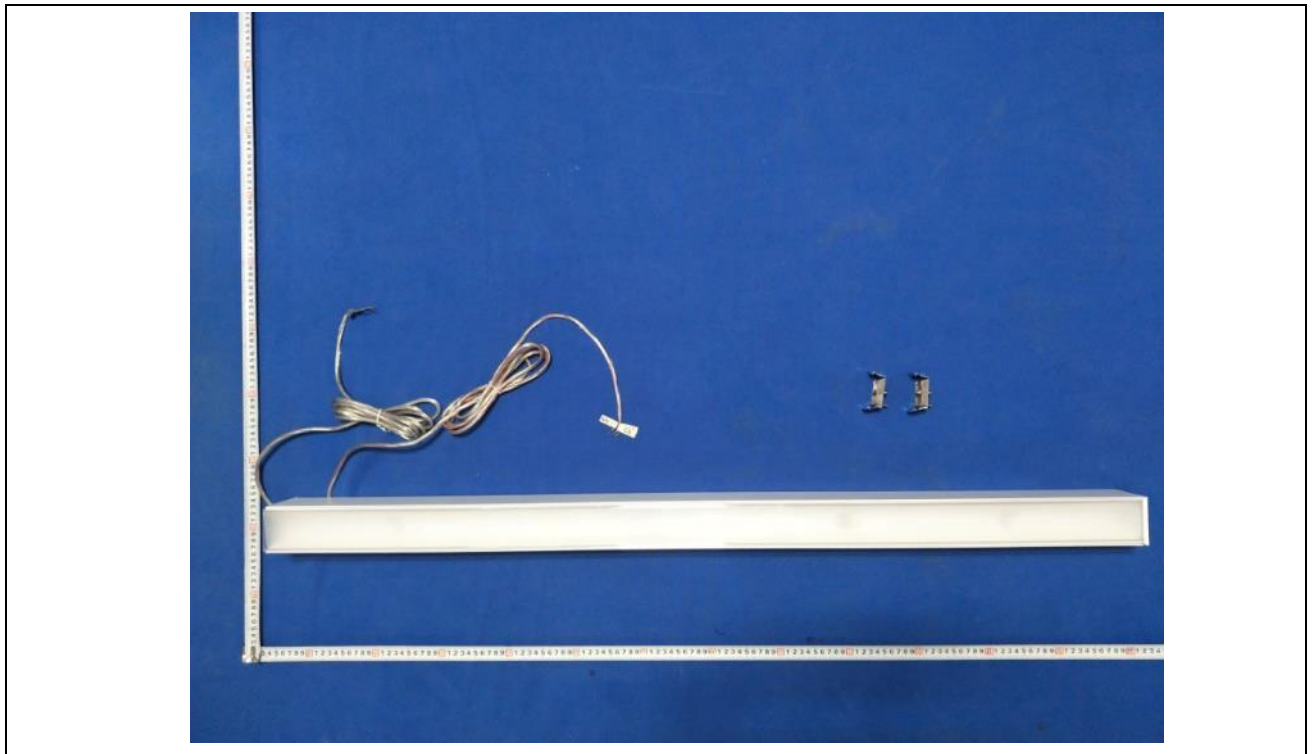
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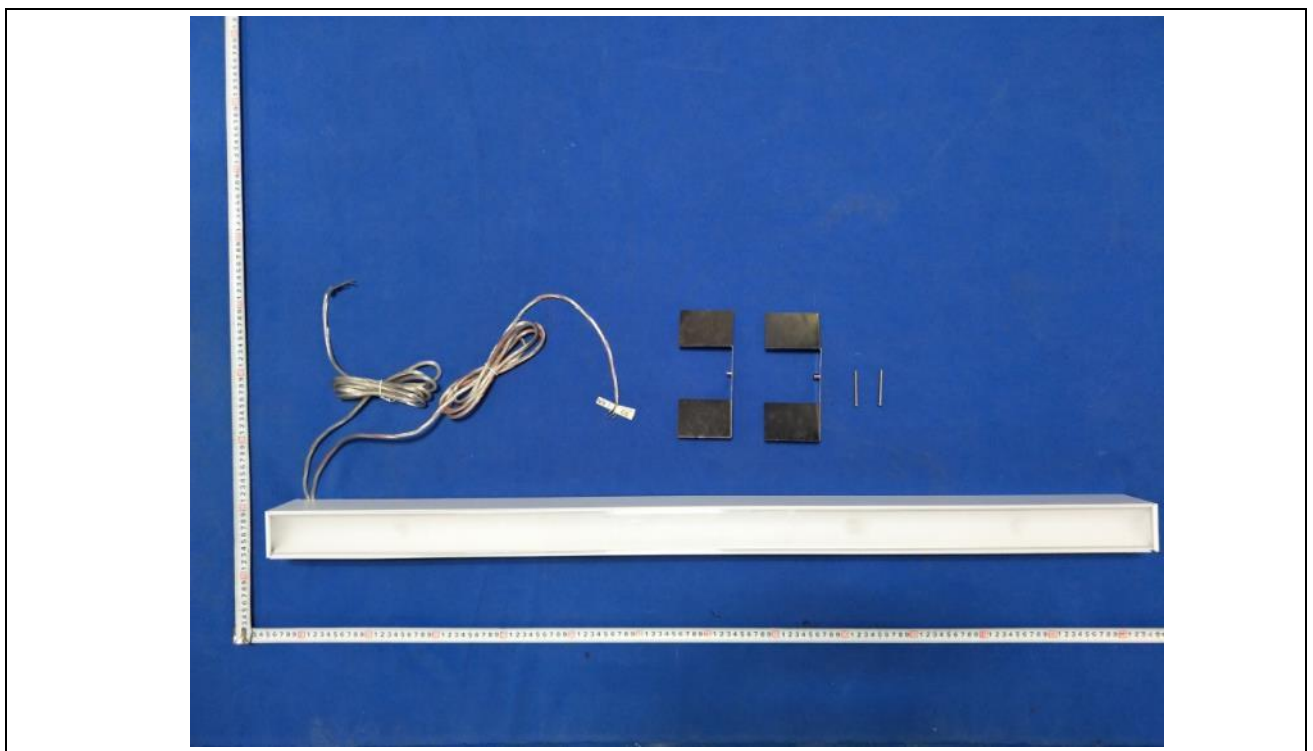
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Details of: Surface mounting



Details of: Recessed mounting



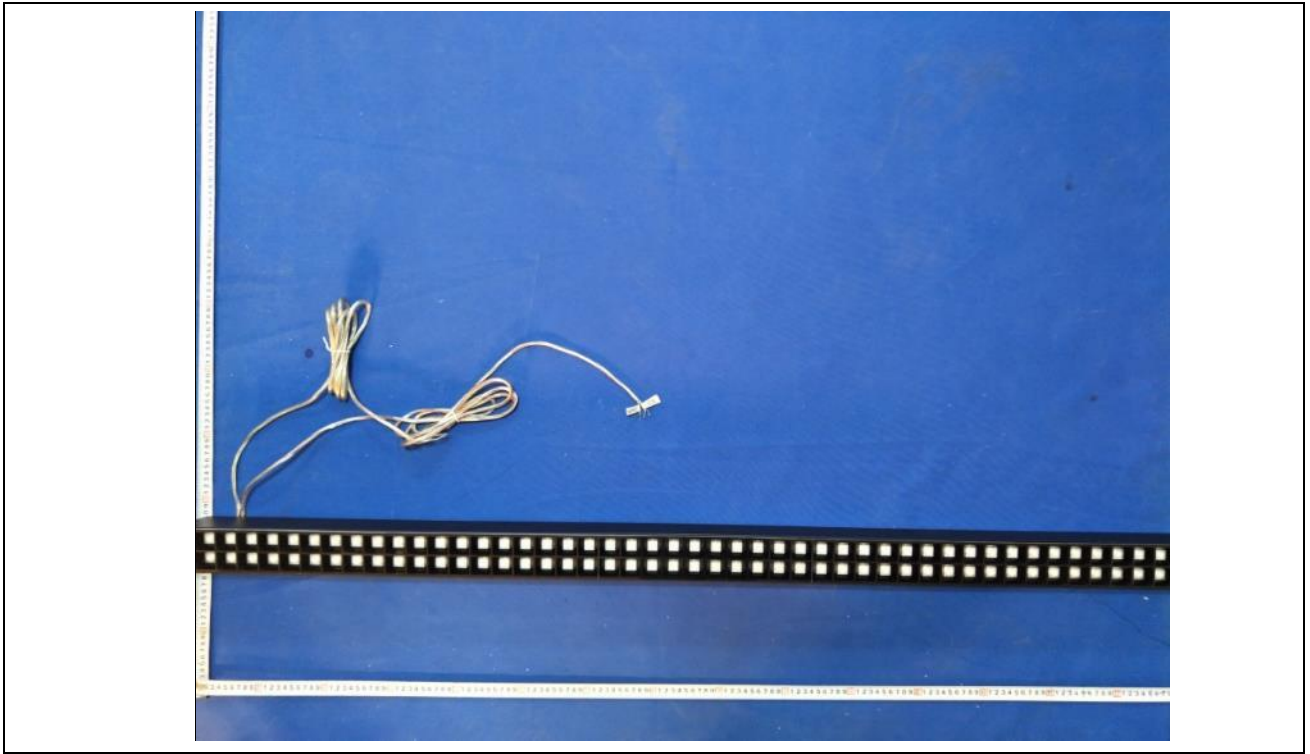
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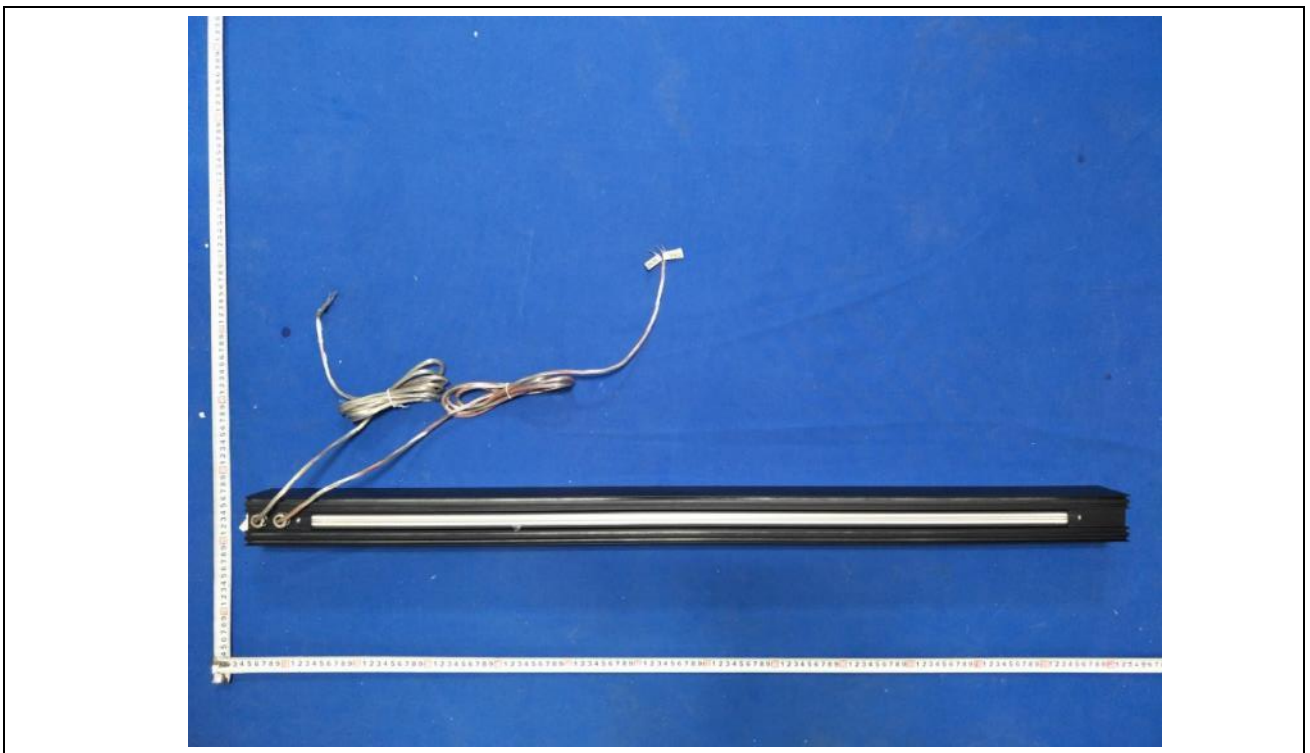
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Details of: Outlook view for VLF1-I120-040B-XX suffixed with I0



Details of: Back view for VLF1-I120-040B-XX suffixed with I0



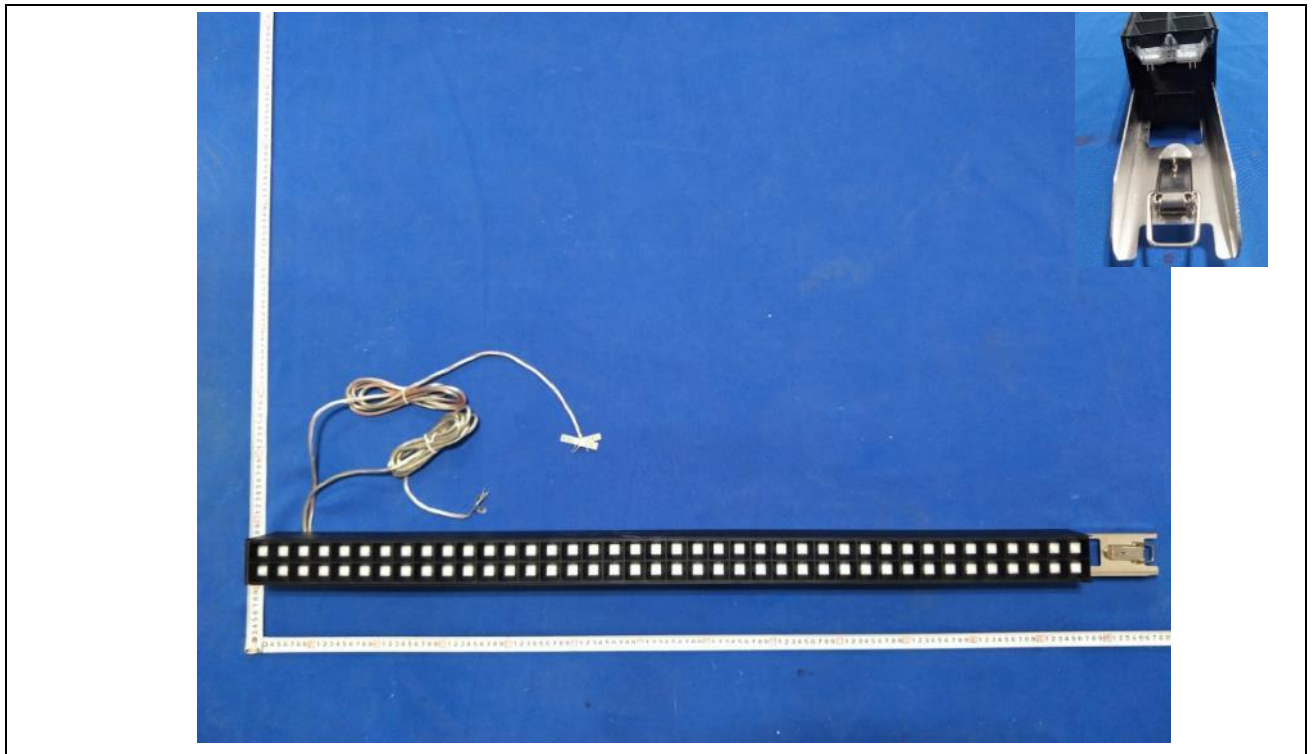
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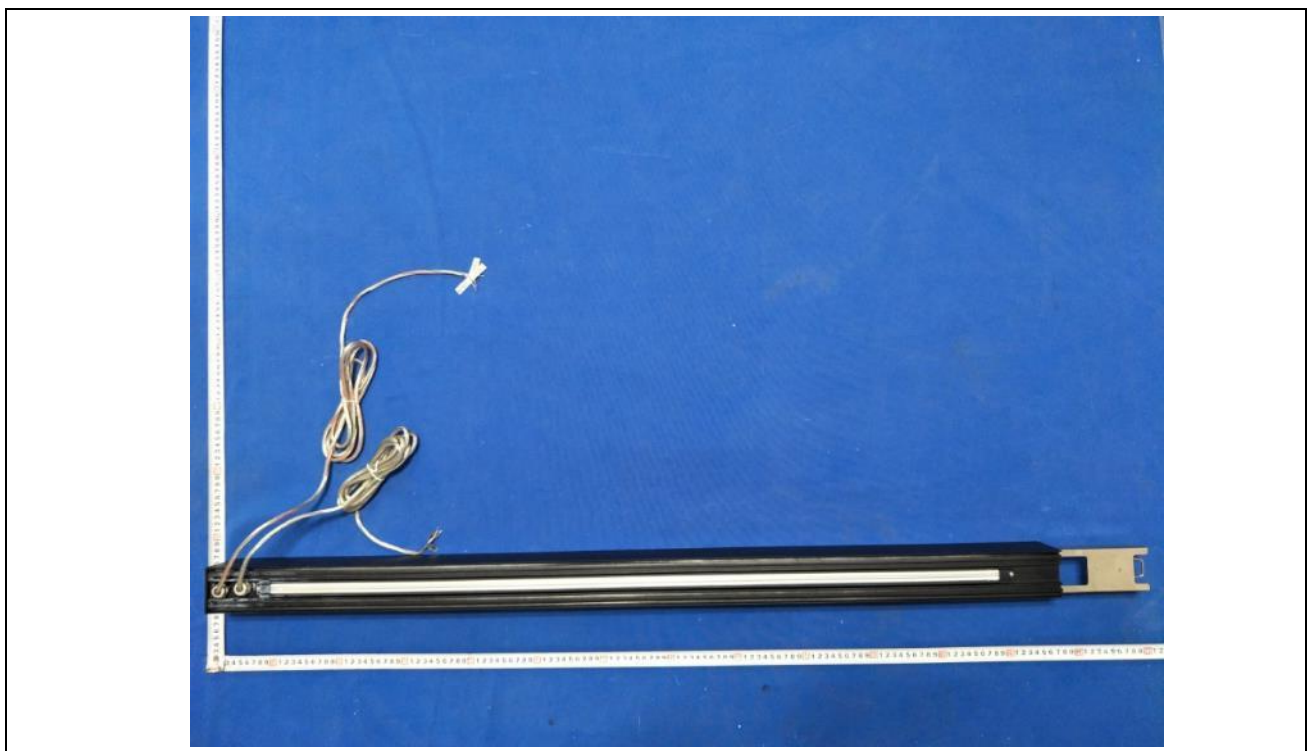
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Details of: Outlook view for VLF1-I120-040B-XX suffixed with C1



Details of: Back view for VLF1-I120-040B-XX suffixed with C1



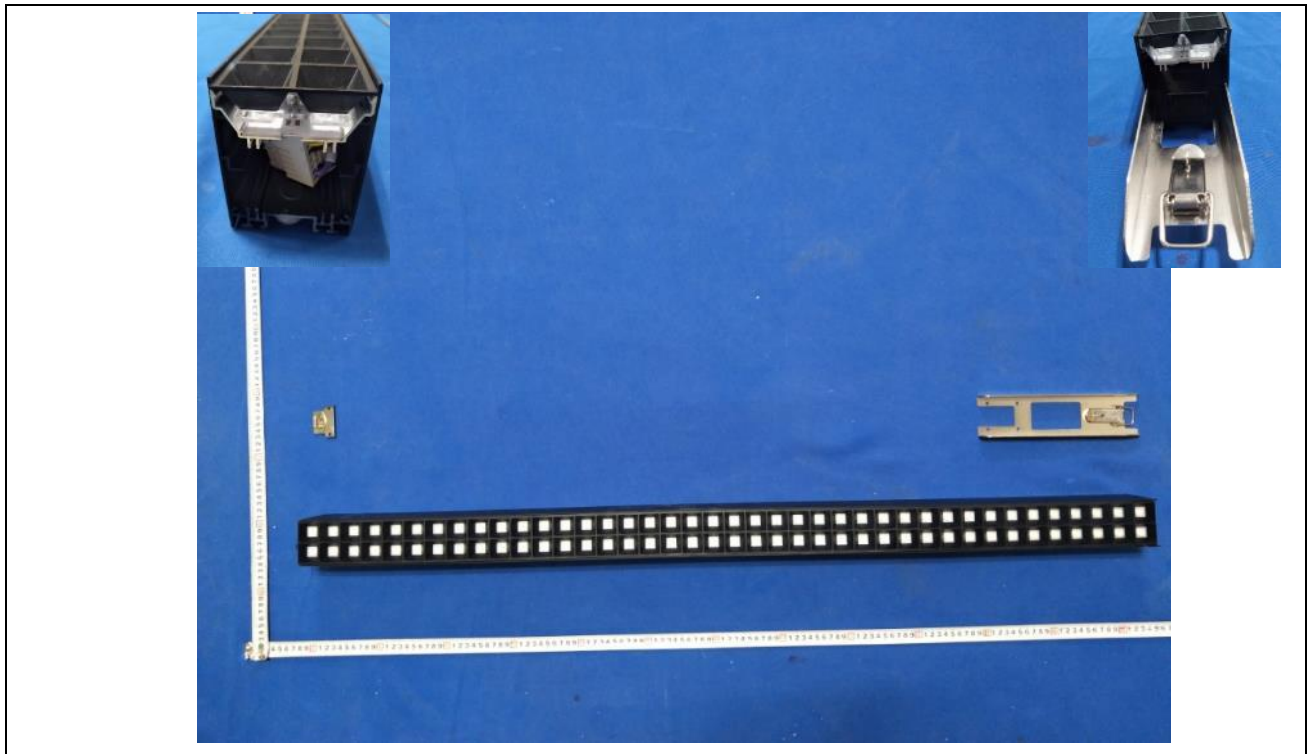
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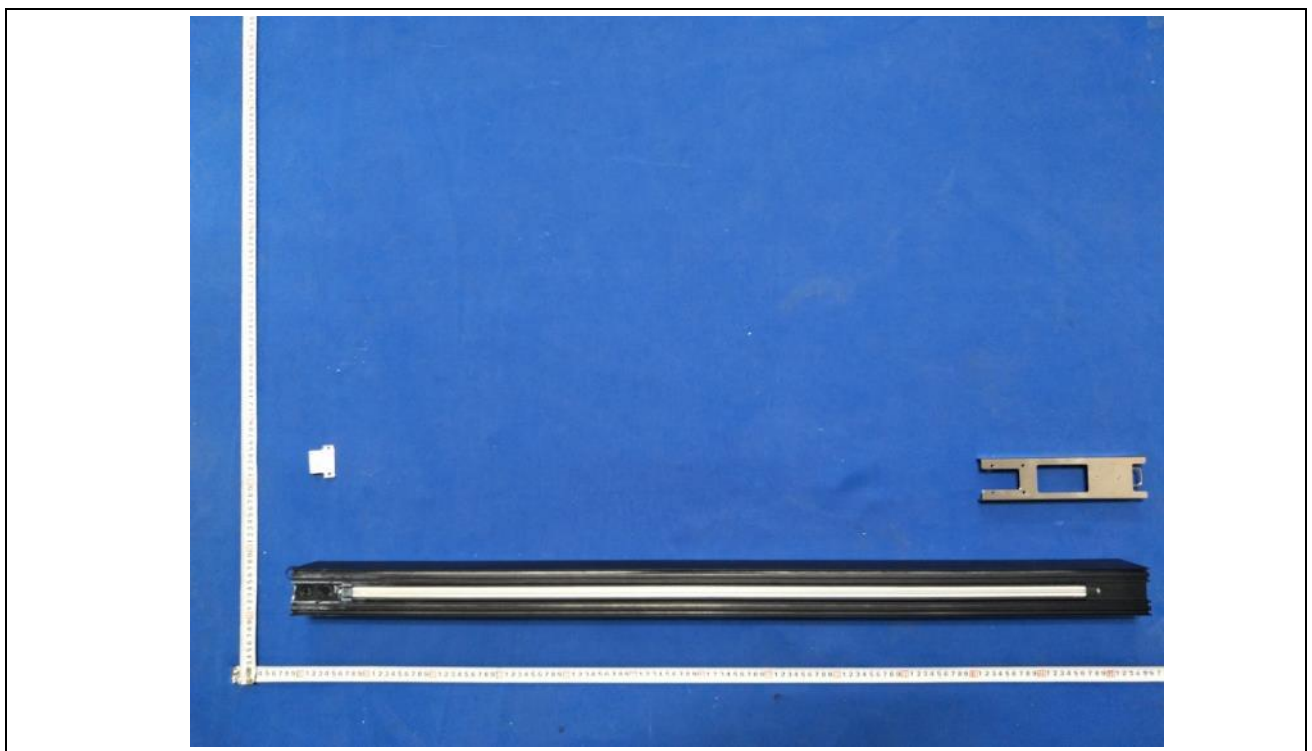
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Details of: Outlook view for VLF1-I120-040B-XX suffixed with C2



Details of: Back view for VLF1-I120-040B-XX suffixed with C2



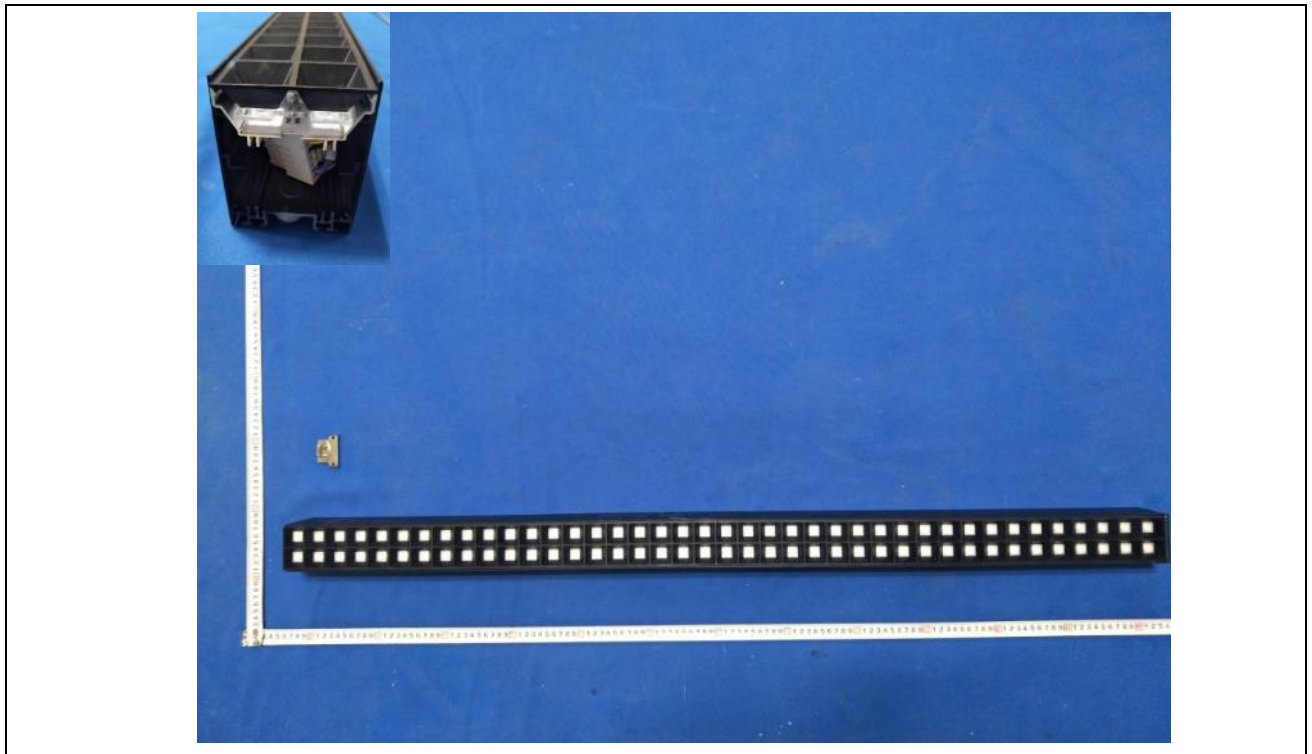
Attachment No. 5

Photo documentation

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Details of: Outlook view for VLF1-I120-040B-XX suffixed with C3



Details of: Back view for VLF1-I120-040B-XX suffixed with C3



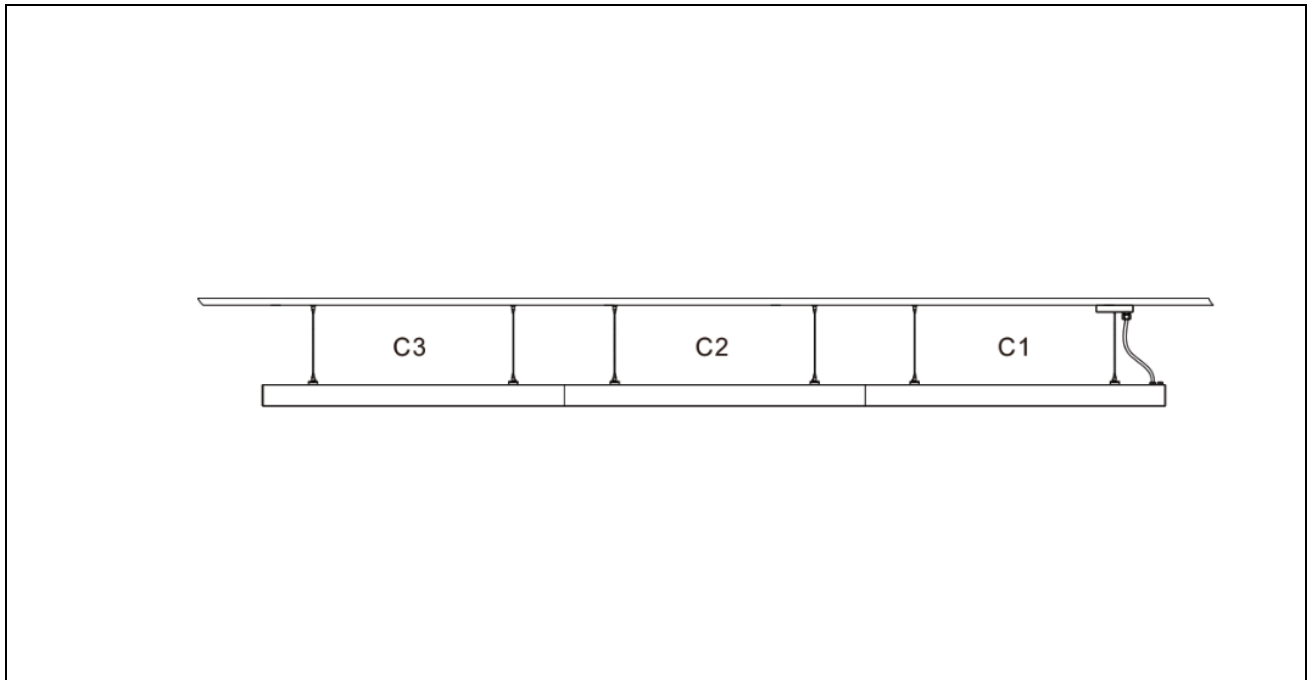
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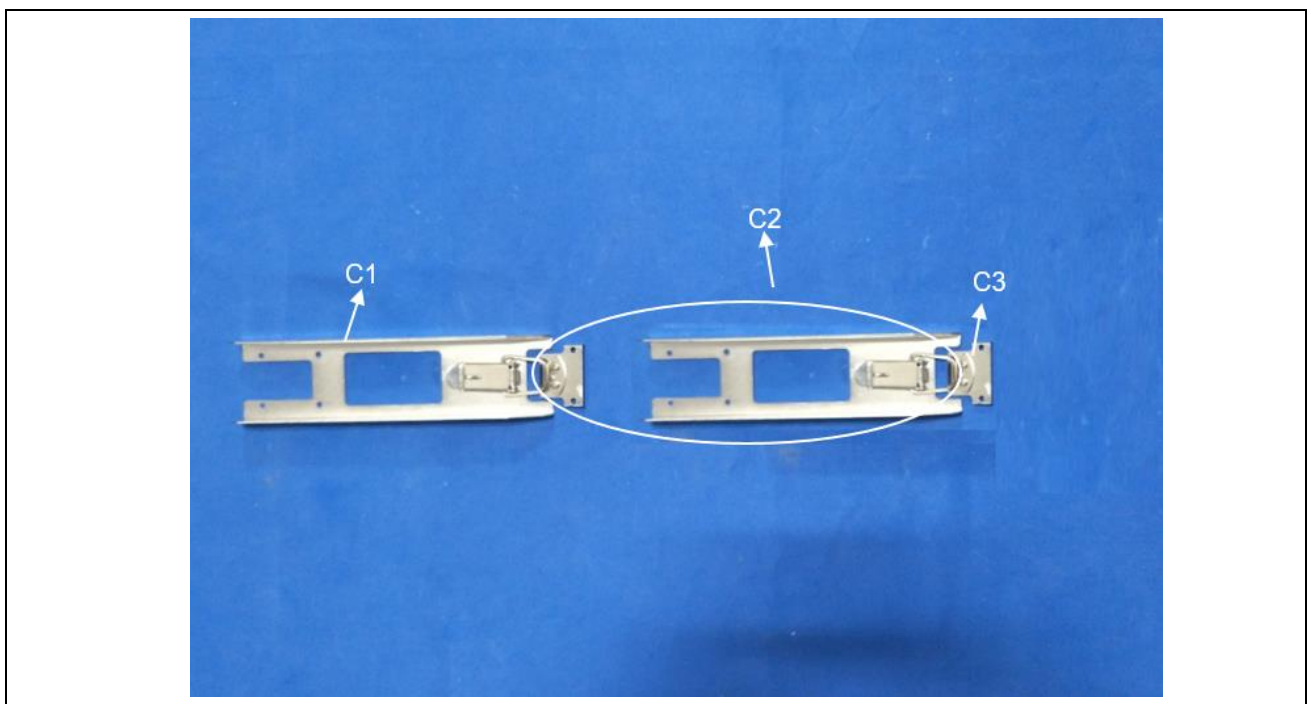
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Details of: Continuous connection.



Details of: Continuous connection.



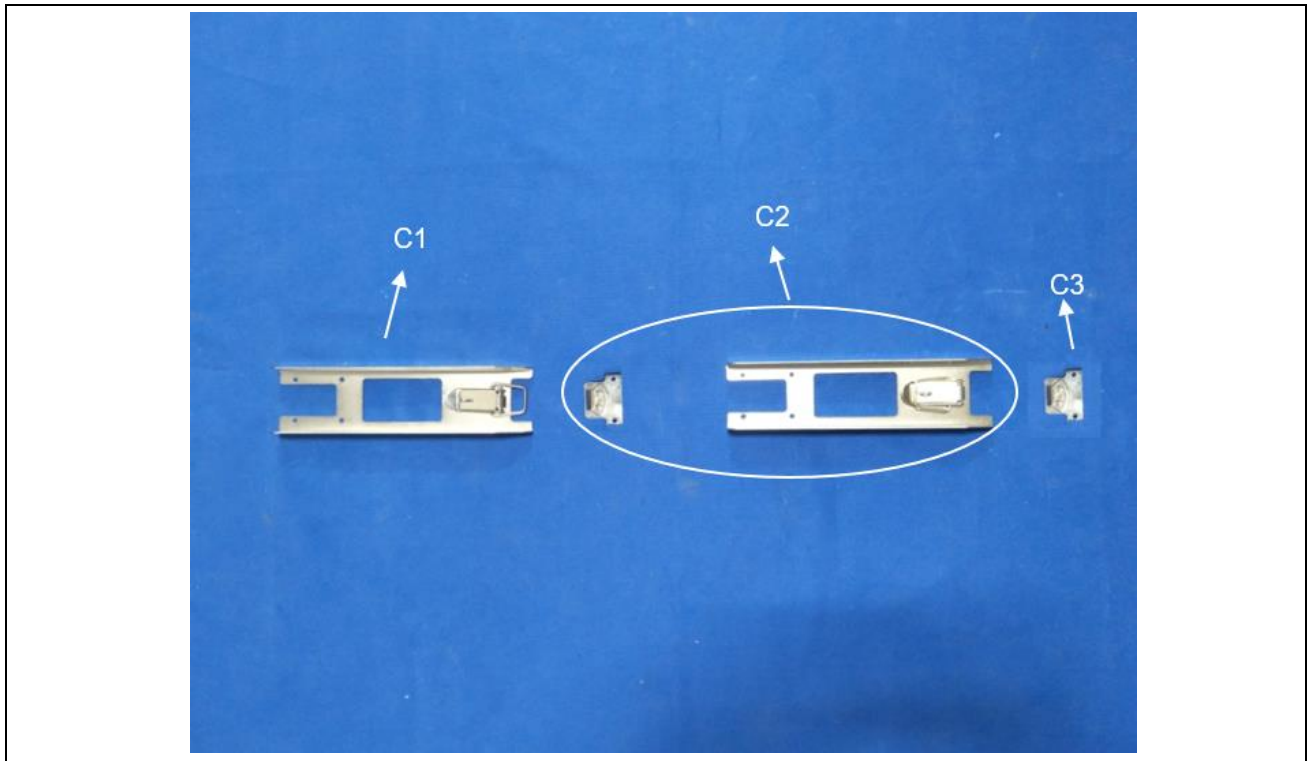
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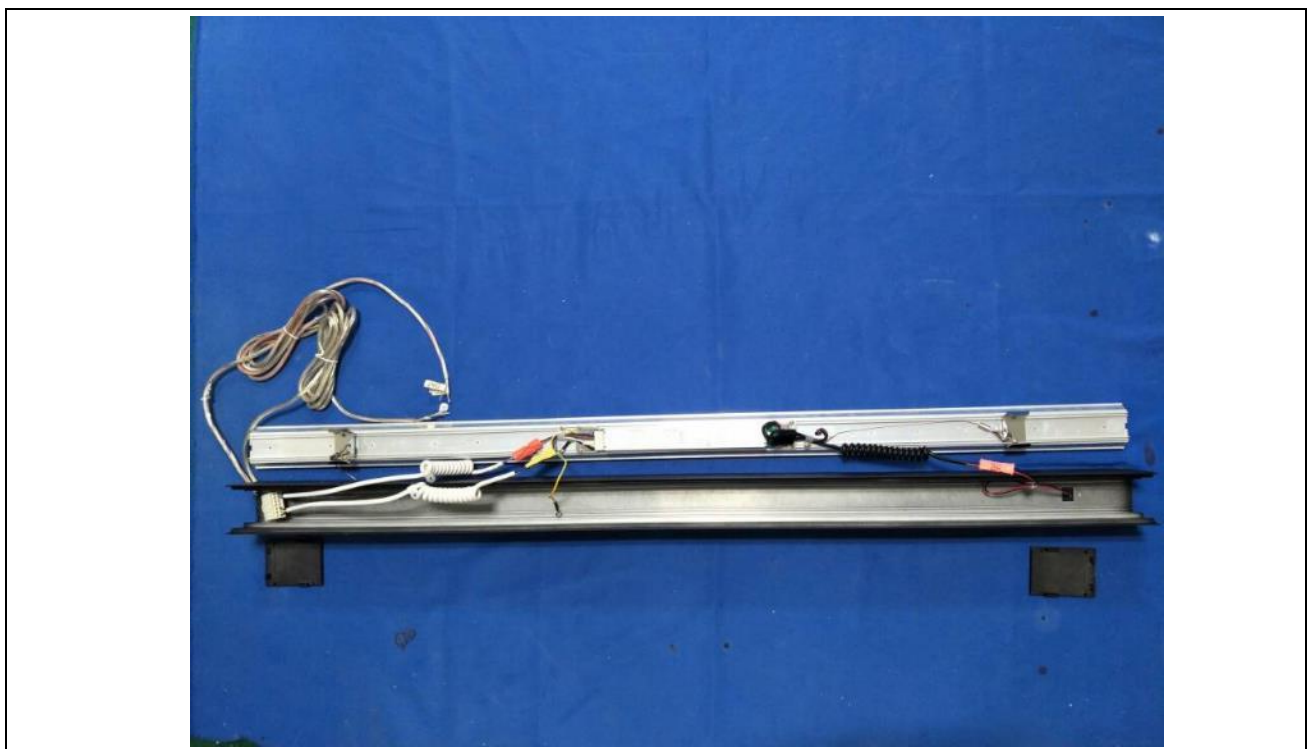
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Details of: Continuous connection.



Details of: Internal view for VLF1-I120-040B-XX suffixed with I0



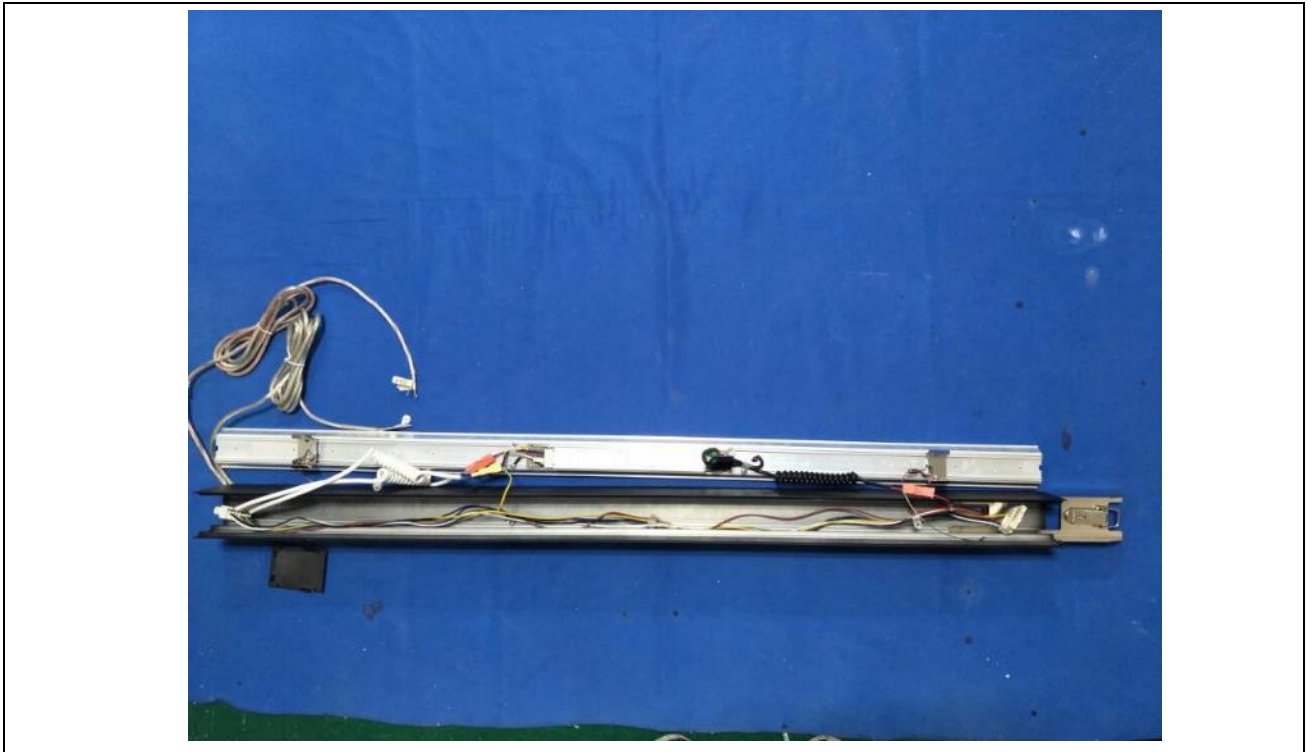
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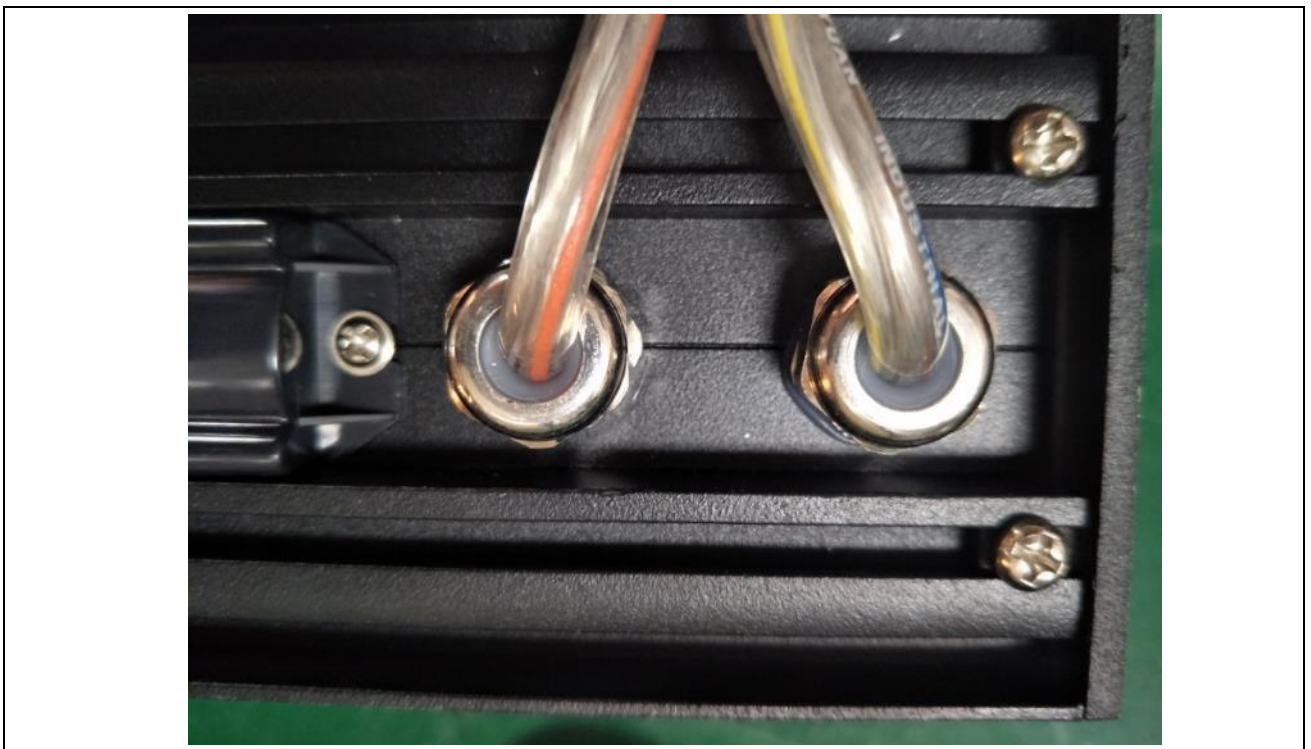
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Report No.: 64.142.19.50071.01

Details of: Internal view for VLF1-I120-040B-XX suffixed with C1



Details of: Cord anchorage for all models in VLF1 series.



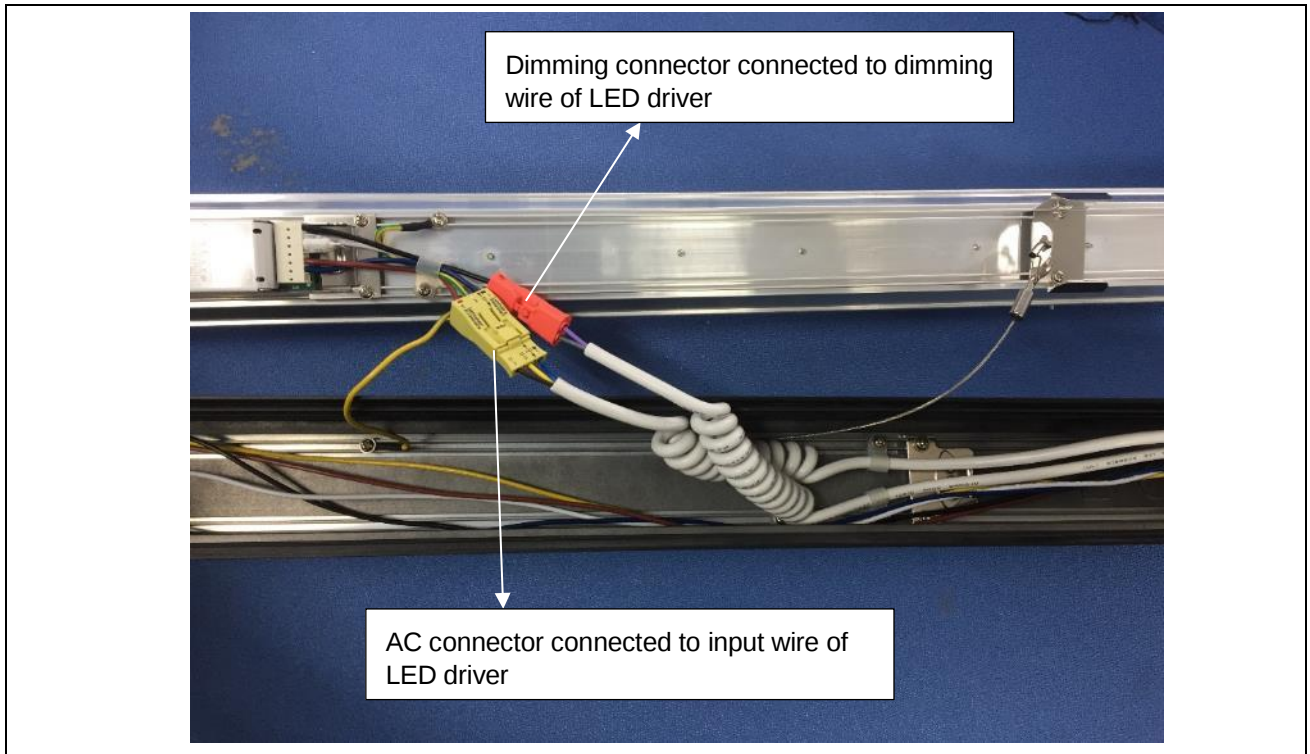
Attachment No. 5

Photo documentation

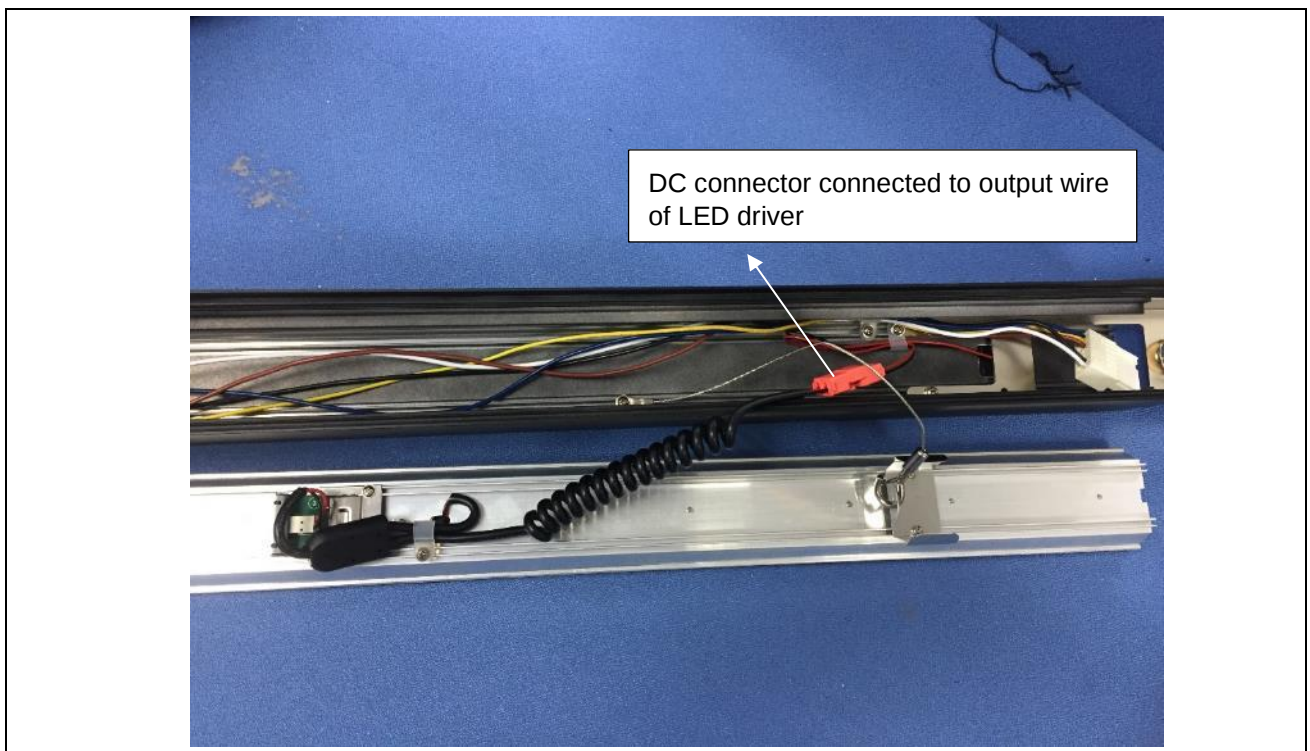
Page 19 of 33

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Details of: Input side view for VLF1-I120-040B-XX suffixed with C1



Details of: Output side view for VLF1-I120-040B-XX suffixed with C1



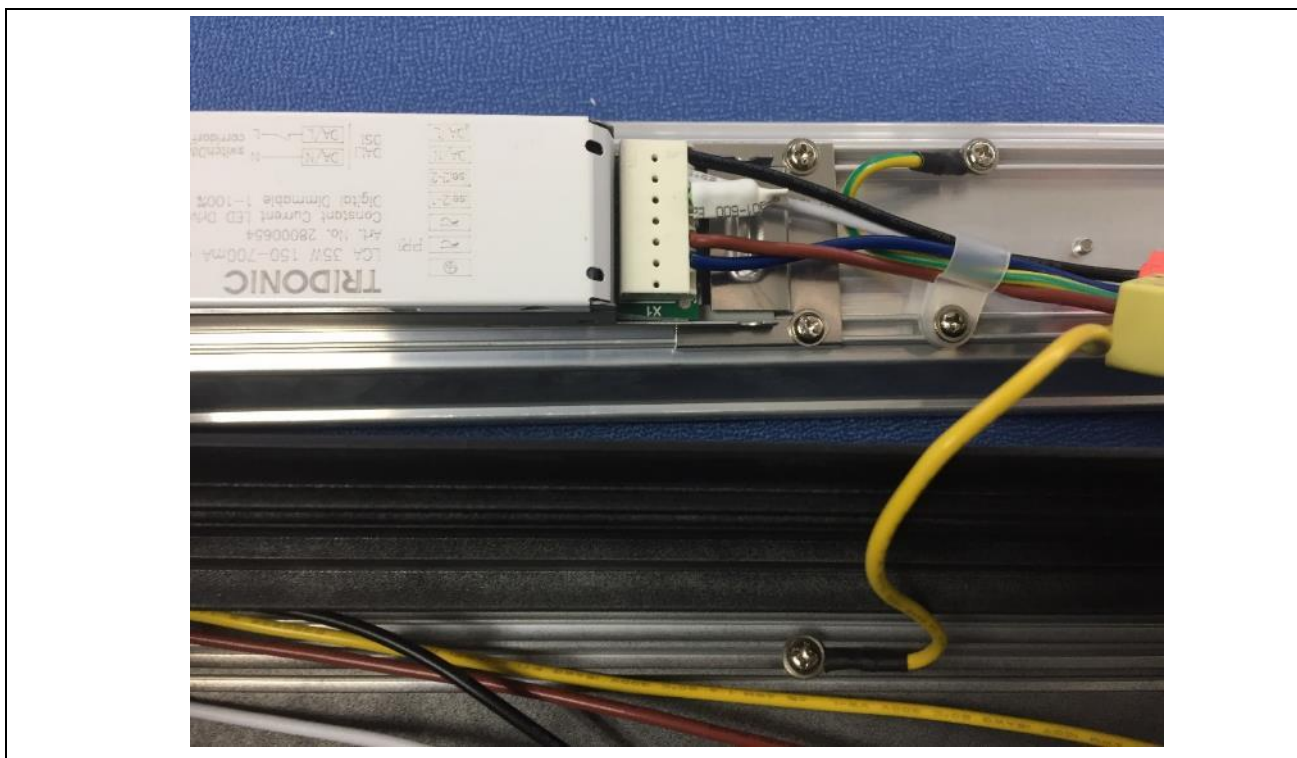
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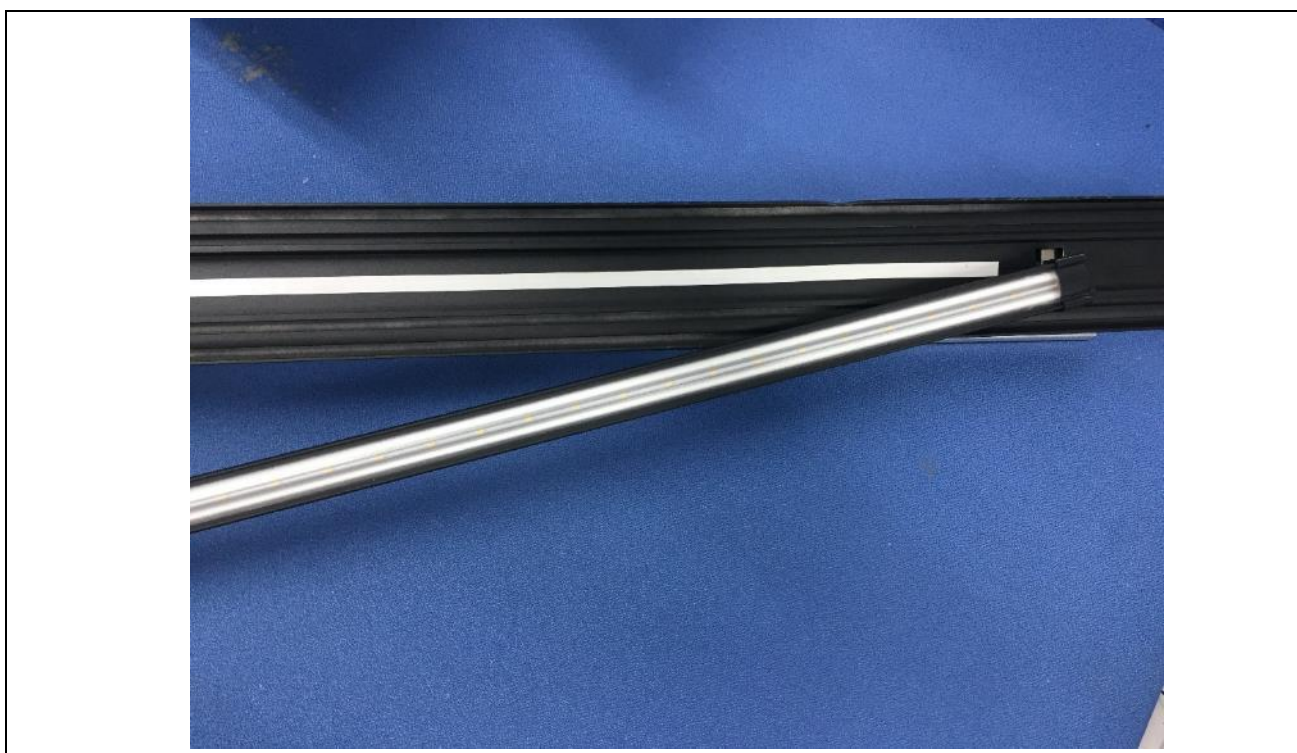
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Details of: Earthing construction view for VLF1-I120-040B-XX suffixed with C1



Details of: LED module above for VLF1-I120-040B-XX



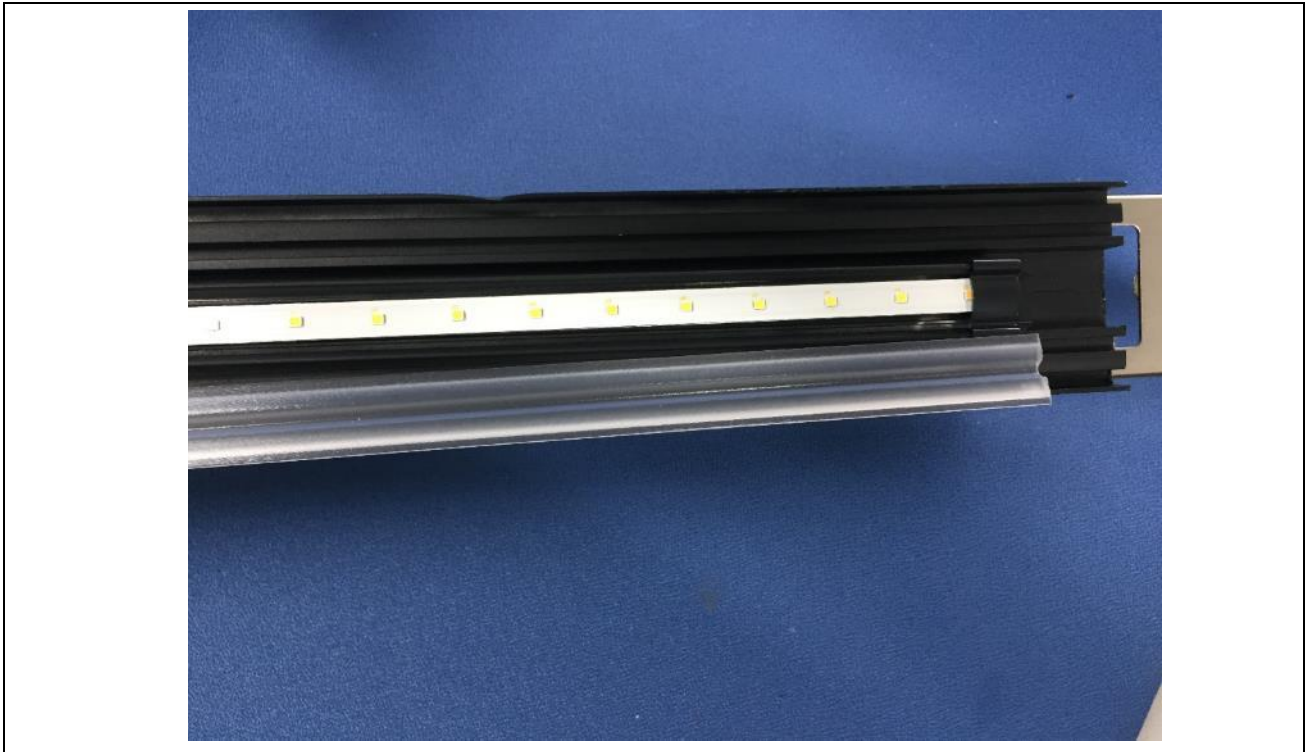
Attachment No. 5

Photo documentation

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Details of: LED module above for VLF1-I120-040B-XX



Details of: LED module below for VLF1-I120-040B-XX



Attachment No. 5

Photo documentation

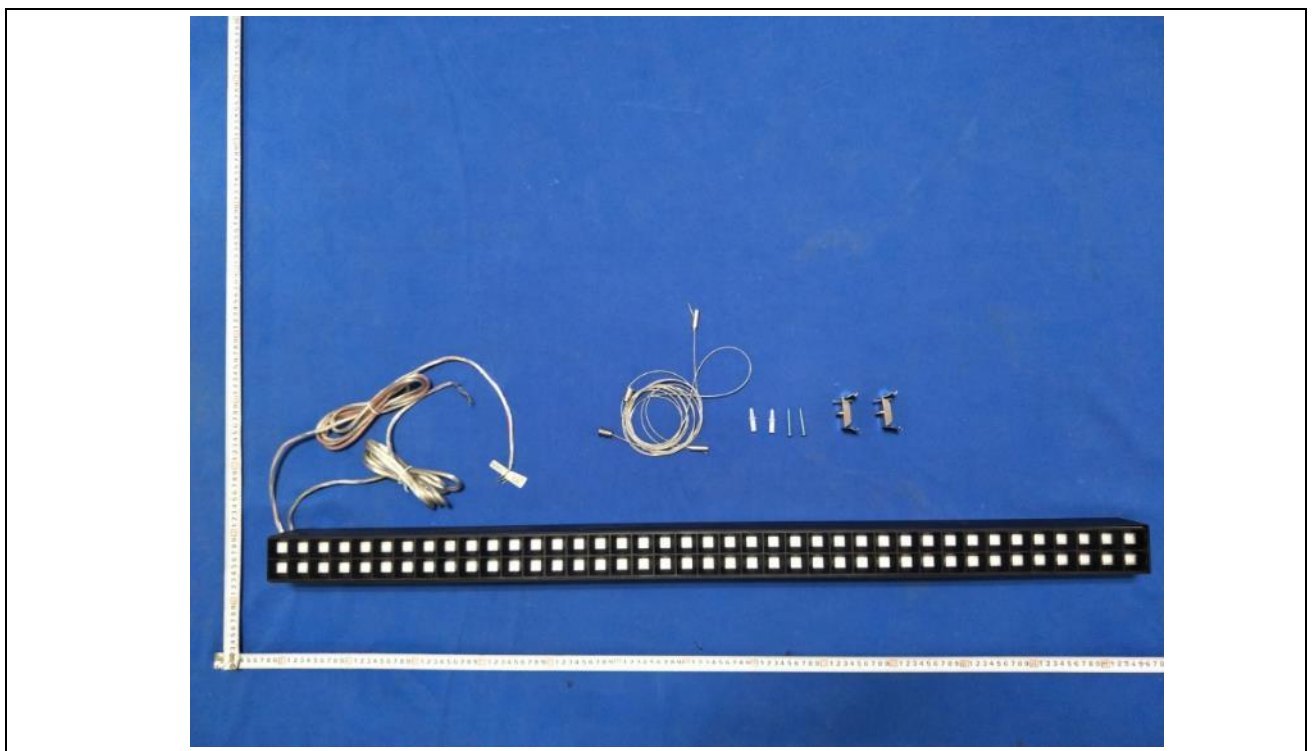
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Details of: LED module below for VLF1-I120-040B-XX



Details of: Cord pendant mounting



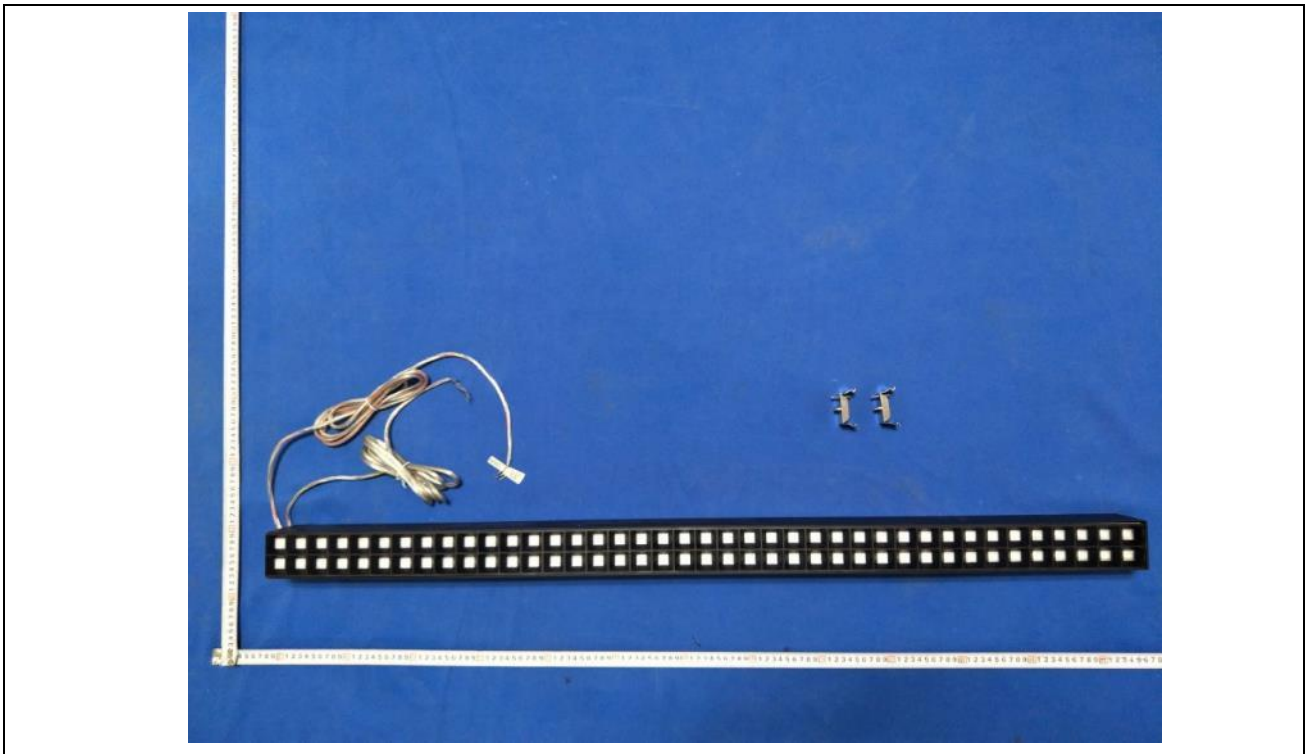
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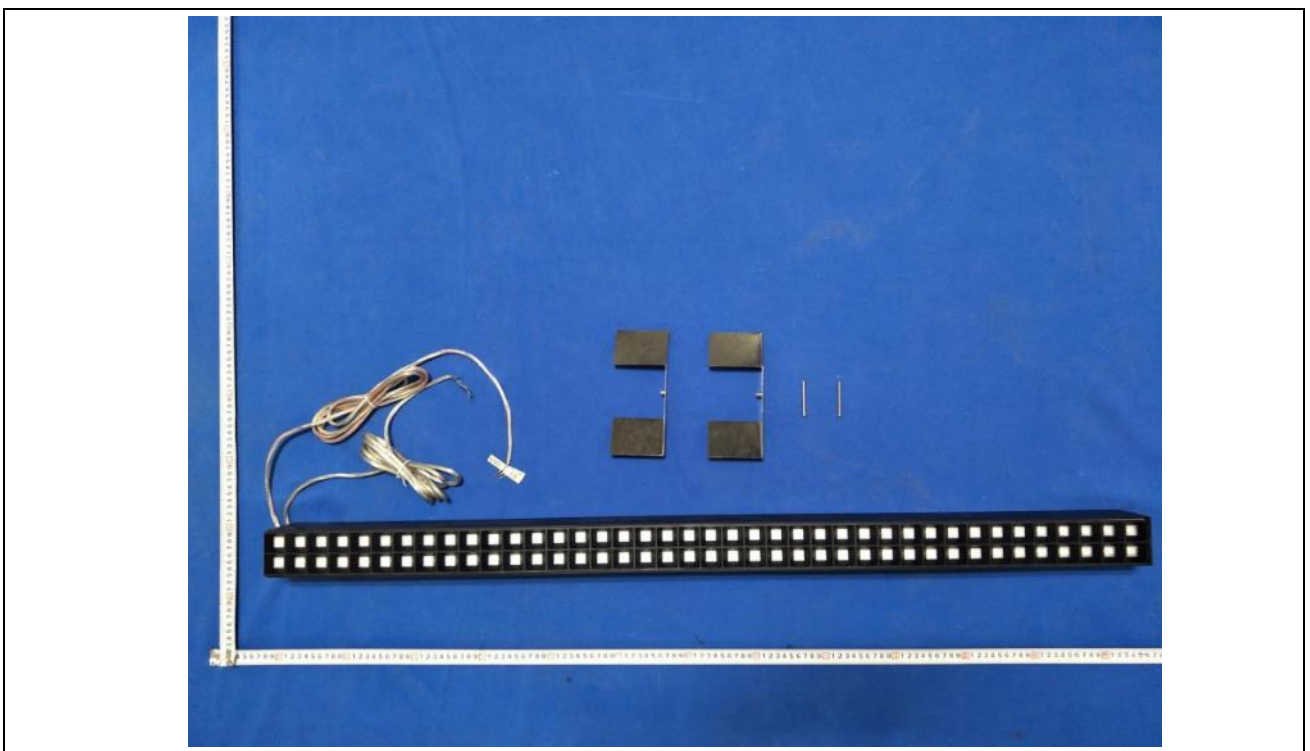
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Details of: Surface mounting



Details of: Recessed mounting



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Photo documentation

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Details of: LED driver for BK-BHL040-0350BD



Details of: LED driver for BK-BHL040-0500BD



Attachment No. 5

Photo documentation

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Details of: LED driver for BK-BHL040-0550BD



Details of: LED driver for BK-BHL040-0600BD



Attachment No. 5

Photo documentation

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Details of: LED driver for BK-BHL040-0650BD



Details of: LED driver for BK-BHL040-0700BD



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Photo documentation

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Report No.: 64.142.19.50071.01

Details of: LED driver for BK-BHL050-0800BD



Details of: LED driver for BK-BHL050-0850BD



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Photo documentation

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Details of: LED driver for BK-BHL060-0950BD



Details of: LED driver for BK-BHL060-1200BD



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Photo documentation

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Details of: LED driver for BK-BHL070-1400BD



Details of: LED driver for BK-BHL070-1500BD



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Photo documentation

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Details of: LED driver for LC 19W 250-350mA flexC Ip ADV



Details of: LED driver for LC 38W 500-700mA flexC Ip ADV



Attachment No. 5

Photo documentation

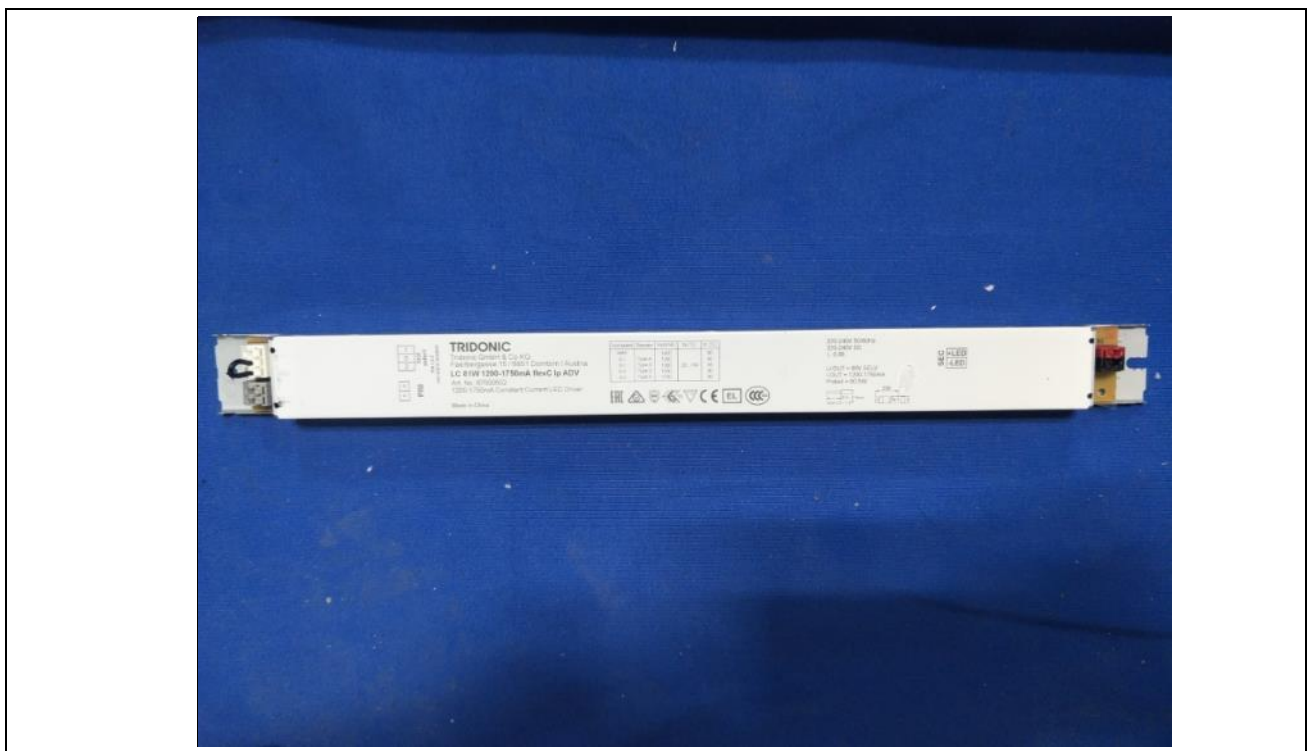
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Details of: LED driver for LC 57W 800-1050mA flexC Ip ADV



Details of: LED driver for LC 81W 1200-1750mA flexC Ip ADV



Attachment No. 5

Photo documentation

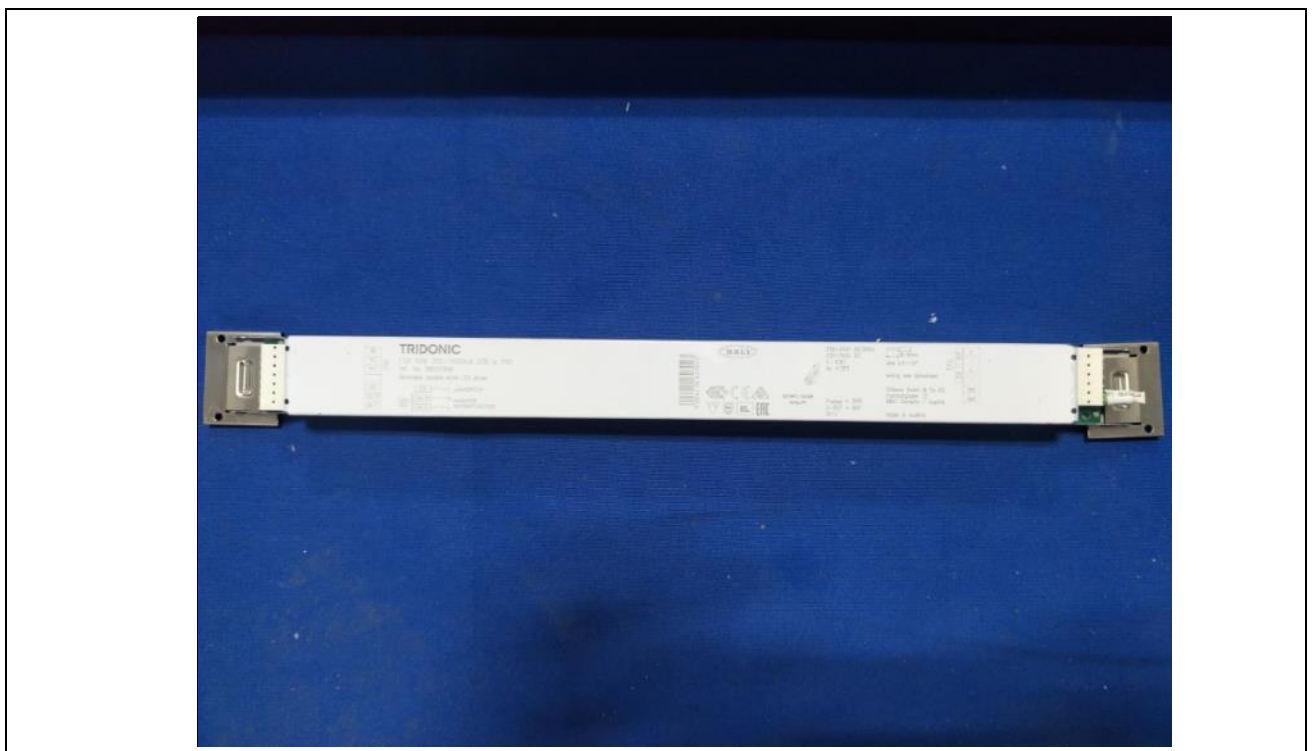
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Details of: LED driver for LCA 35W 150-700mA one4all Ip PRE



Details of: LED driver for LCA 50W 350-1050mA DT8 Ip PRE



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Photo documentation

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Details of: LED driver for LCA 50W 350-1050mA one4all Ip PRE



Details of: LED driver for LCA 75W 900-1800mA one4all Ip PRE

