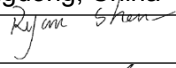
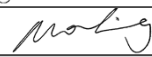




Test Report issued under the responsibility of:

SGS Fimko Ltd.

TEST REPORT IEC 62031 LED modules for general lighting – Safety specifications	
Report Number	GZES191202968201
Date of issue	2020-04-30
Total number of pages	21
Name of Testing Laboratory preparing the Report	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Applicant's name	Environmental Lights
Address	11235 West Bernardo Ct Ste 102, San Diego, CA 92127, USA
Test specification:	
Standard	IEC 62031:2018
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC62031F
Test Report Form(s) Originator	Intertek Semko AB
Master TRF	2018-06-14
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General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description	Built-in LED module	
Trade Mark	EL; Environmental Lights	
Manufacturer	Same as applicant	
Model/Type reference	CCCC -2835LT-XxY-W CCCC can be replaced by 2700K, 3000K, 3500K, 4000K, 5000K, 5600K or 6500K, represents product's CCT; XxY can be replaced by 12 x 12; 12 x 9; 12 x 6; 9 x 6; 12 x 3; 9 x 3 or 6 x 3, represents product's dimension in inches; W can be replaced by 23.04; 17.28; 11.52; 8.64; 5.76; 4.32 or 2.88, represents product's rated power.	
Ratings	See "General product information"	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Testing location/ address		198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China
Tested by (name, function, signature)		Ryan Shen / Project Engineer 
Approved by (name, function, signature) ...:		Mon Liang / Reviewer 
☐	Testing procedure: CTF Stage 1:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ...:		
☐	Testing procedure: CTF Stage 2:	N/A
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) ..:		
Approved by (name, function, signature) ...:		
☐	Testing procedure: CTF Stage 3:	N/A
☐	Testing procedure: CTF Stage 4:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ..:		
Approved by (name, function, signature) ...:		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): Attachment 1: Photo documentations (Total: 2 pages)	
Summary of testing: 1. The submitted samples were found to be in compliance with the standard IEC 62031: 2018. 2. Photobiological hazard measurements have been tested according to Technical report IEC/TR 62778: 2014 (Ed 2). According to the test results, Blue light hazard of the product belongs to RG1 unlimited and therefore no markings are required on the product or in the instructions. 3. After review, the model 6500K-2835LT-12×12-23.04 was selected to perform the full test as it has the maximum wattage and Colour temperature. Other models were performed construction check.	
Tests performed (name of test and test clause): 6 Marking 7. Terminals 10 Moisture resistance and insulation 11 Electric strength 12 Fault conditions 14 Construction 16 Screws, current-carrying parts and connections 17 Resistance to heat, fire and tracking 21 Photobiological safety	Testing location: 198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China
Summary of compliance with National Differences: N/A	

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.

Representative:



Rigid LED Light Tile – 6500K – 12x12 Inches

24 VDC, 23.04 Watts

6500K-2835LT-12x12-23.04

Remark:

1. The height of letters and numbers are not less than 2 mm.
2. According to the standard, warning and text required by the standard should be written in the official language(s) of the country in which the appliance is to be sold. The applicant should ensure that the samples in future production fulfill the requirement;

Test item particulars :	
Classification of installation and use : Fixed	
Supply Connection : DC connector	
Mass of the equipment : N/A	
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 : 2019-12-27	
Date (s) of performance of tests : 2019-12-27 to 2020-03-06	
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 61347-1 When determining for test conclusion, measurement uncertainty of tests has been considered. This document is issued by the Company subject to its General Conditions of Service, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60068-2-1:	
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): Blueview Elec-optic Tech Co., Ltd.
 1000 Section 2, 2nd Konggang Road, Southwest
 Aviation Industrial Development Zone, Chengdu,
 Sichuan, China

General product information:

Built-in LED module with DC connectors, only use with the SELV supply.

The product is supplied by LED driver which should be certified with standard EN 61347-2-13 (Class II, IP20 or higher, fail-safe or short circuit proof, with suitable output ratings).

All models have the same construction, except the size, power and colour temperature are different.

Model	Size (in)	Wattage (W)	Voltage (VDC)
CCCC-2835LT-XxY-W	12 x 12	23,04	24
	12 x 9	17,28	24
	12 x 6	11,52	24
	9 x 6	8,64	24
	12 x 3	5,76	24
	9 x 3	4,32	24
	6 x 3	2,88	24

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		
4.2	Classification		
	Built-in module	Yes ☒ No ☐	—
	Independent module	Yes ☐ No ☒	—
	Integral module	Yes ☐ No ☒	—
4.6	Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A

6	MARKING		
6.2	Contents of marking for built-in and for independent LED modules		P
	a) mark of origin		P
	b) model number, type reference		P
	c1) constant voltage module; rated supply voltage and supply frequency		P
	c2) constant current module; rated supply current and supply frequency		N/A
	d) rated power		P
	e) indication of connections, wiring diagram		N/A
	f) value of t_c and place on the module	In instructions	P
	g) E_{thr} if required		N/A
	h) symbol for built-in modules	In instructions	P
	i) heat transfer temperature t_d		N/A
	j) power for heat-conduction P_d		N/A
	k) working voltage for insulation		N/A
6.3	Location of marking for built-in LED modules		P
	- marking of a) and b) in 6.2 on the modules		P
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		P
6.4	Location of marking for independent LED modules		N/A
	- marking of a), b), c) and f) in 6.2 on the modules		N/A
	- marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website		N/A
6.5	Marking of integral LED modules		N/A

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	- information in 6.2 a) to g) in data sheet, leaflet or website		N/A
6.6	Durable and legibility of marking		P
	- marking on the LED module legible after test with water		P
	- marking not on the LED module legible		P
7	TERMINALS		
7.1	Integral terminals		N/A
	Screw terminals comply with section 14 of IEC 60598-1		N/A
	Screwless terminals comply with section 15 of IEC 60598-1		N/A
7.2	Terminals other than integral terminals		N/A
	Separately approved; component list		N/A
	Ratings suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A
8 (9)	EARTHING		
- (9.1)	Provisions for protective earthing		N/A
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		N/A
- (9.2)	Provision for functional earthing		N/A
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (9.3)	Lamp controlgear with conductors for protective earthing by tracks on printed circuit board		N/A
	Test with a current of 25 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
- (9.4)	Earthing of built-in lamp controlgear		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	Earthing via independent controlgear		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm ² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A
9 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		
- (10.1)	Controlgear protected against accidental contact with live parts	< 60 V d.c.	N/A
- (A2)	Voltage measured with 50 k Ω		N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device		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 $> 0,5 \mu\text{F}$: voltage after 1 min (V): < 50 V		N/A
- (10.3)	Controlgear providing SELV		N/A

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated from earth by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.:		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
10 (11)	MOISTURE RESISTANCE AND INSULATION		
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V ($M\Omega$):		P
	For basic insulation $\geq 2 M\Omega$:	$> 20 M\Omega$	P
	For double or reinforced insulation $\geq 4 M\Omega$:		N/A
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A
11 (12)	ELECTRIC STRENGTH		
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		P

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage ≤ 50 V, test voltage 500 V		P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		N/A
	Basic insulation, $2U + 1000$ V		N/A
	Supplementary insulation, $2U + 1000$ V		N/A
	Double or reinforced insulation, $4U + 2000$ V		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

12 (14)	FAULT CONDITIONS		
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		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		N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)		N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.5)	Short-circuit across electrolytic capacitors		N/A
	Short-circuit or interruption of SPDs		N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 M Ω	> 20 M Ω	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—
12.2	Overpower condition		P

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

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
16 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		—
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
(4.12.5)	Screwed glands; force (Nm).....		N/A
17 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		
- (18.1)	Ball-pressure test	See Test Table 17 (18.1)	P
- (18.2)	Test of printed boards		N/A
- (18.3)	Glow-wire test (650°C)	See Test Table 17 (18.3)	N/A
- (18.4)	Needle-flame test (10 s)	See Test Table 17 (18.4)	P
- (18.5)	Proof tracking test		N/A

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
18	RESISTANCE TO CORROSION		
	Comply with requirements according 4.18 of IEC 60598-1		N/A
20	HEAT MANAGEMENT		
20.1	General		N/A
	Fulfil clause 20 if replaceable LED module and when heat conducting thermal interface is needed.		N/A
20.2	Thermal interface material		N/A
	Thermal interface material delivered with the module if necessary		N/A
20.3	Heat protection		N/A
	Not impair safety when operated under poor heat-conduction conditions according Annex D		N/A
21	PHOTOBIOLOGICAL SAFETY		
21.1	UV radiation		P
	Luminous radiation not exceed 2mW/klm		P
21.2	Blue light hazard		P
	Assessed according to IEC TR 62778	RG1	P
21.3	Infrared radiation		N/A
	Requirements for infrared radiation when required		N/A
A	ANNEX A - TESTS		
	All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable		P

12 (14)	TABLE: tests of fault conditions		
Part	Simulated fault		Hazard
LED	Shorted-circuit		NO
LED	Opened-circuit		NO
Q1			
R1			

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

15 (16)	TABLE: clearance and creepage distance measurements (mm)						N/A
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)							—
Pulse voltage if applicable (kV)							—
Supplementary information:							
Distance 2:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)							—
Pulse voltage if applicable (kV)							—
Supplementary information:							
Distance 3:							
Working voltage (V).....:							—
Frequency if applicable (kHz).....:							—
PTI.....:					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)							—
Pulse voltage if applicable (kV)							—
Supplementary information:							

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

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

17 (18.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm):		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
DC connector	See annex 2	125	1,87	
Supplementary information: —				

17 (18.2)	TABLE: Test of printed boards				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
—	—	—	—	—	—
Supplementary information: —					

17 (18.3)	TABLE: Glow-wire test				N/A
Glow wire temperature		650°C	—		
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
—	—	—	—	—	—
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No).....					—
Supplementary information: —					

17 (18.4)	TABLE: Needle-flame test				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
DC connector	See annex 2	10	No	0	P
Supplementary information: —					

17 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI		175 V	—		
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
—	—	—	—	—	—
Supplementary information: —					

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK	N/A
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ANNEX 1	LED MODULES WITH INTEGRAL CONTROLGEAR PROVIDING SELV	N/A
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ANNEX 2	TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
DC connector	B	Yueqing bochi Electronics Co., Ltd	XH-3A	polyamides	IEC 62031: 2018	Tested with appliance	
LED	B	Hongli Zhihui Group Co., Ltd.	HL-AM-2835H421W-S1-08-HR3-3SDCM-DT-LJ	V _F : 2,8 V – 3,4 V; I _F : 60 mA; 2600 K – 7000 K	IEC 62031: 2018	Tested with appliance	
PCB	B	Chengdu Tianmu Electronic Equipment Co., Ltd.	TM-003	Aluminium substrate ; V-0; 90 °C	IEC 62031: 2018 UL796: 2019	UL E336407 & tested with appliance	
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. The codes above have the following meaning: A - The component is replaceable with another one, also certified, with equivalent characteristics B - The component is replaceable if authorised by the test house C - Integrated component tested together with the appliance D - Alternative component							

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screw terminals (part of the luminaire)		
(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (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 62031			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4	Screwless terminals (part of the luminaire)		
(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples)		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A

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

--- End of main report ---

Attachment 1: Photo documentations

Details of: General view for 6500K-2835LT-12×12-23.04, other models are similar with model 6500K-2835LT-12×12-23.04

View:

☒ general

☐ front

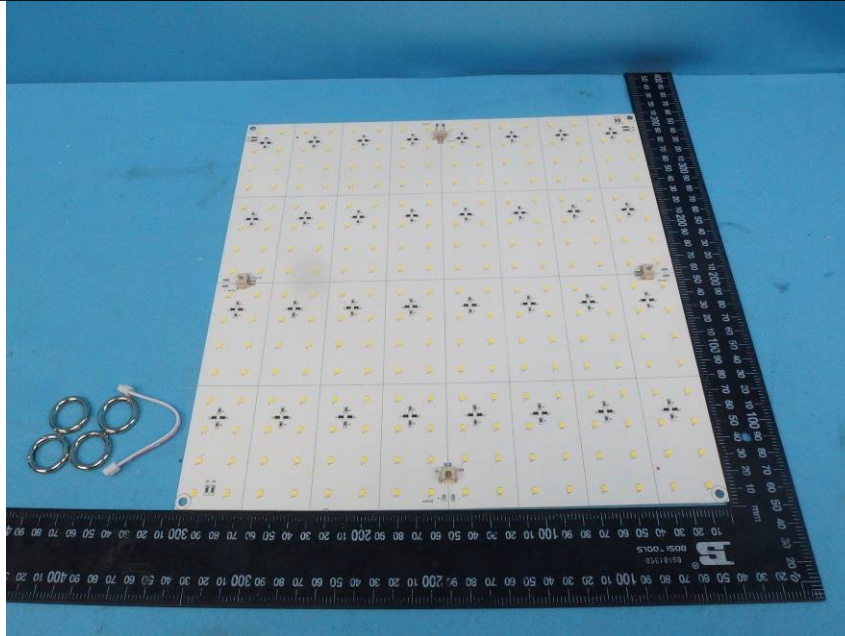
☐ rear

☐ right

☐ left

☐ top

☐ bottom



Details of: General view for 6500K-2835LT-12×12-23.04

View:

☒ general

☐ front

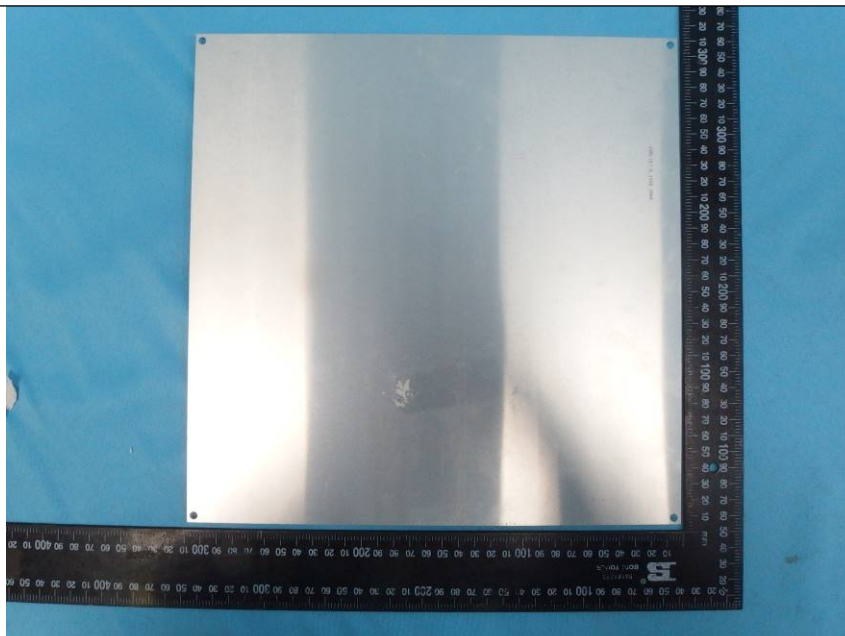
☐ rear

☐ right

☐ left

☐ top

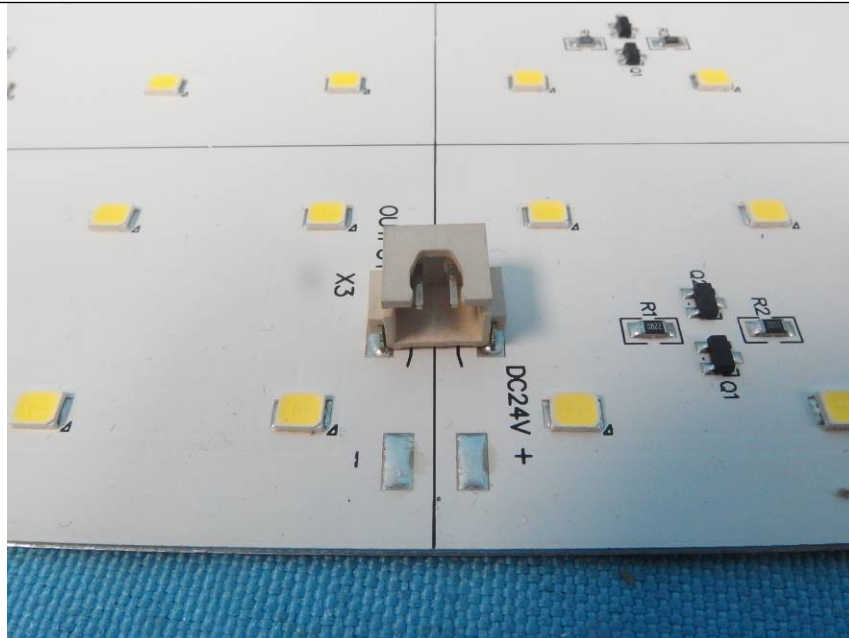
☐ bottom



Attachment 1: Photo documentations

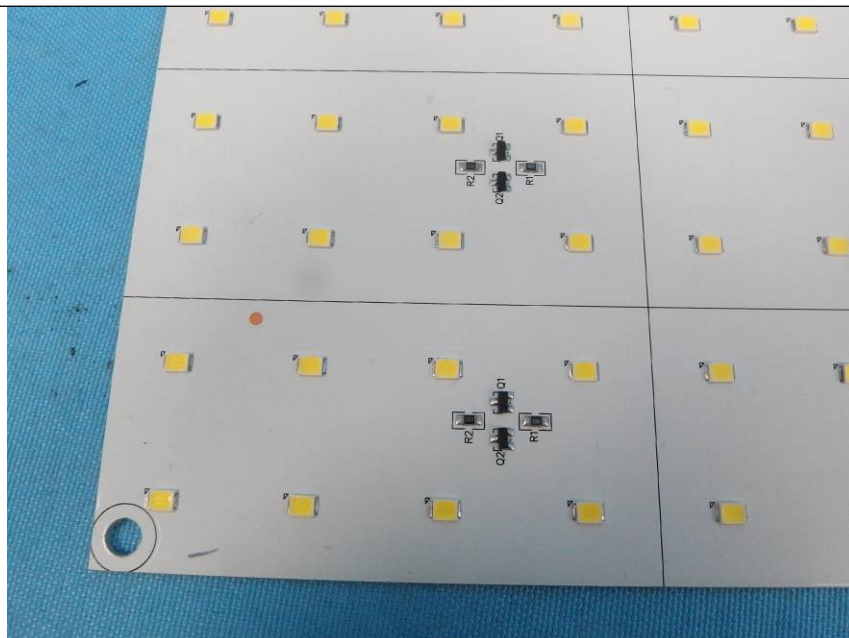
Details of: DC connector

View:

☒ general☐ front☐ rear☐ right☐ left☐ top☐ bottom

Details of: LED

View:

☒ general☐ front☐ rear☐ right☐ left☐ top☐ bottom

- - - End of attachment 1 - - -