TEST REPORT

Reference No.	:	WTU22N10211827L
Applicant	:	LUMATEK LTD.
Address	:	Ewropa Business centre Level 3 – 701 Dun Karm Street Birkirkara BKR 9034 MALTA
Manufacturer	:	Same as applicant
Address	:	Same as applicant
Product Name	:	Lumatek Control Panel
Model No.	:	LUMM0019
Test specification	:	BS EN 61347-1:2015+A1:2021 BS EN 61347-2-11:2001+A1:2019 BS EN 62493:2015
Date of Receipt sample	:	2022-10-25
Date of Test	:	2022-10-25 to 2022-11-29
Date of Issue	:	2022-12-08
Test Report Form No.	:	IEC61347_2_11F
Test Result	:	Pass

Remarks:

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

Prepared By:

Waltek Testing Group (Ningbo) Co., Ltd.

Address: Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China

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Tested by:

Dorren Wang / Project Engineer

Approved by:

Jianzhong Mao / Manager

TEST REPORT
IEC 61347-2-11
Part 2: Particular requirements
Section 11: Miscellaneous electronic circuits used with luminaires

Report Number. .....:	WTU22N10211827L
Date of issue .....:	See cover page
Total number of pages.....:	36 pages
Name of Testing Laboratory preparing the Report.....:	Waltek Testing Group (Ningbo) Co., Ltd.
Applicant's name.....:	See cover page
Address .....:	See cover page
Test specification:	
Standard .....:	IEC 61347-2-11:2001, AMD1:2017 used in conjunction with IEC 61347-1:2015, AMD1:2017
Test procedure .....:	Test report
Non-standard test method …….:	N/A
Test Report Form No.....:	IEC61347_2_11F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	Dated 2018-11-09

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	Miscellaneous electronic circuits used with luminaires
Trade Mark .....:	LUMATEK
Manufacturer.....:	See cover page
Model/Type reference .....:	LUMM0019
Ratings .....:	Power supply: Input 100-240V~, 50/60Hz, 0.45A, Class II; Output 5VDC, 2A, 10W; Control Panel: 5VDC, 2A, 10W, Class III, IP20, ta:40°C, independent.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	Waltek Testing Group (Ningbo) Co., Ltd.	
Testing location/ address ..... :		Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China	
Tested by (name, function, signature) ..... :		See cover page	
Approved by (name, function, signature) .. :		See cover page	
☐	**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 1: Acceptance test report for IEC 60598-1:2014+A1:2017 (20 pages)
- Attachment 2: Photo documentation (9 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
1. All tests were conducted with resistive load. 2. According to the standard IEC 62493:2015, the DUT belongs to unintentional radiating part of lighting equipment.Due to the reason that the DUT fulfils the inherent-compliance condition " **It is an independent auxiliary**", the DUT is deemed to comply with requirements of this standard without testing. 3. Only the most unfavourable results are recorded in this report.	Waltek Testing Group (Ningbo) Co., Ltd. Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China

Summary of compliance with National Differences:

List of countries addressed:

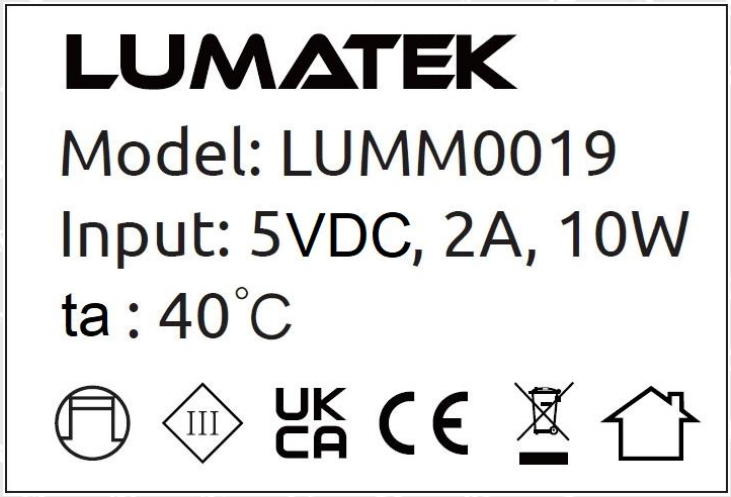
British national differences

The Internal Standards IEC 61347-1:2015+A1:2017, IEC 61347-2-11:2001+A1:2017, IEC 60598-1:2014+A1:2017 and IEC 62493:2015 were identical with corresponding British Standards.

☒ **The product fulfils the requirements of BS EN 61347-1:2015+A1:2021, BS EN 61347-2-11:2001+A1:2019, BS EN 60598-1:2015+A1:2018 and BS EN 62493:2015.**

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.



Remark:

1. On the exterior surface after installation;
2. The height of graphical symbols shall not be less than 5 mm, the height of letters and numerals shall not be less than 2 mm;
3. Manufacturer shall ensure product bears label requirements in article 4(manufacturer), or article 5 (authorised representatives), or article 6 (importer) of the Electrical Equipment (Safety) Regulations 2016 relate to name, batch number, post address prior place the product into Great Britain market.

Test item particulars .....:	
Classification of installation and use.....:	Independent, indoor use
Supply Connection.....:	Power supply
.....:	
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 .....:	See cover page
Date (s) of performance of tests .....:	See cover page

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

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....: Same as manufacturer, see cover page

General product information:

1. Control gear is supplied by external power supply No. AS013W-0502000ZC, Class II.
2. Above power supply is SELV design and have constant voltage output of 5VDC, other output parameters are 2A, 10W.

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
4 (4)	**GENERAL REQUIREMENTS**		**P**
- (4)	Insulation materials for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	Compliance of independent controlgear enclosure with IEC 60598-1		P
- (4)	Built-in magnetic ballast with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
- (4)	SELV controlgear comply with Annex L of IEC 61347-1	(see Annex L)	N/A
6 (6)	**CLASSIFICATION**		**P**
	Built-in controlgear ..... :	Yes ☐ No ☒	—
	Independent controlgear ..... :	Yes ☒ No ☐	—
	Integral controlgear ..... :	Yes ☐ No ☒	—
7 (7)	**MARKING**		P
7.1 (7.1)	**Mandatory markings**		**P**
	a) mark of origin		P
	b) model number or type reference		P
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)		P
	supply frequency (Hz)		N/A
	supply current (A)		P
	f) earthing symbol, if applicable		N/A
	k) wiring diagram	See photo documentation	P
	l) value of t_c		N/A
	s) SELV symbol		N/A
7.1 (-)	- control terminals identified, if applicable		P
	- t_a alternative to t_c if independent		P
7.1 (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P
7.2 (7.1)	**Information to be provided, if applicable**		**P**

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	h) declaration of protection against accidental contact		N/A
	i) cross-section of conductors (mm²)		N/A
	j) number, type and wattage of lamp(s)	Details see user manual	P
7.1 (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P
8 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c.	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V .....:	0.005 μF	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	(see Annex L)	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

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
9 (8)	**TERMINALS**		**N/A**
- (8.1)	**Integral terminals**		**N/A**
	Screw terminals according section 14 of IEC 60598-1	(see Annex 2)	N/A
	Screwless terminals according section 15 of IEC 60598-1	(see Annex 3)	N/A
- (8.2)	**Terminals other than integral terminals**		N/A
	Comply with relevant IEC standard	(see Annex 1)	N/A
	Suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A
10 (9)	**PROVISION FOR EARTHING**		**N/A**
- (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
	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
- (9.3)	**Lamp controlgear with conductors for protective earthing by tracks on printed circuit board**		**N/A**

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
- (9.4)	**Earthing of built-in lamp controlgear**		**N/A**
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	**Earthing via independent controlgear**		**N/A**
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	**MOISTURE RESISTANCE AND INSULATION**		**P**
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P
	For basic insulation ≥ 2 MΩ ..... :	>100 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ ..... :	>100 MΩ (test with power supply)	P
- (11)	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

12 (12)	**ELECTRIC STRENGTH**		**P**
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	Working voltage ≤ 50 V, test voltage 500 V		P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulation, 2U + 1000 V		N/A
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	2960 V (test with power supply)	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A
14 (14)	**FAULT CONDITIONS**		**P**
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	P
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ ..... :	>100 MΩ	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
15 (15)	**CONSTRUCTION**		**P**
- (15.1)	**Wood, cotton, silk, paper and similar fibrous material**		**P**
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		**P**
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	**Plugs and socket-outlets used in SELV or ELV circuits**		**N/A**
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	**Insulation between circuits and accessible parts**		**P**
- (15.4.2)	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		N/A
	- another source	Power supply comply with EN 62368-1.	P
	Voltage in the circuit not higher than ELV		P
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		P

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		P
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		P
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A

16 (16)	**CREEPAGE DISTANCES AND CLEARANCES**	**N/A**

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
- (16)	Creepage distances and clearances according to 16.2 and 16.3		N/A
	Controlgears providing SELV comply with additional requirements in Annex L	(see Annex L)	N/A
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see 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	(see appended table)	N/A
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	**Clearances**		**N/A**
- (16.3.2)	Clearances for working voltages		N/A
	Clearances distances according to Table 9	(see appended table)	N/A
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

17 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**	**P**
- (17)	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)	P
(4.11)	**Electrical connections**	**P**
(4.11.1)	Contact pressure	N/A
(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**	**P**
(4.12.1)	Screws not made of soft metal	P
	Screws of insulating material	N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part ..... :	Metal enclosure: Φ1.65mm, 0.4Nm	P
	Torque test: torque (Nm); part ..... :	Screen PCB: Φ2.92mm, 0.5Nm	P
	Torque test: torque (Nm); part ..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		P
(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**		**P**
- (18.1)	Ball-pressure test ..... :	See Test Table 18 (18.1)	P
- (18.2)	Test of printed boards ..... :	See Test Table 18 (18.2)	P
- (18.3)	Glow-wire test ..... :	See Test Table 18 (18.3)	P
- (18.4)	Needle flame test ..... :	See Test Table 18 (18.4)	P
- (18.5)	Tracking test ..... :	See Test Table 18 (18.5)	N/A

19 (19)	**RESISTANCE TO CORROSION**		**N/A**
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

20 (-)	**ANNEXES**		**P**
	Comply with appropriate annexes of IEC 61347-1	(see Annexes)	P

14	**TABLE: tests of fault conditions**	**P**
Part	Simulated fault	Hazard
	Control PCB	
C21	SC; 0.019A, 0.9W.	~~YES~~/NO
D1	SC; 0.018A, 0.8W.	~~YES~~/NO
$LD01_{1-2}$	SC; 0.027A, 3.1W.	~~YES~~/NO
$LD01_{2-3}$	SC; 0.038A, 4.5W.	~~YES~~/NO
D4	SC; 0.053A, 6.5W.	~~YES~~/NO
$U6_{1-2}$	SC; 0.035A, 4.0W.	~~YES~~/NO
$U6_{2-3}$	SC; 0.035A, 4.0W.	~~YES~~/NO

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
$U6_{3-4}$	SC; 0.035A, 4.0W.		~~YES~~/NO
$U6_{5-6}$	SC; 0.035A, 4.0W.		~~YES~~/NO
$U6_{6-7}$	SC; 0.035A, 4.0W.		~~YES~~/NO
$U6_{7-8}$	SC; 0.035A, 4.0W.		~~YES~~/NO
D7	SC; 0.035A, 4.1W.		~~YES~~/NO
$U8_{1-2}$	SC; 0.036A, 4.2W.		~~YES~~/NO
$U8_{2-3}$	SC; 0.035A, 4.1W.		~~YES~~/NO
$U8_{3-4}$	SC; 0.038A, 4.5W.		~~YES~~/NO
$U8_{5-6}$	SC; 0.035A, 4.1W.		~~YES~~/NO
$U8_{6-7}$	SC; 0.035A, 4.1W.		~~YES~~/NO
$U8_{7-8}$	SC; 0.035A, 4.1W.		~~YES~~/NO
D11	SC; 0.035A, 4.1W.		~~YES~~/NO
Screen PCB			
$U6_{1-2}$	SC; 0.022A, 1.1W. Screen was not displayed.		~~YES~~/NO
$U6_{2-3}$	SC; 0.033A, 3.8W.		~~YES~~/NO
D2	SC; 0.035A, 4.0W.		~~YES~~/NO
D3	SC; 0.035A, 4.0W.		~~YES~~/NO
D1	SC; 0.056A, 6.8W. Screen was not displayed.		~~YES~~/NO

16 (16)	TABLE: creepage distance and clearance (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) ..... :					<30V			—
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) ..... :								—

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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

18 (18.1)	**TABLE: Ball Pressure Test**			**P**
Allowed impression diameter (mm) ..... :				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
DC inlet (J2)	See Annex 1	125	1.07	
DC inlet (J3, J4)		125	1.51	
DC inlet (J5, J6)		125	1.02	
Battery support		125	1.39	
Connector for display screen		125	1.14	
Control PCB		125	0.55	
Screen PCB		125	0.59	
Supplementary information:				

18 (18.2)	**TABLE: Test of printed boards**				**p**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Control PCB	See Annex 1	30	No	1.0	P
Screen PCB		30	No	1.0	P
Supplementary information:					

18 (18.3)	**TABLE: Glow-wire test**	**P**
Glow wire temperature..... :	650°C	—

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Clause	Requirement + Test	Result - Remark	Verdict

Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Label	See Annex 1	No	0	P
Transparent insulation sheet		No	0	P
Support pillar for display screen		No	0	P
Support pillar for indicator		No	0	P
Battery support		No	0	P
Supplementary information:				

18 (18.4)	TABLE: Needle-flame test				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
DC inlet (J2)	See Annex 1	10	No	2.0	P
DC inlet (J3, J4)		10	No	3.0	P
DC inlet (J5, J6)		10	No	3.0	P
Battery support		10	No	3.0	P
Connector for display screen		10	No	1.0	P
Control PCB		10	No	1.0	P
Screen PCB		10	No	1.0	P
Supplementary information:					

18 (18.5)	TABLE: Proof tracking test	N/A
Test voltage PTI ..... :	175 V	—

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Clause	Requirement + Test	Result - Remark	Verdict

Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

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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**		P
(A.1)	Comply with A.2 or A.3		P
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c ..... :	5.99VDC	P
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. ..... :		N/A

(C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		**N/A**
(C3)	**GENERAL REQUIREMENTS**		**N/A**
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	**CLASSIFICATION**		**N/A**
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description .. :		—
(C6)	**MARKING**		**N/A**
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	**LIMITATION OF HEATING**		**N/A**
(C7.1)	**Preselection test:**		**N/A**
	Test sample placed for at least 12 h in an oven having temperature (t_c - 5) K		N/A
	No operation of the protection device		N/A
(C7.2)	**Functioning of protection means:**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14.2 to 14.5		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A
(D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		**N/A**
	Tests in C7 performed in accordance with Annex D, if applicable		N/A
(F)	**ANNEX F - DRAUGHT-PROOF ENCLOSURE**		**P**
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P
	Other design; description		N/A
(H)	**ANNEX H - TESTS**		**P**
	All tests performed in accordance with the advice given in Annex H, if applicable		P

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Clause	Requirement + Test	Result - Remark	Verdict

(I)	**ANNEX I – ADDITIONAL REQUIREMENTS FOR BUILT-IN MAGNETIC BALLASTS WITH DOUBLE OR REINFORCED INSULATION**		**N/A**
(I.6)	Symbol on ballasts with double or reinforced insulation		N/A
	Symbol explained in manufacturers catalogue		N/A
(I.9)	No protective earthing terminal		N/A
(I.12)	Devices for limiting the temperature bridged		—
	After the test according clause 13		N/A
	At least six of seven ballast start the lamp and the current not exceed 115%		N/A
	Insulation resistance not less than 4 MΩ between winding and case for all ballasts		N/A
	All ballasts withstand electric strength test reduced to 35% of values in Table 1 of IEC 61347-1		N/A
(I.15)	Built-in ballasts with double or reinforced insulation comply with corresponding values of creepage and clearances in IEC 60598-1		N/A

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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Required distance (mm) ..... :		—
	Measured (mm) ..... :		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm) ..... :		—
	Measured (mm) ..... :		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A
	Required distance (mm) ..... :		—
	Measured (mm) ..... :		N/A
	Supplementary information		—

(N)	**ANNEX N - REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**		**N/A**
(N.4)	**General requirements**		**N/A**
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	**Solid insulation**		**N/A**
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % to 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	**Thin sheet insulation**		**N/A**
(N.4.3.1)	Thickness and composition of thin sheet insulation		N/A
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N/A
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		N/A
(O)	**ANNEX O - ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**		**N/A**
(O.6)	**Marking**		**N/A**
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	**Protection against accidental contact with live parts**		**N/A**
	Requirements of clause 8 (10)	See clause 8	N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A
(O.8)	**Terminals**		**N/A**
	Clause 9 (8)	See clause 9	N/A
(O.9)	**Provision for earthing**		**N/A**
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A
(O.10)	**Moisture resistance and insulation**		**N/A**
	Clause 11 (11)	See clause 11	N/A
(O.11)	**Electric strength**		**N/A**
	Clause 12 (12)	See clause 12	N/A
(O.13)	**Fault conditions**		**N/A**
	Clause - (14)	See clause 14	N/A
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test reduced to 35 % of values according Table 3 in part 1		N/A
	Insulation resistance according to Cl.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		N/A
(O.14)	**Construction**		**N/A**
	Clause 17 (15)	See clause 17	N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	**Creepage distances and clearances**		**N/A**
	Clause 18 (16)	See clause 18	N/A
	Comply with corresponding values for luminaries in IEC 60598-1		N/A
(O.16)	**Screws, current-carrying parts and connections**		**N/A**
	Clause 19 (17)	See clause 19	N/A
(O.17)	**Resistance to heat and fire**		**N/A**
	Clause 20 (18)	See clause 20	N/A
(O.18)	**Resistance to corrosion**		**N/A**
	Clause 21 (19)	See clause 21	N/A
(P)	**ANNEX P - Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting**		**N/A**
(P.1)	**General**		**N/A**
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
(P.2)	**Creepage distances**		**N/A**
(P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
(P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A
	Voltage $\hat{U}_{out}$ kV ..... :		—
	Frequency ..... :		—
	Required distance ..... :		—
	Measured ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Supplementary information		—
(P.2.4)	Compliance with the required creepage distances		N/A
(P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A
(P.2.4.3)	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3)	**Distance through isolation**		**N/A**
(P.3.4)	Electrical tests after conditioning		N/A
(P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3.4.2)	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage .....:		—
	Impulse voltage.....:		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage .....:		—
	Impulse voltage.....:		N/A
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					P
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Power supply	B	Shenzhen Xin YiJia Electronics Co Ltd	AS013W-0502000ZC	Input: 100-240V~, 50/60Hz, 0.45A; Output: 5VDC, 2A, 10W; Class II, indoor use	EN 62368-1	(CE) ANCI test report No. SA1904266L 01001
Output wire of power supply	C	TONGXIANG ZHOUQUAN HONGKE ELECTRIC FACTORY	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E365749 + tested with appliance
Alt.	C	LTK Electric Wire (Huizhou) Ltd	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E148000 + tested with appliance
Alt.	C	GUANGDONG HAERKN NEW ENERGY CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E300956 + tested with appliance
Alt.	C	DONGGUAN CITY DHE WIRE & CABLE CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E343712 + tested with appliance
Alt.	C	QIFURUI ELECTRONICS CO	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E211048 + tested with appliance
Alt.	C	LINOYA ELECTRONIC TECHNOLOGY CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E315619 + tested with appliance
Alt.	C	DONGGUAN NISTAR TRANSMITTING TECHNOLOGY CO INC	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E214184 + tested with appliance
Alt.	C	XINYA ELECTRONIC CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E170689 + tested with appliance
Alt.	C	Suzhou Dian Hang Electronic Co Ltd	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E354173 + tested with appliance
Alt.	C	KUNSHAN XINGHONGMEN G ELECTRONIC CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E315421 + tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Alt.	C	SUZHOU YONGHAO CABLE CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E313065 + tested with appliance
Alt.	C	Hichain Electricity (Zhaoqing) Co Ltd	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E304337 + tested with appliance
Alt.	C	SHENZHEN LILUTONG TECHNOLOGY INDUSTRY CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL 309471 + tested with appliance
Alt.	C	SUZHOU SHUNTONG WIRE & CABLE CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E339682 + tested with appliance
Alt.	C	SHENZHEN YUEDENG ELECTRONICS CO LTD	2464	22AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E471418 + tested with appliance
Control link cable and Temperature sensor cable	C	SUZHOU SHUNTONG WIRE & CABLE CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E339682 + tested with appliance
Alt.	C	TONGXIANG ZHOUQUAN HONGKE ELECTRIC FACTORY	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E365749 + tested with appliance
Alt.	C	LTK Electric Wire (Huizhou) Ltd	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E148000 + tested with appliance
Alt.	C	GUANGDONG HAERKN NEW ENERGY CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E300956 + tested with appliance
Alt.	C	DONGGUAN CITY DHE WIRE & CABLE CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E343712 + tested with appliance
Alt.	C	QIFURUI ELECTRONICS CO	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E211048 + tested with appliance
Alt.	C	LINOYA ELECTRONIC TECHNOLOGY CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E315619 + tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Alt.	C	DONGGUAN NISTAR TRANSMITTING TECHNOLOGY CO INC	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E214184 + tested with appliance
Alt.	C	XINYA ELECTRONIC CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E170689 + tested with appliance
Alt.	C	Suzhou Dian Hang Electronic Co Ltd	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E354173 + tested with appliance
Alt.	C	KUNSHAN XINGHONGMEN G ELECTRONIC CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E315421 + tested with appliance
Alt.	C	SUZHOU YONGHAO CABLE CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E313065 + tested with appliance
Alt.	C	Hichain Electricity (Zhaoqing) Co Ltd	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E304337 + tested with appliance
Alt.	C	SHENZHEN LILUTONG TECHNOLOGY INDUSTRY CO LTD	2464	28AWG, 80°C, 300V	IEC 61347-1 IEC 61347-2-11	UL E309471 + tested with appliance
Label	C	Suzhou Huayin Packaging Co., Ltd	---	PC, 0.3mm	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Transparent insulation sheet	C	SKC Co.,Ltd.	SG82	PET, 0.2mm	IEC 61347-1 IEC 61347-2-11	UL E74359 + tested with appliance
Alt.	C	TORAY INDUSTRIES INC FILM DIV	Lumirror (#)	PET, 0.2mm	IEC 61347-1 IEC 61347-2-11	UL E86511 + tested with appliance
Alt.	C	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DF6027	PET，0.2mm	IEC 61347-1 IEC 61347-2-11	UL E199019 + tested with appliance
Alt.	C	JIANGSU YUXING FILM TECHNOLOGY CO LTD	6023/6027D/6027	PET，0.2mm	IEC 61347-1 IEC 61347-2-11	UL E212271 + tested with appliance
Alt.	C	JIANGSU YUXING FILM TECHNOLOGY CO LTD	6023Z	PET，0.2mm	IEC 61347-1 IEC 61347-2-11	UL E212271 + tested with appliance

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

Alt.	C	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DF6025	PET，0.2mm	IEC 61347-1 IEC 61347-2-11	UL E199019 + tested with appliance
PCBs	C	KUNSHAN JINPENG ELECTRONICS CO LTD	JP-1/JP-2	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E306084 + tested with appliance
Alt.	C	SUZHOU CITY YILIHUA ELECTRON CO.,LTD	YLH-6	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E251781 + tested with appliance
Alt.	C	Weiliguang Technology Co Ltd	JK-1/JK-2	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E472363 + tested with appliance
Alt.	C	ANHUI HONGXIN ELECTRONIC TECHNOLOGY CO LTD	HX-01/HX-02/HX-03	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E468758 + tested with appliance
Alt.	C	Kunshan Suyuan Eloctronic Group Co., Ltd.	MSY	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E233870 + tested with appliance
Alt.	C	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E231590 + tested with appliance
Alt.	C	GLOBAL SUCCESS CIRCUITS CO LTD	T-1	V-0, 130°C	IEC 61347-1 IEC 61347-2-11	UL E324220 + tested with appliance
DC inlet (J2)	C	Horustech Electronics Co., Ltd	DC-005	DC 12V, 2A	IEC 61347-1 IEC 61347-2-11	Tested with appliance
DC inlet (J3, J4)	C	Horustech Electronics Co., Ltd	PJ3025C	0.5A; DC30V	IEC 61347-1 IEC 61347-2-11	Tested with appliance
DC inlet (J5, J6)	C	Horustech Electronics Co., Ltd	PJ-211A	0.5A; DC30V	IEC 61347-1 IEC 61347-2-11	Tested with appliance
T1 magnet wire	C	ZHEJIANG SANXING ELECTRICAL TECHNOLOGY CO., LTD.	2UEW/155	155°C	IEC 61347-1 IEC 61347-2-11	UL E327855 + tested with appliance
Alt.	C	HENG YA ELECTRIC KUN SHAN LTD	TYA1-U155	155°C	IEC 61347-1 IEC 61347-2-11	UL E245514 + tested with appliance

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

Alt.	C	SHANGHAI LUCKY TRADE CO LTD	TIW-B	155°C	IEC 61347-1 IEC 61347-2-11	UL E305883 + tested with appliance
Insulation tape	C	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY313#	600V, 130°C	IEC 61347-1 IEC 61347-2-11	UL E188295 + tested with appliance
Alt.	C	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	600V, 130°C	IEC 61347-1 IEC 61347-2-11	UL E165111 + tested with appliance
Switch (SW1-SW5)	C	Horustech Electronics Co., Ltd	TS1214-250AH	DC12V, 50mA	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Alt.	C	Suzhou Lai long Electronic Technology Co., Ltd	TC-00121-140E	DC12V, 0.3A	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Switch (SW6)	C	Horustech Electronics Co., Ltd	TS6217-250AH	DC12V, 50mA	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Alt.	C	Zhejiang Lingxiang Electronics Co., Ltd.	8HA-C-A-S1-01170	DC12V, 50mA	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Support pillar for display screen	C	SUZHOU HUIHUA ELECTRICS TECH CO.，LTD	HTP-311	PA66, 2.5mm	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Connector for display screen	C	Suzhou Liqin Electronics Co., Ltd	---	PBT, 2.0mm	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Support pillar for indicator	C	SUZHOU HUIHUA ELECTRICS TECH CO.，LTD	LEDP-9	PA66, 3.0mm	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Button battery	B	MATSUSHITA ELECTRIC INDUSTAIAL CO LTD	CR2032	3V	IEC 62133	CE test report
Battery support	C	Horustech Electronics Co., Ltd	BS-02	3.0mm	IEC 61347-1 IEC 61347-2-11	Tested with appliance
Relay (Relay1, Relay2)	B	Xiamen Hongfa Electroacoustic Co., Ltd.	HFD4/5-S	0.5A, 125VAC, T85	EN 61810-1	TÜV Rheinland R 50333270

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

Alt. Relay (Relay1, Relay2)	C	Omron Corp	G6K-2F-Y	0.3A, 125VAC, T85	EN 61810-1	UL E41515 + 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 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	**Screw terminals (part of the controlgear)**		N/A
(14)	**SCREW TERMINALS** (IEC 60598-1)		N/A
(14.2)	Type of terminal ..... :		—
	Rated current (A) ..... :		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²) ..... :		—
(14.3.3)	Conductor space (mm) ..... :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread)..... :	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) ..... :		N/A
	Torque (Nm)..... :		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)..... :		N/A
(14.4.8)	Without undue damage		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screwless terminals (part of the controlgear)**		N/A
(15)	**SCREWLESS TERMINALS** (IEC 60598-1)		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples) .....:		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples) .....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....:		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....:		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A

IEC 61347-2-11			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....:		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

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

====== End of Report ======

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict

Luminaires – Part 1: General requirements and tests IEC 60598-1:2014+A1:2017 (acceptance test)			
Attachment Form No. ……..:	**WSL-605981A-05A**		
3	**MARKING**		P
3.2	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
3.3	Additional information		P
	Language of instructions		P
3.3.1	Combination luminaires		N/A
3.3.2	Nominal frequency in Hz		N/A
3.3.3	Operating temperature		P
3.3.5	Wiring diagram		P
3.3.6	Special conditions		N/A
3.3.7	Metal halide lamp luminaire – warning		N/A
3.3.8	Limitation for semi-luminaires		N/A
3.3.9	Power factor and supply current		N/A
3.3.10	Suitability for use indoors		P
3.3.11	Luminaires with remote control		N/A
3.3.12	Clip-mounted luminaire – warning		N/A
3.3.13	Specifications of protective shields		N/A
3.3.14	Symbol for nature of supply		N/A
3.3.15	Rated current of socket outlet		N/A
3.3.16	Rough service luminaire		N/A
3.3.17	Mounting instruction for type Y, type Z and some type X attachments	Type X	P
3.3.18	Non-ordinary luminaires with PVC cable		N/A
3.3.19	Protective conductor current in instruction if applicable		N/A
3.3.20	Provided with information if not intended to be mounted within arm's reach		N/A
3.3.21	Non replaceable and non-user replaceable light sources information provided		N/A
3.3.22	Controllable luminaires, classification of insulation provided		P
3.3.23	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
3.3.24	If not supplied with terminal block, information on the packaging		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
4	**CONSTRUCTION**		P
4.2	Components replaceable without difficulty		P
4.3	Wireways smooth and free from sharp edges		P
4.4	**Lampholders**		**N/A**
4.4.1	Integral lampholder		N/A
4.4.2	Wiring connection		N/A
4.4.3	Lampholder for end-to-end mounting		N/A
4.4.4	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) ..... :		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
4.4.5	Peak pulse voltage		N/A
4.4.6	Centre contact		N/A
4.4.7	Parts in rough service luminaires resistant to tracking		N/A
4.4.8	Lamp connectors		N/A
4.4.9	Caps and bases correctly used		N/A
4.4.10	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
4.5	**Starter holders**		**N/A**
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
4.6	**Terminal blocks**		**N/A**
	Tails		N/A
	Unsecured blocks		N/A
4.7	**Terminals and supply connections**		**N/A**
4.7.1	Contact to metal parts		N/A
4.7.2	Test 8 mm live conductor		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test 8 mm earth conductor		N/A
4.7.3	Terminals for supply conductors		N/A
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
4.7.4	Terminals other than supply connection		N/A
4.7.5	Heat-resistant wiring/sleeves		N/A
4.7.6	Multi-pole plug		N/A
	- test at 30 N		N/A
4.8	**Switches**		**P**
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
4.9	**Insulating lining and sleeves**		P
4.9.1	Retainment		P
	Method of fixing ..... :	Glue	P
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
4.10	**Double or reinforced insulation**		**N/A**
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
4.10.2	Assembly gaps:		N/A
	- not coincidental		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- no straight access with test probe		N/A
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
4.10.4	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
4.11	**Electrical connections and current-carrying parts**		**P**
4.11.1	Contact pressure		N/A
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	**Screws and connections (mechanical) and glands**		**P**
4.12.1	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	See (4.12.1) of IEC 61347-2-11	P
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
4.12.2	Screws with diameter < 3 mm screwed into metal		P
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
4.13	**Mechanical strength**		**P**

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm) ..... :		N/A
	- other parts; energy (Nm)..... :	Metal enclosure, Screen surface: 0.35Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
4.13.2	Metal parts have adequate mechanical strength		P
4.13.3	Straight test finger		P
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
4.13.6	Tumbling barrel	Power supply	P
4.14	**Suspensions, fixings and means of adjusting**		**P**
4.14.1	Mechanical load:		P
	A) four times the weight	0.252 Kg * 4 = 1.008 Kg	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
4.14.2	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
4.14.3	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken ..... :		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- electric strength test afterwards		N/A
4.14.4	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
4.14.5	Guide pulleys		N/A
4.14.6	Strain on socket-outlets		N/A
4.15	**Flammable materials**		**P**
	- glow-wire test 650°C ..... :		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
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
4.16	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear ..... :	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
4.16.1	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
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
4.16.3	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
4.17	**Drain holes**		**N/A**
	Clearance at least 5 mm		N/A
4.18	**Resistance to corrosion**		**N/A**
4.18.1	- rust-resistance		N/A
4.18.2	- season cracking in copper		N/A
4.18.3	- corrosion of aluminium		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.19	Ignitors compatible with ballast		N/A
4.20	Rough service vibration		N/A
4.21	**Protective shield**		**N/A**
4.21.1	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
4.21.2	Particles from a shattering lamp not impair safety		N/A
4.21.3	No direct path		N/A
4.21.4	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :		N/A
4.22	Attachments to lamps not cause overheating or damage		N/A
4.23	Semi-luminaires comply Class II		N/A
4.24	**Photobiological hazards**		**N/A**
4.24.1	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
4.24.2	Retinal blue light hazard		N/A
	Class of risk group assessed according to IEC/TR 62778 ..... :		—
	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
4.25	**Mechanical hazard**		**P**
	No sharp point or edges		P
4.26	**Short-circuit protection**		**N/A**
4.26.1	Adequate means of uninsulated accessible SELV parts		N/A
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
4.27	**Terminal blocks with integrated screwless earthing contacts**		**N/A**

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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
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
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
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		P
4.31.1	SELV circuits		N/A
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
4.31.2	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
4.31.3	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
4.32	**Overvoltage protective devices**		**N/A**
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	**EXTERNAL AND INTERNAL WIRING**		P
5.2	**Supply connection and external wiring**		**P**
5.2.1	Means of connection ..... :	Power supply	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
5.2.2	Type of cable ..... :	See Annex 1	P
	Nominal cross-sectional area (mm²) ..... :	See Annex 1	P
	Cables equal to IEC 60227 or IEC 60245		P
5.2.3	Type of attachment, X, Y or Z	Type X	P
5.2.5	Type Z not connected to screws		N/A
5.2.6	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
5.2.7	Cable entries through rigid material have rounded edges		N/A
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
5.2.9	Locking of screwed bushings		N/A
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
5.2.10.1	Cord anchorage for type X attachment:		P
	a) at least one part fixed		P
	b) types of cable		P
	c) no damaging of the cable		P
	d) whole cable can be mounted		P
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		P
	Glands not used as anchorage		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Labyrinth type anchorages		N/A
5.2.10.2	Adequate cord anchorage for type Y and type Z attachment		N/A
5.2.10.3	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) ..... :		N/A
	- torque test: torque (Nm) ..... :		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
5.2.11	External wiring passing into luminaire		P
5.2.12	Looping-in terminals		N/A
5.2.13	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
5.2.14	Mains plug same protection		P
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
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
5.2.17	No standardized interconnecting cables properly assembled		N/A
5.2.18	Used plug in accordance with		P
	- IEC 60083		P
	- other standard		N/A
5.3	**Internal wiring**		**N/A**
5.3.1	Internal wiring of suitable size and type		N/A
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²)..... :		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation thickness (mm) ..... :		N/A
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Cross-sectional area (mm²)..... :		N/A
5.3.1.3	Double or reinforced insulation for class II		N/A
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		N/A
5.3.1.6	Insulation thickness other than PVC or rubber		N/A
5.3.2	Sharp edges etc.		N/A
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
5.3.3	Insulating bushings:		
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
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

8	**PROTECTION AGAINST ELECTRIC SHOCK**		P
8.2.1	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
8.2.2	Portable luminaire adjusted in most unfavourable position		N/A
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
8.2.3.b	BC lampholder of metal in class I luminaires shall be earthed		N/A
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
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
8.2.4	Portable luminaire has protection independent of supporting surface		N/A
8.2.5	Compliance with the standard test finger or relevant probe		P
8.2.6	Covers reliably secured		P
8.2.7	Luminaire other than below with capacitor > 0,5 µF not exceed 50 V 1 min after disconnection		N/A

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
12	**ENDURANCE TEST AND THERMAL TEST**		P
	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
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)	—
12.3	**Endurance test**		**P**
	a) mounting-position ..... :	Acc. to user manual	—
	b) test temperature (°C) ..... :	50	—
	c) total duration (h) ..... :	240	—
	d) supply voltage (V) ..... :	264	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) ..... :		—
	e) luminaire ceases to operate		—
12.3.2	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
12.4	**Thermal test (normal operation)**	(see Annex 2)	P
12.5	**Thermal test (abnormal operation)**	(see Annex 2)	N/A
12.6	**Thermal test (failed lamp control gear condition):**		**N/A**
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

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
12.7	**Thermal test (failed lamp control gear in plastic luminaires):**		**N/A**
12.7.1	Luminaire without temperature sensing control		N/A
12.7.1.1	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W ..... :		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions ..... :		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test ..... :		N/A
12.7.1.2	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test ..... :		N/A
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

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
12.7.2	Luminaire with temperature sensing control		N/A
	- thermal link..... :	Yes ☐ No ☐	—
	- manual reset cut-out ..... :	Yes ☐ No ☐	—
	- auto reset cut-out ..... :	Yes ☐ No ☐	—
	- case of abnormal conditions ..... :		—
	- highest measured temperature of fixing point/ exposed part (°C): ..... :		—
	Ball-pressure test: ..... :		N/A
9	**RESISTANCE TO DUST AND MOISTURE**		P
	If IP > IP 20 the order of tests as specified in clause 1.12		P
9.2	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP20	—
	- mounting position during test ..... :	Acc. to user manual	—
	- fixing screws tightened; torque (Nm) ..... :	Cl. 9.2.0	—
	- tests according to clauses..... :		—
	- electric strength test afterwards		P
	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
9.3	Humidity test 48 h		P
10	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
10.2.1	Insulation resistance test		P

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø ..... :	Metal foil	—
	Insulation resistance (MΩ) ..... :	See below	—
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	>100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire..... :	>100 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		P
	- between live parts of different polarity ..... :		N/A
	- between live parts and mounting surface ..... :	>100 MΩ (test with power supply)	P
	- between live parts and metal parts ..... :	>100 MΩ (test with power supply)	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
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) ..... :	See below	P
	SELV		P
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	500 V	P
	- between current-carrying parts and metal parts of the luminaire..... :	500 V	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

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts of different polarity ..... :		N/A
	- between live parts and mounting surface ..... :	2960 V (test with power supply)	P
	- between live parts and metal parts ..... :	2960 V (test with power supply)	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
10.3	Touch current or protective conductor current (mA).:	Touch current: 0.001 mA < 0.7 mA (Test with power supply)	P

ANNEX 1	TABLE: Critical components information					P
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Description:	See ANNEX 1 of IEC 61347-2-11					
Description:						
Description:						

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

Attachment 1: IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		P
	Type reference ..... :	LUMM0019	—
	Lamp used..... :	Resistive load	—
	Lamp control gear used..... :	AS013W-0502000ZC	—
	Mounting position of luminaire ..... :	Acc. to user manual	—
	Supply wattage (W) ..... :	3.71	—
	Supply current (A) ..... :	0.04	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	40	—
	- abnormal operating mode ..... :	---	—
12.4	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1.06*240=254.4	—
	- 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 ..... :	---	—
12.5	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	---	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Power supply (contact surface)	40	---	51.3	---	70	---	---
Power supply (accessible)	40	---	44.9	---	75	---	---
Output wire of power supply	40	---	44.7	---	80	---	---
Control link cable	40	---	46.0	---	80	---	---
Temperature sensor cable	40	---	42.9	---	80	---	---
DC inlet (J2)	40	---	51.6	---	Cl.18	---	---
DC inlet (J3, J4)	40	---	54.3	---	Cl.18	---	---
DC inlet (J5, J6)	40	---	52.0	---	Cl.18	---	---
T1 magnet wire	40	---	53.0	---	140	---	---
C21	40	---	52.2	---	105	---	---
Battery support	40	---	52.6	---	Cl.18	---	---
Relay	40	---	70.3	---	85	---	---
SW1 surface	40	---	45.2	---	Ref.	---	---

Attachment 1: IEC 60598-1							
Clause	Requirement + Test			Result - Remark			Verdict
Connector for display screen	40	---	54.4	---	Cl.18	---	---
Control PCB	40	---	60.3	---	Cl.18	---	---
Screen PCB	40	---	56.6	---	Cl.18	---	---
Metal surface	40	---	47.3	---	Ref.	---	---
Mounting surface	40	---	46.7	---	90	---	---
Supplementary information:							

====== End of Attachment 1 ======

Attachment 2: Photo Documentation

Model: LUMM0019

Photo 1

Description: Overview.

Photo 2

Description: Overview_ Wiring diagram.

Attachment 2: Photo Documentation

Photo 3

Description: Rear view

Photo 4

Description: Internal view

Attachment 2: Photo Documentation

Photo 5

Description: Internal view

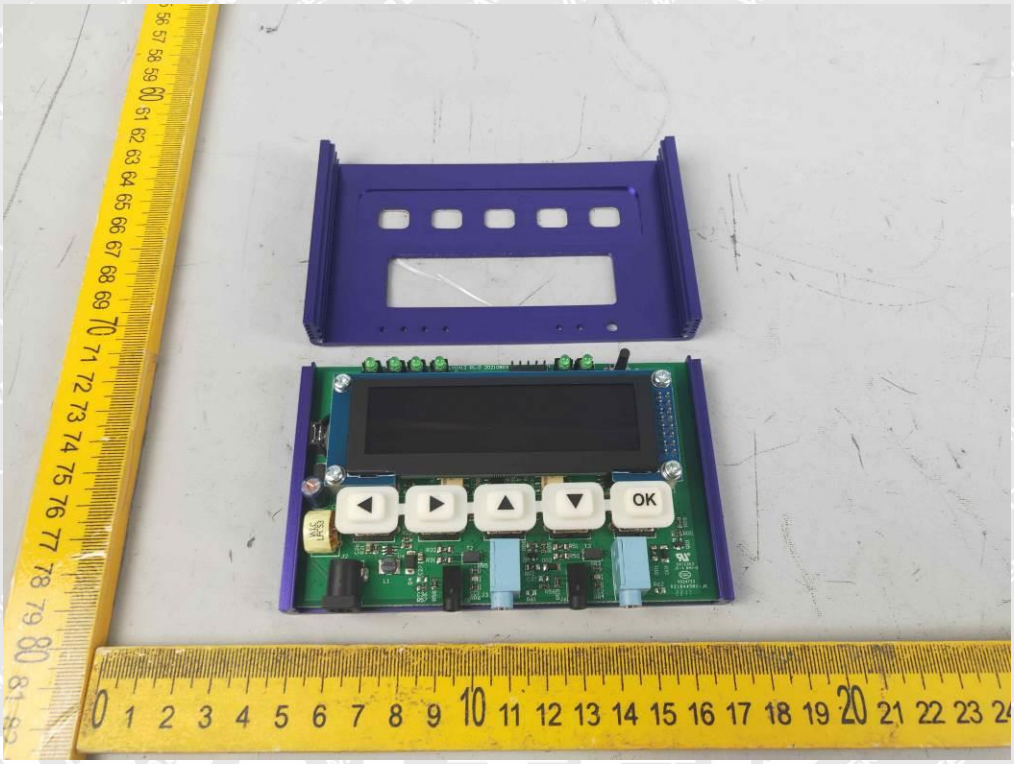
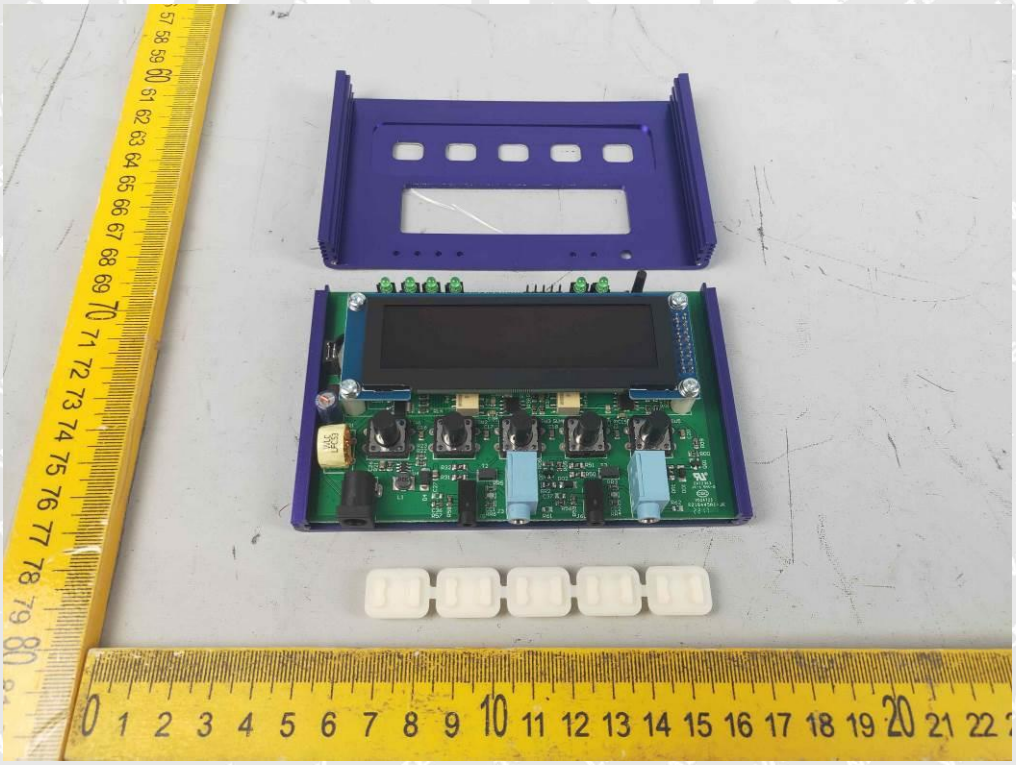


Photo 6

Description: Internal view



Attachment 2: Photo Documentation

Photo 7

Description: Internal view

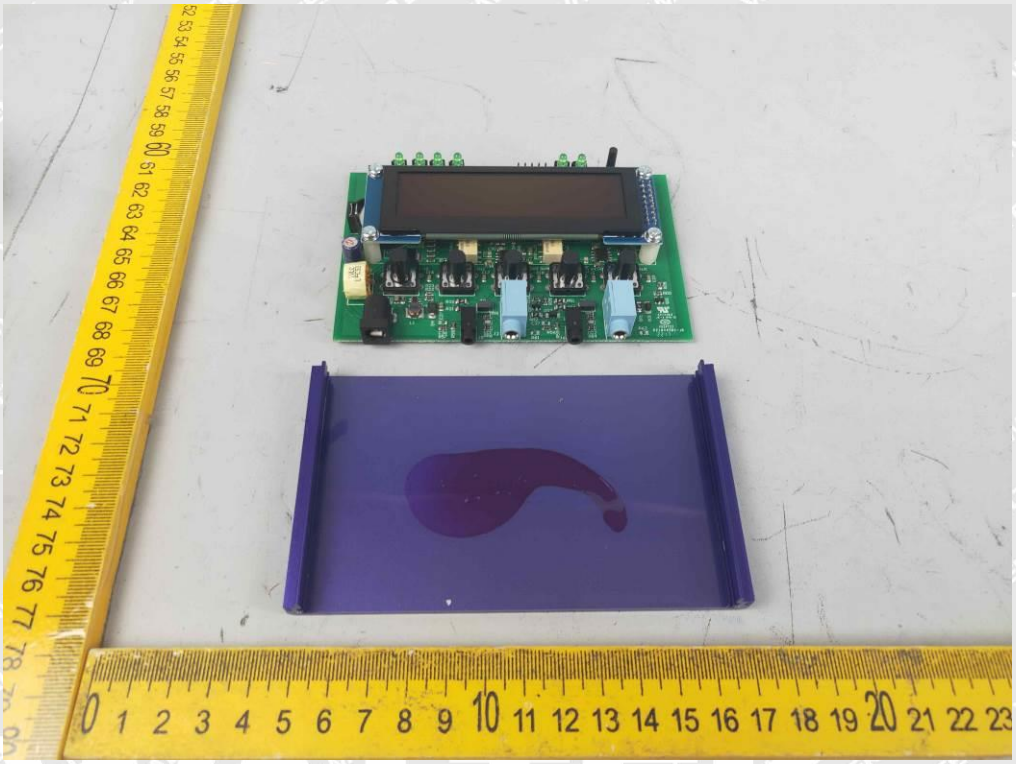


Photo 8

Description: Internal view _ Transparent insulation sheet

Attachment 2: Photo Documentation

Photo 9

Description: Internal view

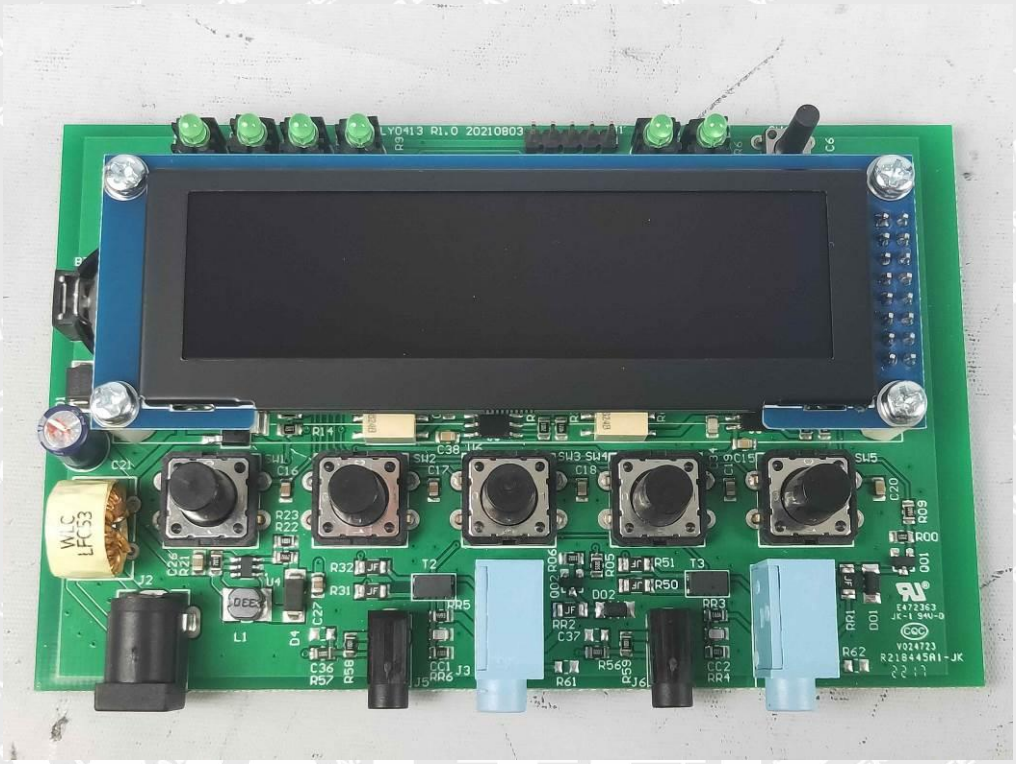
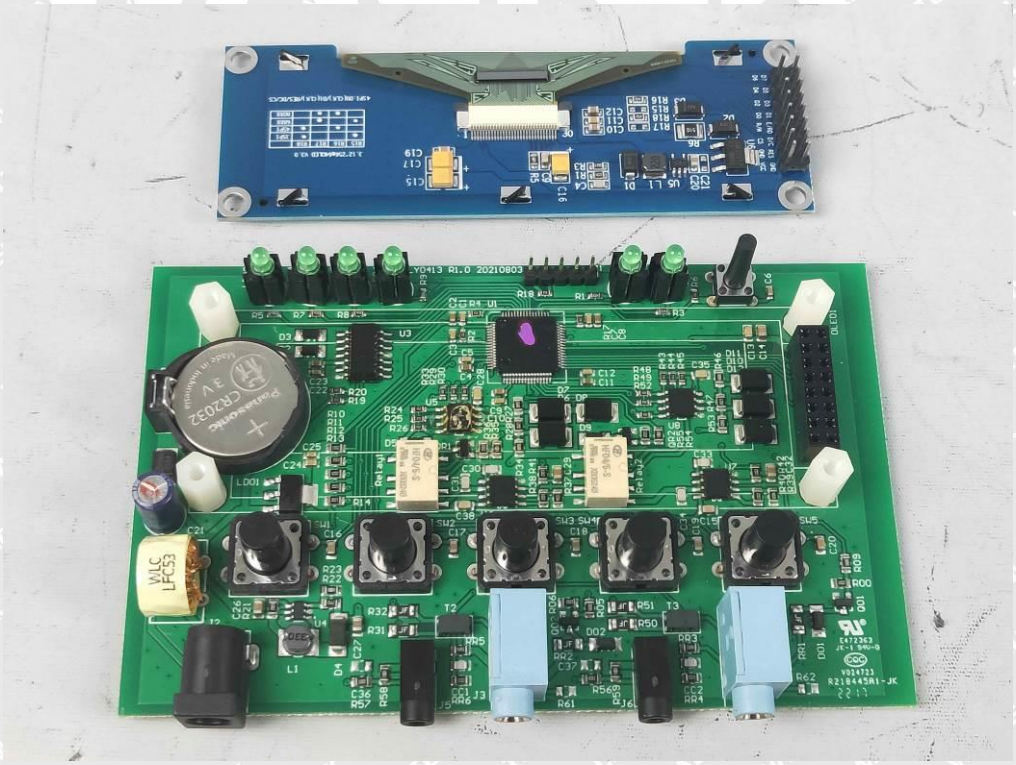


Photo 10

Description: Internal view



Attachment 2: Photo Documentation

Photo 11

Description: Internal view

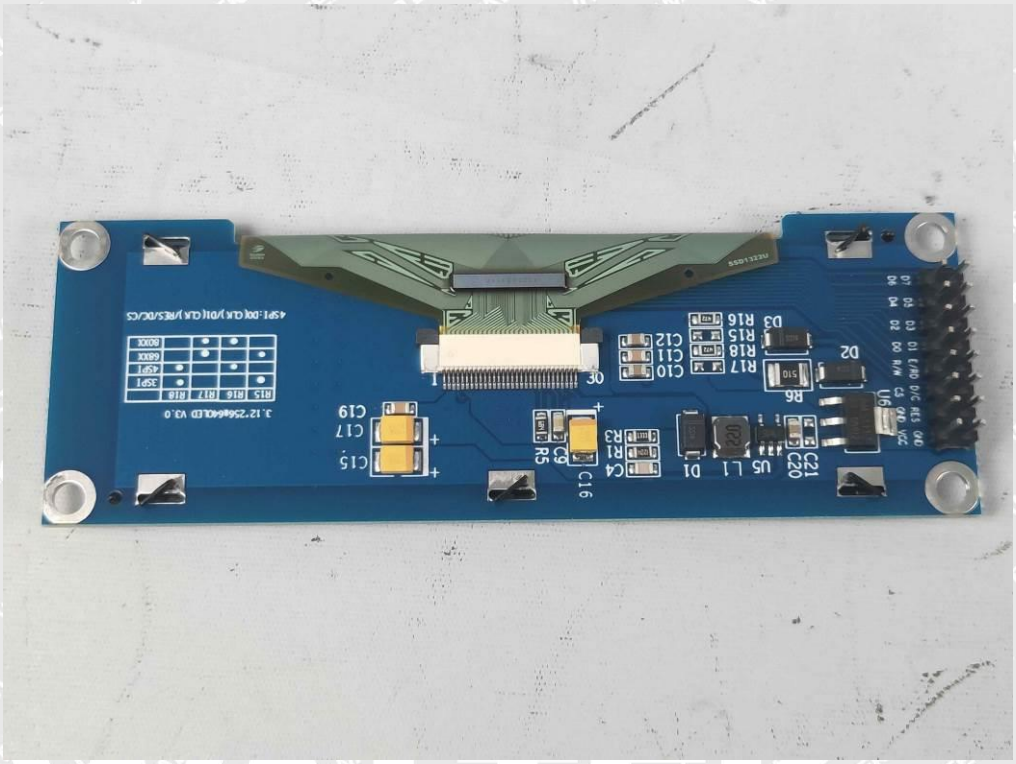
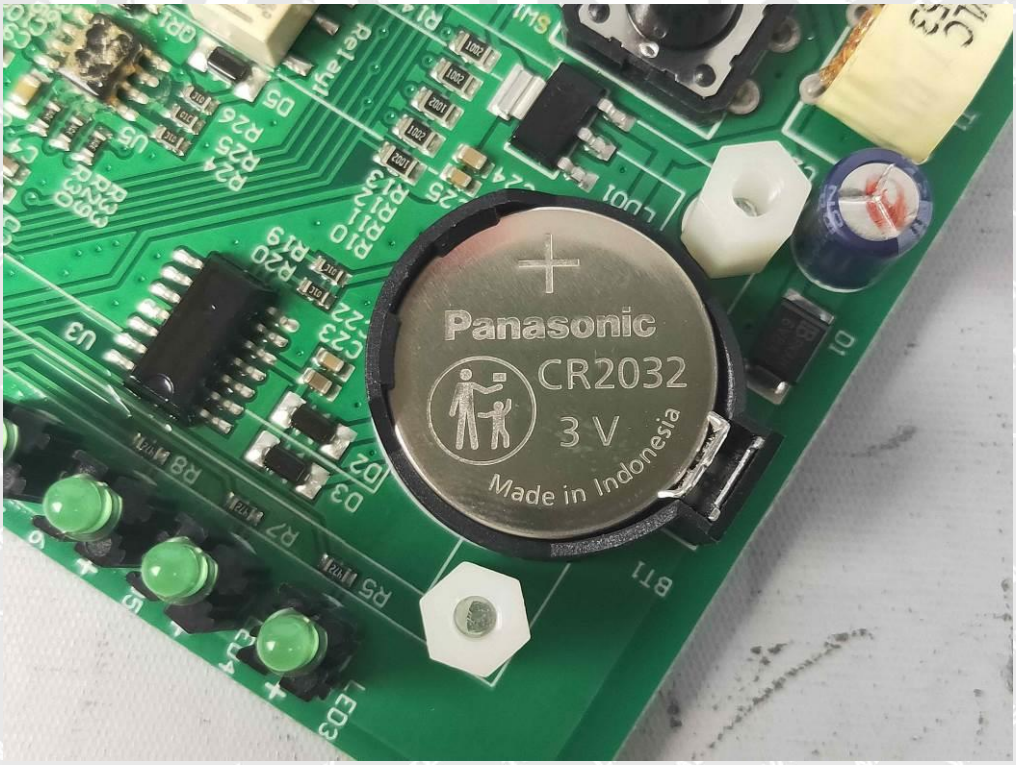


Photo 12

Description: Internal view



Attachment 2: Photo Documentation

Photo 13

Description: Internal view

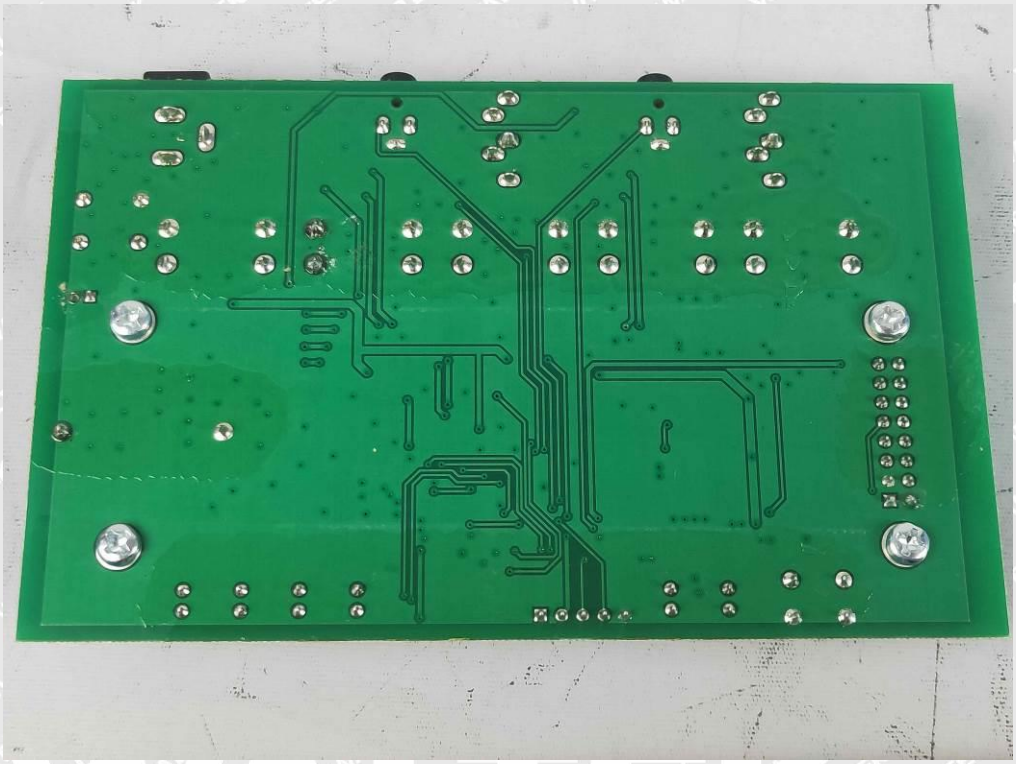


Photo 14

Description: Power supply _ UK plug

Attachment 2: Photo Documentation

Photo 15

Description: Power supply _ EU plug

Photo 16

Description: Label of power supply

Attachment 2: Photo Documentation

Photo 17

Description: Temperature sensor cable.

Photo 18

Description: Control link cable.

====== End of Attachment 2 ======