

CERTIFICATES



Short Circuit Company
For Services And Lighting Solutions



sc driver

IEC TEST REPORT



Short Circuit Company
For Services And Lighting Solutions

ILAC TEST RESULTS

This document is showing the IEC test results for **SC_™ Driver**, which means that the driver is ILAC approved.

Short Circuit Company is providing a wide range of variety of products, and for certain specifications, the company may provide a different driver. In this case, the company's representative will send the approvals and tests for the driver.

Test Report issued under the responsibility of:



TEST REPORT IEC 61347-2-13 PART 2: PARTICULAR REQUIREMENTS: SECTION 13 – D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED modules	
Report Number.....	RGT2024012300401
Date of issue.....	2023-11-23
Total number of pages.....	40 pages (include attachments)
Applicant's name.....	Short Circuit Company
Address.....	Yousef Amer St., El-talbeya El-qebleyah Al-omrania, Giza, Egy
Test item description.....	LED driver
Trade Mark(s)	Short Circuit company
Manufacturer.....	Same as applicant
Model/Type reference.....	SC-50W
Ratings.....	86-265V~ 50/60Hz, 50W, IP65 Built-in SELV, Constant current type, Other information see 'General product information'
Test specification:	
Standard.....	IEC 61347-2-13:2014, AMD1:2016 used in conjunction with IEC 61347-1:2015, AMD1:2017
Test procedure.....	IEC test report
Non-standard test method.....	N/A
General disclaimer:	
The test results presented in this report relate only to the object tested.	
The uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.	
This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity or use of our name or trademark is permitted only with our prior written permission.	
The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. The report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 30 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, however, such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention.	


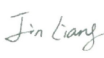
Ring Testing Technology
(Zhongshan) Co., Ltd.
维茵检测技术(中山)有限公司

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TRF No. RGT_LUM_TEST_IEC_EN 61347-2-13 REV.00



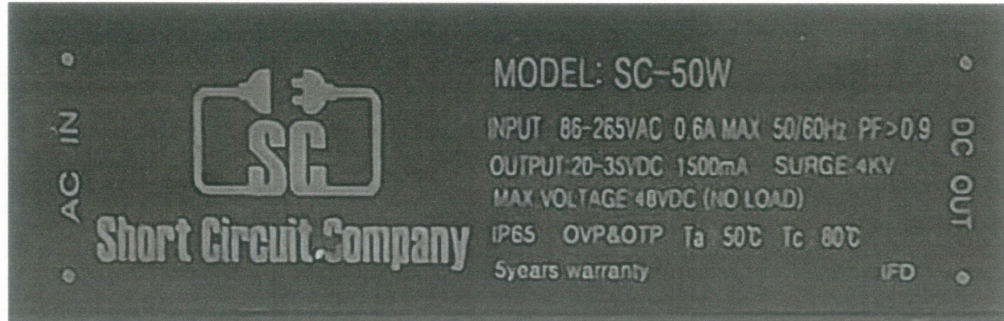
List of Attachments (including a total number of pages in each attachment): Attachment 1: Clearance and creepage distance measurements, temperature measurements, totally 2pages. Attachment 2: Additional requirements for IP test of IEC 60598-1:2020, totally 1 pages. Attachment 4:Photo documentation, totally 5 pages.	
Summary of testing: One model	
Tests performed (name of test and test clause): All clauses	Testing location: Ring Testing Technology (Zhongshan) Co., Ltd. Room 203, 2nd Floor, Building D, Wanwei Lighting Plaza, No.59 Tongxing Road, Guzhen Town, Zhongshan City, China.
Tested by (Name, function, signature)	Sunny Lu/ Project Engineer 
Approved by (Name, function, signature)	Jin Liang/ Project Manger 
Summary of compliance with National Differences (List of countries addressed): N/A	

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Copy of marking plate:

The artwork below may be only a draft.

Representation:



For LED module only

Made in Egypt

Location: Attached on or printed in the surface of LED driver

Remark:

The height of WEEE symbol should not less than 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.



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Test item particulars..... :	
Classification of installation and use..... :	LED driver for built-in used only
Supply Connection..... :	Non-detachable lead wire
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..... :	2023-11-05
Date (s) of performance of tests..... :	2023-11-05 to 2023-11-23
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Clause numbers between brackets refer to clauses in IEC 61347-1. Any holder of this document is advised that information contained hereon reflects the RGT's findings at the time of its intervention only and within the limits of RGT's instructions, if any. The RGT's sole responsibility is to RGT's 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 RGT. 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.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60730-1:	
The application for obtaining a 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..... :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... : Same as applicant	
General product information and other remarks:	
Products covered by this report is IP65, built-in LED driver with basic insulation enclosure.	

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

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

6 (6)	CLASSIFICATION		—
	Built-in controlgear	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Independent controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
6 (-)	Auto-wound controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Separating controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Isolating controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	SELV controlgear	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—

7 (7)	MARKING		—
7.1 (7.1)	Mandatory markings		P
	a) mark of origin		P
	b) model number or type reference		P
	c) symbol for independent controlgear, if applicable		P
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)	86-265V	P
	supply frequency (Hz)	50/60Hz	P
	supply current (A)	Indicated on the rating label.	P

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	f) earthing symbol		N/A
	k) wiring diagram		N/A
	l) value of t_c	Indicated on the rating label.	P
	m) symbol for declared temperature		N/A
	t) LUM earthing symbol		N/A
	u) if not SELV maximum working voltage U_{out} between:		N/A
	- output terminals (V)		N/A
	- output terminals and earth (V)		N/A
7.1 (-)	Constant voltage type:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- rated output power P_{rated} (W)		N/A
	- rated output voltage U_{rated} (V)		N/A
	Constant current type:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	- rated output power P_{rated} (W)	Indicated on the rating label.	P
	- rated output current I_{rated} (A)	Indicated on the rating label.	P
	Indication if for LED modules only		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
	h) declaration of protection against accidental contact		P
	i) cross-section of conductors (mm ²)		N/A
	j) number, type and wattage of lamp(s)	Present at instruction manual	P
	s) SELV symbol		P
7.2 (-)	- declaration of mains connected windings		N/A

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 k Ω	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		P

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V	0V after 1 min	P
- (10.3)	Controlgear providing SELV		P
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		P
	No connection between output circuit and the body or protective earthing circuit		P
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	P
- (10.4)	Accessible conductive parts in SELV circuits		P
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.	≤ 60 VDC	P
	If output voltage > 25 V r.m.s. or > 60 V d.c.: No load output ≤ 35 V peak or ≤ 60 V d.c. and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.	≤ 60 VDC	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	One approved Y1 capacitor	P
	Y1 or Y2 capacitors comply with IEC 60384-14		P
	Resistors comply with test (a) in 14.1 of IEC 60065	No such components	N/A

9 (8)	TERMINALS		N/A
- (8.1)	Integral terminals		N/A
	Screw terminals according section 14 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(see Annex 2)	N/A

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Screwless terminals according section 15 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(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 PROTECTIVE 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
	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: $< 0,5 \Omega$		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



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (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 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: $< 0,5 \Omega$		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 $\geq 2 \text{ M}\Omega$	$> 100 \text{ M}\Omega$	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$	$> 100 \text{ M}\Omega$	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1	See Annex L	P

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	Between output and enclosure	P
	Working voltage $\leq 50 \text{ V}$, test voltage 500 V		N/A
	Working voltage $> 50 \text{ V} \leq 1000 \text{ V}$, test voltage (V):		P
	Basic insulation, $2U + 1000 \text{ V}$	1530V (between different polarities of input, fuse open)	P
	Supplementary insulation, $2U + 1000 \text{ V}$		N/A
	Double or reinforced insulation, $4U + 2000 \text{ V}$		N/A
	No flashover or breakdown		P

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	Short-circuit or interruption of SPDs	(see appended table)	P
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$: $> 100 \text{ M}\Omega$		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		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
15 (-)	TRANSFORMER HEATING		P
15.1	General		P
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		P
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		N/A
15.2 (-)	Normal operation		P
	Comply with clause L.6 of IEC 61347-1		P
15.3 (-)	Abnormal operation		P
	Comply with clause L.7 of IEC 61347-1		P
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		N/A
	Double LED modules or equivalent load connected in serial to the output terminals of constant current type		P
15 (-)	During and at the end of the tests, no defect impairing safety, nor any smoke or flammable gases produced		P
16 (15)	CONSTRUCTION		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	Plugs and socket-outlets used in SELV or ELV circuits		N/A
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV $\leq 3\text{ A}$, $\leq 25\text{ V}$ r.m.s. or $\leq 60\text{ V d.c.}$ and $\leq 72\text{ W}$ 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



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		P
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		P
	- another source		N/A
	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
- (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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm).....:		N/A

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

20 (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

21 (-)	MAXIMUM WORKING VOLTAGE (U_{out}) IN ANY LOAD CONDITION		N/A
	Not exceed declared maximum working voltage U_{out} in any load condition		N/A

14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
RV1	Short circuit; Fuse open immediately, no hazards.		NO
D1	Short circuit; Fuse open immediately, no hazards.		NO
D4	Short circuit; Fuse open immediately, no hazards.		NO
Q1 (S&G)	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO
Q1 (S&D)	Short circuit; Fuse open immediately, no hazards.		NO
Q1 (D&G)	Short circuit; Fuse open immediately, no hazards.		NO
C2	Short circuit; Fuse open immediately, no hazards.		NO
U1(1-8)	Short circuit; Fuse open immediately, no hazards.		NO
D6	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO
D7	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO
D8	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO
EC1	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO
Output	Short circuit; Unit shutdown immediately, no hazards. Recovered.		NO

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

19 (18.1)	TABLE: Ball Pressure Test			P
Allowed impression diameter (mm).....				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Bobbin of transformer	See Annex 1	137	1.2	
PCB	See Annex 1	128	1.3	
Plastic insulation sheet	See Annex 1	114	1.5	
Side enclosure cover	See Annex 1	82	1.5	
Supplementary information:/				

19 (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
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Supplementary information:					

19 (18.3)	TABLE: Glow-wire test				P
Glow wire temperature..... :				650°C	—
Object/ Part No./ Material	Manufacturer/ trademark		Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Potting material	See Annex 1		No	0	P
Plastic insulation sheet	See Annex 1		No	0	P
Side enclosure cover	See Annex 1		No	0	P
Supplementary information:					

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IEC 61347-2-13					
Clause	Requirement + Test			Result - Remark	Verdict
19 (18.4)	TABLE: Needle-flame test				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
PCB	See Annex 1	10	No	0	P
Bobbin of transformer/ inductor	See Annex 1	10	No	0	P
Supplementary information:					

19 (18.5)	TABLE: Proof tracking test				P
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
PCB	See Annex 1	Yes	Yes	Yes	P
Bobbin of transformer/inductor	See Annex 1	Yes	Yes	Yes	P
Potting material	See Annex 1	Yes	Yes	Yes	P
Supplementary information:					

(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			P
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c.			N/A
	Comply with Annex G.2 of IEC 60598-1			N/A

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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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 ...:	Internal circuit	—
(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
	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



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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

I (L)	ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES	P
(L.3)	Classification	P
	Class I	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	Class II	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	Class III	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	non-inherently short circuit proof controlgear	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	d) live parts and an intermediate metal part		N/A
	e) intermediate metal parts and the body		N/A
	f) each input circuit and all other input circuits		N/A
	3) Over reinforced insulation between the body and live parts	3000 V	P
(L.9)	Construction		P
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		P
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	Components		P
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	Creepage distances, clearances and distances through insulation		P
	Creepage distances and clearances not less than in Clause 16		P
	Distance through insulation according Table L.5 in IEC 61347-1		P
	1) Basic distance through insulation		N/A
	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		P
	Required distance (mm)	0.15	—
	Measured (mm)	0.16	P
	Supplementary information	three layer insulation tape between core of transformer and sec. component	—
J (-)	ANNEX J IN THIS PART 2 – PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING		N/A
J.1	General		N/A

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Intended for centralized emergency power supply	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
J.2	Marking		N/A
J.2.1	Mandatory markings		N/A
	a) symbol EL		N/A
	b) rated emergency supply voltage (V)		N/A
J.2.2	Information to be provided if applicable		N/A
	a) Limits of ambient temperature		N/A
	b) Emergency output factor (EOF _x)		N/A
	c) Information if intended for use in luminaires for high-risk task area lighting		N/A
J.3	General notes on tests		N/A
	Length of output cable in tests..... :		N/A
	Load instead of LED lamps/modules..... :		N/A
J.4	Starting conditions		N/A
	Start rated load in emergency mode without adversely affecting the performance		N/A
J.5	Operating condition		N/A
	Comply with the requirements of 7.2 of IEC 62384 at 90% and 110% of rated emergency supply voltage		N/A
J.6	Emergency supply current		N/A
	Emergency supply current not differ more than ±15 %		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF _x)		N/A
	Declared emergency output factor (EOF _x) achieved during emergency operation		N/A

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(N)	ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION		P
(N.4)	General requirements		P
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		P
(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		P
(N.4.3.1)	Thickness and composition of thin sheet insulation		P
	- 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		P
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		P
	Electric strength test after mandrel test:		P
	- 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		P
	- 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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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 (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 according clause 12 reduced to 35 % of values according Table 3 in part 1		N/A
	Insulation resistance according to O.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
	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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Comply with corresponding values for luminaires 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)	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
	Supplementary information		—

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(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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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information	P
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Object/part No.	Code	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
Input wire of LED driver	B	Zhongshan Guzhen Yuanben Cable & Plug Factory	H03VH7-H	300V/300 V, 0.5-0.75 mm ² , 0..75 mm ²	DIN VDE 0281-8	VDE 40023609
Output wire of LED driver	B	Zhongshan Henglan Boyi Electrical Appliance Factory	H05V-K	300V/500 V, 0.5-0.75 mm ²	EN 50525-2- 31	VDE 40036731
PCB of LED driver	C	KINGBOARD LAMINATES HOLDINGS LTD	KB-6150A	FR-4.0, 130°C, V-0, thickness: min. 1.5mm	IEC61347-1 IEC 61347-2- 13	Tested with appliance & UL E123995
Fuse (F1)	B	Shenzhen Great Electronic Co., Ltd	RXF- 1W	10Ω , 1W	IEC 62031 IEC 60598- 1	Tested with appliance & UL E301541
NTC(RT1)	C	HONGZHI ENTERPRISES LTD	5D-9	50, D11mm, T155	IEC61347- 1 IEC61347-2- 13	Tested with appliance & UL E319959
Varistor (MOV1,MOV2)	B	Dongguan City Dafu Electronics Co. Ltd	10D561K	350 V; 125 。 C	IEC 61051-2- 2; IEC 61051- 2; IEC 61051- 1	VDE 40050909
Y-capacitor CY1	B	JYH HSU (JEC) ELECTRONICS LTD	JD	400V, 3.3nF, 85- 125°C	IEC/EN 60384-14	VDE 40038642
Transformer (T1)	C	Short Circuit company	083639A	Class B	IEC61347- 1 IEC61347-2- 13	Tested with appliance
Bobbin of T1	C	CHANG CHUN PLASTICS Co., Ltd.	T375J	V-0, 150°C	IEC61347- 1 IEC61347-2- 13	Tested with appliance & UL E59481
Primary winding of transformer T1	C	ZHANGJIAGAN G HUAFA ELECTRONIC MATERIAL CO LTD	xUEW/155	155°C	IEC61347- 1 IEC61347-2- 13	Tested with appliance & UL E347484
Second winding of transformer T1	C	Shenzhen Darun Science & Technology Co.,Ltd	DRTIW-F	155°C	DIN EN 62368- 1	VDE 40032470

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IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
Insulation tape	C	SHENZHEN YIDAXING TECHNOLOGY CO LTD	YDX-PI101	180°C	IEC61347- 1 IEC61347-2-13	Tested with appliance & UL E468866
Teflon tube	C	DONG GUAN NAN DIAN INSULATION MATERIALS CO LTD	ND-TT	300V, 200°C	IEC61347- 1 IEC61347-2-13	Tested with appliance & UL E350651
Insulation sheet	C	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	PC Thickness: 0.12mm	IEC61347- 1 IEC61347-2-13	Tested with appliance
Side enclosure cover	C	LG Chemical LTD	LUPOY SG-5000(#)	PC, Min. Thickness: 1.0 mm,	IEC61347- 1 IEC61347-2-13	Tested with appliance
Potting material	C	LINKTECHSILICONEMATERIAL COLTD	EncapSil1400	V-0, 150 °C,A/B	IEC61347- 1 IEC61347-2-13	Tested with appliance & UL E502051
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 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal		N/A
	Rated current (A)		N/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)	:	N/A
(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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

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

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IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(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)	--	--	--	--	--	--	--	--	--	--	
		Voltage drop after 50th alt. 100th cycle									--
		Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
		Continued ageing: voltage drop after 10th alt. 25th cycle									--
		Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
		Continued ageing: voltage drop after 50th alt. 100th cycle									--
		Max. allowed voltage drop (mV).....:					--				—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
Supplementary information:											

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IEC 61347-2-13_Attachment

Clause	Requirement + Test	Result - Remark	Verdict
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Attachment 1	Temperature measurements, creepage distances and clearances	P
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Type reference.....	SC-50W	—
Load used.....	Equivalent load	—
Mounting position of luminaire.....	On the black testing board	—
Tc.....	60°C	—
- test 1: rated voltage.....	—	—
- test 2: test voltage(normal).....	1.Normal Input: 1):Input:0.94UR =80.8V; I =0.588A; P =59.3W; Output: U=35V; I=1.38A, P=48.2W 2):Input:1.06UR = 280.9V; I =0. 199A; P =54.8W; Output: U =35V; I=1.38A, P =48.3W	—
- test 3: test voltage(abnormal).....	2.Short-circuit: 0 A / 0 W. 3.Double-load: 0 A / 0 W. 4.Overload: 1)Input:0.9UR =77.4V; I=0.612A; P=62.8W; Output: U=39.4V; I=1.352A; P=53.4W 2)Input:1. 1UR =291.5V; I=0.220A; P=63.6W; Output: U=39.6V; I=1.37A; P=54.5W	—

Temperature (°C) of part	Normal				Abnormal		
	Test 1	Test 2		Limit	Test 3		Limit
		1)	2)		1)	2)	
Input wire of LED driver	--	57.7	58.2	90	58.5	59.3	90
MOV 1	--	88.6	90.2	125	--	--	--
MOV 2	--	87.8	90.1	125	--	--	--
NTC1	--	98.9	99.0	155	--	--	--
C2 (E-Cap)	--	82.6	83.1	105	85.7	86.7	115
Pri.Winding of T1	--	105.2	106.8	120	109.8	112.7	175
Sec.Winding of T1	--	103.8	105.5	120	107.9	109.3	175
Bobbin of T1	--	105.7	105.9	150	--	--	--
PCB under T1	--	100.6	102.4	130	--	--	--
CY1	--	81.6.	81.7	125	--	--	--
C7 (E-Cap)	--	78.9	80.2	105	81.2	83.5	115

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IEC 61347-2-13_Attachment

Clause	Requirement + Test				Result - Remark		Verdict
Plastic insulation sheet	--	88.7	89.8	Ref.	--	--	--
Internal surface of enclosure under T1	--	90.9	91.7	Ref.	--	--	--
Internal surface of enclosure above T1	--	88.8	89.5	Ref.	--	--	--
External surface of enclosure above T1(Tc point)	--	79.9	80	80	82.7	82.9	105
External surface of enclosure under T1	--	81.5	82.2	80	87.7	88.9	105
Side enclosure cover		55.0	56.7	Ref.	--	--	--
Output wire of LED driver		55.9	56.9	90	57.8	59.0	90
Ambient		45.2	45.3	Ref.	--	--	--

Creepage distances and clearances

Clearance cl and creepage distance cr at/of:	U r.m.s. (V)	required cl (mm)	Cl (mm)	required cr (mm)	Cr (mm)
Different polarity between L and N (BI)	265	1.5	2.8	2.7	2.8
Different polarity under Fuse (BI)	265	1.5	2.8	2.7	2.8
Primary track to secondary track(RI)	265	3.0	8	5.3	8
Between Primary and secondary circuit of CY1\CY2\CY3 (RI)	265	3.0	5.5	5.3	5.5
Between Primary and secondary circuit of T1 (RI)	265	3.0	6.5	5.3	6.5
Primary circuit to accessibly plastic enclosure(RI)	265	1.5	>4.5	2.7	>4.5

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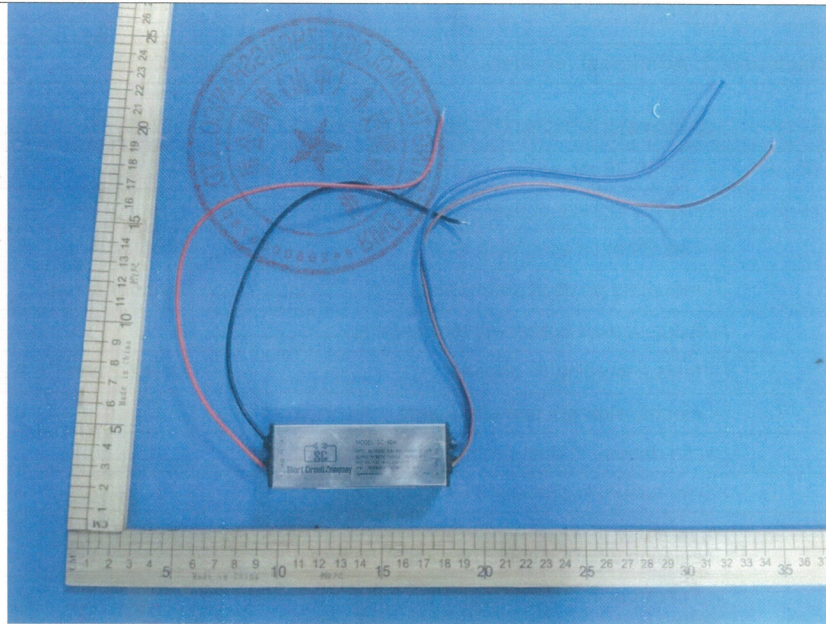
IEC 61347-2-13_Attachment			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment 2: Additional requirements for IP test of IEC 60598-1:2020	P
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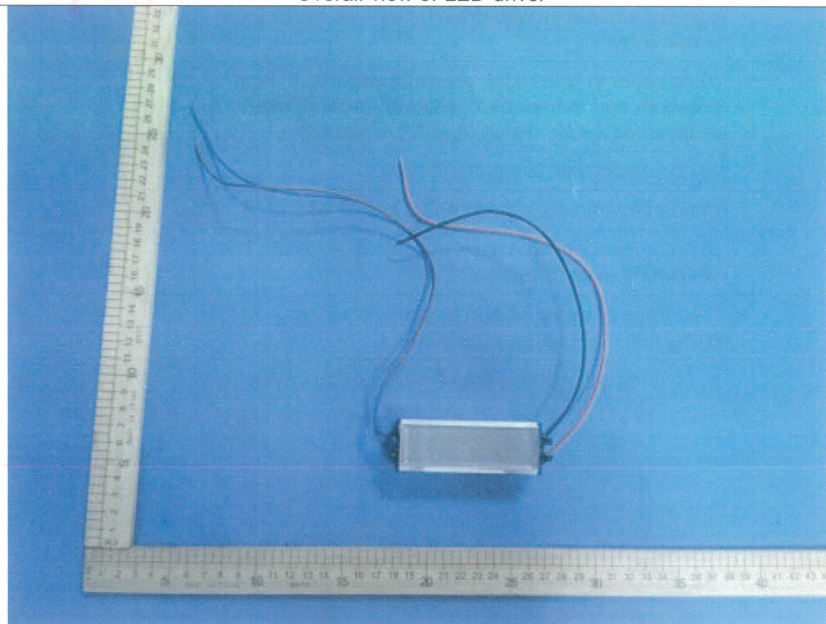
1.14 (9)	RESISTANCE TO DUST AND MOISTURE	P
1.14 (-)	If IP > IP 20 the order of tests as specified in clause 1.12	P
1.14 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP.....: IP65	—
	- mounting position during test.....: As normal use	—
	- fixing screws tightened; torque (Nm).....: --	—
	- tests according to clauses.....: CI 9.2.2 and CL 9.2.6	—
	- electric strength test afterwards	P
	a) no deposit in dust-proof luminaire	N/A
	b) no talcum in dust-tight luminaire	P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard	P
	c.1) For luminaires without drain holes – no water entry	P
	c.2) For luminaires with drain holes – no hazardous water entry	N/A
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire	N/A
	e) no contact with live parts (IP 2X)	N/A
	e) no entry into enclosure (IP 3X and IP 4X)	N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)	N/A
	f) no trace of water on part of lamp requiring protection from splashing water	N/A
	g) no damage of protective shield or glass envelope	N/A

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Attachment 3: product photos



Overall view of LED driver



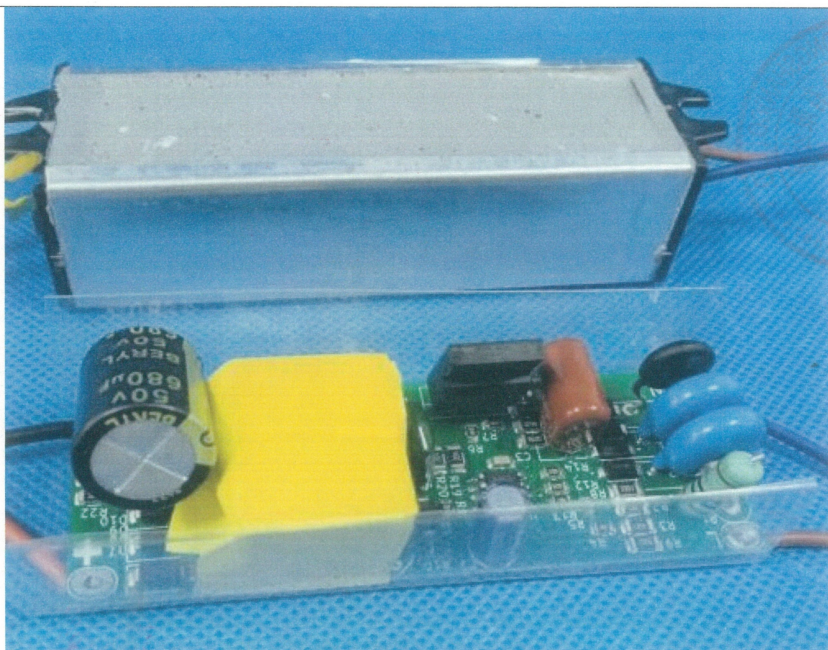
Rear view of LED driver

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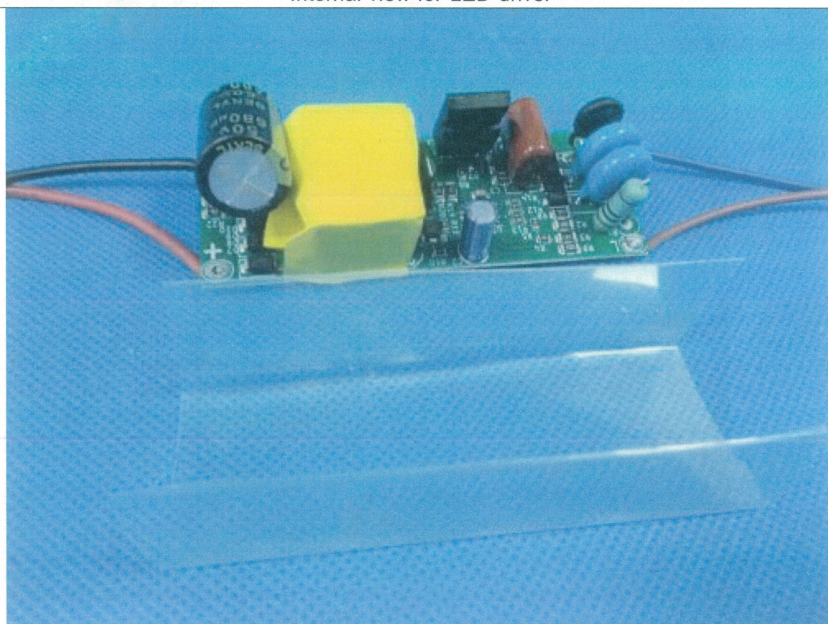
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Attachment 3: product photos



Internal view for LED driver



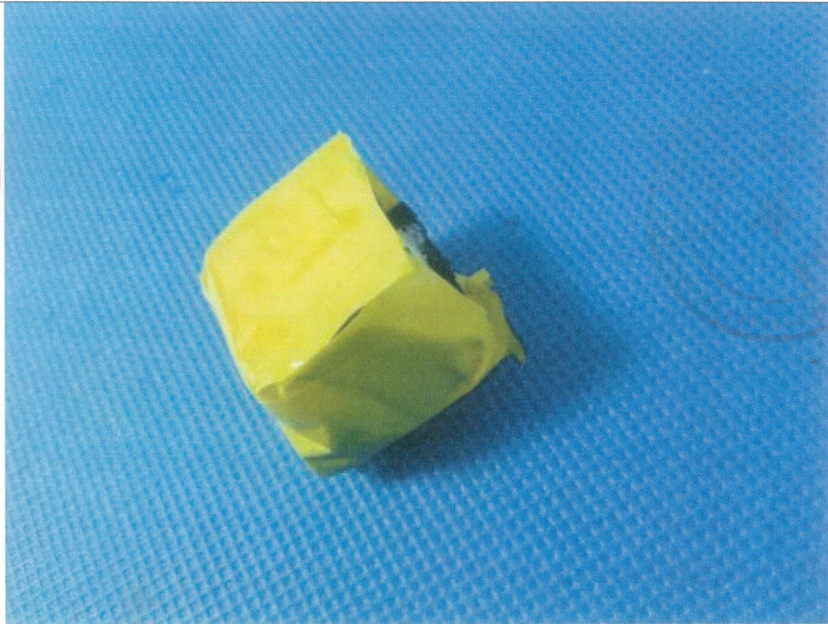
Internal view for LED driver

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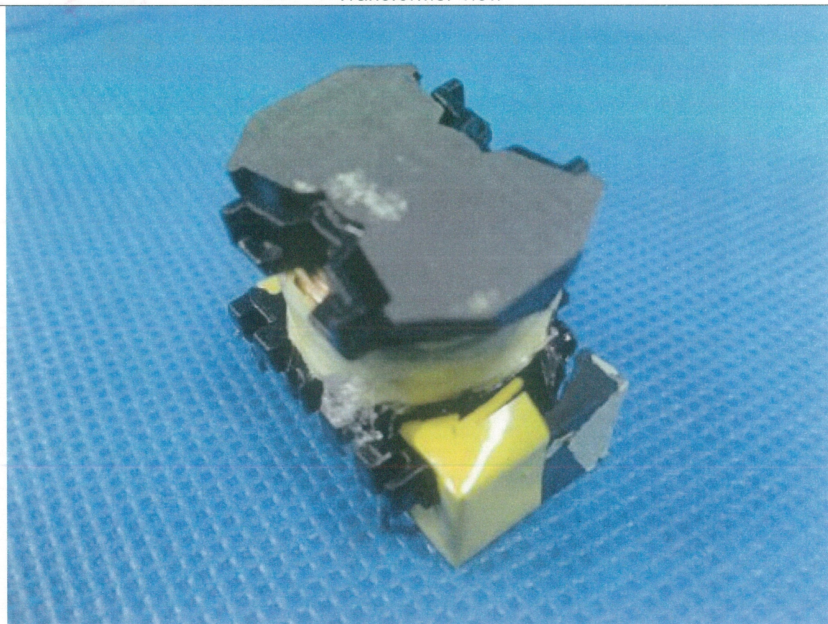
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Attachment 3: product photos



Transformer view



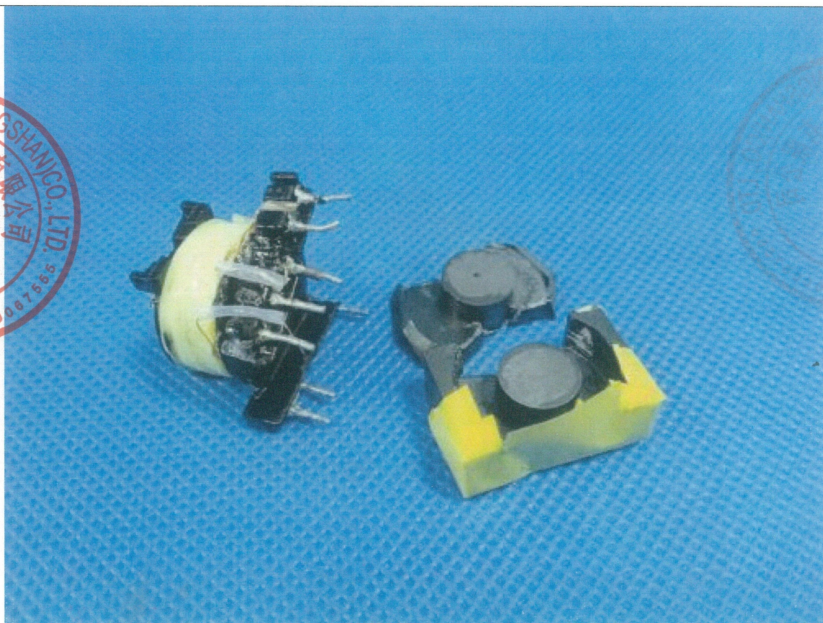
Transformer detail view

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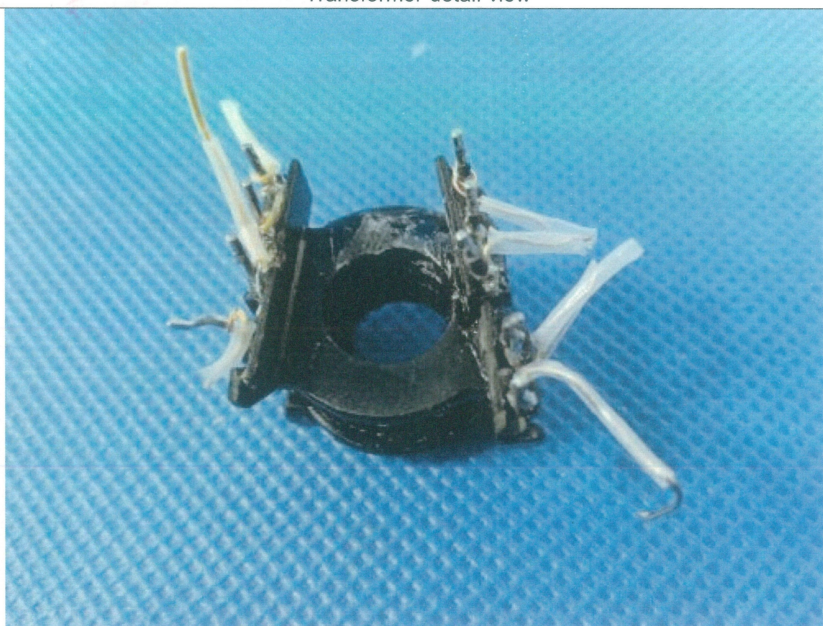
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Attachment 3: product photos



Transformer detail view



Transformer detail view

---End of Report---

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