



Ref. Certif. No.

DE 2-029826

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME**CB TEST CERTIFICATE**

Product	Power supplies (LED Driver)
Name and address of the applicant	Shenzhen Boxinqi Technology Co.,Ltd Room 15K, D Block, Huaqiang Square, Futian District, Shenzhen, Guangdong, P.R. China
Name and address of the manufacturer	Shenzhen Boxinqi Technology Co.,Ltd Room 15K, D Block, Huaqiang Square, Futian District, Shenzhen, Guangdong, P.R. China
Name and address of the factory	Shenzhen Boxinqi Technology Co.,Ltd Room 15K, D Block, Huaqiang Square, Futian District, Shenzhen, Guangdong, P.R. China
Ratings and principal characteristics	AC 200-240V; 50/60Hz; ta:45°C; tc:80°C; Class II; For other ratings, see the test report.
Trademark (if any)	boqi
Customer's Testing Facility (CTF) Stage used	N/A
Model / Type Ref.	BQ-010TNPC; BQ-012TNPC; BQ-015TNPC; BQ-020TNPC; BQ-030TNPC; BQ-050TNPC; BQ-060TNPC; BQ-012ANPC; BQ-015ANPC; BQ-020ANPC; BQ-030ANPC; BQ-050ANPC; for other model names, see test report.
Additional information (if necessary may also be reported on page 2)	-see also test report ref no. 60433448 001.
A sample of the product was tested and found to be in conformity with	IEC 61347-2-13:2014+A1 IEC 61347-1:2015+A1
As shown in the Test Report Ref. No. which forms part of this Certificate	60433448 001

This CB Test Certificate is issued by the National Certification Body

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Date: 2021-01-12

Signature:

Dipl.-Ing. Univ. S. O. Steinke



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: 60433448 001

Date of issue: 08-01-2021

Total number of pages: 35 pages

Name of Testing Laboratory preparing the Report: TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name: Shenzhen Boxinqi Technology Co., Ltd

Address: Room 15K, D Block, Huaqiang Square, Futian District, Shenzhen, Guangdong, P.R. China

Test specification:

Standard: IEC 61347-2-13:2014, AMD1:2016 used in conjunction with IEC 61347-1:2015, AMD1:2017

Test procedure: CB Scheme

Non-standard test method: N/A

Test Report Form No.: IEC61347_2_13G

Test Report Form(s) Originator: Intertek Semko AB

Master TRF: 2017-12-01

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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	Power supplies (LED Driver)	
Trade Mark	 (boqi)	
Manufacturer	Same as applicant	
Model/Type reference	BQ-010TNPC; BQ-012TNPC; BQ-015TNPC; BQ-020TNPC; BQ-030TNPC; BQ-050TNPC; BQ-060TNPC; BQ-012ANPC; BQ-015ANPC; BQ-020ANPC; BQ-030ANPC; BQ-050ANPC; for other model names, see model list on page 6	
Ratings	200-240V AC, 50/60Hz, 0,42A, ta:45°C, tc:80°C, Class II, Independent, SELV, other details see General product information.	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.
	Testing location/ address	1601 R&D Room, 1602-1604, 17-18F Building 7 Site C, Vanke Cloud City Phase I, XingKe First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, China
	Tested by (name, function, signature)	Wayne Wang
	Approved by (name, function, signature) .. :	Jack Li
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
	Testing location/ address	N/A
	Tested by (name, function, signature)	N/A
	Approved by (name, function, signature) .. :	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
	Testing location/ address	N/A
	Tested by (name + signature)	N/A
	Witnessed by (name, function, signature) . :	N/A
	Approved by (name, function, signature) .. :	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
	Testing location/ address	N/A
	Tested by (name, function, signature)	N/A
	Witnessed by (name, function, signature) . :	N/A
	Approved by (name, function, signature) .. :	N/A
	Supervised by (name, function, signature) :	N/A

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Temperature measurements, thermal tests (3 pages)

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018. (5 pages)

Attachment 3: EMF Assessment according to EN 62493:2015 (1 page)

Attachment 4: Photo document (11 pages)

Summary of testing:**Tests performed (name of test and test clause):**

<input checked="" type="checkbox"/>	7.1 (7.2)	Label test
<input checked="" type="checkbox"/>	8 (10)	Protection against accidental contact with live parts
<input checked="" type="checkbox"/>	11 (11)	Moisture resistance and insulation
<input checked="" type="checkbox"/>	12 (12)	Electric strength
<input checked="" type="checkbox"/>	14 (14)	Fault conditions
<input checked="" type="checkbox"/>	15 (-)	Transformer heating
<input checked="" type="checkbox"/>	16 (15)	Construction
<input checked="" type="checkbox"/>	17 (16)	Creepage distances and clearances
<input checked="" type="checkbox"/>	18 (17)	Screws, current-carrying parts and connections
<input checked="" type="checkbox"/>	19 (18)	Resistance to heat, fire and tracking

Testing location:**TÜV Rheinland (Shenzhen) Co., Ltd.**

1601 R&D Room, 1602-1604, 17-18F Building 7 Site C, Vanke Cloud City Phase I, XingKe First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, China

Models BQ-060TNPC, BQ-060ANPC and BQ-060DNPC were selected for above tests.






Summary of compliance with National Differences:**List of countries addressed:**

Remark regarding compliance with European Group Difference:

The IECEE TRF No. 61347_2_13G was applied (that includes the standards IEC 61347-2-13:2014 +AMD1:2016 used in conjunction with IEC 61347-1:2015 +AMD1:2017). In case of compliance with EN standard, the Amendment 1 is not applicable for ENEC Mark licensing, because A1:2017 of IEC 61347-1:2015 has not been published as European standard.

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.

Model: BQ-060DNPC Input: 200-240V AC, 50/60Hz, 0.42A Output: 30-42Vdc, Max. 55Vdc, 1.5A, 63W Suitable for operation with LED modules only ta45°C tc80°C			Output: <input type="checkbox"/> DALI + <input type="checkbox"/> DALI - <input type="checkbox"/> LED + <input type="checkbox"/> LED - 0.5-1.0
Input: <input type="checkbox"/> L <input type="checkbox"/> N 0.75-1.0	       SELV		Shenzhen Boxinqi Technology Co.,Ltd Room 15K, D Block, Huaqiang Square, Futian District, Shenzhen, P.R.China Importer: xxxxxx Address: xxxxxx Made In China

Note: other models are same as above, except model name and rating.

Test item particulars	LED driver
Classification of installation and use	Independent SELV LED driver
Supply Connection	Supply cord without plug
.....	
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:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p>Clause numbers between brackets refer to clauses in IEC 61347-1</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 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..... :	<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's name and address

General product information:

Product: Power supplies(LED Driver)

Ratings: 200-240V AC, 50/60Hz, 0,42A, ta: 45°C, tc: 80°C, IP20, Class II, Independent, SELV, Constant current output, suitable for direct mounting on normally flammable surfaces and operation with LED modules only.

1. The models with same dimming function, use same circuit and PCB layout, except the parameter of secondary circuit components for output ratings, details see below table.

Model list:

Model No.	Output voltage (VDC)	Output current (A)	Power (W)	Dimming function
BQ-010TNPC	30-42	0,24	10,08	Triac dimming
BQ-012TNPC	30-42	0,30	12,6	
BQ-015TNPC	30-42	0,35	14,7	
BQ-020TNPC	30-42	0,45	18,9	
BQ-030TNPC	30-42	0,60	25,2	
BQ-050TNPC	30-42	1,00	42,0	
BQ-060TNPC	30-42	1,50	63,0	
BQ-012ANPC	30-42	0,30	12,6	0-10V dimming
BQ-015ANPC	30-42	0,35	14,7	
BQ-020ANPC	30-42	0,45	18,9	
BQ-030ANPC	30-42	0,60	25,2	
BQ-050ANPC	30-42	1,00	42,0	
BQ-060ANPC	30-42	1,50	63,0	
BQ-012DNPC	30-42	0,30	12,6	DALI dimming
BQ-015DNPC	30-42	0,35	14,7	
BQ-020DNPC	30-42	0,45	18,9	
BQ-030DNPC	30-42	0,60	25,2	
BQ-050DNPC	30-42	1,00	42,0	
BQ-060DNPC	30-42	1,50	63,0	

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 <u>independent controlgear enclosure</u> with IEC 60 598-1		P
- (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 \leq 300 V		P

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

7 (7)	MARKING		P
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)	200-240	P
	supply frequency (Hz)	50/60	P
	supply current (A)	0,42	P
	f) earthing symbol		N/A
	k) wiring diagram		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	l) value of t_c		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)	See Label	P
	- rated output current I_{rated} (A)	See 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		N/A
	i) cross-section of conductors (mm ²)	See Label	P
	j) number, type and wattage of lamp(s)		N/A
	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)	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 μ F: voltage after 1 min (V): < 50 V	0V after 1s	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.3)	Controlgear providing SELV		P
	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		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.		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.		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	Y1 capacitor	P
	Y1 or Y2 capacitors comply with IEC 60384-14		P
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

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

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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (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 $\geq 2 \text{ M}\Omega$	Between L and N after removing fuse: Min. $100 \text{ M}\Omega > 2 \text{ M}\Omega$	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$	Between input and plastic enclosure: Min. $100 \text{ M}\Omega > 4 \text{ M}\Omega$	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1	SELV output circuits and enclosure: Min. $100 \text{ M}\Omega > 2 \text{ M}\Omega$	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	SELV output circuits and enclosure: 500V	P
	Working voltage ≤ 50 V, test voltage 500 V		P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, $2U + 1000$ V	Between L and N after removing fuse: 1480V	P
	Supplementary insulation, $2U + 1000$ V		N/A
	Double or reinforced insulation, $4U + 2000$ V	Between input and plastic enclosure: 2960V	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		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
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)	N/A
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		N/A

15 (-)	TRANSFORMER HEATING		P
15.1	General		P
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		P
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		P
	Double LED modules or equivalent load connected in serial to the output terminals of constant current type		N/A
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 ≤ 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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	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		N/A
- (15.4.3)	FELV circuits		P
	Source used to supply FELV circuits:		P
	- separating transformer in accordance with relevant part 2 of IEC 61558		P
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		P
	- another source		P
	- source in circuits separated by the LV supply by basic insulation		P
	Voltage in the circuit not higher than ELV		P
	FELV circuits insulated from LV supply by at least basic insulation		P
	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

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

17 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
- (16.1)	General		P
	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N/A
- (16.2)	Creepage distances		P
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (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		P
- (16.3.2)	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

18 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
	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		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	Screw for fixed plastic cover: 0,6Nm	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		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
(4.12.5)	Screwed glands; force (Nm)		N/A

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)	P
- (18.3)	Glow-wire test	See Test Table 19 (18.3)	P

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Clause	Requirement + Test	Result - Remark	Verdict

- (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		P
	Not exceed declared maximum working voltage U_{out} in any load condition		P

14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
DB1	Short circuit: Fuse open, 0A, 0W, unrecoverable		No
L1	Short circuit: As normal work, 0,314A, 70,1W, recoverable		No
LF1	Short circuit: As normal work, 0,314A, 70,1W, recoverable		No
LF2	Short circuit: As normal work, 0,314A, 70,1W, recoverable		No
VR1 O/C	Open circuit: As normal work, 0,315A, 70,0W, recoverable		No
VR1 S/C	Short circuit: Fuse open, 0A, 0W, unrecoverable		No
R7	Short circuit: Unit shut down immediately, 0,005A, 0,38W, recoverable		No
D1	Short circuit: As normal work, 0,324A, 72,4W, recoverable		No
D2	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
Q1(G-S)	Short circuit: Unit shut down immediately, 0A, 0W, unrecoverable		No
Q1(G-D)	Short circuit: Unit shut down immediately, 0A, 0W, unrecoverable		No
Q1(S-D)	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
U1(1-4)	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
U1(4-5)	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
R16	Open circuit: As normal work, 0,314A, 70,1W, recoverable		No
U2(1-6)	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
DD2	Open circuit: As normal work, 0,320A, 71,5W, recoverable		No
L2	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No
LF3	Open circuit: As normal work, 0,320A, 70,4W, recoverable		No
RS7	Open circuit: As normal work, 0,315A, 70,4W, recoverable		No
Q3(G-S)	Open circuit: As normal work, 0,320A, 71,5W, recoverable		No

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Clause	Requirement + Test	Result - Remark	Verdict
Q3(G-D)	Short circuit: Unit shut down immediately, 0,039A, 0,43W, recoverable		No
Q3(S-D)	Open circuit: As normal work, 0,315A, 70,4W, recoverable		No
Vout+ Vout-	Short circuit: Unit shut down immediately, 0A, 0W, recoverable		No

17 (16)		TABLE: clearance and creepage distance measurements (mm)						P
Applicable part of IEC 61347-1 Table 7 – 11*								
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	3,1	1,5	Table 9	3,1	2,5	Table 7	
Working voltage (V)					240V		—	
Frequency if applicable (kHz)					50Hz		—	
PTI					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)					--		—	
Pulse voltage if applicable (kV)					--		—	
Supplementary information: Between L to N before fuse								
Distance 2:	B	2,7	1,5	Table 9	2,7	2,5	Table 7	
Working voltage (V)					240V		—	
Frequency if applicable (kHz)					50Hz		—	
PTI					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)					--		—	
Pulse voltage if applicable (kV)					--		—	
Supplementary information: Between different poles of fuse								
Distance 3:	R	5,1	3,0	Table 9	5,1	5,0	Table 7	
Working voltage (V)					240V		—	
Frequency if applicable (kHz)					50Hz		—	
PTI					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)					--		—	
Pulse voltage if applicable (kV)					--		—	
Supplementary information: Between live parts to accessible part								
Distance 4:	R	6,6	4,7	Table 13 of IEC 61558	6,6	5,0	Table 13 of IEC 61558	
Working voltage (V)					250V		—	
Frequency if applicable (kHz)					2,3kHz		—	
PTI					< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>		—	

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Clause	Requirement + Test				Result - Remark		Verdict
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				--			—
Pulse voltage if applicable (kV)				--			—
Supplementary information: Between input circuits and output circuits							
Distance 5:	R	6,6	4,7	Table 13 of IEC 61558	6,6	5,0	Table 13 of IEC 61558
Working voltage (V)				250V		—	
Frequency if applicable (kHz)				2,3kHz		—	
PTI				< 600 <input checked="" type="checkbox"/> \geq 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				--			—
Pulse voltage if applicable (kV)				--			—
Supplementary information: Between CY pri. to sec. (CY1, CY2)							
Distance 6:	R	5,5	4,7	Table 13 of IEC 61558	5,5	5,0	Table 13 of IEC 61558
Working voltage (V)				250V		—	
Frequency if applicable (kHz)				2,3kHz		—	
PTI				< 600 <input checked="" type="checkbox"/> \geq 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				--			—
Pulse voltage if applicable (kV)				--			—
Supplementary information: Between transformer secondary pin to core							
Distance 7:	R	5,5	4,7	Table 13 of IEC 61558	5,5	5,0	Table 13 of IEC 61558
Working voltage (V)				250V		—	
Frequency if applicable (kHz)				2,3kHz		—	
PTI				< 600 <input checked="" type="checkbox"/> \geq 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				--			—
Pulse voltage if applicable (kV)				--			—
Supplementary information: Between transformer primary winding to secondary winding							
Distance 8:	B	2,6	1,5	Table 9	2,6	2,5	Table 7
Working voltage (V)				240V		—	
Frequency if applicable (kHz)				50Hz		—	
PTI				< 600 <input checked="" type="checkbox"/> \geq 600 <input type="checkbox"/>		—	
Peak value of the working voltage \hat{U}_{out} if applicable (kV)				--			—
Pulse voltage if applicable (kV)				--			—
Supplementary information: Between DALI dimming circuit to SELV circuit for model BQ-060DNPC							

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

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Clause	Requirement + Test	Result - Remark	Verdict

19 (18.1)	TABLE: Ball Pressure Test			P
Allowed impression diameter (mm)		2 mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Plastic enclosure	See annex 1	93	1,2	
Bobbin	See annex 1	130	0,8	
Driver PCB	See annex 1	125	0,9	
Supplementary information:				

19 (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
Driver PCB	See annex 1	30	No	0	P
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	
Plastic enclosure	See annex 1	No	0	Pass	
Bobbin	See annex 1	No	0	Pass	
Output terminal	See annex 1	No	0	Pass	
Supplementary information:					

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
Plastic enclosure	See annex 1	10	No	0	Pass
Bobbin	See annex 1	10	No	0	Pass
Driver PCB	See annex 1	10	No	0	Pass
Supplementary information:					

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Clause	Requirement + Test			Result - Remark	Verdict
19 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI				175 V	—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
--	--	--	--	--	--
Supplementary information:					

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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	51,9V 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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
(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
	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		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(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 checked="" type="checkbox"/> No <input 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"/>	—
	inherently short circuit proof controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	fail safe controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	non-short-circuit proof controlgear	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
(L.4)	Marking		P
	Adequate symbols are used		P
(L.5)	Protection against electric shock		P
	Comply with clause 9.2 of IEC 61558-1		P
(L.6)	Heating		P
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked	X-capacitor: 100°C; Y-capacitor: 125°C	—
	Winding insulation classified as Class	Class B	—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		P
(L.7)	Short-circuit and overload protection		P
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		P
(L.8)	Insulation resistance and electric strength		P
(L.8.1)	Conditioned 48 h between 91 % and 95 %		P
(L.8.2)	Insulation resistance		P
	Between input- and output circuits not less than 5 M Ω	100 M Ω	P

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Clause	Requirement + Test	Result - Remark	Verdict
	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	100 MΩ	P
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits	3750V	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity	1875V	P
	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	3750V	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		P
(L.10)	Components		P
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		P
(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

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Clause	Requirement + Test	Result - Remark	Verdict
	Supplementary information		—
	3) Reinforced distance through insulation		P
	Required distance (mm)	0,83	—
	Measured (mm)	Min. 1,2	P
	Supplementary information		—

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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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

(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
	- one of 2 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
	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 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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)	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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage \hat{U}_{out} kV		—
	Frequency.....		—
	Required distance.....		—
	Measured.....		N/A
	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		—

IEC 61347-2-13			
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⁾	
Plastic cover of LED driver	C	CHI MEI CORPORATION	GC-8400A(a)	V-0; 130°C	IEC 61347-1 IEC 6134-2-13	UL E 56070 Tested with appliance	
Driver PCB	C	JIANGXI ZHONG XIN HUA ELECTRONICS INDUSTRY CO LTD	ZXH-1	V-0; 130°C	IEC 61347-1 IEC 6134-2-13	UL E331298 Tested with appliance	
Input/Output terminal block	B	DONGGUAN CITY NI TAI ELECTRONIC CO LTD	NT126-5.0	300V; 10A; T105; 0,5-2,5mm ²	IEC 60947-7-4	VDE 40040417	
Fuse (F1)	B	LITTELFUSE INC.	392	250V; 3,15A	EN 60127-1	VDE 126983	
VR1	B	HONGZHI ENTERPRISES LTD	HEL-10D471	470V; 85°C	IEC 61051-1 IEC 61051-2 IEC 61051-2 IEC 61051-2-2	VDE 40037512	
X-capacitor (CX1, CX2)	B	HONGZHI ENTERPRISES LTD	MPX (X2)	310V; 0,22µF; 100°C	EN 60384-14 IEC 60384-14	VDE 40023936	
Y-capacitor (CY1, CY2)	B	HONGZHI ENTERPRISES LTD	X1Y1 Series	400V; 3,3nf; 125°C	EN 60384-14 IEC 60384-14	VDE 40038760	
Transformer	C	HEZHOU GU DI FENG ELECTRONIC CO LTD	BQ-060ADP	N1: 0,3mmx2, 15Ts; N2: 0,17mmx1, 30Ts; N3: 0,5mmx1; 15Ts; N4: 0,21mmx3, 5Ts; N5: 0,3mmx2, 15Ts; N6: 0,3mmx1, 8Ts; N7: 0,5mmx1, 15Ts;	IEC 61347-1 IEC 61347-2-13	Tested with appliance	
- Bobbin	C	CHANG CHUN PLASTICS CO LTD	T375J(G5)(G6)	150°C	IEC 61347-1 IEC 6134-2-13	UL E59481 Tested with appliance	
- Wire	C	DONG GUAN YIDA INDUSTRIAL CO LTD	2UEW	155°C	IEC 61347-1 IEC 6134-2-13	UL E344055 Tested with appliance	

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark	Verdict	
- Triple Insulation Wire	B	Shenzhen Kaizhong Hedong New Materials Co., Ltd	TIW-B	130°C	EN 62368-1	VDE 40038861
- Tape	C	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY312#	130°C	IEC 61347-1 IEC 6134-2-13	UL E188295 Tested with appliance
- Tube	C	DONGGUAN GODDESS ELECTRONIC CO LTD	ND-LL	200°C	IEC 61347-1 IEC 6134-2-13	UL E468727 Tested with appliance
- Varnish	C	ZHUHAI CHANGXIAN NEW MATERIALS TECHNOLOGY CO LTD	E962	130°C	IEC 61347-1 IEC 6134-2-13	UL E335405 Tested with appliance
<p>Supplementary information:</p> <p>1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>The codes above have the following meaning:</p> <p>A - The component is replaceable with another one, also certified, with equivalent characteristics</p> <p>B - The component is replaceable if authorised by the test house</p> <p>C - Integrated component tested together with the appliance</p> <p>D - Alternative component</p>						

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

IEC 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
(15.6.1)	Conductors		N/A

IEC 61347-2-13											
Clause	Requirement + Test									Result - Remark	Verdict
	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										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)									--	—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)									--	—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)									--	—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
	Continued ageing: voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)									--	—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--	
Supplementary information:--											

Attachment 1: temperature measurements, thermal tests

	Type reference	BQ-060DNPC	---			
	Load used.....	Equivalent load or LED module	---			
	Mounting position of luminaire	N/A	---			
	ta.....	45°C	---			
	- test 1: rated voltage.....	---	---			
	- test 2: test voltage(normal)	Input: 1,06×Ur=212V; I=0,337A; P=70,1W Output: U=42V; I=1,5A; P=63W Input: 1,06×Ur=254,4V; I=0,293A; P=70,5W Output: U=42V; I=1,5A; P=63W	---			
	- test 3: test voltage(abnormal)	1. Fault condition Unit shutdown or normal operation 2. Double the LED modules or equivalent load Shut down.(run for 1h) 3. The output terminals shall be short-circuited. Shut down.(run for 1h) Over load: Input: 0,9U=180V; I=0,398A; P=72,8W Output: U=42,68V; I=1,508A; P=64,36W Input: 1,1U=264V; I=0,290A; P=73,1W Output: U=42,77V; I=1,508A; P=64,50W	---			
Normal operation						
temperature (°C) of part	normal			abnormal		
	test 1	test 2 (212V)	test 2 (254,2V)	limit	test 3	limit
Plastic cover outside above transformer	--	73,1	73,4	Ref.	--	--
Plastic cover outside under transformer (tc)	--	78,8	78,4	80	--	--
Plastic cover inside above transformer	--	87,0	88,0	Ref.	--	--

Attachment 1: temperature measurements, thermal tests
--

Plastic cover inside under transformer	--	90,0	97,7	Ref.	--	--
Input terminal	--	67,2	66,1	105	--	--
Output terminal	--	72,8	72,9	105	--	--
LF1	--	66,3	65,7	120	--	--
L1	--	76,2	73,3	120	--	--
LF2	--	84,8	82,6	120	--	--
Varistor(VR1)	--	75,6	75,2	85	--	--
X-Capacitor(CX1)	--	76,8	76,0	100	--	--
X-Capacitor(CX2)	--	76,8	76,0	100	--	--
Capacitor(Ce1)	--	91,3	92,5	105	--	--
T1 winding	--	107,7	108,5	120	--	--
T1 bobbin	--	102,0	102,8	120	--	--
Y-Capacitor(CY1)	--	83,8	84,3	125	--	--
Y-Capacitor(CY2)	--	88,8	89,4	125	--	--
Capacitor(Ce2)	--	93,2	93,8	105	--	--
Capacitor(Ce3)	--	94,7	95,2	105	--	--
Capacitor(Ce4)	--	99,3	99,9	105	--	--
Capacitor(Ce5)	--	98,7	99,1	105	--	--
PCB	--	98,3	99,2	Ref.	--	--
L2	--	97,4	97,8	120	--	--
LF3	--	85,8	86,0	120	--	--
Supporting surface	--	85,8	86,4	90	--	--
Ambient	--	45,0	45,0	--	--	--
Fault condition						
temperature (°C) of part	normal			Abnormal		
	test 1	test 2	limit	test 3	limit	
Operated for 1h, no detect impairing safety nor smoke or flammable gases produced.						
Double the LED modules or equivalent load						
temperature (°C) of part	normal			Abnormal		
	test 1	test 2	limit	test 3	limit	

Attachment 1: temperature measurements, thermal tests
--

Operated for 1h, no detect impairing safety nor smoke or flammable gases produced.
--

The output terminals shall be short-circuited
--

temperature (°C) of part	normal			Abnormal	
	test 1	test 2	limit	test 3	limit

Unit shut down, temperature rise less than normal condition

Over load condition

temperature (°C) of part	normal			Abnormal		
	test 1	test 2	limit	test 3		Limit
				0,9U	1,1U	
Plastic cover outside above transformer (tc)	--	--	--	87,7	87,9	105
Input terminal	--	--	--	69,0	69,7	105
Output terminal	--	--	--	73,1	73,0	105
LF1	--	--	--	68,4	68,1	175
L1	--	--	--	82,2	73,8	175
LF2	--	--	--	90,6	86,8	175
T1 winding	--	--	--	109,6	110,6	175
L2	--	--	--	96,8	97,9	175
LF3	--	--	--	85,9	86,3	175
Supporting surface	--	--	--	87,7	87,9	130
Ambient	--	--	--	45,0	45,0	--

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018			
Clause	Requirement + Test	Result - Remark	Verdict
4	CONSTRUCTION		P
4.13	Mechanical strength		P
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm) :	Enclosure: 0,5Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
4.13.3	Straight test finger		P
4.13.6	Tumbling barrel		N/A
4.25	Mechanical hazard		P
	No sharp point or edges		P
4.31	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
4.31.1	SELV circuits		P
	Used SELV source		P
	Voltage \leq ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		P
	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

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018			
Clause	Requirement + Test	Result - Remark	Verdict

	Used FELV source		N/A
	Voltage \leq 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

5	EXTERNAL AND INTERNAL WIRING		P
5.2	Supply connection and external wiring		P
5.2.1	Means of connection.....: Terminal		P
5.2.2	Type of cable		N/A
	Nominal cross-sectional area (mm ²).....:		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
5.2.3	Type of attachment, X, Y or Z		N/A
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

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
5.2.10.1	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
5.2.10.2	Adequate cord anchorage for type Y and type Z attachment		N/A
5.2.10.3	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	60 N for input cord (H03VV-F, H03VVH2-F: 2x0,75mm ² , 2x1,0mm ²) and output cord (2 x 0,5mm ² , 2 x 0,75mm ²)	P
	- torque test: torque (Nm)	0,25Nm for input cord (2x0,75mm ² , 2x1,0mm ²); 0,15Nm output cord (2 x 0,5mm ²)	P

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018			
Clause	Requirement + Test	Result - Remark	Verdict

	- displacement \leq 2 mm	Max. 0,8mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
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		N/A
	Class III luminaire plug		N/A
5.2.16	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
5.2.17	No standardized interconnecting cables properly assembled		N/A
5.2.18	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A

9	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
-	If IP > IP 20 the order of the test specified in clause 1.12		—
9.2	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP : IP20		—
	- mounting position during test : As normal		—
	- fixing screws tightened; torque (Nm) :		—
	- tests according to clauses : Cl. 9.2.0		—
	- 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 SELV parts or where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		P

Attachment 2: Tests according to IEC 60598-1:2014, AMD1:2017, EN60598-1:2015+A1:2018			
Clause	Requirement + Test	Result - Remark	Verdict
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	25°C, 93% R.H	P

Attachment 3: EMF Assessment according to EN 62493:2015			
Clause	Requirement + Test	Result - Remark	Verdict

Procedure	Products are applications with	If No	If yes
a)	Non-electronic control gear?	<input checked="" type="checkbox"/> see Procedure b)	<input type="checkbox"/> Pass
b)	Incandescent-lamp technology or halogen?	<input checked="" type="checkbox"/> see Procedure c)	<input type="checkbox"/> see Procedure h)
c)	LED light-source technology?	<input type="checkbox"/> see Procedure d)	<input checked="" type="checkbox"/> see Procedure h)
d)	OLED light-source technology?	<input type="checkbox"/> see Procedure e)	<input type="checkbox"/> see Procedure h)
e)	High-pressure discharge lamp technology?	<input type="checkbox"/> see Procedure f)	<input type="checkbox"/> see Procedure h)
f)	Low-pressure discharge lamp technologies with a measurement distance $\geq 50\text{cm}$ (Distance for Hand lights, table lightings and Self-ballasted lamps is less than 50cm)	<input type="checkbox"/> see Procedure g)	<input type="checkbox"/> see Procedure h)
g)	Independent auxiliary?	<input type="checkbox"/> see Procedure i)	<input type="checkbox"/> see Procedure h)
h)	Non-wireless technology (exclude infra-red)?	<input type="checkbox"/> see Procedure i)	<input checked="" type="checkbox"/> Pass
i)	Additional test is performed and result is Pass Test Report with No.:	<input type="checkbox"/> see Procedure b)	<input type="checkbox"/> Pass

Attachment 4: Photo document

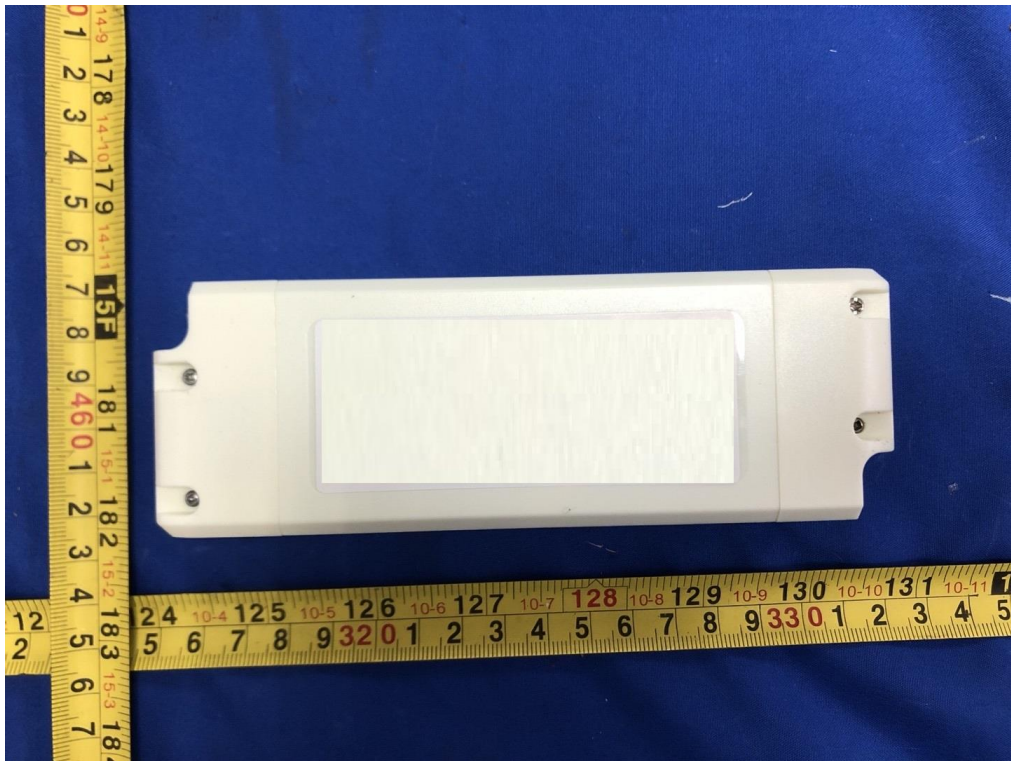


Figure 1. Front view of model BQ-060DNPC

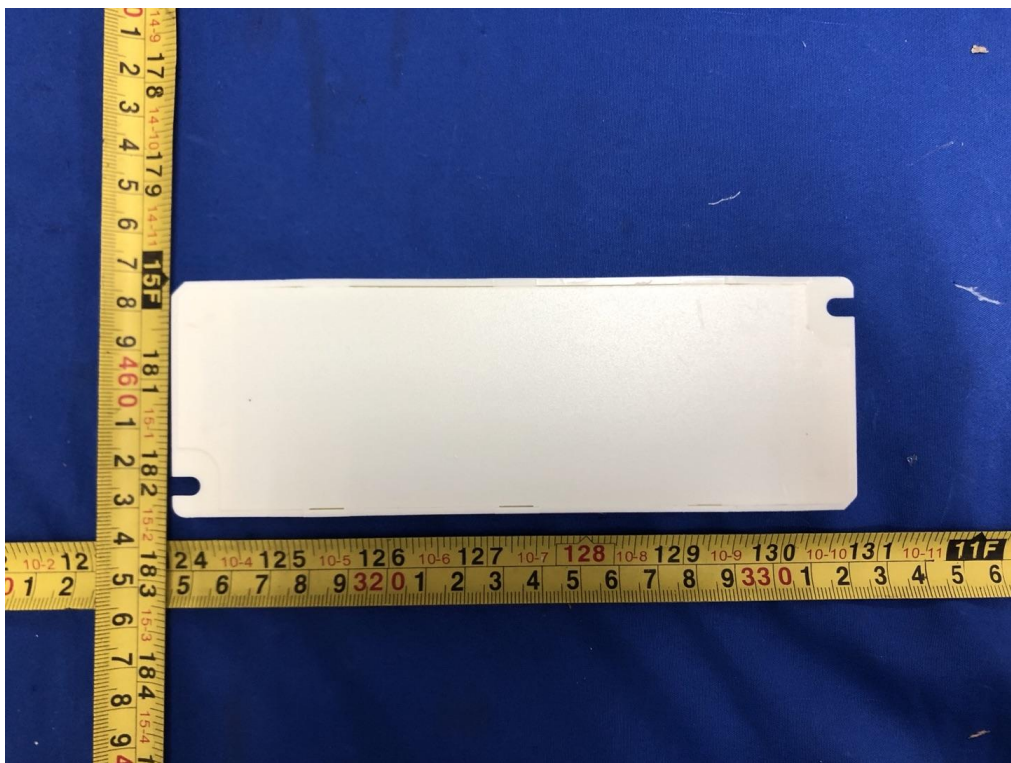


Figure 2. Base view of model BQ-060DNPC

Attachment 4: Photo document



Figure 3. Input and output view of model BQ-060DNPC

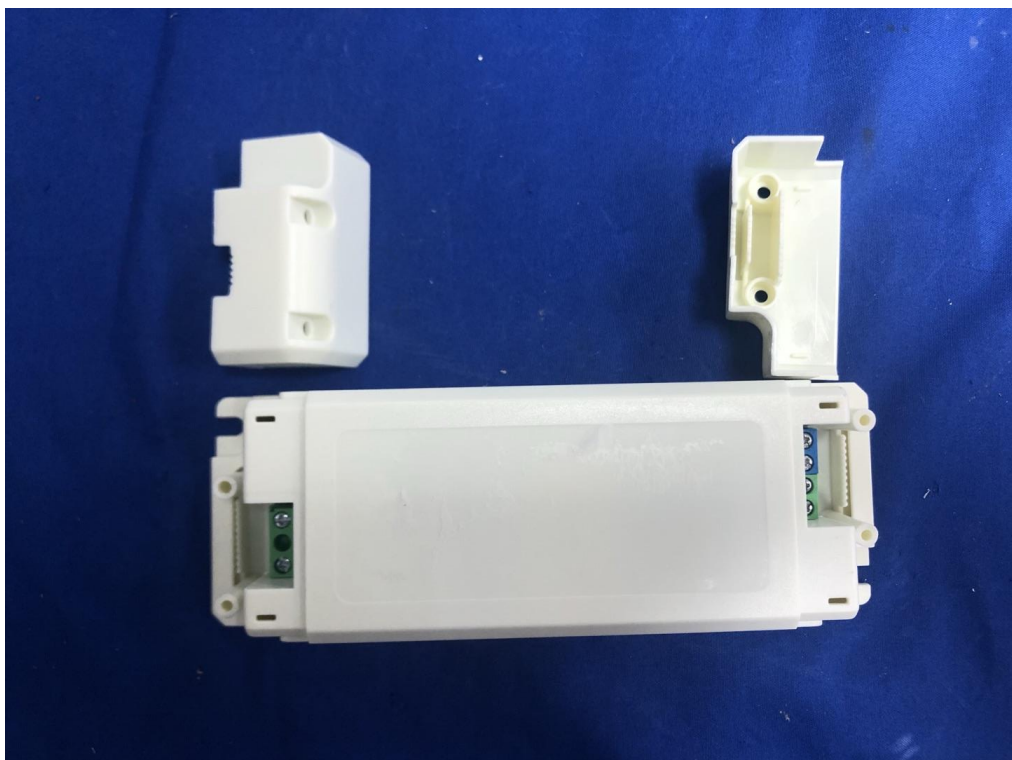


Figure 4. Internal view of model BQ-060DNPC

Attachment 4: Photo document

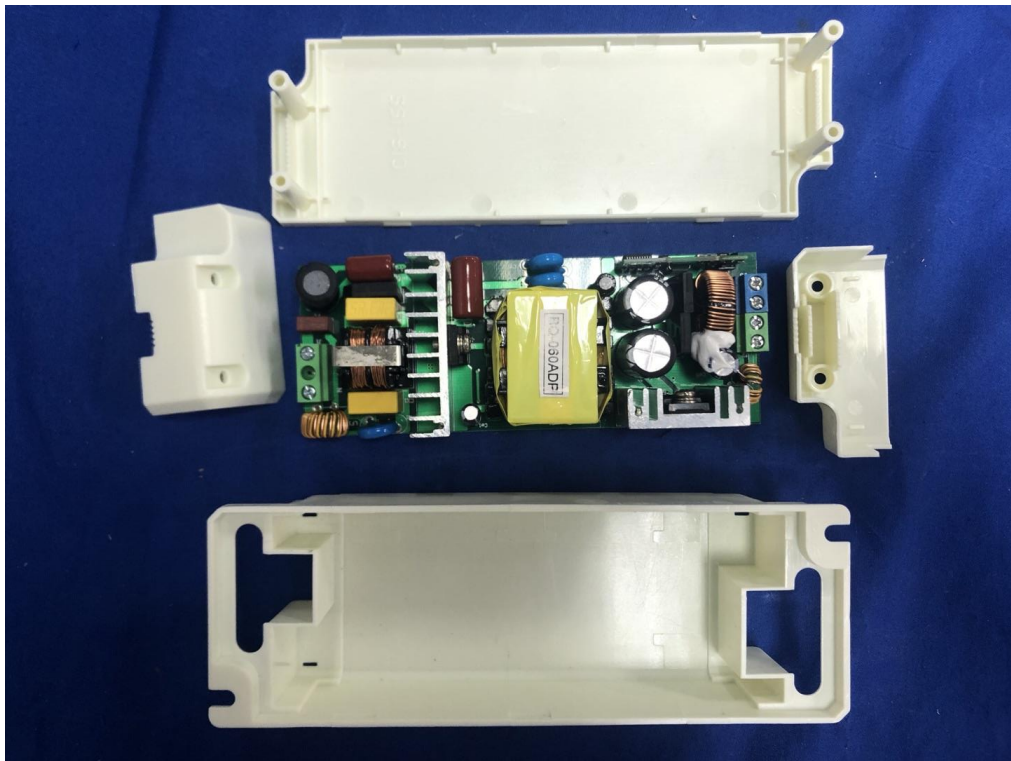


Figure 5. Internal view of model BQ-060DNPC

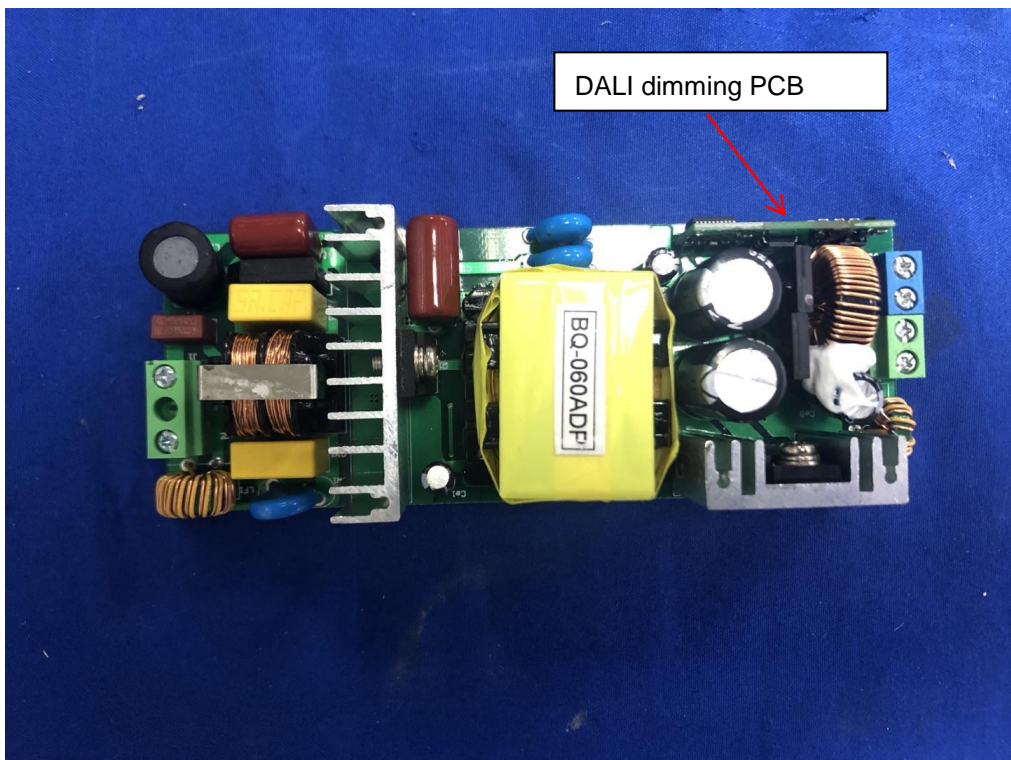


Figure 6. LED driver PCB front view of model BQ-060DNPC

Attachment 4: Photo document

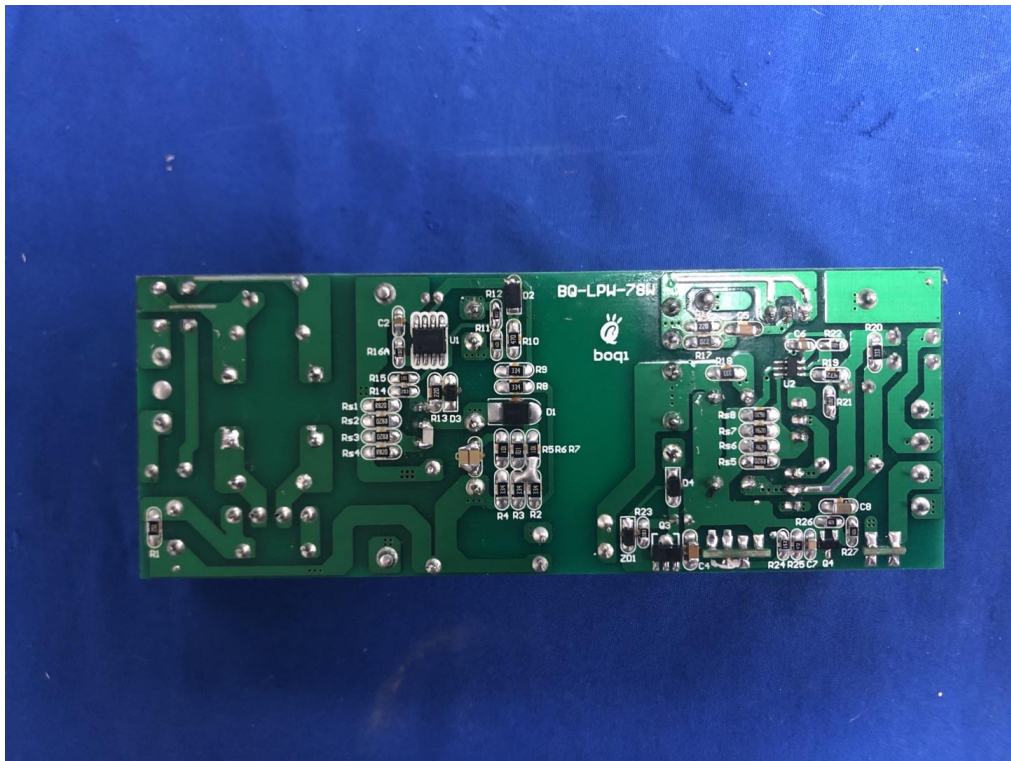


Figure 7. LED driver PCB base view of model BQ-060DNPC

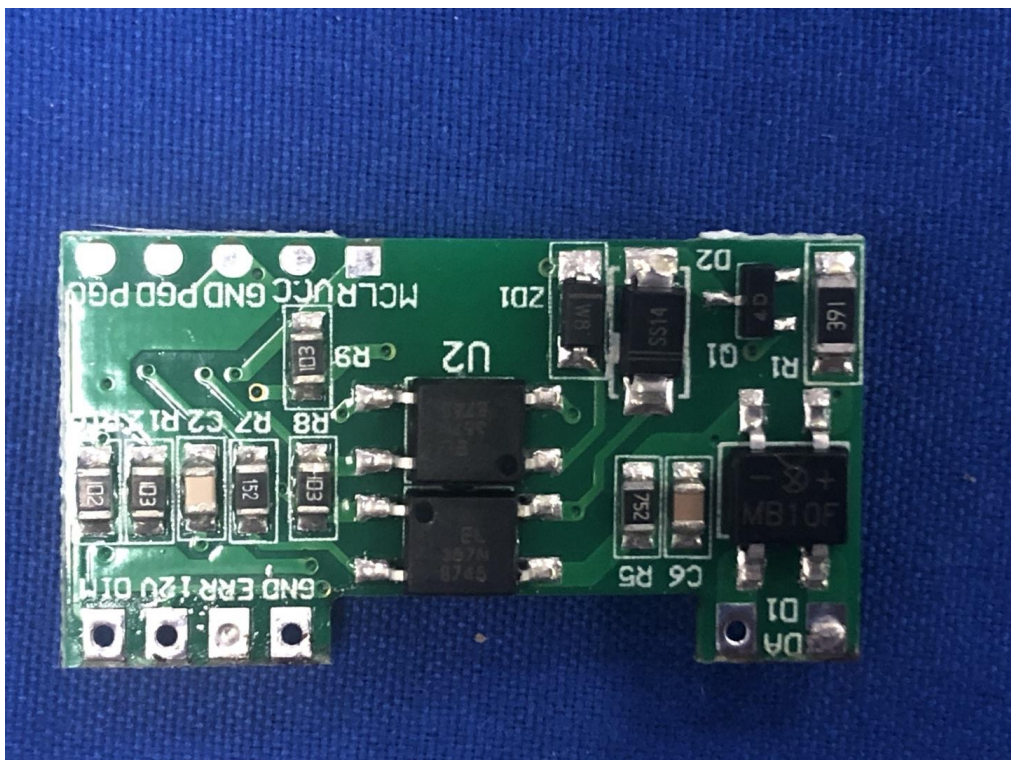


Figure 8. DALI dimming PCB view of model BQ-060DNPC

Attachment 4: Photo document

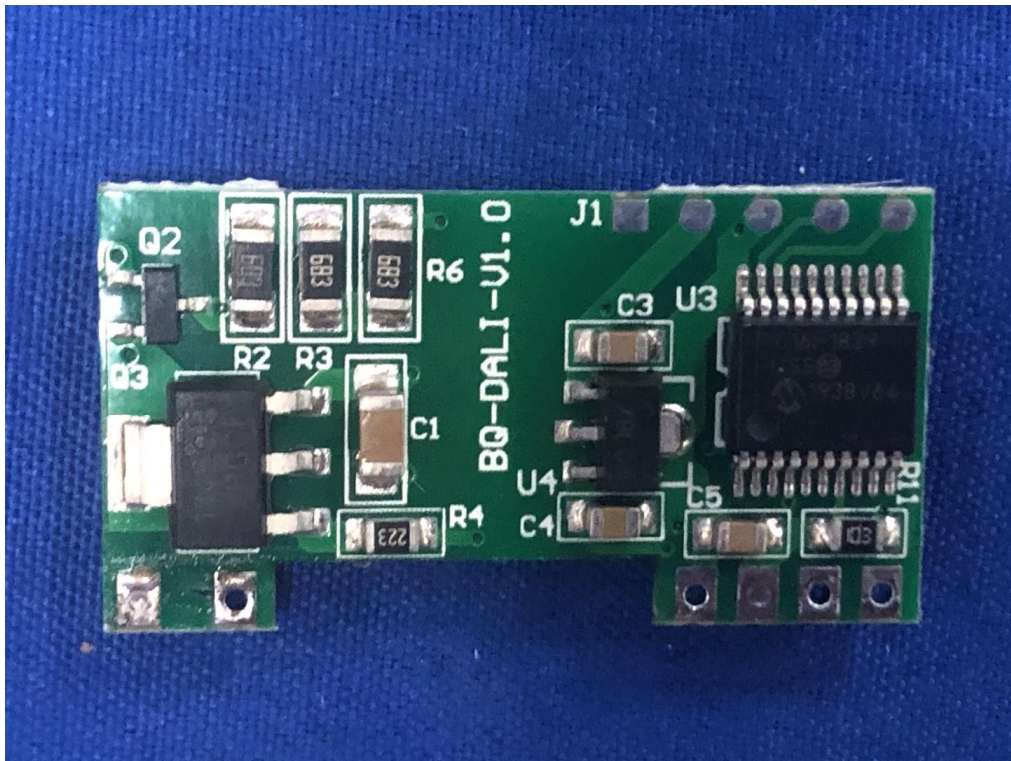


Figure 9. DALI dimming PCB view of model BQ-060DNPC

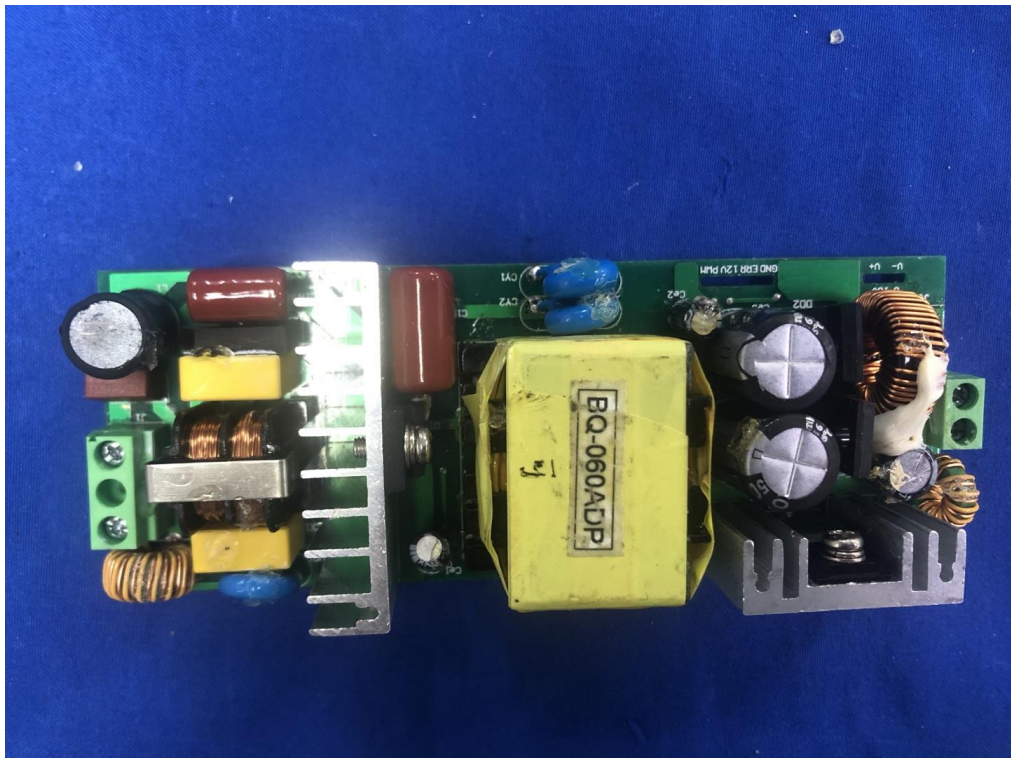


Figure 10. LED driver PCB front view of model BQ-060TNPC

Attachment 4: Photo document

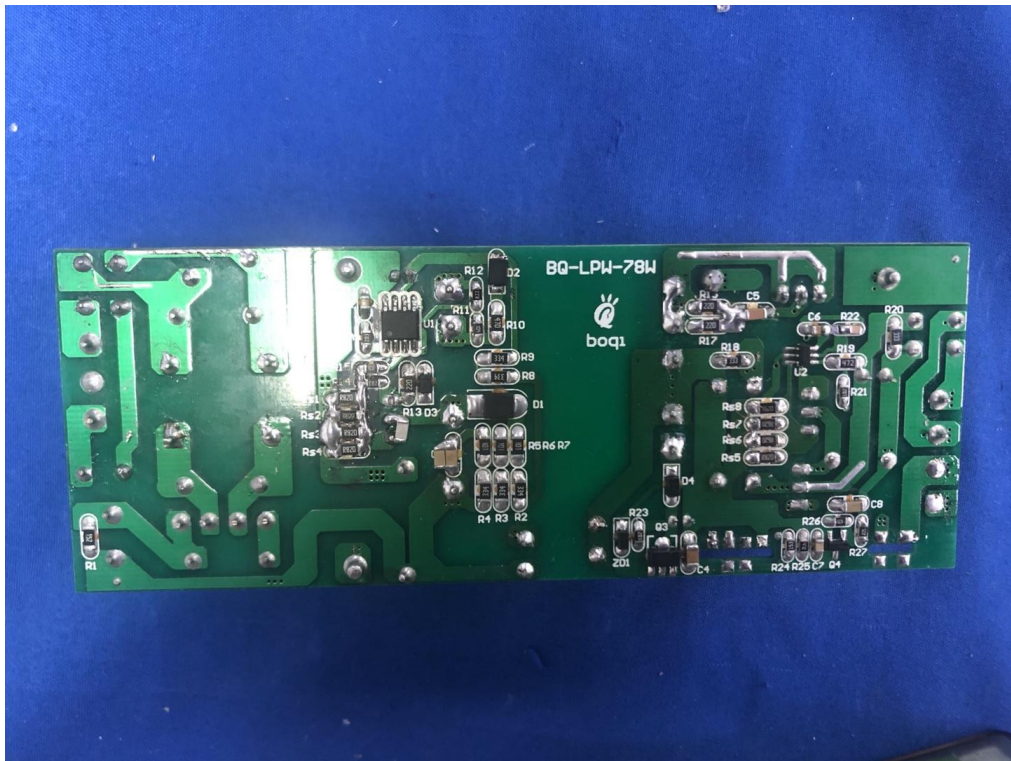


Figure 11. LED driver PCB base view of model BQ-060TNPC



Figure 12. LED driver PCB front view of model BQ-060ANPC

Attachment 4: Photo document

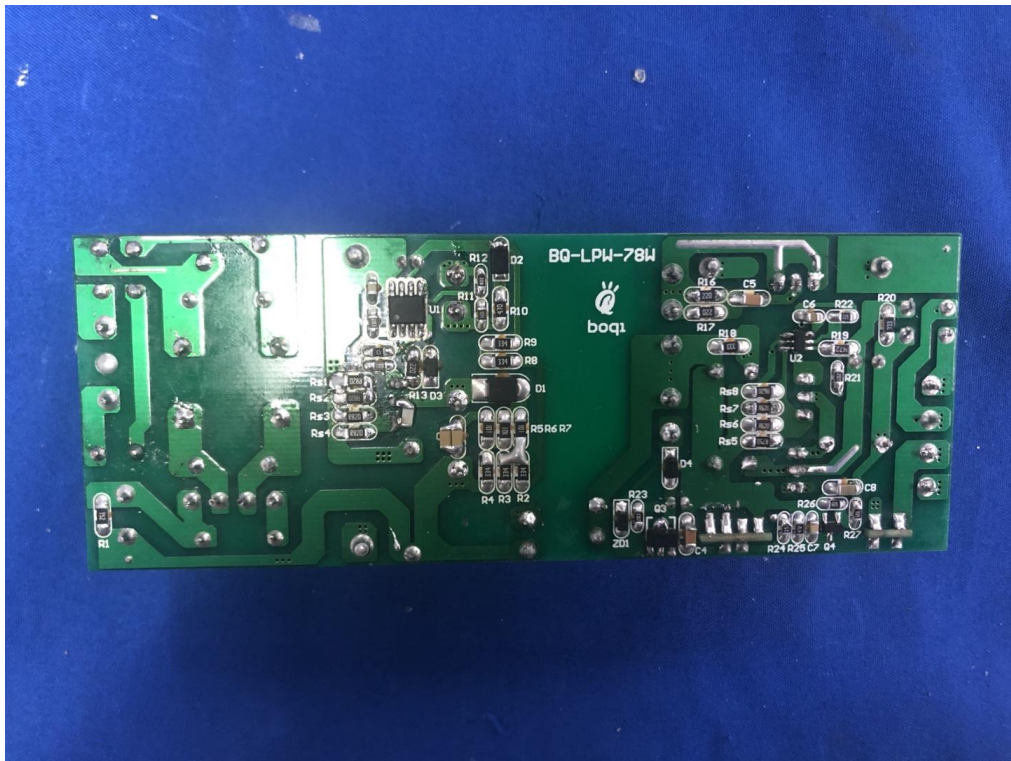


Figure 13. LED driver PCB base view of model BQ-060ANPC

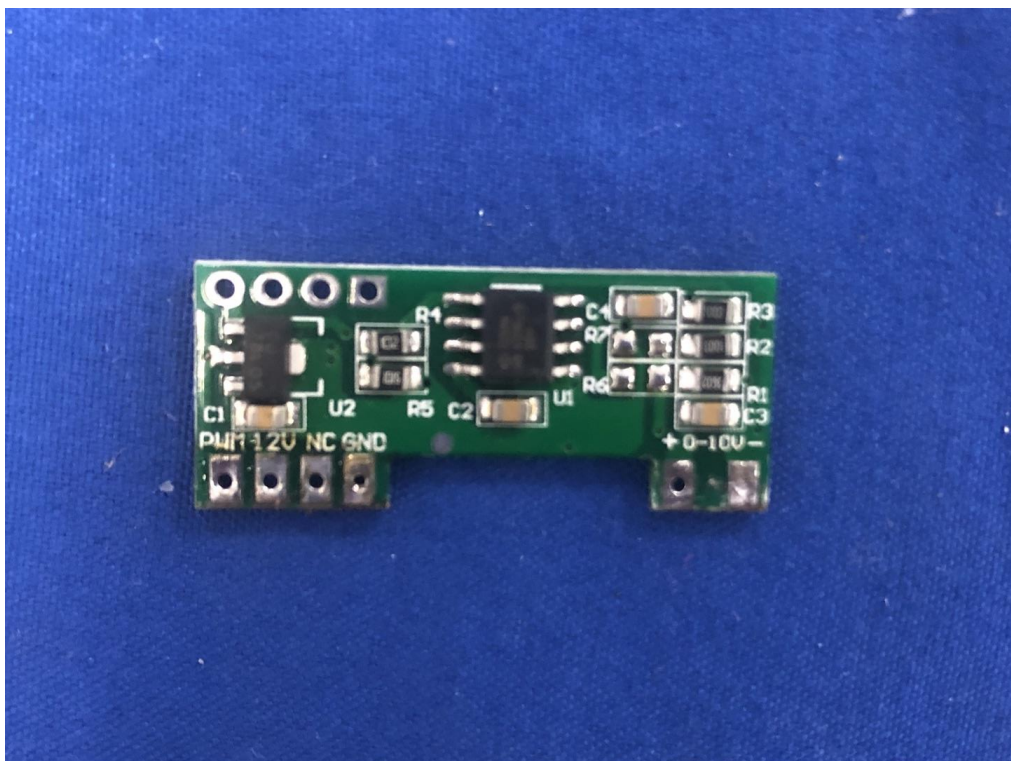


Figure 14. 0-10V Dimming PCB view of model BQ-060ANPC

Attachment 4: Photo document



Figure 15. 0-10V Dimming PCB view of model BQ-060ANPC



Figure 16. Transformer external view of model BQ-060ADP

Attachment 4: Photo document

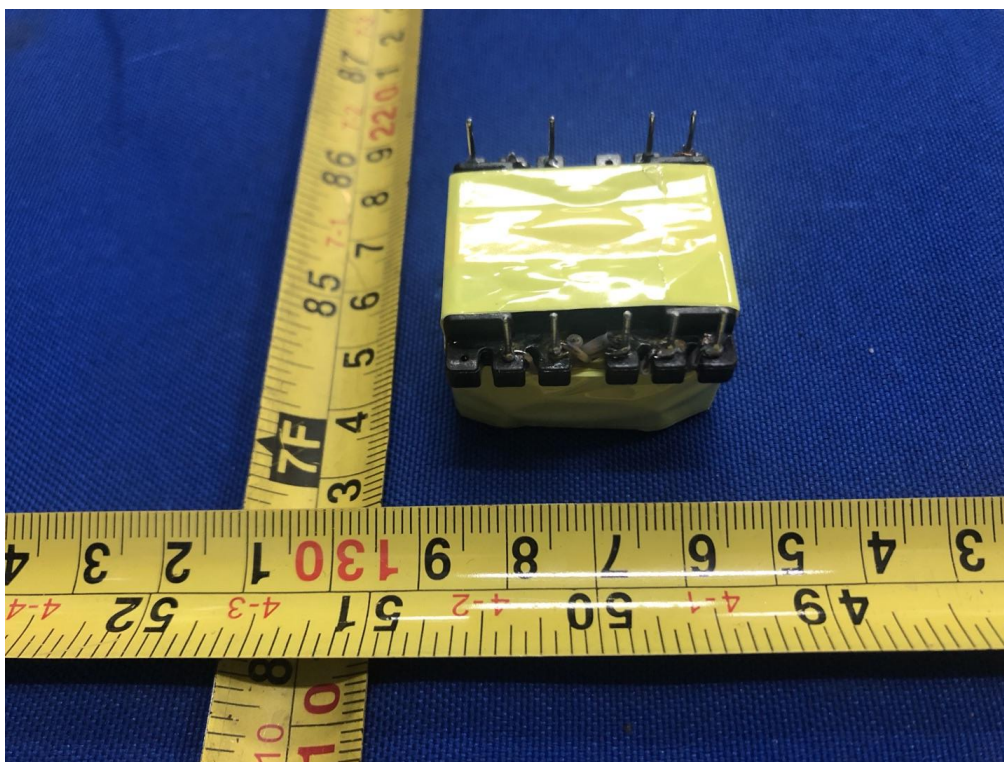


Figure 17. Transformer external view of model BQ-060ADP

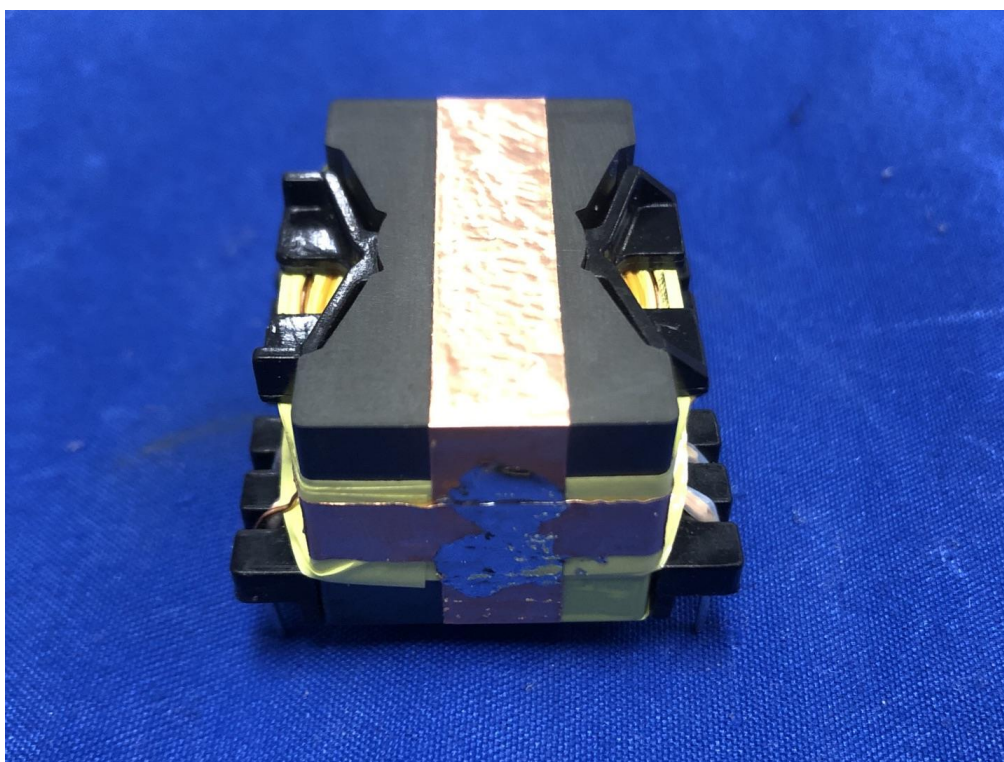


Figure 18. Transformer internal view of model BQ-060ADP

Attachment 4: Photo document

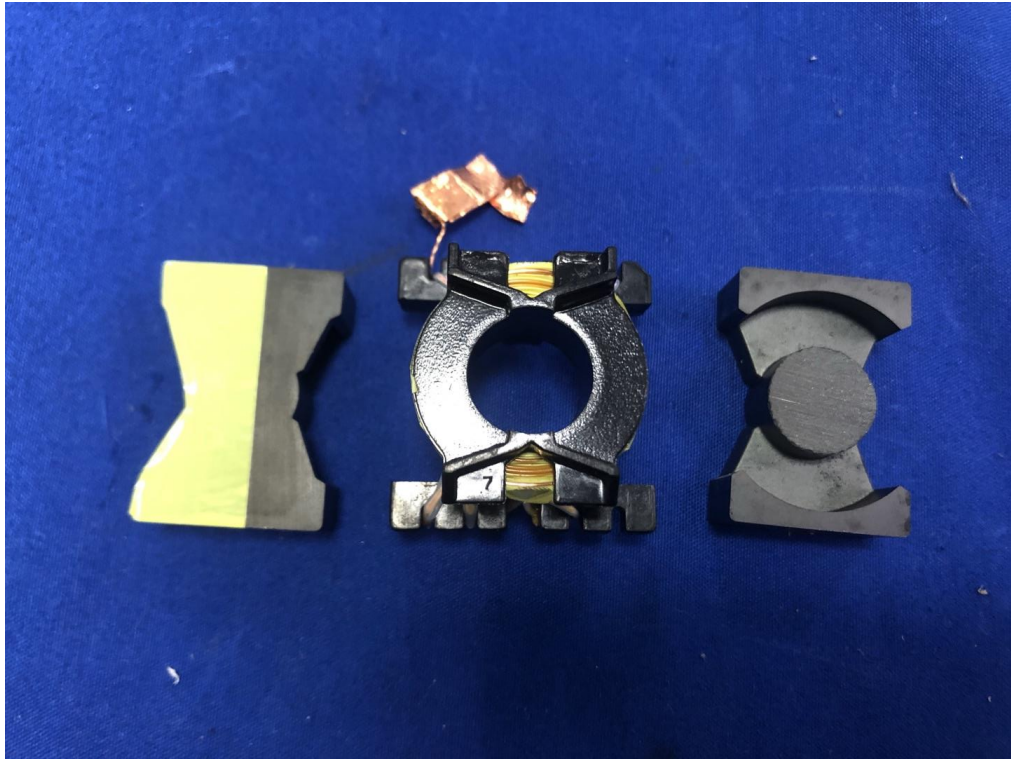


Figure 19. Transformer internal view of model BQ-060ADP

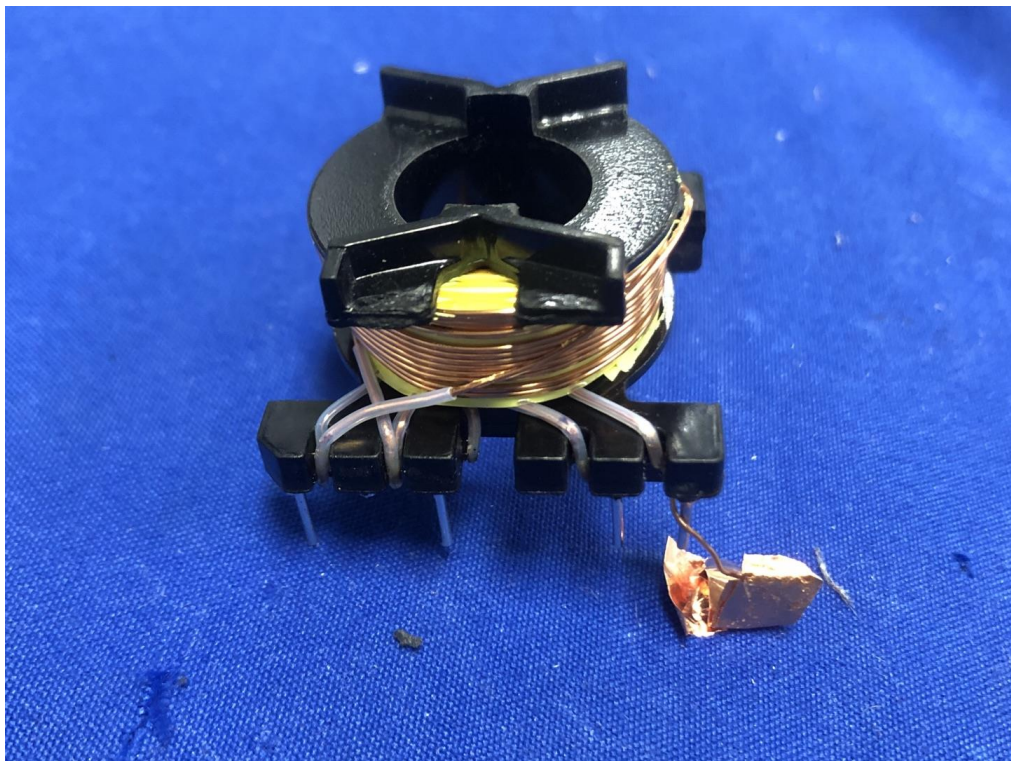


Figure 20. Transformer internal view of model BQ-060ADP

Attachment 4: Photo document

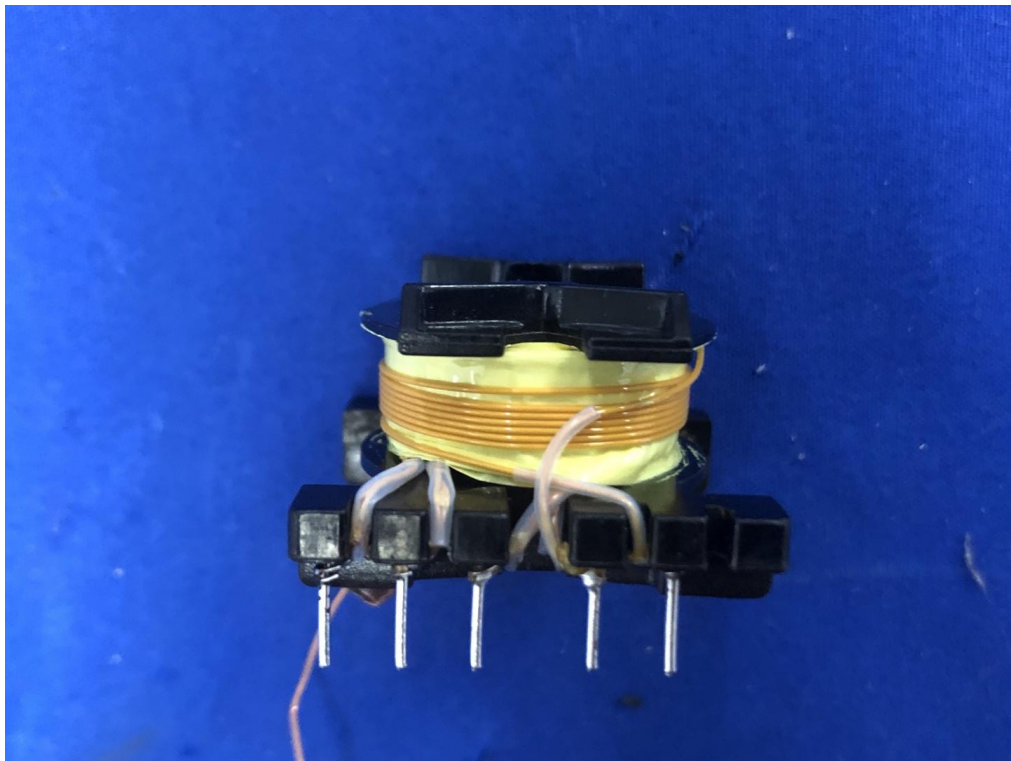


Figure 21. Transformer internal view of model BQ-060ADP

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