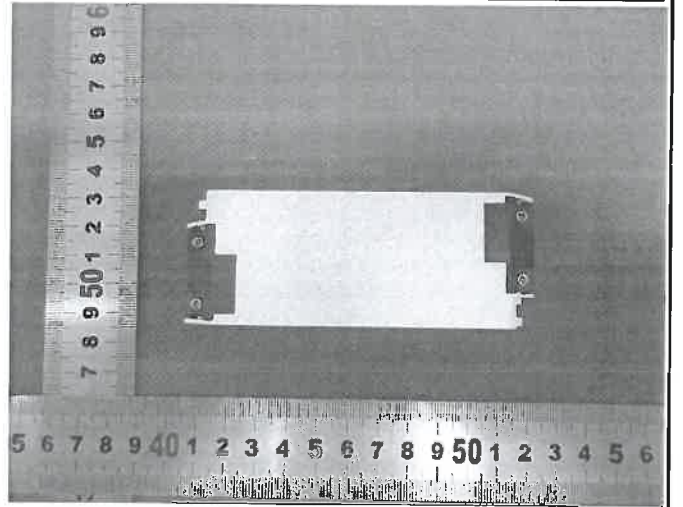


Prüfbericht-Nr.: Test Report No.:	50107447 001	Auftrags-Nr.: Order No.:	164106799	Seite 1 von 61 Page 1 of 61
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	2017-09-26	
Auftraggeber: Client:	Berdis Lighting Co., LTD Floor 6, No.1, Huatai East Road, Caosan Industrial Park, Guzhen Town, Zhongshan City, Guangdong Province 528421, P. R. China			
Prüfgegenstand: Test item:	LED POWER SUPPLY			
Bezeichnung / Typ-Nr.: Identification / Type No.:	A03-0024 D01, A03-0024 D02, A03-0024 D07, A03-0018 D03, A03-0018 D05, A03-0012 D09, A03-0012 D11, A03-0012 D14, A03-0012 D13, A03-0007 D07, A03-0007 D09			
Auftrags-Inhalt: Order content:	LVD CoC			
Prüfgrundlage: Test specification:	EN 61347-1:2015 EN 61347-2-13:2014+A1 EN 62493:2015			
Wareneingangsdatum: Date of receipt:	2017-09-26			
Prüfmuster-Nr.: Test sample No.:	A000650453			
Prüfzeitraum: Testing period:	2017-09-26 to 2017-12-01			
Ort der Prüfung: Place of testing:	See page 3.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
2017-12-21	Phill Liu/ Engineer	2017-12-22	Jack Li / Technical Certifier	
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position
Sonstiges / Other: 1. This report is for issuing LVD CoC for LED POWER SUPPLY mentioned above. 2. EMF refer to report 50107459 001.				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.				

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.:	See cover page
Date of issue	See cover page
Total number of pages	See cover page
Name of Testing Laboratory preparing the Report.....:	TÜV Rheinland (Shenzhen) Co., Ltd.
Applicant's name.....:	See cover page
Address	See cover page
Test specification: Standard IEC 61347-2-13:2014/AMD1:2016 used in conjunction with IEC 61347-1:2015 Test procedure LVD CoC Non-standard test method.....: N/A	
Test Report Form No.....:	IEC61347_2_13F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF	2016-10
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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. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description	LED POWER SUPPLY																																						
Trade Mark	BERDIS																																						
Manufacturer.....	Same as applicant																																						
Model/Type reference	See model list																																						
Ratings	AC 200-240V, 50/60Hz See general product information for detail																																						
List of Attachments (including a total number of pages in each attachment): 10 pages of photo document embedded in this report.																																							
Summary of testing:																																							
Tests performed (name of test and test clause):		Testing location: Shenzhen Southern LCS Compliance Testing Laboratory Ltd. B Area, 2F, Building B, Zhongyu Green High-tech Industrial Park, Wenge Road, Heshuikou, Gongming Street, Guangming New District, Shenzhen, Guangdong, China																																					
<table border="1"> <thead> <tr> <th>Clause(s)</th> <th>Test(s)</th> </tr> </thead> <tbody> <tr> <td colspan="2">IEC 61347-2-13:2014+A1 IEC 61347-1:2015</td> </tr> <tr> <td>7</td> <td>Rubbing test</td> </tr> <tr> <td>8</td> <td>Protection against accidental contact with live part</td> </tr> <tr> <td>10</td> <td>Provision for protective earthing</td> </tr> <tr> <td>11</td> <td>Humidity test</td> </tr> <tr> <td>14</td> <td>Fault conditions</td> </tr> <tr> <td>15</td> <td>Transformer heating</td> </tr> <tr> <td>20</td> <td>Resistance to heat, fire and tracking</td> </tr> <tr> <td>L.5</td> <td>Protection against electric shock</td> </tr> <tr> <td>L.6</td> <td>Heating</td> </tr> <tr> <td>L.7</td> <td>Short-circuit and overload protection</td> </tr> <tr> <td>L.8</td> <td>Insulation resistance and electric strength</td> </tr> <tr> <td colspan="2">IEC 60598-1:2014 EN 60598-1:2015</td> </tr> <tr> <td>4.11</td> <td>Electrical connections</td> </tr> <tr> <td>4.13</td> <td>Mechanical strength</td> </tr> <tr> <td>5</td> <td>External and internal wiring</td> </tr> <tr> <td>8</td> <td>Protection against electric shock</td> </tr> <tr> <td>9</td> <td>Resistance to dust, solid objects and moisture</td> </tr> </tbody> </table> Full tests were performed on models A03-0024 D02 and A03-0012 D09, partial tests performed on other type.			Clause(s)	Test(s)	IEC 61347-2-13:2014+A1 IEC 61347-1:2015		7	Rubbing test	8	Protection against accidental contact with live part	10	Provision for protective earthing	11	Humidity test	14	Fault conditions	15	Transformer heating	20	Resistance to heat, fire and tracking	L.5	Protection against electric shock	L.6	Heating	L.7	Short-circuit and overload protection	L.8	Insulation resistance and electric strength	IEC 60598-1:2014 EN 60598-1:2015		4.11	Electrical connections	4.13	Mechanical strength	5	External and internal wiring	8	Protection against electric shock	9
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General remarks:

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 61347-1

When 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: Constant current LED POWER SUPPLY

Independent SELV LED driver, AC 200-240V, 50/60Hz, Class II, IP20, ta:45°C, tc: 70°C, constant current output type, Non-inherently short-circuit proof.

1. Models in the same series have the same circuit diagram, layout, and similar transformer, except transformer secondary winding turns, parameters of some components in secondary circuit are different.
2. The input circuit is isolated from output circuit by double or reinforced insulation.

Model list:

Series	Model No.	Input	Input current (mA)	Output voltage (V)	Output current (mA)	Max. output voltage(V)	Max. output Wattage(W)
1	A03-0024 D01	AC 200-240V, 50/60Hz	160	55-85	280	98	24
	A03-0024 D02		160	30-42	580	48	24
	A03-0024 D07		160	30-50	450	60	24
	A03-0018 D03		130	30-65	280	80	18
	A03-0018 D05		85	28-48	450	60	18
2	A03-0012 D09		85	22-42	280	48	12
	A03-0012 D11		85	45-78	135	94	12
	A03-0012 D14		50	28-45	200	59	10
	A03-0012 D13		50	13-25	350	33	9
	A03-0007 D07		50	13-25	280	33	7
	A03-0007 D09		50	22-42	135	48	5

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
4 (4)	GENERAL REQUIREMENTS		--
- (4)	<u>Insulation materials</u> according requirements in Annex N of IEC 61347-1	(see Annex N)	N/A
- (4)	<u>Compliance of independent controlgear enclosure</u> with IEC 60598-1		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)	SELV controlgear 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 ☐ No ☒	—
	Independent controlgear	Yes ☒ No ☐	—
	Integral controlgear	Yes ☐ No ☒	—
6 (-)	Auto-wound controlgear	Yes ☐ No ☒	—
	Separating controlgear	Yes ☒ No ☐	—
	Isolating controlgear	Yes ☒ No ☐	—
	SELV controlgear	Yes ☒ No ☐	—

7 (7)	MARKING		--
7.1 (7.1)	Mandatory markings		P
	a) mark of origin	BERDIS	P
	b) model number or type reference	See copy of marking plate	P
	c) symbol for independent controlgear, if applicable		P
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)	AC 200-240V	P
	supply frequency (Hz)	50/60Hz	P
	supply current (A)	See copy of marking plate	P
	f) earthing symbol		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	k) wiring diagram		P
	l) value of t_c	70°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 ☐ No ☒	—
	- rated output power P_{rated} (W)		N/A
	- rated output voltage U_{rated} (V)		N/A
	Constant current type:	Yes ☒ No ☐	—
	- rated output power P_{rated} (W)	See copy of marking plate	P
	- rated output current I_{rated} (A)	See copy of marking plate	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)		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		--
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V	For series 1 models: Max. 0,5V For series 2 models: Max. 0,5V	P
- (10.3)	Controlgear providing SELV		--
	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		N/A
	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		--
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor	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		--
	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)	N/A

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

10 (9)	PROVISION FOR PROTECTIVE EARTHING		--
- (9.1)	Provisions for protective earthing		--
	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		--
	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		--
	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		--
	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		--
- (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

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

12 (12)	ELECTRIC STRENGTH		--
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N/A
	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, $2U + 1000 \text{ V}$	Between L and N after removing fuse: 1480 V	P
	Supplementary insulation, $2U + 1000 \text{ V}$		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation, 4U + 2000 V	Live parts and enclosure, Input circuit and output circuit: 3080V(working voltage:270V)	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

14 (14)	FAULT CONDITIONS		--
- (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)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(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:		--
	The insulation resistance $\geq 1 \text{ M}\Omega$	$> 1 \text{ M}\Omega$	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		—

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A

15 (-)	TRANSFORMER HEATING		--
15.1	General		--
	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		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	See ANNEX5	P
	Double LED modules or equivalent load connected in parallel 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		--
- (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		--
	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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	Insulation between circuits and accessible parts		P
- (15.4.2)	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		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		P
	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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		N/A
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A

17 (16)	CREEPAGE DISTANCES AND CLEARANCES		--
- (16)	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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

18 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		--
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		--
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		P
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		P
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	Screw for fixing enclosure: 0,5Nm	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

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Clause	Requirement + Test	Result - Remark	Verdict
(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		--
- (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
- (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		--
	- 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		--
	Not exceed declared maximum working voltage U_{out} in any load condition		P

14	TABLE: tests of fault conditions	--
For model of A03-0024 D02		
Part	Simulated fault(AC 200-240V, 50/60Hz)	Hazard
BD1	0W, 0A, Fuse opened immediately	No
C10	Unit shut down, recoverable	No
C1	Normal working, recoverable	No
Q1(G-S)	Unit shut down, recoverable	No
Q1(D-S)	0W, 0A, Fuse opened immediately	No
Q1(G-D)	0W, 0A, Fuse opened immediately	No
T1(2-4)	Unit shut down, recoverable	No
T1(2-3)	Unit shut down, recoverable	No
T1(7-9)	Unit shut down, recoverable	No

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Clause	Requirement + Test	Result - Remark	Verdict
E1	Unit shut down, recoverable		No
D1	Unit shut down, recoverable		No
D7	Unit shut down, recoverable		No
C9	Unit shut down, recoverable		No
ZD1	Unit shut down, recoverable		No
C8	Unit shut down, recoverable		No
U1(3-8)	Normal working, recoverable		No
Output	Unit shut down, recoverable		No
For model of A03-0012 D09			
R2	Unit shut down, recoverable		No
C1	Unit shut down, recoverable		No
E2	Normal working, recoverable		No
Q1 (D-S)	Unit shut down, recoverable		No
Q1 (G-S)	Unit shut down, recoverable		No
Q1 (G-D)	Unit shut down, recoverable		No
Q14(D-S)	Unit shut down, recoverable		No
D2	Unit shut down, recoverable		No
T1(1-NC)	Unit shut down, recoverable		No
T1(2-5)	Unit shut down, recoverable		No
T1(6-7)	Unit shut down, recoverable		No
E1	Unit shut down, recoverable		No
D3	Unit shut down, recoverable		No
C9	Unit shut down, recoverable		No
Output	Unit shut down, recoverable		No

IEC 61347-2-13							
Clause	Requirement + Test				Result - Remark		Verdict
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
Model:A03-0024 D02							
Working voltage (V).....:					240V		—
Frequency if applicable (kHz).....:					60Hz		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Distance 1:	B	4,4	1,5	Table 9	4,4	2,5	Table 7
Supplementary information: L to N before fuse.							
Distance 2:	B	5,8	1,5	Table 9	5,8	2,5	Table 7
Supplementary information: Between poles of fuse.							
Working voltage (V).....:					270V		—
Frequency if applicable (kHz).....:					3,2 kHz		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Distance 3:	B	6,5	5,5	Table 9	6,5	5,5	Table 7& 9
Supplementary information: Live parts to accessible parts.							
Distance 4:	R	7,5	5,5	Table 9	7,5	5,5	Table 7& 9
Supplementary information: Input circuits and output circuits.							
Distance 5:	R	7,5	5,5	Table 9	7,5	5,5	Table 7& 9
Supplementary information: Between poles of Y-Cap.							
Distance 6:	R	6,0	5,5	Table 9	6,0	5,5	Table 7& 9
Supplementary information: Transformer primary winding to secondary pin.							
Distance 7:	R	9,7	5,5	Table 9	5,6	5,5	Table 7& 9
Supplementary information: Transformer core to secondary pin.							

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Clause	Requirement + Test				Result - Remark		Verdict
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
Model: A03-0012 D11							
Working voltage (V).....:					240V		—
Frequency if applicable (kHz).....:					60Hz		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Distance 1:	B	6,0	1,5	Table 9	6,0	2,5	Table 7
Supplementary information: L to N before fuse.							
Distance 2:	B	3,6	1,5	Table 9	3,6	2,5	Table 7
Supplementary information: Between poles of fuse.							
Working voltage (V).....:					240V		—
Frequency if applicable (kHz).....:					1,2 kHz		—
PTI.....:					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					--		—
Pulse voltage if applicable (kV)					--		—
Distance 3:	B	5,5	3,0	Table 9	5,5	5,0	Table 7
Supplementary information: Live parts to accessible parts.							
Distance 4:	R	8,5	3,0	Table 9	8,5	5,0	Table 7
Supplementary information: Input circuits and output circuits.							
Distance 5:	R	8,5	3,0	Table 9	8,5	5,0	Table 7
Supplementary information: Between poles of Y-Cap.							
Distance 6:	R	7,2	4,5	Table 13 of IEC 61558-1	7,2	5,0	Table 7
Supplementary information: Transformer primary winding to secondary pin.							
Distance 7:	R	7,0	4,5	Table 13 of IEC 61558-1	7,0	5,0	Table 7
Supplementary information: Transformer core to primary pin.							

** 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) :		2,0			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)		Impression diameter (mm)	
Bobbin of transformer:	See ANNEX 1	125		0,6mm	
PCB	See ANNEX 1	125		0,5mm	
Input terminal block	See ANNEX 1	125		0,6mm	
Output terminal block	See ANNEX 1	125		0,6mm	
Plastic enclosure	See ANNEX 1	104		0,9mm	
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
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	P	
--	--	--	--	--	
Supplementary information: /					

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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
Bobbin of transformer	See ANNEX 1	10	No	0	P
PCB	See ANNEX 1	10	No	0	P
Input terminal block	See ANNEX 1	10	No	0	P
Output terminal block	See ANNEX 1	10	No	0	P
Supplementary information: /					

19 (18.5)	TABLE: Proof tracking test				--
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		--
(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. :	For series 1 models: Max. 0,11mA; For series 2 models: Max. 0,16m	P
	Comply with Annex G.2 of IEC 60598-1		P

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

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Clause	Requirement + Test	Result - Remark	Verdict
	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:		--
	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		--
	Tests in C7 performed in accordance with Annex D, if applicable		N/A
(F)	ANNEX F – DRAUGHT-PROOF ENCLOSURE		--
	Draught-proof enclosure in accordance with the description		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Dimensions of the enclosure		P
	Other design; description		N/A
(H)	ANNEX H - TESTS		--
	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		--
(L.3)	Classification		P
	Class I	Yes ☐ No ☒	—
	Class II	Yes ☒ No ☐	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☒ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☒	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	Marking		--
	Adequate symbols are used		P
(L.5)	Protection against electric shock		--
	Comply with clause 9.2 of IEC 61558-1		P
(L.6)	Heating		--
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked		—
	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		--
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		P
(L.8)	Insulation resistance and electric strength		--
(L.8.1)	Conditioned 48 h between 91 % and 95 %		P
(L.8.2)	Insulation resistance		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Between input- and output circuits not less than 5 MΩ :	Min.100MΩ	P
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ :		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ :		N/A
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits :	3750 V	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity :	1875 V	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 :	3750 V	P
(L.9)	Construction		--
(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		--
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		P
(L.11)	Creepage distances, clearances and distances through insulation		--
	Creepage distances and clearances not less than in Clause 16		--
	Distance through insulation according Table L.5 in IEC 61347-1		--
	1) Basic distance through insulation		P
	Required distance (mm) :		—
	Measured (mm) :	(see appended table)	P
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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)	1,0	—
	Measured (mm)	For enclosure series 1 models: 1,3 mm; For enclosure of series 2 models: 1,3 mm	P
	Supplementary information		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		--
J.1	General		--
	Intended for centralized emergency power supply	Yes ☐ No ☐	—
J.2	Marking		--
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

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Clause	Requirement + Test	Result - Remark	Verdict
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.4)	General requirements		--
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	Solid insulation		--
	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 % of 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	Thin sheet insulation		--
(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
	No flashover or breakdown occurred		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(O)	ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION		--
(O.6)	Marking		--
	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		--
	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		--
	Clause 9 (8)	See clause 9	N/A
(O.9)	Provision for earthing		--
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A
(O.10)	Moisture resistance and insulation		--
	Clause 11 (11)	See clause 11	N/A
(O.11)	Electric strength		--
	Clause 12 (12)	See clause 12	N/A
(O.13)	Fault conditions		--
	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 reduced to 35 % of values according Table 1 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		--
	Clause 17 (15)	See clause 17	N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	Creepage distances and clearances		--
	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		--
	Clause 19 (17)	See clause 19	N/A
(O.17)	Resistance to heat and fire		--
	Clause 20 (18)	See clause 20	N/A
(O.18)	Resistance to corrosion		--
	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		--
(P.1)	General		--
	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		--
(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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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	--
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object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
For models of series 2.						
Terminal block	B	Heavy Power Co., Ltd.	PA12	250V, 10A, 110°C	EN 60998-1	VDE 40016433
Fuse resistor(FR1)	C	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	47R 1W, 250V	--	UL E359590
Varistor(RV1)	B	HuiZhou Lien Shun Electronics Co., Ltd.	07D471K	470V, 85°C	IEC 61051-1 IEC 61051-2	VDE 40005858
Inductor(L1/L2)	C	Guangdong Fenghua Advanced Technology Holding CO.,LTD	VLU0610- 472KFE	0,12A, 4,7mH	--	Test with equipment
- Magnetic wire	C	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	130°C	--	UL E201757
- Heat shrinkable	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V, 125°C	--	UL E203950
Y-capacitor (CY1/CY2)	B	JYH HSU ELECTRONICS LTD	JD	400V, 1000pF, 125°C, Y1	EN60384-14	VDE 40038642
Transformer T1	C	JIANGMEN JIAMINGDA	TREE19- 017HR280 TUV	2,2mH	--	Test with appliance
-bobbin	C	CHANGSHU SOUTH- EAST PLASTIC CO LTD	MF1I-C	150°C, V-0	--	UL E136137
- Magnetic wire	C	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	130°C	--	UL E201757
-Triple insulated wire	B	Shenzhen Darun Science and Technology Co., Ltd	DRTIW-B	130°C	DIN EN 61558-1	VDE 40041174
-Insulation tape	C	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B	130°C, V0	--	UL E165111

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Teflon tube	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	200°C, VW-1	--	UL E203950
-Varnish	C	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	ET-90	180°C, V0	--	UL E228349
PCB	C	GOLDENMAX INTERNATIONAL TECHNOLOGY LTD	ILM-R1	130°C, V-0	--	UL E224772
Plastic enclosure	C	LG CHEMICAL (GUANGZHOU) ENGINEERING PLASTICS CO LTD	GP-2301BF	120°C, V-0	--	UL E248280
For models of series 1.						
Terminal block	B	Heavy Power Co., Ltd.	PA12	250V, 10A, 110°C	EN 60998-1	VDE 40016433
Fuse resistor(FR1)	C	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	47R 1W,250V	--	UL E359590
Common Mode Inductor (LF1)	C	JIANGMEN JIAMINGDA	TC633-151	150uH	--	Test with appliance
-bobbin	C	CHANGSHU SOUTH- EAST PLASTIC CO LTD	MF1I-C	150°C, V-0	--	UL E136137
- Magnetic wire	C	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	130°C	--	UL E201757
Varistor (RV1)	B	HuiZhou Lien Shun Electronics Co., Ltd.	07D471K	470V, 85°C	IEC 61051-1 IEC 61051-2	VDE 40005858
Inductor(L1/L2)	C	Guangdong Fenghua Advanced Technology Holding CO.,LTD	VLU0912- 472KFE	0.24A,4.7mH	--	Test with appliance
Y-capacitor (CY1/CY2)	B	JYH HSU ELECTRONICS LTD	JD	400V, 2200pF, 125°C	EN60384-14	VDE 40038642

IEC 61347-2-13						
Clause	Requirement + Test			Result - Remark		Verdict
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Transformer T1	C	JIANGMEN JIAMINGDA	TREFD25- 001HR280WD TUV	1.0mH	--	Test with appliance
-bobbin	C	CHANGSHU SOUTH- EAST PLASTIC CO LTD	MF1I-C	150°C, V-0	--	UL E136137
- Magnetic wire	C	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	130°C	--	UL E201757
-Triple insulated wire	B	Shenzhen Darun Science and Technology Co., Ltd	DRTIW-B	130°C	DIN EN 61558-1	VDE 40041174
-Insulation tape	C	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B	130°C, V-0	--	UL E165111
-Varnish	C	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	ET-90	180°C, V-0	--	UL E228349
- Heat shrinkable	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V, 125°C	--	UL E203950
Teflon tube	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	200°C, VW-1	--	UL E203950
PCB	C	GOLDENMAX INTERNATIONAL TECHNOLOGY LTD	ILM-R1	130°C, V-0	--	UL E224772
Plastic enclosure	C	LG CHEMICAL (GUANGZHOU) ENGINEERING PLASTICS CO LTD	GP-2301BF	120°C, V0	--	UL E248280

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

IEC 61347-2-13										
Clause	Requirement + Test								Result - Remark	Verdict
	Terminal size and rating									N/A
15.6.2	Mechanical tests									
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)									N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)									N/A
(15.6.3)	Electrical tests									N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1									N/A
(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
Supplementary information: /										

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

ANNEX 4: temperature measurements, thermal tests

	Type reference	A03-0024 D02	—
	Load used	Equivalent load	—
	Mounting position of luminaire	On the black testing board	—
	Ta	45°C	—
	- test 1: rated voltage	--	—
	- test 2: test voltage(normal)	Input: 1,06×240=254,4V; 0,116A, 28,3W Output: 42,0V, 0,564A	—
	- test 3: test voltage(abnormal)	1. Fault condition. Shut down immediately 2. Double the LED modules or equivalent load connected. Shut down immediately 3. The output terminals shall be short-circuited. Shut down immediately 4.Over load: U=264V, P =32,1W	—

Normal operation

temperature (°C) of part	Normal			Abnormal	
	test 1	test 2(°C)	Limit(°C)	test 3	limit
Enclosure inside (under T1)	--	78,1	Ref.	--	--
tc point	--	67,8	70	--	--
Input terminal block	--	72,6	110	--	--
Output terminal block	--	61,6	110	--	--
Input wire	--	54,6	90	--	--
Output wire	--	56,9	90	--	--
LF1	--	97,4	120	--	--
Varistor	--	83,4	85	--	--
L1	--	94,2	120	--	--
L2	--	96,2	120	--	--
E3	--	88,6	105	--	--
E1	--	89,9	105	--	--
T1 primary winding	--	89,7	120	--	--
T1 secondary winding	--	85,7	120	--	--

IEC 61347-2-13					
Clause	Requirement + Test			Result - Remark	Verdict
T1 bobbin	--	87,8	Ref.	--	--
PCB near T1	--	65,1	Ref.	--	--
CY1	--	73,4	125	--	--
CY2	--	76,5	125	--	--
LF2	--	68,3	120	--	--
Supporting surface	--	74,4	90	--	--
Fault condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Double the LED modules or equivalent load connected					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Output short-circuited					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Over load condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
tc point	--	--	--	65,1	105
Input wire	--	--	--	62,5	85
Output wire	--	--	--	64,5	85
L1	--	--	--	92,8	175
L2	--	--	--	94,1	175
LF1	--	--	--	87,7	175
LF2	--	--	--	69,2	175
T1 primary winding	--	--	--	90,0	175
T1 secondary winding	--	--	--	87,0	175
Support surface	--	--	--	74,6	105

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

ANNEX 4: temperature measurements, thermal tests

	Type reference	A03-0012 D09	—
	Load used	Equivalent load	—
	Mounting position of luminaire	On the black testing board	—
	Ta	45°C	—
	- test 1: rated voltage	--	—
	- test 2: test voltage(normal)	Input: 1,06×240=254,4V; 0,057A, 13,8W Output: 41,9V, 0,254A	—
	- test 3: test voltage(abnormal)	1. Fault condition. Shut down immediately 2. Double the LED modules or equivalent load connected. Shut down immediately 3. The output terminals shall be short-circuited. Shut down immediately 4.Over load: U=264V, P =15,0W	—

Normal operation

temperature (°C) of part	Normal			Abnormal	
	test 1	test 2(°C)	Limit(°C)	test 3	limit
Enclosure inside (under T1)	--	70,4	Ref.	--	--
tc point	--	63,0	70	--	--
Input terminal block	--	65,9	110	--	--
Output terminal block	--	67,6	110	--	--
Input wire	--	61,3	90	--	--
Output wire	--	60,4	90	--	--
Varistor	--	83,2	85	--	--
L1	--	89,5	120	--	--
L2	--	87,2	120	--	--
E2	--	77,2	105	--	--
E1	--	80,5	105	--	--
T1 primary winding	--	90,6	120	--	--
T1 secondary winding	--	91,9	120	--	--
T1 bobbin	--	86,6	Ref.	--	--

IEC 61347-2-13					
Clause	Requirement + Test			Result - Remark	Verdict
PCB near T1	--	74,9	Ref.	--	--
CY1	--	77,9	125	--	--
CY2	--	77,3	125	--	--
Supporting surface	--	64,9	90	--	--
Fault condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Double the LED modules or equivalent load connected					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Output short-circuited					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Over load condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
tc point	--	--	--	55,3	105
Input wire	--	--	--	65,8	85
Output wire	--	--	--	68,0	85
L1	--	--	--	90,2	175
L2	--	--	--	78,6	175
T1 primary winding	--	--	--	58,9	175
T1 secondary winding	--	--	--	73,7	175
Support surface	--	--	--	65,3	105

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

ANNEX 4: temperature measurements, thermal tests

	Type reference	A03-0012 D13	—
	Load used	Equivalent load	—
	Mounting position of luminaire	On the black testing board	—
	Ta	45°C	—
	- test 1: rated voltage	--	—
	- test 2: test voltage(normal)	Input: 1,06×240=254,4V; 0,044A, 10,7W Output: 24,9V, 0,342A	—
	- test 3: test voltage(abnormal)	1. Fault condition. Shut down immediately 2. Double the LED modules or equivalent load connected. Shut down immediately 3. The output terminals shall be short-circuited. Shut down immediately 4.Over load: U=264V, P =12,8W	—

Normal operation

temperature (°C) of part	Normal			Abnormal	
	test 1	test 2(°C)	Limit(°C)	test 3	limit
Enclosure inside (under T1)	--	72,8	Ref.	--	--
tc point	--	65,3	70	--	--
Input terminal block	--	61,9	110	--	--
Output terminal block	--	59,6	110	--	--
Input wire	--	52,4	90	--	--
Output wire	--	53,4	90	--	--
Varistor	--	62,5	85	--	--
L1	--	65,3	120	--	--
L2	--	68,9	120	--	--
E2	--	65,8	105	--	--
E1	--	62,3	105	--	--
T1 primary winding	--	80,4	120	--	--
T1 secondary winding	--	69,8	120	--	--
T1 bobbin	--	83,1	Ref.	--	--

IEC 61347-2-13					
Clause	Requirement + Test			Result - Remark	Verdict
PCB near T1	--	74,4	Ref.	--	--
CY1	--	69,9	125	--	--
CY2	--	71,2	125	--	--
Supporting surface	--	62,7	90	--	--
Fault condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Double the LED modules or equivalent load connected					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Output short-circuited					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
Operated for 1h, no defect impairing safety nor smoke or flammable gases produced.					
Over load condition					
temperature (°C) of part	Normal			Abnormal	
	test 1	test 2	limit	test 3	limit
tc point	--	--	--	67,5	105
Input wire	--	--	--	53,8	85
Output wire	--	--	--	54,4	85
L1	--	--	--	68,0	175
L2	--	--	--	72,3	175
T1 primary winding	--	--	--	85,0	175
T1 secondary winding	--	--	--	78,5	175
Support surface	--	--	--	66,0	105

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

Annex 5: ATTACHMENT TO TEST REPORT IEC 61347-2-13 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Part 2: Particular requirements Section Thirteen – d.c. or a.c. supplied electronic controlgear for LED modules	
Differences according to.....:	EN 61347-2-13:2014+A1 used in conjunction with EN 61347-1 :2015

	CENELEC COMMON MODIFICATIONS (EN)	P
	No Common modifications	P

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015
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Clause	Requirement + Test	Result - Remark	Verdict
4.10	Insulation of Class II luminaires		N/A
4.10.1	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
4.10.2	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
4.10.3	Retention of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A

4.11	Electrical connections		P
4.11.1	Contact pressure		P
4.11.2	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		P
4.11.3	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
4.11.4	Material of current-carrying parts		P
4.11.5	No contact to wood or mounting surface		P
4.11.6	Electro-mechanical contact systems		N/A
4.12	Mechanical connections and glands		P
4.12,1	Screws not made of soft metal		P
	Screws of insulating material	Screw for fixing enclosure: 0,5Nm	P

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part :		N/A
	Torque test: torque (Nm); part :		N/A
	Torque test: torque (Nm); part :		N/A
4,12,2	Screws with diameter < 3 mm screwed into metal		N/A
4,12,4	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
4,12,5	Screwed glands; force (Nm) :		N/A
4.13	Mechanical strength		P
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A
	- other parts; energy (Nm) :	0,35 Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P

5	EXTERNAL AND INTERNAL WIRING		--
5.2	Supply connection and external wiring		--
5.2.1	Means of connection..... :	Terminal block	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

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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Clause	Requirement + Test	Result - Remark	Verdict
5.2.7	Cable entries through rigid material have rounded edges		P
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.		N/A
	- insulating material or lining		N/A
5.2.10.1	Cord anchorage for type X attachment:		—
	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:		--
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) :	For input wire 2x0,75mm ² , 60N;(round wire) For output wire 2x0,75mm ² , 60N(round wire)	P

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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Clause	Requirement + Test	Result - Remark	Verdict
	- torque test: torque (Nm) :	For input wire 2x0,75mm ² , 0,15Nm; For output wire 2x0,75mm ² , 0,15Nm	P
	- displacement ≤ 2 mm	For input wire: Max. 0,5mm; For output wire: Max. 0,5mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
5.2.11	External wiring passing into luminaire		N/A
5.2.12	Looping-in terminals		N/A
5.2.13	Wire ends not tinned		N/A
	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		--
	- IEC 60083		N/A
	- other standard		N/A
5.3	Internal wiring		--
5.3.1	Internal wiring of suitable size and type		N/A
	Through wiring		--
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A) :		N/A
	- temperatures..... :	(see Annex 2)	N/A
	Green-yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		--
	Cross-sectional area (mm ²) :		N/A
	Insulation thickness		N/A

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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Clause	Requirement + Test	Result - Remark	Verdict
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		--
	Adequate cross-sectional area and insulation thickness		N/A
5.3.1.3	Double or reinforced insulation for class II		P
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		N/A
5.3.1.6	Insulation thickness other than PVC or rubber		N/A
5.3.2	Sharp edges etc.		N/A
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
5.3.3	Insulating bushings:		--
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A

8	PROTECTION AGAINST ELECTRIC SHOCK		--
8.2.1	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P

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

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
8.2.2	Portable luminaire adjusted in most unfavourable position		N/A
8.2.3.a	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
8.2.3.b	BC lampholder of metal in class I luminaires shall be earthed		N/A
8.2.3.c	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current		N/A
	- no-load voltage		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage		N/A
8.2.4	Portable luminaire have protection independent of supporting surface		N/A
8.2.5	Compliance with the standard test finger or relevant probe		P

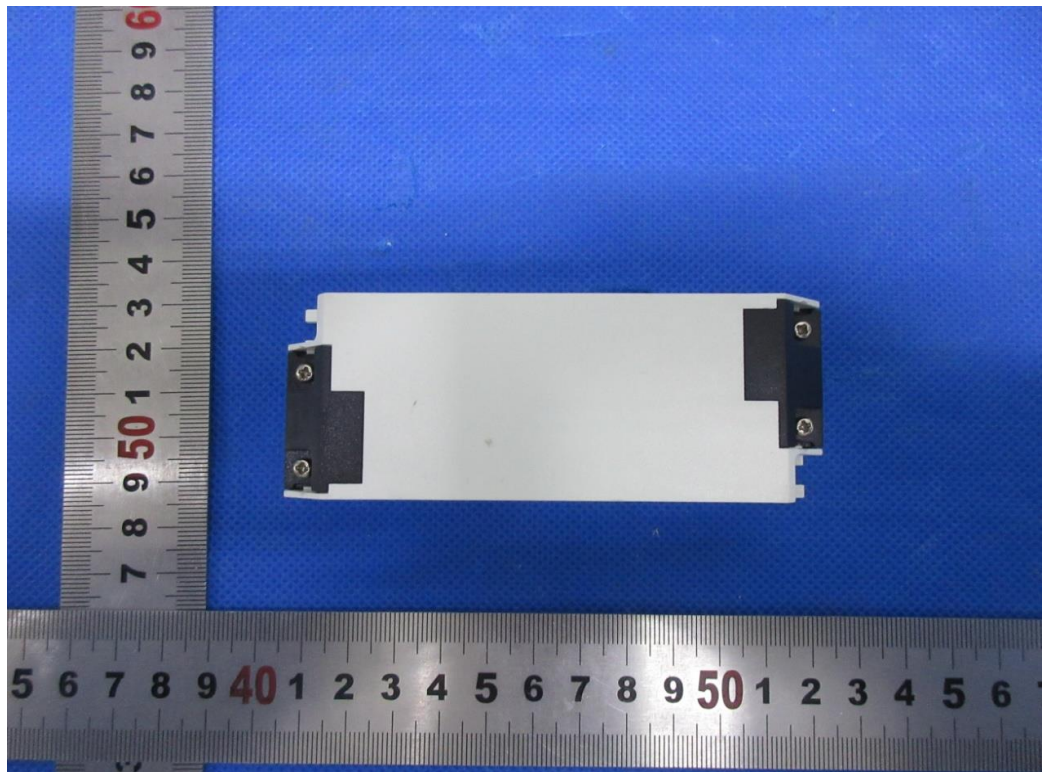
IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 6	Tests according to IEC 60598-1:2014, EN 60598-1:2015		
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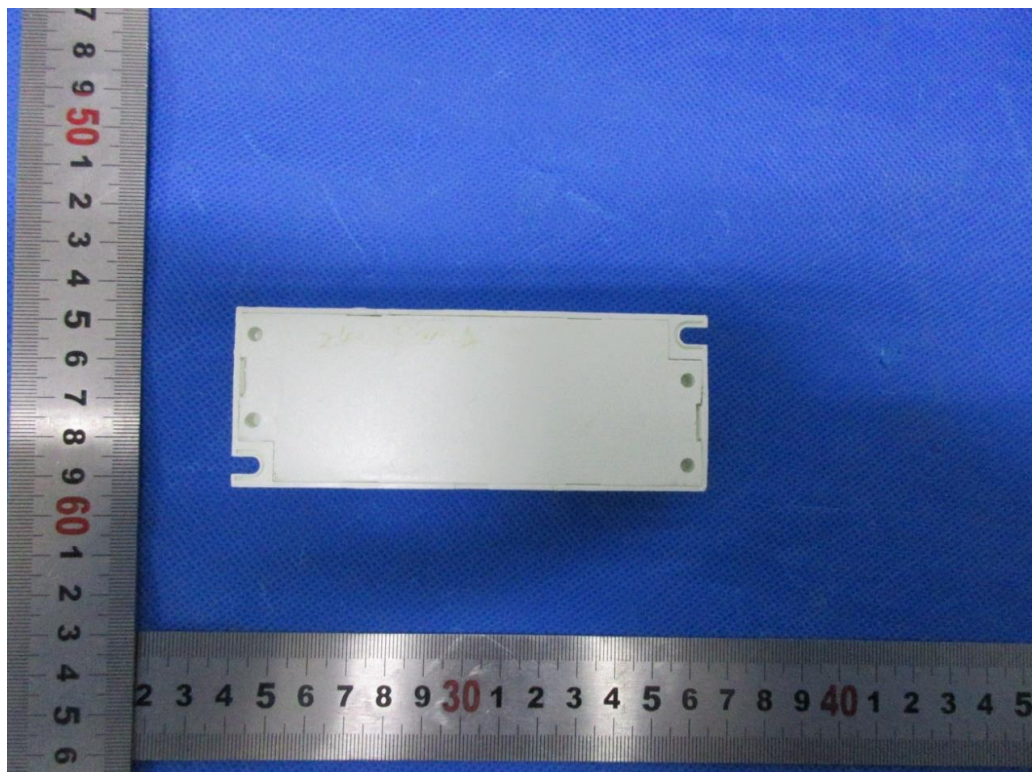
Clause	Requirement + Test	Result - Remark	Verdict
8.2.6	Covers reliably secured		P
8.2.7	Discharging of capacitors $\geq 0,5 \mu\text{F}$	Max. 0,5V	P
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

9	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		--
-	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.....	According to the instruction	—
	- 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
	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

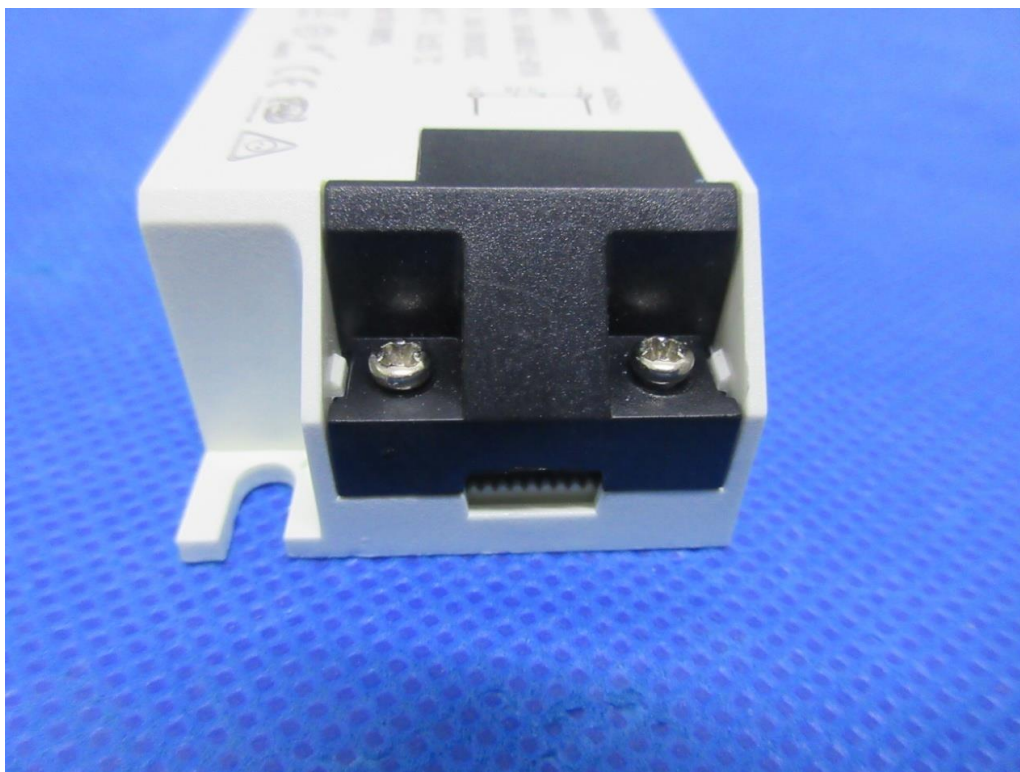
Photo document:



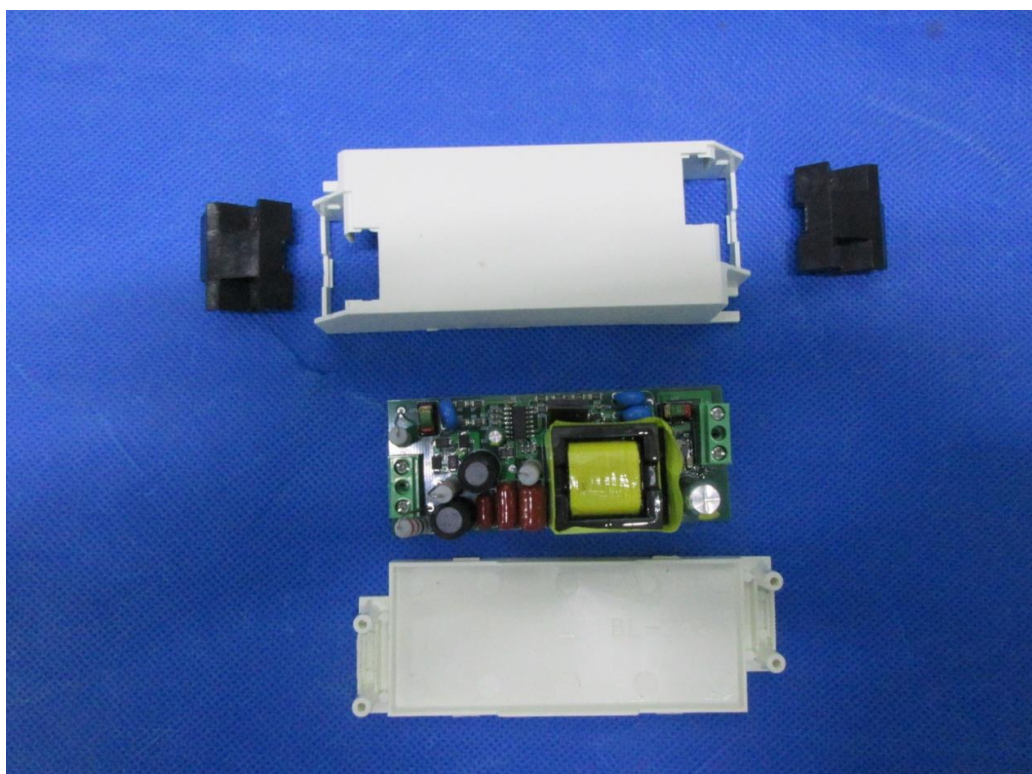
Picture 1. Over view for models of series 1



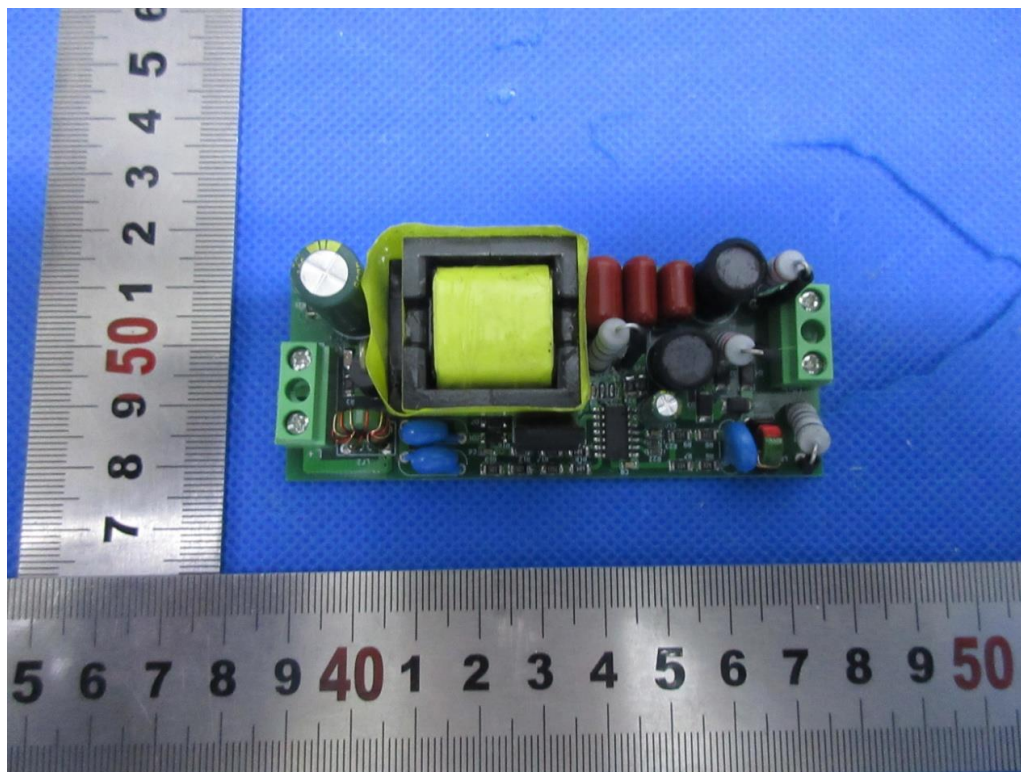
Picture 2. Rear view for models of series 1



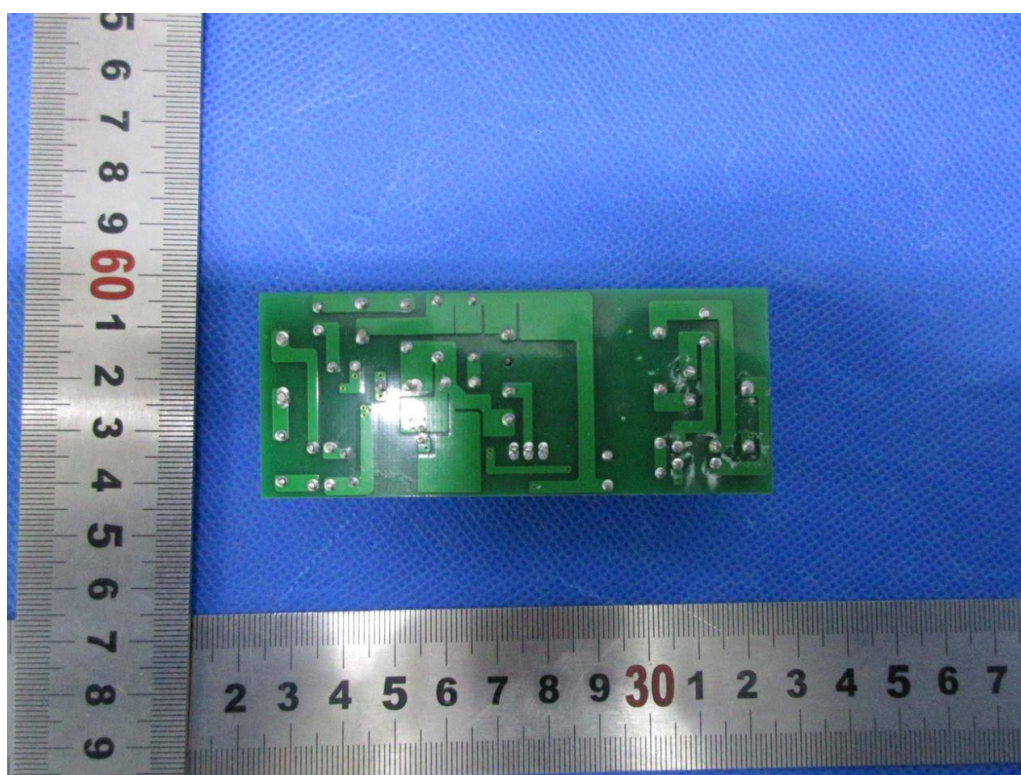
Picture 3. Side view for models of series 1



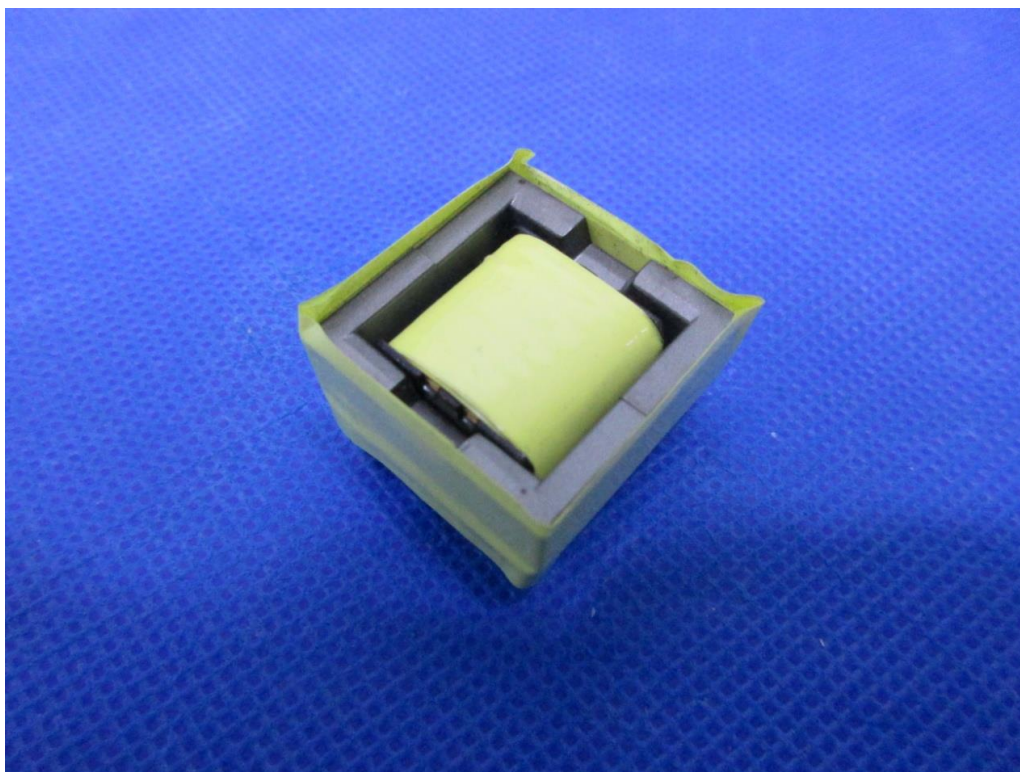
Picture 4. Dismantle view for models of series 1



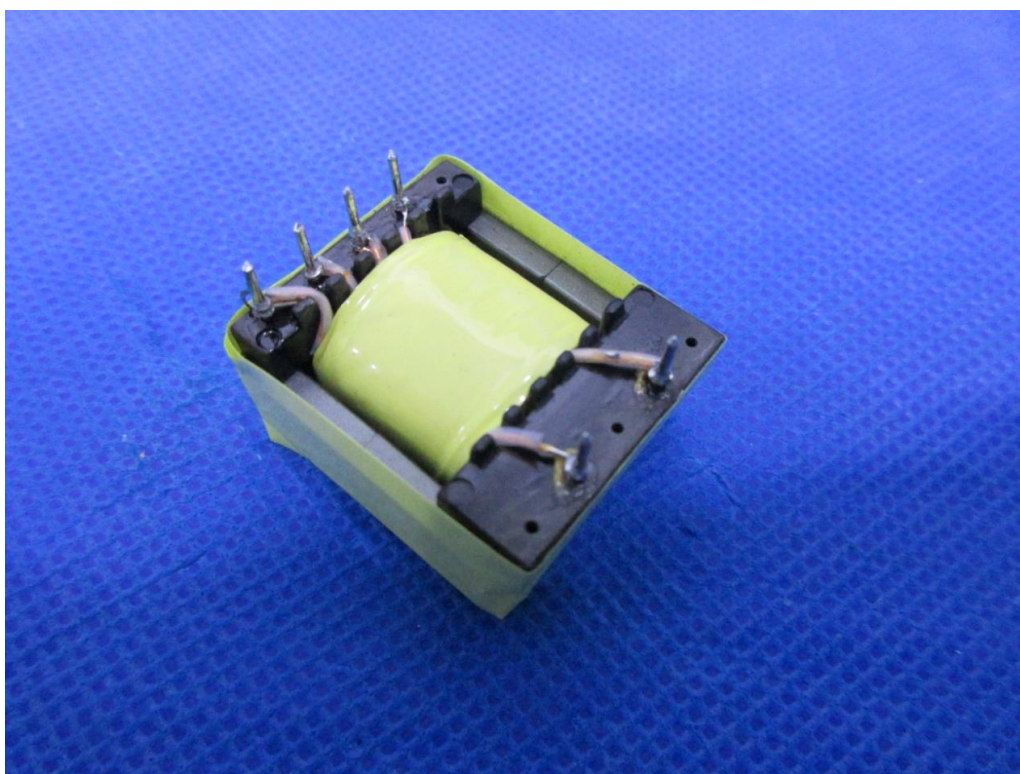
Picture 5. PCB top view for models of series 1



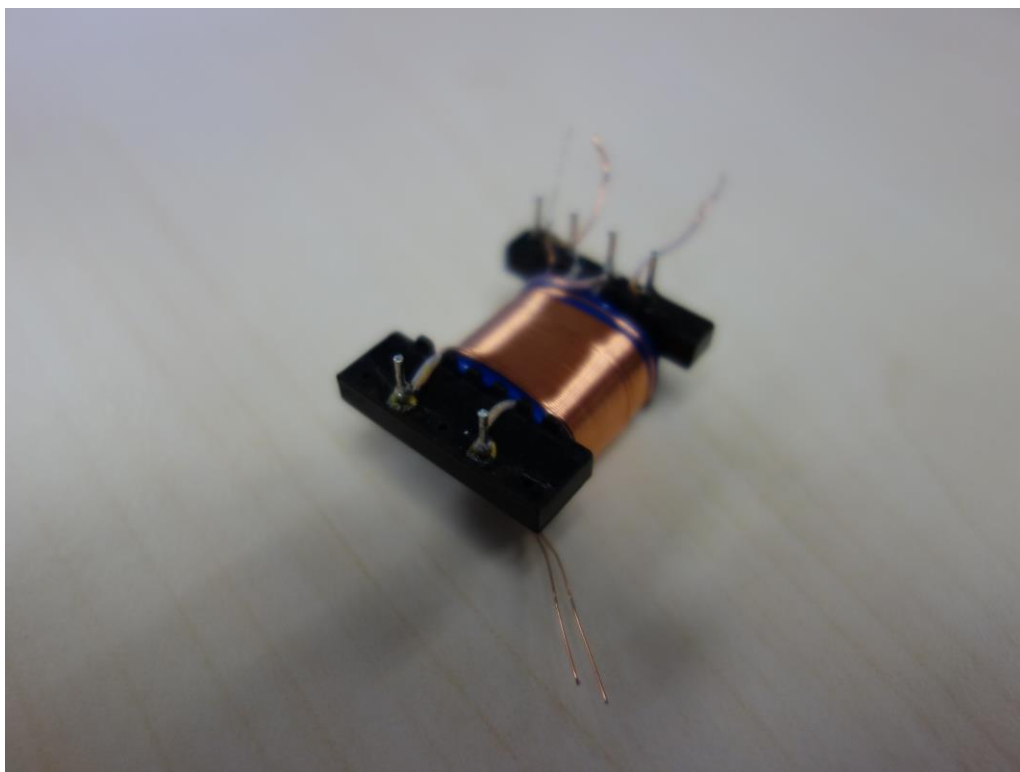
Picture 6. PCB bottom view for models of series 1



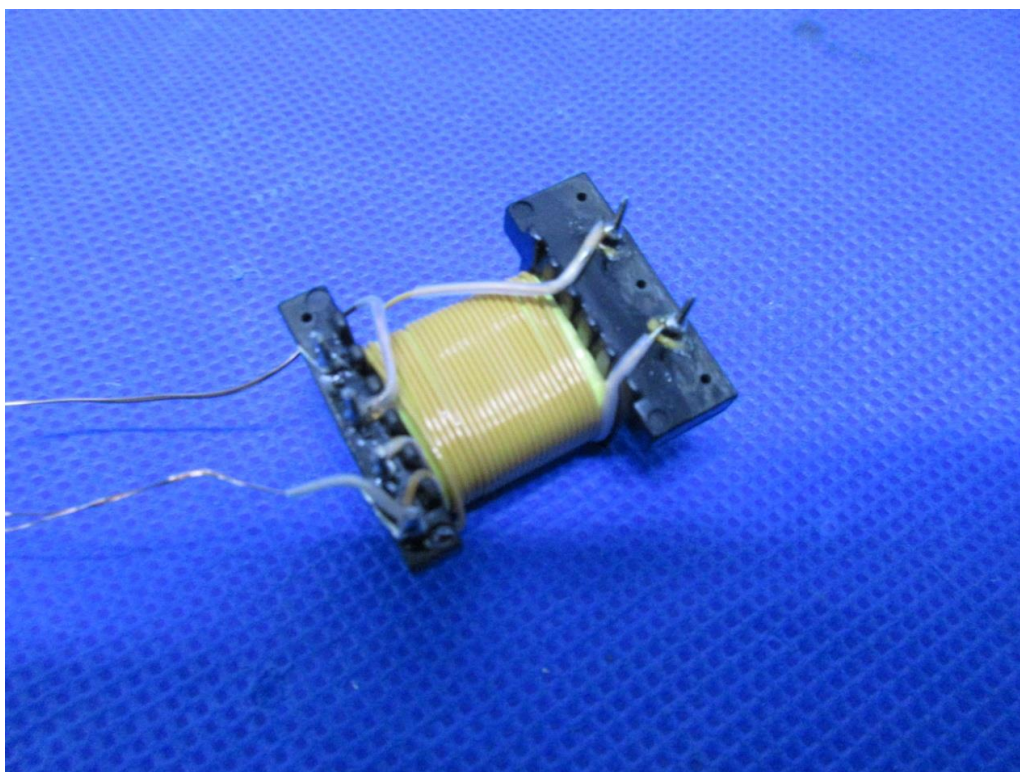
Picture 7. Top view of Transformer



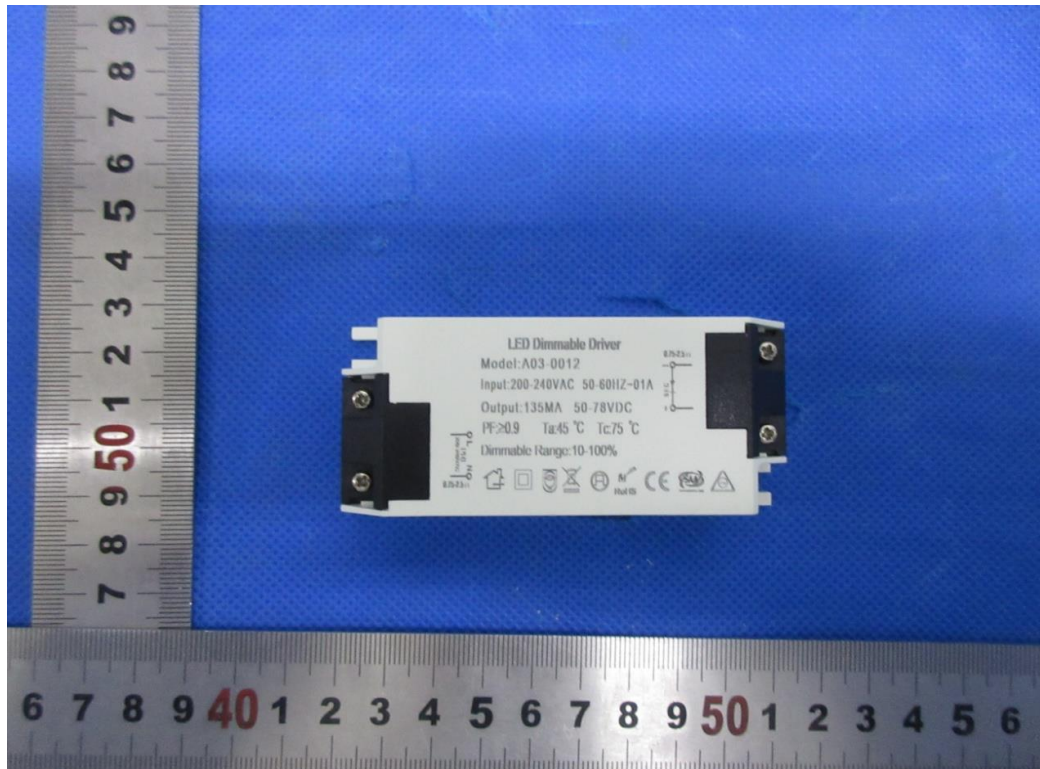
Picture 8. Bottom view of Transformer



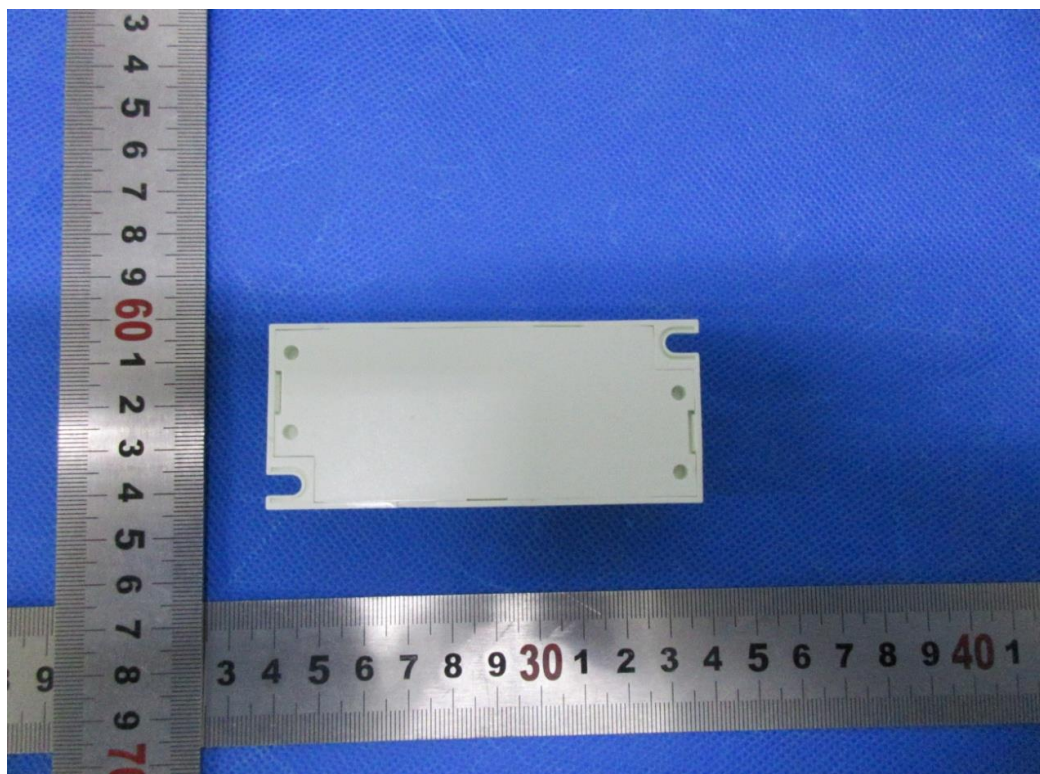
Picture 9. Primary winding of Transformer



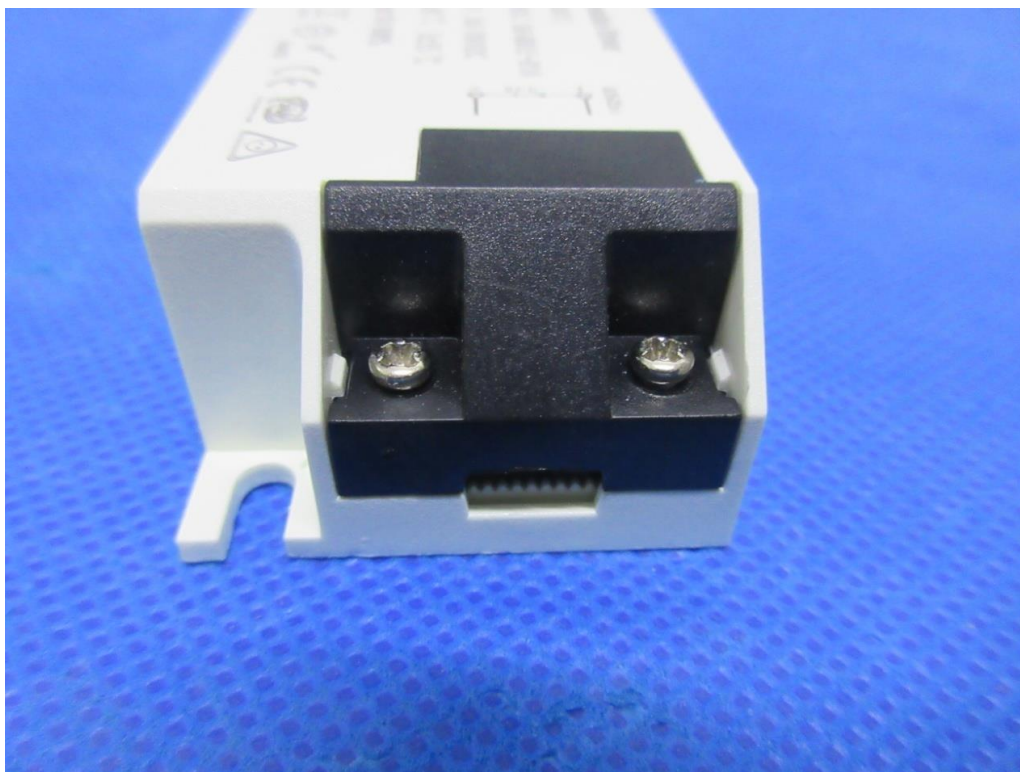
Picture 10. Primary winding of Transformer



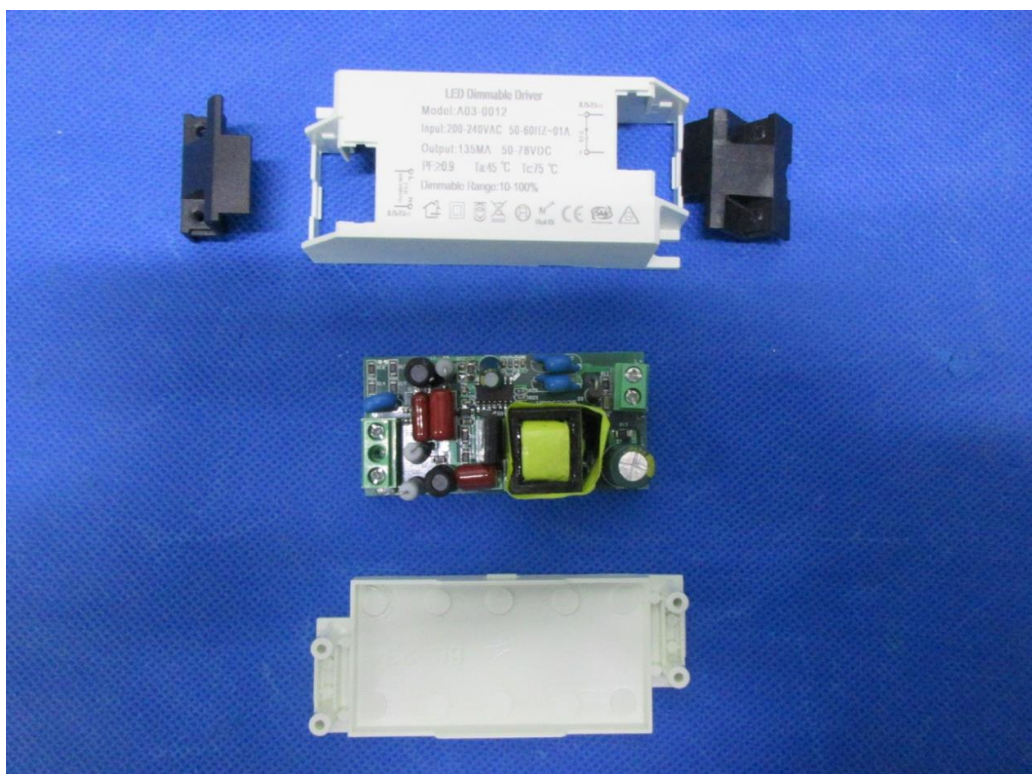
Picture 11. Over view for models of series 2



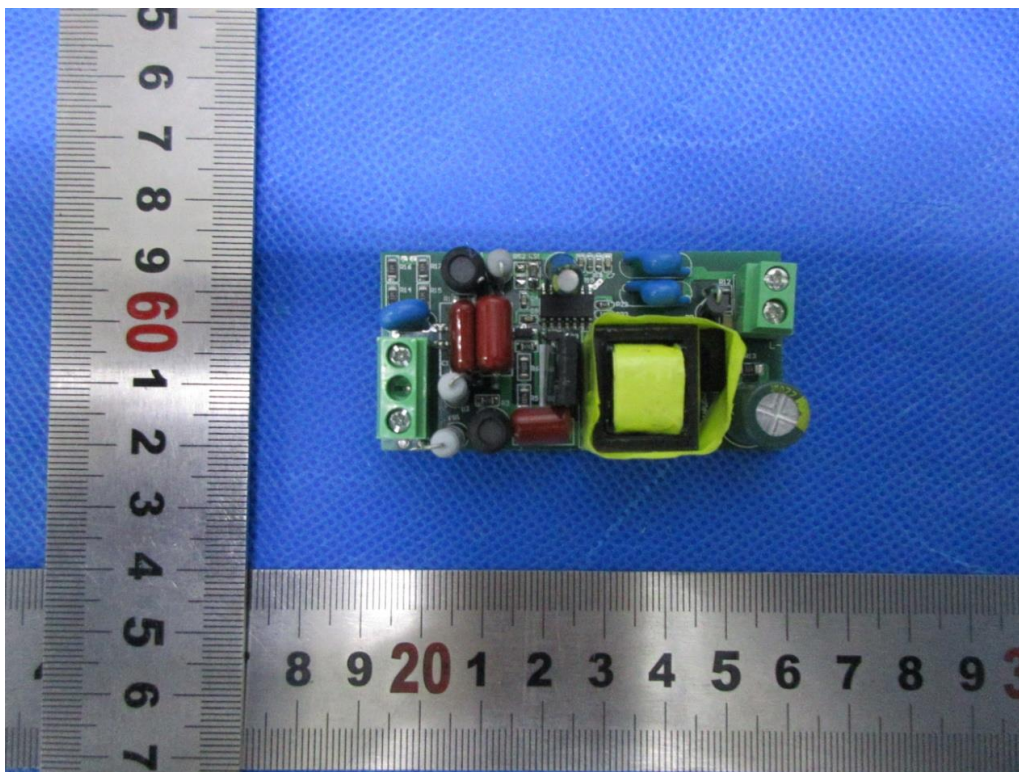
Picture 12. Rear view for models of series 2



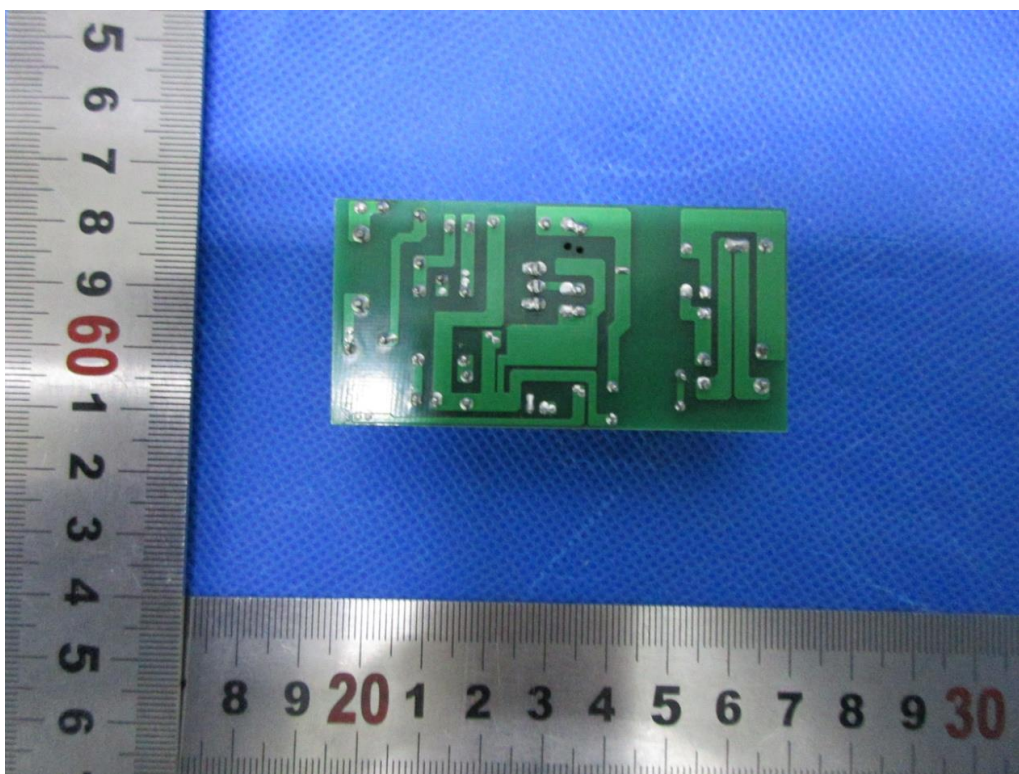
Picture 13. Side view for models of series 2



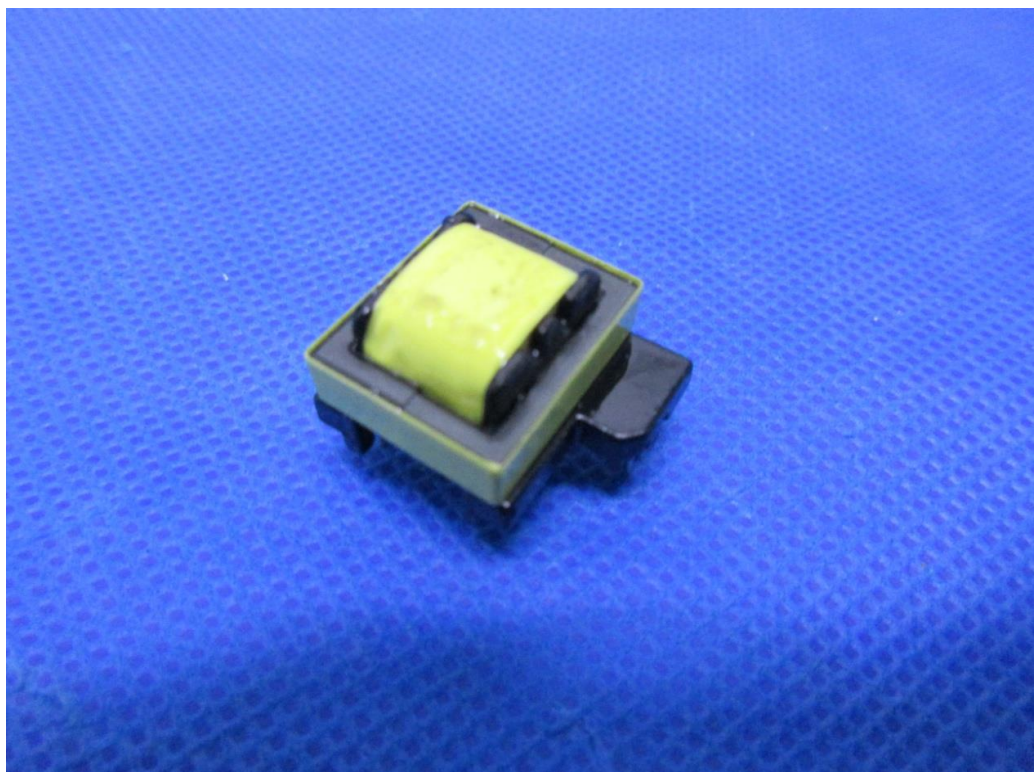
Picture 14. Dismantle view for models of series 2



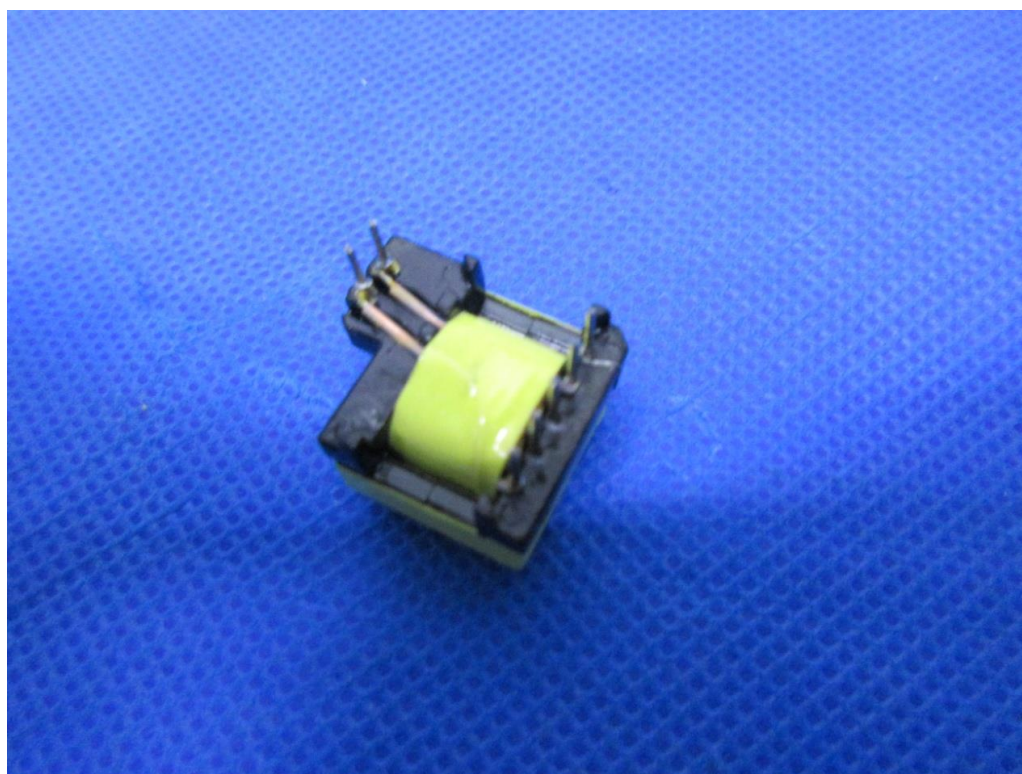
Picture 15. PCB top view for models of series 2



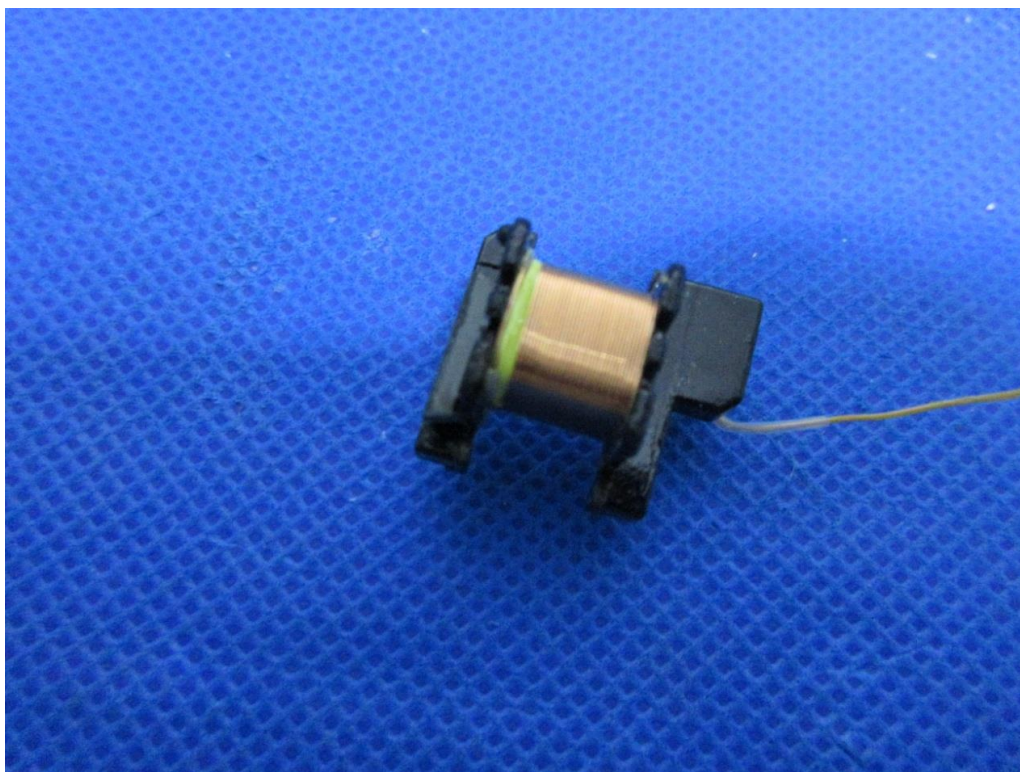
Picture 16. PCB bottom view for models of series 2



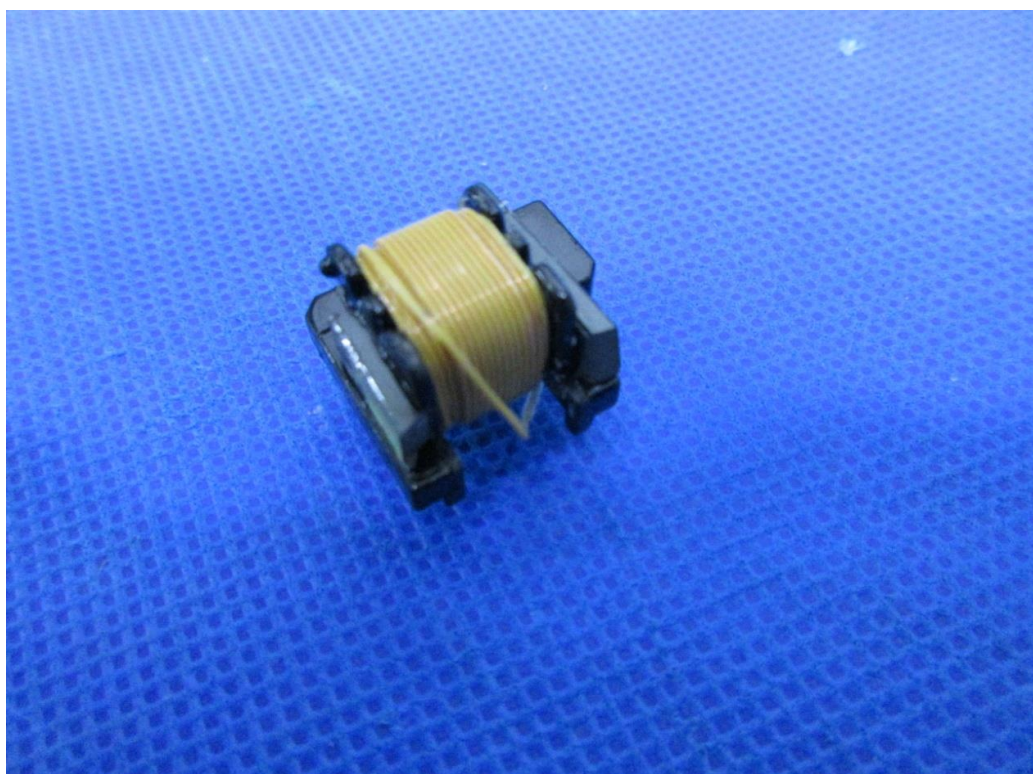
Picture 17. Top view of Transformer



Picture 18. Bottom view of Transformer



Picture 19. Primary winding of Transformer



Picture 20. Secondary winding of Transformer