APPLICATION FOR TEST REPORT

On Behalf of

DONGGUAN BOKE LED DRIVERS CO LTD
LED Driver

Model No. : BK-PUL060A-2000Az,
BK-PUL042A-1100Az, BK-PUL042A-0700Bz

Prepared for : DONGGUAN BOKE LED DRIVERS CO LTD.
Building H, Julong Industrial Park, Meitang Community, Huangjiang Town, Dongguan, China.

Manufacturer : DONGGUAN BOKE LED DRIVERS CO LTD.
Building H, Julong Industrial Park, Meitang Community, Huangjiang Town, Dongguan, China.

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Report Number : 17KWS010061L
Date of Test : Jan. 04, 2016 – Jan. 16, 2017
Date of Report : Jan. 16, 2017

TEST REPORT
IEC 61347-2-13
Lamp controlgear —
Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules

Report reference No. ……..…	17KWS010061L
Tested by (+ signature)…….....:.:	Jason Dong
Reviewed by (+ signature)……:.:	Toney Cao
Approved by (+ signature)……:.:	Linc Yuan
Date of issue……:	Jan. 16, 2017
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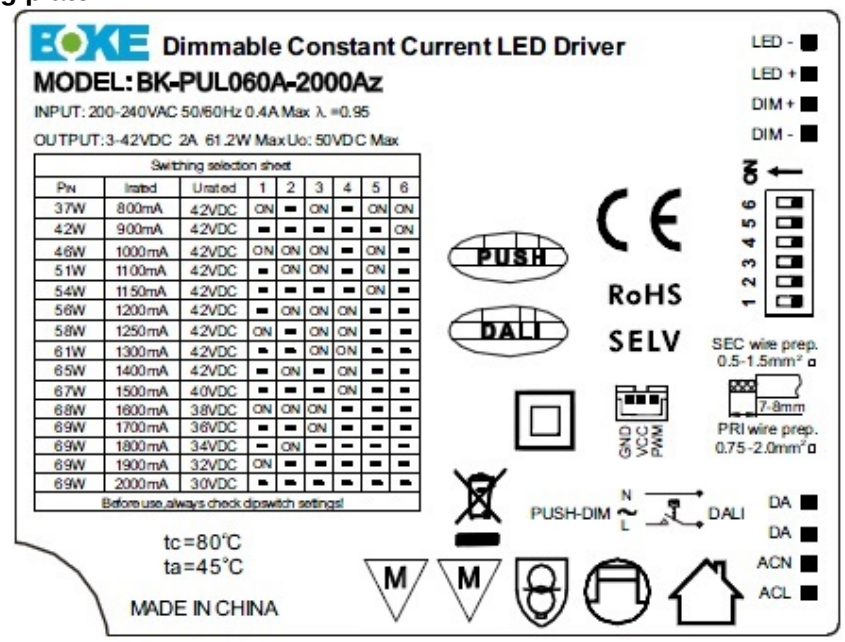
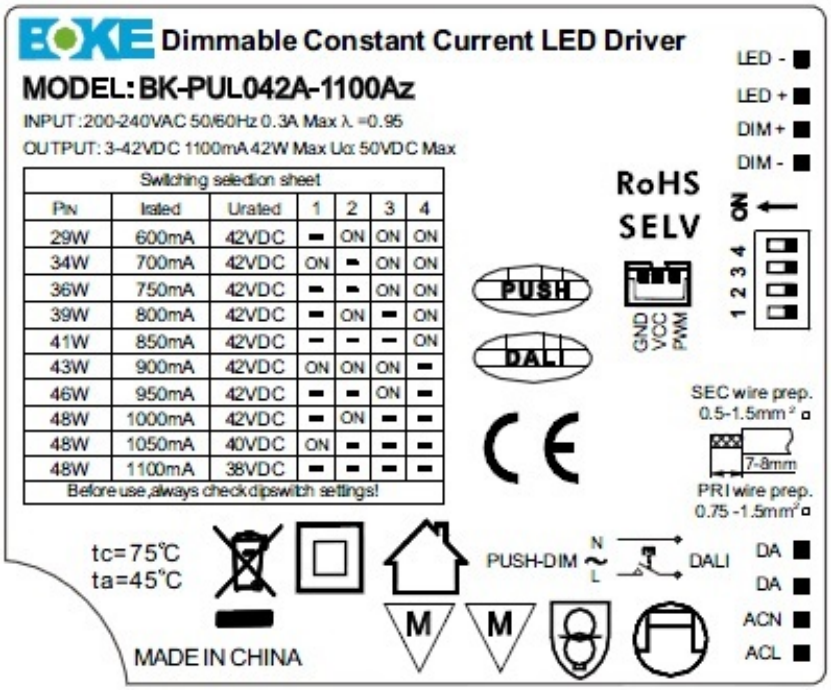
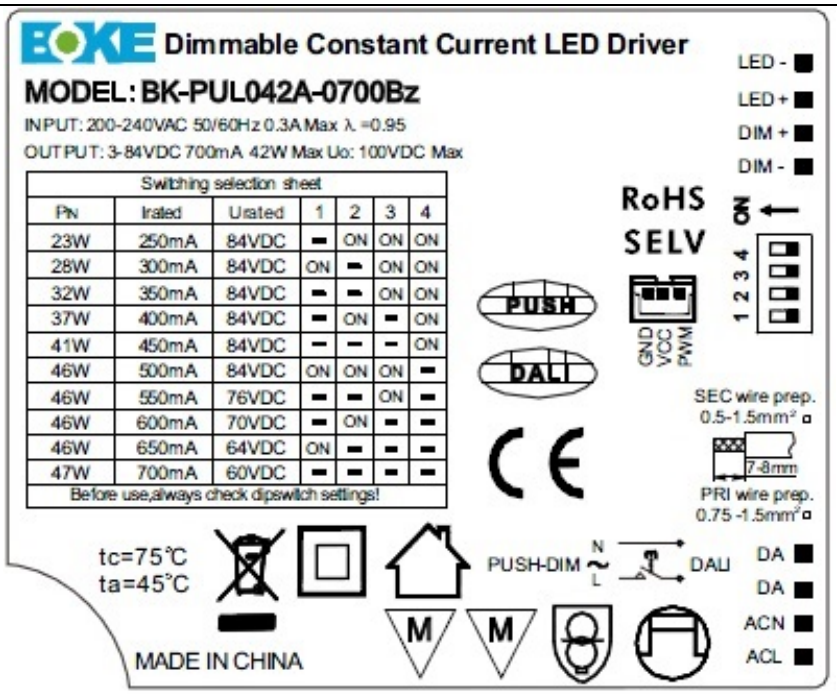
Testing laboratory ……	Keyway Testing Technology Co., Ltd.
Location……	Baishun Industrial Zone, Zhangmutou Town, Dongguan, Guangdong, China 523638
Applicant……..	DONGGUAN BOKE LED DRIVERS CO LTD.
Address:……...	Building H, Julong Industrial Park, Meitang Community, Huangjiang Town, Dongguan, China.
Manufacturer……..	DONGGUAN BOKE LED DRIVERS CO LTD.
Address:……...	Building H, Julong Industrial Park, Meitang Community, Huangjiang Town, Dongguan, China.
Standards……	IEC 61347-1:2007+A1:2010+A2:2012; IEC 61347-2-13:2014;
Procedure deviation……..	N/A
Non-standard test method…….	N/A
Type of test equipment …….	LED Driver
Trade mark……..	BOKE
Model/Type designation……	BK-PUL060A-2000Az, BK-PUL042A-1100Az, BK-PUL042A-0700Bz
Rating……..	Input: 200-240V~ 50/60Hz Details see model list on page 5

Test item particulars .....:	
Classification of installation and use .....:	Independent
Supply Connection.....:	Terminal block
.....:	
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 .....:	Jan. 04, 2016
Date (s) of performance of tests .....:	Jan. 04, 2016 – Jan. 16, 2017

Copy of marking plate:







Summary of testing:

1. Full tests are performed on model BK-PUL060A-2000Az, BK-PUL042A-1100Az, partial test were done on model BK-PUL042A-0700Bz.
2. The product was accessed according to EUROPEAN GROUP DIFFERENCES(EN) and AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU).
3. Only the most unfavourable results had been recorded.

Summary of compliance with National Differences:

List of countries addressed:

☒ The product fulfils the requirements of EN 61347-1:2008+A1:2011+A2:2013, EN 61347-2-13:2014.

☒ The product fulfils the requirements of AS/NZS 61347.1:2016, AS/NZS IEC 61347.2.13:2013.

Name and address of factory (ies) ..... :

DONGGUAN BOKE LED DRIVERS CO LTD.
Building H, Julong Industrial Park, Meitang Community, Huangjiang Town, Dongguan, China.

General product information:
Product: LED Driver
Input: AC200-240V, 50/60Hz
Class II, ta=45°C, IP20, for indoor use, independent SELV controlgear, constant current output, indoors use only, Non-inherently short-circuit protection.
The product is with dimming function.

Model differences:
All models have the same circuit diagram, PCB layout, construction and installation, except different transformer secondary output.

Model list

Model name	Input voltage (V AC)	Input current (A)	Output current (A)	Output voltage (V DC)	Max. Output voltage (V DC)	Max. Rated power (W)	ta/tc (°C)	Transformer type
BK-PUL060A-2000Az	200-240	Max. 0.4	0.80-2.00	3-42	50	61.2	45/80	BKT-PQ3220-022
BK-PUL042A-1100Az	200-240	Max. 0.3	0.60-1.10	3-42	50	42	45/75	BKT-PQ2620-043
BK-PUL042A-0700Bz	200-240	Max. 0.3	0.25-0.70	3-84	100	42	45/75	BKT-PQ2620-044

Note:

The letter ”z” in model name can be ”A” to ”Z” which denote different dimming function and dimming combination mode.

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Clause	Requirement + Test	Result - Remark	Verdict

4 (4)	**GENERAL REQUIREMENTS**		—
- (4)	Insulation materials according requirements in Annex N of IEC 61347-1	(see Annex N)	P
- (4)	Compliance of independent controlgear enclosure with IEC 60 598-1		P
- (4)	Built-in magnetic ballast with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1		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**		—
	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)		P
	supply frequency (Hz)		P
	supply current (A)		P
	f) earthing symbol		N/A
	k) wiring diagram		P
	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 ☐ 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) ..... :		P
	- rated output current I_{rated} (A) ..... :		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**		—

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Clause	Requirement + Test	Result - Remark	Verdict

	h) declaration on protection against accidental contact		P
	i) cross-section of conductors (mm²)		P
	j) number, type and wattage of lamp(s)		P
	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	Plastic enlcosure, conductive part is not accessible	P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	N/A
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V ..... :	Max. 0.22 μF	N/A
- (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		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		P
- (10.4)	**Accessible conductive parts in SELV circuits**		—
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.	Not accessible	N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0.7 mA (peak) or 2 mA d.c. ..... :		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

9 (8)	**TERMINALS**		**—**
	Screw terminals according section 14 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(see Annex 2)	N/A
	Screwless terminals according section 15 of IEC 60598-1:		P
	Separately approved; component list	(see Annex 1)	P
	Part of the controlgear	(see Annex 3)	P

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Clause	Requirement + Test	Result - Remark	Verdict

10 (9)	**PROVISION FOR PROTECTIVE EARTHING**		**—**
- (9.1)	**Provisions for protective earthing**		—
	Terminal complying with clause 8	Class II	N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
- (9.2)	**Provision for functional earthing**		—
	Comply with clause 8 and 9.1		N/A
- (9.3)	**Earth contact via the track on the printed board**		—
	Test with a current of 25 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		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 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	**MOISTURE RESISTANCE AND INSULATION**		**—**
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ ..... :	>100MΩ	P
	For double or reinforced insulation ≥ 4 MΩ ..... :	>100MΩ	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		P
11 (-)	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A

12 (12)	**ELECTRIC STRENGTH**		**—**
	Immediately after clause 11 electric strength test for 1 min		P

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Clause	Requirement + Test	Result - Remark	Verdict

	Basic insulation for SELV, test voltage 500 V		P
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	Live parts(L/N) of different polarities: 1480V	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	Input circuit to output circuit: 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

14 (14)	**FAULT CONDITIONS**		**—**
- (14)	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
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ ..... :	>100 MΩ	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.6)	Relevant fault condition tests with high-power supply		—
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**		—
	Comply with clause L.6 of IEC 61347-1	(see appended table)	P
15.3 (-)	**Abnormal operation**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Comply with clause L.7 of IEC 61347-1	(see appended table)	P
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		N/A
	Double LED modules or equivalent load connected in series to the output terminals of constant current type		P
15 (-)	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P
16 (15)	**CONSTRUCTION**		**—**
- (15.1)	**Wood, cotton, silk, paper and similar fibrous material**		—
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		—
	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
	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
17 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**—**
- (16)	Creepage distances and clearances according to Table 3 and 4, as appropriate		N/A
	Controlgears providing SELV comply with L.1 in Annex L	(see appended table L.11)	P
	Insulating lining of metallic enclosures		N/A
	Basic insulation on printed boards tested according to clause 14		P
	Distances subjected to both sinusoidal voltage as non-sinusoidal pulses not less than value in either Table 3 or 4		N/A
	Creepage distances not less than minimum clearance		P
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)		P
(4.11)	**Electrical connections**		—
(4.11.1)	Contact pressure		P
(4.11.2)	**Screws:**		—
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	**Screw locking:**		—
	- spring washer		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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**		—
(4.12.1)	Screws not made of soft metal	Metal screw for fixing cover of terminal block	P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....:	Screw for fixing cover of terminal block: 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
(4.12.4)	**Locked connections:**		—
	- 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:		P
	- part tested; temperature (°C).....:	Plastic enclosure: 111°C, 1.1mm	P
	- part tested; temperature (°C).....:	All bobbins: 125°C, 0.9mm	P
	- part tested; temperature (°C).....:	PCB: 125°C, 0.8mm	P
- (18.2)	Test of printed boards:		P
	- part tested.....:	PCB	P
- (18.3)	Glow-wire test (650°C):		P
	- part tested.....:	Plastic enclosure	P
	- part tested.....:		N/A
- (18.4)	Needle flame test (10 s):		P
	- part tested.....:	All bobbins	P
- (18.5)	Tracking test:		P
	- part tested.....:	PCB	P
	- part tested.....:	All bobbins	P
20 (19)	**RESISTANCE TO CORROSION**		—
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: tests of fault conditions					P
Part	Un	Un	Short-circuited	Dis-connected	Remark	Hazard
MOV1 #	200V	240V	X	—	Fuse FS1 opened immediately; No hazards.	NO
D1 #	200V	240V	X	—	Fuse FS1 opened immediately; No hazards.	NO
C3 #	200V	240V	X	—	Fuse FS1 opened immediately; No hazards.	NO
D5	200V	240V	X	—	Working , recoverable, No hazards.	NO
Q1 pin G-S	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
Q1 pin G-D #	200V	240V	X	—	Fuse FS1 opened immediately; Q1, R29 damaged immediately. No hazards.	NO
Q1 pin D-S #	200V	240V	X	—	Fuse FS1 opened immediately; Q1, R29 damaged immediately. No hazards.	NO
U1 pin 1-2	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
T1 pin 1-3	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
T1 pin 4-6	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
C18	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
D15	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
C26	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
Output +/-	200V	240V	X	—	Unit shutdown immediately, recoverable.	NO
Remark: #: means the tests were conducted on the all alternate fuses with the same tests result.						

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Clause	Requirement + Test	Result - Remark	Verdict

17 (16)	**TABLES: Creepage distances and clearances**						N/A
Table 3	**Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages**						N/A
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
Creepage distances							
Required basic insulation, PTI ≥ 600		0,6	0,8	1,5	3	4	5,5
Measured							
Required basic insulation, PTI < 600		1,2	1,6	2,5	5	8	10
Measured							
Required supplementary insulation PTI ≥ 600		-	0,8	1,5	3	4	5,5
Measured							
Required supplementary insulation PTI < 600		-	1,6	2,5	5	8	10
Measured							
Required reinforced insulation		-	3,2	5	6	8	11
Measured							
Clearances							
Required basic insulation		0,2	0,8	1,5	3	4	5,5
Measured							
Required supplementary insulation		-	0,8	1,5	3	4	5,5
Measured							
Required reinforced insulation		-	1,6	3	6	8	11
Measured							

Table 4	**Minimum distances (mm) for non-sinusoidal pulse voltages**						N/A
Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured							
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured							
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-
Required clearances	75	90	130	170	-	-	-
Measured							

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Clause	Requirement + Test	Result - Remark	Verdict

A (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	Plastic enlcosure, conductive part is not accessible	N/A
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:		N/A
(A.3)	If voltage > 35 V peak or > 60 V d.c. or protective impendance device; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
	Comply with Annex G of IEC 60598-1		N/A

C (C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		—
(C3)	**GENERAL REQUIREMENTS**		—
(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**		—
	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 ..:		N/A
(C6)	**MARKING**		—
(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**		—
(C7.1)	**Preselection test:**		—
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Output of windings connected to the mains supply short-circuited, and other part of the convertor 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
D (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
E (E)	**ANNEX E – USE OF CONSTANT S OTHER THAN 4500 IN tw TESTS**		—
	Comply with tests according Annex E		N/A
F	**ANNEX F - DRAUGHT-PROOF ENCLOSURE**		—
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P
	Other design; description		N/A
H (H)	**ANNEX H - TESTS**		—
	All tests performed in accordance with the advice given in Annex H, if applicable		P
I (L)	**ANNEX I: PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED MODULES**		—
(L.3)	**Classification**		—
	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 ☒	—

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Clause	Requirement + Test	Result - Remark	Verdict
	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 9.2 of IEC 61558-1		P
(L.6)	**Heating**		—
	No excessive temperatures in normal use	(See appended table L.6)	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	(See appended table L.7)	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
	Between input- and output circuits not less than 5 MΩ .....:	>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 .....:	>100MΩ	P
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits .....:	3000VAC	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity .....:	1500VAC	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 .....:	3000VAC	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**		—

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Clause	Requirement + Test	Result - Remark	Verdict

	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		P
(L.11)	**Creepage distances and clearances**		—
	1. Insulation between input and output circuits, basic insulation:		N/A
	a) measured values ≥ specified values (mm) .....:		N/A
	b) measured values ≥ specified values (mm) .....:		N/A
	c) measured values ≥ specified values (mm) .....:		N/A
	2. Insulation between input and output circuits, double or reinforced insulation:		P
	a) measured values ≥ specified values (mm) .....:	(See appended table L.11)	P
	b) measured values ≥ specified values (mm) .....:		N/A
	c) measured values ≥ specified values (mm) .....:	(See appended table L.11)	P
	3. Insulation between adjacent input circuits		N/A
	- measured values ≥ specified values (mm) .....:		N/A
	3. Insulation between adjacent output circuits		N/A
	- measured values ≥ specified values (mm) .....:		N/A
	4. Insulation between terminals for external connection:		N/A
	- measured values ≥ specified values (mm) .....:		N/A
	5. Basic or supplementary insulation:		P
	a) measured values ≥ specified values (mm) .....:	(See appended table L.11)	P
	b) measured values ≥ specified values (mm) .....:		N/A
	c) measured values ≥ specified values (mm) .....:		N/A
	d) measured values ≥ specified values (mm) .....:		N/A
	e) measured values ≥ specified values (mm) .....:		N/A
	6. Reinforced insulation or insulation:		P
	Between body and live parts: measured values ≥ specified values (mm) .....:	(See appended table L.11)	P
	Between body and output circuit if provision against transient voltages: measured values ≥ specified values (mm) .....:		N/A
	7. Distance through insulation:		P
	a) measured values ≥ specified values (mm) .....:		N/A
	b) measured values ≥ specified values (mm) .....:		N/A
	c) measured values ≥ specified values (mm) .....:	(See appended table L.11)	P

(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		P
(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		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		P
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		P
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		P
	Electric strength test after mandrel test:		P
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		P
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		P
(O)	**ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**		**—**
(O.6)	**Marking**		—
	Marking according clause 7 (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)		N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A
(O.8)	**Terminals**		—
	Clause 9 (8)		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)		N/A
(O.11)	**Electric strength**		N/A
	Clause 12 (12)		N/A
(O.13)	**Fault conditions**		—
	Clause 14 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	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)		N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	**Creepage distances and clearances**		—
	Clause 18 (16)		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)		N/A
(O.17)	**Resistance to heat and fire**		—
	Clause 20 (18)		N/A
(O.18)	**Resistance to corrosion**		—
	Clause 21 (19)		N/A
J	**ANNEX J: 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Emergency supply current not differ more than ±15 %		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF_x)		N/A
	Declared emergency output factor (EOF_x) achieved during emergency operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

L.6	***TABLE: transformer heating---normal operation***		*P*
	Type reference ..... :	BK-PUL060A-2000Az	—
	Lamp used ..... :	LED modules	—
	Mounting position ..... :	As in normal use	—
	Test voltage..... :	1: 1.06x200V=212V 2: 1.06x240V=254.4V	—

temperature rise(K) of part	1 Test (°C)	2 Test (°C)	Limit(°C)
Input terminal block	52.3	51.7	105
Plastic Fuse	53.8	52.9	Ref.
Mov1	61.4	59.9	85
Choke (LF1) coil , T130	65.7	63.7	130
CX1	72.6	69.8	100
Choke (LF2) coil , T130	84.2	79.1	130
Capacitor (C1)	86.2	81.9	Ref.
Capacitor (C2)	96.2	92.5	Ref.
Capacitor (C3)	83.3	81.0	105
Choke (L1) coil , T130	93.9	88.3	130
Y capacitor (CY1), T125	86.9	85.9	125
Y capacitor (CY2), T125	90.7	90.5	125
HS1	100.8	98.9	Ref.
Transformer (T1) coil, class 130	103.1	102.9	110
PCB near T1	102.5	101.0	130
HS2	102.9	103.1	Ref.
Capacitor (C18)	88.3	88.2	105
Capacitor (C19)	86.7	86.6	105
Capacitor (C25)	86.5	86.5	105
Capacitor (C26)	81.2	80.5	105
Choke (L2) coil , T130	92.7	92.0	130
Choke (LF3) coil , T130	69.8	69.5	130
Output terminal block	60.8	58.8	105
PCB near D12	72.2	71.1	130
Enclosure inside above T1	85.2	81.8	Ref.
Enclosure inside under T1	80.6	79.0	Ref.
tc above transformer (T1)	77.6	76.7	80
Support under transformer (T1)	72.8	72.2	90
Ambient	45	45	--

L.6	***TABLE: transformer heating---normal operation***		*P*
	Type reference ..... :	BK-PUL042A-1100Az	—
	Lamp used ..... :	LED modules	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Mounting position ..... :	As in normal use	—
	Test voltage..... :	1: 1.06x200V=212V 2: 1.06x240V=254.4V	—

temperature rise(K) of part	1 Test (°C)	2 Test (°C)	Limit(°C)
Input terminal block	54.9	54.4	105
Plastic Fuse	55.6	54.9	Ref.
Mov1	63.6	62.4	85
Choke (LF1) coil , T130	67.9	66.1	130
CX1	74.4	72.3	100
Choke (LF2) coil , T130	88.5	83.0	130
Capacitor (C1)	86.3	82.4	Ref.
Capacitor (C2)	93.0	90.1	Ref.
Capacitor (C3)	86.5	83.8	105
Choke (L1) coil , T130	91.0	86.0	130
Y capacitor (CY1), T125	91.5	90.8	125
Y capacitor (CY2), T125	91.0	91.3	125
HS1	98.6	96.6	Ref.
Transformer (T1) coil, class 130	102.0	102.4	110
PCB near T1	95.3	93.9	130
PCB near Q2	97.1	97.3	Ref.
Capacitor (C18)	88.8	89.3	105
Capacitor (C19)	87.9	87.9	105
Capacitor (C26)	85.8	85.5	105
Choke (L2) coil , T130	105.4	106.6	130
Choke (LF3) coil , T130	78.3	78.0	130
Output terminal block	59.9	59.6	105
PCB near D12	75.6	74.7	130
Enclosure inside above T1	77.8	78.2	Ref.
Enclosure inside under T1	85.4	84.8	Ref.
tc above transformer (T1)	71.9	72.1	75
Support under transformer (T1)	77.2	76.5	90
Ambient	45	45	--

L.7	***TABLE: Heating - abnormal operation (short-circuit and over-loads)***		*P*
	Type reference ..... :	BK-PUL060A-2000Az	—
	Condition ..... :	ta: 45°C	—
	Lamp used ..... :	LED modules	—
	Mounting position ..... :	As in normal use	—
	Test voltage(V)..... :	0.9x200V=180V 1.1x240V=264V	—

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Clause	Requirement + Test	Result - Remark	Verdict

temperature rise(K) of part	Test (°C) (Max. value recorded)	Limit (°C)
Transformer coil (T1), class 130	114.5/113.9	175
Enclosure outside above T1	84.9/83.3	--
Support under T1	84.2/82.8	105
Ambient	45	--

L.7	***TABLE: Heating - abnormal operation (short-circuit and over-loads)***		*P*
	Type reference ..... :	BK-PUL042A-1100Az	—
	Condition ..... :	ta: 45°C	—
	Lamp used ..... :	LED modules	—
	Mounting position ..... :	As in normal use	—
	Test voltage(V) ..... :	0.9x200V=180V 1.1x240V=264V	—

temperature rise(K) of part	Test (°C) (Max. value recorded)	Limit (°C)
Transformer coil (T1), class 130	110.3/109.6	175
Enclosure outside above T1	75.9/74.8	--
Support under T1	78.6/76.7	105
Ambient	45	--

15.3	***TABLE: Heating - abnormal operation (double load)***		*P*
	Type reference ..... :	BK-PUL060A-2000Az	—
	Lamp used ..... :	LED modules	—
	Mounting position ..... :	As in normal use	—
	Test voltage ..... :	1.1x240V=264V	—

temperature rise(K) of part	Test (K)		Limit(K)
Condition:	a). in parallel to the output terminals for constant voltage type	b). in series to the output terminals for constant current type	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Remark:
1. Output shutdown immediately for condition b).
2. The temperature rise of components are lower than temperature rise of components at normal heating test, so no temperature rise data are recorded.

15.3	***TABLE: Heating - abnormal operation (double load)***		*P*
	Type reference ..... :	BK-PUL042A-1100Az	—
	Lamp used ..... :	LED modules	—
	Mounting position ..... :	As in normal use	—
	Test voltage ..... :	1.1x240V=264V	—

temperature rise(K) of part	Test (K)	Limit(K)

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Clause	Requirement + Test	Result - Remark	Verdict

Condition:	a). in parallel to the output terminals for constant voltage type	b). in series to the output terminals for constant current type	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Remark:
1. Output shutdown immediately for condition b).
2. The temperature rise of components are lower than temperature rise of components at normal heating test, so no temperature rise data are recorded.

L.11	TABLES: Creepage distances and clearances measurement						P
creepage distance Cr. and clearance Cl. at/of:	**Up (V)**	**U rms. (V)**	**Table L.5**	**Measured**		**Required in table L.5**	
				Cl. (mm)	**Cr. (mm)**	**Cl. (mm)**	**Cr. (mm)**
Model:BK-PUL042A-1100Az							
Basic Insulation							
Different polarities of live parts (L/N)	—	240	5a	3.2	3.2	2.4	2.5
Two ends of fuse (F1)	—	240	5a	3.7	3.7	2.4	2.5
Supplementary Insulation							
—	—	—	—	—	—	—	—
Reinforced or Double Insulation							
Pri. trace to sec. trace under CY1	—	240	2a	7.7	7.7	4.7	5.0
Pri. trace to sec. trace under CY2	—	240	2a	7.7	7.7	4.7	5.0
Pri. trace to sec. trace under T1	—	295	2a	7.7	7.7	4.7	5.0
Pri. components to enclosure outside	—	240	2a	10.8	10.8	4.7	5.0
T1 pri. winding to sec. winding	—	295	2a	>7	>7	4.7	5.0
T1 core to sec. pin	—	295	2a	>6	>6	4.7	5.0
Model:BK-PUL060A-2000Az							
Basic Insulation							
Different polarities of live parts (L/N)	—	240	5a	4.9	4.9	2.4	2.5
Two ends of fuse (F1)	—	240	5a	3.7	3.7	2.4	2.5
Supplementary Insulation							
—	—	—	—	—	—	—	—
Reinforced or Double Insulation							
Pri. trace to sec. trace under CY1	—	240	2a	7.3	7.3	4.7	5.0
Pri. trace to sec. trace under CY2	—	240	2a	7.3	7.3	4.7	5.0
Pri. trace to sec. trace under T1	—	250	2a	7.3	7.3	4.7	5.0
Pri. components to enclosure outside	—	240	2a	10.4	10.4	4.7	5.0
T1 pri. winding to sec. winding	—	250	2a	>7	>7	4.7	5.0
T1 core to sec. pin	—	250	2a	>6	>6	4.7	5.0
DTI (Distance through insulation)							
DTI at/of:	**Up**	**U**	**Table**	**Measured**		**Required in table L.5**	

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Clause	Requirement + Test	Result - Remark	Verdict

	(V)	rms. (V)	L.5	DTI (mm)	Layers of insulating tape	DTI (mm)
Supplementary Insulation						
—	—	—	—	—	—	—
Reinforced insulation						
Insulation between transformer core (TR1) and secondary components	—	246	2c	0.25	2+3	0.17[output< 100VA]
Enclosure	—	240	7c	1.6	—	0.9

Remark:

1.Above limits are considered under normal pollution and PTI < 600 condition.

2.Minimum measured value recorded.

ANNEX 1: components					**P**
object/part No.	manufacturer/ trademark	type/model	technical data	Standard	mark(s) of conformity
Plastic Enclosure	SABIC INNOVATIVE PLASTICS B V	945 (GG)	V-0, 120°C, Min. thickness 1.5 mm	UL 94	UL E45329
PCB (mother board & daughter board)	SHENZHEN JI HAO ELECTRONIC CO LTD	JH-2	V-0, 130°C	UL 94	UL E316355
(Alternative)	Various	Various	V-0, 130°C	UL 94	UL approved
Fuse (FS1)	XC Electronics (Shen Zhen) Corp. Ltd.	5TE-Serie(s)	T2AL, 250Vac	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40036821 UL E249609
(Alternative)	Shenzhen Lanson Electronics Co. Ltd.	SMT	T2AL, 250Vac	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
(Alternative)	Dongguan Better Electronics Technology Co., Ltd.	932	T2AL, 250Vac	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40033369 UL E300003
(Alternative)	CONQUER ELECTRONICS CO LTD	MST series	T2AL, 250Vac	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Varistor (MOV1) (optional)	Thinking Electronic Industrial Co Ltd	TVR10511K TVR10561K	Min. 300V AC, Min 85°C	IEC 61051-2 IEC 61051-2-2 UL 1449	VDE 005944 UL E314979
(Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	STE-10D511K STE-10D561K	Min. 300V AC, Min 85°C	IEC 61051-2 IEC 61051-2-2 UL 1449	VDE 40023049 UL E330837
(Alternative)	Hongzhi Enterprises Ltd	HEL10D511K HEL10D561K	Min. 300V AC, Min 85°C	IEC 61051-2 IEC 61051-2-2 UL 1449	VDE 40008621 UL E324904
Bridge-capacitor (CY1) (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD-Series	Max. 2200pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	HJ-Series	Max. 2200pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40000353 UL E221839
(Alternative)	Walsin Technology Corp.	AH	Max. 2200pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40001804 UL E146544

(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 2200pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40036246 UL E154899
Bridge-capacitor (CY2) (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD-Series	Max. 1000pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Xiamen Wanming Electronics Co., Ltd.	HJ-Series	Max. 1000pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40000353 UL E221839
(Alternative)	Walsin Technology Corp.	AH	Max. 1000pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40001804 UL E146544
(Alternative)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 1000pF, 250Vac, 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40036246 UL E154899
Model:BK-PUL060A-2000Az					
AC terminal block	Dong Guan Dieran Electronics Science and Technology Co., Ltd.	DA260	6A, 300V, 105°C	IEC/EN 60998-1, IEC/EN 60998-2-2	VDE 40031801
DC terminal block	Dong Guan Dieran Electronics Science and Technology Co., Ltd.	DA250	6A, 300V, 105°C	IEC/EN 60998-1, IEC/EN 60998-2-2	VDE 40031801
X capacitor (CX1) (Optional)	Shenzhen Surong Capacitors Co Ltd	MPX, MKP	Min. 250Vac, max. 0.22uF, 40/100/21/C	IEC/EN 60384-14	VDE 40008924 UL E314875
(Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	MPX	Min. 250Vac, max. 0.22uF, 40/110/21/C	IEC/EN 60384-14	VDE 40034679 UL E208107
(Alternative)	Shenzhen Sincerity Technology Co., Ltd.	MPX/MKP	Min. 250Vac, max. 0.22uF, 40/110/21/C	IEC/EN 60384-14	VDE 40028812 UL E319615
(Alternative)	SHENZHEN CHUANGSHUODA ELECTRONICS CO LTD	MPX	Min. 250Vac, max. 0.22uF, 40/110/21/C,X2	IEC/EN 60384-14, UL 60384-14	VDE 40028274 UL E326938
Choke (LF1,LF3)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKL-100605-001	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945

- Triple insulation wire	Furukawa Electric Co Ltd	TEX-E	130ºC	IEC/EN 60950-1 UL 1446	VDE 006735 UL E206440
Choke (LF2)	SHENZHEN MEICHUANG INDUCTANCE PRODUCTS CO LTD	BKL-UU10.5-006	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
Choke (L1)	SHENZHEN HAORUICIDIAN ELECTRONICS CO LTD	BKL-10*16-03	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Heat Shrinkable Tubing	Chanyuan Electrionics (Shenzhen) Co., Ltd	CB-HFT	125°C	UL224	UL E180908
Choke (L2)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKL-EE16-009	130ºC	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Insulation tape	Suzhou Mailaduona Electric Material Co Ltd	JY312	130ºC	UL 510	UL E188295
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B, PZ	130ºC	UL 510	UL E165111
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Varnish	HANG CHEUNG PETROCHEMICAL LTD	8562(C)	155°C	UL1446	UL E200154
Transformer (T1)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKT-PQ3220-022	Class B	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Insulation tape	Suzhou Mailaduona Electric Material Co Ltd	JY312	130ºC	UL 510	UL E188295
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B, PZ	130ºC	UL 510	UL E165111
- Tubing	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	200°C VW-1	UL224	UL E180908

- Varnish	HANG CHEUNG PETROCHEMICAL LTD	8562(C)	155°C	UL1446	UL E200154
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Triple insulation wire (secondary)	SHANGHAI LUCKY TRADE CO LTD	TIW-B	130ºC	IEC/EN 60950-1 UL 1446	VDE 40023686 UL E305883
(Alternative)	Furukawa Electric Co Ltd	TEX-E	130ºC	IEC/EN 60950-1 UL 1446	VDE 006735 UL E206440
Model:BK-PUL042A-0700Bz, BK-PUL042A-1100Az					
AC & DC terminal block	Dong Guan Dieran Electronics Science and Technology Co., Ltd.	DA250	6A, 300V, 105°C	IEC/EN 60998-1, IEC/EN 60998-2-2	VDE 40031801
X capacitor (CX1) (Optional)	Shenzhen Surong Capacitors Co Ltd	MPX, MKP	Min. 250Vac, max. 0.15uF, 40/100/21/C	IEC/EN 60384-14	VDE 40008924 UL E314875
(Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	MPX	Min. 250Vac, max. 0.15uF, 40/110/21/C	IEC/EN 60384-14	VDE 40034679 UL E208107
(Alternative)	Shenzhen Sincerity Technology Co., Ltd.	MPX/MKP	Min. 250Vac, max. 0.15uF, 40/110/21/C	IEC/EN 60384-14	VDE 40028812 UL E319615
(Alternative)	SHENZHEN CHUANGSHUODA ELECTRONICS CO LTD	MPX	Min. 250Vac, max. 0.15uF, 40/110/21/C,X2	IEC/EN 60384-14, UL 60384-14	VDE 40028274 UL E326938
Choke (LF1,LF3)	SHENZHEN CREAT FUBON TECHNOLOGY CO., LTD	BKL-090503-005	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Triple insulation wire	Furukawa Electric Co Ltd	TEX-E	130ºC	IEC/EN 60950-1 UL 1446	VDE 006735 UL E206440
Choke (LF2)	SHENZHEN MEICHUANG INDUCTANCE PRODUCTS CO LTD	BKL-UU9.8-004	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481

- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
Choke (L1)	SHENZHEN MEICHUANG INDUCTANCE PRODUCTS CO LTD	BKL-8*12-2mH	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	Test with appliance
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Heat Shrinkable Tubing	Chanyuan Electrionics (Shenzhen) Co., Ltd	CB-HFT	125°C	UL224	UL E180908
Choke (L2 for BK-PUL042A-1100Az)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKL-EE13-007	130ºC	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
Choke (L2 for BK-PUL042A-0700Bz)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKL-EE13-008	130ºC	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Insulation tape	Suzhou Mailaduona Electric Material Co Ltd	JY312	130ºC	UL 510	UL E188295
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B, PZ	130ºC	UL 510	UL E165111
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Varnish	HANG CHEUNG PETROCHEMICAL LTD	8562(C)	155°C	UL1446	UL E200154
Transformer (T1 for BK-PUL042A-1100Az)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKT-PQ2620-043	Class B	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
Transformer (T1 for BK-PUL042A-0700Bz)	CHOU SHEN SHENG ELECTRONICS (SHENZHEN) CO LTD	BKT-PQ2620-044	Class B	Applicable part of IEC/EN 61347-1 and according to IEC/EN 60085	Tested with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL94	UL E59481
- Insulation tape	Suzhou Mailaduona Electric Material Co Ltd	JY312	130ºC	UL 510	UL E188295
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B, PZ	130ºC	UL 510	UL E165111
- Tubing	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	200°C VW-1	UL224	UL E180908

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

- Varnish	HANG CHEUNG PETROCHEMICAL LTD	8562(C)	155°C	UL1446	UL E200154
- Magnet wire	TAI-I Electric Wire & Cable Co Ltd	2UEW	130 C	UL 1446	UL E230945
- Triple insulation wire (secondary)	SHANGHAI LUCKY TRADE CO LTD	TIW-B	130ºC	IEC/EN 60950-1 UL 1446	VDE 40023686 UL E305883
(Alternative)	Furukawa Electric Co Ltd	TEX-E	130ºC	IEC/EN 60950-1 UL 1446	VDE 006735 UL E206440
Note:					

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 (mm²) ..... :		N/A
(14.3.3)	Conductor space (mm) ..... :		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) . :		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

	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
(15.6)	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
(15.7)	Terminals external wiring		N/A
	Terminal size and rating		N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		N/A
	Pull test pin or tab terminals (4 samples); pull (N) ..... :		N/A
(15.9)	Contact resistance test		N/A

	Voltage drop (mV) after 1 h									N/A
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)										--

EUROPEAN GROUP DIFFERENCES(EN)			
Clause	Requirement + Test	Result - Remark	Verdict

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 used in conjunction with EN 61347-1:2008 + A1:2011 + A2:2013
Attachment Form No. .....:	EU_GD_IEC61347_2_13E
Attachment Originator .....:	Intertek Semko AB
Master Attachment .....:	2014-12

	CENELEC COMMON MODIFICATIONS (EN)	N/A
	No Common modifications	N/A

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict

VARIATIONS TO IEC 61347-2-13, Ed.1.0 (2006) MOD			
4	Add the following dash points:		N/A
	– Where the controlgear has accessible outputs, the controlgear shall be SELV output and comply with Annex I.	Plastic enlcosure, conductive part is not accessible	N/A
	– SELV equivalent is not permitted where controlgear has accessible outputs or is classified as independent SELV.		N/A
8.2	Delete existing text and replace with the following:		N/A
	Output circuits of SELV controlgear with accessible outputs shall not exceed 25 V r.m.s. or 60 V d.c. ripple-free d.c. under load except as indicated below	Plastic enlcosure, conductive part is not accessible	N/A
	If the voltage exceeds 25 V r.m.s. or 60 V ripple-free d.c., the output shall comply with the following:		N/A
	a) the touch current shall not exceed: – fora.c.: 0,7 mA (peak); – ford.c.: 2,0 mA;		N/A
	b) the no-load output shall not exceed 33.2 V peak or 60 V ripplefreed.c. NOTE:The limits given are based on IEC 60364-4-41.		N/A
	For controlgears with more than one supply voltage, the requirements are applicable for each of the rated supply voltages.Controlgear with an output greater than the limits above shall have insulated terminals.		N/A
	Compliance is checked by measuring the output voltage when steady conditions are established, the controlgear being connected to rated supply Voltage and rated frequency. For the test under load, controlgear is loaded with a resistance which would give rated output (current or wattage respectively) at rated output voltage.		N/A
	The touch current is checked by measurement in accordance with Annex G of IEC 60598-1.		N/A
	Accessible conductive parts separated by double or reinforced insulation,e.g. live parts and the body or primary and secondary circuits, may beridged (conductive bridged) by resistors or Y2 capacitors provided they consist of at least two separate components of the same rated value(resistance or capacitance) and are rated for the total working voltage and whose impedance is unlikely to change significantly during the individual lifetime of the controlgea		N/A

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict
	In addition, accessible conductive parts separated by double or reinforcedinsulation from live parts, as above, may be bridged by a single Y1capacitor.Y1 or Y2 capacitors shall comply with relevant requirements of IEC 60384-14 and if resistors are used they shall comply with the requirements of testa) in 14.1 of IEC 60065:2001.		N/A
	NOTE "Ripple-free" is conventionally an r.m.s. ripple voltage not more than 10 %of the d.c. component.		N/A
9.1	Direct plug-in control gear		N/A
	Plug-in controlgear with pins for direct insertion into a socket-outlet shallcomply with Appendix J of AS/NZS 3112:2011.		N/A
16.2	1 Add the following after point c):		P
	d) For controlgear with SELV output, the LED modules, or equivalent load for which the controlgear is designed, shall continue to be connected in series incrementally to the output terminals until the controlgear ceases to operate or the output voltage is stabilized.		N/A
	2 Add the following text after the last sentence:		P
	During the tests specified under d), the maximum voltage measured on the output terminals shall not exceed the SELV limits of Clause 8.		N/A
	NOTE: Test d) has been added to ensure that if too many LED modules are connected in series (against manufacturer's instruction) then the output voltage of the SELV controlgear does not exceed the SELV limit of Clause 8.		N/A

VARIATIONS TO IEC 61347-1, Ed.3.0 (2015) MOD			
4	After the fourth paragraph, add the following new Note:		N/A
	- Test conditions and marking requirements for independent controlgear, for use with building insulation or flammable surfaces, for example when used with recessed luminaires, are under consideration.		N/A
4.101	At the end of the clause, add new Clause 4.101 as follows:		P

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict
	Independent lamp controlgear shall be provided with only one of the following means of connection to the LV supply. The means of connection shall be on the following: – Device for the connection of controlgears. – Connecting lead (tails). – Supply cord and plug. – Adaptor for engagement with supply tracks. – Appliance inlet or inlet plug. – Installation coupler. – Luminaire coupler. – Integral pins for insertion into socket outlets.	Terminal block, will conneted to supply with supply cord	P
	In Australia, equipment with a supply cord shall be fitted with a plug complying with AS/NZS 3112 or a coupler complying with its standard. However for other than controlgear supplying portable luminaire a plug is not required if the controlgear is marked with a cord tag with the symbol for “must be installed by a licensed electrician” in accordance with AS/NZS 60598.1.		N/A
	NOTE 1 Requirements for equipment with integral pins are shown in AS/NZS 3112 Appendix J ‘Equipment with integral pins for insertion into socketoutlets’.		N/A
	NOTE 2 Requirements for supply cords used as a means of connection to the supply are shown in AS/NZS 60598.1.		P
	NOTE 3 Independent and built-in controlgear compliance examples are as follows:		P
	a) An Independent LED power supply (known in Australia/New Zealand as a driver) is required to comply with the relevant requirements of AS/NZS 61347.2.13, AS/NZS 61347.1 and AS/NZS 60598.1.		P
	b) A built in LED power supply (driver) is required to comply with the relevant requirements of AS/NZS 61347.2.13, AS/NZS 61347.1 and after the built-in LED power supply is installed in a luminaire it is required to comply with the relevant requirements of the appropriate part of AS/NZS 60598.2 standard for that luminaire type.		N/A
5	At the end of Clause 5, add new Clause 5.101 as follows:		P
5.101	In Australia, for equipment other than Class III equipment, intended for connection to the a.c. supply mains, and that are not marked with:		P
	– a rated voltage of at least 240 V for single-phase equipment or a rated voltage of at least 415 V for three-phase equipment; or		N/A

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict
	– a rated voltage range that includes 240 V for single-phase equipment and 415 V for three-phase equipment,		P
	The rated voltage for controlgear shall be equal to 240 V for single-phase equipment and 415 V for three phase equipment. The upper limit of the voltage range shall be equal to 240 V for single-phase equipment and 415 V for threephase equipment.		P
7.1	After the first paragraph, add the following text:		P
	In Australia and New Zealand, information, instructions and other texts required by this Standard shall be written in English.		P
	The marking of the rated voltage or rated voltage range shall include 240 V for Australia and 230 V for New Zealand.		P
	The information provided shall contain details related to components in controlgear requiring replacement as part of a maintenance program.		N/A
	FELV control terminals shall be marked with the warning symbol “Risk of electric shock”  		N/A
	Instructions shall be provided with controlgear that have FELV control terminals that state the following:		N/A
	– WARNING: FELV terminals marked “Risk of electric shock” are not safe to touch.  		N/A
	–WARNING: Circuits connected to any FELV control terminal shall be insulated for the LV supply voltage of the controlgear and any terminals connected to the FELV circuit shall be protected against accidental contact.		N/A
10.1	After the second paragraph, insert the following text:		N/A
	For the purpose of this Clause, FELV circuits are considered a live part.		N/A
15.3	At the end of Clause 15.3, add new Clause 15.101 as follows:		N/A
15.101	Power factor correction capacitors incorporated into controlgear shall be of a type to ensure that any capacitor failure results in a failsafe outcome (i.e. the capacitor type will fail in the open-circuit mode only and is protected against fire or shock hazard).		N/A

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict

	These capacitors shall be not less than Type B capacitors with metal body and break action protection in accordance with IEC 61048 and AS/NZS 61049. A capacitor complying with ANCI/EIA-456-A shall comply with AS/NZS 61049 and IEC 61048:2006, excluding the endurance test (Clause 18.1.1).		N/A
	NOTE Capacitors of class P2 of IEC 60252 AC motor capacitors do not meet the safety requirements of a Type B capacitor.		N/A
	In addition capacitors shall have a minimum voltage rating of 250 V at temperature rating of 85℃ or 280 V at temperature rating of 100℃		N/A
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or for voltage dividing, shall comply with IEC 60384-14.		N/A
18.2	Delete clause and replace with the following:		P
18.2.1	Parts of non-metallic material shall be resistant to flame and ignition.		P
	For materials other than ceramic, compliance is checked by the tests of 18.2.2 and 18.2.3, 18.2.4 and 18.2.5, as appropriate.		P
	This requirement does not apply to decorative trims, knobs, wiring insulation and other parts not likely to be ignited or to propagate flames from inside the controlgear.		P
	This Clause applies to all parts, including components, even if they have been tested to their own standard.		P
18.2.2	Parts of non-metallic material supporting connections shall withstand the glow wire test		P
	The test apparatus, test procedure and criteria shall be those described in AS/NZS 60695.2.11.		P
	The glow wire is heated to 750℃ and applied to one test sample for 30s.	PCB, all bobbins, X capacitor and terminal block (AC/DC): 750ºC glow-wire test	P
18.2.3	All other parts of non-metallic material shall withstand the glow wire test.		P
	The test apparatus, test procedure and criteria shall be those described in AS/NZS 60695.2.11.		P
	The glow wire is heated to 650℃ and applied to one test sample for 30s.	Plastic enclosure: 650ºC glow-wire test	P
18.2.4	During the application of the 750℃ glow wire test of Clause 18.2.2 if a flame is produced that persists for longer than 2 s, the controlgear is further tested as follows:	No flame produced	N/A
	The needle-flame test of AS/NZS 60695.11.5 is applied to non-metallic parts that encroach within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm above the point of application of the glow wire.		N/A
	Parts shielded by a barrier that meets the needle-flame test of AS/NZS 60695.11.5 are not tested.		N/A

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE This requires the needle flame to be applied to all parts likely to be impinged upon by the glow-wire flame within the hypothetical envelope of a vertical cylinder positioned above the point of application of the glow-wire. This applies to all parts unless there is a barrier that passes the needle-flame test and is within the cylinder and would protect the part from the glow-wire flame.		N/A
	The test apparatus, test procedure and criteria shall be those described in AS/NZS 60695.2.10.		N/A
	The needle flame is applied to one test sample for 30s.		N/A
	The needle-flame test is not carried out on parts that are made of material classified as V-0 or V-1 according to AS/NZS 60695.11.10. The sample of material classified in accordance with AS/NZS 60695.11.10 shall be no thicker than the relevant part.		N/A
18.2.5	PCBs in controlgear shall be subject to the needle-flame test of AS/NZS 60695.11.5.		P
	The test apparatus, test procedure and criteria shall be those described in AS/NZS 60695.11.5.		P
	The needle flame is applied to one test sample for 30s to an edge of the PCB at least 10 mm from a corner.		P
	The duration of burning shall not exceed 15 s after removal of the needle flame.		P
	The needle-flame test is not carried out on PCBs made of material that is V-0 rated according to AS/NZS 60695.11.10.		P
18.3	Delete clause and replace with the following:		P
	Lamp controlgear intended for building into luminaires other than ordinary, independent lamp controlgear, and lamp controlgear having insulation subject to starting voltages with a peak value higher than 1500 V shall be resistant to tracking.	PCB, all bobbins, terminal block (AC/DC): PTI 175V	P
	For materials other than ceramic, compliance is checked by subjecting the parts to the resistance to tracking test according to AS/NZS 60598-1.		P
18.4	Delete clause.		P
18.5	Delete clause.		P

VARIATIONS to IEC 60598-1:2008 MOD			
Clause	Requirement + Test	Result - Remark	Verdict
(0)	GENERAL INTRODUCTION		P

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Clause	Requirement + Test	Result - Remark	Verdict

(0.1)	Add the following text at the end of Clause 0.1: Where the term “lamp” is used in this Standard, it is taken to include electric light sources. LED light sources are subject to the same test parameters as “other discharge lamps”. NOTE It is recommended that portable, rechargeable, battery operated luminaires comply with AS/NZS 60335.1, Annex B. In addition, portable, rechargeable, battery operated luminaires with lithium ion batteries should have overvoltage protection.		N/A
(0.4.2)	After the first paragraph, add the following text: In Australia, for equipment, other than class III equipment, that is intended for connection to the supply mains and not marked with: -- a rated voltage of at least 240 V for single-phase equipment or a rated voltage of at least 415 V for three-phase equipment; or -- a rated voltage range that includes 240 V for single-phase equipment and 415 V for three-phase equipment, the rated voltage is equal to 240 V for single-phase equipment and 415 V for three-phase equipment, and the upper limit of the voltage range is equal to 240 V for single-phase equipment and 415 V for three-phase equipment.		P
(0.5)	Add the following paragraph after the title: Throughout this document, where there is a relevant Australian		P
(0.5.2A)	Add the following new Clause after Clause 0.5.2: 0.5.2A Capacitors Capacitors shall comply with Clause 4.2A.		N/A

(2)	CLASSIFICATION OF LUMINAIRES		P
(2.2)	At the end of Clause 2.2, add the following paragraph: Class 0 luminaires are not allowed in Australia or New Zealand.		P

(3)	MARKING		P
(3.2.12)	Add the following paragraph after Note 3: In Australia, luminaires for household use and similar with supply cords which are not fitted with a plug shall be marked with a cord tag with the symbol for “must be installed by a licensed electrician”.(Refer to Figure ZZ1).  FIGURE ZZ1 MUST BE INSTALLED BY A LICENSED ELECTRICIAN		N/A
(3.3)	Add the following text after the second paragraph: In Australia and New Zealand, instructions and other texts required by this Standard shall be written in English.	English	P

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Clause	Requirement + Test	Result - Remark	Verdict
(3.3.7)	Delete Clause 3.3.7 and replace with the following: 3.3.7 Luminaires for use with metal halide lamps shall be provided with instructions that state the substance of the following: To avoid potential unsafe lamp failure, the luminaire shall be switched off for at least 30 minutes at least once a week. In addition, the luminaire shall be operated: -- complete with its protective shield; or -- with a double jacketed lamp.		N/A
(3.3.21)	Add the following new Clause: 3.3.21 The instructions shall contain details related to components in the luminaire that require replacement as part of a maintenance program.		N/A
(4)	CONSTRUCTION		P
(4.8)	Add the following paragraph after the third paragraph: Switches that indicate an off position shall have contacts with an air break and comply with AS/NZS 3133 or AS/NZS 61058.1.		N/A
	Add the following new Clause after Clause 4.2: 4.2A Capacitors shall be of a type to ensure that any capacitor failure results in a failsafe outcome (i.e. the capacitor type will fail in the open-circuit mode only and is protected against fire or shock hazard). Capacitors shall be not less than Type B capacitors with metal body and break action protection in accordance with IEC 61048 and IEC 61049. A capacitor complying with ANCI/EIA-456-A shall comply with IEC 61049 and IEC 61048: 2006 excluding the endurance test of 18.1.1. NOTE Capacitors of Class S2 (formerly referred to as P2) of IEC 60252 (all parts) do not meet the safety requirements of a Type B capacitor. In addition, capacitors shall have a minimum voltage rating of 250 V at a temperature rating of 100 °C or 280 V at a temperature rating of 85 °C. Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or for voltage dividing, shall comply with IEC 60384-14.		N/A
(5)	EXTERNAL AND INTERNAL WIRING		P

AUSTRALIA / NEW ZEALAND NATIONAL DIFFERENCES(AU)			
Clause	Requirement + Test	Result - Remark	Verdict
(5.2.1)	Delete the first paragraph and replace with the following: Luminaires shall be provided with only one of the following means of connection and isolation to the supply. Fixed luminaires: -- device for the connection of luminaires; -- terminals; plug for engagement with socket-outlets; -- connecting lead (tails); -- supply cord and plug; -- adapter for engagement with supply tracks; -- appliance inlet; -- installation coupler; -- luminaire coupler; Portable luminaires: -- supply cord with plug; -- appliance inlet. Track-mounted luminaires: -- adaptor; -- connector.	Terminal block, will conneted to supply with supply cord	P
	Delete the second and third paragraph.		P
	Add the following text after Note 3: In Australia, non-portable luminaires with a supply cord shall be fitted with a plug complying with AS/NZS 3112 or a coupler complying with its standard, except where the luminaire has markings and instructions that comply with Clause 3.2.12, in which case, a plug or coupler is not required. However, for other than portable luminaires a plug is not required if the luminaire has markings and instructions in accordance with Clause 3.2.12. The plug portion of a luminaire with integral pins shall comply with the relevant requirements of AS/NZS 3112. NOTE 1 Relevant requirements for equipment with integral pins are outlined in AS/NZS 3112. NOTE 2 PVC-insulated connection cords should not be used with outdoor luminaires in cold alpine locations.		N/A
(5.2.2)	Delete the first paragraph and replace with the following: Supply cords used as a means of connection to the supply, when supplied by the luminaire manufacturer, shall be at least equal in their mechanical and electrical properties to those specified in IEC 60227 and IEC 60245, as indicated in Table 5.1, or AS/NZS 3191, and shall be capable of withstanding, without deterioration, the highest temperature to which they may be exposed under normal conditions of use.		N/A
	Table 5.1, delete rows 4 and 5 and replace with the following: Luminaires which are other than ordinary Portable rough service luminaires | 60245 IEC 57 | 60227 IEC 53 Portable rough service luminaires | 60245 IEC 66 | PVC insulated and sheathed heavy duty flexible cord		N/A
	Delete the third paragraph and replace with the following: To provide adequate mechanical strength, the nominal cross-sectional area of the conductors shall be not less than: -- 0,75 mm^2; -- 1,0 mm^2 for portable rough service luminaires.		P

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Clause	Requirement + Test	Result - Remark	Verdict

(5.2.16)	Add the following text at the end of Clause 5.2.16: Class II luminaires for fixed wiring incorporating an appliance coupler shall not have means to allow further luminaires to be connected, including looping in by cascading. Luminaire couplers incorporated with the luminaire shall comply with IEC 61995-1.		N/A
(5.2.18)	Delete Clause 5.2.18 and replace with the following: 5.2.18 All portable luminaires with a flexible supply cord shall be fitted with a plug complying with AS/NZS 3112. Other luminaires with flexible cords shall be fitted with a plug complying with AS/NZS 3112, unless they have the warning allowed by Clause 3.2.12.		N/A
(5.2.19)	Add the following new Clause: 5.2.19 Installation couplers incorporated within luminaires shall comply with the requirements of AS/NZS 61535. Luminaires incorporating installation couplers may have means to allow further luminaires to be connected by cascading provided the through wiring is rated for the current rating of the installation coupler.		N/A
(5.3.1)	Delete the third paragraph and replace with the following: Internal wires coloured green, yellow or green/yellow combination shall be used for making protective earth connections only. Functional earth connections shall not be made by wires coloured green, yellow or green/yellow combination.		N/A
	Add the following new Note: NOTE 3 Internal wires of other colours are not precluded from making protective earthing connections.		N/A

Photo Document

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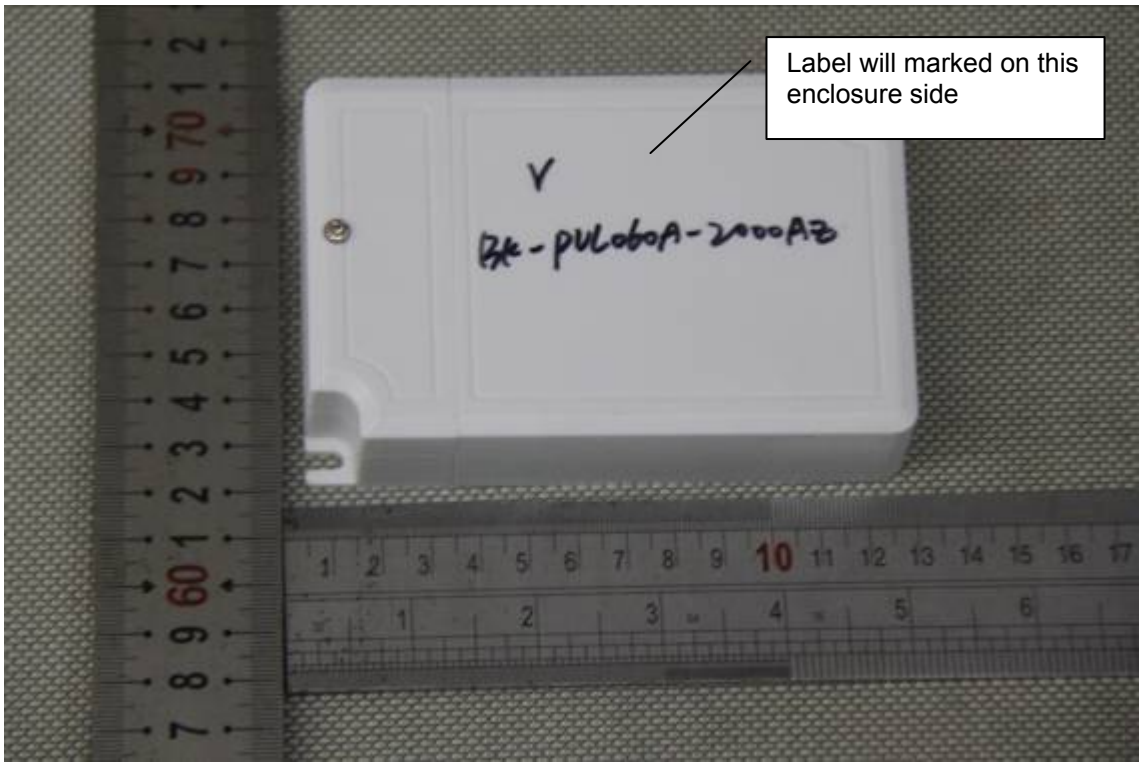

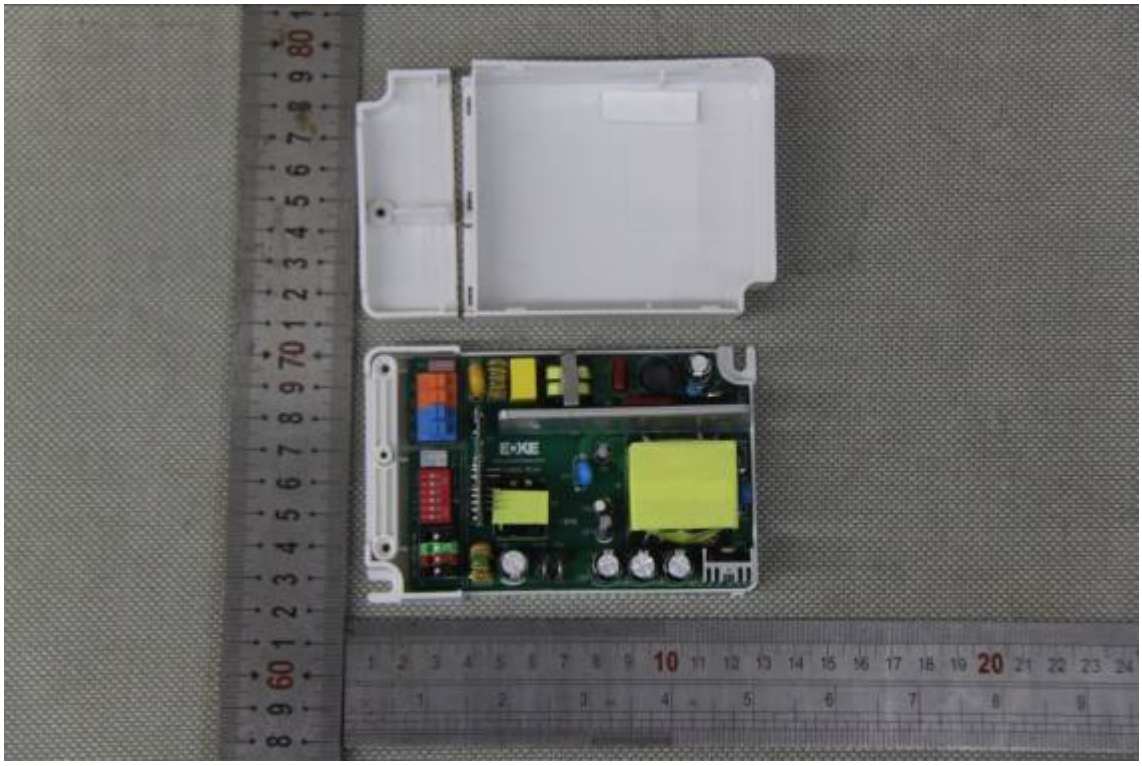

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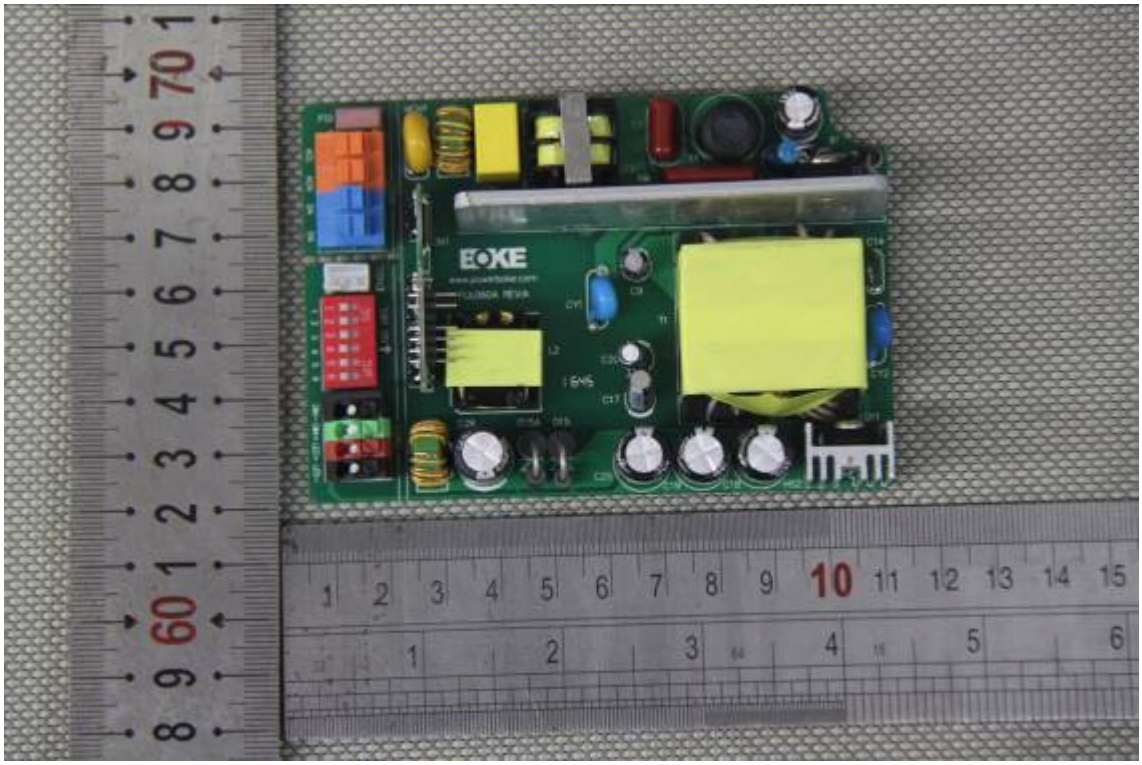

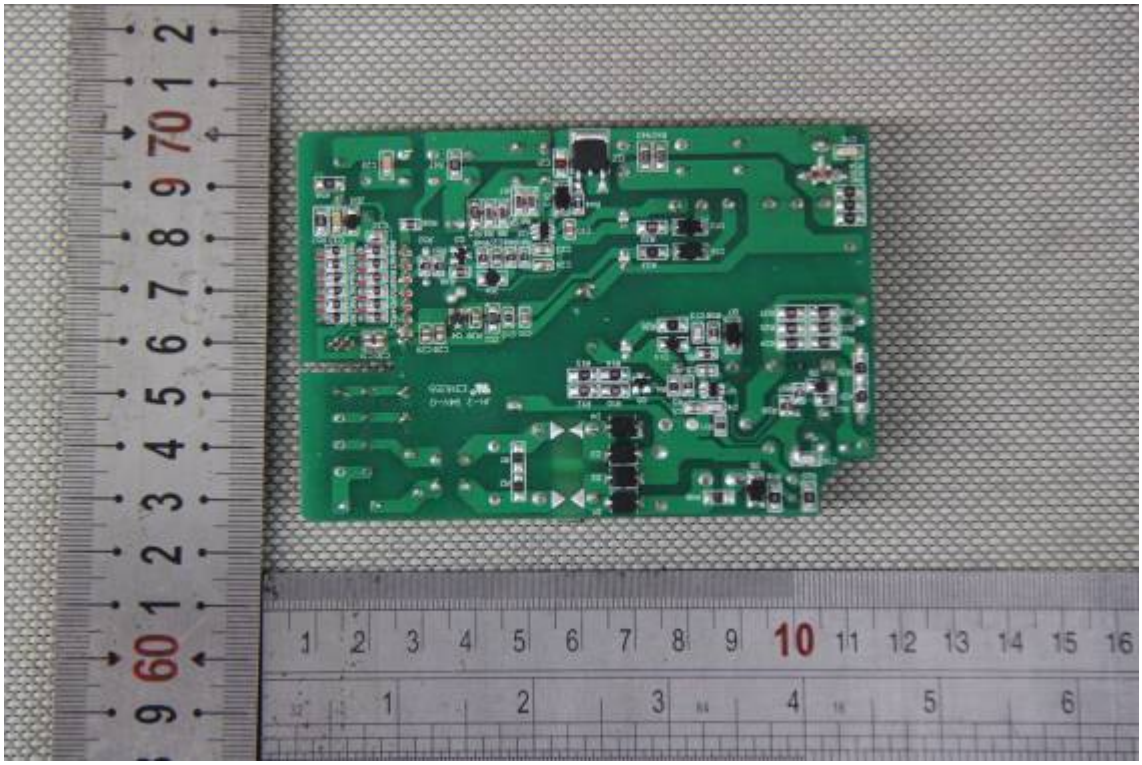

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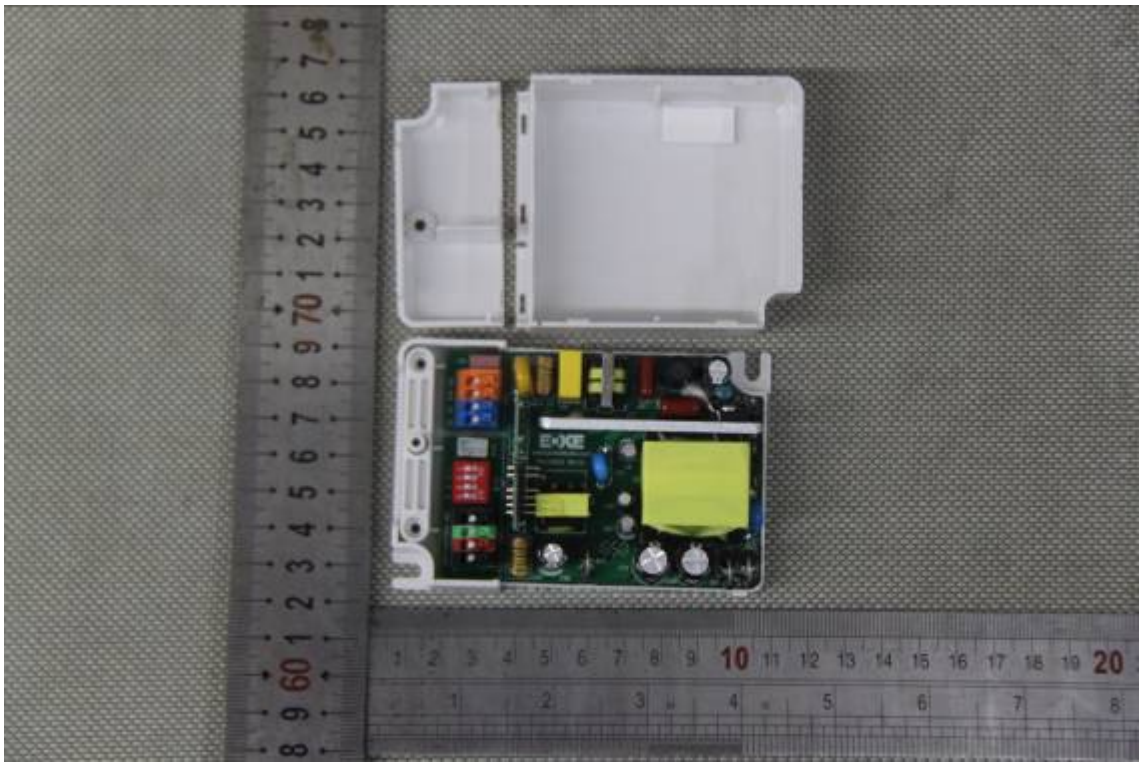

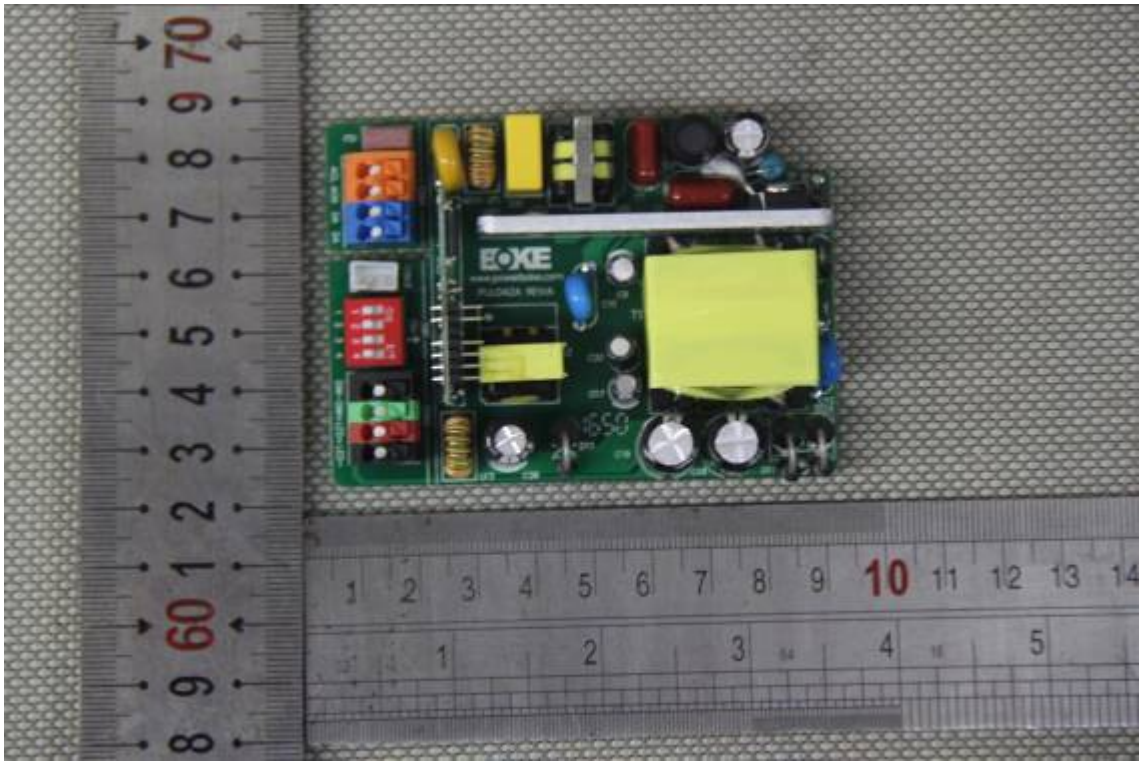

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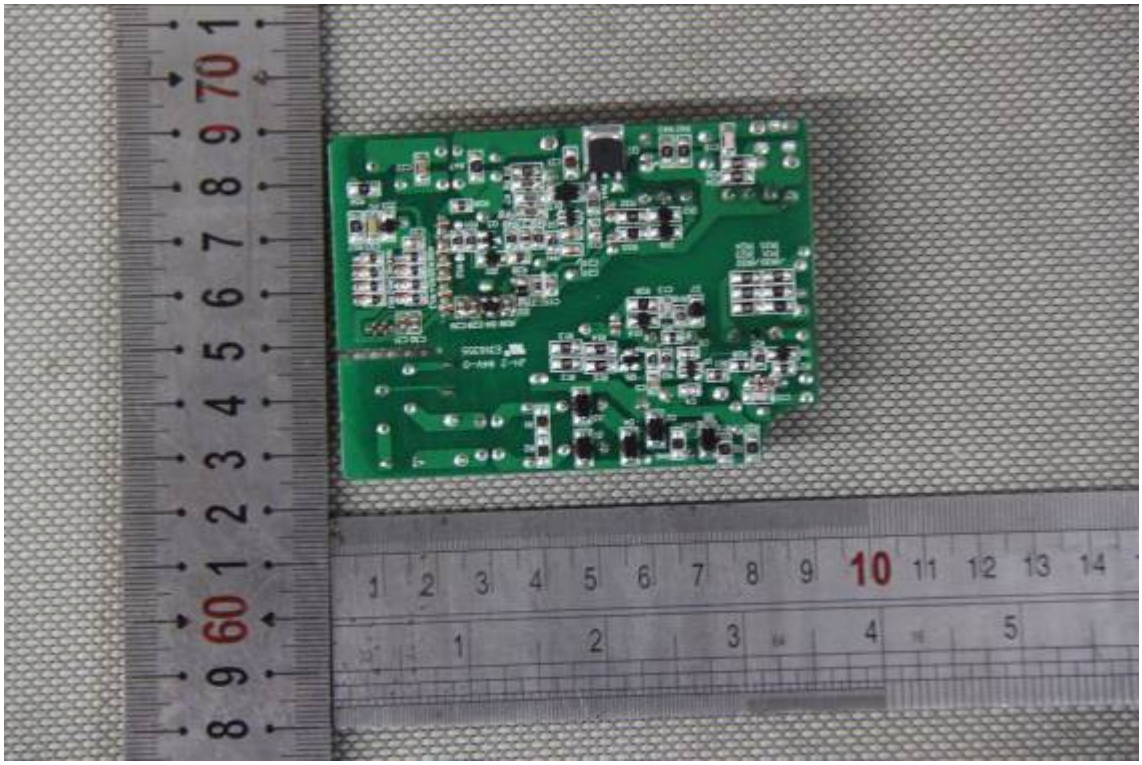

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