Test Report issued under the responsibility of:

Intertek Testing Services Shenzhen Ltd.

Guangzhou Branch

TEST REPORT

IEC 61347-2-13

Part 2: Particular requirements

Section Thirteen – d.c. or a.c. supplied electronic controlgear for LED modules

Report Reference No......:	JGZ0512203-1R4
Date of issue.....:	03 March 2011
Total number of pages .....:	38
CB Testing Laboratory.....:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Address.....:	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Applicant's name.....:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Address.....:	Guicheng Sci-Tech Industrial Park, Jianping Road, Nanhai District, Foshan City, Guangdong Province, P. R. China
Test specification:	
Standard .....:	☐ IEC 61347-2-13:2006 used in conjunction with IEC 61347-1:2007 ☒ EN 61347-2-13:2006 used in conjunction with EN 61347-1:2008
Test procedure .....:	S+LVD
Non-standard test method……..:	N/A
Test Report Form No.....:	TTRF_IEC61347_2_13B+EN
TRF Originator.....:	Intertek ETL Semko Guangzhou
Master TRF.....:	Dated 2009-04

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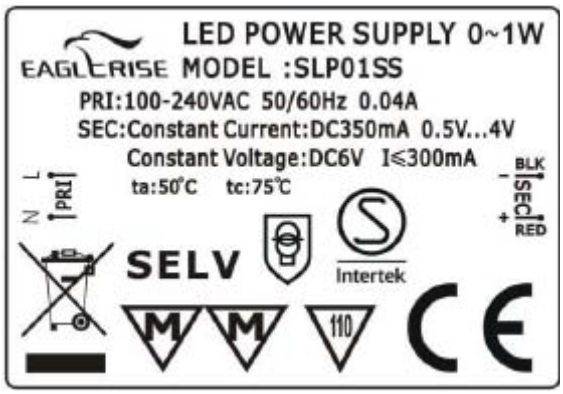
Test item description .....:	Electronic convertor for LED
Trade Mark .....:	EAGLERISE
Manufacturer.....:	Eaglerise Electric & Electronic (Foshan) Co., Ltd.
Model/Type reference.....:	SLP03SS; SLP03SS1; SLP01SS

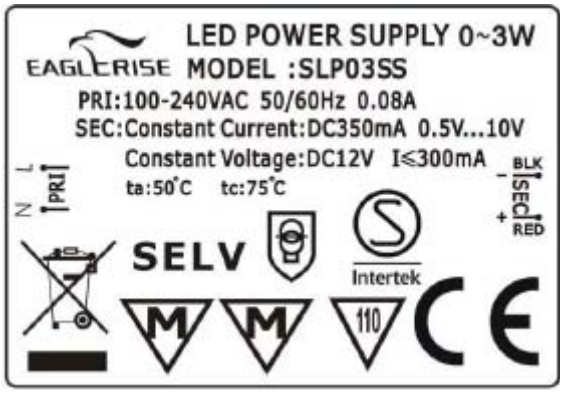
Ratings.....:	Input: 100-240 VAC; 50/60 Hz; SLP01SS: 0,04 A; SLP03SS, SLP03SS1: 0,08 A; Output: SLP03SS: Constant current – DC 350 mA; 0,5 V – 10 V Constant voltage – DC 12 V; I ≤ 300 mA SLP03SS1: Constant current – DC 700 mA; 0,5 V – 4 V Constant voltage – DC 6 V; I ≤ 650 mA SLP01SS: Constant current – DC 350 mA; 0,5 V – 4 V Constant voltage – DC 6 V; I ≤ 300 mA Built-in; SELV; ta 50 °C; 110°C thermal protected; SLP03SS; SLP01SS: tc 75 °C; SLP03SS1: tc 85 °C

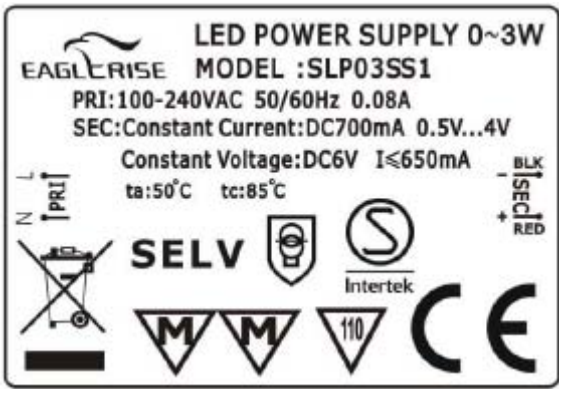
Testing procedure and testing location:	
☒ **CB Testing Laboratory**:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Testing location/ address.....:	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
☐ **Associated CB Laboratory:**	
Testing location/ address.....:	
Tested by (name + signature).....:	Harry Zou Harry Zou
Approved by (+ signature).....:	Shelley Ying Shelley Li
☐ Testing procedure: TMP	
Tested by (name + signature).....:	—
Approved by (+ signature)..... :	—
Testing location/ address.....:	
☐ Testing procedure: WMT	
Tested by (name + signature).....:	—
Witnessed by (+ signature)..... :	—
Approved by (+ signature).....:	—
Testing location/ address.....:	
☐ Testing procedure: SMT	
Tested by (name + signature).....:	—
Approved by (+ signature).....:	—
Supervised by (+ signature).....:	—
Testing location/ address..... :	
☐ Testing procedure: RMT	
Tested by (name + signature).....:	—
Approved by (+ signature).....:	—
Supervised by (+ signature).....:	—
Testing location/ address.....:	

Summary of testing:	
The tested samples fulfil the requirements of specified standards. Additional, samples have been tested and withstand the IP 65 tests according to EN 60598-1. These three models can be used for class II or class I luminaires.	
Tests performed (name of test and test clause):	**Testing location:**
4(4) General requirements 7(7) Marking 8(10) Protection against accidental contact with live parts 11(11) Moisture resistance and insulation 12(12) Electric strength 14(14) Fault conditions 16 Abnormal conditions 17(15) Construction 18(16) Creepage distances and clearances 19(17) Screws, current-carrying parts and connections 20(18) Resistance to heat, fire and tracking 21(19) Resistance to corrosion Annex C Particular requirements for electronic lamp controlgear with means of protection against overheating Annex I Particular additional requirements for independent SELV d.c. or a.c. supplied electronic step-down convertors for filament lamps	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Summary of compliance with National Differences:	
Not checked	

Copy of marking plate







Location: attached on enclosure

Remark on above marking:

1. The height of graphical symbols shall not be less than 5 mm;

2. The height of letters and numerals shall be not less than 2 mm.

Test item particulars	:	
Classification of installation and use	:	Built-in; SELV; for use with LED lamp
Supply Connection	:	Lead wires
Possible test case verdicts:		
- test case does not apply to the test object	:	N/A (not applicable)
- test object does meet the requirement	:	P (Pass)
- test object does not meet the requirement	:	F (Fail)
Testing		
Date of receipt of test item	:	15 December 2005 1st revision: 10 July 2007 2nd revision: 18 January 2008 and 19 March 2008 3rd revision: 2 April 2009 4th revision: 18 January 2011
Date (s) of performance of tests	:	15 December 2005 to 18 January 2006 1st revision: 10 July 2007 to 10 September 2007 2nd revision: 18 January 2008 to 25 March 2008 3rd revision: 2 April 2009 to 17 April 2009 4th revision: 18 January 2011 to 03 March 2011

General remarks:

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 testing laboratory.
"(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 is used as the decimal separator.

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

When determining for test conclusion, measurement uncertainty of tests has been considered.

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The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

The clause which indicated with * is the subcontract test item.

Total 38 pages; Page 1 to 32 for test report; Page 33 to 38 for product photos.

Manufacturing site: Eaglerise Electric & Electronic (foshan) Co., Ltd.

Manufacturing address: Guicheng Sci-Tech Industrial Park, Jianping Road, Nanhai District, Foshan City, Guangdong Province, P.R. China

Revision History:

1st revision: Based on and superseded the previous report JGZ0512203-1 (issued on 01 March 2006), This revision included the below changes:
- Updated the standard version of EN 61347-2-13;
- Added a Y1-capacitor on circuit, see component list and circuit diagrams for details;
- Changed the test lab from “Intertek Testing Services Shenzhen Ltd. Guangzhou GDD Branch” to “Intertek Testing Services Shenzhen Ltd. Guangzhou Branch” and the address changed accordingly.

2nd revision: Based on and superseded the previous report JGZ0512203-1R1 (issued on 10 September 2007), added an additional requirement DIN 57710-14: 1982 (teilweise / in parts) and added a base plastic sheet (min. 1,2 mm thickness) on the bottom.

3rd revision: Based on and superseded the previous test report JGZ0512203-1R2 (issued on 28 March 2008), this revision included the below changes:
- Changed the labels’ format;
- Changed the test procedure from “GS-BG; S-Marking” to “S-Marking”;
- Changed the test lab address from “1~8th floor, Block E2, 11 Cai Pin Road, Science City, Guangzhou Economic Development Zone, Guangzhou, P. R. China 510663” to “Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China”.

4th revision: Based on and superseded the previous report JGZ0512203-1R3 (Issued on 17 April 2009), updated the standard version of EN 61347-1.

General product information:

The models have same circuit diagram and same enclosure. Only technical data of several components, output voltage and output current are different; see labels and circuit diagrams for details.

Model SLP03SS has been selected for full testing for it has greater wattage and higher output voltage;

Thermal protection is integrated in IC; control IC of SLP03SS1 is the same as that of SLP03SS; so model SLP03SS1 has been selected for thermal test only.

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
4 (4)	**GENERAL REQUIREMENTS**		—
	Compliance of independent controlgear enclosure with EN 60 598-1		N/A
	Independent SELV controlgear comply with Annex I	(see Annex I)	N/A
6 (6)	**CLASSIFICATION**		—
	Independent controlgear.....:	Yes ☐ No ☒	—
	Built-in controlgear .....:	Yes ☒ No ☐	—
	Integral controlgear .....:	Yes ☐ No ☒	—
	SELV-equivalent or isolating controlgear.....:	Yes ☒ No ☐ SELV insulating convertor	—
	Auto-wound controlgear.....:	Yes ☐ No ☒	—
	Independent SELV controlgear.....:	Yes ☐ No ☒	—
7	**MARKING**		**P**
7.1 (7.1)	Mandatory markings:		P
	- mark of origin		P
	- model number, type reference .....:	SLP03SS; SLP03SS1; SLP01SS	P
	- symbol for independent controlgear, if applicable		N/A
	- correlation between interchangeable parts and controlgear marked		N/A
	- rated supply voltage (V) .....:	100 – 240 V	P
	- earthing symbol		N/A
	- wiring diagram		P
	- value of t_c	tc 75 °C for SLP03SS; SLP01SS; tc 85 °C for SLP03SS1	P
	- symbol for declared temperature		P
	Constant voltage type:	Yes ☒ No ☐	—
	- rated supply voltage (V) .....:	SLP01SS: 6 VDC; SLP03SS1: 6 VDC; SLP03SS: 12 VDC	P
	Constant current type:	Yes ☒ No ☐	—

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
	- rated output current (A) .....:	SLP01SS: 350 mA; SLP03SS1: 700 mA; SLP03SS: 350 mA	P
	- rated maximum output voltage (V) .....:	SLP01SS: 4 VDC; SLP03SS1: 4 VDC; SLP03SS: 10 VDC	P
	- indication if for LED modules only		N/A
7.2 (7.1)	- information to be provided, if applicable		P
	- declaration on protection against accidental contact	SELV	N/A
	- cross-section of conductors (mm²) .....:		N/A
	- number, type and wattage of lamp(s)		P
	- directly mains-connected windings		N/A
	SELV-equivalent controlgear		N/A
- (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P

8 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	The current flowing between the part concerned and earth is measured and does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
- (A2)	For frequencies above 1 kHz, the current does not exceed 0,7 mA (peak) multiplied by the value of the frequency in kilohertz or 70 mA (peak) .....:		N/A
- (A3)	The voltage between the part concerned and any accessible part is measured and does not exceed 34 V (peak).....:		N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V:		N/A
8.1 (-)	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation according 8.6 and 13.1 in IEC 60065		N/A

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
8.2 (-)	Exposed terminals of SELV or SELV-equivalent controlgear are allowed if: - the rated or maximum output voltage does not exceeding 25 V r.m.s. - the no-load output voltage does not exceed 30 V r.m.s. or 33 √2 V peak		N/A
	Insulated terminals if rated output voltage >25 V		N/A
	One capacitor Y1 or two capacitors Y2 of the same values used in series between SELV or SELV-equivalent output and primary circuits - Capacitor complying with IEC 60384-14 - Other components bridging the separating transformer complying with IEC 60065, clause 14		P
9 (8)	**TERMINALS**		N/A
	Screw terminals: compliance with Section 14 of IEC 60598-1		N/A
	Screwless terminals: compliance with Section 15 of IEC 60598-1		N/A
10 (9)	**PROVISION FOR EARTHING**		N/A
	External metal parts connected to the earth-terminal:		N/A
	- compliance with 7.2.1 in IEC 60598-1		N/A
	Test with a current of 10 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω): < 0,5 Ω .....:		N/A
	Protective earth, symbol		N/A
	Terminal complying with clause 8 in Part 1		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

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
	Conductors by tracks on printed circuit boards:		N/A
	- a.c. current of 25 A for 1 min between earthing terminal and accessible metal parts		N/A
	- compliance with clause 7.2.1 in IEC 60598-1		N/A
11 (11)	**MOISTURE RESISTANCE AND INSULATION**		**P**
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	≥ 2 MΩ for basic insulation .....:	> 100 MΩ	P
	≥ 4 MΩ for double or reinforced insulation.....:	Between primary circuit and output circuit: > 100 MΩ	P
11 (-)	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A
12 (12)	**ELECTRIC STRENGTH**		**P**
	Immediately after clause 11 electric strength test for 1 min		P
	Working voltage ≤ 42 V, test voltage 500 V		N/A
	Working voltage > 42 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	1480 V	P
	Supplementary insulation, 2U + 1750 V		N/A
	Double or reinforced insulation, 4U + 2750 V	Between input and output circuit: 3710 V	P
	No flashover or breakdown		P
	Windings in separating transformers in SELV-equivalent control gear according to 14.3.2 of EN 60065		N/A
13 (13)	**THERMAL ENDURANCE FOR WINDINGS (Not applicable)**		—
14 (14)	**FAULT CONDITIONS**		**P**
	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		P

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
	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
	Distances on printed boards 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	(see appended table)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.5)	After the tests the insulation resistance with d.c. 500 V (MΩ) are ≥ 1 MΩ ..... :	> 100 MΩ	P
	After the tests the accessible parts has not become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
	Temperature declared thermally protected controlgear fulfil the requirements in Annex C		P

15	**TRANSFORMER HEATING**		N/A
	Windings of separating transformer in a SELV-equivalent controlgear fulfil the requirements according to 7.1 and 11.2 of IEC 60065		N/A
15.1	Temperatures do not exceed the changed values of the values in column 2 of Table 3 of IEC 60065, in respect to relevant ambient temperature at t_c, under normal operation		N/A
15.2	Temperatures do not exceed the changed values of the values in column 3 of Table 3 of IEC 60065, in respect to relevant ambient temperature at t_c, under abnormal conditions of Cl. 16 and fault conditions of Cl. 14		N/A
	Ambient temperature at t_c ..... :		N/A

16	**ABNORMAL CONDITIONS**		**P**
	Safety not impaired when the controlgear is operated at any voltage between 90% and 110% of rated voltage	90,0-264,0 V	P
16.1	Control gear which are of the constant voltage output type:		—

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
	a) No LED module inserted		P
	b) Double LED modules or equivalent load connected to the output terminals		P
	c) Output terminal short-circuited (20 cm and 200 cm or declared length)	10 cm / 250 cm; declared	P
	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P
16.2	Control gear which are of the constant current output type:		—
	a) No LED module connected		P
	b) Double the LED modules or equivalent load connected in series to the output terminals		P
	c) Output terminal short-circuited (20 cm and 200 cm or declared length)	10 cm / 250 cm; declared	P
	Maximum output voltage not exceeded		P
	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P
17 (15)	**CONSTRUCTION**		**P**
- (15.1)	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed boards used as internal connections complies with clause 14 of IEC 61347-1		P
	Socket-outlet in the output circuit does not accept plugs complying with IEC 60083 and IEC 60906		N/A
	Not possible to engage plugs accepted by socket-outlet in the output circuit with socket-outlets complying with IEC 60083 and IEC 60906		N/A
18 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Creepage distances and clearances according to Table 3 and 4, as appropriate	(see appended table)	P
	Printed boards see clause 14 of IEC 61347-1		P
	Insulating lining of metallic enclosures		N/A
19 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		P

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
	- at least two self-tapping screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood		P
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Mechanical stress		N/A
	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: part; torque (Nm) .....:		N/A
	Torque test: part; torque (Nm) .....:		N/A
	Torque test: part; torque (Nm) .....:		N/A
(4.12.2)	Screw diameter < 3 mm screwed into metal		N/A
(4.12.3)	Void		—
(4.12.4)	Locked connections		N/A
(4.12.5)	Screwed glands: force (N) .....:		N/A

20 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
20 (18.1)	Parts of insulating material retaining live parts in position, ball-pressure test:		P
	- part; test temperature (°C) .....:	Bobbin: 125 °C	P
	- part; test temperature (°C) .....:	Enclosure: 113,9 °C	P
20 (18.2)	Printed boards in accordance with IEC 60249-1, 4.3		P
20 (18.3)	External parts of insulating material preventing electric shock glow-wire test 650 °C	Enclosure	P
20 (18.4)	Parts of insulating material retaining live parts in position, needle-flame test 10 s:		P
	- flame extinguished within 30 s	Bobbin	P
	- no flaming drops igniting tissue paper		P
20 (18.5)	Tracking test	Enclosure	P

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
21 (19)	**RESISTANCE TO CORROSION**		N/A
	Rust protection:		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A
- (20)	**NO-LOAD OUTPUT VOLTAGE**		N/A
	No load output voltage not differ more than 10 % from rated voltage		N/A

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

14	**TABLE: tests of fault conditions**	**P**
Part	Simulated fault	Hazard
C6	Short-circuited; output voltage = 0 V; can recover	NO
D5	Short-circuited; fusing resistor operated immediately; output voltage = 0 V	NO
3&5 pins of IC1	Short-circuited; IC damaged immediately; output voltage = 0 V	NO
3&4 pins of IC1	Short-circuited; output voltage = 0,1 mV; can recover	NO
5&8 pins of IC1	Short-circuited C&E pins; IC damaged immediately; output voltage = 0,2 mV	NO
C4	Short-circuited; output voltage = 31,8 mV; can recover	NO
C4	Interrupted; output voltage = 0,3 V; can recover	NO
R1	Short-circuited; output voltage = 12,3 V; can recover	NO
R3	Short-circuited; output voltage = 9,5 V; can recover	NO

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

18 (16)	**TABLE: creepage distances and clearances** **(EN group deviation please read appendix: CENELEC COMMON MODIFICATIONS (EN))**							N/A
	Minimum distances for a.c. (50/60 Hz) sinusoidal voltages							N/A
RMS working voltage (V) not exceeding			50	150	250	500	750	1000
1 minimum distances between live parts of different polarity. Specify the value measured.			—	—	—	—	—	—
2 minimum distances between live parts and accessible parts which are permanently fixed to the ballast, including screws or devices for fixing covers or fixing the ballast to its support. Specify the value measured.			—	—	—	—	—	—
- required creepage distances (mm), insulation PTI ≥ 600			0,6	1,4	1,7	3	4	5,5
- required creepage distances (mm), insulation PTI < 600			1,2	1,6	2,5	5	8	10
- required clearances (mm)			0,2	1,4	1,7	3	4	5,5
3 minimum distances between live parts and a flat supporting surface or a loose metal cover, if any, if the construction does not ensure that the values under 2 above are maintained under the most unfavourable circumstances			—	—	—	—	—	—
- required clearances (mm)			2	3,2	3,6	4,8	6	8
	Minimum distances 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 minimum distances, clearances (mm)	1,0	1,5	2	3	4	5,5	8	
Specify the value measured	—	—	—	—	—	—	—	
rated pulse voltage (peak kV)	10	12	15	20	25	30	40	
required minimum distances, clearances (mm)	11	14	18	25	33	40	60	
Specify the value measured	—	—	—	—	—	—	—	
rated pulse voltage (peak kV)	50	60	80	100	-	-	-	
required minimum distances, clearances (mm)	75	90	130	170	-	-	-	
Specify the value measured	—	—	—	—	—	—	—	

IEC 61347-2-13			
Clause	Requirement – Test	Result - Remark	Verdict
A	**ANNEX A (NORMATIVE), TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		N/A
A.2	See clause 8 A.2 in this Test Report		N/A
A.3	See clause 8 A.3 in this Test Report		N/A
C	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		**P**
C3	**GENERAL REQUIREMENTS**		**P**
C3.1	Thermal protection means integral with the controlgear, protected against mechanical damage	IC incorporates thermal protection	P
	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)		P
C5	**CLASSIFICATION**		**P**
	a) automatic resetting type	Automatic resetting	—
	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**		**P**
C6.1	Symbol for temperature declared thermally protected ballasts	110 °C	P
C6.2	Declaration of the type of protection provided		P
C7	**LIMITATION OF HEATING**		**P**
C7.1	Preselection test		P
	Test sample placed for at least 12 h in an oven having temperature (tc - 5) K	SLP03SS; 70 °C	P
	No operation of the protection device		P
C7.2	Functioning of protection means		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		P
	No operation of the protection device		P
	Introducing of the most onerous test condition determined during test of clause 14		P
	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	Output can only be adjusted to MAX 5,9 W; no operation of protection means	P
	Continuous measuring of the highest surface temperature		P
	Controlgear according to C5 a) or C5 e) operated until stable conditions are achieved		P
	Automatic-resetting thermal protectors working 3 times		P
	Controlgear according to C5 b) working 6 times		N/A
	Controlgear according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		P
	Any overshoot of 10% over the marked value within 15 min	No overshoot	N/A
D	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		P
	Tests in C7 performed in accordance with Annex D, if applicable		P
E	**ANNEX E – USE OF CONSTANT S OTHER THAN 4500 IN t_w TESTS**		N/A
E1	Constant S claimed		N/A
	Claimed test method		N/A
E2	Procedure A		N/A
	Adequate data provided by the manufacturer		N/A
	The inverse of the slope is greater than or equal to the claimed value of S		N/A
	Compliance with the failure criteria for procedure B		N/A
E3	Procedure B		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	Claimed value of T_1		N/A
	Claimed value of T_2		N/A
	Endurance test carried out at:		N/A
	T_1 (7 samples)		N/A
	T_2 (7 samples)		N/A
	Duration of test calculated from equation (2)		N/A
	T_1		N/A
	T_2		N/A
	During the test: - No open circuit - No breakdown insulation		N/A
	The claimed constant S is deemed to be verified		N/A
F	**ANNEX F - DRAUGHT-PROOF ENCLOSURE**		**P**
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P
	Other design; description		N/A
H	**ANNEX H - TESTS**		**P**
	All tests performed in accordance with the advise given in Annex H, if applicable		P
I	**ANNEX I - PARTICULAR ADDITIONAL REQUIREMENTS FOR INDEPENDENT SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED MODULES**		**P**
I.3	Classification		—
I.3.1	Class I	Yes ☐ No ☒	—
	Class II	Yes ☒ No ☐	—
I.3.2	a) non-inherently short circuit proof controlgear	Yes ☐ No ☒	—
	b) non-inherently open circuit proof controlgear	Yes ☐ No ☒	—
	c) inherently short circuit proof controlgear	Yes ☒ No ☐	—
	d) inherently open circuit proof controlgear	Yes ☒ No ☐	—
	e) fail safe controlgear	Yes ☐ No ☒	—
	f) non-short-circuit proof controlgear	Yes ☐ No ☒	—

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Clause	Requirement – Test	Result - Remark	Verdict
	g) non-open-circuit proof controlgear	Yes ☐ No ☒	—
I.4	Marking		P
	Adequate symbols are used		P
I.5	Protection against electric shock		P
I.5.1	No connection between output winding and body		P
	No connection between output winding and protective earthing circuit		N/A
I.5.2	Input and output circuits electrically separated from each other		P
I.5.2.1	Insulation between input and output winding of the HF-transformer consists of double or reinforced insulation		P
	Class II: insulation between input/output and body consists of double or reinforced insulation		P
	Class I: insulation between input and body consists of basic and between output and body supplementary insulation		N/A
I.5.2.2	Insulation between input and output winding via the core consists of double or reinforced insulation		P
	Insulation between cord and windings of the HF-transformer consists of basic insulation		P
I.5.2.3	Serrated tape, additional layer		N/A
I.5.2.4	Class I controlgear for fixed connection provided with basic insulation plus protective screening comply with the following conditions:		N/A
	a) Insulation between the input winding and the protective screen complies with the requirements for basic insulation		N/A
	b) Insulation between the protective screen and the output winding complies with the requirements for basic insulation		N/A
	c) Metal screen consists of a metal foil or of a wire wound screen		N/A
	d) Metal screen so arranged that both edges cannot simultaneously touch a magnetic core		N/A
	e) Metal screen and its lead-out wire have a cross-section sufficient to ensure that an overload device will open the circuit before the screen is destroyed		N/A
	f) Lead-out wire sufficiently fixed to the metal screen		N/A
I.5.2.5	Last turn of each winding of the transformer retained by positive means		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Impregnated winding		P
	Winding held together by means of insulating material		P
I.5.3	Components bridging between input and output circuit	One opto-coupler and Y1 capacitor between input and output circuits	P
I.5.3.1	Used capacitors and resistors comply with 8.2		P
I.5.3.2	Used opto-couplers	Approved opto-coupler	P
I.6	Heating		—
I.6.1	No excessive temperatures in normal use		P
	Used material classified as Class _____	Primary: class E; Secondary: class E	—
	Stated value of t_a _____	50 °C	—
I.6.2	Upri: 1.06 time supply rated voltage	254,4 V	—
	Determined temperature rises in windings: - Primary: _____ K - Limit max: _____ K - Secondary: _____ K - Limit max: _____ K	 SLP03SS: 46,2 K SLP03SS1: 49,3 K 65 SLP03SS: 43,8 K SLP03SS1: 49,2 K 65	P
	After the test:		P
	- no connections have worked loose		P
	- no reduction of creepage distances and clearances		P
	- no flow of sealing compound		P
	- no operation of protecting devices		P
	- electric strength test between input and output windings		P
I.6.3	Cycling test (10 cycles):		N/A
I.6.3.1	- heat run at _____ K		N/A
I.6.3.2	- moisture treatment 48 h		N/A
I.6.3.3	- vibration test 1 h; 1,5 g		N/A
I.6.3.4	After the tests:		N/A
	- insulation resistance		N/A
	- dielectric strength test at 35 % of specified value; test voltage _____ V		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	- Current or the ohmic component does not deviates by more than 30 %		N/A
I.7	Short-circuit and overload protection		P
I.7.1	Upri: 1.06 times rated voltage or 0.94 and 1.06 times rated supply voltage - used voltage _____ V	254,4 V	P
I.7.2 I.7.3 I.7.4	Determined temperature rise in windings and on other parts:		P
	- test according to Clause _____	I.7.2; model SLP03SS; all temperatures decreased	P
	- Primary winding _____ K	28,1 K	P
	- Limit max _____ K	115 K	P
	- Secondary winding _____ K	26,5 K	P
	- Limit max _____ K	115 K	P
	- External enclosure _____ K	12,3 K	P
	- Limit max K	55 K	P
	- Rubber insulation of wiring _____ K	—	N/A
	- Limit max K	—	N/A
	- PVC insulation of wiring _____ K	29,2 K	P
	- Limit max K	35 K	P
	- Supports _____ K	11,8 K	P
	- Limit max K	55 K	P
I.7.5	Fail-safe convertors		N/A
I.7.5.1	- Upri: 1.06 times rated supply voltage ..... V:		—
	- Isec: 1.5 times rated output current ..... A:		—
	- time until steady-state conditions t1 (h) .....:		—
	- time until failure t2 (h): ≤ t1; ≤ 5 h .....:		N/A
I.7.5.2	During the test:		N/A
	- no flames, molten material, etc.		N/A
	- temperature rise of enclosure ≤ 150 K		N/A
	- temperature rise of plywood support ≤ 100 K		N/A
	After the test:		N/A
	- electric strength (test voltage; 35 % of specified value); no flashover or breakdown for primary-to-secondary and for primary-to-body		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	- live parts not accessible by test finger through holes of enclosure		N/A
I.8	Insulation resistance and electric strength		P
I.8.1	Conditioned 48 h between 91 % and 95 %		P
I.8.2	Adequate insulation (500 V d.c. for 1 min) between:		P
	Live parts and the body -for basic insulation not less than 2 MΩ ..... :		N/A
	Live parts and the body -for reinforced insulation not less than 4 MΩ ..... :	> 100 MΩ	P
	Input- and output circuits not less than 5 MΩ ..... :	> 100 MΩ	P
	Metal parts of class II controlgear which are separated from live parts by basic insulation only and the body not less than 5 MΩ ..... :		N/A
	Metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ ..... :	> 100 MΩ	P
I.8.3	Electric strength test:		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 which are or may become of 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
	3) Over reinforced insulation between the body and live parts ..... :	3750 V	P
	No flashover or breakdown occurred		P
I.9	Construction		P
I.9.1	Comply with all requirements		P
I.9.2	The distance between input and output terminals shall not be less than 25 mm ..... :		N/A
I.10	Components		P
I.10.1	Socket-outlets in the output circuit does not accept plugs complying with IEC 60083 and IEC 60906-1		N/A
I.10.2	Self-resetting protective devices shall not be used unless it is certain that there will be no hazards		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Compliance is checked by connecting the controlgear for 48 h at 1.06 times the rated voltage with the output short-circuited		P
I.11	Creepage distances and clearances		P
	1. Insulation between input and output circuits:		P
	a) measured values ≥ specified values (mm) ..... :	Sealed with resin; > 6,0 mm	P
	b) measured values ≥ specified values (mm) ..... :		N/A
	c) measured values ≥ specified values (mm) ..... :	Barrier for output transformer: 0,8 mm plus 3 layer of insulation tapes	P
	2. Insulation between adjacent input circuits: measured values ≥ specified values (mm) ..... :		N/A
	2. Insulation between adjacent output circuits: measured values ≥ specified values (mm) ..... :		N/A
	3. Insulation between terminals for external connection:		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
	4. Basic or supplementary insulation:		P
	a) measured values ≥ specified values (mm) ..... :	3,4 mm > 3,0 m	P
	b) measured values ≥ specified values (mm) ..... :		N/A
	c) measured values ≥ specified values (mm) ..... :		N/A
	5. Reinforced insulation: measured values ≥ specified values (mm) ..... :	Sealed with resin; > 6,0 mm	P
	6. Distance through insulation:		P
	a) measured values ≥ specified values (mm) ..... :		N/A
	b) measured values ≥ specified values (mm) ..... :	1,10 mm > 1,0 mm	P
	c) measured values ≥ specified values (mm) ..... :		N/A
	d) measured values ≥ specified values (mm) ..... :		N/A

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Clause	Requirement – Test	Result - Remark	Verdict

	CENELEC COMMON MODIFICATIONS (EN)	P

18 (16)	**TABLE: creepage distances and clearances**	**P**
	Minimum distances for a.c. (50/60 Hz) sinusoidal voltages	P

RMS working voltage (V) not exceeding			50	150	250	500	750	1000
1 between live parts of different polarity			—	—	Sealed with resin	—	—	—
2 between live parts and accessible metal parts which are permanently fixed to the ballast, including screws or devices for fixing covers or fixing the ballast to its support			—	—	Sealed with resin	—	—	—
3 for ballasts declared not to rely on the luminaire enclosure for protection against electric shock – between live parts and outer accessible surface of insulating parts			—	—	—	—	—	—
Creepage distances	Basic insulation	PTI⩾600	0,6	0,8	1,5	3	4	5,5
		PTI<600	1,2	1,6	2,5	5	8	10
	Supplementary insulation	PTI⩾600	--	0,8	1,5	3	4	5,5
		PTI<600	--	1,6	2,5	5	8	10
	Reinforced insulation		--	3,2	5	6	8	11
Clearances	Basic insulation		0,2	0,8	1,5	3	4	5,5
	Supplementary insulation		--	0,8	1,5	3	4	5,5
	Reinforced insulation		--	1,6	3	6	8	11

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Component list:	

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(1)	**FIELD OF APPLICATION AND PURPOSE**		P
(2)	**DEFINITIONS**		P
(3)	**LABELS AND DESIGNATIONS**		P
(3.1)	Furniture luminaires for discharge lamps with built-in ballast and may be used according to Section 1a)		N/A
(3.2)	Furniture luminaires for discharge lamps with built-in ballast and may be used according to Section 1b)		P
(3.3)	Details of the permissible installation or attachment possibilities shall be given in assembly instructions.		P
(3.4)	The manufacturer's documentation shall state that these luminaires are for furniture.		P
(4)	**CONNECTION OF THE LUMINAIRES TO THE WIRING SYSTEM**		P
(4.1)	The conductor cross-section is……	0,75 mm^2	P
(4.2)	Suitable strain relief devices shall be provided		N/A
(5)	**COMPONENTS**		P
(5.1)	If the reference to the envisaged lamp equipment is mounted that it is clearly visible when the lamp is changed, the maximum output may less than 40 W	Max 3 W	P
(5.2)	Only temperature limiters or temperature protection devices or safety temperature limiters may be used as temperature-dependent devices		P
(6)	**HEATING**		P
(6.1)	Luminaires shall be mounted in the least favourable position or according to the assembly instructions.	According to the assembly instruction	P
(6.2)	Luminaires according to Section 1a)		N/A
(6.2.1)	The limit temperature of mounting surface in normal operation is 130 °C, in abnormal operation is 180 °C.	(see Annex 2)	N/A
(6.2.2)	Thermal test		N/A
(6.2.3)	The luminaires shall be closed opposite their mounting area.		N/A
(6.2.4)	Lead-in openings shall not be larger than specified in VDE 0710, Part 1/3.69, Section 9, b) 3.1		N/A
(6.2.5)	Larger fixing opening may be present, if they are automatically closed during assembly by covers supplied at the same time.		N/A
(6.2.6)	The number of openings for fixing the luminaires shall be adapted to the size and weight of the luminaires.		N/A
(6.2.7)	Smaller openings shall be limited to the necessary quantity and kept correspondingly small.		N/A

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Component list:			

(6.2.8)	Pre-cut sheet-metal lugs can be used for fixing leads, as long as their size does not exceed about 10 mm x 40 mm.		N/A
(6.2.9)	Pre-punched openings closed when the luminaire is new shall likewise be permissible, insofar as they are not within the ballast area.		N/A
(6.2.10)	Opening other than those so far specified may be face the mounting area only if they are closed by covers which can be removed only by a tool.		N/A
(6.3)	Luminaires according to Section 1b), the mounting surface shall not exceed 95 °C	(see Annex 2)	P
(6.3.1)	The mounting surface shall not exceed 115 °C during normal and abnormal operation with 1,1 Un	SLP03SS: 75 °C; SLP01SS: 70 °C; SLP03SS1: 90 °C	P
(6.3.2)	Determination of the temperatures during abnormal operation and in the case of a ballast fault.		P
(6.3.2.1)	Luminaires without temperature-limiting devices.		N/A
(6.3.2.2)	Luminaires with temperature-limiting devices.		P
(6.4)	In the case of luminaires in which exceeding of the limit value is prevented by temperature-dependent devices, it shall be proved by the following test that disconnection takes place before or on attainment of the specified limit values. The limit is 180 °C for the luminaires according to 1a), 115 °C for the luminaires according to 1b).	SLP03SS: 84 °C; SLP01SS: 87 °C; SLP03SS1: 86 °C	P
(7)	**CORROSION RESISTANCE**		P
(7.1)	The test according to VDE 0710, Part 1/3.69, Section 19.		P
(8)	**REPAIR OF LUMINAIRE**		N/A
	Only DIN 57701, Part 1/VDE 0701, Part 1 shall apply to the repair of luminaires in VDE 0710, Part 1/3.69, Section 21.		N/A