Ref. Certif. No.
NL-51354

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

CB TEST CERTIFICATE

Product	Independent LED driver
Name and address of the applicant	MEAN WELL Enterprises Co., Ltd. No.28, Wuquan 3rd Road, Wugu Dist, New Taipei City 248 Taiwan
Name and address of the manufacturer	MEAN WELL Enterprises Co., Ltd. No.28, Wuquan 3rd Road, Wugu Dist, New Taipei City 248 Taiwan
Name and address of the factory Note: *When more than one factory, please report on page 2*	☒ Additional information on page 2 MEAN WELL (Guangzhou) Electronics Co. Ltd. Huadu Branch No.11 Jingu South Road, Huadong Town, Huadu District, Guangzhou, Guangdong China
Ratings and principal characteristics	Class I, ta: 60 °C, tc: 90 °C, λ: 0,95, SELV Independent controlgears, Non-Inherently short-circuit proof, 110 °C thermal protection, MM mark; ELG-100-CXY (X=1050, 1400, Y=blank, A, B, AB, D, D2, DA, ADA, AD2): Constant current; ELG-100-XY (X=24, 36, 42, 48, 54, Y=blank, A, B, AB, D, D2,DA, ADA, AD2): Constant voltage; IP65 for model ELG-100-CXY (X=1050, 1400, Y=A, AB, ADA, AD2), ELG-100-XY (X=24, 36, 42, 48, 54, Y=A, AB, ADA, AD2) IP67 for model ELG-100-CXY (X=1050, 1400, Y= blank, B, D, D2, DA), ELG-100-XY (X= 24, 36, 42, 48, 54, Y= blank, B, D, D2, DA) (Details refer to General product information of test report.)
Trademark (if any)	MEAN WELL
Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	ELG-100-CXY (X=1050, 1400, Y=blank, A, B, AB, D, D2, DA, ADA, AD2) ELG-100-XY (X= 24, 36, 42, 48, 54, Y=blank, A, B, AB, D, D2, DA, ADA, AD2)
Additional information (if necessary may also be reported on page 2)	☐ Additional information on page 2 This CB Test Certification is an addition to CB NL-42344 with Test Report Number 4329184.50 dated 2016-07-18 due to updated factory information, standards, deviations and rating label.
A sample of the product was tested and found to be in conformity with	IEC 61347-1:2015, IEC 61347-2-13:2014, IEC 61347-2-13:2014/AMD1:2016 National differences: EU Group Differences, EU Special National Conditions, AU, NZ
As shown in the Test Report Ref. No. which forms part of this Certificate	4343528.50

This CB Test Certificate is issued by the National Certification Body

DEKRA Certification B.V.
Meander 1051, NL-6825 MJ Arnhem, Netherlands

DEKRA

Date: 2018-04-02

Signature: Miranda Zhou

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

Additional factory

MEAN WELL Enterprises Co., Ltd.

No.28, Wuquan 3rd, Wugu Dist, New Taipei City 248

Taiwan

Suzhou MEAN WELL Technology Co., Ltd.

No. 77, Jian-min Road, Dong-qiao, Pan-yang Ind. Park, Huang-dai Town, Xiang-cheng Dist, Suzhou, 215152 Jiangsu

China

This CB Test Certificate is issued by the National Certification Body

DEKRA Certification B.V.
Meander 1051, NL-6825 MJ Arnhem, Netherlands

Date: 2018-04-02

Signature: Miranda Zhou

Test Report issued under the responsibility of:

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

Report Number. .....:	4343528.50
Date of issue .....:	2018-03-28
Total number of pages.....	174 pages
Name of Testing Laboratory preparing the Report.....:	DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou Branch
Applicant's name.....:	MEAN WELL Enterprises Co., Ltd.
Address .....:	No.28, Wuquan 3rd Road, Wugu Dist, New Taipei City 248, Taiwan
Test specification:	
Standard .....:	IEC 61347-2-13:2014/AMD1:2016 used in conjunction with IEC 61347-1:2015
Test procedure .....:	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC61347_2_13F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	2016-10

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

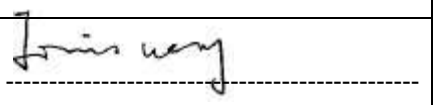
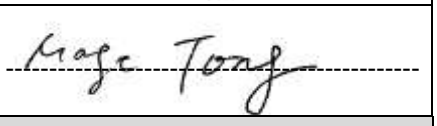
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description .....:	Independent LED driver
Trade Mark .....:	MEAN WELL
Manufacturer.....:	Same as applicant
Model/Type reference .....:	ELG-100-CXY (X=1050, 1400, Y=blank, A, B, AB, D, D2, DA, ADA, AD2) ELG-100-XY (X= 24, 36, 42, 48, 54, Y=blank, A, B, AB, D, D2, DA, ADA, AD2)
Ratings .....:	Class I, ta: 60 °C, tc: 90 °C, λ: 0,95, SELV Independent controlgears, Non-Inherently short-circuit proof, 110 °C thermal protection, MM mark; ELG-100-CXY (X=1050, 1400, Y=blank, A, B, AB, D, D2, DA, ADA, AD2): Constant current; ELG-100-XY (X=24, 36, 42, 48, 54, Y=blank, A, B, AB, D, D2,DA, ADA, AD2): Constant voltage; IP65 for model ELG-100-CXY (X=1050, 1400, Y=A, AB, ADA, AD2), ELG-100-XY (X=24, 36, 42, 48, 54, Y=A, AB, ADA, AD2) IP67 for model ELG-100-CXY (X=1050, 1400, Y= blank, B, D, D2, DA), ELG-100-XY (X= 24, 36, 42, 48, 54, Y= blank, B, D, D2, DA) Refer to General product information for details.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou Branch	
Testing location/ address ..... :		No. 3 Qiyun Road, Science City, Guangzhou Hi-Tech Industrial Development Zone, Guangzhou, P. R. China	
Tested by (name, function, signature) ..... :		Jimmy Wang	
Approved by (name, function, signature) .. :		Magic Tong	

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

Attachment 1: Additional requirement of EN 60598-1: 2015 and IEC 60598-1: 2014 (32 pages)
Attachment 2: Clearance And Creepage Distance Measurements (3 pages)
Attachment 3: (AU/NZ) Australian /New Zealand Deviations AS/NZS 61347.1: 2016 (10 pages)
Attachment 4: (AU/NZ) Australian /New Zealand Deviations AS/NZS 61347.2.13: 2013 (6 pages)
Attachment 5: (AU/NZ) Australian /New Zealand Deviations AS/NZS 60598.1: 2017 (20 pages)
Attachment 6: Additional requirement of DIN 57710-14: 1982 (2 pages)
Attachment 7: Product photos (38 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
4323568:50: ELG-100-C1400B and ELG-100-54B were subjected to full test. ELG-100-24B was subjected to thermal test, fault condition and abnormal test. ELG-100-C1400DA, ELG-100-C1400D were subjected to fault condition test for dimming PCB. ELG-100-C1400A was subjected to IP test. 4329184.50: ELG-100-C1400B, ELG-100-54B and ELG-100-24B were subjected to thermal test. All models were subjected to construction check. 4343528.50: ELG-100-C1050A was subjected to construction check, protective conductor current test, output voltage and working voltage measurement. ELG-100-C1400A, ELG-100-24A and ELG-100-54A were subjected to output voltage measurement.	DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch No. 3 Qiyun Road, Science City, Guangzhou Hi-Tech Industrial Development Zone, Guangzhou, P. R. China

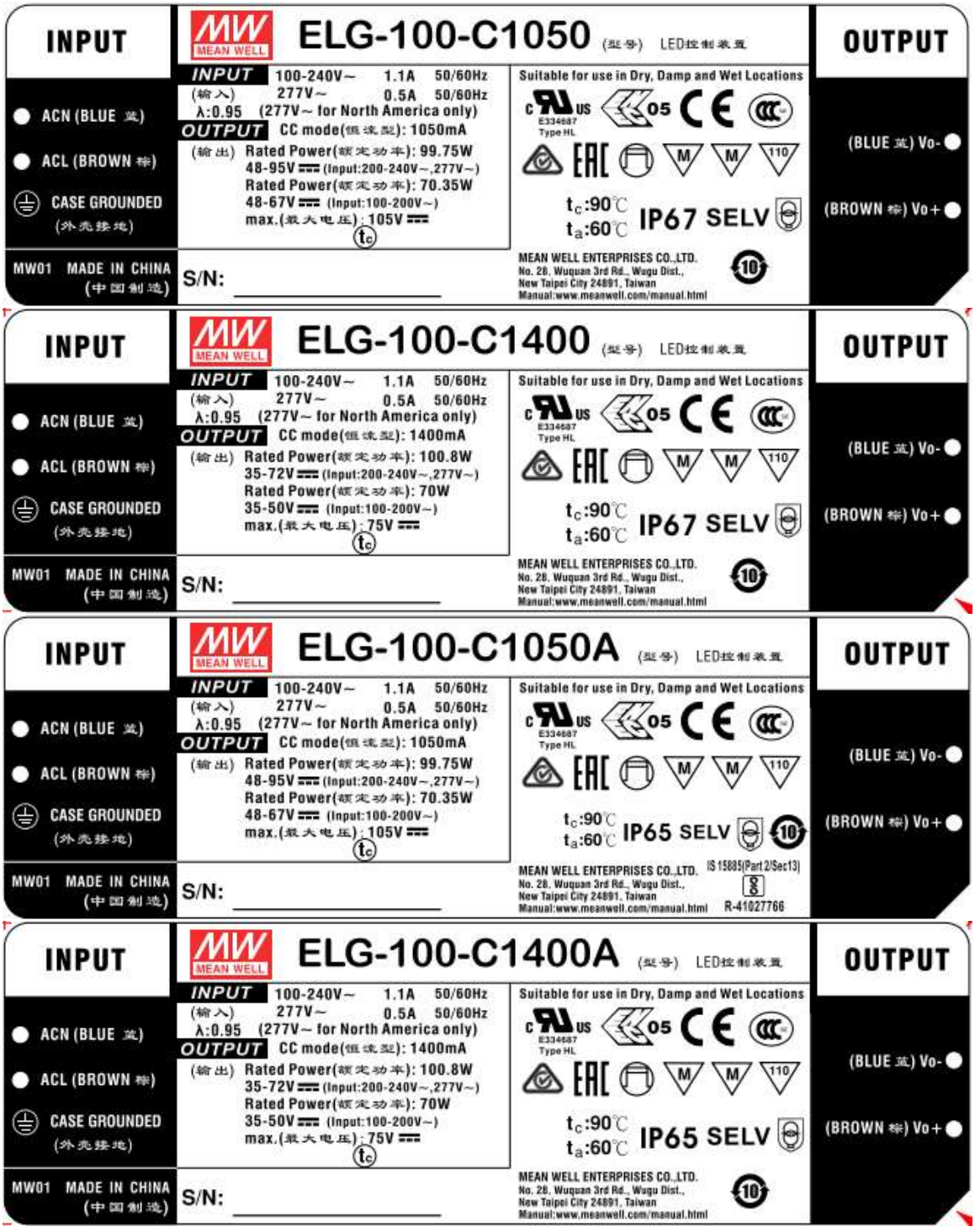
Summary of compliance with National Differences:

List of countries addressed:

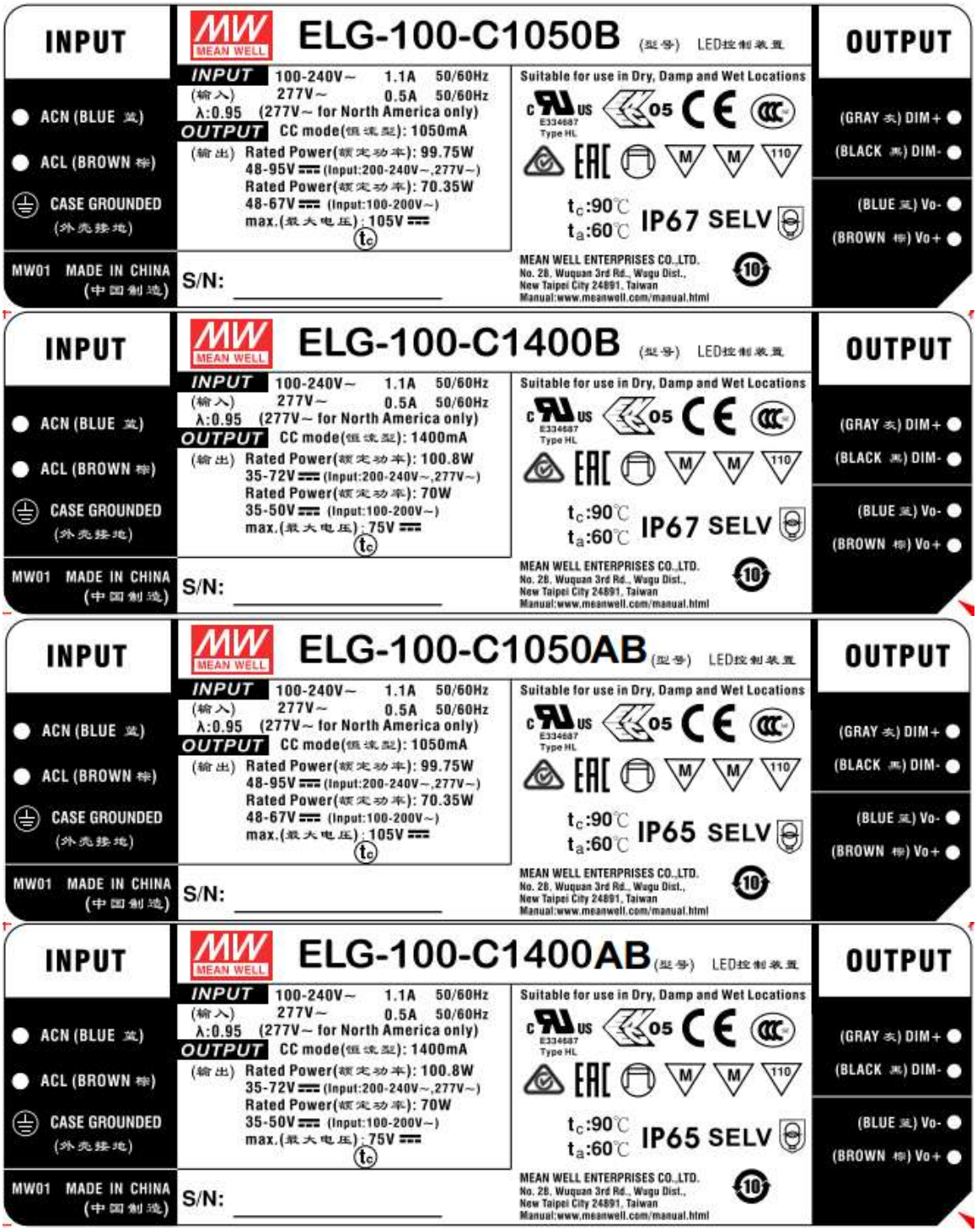
☒ EU Group Differences and National Differences
☒ Australia (AU) / New Zealand (NZ) deviations based on AS/NZS 61347.1: 2016 & AS/NZS 61347.2.13: 2013 & AS/NZS 60598.1: 2017.

Copy of marking plate

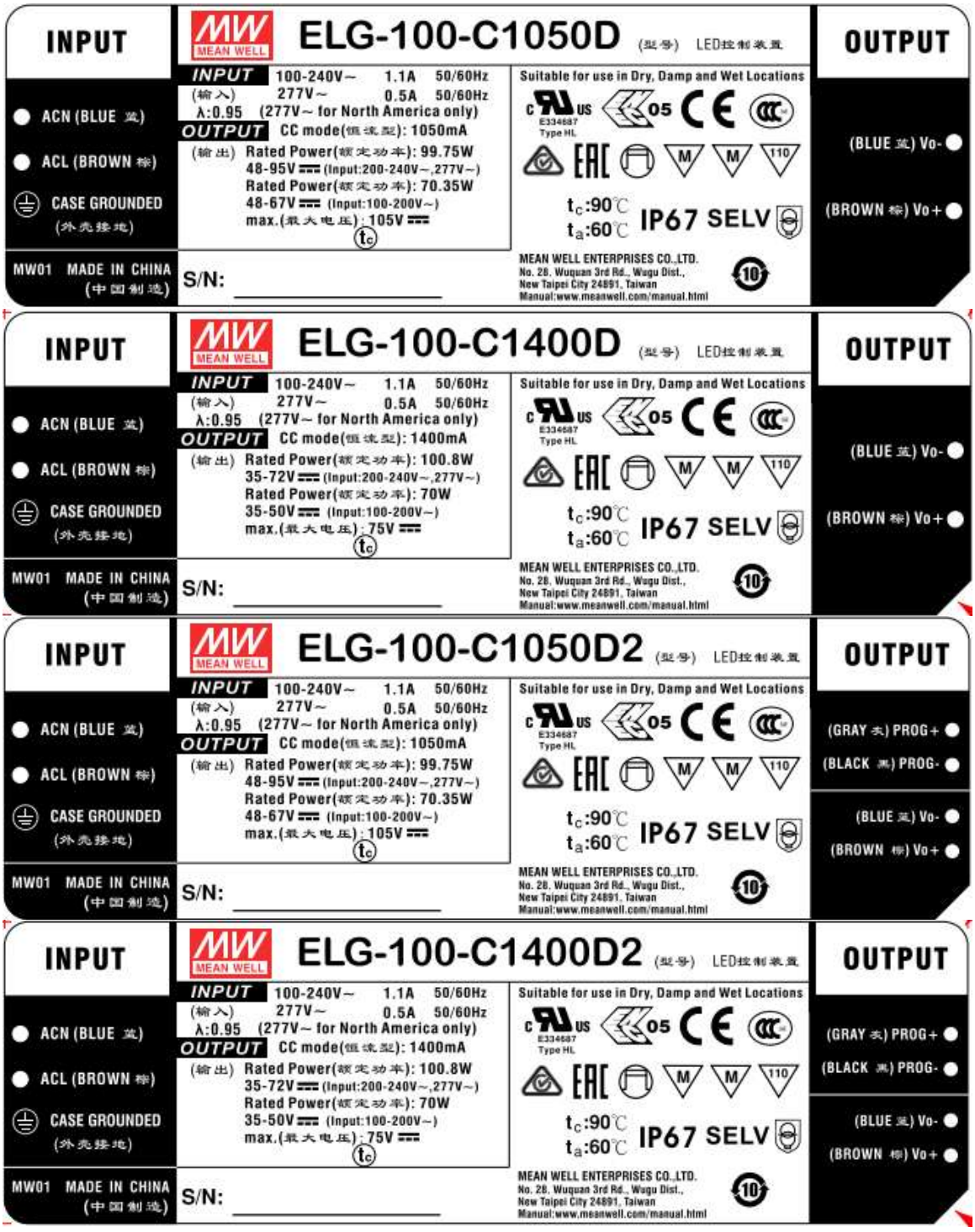
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



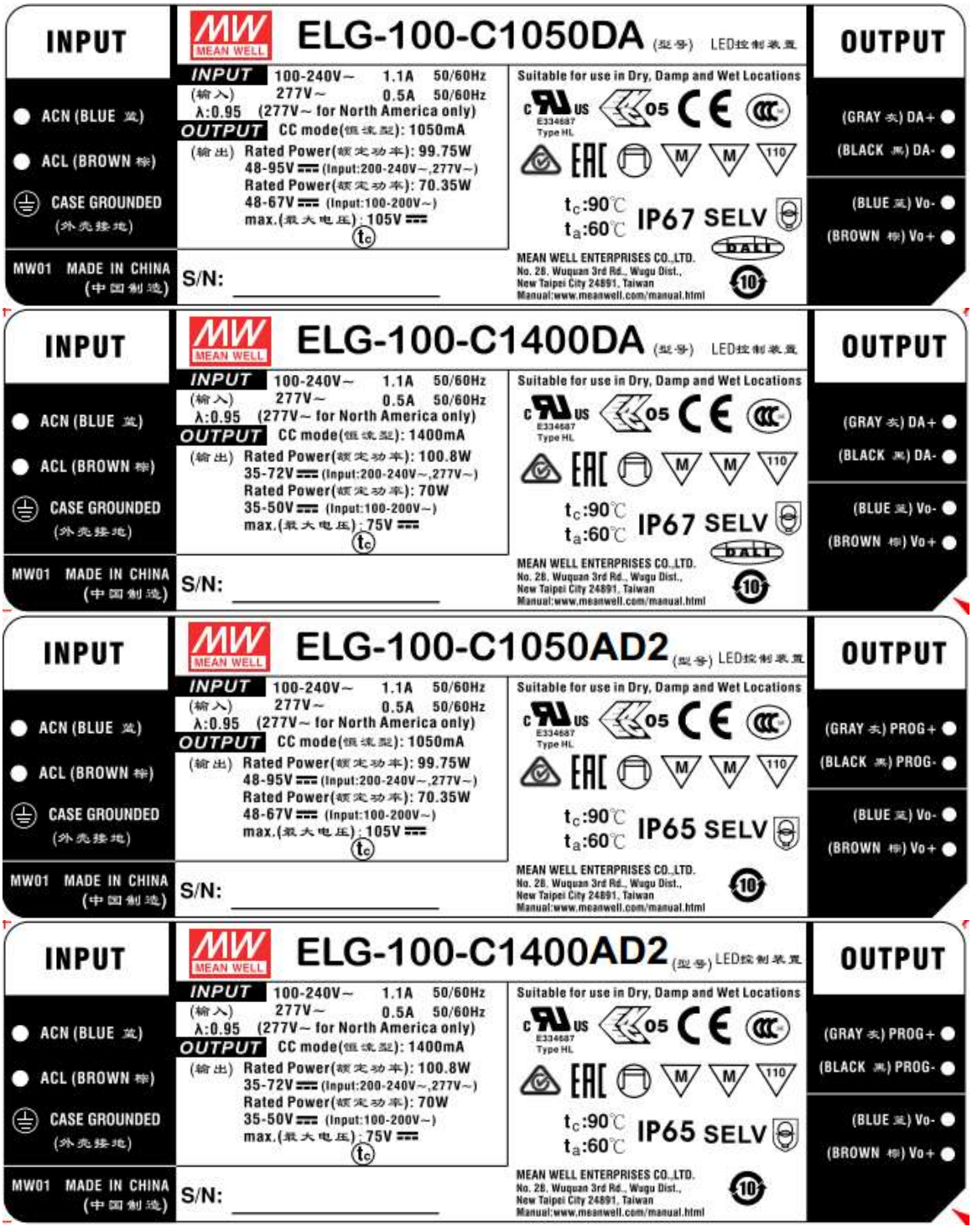
Location: Attached on the external surface of enclosure, Visible during installation and normal use



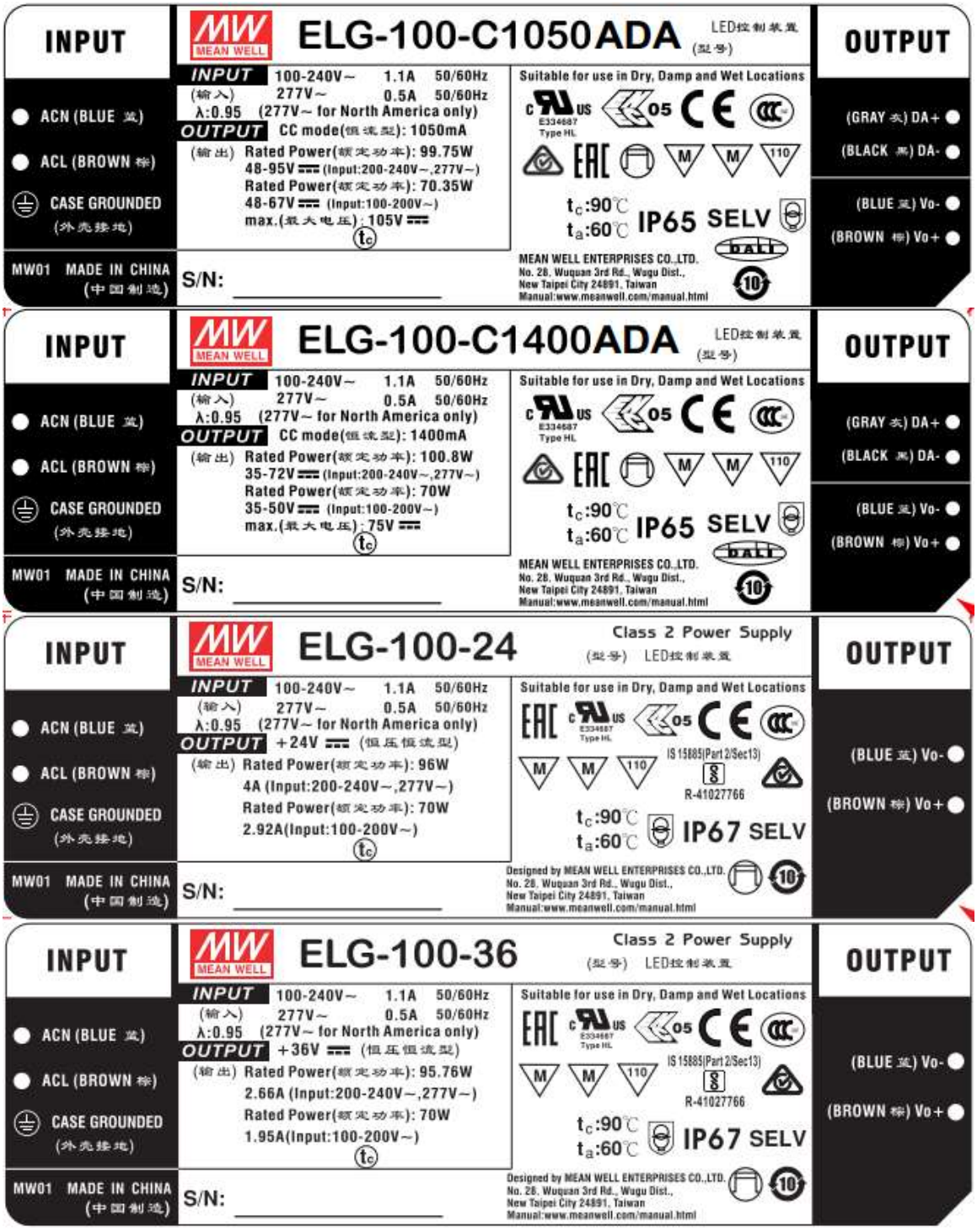
Location: Attached on the external surface of enclosure, Visible during installation and normal use



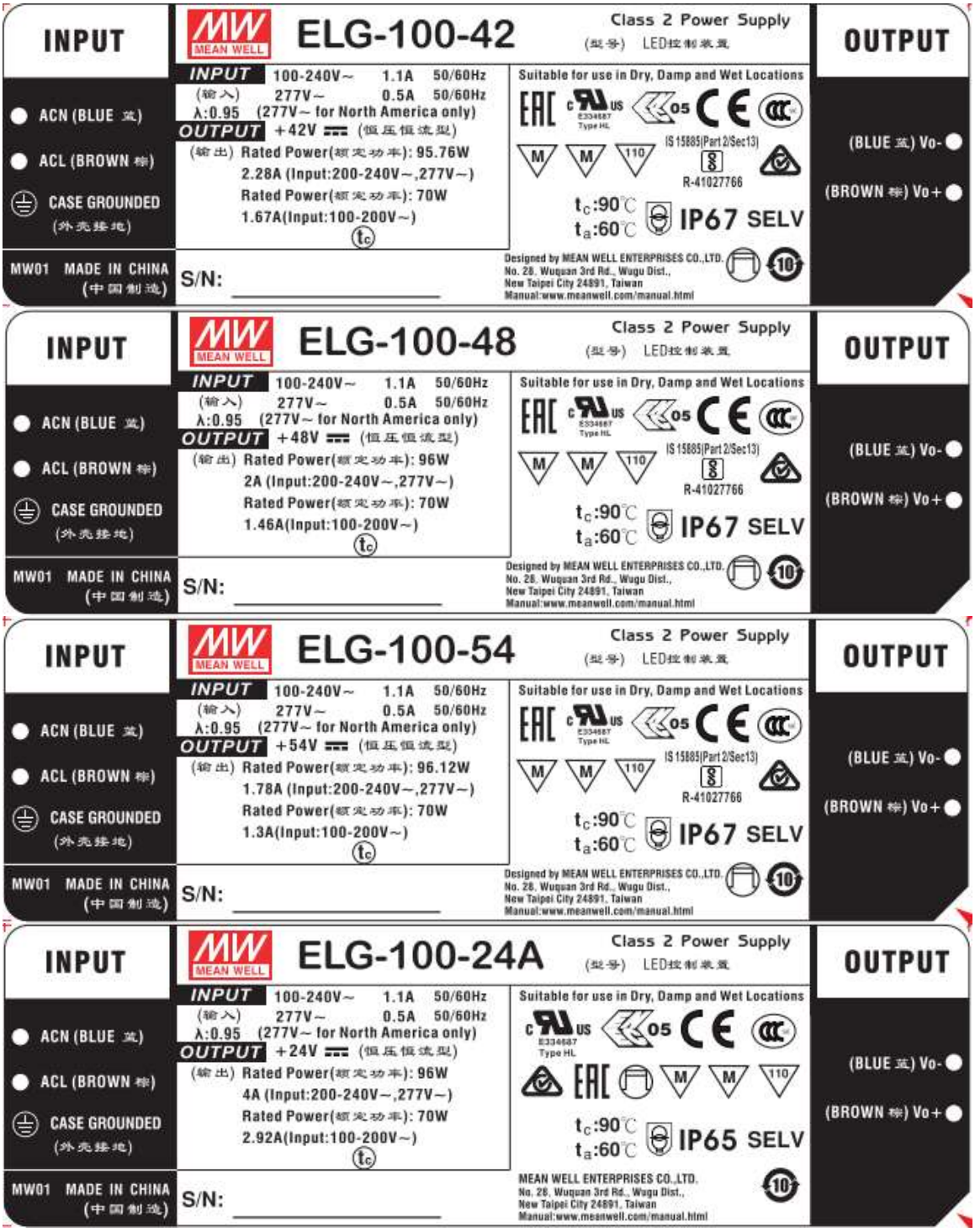
Location: Attached on the external surface of enclosure, Visible during installation and normal use



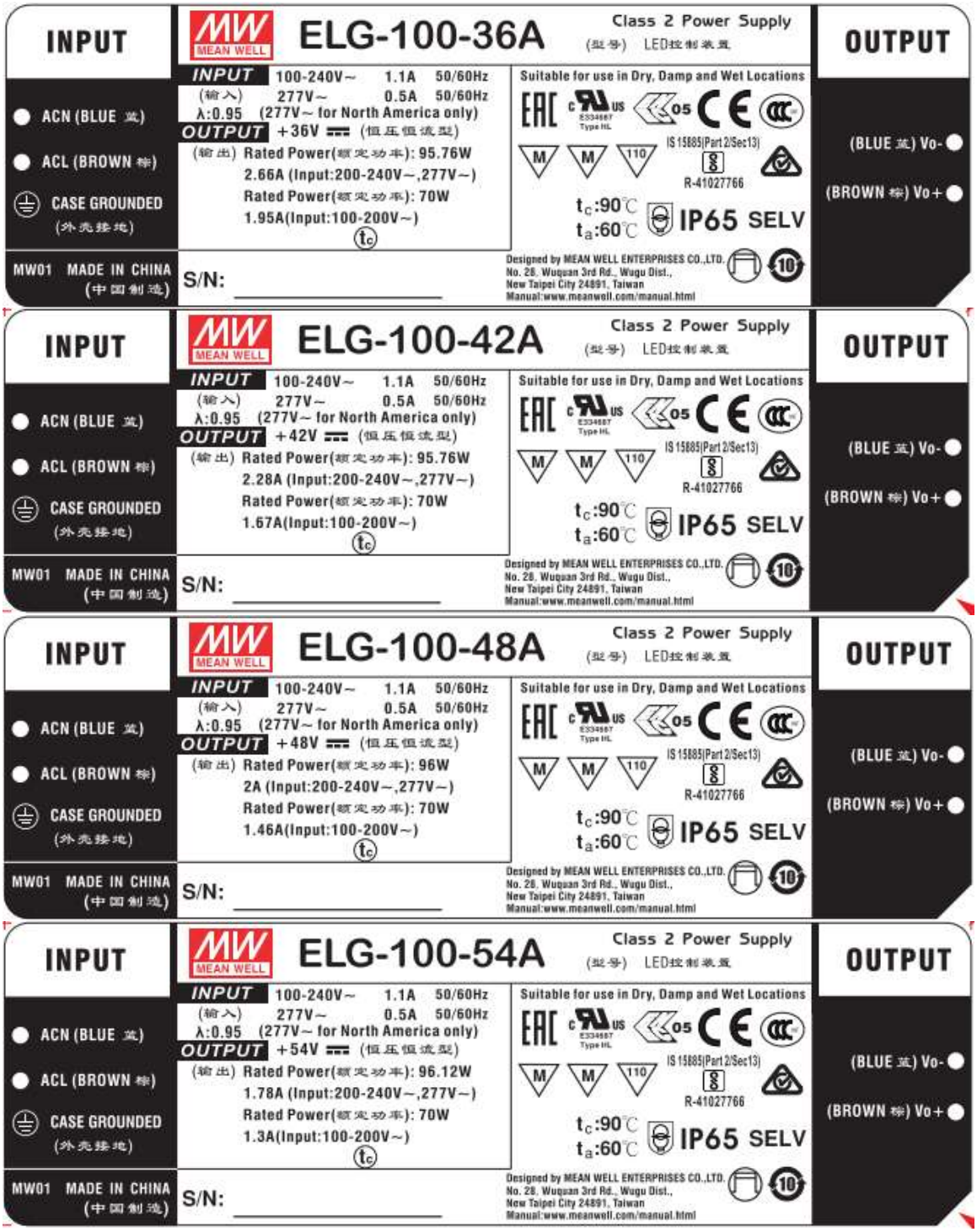
Location: Attached on the external surface of enclosure, Visible during installation and normal use



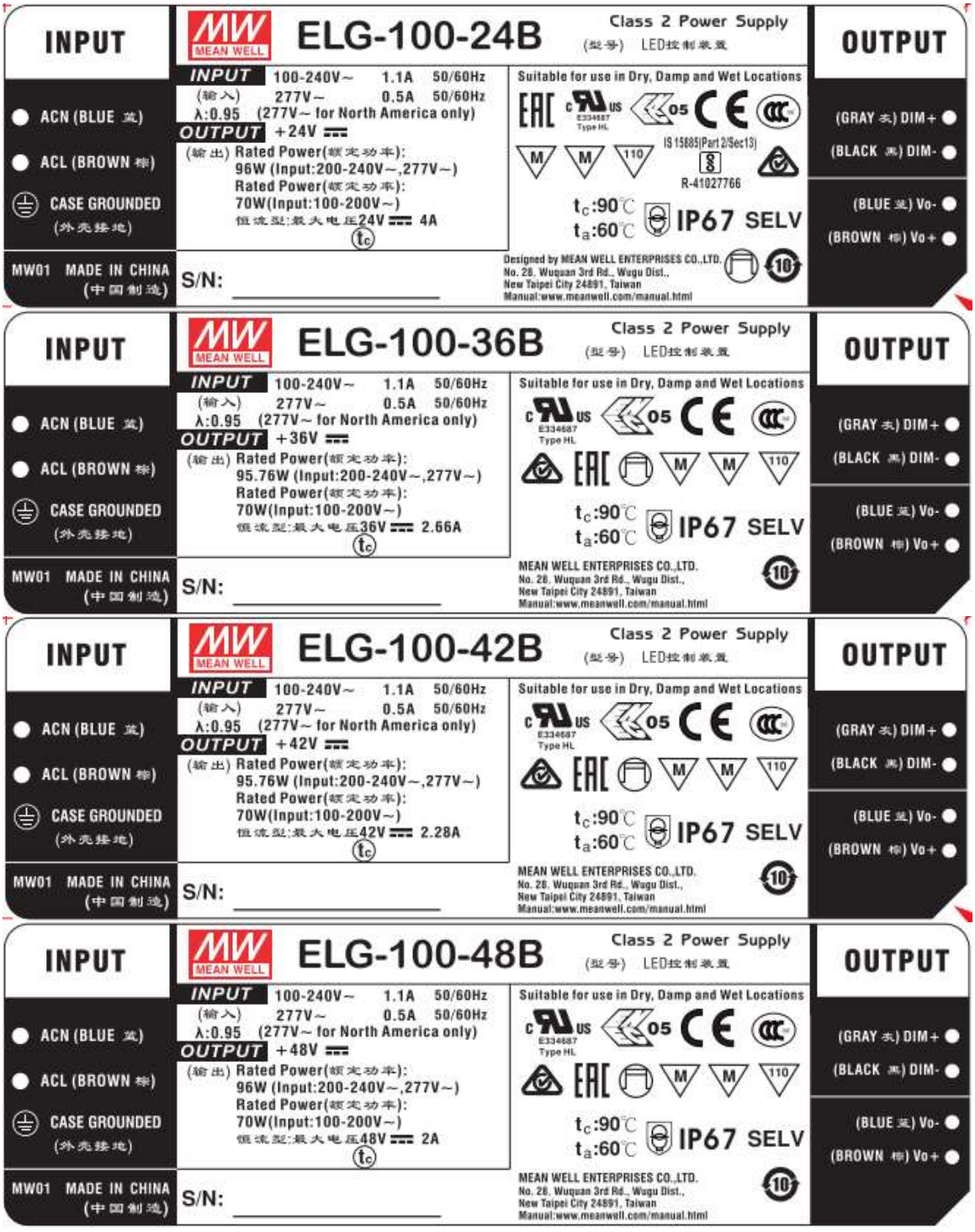
Location: Attached on the external surface of enclosure, Visible during installation and normal use



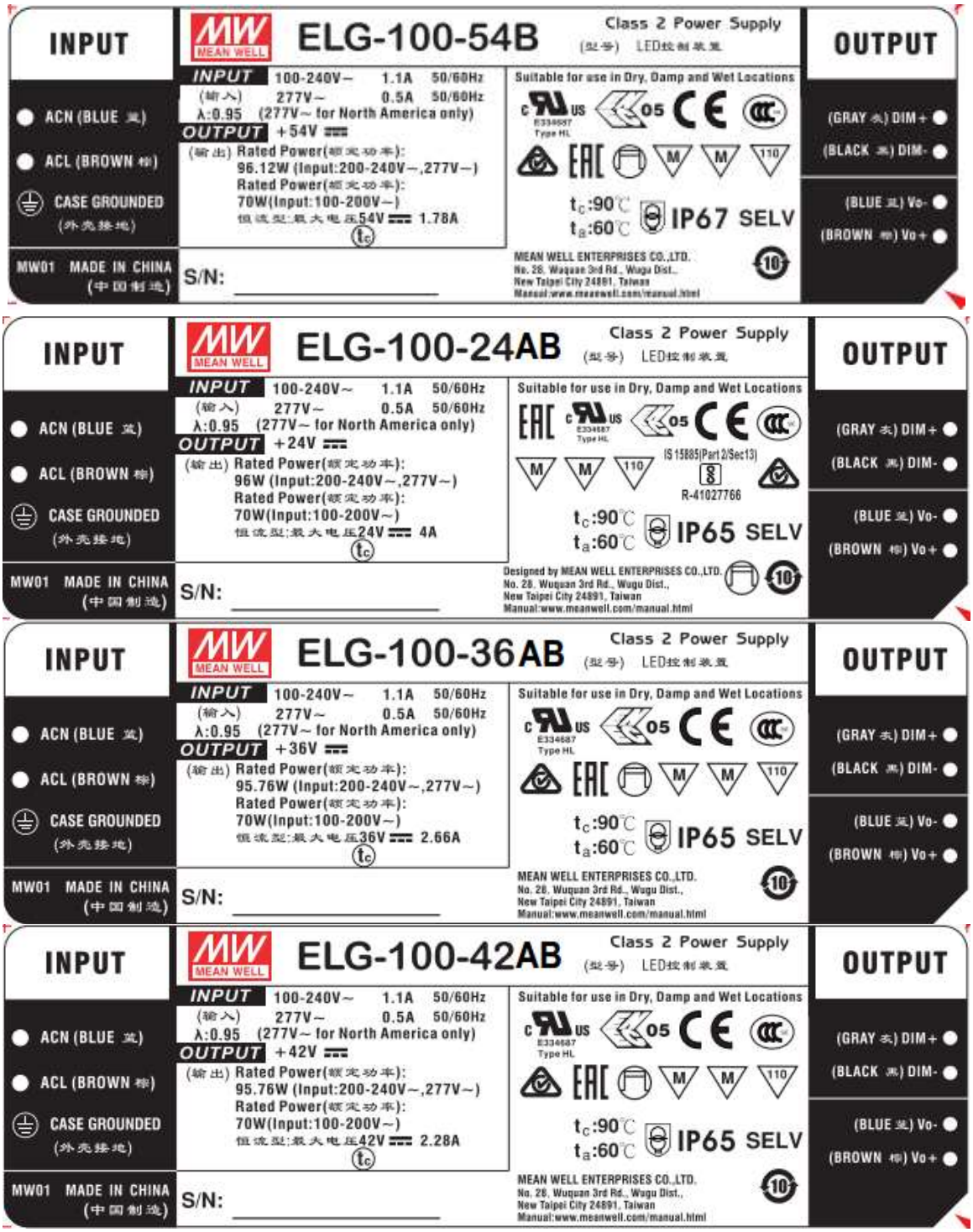
Location: Attached on the external surface of enclosure, Visible during installation and normal use



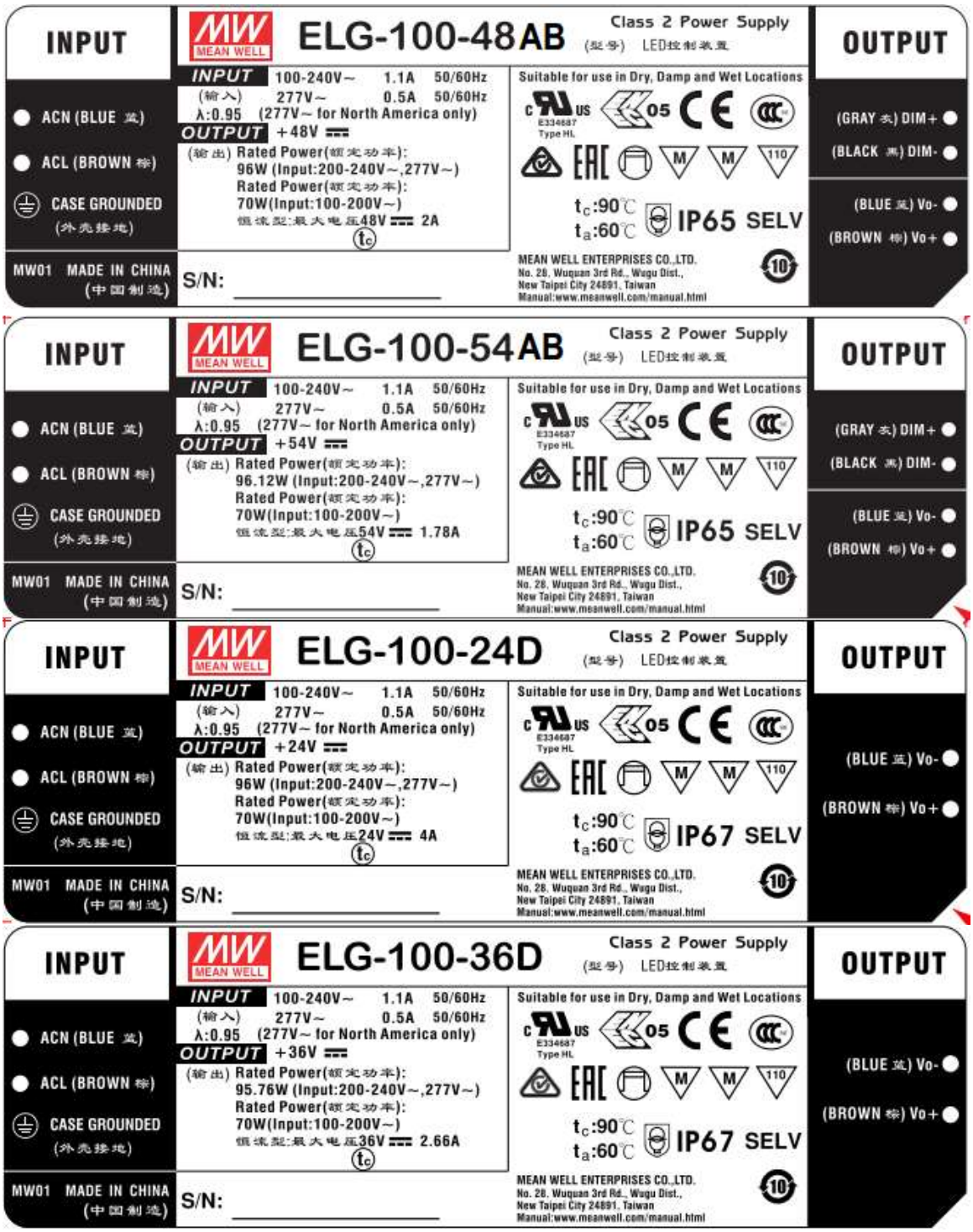
Location: Attached on the external surface of enclosure, Visible during installation and normal use



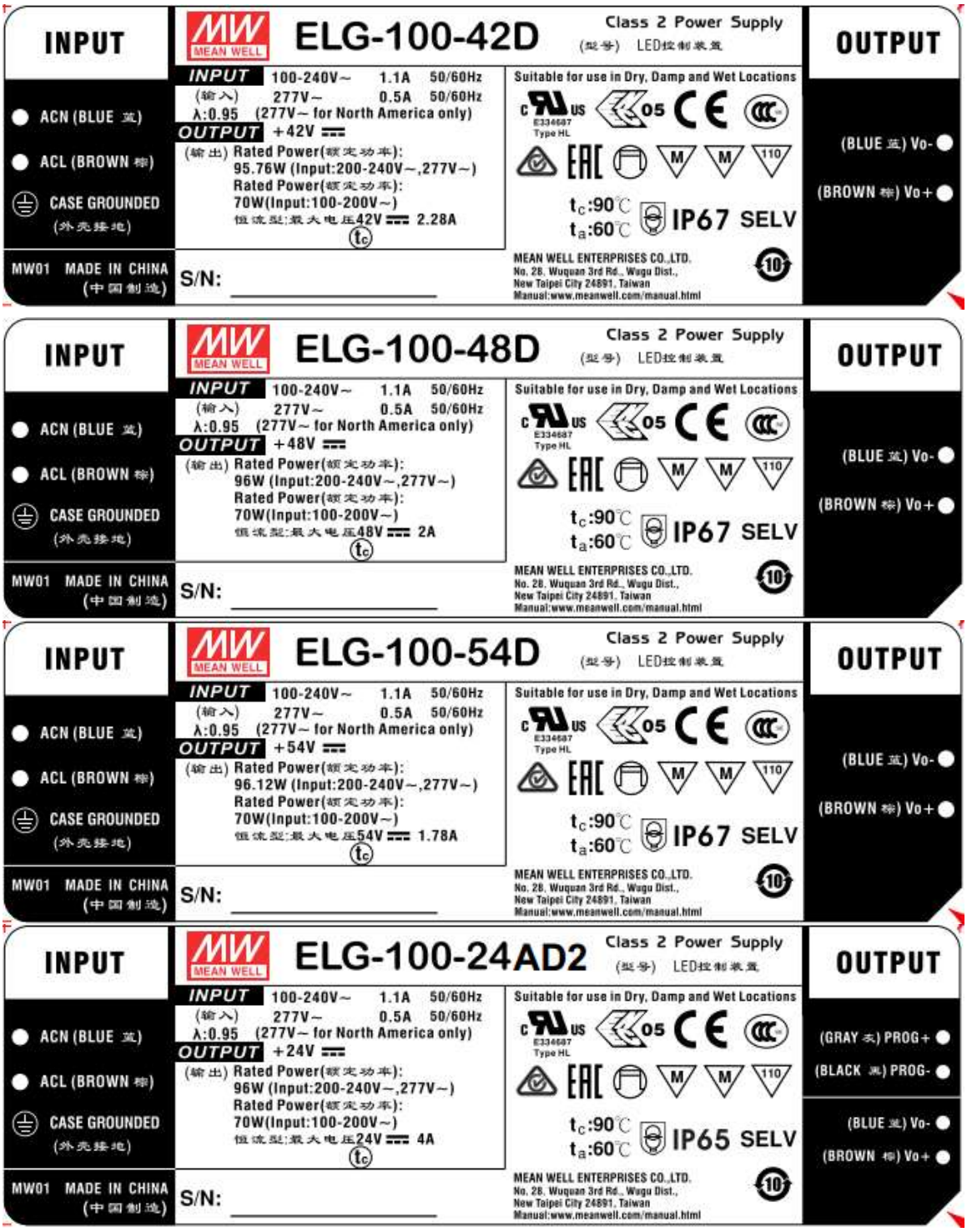
Location: Attached on the external surface of enclosure, Visible during installation and normal use



Location: Attached on the external surface of enclosure, Visible during installation and normal use

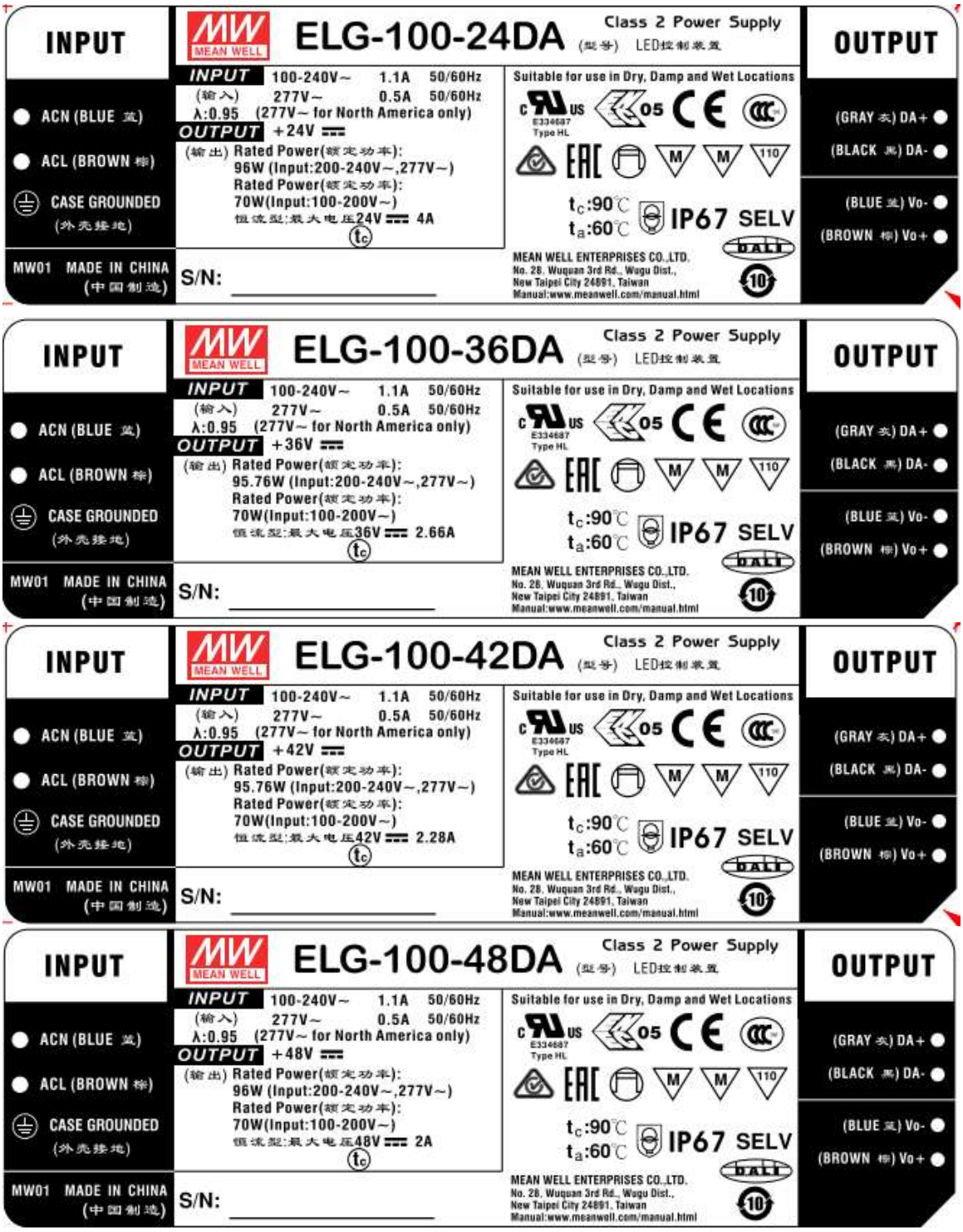


Location: Attached on the external surface of enclosure, Visible during installation and normal use

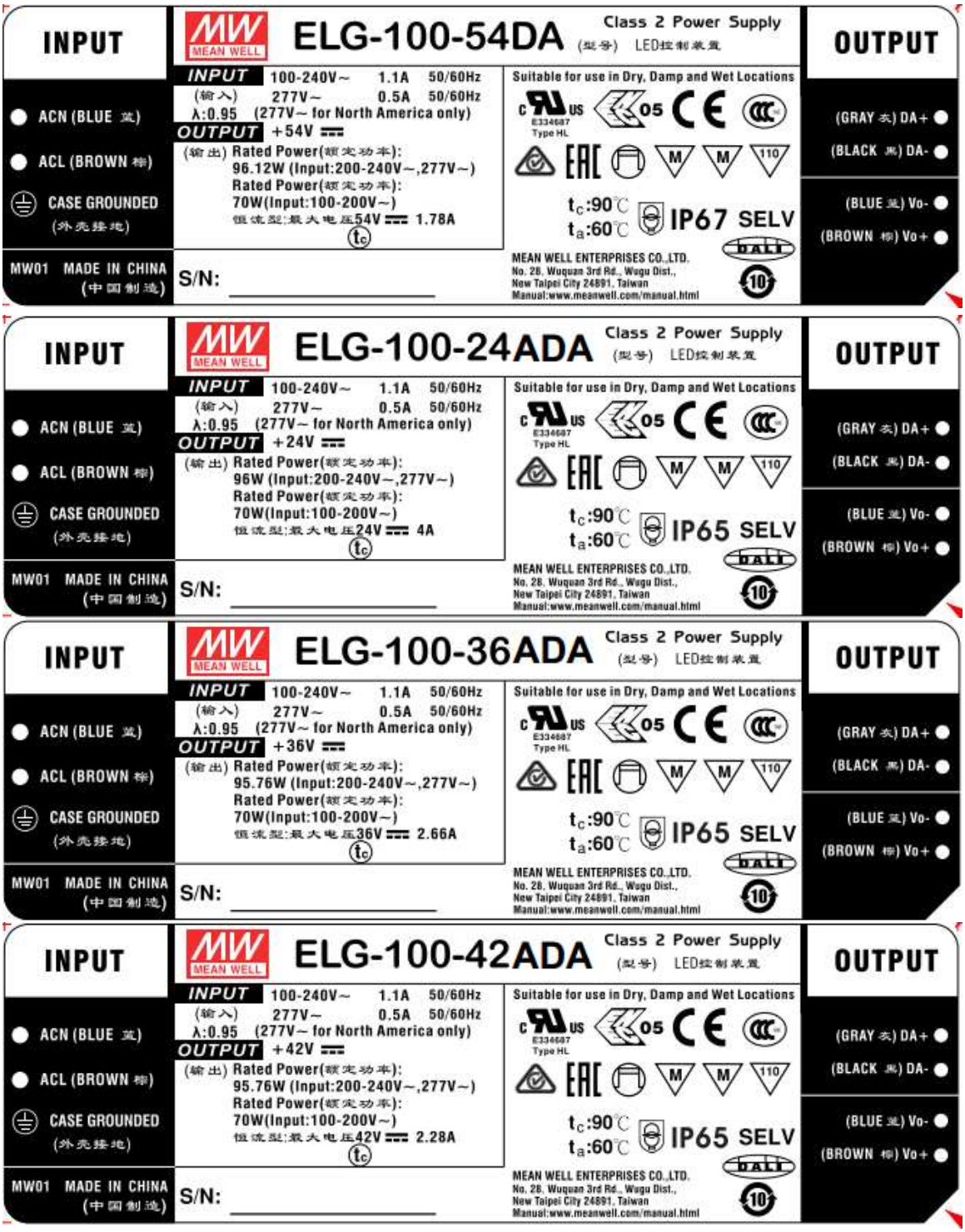


Location: Attached on the external surface of enclosure, Visible during installation and normal use

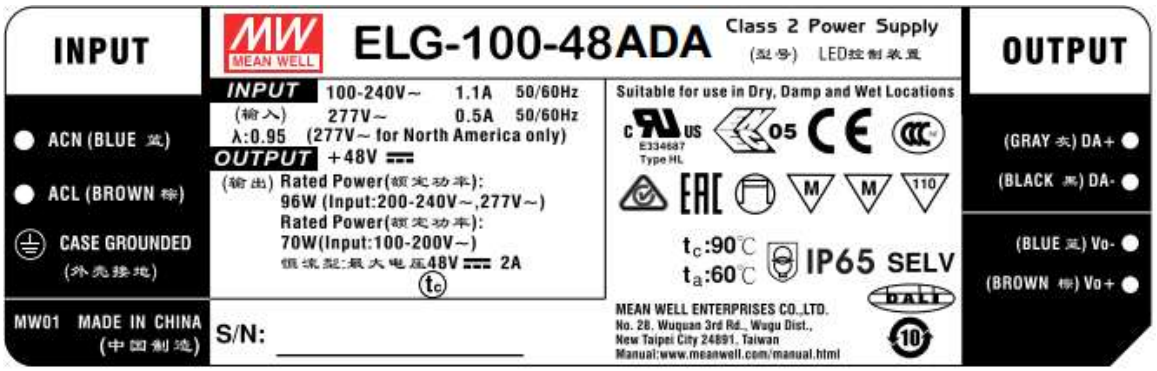
Location: Attached on the external surface of enclosure, Visible during installation and normal use



Location: Attached on the external surface of enclosure, Visible during installation and normal use



Location: Attached on the external surface of enclosure, Visible during installation and normal use



Location: Attached on the external surface of enclosure, Visible during installation and normal use

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 .....:	Independent LED driver
Supply Connection.....:	Supply cord
.....:	
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 .....:	2018-02-23
Date (s) of performance of tests .....:	2018-02-23 to 2018-02-23

General remarks:

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

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

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

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	Factory 1: MEAN WELL (Guangzhou) Electronics Co. Ltd. Huadu Branch No.11 Jingu South Road, Huadong Town, Huadu District, Guangzhou, Guangdong, China. Factory 2: MEAN WELL Enterprises Co., Ltd. No.28, Wuquan 3rd, Wugu Dist, New Taipei City 248, Taiwan Factory 3: Suzhou MEAN WELL Technology Co., Ltd. No. 77, Jian-min Road, Dong-qiao, Pan-yang Ind. Park, Huang-dai Town, Xiang-cheng Dist, Suzhou, 215152 Jiangsu, China

General product information:

The products were tested and complied with following standards:

- IEC 61347-2-13:2014+AMD1:2016 used in conjunction with IEC 61347-1:2015
- EN 61347-2-13:2014+AMD1:2017 used in conjunction with EN 61347-1:2015
- EN 62384:2006 + A1:2009

The products covered in this report are independent SELV LED drivers, they are totally filled by self-hardening resin (Potting compounds), they have similar dimension of enclosure, PCB layout and circuit diagram. The major differences among them are output type, output voltage and current, shape and rating of some components, turns of secondary coil of transformer, See below tables for details.

Regarding the insulation between driver SELV output and dimmer circuit shall be considered in the final luminaire for following situations:

- Control sides in this report may be used together with the sensing device outside of the controlgear case, but inside the luminaire (not remotely), or
- Dimming circuits shall be insulated from accessible conductive parts by an insulation according Table 6 in IEC/EN61347-1 and Table X.1 in IEC/EN60598-1.

When final assembly, input wires of driver shall be complied with Class II construction or got available protective earthing, both input wires and output wires will be connected by a qualified person.

This report was based on original report 4329184.50, issued on 2016-07-14. Below changes were considered:

1, Deleted below factory information:

Factory 1: MEAN WELL (Guangzhou) Electronics Co., Ltd.

2F, A Building, Yuean Industrial Park, Huangcun, Dongpu Town, Tianhe District, Guangzhou, Guangdong, P.R. China

2, Changed factory information as below:

Old factory name: GUANGZHOU HUA WELL ELECTRONICS CO., LTD.

New factory name: MEAN WELL (Guangzhou) Electronics Co. Ltd. Huadu Branch

3, Updated standard IEC/EN 61347-1 and IEC/EN 61347-2-13 to new version.

4, Updated (AU/NZ) Australian /New Zealand Deviations AS/NZS 61347.1 to new version.

5, Updated rating label.

Model No	Input voltage (V)	Input current (A)	Output type	Output voltage (V dc)	Output current (A)	Output power (W)
ELG-100-C1050Y	100-200	1,1	Constant current	48-67 Vdc, max. 105 Vdc	1,05 A	70,35
	200-240			48-95 Vdc, max. 105 Vdc		99,75
ELG-100-C1400Y	100-200	1,1	Constant current	35-50 Vdc, max. 75 Vdc	1,4 A	70
	200-240			35-72 Vdc, max. 75 Vdc		100,8
ELG-100-24Y	100-200	1,1	Constant voltage	24 Vdc	--	70
	200-240					96
ELG-100-36Y	100-200	1,1	Constant voltage	36 Vdc	--	70
	200-240					95,76
ELG-100-42Y	100-200	1,1	Constant voltage	42 Vdc	--	70
	200-240					95,76
ELG-100-48Y	100-200	1,1	Constant voltage	48 Vdc	--	70
	200-240					96
ELG-100-54Y	100-200	1,1	Constant voltage	54 Vdc	--	70
	200-240					96,12

Model Encoding:

Y= blank, A, B, AB, D, D2,DA, ADA, AD2, define for dimming function mode.
Blank: Cable for I/O connection.
A: Adjusted through internal potentiometer.
B: Adjustable through output cable with 0-10 Vdc or 10 V PWM signal or resistance.
AB: Adjusted through internal potentiometer or output cable with 0-10 Vdc or 10 V PWM signal or resistance
D: Smart timer dimming
D2: Smart timer dimming can be programmed by output cable.
DA: DALI function
ADA: DALI function and adjusted through internal potentiometer,
AD2: Smart timer dimming can be programmed by output cable and adjusted through internal potentiometer.

Model difference:

Function mode	Main PCB	Dimming PCB	Dimming wire	Rear cover (with or without plastic cap)	IP
Blank	Same	Without	Without	Without	67
A	Same	Without	Without	With	65
B	Same	B type	With	Without	67
AB	Same	B type	With	With	65
D	Same	D type	Without	Without	67
D2	Same	D type	With	Without	67
AD2	Same	D type	With	With	65
DA	Same	DA type	With	Without	67
ADA	Same	DA type	With	With	65

IEC 61347-2-13			
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)	N/A
- (4)	Compliance of independent controlgear enclosure with IEC 60 598-1		P
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
4 (4)	SELV controlgear comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	P
4 (-)	Transformer comply with IEC 61558		N/A
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage ≤ 300 V		N/A

6 (6)	**CLASSIFICATION**		
	Built-in controlgear ..... :	Yes ☐ No ☒	—
	Independent controlgear ..... :	Yes ☒ No ☐	—
	Integral controlgear ..... :	Yes ☐ No ☒	—
6 (-)	Auto-wound controlgear ..... :	Yes ☐ No ☒	—
	Separating controlgear ..... :	Yes ☐ No ☒	—
	Isolating controlgear ..... :	Yes ☐ No ☒	—
	SELV controlgear ..... :	Yes ☒ No ☐	—

7 (7)	**MARKING**		
7.1 (7.1)	**Mandatory markings**		**P**
	a) mark of origin		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		P
	k) wiring diagram		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	l) value of tc		P
	m) symbol for declared temperature		P
	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) ..... :	See marking plates	P
	- rated output voltage U_{rated} (V) ..... :	See marking plates	P
	Constant current type:	Yes ☒ No ☐	—
	- rated output power P_{rated} (W) ..... :	See marking plates	P
	- rated output current I_{rated} (A) ..... :	See marking plates	P
	Indication if for LED modules only		P
7.1 (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P
7.2 (7.1)	**Information to be provided, if applicable**		**P**
	h) declaration of protection against accidental contact		N/A
	i) cross-section of conductors (mm²)		N/A
	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		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V .....:	< 0,5 μF	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.3)	**Controlgear providing SELV**		**P**
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		P
	No connection between output circuit and the body or protective earthing circuit		P
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	P
- (10.4)	**Accessible conductive parts in SELV circuits**		**P**
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.	For model ELG-100-XY (X=12, 24, 36, 42, 48, 54, Y=blank, A, B, AB, D, D2, DA, ADA, AD2)	P
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:	Max 0,59 mA	P
	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		P
	Y1 or Y2 capacitors comply with IEC 60384-14		P
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

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

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

10 (9)	**PROVISION FOR PROTECTIVE EARTHING**		
- (9.1)	**Provisions for protective earthing**		**P**
	Terminal complying with clause 8		P
	Locked against loosening and not possible to loosen by hand		P
	Not possible to loosen clamping means unintentionally on screwless terminals		P
	All parts of material minimizing the danger of electrolytic corrosion		P
	Made of brass or equivalent material		P
	Contact surface bare metal		P
	Test according 7.2.3 of IEC 60598-1		P
- (9.2)	**Provision for functional earthing**		**N/A**
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A
- (9.3)	**Lamp controlgear with conductors for protective earthing by tracks on printed circuit board**		**P**
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :	Max. 0,01 Ω	P
- (9.4)	**Earthing of built-in lamp controlgear**		**N/A**
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	**Earthing via independent controlgear**		**P**
- (9.5.1)	Earth connection to other equipment		P
	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 of IEC 60598-1		P
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	**MOISTURE RESISTANCE AND INSULATION**		
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P
	For basic insulation ≥ 2 MΩ ..... :	> 100 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ ..... :	> 100 MΩ	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		P

12 (12)	**ELECTRIC STRENGTH**		
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V	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	1850 V (Working voltage: Max 425 V)	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	3700 V (Working voltage: Max 425 V)	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A

14 (14)	**FAULT CONDITIONS**		
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Thermally protected controlgear does not exceed the marked temperature value		P
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	P
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 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
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		P

15 (-)	**TRANSFORMER HEATING**		
15.1	**General**		**P**
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		P
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		P
15.2 (-)	**Normal operation**		**P**
	Comply with clause L.6 of IEC 61347-1		P
15.3 (-)	**Abnormal operation**		**P**
	Comply with clause L.7 of IEC 61347-1		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		P
	Double LED modules or equivalent load connected in 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**		**P**
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		**P**
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	**Plugs and socket-outlets used in SELV or ELV circuits**		**N/A**
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	**Insulation between circuits and accessible parts**		**P**
- (15.4.2)	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		P
	- another source		N/A
	Voltage in the circuit not higher than ELV		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		P
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		P
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
17 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		
- (16)	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N/A
- (16.2)	**Creepage distances**		**P**
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	**Clearances**		P
- (16.3.2)	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A
18 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		P
(4.11)	**Electrical connections**		**P**
(4.11.1)	Contact pressure		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	**Mechanical connections and glands**		**P**
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part ..... :	Screw fixing metal cover: 0,5 Nm	P
	Torque test: torque (Nm); part ..... :	Screw fixing LED PCB: 0,5 Nm	P
	Torque test: torque (Nm); part ..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
(4.12.5)	Screwed glands; force (Nm) ..... :		N/A

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

20 (19)	**RESISTANCE TO CORROSION**		
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

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

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

14	**TABLE: tests of fault conditions**	
Part	Simulated fault for model ELG-100-C1400B	Hazard
ZNR1	Short circuit, the fuse operated	NO
LF1	Short circuit, the fuse operated	NO
BD1	Short circuit, the fuse operated	NO
C23	Short circuit, the fuse operated	NO
C1	Short circuit, the fuse operated	NO
ZNR2	Short circuit, the fuse operated	NO
D6	Short circuit, the fuse operated	NO
C5	Short circuit, the fuse operated	NO
Q1 (G/D)	Short circuit, the Q1 was break down, no damage occur	NO
Q2 (G/D)	Short circuit, the Q2 was break down, no damage occur	NO
Output of secondary winding (pin1-pin2)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of secondary winding (pin3-pin4)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C31	Short circuit, normal operated	NO
C45	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C205	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C108	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C106	Short circuit, normal operated	NO
LF100	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C112	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C131	Short circuit, normal operated	NO

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

Output of driver	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
D503	Short circuit, normal operated	NO
ZD500	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
U500(1-20)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of dimmer	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

14	**TABLE: tests of fault conditions**	
Part	Simulated fault for model ELG-100-54B	Hazard
ZNR1	Short circuit, the fuse operated	NO
LF1	Short circuit, the fuse operated	NO
BD1	Short circuit, the fuse operated	NO
C23	Short circuit, the fuse operated	NO
C1	Short circuit, the fuse operated	NO
ZNR2	Short circuit, the fuse operated	NO
D6	Short circuit, the fuse operated	NO
C5	Short circuit, the fuse operated	NO
Q1 (G/D)	Short circuit, the fuse operated	NO
Q2 (G/D)	Short circuit, the fuse operated	NO
Output of secondary winding (pin1-pin2)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of secondary winding (pin3-pin4)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C31	Short circuit, normal operated	NO
C45	Short circuit, the unit was protected by circuit and could not recover when removing the fault	NO
C205	Short circuit, the unit was protected by circuit and could not recover when removing the fault	NO
C108	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C106	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

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

LF100	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C112	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C131	Short circuit, normal operated	NO
D503	Short circuit, normal operated	NO
D505	Short circuit, normal operated	NO
ZD500	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
U500(1-20)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of dimmer	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

14	**TABLE: tests of fault conditions**	
Part	Simulated fault for model ELG-100-24B	Hazard
ZNR1	Short circuit, the fuse operated	NO
LF1	Short circuit, the fuse operated	NO
BD1	Short circuit, the fuse operated	NO
C23	Short circuit, the fuse operated	NO
C1	Short circuit, the fuse operated	NO
ZNR2	Short circuit, the fuse operated	NO
D6	Short circuit, the fuse operated	NO
C5	Short circuit, the fuse operated	NO
Q1 (G/D)	Short circuit, the fuse operated	NO
Q2 (G/D)	Short circuit, the fuse operated	NO
Output of secondary winding (pin1-pin2)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of secondary winding (pin3-pin4)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C31	Short circuit, normal operated	NO
C45	Short circuit, the unit was protected by circuit and could not recover when removing the fault	NO

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

C205	Short circuit, the unit was protected by circuit and could not recover when removing the fault	NO
C108	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C106	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
LF100	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C112	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C131	Short circuit, normal operated	NO
D503	Short circuit, normal operated	NO
D505	Short circuit, normal operated	NO
ZD500	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
U500 (1-20)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of dimmer	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

14	**TABLE: tests of fault conditions**	
Part	Simulated fault for model ELG-100-1400D	Hazard
U301A (2-3)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
ZD301	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
D302	Short circuit, normal operated	NO
C300	Short circuit, normal operated	NO
D301	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
U300 (1-20)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

14	**TABLE: tests of fault conditions**	
Part	Simulated fault for model ELG-100-1400DA	Hazard
U412 (2-3)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
U411 (1-20)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

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

BD401	Short circuit, normal operated	NO
Q402 (B-E)	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C401	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
C417	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO
Output of dimmer	Short circuit, the unit was protected by circuit and could recover when removing the fault	NO

17 (16)	TABLE: clearance and creepage distance measurements (mm)						
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**	
			clearance	***Table**		**creepage**	***Table**
Distance 1:	B	5,1	1,5	9	5,1	2,5	7
Working voltage (V) ..... :					100-240 V~		—
Frequency if applicable (kHz) ..... :					65,54 kHz		—
PTI ..... :					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :					--		—
Pulse voltage if applicable (kV) ..... :					--		—
Supplementary information: Measured on L to N, fuse.							
Distance 2:	B	4,0	1,5	9	4,0	2,5	7
Working voltage (V) ..... :					100-240 V~		—
Frequency if applicable (kHz) ..... :					65,54 kHz		—
PTI ..... :					< 600 ☒ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :					--		—
Pulse voltage if applicable (kV) ..... :					--		—
Supplementary information: Measured on live parts to enclosure.							
Distance 3:	--	--	--	--	--	--	--
Working voltage (V) ..... :					--		—
Frequency if applicable (kHz) ..... :					--		—
PTI ..... :					< 600 ☐ ≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :					--		—
Pulse voltage if applicable (kV) ..... :					--		—
Supplementary information: --							

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

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

19 (18.1)	**TABLE: Ball Pressure Test**		**P**
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Bobbin of transformer (T1)	See Annex 1	135	1,35
Potting material	See Annex 1	125	0,27
PCB	See Annex 1	129	0,6
Insulation sheet	See Annex 1	133	1,56
Supplementary information: --			

19 (18.2)	**TABLE: Test of printed boards**				**N/A**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Supplementary information:					

19 (18.3)	**TABLE: Glow-wire test**			**N/A**
Glow wire temperature..... :		650°C		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
Supplementary information:				

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

19 (18.4)	**TABLE: Needle-flame test**				**P**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Bobbin of transformer (T1)	See Annex 1	10	No	0	P
Potting material	See Annex 1	10	No	0	P
PCB	See Annex 1	10	No	0	P
Supplementary information:					

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

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

(A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		
(A.1)	Comply with A.2 or A.3		P
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:	Max. 7,72 V d,c.	P
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:	Max. 0,59 mA	P
	Comply with Annex G.2 of IEC 60598-1		P

(C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		
(C3)	**GENERAL REQUIREMENTS**		**P**
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		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		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ..:	Non-inherently circuit feedback protection	—
(C6)	**MARKING**		**P**
(C6.1)	Symbol for temperature declared thermally protected ballasts		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 (t_c - 5) K		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	No operation of the protection device		P
(C7.2)	**Functioning of protection means:**		**P**
	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 14.2 to 14.5		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		P
	Continuous measuring of the highest surface temperature		P
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		P
	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		P
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A
(D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		
	Tests in C7 performed in accordance with Annex D, if applicable		P
(F)	**ANNEX F – DRAUGHT-PROOF ENCOSURE**		
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P
	Other design; description		N/A

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

(H)	**ANNEX H - TESTS**		
	All tests performed in accordance with the advice given in Annex H, if applicable		P

I (L)	**ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES**		
(L.3)	**Classification**		**P**
	Class I	Yes ☒ No ☐ Input circuit to output circuit complied with double insulation, input circuit to metal enclosure complied with basic insulation	—
	Class II	Yes ☐ No ☒	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☒ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☒	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	**Marking**		**P**
	Adequate symbols are used		P
(L.5)	**Protection against electric shock**		**P**
	Comply with clause 9.2 of IEC 61558-1		P
(L.6)	**Heating**		**P**
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked .....:	X-Cap: min. 100 Y-Cap: min. 85 E-Cap: min. 105	—
	Winding insulation classified as Class .....:	Class B	—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		P
(L.7)	**Short-circuit and overload protection**		**P**
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		P
(L.8)	**Insulation resistance and electric strength**		**P**

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(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 .....:	> 100 MΩ	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 .....:	> 100 MΩ	P
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ .....:		N/A
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits .....:	3500 V (Interpolation between 3000 Vac and 4200 Vac) (Max. working voltage: 425 Vrms for worst case)	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity .....:		N/A
	b) live parts and body if intended to be connected to protective earth .....:	1500 V	P
	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 .....:		N/A
(L.9)	**Construction**		**P**
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		P
	HF transformer comply with 19 of IEC 61558-2-16		P
(L.10)	**Components**		**N/A**
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	**Creepage distances, clearances and distances through insulation**		**P**
	Creepage distances and clearances not less than in Clause 16		P
	Distance through insulation according Table L.5 in IEC 61347-1		P
	1) Basic distance through insulation		N/A
	Required distance (mm) .....:		—

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured (mm) .....:		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		P
	Required distance (mm) .....:	0,171	—
	Measured (mm) .....:	0,180	P
	Supplementary information	Measured DTI on transformer (T1) between primary winding and secondary winding. Working voltage: Max 425 Vrms	—
	3) Reinforced distance through insulation		P
	Required distance (mm) .....:	1,21	—
	Measured (mm) .....:	1,7	P
	Supplementary information	Measured DTI on transformer (T1) between primary winding and secondary winding. (Working voltage: Max 425 Vrms)	—

J (-)	**ANNEX J IN THIS PART 2 – PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING**		
J.1	**General**		**N/A**
	Intended for centralized emergency power supply	Yes ☐ No ☐	—
J.2	**Marking**		**N/A**
J.2.1	Mandatory markings		N/A
	a) symbol EL		N/A
	b) rated emergency supply voltage (V)		N/A
J.2.2	Information to be provided if applicable		N/A
	a) Limits of ambient temperature		N/A
	b) Emergency output factor (EOF_X)		N/A
	c) Information if intended for use in luminaires for high-risk task area lighting		N/A
J.3	General notes on tests		N/A
	Length of output cable in tests.....:		N/A
	Load instead of LED lamps/modules.....:		N/A
J.4	Starting conditions		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Start rated load in emergency mode without adversely affecting the performance		N/A
J.5	Operating condition		N/A
	Comply with the requirements of 7.2 of IEC 62384 at 90% and 110% of rated emergency supply voltage		N/A
J.6	Emergency supply current		N/A
	Emergency supply current not differ more than ±15 %		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF_x)		N/A
	Declared emergency output factor (EOF_x) achieved during emergency operation		N/A
(N)	**ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**		
(N.4)	**General requirements**		**N/A**
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	**Solid insulation**		**N/A**
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % of 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	**Thin sheet insulation**		**N/A**
(N.4.3.1)	Thickness and composition of thin sheet insulation		N/A
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N/A
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		N/A
(O)	**ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**		
(O.6)	**Marking**		**N/A**
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	**Protection against accidental contact with live parts**		**N/A**
	Requirements of clause 8 (10)	See clause 8	N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A
(O.8)	**Terminals**		**N/A**
	Clause 9 (8)	See clause 9	N/A
(O.9)	**Provision for earthing**		**N/A**
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A
(O.10)	**Moisture resistance and insulation**		**N/A**
	Clause 11 (11)	See clause 11	N/A
(O.11)	**Electric strength**		**N/A**
	Clause 12 (12)	See clause 12	N/A
(O.13)	**Fault conditions**		**N/A**
	Clause 14 (14)	See clause 14	N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test reduced to 35 % of values according Table 1 in part 1		N/A
	Insulation resistance according to O.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		N/A
(O.14)	**Construction**		**N/A**
	Clause 17 (15)	See clause 17	N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	**Creepage distances and clearances**		**N/A**
	Clause 18 (16)	See clause 18	N/A
	Comply with corresponding values for luminaries in IEC 60598-1		N/A
(O.16)	**Screws, current-carrying parts and connections**		**N/A**
	Clause 19 (17)	See clause 19	N/A
(O.17)	**Resistance to heat and fire**		**N/A**
	Clause 20 (18)	See clause 20	N/A
(O.18)	**Resistance to corrosion**		**N/A**
	Clause 21 (19)	See clause 21	N/A

(P)	**Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting**		
(P.1)	**General**		**N/A**
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
(P.2)	**Creepage distances**		**N/A**
(P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage ..... :		—

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured ..... :		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
(P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A
	Voltage $\hat{U}_{out}$ kV ..... :		—
	Frequency ..... :		—
	Required distance ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
(P.2.4)	Compliance with the required creepage distances		N/A
(P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A
(P.2.4.3)	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3)	**Distance through isolation**		**N/A**
(P.3.4)	Electrical tests after conditioning		N/A
(P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3.4.2)	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage ..... :		—
	Impulse voltage ..... :		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage ..... :		—
	Impulse voltage ..... :		N/A
	Supplementary information		—

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

ANNEX 1	TABLE: Critical components information					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Input wire for indoor use only and output wires	A	Awin Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40023114)
Alternative	D	Chung Kwang Electric Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (109851)
Alternative	D	Well Shin Technology Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40007541)
Alternative	D	TA TUN ELECTRIC WIRE & CABLE CO LTD	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016695)
Alternative	D	I-Sheng ELECTRIC WIRE & CABLE CO LTD	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40015762, 40026441)
Alternative	D	MainLand Electric Wire & Cable Co., Ltd	H03VV-F, H03VVH2-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40010355)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN50525-2-11	VDE (098629)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H07RN-F H05RN-F, H05RR-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016757)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H05BB-F, H05BN4-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016237)
Alternative	D	Unirise Electric Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40017449)

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

Alternative	D	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015999)
Alternative	D	Zheng Yu Electric Appliance Fittings (Kunshan) Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016693)
Alternative	D	Dong Guan Recheer Electric Wire & Cable Go., Ltd	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015173)
Alternative	D	AWIN WIRE & CABLE CO., LTD	NISPT-1, NISPT-2, SJTW, STW, SVT	Min. 2 × 18 AWG, min. 90 °C	IEC/EN 61347-2-13	Tested in appliance and UL (E228636)
Alternative	D	Interchangeable	Interchange-able	Min. 2 × 0,75 mm², min. 90 °C	DIN EN50525-2-21 DIN EN50525-2-11 DIN EN50525-3-11	VDE
Alternative	D	Interchangeable	Interchange-able	Min. 2 × 18 AWG, min. 90 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL
Input wires	A	TA TUN ELECTRIC WIRE & CABLE CO LTD	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016695)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H07RN-F, H05RN-F, H05RR-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016757)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H05BB-F, H05BN4-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016237)
Alternative	D	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015999)

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

Alternative	D	Zheng Yu Electric Appliance Fittings (Kunshan) Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016693)
Alternative	D	Dong Guan Recheer Electric Wire & Cable Go., Ltd	H05RN-F, H05RR-F, H07RN-F	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015173)
Alternative	D	Interchangeable	Interchange-able	Min. 2 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE
Input wires (indoor use only) (Alternative earthing construction with 3C)	A	Awin Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40023114)
Alternative	D	Chung Kwang Electric Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (109851)
Alternative	D	Well Shin Technology Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40007541)
Alternative	D	TA TUN ELECTRIC WIRE & CABLE CO LTD	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016695)
Alternative	D	I-Sheng ELECTRIC WIRE & CABLE CO LTD	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40015762, 40026441)
Alternative	D	MainLand Electric Wire & Cable Co., Ltd	H03VV-F, H03VVH2-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40010355)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN50525-2-11	VDE (098629)

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

Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H07RN-F, H05RN-F, H05RR-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016757)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H05BB-F, H05BN4-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016237)
Alternative	D	Unirise Electric Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-11	VDE (40017449)
Alternative	D	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015999)
Alternative	D	Zheng Yu Electric Appliance Fittings (Kunshan) Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016693)
Alternative	D	Dong Guan Recheer Electric Wire & Cable Go., Ltd	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 0,75 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015173)
Alternative	D	AWIN WIRE & CABLE CO., LTD	NISPT-1, NISPT-2, SJTW, STW, SVT	Min. 3 × 18 AWG, min. 90 °C	IEC/EN 61347-2-13	Tested in appliance and UL (E228636)
Alternative	D	Interchangeable	Interchange-able	Min. 3 × 0,75 mm², min. 90 °C	DIN EN50525-2-21 DIN EN50525-2-11 DIN EN50525-3-11	VDE
Alternative	D	Interchangeable	Interchange-able	Min. 3 × 18 AWG, min. 90 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL
Input wires (Alternative earthing construction with 3C)	A	TA TUN ELECTRIC WIRE & CABLE CO LTD	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016695)

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

Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H07RN-F H05RN-F, H05RR-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016757)
Alternative	D	Dong Guan Ever United Electric Wire & Cable Co., Ltd	H05BB-F, H05BN4-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016237)
Alternative	D	Guangdong Rifeng Electrical Cable Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015999)
Alternative	D	Zheng Yu Electric Appliance Fittings (Kunshan) Co., Ltd.	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40016693)
Alternative	D	Dong Guan Recheer Electric Wire & Cable Go., Ltd	H05RN-F, H05RR-F, H07RN-F	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE (40015173)
Alternative	D	Interchangeable	Interchange-able	Min. 3 × 1,0 mm², min. 90 °C	DIN EN 50525-2-21	VDE
Dimming wire	A	Awin Wire & Cable Co., Ltd.	H03VVH2-F, H03VV-F, H05VV-F, H05VVH2-F	2 x Min. 0,4 mm², min. 80 °C	DIN EN 50525-2-11	VDE (40023114)
Alternative	D	Interchangeable	Interchange-able	2 x Min. 0,4 mm², min. 80 °C	DIN EN50525-2-21 DIN EN50525-2-11 DIN EN50525-3-11	VDE
Alternative	D	Interchangeable	Interchange-able	Min. 22 AWG, min. 80 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL
Fuse (FS1)	B	Conquer	MST	T3,15 A, 250 V or 300 Vac	IEC/EN 60127-1 IEC/EN 60127-3	TUV (R50176525, TA50196759) VDE (40017118)

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

Alternative	D	Walter	2010	T3,15 A, 250 V or 300 Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE (40018781) TUV (J50361151)
Alternative	D	Littelfuse	369	T3.15 A, 250 V or 300 Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE (40037351)
Varistor (ZNR1, ZNR2) (Optional)	B	Thinking	TVR10561-M, TVR14561-M	350 Vac, 450 Vdc, Min. 125 °C	IEC/EN 61051-1, IEC/EN 61051-2, IEC/EN 61051-2-2	VDE (40036061)
Alternative	D	Thinking	TVR14511-M, TVR10511-M	320 Vac, 410 Vdc, Min. 125 °C	IEC/EN 61051-1, IEC/EN 61051-2, IEC/EN 61051-2-2	VDE (40036061)
Alternative	D	Thinking	TVR10471-M, TVR14471-M	300 Vac, 385 Vdc, 125 °C	IEC/EN 61051-1, IEC/EN 61051-2, IEC/EN 61051-2-2	VDE (40036061)
X Capacitors (C1) (Optional) (X1 or X2 type)	A	Kemet (Arcotronics)	R.46, R.49	Max. 0,82 µF, min. 250 V, min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (DAT917500 141, SN.A002N0)
Alternative	D	Epcos	B3292#	Max. 0,82 µF, min. 250 V, min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40005536)
Alternative	D	Iskra	KNB1530	Max. 0,82 µF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	VDE (139081)
Alternative	D	Iskra	KNB1560	Max. 0,82 µF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	VDE (139106)
Alternative	D	Liow Gu	GS-L	Max. 0,82 µF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (2016045) VDE (40023391)

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

Alternative	D	Pilkor	PCX2 335	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (0256-1F)
Alternative	D	Pilkor	PCX2 337	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (0256-1L)
Alternative	D	Ultra Tech	HQX	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40024534)
Alternative	D	Vishay	339	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40033060)
Alternative	D	Shiny Space	SX1	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (ENEC-01199)
Alternative	D	HUA JUNG	MKP	Max. 0,82 μF, Min. 250 V, Min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (0252-5C)
Alternative	D	Carli Electronics	MPX	Max. 0,82 μF, min. 250 Vac, min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40008520)
Alternative	D	Joey	MPX	Max. 0,82 μF, min. 250 Vac, min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40032481)
Alternative	D	Xiamen Faratronic	MKP62	Max. 0,82 μF, min. 250 Vac, min. 100 °C	IEC 60384-14 EN 60384-14	VDE (40000358)
Alternative	D	Okaya	LE	Max. 0,82 μF, min. 250 Vac, min. 100 °C	IEC 60384-14 EN 60384-14	ENEC (0142-1AD)
Alternative	D	Interchangeable	Interchange-able	Max. 0,82 μF, min. 250 Vac, min. 100 °C	IEC 60384-14 EN 60384-14	VDE,ENEC, TUV
One Y1 or two Y2 capacitor (C31) (Optional)	A	Murata	KH, KX, KY	Max. 2200 pF, Min. 250 V, Min. 105°C	IEC 60384-14 EN 60384-14	VDE (40002831) VDE (40002796) VDE (40006273)

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

Alternative	D	Walsin	AH, AC, AS	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40001804) VDE (40001829) VDE (40039265)
Alternative	D	TDK	CD, CS	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40017930) VDE (40017931)
Alternative	D	Welson	WD, KL	Max. 2200 pF, Min. 250 V, Min. 105°C	IEC 60384-14 EN 60384-14	VDE (40016156) VDE (40016157)
Alternative	D	VISHAY	VY1, WKP	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40012673) VDE (136493)
Alternative	D	VISHAY	440L	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40003985)
Alternative	D	Vishay	338 6, F1710	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	ENEC (2016035)
Alternative	D	Interchangeable	Interchange-able	Max. 2200 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE,ENEC
Y1 or Y2 capacitor (C23, C24, C25) (Optional)	A	Murata	KH, KX, KY	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40002831) VDE (40002796) VDE (40006273)
Alternative	D	Walsin	AH, AC, AS	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40001804) VDE (40001829) VDE (40039265)
Alternative	D	TDK	CD, CS	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40017930) VDE (40017931)

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

Alternative	D	Welson	WD, KL	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40016156) VDE (40016157)
Alternative	D	VISHAY	VY1, WKP	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40012673) VDE (136493)
Alternative	D	VISHAY	440L	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40003985)
Alternative	D	VISHAY	338 6	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	ENEC (2016035)
Alternative	D	Interchangeable	Interchange-able	Max. 1000 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE,ENEC
Y1 or Y2 capacitor (C3) (Optional)	A	Murata	KH, KX, KY	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40002831) VDE (40002796) VDE (40006273)
Alternative	D	Walsin	AH, AC, AS	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40001804) VDE (40001829) VDE (40039265)
Alternative	D	TDK	CD, CS	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40017930) VDE (40017931)
Alternative	D	Welson	WD, KL	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40016156) VDE (40016157)
Alternative	D	VISHAY	VY1, WKP	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40012673) VDE (136493)
Alternative	D	VISHAY	440L	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE (40003985)

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

Alternative	D	VISHAY	338 6	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	ENEC (2016035)
Alternative	D	Interchangeable	Interchange-able	Max. 220 pF, Min. 250 V, Min. 105 °C	IEC 60384-14 EN 60384-14	VDE,ENEC
PCB	A	Junda	JD-D, JD-E	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E173873)
Alternative	D	GUANGZHOU TAIHE	THS, THD	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E221000)
Alternative	D	HONG SHIEN	03V-0, -D, -M	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E119853)
Alternative	D	HSU TZU	4V0, DV2, MV1	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E113945)
Alternative	D	JIIN-YU	JY-001, JY-003	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E189348)
Alternative	D	Brite Plus	DGV0-3A	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E177671)
Alternative	D	HSIANG KUO	76V0A	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E116921)
Alternative	D	SHANGHAI WANZHENG	SWZ-1	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E301791)
Alternative	D	GUANGDONG CHAOHUA	C-103, C-104	Min. V-1, min. 105 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E231151)

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

Alternative	D	Interchangeable	Interchange-able	Min. V-1, Min. 130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL
Line Filter Choke(LF1) (Optional)	C	MEAN WELL	TR-6164, TR-6164A	Min. 130 °C	IEC/EN 61347-1 IEC/EN 61347-2-13	Tested in appliance
Line Filter Choke(LF2) (Optional)	C	MEAN WELL	LF-6015	Min. 130 °C	IEC/EN 61347-1 IEC/EN 61347-2-13	Tested in appliance
Line Filter Choke(L1) (Optional)	C	MEAN WELL	TR-6118	Min. 130 °C	IEC/EN 61347-1 IEC/EN 61347-2-13	Tested in appliance
Line Filter Choke(L2) (Optional)	C	MEAN WELL	TF-6673A, TF6673	Min. 130 °C	IEC/EN 61347-1 IEC/EN 61347-2-13	Tested in appliance
Winding of LF1, LF2 and L1, L2	B	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD.	UEW/U(MW 75-C), UEWN/U(MW 28-C), UEWS/U(MW75-C)	130 °C	IEC/EN 61347-2-13	Tested in appliance and UL (E201757)
Alternative	D	Interchangeable	Interchange-able	Min. 130 °C	IEC/EN 61347-2-13	UL
Transformer (T1)	C	MEAN WELL Enterprises Co., Ltd.	TF-6712 for ELG-100-24X, TF-6713 for ELG-100-36X, TF-6714 for ELG-100-42X, TF-6715 for ELG-100-48X, TF-6716 for ELG-100-54X, TF-6688 for	Class B	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance
Alternative	D	JET SIGNAL INDUSTRIES CO LTD		Class B	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance
Alternative	D	LONG SAIL ELECTRONIC CO LTD		Class B	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance

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

Alternative	D	YU JING TECHNOLOGY CO LTD	ELG-100-C1050X, TF-6689 for ELG-100-C1400X, (X=Blank, A, B, D, D2, DA, AB, AD2, ADA)	Class B	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance
Bobbin of T1	B	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	V-0, Phenolic, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E41429)
Alternative	D	E I Dupont DE Nemours & Co., Inc.	FR530	V-0, PET, 155 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E41938)
Alternative	D	NAN YA	1403G3, 1403G6	V-0,130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E130155)
Alternative	D	CHANG CHUN PLASTICS CO LTD	T375J, T375HF	V-0,150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E59481)
Alternative	D	SUMITOMO CHEMICAL CO LTD	E4008	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E54705)
Alternative	D	SUMITOMO CHEMICAL CO LTD	E4008	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E249884)
Triple insulation wire of T1	B	Furukawa	TEX-E	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E206440)
Alternative	D	TOTOKU ELECTRIC CO LTD	TIW-2X, TIW-2SX	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E166483)
Alternative	D	TOTOKU ELECTRIC CO LTD	TIW-3X	155 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E166483)

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

Alternative	D	Great Leoflon Industrial Co Ltd	TRW(B) –M series	130°C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E211989)
Alternative	D	Great Leoflon Industrial Co Ltd	TRW(F)-M series	155°C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E211989)
Winding of transformer (T1)	B	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD.	UEW/U@ (MW 75-C)	130 °C	IEC/EN 61347-2-13	Tested in appliance and UL (E201757)
Alternative	D	Interchangeable	Interchange-able	Min. 130 °C	IEC/EN 61347-2-13	UL
Teflon tube	B	Great Holding Industrial Co., Ltd.	TFL, TFT, TFS	200 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E156256)
Alternative	D	ZEUS INDUSTRIAL PRODUCTS INC.	TFE-LW-150, TFE-TW-300, TFE-SW-600	200 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E64007)
Insulation tape	B	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1351-1(a), 1351-2(c), 1351T-1(a), 1351T-2(a), 1351T-3(a)	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E17385)
Alternative	D	BONDTEC PACIFIC CO LTD.	No 370S(b), No371F(a)	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E175868)
Alternative	D	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1(b), 1350T-1(b), 1350T-3(b), 1318-1	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E17385)
Alternative	D	Symbio Inc.	MY9YAF(h), 35660Y(e), 35660(a), 35661(c),	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E50292)
Alternative	D	Jingjiang Yahua	CT*(b)(g), PZ, WF	130 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E165111)

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

Alternative	D	E I DUPONT DE NEMOURS & CO INC	Nomex®410,411, 414, 418	220 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E34739)
Alternative	D	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	92	180 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E17385)
Alternative	D	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1318-1(a), 1350F-1(b), 1350T-1(b), 1350T-2(b), 1350T-3(b), 1351T-1(a), 1351T-2(a), 44(a), 56(a), 44, 44D, 44D-A, 44-T, 44T-A	130 °C	IEC/EN 61347-2-13	UL (E17385)
Photocoupler (U2, U3)	B	Lite-On	LTV-817, LTV-817M	Dti= 0,4 mm, Int. cr= 5,2 mm, Ext.cr≥8 mm 115 °C	IEC/EN 60950-1, IEC/EN 60747-5-5	VDE (40015248)
Alternative	D	Sharp	PC123	Dti= 0,4 mm, Int. cr= 5,2 mm, Ext. cr= 8,0 mm 110 °C	IEC/EN 60747-5-5, IEC/EN 60950-1	VDE (40008087)
Alternative	D	Cosmo	K1010	Dti= 0,5 mm, Int. cr= 5,3 mm, Ext. cr = 8,0 mm 115 °C	IEC/EN 60950-1, IEC/EN 60747-5-2	VDE (101347)
Alternative	D	Toshiba Corporation	TLP781F	Dti = 0,6 mm, Int. dcr.= 6,0 mm, Ext. dcr.≥8,0mm, 115 °C	IEC 60950-1 EN 60747-5-5	VDE (40021173)
Alternative	D	Everlight	EL817M	Dti = 0,4 mm, Int. dcr.= 6,0 mm, Ext. dcr.≥8,0 mm, min. 100 °C	IEC/EN 60950-1 IEC/EN 60747-5-5	VDE (132249)
Potting compound	B	Guangzhou Huitian New Chemical Ltd.	5299, 5297	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	Tested in appliance and UL (E306078)

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

Alternative	D	Shin-Etsu Silicone Taiwan Co., Ltd.	KET-132 A/B H	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E174951)
Alternative	D	Shin-Etsu Silicone Taiwan Co., Ltd.	KET-132 A/B	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E174951)
Alternative	D	DOW CORNING CORP	SYLGARD 160	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E40195)
Alternative	D	DOW CORNING CORP	TC-6011	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E251343)
Alternative	D	U-Bond	UB-5203A/ UB-5203B	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E250719)
Alternative	D	Riseast	SSTCP	V-0, 150 °C	IEC/EN 61347-1, IEC/EN 61347-2-13	UL (E352845)

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

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

ANNEX 2	**Screw terminals (part of the luminaire)**	
(14)	**SCREW TERMINALS**	N/A

ANNEX 3	**Screwless terminals (part of the luminaire)**	
(15)	**SCREWLESS TERMINALS**	N/A

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

	Attachment 1: Additional test according to IEC 60598-1: 2014 and EN 60598-1: 2015	

0)	**GENERAL TEST REQUIREMENTS**		
(0.1)	Information for luminaire design considered.....	Standard Yes ☐ No ☒	—
(0.3)	More sections applicable.....	Yes ☐ No ☒	—

(2)	**CLASSIFICATION**		
(2.2)	Type of protection	Class I	—
(2.3)	Degree of protection	IP65, IP67	—
(2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes ☒ No ☐	—
(2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

(3)	**MARKING**		
(3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
(3.3)	Additional information		P
	Language of instructions		P
(3.3.1)	Combination luminaires		N/A
(3.3.2)	Nominal frequency in Hz		P
(3.3.3)	Operating temperature		N/A
(3.3.4)	Symbol or warning notice		N/A
(3.3.5)	Wiring diagram		N/A
(3.3.6)	Special conditions		N/A
(3.3.7)	Metal halide lamp luminaire – warning		N/A
(3.3.8)	Limitation for semi-luminaires		N/A
(3.3.9)	Power factor and supply current		P
(3.3.10)	Suitability for use indoors		N/A
(3.3.11)	Luminaires with remote control		N/A
(3.3.12)	Clip-mounted luminaire – warning		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(3.3.13)	Specifications of protective shields		N/A
(3.3.14)	Symbol for nature of supply		P
(3.3.15)	Rated current of socket outlet		N/A
(3.3.16)	Rough service luminaire		N/A
(3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	P
(3.3.18)	Non-ordinary luminaires with PVC cable		N/A
(3.3.19)	Protective conductor current in instruction if applicable		N/A
(3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
(3.3.21)	Non replaceable and non-user replaceable light sources information provided		N/A
	Cautionary symbol		N/A
(3.3.22)	Controllable luminaires, insulation		P
(3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

(4)	**CONSTRUCTION**		
(4.2)	Components replaceable without difficulty		N/A
(4.3)	Wireways smooth and free from sharp edges		P
(4.4)	Lampholders		N/A
(4.4.1)	Integral lampholder		N/A
(4.4.2)	Wiring connection		N/A
(4.4.3)	Lampholder for end-to-end mounting		N/A
(4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.4.5)	Peak pulse voltage		N/A
(4.4.6)	Centre contact		N/A
(4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
(4.4.8)	Lamp connectors		N/A
(4.4.9)	Caps and bases correctly used		N/A
(4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
(4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
(4.7)	Terminals and supply connections		N/A
(4.7.1)	Contact to metal parts		N/A
(4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
(4.7.3)	Terminals for supply conductors		N/A
(4.7.3.1)	Welded connections:		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
(4.7.4)	Terminals other than supply connection		N/A
(4.7.5)	Heat-resistant wiring/sleeves		N/A
(4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
(4.8)	Switches:		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.9)	Insulating lining and sleeves		P
(4.9.1)	Retainment		P
	Method of fixing.....	Insulation lining	—
(4.9.2)	Insulated linings and sleeves		P
	Resistant to a temperature 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....		N/A
(4.10)	Insulation of Class II luminaires		N/A
(4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
(4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
(4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
(4.11)	Electrical connections		P
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	Screw fixing enclosure and PCB, 0,5 Nm	P
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm		N/A
(4.12.5)	Screwed glands; force (Nm)		N/A
(4.13)	Mechanical strength		P
(4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		N/A
	- other parts; energy (Nm).....	Enclosure: 0,5 Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
(4.13.3)	Straight test finger		P
(4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
(4.13.6)	Tumbling barrel		N/A
(4.14)	Suspensions and adjusting devices		N/A
(4.14.1)	Mechanical load:		N/A
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)		N/A
	D) load track-mounted luminaires		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
(4.14.2)	Load to flexible cables		N/A
	Mass (kg)		—
	Stress in conductors (N/mm²)		N/A
	Mass (kg) of semi-luminaire		—
	Bending moment (Nm) of semi-luminaire		N/A
(4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
(4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
(4.14.5)	Guide pulleys		N/A
(4.14.6)	Strain on socket-outlets		N/A
(4.15)	Flammable materials:		N/A
	- glow-wire test 650°C		N/A
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
(4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
(4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	Electronic control gear	N/A
(4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
(4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
(4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
(4.18)	Resistance to corrosion:		P
(4.18.1)	- rust-resistance		P
(4.18.2)	- season cracking in copper		N/A
(4.18.3)	- corrosion of aluminium		P
(4.19)	Igniters compatible with ballast		N/A
(4.20)	Rough service vibration		N/A
(4.21)	Protective shield:		N/A
(4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
(4.21.2)	Particles from a shattering lamp not impair safety		N/A
(4.21.3)	No direct path		N/A
(4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 4.15 (13.3.2)	N/A
(4.22)	Attachments to lamps		N/A
(4.23)	Semi-luminaires comply Class II		N/A
(4.24.1)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N/A
(4.24.2)	Retinal blue light hazard		N/A
	Luminaires with E_{thr}		N/A
	a) Fixed luminaires		N/A
	Distance x m, borderline between RG1 and RG2...		N/A
	Marking and instruction		N/A
	b) Portable and handheld luminaires		N/A
	RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Marking		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12		N/A
	RG at 200 mm according to IEC/62778		N/A
(4.25)	No sharp point or edges		P
(4.26)	Short-circuit protection:		N/A
(4.26.1)	Uninsulated accessible SELV parts		N/A
(4.26.2)	Short-circuit test		N/A
(4.26.3)	Test chain according to Figure 29		N/A
(4.27)	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
(4.28)	Fixing of thermal sensing control		N/A
	External to lamp control gear		N/A
	Plug-in or easily replaceable type		N/A
	Adhesive fixing		N/A
	Positioning		N/A
	Temperature (°C)		N/A
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
(4.29)	Luminaires with non-replaceable light source		N/A
	Replacement not possible		N/A
	Live part not accessible		N/A
	Breaking of the luminaire or its parts		N/A
	Removal of parts		N/A
	Compliance with test probe		N/A
	Access to live parts		N/A
(4.30)	Luminaires with non-user replaceable light source		N/A
	Protective cover		N/A
	Fixing means		N/A
	Cautionary symbol		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.31)	Insulation between circuits		P
	Transformer or control gears		P
	Insulation between circuits		P
	Circuits insulated from LV supply		P
	Insulation provided		P
	Controllable luminaires		P
	Control terminals		N/A
	Insulation		N/A
	Control gear U-OUT		N/A
(4.31.1)	SELV circuits		P
	Source		P
	Insulation between circuits		P
	Control gear U-OUT		P
	Plug and socket outlet		N/A
(4.31.2)	FELV circuits		N/A
	Source		N/A
	Insulation between circuits		N/A
	Plug and socket outlet		N/A
(4.31.3)	Other circuits		N/A
	Cl II		N/A
	Equipotential bonding		N/A
	All conductive part connected		N/A
	Resistance < 0,5 Ω .....:		N/A
	Insulation fault: accessible part cause electric shock		N/A
	Master/slave applications		N/A
(4.32)	Overvoltage protective devices		N/A
	External to lamp control gear, connected to earth		N/A
	Fixed luminaires connected to a protective earth		N/A

(11)	**CREEPAGE DISTANCES AND CLEARANCES**		
(11.2)	Creepage distances and clearances	See Table 4.7 (11.2)	P
	Working voltage (V)	100-240 V	—
	Rated pulse voltage (kV)	—	—

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

	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—

(7)	PROVISION FOR EARTHING		
(7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	Max. 0,01 Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Built-in control gear		N/A
(7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
(7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
(7.2.5)	Earth terminal integral part of connector socket		N/A
(7.2.6)	Earth terminal adjacent to mains terminals		P
(7.2.7)	Electrolytic corrosion of the earth terminal		P
(7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
(7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
(7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P

(14)	SCREW TERMINALS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire.....	(see Annex 3)	N/A

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

(15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire.....	(see Annex 4)	N/A

(5)	EXTERNAL AND INTERNAL WIRING		
(5.2)	Supply connection and external wiring		P
(5.2.1)	Means of connection	Supply cord	P
(5.2.2)	Type of cable.....	See Annex 1	P
	Nominal cross-sectional area (mm²)	See Annex 1	P
	Cables equal to IEC 60227 or IEC 60245		P
(5.2.3)	Type of attachment, X, Y or Z	Type Z	P
(5.2.5)	Type Z not connected to screws		P
(5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
(5.2.7)	Cable entries through rigid material have rounded edges		P
(5.2.8)	Insulating bushings:		P
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
(5.2.9)	Locking of screwed bushings		N/A
(5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
(5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
(5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Complying with Type Z's test	P
(5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	60 N for other cables	P
	- torque test: torque (Nm).....	0,15 Nm for 2 x 0,75 cables; 0,25 Nm for other cables	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
(5.2.11)	External wiring passing into luminaire		P
(5.2.12)	Looping-in terminals		N/A
(5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P
(5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
(5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector		N/A
	Relevant IEC standard		N/A
(5.2.17)	No standardized interconnecting cables properly assembled		N/A
(5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
(5.3)	Internal wiring		P
(5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- factory assembled		N/A
	- socket outlet loaded (A)		N/A
	- temperatures	(see Annex 2)	N/A
	Green-yellow for earth only		P
(5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²).....	Min. 0,75 mm^2	P
	Insulation thickness		P
	Extra insulation added where necessary		N/A
(5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
(5.3.1.3)	Double or reinforced insulation for class II		N/A
(5.3.1.4)	Conductors without insulation		N/A
(5.3.1.5)	SELV current-carrying parts		P
(5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
(5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
(5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
(5.3.4)	Joints and junctions effectively insulated		N/A
(5.3.5)	Strain on internal wiring		P
(5.3.6)	Wire carriers		N/A
(5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		P

(8)	**PROTECTION AGAINST ELECTRIC SHOCK**		
(8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
(8.2.2)	Portable luminaire adjusted in most unfavourable position		P
(8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
(8.2.3.b)	lampholder of metal in class I luminaires shall be earthed		N/A
(8.2.3.c)	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current		N/A
	- no-load voltage		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage		N/A
(8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
(8.2.5)	Compliance with the standard test finger or relevant probe		P
(8.2.6)	Covers reliably secured		P
(8.2.7)	Discharging of capacitors ≥ 0,5 μF	0,1 V	P

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

	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

(12)	**ENDURANCE TEST AND THERMAL TEST**		
(-)	If IP IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 4.13		—
(12.3)	Endurance test:		P
	- mounting-position ..... :	Placed on table	—
	- test temperature (°C) ..... :	70 °C	—
	- total duration (h)..... :	240	—
	- supply voltage: Un factor; calculated voltage (V) .. :	264	—
	- lamp used ..... :	Resistor load	—
(12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
(12.4)	Thermal test (normal operation)	(see Annex 4)	P
(12.5)	Thermal test (abnormal operation)	(see Annex 4)	N/A
(12.6)	Thermal test (failed lamp control gear condition):		N/A
(12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .... :		—
	- measured mounting surface temperature (°C) at 1,1 Un..... :		N/A
	- calculated mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
(12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions ..... :		—
	- thermal link		N/A

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

	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
(12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
(12.7.1)	Luminaire without temperature sensing control		N/A
(12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W ..... :		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions ..... :		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test ..... :	See Table 4.15 (13.2.1)	N/A
(12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp 70W, transformer 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test ..... :	See Table 4.15 (13.2.1)	N/A
(12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
(12.7.2)	Luminaire with temperature sensing control		N/A

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

	- thermal link..... :	Yes ☐ No ☐	—
	- manual reset cut-out..... :	Yes ☐ No ☐	—
	- auto reset cut-out..... :	Yes ☐ No ☐	—
	- case of abnormal conditions..... :		—
	- highest measured temperature of fixing point/ exposed part (°C):..... :		—
	Ball-pressure test: ..... :	See Table 4.15 (13.2.1)	N/A

(9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		
(-)	If IP IP 20 the order of tests as specified in clause		P
(9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP ..... :	Refer to General product information	—
	- mounting position during test..... :	Most unfavourable position	—
	- fixing screws tightened; torque (Nm) ..... :	0,33 Nm	—
	- tests according to clauses ..... :	9.2.2 & 9.2.6 for model with IP65, 9.2.2 & 9.2.8 for model with IP67 Note: Potting material was regarded as enclosure	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		P
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		P
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(9.3)	Humidity test 48 h		P

(10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
(10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ).....		—
	SELV		P
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface	> 100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	> 100 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity.....		N/A
	- between live parts and mounting surface.....	> 100 MΩ	P
	- between live parts and metal parts.....	> 100 MΩ	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
(10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V)		P
	SELV		P
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface	500 V	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity		N/A
	- between live parts and mounting surface	3808 V	P
	- between live parts and metal parts	3808 V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
(10.3)	Touch current or protective conductor current (mA)	Max. 0,48 mA	P
(13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		
(13.2.1)	Ball-pressure test	See Clause 18.1 of IEC 61347-1	P
(13.3.1)	Needle-flame test (10 s)	See Clause 18.4 of IEC 61347-1	P
(13.3.2)	Glow-wire test (650°C)	See Clause 18.3 of IEC 61347-1	N/A
(13.4.1)	Proof tracking test (IEC 60112)		N/A
	- part tested		N/A

(11.2)	**TABLE: Clearance and creepage distance measurements**							P
Class of luminaire		Class I ☒ Class II ☐ Class III ☐						—
Impulse withstand category		Category II ☒ Category II ☐						—
Clearance (cl) and creepage distance (cr) at/of/between:	Insulation type	U peak (V)	U r.m.s. (V)	Required cl (mm)	Measured cl (mm)	Required cr (mm)	Measured cr (mm)	
Current-carrying parts of different polarity	B	—	100-240	1,5	5,1	2,5	5,1	
Current-carrying parts and accessible parts	B	—	100-240	1,5	4,0	2,5	4,0	

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

Current-carrying parts and outer accessible surface of insulating parts	—	—	—	—	—	—	—
Parts becoming live due to breakdown of basic insulation and metal parts	—	—	—	—	—	—	—
Outer surface of cable where it is clamped and metal parts	—	—	—	—	—	—	—
Current-carrying parts and supporting surface	B	—	100-240	1,5	4,0	2,5	4,0
Supplementary information: B – Basic; S – Supplementary; R – Reinforced							

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

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-C1400B	—
	Lamp used.....	Resistance load	—
	Lamp control gear used.....	—	—
	Mounting position of luminaire	Placed in oven	—
	Supply wattage (W).....	A: 112,3 W B: 111,7 W	—
	Supply current (A)	A: 0,532 A B: 0,447 A	—
	Calculated power factor.....	A: 0,990 B: 0,982	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	1). Short-circuit output 2). Overload condition	—
	- test 1: rated voltage.....	240 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	A: 1,06 x 200 V = 212,0 V B: 1,06 x 240 V = 254,4 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	1,1 x 240 V = 264 V	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	89,7	87,8	—	130	—	—
Bobbin of LF1	60	—	89,2	87,5	—	Ref.	—	—
ZNR1	60	—	93,0	92,4	—	125	—	—
Winding of LF2	60	—	95,3	92,4	—	130	—	—
Bobbin of LF2	60	—	92,4	90,3	—	Ref.	—	—
Winding of L2	60	—	96,1	94,9	—	130	—	—

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

Bobbin of L2	60	—	95,0	93,1	—	Ref.	—	—
C1(X cap)	60	—	93,4	90,9	—	100	—	—
C23(Y cap)	60	—	88,0	86,6	—	105	—	—
C3	60	—	86,9	85,5	—	105	—	—
C5	60	—	94,9	93,9	—	105	—	—
C41	60	—	95,1	94,6	—	105	—	—
C31(Y cap)	60	—	97,5	96,9	—	105	—	—
Primary winding of T1	60	—	108,0	107,4	—	110	—	—
Secondary winding of T1	60	—	103,7	103,2	—	110	—	—
Bobbin of T1	60	—	109,9	109,0	—	Ref.	—	—
PCB under T1	60	—	104,3	103,3	—	Ref.	—	—
PCB under Q2	60	—	96,4	95,0	—	Ref.	—	—
C205	60	—	95,8	95,3	—	105	—	—
C106	60	—	87,2	86,7	—	105	—	—
LF100	60	—	89,0	88,6	—	130	—	—
Dimming PCB under IC	60	—	88,4	88,0	—	Ref.	—	—
Internal surface of enclosure above transformer	60	—	88,8	88,4	—	Ref.	—	—
Input wire	60	—	91,3	89,4	—	90+5	—	—
Output wire	60	—	87,0	86,7	—	90	—	—
DIM output wire	60	—	86,2	85,9	—	90	—	—
External top surface on enclosure (tc) at 1,0Un	60	Max.86, 3	—	—	—	90		

Supplementary information:

1, Temperature for all monitored positions in tested sample was dropped to ambient temperature sharply when abnormal operating mode (short circuited output and double times load) was conducted to the tested samples.

2, Max. output for overload condition was same as the output of normal operation, test data refer to normal operation condition.

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

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-C1400B	—
	Lamp used	Resistance load	—
	Lamp control gear used	—	—
	Mounting position of luminaire	Placed in oven	—
	Supply wattage (W)	80,64 W	—
	Supply current (A)	0,758 A	—
	Calculated power factor	1,000	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	—	—
	- test 1: rated voltage	100 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	A: 1,06 x 100 V = 106,0 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage	—	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	87,9	—	130	—	—	—
Bobbin of LF1	60	—	89,8	—	Ref.	—	—	—
ZNR1	60	—	84,7	—	125	—	—	—
Winding of LF2	60	—	84,3	—	130	—	—	—
Bobbin of LF2	60	—	86,2	—	Ref.	—	—	—
Winding of L2	60	—	85,4	—	130	—	—	—
Bobbin of L2	60	—	87,3	—	Ref.	—	—	—
C1(X cap)	60	—	89,2	—	100	—	—	—
C23(Y cap)	60	—	82,9	—	105	—	—	—

IEC 61347-2-13								
Clause	Requirement + Test					Result - Remark		Verdict
C3	60	—	87,3	—	105	—	—	—
C5	60	—	89,4	—	105	—	—	—
C41	60	—	87,6	—	105	—	—	—
C31(Y cap)	60	—	85,0	—	105	—	—	—
Primary winding of T1	60	—	88,1	—	110	—	—	—
Secondary winding of T1	60	—	82,5	—	110	—	—	—
Bobbin of T1	60	—	91,2	—	Ref.	—	—	—
PCB under T1	60	—	89,4	—	Ref.	—	—	—
PCB under Q2	60	—	90,0	—	Ref.	—	—	—
C205	60	—	83,0	—	105	—	—	—
C106	60	—	75,6	—	105	—	—	—
LF100	60	—	78,9	—	130	—	—	—
Dimming PCB under IC	60	—	77,5	—	Ref.	—	—	—
Internal surface of enclosure above transformer	60	—	89,4	—	Ref.	—	—	—
Input wire	60	—	81,4	—	90	—	—	—
Output wire	60	—	76,8	—	90	—	—	—
DIM output wire	60	—	75,6	—	90	—	—	—
External top surface on enclosure (tc) at 1,0Un	60	77,0	—	—	90	—	—	—
Support	60	—	74,0	—	90	—	—	—
Supplementary information: --								

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-54B	—
	Lamp used.....	Resistance load	—
	Lamp control gear used.....	—	—
	Mounting position of luminaire	Placed in oven	—

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

	Supply wattage (W)	A: 104,1 W B: 103,7 W	—
	Supply current (A)	A: 0,498 A B: 0,418 A	—
	Calculated power factor.....	A: 0,984 B: 0,975	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	1). Short-circuit output 2). Overload condition	—
	- test 1: rated voltage.....	240 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	A: 1,06 x 200 V = 212,0 V B: 1,06 x 240 V = 254,4 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	1,1 x 240 V = 264 V	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	85,9	84,1	—	130	—	—
Bobbin of LF1	60	—	85,4	83,9	—	Ref.	—	—
ZNR1	60	—	85,1	83,6	—	125	—	—
Winding of LF2	60	—	88,9	86,6	—	130	—	—
Bobbin of LF2	60	—	90,9	88,5	—	Ref.	—	—
Winding of L2	60	—	90,7	88,6	—	130	—	—
Bobbin of L2	60	—	90,5	88,6	—	Ref.	—	—
C1(X cap)	60	—	89,7	87,1	—	100	—	—
C23(Y cap)	60	—	83,8	82,5	—	105	—	—
C3	60	—	82,5	81,4	—	105	—	—
C5	60	—	88,3	87,4	—	105	—	—
C41	60	—	89,0	88,2	—	105	—	—

IEC 61347-2-13								
Clause	Requirement + Test					Result - Remark		Verdict
C31(Y cap)	60	—	90,8	89,9	—	105	—	—
Primary winding of T1	60	—	94,5	93,5	—	110	—	—
Secondary winding of T1	60	—	94,3	93,5	—	110	—	—
Bobbin of T1	60	—	97,5	96,8	—	Ref.	—	—
PCB under T1	60	—	80,8	80,0	—	Ref.	—	—
PCB under Q2	60	—	91,7	90,5	—	Ref.	—	—
C205	60	—	87,7	87,0	—	105	—	—
C108	60	—	84,9	84,2	—	105	—	—
C106	60	—	86,1	85,4	—	105	—	—
C112	60	—	80,9	80,2	—	105	—	—
LF100	60	—	83,9	83,2	—	130	—	—
Dimming PCB under IC	60	—	81,7	91,0	—	Ref.	—	—
Internal surface of enclosure above transformer	60	—	82,1	81,3	—	Ref.	—	—
Input wire	60	—	84,5	82,9	—	90	—	—
Output wire	60	—	82,0	81,4	—	90	—	—
DIM output wire	60	—	79,5	78,9	—	90	—	—
External top surface on enclosure (tc) at 1,0Un	60	Max. 81,2	—	—	—	90	—	—
Supplementary information: 1, Temperature for all monitored positions in tested sample was dropped to ambient temperature sharply when abnormal operating mode (short circuited output and double times load) was conducted to the tested samples. 2, Max. output for overload condition was same as the output of normal operation, test data refer to normal operation condition.								

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-54B	—
	Lamp used.....	Resistance load	—
	Lamp control gear used.....	—	—

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

	Mounting position of luminaire	Placed in oven	—
	Supply wattage (W)	78,89 W	—
	Supply current (A)	0,741 A	—
	Calculated power factor.....	1,000	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	—	—
	- test 1: rated voltage.....	100 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	A: 1,06 x 100 V = 106,0 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	—	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	79,3	—	130	—	—	—
Bobbin of LF1	60	—	81,0	—	Ref.	—	—	—
ZNR1	60	—	91,5	—	125	—	—	—
Winding of LF2	60	—	79,0	—	130	—	—	—
Bobbin of LF2	60	—	80,6	—	Ref.	—	—	—
Winding of L2	60	—	84,2	—	130	—	—	—
Bobbin of L2	60	—	85,9	—	Ref.	—	—	—
C1(X cap)	60	—	90,6	—	100	—	—	—
C23(Y cap)	60	—	89,9	—	105	—	—	—
C3	60	—	89,0	—	105	—	—	—
C5	60	—	81,1	—	105	—	—	—
C41	60	—	79,3	—	105	—	—	—
C31(Y cap)	60	—	79,7	—	105	—	—	—

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

Primary winding of T1	60	—	83,8	—	110	—	—	—
Secondary winding of T1	60	—	82,8	—	110	—	—	—
Bobbin of T1	60	—	81,0	—	Ref.	—	—	—
PCB under T1	60	—	81,3	—	Ref.	—	—	—
PCB under Q2	60	—	87,3	—	Ref.	—	—	—
C205	60	—	78,3	—	105	—	—	—
C108	60	—	72,8	—	105	—	—	—
C106	60	—	80,5	—	105	—	—	—
C112	60	—	72,8	—	105	—	—	—
LF100	60	—	76,1	—	130	—	—	—
Dimming PCB under IC	60	—	78,9	—	Ref.	—	—	—
Internal surface of enclosure above transformer	60	—	82,2	—	Ref.	—	—	—
Input wire	60	—	74,9	—	90	—	—	—
Output wire	60	—	71,8	—	90	—	—	—
DIM output wire	60	—	70,2	—	90	—	—	—
External top surface on enclosure (tc) at 1,0Un	60	73,9	—	—	90	—	—	—
support	60	—	69,5	—	90	—	—	—
Supplementary information: --								

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-24B	—
	Lamp used.....	Resistance load	—
	Lamp control gear used.....	—	—
	Mounting position of luminaire	Placed in oven	—
	Supply wattage (W)	A: 104,5 W B: 103,6 W	—

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

	Supply current (A)	A: 0,498 A B: 0,415 A	—
	Calculated power factor.....	A: 0,985 B: 0,976	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	1). Short-circuit output 2). Overload condition	—
	- test 1: rated voltage.....	240 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	A: 1,06 x 200 V = 212,0 V B: 1,06 x 240 V = 254,4 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	1,1 x 240 V = 264 V	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	91,6	87,7	—	130	—	—
Bobbin of LF1	60	—	91,2	87,4	—	Ref.	—	—
ZNR1	60	—	90,4	86,6	—	125	—	—
Winding of LF2	60	—	95,7	90,7	—	130	—	—
Bobbin of LF2	60	—	94,4	89,5	—	Ref.	—	—
Winding of L2	60	—	96,1	91,5	—	130	—	—
Bobbin of L2	60	—	96,0	91,5	—	Ref.	—	—
C1(X cap)	60	—	92,9	88,7	—	100	—	—
C23(Y cap)	60	—	89,0	85,5	—	105	—	—
C3	60	—	97,2	84,0	—	105	—	—
C5	60	—	95,7	92,3	—	105	—	—
C41	60	—	95,2	92,3	—	105	—	—
C31(Y cap)	60	—	96,7	93,3	—	105	—	—

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

Primary winding of T1	60	—	103,4	99,5	—	110	—	—
Secondary winding of T1	60	—	104,4	100,8	—	110	—	—
Bobbin of T1	60	—	105,8	101,8	—	Ref.	—	—
PCB under T1	60	—	102,1	97,9	—	Ref.	—	—
PCB under Q2	60	—	98,1	93,8	—	Ref.	—	—
C205	60	—	95,9	92,4	—	105	—	—
C108	60	—	94,3	91,0	—	105	—	—
C106	60	—	93,9	90,7	—	105	—	—
C112	60	—	89,4	86,5	—	105	—	—
LF100	60	—	94,8	91,6	—	130	—	—
Dimming PCB under IC	60	—	87,6	84,5	—	Ref.	—	—
Internal surface of enclosure above transformer	60	—	92,1	89,2	—	Ref.	—	—
Input wire	60	—	89,4	85,4	—	90+5	—	—
Output wire	60	—	88,7	85,8	—	90	—	—
DIM output wire	60	—	86,4	83,5	—	90	—	—
External top surface on enclosure (tc) at 1,0Un	60	Max. 88,1	—	—	—	90	—	—

Supplementary information:

1, Temperature for all monitored positions in tested sample was dropped to ambient temperature sharply when abnormal operating mode (short circuited output and double times load) was conducted to the tested samples.

2, Max. output for overload condition was same as the output of normal operation, test data refer to normal operation condition.

ANNEX 4	TABLE: Temperature measurements, thermal tests of Section 12		
	Type reference	ELG-100-24B	—
	Lamp used.....	Resistance load	—
	Lamp control gear used.....	—	—
	Mounting position of luminaire	Placed in oven	—

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

	Supply wattage (W)	101,6 W	—
	Supply current (A)	0,950 A	—
	Calculated power factor.....	1,000	—
	Table: measured temperatures corrected for ta = 60 °C:		P
	- abnormal operating mode	—	—
	- test 1: rated voltage.....	100 V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	A: 1,06 x 100 V = 106,0 V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	—	—
	Through wiring or looping-in wiring loaded by a current of A during the test	—	—

Temperature measurements, (°C)

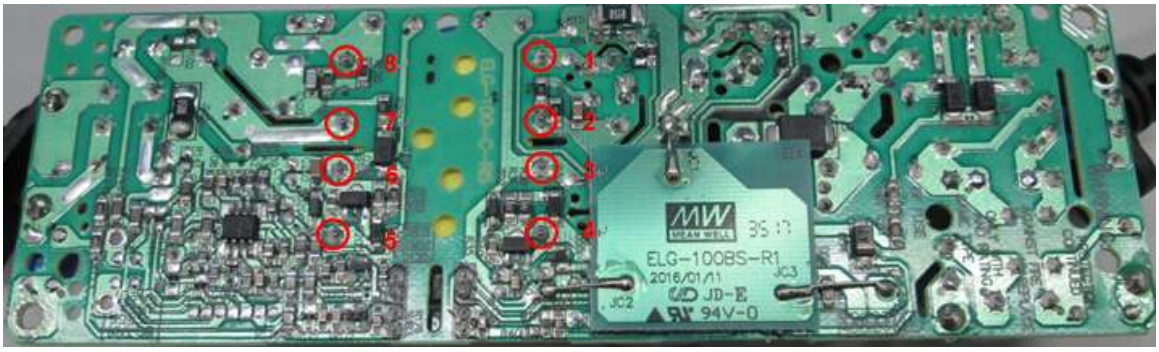
Part	Ambient	Clause 12.4 – normal					Clause 12.5 – abnormal	
		test 1	test 2		test 3	limit	test 4	limit
			A	B				
Winding of LF1	60	—	81,2	—	130	—	—	—
Bobbin of LF1	60	—	82,4	—	Ref.	—	—	—
ZNR1	60	—	87,8	—	Ref.	—	—	—
Winding of LF2	60	—	88,1	—	130	—	—	—
Bobbin of LF2	60	—	90,1	—	Ref.	—	—	—
Winding of L2	60	—	84,3	—	130	—	—	—
Bobbin of L2	60	—	85,5	—	Ref.	—	—	—
C1(X cap)	60	—	81,7	—	100	—	—	—
C23(Y cap)	60	—	90,0	—	105	—	—	—
C3	60	—	88,9	—	105	—	—	—
C5	60	—	88,4	—	105	—	—	—
C41	60	—	88,7	—	105	—	—	—
C31(Y cap)	60	—	86,6	—	105	—	—	—
Primary winding of T1	60	—	81,8	—	110	—	—	—

IEC 61347-2-13								
Clause	Requirement + Test					Result - Remark		Verdict
Secondary winding of T1	60	—	79,1	—	110	—	—	—
Bobbin of T1	60	—	83,0	—	Ref.	—	—	—
PCB under T1	60	—	80,3	—	Ref.	—	—	—
PCB under Q2	60	—	89,9	—	Ref.	—	—	—
C205	60	—	82,4	—	105	—	—	—
C108	60	—	80,8	—	105	—	—	—
C106	60	—	81,7	—	105	—	—	—
C112	60	—	78,0	—	105	—	—	—
LF100	60	—	74,2	—	130	—	—	—
Dimming PCB under IC	60	—	90,1	—	Ref.	—	—	—
Internal surface of enclosure above transformer	60	—	89,5	—	Ref.	—	—	—
Input wire	60	—	80,0	—	90	—	—	—
Output wire	60	—	76,2	—	90	—	—	—
DIM output wire	60	—	83,8	—	90	—	—	—
External top surface on enclosure (tc) at 1,0Un	60	76,1	—	—	90	—	—	—
Support	55	—	72,3	—	90	—	—	—
Supplementary information: --								

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

Attachment 2: Clearance and creepage distance measurement according to IEC/EN 61558-1

Cl. 26 of IEC 61558-1	TABLE 1: Clearance and creepage distance measurements for component between primary circuit and secondary circuit for model ELG-100-C1050A:					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Pin 1-5 of transformer (T1)	684	408	6,55	7,0	8,50	9,6
Pin 1-6 of transformer (T1)	724	425	6,55	7,0	8,50	9,6
Pin 1-7 of transformer (T1)	732	425	6,55	7,0	8,50	9,6
Pin 1-8 of transformer (T1)	620	372	6,10	7,0	7,44	9,6
Pin 2-5 of transformer (T1)	506	347	6,10	7,0	7,44	9,6
Pin 2-6 of transformer (T1)	446	345	6,10	7,0	7,44	9,6
Pin 2-7 of transformer (T1)	446	345	6,10	7,0	7,44	9,6
Pin 2-8 of transformer (T1)	648	361	6,10	7,0	7,44	9,6
Pin 3-5 of transformer (T1)	394	176	4,7	6,1	5,0	6,1
Pin 3-6 of transformer (T1)	354	172	4,7	6,1	5,0	6,1
Pin 3-7 of transformer (T1)	354	172	4,7	6,1	5,0	6,1
Pin 3-8 of transformer (T1)	456	203	4,7	6,1	5,0	6,1
Pin 4-5 of transformer (T1)	356	171	4,7	6,1	5,0	6,1
Pin 4-6 of transformer (T1)	408	174	4,7	6,1	5,0	6,1
Pin 4-7 of transformer (T1)	408	174	4,7	6,1	5,0	6,1
Pin 4-8 of transformer (T1)	428	187	4,7	6,1	5,0	6,1
Pin 1-3 of U2	368	180	4,7	6,1	5,0	6,1
Pin 1-4 of U2	364	180	4,7	6,1	4,7	6,1
Pin 2-3 of U2	364	180	4,7	6,1	5,0	6,1
Pin 2-4 of U2	364	179	4,7	6,1	5,0	6,1
Y cap	356	171	4,7	6,1	5,0	6,1
Supplementary information: --						



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

	Table 2: Clearance and creepage distance measurements for component between primary circuit and secondary circuit 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) ..... :	Between components of primary circuit and secondary circuit: cr: 9,6 mm; cl: 7,0 mm (limit: cr: 8,50 mm, cl: 6,55) Working voltage: Max.425 Vrms	P
	b) measured values ≥ specified values (mm) ..... :		N/A
	c) measured values ≥ specified values (mm) ..... :	Triple insulation winding used	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) ..... :	live parts which are or may become of different polarity by the action of a fuse, L/N: 5,1 mm (limit: cr: 2,6 mm; cl: 2,5 mm) live parts and the enclosure: 4,0 mm (limit: cr: 2,6 mm; cl: 2,5 mm)	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:		N/A
	Between body and output circuit: measured values ≥ specified values (mm) ..... :		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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) ..... :	Thickness of insulation tape: 0,18 mm (limit: 0,171 mm) Working voltage: Max.425 Vrms	P
	c) measured values ≥ specified values (mm) ..... :		N/A

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

Attachment 3: Australian/New Zealand Deviations AS/NZS 61347.1: 2016

4	GENERAL REQUIREMENT		
	NOTE 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	Supply Connection Wiring		P
	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:		P
	a) Device for the connection of controlgears		N/A
	b) Terminals		N/A
	c) Connecting lead (tails)		P
	d) Supply cord and plug		N/A
	e) Adaptor for engagement with supply tracks.		N/A
	f) Appliance inlet or inlet plug		N/A
	g) Installation coupler		N/A
	h) Luminaire coupler		N/A
	i) Integral pins for insertion into socket outlets.		N/A
	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.		N/A
	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 socket-outlets'.		N/A
	NOTE 2 Requirements for supply cords used as a means of connection to the supply are shown in AS/NZS 60598.1.	Not suitable for household used	N/A
	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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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	GENERAL NOTES ON TESTS		
5.101	Controlgear Voltage		P
	In Australia, for equipment other than class III equipment, intended for connection to the a.c. supply mains and that are 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. The upper limit of the voltage range shall be equal to 240 V for single-phase equipment and 415 V for three-phase equipment.		P
7	MARKING		
7.1	ITEMS TO BE MARKED		P
	V) Declaration of the maximum equivalent output peak voltage Up between:		N/A
	- output terminals;		N/A
	- any output terminal and earth, if applicable		N/A
	The declaration of the maximum equivalent output peak voltage Up is not applicable to terminals with SELV-circuits as defined in IEC 61558-1.		N/A
	W) If the creepage distance values of the Table 8 of this standard have to be used and creepage distance is greater than the related creepage distances of Table 7, the maximum output peak voltage Ûout and its corresponding frequency fUout shall be declared between:		N/A
	- output terminals;		N/A
	- output terminal and earth		N/A
	Item W) is not applicable to terminals with SELV-circuits as defined in IEC 61558-1.		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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: 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	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		
10.1	For the purpose of this Clause, FELV circuits are considered a live part.		N/A
15	CONSTRUCTION		
15.4	Insulation between circuits and accessible parts		P
15.4.2	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		P
	- another source		N/A
	Voltage in the circuit not higher than ELV		P
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		P
15.4.3	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
15.4.4	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		N/A
15.4.5	Insulation between circuits and accessible conductive parts		P
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		P
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
15.101	Power Factor Connection Capacitors		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	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 don't meet the safety requirements of a Type B capacitor.		N/A
	In addition capacitor shall have a minimum voltage rating of 250 V at temperature rating of 85 °C or 280 V at temperature rating of 100 °C		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
16	CREEPAGE DISTANCES AND CLEARANCES		
16.1	General		P
	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P		N/A
16.2	Creepage distances		P
16.2.2	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
16.2.3	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
16.3	Clearances		P
16.3.2	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
16.3.3	Clearances for ignition voltages and working voltages with higher frequencies		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

16	TABLE: clearance and creepage distance measurements (mm)							
Applicable part of IEC 61347-1 Table 7 – 11*								
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	4,0	1,5	7	4,0	2,5	7	
Working voltage (V) ..... :					100-240 V			—
Frequency if applicable (kHz) ..... :					65,54 kHz			—
PTI ..... :					< 600 ☒	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :					< 0,1			—
Pulse voltage if applicable (kV) ..... :					--			—
Supplementary information: Measured on L to N, fuse								
Distance 2:	B	4,0	1,5	9	4,0	2,5	7	
Working voltage (V) ..... :					100-240 V			—
Frequency if applicable (kHz) ..... :					65,54 kHz			—
PTI ..... :					< 600 ☒	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :					< 0,1			—
Pulse voltage if applicable (kV) ..... :					--			—
Supplementary information: Measured between live parts to enclosure.								

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

18	RESISTANCE TO HEAT, FIRE AND TRACKING		
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 13.3.1 and 13.3.2, 13.3.3 and 13.3.4, as appropriate. 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 luminaire. This Clause applies to all parts, including components, even if they have been tested to their own standard.		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
18.2.2	Parts of non-metallic material supporting connections shall withstand the glow wire test.		P
	The test apparatus and test procedure shall be those described in AS/NZS 60695.2.11. The glow wire is heated to 750 °C and applied to the test sample for 30 s.		P
18.2.3	All other parts of non-metallic material shall withstand the glow wire test. Parts are subject to a test using a nickel-chromium glow-wire.		N/A
	The test apparatus and test procedure shall be those described in AS/NZS 60695.2.11. The glow wire is heated to 650 °C and applied to the test sample for 30 s.		N/A
18.2.4	During the application of the 750 °C glow wire test of Clause 18.2.2, if a flame is produced that persists for longer than 2 s, the luminaire is further tested as follows: 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. The needle flame is applied to the test sample for 30 s.		N/A
	Parts shielded by a barrier that meets the needle-flame test of AS/NZS 60695.11.5 are not tested.		N/A
	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. The needle flame is applied to one test sample for 30 s.		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 luminaires 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. The needle flame is applied to one test sample for 30 s to an edge of the PCB at least 10 mm from a corner.		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	The duration of burning shall not exceed 15 s after removal of the needle flame and any burning droplets shall not ignite the tissue paper placed underneath the PCB.		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	Resistance to tracking		N/A
	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.		N/A
	For materials other than ceramic, compliance is checked by subjecting the parts to the resistance to tracking test according to AS/NZS 60598-1.		N/A

P	CREEPAGE DISTANCES AND CLEARANCES AND DISTANCE THROUGH ISOLATION (DTI) FOR LAMP CONTROLGEAR WHICH ARE PROTECTED AGAINST POLLUTION BY THE USE OF COATING OR POTTING		
P.1	General		N/A
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
P.2	Creepage distances		N/A
P.2.2	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage ..... :		—
	Measured ..... :		N/A
	Supplementary information		—
P.2.3	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A
	Voltage Ûout kV ..... :		—
	Frequency ..... :		—
	Required distance ..... :		—
	Measured ..... :		N/A
	Supplementary information		—

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

P.2.4	Compliance with the required creepage distances		N/A
P.2.4.1	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A
P.2.4.3	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
P.3	Distance through isolation		N/A
P.3.4	Electrical tests after conditioning		N/A
P.3.4.1	Insulation resistance and electric strength according Clause 11 and 12		N/A
P.3.4.2	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage .....:		—
	Impulse voltage.....:		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage .....:		—
	Impulse voltage.....:		N/A
	Supplementary information		—

R	CONCEPT OF CREEPAGE DISTANCES AND CLEARANCES		
R.1	Basic concept considerations		N/A
R.1.1	Creepage distances		N/A
	For creepage distances r.m.s. voltages are normally considered and pulse voltages like transients are disregarded. In case of voltages with more than 30 kHz frequency however, according to IEC 60664-4, the peak values of the voltage together with the frequency should be considered. Therefore Table 8 was created according to Table 2 in IEC 60664-4:2005.		N/A
R.1.2	Clearances		N/A
	The withstand voltage of a clearance is influenced by the shape of the electric field. IEC 60664-1 distinguishes only homogeneous field (two balls of 1 m diameter) and inhomogeneous field (needle of 30 mm against plane of 1 m × 1 m). According to IEC 60664-4 the withstand voltage of a clearance is reduced when the frequency of this voltage is increased above a critical value.		N/A
	a) Homogeneous field conditions		N/A
	b) Inhomogeneous field condition		N/A

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

TEST DATA

18.2 Glow Wire Test

Parts name; material spec. if applicable	Test temp. (°C)	Duration of flame (s)	Height of flame (mm)	Burning drop ignite tissue paper	Verdict
Bobbin of transformer and inductor	750	0	0	No	Pass
PCB	750	0	0	No	Pass

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

Attachment 4: (AU/NZ) Australian /New Zealand Deviations AS/NZS 61347.2.13: 2013

4	GENERAL REQUIREMENT		
	- Where the controlgear has accessible outputs, the controlgear shall be SELV output and comply with Annex I.		P
	- SELV equivalent is not permitted where controlgear has accessible outputs or is classified as independent SELV.		N/A

6	CLASSIFICATION		
	Built-in controlgear ..... :	Yes ☐ No ☒	—
	Independent controlgear..... :	Yes ☒ No ☐	—
	Integral controlgear ..... :	Yes ☐ No ☒	—
	SELV-equivalent or isolating controlgear ..... :	Yes ☐ No ☒	—
	Auto-wound controlgear ..... :	Yes ☐ No ☒	—
	Independent SELV controlgear..... :	Yes ☒ No ☐	—

7	MARKING		
7.1	Mandatory Marking		P
	Constant voltage type:	Yes ☒ No ☐	P
	- rated output voltage (V) ..... :	See model list	P
	Constant current type:	Yes ☒ No ☐	P
	- rated output current (A) ..... :	See model list	P
	- rated maximum output voltage (V) ..... :		P
7.2	Information to be provided, if applicable:		N/A
	- declaration for SELV-equivalent controlgear		N/A

8	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		
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
8.2	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:		P
	If the voltage exceeds 25 V r.m.s. or 60 V ripple-free d.c., the output shall comply with the following:		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Touch current shall not exceed 0,7 mA peak for a.c. 2,0 mA for d.c.		P
	No-load output shall not exceed $33\sqrt{2}$ V peak or 60 V ripple free d.c.		N/A
	For controlgears with more than one supply voltage, the requirements are applicable for each of the rated supply voltages.		P
	Controlgear with an output greater than the limits shall have insulated terminals		N/A
	Accessible conductive parts separated by double or reinforced insulation may be bridged by two resistors or two Y2 capacitors provided they have the same rated value		P
	Accessible conductive parts separated by double or reinforced insulation from live part may be bridged by a single Y1 capacitor		P
	Y1 or Y2 capacitors shall comply with IEC 60384-14		P
	If resistors are used, they shall comly with test a) in 14.1 of IEC 60065: 2001		N/A
9	TERMINALS		
9.1	Direct plug-in controlgear		N/A
	Plug-in controlgear with pins for direct insertion into a socket-outlet shall comply with Appendix J of AS/NZS 3112:2011.		N/A
11	MOISTURE RESISTANCE AND INSULATION		
	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A
12	ELECTRIC STRENGTH		
	Windings in separating transformers in SELV-equivalent convertors according to 14.3.2 of IEC 60065		N/A
15	TRANSFORMER HEATING		
	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	Normal operation		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	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 tc, under normal operation		N/A
15.2	Abnormal operation		N/A
	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 tc, under abnormal conditions of Cl. 16 and fault conditions of Cl. 14		N/A
	Ambient temperature at tc :		N/A
16	ABNORMAL CONDITIONS		
16.1	Control gear which are of the constant voltage output type:		P
	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)		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		P
	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)		P
	d). For controlgear with SELV output, the LED modules, or equivalent load shall continue to be connected in series incrementally to the output terminals until the controlgear ceases to operate or the output voltage is stabilized		P
	During the test above, maxiumum output votage measured on output terminals shall not exceed the SELV limits of clause 8.		P
	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P
17	CONSTRUCTION		
	Socket-outlet in the output circuit does not accept plugs complying with IEC 60083 and IEC 60906		N/A

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

I	ANNEX I: PARTICULAR ADDITIONAL REQUIREMENTS FOR INDEPENDENT SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED MODULES		P
I.3	Classification		P
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 ☒	—
	g) non-open-circuit proof controlgear	Yes ☐ No ☒	—
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 :	> 100 MΩ	P
	Live parts and the body -for reinforced insulation not less than 4 MΩ :		N/A
	Input- and output circuits not less than 5 MΩ :	> 100 MΩ	P
	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
	Metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ :		N/A
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:		N/A
	a) live parts which are or may become of different polarity :		N/A
	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

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

	d) live parts and an intermediate metal part :		N/A
	e) intermediate metal parts and the body :		N/A
	3) Over reinforced insulation between the body and live parts :		N/A
	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 :		P
I.10	Components		N/A
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		N/A
	Compliance is checked by connecting the convertor for 48 h at 1.06 times the rated voltage with the output short-circuited		N/A
I.11	Creepage distances and clearances		P
	1. Insulation between input and output circuits:		P
	a) measured values > specified values (mm) :	Refer to attachment 2	P
	b) measured values > specified values (mm):		N/A
	c) measured values > specified values (mm):	Refer to attachment 2	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:		P
	a) measured values > specified values (mm):	Refer to attachment 2	P
	b) measured values > specified values (mm):		N/A
	c) measured values > specified values (mm):		N/A
	4. Basic or supplementary 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
	d) measured values > specified values (mm):		N/A
	e) measured values > specified values (mm):		N/A
	5. Reinforced insulation: measured values > specified values (mm) :		N/A

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

	6. Distance through 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
	d) measured values > specified values (mm):		N/A

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

Attachment 5 : (AU/NZ) Australian /New Zealand Deviations AS/NZS 60598.1: 2017

ATTACHMENT TO TEST REPORT IEC 60598-1
(AUSTRALIA/NEW ZEALAND) NATIONAL DIFFERENCES
(Luminaires)

(Part 2.3 Particular requirements—Luminaires for road and street lighting)

Differences according to.....:	AS/NZS 60598.1: 2017
Attachment Form No.....:	AU_NZ_ND_IEC60598_1
Attachment Originator .....:	DEKRA
Master Attachment.....:	2017-12-11

	National Differences		
Appendix ZZ	Variations to IEC 60598-1 Ed 8.0 (2014) (Normative)		P
ZZ1	Scope This Appendix sets out variations between this Standard and IEC 60598-1, Ed. 8.0 (2014) and additional requirements to cover issues that have not been addressed by the International Standard. (AS/NZS 60598.1:2017)		P
	Variations to form the Australian/New Zealand variations for the purposes of the IECEE Scheme for recognition of testing to standards for safety of electrical equipment (the CB Scheme). They are listed in this Appendix for easy reference and will be published in the CB bulletin. (AS/NZS 60598.2.3:2015)		N/A
ZZ2	Variations		
0.1	Addition 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”. (AS/NZS 60598.1:2017)		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE: Portable rechargeable battery operated luminaires should comply with Annex B, 'Appliances powered by rechargeable batteries' of AS/NZS 60335.1, Household and similar electrical appliances—Safety, Part 1: General requirements (IEC 60335-1 ED. 5, MOD). In addition, portable, rechargeable, battery-operated luminaires with lithium ion batteries should have overvoltage protection (AS/NZS 60598.1:2017)		N/A
0.2	Addition Add the following normative references: IEC 61048, Auxilaries for lamps – Capacitors for use in tubular fluorescent and other discharge lamp circuits – General and safety requirements IEC 61049, Auxilaries for lamps – Capacitors for use in tubular fluorescent and other discharge lamp circuits – Performance requirements IEC 61995-1, Devices for the connection of luminaires for household and similar purposes – Part 1: General ISO 8124-1, Safety of toys – Part 1: Safety aspects related to mechanical and physical properties AS/NZS 3112, Approval and test specification—Plugs and socket-outlets AS/NZS 3120, Approval and test specification—Cord extension sockets AS/NZS 3133, Approval and test specification—Air-break switches AS/NZS 3191, Electric flexible cords AS/NZS 60335.2.29, Household and similar electrical appliances—Safety, Part 2.29: Particular requirements for battery chargers AS/NZS 60669, Switches for household and similar fixed electrical installations (series) AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products (IEC 60695-2-11:2000, MOD) AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements AS/NZS 61058.1, Switches for appliances, Part 1: General requirements (IEC 61058-1, Ed.3.1 (2000), MOD) AS/NZS 61347, Lamp controlgear (series) AS/NZS 61558, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V (series) (AS/NZS 60598.1:2017)		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
0.4.2	Addition After the first paragraph, insert 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. (AS/NZS 60598.1:2017)		P
0.5	Addition Insert the following text as the first paragraph: Throughout this document, where there is a relevant Australian/New Zealand Standard, it replaces the IEC Standard unless otherwise specified (AS/NZS 60598.1:2017)		P
0.5.2A	Addition Add the following new Clause after Clause 0.5.2 **0.5.2A Capacitors** Capacitors shall comply with Clause 4.2A. (AS/NZS 60598.1:2017)		P
1.2	Addition Add the following new definitions after 1.2.86		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	1.2.87 **installation coupler** connecting device consisting of an installation female connector and an installation male connector provided with retaining means for permanent connection not intended to be engaged or disengaged under load nor to be engaged or disengaged other than during first installation, during maintenance of the wiring system or during re-configuration of the wiring system.		N/A
	1.2.88 **installation male connector** load side portion of an installation coupler which contains the male contacts		N/A
	1.2.89 **installation female connector** supply side portion of an installation coupler which contains the female contacts		N/A
	1.2.90 **installation coupler system** family of installation couplers consisting of one or more installation female connectors compatible by mechanical coding features with one or more installation male connectors, with the same ratings produced according to the specification of one manufacturer (AS/NZS 60598.1:2017)		N/A
2.2	Addition At the end of Clause 2.2, insert the following text: Class 0 luminaires are not permitted in Australia or New Zealand (AS/NZS 60598.1:2017)		N/A
3.1	Addition After the first paragraph, insert the following text: In Australia and New Zealand, instructions and other texts required by this Standard shall at least be written in English. Compliance is checked by inspection. (AS/NZS 60598.1:2017)		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
3.2	Variation Delete the second paragraph beginning with 'Marking may be on ballast provided'. (AS/NZS 60598.1:2017)		N/A
Table 3.1	Variation 1. Second column, second row, delete Item 3.2.21. 2. Third column, second row, add the following new item: "3.2.21 The relevant symbol for luminaires not suitable for covering with thermally insulating material". (AS/NZS 60598.1:2017)		N/A
3.2.3	Variation Delete the text ', if other than 25 °C.		P
3.2.12	Addition At the end of the Clause, insert the following text: In Australia, luminaires for household use and similar with supply cords that 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.) (AS/NZS 60598.1:2017)		N/A
3.2.23	Addition At the end of the Clause, insert the following text: The additional information shall include the symbol "Do not stare at the operating light source" (see Figure 1) along with an explanation of the symbol. (AS/NZS 60598.1:2017)		N/A
3.3.7	Variation 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 (AS/NZS 60598.1:2017)		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.18	Deletion Delete the text ‘, i.e. for indoor use only’. (AS/NZS 60598.1:2017)		N/A
3.3.21	Deletion Delete the text ‘Caution, risk of electric shock’ and the symbol. (AS/NZS 60598.1:2017)		N/A
4.7.2	Variation Delete the first paragraph and replace with the following: 4.7.2 Terminals shall be located or shielded in such a way that, if a wire of a stranded conductor escapes from a terminal when the conductors are fitted, there is no risk of contact between live parts and metal parts that can be touched with the standard test finger, nor shall it be possible to touch a live free wire with the standard test finger when the luminaire is fully assembled for use or open for the replacement of replaceable light sources or starters. (AS/NZS 60598.1:2017)		P
4.8	Variation After the third paragraph, insert the following text: Switches shall comply with AS/NZS 3133, the AS/NZS 60669 series or AS/NZS 61058.1. Switches that indicate an off position shall have contacts with an air break and comply with AS/NZS 3133, AS/NZS 60669.1 or AS/NZS 61058.1.		N/A
	Fourth paragraph, delete the text ‘IEC 61058-1’ and replace with ‘AS/NZS 60669.2.1 or IEC 61058-1 classified for 10,000 operating cycles’. (AS/NZS 60598.1:2017)		N/A
4.10.4	Variation First paragraph, delete the last sentence and replace with the following: If the working voltage does not exceed the rated voltage of the capacitor, accessible conductive parts separated from live parts by double or reinforced insulation, as above, may be bridged by a single Y1 capacitor with qualification approval as specified in IEC 60384-14. (AS/NZS 60598.1:2017)		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
4.14.6	After the first paragraph, insert the following text: A fixed socket-outlet complying with AS/NZS 3112 or AS/NZS 60884.1 is used for the following test. (AS/NZS 60598.1:2017)		P
4.32	Addition At the end of the Clause, insert the following text: Metal oxide varistors shall comply with the requirements of AS/NZS 3100 for metal oxide varistors incorporated in accessories. NOTE: The test and assessment is conducted on any circuits connected between phases (between actives and between actives and neutral) and circuits connected between phases and earth (actives-to-earth and neutral-to-earth). (AS/NZS 60598.1:2017)		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.1	Variation 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) in accordance with Clause 4.6 requirements; — supply cord — supply cord and plug; — adapter for engagement with supply tracks; — appliance inlet; — installation coupler; — luminaire coupler; Portable luminaires: — supply cord with plug; — appliance inlet. — inlet plug complying with AS/NZS 3120. Track-mounted luminaires: — adaptor; — connector.		P
	2. Delete the second and third paragraph.		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	3. After Note 3, insert the following text: 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 4: PVC-insulated connection cords should not be used with outdoor luminaires in cold alpine locations. (AS/NZS 60598.1:2017)		N/A
5.2.2	Variation 1. 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.		P
	2. Delete the fourth 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. (AS/NZS 60598.1:2017)		P

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

Table 5.1	Variation Delete Table 5.1 and replace with the following: Table 5.1 — Supply cord		P

Luminaire	Rubber	PVC	No Insulation
Ordinary class 1 luminaires	60245 IEC 51 c	60227 IEC 52 c	
Ordinary class II luminaires	60245 IEC 53 c	60227 IEC 52 c	
Luminaires which are other than ordinary class I and II	60245 IEC 57 c	60227 IEC 53 c	
Portable rough service luminaires	60245 IEC 66 c		
Class III or with SELV circuits luminaires (up to 25 V a.c./60 V d.c.)			Un-insulated conductor b
Class III or with SELV circuits luminaires (above 25 V a.c./60 V d.c.), including 50 V a.c./120 V d.c.	Unsheathed basic insulated conductor		

a. For indoor use only.

b. AS/NZS 3000 may restrict the use of un-insulated conductors in certain special installations.

c For supply voltages greater than 250 V, higher voltage grade cables and cords than those given in the above table may be necessary

(AS/NZS 60598.1:2017)

5.2.16	Addition At the end of the Clause, insert the following text: Class II luminaires for fixed wiring incorporating an appliance coupler shall not have means to allow further luminaires to be connected by cascading including connection by looping-in. Luminaire couplers incorporated with the luminaire shall comply with IEC 61995-1. 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. (AS/NZS 60598.1:2017)		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.18	Variation Delete Clause 5.2.18 and replace with the following: **5.2.18** All portable luminaires with a supply cord shall be fitted with a plug complying with AS/NZS 3112. Other luminaires with a supply cord shall be fitted with a plug complying with AS/NZS 3112, unless they have the warning specified by Clause 3.2.12. (AS/NZS 60598.1:2017)		P
5.3.1	Variation 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. NOTE 101 Internal wires of other colours are not precluded from making protective earthing connections.		P
5.3.1.3	Variation Delete Clause and replace with the following: In class II luminaires, where the internal wiring has a live conductor and the wiring insulation may touch accessible metal parts under normal operating conditions, the insulation, at least at the places of contact, shall comply with the requirements for double or reinforced insulation, e.g. by applying sheathed cables or sleeves. (AS/NZS 60598.1:2017)		P
7.2.11	Variation Delete the third paragraph and replace with the following: All conductors, whether internal or external, coloured green, yellow or green/yellow combination, shall only be connected to an earthing terminal (AS/NZS 60598.1:2017)		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
8.2.1	Variation Variation Delete the first two paragraphs including Note 1 and replace with the following: Luminaires shall be so constructed that their live parts and basic insulation are not accessible when the luminaire has been installed and wired as in normal use. Live parts shall not be accessible when the luminaire is opened as necessary for user cleaning or maintenance, or for replacement of lamps, replaceable light sources or (replaceable) starters, even if the operation cannot be achieved by hand. Luminaires with non-replaceable light sources are subjected to the tests of Clause 4.29 prior to applying the tests and inspections of Section 8 of this Standard. NOTE 1 Examples of parts with basic insulation are cables intended for internal wiring, controlgear for building-in, etc. This does not apply to the non-current-carrying parts of lamp caps that comply with the relevant IEC safety standard.		P
	Delete the ninth paragraph beginning with 'Covers in fixed luminaires that cannot be remove' (AS/NZS60598.1:2017)		N/A
9.2	After Note 1, insert the following new Note: NOTE 101 A designation of IPX7 or IPX8 is considered unsuitable for exposure to water jets (designated by IPX5 or IPX6) and may not comply with requirements for second numeral 5 or 6 unless it is dual coded. (AS/NZS60598.1:2017)		N/A
Table 10.3	Deletion Delete the second row beginning with 'Class I luminaires rated up to and including 16 A'.		N/A
	First column, third row, delete the word 'Metal'. (AS/NZS60598.1:2017)		N/A
Table 12.1	First column, first row, delete the text— 'Case (of capacitor, starting device, electronic ballast or convertor, etc.)' and replace with the following: 'Case (of control gear, capacitor, starting device, electronic ballast or convertor, etc.)'		P
	Addition		P

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

	Add the following new Note after Table 12.1 NOTE 101 Luminaire manufacturers should consider the maximum ambient air temperature in the vicinity of components such as starting devices and electronic ballasts or converters. Component performance specifications advise manufacturers to mark or supply life data as maximum ambient air temperature based on 50,000 h. This t-life is often marked as ta and is the temperature of the air in the vicinity of the component and is not related to the luminaire ta. As such, luminaire manufacturers should measure air temperature in the vicinity of such components, within the luminaire, as even those complying with their tc point measurements can still fail prematurely if t-life is exceeded. (AS/NZS 60598.1:2017)		
13.3	Variation Delete Clause 13.3 and replace with the following: **13.3 Resistance to flame and ignition** Parts of non-metallic material shall be resistant to flame and ignition. For materials other than ceramic, compliance is checked by the tests of 13.3.1 and 13.3.2, and 13.3.3 as appropriate. 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 luminaire. This Clause applies to all parts, including components, even if they have been tested to their own IEC or equivalent standard.		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	13.3.1 Parts of non-metallic material supporting connections that could become an ignition source, and parts of non-metallic material within a distance of 3 mm of such connections, shall withstand the glow wire test. Welded connections, soldered connections on printed circuit boards and other connections carrying less than 0.2 A during normal operation are not considered to be an ignition source. The test apparatus, test procedure and criteria shall be those specified in AS/NZS 60695.2.11. The glow wire is heated to 750 °C and applied to one test sample for 30 s.or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4:2002, spread out horizontally 200 mm ± 5 mm below the sample.		P
	13.3.2 All other parts of non-metallic material which do not support connections that could become an ignition source, but provide protection against electric shock or maintain creepage and clearances, shall withstand the glow wire test. The test apparatus, test procedure and criteria shall be those specified in AS/NZS 60695.2.11. The glow wire is heated to 650 °C and applied to one test sample for 30 s.		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	13.3.3 During the application of the glow wire test of Clause 13.3.1 and 13.3.2, if a flame is produced that persists for longer than 2 s, the luminaire is further tested as follows: 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. Parts shielded by a barrier that meets the needle-flame test of AS/NZS 60695.11.5 are not tested**.** 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
Bibliography	Addition Add the following new informative references: IEC 60252, AC motor capacitors (all parts) AS/NZS 60335.1, Household and similar electrical appliances—Safety, Part 1: General requirements (IEC 60335-1 Ed. 5, MOD) (AS/NZS 60598.1:2017)		N/A

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

	Special national conditions (if any)		
0.5.101	After Clause 0.5.4, add new Clause 0.5.101 as follows: **0.5.101 Capacitors** 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 (other than those incorporated in control gear that comply with the relevant standard) shall comply with one of the following:		N/A
	Capacitors likely to be permanently subjected to the supply voltage, used for radio interference suppression or for voltage dividing shall comply with IEC 60384-14		N/A
	Other 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 EIA-456-A, Metallized Film Dielectric Capacitors for Alternating Current Applications, 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. (AS/NZS 60698.1:2017)		N/A
0.5.102	After Clause 0.5.101, add new Clause 0.5.102 as follows: **0.5.102 Control gear** Power supplies shall comply with the relevant part 2 of the AS/NZS 61558 series.		N/A
	Control gear shall comply with the relevant part 2 of the AS/NZS 61347 series		N/A
	Battery chargers used for lighting other than emergency lighting shall comply with AS/NZS 60335.2.29.		N/A
	Sensor switches and similar control circuits, including those incorporated in other equipment, are considered electronic switches (see Clause 4.8). (AS/NZS 60598.1:2017)		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.101	After Clause 1.2.91, add the following definitions: **1.2.101** **installation coupler** connecting device consisting of an installation female connector and an installation male connector provided with retaining means for permanent connection not intended to be engaged or disengaged under load nor to be engaged or disengaged other than during first installation, during maintenance of the wiring system or during re-configuration of the wiring system **1.2.103** **installation male connector** load side portion of an installation coupler which contains the male contacts **1.2.104** **installation female connector** supply side portion of an installation coupler which contains the female contacts **1.2.105** **installation coupler system** family of installation couplers consisting of one or more installation female connectors compatible by mechanical coding features with one or more installation male connectors, with the same ratings produced according to the specification of one manufacturer (AS/NZS 61058.1:2017)		N/A
3.3.101	Addition After Clause 3.3.22, add new Clauses 3.3.101 and 3.3.102 as follows: 3.3.101 The instructions shall contain details of the components in the luminaire that require replacement as part of a maintenance program.		N/A
3.3.102	3.3.102 The instructions for luminaires, including for remotes or other accessories containing coin/button cell batteries and batteries designated R1, shall include the safety warnings below. Equipment containing one or more coin/button cell/R1 batteries shall have the safety warnings in the instructions accompanying the equipment. The safety warnings are not required where these batteries are not intended to be replaced or are only accessible after damaging the equipment. The safety warnings shall be as follows:		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	– CAUTION: Do not ingest battery—Chemical burn hazard [or equivalent wording]. – [The remote control supplied with] this product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. – Keep new and used batteries away from children. – If the battery compartment does not close securely, stop using the product and keep it away from children. – If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention. NOTE 1 Coin/button cell batteries are small, single cell devices having a diameter greater than their height. NOTE 2 Battery designations are specified in IEC 60086-2. (AS/NZS 60598.1:2017)		N/A
4.101	Addition After Clause 4.32, add new Clauses as follows: **4.101.1 Small batteries** Batteries that fit wholly within the small parts cylinder as specified in Clause 5.2 of ISO 8124-1 shall not be removable without the aid of a tool. Luminaires intended for children under the age of three, or parts of such luminaries that contain batteries, shall not fit wholly within the small parts cylinder as specified in Clause 5.2 of ISO 8124-1. For luminaires or parts of luminaires containing batteries that fit wholly within the small parts cylinder as specified in Clause 5.2 of ISO 8124-1, the batteries shall not be accessible without the aid of a tool.		N/A

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

	Compliance is checked by inspection and by the following test. A force is applied without jerks for 10 s in the most unfavourable direction to parts likely to be weak. The force is as follows: – push force, 50 N; – pull force; 30 N; – if the shape of the part is such that the fingertips cannot easily slip off, 50 N; – if the projection of the part that is gripped is less than 10 mm in the direction of removal, 30 N. The push force is applied by test probe 11 of IEC 61032. The pull force is applied by a suitable means, such as a suction cup, so that the test results are not affected. While the force is being applied, the test fingernail of Figure 7 of AS/NZS 60335.1 is inserted in any aperture or joint with a force of 10 N. The fingernail is then slid sideways with a force of 10 N but is not twisted or used as a lever.		N/A
	If the shape of the part is such that an axial pull is unlikely, the pull force is not applied but the test fingernail is inserted in any aperture or joint with a force of 10 N and is then pulled for 10 s by means of the loop with a force of 30 N in the direction of removal. If the part is likely to be twisted, the following torque is applied at the same time as the pull or push force: – 2 Nm, for major dimensions up to 50 mm. – 4 Nm, for major dimensions over 50 mm. This torque is also applied when the test fingernail is pulled by means of the loop. If the projection of the part that is gripped is less than 10 mm, the torque is reduced by 50 %. NOTE The types and dimensions of batteries are specified in IEC 60086-2. (AS/NZS 60598.1:2017)		N/A
4.101.2	Addition **4.101.2 Battery compartment fasteners** If screws or similar fasteners are used to secure a door or cover providing access to the battery compartment, the screw or similar fastener shall be captive to ensure that it remains with the door, cover or equipment. Compliance is checked by inspection and by the following test. A force of 20 N is applied to the screw or similar fastener without jerks for a duration of 10 s in any		N/A

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

	direction. (AS/NZS 60598.1:2017)		
Figure ZZ1	 **Figure ZZ1 — Must be installed by a licensed electrician**		N/A
Bibliography	Add the following new informative references: IEC 60252, AC motor capacitors (all parts) AS/NZS 60335.1, Household and similar electrical appliances—Safety, Part 1: General requirements (IEC 60335-1 Ed. 5, MOD)		N/A

GLOW WIRE TEST DATA SHEET					
Parts name; material spec. if applicable	Test temp. (°C)	Duration of flame (s)	Height of flame (mm)	Burning drop ignite tissue paper (Y/N)	Verdict (P/F)
Bobbin of transformer and inductor	750	No	0	No	Pass
LED driver PCB	750	No	0	No	Pass

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

	Attachment 6: Additional requirement of DIN 57710-14: 1982		
(1)	**FIELD OF APPLICATION AND PURPOSE**		—
(2)	**DEFINITIONS**		—
(3)	**LABELS AND DESIGNATIONS**		—
(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)		N/A
(3.3)	Details of the permissible installation or attachment possibilities shall be given in assembly instructions.		N/A
(3.4)	The manufacturer's documentation shall state that these luminaires are for furniture.		N/A
(4)	**CONNECTION OF THE LUMINAIRES TO THE WIRING SYSTEM**		N/A
(4.1)	The conductor cross-section is……		N/A
(4.2)	Suitable strain relief devices shall be provided		N/A
(5)	**COMPONENTS**		N/A
(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		N/A
(5.2)	Only temperature limiters or temperature protection devices or safety temperature limiters may be used as temperature-dependent devices		N/A
(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.		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

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(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		P
(6.3.2)	Determination of the temperatures during abnormal operation and in the case of a ballast fault.		—
(6.3.2.1)	Luminaires without temperature-limiting devices.		N/A
(6.3.2.2)	Luminaires with temperature-limiting devices.		N/A
(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).		N/A
(7)	**CORROSION RESISTANCE**		—
(7.1)	The test according to VDE 0710, Part 1/3.69, Section 19.		N/A
(8)	**REPAIR OF LUMINAIRE**		—
	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

IEC 61347-2-13
Attachment 7: Product photos

Overall view of ELG-100-54B (IP 67 construction)

Bottom view of ELG-100-54B

IEC 61347-2-13
Attachment 7: Product photos

Input wire view, ELG-100-54B

Output wire view, ELG-100-54B

IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-54B

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).

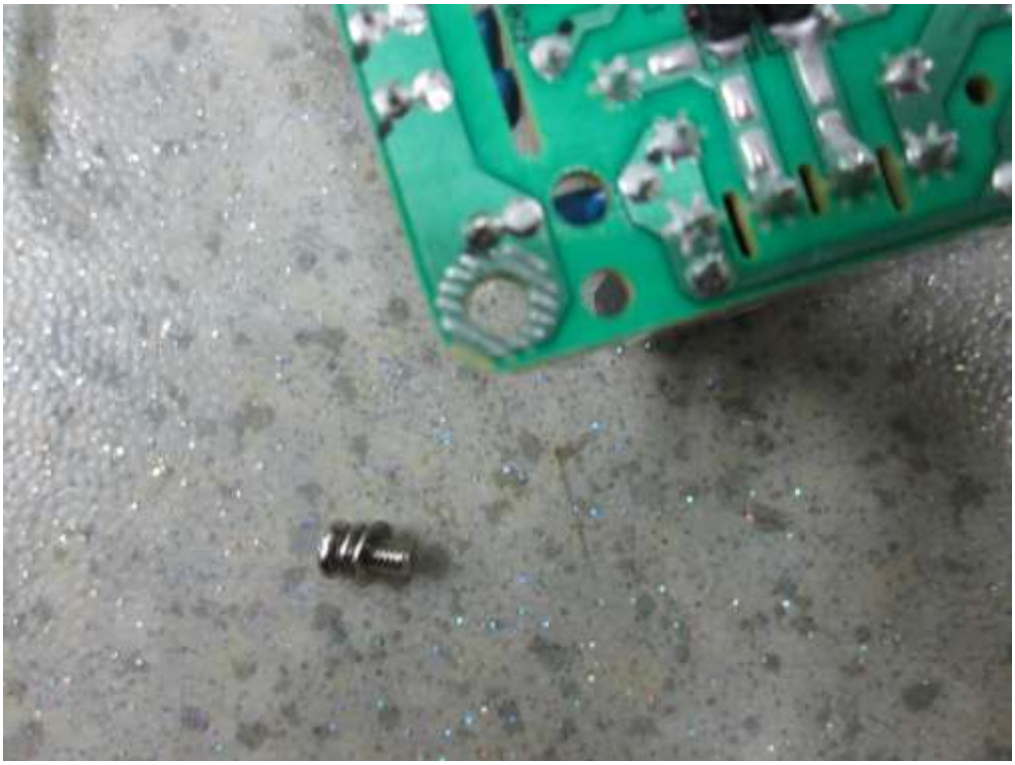
Internal view, ELG-100-54B before potting

IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-54B

Earthing connection-1, ELG-100-54B

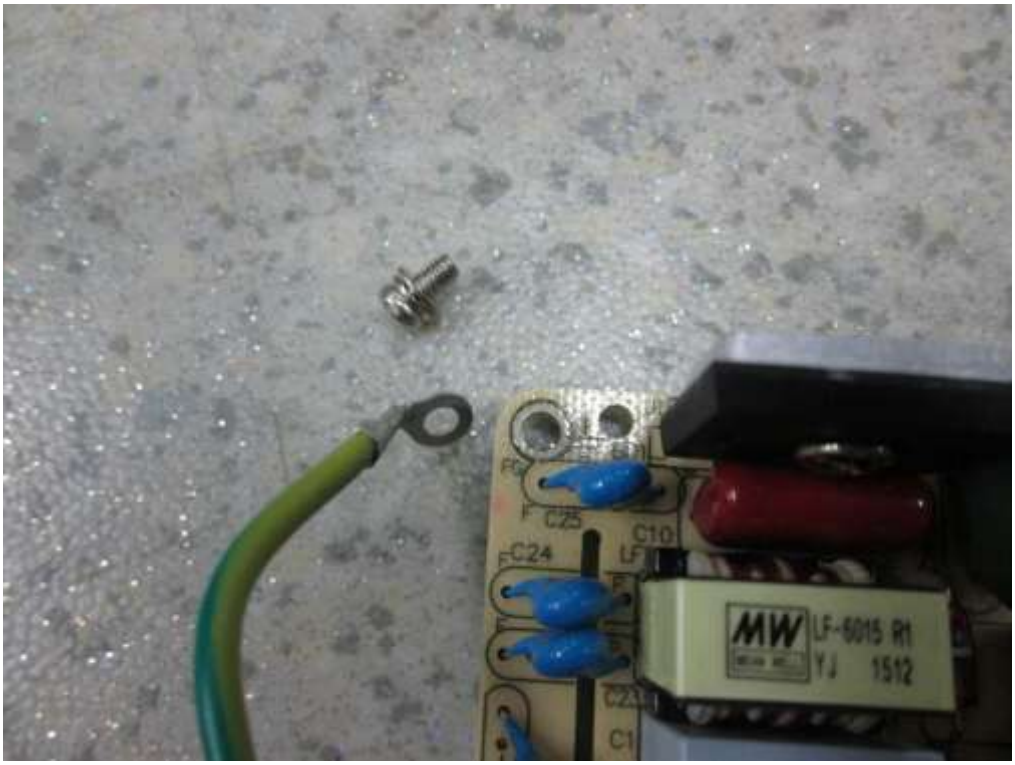
IEC 61347-2-13
Attachment 7: Product photos



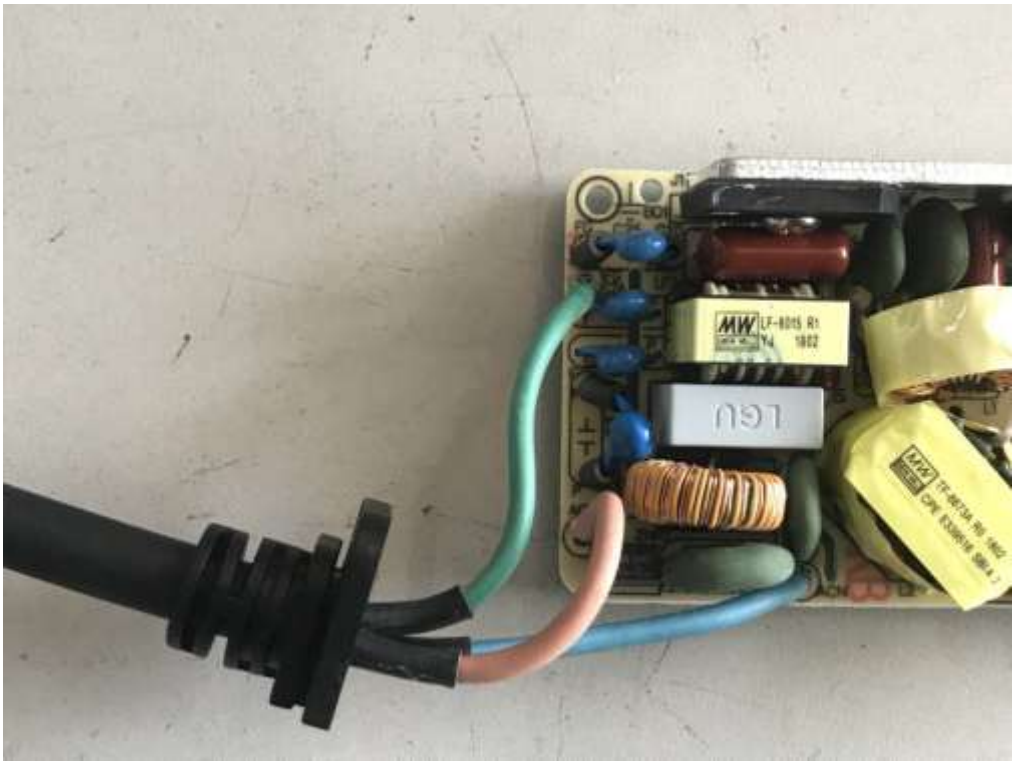
Earthing construction view on PCB board (Two positions)

Alternative earthing connection, ELG-100-54B

IEC 61347-2-13
Attachment 7: Product photos

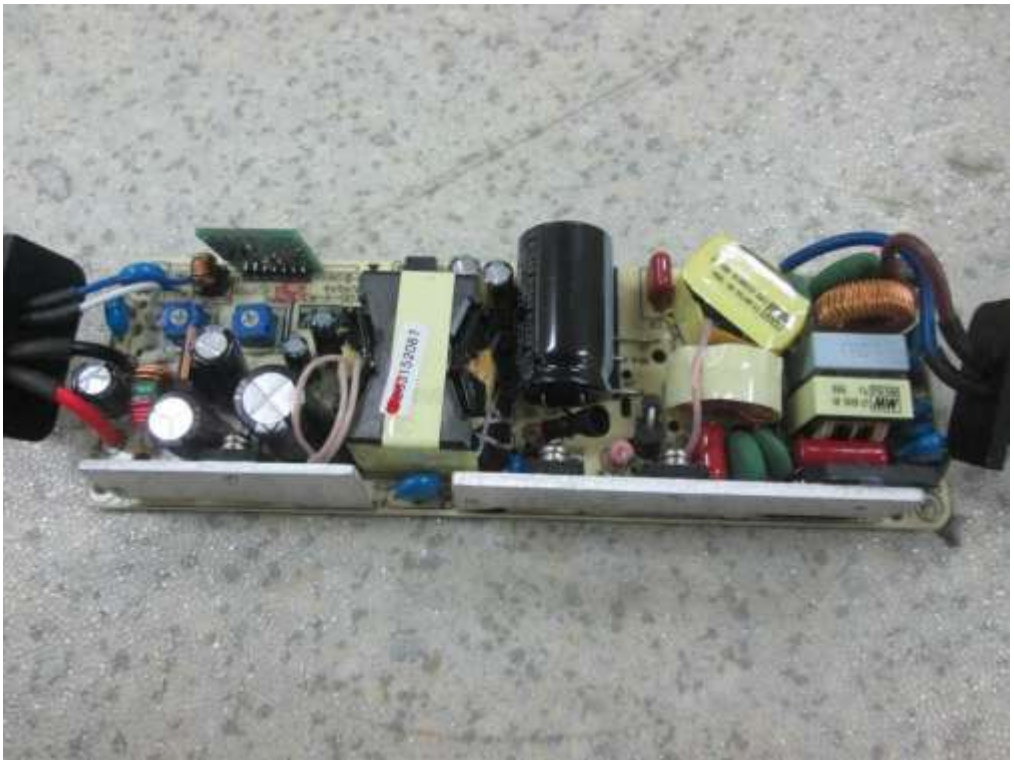


Alternative earthing construction view on PCB board (fixed by screw)



Alternative earthing construction view on PCB board (fixed by soldering)

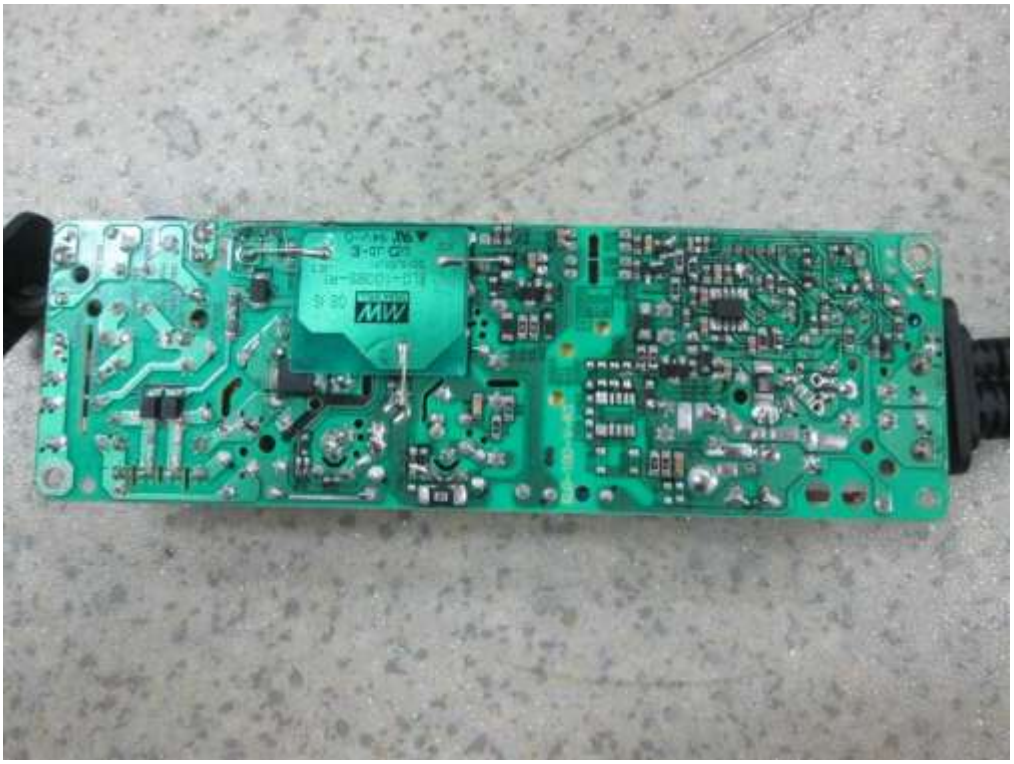
IEC 61347-2-13
Attachment 7: Product photos



Detailed view of PCB, ELG-100-54B

Detailed view of PCB, ELG-100-54B

IEC 61347-2-13
Attachment 7: Product photos



Detailed view of PCB, ELG-100-54B

Internal view after transformer removed

IEC 61347-2-13
Attachment 7: Product photos

Overall view of transformer

Note: Transformers used on all models in this report have similar construction.

Internal view of transformer

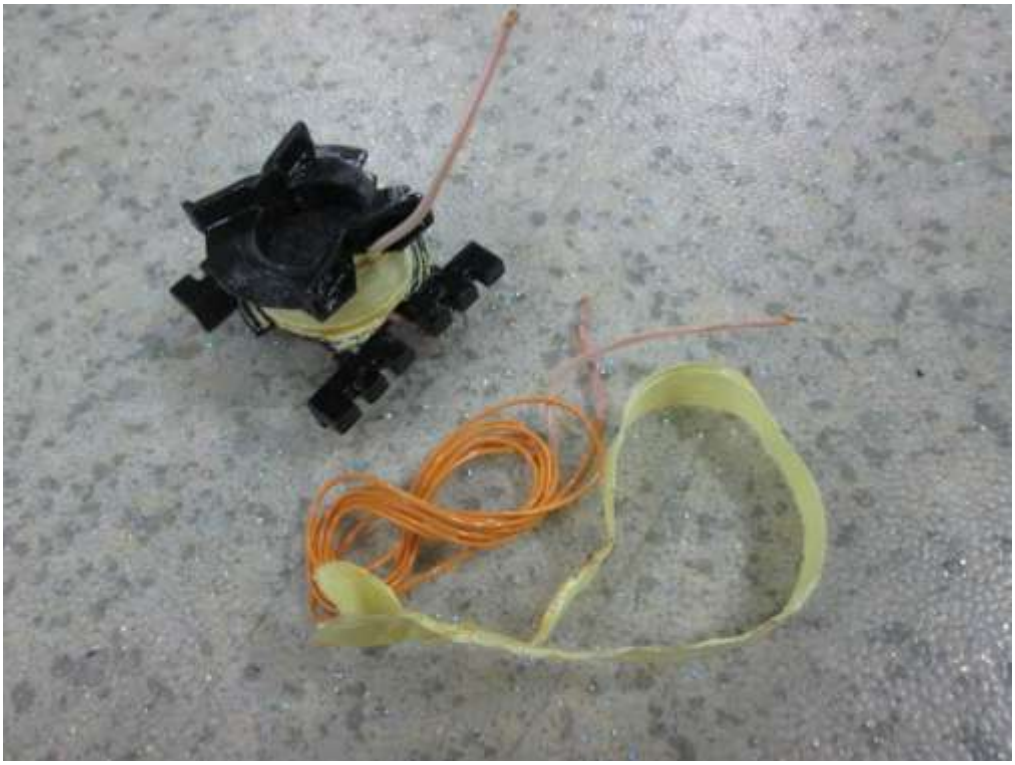
IEC 61347-2-13
Attachment 7: Product photos

Internal view of transformer

Internal view of transformer

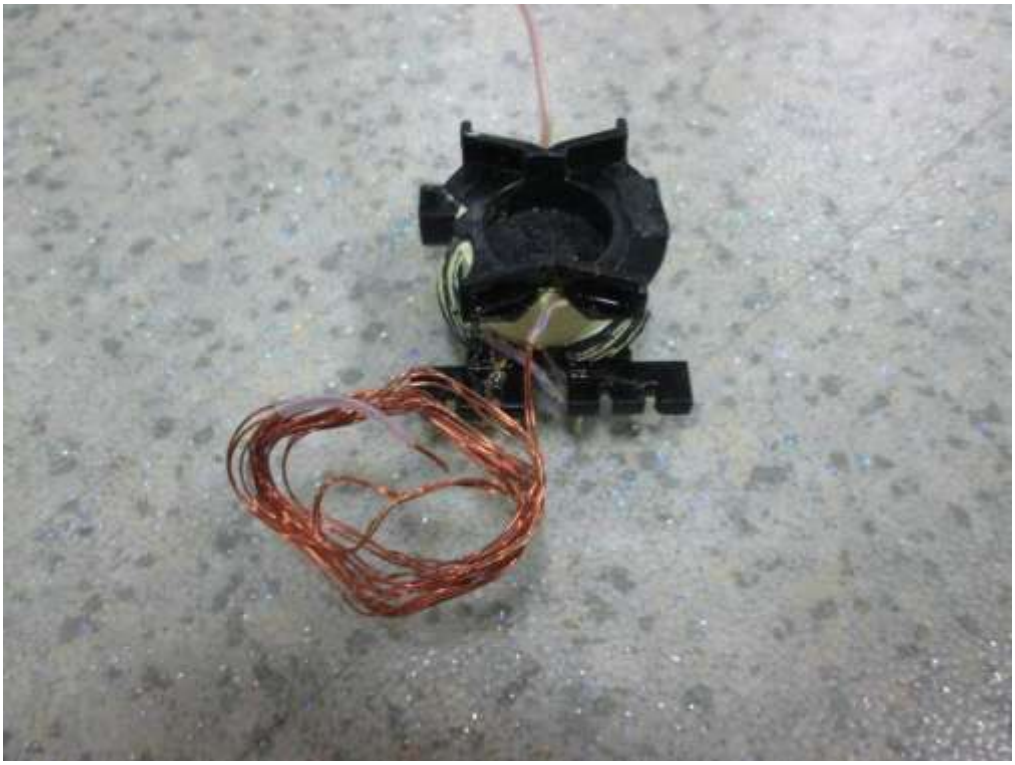
IEC 61347-2-13
Attachment 7: Product photos

Internal view of transformer



Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos



Internal view of transformer

Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos

Internal view of transformer

Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos

Overall view of ELG-100-24B (IP 67 construction)

Bottom view of ELG-100-24B

IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-24B

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).

Internal view, ELG-100-24B before potting

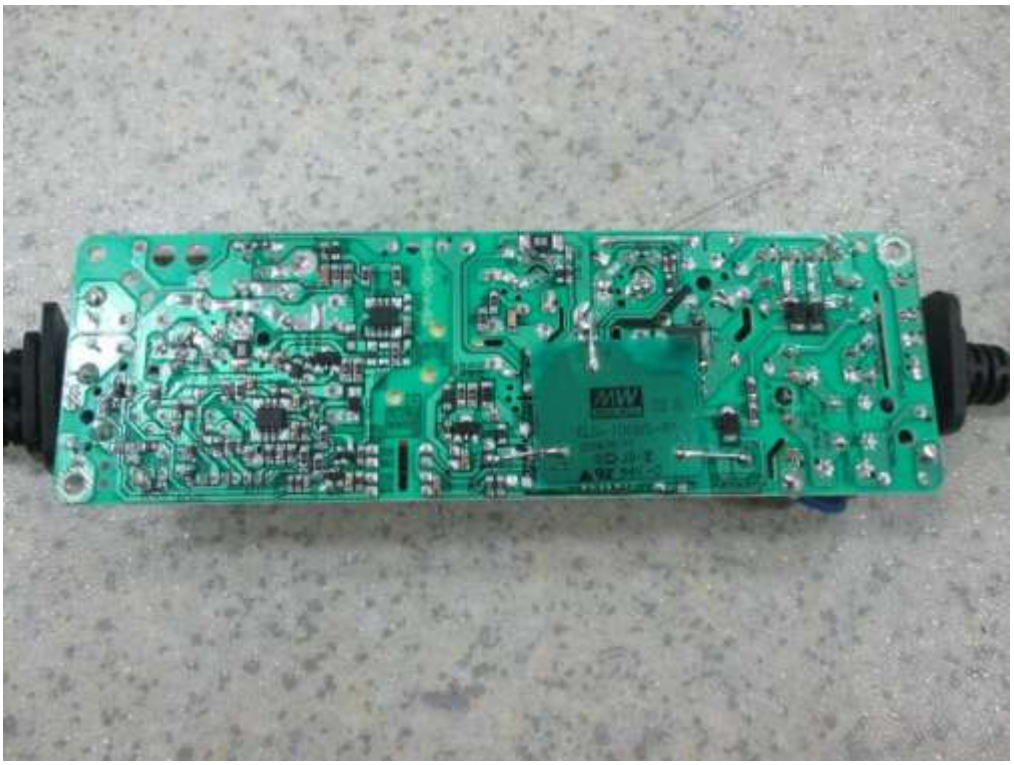
IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-24B

Detailed view of PCB, ELG-100-24B

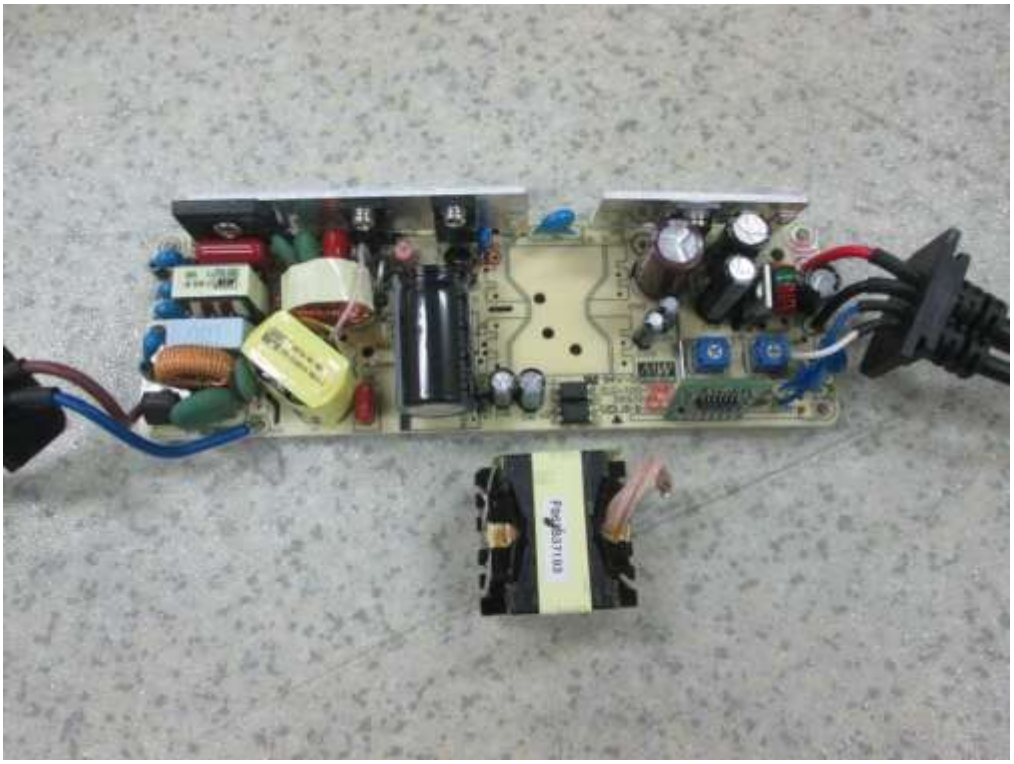
IEC 61347-2-13
Attachment 7: Product photos

Detailed view of PCB, ELG-100-24B



Detailed view of PCB, ELG-100-24B

IEC 61347-2-13
Attachment 7: Product photos



Internal view after transformer removed

Overall view of transformer

Note: Transformers used on all models in this report have similar construction.

IEC 61347-2-13
Attachment 7: Product photos

Overall view of ELG-100-C1400B (IP 67 construction)

Bottom view of ELG-100-C1400B

IEC 61347-2-13
Attachment 7: Product photos

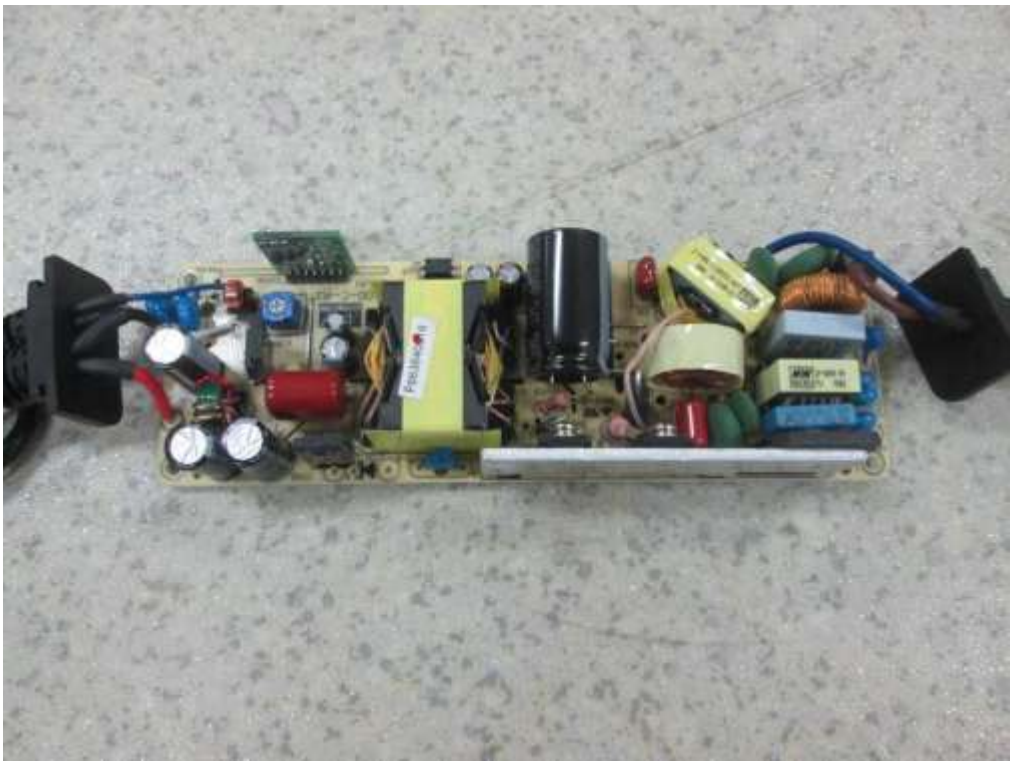
Internal view, ELG-100-C1400B

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).

Internal view, ELG-100-C1400B

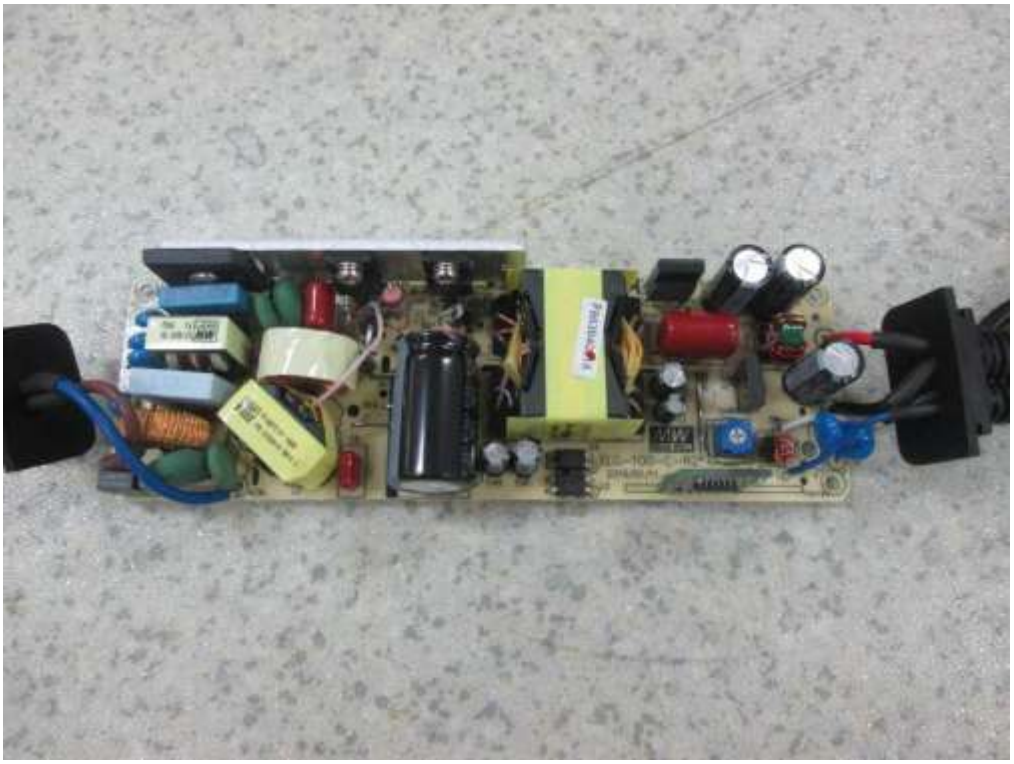
IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-C1400B before potting

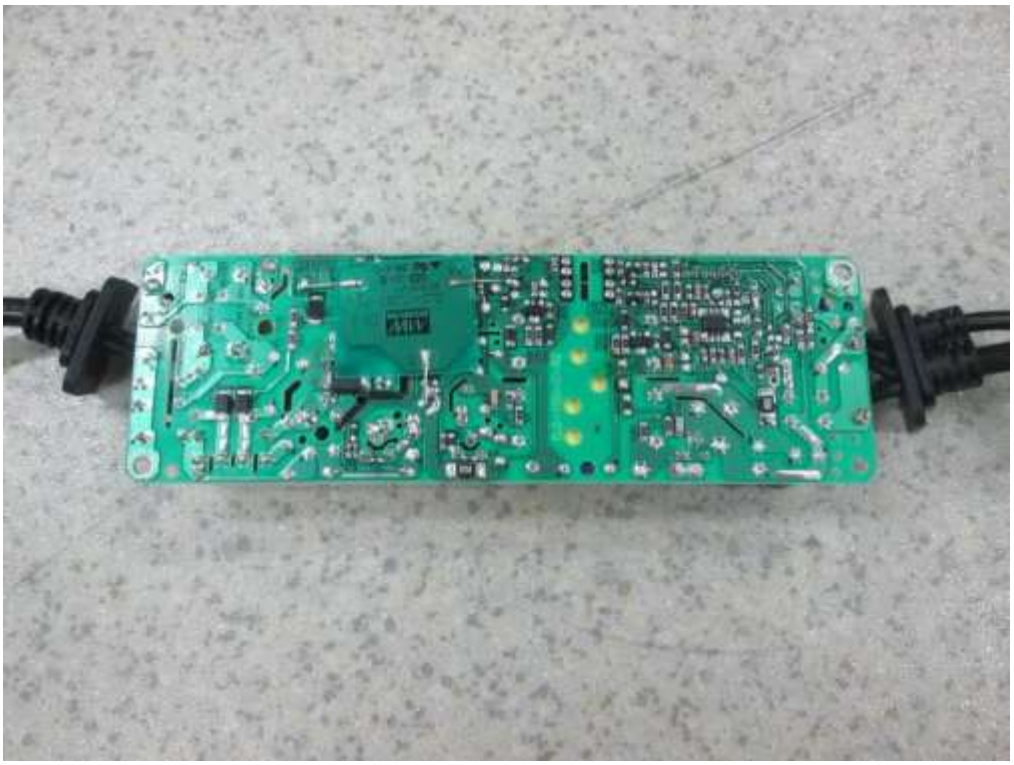


Detailed view of PCB, ELG-100-C1400B

IEC 61347-2-13
Attachment 7: Product photos

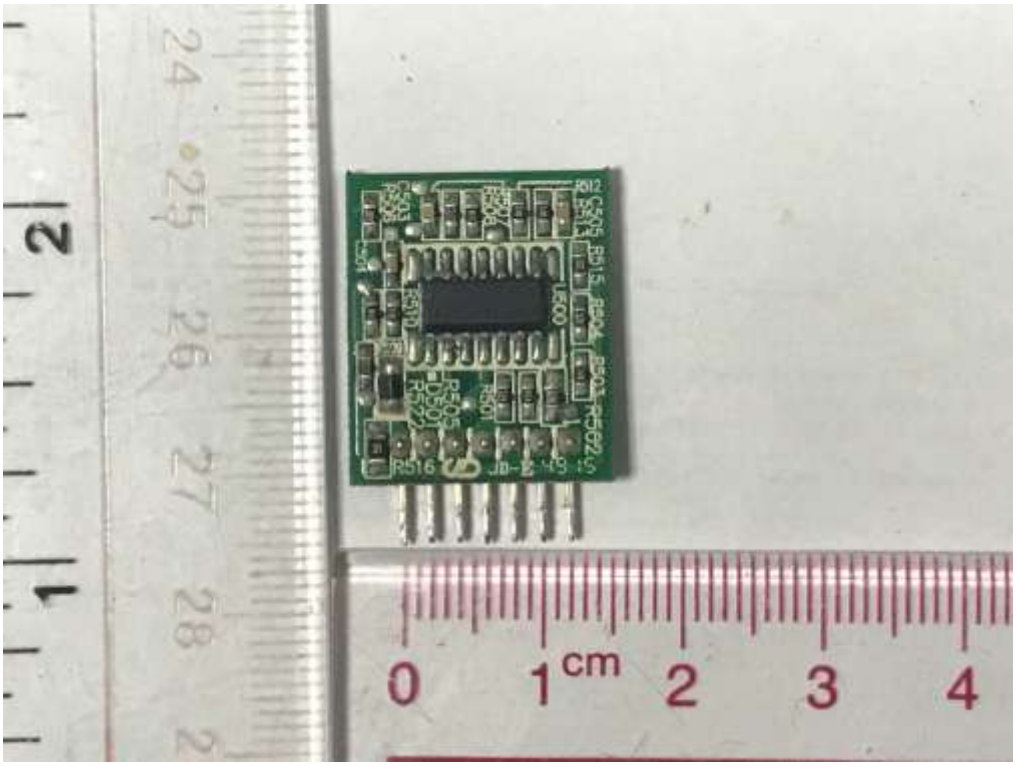


Detailed view of PCB, ELG-100-C1400B

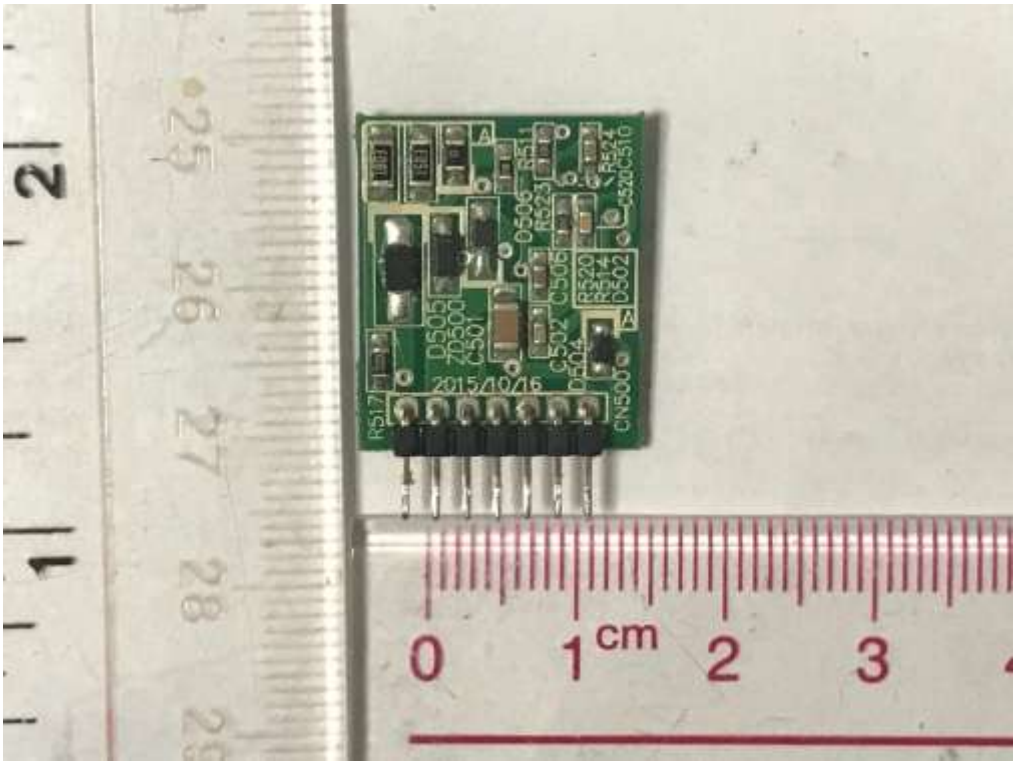


Detailed view of PCB, ELG-100-C1400B

IEC 61347-2-13
Attachment 7: Product photos

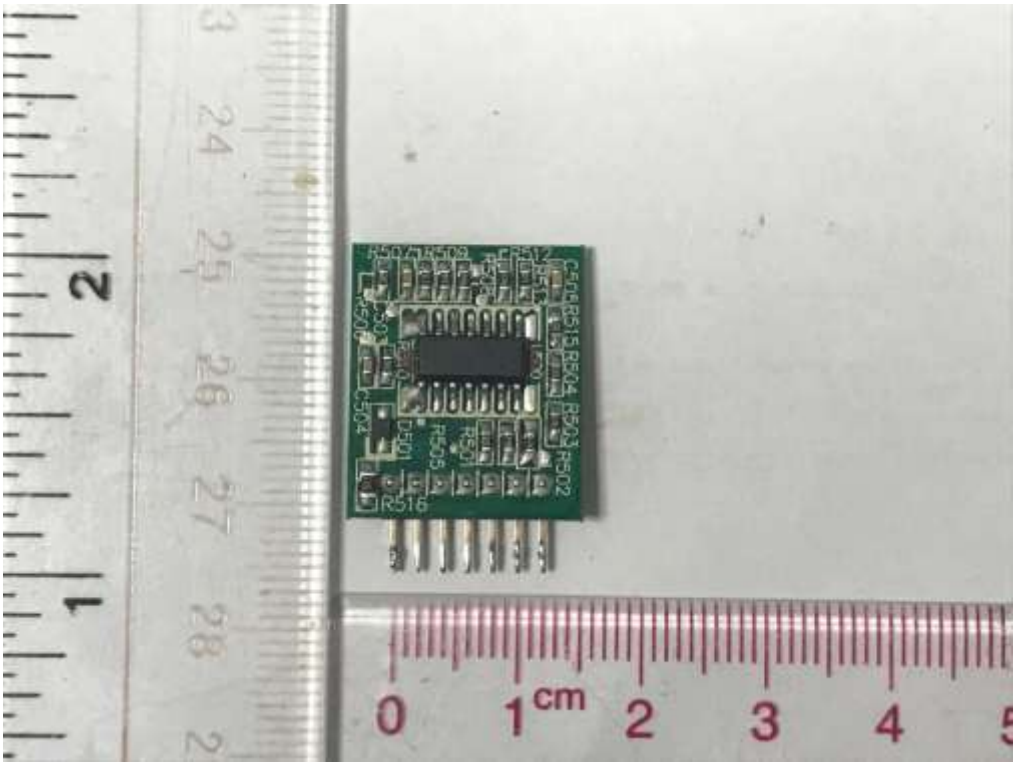


Detailed view of dimming PCB for model ELG-100-XB, X=24, 36, 42, 48, 54 (Type B)

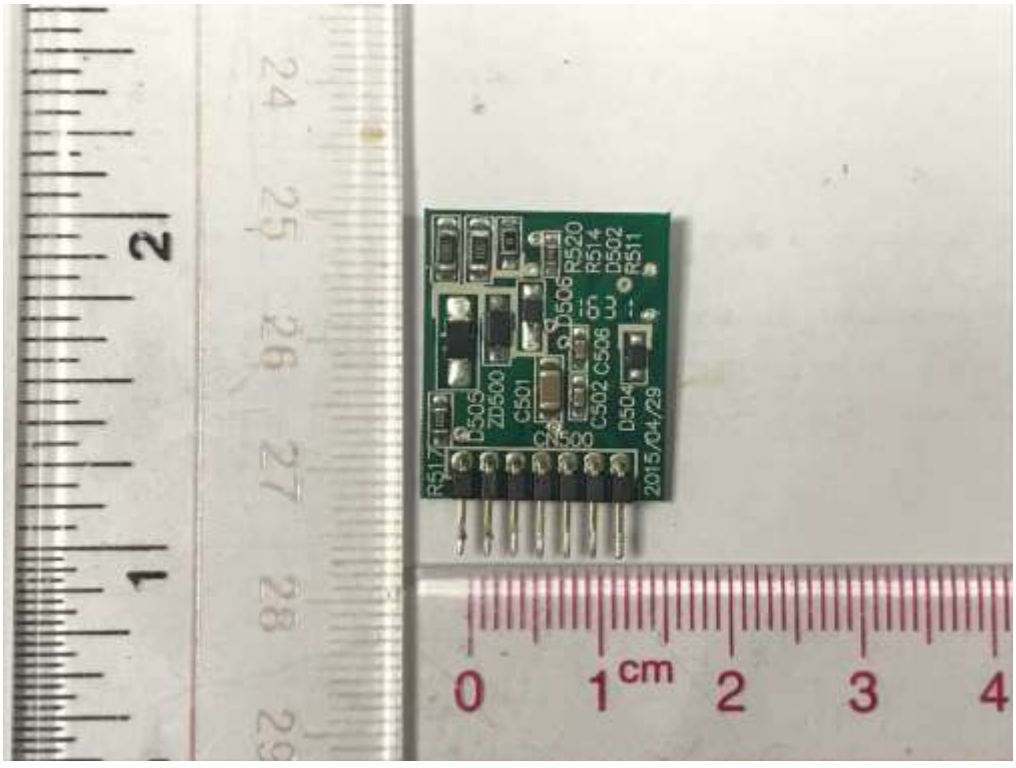


Detailed view of dimming PCB for model ELG-100-XB, X=24, 36, 42, 48, 54 (Type B)

IEC 61347-2-13
Attachment 7: Product photos

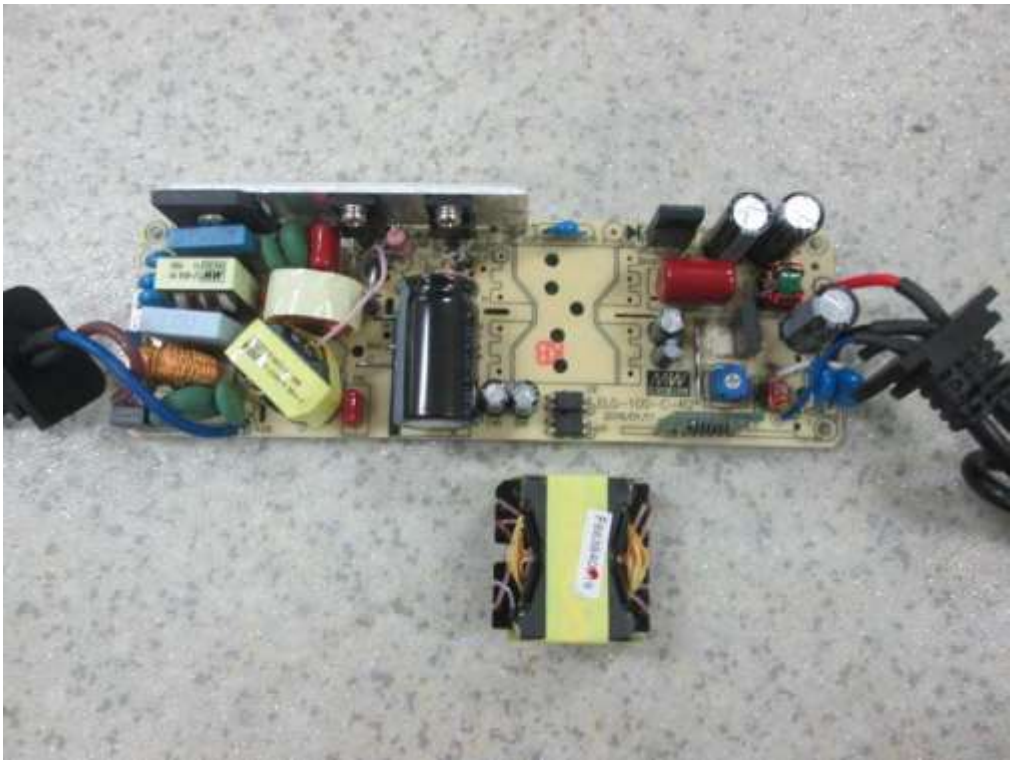


Detailed view of dimming PCB for other models (Type B)



Detailed view of dimming PCB for other models (Type B)

IEC 61347-2-13
Attachment 7: Product photos



Internal view after transformer removed

Overall view of transformer

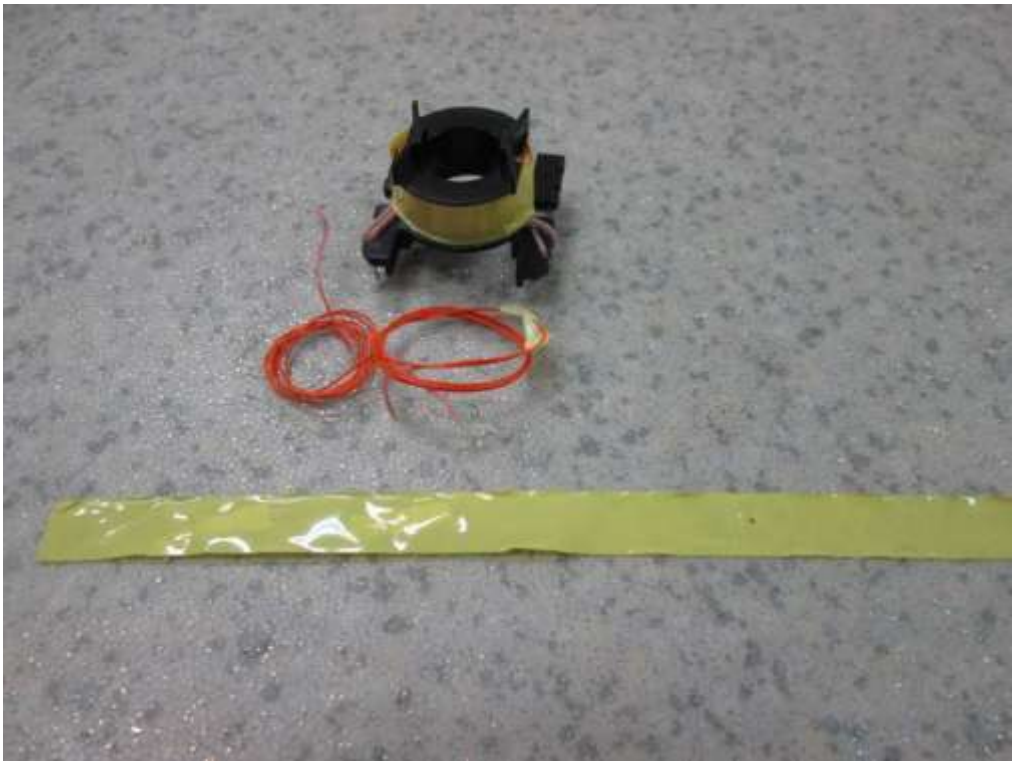
Note: Transformers used on all models in this report have similar construction.

IEC 61347-2-13
Attachment 7: Product photos

Internal view of transformer

Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos

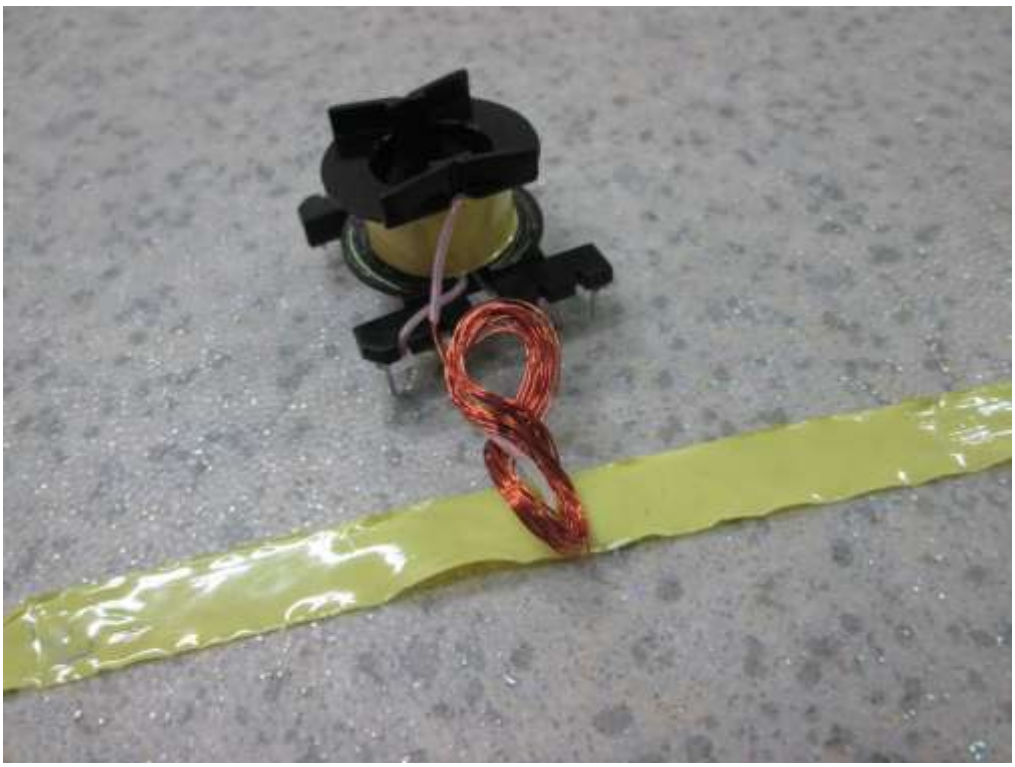


Internal view of transformer

Internal view of transformer

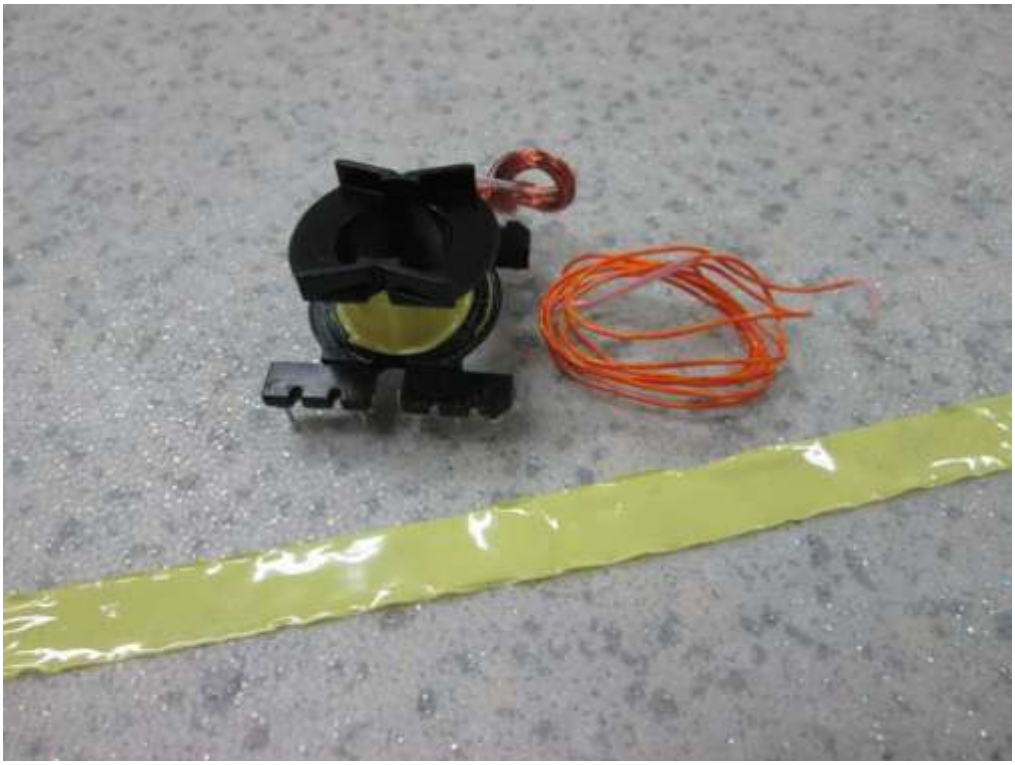
IEC 61347-2-13
Attachment 7: Product photos

Internal view of transformer

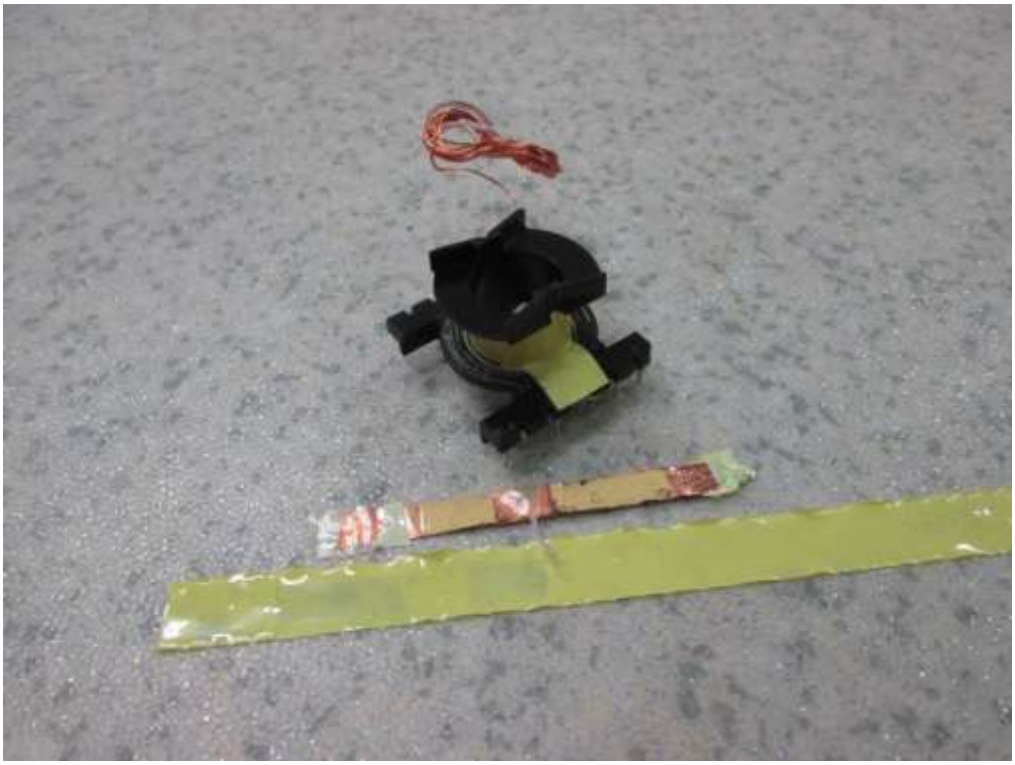


Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos



Internal view of transformer



Internal view of transformer

IEC 61347-2-13
Attachment 7: Product photos

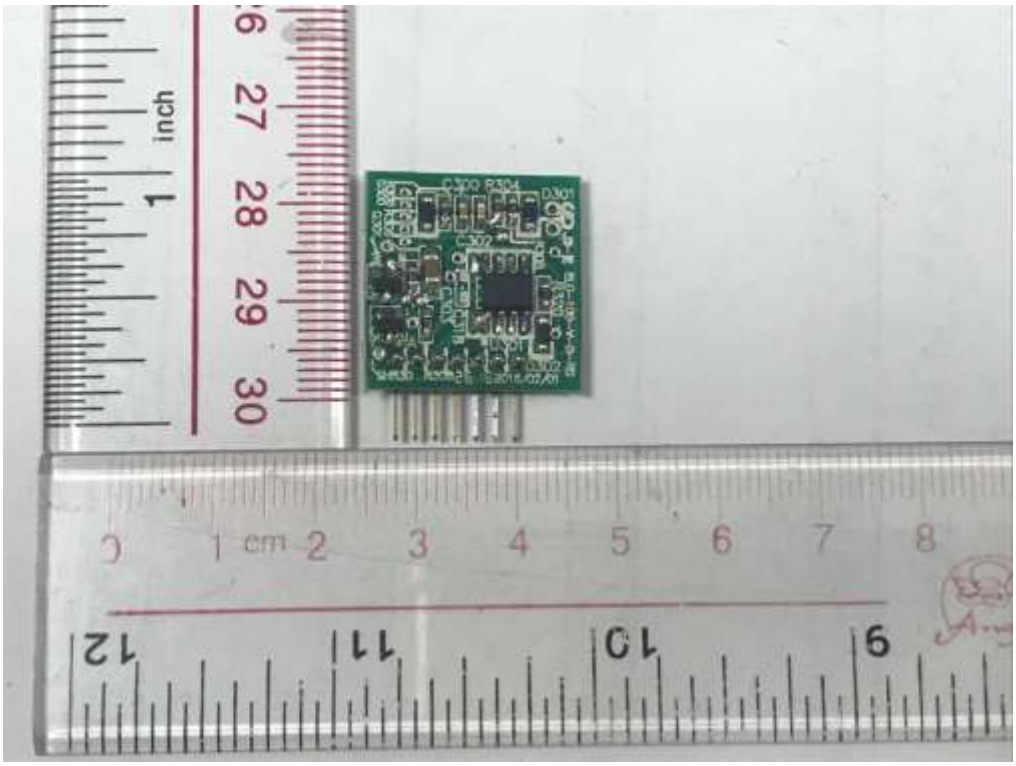
Internal view of transformer

Overall view of ELG-100-C1400D

IEC 61347-2-13
Attachment 7: Product photos

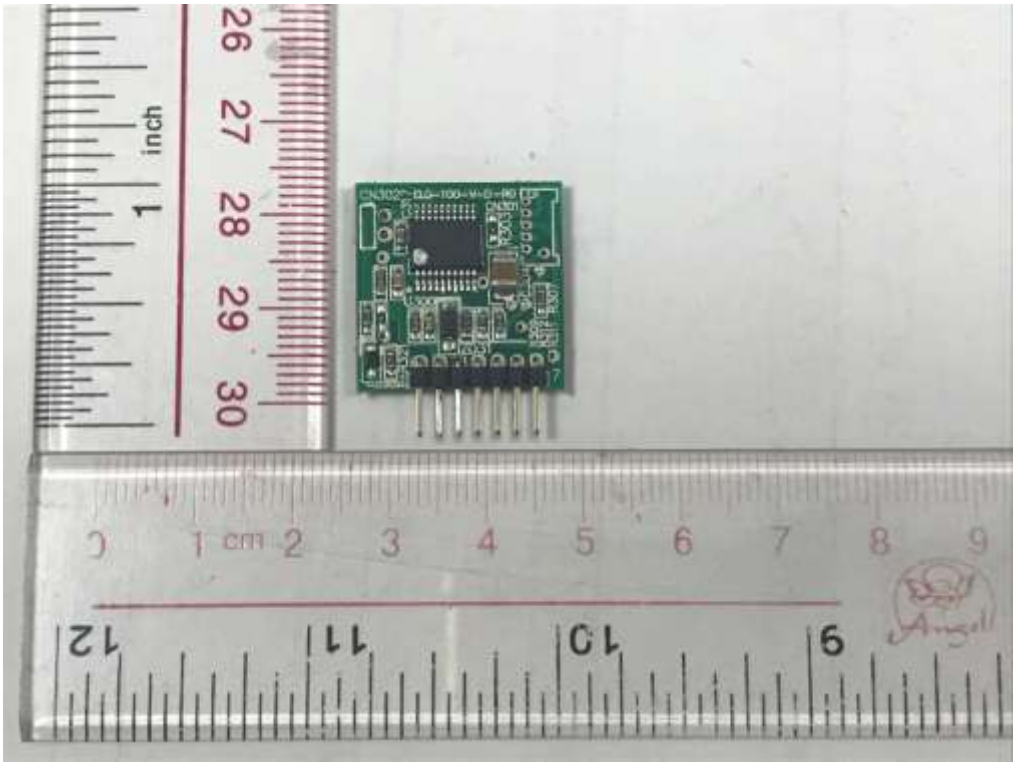
Internal view, ELG-100-C1400D before potting

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).



Detailed view of dimming PCB (Type D)

IEC 61347-2-13
Attachment 7: Product photos



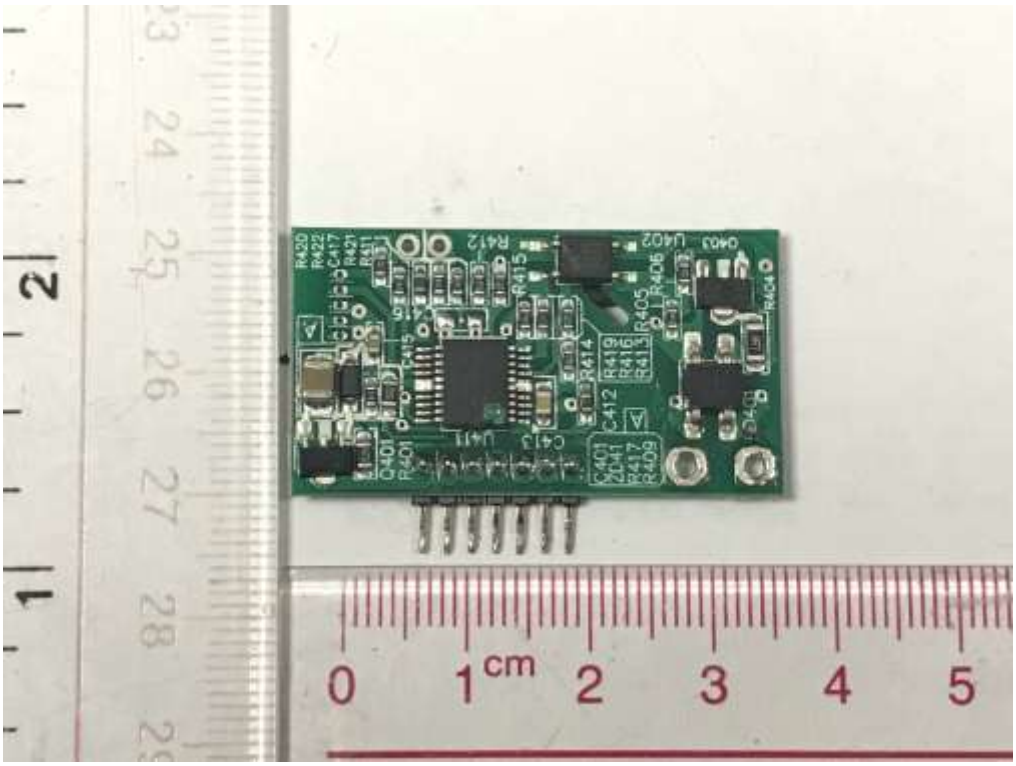
Detailed view of dimming PCB (Type D)

Overall view of ELG-100-C1400DA

IEC 61347-2-13
Attachment 7: Product photos

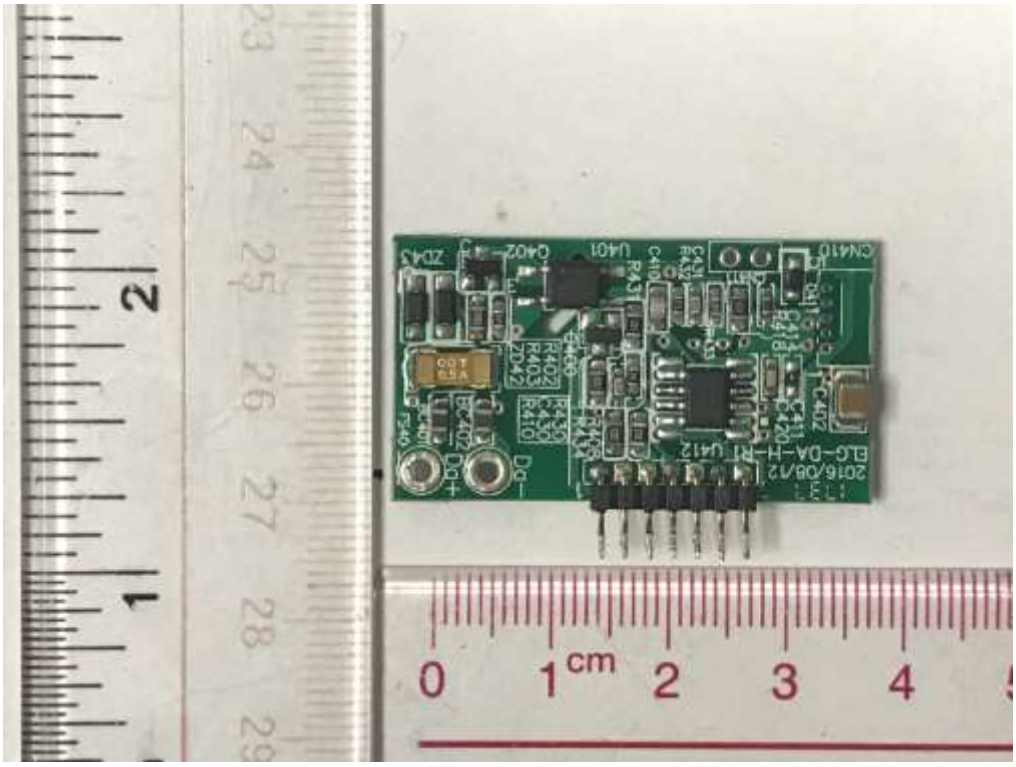
Internal view, ELG-100-C1400DA before potting

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).

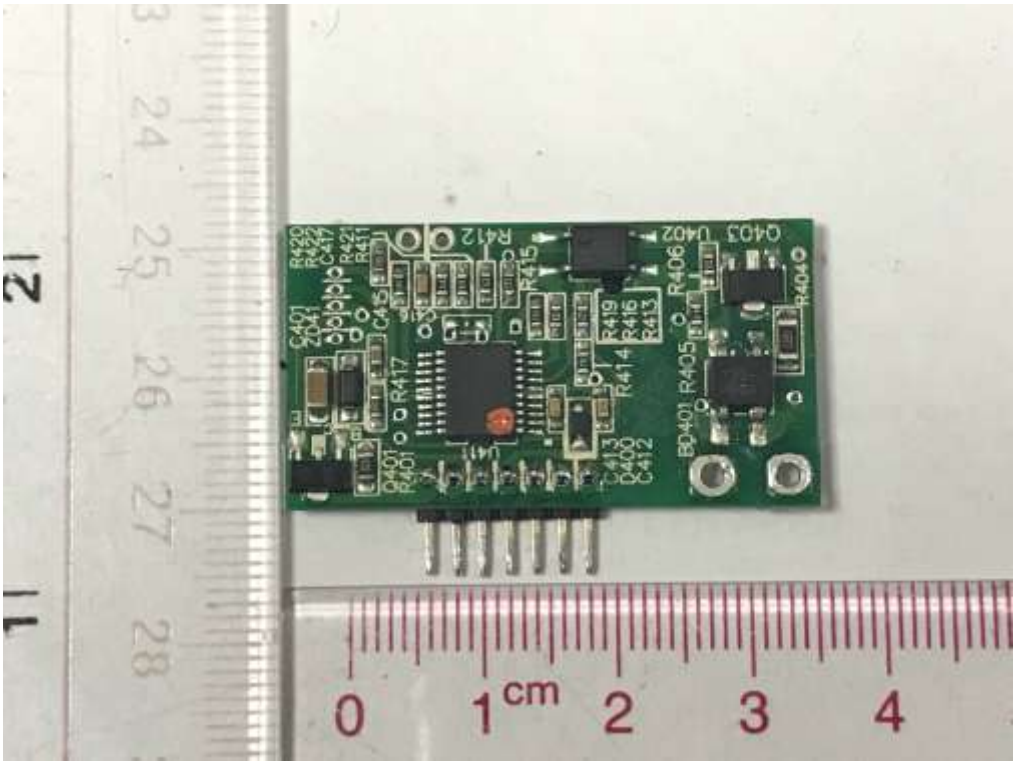


Detailed view of dimming PCB (Type DA)

IEC 61347-2-13
Attachment 7: Product photos

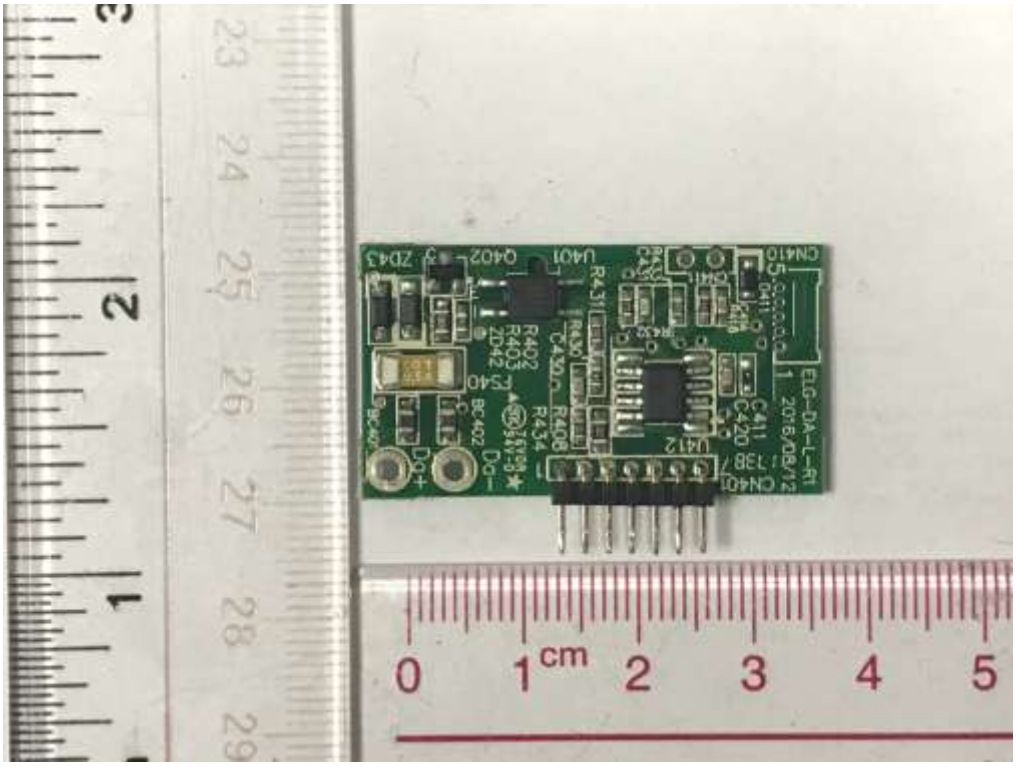


Detailed view of dimming PCB (Type DA)



Detailed view of dimming PCB (Alternative for Type DA)

IEC 61347-2-13
Attachment 7: Product photos



Detailed view of dimming PCB (Alternative for Type DA)

Overall view of ELG-100-54A

IEC 61347-2-13
Attachment 7: Product photos

Rear view of ELG-100-54A (IP65 construction)

Note: Models ELG-100-CXY (Y= A, AB, ADA, AD2), addition hole on rear cover blocked with plastic cap used for dimming through internal potentiometer.

Internal view, ELG-100-54A

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds).

IEC 61347-2-13
Attachment 7: Product photos

Overview of ELG-100-1400A

Rear view of ELG-100-1400A (IP65 construction)

Note: Models ELG-100-XY (Y= A, AB, ADA, AD2), addition hole on rear cover blocked with plastic cap used for dimming through internal potentiometer.

IEC 61347-2-13
Attachment 7: Product photos

Internal view, ELG-100-C1400A

Note: LED driver PCB was totally filled by self-hardening resin (Potting compounds)

-END-