TEST REPORT

Reference No.	:	WTU21N03018974L
Applicant	:	LUMATEK LTD.
Address	:	Ewropa Business centre Level 3 – 701 Dun Karm Street Birkirkara BKR 9034 MALTA
Manufacturer	:	LUMATEK LTD.
Address	:	Ewropa Business centre Level 3 – 701 Dun Karm Street Birkirkara BKR 9034 MALTA
Product Name	:	Electronic Ballast
Model No.	:	630W
Standards	:	Lamp controlgear -- IEC 61347-1:2015+A1:2017 Part 1: General and safety requirements IEC 61347-2-12:2005+A1:2010 Part 2-12: Particular requirements for d.c. or a.c. supplied electronic ballasts for discharge lamps (excluding fluorescent lamps) Used in conjunction with EU deviation
Date of Receipt sample	:	2021-03-12
Date of Test	:	2021-03-12 to 2021-04-12
Date of Issue	:	2021-04-12
Test Report Form No.	:	WSL-61347212E-01A
Test Result	:	**Pass**

Remarks: The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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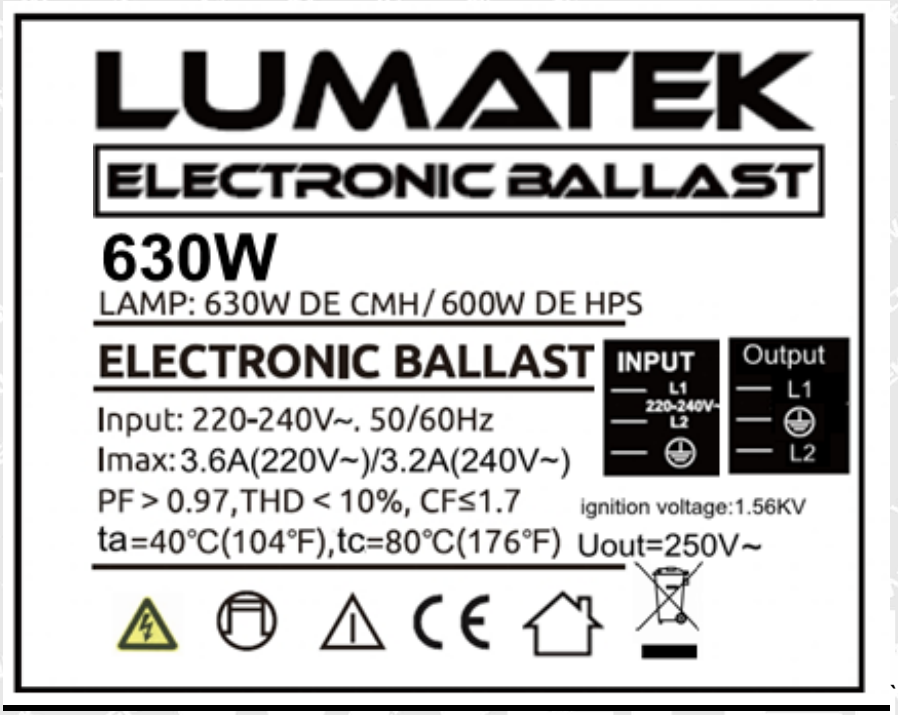
Test item description .....:	Electronic Ballast
Trademark .....:	LUMATEK
Model and/or type reference .....:	630W
Rating(s).....:	220-240V~,50/60Hz,630W,IP20,Class I ,ta 40℃

Rating label:



Marked on the exterior surface

Note: height of CE mark at least 5mm, height of WEEE mark at least 7mm, height of other marks at least 5mm, heights of letters and numerals at least 2 mm.

Remark: The marking labels for other models are identical as above, except with model No. and rating.

1. As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.
2. Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.
3. Manufacture or/and his importer shall ensure product bears label requirements in article 6 and article 8 of the 2014/35/EU relate to name, batch number, post address prior place the product into EU market.

Summary of testing:

Only the most unfavourable results have been recorded.

Test items particulars:	Electronic Ballast
Classification of installation and use..... :	Fixed and indoor use
Supply Connection ..... :	Supply cord with plug
Possible test case verdicts:	
- test case does not apply to the test object..... :	N (Not applicable)
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
General remarks:	
"(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator.	
General product information:	
1. Independent electronic controlgear for discharge lamps. 2. Class I; IP 20; more information see model list below.	

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Clause	Requirement + Test	Result - Remark	Verdict
4 (4)	**GENERAL REQUIREMENTS**		**P**
- (4)	Insulation materials for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	N
- (4)	Compliance of independent controlgear enclosure with IEC 60598-1		P
- (4)	Built-in magnetic ballast with double or reinforced insulation comply with Annex I of IEC 61347-1		N
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N
- (4)	SELV controlgear comply with Annex L of IEC 61347-1	(see Annex L)	N
6 (6)	**CLASSIFICATION**		**P**
	Built-in controlgear ..... :	Yes ☐ No ☒	—
	Independent controlgear ..... :	Yes ☒ No ☐	—
	Integral controlgear ..... :	Yes ☐ No ☒	—
6 (-)	Output voltage categories		—
	Up to and including 5 kV	Yes ☒ No ☐	—
	Greater than 5 kV, and up to and including 10 kV	Yes ☐ No ☒	—
	Greater than 10 kV, and up to and including 100 kV	Yes ☐ No ☒	—
7	**MARKING**		P
7.1 (7.1)	**Mandatory markings (other than integral ballast)**		P
	a) mark of origin	See rating label	P
	b) model number or type reference	See rating label	P
	c) symbol for independent controlgear, if applicable		P
	d) correlation between interchangeable parts and controlgear marked		N
	e) rated supply voltage (V)	220-240V~	P
	supply frequency (Hz)	50/60Hz	P
	supply current (A)	3,6A(max)	P
	f) earthing symbol, if applicable		P
	k) wiring diagram		P
	l) value of t_c	80°C	P
7.1 (-)	- control terminals identified, if applicable		N
	- output terminals identified		P
	- ignition voltage if > 1500V (V) ..... :	1,56KV	P
	- flash symbol if ignition voltage > 5000V		N
	Declared maximum working voltage (r.m.s)		P
	- between output terminals		P
	- between output terminal and earth, if applicable		P
	- given in the description		P
	- marked on the ballast		P

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Clause	Requirement + Test	Result - Remark	Verdict
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 on protection against accidental contact		N
	i) cross-section of conductors (mm²)		P
	j) number, type and wattage of lamp(s)		P
	m) symbol for thermally protected ballast		N
	n) heat sink(s)		N
7.2 (-)	- marking of ballast if more than one unit		P
	- overheating in a multi ballast installation		N
	- time limitation of ignition voltage		N
	- control terminals not basic insulated		N
8 (8)	**TERMINALS**		**N**
- (8.1)	**Integral terminals**		**N**
	Screw terminals according section 14 of IEC 60598-1:		**N**
	Separately approved; component list	(see Annex 1)	N
	Part of the controlgear	(see Annex 2)	N
	Screwless terminals according section 15 of IEC 60598-1:		**N**
	Separately approved; component list	(see Annex 1)	N
	Part of the controlgear	(see Annex 3)	N
- (8.2)	**Terminals other than integral terminals**		N
	Comply with relevant IEC standard	(see Annex 1)	N
	Suit the conditions		N
	Satisfy additional relevant requirements of this standard		N
9 (9)	**PROVISION FOR EARTHING**		**P**
- (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		N
	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
	Comply with clause 8 and 9.1		N
	Functional earth insulated from live parts by double or reinforced insulation		N
- (9.3)	**Lamp controlgear with conductors for protective earthing by tracks on printed circuit board**		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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 ..... :	0,25Ω	P
- (9.4)	**Earthing of built-in lamp controlgear**		N
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N
	Earthing terminal only for earthing the built-in controlgear		N
- (9.5)	**Earthing via independent controlgear**		P
- (9.5.1)	Earth connection to other equipment		N
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N
	Protective earthing wires in line with 5.3.1.1 and clause 7		P
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		P
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :	0,25Ω	P
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		P
10 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	N
- (A3)	Voltage > 35 V r.m.s. or > 60 V d.c. or protective impendence device	(see Annex A)	N
- (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 .....:	4,4μF ,8V	P
- (10.3)	**Controlgear providing SELV**		N
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N
	No connection between output circuit and the body or protective earthing circuit		N
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N
	SELV outputs separated by at least basic insulation		N
	ELV conductive parts insulated as live parts		N
	Tests according Annex L of IEC 61347-1		N
- (10.4)	**Accessible conductive parts in SELV circuits**		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N
	Y1 or Y2 capacitors comply with IEC 60384-14		N
	Resistors comply with test (a) in 14.1 of IEC 60065		N
11 (11)	**MOISTURE RESISTANCE AND INSULATION**		**P**
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ ..... :	>100 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ ..... :		N
- (11)	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N
12 (12)	**ELECTRIC STRENGTH**		**P**
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		N
	Working voltage ≤ 50 V, test voltage 500 V		N
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	L to N(F1 open): 1480V, L /N to enclosure: 1480V, Output to enclosure:1480V	P
	Supplementary insulation, 2U + 1000 V		N
	Double or reinforced insulation, 4U + 2000 V		N
	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
14 (14)	**FAULT CONDITIONS**		**P**
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	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)	P
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (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 supply		—
15	**PROTECTION OF ASSOCIATED COMPONENTS**		**P**
15.1	Voltage at the output terminals, under normal and abnormal conditions, does not exceed the declared maximum working voltage		P
15.2	Declared time limitation is not exceeded, under normal and abnormal conditions		P
15.3	Control terminals isolated from the mains circuit by at least basic insulation, or marking according to 7.2		N
16	**IGNITION VOLTAGE**		**P**
16.1	Measurements by oscilloscope or electrostatic voltmeter		P
16.2	Ignition voltage not exceed 5 kV or 1,3 x Up		P
16.3	Cut-out time:		N
	- max. 60 s for ignition voltage 5 to 10 kV		N
	- max. 20 min. for ignition voltage 5 to 10 kV if evident that the ballast still trying to ignite		N
	- max. 3 or 30 s for ignition voltage > 10 kV		N
17	**ABNORMAL CONDITIONS**		**P**
	Safety not impaired when ballast is operated at any voltage between 90% and 110% of rated voltage		P
	The following condition(s) was/were applied for 1 h:		—
	a) lamp not inserted or does not ignite		P
	b) burner leaks		P
	c) rectifying effect		P
	No defect impairing safety		P
	No flammable gases, molten material or smoke produced		P

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Clause	Requirement + Test	Result - Remark	Verdict
18 (15)	**CONSTRUCTION**		**P**
- (15.1)	**Wood, cotton, silk, paper and similar fibrous material**		**P**
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	**Plugs and socket-outlets used in SELV or ELV circuits**		N
	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
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N
	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
	- plugs not able to enter socket-outlets of other standardised system		N
	- socket-outlets not admit plugs of other standardised system		N
	- socket-outlets without protective earth		N
- (15.4)	**Insulation between circuits and accessible parts**		P
- (15.4.2)	SELV circuits		N
	Source used to supply SELV circuits:		N
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		N
	- another source		N
	Voltage in the circuit not higher than ELV		N
	SELV circuits insulated from LV by double or reinforced insulation		N
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N
	SELV circuits insulated from FELV circuits by supplementary insulation		N
	SELV circuits insulated from other SELV circuits by basic insulation		N
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N
- (15.4.3)	FELV circuits		N
	Source used to supply FELV circuits:		N
	- separating transformer in accordance with relevant part 2 of IEC 61558		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N
	- another source		N
	- source in circuits separated by the LV supply by basic insulation		N
	Voltage in the circuit not higher than ELV		N
	FELV circuits insulated from LV supply by at least basic insulation		N
	FELV circuits insulated from other FELV circuits if functional purpose		N
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N
	Plugs and socket-outlets for FELV system comply with:		N
	- plugs not able to enter socket-outlets of other voltage systems		N
	- socket-outlets not admit plugs of other voltage systems		N
	- socket-outlets have a protective conductor contact		N
- (15.4.4)	Other circuits		P
	Insulation between circuits other than SELV or FELV and accessible conductive parts in according Table 6 in 15.4.5.		P
- (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
	- all conductive parts are connected together		N
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N
	- conductive parts comply with requirements of Annex A in case of insulation fault		N

19 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
- (16)	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		N
	Insulating lining of metallic enclosures		N
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N
- (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
	Creepage distances according to Table 8	(see appended table)	N
- (16.3)	**Clearances**		P
- (16.3.2)	Clearances for working voltages		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N

20 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**
- (17)	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
(4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N
(4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N
(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
(4.12)	**Mechanical connections and glands**		P
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part ..... :	Screws for fixing enclosure :2,86mm;0.5Nm	P
	Torque test: torque (Nm); part ..... :	Screws for fixing earthing :2,91mm;0.5Nm	P
	Torque test: torque (Nm); part ..... :	Screws for fixing PCB:2,94mm;0,5Nm	P
(4.12.2)	Screws with diameter < 3 mm screwed into metal		P
(4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm)..... :		N
	- lampholder; torque (Nm)..... :		N
	- push-button switches; torque 0,8 Nm..... :		N
(4.12.5)	Screwed glands; force (Nm) ..... :		N

21 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
- (18.1)	Ball-pressure test ..... :	See Test Table 21 (18.1)	P
- (18.2)	Test of printed boards ..... :	See Test Table 21 (18.2)	P
- (18.3)	Glow-wire test ..... :	See Test Table 21 (18.3)	P
- (18.4)	Needle flame test ..... :	See Test Table 21 (18.4)	P
- (18.5)	Tracking test ..... :	See Test Table 21 (18.5)	N

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

14	**TABLE: tests of fault conditions**		**P**
Part	Simulated fault		Hazard

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Clause	Requirement + Test	Result - Remark	Verdict

BD1	Short circuit, 0W,0A;fuse opened	NO
C13	Short circuit, 0W,0A;fuse opened	NO
C4	Short circuit, 0W,0A;fuse opened	NO
C41	Short circuit, 2,1W, 0,009A; No working.	NO
C49	Short circuit, 2,0W, 0,009A; No working.	NO
RV1	Short circuit, 0W, 0A; fuse opened	NO
RT1	Short circuit, 653W, 2,658A; Normal work.	NO
D7	Short circuit, 2,0W, 0,009A; No working.	NO
D11	Short circuit, 653W, 2,658A; Normal working.	NO
D4	Short circuit, 2,0W, 0,008A; No working.	NO
D5	Short circuit, 1,8W, 0,15A; No working.	NO
D3	Short circuit, 653W, 2,658A; Normal work.	NO
DZ5	Short circuit, 2,0W, 0,009A; No working.	NO
D2	Short circuit, 653W, 2,658A; Normal work.	NO
DZ2	Short circuit, 4,1W, 0,365A; No working.	NO
DZ1	Short circuit, 653W, 2,658A; Normal work.	NO
D9	Short circuit, 653W, 2,658A; Normal work.	NO
DZ3	Short circuit, 653W, 2,658A; Normal work.	NO
D10	Short circuit, 4,1W, 0,325A; No working.	NO
$U1_{3-4}$	Short circuit, 2,3W, 0,009A; No working.	NO
$T1_{G-S}$	Short circuit, 653W, 2,658A; Normal work.	NO
D1	Short circuit, 0W, 0A; Fuse opened.	NO
$T3_{G-S}$	Short circuit,653W, 2,658A; Normal work.	NO

19 (16)	**TABLE: creepage distance and clearance (mm)**	**P**

Applicable part of IEC 61347-1 Table 7 – 11*

Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**	
			clearance	***Table**		**creepage**	***Table**
Distance 1:	B	>3,5	1,5	9	4,0	2,5	9
Working voltage (V) ..... :					240		—
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: Different polarities							
Distance 2:	B	>3,5	1,5	9	4,0	2,5	9
Working voltage (V) ..... :					240		—
Frequency if applicable (kHz) ..... :					--		—
PTI ..... :					< 600 ☒	≥ 600 ☐	—

EN 61347-2-12			
Clause	Requirement + Test	Result - Remark	Verdict

Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :	--	—
Pulse voltage if applicable (kV) ..... :	--	—
Supplementary information: Live part and accessible part.		

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

21 (18.1)	**TABLE: Ball Pressure Test**			**P**
Allowed impression diameter (mm) ..... :		2mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB	See Annex 1	125	0,6	
Supplementary information:				

21 (18.2)	**TABLE: Test of printed boards**				**P**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
PCB	See Annex 1	30	No	--	P
Supplementary information:					

21 (18.3)	**TABLE: Glow-wire test**			**P**
Glow wire temperature :		**650°C**		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Insulation sheet	See Annex 1	No	--	P
Supplementary information:				

21 (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
PCB	See Annex 1	10	No	0	P
Connector		10	No	0	P
Supplementary information:					

21 (18.5)	**TABLE: Proof tracking test**				**P**
Test voltage PTI :		**175 V**			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
PCB	See Annex 1	P	P	P	P
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict
A (A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		N
-(A.1)	Comply with A.2 or A.3		N
-(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c ..... :	Max. 218AC	N
-(A.3)	If voltage > 35 V r.m.s. or > 60 V d.c. or protective impendence device; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. ..... :	125mA	N
(C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		N
(C3)	**GENERAL REQUIREMENTS**		**N**
(C3.1)	Thermal protection means integral with the controlgear, protected against mechanical damage		N
	Renewable only by means of a tool		N
	If function depending on polarity, for cord-connected equipment protection means in both leads		N
	Thermal links comply with IEC 60691		N
	Electrical controls comply with IEC 60730-2-3		N
(C3.2)	No risk of fire by breaking (clause C7)		N
(C5)	**CLASSIFICATION**		**N**
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description .. :		N
(C6)	**MARKING**		**N**
(C6.1)	Symbol for temperature declared thermally protected controlgear		N
(C6.2)	Declaration of the type of protection provided		N
(C7)	**LIMITATION OF HEATING**		**N**
(C7.1)	**Preselection test:**		N
	Test sample placed for at least 12 h in an oven having temperature (t_c - 5) K		N
	No operation of the protection device		N
(C7.2)	**Functioning of protection means:**		N
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		N
	No operation of the protection device		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Introducing of the most onerous test condition determined during test of clause 14		N
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N
	Increasing of the current through the windings continuously until operation of the protection means		N
	Continuous measuring of the highest surface temperature		N
	Controlgear according to C5 a) or C5 e) operated until stable conditions are achieved		N
	Automatic-resetting thermal protectors working 3 times		N
	Controlgear according to C5 b) working 6 times		N
	Controlgear according to C5 c) and C5) d) working once		N
	Highest temperature does not exceed the marked value		N
	Any overshoot of 10% over the marked value within 15 min		N
(D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		**N**
	Tests in C7 performed in accordance with Annex D, if applicable		N
F(F)	**ANNEX F – DRAUGHT-PROOF ENCOSURE**		**P**
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P
	Other design; description		N
I (-)	**ANNEX I IN THIS PART 2 - – PRECAUTIONS TO BE OBSERVED WHEN MEASURING WITH SPHERICAL SPARK GAPS**		N
	Precautions according Annex I		N
-(L)	**ANNEX L IN PART 1: PARTICULAR ADDITIONAL REQUIREMENTS FOR CONTROLGEAR PROVIDING SELV**		N
-(L.3)	**Classification**		**N**
	Class I	Yes ☐ No ☐	—
	Class II	Yes ☐ No ☐	—
	Class III	Yes ☐ No ☐	—
	non-inherently short circuit proof controlgear	Yes ☐ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☐	—

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Clause	Requirement + Test	Result - Remark	Verdict
	fail safe controlgear	Yes ☐ No ☐	—
	non-short-circuit proof controlgear	Yes ☐ No ☐	—
-(**L.4**)	**Marking**		**N**
	Adequate symbols are used		N
-(**L.5**)	**Protection against electric shock**		**N**
	Comply with 9.2 of IEC 61558-1		N
-(**L.6**)	**Heating**		**N**
	No excessive temperatures in normal use		N
	Value if capacitor t_c marked .....:		—
	Winding insulation classified as Class .....:		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N
-(**L.7**)	**Short-circuit and overload protection**		**N**
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N
-(**L.8**)	**Insulation resistance and electric strength**		**N**
-(L.8.1)	Conditioned 48 h between 91 % and 95 %		N
-(L.8.2)	Insulation resistance		N
	Between input- and output circuits not less than 5 _MΩ .....:		N
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ .....:		N
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ .....:		N
-(L.8.3)	Electric strength		N
	1) Between live parts of input circuits and live parts of output circuits .....:		N
	2) Over basic or supplementary insulation between:		N
	a) live parts having different polarity .....:		N
	b) live parts and body if intended to be connected to protective earth .....:		N
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord .....:		N
	d) live parts and an intermediate metal part .....:		N
	e) intermediate metal parts and the body .....:		N
	f) each input circuit and all other input circuits ...:		N
	3) Over reinforced insulation between the body and live parts .....:		N
-(**L.9**)	**Construction**		**N**

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Clause	Requirement + Test	Result - Remark	Verdict
-(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N
	HF transformer comply with 19 of IEC 61558-2-16		N
-(**L.10**)	**Components**		**N**
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N
-(**L.11**)	**Creepage distances and clearances**		**N**
	Creepage distances and clearances not less than in Clause 16		N
	Distance through insulation according Table L.5 in IEC 61347-1		N
	1) Basic distance through insulation		N
	Required distance (mm)		—
	Measured (mm)		N
	Supplementary information		—
	2) Supplementary distance through insulation		N
	Required distance (mm)		—
	Measured (mm)		N
	Supplementary information		—
	3) Reinforced distance through insulation		N
	Required distance (mm)		—
	Measured (mm)		N
	Supplementary information		—
-(N)	**ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**		N
-(**N.4**)	**General requirements**		**N**
-(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N
-(N.4.2)	Solid insulation		N
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N
	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
-(N.4.3)	Thin sheet insulation		N
-(N.4.3.1)	Thickness and composition of thin sheet insulation		N
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N

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

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

- (P)	**ANNEX P IN PART 1: Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting**		N
- (P.1)	**General**		**N**
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N
- (P.2)	**Creepage distances**		**N**
- (P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N
	Basic or supplementary insulation:		N
	Required creepage		—
	Measured		N
	Supplementary information		—
	Reinforced insulation:		N
	Required creepage		—
	Measured		N
	Supplementary information		—
- (P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N
	Voltage $\hat{U}_{out}$ kV		—

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

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	**TABLE: Critical components information**					**P**
Object/part No.	Code	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
Plug	B	Chau's Electrical Co., Ltd.	CE-501S	250 V 16A	VDE 0620-2-1	VDE 40006607
Alt.	B	NINGBO XUANHUA ELECTRIC CO. LTD.	XH-03B	250 V 16A	VDE 0620-2-1	VDE 40019692
Alt.	B	NINGBO XUANHUA ELECTRIC CO. LTD.	XH-03	250 V 16A	VDE 0620-2-1	VDE 40019691
Alt.	B	New Square Company Ltd.	NS-20	250 V 16A	VDE 0620-2-1	VDE 40012985
Alt.	B	Chau's Electrical Co., Ltd.	BS-01	250 V 10A	BS 1363 Parts 1-5	BSI KM 41436
Alt.	B	Chau's Electrical Co., Ltd.	CE-507	250 V 10A	VDE 0620-2-1	S+20.0208
Alt.	B	New Square Company Ltd.	NS-20	250 V 16A	VDE 0620-2-1	VDE 40012985
Supply cord	B	Chau's Electrical Co., Ltd.	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 40022055
Alt.	B	NINGBO XUANHUA ELECTRIC CO. LTD.	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 40016531
Alt.	B	Ningbo Xuanhua Electric Co., Ltd.	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 40047946
Alt.	B	NINGBO XUANHUA ELECTRIC CO. LTD.	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 40038850
Alt.	B	Shenzhen Lilutong Technology	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 40043199
Alt.	B	New Square Company Ltd.	H05VV-F	3×1,5mm^2	EN 50525-2-11	VDE 116006
Alt.	B	Dong Guan Ever United	H05VV-F	3×1,5mm^2	EN 50525-2-21	VDE 098629

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Clause	Requirement + Test	Result - Remark	Verdict

Wire connector	C	ZHEJIANG YUESHEN ELECTRON CO LTD	TJC3-2A	250V 3A	EN 61347-1 EN 61347-2-12	UL E315941 +Tested with appliance
Alt.	C	ZHEJIANG KUAILI ELECTRONICS CO LTD	KL25000-2A	250V 3A	EN 61347-1 EN 61347-2-12	UL E307817 +Tested with appliance
Fuse(F1)	B	Littelfuse Inc.	215	250V, 8A	IEC 60127	VDE 40013521
Alt.	B	Hollyland Company Limited	50CT	250V, 8A	IEC 60127	VDE 40030750
PCB	C	KUNSHAN JINPENG ELECTRONICS CO LTD	JP-2 ,JP-1	V-0, 130℃	EN 61347-1 EN 61347-2-12	UL E306084 +Tested with appliance
Alt.	C	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	V-0, 130°C	EN 61347-1 EN 61347-2-12	UL E231590 +Tested with appliance
Alt.	C	ANHUI HONGXIN ELECTRONIC TECHNOLOGY CO LTD	HX-03,HX-02	V-0, 130°C	EN 61347-1 EN 61347-2-12	UL E468758 +Tested with appliance
Alt.	C	ANHUI JUKANG ELECTRONICS CO LTD	JK-1,JK-2	V-0, 130°C	EN 61347-1 EN 61347-2-12	UL E472363 +Tested with appliance
Alt.	C	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	V-0, 130°C	EN 61347-1 EN 61347-2-12	UL E231590 +Tested with appliance
Varistor (RV1)	B	BRIGHTKING INC	471KD20	470V,D20	IEC61051-1	VDE 40027827
Alt.	B	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR20471	470V,D20	IEC61051-1	VDE 005944
Alt.	B	Xiamen Wanming Electronics Co., Ltd.	20D471K	470V,D20	IEC61051-1	VDE 40043176
Alt.	B	Guangdong Fenghua Advanced Technology Holding CO.,LTD.	FNR-20K471	470V,D20	IEC 61051-1	VDE 40008242

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Clause	Requirement + Test	Result - Remark	Verdict

RT1	C	JIANGSU NEW LINZHI ELECTRONIC TECHNOLOGY CO LTD	CPL09550NX 0D0	55Ω	EN 61347-1 EN 61347-2-12	UL E301459 +Tested with appliance
X2-capacitor (CX1/CX2/CX 3)	B	XIAMEN FARATRONIC	MKP62	1,5uF, 275V,T110	IEC60384-14	VDE 40000358
Alt.	B	Yangzhou Nissei Electronics Co., Ltd.	MP1	1,5uF, 275V T110	IEC 60384-14	VDE 40041628
Alt.	B	Sichuan ZhongxingElectr. Co.Ltd.	MKP61	1,5uF, 275V T110	IEC 60384-14	VDE 40032626
Alt.	B	Fuxin Pan Ocean Electronic Ltd.	MPX-X2	1,5uF, 275V T110	IEC 60384-14	VDE 40015756
Alt.	B	Nistronics (Jiangxi) Co., Ltd.	MPR	1,5uF, 275V T110	IEC 60384-14	VDE 40032056
Alt.	B	Tenta Electric Industrial Co. Ltd.	MEX	1,5uF, 275V T110	IEC60384-14	VDE 119119
CY1/CY2	B	MURATA MFG CO LTD	KY	2200pF, 250V,T125	IEC60384-14	VDE 40006273
Alt.	B	TDK Corporation Honjo Factory	CD	4700pF 250VAC,T125	IEC 60384-14	VDE 40017931
Alt.	B	SUCCESS ELECTRONICS CO LTD	SF	2200pF, 250V T125	IEC60384-14	VDE 40016665
Alt.	B	SUCCESS ELECTRONICS CO LTD	SE	2200pF, 250V T125	IEC60384-14	VDE 122995
Alt.	B	SUCCESS ELECTRONICS CO LTD	SB	2200pF, 250V T125	IEC60384-14	VDE 40016621
Alt.	B	Xiamen Wanming Electronics Co., Ltd.	HM, CM, UM	2200pF, 250V T125	IEC60384-14	VDE 40034436
Alt.	B	TDK CORPORATION	CS	2200pF, 250V	IEC60384-14	VDE 40017931
Alt.	B	Murata Mfg. Co., Ltd.	SA-Series	2200pF, 250V	IEC60384-14	VDE 40042990

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Clause	Requirement + Test	Result - Remark	Verdict

CY1-Control module	B	MURATA MFG CO LTD	KY	2200pF/4400 pF, 250V,T125	IEC60384-14	VDE 40006273
Alt.	B	SUCCESS ELECTRONICS CO LTD	SF	2200pF/4400 pF, 250V T125	IEC60384-14	VDE 40016665
Alt.	B	SUCCESS ELECTRONICS CO LTD	SE	2200pF/4400 pF, 250V T125	IEC60384-14	VDE 122995
Alt.	B	SUCCESS ELECTRONICS CO LTD	SB	2200pF/4400 pF, 250V T125	IEC60384-14	VDE 40016621
Alt.	B	Xiamen Wanming Electronics Co., Ltd.	HM, CM, UM	2200pF/4400 pF, 250V T125	IEC60384-14	VDE 40034436
Alt.	B	TDK CORPORATION	CS	2200pF/4400 pF, 250V T125	IEC60384-14	VDE 40017931
Alt.	B	Murata Mfg. Co., Ltd.	SA-Series	2200pF/4400 pF, 250V	IEC60384-14	VDE 40042990
Relay(K1)	B	Ningbo Jinhai Electronic CoLtd	HF14FW	250V 16A	IEC 61810-1	VDE 40023508
-Alt.	B	SONG CHUAN PRECISION CO LTD	793-P-1A	250V 16A	IEC 61810-1	TUV R50056914
Insulation paper	C	SKC Co. Ltd or equivalent	SG82	VTM-2, 105℃	EN 61347-1 EN 61347-2-12	UL E74359 +Tested with appliance
Alt.	C	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DF6025	VTM-2, 105℃	EN 61347-1 EN 61347-2-12	UL E199019 +Tested with appliance
Alt.	C	JIANGSU YUXING FILM TECHNOLOGY CO LTD	6027D	VTM-2, 105℃	EN 61347-1 EN 61347-2-12	UL E212271 +Tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

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

EN 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 2	**Screw terminals (part of the controlgear)**		**N**
(14)	**SCREW TERMINALS** (EN 60598-1)		**N**
(14.2)	Type of terminal		—
	Rated current (A)		—
(14.3.2.1)	One or more conductors		N
(14.3.2.2)	Special preparation		N
(14.3.2.3)	Terminal size		N
	Cross-sectional area (mm²)		N
(14.3.3)	Conductor space (mm)		N
(14.4)	Mechanical tests		N
(14.4.1)	Minimum distance		N
(14.4.2)	Cannot slip out		N
(14.4.3)	Special preparation		N
(14.4.4)	Nominal diameter of thread (metric ISO thread) .		N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.4.6)	Nominal diameter of thread (mm).....		N
	Torque (Nm)		N
(14.4.7)	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N)		N
(14.4.8)	Without undue damage		N

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Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 3	**Screwless terminals (part of the controlgear)**		N
(15)	**SCREWLESS TERMINALS** (EN 60598-1)		N
(15.2)	Type of terminal ..... :		—
	Rated current (A) ..... :		—
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N
(15.3.6)	Clear connection method		N
(15.3.7)	Clamping independently		N
(15.3.8)	Fixed in position		N
(15.3.10)	Conductor size		N
	Type of conductor		N
(15.5)	Terminals and connections for internal wiring		N
(15.5.1)	Mechanical tests		N
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples).....		N
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....		N
	Insertion force not exceeding 50 N		N
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N
(15.5.2)	Electrical tests		N
	Voltage drop (mV) after 1 h (4 samples)		N
	Voltage drop of two inseparable joints		N
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		N
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		N
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		N
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		N
(15.6)	Terminals and connections for external wiring		N
(15.6.1)	Conductors		N
	Terminal size and rating		N
15.6.2	Mechanical tests		N
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N

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Clause	Requirement + Test	Result - Remark	Verdict

(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N
(15.6.3)	Electrical tests		N
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N

(15.6.3.1) **(15.6.3.2)**	**TABLE: Contact resistance test / Heating tests**									**N**
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
Supplementary information:										

EN 61347-2-12			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 4	**Temperature measurements**		**P**
	Type reference	630W	—
	Lamp used	630W CMH	—
	Operation: heating test is under at tc condition		N
	- abnormal operating mode…:	--	—
	- test 1:……:	240x 1,06=254,4V, Input:2,62 A, 654 W	—

Temperature rise (K) of part	Normal operation	
Temperature rise of part	Test (254,4V)	Limits (°C)
Plug	47,8	90
Supply cord	55,6	90
C7-1	64,8	110
C7-2	67,7	110
C7-3	66,3	110
Relay	65,1	85
C17	68,1	110
C18	69,6	110
C19	69,0	110
C20	70,5	110
C20	66,1	110
RV1	69,5	85
CY1	68,8	125
CY2	69,7	125
C13	71,2	105
C4	78,1	105
C41	68,6	105
C44	75,1	105
C49	73,1	105
L8	73,9	120
T9	81,3	120
L5	55,9	120
TC	71,7	80
PCB	59,0	Cl.11
Internal wire	66,4	125
Wire connector	68,3	Cl.11

EN 61347-2-12			
Clause	Requirement + Test	Result - Remark	Verdict

Output wire of ballast	57,5	90
Mounting surface	47,8	90
Ambient	40	--
Note:		

EN 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex 5	**Independent lamp controlgear acc. to the requirements of EN 60598-1:2015+A1:2018**		**P**
4	**CONSTRUCTION**		**P**
4.13	Mechanical strength		P
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm).....	---	N
	- other parts; energy (Nm)	Enclosure: 0,5 Nm	P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
5	**External and internal wiring**		**P**
5.2.10.3	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....	80N	P
	- torque test: torque (Nm)	0,35Nm	P
	- displacement ≤ 2 mm	1,4mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
9	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
9.2	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP20	—
	- mounting position during test	As in normal use	—
	- fixing screws tightened; torque (Nm).....	---	—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	d) ii) For luminaires with drain holes – no hazardous water entry		N

EN 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		N
1.13.1 (-)	Parts removed before humidity treatment	No such part	N

====== End of Report ======

Photo Documentation

Model: 630W

Photo 1

Description: Over view 1

Photo 2

Description: Rear view

Photo Documentation

Photo 3

Description: Internal view 1

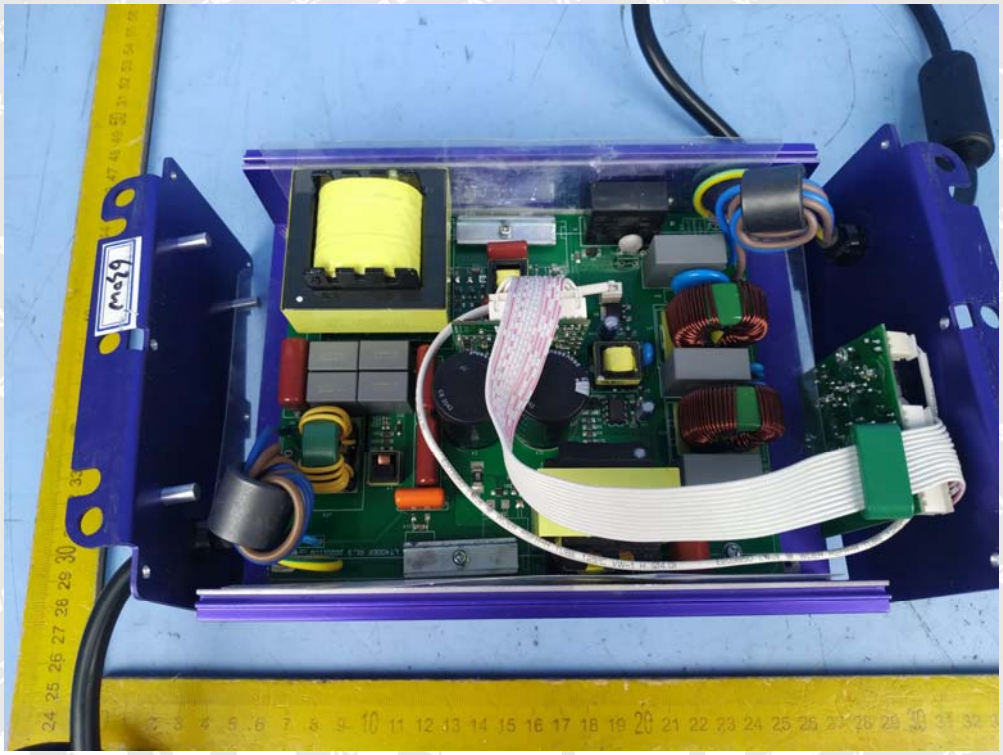

Photo 4

Description: Internal view 2

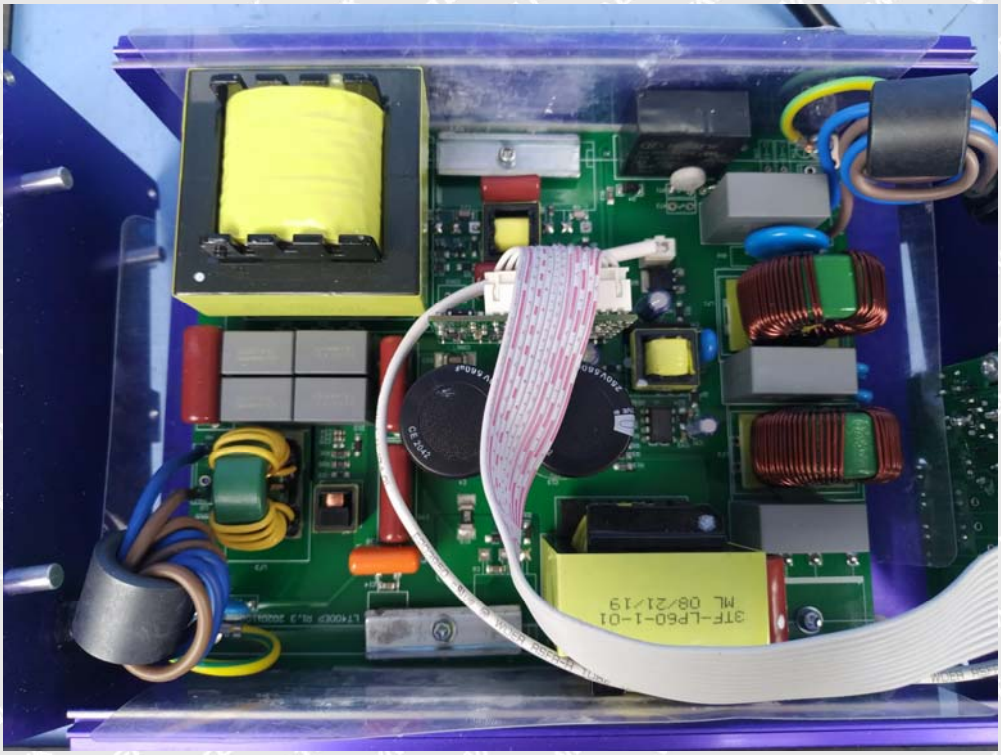

Photo Documentation

Photo 5

Description: Internal view 3

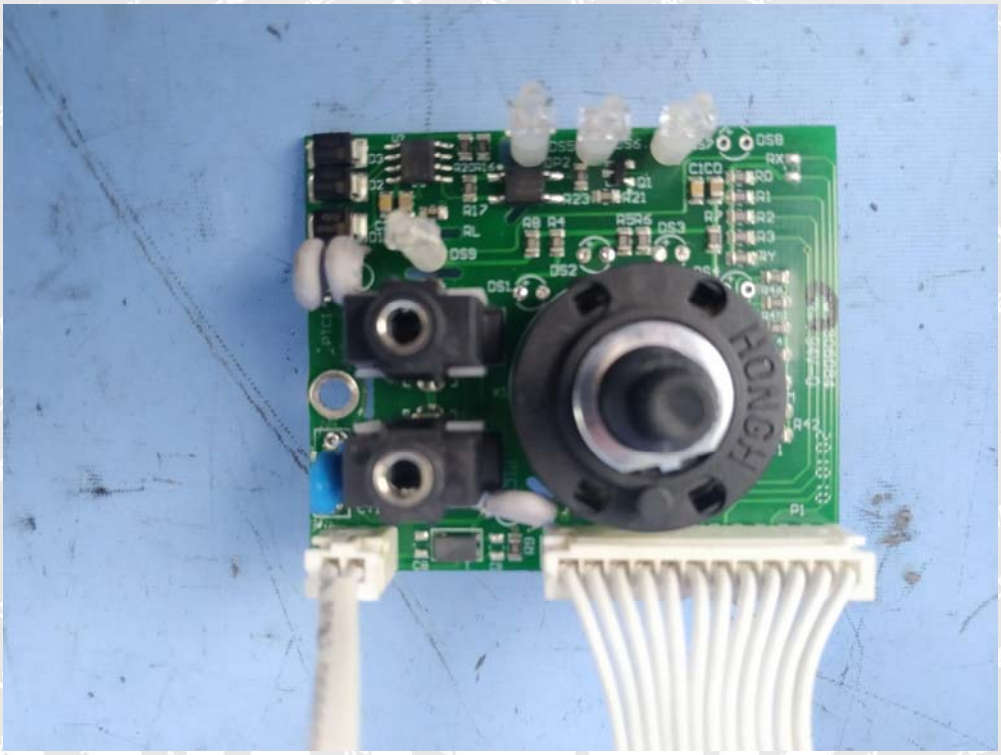

Photo 6

Description: Internal view 4

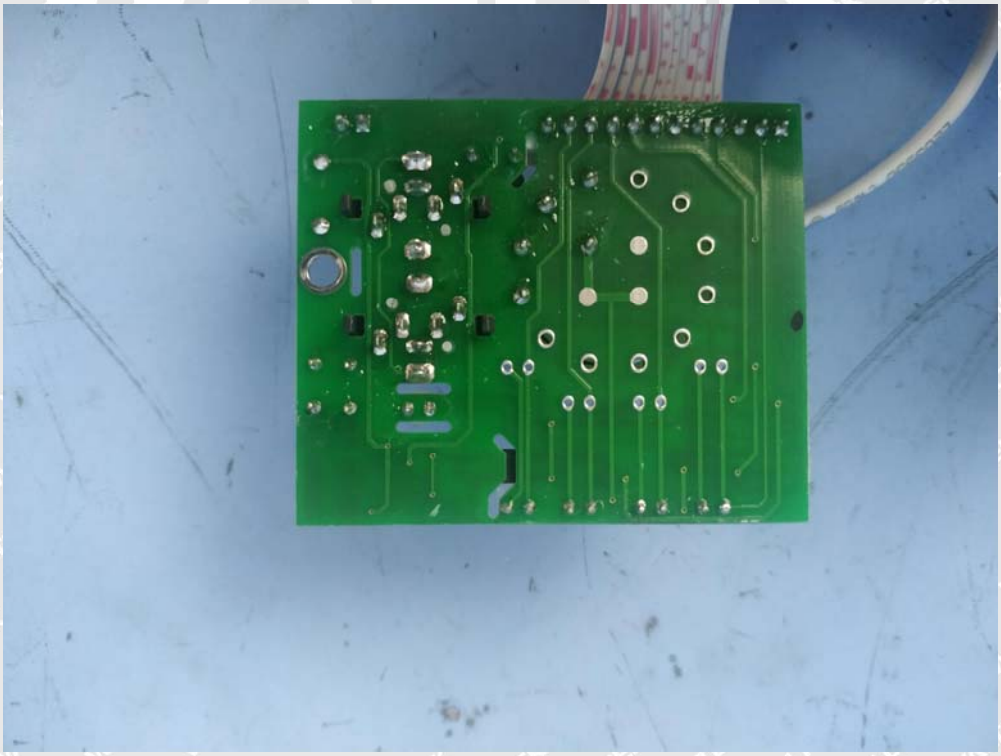

Photo Documentation

Photo 7

Description: Internal view 5

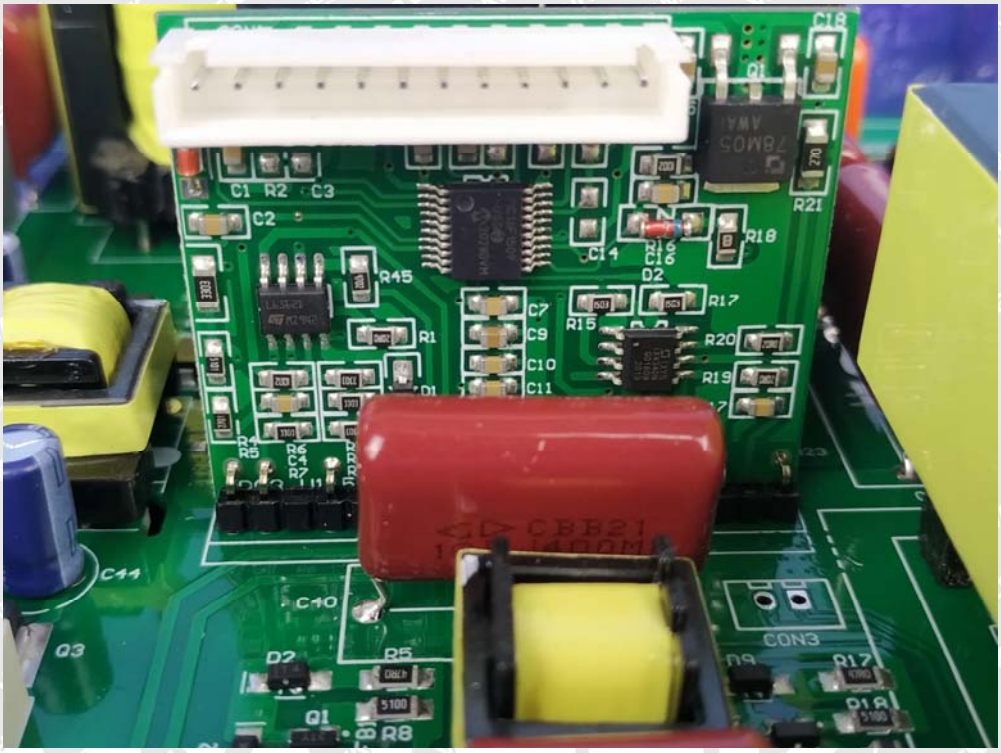

Photo 8

Description: PCB board

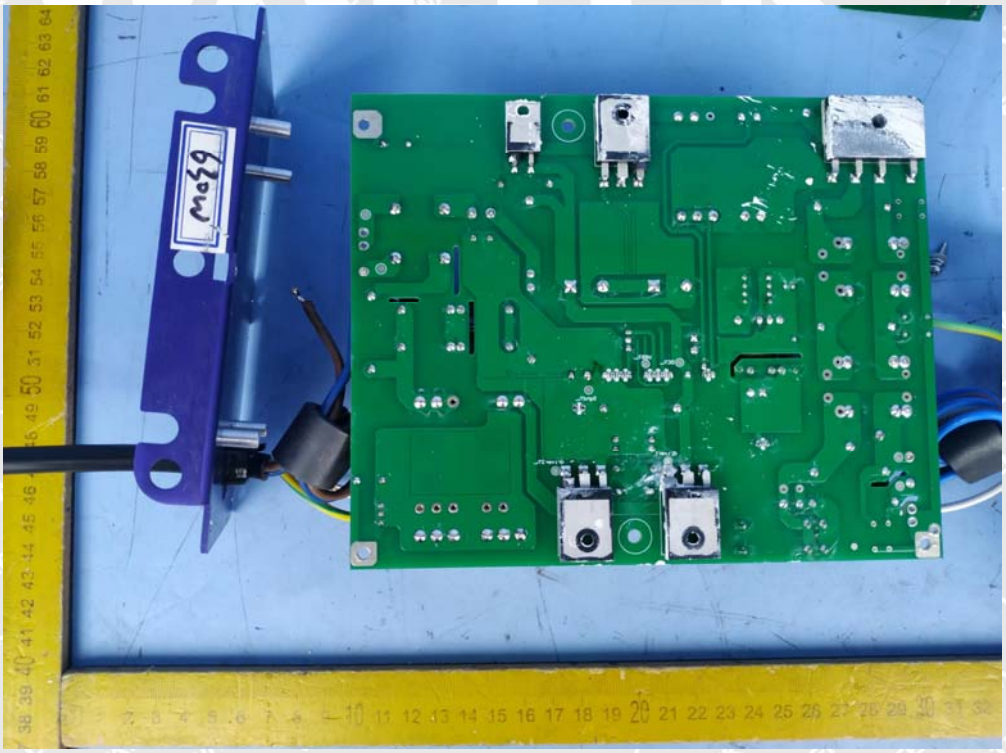

Photo Documentation

Photo 9

Description: Swiss Plug

Photo 10

Description: England Plug

Photo Documentation

Photo 11

Description: England Plug

Photo 12

Description: German Plug

====== End of Photo ======