TEST REPORT

EN 60598-2-17

Luminaires
Part 2: Particular requirements:
Section 17: Luminaires for stage lighting, television and film studios (outdoor and indoor)

Report reference No. ..... :	ED170213032S
Tested by ..... :	Faker Guo
Approved by ..... :	Kobe Mai
Date of issue ..... :	June 19, 2017
Contents ..... :	87 pages

Testing laboratory

Name ..... :	EMTEK(Dongguan) CO., LTD.
Address ..... :	No.281, Guantai Road, Nancheng District, Dongguan, Guangdong, China.
Testing location ..... :	Same as above

Client

Applicant name ..... :	CLF LIGHTING B.V.
Address ..... :	Handelstraat 25 6851 EH Huissen
Manufacturer name ..... :	CLF LIGHTING B.V.
Address ..... :	Handelstraat 25 6851 EH Huissen
Factory name ..... :	CLF LIGHTING B.V.
Address ..... :	Handelstraat 25 6851 EH Huissen

Test specification

Standard ..... :	EN 60598-1:2015; EN 60598-2-17:1989+A2:1991;
Test procedure ..... :	Safety
Procedure deviation ..... :	N/A
Non-standard test method ..... :	N/A

Test item

Product name ..... :	CLF Xena RGBW Par
Trademark ..... :	
Model and/or type reference ..... :	CLF Xena RGBW Par, CLF Quadcolor Mini Par
Rating(s) ..... :	100-240V~ 50/60Hz, 68W ,Class I

Test item particulars ..... :	
Classification of installation and use ..... :	Class I , Fixed mounting
Supply Connection ..... :	Supply cord with plug
..... :	
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 ..... :	May 20, 2017
Date (s) of performance of tests..... :	May 20, 2017 to June 19, 2017

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

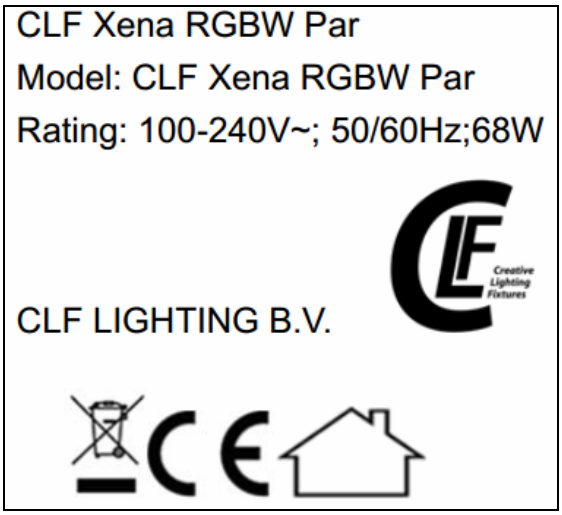
Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

Summary of testing:

1. Full tests were performed on model CLF Xena RGBW Par . And the tests results complied with the requirements of the standards mentioned in page one.
2. Construction checking had been done.
3. EN 61347-2-13:2014 in conjunction with EN 61347-1:2015 was evaluated, details see Attachment No.1.
4. EN 61347-2-11:2001 in conjunction with EN 61347-1:2015 was evaluated, details see Attachment No.2.
5. EN 62301:2008+A1:2013+A2:2015 was considered, details see Attachment No.3.
6. IEC TR62778:2014 was considered, details see Attachment No.4.
7. EN 62471: 2008 was evaluated, classification group: exempt☐ risk 1☒ risk 2☐ risk 3☐, details see report ED170213034S.

Copy of marking plate:



Risk group 1
Caution Possibly hazardous optical radiation emitted from this product. Do not stare at lamp. May be harmful to the eyes.

On luminaire enclosure

Note:
1. The height of graphical symbols shall not be less than 5 mm.
2. The height of letters and numerals either shown separately or with or as part of symbols shall not be less than 2 mm.
3. The height of WEEE symbols shall not be less than 7 mm.

General product information:

1. Fixed LED luminaires, Input: 100V-240V~, 50/60Hz; Class I, 68W ,IP20
2.Only two model is covered in this report.

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

17.2 (0)	**GENERAL TEST REQUIREMENTS**		P
17.2 (0.1)	Information for luminaire design considered ..... :	Yes ☒ No ☐ Lamp standard:	—
17.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—

17.4 (2)	**CLASSIFICATION**		P
17.4 (2.2)	Type of protection ..... :	Class I	P
17.4 (2.3)	Degree of protection..... :	IP20	P
17.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ..... :	Yes ☒ No ☐	—
17.4 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—

17.5 (3)	**MARKING**		P
17.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
17.5 (3.3)	Additional information		P
	Language of instructions	English	P
17.5 (3.3.1)	Combination luminaires		N/A
17.5 (3.3.2)	Nominal frequency in Hz	50/60	P
17.5 (3.3.3)	Operating temperature		N/A
17.5 (3.3.4)	Symbol or warning notice		P
17.5 (3.3.5)	Wiring diagram		N/A
17.5 (3.3.6)	Special conditions		N/A
17.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
17.5 (3.3.8)	Limitation for semi-luminaires		N/A
17.5 (3.3.9)	Power factor and supply current		N/A
17.5 (3.3.10)	Suitability for use indoors		P
17.5 (3.3.11)	Luminaires with remote control		N/A
17.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
17.5 (3.3.13)	Specifications of protective shields		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.5 (3.3.14)	Symbol for nature of supply	~	P
17.5 (3.3.15)	Rated current of socket outlet		N/A
17.5 (3.3.16)	Rough service luminaire		N/A
17.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
17.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
17.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
17.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
17.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
	Cautionary symbol		N/A
17.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
17.5 (3.4)	Test with water	Rubbing lighty for 15s	P
	Test with hexane	Rubbing lighty for 15s	P
	Legible after test		P
	Label attached		P
17.5.1 (-)	If luminaire design imposes restriction of use the luminaire is marked with		P
	a) Indication of the "top"		P
	b) Designed position or range of angle		P
	c) Mounting arrangements		P
17.5.2 (-)	Warning if lamp ≤ 250W		P
17.5.3 (-)	Maximum ambient temperature t_a		P
17.5.4 (-)	Minimum distances from flammable materials		P
17.5.5 (-)	Warning against opening immediately if applicable		N/A
17.5.6 (-)	Value of exterior surface temperature		P
	a) after 5 min		N/A
	b) when steady state		P
17.5.7 (-)	Instruction leaflet contain warnings		P
	a) Visibly damaged shields shall be changed		N/A
	b) Damaged or thermally deformed lamp shall be changed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

17.6 (4)	**CONSTRUCTION**		P
17.6 (4.2)	Components replaceable without difficulty		P
17.6 (4.3)	Wireways smooth and free from sharp edges		P
17.6 (4.4)	**Lampholders**		N/A
17.6 (4.4.1)	Integral lampholder		N/A
17.6 (4.4.2)	Wiring connection		N/A
17.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
17.6 (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
17.6 (4.4.5)	Peak pulse voltage		N/A
17.6 (4.4.6)	Centre contact		N/A
17.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
17.6 (4.4.8)	Lamp connectors		N/A
17.6 (4.4.9)	Caps and bases correctly used		N/A
17.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
17.6 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
17.6 (4.6)	**Terminal blocks**		P
	Tails		N/A
	Unsecured blocks		P
17.6 (4.7)	**Terminals and supply connections**		P
17.6 (4.7.1)	Contact to metal parts		P
17.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
17.6 (4.7.3)	Terminals for supply conductors		P

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Clause	Requirement + Test	Result - Remark	Verdict
17.6 (4.7.3.1)	Welded method and material		P
	- stranded or solid conductor		P
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.2.3 and 15.6.2.4		N/A
17.6 (4.7.4)	Terminals other than supply connection		P
17.6 (4.7.5)	Heat-resistant wiring/sleeves		P
17.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
17.6 (4.8)	**Switches**		P
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
17.6 (4.9)	**Insulating lining and sleeves**		P
17.6 (4.9.1)	Retainment		P
	Method of fixing ..... :	Heat shrinkable	P
17.6 (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
17.6 (4.10)	**Double or reinforced insulation**		N/A
17.6 (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
17.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- no straight access with test probe		N/A
17.6 (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
17.6 (4.11)	**Electrical connections and current-carrying parts**		P
17.6 (4.11.1)	Contact pressure		P
17.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N/A
17.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
17.6 (4.11.4)	Material of current-carrying parts		P
17.6 (4.11.5)	No contact to wood or mounting surface		P
17.6 (4.11.6)	Electro-mechanical contact systems		P
17.6 (4.12)	**Screws and connections (mechanical) and glands**		P
17.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	Screw for fixing LED driver: 2.92mm, 0.5Nm	P
	Torque test: torque (Nm); part..... :	Screw for fixing metal enclousure:3.77mm,1.2Nm	P
	Torque test: torque (Nm); part..... :	Screw for glass lens: 3.88mm, 1.2Nm	P
17.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
17.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- lampholder; torque (Nm) ..... :		N/A
	- push-button switches; torque 0,8 Nm ..... :		N/A
17.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
17.6 (4.13)	**Mechanical strength**		P
17.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :	0.5Nm for glass	P
	- other parts; energy (Nm)..... :	0.7Nm for enclosure	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
17.6 (4.13.3)	Straight test finger	30N	P
17.6 (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
17.6 (4.13.6)	Tumbling barrel		N/A
17.6 (4.14)	**Suspensions, fixings and means of adjusting**		P
17.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	3.467kg*4=13.868 kg	P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
17.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
17.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles..... :	1500	P
	- strands broken ..... :	0%	P
	- electric strength test afterwards		P
17.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
17.6 (4.14.5)	Guide pulleys		N/A
17.6 (4.14.6)	Strain on socket-outlets		N/A
17.6 (4.15)	**Flammable materials**		P
	- glow-wire test 650°C ..... :	See Test Table 17.15 (13.3.2)	P
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
17.6 (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
17.6 (4.16)	**Luminaires for mounting on normally flammable surfaces**		P
	No lamp control gear..... :	(compliance with Section 12)	N/A
17.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.6 (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
17.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
17.6 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
17.6 (4.18)	**Resistance to corrosion**		N/A
17.6 (4.18.1)	- rust-resistance		N/A
17.6 (4.18.2)	- season cracking in copper		N/A
17.6 (4.18.3)	- corrosion of aluminium		N/A
17.6 (4.19)	Ignitors compatible with ballast		N/A
17.6 (4.20)	Rough service vibration		N/A
17.6 (4.21)	**Protective shield**		N/A
17.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
17.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
17.6 (4.21.3)	No direct path		N/A
17.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	See Test Table 17.15 (13.3.2)	N/A
17.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
17.6 (4.23)	Semi-luminaires comply Class II		N/A
17.6 (4.24)	**Photobiological hazards**		P
17.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
17.6 (4.24.2)	Retinal blue light hazard		P
	Luminaires with E_{thr} :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 .. :	RG1	N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
17.6 (4.25)	**Mechanical hazard**		P
	No sharp point or edges		P
17.6 (4.26)	**Short-circuit protection**		N/A
17.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
17.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
17.6 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test 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
17.6 (4.28)	**Fixing of thermal sensing control**		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
17.6 (4.29)	**Luminaires with non-replaceable light source**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
17.6 (4.30)	**Luminaires with non-user replaceable light source**		P
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
17.6 (4.31)	**Insulation between circuits**		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
17.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
17.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
17.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
17.6 (4.32)	**Overvoltage protective devices**		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
17.6.1 (-)	Not possible to insert a lamp into a “live” lampholder if applicable		N/A
17.6.2 (-)	Prevent immediate access to the lamp or marked according 17.5.5 if applicable		N/A
17.6.3 (-)	Fitted with a protective shield		N/A
	Comply with test		N/A
17.6.4 (-)	Bearing parts of hanger are capable to support ten time the weight of the luminaire		P
	Non-combustible materials		P
	Parts of hanger carrying a proportion of the weight of the luminaire are capable to support ten time the proportion of weight		P
	Connection between hanger and luminaire locked		P
17.6.5 (-)	Removable accessories cannot fall out of the luminaire from any position		P
17.6.6 (-)	If applicable a secondary suspension provided and passed the test		P

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Clause	Requirement + Test	Result - Remark	Verdict

17.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		P
17.7 (11.2)	Creepage distances and clearances..... :	See Table 17.7 (11.2)	P
	Working voltage (V)..... :	Max. 240V~	—
	Rated pulse voltage (kV)..... :		—
	Voltage form..... :	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI..... :	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—

17.8 (7)	**PROVISION FOR EARTHING**		P
17.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω..... :	0.12Ω	P
	Self-tapping screws used		P
	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
	Protective earthing of the luminaire not via built-in control gear		N/A
17.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
17.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
17.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
17.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
17.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
17.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
17.8 (7.2.10)	Class II luminaire for looping-in		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation to functional earth		N/A
17.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
17.9 (14)	**SCREW TERMINALS**		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
17.9 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		P
	Separately approved; component list..... :	(see Annex 1)	P
	Part of the luminaire ..... :	(see Annex 4)	N/A
17.10 (5)	**EXTERNAL AND INTERNAL WIRING**		P
17.10 (5.2)	**Supply connection and external wiring**		P
17.10 (5.2.1)	Means of connection ..... :	Supply cords with plug	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
17.10 (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
17.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
17.10 (5.2.5)	Type Z not connected to screws		N/A
17.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
17.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
17.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
17.10 (5.2.9)	Locking of screwed bushings		N/A
17.10 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
17.10 (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
	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
17.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
17.10 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) ..... :		N/A
	- torque test: torque (Nm)..... :		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
	- function independent of electrical connection		N/A
17.10 (5.2.11)	External wiring passing into luminaire		N/A
17.10 (5.2.12)	Looping-in terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
17.10 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
17.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
17.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
17.10 (5.2.18)	Used plug in accordance with		P
	- IEC 60083		N/A
	- other standard	VDE 0620-2-1	P
17.10 (5.3)	**Internal wiring**		P
17.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(see Annex 2)	N/A
	Green-yellow for earth only		P
17.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²)..... :		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
17.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
17.10 (5.3.1.3)	Double or reinforced insulation for class II		P

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Clause	Requirement + Test	Result - Remark	Verdict
17.10 (5.3.1.4)	Conductors without insulation		N/A
17.10 (5.3.1.5)	SELV current-carrying parts		P
17.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
17.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		P
	No twisting over 360°		P
17.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
17.10 (5.3.4)	Joints and junctions effectively insulated		P
17.10 (5.3.5)	Strain on internal wiring		P
17.10 (5.3.6)	Wire carriers		N/A
17.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
17.10.1 (-)	Cross-sectional area (mm²) ≥ 0,75 for current ≤ 2A and ≥ 1,5 for current > 2A		P
17.10.2 (-)	Plugs and sockets not interchangeable		N/A
17.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
17.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
17.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		P
17.11 (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
17.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
17.11 (8.2.3.c)	SELV circuits with exposed current carrying 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
17.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		P
17.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
17.11 (8.2.6)	Covers reliably secured		P
17.11 (8.2.7)	Discharging of capacitors $\geq$ 0,5 μF	0.06<0.1μF	P

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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
17.11.1 (-)	Luminaires exempt from 17.6.1 requirements for protection against contact with live parts after opening does not apply		—

17.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
17.12 (12.3)	Endurance test:		P
	- mounting-position..... :	Normally works	—
	- test temperature (°C) ..... :	35℃	—
	- total duration (h)..... :	240h	—
	- supply voltage: Un factor; calculated voltage (V)... :	264V	—
	- lamp used..... :	Integral LED module	—
17.12 (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
17.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
17.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
17.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
17.12 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	- track-mounted luminaires		N/A
17.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions ..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
17.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
17.12 (12.7.1)	Luminaire without temperature sensing control		N/A
17.12 (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 17.15 (13.2.1)	N/A
17.12 (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) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test ..... :	See Table 17.15 (13.2.1)	N/A
17.12 (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
17.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- 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 17.15 (13.2.1)	N/A
17.12.1 (-)	Exterior surface temperature	(see Annex 2)	P

17.13 (9)	**RESISTANCE TO DUST AND MOISTURE**		P
17.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP20	—
	- mounting position during test..... :	Normally works	—
	- fixing screws tightened; torque (Nm) ..... :	2/3 torque	—
	- tests according to clauses..... :	9.2.2&9.2.6	—
	- 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 on insulation 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		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
17.13 (9.3)	Humidity test 48 h	93%RH, 25℃	P
17.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
17.14 (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		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :		N/A
	- between current-carrying parts and metal parts of the luminaire..... :		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
	Other than SELV		P
	- between live parts of different polarity ..... :	>100MΩ	P
	- between live parts and mounting surface ..... :	>100MΩ	P
	- between live parts and metal parts ..... :	>100MΩ	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
17.14 (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)..... :		N/A
	SELV		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface ..... :		N/A
	- between current-carrying parts and metal parts of the luminaire ..... :		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
	Other than SELV		P
	- between live parts of different polarity ..... :	1480V	P
	- between live parts and mounting surface ..... :	1480V	P
	- between live parts and metal parts ..... :	1480V	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
7.14 (10.3)	Touch current or protective conductor current (mA) :	Touch current: 0.013mA Protective conductor current: 0.17mA	P

17.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
17.15 (13.2.1)	Ball-pressure test ..... :	See Test Table 17.15 (13.2.1)	P
17.15 (13.3.1)	Needle-flame test (10 s) ..... :	See Test Table 17.15 (13.3.1)	P
17.15 (13.3.2)	Glow-wire test (650°C) ..... :	See Test Table 17.15 (13.3.2)	P
17.15 (13.4)	Proof tracking test (IEC 60112) ..... :	See Test Table 17.15 (13.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

17.7 (11.2)	**TABLE: Creepage distances and clearances**							**P**
	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages							**P**
	Applicable part of IEC 60598-1 Table 11.1* and 11.2*							**P**
	Insulation type **	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Supplementary information:								
Distance 2:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Supplementary information:								
Distance 3:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage if applicable (kV) .....:								—
Test result: Between different polarity of L and N:Cr=Cl=6.65mm>2.5mm Between terminal of fuse: Cr=Cl=7.26mm>2.5mm Between live parts and accessible metal parts: Cr=Cl=7.4mm>2.5mm								

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

17.15 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**		**P**
Allowed impression diameter (mm) ..... :			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Terminal	--	125	1.0
T1 bobbin	--	125	1.1
Driver PCB	--	125	0.9
Control PCB	--	125	1.2

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:/

17.15 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Terminal	--	10	No	0	P
Control PCB	--	10	No	0	P
T1 bobbin	--	10	No	0	P
Driver PCB	--	10	No	0	P
Supplementary information:/					

17.15 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**			P
Glow wire temperature ..... :	650°C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Insulation sheet for driver	--	No	0	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No) ..... :				Yes
Supplementary information:/				

17.15 (13.4)	**TABLE: Proof tracking test (IEC 60112)**			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:				

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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[1)]**
Plug	B	Zhongshan jinkarui Electrical Co.,Ltd	JKR-305	250V ,16A	DIN VDE 0620-2-1	VDE 40040411
Supply cord	B	CHING CHENG WIRE MATERIAL CO LTD	SJT	3G1.5mm²	EN 50525-2-21	UL E162604
Earth wire	B	SHENZHEN JINRUIHUA WIRE & CABLE CO LTD	1007	300V,18AWG, 80℃	--	UL E316944
Connector for input terminal	B	Seetronic Ningbo Co., Ltd	SAC3FCA	250V，20A	EN 61984	UL E359036
Connector for input terminal	B	Seetronic Ningbo Co., Ltd	SAC3MPA	250V，20A	EN 61984	UL E359036
Terminal block	B	WAGO KONTAKTTECHNIK GMBH & CO KG	221-412	22A 300V	--	UL E69654
Internal silicone wire	B	Dongguan Puliwan Electronics CoLtd	1332	26AGW-14AGW; 200℃,300V	--	E467326
Internal silicone wire	D	POWER ACT ENTERPRIsEs LTD	1332	26AGW-14AGW; 200℃,300V	--	E310829
Insulation sleeve	B	DONG GUAN PUHUI INSULATION MATERIALS CO LTD	1.16 - 12.0mm	200℃,600V	--	E338333
Driver PCB	B	RAYBEN TECHNOLOGIES (ZHUHAI) LTD	RB-10	130°C , V-0	--	E173761
Control PCB	B	RAYBEN TECHNOLOGIES (ZHUHAI) LTD	RB-10	130°C , V-0	--	E173761
Switch button	B	Well electronics factory	KFC-A07-H12	DC5V 5mA	--	Test with appliance
LED PCB	B	RAYBEN TECHNOLOGIES (ZHUHAI) LTD	RB-AL16	130°C , V-0	--	E173761
LED chip	B	Tianxin photoelectricity co.,Ltd	TX-BRWG2A120-101	5V 500mA	EN 62471, IEC TR62778 EN 62031	Test with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Fuse, F1	B	DONGGUAN BETTER ELECTRONIC TECHNOLOGY CO., LTD	932	T3.15A, 250Vac	IEC 60127-1 ; IEC 60127-3	UL E67006 VDE 40033369
Birdge (BD1)	B	HY ELECTRONTC(CAYMAN)LTD TAIWAN BRANCH	GBU	4A 700V	--	E217139
Varistor,TV1	B	CERGLASS MFG INC	10D561K	AC 350V, DC560V	--	VDE40028836
PCB	B	GUANGZHOU KONXIN CIRCUIT BOARE CO LTD	KX-1M	V-0，130°	--	UL E308300
CX1,	B	Tenta Electric Industrial Co. Ltd.	MEX/X2	275VAC, X2, 110℃, 0.47μF	IEC 60384-14	UL E222911 VDE119119
CX3	B	shunde Chuang Ge Electronic Industrial Co ,Ltd	MEX/X2	275VAC, X2, 110℃, 0.47μF	IEC 60384-14	UL E318999 VDE40008922
L1 winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	700uH, Φ0.5mm	--	UL E85640
LF1 winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	65mH,Φ0.5mm	--	UL E85640
LF2winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	10mH,Φ0.5mm	--	UL E85640
LF4 winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	18.6uH, Φ0.6mm	--	UL E85640
T1primary winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	130°C	--	UL E85640
T1primary winding	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	130°C	--	UL E85640
T1 secondary	B	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	130°C	--	UL E85640
T1 bobbin	B	CHANG CHUN PLASTICS CO LTD	T375J	V-0 150°C	--	ULE59481
Insulation tape	B	Dupont Hongji Films Foshan Co Ltd	BP	MIN 0.2mm 105℃ VTM-2	--	E241830
CY1、CY2、CY3、CY4、CY6、CY7、CY8	B	JYH CHUNG ELECTRONICS CO LTD	JD	2200pF, AC250 125°C, Y1	IEC 60384-14	UL E187963 VDE 137027

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Clause	Requirement + Test	Result - Remark	Verdict

CY3	B	JYH CHUNG ELECTRONICS CO LTD	JD	470PF,400V, 125°C, Y1	IEC 60384-14	UL E187963 VDE 137027
OPT1	B	EVERLIGHT ELECTRONICS CO LTD	EL817	5000 Vac isolation, Cr & Cl. > 7.62mm, dti≥ 0.4mm	--	UL E214129
CN1、CN2	B	ZHEJIANG KUAILI ELECTRONICS CO LTD	VH39600	VH3.96	--	E307817

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

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	**TABLE: Temperature measurements, thermal tests of Section 12**		P
	Type reference ..... :	CLF Xena RGBW Par	—
	Lamp used..... :	LED module	—
	Lamp control gear used..... :	LED driver	—
	Mounting position of luminaire ..... :	Normally works	—
	Supply wattage (W)..... :	See below	—
	Supply current (A) ..... :	See below	—
	Calculated power factor..... :	See below	—
	Table: measured temperatures corrected for ta = 40 °C:		
	- abnormal operating mode ..... :	Short-circuit LED + and LED	—
	- test 1: rated voltage..... :	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	Charging and working: 106V, 0.545A, 57.5W, 0.993PF; 254.4V, 0.251A,55.5W,0.866PF	—
	- 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..... :	Unit shut down: 264V, 0.023A, 5.7W	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—

Temperature measurements, (°C)

Part	Clause 12.4 – normal					Clause 12.5 – abnormal	
	test 1	test 2 Charing	test 2 Discharging	test 3	limit	test 4	limit
		106V	254.4V				
Supply wire	--	30.1	31.1	--	90	--	--
Cord anchorage	--	44.8	45.7	--	105	--	--
Button	--	45.1	46.3	--	55	--	--
Adjust metal parts	--	37.4	38.2	--	60	--	--
Metal enclosure	--	54.0	53.2	--	60	--	--
Terminal	--	50.6	51.3	--	85	--	--
Closed-end connector	--	48.7	49.3	--	Ref.	--	--
Internal wire	--	50.4	52.3	--	105	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Control PCB	--	51.6	53.3	--	Ref.	--	--
Input terminal for driver	--	51.4	52.4	--	85	--	--
Input wire for driver	--	53.2	54.1	--	90	--	--
F1	--	63.4	64.5	--	Ref.	--	--
RT1	--	78.1	79.3	--	Ref	--	--
CX1	--	64.5	65.6	--	105	--	--
CX2	--	66.3	64.9	--	105	--	--
LF1	--	70.4	71.3	--	120	--	--
LF2	--	72.6	72.4	--	120	--	--
RV1		68.7	69.3	--	Ref.	--	--
CY1		58.8	59.7	--	105	--	--
CY2	--	57.6	58.6	--	105	--	--
CY3	--	58.9	59.4	--	105	--	--
CY4	--	59.3	58.7	--	105	--	--
T1 winding	--	94.0	95.3	--	120	--	--
T1 bobbin	--	92.1	92.4	--	Ref.	--	--
C6	--	81.3	82.4	--	105	--	--
CY8	--	72.9	73.4	--	105	--	--
C12	--	79.9	76.8	--	105	--	--
T2 winding	--	91.7	93.4	--	120	--	--
T2 bobbin	--	89.7	92.1	--	Ref.	--	--
CY5	--	69.8	72.1	--	105	--	--
PCB near T2	--	94.6	95.1	--	Ref.	--	--
C15	--	74.7	75.6	--	105	--	--
C16	--	76.3	74.1	--	105	--	--
Output terminal for driver	--	62.3	64.3	--	85	--	--
Output wire for driver	--	59.8	62.1	--	90	--	--
Lead wire of LED	--	66.8	67.8	--	90	--	--
Terminal of LED	--	61.5	62.3	--	85	--	--
LED PCB	--	83.0	84.3	--	Ref.	--	--
Glass	--	29.3	30.2	--	Ref.	--	--
Lighted object	--	42.9	43.2	--	90	--	--

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

Mounting surface	--	27.4	27.6	--	90	--	--
Ambient	--	25.0	25.0	--	--	--	--
Supplementary information:/							

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		N/A
(14)	**SCREW TERMINALS**		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm) .....:		N/A
	Torque (Nm).....:		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....:		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

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

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-17
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

LUMINAIRES
PART 2: PARTICULAR REQUIREMENTS:
SECTION SEVENTEEN - LUMINAIRES FOR STAGE LIGHTING, TELEVISION AND FILM STUDIOS (OUTDOOR AND INDOOR)

Differences according .....:	EN 60598-2-17:1988 + A2:1991 used in conjunction with EN 60598-1:2015
Annex Form No.....:	EU_GD_IEC60598_2_17D
Annex Form Originator .....:	IMQ S.p.A.
Master Annex Form .....:	2015-04

	CENELEC COMMON MODIFICATIONS (EN)	P

17.5 (3)	**MARKING**		P
17.5 (3.3.101)	Adequate warning on the package		N/A

17.6 (4)	**CONSTRUCTION**		P
17.6 (4.11.6)	Electro-mechanical contact systems		P

17.10 (5)	**EXTERNAL AND INTERNAL WIRING**		P
17.10 (5.2.1)	Connecting leads		P
	- without a means for connection to the supply		N/A
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
17.10 (5.2.2)	Cables equal to HD21 S2 or HD22 S2		N/A

17.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
17.12 (12.4.2c)	Thermal test (normal operation)		P

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
(3.3)	DK: power supply cord with label		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	IT: warning label on Class 0 luminaire		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
(13.3)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public or 960°C for luminaires in emergency exits		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
4 (4)	**GENERAL REQUIREMENTS**		P
- (4)	Insulation materials according requirements in Annex N of IEC 61347-1	(see Annex N)	P
- (4)	Compliance of independent controlgear enclosure with IEC 60 598-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	P
4 (4)	SELV controlgear comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	P
4 (-)	Transformer comply with IEC 61558		P
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage ≤ 300 V		P
6 (6)	**CLASSIFICATION**		P
	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**		N/A
7.1 (7.1)	**Mandatory markings**		N/A
	a) mark of origin		N/A
	b) model number or type reference		N/A
	c) symbol for independent controlgear, if applicable		N/A
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)		N/A
	supply frequency (Hz)		N/A
	supply current (A)		N/A
	f) earthing symbol		N/A
	k) wiring diagram		N/A
	l) value of tc		N/A
	m) symbol for declared temperature		N/A
	t) LUM earthing symbol		N/A

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
	u) if not SELV maximum working voltage U_{out} between:		N/A
	- output terminals (V) ..... :		N/A
	- output terminals and earth (V) ..... :		N/A
7.1 (-)	Constant voltage type:	Yes ☐ No ☐	—
	- rated output power P_{rated} (W) ..... :		N/A
	- rated output voltage U_{rated} (V) ..... :		N/A
	Constant current type:	Yes ☐ No ☐	—
	- rated output power P_{rated} (W) ..... :		N/A
	- rated output current I_{rated} (A) ..... :		N/A
	Indication if for LED modules only		N/A
7.1 (7.2)	Marking durable and legible		N/A
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A
7.2 (7.1)	**Information to be provided, if applicable**		N/A
	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)		N/A
	s) SELV symbol		N/A
7.2 (-)	- declaration of mains connected windings		N/A

8 (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/A
- (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		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V ..... :	0.314μF	P
- (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		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A

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EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
	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**		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. ..... :		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
9 (8)	**TERMINALS**		N/A
	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
10 (9)	**PROVISION FOR PROTECTIVE 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/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		P
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		P

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
- (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 ..... :		P
- (9.4)	**Earthing of built-in lamp controlgear**		P
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		P
	Earthing terminal only for earthing the built-in controlgear		P
- (9.5)	**Earthing via independent controlgear**		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

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:		P
	For basic insulation ≥ 2 MΩ ..... :		P
	For double or reinforced insulation ≥ 4 MΩ ..... :		P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		P

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		P

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		N/A
	Basic insulation, 2U + 1000 V	1480V between L and N	P
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V	2960V between input terminal and output terminal	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		P
14 (14)	**FAULT CONDITIONS**		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		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)	N/A
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		N/A
	The insulation resistance ≥ 1 MΩ ..... :		N/A
	No flammable gases		N/A
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
- (14.7)	Relevant fault condition tests with high-power a.c. supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
15 (-)	**TRANSFORMER HEATING**		P
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
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		N/A
	Double LED modules or equivalent load connected in parallel 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**		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/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

Attachment No.1

EN 61347-2-13			
Clause	Requirement – Test	Result – Remark	Verdict
	Source used to supply SELV circuits:		N/A
	- 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		N/A
	- another source		N/A
	Voltage in the circuit not higher than ELV		N/A
	SELV circuits insulated from LV by double or reinforced insulation		N/A
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		P
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		N/A
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
- (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		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A
17 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		P
- (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**		P
	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		N/A
	- thread-cutting screws		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
(4.11.3)	Screw locking:		P
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		P
(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 .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....:		N/A
	- lampholder; torque (Nm).....:		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm) .....:		N/A

19 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**	**(Refer to 60598 parts)**	N/A
- (18.1)	Ball-pressure test .....:	See Test Table 19 (18.1)	N/A
- (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)	N/A
- (18.5)	Tracking test .....:	See Test Table 19 (18.5)	N/A

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

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

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Clause	Requirement – Test	Result – Remark	Verdict

14	TABLE: tests of fault conditions	P
Part	Simulated fault	Hazard
Driver output	S-C: Unit shut down.	~~YES~~/NO
T1(1-2)	S-C: Unit shut down.	~~YES~~/NO
T1(3-4)	S-C: Unit shut down.	~~YES~~/NO
T1(5-6)	S-C: Unit shut down.	~~YES~~/NO
T1(7-9)	S-C: Unit shut down.	~~YES~~/NO
EC1	S-C: Fuse open immediately.	~~YES~~/NO
DB1	S-C: Fuse open immediately.	~~YES~~/NO
Q1(G-S)	S-C: Unit shut down.	~~YES~~/NO
Q1(G-D)	S-C: Fuse open immediately.	~~YES~~/NO
Q1(D-S)	S-C: Fuse open immediately.	~~YES~~/NO
OPT1(1-3)	S-C: Unit shut down.	~~YES~~/NO

17 (16)	TABLE: clearance and creepage distance measurements (mm)						P
Applicable part of IEC 61347-1 Table 7 – 11*							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
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:							
Distance 2:							
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:							
Distance 3:							
Working voltage (V) ..... :							—

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Clause	Requirement – Test	Result – Remark	Verdict

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: Between different polarity of L and N:Cr=Cl=6.65mm>2.5mm Between terminal of fuse: Cr=Cl=7.26mm>2.5mm Between primary winding and secondary winding: Cr>6.0mm, Cl>6.0mm; Between opt1 primary and secondary: Cr=Cl=>6.5mm Between primary trace and secondary trace: Cr=Cl>5.5mm		

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

19 (18.1)	**TABLE: Ball Pressure Test (Refer to 60598 parts)**			**N/A**
Allowed impression diameter (mm)..... :				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

19 (18.2)	**TABLE: Test of printed boards (Refer to 60598 parts)**				**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:					

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Clause	Requirement – Test	Result – Remark	Verdict

19 (18.3)	TABLE: Glow-wire test (Refer to 60598 parts)			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:				

19 (18.4)	TABLE: Needle-flame test (Refer to 60598 parts)				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 (18.5)	TABLE: Proof tracking test (Refer to 60598 parts)				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:					

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Clause	Requirement – Test	Result – Remark	Verdict

(A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		P
(A.1)	Comply with A.2 or A.3		N/A
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:		N/A
(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. .....:		N/A
	Comply with Annex G.2 of IEC 60598-1		N/A

(C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		N/A
(C3)	**GENERAL REQUIREMENTS**		N/A
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	**CLASSIFICATION**		N/A
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ..:		—
(C6)	**MARKING**		N/A
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	**LIMITATION OF HEATING**		N/A
(C7.1)	**Preselection test:**		N/A
	Test sample placed for at least 12 h in an oven having temperature (t_c - 5) K		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	No operation of the protection device		N/A
(C7.2)	**Functioning of protection means:**		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14.2 to 14.5		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A
(D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		N/A
	Tests in C7 performed in accordance with Annex D, if applicable		N/A
(F)	**ANNEX F – DRAUGHT-PROOF ENCOSURE**		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A

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Clause	Requirement – Test	Result – Remark	Verdict

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

I (L)	**ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES**		P
(L.3)	**Classification**		P
	Class I	Yes ☒ No ☐	—
	Class II	Yes ☐ No ☒	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☒ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☒	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	**Marking**		N/A
	Adequate symbols are used		N/A
(L.5)	**Protection against electric shock**		N/A
	Comply with clause 9.2 of IEC 61558-1		N/A
(L.6)	**Heating**		P
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked .....:		—
	Winding insulation classified as Class .....:		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
(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
(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 .....:		P
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ .....:		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	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 .....:	3000V	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity .....:	1500V	P
	b) live parts and body if intended to be connected to protective earth .....:		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord .....:		N/A
	d) live parts and an intermediate metal part .....:		N/A
	e) intermediate metal parts and the body .....:		N/A
	f) each input circuit and all other input circuits ....:		N/A
	3) Over reinforced insulation between the body and live parts .....:		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		N/A
(L.10)	**Components**		P
	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		P
	Required distance (mm) .....:		—
	Measured (mm) .....:		P
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm) .....:		—
	Measured (mm) .....:		N/A
	Supplementary information		—
	3) Reinforced distance through insulation		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	Required distance (mm) .....:		—
	Measured (mm) .....:		N/A
	Supplementary information		—
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**		N/A
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
	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

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Clause	Requirement – Test	Result – Remark	Verdict
	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**		P
(N.4)	**General requirements**		P
(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**		P
(N.4.3.1)	Thickness and composition of thin sheet insulation		P
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		P
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	No flashover or breakdown occurred		N/A

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Clause	Requirement – Test	Result – Remark	Verdict

(O)	**ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**		P
(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**		P
	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**		P
	Clause 11 (11)	See clause 11	P
(O.11)	**Electric strength**		P
	Clause 12 (12)	See clause 12	P
(O.13)	**Fault conditions**		P
	Clause 14 (14)	See clause 14	P
	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		P
	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		P
(O.14)	**Construction**		P
	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

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Clause	Requirement – Test	Result – Remark	Verdict
(O.15)	**Creepage distances and clearances**		P
	Clause 18 (16)	See clause 18	P
	Comply with corresponding values for luminaries in IEC 60598-1		P
(O.16)	**Screws, current-carrying parts and connections**		P
	Clause 19 (17)	See clause 19	P
(O.17)	**Resistance to heat and fire**		P
	Clause 20 (18)	See clause 20	P
(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**		N/A
(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 $\hat{U}_{out}$ kV ..... :		—
	Frequency ..... :		—
	Required distance ..... :		—
	Measured ..... :		N/A
	Supplementary information		—

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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		—

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Clause	Requirement – Test	Result – Remark	Verdict

ANNEX 1	TABLE: Critical components information (Refer to 60598 parts)					N/A
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**

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

Attachment No.1

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

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

Attachment No.1

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

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

Attachment No.1

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

15.6.2	Mechanical tests		P
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		P
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) ..... :		P
(15.6.3)	Electrical tests		P
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		P

(15.6.3.1) (15.6.3.2)	**TABLE: Contact resistance test / Heating tests**									P
	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:										

Attachment No.2

EN 61347-2-11			
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/A
- (4)	Compliance of independent controlgear enclosure with IEC 60 598-1		N/A
- (4)	Built-in magnetic ballast with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
- (4)	SELV controlgear comply with Annex L of IEC 61347-1	(see Annex L)	N/A

6 (6)	**CLASSIFICATION**		P
	Built-in controlgear ..... :	Yes ☒ No ☐	—
	Independent controlgear..... :	Yes ☐ No ☒	—
	Integral controlgear ..... :	Yes ☐ No ☒	—

7 (7)	**MARKING**		N/A
7.1 (7.1)	Mandatory markings (other than integral miscellaneous electronic circuits)		N/A
	a) mark of origin		N/A
	b) model number or type reference		N/A
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)		N/A
	supply frequency (Hz)		N/A
	supply current (A)		N/A
	f) earthing symbol		N/A
	k) wiring diagram		N/A
	l) value of t_c alternative t_a		N/A
7.1 (-)	- control terminals identified, if applicable		N/A
- (7.2)	Marking durable and legible		N/A
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A
7.2 (7.1)	Information to be provided, if applicable:		N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	h) declaration on protection against accidental contact		N/A
	i) cross-section of conductors (mm²)		N/A
	j) number, type and wattage of lamp(s)		N/A
- (7.2)	Marking durable and legible		N/A
	Rubbing 15 s water, 15 s petroleum; marking legible		N/A
8 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		P
- (10.1)	Controlgear protected against accidental contact with live parts	Rely upon final luminaries	P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	N/A
- (A3)	Voltage > 35 V r.m.s. or > 60 V d.c. or protective impendance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V ..... :		N/A
- (10.3)	Controlgear providing SELV		N/A
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		N/A
	No connection between output circuit and the body or protective earthing curcuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		N/A
	SELV outputs separated by at least basic insulation		N/A
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		N/A
- (10.4)	Accessible conductive parts in SELV circuits		N/A
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		N/A
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. ..... :		N/A

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EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
9 (8)	**TERMINALS**		N/A
- (8)	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
10 (9)	**PROVISION FOR PROTECTIVE EARTHING**		N/A
- (9.1)	Provisions for protective earthing		N/A
	Terminal complying with clause 9		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
- (9.2)	Provision for functional earthing		N/A
	Comply with clause 8 and 9.1		N/A
- (9.3)	Earth contact via the track on the printed board		N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	Test with a current of 25 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
- (9.4)	Earthing of built-in lamp controlgear		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		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A
11 (11)	**MOISTURE RESISTANCE AND INSULATION**		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ ..... :		P
	For double or reinforced insulation ≥ 4 MΩ ..... :		N/A
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A
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		P
	Working voltage ≤ 50 V, test voltage 500 V		N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		N/A

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EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	Basic insulation, 2U + 1000 V		N/A
	Supplementary insulation, 2U + 1000 V		N/A
	Double or reinforced insulation, 4U + 2000 V		N/A
	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**		P
- (14)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	P
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ ..... :		P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.6)	Relevant fault condition tests with high-power supply		—

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
15 (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/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
16 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		N/A
- (16)	Creepage distances and clearances according to Table 3 and 4, as appropriate		N/A
	Controlgears providing SELV comply with L.1 in Annex L		N/A
	Insulating lining of metallic enclosures		N/A
	Basic insulation on printed boards tested according to clause 14		N/A
	Distances subjected to both sinusoidal voltage as non-sinusoidal pulses not less than value in either Table 3 or 4		N/A
	Creepage distances not less than minimum clearance		N/A
17 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		P

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	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		N/A
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		N/A
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
	Torque test: torque (Nm); part .....:		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....:		N/A
	- lampholder; torque (Nm).....:		N/A
	- push-button switches; torque 0,8 Nm.....:		N/A
(4.12.5)	Screwed glands; force (Nm) .....:		N/A

18 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
- (18.1)	Ball-pressure test:		P
	- part tested; temperature (°C).....:	See 60598 part	P
	- part tested; temperature (°C).....:		N/A
- (18.2)	Test of printed boards:		P
	- part tested.....:	See 60598 part	P
	- part tested.....:		N/A
- (18.3)	Glow-wire test (650°C):		P

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	- part tested.....:	See 60598 part	P
	- part tested.....:		N/A
- (18.4)	Needle flame test (10 s):		N/A
	- part tested.....:		N/A
	- part tested.....:		N/A
- (18.5)	Tracking test:		N/A
	- part tested.....:		N/A
	- part tested.....:		N/A

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

20 (-)	**ANNEXES**		P
	Comply with appropriate annexes of IEC 61347-1	(see Annexes)	P

14	**TABLE: tests of fault conditions (see 60598 parts)**	P
Part	Simulated fault	Hazard
		NO

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict

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

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

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	ANNEXES FROM IEC 61347-1		P
A	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		P
A.1	Comply with A.2 or A.3		N/A
A.2	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:		N/A
A.3	If voltage > 35 V r.m.s. or > 60 V d.c. or protective impendance device; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		N/A
	Comply with Annex G of IEC 60598-1		P
C	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		N/A
C3	**GENERAL REQUIREMENTS**		N/A
C3.1	Thermal protection means integral with the controlgear, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
C3.2	No risk of fire by breaking (clause C7)		N/A
C5	**CLASSIFICATION**		N/A
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ..:		N/A
C6	**MARKING**		N/A
C6.1	Symbol for temperature declared thermally protected controlgear		N/A
C6.2	Declaration of the type of protection provided		N/A
C7	**LIMITATION OF HEATING**		N/A
C7.1	Preselection test:		N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	Test sample placed for at least 12 h in an oven having temperature (t_c - 5) K		N/A
	No operation of the protection device		N/A
C7.2	Functioning of protection means:		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Controlgear according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Controlgear according to C5 b) working 6 times		N/A
	Controlgear according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
D	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		N/A
	Tests in C7 performed in accordance with Annex D, if applicable		N/A
E	**ANNEX E – USE OF CONSTANT S OTHER THAN 4500 IN t_w TESTS**		N/A
	Comply with tests according Annex E, if applicable		N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
F	**ANNEX F - DRAUGHT-PROOF ENCLOSURE**		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A
H	**ANNEX H - TESTS**		P
	All tests performed in accordance with the advice given in Annex H, if applicable		P
I	**ANNEX I - ADDITIONAL REQUIREMENTS FOR BUILT-IN MAGNETIC BALLASTS WITH DOUBLE OR REINFORCED INSULATION**		N/A
	Comply with tests according Annex I, if applicable		N/A
L	**ANNEX L: PARTICULAR ADDITIONAL REQUIREMENTS FOR CONTROLGEAR PROVIDING SELV**		N/A
L.3	**Classification**		N/A
	Class I	Yes ☐ No ☐	—
	Class II	Yes ☐ No ☐	—
	Class III	Yes ☐ No ☐	—
	non-inherently short circuit proof controlgear	Yes ☐ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☐	—
	fail safe controlgear	Yes ☐ No ☐	—
	non-short-circuit proof controlgear	Yes ☐ No ☐	—
L.4	**Marking**		N/A
	Adequate symbols are used		N/A
L.5	**Protection against electric shock**		N/A
	Comply with 9.2 of IEC 61558-1		N/A
L.6	**Heating**		N/A
	No excessive temperatures in normal use		N/A
	Value if capacitor t_c marked .....:		—
	Winding insulation classified as Class .....:		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
L.7	**Short-circuit and overload protection**		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		N/A
L.8	**Insulation resistance and electric strength**		N/A
L.8.1	Conditioned 48 h between 91 % and 95 %		N/A
L.8.2	Insulation resistance		N/A
	Between input- and output circuits not less than 5 MΩ .....:		N/A
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ .....:		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ .....:		N/A
L.8.3	Electric strength		N/A
	1) Between live parts of input circuits and live parts of output circuits .....:		N/A
	2) Over basic or supplementary insulation between:		N/A
	a) live parts having 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
	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**		N/A
L.9.1	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
L.10	**Components**		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
L.11	**Creepage distances and clearances**		N/A
	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

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Clause	Requirement – Test	Result – Remark	Verdict
	c) measured values ≥ specified values (mm) .....:		N/A
	2. Insulation between input and output circuits, double or reinforced 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
	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:		N/A
	a) measured values ≥ specified values (mm) .....:		
	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
	Between body and output circuit if provision against transient voltages: measured values ≥ specified values (mm) .....:		N/A
	7. 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

M	**ANNEX M: DIELECTRIC STRENGTH TEST VOLTAGES FOR CONTROLGEAR INTENDED FOR USE IN IMPULSE WITHSTAND CATEGORY III**		N/A
	Comply with tests according Annex M, if applicable		N/A

N	**ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**		N/A
N.4	**General requirements**		N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
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
	- 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**		N/A
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

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict
	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
	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 16 (15)	See clause 16	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 17 (16)	See clause 17	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 18 (17)	See clause 18	N/A
O.17	**Resistance to heat and fire**		N/A
	Clause 19 (18)	See clause 19	N/A

Attachment No.2

EN 61347-2-11			
Clause	Requirement – Test	Result – Remark	Verdict

O.18	**Resistance to corrosion**		N/A
	Clause 20 (19)	See clause 20	N/A

Attachment No.3

EN 62031			
Clause	Requirement – Test	Result – Remark	Verdict
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite		P

Attachment No.4

IEC TR 62778			
Clause	Requirement – Test	Result – Remark	Verdict

Item	Symbol	Units	Result Red light	Result Blue light	Result White light	Remark
Correlated colour temperature	CCT	K	/	/	/	/
x/y colour coordinates			/	/	/	/
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	25	46	72	/
Blue light hazard irradiance	E_B	W/m^2	1.793e-002	1.445e+001	2.177e+001	/
Luminance	L	cd/m^2	9.537e+004	3.057e+003	5.139e+003	/
Illuminance	E	lx	2307	1137	13686	/
Supplementary information:red/blue/white light classification group: risk 1						

Pictures

Figure 1. Overview for model CLF Xena RGBW Par

Figure 2. Overview for model CLF Xena RGBW Par

Pictures

Figure 3. Button view for model CLF Xena RGBW Par

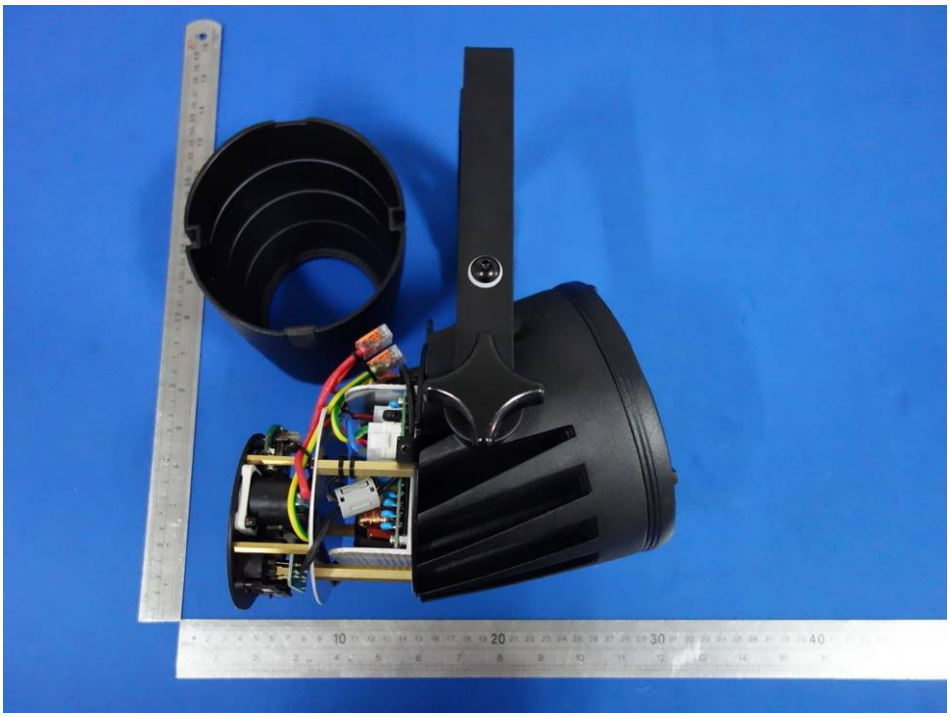

Figure 4. Internal view for model CLF Xena RGBW Par

Pictures

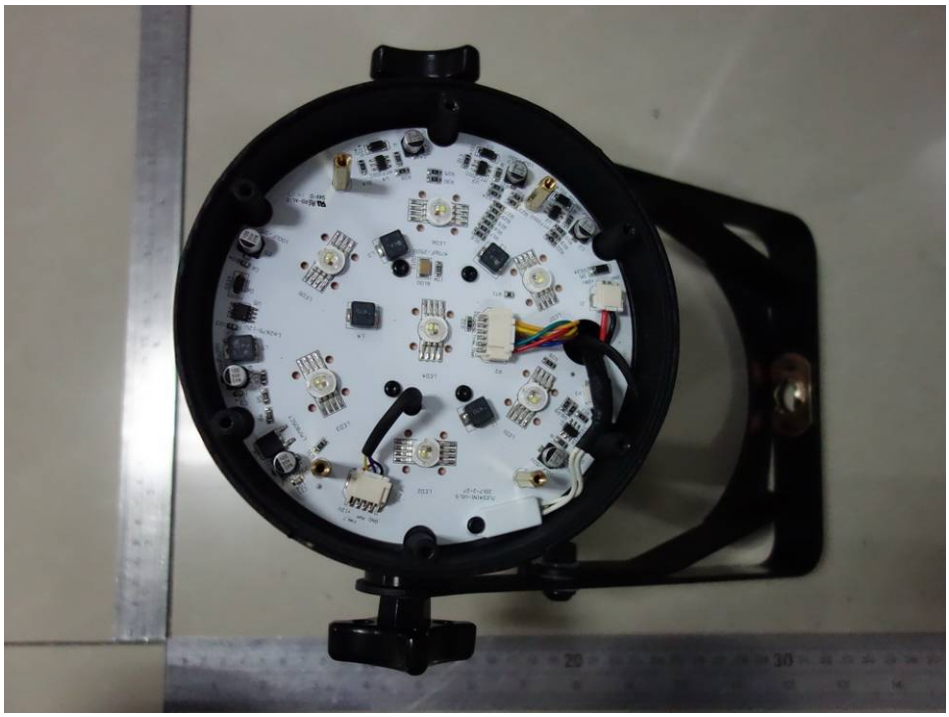

Figure 5. LED view for model CLF Xena RGBW Par

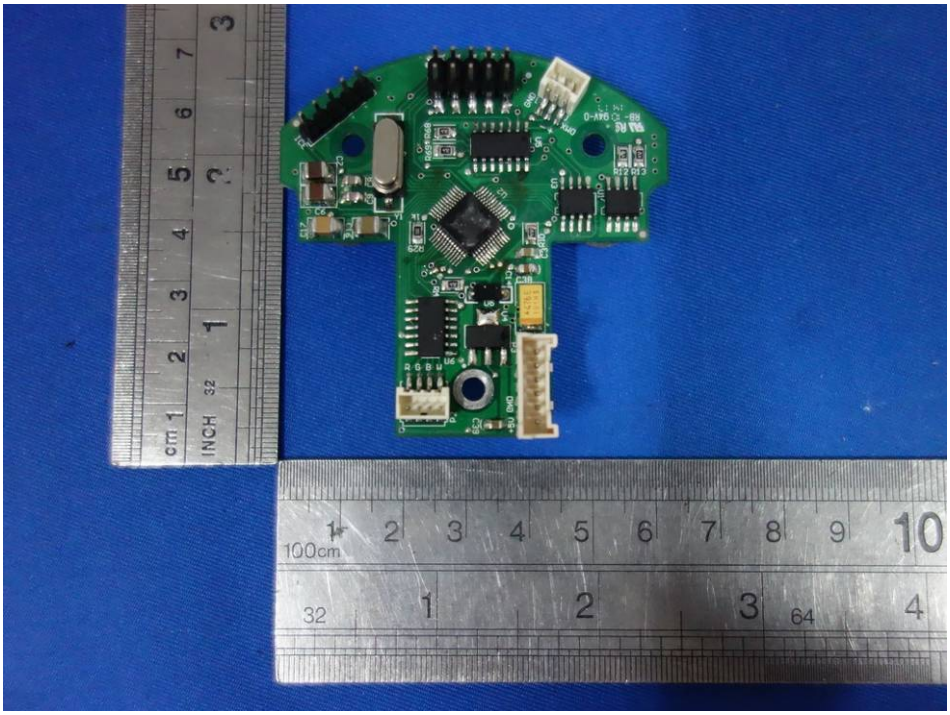

Figure 6. Control panel view for model CLF Xena RGBW Par

Pictures

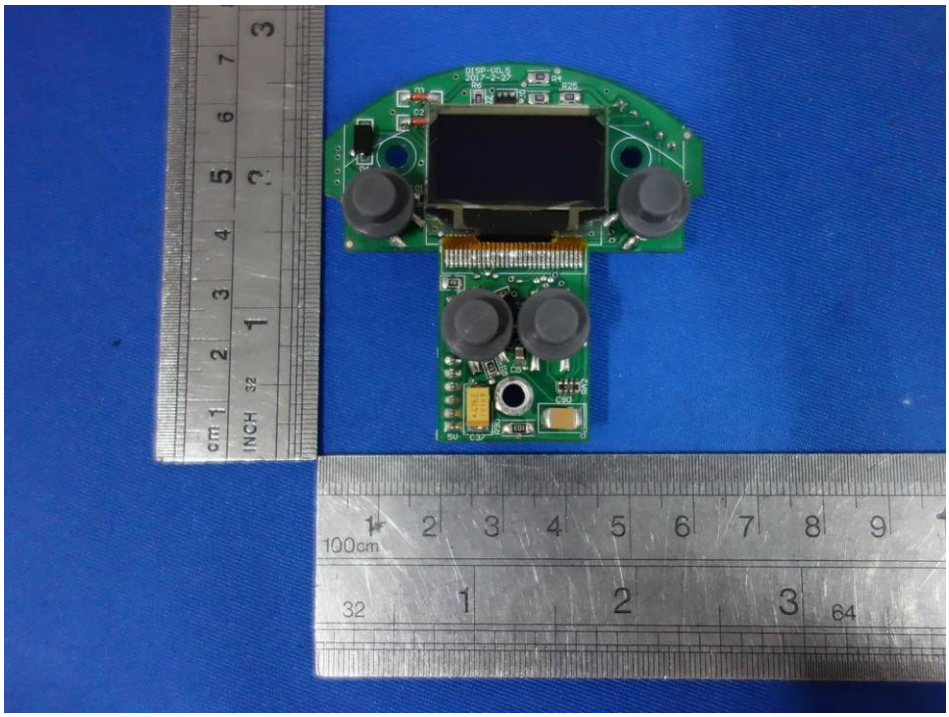

Figure 7. Control panel view for model CLF Xena RGBW Par

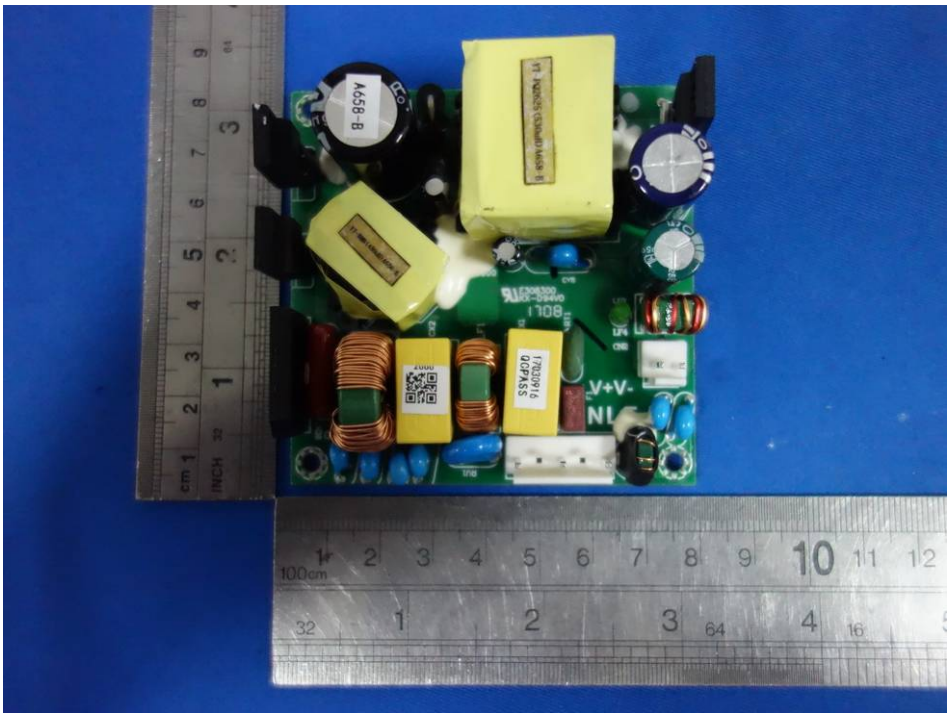

Figure 8. LED driver view for model CLF Xena RGBW Par

Pictures

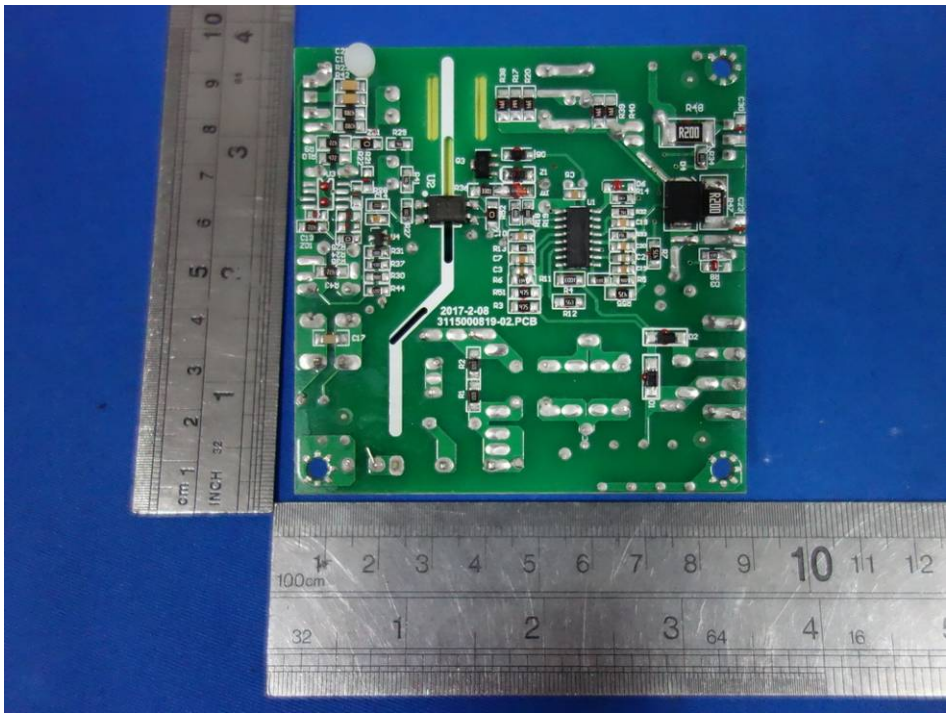

Figure 9. LED driver view for model CLF Xena RGBW Par

==========END OF REPORT==========