



TEST REPORT
IEC 60598-2-1
Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Report Number. : AOC251023018S

Date of issue : 2025-10-24

Total number of pages : 63 pages

Name of Testing Laboratory preparing the Report : Shenzhen AOCE Electronic Technology Service Co., Ltd
Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

Applicant's name : Goldful Lighting

Address : EM MACAU, RUA DE TOMAS VIEIRA NO.5EE, CHINA

Test specification:

Standard : ☒ IEC 60598-2-1:2020
☒ IEC 60598-1:2020
☒ EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Test procedure : Type testing

Non-standard test method : N/A

Test Report Form No. : IEC60598_2_1G

Test Report Form(s) Originator : Intertek Semko AB

Master TRF : Dated 2020-06-02

Copyright © 2020 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

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

General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the Testing Laboratory, responsible for this Test Report.

Test item description	LED Batten		
Trade Mark(s)	Goldful Lighting		
Manufacturer	Goldful Lighting		
Model/Type reference.....	EM MACAU, RUA DE TOMAS VIEIRA NO.5EE, CHINA GLB66D-1500-49W, GLBM-X1-X2 X3, GLBL-X1-X2 X3, GLBK6-X1-X2 X3, GLBWP-X1-X2 X3, GLB5-X1-X2 X3, GLB25-X1-X2 X3, GLB66D-X1-X2 X3, GLB77A-X1-X2 X3, GLB77B-X1-X2 X3, GLB104A-X1-X2 X3, GLB105A-X1-X2 X3, GLB146-X1-X2 X3, GLB147-X1-X2 X3, GLB151-X1-X2 X3, GLB155-X1-X2 X3, GLB157-X1-X2 X3, GLB158-X1-X2 X3, GLB160-X1-X2 X3, GLB163-X1-X2 X3, GLB166-X1-X2 X3, GLB176-X1-X2 X3, GLB179-X1-X2 X3, GLB181-X1-X2 X3, GLB194-X1-X2 X3, GLB197-X1-X2 X3, GLB198-X1-X2 X3, GLB221-X1-X2 X3, GLBH1-X1-X2 X3, GLBH2-X1-X2 X3, GLBK-X1-X2 X3, GLBS-X1-X2 X3, GLBT5-X1-X2 X3, GLB8-X1-X2 X3, GLB41-X1-X2 X3, GLB49-X1-X2 X3, GLB74-X1-X2 X3, GLB76-X1-X2 X3, GLB106B-X1-X2 X3, GLB121-X1-X2 X3, GLB124-X1-X2 X3, GLB128A-X1-X2 X3, GLB128B-X1-X2 X3, GLB143-X1-X2 X3, GLB144-X1-X2 X3, GLB175-X1-X2 X3, GLB186B-X1-X2 X3, GLB199-X1-X2 X3, GLB211A-X1-X2 X3, GLB226A-X1-X2 X3, GLB-X1-X2 X3 X1=Nominal length/width/height X2=Power(4-115W) X3=Non-dimmable(blank)/Dimmable(D)/Power switch(PS)/High Lumen Output(HO)		
Ratings	220-240 V~, 50/60 Hz, 49 W, Class I, ta:25 °C		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	Testing Laboratory:	Shenzhen AOCE Electronic Technology Service Co., Ltd	
	Testing location/ address	Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
	Tested by (name, function, signature)	ZhiCong Xian Technical Engineer	<i>ZhiCong Xian</i>
	Approved by (name, function, signature) ..	Robin Liu Technical Manager	<i>Robin Liu</i>
☐	Testing procedure: CTF Stage 1:		
	Testing location/ address		
	Tested by (name, function, signature)		
	Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 2:		
	Testing location/ address		

Tested by (name + signature)..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
☐	Testing procedure: CTF Stage 3:		
☐	Testing procedure: CTF Stage 4:		
Testing location/ address			
Tested by (name, function, signature)			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			
List of Attachments (including a total number of pages in each attachment): Attachment No.1: European Group Differences And National Differences. Attachment No.2: Clause 13 of EN IEC 62031 Attachment No.3: IEC TR 62778 Attachment No.4: Photo document.			
Summary of testing:			
Tests performed (name of test and test clause): - EN IEC 60598-2-1:2021 - EN IEC 60598-1:2024+A11:2024 - Clause 13 of EN IEC 62031:2020+A11:2021 - IEC TR 62778:2014 - EN 62493:2015+A1:2022 -EN 62471:2008		Testing location: Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Summary of compliance with National Differences (List of countries addressed): European Group Differences And National Differences ☒ The product fulfils the requirements of <u>EN IEC 60598-2-1:2021 & EN IEC 60598-1:2024+A11:2024</u>			

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

Copy of marking plate:

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



Test item particulars..... :	
Classification of installation and use..... :	Fixed luminaire
Supply Connection	Terminal block
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing..... :	
Date of receipt of test item	2025-10-09
Date (s) of performance of tests	2025-10-09 to 2025-10-24
General remarks:	
The tested sample(s) and the sample information are provided by the client. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF. Throughout this report a ☐ comma / ☒ point is used as the decimal separator. The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid. When determining for test conclusion, measurement uncertainty of tests has been considered. Clause numbers between brackets refer to clauses in IEC 60598-1. Note: clauses marked “*” not included in CNAS scope.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Same as manufacturer	

General product information:

Class I luminaires, all models have the same electrical and mechanical construction, only appearance size is different.

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.3)	More sections applicable	Yes ☐ No ☒ Section/s:	—
1.2 (0.5)	Components	(see Annex 1)	—
1.2 (0.7)	Information for luminaire design in light sources standards		—
1.2 (0.7.2)	Light source safety standard		—
	Luminaire design in the light source safety standard		P

1.4 (2)	CLASSIFICATION OF LUMINAIRES		P
1.4 (2.2)	Type of protection	Class I	P
1.4 (2.3)	Degree of protection		—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes ☒ No ☐	—
1.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions		P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz		P
1.5 (3.3.3)	Operating temperature		N/A
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply		P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
1.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
1.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		P
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
1.6 (4.7.3)	Terminals for supply conductors		P
1.6 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		N/A
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves		N/A
1.6 (4.9.1)	Retainment		N/A
	Method of fixing		N/A
1.6 (4.9.2)	Insulated linings and sleeves:		N/A
	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
1.6 (4.10)	Double or reinforced insulation		N/A
1.6 (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
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- sleeves retained in position		P
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		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
1.6 (4.11)	Electrical connections and current-carrying parts		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	Screws and connections (mechanical) and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	0.5 Nm for earthing screw	P
	Torque test: torque (Nm); part	0.5 Nm for LED PCB screw	P
	Torque test: torque (Nm); part		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (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
1.6 (4.12.5)	Screwed glands; force (Nm)		N/A
1.6 (4.13)	Mechanical strength		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:		N/A
	- other parts; energy (Nm)	0.35	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
1.6 (4.13.2)	Metal parts have adequate mechanical strength		P
1.6 (4.13.3)	Straight test finger		P
1.6 (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
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	Suspensions, fixings and means of adjusting		P
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight		P
	B) torque 2,5 Nm		N/A
	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
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		—
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	Flammable materials		P
	- glow-wire test 650°C.....	See Test Table 1.15 (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
1.6 (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
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- temperature marked lamp control gear		N/A
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion		N/A
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	Protective shield		N/A
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 1.15 (13.3.2)	N/A
1.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
*1.6 (4.24)	Photobiological hazards		P
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778		—
	Luminaires with E_{thr} :		N/A
	a) fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2....:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
1.6 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection		N/A
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
1.6 (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
1.6 (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
1.6 (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
1.6 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Live part not accessible after parts have been opened by hand or tools		N/A
1.6 (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		P
1.6 (4.31)	Insulation between circuits		P
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	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
1.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage $\leq$ ELV		P
	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		P
	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
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	Socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.3)	Other circuits		N/A
	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
1.6 (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
1.7 (4.33)	Luminaire powered via information technology communication cabling		N/A
	Requirements for Class III luminaire		N/A
	Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector		N/A
	Luminaire does not create any hazard from overvoltage		N/A
1.7 (4.34)	Electromagnetic fields (EMF)		P
	No harmful electromagnetic fields		P
1.7 (4.35)	Protection against moving fan blades		N/A
	Test with a standard test finger		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	Blades rounded with radius ≥ 0.5 mm and:		N/A
	-hardness less than D60 Shore		N/A
	-peripheral speed less than 15 m/s		N/A
	-input power of fan ≤ 2 W at rated voltage		N/A
1.7 (4.36)	Track-mounted luminaires		N/A
	Test in accordance with Annex A of IEC60570:2003/AMD2:2019		N/A

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
1.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
1.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A
1.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.7 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 1.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.7 (11.2) II	N/A

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance $< 0,5 \Omega$	0.04	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
1.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

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

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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection.....:	Terminal block	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
1.10 (5.2.2)	Type of cable		N/A
	Nominal cross-sectional area (mm ²).....:		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
1.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
1.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (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
1.10 (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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
1.10 (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
1.10 (5.2.11)	External wiring passing into luminaire		N/A
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	Internal wiring		P
1.10 (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
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²):		P
	Insulation thickness (mm):		P
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm ²):		P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		N/A
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (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		N/A
	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		N/A
	Double-ended high-pressure discharge lamp		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (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
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V)		N/A
	- no-load voltage (V)		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V)		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		P
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Other luminaires with capacitor > 0,1 µF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
1.12 (12.3)	Endurance test		P
	a) mounting-position		—
	b) test temperature (°C)	35 °C	—
	c) total duration (h)	240 h	—
	d) supply voltage (V)	264 V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)		—
	e) luminaire ceases to operate		—
1.12 (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
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (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		—

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
1.12 (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
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (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 Test Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....		—

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 Test Table 1.15 (13.2.1)	N/A
1.12 (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
1.12 (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 Test Table 1.15 (13.2.1)	N/A

1.13 (9)	RESISTANCE TO DUST AND MOISTURE		P
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP	IP 40	—
	- mounting position during test.....:		—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses		—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		P
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h		P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (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		P
	- between current-carrying parts of different polarity :	> 100 MΩ	P
	- between current-carrying parts and mounting surface	> 100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire	> 100 MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity	> 100 MΩ	P
	- between live parts and mounting surface	> 100 MΩ	P
	- between live parts and metal parts	> 100 MΩ	P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
1.14 (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		P
	- between current-carrying parts of different polarity:	500 V	P
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		P
	- between live parts of different polarity	1480 V	P
	- between live parts and mounting surface	1480 V	P
	- between live parts and metal parts	1480 V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
1.14 (10.3)	Touch current or protective conductor current (mA):	protective conductor current : 0.02 mA	P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test..... :	See Test Table 1.15 (13.2.1)	P
1.15 (13.3.1)	Needle-flame test (10 s) :	See Test Table 1.15 (13.3.1)	P
1.15 (13.3.2)	Glow-wire test (650°C)..... :	See Test Table 1.15 (13.3.2)	P
1.15 (13.4)	Proof tracking test (IEC 60112) :	See Test Table 1.15 (13.4)	N/A

1.7 (11.2)	TABLE I: Creepage distances and clearances						P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						P
	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:	B	> 1.95	1.5	11.1B	> 3.25	2.5	11.1A
Working voltage (V)					240 V		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					-		—
Supplementary information: L and N							
Distance 2:	B	> 1.95	1.5	11.1B	> 3.25	2.5	11.1A
Working voltage (V)					240 V		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					-		—
Supplementary information: Live parts and accessible parts							
Distance 3:	B	> 1.95	1.5	11.1B	> 3.25	2.5	11.1A
Working voltage (V)					240 V		—
PTI					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV)					-		—
Supplementary information: / Live parts and mounting surface							

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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) : 2				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
LED cover	see ANNEX 1	95 (69.5+25)	1.1	
LED PCB	see ANNEX 1	125	1.2	
Supplementary information:				

1.15 (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
LED PCB	see ANNEX 1	10 s	No	0	pass
Supplementary information:					

1.15 (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
LED cover	see ANNEX 1		No	0	pass
Supplementary information:					

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.15 (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:					

ANNEX 1		TABLE: Critical components information					P
Object / part No.	Cod e	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Terminal block	B	PUTIAN HANJIANG FUCON ELECTRONIC S CO LTD	CM238	450VAC, 24A, T120	EN 60998-1 /-2-2	VDE 40041279	
- Alt.	D	SHENGZHE N GREENWAY ELECTRONI C CO.,LTD	863	450VAC, 16A, T110	EN 60998-1 /-2-2	DEKRA ENEC 35-116893	
- Alt.	D	Openwise Industrial Ltd	923	400VAC, 16A, T80	EN 60998-1 /-2-2	VDE 40022690	
- Alt.	D	Donggua n Changhe Electronic s Co.,Ltd	CS350-16	450VAC, 16A, T110	EN 60998-1 /-2-2	TUV SUD mark B 17 10 02030 001	
- Alt.	D	Foshan Shunde Jinjin Electrical Co.,Ltd.	KZ8-601-3	450VAC, 24A, T110	EN 60998-1 /-2-2	DEKRA ENEC 35-107149	
- Alt.	D	Jiang Men Krealux Electrical Appliances Co.Ltd.	P02	450VAC, 24A, T110	EN 60998-1 /-2-2	VDE 40021964	

Tel: (86)755-85277785

Fax: (86)755-23705230

E-mail: postmaster@aoc-cert.comWebsite: <http://www.aoc-cert.com>

TRF No. IEC60598_2_1G

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
- Alt.	D	Jiang Men Krealux Electrical Appliances Co.Ltd.,	P02-D	450VAC, 24A, T110	EN 60998-1 /-2-2	VDE 40021964
- Alt.	D	Jiang Men Krealux Electrical Appliances Co.Ltd.	960	450VAC, 24A, T80	EN 60998-1/2- 1/2-2	VDE 40029029
- Alt.	D	XIAMEN GHGM INDUSTRIAL TRADE CO.,LTD.	JCCA10 0-0241102	450VAC, 24A, T105	IEC 60998-1/-2-1	VDE 40050942
- Alt.	D	XIAMEN GHGM INDUSTRIAL TRADE CO.,LTD.	JCCA10 0-0341103	450VAC, 24A, T105	IEC 60998-1/-2-1	VDE 40050942
- Alt.	D	Yuyao Sineyi Electronic Technology Co., Ltd	P02-2P, P02- 3P, P02-4P, P02-5P	450VAC, 16A, T110	EN 60998-1, EN 60998-2-2	TUV R 50420331 001
- Alt.	D	Heavy Power Co., Ltd	PA10	450VAC,32A, Max.4.0mm ² , T110	IEC 60998-1/-2-1	VDE 40019247
- Alt.	D	Putian Hanjiang Fucon Electronics Co.,Ltd.,	CM-10-2-2P CM-10-3-3P	450VAC,24A, Max.2.5mm ² , T110	IEC 60998-1/-2-1	VDE 40039389
- Alt.	D	Heavy Power Co., Ltd	PA12	500VAC,41A, Max.6.0mm ² , T110	IEC 60998-1/-2-1	VDE 40016433
- Alt.	D	Foshan Nanhai Ding Qing Hardware & Electric Co.,Ltd.	PA12	500VAC,41A, Max.6.0mm ² , T110	IEC 60998-1/-2-1	VDE 40027883

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
Earth Wire	B	SHENZHEN DINGYU ELECTRICAL TECHNOLOGY CO LTD	1015	18AWG, 105 C, 600V, yellow and green	--	UL E365423 Test with appliance
- Alt.	D	Various	Various	18AWG, 105 C, 600V, yellow and green	--	UL Test with appliance
- Alt.	D	Shenzhen Dingyu Electrical Technology Co Ltd	1569	18AWG, 105 C, 300V, yellow and green	--	UL E365423 Test with appliance
- Alt.	D	Various	Various	18AWG, 80 C, 300V, yellow and green	--	UL Test with appliance
AC connector	B	JAPAN SOLDERLESS TERMINAL MFG CO LTD	YLR-03V ; YLP-03VF; YLR-06V ; YLP-06VF	300V, 7A	DIN VDE 0627/06	TUV mark R9351052
- Alt.	D	YUEQING JIADE ELECTRONICS CO.,LTD.	B450002(YL)	300V, 10A	--	UL E241222
- Alt.	D	Zhejiang Hongxing Electrical Co.,Ltd.	HX450XX-(b) R; HX450XX-(b) RT	250V 5A	EN 61984	TUV mark No.B 079214 0001 Rev.01
Input wire of LED driver	B	SHENZHEN DINGYU ELECTRICAL TECHNOLOGY CO LTD	1569	18AWG, 105 C, 300V	--	UL E365423 Test with appliance
- Alt.	D	SHENZHEN CHAOJIE ELECTRONICS CO LTD	1569	18AWG, 105 C, 300V	--	UL E484929 Test with appliance
- Alt.	D	SHIQING ELECTRONICS (HUIZHOU) CO LTD	1569	18AWG, 105 C, 300V	--	UL E342682 Test with appliance

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
- Alt.	D	GUANGDONG HAERKN NEW ENERGY CO LTD	1332	18AWG,200 C,300V	--	UL E300956 Test with appliance
- Alt.	D	DONG GUAN SHENG PAI ELECTRIC WIRE & CABLE CO LTD	1332	18AWG,200 C,300V	--	UL E347603 Test with appliance
- Alt.	D	DONG GUAN SHENG PAI ELECTRIC WIRE & CABLE CO LTD	1332	18AWG,200 C,300V	--	UL E347603 Test with appliance
- Alt.	D	Various	Various	18AWG, 105 C,300V	--	UL Test with appliance
- Alt.	D	Guangzhou Feng Tai Electronics Co., Ltd	H05VV-F	300/300V, 2x0,75mm ²	EN 50525-2-11	VDE 40013790
- Alt.	D	Dongguan Hongfuwei Cable Technology Co., Ltd	H05VV-F	300/300V, 2x0,75mm ²	EN 50525-2-11	VDE 40043104
- Alt.	D	Various	Various	300/300V, 2x0,75mm ²	EN 50525-2-11	VDE Approve
Input wire for LED PCB and Output wire for LED driver	B	SHENZHEN JIAHUIDA ELECTRONIC S CO LTD	3239	20-24AWG 200 C, 3KV	--	UL E361915 Test with appliance
- Alt.	D	QIFURUI ELECTRONIC S CO	3239	20-24AWG, 200 C, 3KV	--	UL E211048 Test with appliance
- Alt.	D	SHENZHEN DINGYU ELECTRICAL TECHNOLOGY CO LTD	3239	20-24AWG, 200 C, 3KV	--	UL E365423 Test with appliance

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
- Alt.	D	DONG GUAN SH ENG PAI ELECT RIC WIRE & CAB LE CO LTD	3239	20-24AWG, 200 C, 3KV	--	UL E347603 Test with appliance
- Alt.	D	Various	Various	20-24AWG, 200 C, 3KV	--	UL Approve
- Alt.	D	SHENZHEN CHAOJIE ELECTRONIC S CO LTD	H03VVH2-F	300/300V, 2x0.5mm ²	EN 50525-2-11	VDE 40047214
- Alt.	D	Sheng Yi Electrical Factory	H03VVH2-F	300/300V, 2x0.5mm ²	EN 50525-2-11	VDE 40023272
- Alt.	D	Shiqing Electronics (Huizhou) Co., Ltd,	H03VVH2-F	300/300V, 2x0.5mm ²	EN 50525-2-11	VDE 40038012
- Alt.	D	Various	Various	300/300V, 2x0.5mm ²	EN 50525-2-11	VDE Approve
DC connector	B	Shenzhen Mianjiang Industrial Co.Ltd..	5521	230 1A	IEC 60598-1 IEC 60598-2-2	Tested with appliance
Lamp cover(down)	B	Covestro Deutschland AG [PC Resins]	6555+(z)(f1)	PC, V-2	--	UL E41613
- Alt.	D	TEIJIN POLYCARBON A TE SINGAPORE PTE LTD	LN-2250Z(#)(f1), LN-2250U(#)(f1), LN-2250V(#)(f1)	V-2, 80 C	--	UL E195100
Lens(down)	B	Covestro Deutschland AG [PC Resins]	6555+(z)(f1)	PC, V-2	--	UL E41613

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
- Alt.	D	TEIJIN POLYCARBON A TE SINGAPORE PTE LTD	LN-2250Z(#)(f1), LN-2250U(#)(f1), LN-2250V(#)(f1)	V-2, 80 C	--	UL E195100
LED cover(up)	B	Covestro Deutschland AG [PC Resins]	6555+(z)(f1)	PC, V-2	--	UL E41613
- Alt.	D	TEIJIN POLYCARBON A TE SINGAPORE PTE LTD	LN-2250Z(#)(f1), LN-2250U(#)(f1), LN-2250V(#)(f1)	V-2, 80 C	--	UL E195100
LED	B	Guangzhou Hongli Opto-Electronic Co.,Ltd	2835	IF=150mA, IV=8.5-9.1V, 3000-5700K	IEC 62778	Test with appliance
LED PCB	B	WODE ELECTRONICS TECHNOLOGY(Z HUHA)CO., LTD.	WD-16	V-0, 130 C	--	UL E323980 Test with appliance
- Alt.	D	JIANGMEN JUNYEDA ELECTRONIC S CO LTD	JYD-L	V-0, 90 C	--	UL E345177 Test with appliance
- Alt.	D	DONGGUAN QINGKANG ELECTRONIC S CO LTD	LQK-001	V-0, 90 C	--	UL E359435 Test with appliance
- Alt.	D	JUCHUANG OPTOELECT R ONIC CO LTD	JC-1	V-0, 90 C	--	UL E503117 Test with appliance
- Alt.	D	JIANGXI HONG YU ELECTRONIC CO LTD	HY-6	V-0, 130 C	--	UL E309772 Test with appliance

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
- Alt.	D	FOSHAN SHUNDE TONGYU ELECTRONIC S CO LTD	TY-6	V-0, 130 C	--	UL E337729 Test with appliance
- Alt.	D	LIANMENG ELECTRONIC S HUIYANG CO LTD	LM-6	V-0, 130 C	--	UL E469262 Test with appliance
- Alt.	D	Hunan Huapuxing Photoelectric Co Ltd	HPX-L	V-0, 130 C	--	UL E523207 Test with appliance
- Alt.	D	Zhongshan Cakee PCB Co Ltd	NST-6	V-0, 130 C	--	UL E205740 Test with appliance
LED driver	B	Up-Shine Lighting Co., Limited.	WSI-30W710-NF1	Build-in SELV, Constant current, IP20, ClassI Input:220-240Vac, 50/60Hz, 0,17A Output: 28-42Vdc, 500/710mA, max.60Vdc ta:50°C, tc:85°C	EN 61347-1 EN 61347-2-13	TUV SUD N8A 089967 0070 REV. 00

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver	B	Up-Shine Lighting Co., Limited.	WSI-40W1000-NF1	Build-in SELV, Constant current, IP20, ClassI Input:220-240Vac, 50/60Hz, 0,23A, Max.48W Output: 28-42Vdc, 1000/900/600/500 mA, max.60Vdc, Max.42W, ta:50°C, tc:85°C	EN 61347-1 EN 61347-2-13	TUV SUD N8A 089967 0070 REV. 00
LED driver	B	Up-Shine Lighting Co., Limited.	WSI-52W1300-NF1	Build-in SELV, Constant current, IP20, ClassI Input:220-240Vac, 50/60Hz, 0,31A Output: 28-42Vdc, 1150/1200/1250 /1 300mA, max.60Vdc, ta:50°C, tc:85°C	EN 61347-1 EN 61347-2-13	TUV SUD N8A 089967 0070 REV. 00

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver	B	Up-Shine Lighting Co., Limited.	WSI-60W1500-NF1	Build-in SELV, Constant current, IP20, ClassI Input:220-240Vac, 50/60Hz, 0,36A Output: 28-42Vdc, 1050/1200/1350 or DC28-40Vdc, 1500mA, max.60Vdc, ta:50°C, tc:85°C	EN 61347-1 EN 61347-2-13	TUV SUD N8A 089967 0070 REV. 00
LED driver	B	BOKE Drivers Co., Ltd.	BK-DAL030-0800Ad	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,19A Output: 6-42Vdc, 275-800mA, max.30,4W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0140 Rev. 00

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver	B	BOKE Drivers Co., Ltd.	BK-KHL030-0800Am	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,21A Output: 24-42Vdc, 350-800mA, max.30,4W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0132 Rev. 01
LED driver	B	BOKE Drivers Co., Ltd.	BK-DAL040-1050Ad	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,24A Output: 6-42Vdc, 400-1050mA, max.40W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0140 Rev. 00
LED driver	B	BOKE Drivers Co., Ltd.	BK-KHL040-1050Am	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,24A Output: 24-42Vdc, 600-1050mA, max.40W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0132 Rev. 01

IEC 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver	B	BOKE Drivers Co., Ltd.	BK-DAL050-1300Ad	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,30A Output: 6-42Vdc, 550-1300mA, max.50W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0140 Rev. 00
LED driver	B	BOKE Drivers Co., Ltd.	BK-KHL050-1300Am	Build-in SELV, Constant current, IP20, ClassI Input:200-240Vac, 50/60Hz, 0,29A Output: 24-42Vdc, 850-1300mA, max.52,5W, max.50Vdc, ta:60°C, tc:90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0132 Rev. 01
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. The codes above have the following meaning: A - The component is replaceable with another one, also certified, with equivalent characteristics B - The component is replaceable if authorised by the test house C - Integrated component tested together with the appliance D - Alternative component						

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		P				
	Type reference.....:	GLB66D-1500-49W	—				
	Lamp used	LEDs	—				
	Lamp control gear used	-	—				
	Mounting position of luminaire	Normal mounting	—				
	Supply wattage (W)	49 W	—				
	Supply current (A)		—				
	Temperatures in test 1 - 4 below are corrected for ta (°C)	25°C	—				
	- abnormal operating mode.....:	-	—				
1.12 (12.4)	- test 1: rated voltage	-	—				
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	1.06×240 V	—				
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:	-	—				
	Through wiring or looping-in wiring loaded by a current of A during the test	-	—				
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	-	—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Input of Terminal block	25	-	49.8	-	85	-	-
Input wire of LED driver	25		69.4		90		
LED driver tc	25		69.5		90		
LED PCB	25		67.2		cl.13.1		
LED lens	25	-	70.7	-	cl.13.1	-	-
Mounting surface	25		33.7		90		
Supplementary information:							

IEC 60598-2-1			
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 (mm ²)		—
(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 60598-2-1			
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

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV) :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV) :										—

IEC 60598-2-1										
Clause	Requirement + Test					Result - Remark				Verdict
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV) :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
Supplementary information:										

Attachment No.1**IEC60598_2_1D - ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

ATTACHMENT TO TEST REPORT IEC 60598-2-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Luminaires
Part 2: Particular requirements
Section 1: Fixed general purpose luminaires

Differences according to: EN IEC 60598-2-1:2021 used in conjunction with
EN 60598-1:2021+A1:2022

Annex Form No. : EU_GD_IEC60598_2_1D

Annex Form Originator : OVE

Master Annex Form : 2014-11

Copyright © 2014 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

	CENELEC COMMON MODIFICATIONS (EN)	P
--	--	---

1.5 (3)	MARKING	P
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	P

1.6 (4)	CONSTRUCTION	N/A
1.6 (4.11.6)	Electro-mechanical contact systems	N/A

1.10 (5)	EXTERNAL AND INTERNAL WIRING	P
1.10 (5.2.1)	Connecting leads	P
	- without a means for connection to the supply	P
	- terminal block specified	P
	- relevant information provided	P
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	P
1.10 (5.2.2)	Cables equal to EN 50525	N/A
	Replace table 5.1 – Supply cord	N/A

Attachment No.1**IEC60598_2_1D - ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12)	ENDURANCE TESTS AND THERMAL TESTS		P
1.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		P
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
(3.3)	DK: power supply cords of class I luminaires with label		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
	GB: Requirements according to United Kingdom Building Regulation		N/A

Attachment No.2

EN 62031

Clause	Requirement + Test	Result - Remark	Verdict
13 (14)	FAULT CONDITIONS		P
- (14.1)	In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		N/A
	When operated under fault conditions the LED module:		N/A
	- does not emit flames or molten material		N/A
	- does not produce flammable gases		N/A
	- protection against accidental contact not impaired		N/A
	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		N/A
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)		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
- (14.3)	Short-circuit or interruption of semiconductor devices		N/A
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.5)	Short-circuit across electrolytic capacitors		N/A
- (14.6)	After the tests has been carried out on three samples:		N/A
	The insulation resistance $\geq 1 \text{ M}\Omega$		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 supply		N/A
13.2	Overpower condition		P
	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	No fire, smoke or flammable gas is produced		P
	Molten material does not ignite tissue paper, spread below the module		P

Attachment No.3

IEC TR 62778

Clause	Requirement + Test				Result - Remark				Verdict
Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								—
	Photobiological safety of lamps and lamp systems (LED bulb emit white light)								P
Risk	Action spectrum m	Symb ol	Units	Emission limits					
				Exempt	Result	Low risk	Result	Mod risk	Result
Actinic UV	S _{UV} (λ)	E _s	mW·m ⁻²	0,001	1.002E-06	0.003	--	--	--
Near UV	--	E _{UVA}	W·m ⁻²	0,33	3.455E-04	33	--	--	--
Blue light	B(λ)	L _B	W·m ⁻² ·sr ⁻¹	100	3.087E+00	10000	--	4000000	--
Blue light, small source	B(λ)	E _B	W·m ⁻²	1,0*	--	--	--	400	--
Retinal thermal	R(λ)	L _R	W·m ⁻² ·sr ⁻¹	28000/α	1.006E+03	1.011E+06	--	71000/α	--
Retinal thermal, weak visual stimulus**	R(λ)	L _{IR}	W·m ⁻² ·sr ⁻¹	545000 0,0017≤ α ≤ 0,011	--				
					--				
IR radiation, eye	--	E _{IR}	W·m ⁻²	6000/α 0,011≤ α ≤ 0,1	0.000E+00	570	--	3200	--
* Small source defined as one with α < 0,011radian. Averaging field of view at 10000 s is 0.1radian. ** Involves evaluation of non-GLS source NOTE 1. Angular subtense of apparent source: α=77.53 mrad 2. Measure distance is 200mm.									
Blue light	B(λ)	LB	W·m ⁻² ·sr ⁻¹	100	3.746E+00	10000	--	4000000	--
NOTE Angular subtense of apparent source: α= 77.53 mrad. Measure distance 200mm.									

Attachment No.4

Product Photos

Details of: Fig. 1



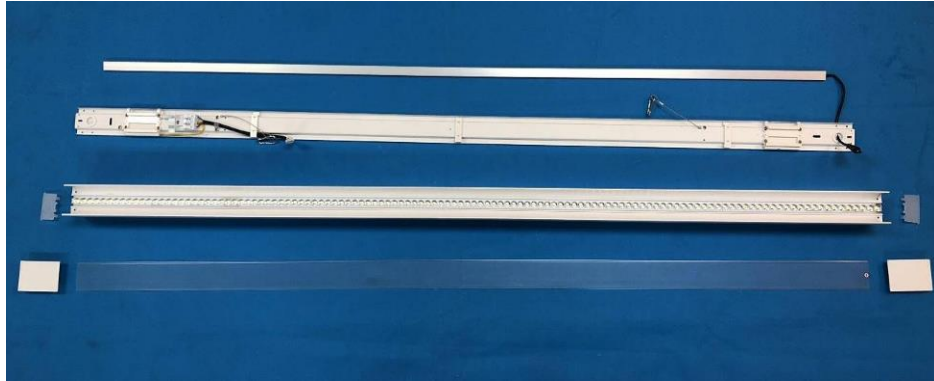
Details of: Fig. 2



Attachment No.4

Product Photos

Details of: Fig. 3



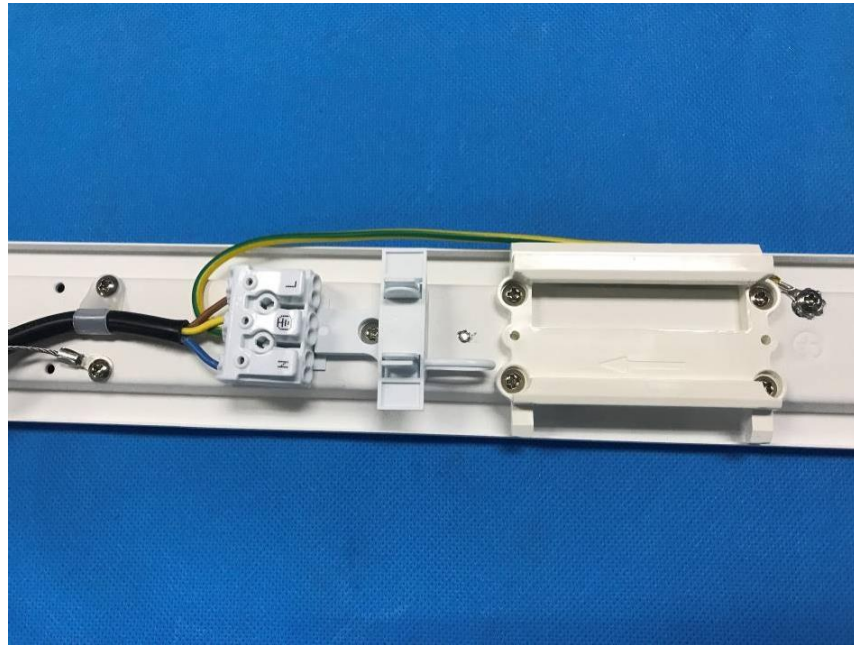
Details of: Fig. 4



Attachment No.4

Product Photos

Details of: Fig. 5



Details of: Fig. 6



Attachment No.4

Product Photos

Details of: Fig. 7



Details of: Fig. 8



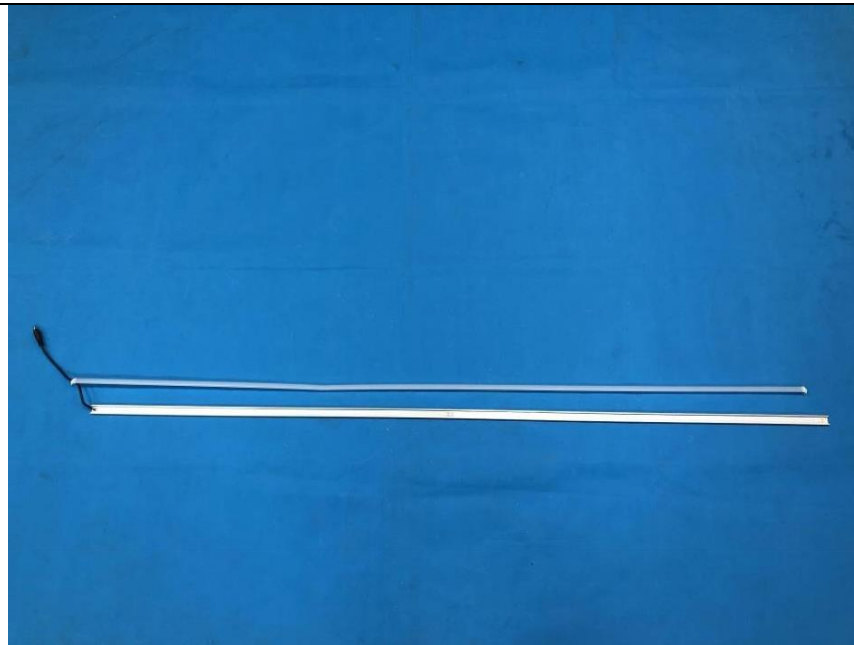
Attachment No.4

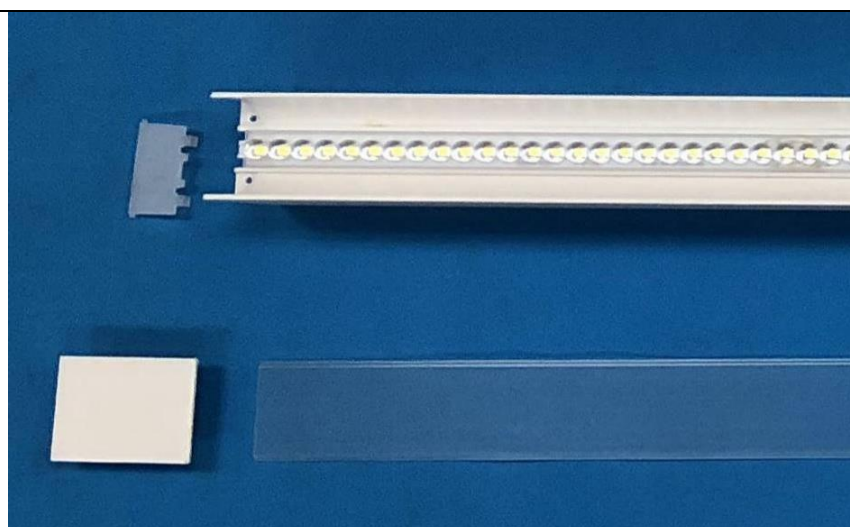
Product Photos

Details of: Fig. 9



Details of: Fig. 10

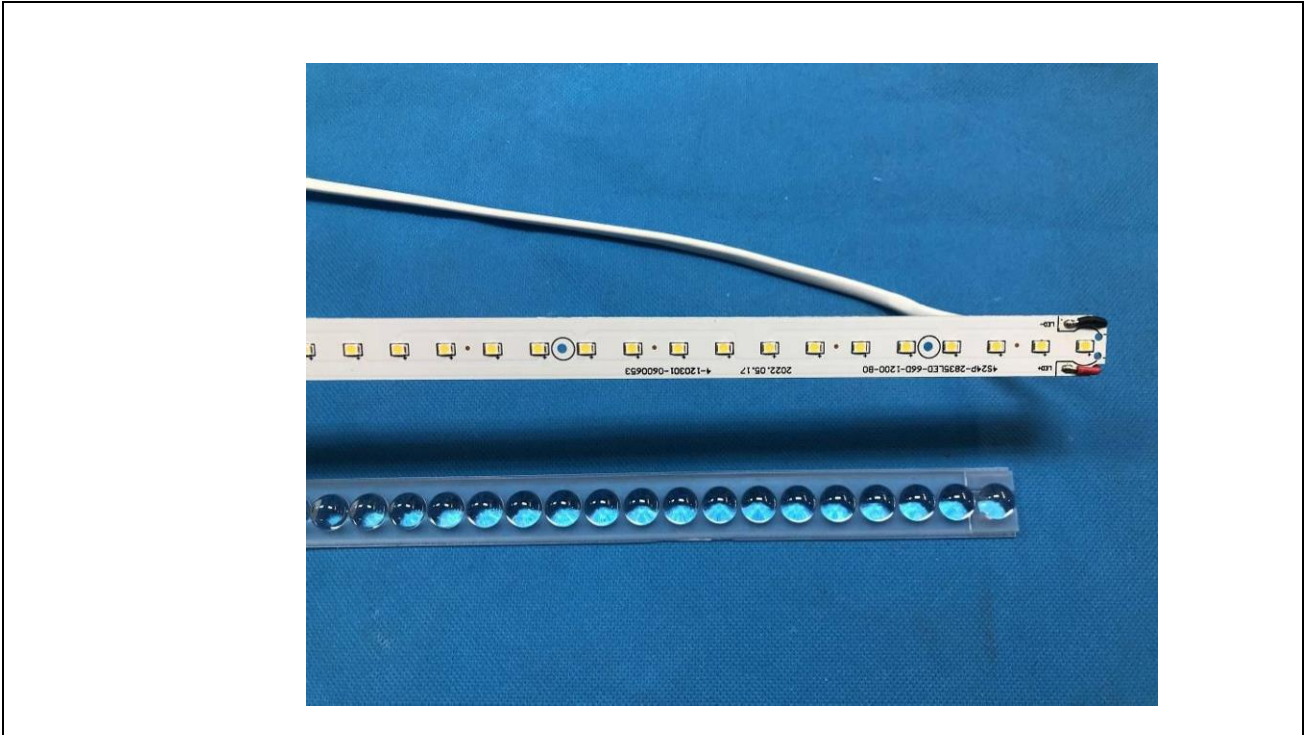


Attachment No.4**Product Photos**Details of: Fig. 11Details of: Fig. 12

Attachment No.4

Product Photos

Details of: Fig. 13



Details of: Fig. 14



Attachment No.4

Product Photos

Details of: Fig. 15



Details of: Fig. 16



Attachment No.4

Product Photos

Details of: Fig. 17



Details of: Fig. 18



Product Photos

Details of: Fig. 19



Details of: Fig. 20



Product Photos

Details of: Fig. 21



- End of test report -