TEST REPORT

Reference No.	:	WTF25N08227077L
Applicant	:	ENERJI ELECTRICAL (PTY) LTD
Address	:	W P PARK, UNIT 2, 17 AGRIC, STREET, EPPING 2, CAPE TOWN,7460, SOUTH AFRICA
Manufacturer	:	SHENZHEN R&J LIGHTING LIMITED.
Address	:	RM1403, BLOCK 4, NANTAI YUNCHUANGGU, FENGHUANG STREET, GUANGMING DISTRICT, SHENZHEN, CHINA
Product Name	:	Moisture-proof lamp
Model No.	:	SYBRG005AB, others see “General product information and other remarks”.
Test specification	:	EN IEC 60598-1:2021+A11:2022 EN IEC 60598-2-1:2021 EN 62493:2015+A1:2022
Date of Receipt sample	:	2024-07-16
Date of Test	:	2024-07-26 to 2024-08-09
Date of Issue	:	2025-09-04
Test Report Form No.	:	IEC60598_2_1I
Test Result	:	**Pass**

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

Prepared By:
Waltek Testing Group (Ningbo) Co., Ltd.
Address: Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China
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Tested by: Zeki Shao

Zeki Shao / Project Engineer

Approved by:

Jianzhong Mao/ Manager

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

Report Number. .....:	WTF25N08227077L
Date of issue .....:	See cover page
Total number of pages.....:	41 pages
Name of Testing Laboratory preparing the Report.....:	Waltek Testing Group (Ningbo) Co., Ltd. Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China
Applicant's name.....:	See cover page
Address .....:	See cover page
Test specification:	
Standard.....:	IEC 60598-2-1:2020 used in conjunction with IEC 60598-1:2020
Test procedure .....:	CE-LVD
Non-standard test method .....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC60598_2_1I
Test Report Form(s) Originator ....:	Intertek Semko AB
Master TRF .....:	Dated 2022-08-26

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

General disclaimer:

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

Test item description ..... :	Fixed general purpose luminaires
Trade Mark(s) ..... :	SHENZHEN R&J LIGHTING LIMITED.
Manufacturer ..... :	See cover page
Model/Type reference ..... :	SYBRG005AB, others see “General product information and other remarks”.
Ratings ..... :	220-240V~, 50Hz, 40W, Class II, IP44, ta: 25°C

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

☒	**Testing Laboratory:**	Waltek Testing Group (Ningbo) Co., Ltd.	
Testing location/ address.....:		Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China	
Tested by (name, function, signature).....:		See cover page	
Approved by (name, function, signature)...:		See cover page	
☐	~~**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 1: photo documentation (3 pages)

Summary of testing:

Tests performed (name of test and test clause):

1. All tests are applied to SYBRG005AB.
2. EU differences see Annex 5.
3. According to the standard EN 62493:2015/A1:2022, the DUT belongs to unintentional radiating part of lighting equipment. Due to the reason that the DUT fulfils the inherent-compliance condition " **it contains no electronic controlgear**" The DUT is deemed to comply with requirements of this standard without testing.
4. Only the most unfavourable results are recorded in this report.

Testing location:

Waltek Testing Group (Ningbo) Co., Ltd.

Zone 3, 1/F., No.6, Building 011; Zone 1, 5/F., No.1, Building 007, No.1177, Lingyun Road, Ningbo Hi-Tech Zone, Yinzhou District, Ningbo, Zhejiang, China

Summary of compliance with National Differences (List of countries addressed):

EU Group differences

☒ **The product fulfils the requirements of**

EN IEC 60598-1: 2021+A11: 2022

EN IEC 60598-2-1: 2021

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

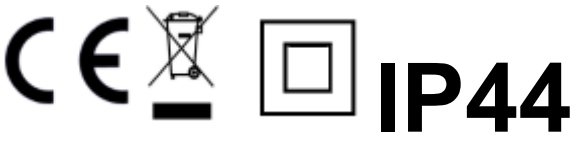
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.

Moisture-proof lamp
Model: SYBRG005AB
220-240V~, 50Hz, 40W, Class II, ta: 25°C



SHENZHEN R&J LIGHTING LIMITED.
RM1403, BLOCK 4, NANTAI YUNCHUANGGU, FENGHUANG STREET, GUANGMING DISTRICT, SHENZHEN, CHINA

Remark:

1. On the luminaires' exterior surface after installation;
2. The height of graphical symbols shall not be less than 5 mm. The height of letters and numerals either shown separately or with or as part of symbols shall not be less than 2 mm. The various components of the CE marking must have substantially the same vertical dimension, which may not be less than 5 mm. The symbol combination of WEEE logo shall have a minimum height of 7 mm.

1. Manufacturer or/and his importer shall ensure product bears label requirements in article 6 and article of the 2014/35/EU relate to name, registered trade mark, a single contact postal address, product type, batch or serial number or other element allowing product into EU.

Max. 40W E27

Remark: Near the lamp holder

Test item particulars.....:	Fixed general purpose luminaires
Classification of installation and use.....:	Class II, indoor / outdoor use
Supply Connection.....:	Terminal block (incorporated in lampholder)
Possible test case verdicts:	
- test case does not apply to the test object.....:	N
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	See cover page
Date (s) of performance of tests .....:	See cover page

General remarks:

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

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

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

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

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

Name and address of factory (ies) ..... : Same as manufacturer, see cover page.

General product information and other remarks:

1. Light source will not be provided by manufacturer when products into marketing.
2. External wire and internal wire will not be provided by manufacturer when products into marketing.
3. All models have similar construction and principle, details differences see following tables.

Model lists

Item	Model	Rated power	Dimension	Colour
1.	SYBR003WHT	40W	185*100mm	White
2.	SYBR003BLK	40W	185*100mm	Black
3.	SYBR003AB	40W	185*100mm	Antique brass
4.	SYBRG004WHT	40W	185*100mm	White
5.	SYBRG004BLK	40W	185*100mm	Black
6.	SYBRG004AB	40W	185*100mm	Antique brass
7.	SYBO001WHT	40W	210*120*100mm	White
8.	SYBO001BLK	40W	210*120*100mm	Black
9.	SYBO001AB	40W	210*120*100mm	Antique brass
10.	SYBO01WHT	40W	270*155*110mm	White
11.	SYBO01BLK	40W	270*155*110mm	Black
12.	SYBO01AB	40W	270*155*110mm	Antique brass
13.	SYBOG002WHT	40W	210*120*100mm	White
14.	SYBOG002BLK	40W	210*120*100mm	Black
15.	SYBOG002AB	40W	210*120*100mm	Antique brass
16.	SYBOG02WHT	40W	270*155*110mm	White
17.	SYBOG02BLK	40W	270*155*110mm	Black
18.	SYBOG02AB	40W	270*155*110mm	Antique brass
19.	SYBR03WHT	40W	270*155*110mm	White
20.	SYBR03BLK	40W	270*155*110mm	Black
21.	SYBR03AB	40W	270*155*110mm	Antique brass
22.	SYBRG04WHT	40W	175*125*110mm	White
23.	SYBRG04BLK	40W	175*125*110mm	Black
24.	SYBRG005WHT	40W	175*125*110mm	White
25.	SYBRG005BLK	40W	175*125*110mm	Black
26.	SYBRG005AB	40W	175*125*110mm	Antique brass
27.	SYB**********	40W	175*125*110mm	/

Remark: "*" = a-z or A-Z or 0-9, represents different colours.

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.4 (0)	**GENERAL TEST REQUIREMENTS**		P
1.4 (0.3)	More sections applicable ..... :	Yes ☐ No ☒ Section/s:	—
1.4 (0.5)	Components	(see Annex 1)	—
1.4 (0.7)	**Information for luminaire design in light sources standards**		—
1.4 (0.7.2)	Light source safety standard ..... :	---	—
	Luminaire design in the light source safety standard		N
1.5 (2)	**CLASSIFICATION OF LUMINAIRES**		P
1.5 (2.2)	Type of protection ..... :	Class II	P
1.5 (2.3)	Degree of protection ..... :	IP44	—
1.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ..... :	Yes ☒ No ☐	—
1.5 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—
1.6 (3)	**MARKING**		P
1.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.6 (3.3)	Additional information		P
	Language of instructions	English	P
1.6 (3.3.1)	Combination luminaires		N
1.6 (3.3.2)	Nominal frequency in Hz	50	P
1.6 (3.3.3)	Operating temperature		N
1.6 (3.3.5)	Wiring diagram		N
1.6 (3.3.6)	Special conditions		N
1.6 (3.3.7)	Metal halide lamp luminaire – warning		N
1.6 (3.3.8)	Limitation for semi-luminaires		N
1.6 (3.3.9)	Power factor and supply current		N
1.6 (3.3.10)	Suitability for use indoors		P
1.6 (3.3.11)	Luminaires with remote control		N
1.6 (3.3.12)	Clip-mounted luminaire – warning		N
1.6 (3.3.13)	Specifications of protective shields		N
1.6 (3.3.14)	Symbol for nature of supply		P
1.6 (3.3.15)	Rated current of socket outlet		N

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (3.3.16)	Rough service luminaire		N
1.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N
1.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N
1.6 (3.3.19)	Protective conductor current in instruction if applicable		N
1.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N
1.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		N
1.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N
1.6 (3.3.23)	Luminaires without control gear provided with necessary information for selection of appropriate component		N
1.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N
1.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		N
1.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N
1.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
1.7 (4)	**CONSTRUCTION**		P
1.7 (4.2)	Components replaceable without difficulty		P
1.7 (4.3)	Wireways smooth and free from sharp edges		P
1.7 (4.4)	**Lamp holders**		**P**
1.7 (4.4.1)	Integral lamp holder		N
1.7 (4.4.2)	Wiring connection		N
1.7 (4.4.3)	Lamp holder for end-to-end mounting		N
1.7 (4.4.4)	Positioning		P
	- pressure test (N) ..... :	E27: 2 Nm	—
	After test the lamp holder comply with relevant standard sheets and show no damage		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	After test on single-capped lamp holder the lamp holder has not moved from its position and show no permanent deformation		N
	- bending test (N) ..... :		—
	After test the lamp holder has not moved from its position and show no permanent deformation		N
1.7 (4.4.5)	Peak pulse voltage		N
1.7 (4.4.6)	Centre contact		N
1.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
1.7 (4.4.8)	Lamp connectors		N
1.7 (4.4.9)	Caps and bases correctly used		N
1.7 (4.4.10)	Light source for lamp holder or connection according IEC 60061 not connected another way		P
1.7 (4.5)	**Starter holders**		**N**
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
1.7 (4.6)	**Terminal blocks**		**N**
	Tails		N
	Unsecured blocks		N
1.7 (4.7)	**Terminals and supply connections**		**P**
1.7 (4.7.1)	Contact to metal parts		P
1.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
1.7 (4.7.3)	Terminals for supply conductors		P
1.7 (4.7.3.1)	Welded method and material		N
	- stranded or solid conductor		N
	- spot welding		N
	- welding between wires		N
	- Type Z attachment		N
	- mechanical test according to 15.6.2		N
	- electrical test according to 15.6.3		N
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N
1.7 (4.7.4)	Terminals other than supply connection		N
1.7 (4.7.5)	Heat-resistant wiring/sleeves		N
1.7 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7 (4.8)	**Switches**		**N**
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with IEC 61058-1 for electronic switches		N
1.7 (4.9)	**Insulating lining and sleeves**		**N**
1.7 (4.9.1)	Retainment		N
	Method of fixing ..... :		N
1.7 (4.9.2)	Insulated linings and sleeves:		N
	Resistant to a temperature > 20 °C to the wire temperature or		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C) ..... :		N
1.7 (4.10)	**Double or reinforced insulation**		**N**
1.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N
	Safe installation fixed luminaires		N
	Capacitors and switches		N
1.7 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
1.7 (4.10.3)	Retainment of insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lamp holder		N
1.7 (4.10.4)	Protective impedance device		N
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		N
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N
	Capacitors comply with IEC 60384-14		N
	Resistors comply with test (a) in 14.2 of IEC 60065		N
1.7 (4.11)	**Electrical connections and current-carrying parts**		**P**

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7 (4.11.1)	Contact pressure		N
1.7 (4.11.2)	Screws:		N
	- self-tapping screws		N
	- thread-cutting screws		N
1.7 (4.11.3)	Screw locking:		P
	- spring washer		N
	- rivets		N
1.7 (4.11.4)	Material of current-carrying parts		P
1.7 (4.11.5)	No contact to wood or mounting surface		P
1.7 (4.11.6)	Electro-mechanical contact systems		N
1.7 (4.12)	**Screws and connections (mechanical) and glands**		**P**
1.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part..... :	Screw fixing for lamp holder: Φ3,80 mm, 1,2 Nm	P
	Torque test: torque (Nm); part..... :		N
	Torque test: torque (Nm); part..... :		N
1.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
1.7 (4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm) ..... :	2,5 Nm	N
	- lamp holder; torque (Nm) ..... :	E27, 2,0Nm	P
	- push-button switches; torque 0,8 Nm ..... :		N
1.7 (4.12.5)	Screwed glands; force (Nm)..... :		N
1.7 (4.13)	**Mechanical strength**		**P**
1.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :	Glass cover: 0,2 Nm	P
	- other parts; energy (Nm)..... :	Plastic enclosure: 0,35 Nm	P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
1.7 (4.13.2)	Metal parts have adequate mechanical strength		P
1.7 (4.13.3)	Straight test finger	30 N	P
1.7 (4.13.4)	Rough service luminaires		N
	- IP54 or higher		N

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) fixed		N
	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
1.7 (4.13.6)	Tumbling barrel		N
1.7 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
1.7 (4.14.1)	Mechanical load:		P
	A) four times the weight	0,452 kg x 4 = 1,808 kg	P
	B) torque 2,5 Nm		N
	C) bracket arm; bending moment (Nm) ..... :		N
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N
	Metal rod. diameter (mm) ..... :		N
	Fixed luminaire or independent control gear without fixing devices		N
1.7 (4.14.2)	Load to flexible cables		N
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N
	Mass (kg) of semi-luminaire ..... :		N
	Bending moment (Nm) of semi-luminaire ..... :		N
1.7 (4.14.3)	Adjusting devices:		N
	- flexing test; number of cycles..... :	---	N
	- strands broken ..... :	---	N
	- electric strength test afterwards		N
1.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
1.7 (4.14.5)	Guide pulleys		N
1.7 (4.14.6)	Strain on socket-outlets		N
1.7 (4.15)	**Flammable materials**		**P**
	- glow-wire test 650°C ..... :	See Test Table 1.15 (13.3.2)	P
	- spacing ≥30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- thermal protection		N
	- electronic circuits exempted		N
1.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
1.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear ..... :	(compliance with Section 12)	P
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N
1.7 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
1.7 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N
1.7 (4.17)	**Drain holes**		**N**
	Clearance at least 5 mm		N
1.7 (4.18)	**Resistance to corrosion**		**N**
1.7 (4.18.1)	- rust-resistance		N
1.7 (4.18.2)	- season cracking in copper		N
1.7 (4.18.3)	- corrosion of aluminium		N
1.7 (4.19)	Ignitors compatible with ballast		N
1.7 (4.20)	Rough service vibration		N
1.7 (4.21)	**Protective shield**		**N**
1.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N
	Shield of glass if tungsten halogen lamps		N
1.7 (4.21.2)	Particles from a shattering lamp not impair safety		N
1.7 (4.21.3)	No direct path		N
1.7 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment ..... :	See Test Table 1.15 (13.3.2)	N

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7 (4.22)	Attachments to lamps not cause overheating or damage		N
1.7 (4.23)	Semi-luminaires comply Class II		N
1.7 (4.24)	**Photobiological hazards**		**N**
1.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N
1.7 (4.24.2)	Retinal blue light hazard		N
	Class of risk group assessed according to IEC/TR 62778 .....:	---	—
	Luminaires with E_{thr} :		N
	a) Fixed luminaires		N
	- distance x m, borderline between RG1 and RG2 .. :		N
	- marking and instruction according 3.2.23		N
	b) Portable and handheld luminaires		N
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N
	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
1.7 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
1.7 (4.26)	**Short-circuit protection**		**N**
1.7 (4.26.1)	Adequate means of uninsulated accessible SELV / PELV parts		N
1.7 (4.26.2)	Short-circuit test with test chain according 4.26.3:		N
	Supply source ES1 PSE		N
	Test chain not melt through		N
	Test sample not exceed values of Table 12.1 and 12.2		N
1.7 (4.27)	**Terminal blocks with integrated screwless protective earthing contacts**		**N**
	Test according Annex V		N
	Pull test of terminal fixing (20 N)		N
	After test, resistance < 0,05 Ω		N
	Pull test of mechanical connection (50 N)		N
	After test, resistance < 0,05 Ω		N
	Voltage drop test, resistance < 0,05 Ω		N
1.7 (4.28)	**Fixing of thermal sensing control**		**N**

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Clause	Requirement + Test	Result - Remark	Verdict
	Not plug-in or easily replaceable type		N
	Reliably kept in position		N
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N
	Not outside the luminaire enclosure		N
	Test of adhesive fixing:		N
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N
	Temperature sensing control still in position		N
1.7 (4.29)	**Luminaires with non-replaceable light source**		**N**
	Not possible to replace light source		N
	Live part not accessible after parts have been opened by hand or tools		N
1.7 (4.30)	**Luminaires with non-user replaceable light source**		**N**
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N
	At least one fixing means requiring use of tool		N
1.7 (4.31)	**Insulation between circuits**		**N**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N
	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
1.7 (4.31.1)	SELV or PELV circuits		N
	Used SELV/PELV source		N
	Voltage ≤ ELV		N
	Insulating of SELV/PELV circuits from LV supply		N
	Insulating of SELV/PELV circuits from other non SELV/PELV circuits		N
	Insulating of SELV/PELV circuits from FELV		N
	Insulating of SELV/PELV circuits from other SELV/PELV circuits		N
	SELV/PELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Plugs and socket-outlets does not have protective conductor contact		N
1.7 (4.31.2)	FELV circuits		N
	Used FELV source		N
	Voltage ≤ ELV		N
	Insulating of FELV circuits from LV supply		N
	FELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Socket-outlets have protective conductor contact		N
1.7 (4.31.3)	Other circuits		N
	Other circuits insulated from accessible parts according Table X.1		N
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N
	- conductive parts are connected together		N
	- test according 7.2.3		N
	- conductive part not cause an electric shock in case of an insulation fault		N
	- equipotential bonding in master/slave applications		N
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N
	- slave luminaire constructed as class I		N
1.7 (4.32)	**Overvoltage protective devices**		**N**
	Comply with IEC 61643-11		N
	External to controlgear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N
1.7 (4.33)	**Luminaire powered via information technology communication cabling**		N
	Requirements for Class III luminaire		N
	Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector		N
	Luminaire does not create any hazard from overvoltage	(see Annex 2)	N
1.7 (4.34)	**Electromagnetic fields (EMF)**		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No harmful electromagnetic fields		P
1.7 (4.35)	**Protection against moving fan blades**		N
	Test with a standard test finger		N
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N
	Blades rounded with radius ≥ 0.5 mm and:		N
	-hardness less than D60 Shore		N
	-peripheral speed less than 15 m/s		N
	-input power of fan ≤ 2 W at rated voltage		N
1.7 (4.36)	**Track-mounted luminaires**		N
	Test in accordance with Annex A of IEC60570:2003/AMD2:2019		N

1.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		P
1.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N
1.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 1.8 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 1.8 (11.2) II	N
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.8 (11.2) II	N
1.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 1.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N
	- Controlgear marked with U_P	See Test Table 1.8 (11.2) II	N
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 1.8 (11.2) II	N

1.9 (7)	**PROVISION FOR EARTHING**		N
1.9 (7.2.1 + 7.2.3)	Accessible metal parts		N
	Metal parts in contact with supporting surface		N
	Resistance < 0,5 Ω..... :	---	N
	Self-tapping screws used		N
	Thread-forming screws		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Thread-forming screw used in a grove		N
	Protective earth makes contact first		N
	Terminal blocks with integrated screwless protective earthing contacts tested according Annex V		N
	Protective earthing of the luminaire not via built-in control gear		N
1.9 (7.2.2 + 7.2.3)	Protective earth continuity in joints, etc.		N
1.9 (7.2.4)	Locking of clamping means		N
	Compliance with 4.7.3		N
1.9 (7.2.5)	Protective earth terminal integral part of connector socket		N
1.9 (7.2.6)	Protective earth terminal adjacent to mains terminals		N
1.9 (7.2.7)	Electrolytic corrosion of the protective earth terminal		N
1.9 (7.2.8)	Material of protective earth terminal		N
	Contact surface bare metal		N
1.9 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
1.9 (7.2.11)	Protective earthing core coloured green-yellow		N
	Length of protective earthing conductor		N
1.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N
1.10 (14)	**SCREW TERMINALS**		N
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 3)	N
1.10 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		N
	Separately approved; component list..... :	(see Annex 1)	N
	Part of the luminaire ..... :	(see Annex 4)	N
1.11 (5)	**EXTERNAL AND INTERNAL WIRING**		P
1.11 (5.2)	**Supply connection and external wiring**		**P**
1.11 (5.2.1)	Means of connection ..... :	Terminal block (incorporated in lampholder)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Outdoor luminaire has not PVC insulated external wiring if not Class III or SELV/PELV circuits ≤ 25 V AC/60 V DC/25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment		N
1.11 (5.2.2)	Type of cable ..... :	see Annex 1	N
	Nominal cross-sectional area (mm²) ..... :	see Annex 1	N
	Cables equal to IEC 60227 or IEC 60245		N
1.11 (5.2.3)	Type of attachment, X, Y or Z		N
1.11 (5.2.5)	Type Z not connected to screws		N
1.11 (5.2.6)	Cable entries:		N
	- suitable for introduction		N
	- adequate degree of protection		N
1.11 (5.2.7)	Cable entries through rigid material have rounded edges		N
1.11 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made of insulating material		N
1.11 (5.2.9)	Locking of screwed bushings		N
1.11 (5.2.10)	Cord anchorage:		N
	- covering protected from abrasion		N
	- clear how to be effective		N
	- no mechanical or thermal stress		N
	- no tying of cables into knots etc.		N
	- insulating material or lining		N
1.11 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N
	f) metal screw not directly on cable		N
	g) replacement without special tool		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
1.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N
1.11 (5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N) ..... :	---	N
	- torque test: torque (Nm) ..... :	---	N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
	- function independent of electrical connection		N
1.11 (5.2.10.4)	Luminaire with/designed for use with supply cord with maximum current of 2A:		N
	- Ordinary Class III luminaire supplied with SELV ≤ 25V RMS/60V DC		N
	- Ordinary Class III luminaire supplied with PELV ≤12V RMS/30V DC		N
	- Other than ordinary Class III luminaire supplied with voltage ≤12V RMS/30V DC		N
	Pull test of 30N		N
1.11 (5.2.11)	External wiring passing into luminaire		N
1.11 (5.2.12)	Looping-in terminals		N
1.11 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.11 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
	No unsafe compatibility		N
1.11 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N
1.11 (5.2.16)	Appliance inlets (IEC 60320)		N
	Installation couplers (IEC 61535)		N
	Appliance inlet or connector systems (IEC 61984)		N

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Clause	Requirement + Test	Result - Remark	Verdict
1.11 (5.2.17)	No standardized interconnecting cables properly assembled		N
1.11 (5.2.18)	Used plug in accordance with		N
	- IEC 60083		N
	- other standard		N
1.11 (5.3)	**Internal wiring**		**N**
1.11 (5.3.1)	Internal wiring of suitable size and type		N
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A) ..... :		N
	- temperatures ..... :	(see Annex 2)	N
	Green-yellow for protective earth only		N
1.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N
	Cross-sectional area (mm²)..... :	(see Annex 1)	N
	Insulation thickness (mm) ..... :	---	N
	Extra insulation added where necessary		N
1.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Cross-sectional area (mm²)..... :	(see Annex 1)	N
1.11 (5.3.1.3)	Double or reinforced insulation for class II		N
1.11 (5.3.1.4)	Conductors without insulation		N
1.11 (5.3.1.5)	SELV/PELV current-carrying parts		N
1.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
1.11 (5.3.2)	Sharp edges etc.		N
	No moving parts of switches etc.		N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		N
1.11 (5.3.3)	Insulating bushings:		N
	- suitable fixed		N
	- material in bushings		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- material not likely to deteriorate		N
	- cables with protective sheath		N
1.11 (5.3.4)	Joints and junctions effectively insulated		N
1.11 (5.3.5)	Strain on internal wiring		N
1.11 (5.3.6)	Wire carriers		N
1.11 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		**N**
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N
	No damage to luminaire wiring after test		N
1.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
1.12 (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
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starter holders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N
	Basic insulation only accessible under lamp or starter replacement		P
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		N
	Double-ended high-pressure discharge lamp		N
	Relevant warning according to 3.2.18 fitted to the luminaire		N
1.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
1.12 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- required insulation from live parts in compliance with Table X.1		N
	- glass protective shields not used as supplementary insulation		N
1.12 (8.2.3.b)	BC lamp holder of metal in class I luminaires shall be connected to protective earth		N
1.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N
	Ordinary luminaire:		N
	- voltage under load/ no-load AC (V)..... :		N
	- voltage under load/ no-load DC (V)……...:		N
	- interrupted DC voltage (V) ……..:		N
	- touch current if applicable (mA) ..... :		N
	One conductive part insulated if required		N
	Other than ordinary luminaire:		N
	- voltage under load/ no-load AC (V)..... :		N
	- voltage under load/ no-load DC (V)……...:		N
	- interrupted DC voltage (V) ……..:		N
	Class III luminaire only for connection to SELV/PELV		N
1.12 (8.2.3.d)	PELV circuits with exposed current carrying parts:		N
	Ordinary luminaire:		N
	- voltage under load/ no-load AC (V)..... :		N
	- voltage under load/ no-load DC (V)……...:		N
	Other than ordinary luminaire:		N
	- voltage under load/ no-load AC (V)..... :		N
	- voltage under load/ no-load DC (V)……...:		N
	One pole insulated if required		N
1.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N
1.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.12 (8.2.6)	Covers reliably secured		P
1.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection		N
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N

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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
1.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
1.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) as specified in 1.14		—
1.13 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Control gear if separate and not supplied	(Control gear used see Annex 2)	—
1.13 (12.3)	**Endurance test**		**P**
	a) mounting-position ..... :	Acc. to user manual	—
	b) test temperature (°C) ..... :	35	—
	c) total duration (h) ..... :	240	—
	d) supply voltage (V) ..... :	226	—
	d) if not equipped with control gear, constant voltage/current (V) or (A) ..... :	---	—
1.13 (12.3.1d)	d) Class III luminaires powered via information technology communication cable:		N
	- voltage under normal operation (V)……..:		—
	- voltage under abnormal operation (V)……..:		—
	e) luminaire ceases to operate		—
	f) luminaire with constant light output function		N
1.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible		P
	- no cracks, deformation etc.		P
1.13 (12.4)	**Thermal test (normal operation)**	(see Annex 2)	P
1.13 (12.5)	**Thermal test (abnormal operation)**	(see Annex 2)	N
1.13 (12.6)	**Thermal test (failed lamp control gear condition):**		**N**
1.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- electronic lamp control gear		N
	- measured winding temperature (°C): at 1,1 Un .... :		—
	- measured mounting surface temperature (°C) at 1,1 Un ..... :		N
	- calculated mounting surface temperature (°C) ..... :		N
	- track-mounted luminaires		N
1.13 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions ..... :		—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C) ..... :		N
	- track-mounted luminaires		N
1.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		**N**
1.13 (12.7.1)	Luminaire without temperature sensing control		N
1.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N
	Test method 12.7.1.1 or Annex W ..... :		—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions ..... :		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex W:		N
	- 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
1.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
1.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N
	- case of abnormal conditions ..... :		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
1.13 (12.7.2)	Luminaire with temperature sensing control		N
	- 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

1.14 (9)	**RESISTANCE TO DUST AND MOISTURE**		P
1.14 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP ..... :	IP44	—
	- mounting position during test ..... :	Acc. to user manual	—
	- fixing screws tightened; torque (Nm) ..... :	2/3 torque for Cl.4.12.1	—
	- tests according to clauses ..... :	Cl.9.2.0 & Cl.9.2.5	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N
	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
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N

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Clause	Requirement + Test	Result - Remark	Verdict
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire		N
	e) no contact with live parts (IP 2X)		N
	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
	f) no trace of water on part of lamp requiring protection from splashing water		N
	g) no damage of protective shield or glass envelope		P
1.14 (9.3)	Humidity test 48 h	25°C,93%H	P
1.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
1.15 (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):		P
	SELV/PELV:		N
	- between current-carrying parts of different polarity :		N
	- between current-carrying parts and mounting surface..... :		N
	- between current-carrying parts and metal parts of the luminaire..... :		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N
	- Insulation bushings as described in Section 5 ..... :		N
	Other than SELV/PELV:		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
	- between live parts of different polarity through action of a switch..... :		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N
	- Insulation bushings as described in Section 5 ..... :		N
1.15 (10.2.2)	Electric strength test		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		P
	SELV/PELV:		N
	- between current-carrying parts of different polarity :		N
	- between current-carrying parts and mounting surface..... :		N
	- between current-carrying parts and metal parts of the luminaire..... :		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N
	- Insulation bushings as described in Section 5 ..... :		N
	Other than SELV/PELV:		P
	- between live parts of different polarity ..... :	1480 V	P
	- between live parts and mounting surface ..... :	2960 V	P
	- between live parts and metal parts ..... :	2960 V	P
	- between live parts of different polarity through action of a switch..... :		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N
	- Insulation bushings as described in Section 5 ..... :		N
1.15 (10.3)	Touch current (mA)..... :	0, 011 mA < 0,7 mA	P
	Protective conductor current (mA)..... :		N

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Clause	Requirement + Test	Result - Remark	Verdict

1.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
1.16 (13.2.1)	Ball-pressure test ..... :	See Test Table 1.16 (13.2.1)	P
1.16 (13.3.1)	Needle-flame test (10 s) ..... :	See Test Table 1.16 (13.3.1)	N
1.16 (13.3.2)	Glow-wire test (650°C) ..... :	See Test Table 1.16 (13.3.2)	P
1.16 (13.4)	Proof tracking test (IEC 60112) ..... :	See Test Table 1.16 (13.4)	N

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Clause	Requirement + Test	Result - Remark	Verdict

1.8 (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	>2,0	1,5	11.1.B*	>3,1	2,4	11.1.A*	
Working voltage (V) ..... :					240			—
PTI ..... :					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) ..... :					---			—
Supplementary information: Different polarities of supply plug								
Distance 2:	R	>3,9	3,0	11.1.B*	>6,3	4,8	11.1.A*	
Working voltage (V) ..... :					240			—
PTI ..... :					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) ..... :					---			—
Supplementary information: Live part and outer accessible metal part								
Distance 3:	R	>3,9	3,0	11.1.B*	>6,3	4,8	11.1.A*	
Working voltage (V) ..... :					240			—
PTI ..... :					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) ..... :					---			—
Supplementary information: Live part 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

1.8 (11.2)	TABLE II: Creepage distances and clearances							N
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages								
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2								
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) ..... :								—
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) ..... :								—
Supplementary information:								
Distance 3:								
Working voltage (V) ..... :								—
Frequency if applicable (kHz) ..... :								—
PTI ..... :					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Supplementary information:								

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

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Clause	Requirement + Test	Result - Remark	Verdict

1.16 (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)
Plastic enclosure	See Annex 1	133,7	<2
Supplementary information:			

1.16 (13.3.1)	TABLE: Needle-flame test				N
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
Supplementary information:					

1.16 (13.3.2)	TABLE: Resistance to heat and fire - Glow wire tests				P
Object/ Part No./ Material	**Manufacturer/ trademark**	**GWT (°C) : 650**			**Verdict**
		t_E (s)	**t_i (s)**	**t_R (s)**	
Plastic enclosure	See Annex 1	0	0	0	P
Ignition of the specified layer placed underneath the test specimen (Yes/No)..... :					No
Supplementary information:					

1.16 (13.4)	TABLE: Proof tracking test				N
Test voltage PTI ..... :		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

IEC 60598-2-1			
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)]**
Plastic enclosure	C	Yuyao Tailian Lighting Electric. Co., Ltd.	---	PA: V-0: Thickness:0,75mm	IEC 60598-1 IEC 60598-2-1	Test with appliance
E27 lampholder	B	Yuyao Ming Cheng Lightings	PA200	250V, 4A, T210	EN IEC 60238	VDE 40031040

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
2-1	Type reference ..... :	SYBRG005AB	—
	Lamp used..... :	E27 lamp 40W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	Mounting acc. to user manual	—
	Supply wattage (W) ..... :	42,3	—
	Supply current (A) ..... :	0,178	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	---	—
1.13 (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 ..... :	1,05 x 40 W = 42 W	—
	- 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 ..... :	---	—
1.13 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage ..... :	---	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Lamp holder	25	---	176,3	---	210	---	---
Glass cover	25	---	82,8	---	Ref.	---	---
Plastic enclosure	25	---	108,7	---	Ref.	---	---
Mounting surface (flammable surface)	25	---	37,8	---	90	---	---
Surface illuminated by lamp(0.1m)	25	---	34,8	---	90	---	---

Supplementary information:

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 3	**Screw terminals (part of the luminaire)**		N
(14)	**SCREW TERMINALS**		N
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N
(14.3.2.2)	Special preparation		N
(14.3.2.3)	Terminal size		N
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N
(14.4)	Mechanical tests		N
(14.4.1)	Minimum distance		N
(14.4.2)	Cannot slip out		N
(14.4.3)	Special preparation		N
(14.4.4)	Nominal diameter of thread (metric ISO thread) .....:	M	N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.4.6)	Nominal diameter of thread (mm) .....:		N
	Torque (Nm).....:		N
(14.4.7)	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N).....:		N
(14.4.8)	Without undue damage		N

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

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

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

EU differences			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5	**EN IEC 60598-2-1:2021 used in conjunction with EN IEC 60598-1:2021 + AMD11:2022**	N

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 IEC 60598-1:2021 + AMD11:2022
TRF template used .....:	IECEE OD-2020-F2:2020, Ed. 1.1
Attachment Form No. .....:	EU_GD_IEC60598_2_1I
Attachment Originator .....:	UL(Demko)
Master Attachment .....:	2022-05-13

	CENELEC COMMON MODIFICATIONS (EN)		P
1.6 (3)	**MARKING**		N
1.6 (3.2.12)	Note 4 deleted		N
1.7 (4)	**CONSTRUCTION**		N
1.7 (4.11.6)	Electro-mechanical contact systems: electric strength test at 1 500 V		N
1.11 (5)	**EXTERNAL AND INTERNAL WIRING”**		N
1.11 (5.2.2)	Cables equal to EN 50525 (all parts)		N
	Paragraph 2 deleted		N
	Replace table 5.1 – Supply cord		N
1.13 (12)	**ENDURANCE TESTS AND THERMAL TESTS**		N
1.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N
(3.3)	DK: power supply cords of class I luminaires with label		N
(5.2.1)	CY, DK, FI, UK: type of plug		N
(5.2.18)	DK: socket-outlets		N

EU differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		**P**
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N
	FR: Safety requirements for high buildings *(Decree of 30 December 2011 on safety regulations for the construction of high-rise buildings and their protection against fire and panic risks; Section VIII; Article GH 48, Lighting)* Glow-wire test for outer parts of luminaires:		N
	- 850°C for luminaires in stairways and horizontal travel paths		N
	- 650°C for indoor luminaires		P
	UK: Requirements according to United Kingdom Building Regulation		N

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

Attachment 1: Photo Documentation

Model: SYBRG005AB, others see report.

Photo 1

Description: Over view.

Photo 2

Description: Side view.

Attachment 1: Photo Documentation

Photo 3

Description: Top view.

Photo 4

Description: Rear view.

Attachment 1: Photo Documentation

Photo 5

Description: Internal view.

======End of Attachment 1======