



TEST REPORT
IEC 60598-2-4
Luminaires
Part 2: Particular requirements –
Section 4: Portable general purpose luminaires

Report Number.....: LCSB11103011S

Date of issue.....: December 13, 2023

Total number of pages.....: 69 pages

**Name of Testing Laboratory
preparing the Report.....:** Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Applicant's name.....: Sundopt LED Lighting Co., Ltd.

Address.....: Bldg 8-6#, TongFuYu Industrial Park Ai Qun Rd Shiyan Town
Baoan District Shenzhen, Guangdong 518108

Test specification:

Standard.....: IEC 60598-2-4:2017 for use in conjunction with IEC 60598-1:2020

Test procedure.....: CE-LVD

Non-standard test method.....: N/A

TRF template used.....: IECEE OD-2020-F1:2020, Ed.1.3

Test Report Form No.....: IEC60598_2_4I

Test Report Form(s) Originator.....: UL (US)

Master TRF.....: Dated 2021-06-10

**Copyright © 2021 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.

**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 Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the Testing Laboratory, responsible for this Test Report.



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Test item description.....:	Standing luminaires		
Trade Mark.....:	N/A		
Manufacturer.....:	Sundopt LED Lighting Co., Ltd.		
Address.....:	Bldg 8-6#, TongFuYu Industrial Park Ai Qun Rd Shiyan Town Baoan District Shenzhen, Guangdong 518108		
Model/Type reference.....:	See model list on page 5		
Ratings.....:	See model list on page 5		
☒ Testing Laboratory:			
Testing location/ address.....:	Shenzhen Southern LCS Compliance Testing Laboratory Ltd. 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China		
Tested by.....:	Yan Shi (Engineer)		
Check by.....:	Torres He (Director)		
Approved by.....:	Jesse Liu (Manager)		
List of Attachments (including a total number of pages in each attachment):			
Attachment No. 1: European group differences and national differences according to EN 60598-2-4:2018 used in conjunction with EN IEC 60598-1:2021+A11:2022			
Attachment No. 2: Report IEC/EN IEC 62031.			
Attachment No. 3: Report IEC TR 62778.			
Attachment No. 4: Photo documentation.			
Summary of testing:			
Tests performed (name of test and test clause):		Testing location:	
IEC 60598-2-4:2017		Shenzhen Southern LCS Compliance Testing Laboratory Ltd.	
IEC 60598-1:2020		101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China	
IEC TR 62778:2014			
IEC 62031:2018			
IEC 62493:2015+A1:2022			
Summary of compliance with National Differences:			
List of countries addressed			
European Group differences			
☒ The product fulfils the requirements of			
EN 60598-2-4:2018; EN IEC 60598-1:2021+A11:2022; EN 62493:2015+A1:2022;			
EN IEC 62031:2020+A11:2021			



**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.

Standing luminaires**Model: UNF-20210030-CDA****220-240V~, 50/60Hz, 100W****Sundopt LED Lighting Co., Ltd.****Importer: xxxxxxxx****Address: xxxxxxxx****MADE IN CHINA****Remarks:**

1. Representative markings of UNF-20210030-CDA, markings of all models are identical except for the model name and rating.
2. Height of CE mark at least 5mm, height of WEEE symbol should not less than 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Test item particulars :									
Classification of installation and use :	Portable general purpose luminaires								
Supply Connection :	Detachable supply cord with plug								
Protection Class :	Class I								
Degree of Protection :	IP20								
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 :	November 08, 2023								
Date (s) of performance of tests :	November 08, 2023- November 24, 2023								
General remarks:									
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Clause numbers with "*" were not within the scope of CNAS recognition. Clause numbers between brackets refer to clauses in IEC/EN IEC 60598-1. The general information of applicant and manufacturer (such as the name and address), product name, model/type reference, trademark and other similar information contained in this report are all provided by the applicant, the laboratory is not responsible for verifying its authenticity. Throughout this report a ☐ comma / ☒ point is used as the decimal separator. According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market. Modified Information <table border="1"><thead><tr><th>Version</th><th>Report No.</th><th>Revision Date</th><th>Summary</th></tr></thead><tbody><tr><td>V1.0</td><td>LCSB11103011S</td><td>/</td><td>Original Version</td></tr></tbody></table>		Version	Report No.	Revision Date	Summary	V1.0	LCSB11103011S	/	Original Version
Version	Report No.	Revision Date	Summary						
V1.0	LCSB11103011S	/	Original Version						
Manufacturer's Declaration per sub-clause 4.2.5 of IECIEE 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									



**General product information:**

Product: Standing luminaires

Ratings: 220-240V~, 50/60Hz, IP20, Class I, Luminaire suitable for direct mounting on normally flammable surfaces, suitable for indoor use.

- All models have similar appearance and construction except power and LED driver are difference.
- Unless otherwise specified, the model UNF-20210030-CDA was chosen as representative model to perform all test. The model UNF-2028030-KD only test clause 12.4.

Model List:

Model	Power	LED driver
UNF-2026030-KD	60W	BK-CJL080-2000AM
UNF-2026030-CDA	60W	BK-HGV100-48V0
UNF-2026030-CDS	60W	BK-CJL080-2000AM
UNF-2026030-TD	60W	BK-HGV100-48V0
UNF-2026030-TDC	60W	BK-HGV100-48V0
UNF-2028030-KD	80W	BK-KHL080-2000Am
UNF-2028030-CDA	80W	BK-HGV100-48V0
UNF-2028030-CDS	80W	BK-CJL080-2000AM
UNF-2028030-TD	80W	BK-HGV100-48V0
UNF-2028030-TDC	80W	BK-HGV100-48V0
UNF-20210030-KD	100W	BK-KHL080-2000Am /BK-KHL050-1300Am
UNF-20210030-CDA	100W	BK-HGV100-48V0
UNF-20210030-CDS	100W	BK-CJL080-2000AM, BK-CJL050-1300AM
UNF-20210030-TD	100W	BK-HGV100-48V0
UNF-20210030-TDC	100W	BK-HGV100-48V0
UNF-20210015-TD	100W	BK-HGV100-48V0
UNF-20210015-TDC	100W	BK-HGV100-48V0
UNT-1296030-KD	60W	BK-KHL080-2000Am
UNT-1296030-CDA	60W	BK-HGV100-48V0
UNT-1296030-CDS	60W	BK-CJL080-2000AM
UNT-1296030-TD	60W	BK-HGV100-48V0
UNT-1296030-TDC	60W	BK-HGV100-48V0
UNT-1298030-KD	80W	BK-KHL080-2000Am
UNT-1298030-CDA	80W	BK-HGV100-48V0
UNT-1298030-CDS	80W	BK-CJL080-2000AM
UNT-1298030-TD	80W	BK-HGV100-48V0
UNT-1298030-TDC	80W	BK-HGV100-48V0
UNT-12910030-KD	100W	BK-KHL080-2000Am /BK-KHL050-1300Am



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



UNT-12910030-CDA	100W	BK-HGV100-48V0
UNT-12910030-CDS	100W	BK-CJL080-2000AM, BK-CJL050-1300AM
UNT-12910030-TD	100W	BK-HGV100-48V0
UNT-12910030-TDC	100W	BK-HGV100-48V0
UNT-12910015-TD	100W	BK-HGV100-48V0
UNT-12910015-TDC	100W	BK-HGV100-48V0





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.4 (0)	GENERAL TEST REQUIREMENTS		P
4.4 (0.3)	More sections applicable.....:	Yes ☐ No ☒ Section/s:	—
4.4 (0.5)	Components	(see Annex 1)	—
4.4 (0.7)	Information for luminaire design in light sources standards		—
4.4 (0.7.2)	Light source safety standard	IEC/EN IEC 62031	—
	Luminaire design in the light source safety standard		P

4.5 (2)	CLASSIFICATION OF LUMINAIRES		P
4.5 (2.2)	Type of protection	Class I	—
4.5 (2.3)	Degree of protection.....:	IP20	—
4.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☒ No ☐	—
4.5 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—
4.5.1 (-)	Ordinary luminaire classified “for indoor use only”.....:	Yes ☒ No ☐	—
	Luminaires other than ordinary classified “for indoor use only”.....:	Yes ☐ No ☒	—
	Luminaires other than ordinary classified for “outdoor use” and “for indoor use”.....:	Yes ☐ No ☒	—
4.5.2 (-)	Portable luminaire for outdoor use classified IPX4 or higher		N/A
4.5.3 (-)	Luminaires designed for standing on a floor or table classified as suitable for direct mounting on normally flammable surfaces		P

4.6 (3)	MARKING		P
4.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
4.6 (3.3)	Additional information		P
	Language of instructions	English	P
4.6 (3.3.1)	Combination luminaires		N/A
4.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.6 (3.3.3)	Operating temperature		N/A
4.6 (3.3.5)	Wiring diagram		N/A
4.6 (3.3.6)	Special conditions		N/A
4.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A
4.6 (3.3.8)	Limitation for semi-luminaires		N/A
4.6 (3.3.9)	Power factor and supply current		P
4.6 (3.3.10)	Suitability for use indoors		N/A
4.6 (3.3.11)	Luminaires with remote control		N/A
4.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
4.6 (3.3.13)	Specifications of protective shields		N/A
4.6 (3.3.14)	Symbol for nature of supply	~	P
4.6 (3.3.15)	Rated current of socket outlet		N/A
4.6 (3.3.16)	Rough service luminaire		N/A
4.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Detachable power cord	N/A
4.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
4.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
4.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
4.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable	P
4.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
4.6 (3.3.23)	Luminaires without controlgear provided with necessary information for selection of appropriate component		N/A
4.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
4.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
4.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N/A
4.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Label attached		P
4.6.1 (-)	Luminaire not suitable for outdoor application		N/A
	Required symbol		N/A
	Information in the instructions		N/A
4.6.2 (-)	Outdoor use, socket outlet incorporated in the luminaire		N/A
	Maximum power rating marked		N/A
	Position of the marking		N/A

4.7 (4)	CONSTRUCTION		P
4.7 (4.2)	Components replaceable without difficulty		P
4.7 (4.3)	Wireways smooth and free from sharp edges		P
4.7 (4.4)	Lampholders		N/A
4.7 (4.4.1)	Integral lampholder		N/A
4.7 (4.4.2)	Wiring connection		N/A
4.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
4.7 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder has not moved from its position and show no permanent deformation		N/A
4.7 (4.4.5)	Peak pulse voltage		N/A
4.7 (4.4.6)	Centre contact		N/A
4.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
4.7 (4.4.8)	Lamp connectors		N/A
4.7 (4.4.9)	Caps and bases correctly used		N/A
4.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
4.7 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Starter holder class II construction		N/A
4.7 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
4.7 (4.7)	Terminals and supply connections		P
4.7 (4.7.1)	Contact to metal parts		N/A
4.7 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
4.7 (4.7.3)	Terminals for supply conductors		P
4.7 (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
	- 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
4.7 (4.7.4)	Terminals other than supply connection		N/A
4.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
4.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
4.7 (4.8)	Switches		P
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches	Conform to 10000 cycles test	P
4.7 (4.9)	Insulating lining and sleeves		P
4.7 (4.9.1)	Retainment		P
	Method of fixing.....: By self construction		—
4.7 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
4.7 (4.10)	Double or reinforced insulation		N/A
4.7 (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
4.7 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
4.7 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
4.7 (4.10.4)	Protective impedance device		N/A
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		N/A
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N/A
	Capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A
4.7 (4.11)	Electrical connections and current-carrying parts		P
4.7 (4.11.1)	Contact pressure		P
4.7 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
4.7 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
4.7 (4.11.4)	Material of current-carrying parts		P
4.7 (4.11.5)	No contact to wood or mounting surface		P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.7 (4.11.6)	Electro-mechanical contact systems		N/A
4.7 (4.12)	Screws and connections (mechanical) and glands		P
4.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....	Fixed enclosure: 1.2Nm	P
	Torque test: torque (Nm); part.....	Fixed LED cover: 0.5Nm	P
	Torque test: torque (Nm); part.....	Fixed earthing: 0.6Nm	P
	Torque test: torque (Nm); part.....	Fixed cord anchorage: 0.6Nm	P
	Torque test: torque (Nm); part.....	Fixed LED PCB: 0.5Nm	P
	Torque test: torque (Nm); part.....	Fixed LED driver: 0.5Nm	P
	Torque test: torque (Nm); part.....	Fixed control PCB: 0.5Nm	P
4.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
4.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm.....		N/A
4.7 (4.12.5)	Screwed glands; force (Nm).....		N/A
4.7 (4.13)	Mechanical strength		P
4.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....		N/A
	- other parts; energy (Nm).....	0.5Nm, no damage	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
4.7 (4.13.2)	Metal parts have adequate mechanical strength		P
4.7 (4.13.3)	Straight test finger		P
4.7 (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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	d) for temporary installations and suitable for mounting on a stand		N/A
4.7 (4.13.6)	Tumbling barrel		N/A
4.7 (4.14)	Suspensions, fixings and means of adjusting		N/A
4.7 (4.14.1)	Mechanical load:		N/A
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) :		N/A
	Metal rod. diameter (mm) :		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
4.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) :		N/A
	Stress in conductors (N/mm ²) :		N/A
	Mass (kg) of semi-luminaire :		N/A
	Bending moment (Nm) of semi-luminaire :		N/A
4.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken..... :		N/A
	- electric strength test afterwards		N/A
4.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
4.7 (4.14.5)	Guide pulleys		N/A
4.7 (4.14.6)	Strain on socket-outlets		N/A
4.7 (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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- electronic circuits exempted		N/A
4.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
4.7 (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
4.7 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
4.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
4.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
4.7 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
4.7 (4.18)	Resistance to corrosion		P
4.7 (4.18.1)	- rust-resistance		N/A
4.7 (4.18.2)	- season cracking in copper		P
4.7 (4.18.3)	- corrosion of aluminium		N/A
4.7 (4.19)	Igniters compatible with ballast		N/A
4.7 (4.20)	Rough service vibration		N/A
4.7 (4.21)	Protective shield		N/A
4.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
4.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
4.7 (4.21.3)	No direct path		N/A
4.7 (4.21.4)	Impact test on shield		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Glow-wire test on lamp compartment.....:	See Test Table 1.15 (13.3.2)	N/A
4.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
4.7 (4.23)	Semi-luminaires comply Class II		N/A
4.7 (4.24)	Photobiological hazards		P
4.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
4.7 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778	RG1	—
	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
	- 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
4.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
4.7 (4.26)	Short-circuit protection		N/A
4.7 (4.26.1)	Adequate means of uninsulated accessible SELV or PELV parts		N/A
4.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Supply source ES1 PSE		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
4.7 (4.27)	Terminal blocks with integrated screwless protective 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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
4.7 (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 ($^{\circ}\text{C}$) :		—
	100 cycles between $t_{\min}$ and $t_{\max}$		N/A
	Temperature sensing control still in position		N/A
4.7 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
4.7 (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
	At least one fixing means requiring use of tool		P
4.7 (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
4.7 (4.31.1)	SELV or PELV circuits		P
	Used SELV or PELV source		P
	Voltage $\leq$ ELV		P
	Insulating of SELV or PELV circuits from LV supply		P
	Insulating of SELV or PELV circuits from other non SELV or PELV circuits		N/A
	Insulating of SELV or PELV circuits from FELV		N/A
	Insulating of SELV or PELV circuits from other SELV or PELV circuits		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	SELV or PELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to make any electrical contact with 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
4.7 (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
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets have protective conductor contact		N/A
4.7 (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 does 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
4.7 (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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- only connected to protective earth		N/A
4.7 (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	(see Annex 2)	N/A
4.7 (4.34)	Electromagnetic fields (EMF)		P
	No harmful electromagnetic fields		P
4.7 (4.35)	Protection against moving fan blades		N/A
	Test with a standard test finger		N/A
	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
4.7 (4.36)	Track-mounted luminaires		N/A
	Test in accordance with Annex A of IEC60570:2003/AMD2:2019		N/A
4.7.1 (-)	Insulation not damaged when moving, adjusting or placing on support		P
4.7.2 (-)	Wiring fixed, to avoid rubbing		P
	Carrier or clips of insulation material or with insulating lining		P
4.7.3 (-)	Luminaire does not overturn:		P
	- at an angle of 6° for indoor use		P
	- at an angle 15° for outdoor use		N/A
4.7.4 (-)	Candlestick luminaires provided with switch		N/A
	Switch in candlestick luminaires with E5 or E10 lampholders switches all lamps on and off simultaneously		N/A
	Switch part of the luminaire or within 300 mm of the luminaire if with cord		N/A
4.7.5 (-)	Voltage not exceeding 25 V for E5 lampholders		N/A
	E10 lampholder voltage:		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- not exceeding 60 V for series connection		N/A
	- not exceeding 250 V for parallel connection		N/A
	Maximum rated wattage does not exceed 100 W		N/A
4.7.6 (-)	Tails not provided for luminaires for outdoor use		N/A
4.7.7 (-)	Not more than two cable entries for luminaires for outdoor use		N/A
4.7.8 (-)	Portable luminaires for outdoor use, socket-outlet degree of protection at least same as the luminaire but not less than IPX4.		N/A
	Degree of protection maintained with or without a plug inserted into the socket-outlet.		N/A
	Class II luminaires, mains socket-outlets comply with the standard and only allow connection to Class II luminaires		N/A
	Class I luminaires, mains socket-outlets comply with the standard and only allow connection to Class I or Class II luminaires		N/A
4.7.9 (-)	Lampholders and plugs resistant to tracking for luminaires for outdoor use	See Test Table 4.16 (13.4)	N/A
	Compliance to clause 13.4		N/A

4.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
4.8 (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
4.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 4.8 (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 4.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 4.8 (11.2) II	N/A
4.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 4.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P	See Test Table 4.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 4.8 (11.2) II	N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

4.9 (7)	PROVISION FOR EARTHING		P
4.9 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω:	0.022 Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Protective earth makes contact first		P
	Terminal blocks with integrated screwless protective earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		P
4.9 (7.2.2 + 7.2.3)	Protective earthing continuity in joints, etc.		P
4.9 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
4.9 (7.2.5)	Earth terminal integral part of connector socket		N/A
4.9 (7.2.6)	Earth terminal adjacent to mains terminals		P
4.9 (7.2.7)	Electrolytic corrosion of the protective earth terminal		P
4.9 (7.2.8)	Material of protective earth terminal		P
	Contact surface bare metal		P
4.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
4.9 (7.2.11)	Protective earthing core coloured green-yellow		P
	Length of protective earthing conductor		P
4.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A

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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

4.10 (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

4.11 (5)	EXTERNAL AND INTERNAL WIRING		P
4.11 (5.2)	Supply connection and external wiring		P
4.11 (5.2.1)	Means of connection.....:	Detachable supply cord with plug	P
	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/A
4.11 (5.2.2)	Type of cable.....:	H05VV-F	P
	Nominal cross-sectional area (mm ²).....:	3x0.75mm ²	P
	Cables equal to IEC 60227 or IEC 60245		P
4.11 (5.2.3)	Type of attachment, X, Y or Z		N/A
4.11 (5.2.5)	Type Z not connected to screws		N/A
4.11 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
4.11 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
4.11 (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
4.11 (5.2.9)	Locking of screwed bushings		N/A
4.11 (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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- insulating material or lining		N/A
4.11 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
4.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
4.11 (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
4.11 (5.2.10.4)	Luminaire with/designed for use with supply cord with maximum current of 2A:		N/A
	- Ordinary Class III luminaire supplied with SELV ≤ 25 V RMS/60V DC		N/A
	- Ordinary Class III luminaire supplied with PELV ≤ 12 V RMS/30V DC		N/A
	- Other than ordinary Class III luminaire supplied with voltage ≤ 12 V RMS/30V DC		N/A
	Pull test of 30 N		N/A
4.11 (5.2.11)	External wiring passing into luminaire		P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.11 (5.2.12)	Looping-in terminals		N/A
4.11 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
4.11 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N/A
	No unsafe compatibility		P
4.11 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
4.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Appliance inlet or connector systems (IEC 61984)		N/A
4.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
4.11 (5.2.18)	Used plug in accordance with		P
	- IEC 60083		N/A
	- other standard		P
4.11 (5.3)	Internal wiring		P
4.11 (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 protective earth only		P
4.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm ²)..... :		N/A
	Insulation thickness (mm)		N/A
	Extra insulation added where necessary		N/A
4.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Cross-sectional area (mm ²)..... :	see Annex 1	P
4.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A
4.11 (5.3.1.4)	Conductors without insulation		N/A
4.11 (5.3.1.5)	SELV or PELV current-carrying parts		P
4.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
4.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
4.11 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
4.11 (5.3.4)	Joints and junctions effectively insulated		N/A
4.11 (5.3.5)	Strain on internal wiring		N/A
4.11 (5.3.6)	Wire carriers		N/A
4.11 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
4.11 (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 does not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
4.11.1 (-)	Cord anchorage of luminaire for indoor use made of glass or ceramic not fixed or integral		N/A
4.11.2 (-)	For Class I and Class II luminaires for indoor use, if:		N/A
	- mass < 1 kg (kg)..... :		N/A
	- rated current ≤ 2,5 A (A)..... :		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- cable length ≤ 2 m (m).....:		N/A
	- the nominal cross-sectional area of copper conductor $\geq 0,5$ mm ² (mm ²).....:		N/A
4.11.3 (-)	Terminals, cord anchorage and inlet opening provided for luminaire for outdoor use delivered without a flexible cable or cord and a plug.		N/A
4.11.4 (-)	Non-detachable flexible cables or cords not lighter than type 245 IEC 57 for Class I and Class II luminaires for outdoor use.		N/A

4.12 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
4.12 (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		P
	Basic insulated parts not accessible with $\varnothing 50$ mm probe from outside, other types of luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		P*
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		N/A
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
4.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		P
4.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible		N/A
	- required insulation from live parts in compliance with Table X.1		N/A
	- glass protective shields not used as supplementary insulation		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.12 (8.2.3.b)	Metal BC lampholder in class I luminaires connected to protective earth		N/A
4.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	- interrupted DC voltage (V).....:		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	- interrupted DC voltage (V).....:		N/A
4.12 (8.2.3.d)	PELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V).....:		N/A
	- voltage under load/ no-load DC (V).....:		N/A
	Pole not connected to earth insulated		N/A
	Class III luminaire only for connection to SELV or PELV		N/A
4.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		P
4.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
4.12 (8.2.6)	Covers reliably secured		P
4.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 μ F (0,25) not exceed 34 V 1 s after disconnection	0V	P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	Other luminaires with capacitor > 0,1 μ F (0,25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
4.12 (-)	Class I luminaire with bayonet lampholder:		N/A
	1) cap not accessible with test finger		N/A
	2) metal lampholder is earthed		N/A

4.13 (12)	ENDURANCE TEST AND THERMAL TEST		P
4.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) but before (9.3) specified in 4.14		—
4.13 (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)	—
4.13 (12.3)	Endurance test		P
	a) mounting- position	As normal used	—
	b) test temperature (°C).....	25°C+10°C	—
	c) total duration (h)	240h	—
	d) supply voltage (V).....	1.1x240V	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	--	—
4.13 (12.3.1d)	d) Class III luminaires powered via information technology communication cable:		—
	- voltage under normal operation (V).....		—
	- voltage under abnormal operation (V).....		N/A
	e) luminaire ceases to operate		—
	f) luminaire with a constant light output function		N/A
4.13 (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
4.13 (12.4)	Thermal test (normal operation)	(Annex 2)	P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
4.13 (12.5)	Thermal test (abnormal operation)	(Annex 2)	P
4.13 (12.6)	Thermal test (failed lamp control gear condition):		N/A
4.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions.....		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
4.13 (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
4.13 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
4.13 (12.7.1)	Luminaire without temperature sensing control		N/A
4.13 (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.....		—





IEC 60598-2-4			
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/A
4.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test.....:	See Test Table 1.15 (13.2.1)	N/A
4.13 (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
4.13 (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 4.15 (13.2.1)	N/A
4.13 (-)	Luminaire for indoor use tested in overturned position (overturns < 15°)		P

4.14 (9)	RESISTANCE TO DUST AND MOISTURE	P
4.14 (-)	If IP > IP 20 the order of tests as specified in clause 4.13	P
4.14 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP.....:	IP20





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- mounting position during test.....:	As normal used	—
	- fixing screws tightened; torque (Nm).....:	--	—
	- tests according to clauses.....:	Clause 9.2.0	—
	- 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
	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, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold-water jet-proof luminaire		N/A
	e) no contact with live parts (IP 2X)		P
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	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
4.14 (9.3)	Humidity test 48 h	25°C, 93%RH	P

4.15 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
4.15 (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):		—
	SELV or PELV:		P
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:	>100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire.....:	>100 MΩ	P





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 or PELV:		P
	- between live parts of different polarity..... :	LED driver approved	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/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
4.15 (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
	Luminaires with ignitors provided with ballasts conforming to IEC 61347-2-9		N/A
	SELV or PELV:		P
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface..... :	500Vac, no breakdown	P
	- between current-carrying parts and metal parts of the luminaire..... :	500Vac, no breakdown	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/PELV:		P
	- between live parts of different polarity..... :	LED driver approved	P
	- between live parts and mounting surface..... :	1480Vac, no breakdown	P
	- between live parts and metal parts..... :	1480Vac, no breakdown	P
	- between live parts of different polarity through action of a switch..... :		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
4.15 (10.3)	Touch current (mA)..... :		N/A
	Protective conductor current (mA)..... :	0.09mA; limit: 3.5mA	P

4.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
4.16 (13.2.1)	Ball-pressure test..... :	See Test Table 4.16 (13.2.1)	P
4.16 (13.3.1)	Needle-flame test (10 s)..... :	See Test Table 4.16 (13.3.1)	P
4.16 (13.3.2)	Glow-wire test (650°C)..... :	See Test Table 4.16 (13.3.2)	P
4.16 (13.4)	Proof tracking test (IEC 60112)..... :	See Test Table 4.16 (13.4)	N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

4.8 (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	3.2	1.5	Table 11.1.B	3.2	2.5	Table 11.1.A
Distance 2:	B	3.7	1.5	Table 11.1.B	3.7	2.5	Table 11.1.A
Distance 3:	B	3.7	1.5	Table 11.1.B	3.7	2.5	Table 11.1.A
Working voltage (V)..... :					240V~		—
PTI..... :					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) :					--		—
Supplementary information: Distance 1: Between current-carrying parts of different polarity. Distance 2: Between current-carrying parts and accessible parts. Distance 3: Between current-carrying parts and mounting surface.							

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





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

4.16 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm):		2,0mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
LED cover	See Annex 1	77.5°C	1.2mm	
Plastic component	See Annex 1	75°C	1.3mm	
Control PCB	See Annex 1	125°C	0.7mm	
Quick connector	See Annex 1	125°C	1.1mm	
Quick connector (white)	See Annex 1	125°C	1.1mm	
Supplementary information:--				

4.16 (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
Control PCB	See Annex 1	10s	No	0s	P
Quick connector	See Annex 1	10s	No	0s	P
Quick connector (white)	See Annex 1	10s	No	0s	P
Supplementary information:--					

4.16 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)				P
Glow wire temperature		650°C	—		
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 cover	See Annex 1	30s	No	0s	P
Plastic component	See Annex 1	30s	No	0s	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No).....:					Yes
Supplementary information:--					

4.16 (13.4)	TABLE: Proof tracking test (IEC 60112)	N/A
-------------	---	------------





IEC 60598-2-4					
Clause	Requirement + Test			Result - Remark	Verdict
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 60598-2-4

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

ANNEX 1	TABLE: Critical components information						--
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Supply cord	B	Zhongshan Colon Electrical Technology Co.,Ltd	H05VV-F	3x0.75mm ²	3x075mm ² EN 50525-2-11	VDE 40007655	
Alt.	D	Dongguan City Xin Hailin Wire and Cable Technology Co., Ltd.	H05VV-F	3x0.75mm ²	EN 50525-2-11	VDE 40043059	
Plug	B	Zhejiang Jintong Nuclear Cable Co.,Ltd.	JT008	16A, 250V~, IP20	DIN VDE 0620-2-1	VDE 40050831	
Alt	B	Ningbo Liansheng Wire & Cable Co., Ltd.	LS03	16A, 250V~, IP20	DIN VDE 0620-2-1	VDE 40034732	
Alt	B	NINGBO XUANHUA ELECTRIC CO. LTD.	XH-03	16A, 250V~, IP20	DIN VDE 0620-2-1	VDE 40019691	
AC connector	B	LECI Electronics Co., Ltd	DB-14	AC250V,10A	EN 60320-1	VDE 40032137	
LED driver	B	DONGGUAN BOKE LED DRIVERS CO., LTD	BK-HGV100-48V0	Input: 200-240V~, 50/60Hz, 0.45A Output: 48V, 2A, 80W Max., SELV, ta50°C, tc90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0096 Rev. 00	
LED driver	B	DONGGUAN BOKE LED DRIVERS CO., LTD	BK-KHL080-2000Am	Input: 200-240V~, 50/60Hz, 0.45 Max. Output:24-42V, 1.55-2A, 80W Max., SELV, ta60°C, tc90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0132 Rev. 00	





IEC 60598-2-4						
Clause	Requirement + Test			Result - Remark		Verdict
LED driver	B	BOKE Drivers Co., Ltd.	BK-CJL080-2000AM	Input: 200-240V~, 0/50/60Hz, 0.47A Max. Output: DC12- 42V, 1.55-2.0A, 80W, 50VDC Max., ta60°C, tc90°C, SELV	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0152 Rev.00
LED driver	B	BOKE Drivers Co., Ltd.	BK-CJL060-1650Am	Input: 200-240V~, 50/60Hz, 0.37 Max. Output: 24-42V, 1.2-1.65A, 62.7W Max., SELV, ta60°C, tc90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0152 Rev.00
LED driver	B	DONGGUAN BOKE LED DRIVERS CO., LTD	BK-HGV070-48V0	Input: 200-240V~, 50/60Hz, 0.5A Max. Output: DC48V, 1.5A, 72W Max., SELV, ta50°C, tc90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. U6 089086 0092 Rev.00
LED driver	B	DONGGUAN BOKE LED DRIVERS CO., LTD	BK-CJL050-1300Am	Input: 200-240V~, 50/60Hz, 0.37 Max. Output: 12-42V, 0.85-1.30A, 49.4W Max., SELV, ta60°C, tc90°C	EN 61347-1 EN 61347-2-13	TUV SUD No. N8A 089086 0152 Rev.00
Terminal block	B	Wenzhou Jiankun Connector Co., Ltd	A2001AWV-03/ A2001AWV-05	250V, 2A, 105°C	EN 60998-1 EN 60998-2-1	Tested with appliance
Control PCB	B	WANAN WANGSHUN ELECTRON CO LTD	WS02	V-0, 130°C		UL E312055
Internal wire	B	Zhongshan Xinsheng Electric Appliance Co., Ltd	1015	18AWG 105°C, 600V	--	UL E328303
Alt.	D	Rizhan (Guangzhou) Electronic Technology Co., Ltd	1015	18AWG, 105°C, 600V	--	UL E353571





IEC 60598-2-4						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	D	Zelongkang Electronics Co., Ltd	1015	18AWG, 105°C, 600V	--	UL E330488
Internal wire	B	Shenzhen Hongya Electronics Co., Ltd	1332	20AWG, 105°C, 300V	--	UL E346933
Alt.	D	Rizhan (Guangzhou) Electronic Technology Co., Ltd	1332	20AWG, 105°C, 300V	--	UL E353571
Alt.	D	Zelongkang Electronics Co., Ltd	1332	20AWG, 105°C, 300V	--	UL E330488
Internal wire	B	Rizhan (Guangzhou) Electronic Technology Co., Ltd	2468	22AWG, 105°C, 300V	--	UL E353571
Alt.	D	Zhongshan Xinsheng Electric Appliance Co., Ltd	2468	22AWG, 105°C, 300V	--	UL E328303
Alt.	D	Zelongkang Electronics Co., Ltd	2468	22AWG, 105°C, 300V	--	UL E330488
Internal wire	B	Shenzhen Hongya Electronics Co., Ltd	2651	6*28AWG, 105°C, 300V	--	UL E346933
Alt.	D	Zhongshan Xinsheng Electric Appliance Co., Ltd	2651	6*28AWG, 105°C, 300V	--	UL E328303
Alt.	D	Zelongkang Electronics Co., Ltd	2651	6*28AWG, 105°C, 300V	--	UL E330488
Internal wire	B	Shenzhen Hongya Electronics Co., Ltd	2464	3*20AWG, 105°C, 300V	--	UL E346933
Alt.	D	Zhongshan Xinsheng Electric Appliance Co., Ltd	2464	3*20AWG, 105°C, 300V	--	UL E328303
Alt.	D	Zelongkang Electronics Co., Ltd	2464	3*20AWG, 105°C, 300V	--	UL E330488



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4						
Clause	Requirement + Test			Result - Remark		Verdict
Internal wire	B	Shenzhen Hongya Electronics Co., Ltd	1569	2*22AWG, 105°C, 300V	--	UL E346933
Alt.	D	Zhongshan Xinsheng Electric Appliance Co., Ltd	1569	2*22AWG, 105°C, 300V	--	UL E328303
Alt.	D	Zelongkang Electronics Co., Ltd	1569	2*22AWG, 105°C, 300V	--	UL E330488
Internal wire	B	Dong Guan Sheng Pai Electric Wire & Cable Co Ltd	H05V-K	0.75mm ² , 70°C, 300/500V/	DIN EN 50525-2-11	40053466
Alt.	D	Shenzhen Dongju Wire & Cable Co., Ltd.,	H05V-K	0.75mm ² , 70°C, 300/500V/	DIN EN 50525-2-11	40031065
DC connector	B	Zhejiang Lianhe Electronics Co., Ltd	A2001Y	300V, 2A	--	UL E364711
Alt.	D	Zhejiang Kuaili Electronics Co., Ltd	A2001Y	300V, 2A	--	UL E307817
Alt.	D	Cixi General Electronic Technology Co., Ltd	2.5H/V	125V, 4A	--	TUV 117063 0001
LED PCB	B	HUNAN CHENG CHUANG XIN TECHNOLOGY CO LTD	CCX-03	Minimum thickness, 130°C, V-0	--	UL E502083
Alt.	D	FENGSHUN JIAFENG ELECTRICAL CO LTD	JF-AL	V-0, 130°C, metal base printed	--	UL E493538
Alt.	D	SHENZHEN NAIPUCIRCUIT TECHNOLOGY CO LTD	NP001	V-0, 110°C, metal base printed	--	UL E366053
PCB	B	FENGSHUN JIAFENG ELECTRICAL CO.,LTD	FR-4	V-0, 130°C	--	UL E493538





IEC 60598-2-4						
Clause	Requirement + Test			Result - Remark		Verdict
Alt.	D	Hunan Cheng Chuang Xin Technology Co Ltd	FR-4	V-0, 130°C	--	UL E502083
LED	C	Bridgelux	2835	IF:60mA; VF:2.7-3.3V	IEC TR 62778	Tested with appliance
LED	C	Philips	2835	IF:60mA; VF:2.7-3.3V	IEC TR 62778	Tested with appliance
LED cover	B	Covestro Deutschland AG [PC Resins]	2805 + (z)(f1)	V-2, 115°	UL746B	UL E41613
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 60598-2-4

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

ANNEX 2	TABLE: Thermal tests of Section 12		P				
	Type reference.....:	UNF-20210030-CDA	—				
	Lamp used.....:	LED module	—				
	Lamp control gear used.....:	BK-HGV100-48V0	—				
	Mounting position of luminaire.....:	See product manual	—				
	Supply wattage (W)	100.2W	—				
	Supply current (A)	0.403A	—				
	Calculated power factor.....:	0.978	—				
	Temperatures in test 1 - 4 below are corrected for ta (°C)	25°C	—				
	- abnormal operating mode.....:	15° overturned	—				
4.13 (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	1.06x240V~	—				
	- 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		—				
4.13 (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.....:	1.1x240V~	—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnor.	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	25	--	29.1	--	90	--	--
AC inlet	25	--	30.7	--	70	--	--
Input wire of LED driver	25	--	36.6	--	105	--	--
Output connector (orange)	25	--	35.1	--	Ref.	--	--
LED PCB (up)	25	--	58.5	--	110	--	--
Internal wire near LED (up)	25	--	56.9	--	80	--	--
LED cover (up)	25	--	52.5	--	Ref.	--	--
LED PCB (down)	25	--	51.8	--	110	--	--
Internal wire near LED (down)	25	--	50.2	--	80	--	--



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China

Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



IEC 60598-2-4							
Clause	Requirement + Test				Result - Remark		Verdict
LED cover (down)	25	--	47.6	--	Ref.	--	--
Plastic component	25	--	46.3	--	Ref.	--	--
tc of LED driver	25	--	60.3	--	90	--	--
Quick connector	25	--	38.6	--	Ref.	--	--
Controller PCB	25	--	53.8	--	130	--	--
Quick connector (white)	25	--	37.4	--	Ref.	--	--
Support surface	25	--	28.5	--	90	29.1	130
Irradiation surface	25	--	32.1	--	90	34.5	175
Supplementary information:--							

ANNEX 2	TABLE: Thermal tests of Section 12		P
	Type reference.....:	UNF-2028030-KD	—
	Lamp used.....:	LED module	—
	Lamp control gear used.....:	BK-KHL080-2000Am	—
	Mounting position of luminaire.....:	See product manual	—
	Supply wattage (W)	77.0	—
	Supply current (A)	0.318	—
	Calculated power factor.....:	0.952	—
	Temperatures in test 1 - 4 below are corrected for ta (°C)	25°C	—
	- abnormal operating mode.....:		—
4.13 (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	1.06x240V~	—
	- 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		—
4.13 (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 – abnor.





IEC 60598-2-4							
Clause	Requirement + Test				Result - Remark		Verdict
		test 1	test 2	test 3	limit	test 4	limit
tc of LED driver	25	--	57.2	--	90	--	--
Supplementary information:--							

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

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal.....:		—





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	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
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....:		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
(15.6)	Terminals external wiring		N/A
	Terminal size and rating		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
	Pull test pin or tab terminals (4 samples); pull (N)		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

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

	ANNEX 5: EMF test result according to IEC/EN 62493	P
4	LIMITS	P
4.1	General	P
	Comply with Van der Hoofden test limit in 4.2.3 or inherently compliant in 4.2.2 and pass assessment procedure for intentional radiators in 4.3	P
4.2	Unintentional radiating part of lighting equipment	P
4.2.2	Lighting equipment deemed to comply with the Van der Hoofden test without testing	P
	1) electronic controlgear	Yes ☐ No ☒



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict
	2) incandescent-lamp technology	Yes ☐ No ☒	—
	3) LED-light-source technology	Yes ☒ No ☐	—
	4) OLED-light-source technology	Yes ☐ No ☒	—
	5) high-pressure discharge lamp technologies	Yes ☐ No ☒	—
	6) low-pressure discharge lamp technologies with exposure distance ≥ 50 cm	Yes ☐ No ☒	—
	7) independent auxiliary	Yes ☐ No ☒	—
	Not fulfil any of 1-7 above subject to 4.2.3		—
4.2.3	Applications of limits		N/A
	Not fulfil any of 1-7 in 4.2.2 but the compliance factor F is ≤ 1		N/A
4.3	Intentional radiating part of lighting equipment		N/A
	Comply with one of methods in Clause 7 if intentional radiator		N/A

6	MEASUREMENT PROCEDURE FOR THE VAN DER HOOFDEN TEST		N/A
6.1	General		N/A
	Measurements carried out under conditions according Clause 6.1 – 6.6	See Table 6	N/A

7	ASSESSMENT PROCEDURE INTENTIONAL RADIATORS		N/A
7.2	Low-power exclusion method		N/A
7.2.1	Input $P_{\text{int,rad}}$:		—
	Exclusion level P_{max}:		—
	Input power $P_{\text{int,rad}} < \text{exclusion level } P_{\text{max}}$		N/A
7.3	Application of the EMF product standard for body worn-equipment		N/A
	If not Clause 7.2 is met and expose distance ≤ 0.05 m, comply with IEC 62209-2		N/A
7.4	Application of the EMF product standard for base stations		N/A
	If not Clause 7.2 is met and if intentional radiator is base station, comply with IEC 62232		N/A
7.5	Application of another EMF standard		N/A
	If not Clause 7.2 is met and if intentional radiator cannot be considered as in Clause 7.3 or 7.4, comply with IEC 62311		N/A





IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

6	TABLE: Measurement results with Van der Hoofden test head				N/A
Location of EUT	Test model	Measuring distance	Result(F)	Limit(F)	Verdict
Reference Annex B of IEC/EN 62493:2015+A1:2022	--	--	--	≤1.0	N/A





Attachment No.1

IEC 60598_2_4I-ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-4
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
LUMINAIRES
PART 2: PARTICULAR REQUIREMENTS
SECTION 4: PORTABLE GENERAL PURPOSE LUMINAIRES

Differences according to..... : EN 60598-2-4:2018 used in conjunction with
EN IEC 60598-1:2021+A11:2022

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

4.11 (5)	EXTERNAL AND INTERNAL WIRING	N/A
4.11.4	For class I and class II portable luminaires for outdoor use, non-detachable flexible cables or cords not lighter than type H05RN-F	N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	N/A
4.4.4	DK: Luminaires for outdoor use classified as class II or class III	N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.2

IEC/EN IEC 62031 LED modules for general lighting - Safety specifications			
Clause	Requirement + Test	Result - Remark	Verdict
4.2	Classification		---
	Built-in.....:	Yes ☐ No ☒	—
	Independent.....:	Yes ☐ No ☒	—
	Integral.....:	Yes ☒ No ☐	—
4.6	Independent modules comply with requirements in IEC 60598-1:2020		N/A
4.8	Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11.	(see Annex 1)	N/A
6	Marking		N/A
6.2	Contents of marking for built-in and for independent LED modules		N/A
6.3	Location of marking for built-in LED modules		N/A
6.4	Location of marking for independent LED modules		N/A
6.5	Marking of integral LED modules		N/A
6.6	Durability and legibility of marking		N/A
7	Terminals		N/A
8 (9)	EARTHING		N/A
9 (10)	Protection against accidental contact with live parts		N/A
10 (11)	Moisture resistance and insulation		P
11 (12)	Electric strength		P
12 (14)	Fault conditions		P
12.1	Fault conditions according to IEC 61347-1, Clause 14		P
12.2	Overpower condition	No damage	P
14 (15)	Construction		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
15 (16)	Creepage distances and clearances		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.2

IEC/EN IEC 62031 LED modules for general lighting - Safety specifications			
Clause	Requirement + Test	Result - Remark	Verdict
16 (17)	Screws, current-carrying parts and connections		N/A
17 (18)	Resistance to heat, fire and tracking		N/A
18	Resistance to corrosion		N/A
20	Heat management		N/A
22	Photobiological safety		P
22.1	UV radiation		N/A
22.2	Blue light hazard		P
	Assessed according to IEC TR 62778		P
22.3	Infrared radiation		N/A



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.3

IEC TR 62778 Photobiological safety of lamps and lamp systems			
Clause	Requirement + Test	Result - Remark	Verdict

Table 4.7 (4.24)		Spectroradiometric measurement			--
	Measurement performed on:	Luminaire			--
	Model number	UNF-20210030-CDA (for LED: Bridgelux)			--
	Test voltage (V)	240V			--
	Test current (mA)	--			--
	Test frequency (Hz)	50			--
	Ambient, t (°C)	25,0			--
	Measurement distance	☒ 20 cm ☐ ... cm			--
	Source size	☒ Non-small ☐ Small : mm			--
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)			--
Item		Symb ol	Units	Result	Risk Group
Correlated colour temperature		CCT	K	--	--
x/y colour coordinates		--	--	--	--
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	2238	☐ RG0: <100 ☒ RG1: <10000 ☐ RG2: <4000000
Blue light hazard irradiance		E _B	W/m ²	--	--
Luminance		L	cd/m ²	--	--
Illuminance		E	lx	--	--
Supplementary information:					

Table 4.7 (4.24)		Spectroradiometric measurement			--
	Measurement performed on:	Luminaire			--
	Model number	UNF-20210030-CDA (for LED: Philips)			--
	Test voltage (V)	240V			--



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.3

IEC TR 62778 Photobiological safety of lamps and lamp systems				
Clause	Requirement + Test			Verdict
	Test current (mA).....			--
	Test frequency (Hz).....			50
	Ambient, t (°C).....			25,0
	Measurement distance.....			☒ 20 cm ☐ ... cm
	Source size			☒ Non-small ☐ Small : mm
	Field of view			☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)
Item		Symbol	Units	Risk Group
Correlated colour temperature		CCT	K	--
x/y colour coordinates		--	--	--
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	2356 ☐ RG0: <100 ☒ RG1: <10000 ☐ RG2: <4000000
Blue light hazard irradiance		E _B	W/m ²	--
Luminance		L	cd/m ²	--
Illuminance		E	lx	--
Supplementary information:				



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.4

Photo Documentation

Model: UNF-20210030-CDA

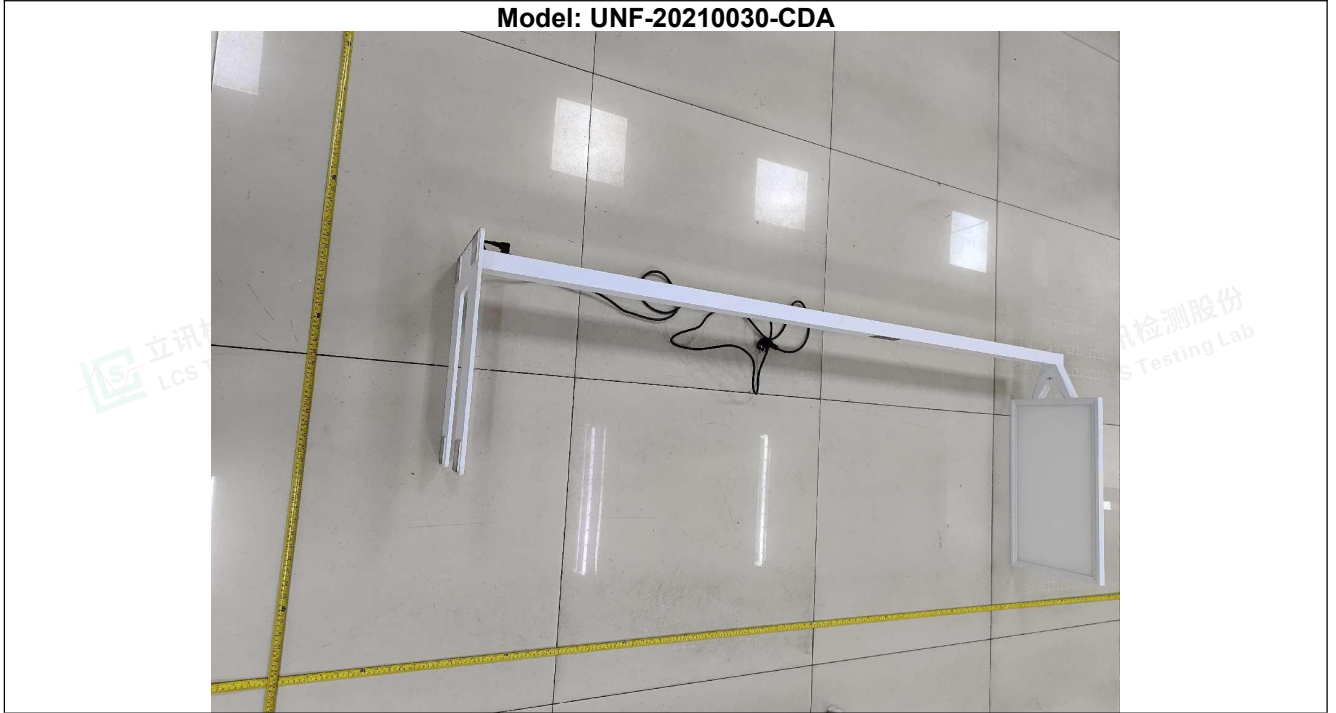


Photo 1



Photo 2



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.4

Photo Documentation



Photo 3



Photo 4





Attachment No.4

Photo Documentation



Photo 5



Photo 6





Attachment No.4

Photo Documentation



Photo 7

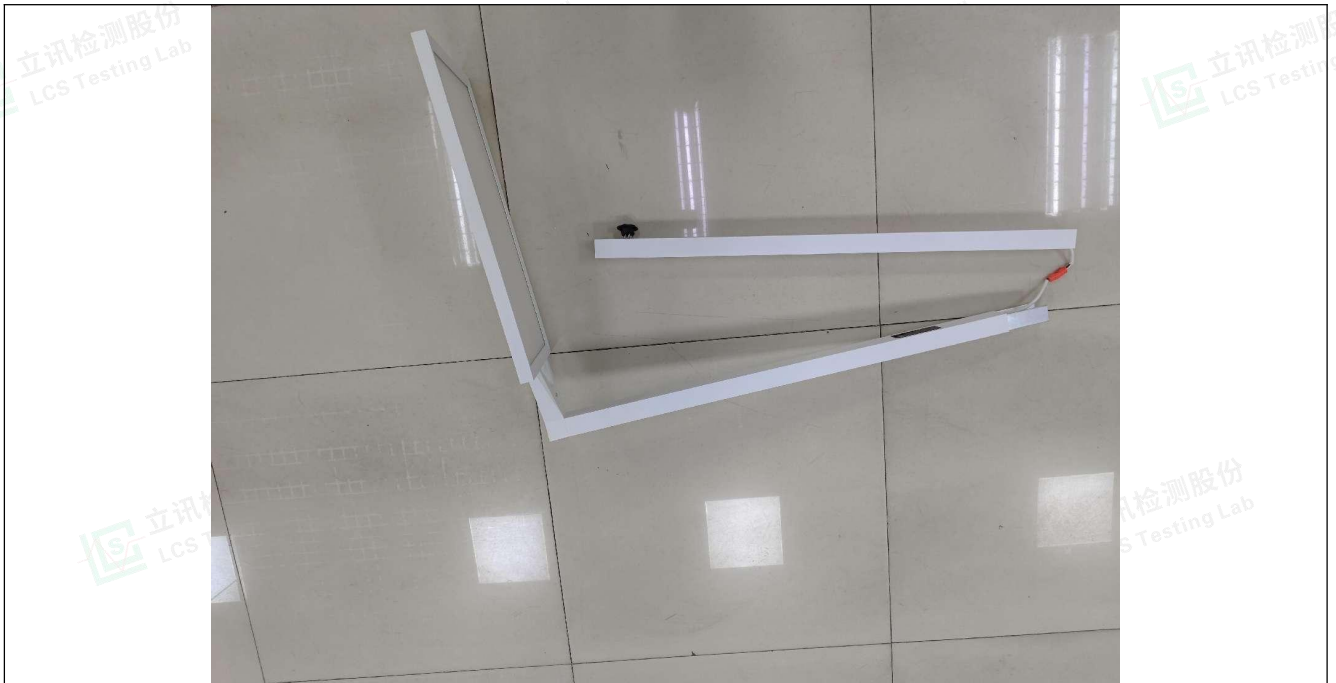


Photo 8





Attachment No.4

Photo Documentation



Photo 9



Photo 10





Attachment No.4

Photo Documentation



Photo 11 LED driver: BK-HGV100-48V0



Photo 12





Attachment No.4

Photo Documentation



Photo 13



Photo 14 controller





Attachment No.4

Photo Documentation

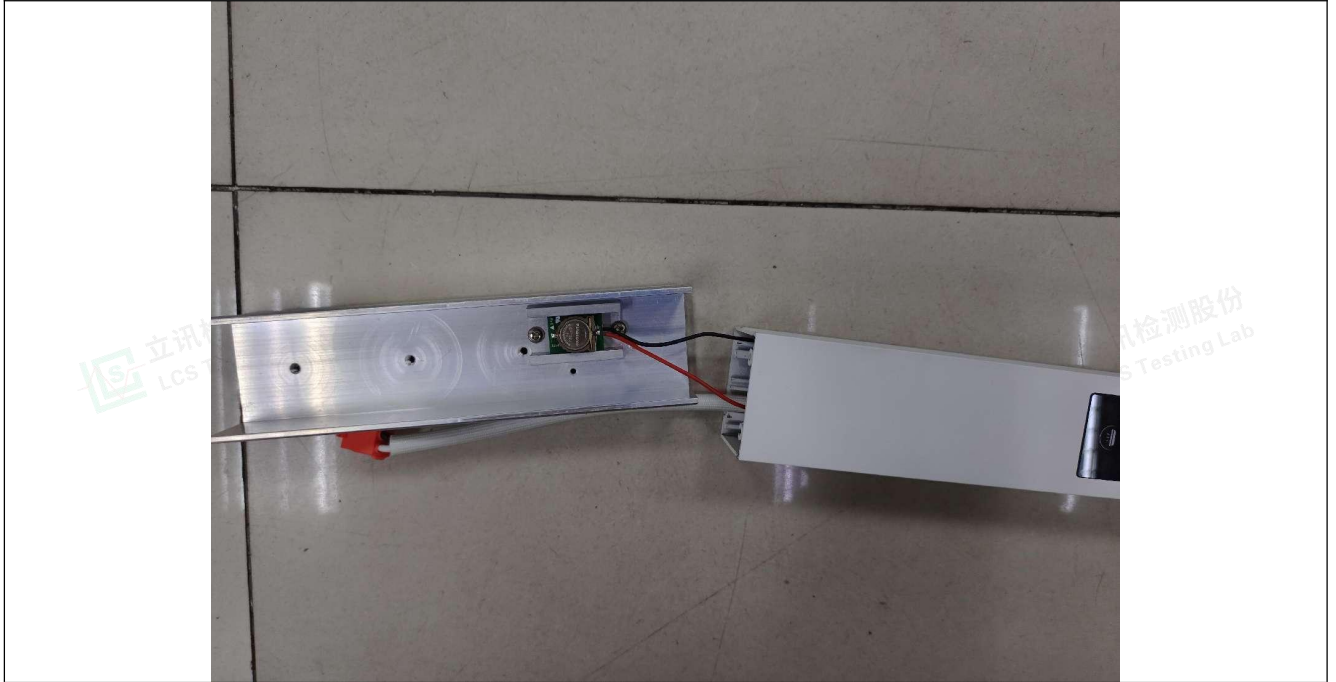
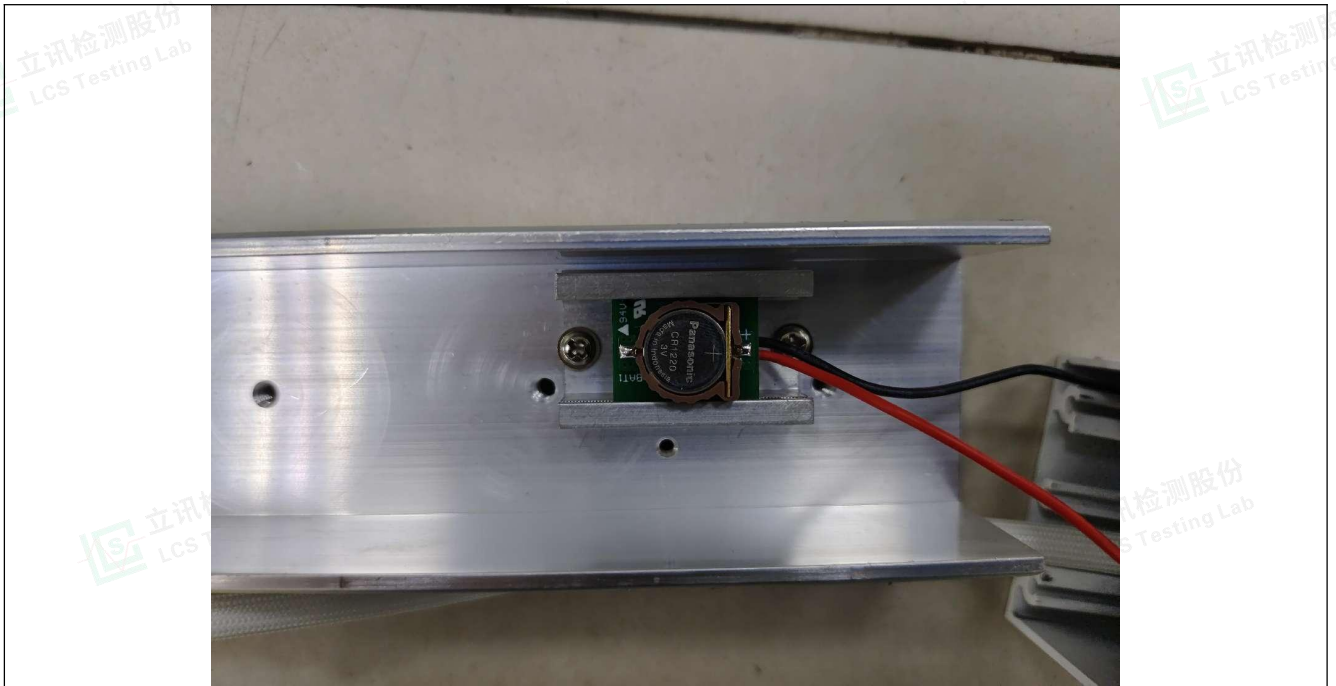


Photo 15





Attachment No.4

Photo Documentation

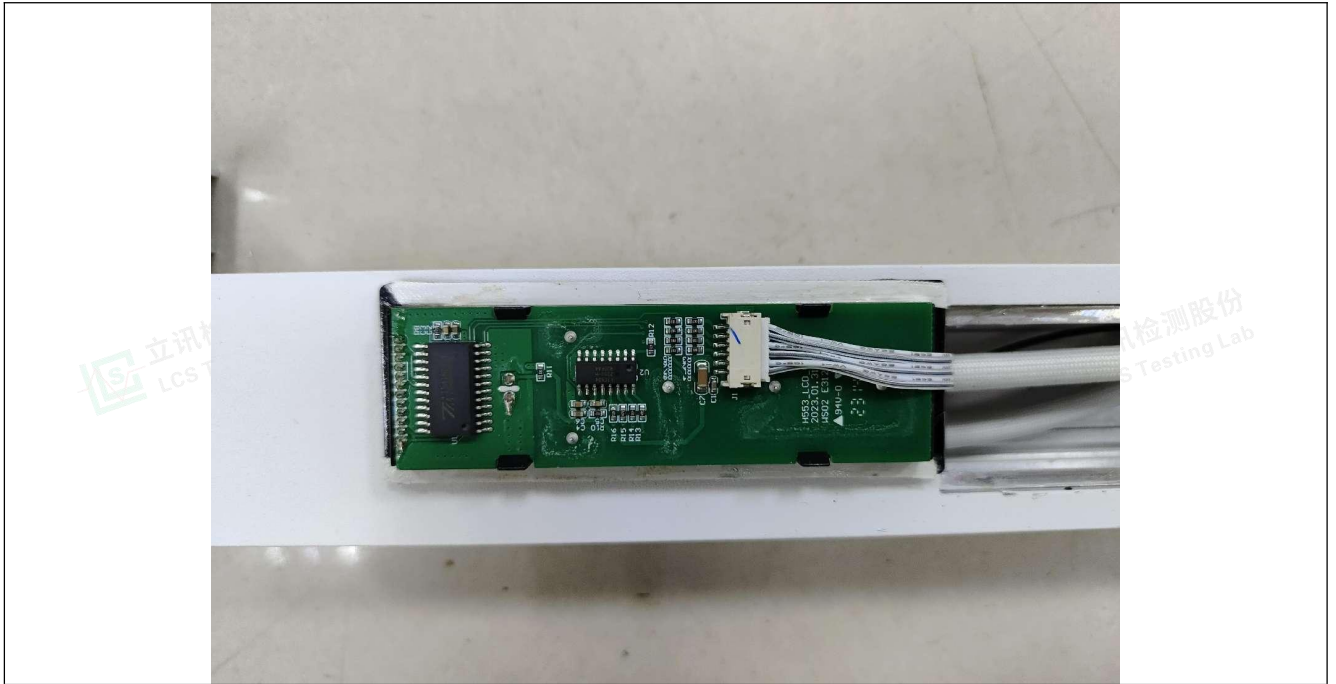
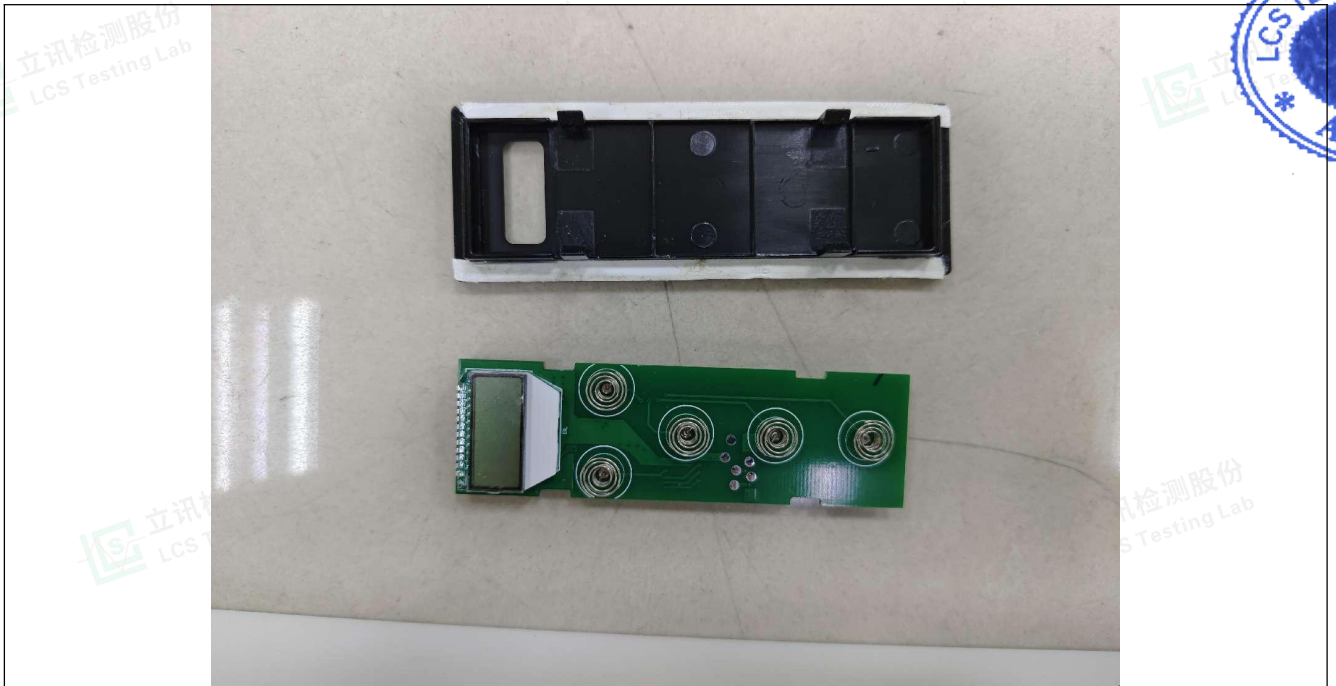


Photo 16





Attachment No.4

Photo Documentation



Photo 17



Photo 18





Attachment No.4

Photo Documentation



Photo 19



Photo 20





Attachment No.4

Photo Documentation



Photo 21 LED(Up)



Photo 22



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.4

Photo Documentation



Photo 23



Photo 24





Attachment No.4

Photo Documentation



Photo 25



Photo 26 LED(Down)





Attachment No.4

Photo Documentation

Model: UNF-2028030-KD



Photo 27



Photo 28



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



Attachment No.4

Photo Documentation

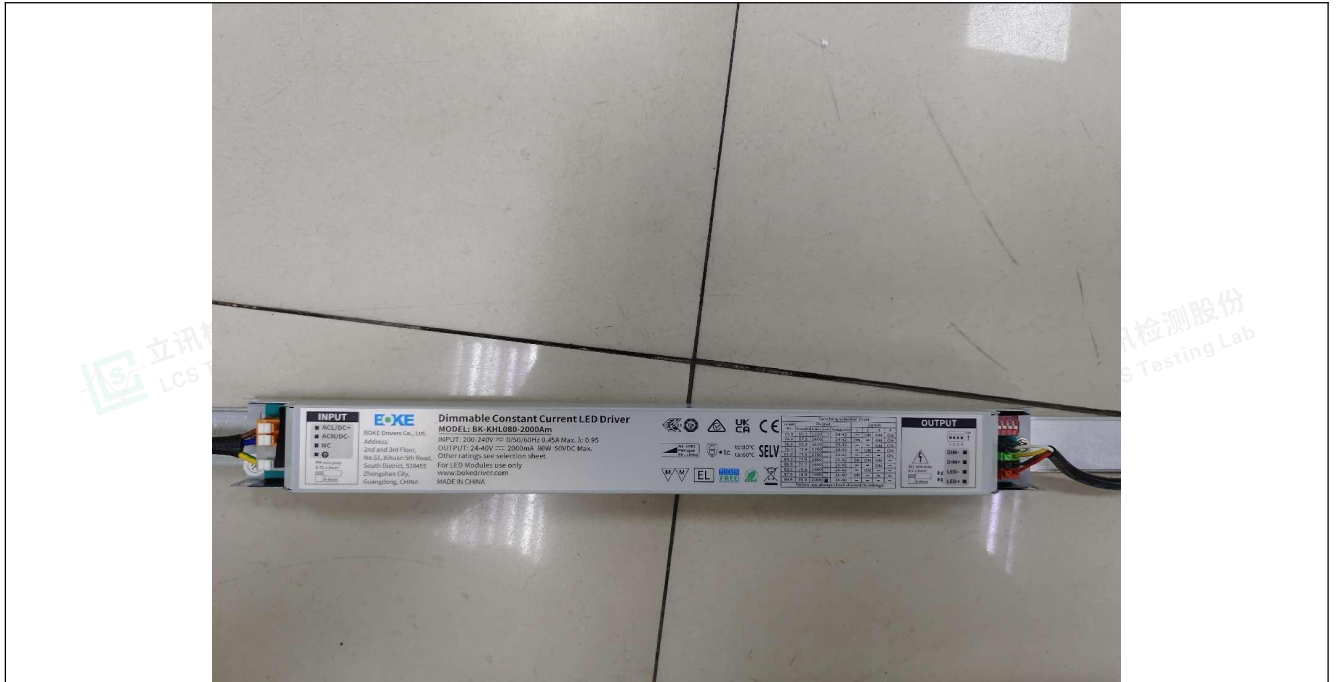


Photo 29 LED driver: BK-KHL080-2000Am

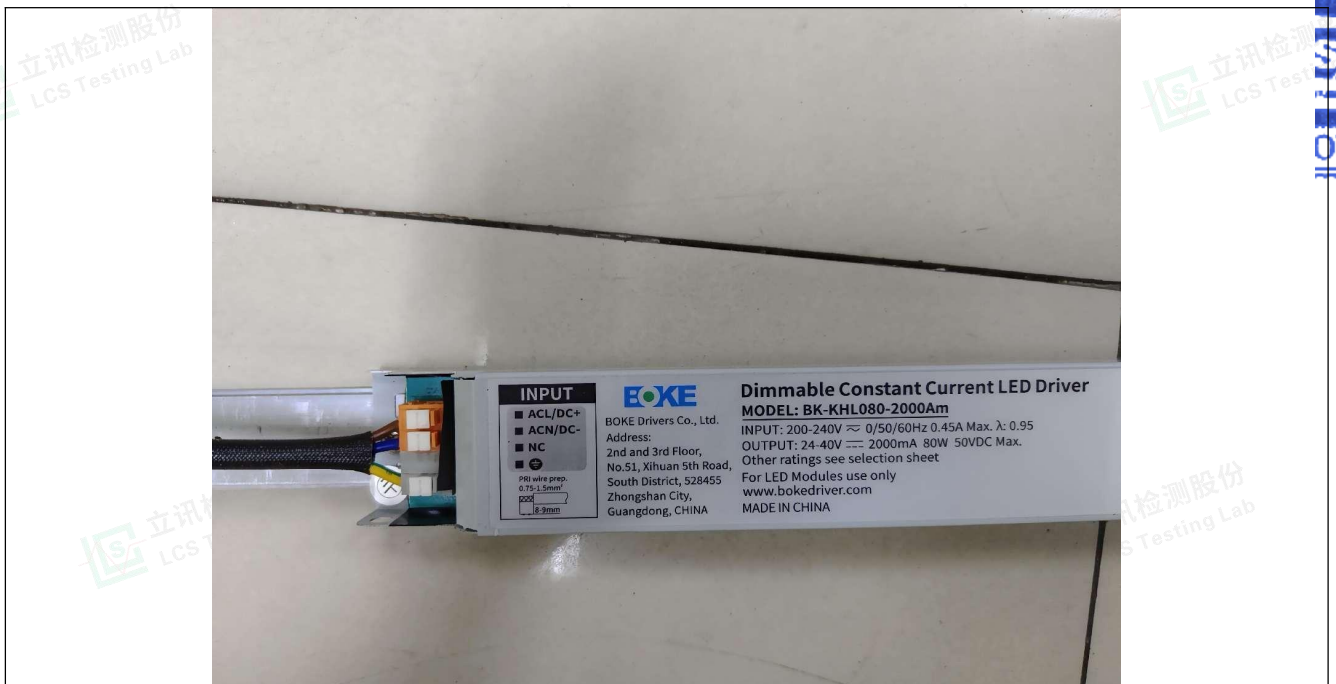


Photo 30



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, China
Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

Attachment No.4

Photo Documentation



Photo 31

-End of Test Report



Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Shenzhen Southern EEC Compliance Testing Laboratory Ltd.
Add: 101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District,
Shenzhen, China

Tel: +(86) 0755-29871520 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity