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CNAS L6964

Report No.:UNI2018010312SR-01

Test Report issued under the responsibility of:
Shenzhen United Testing Technology Co., Ltd.

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

Report Number.....: UNI2018010312SR-01
Date of issue: 2018-01-03
Total number of pages: 54 pages (including attachments)

Applicant's name: Shenzhen Huadian Lighting Co.,Ltd
Address: 2F Building A jinkaijin Industrial park Shilongzai Shiyan Town, Baoan District, Shenzhen, Guangdong

Test specification:

Standard: AS/NZS 60598.2.1:2014 used in conjunction with IEC 60598-1:2008
Test procedure.....: IEC Scheme
Non-standard test method.....: N/A

Test Report Form No.: IEC60598_2_1C
Test Report Form(s) Originator: Intertek Semko AB
Master TRF: 2012-11

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Test item description:	LED SPORTS LIGHT
Trade Mark:	N/A
Manufacturer	Shenzhen Huadian Lighting Co.,Ltd 2F Building A jinkaijin Industrial park Shilongzai Shiyao Town, Baoan District, Shenzhen, Guangdong
Model/Type reference:	HD-SP-1250WD-A-Z (Other models see the table MODEL LIST)
Ratings:	100-240V~, 50/60Hz, Class I, see the table MODEL LIST for other parameters

TRF No. IEC60598_2_1C

Testing procedure and testing location:

<input checked="" type="checkbox"/> Testing Laboratory:	Shenzhen United Testing Technology Co., Ltd. Testing location/ address.....: 2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China Tested by (name + signature).....: Steven Approved by (+ signature): Liuze
<input type="checkbox"/> Associated CB Laboratory:	Testing location/ address.....: Tested by (name + signature).....: Approved by (+ signature):
<input type="checkbox"/> Testing procedure: TMP	Testing location/ address.....: Tested by (name + signature).....: Approved by (+ signature):
<input type="checkbox"/> Testing procedure: WMT	Testing location/ address.....: Tested by (name + signature).....: Witnessed by (+ signature).....: Approved by (+ signature):
<input type="checkbox"/> Testing procedure: SMT	Testing location/ address.....: Tested by (name + signature).....: Approved by (+ signature): Supervised by (+ signature).....:

Steven
Liuze



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List of Attachments (including a total number of pages in each attachment):

Attachment 1: Additional test according to IEC 62031:2008 for LED modules incorporated in the luminaires (total: 7pages)

Attachment 2: Variations to IEC 60598-1, Ed. 7.0 (2008) for AS/NZS 60598.1:2013 (total: 7 pages)

Attachment 3: Variations to IEC 60598-2-1:1979+A1:1987 for application in Australia and New Zealand (AS/NZS 60598.2.1:2016) (total: 2 page)

Attachment 4: Photographs of test samples (total: 2 pages)


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<p>Summary of testing:</p>	
<p>Tests performed (name of test and test clause):</p> <p>All applicable tests according to IEC 60598-2-1 were performed on models HD-SP-1250WD-A-Z based on the conditions which all models have similar electrical and mechanical construction, the differences used appearance dimensions and rated wattages, the test sections include:</p> <p>1.5 (3) MARKING 1.6 (4) CONSTRUCTION 1.7 (11) CREEPAGE DISTANCES AND CLEARANCES 1.8 (7) PROVISION FOR EARTHING 1.10 (5) EXTERNAL AND INTERNAL WIRING 1.11 (8) PROTECTION AGAINST ELECTRIC SHOCK 1.12 (12) ENDURANCE TEST AND THERMAL TEST 1.13 (9) RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE 1.14 (10) INSULATION RESISTANCE AND ELECTRIC STRENGTH 1.15 (13) RESISTANCE TO HEAT, FIRE AND TRACKING</p> <p>For LED modules incorporated in the luminaires, the standards IEC 62031:2008 have been evaluated. See attachment 2.</p> <p>For Australia national deviations of AS/NZS 60598.2.1:2016 and AS/NZS 60598.1:2013, we have also considered in this test report. See attachment 3.</p> <p>The tested samples fulfill the requirements of the standards IEC 60598-2-1:2016 and AS/NZS 60598.2.1:1998.</p>	<p>Testing location:</p> <p>Shenzhen United Testing Technology Co., Ltd. 2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China</p>
<p>Summary of compliance with National Differences:</p> <p>List of countries addressed: Austrilia</p> <p><input checked="" type="checkbox"/> The product fulfils the requirements of IEC 60598-2-1:1979 + A1:1987 used in conjunction with IEC 60598-1:2008 IEC 62031:2008 AS/NZS 60598.2.1: 2016 used in conjunction with AS/NZS 60598.1:2013</p>	

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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.

LED SPORTS LIGHT	
Model: HD-SP-1250WD-A-Z	IP66 
Input: 100-240V~, 50/60Hz, 1250W	
Shenzhen Huadian Lighting Co.,Ltd	
Made in China	

Representative model: HD-SP-1250WD-A-Z

Location: attached on the enclosure, visible during installation

Remarks:

1. The height of WEEE symbol shall be not less than 7.0mm
2. The height of other required graphical symbols shall be not less than 5.0mm
3. The height of letters and numerals shall be not less than 2.0mm
4. The marking plates for other models are identical with the exception of model designations, , see the table MODEL LIST.

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Test item particulars:	
Classification of installation and use.....:	Class I luminaires
Supply Connection.....:	Power cable
.....:	
.....:	
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.....:	2017-12-13
Date (s) of performance of tests	2017-12-13 to 2018-01-03

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General remarks:

The test results presented in this report relate only to the object tested.
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

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

"(See appended table)" refers to a table appended to the report.

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

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

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 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) : Shenzhen Huadian Lighting Co.,Ltd
 2F Building A jinkaijin Industrial park Shilongzai
 Shiyan Town, Baoan District, Shenzhen,
 Guangdong

General product information:

The tested samples are suspension LED fixed luminaires incorporated LED modules as light source. They are classified class I according to protection against electric shock, suitable for direct mounting on normally flammable surfaces.

The tested samples are designed for indoor use and outdoor use, and intended for being suspending on the wall for general lighting. Each appliance consists of metal body, and LED modules which are be assembled in position by the manufacturer before delivery.

The supply voltage of the tested samples is 100-240V~ 50/60Hz, rated wattages 1250W, see model list for detail information.

The maximum ambient temperature t_a is considered as 25°C since it is not declared in the technical documentations.

The test samples have similar mechanical and electrical constructions, only with different size , and power

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MODEL LIST

No	Model	Driver model	Power supply rating	LED panel light rating	Size (mm)	Weight	Photo
1	HD-SP-300W series	HLG-150HA/B	Input:100-240V~,50-60Hz Output:24-48V,1920-3200mA	100-240V~,50/60Hz 300w	∅ 363*480	16kg	
2	HD-SP-400W series	HLG-240HA/B	Input:100-240V~,50-60Hz Output:24-48V,2500-5000mA	100-240V~,50/60Hz 400w	∅ 363*480	16kg	
3	HD-SP-500W series	HLG-240HA/B	Input:100-240V~,50-60Hz Output:24-48V,2500-5000mA	100-240V~,50/60Hz 500w	∅ 363*480	16kg	
4	HD-SP-600W series	HLG-150HA/B	Input:100-240V~,50-60Hz Output:24-48V,1920-3200mA	100-240V~,50/60Hz 600w	∅ 472*582	30.5 kg	
5	HD-SP-750W series	HLG-240HA/B	Input:100-240V~,50-60Hz Output:24-48V,2500-5000mA	100-240V~,50/60Hz 750w	∅ 472*582	30.5 kg	
6	HD-SP-1000W series	HLG-240HA/B	Input:100-240V~,50-60Hz Output:24-48V,2500-5000mA	100-240V~,50/60Hz 1000w	∅ 472*582	30.5 kg	
7	HD-SP-1250W series	HLG-320HA/B	Input:100-240V~,50-60Hz Output:24-48V,3350-6700mA	100-240V~,50/60Hz 1250w	∅ 472*582	40.5 kg	
8	HD-SP-1500W series	HLG-320HA/B	Input:100-240V~,50-60Hz Output:24-48V,3350-6700mA	100-240V~,50/60Hz 1500w	∅ 472*582	40.5 kg	

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Model Similarity:

HD represen Huadian lighting Co.,LTD

1. followed by -SP represents series designation.

2. followed by -300W, -400W, -500W, -600W, -750W, -1000W, -1250W, -1500W represents input lamp power.

3. followed by D or blank means: "D" represented Dimmable; blank represented Non-Dimmable.

4. followed by -S or blank means: "-S" represented input voltage 200-240Vac; blank represented input voltage 100-277Vac.

5. followed by -A or blank means: blank represented no driver housing; "-A" represented provided with driver housing.

6. followed by -A, -B, -C, -D, -E, -F, -G, -H, -I, -J, -K, -L, -M, -N, -O, -P, -Q, -R, -S, -T, -U, -V, -W, -X, -Y or -Z Represents product code.

7. followed by -2700K, -3000K, -3500K, -4000K, -4500K, -5000K, 5500K, -5700K, -6000K or 6500K

"-2700K" represented with Color temperature 2700k;

"-3000K" represented with Color temperature 3000k;

"-3500K" represented with Color temperature 3500k;

"-4000K" represented with Color temperature 4000k;

"-4500K" represented with Color temperature 4500k;

"-5000K" represented with Color temperature 5000k;

"-5500K" represented with Color temperature 5500k;

"-5700K" represented with Color temperature 5700k;

"-6000K" represented with Color temperature 6000k;

"-6500K" represented with Color temperature 6500k..

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

1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered	Standard IEC 62031:2008 Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
1.2 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection	Class I	—
1.4 (2.3)	Degree of protection.....	IP 66	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
1.4 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	On the enclosure	P
	Format of symbols/text	WEEE symbol: 7.0mm(MIN) Letters/numerals: 2.0mm(MIN)	P
1.5 (3.3)	Additional information	In the instruction leaflet	P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
1.5 (3.3.3)	Operating temperature		N/A
1.5 (3.3.4)	Symbol or warning notice		N/A
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning	LED module used	N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning	Fixed luminaires	N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire	Normal use luminaires	N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
1.5 (3.4)	Test with water	15 s	P
	Test with hexane	15 s	P
	Legible after test		P
	Label attached		P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N/A
1.6 (4.4.1)	Integral lampholder	No lampholder used	N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting	Not luminaires for tubular fluorescent lamps designed for end-to-end mounting	N/A
1.6 (4.4.4)	Positioning	No lampholders used	N/A
	- pressure test (N)		N/A
	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)		N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage	Not luminaires with ignitors No pulse voltage generated	N/A
1.6 (4.4.6)	Centre contact	Not luminaires with ignitor and Edison screw lampholders No pulse voltage generated	N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking	Normal use luminaires No lampholder, plug and similar insulating parts used	N/A
1.6 (4.4.8)	Lamp connectors	No lamp connectors used LED module connection by soldering wire	N/A
1.6 (4.4.9)	Caps and bases correctly used	No caps and bases used	N/A
1.6 (4.5)	Starter holders	<i>No starter holder used</i>	N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		P
1.6 (4.7.1)	Contact to metal parts		P
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		P
1.6 (4.7.3.1)	Welded connections:		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 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.7.4)	Terminals other than supply connection		N/A
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches:		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves		N/A
1.6 (4.9.1)	Retainment		N/A
	Method of fixing		N/A
1.6 (4.9.2)	Insulated linings and sleeves		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)		N/A
1.6 (4.10)	Insulation of Class II luminaires		N/A
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.11)	Electrical connections		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		P
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts	Copper or copper alloy used	P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	Mechanical connections and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	1.20 Nm for fixing enclosure	P
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....	No fixed arms used	N/A
	- lampholder; torque (Nm)	No lampholder used	N/A
	- push-button switches; torque 0,8 Nm		N/A
1.6 (4.12.5)	Screwed glands; force (Nm)		N/A
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....	0.20Nm	P
	- other parts; energy (Nm)	0.35 Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.13.3)	Straight test finger	30 N	P
1.6 (4.13.4)	Rough service luminaires	<i>Normal use luminaires</i>	N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
1.6 (4.13.6)	Tumbling barrel		P
1.6 (4.14)	Suspensions and adjusting devices		P
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	4x40.5kg=162kg	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)	Not clip-mounted luminaires	N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		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
1.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No cable with such construction used	N/A
1.6 (4.14.5)	Guide pulleys	No guide pulley used	N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	Flammable materials:		P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- glow-wire test 650 °C		P
	- spacing \geq 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N/A
1.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion:		N/A
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration	Normal use luminaires	N/A
1.6 (4.21)	Protective shield:		N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.21.1)	Shield fitted	LED module as light source No protective shield used	N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A
1.6 (4.22)	Attachments to lamps		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)	LED module as light source	N/A
1.6 (4.25)	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection:		N/A
1.6 (4.26.1)	Uninsulated accessible SELV parts	No uninsulated accessible SELV parts used	N/A
1.6 (4.26.2)	Short-circuit test		N/A
1.6 (4.26.3)	Test chain according to Figure 29		N/A
1.6 (4.27)	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)	240 V r.m.s (Input)	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> For LED driver input Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated pulse voltage (kV)	No pulse voltage generated	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)	Cr=cl>2.5mm(Limit: cr=2.5mm, cl=1.5mm)	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	cr>2.5mm, cl>1.5mm(Limit: cr=2.5mm, cl=1.5mm)	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm)		N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm) ...		N/A
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)	cr>2.5mm, cl>1.5mm(Limit: cr=2.5mm, cl=1.5mm)	P

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω.....	0.056Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		P
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		P

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

	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A

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

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

1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection	Power cable	P
1.10 (5.2.2)	Type of cable	3x2.5mm ²	P
	Nominal cross-sectional area (mm ²).....		P
	Cables equal to IEC 60227 or IEC 60245	IEC 60245	P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		N/A
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
1.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N).....: 120		P
	- torque test: torque (Nm): 0.35		P
	- displacement ≤ 2 mm	<2mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
1.10 (5.2.11)	External wiring passing into luminaire		N/A
1.10 (5.2.12)	Looping-in terminals	Not loop-in luminaire	N/A
1.10 (5.2.13)	Wire ends not tinned		N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)	No appliance inlet used	N/A
	Appliance couplers of class II type		N/A
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures: (see Annex 2)		N/A
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²)		P
	Insulation thickness		P
	Extra insulation added where necessary		P
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation	No conductors without insulation used	N/A
1.10 (5.3.1.5)	SELV current-carrying parts		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		N/A
	No twisting over 360°	Not withstand rotation along cable longitudinal axis	P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers	Not make cable damaged during adjusting luminaire height	N/A
1.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with \varnothing 50 mm probe from outside, within arm's reach, on wall-mounted luminaires		P
	Lamp and starter holders in portable and adjustable luminaires comply with double or reinforced insulation requirements	No lamp holder and starter holder used	N/A
	Basic insulation only accessible under lamp or starter replacement		P

TRF No. IEC60598_2_1C_ATTACHMENT

IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp	LED module used as light source	N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed	No BC lampholder of metal used	N/A
1.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current		N/A
	- no-load voltage.....		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface	Fixed luminaires	N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		N/A
1.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

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

	Discharge device mounted separately		N/A
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1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13	IP66	—
1.12 (12.3)	Endurance test:		P
	- mounting-position	Normal use	—
	- test temperature (°C)	35 °C	—
	- total duration (h)	240 h	—
	- supply voltage: Un factor; calculated voltage (V)	1.1 X 240=264 (V)	—
	- lamp used	LED module incorporated in the luminaires	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)		N/A
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....:		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex V:		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:		N/A
	- part tested; temperature (°C).....:		N/A
	- part tested; temperature (°C).....:		N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part (°C).....		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C).....		N/A
	- part tested; temperature (°C).....		N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):.....		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C).....		N/A
	- part tested; temperature (°C).....		N/A

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE	P
1.13 (-)	If IP > IP 20 the order of the test specified in clause 1.12	P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP	IP66
	- mounting position during test	—
	- fixing screws tightened; torque (Nm).....	—
	- tests according to clauses	—
	- electric strength test afterwards	P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		P
	h) no damage of protective shield or glass envelope		P
1.13 (9.3)	Humidity test 48 h	93% 25°C	P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø	Covered by metal foil	—
	Insulation resistance (MΩ)		—
	SELV:		N/A
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5	Not used	N/A
	Other than SELV:		P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		N/A
	SELV:		N/A
	- between current-carrying parts of different polarity		N/A
	- between current-carrying parts and mounting surface		N/A
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV:		P
	- between live parts of different polarity	1480 V/1 min	P
	- between live parts and mounting surface	1480 V/1 min	P
	- between live parts and metal parts	1480 V/1 min	P
	- between live parts of different polarity through action of a switch	No switch used	N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5		N/A
1.14 (10.3)	Touch current or protective conductor current (mA).....	0.032mA	P

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
1.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C).....	Concect, 120°C, 1.1mm	P
	- part tested; temperature (°C).....		N/A
1.15 (13.3.1)	Needle flame test (10 s):		N/A
	-part tested	Concect no burning, no flame	P
	-part tested		N/A
1.15 (13.3.2)	Glow-wire test (650°C):		N/A
	- part tested	Concect no burning, no flame	P
	-part tested		N/A
1.15 (13.4.1)	Tracking test:		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

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

ANNEX 1: components	P
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object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
LED driver	B	MEAN WELL ENTERPRISES CO LTD	HLG-150H- 48A/B	Input: 100- 240VAC, 50/60Hz, 1.7A; Output: 24- 48VDC, 3.2A; 150W	AS/NZS 61347.1 AS/NZS 6134.2.13	SAA- 160127-EA
LED driver	B	MEAN WELL ENTERPRISES CO LTD	HLG-240H- 48A/B	Input: 100- 240VAC, 50/60Hz, 2.5A; Output: 24- 48VDC, 5A; 240W	AS/NZS 61347.1 AS/NZS 6134.2.13	SAA- 160127-EA
LED driver	B	MEAN WELL ENTERPRISES CO LTD	HLG-320- 48A/B	Input: 100- 240VAC, 50/60Hz, 3.5A; Output: 24- 48VDC, 6.7A; 320W	AS/NZS 61347.1 AS/NZS 6134.2.13	SAA- 160127-EA
connect	B	Shenzhen Lilutong Electronic Technology Co.,Ltd	LLT-M19-15	Rated current:15A; Rated voltage 250V	-	TUV B15039023 0 002
connect	B	Shenzhen Lilutong Electronic Technology Co.,Ltd	LLT-M22-15	Rated current:25A; Rated voltage 250V	-	TUV B15039023 0 002
Power cable	B	Ningbo Dabu Electric Appliance Co., Ltd.	60245 IEC 53 3x2.5mm	3Gx2.5mm 2	AS/NZS 60245.4	SAA13015 5 EA
-alt	B	Ningbo Dabu Electric Appliance Co., Ltd.	60245 IEC 53 3x1.0mm	3Gx1.0mm 2	AS/NZS 60245.4	SAA13015 5 EA

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IEC 60598-2-1_ATTACHMENT						
Clause	Requirement + Test			Result - Remark		Verdict
internal wire		Ningbo Dabu Electric Appliance Co., Ltd.	H05RN-F	VW-1, 105 °C, min.300V, min. 2x1.0 mm	EN 50525-2-21	VDE 400306 91
LED		OSRAM	3737	Vf:2.7-3.2V, If:1500mA	-	Tested with appliance
LED board		WING SHING ELECTRONIC & PCB LTD	YS-4	V-0; AI	-	UL

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 authorized by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

TRF No. IEC60598_2_1C_ATTACHMENT

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

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
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Type reference.....	HD-SP-1250WD-A-Z	—
Lamp used	Normal use	—
Lamp control gear used		—
Mounting position of luminaire	See user manual	—
Supply wattage (W).....	-	—
Supply current (A)	-	—
Calculated power factor	-	—
Table: measured temperatures corrected for ta = 25 °C:		P
- abnormal operating mode.....		—
- test 1: rated voltage	N/A	—
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1.06 X 240 = 254.4 (V)	—
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	N/A	—
- test 4: 1,1 times rated voltage or 1,05 times rated wattage	N/A	—
Through wiring or looping-in wiring loaded by a current of A during the test	N/A	—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Power cable	-	40.2	-	105	-	-
Internal wire	-	61.3	-	105	-	-
LED dirver	-	45.7	-	85	-	-
cover	-	51.9	-	Ref.	-	-
LED PCB	-	71.2	-	130	-	-
Mounting surface	-	26.1	-	90	-	-
Ambient	-	25.2	-	Ref.	-	-

	ANNEX 3: screw terminals (part of the luminaire)		N/A
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TRF No. IEC60598_2_1C_ATTACHMENT

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

(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)		N/A
(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

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 4: screwless terminals (part of the luminaire)		N/A
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(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal		—
	Rated current (A)		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	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
(15.5.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	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

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Clause	Requirement + Test									Verdict
(15.7)	Terminals external wiring									N/A
	Terminal size and rating									N/A
(15.8.1)	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
(15.9)	Contact resistance test									N/A
	Voltage drop (mV) after 1 h									N/A
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)	-	-	-	-	-	-	-	-	-	-

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

	Attachment 1: Additional test according to IEC 62031:2008 for LED modules incorporated in the luminaires		P
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4	GENERAL REQUIREMENTS		P
4.4	Integral modules treated as part of luminaires defined in clause 0.5 of IEC 60598-1		N/A
4.5	Independent modules complies with requirements in IEC 60598-1		N/A

5	GENERAL TEST REQUIREMENTS		P
5.5	SELV-operated LED modules comply with Annex I of IEC 61347-2-13		P

6	CLASSIFICATION		P
	Built-in module	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Independent module	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Integral module	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	For Integral module; Note to 1.2.1 in IEC 60598-1 applies.		—

7	MARKING		N/A
7.1	Mandatory markings:		N/A
	- mark of origin		N/A
	- model number, type reference		N/A
	- rated supply voltage (V)		N/A
	- rated supply current (A)		N/A
	- rated input power (V)		N/A
	- nominal power		N/A
	- indication of connections, wiring diagram		N/A
	- value of t_c		N/A
	- eye protection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- marking of built-in modules only		N/A
7.2	- location of marking		N/A
7.3	Marking durable and legible		N/A
	Rubbing 15 s water, marking legible		N/A

8	SCREW TERMINALS		N/A
	Compliance with section 14 of IEC 60598-1		N/A
	SCREWLESS TERMINALS		N/A
	Compliance with section 15 of IEC 60598-1		N/A
	CONNECTORS		N/A
	Compliance with IEC 60838-2-2		N/A

9	PROVISION FOR PROTECTIVE EARTHING		N/A
	External metal parts connected to the earth terminal:		N/A
	- compliance with 7.2.1 in IEC 60598-1		N/A
	Test with a current of 10 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω): $< 0,5 \Omega$:		N/A
	Protective earth, symbol		N/A
	Terminal complying with clause 8 in Part 1		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Conductors by tracks on printed circuit boards:		N/A
	- a.c. current of 25 A for 1 min between earthing terminal and accessible metal parts		N/A
	- compliance with clause 7.2.1 in IEC 60598-1		N/A

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

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		N/A
	Protection against accidental contact with live parts in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		N/A
- (10.1)	Controlgear protected against accidental contact with live parts		N/A
- (A1)	Current measured according to IEC 60990, figure 4 and clause 7.1: max. 0,7 mA (peak) or 2,0 mA d.c., for $f \geq 1000$ Hz max. 70 mA ... :		N/A
- (A2)	Voltage at 50 kΩ (V): max. 34 V (peak) :		N/A
	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V :		N/A
8.1 (-)	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation according 8.6 and 13.1 in IEC 60065		N/A
8.2 (-)	Exposed terminals of SELV or SELV-equivalent controlgear are allowed if: - the rated or maximum output voltage does not exceeding 25 V r.m.s. - the no-load output voltage does not exceed 30 V r.m.s. or $33 \sqrt{2}$ V peak		N/A
	Insulated terminals if rated output voltage >25 V		N/A
	One capacitor Y1 or two capacitors Y2 of the same values used in series between SELV or SELV-equivalent output and primary circuits - Capacitor complying with IEC 60384-14 - Other components bridging the separating transformer complying with EN 60065, clause 14		N/A

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

11	MOISTURE RESISTANCE AND INSULATION		P
	Protection against moisture and insulation in compliance with Clause 11, IEC 61347-1		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ): ≥ 2 MΩ :	>100 MΩ	P
	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A
	For double or reinforced insulation the resistance exceeds 4 MΩ		N/A

12	ELECTRIC STRENGTH		P
	Electric strength in compliance with Clause 12 of IEC 61347-1		P
	Immediately after clause 11 electric strength test for 1 min		P
	Working voltage ≤ 42 V, test voltage 500 V	500V between D+/D-polarities	P
	Working voltage > 42 V, test voltage (V): 2U + 1000 V		N/A
	Reinforced insulation, test voltage (V):	No such insulation used	N/A
	No flashover or breakdown		P
	Windings in separating transformers in SELV-equivalent control gear according to 14.3.2 of EN 60065		N/A

13	FAULT CONDITIONS		P
13.1	In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		P
	When operated under fault conditions the LED-module:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		N/A
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with	(see appended table)	P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	relevant specifications have been short-circuited or disconnected		
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	N/A
	Distances on printed boards provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	N/A
- (14.5)	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
	After the tests the insulation resistance with d.c. 500 V (MΩ) are ≥ 1 MΩ	>100 MΩ	P
	Temperature declared thermally protected LED-modules fulfil the requirements in Annex C of IEC 61437-1	Not temperature declared thermally protected LED-modules	N/A
13.2	Module withstands overpower condition >15 min.		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite	No molten material occurred	P

15	CONSTRUCTION		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P

16	CREEPAGE DISTANCES AND CLEARANCES		N/A
	Creepage and distances and clearances in compliance with IEC 60598-1		N/A
	Class of protection	CLASS III	—
	Working voltage (V)		—
	Voltage form		—

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	PTI		—
	Rated pulse voltage (kV)		—
	(1) Live parts of different polarity: cr (mm); cl (mm)		N/A
	(2) Live parts and accessible parts: cr (mm); cl (mm)		N/A
	(3) Parts becoming live: cr (mm); cl (mm) :		N/A
	(4) Outer surface of cable: cr (mm); cl (mm)		N/A
	(5) Live parts of switches: cr (mm); cl (mm) :		N/A
	(6) Live parts and supporting surface: cr (mm); cl (mm)		N/A

17 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		N/A
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		N/A
(4.11)	Electrical connections:		N/A
(4.11.1)	Contact pressure		N/A
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
	- at least two self-tapping screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		N/A
(4.11.5)	No contact to wood		N/A
(4.12)	Mechanical connections and glands:		N/A
(4.12.1)	Mechanical stress		N/A
	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: part; torque (Nm)		N/A
	Torque test: part; torque (Nm)		N/A
	Torque test: part; torque (Nm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(4.12.2)	Screw diameter < 3 mm screwed into metal		N/A
(4.12.3)	Void		—
(4.12.4)	Locked connections		N/A
(4.12.5)	Screwed glands: force (N) :		N/A

18 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A
	Resistance to Heat, Fire and Tracking in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		N/A
(18.1)	Parts of insulating material retaining live parts in position, ball-pressure test:		N/A
	- part; test temperature (°C) :		N/A
(18.2)	Printed boards in accordance with IEC 60249-1, 4.3		N/A
(18.3)	External parts of insulating material preventing electric shock glow-wire test 650 °C		N/A
(18.4)	Parts of insulating material retaining live parts in position, needle-flame test 10 s:		N/A
	- flame extinguished within 30 s		N/A
	- no flaming drops igniting tissue paper		N/A
(18.5)	Tracking test		N/A

19	RESISTANCE TO CORROSION		N/A
	Resistance to corrosion in compliance with IEC 61347-1		N/A
	Rust protection:		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A

14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
LED	Short circuit, module normal working, no fire, no smoke or similar hazardous conditions occurred		NO

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Clause	Requirement + Test	Result - Remark	Verdict

	Attachment 2: Variations to IEC 60598-1, Ed. 7.0 (2008) for AS/NZS 60598.1:2013		P
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ZZ1	SCOPE		P
ZZ2	VARIATIONS		P
1.1 (0)	SCOPE		P
0.1	LED light sources are subject to the same test parameters as “other discharge lamps	LED light sources	P
0.2	normative references		P
0.4.2	In Australia, for equipment, other than class III equipment, that is intended for connection to the supply mains and not marked with:		P
	-a rated voltage of at least 240 V for single-phase equipment or a rated voltage of at least 415 V for three-phase equipment; or		N/A
	-a rated voltage range that includes 240 V for single-phase equipment and 415 V for three-phase equipment,	100-240V ~	P
	the rated voltage is equal to 240 V for single-phase equipment and 415 V for three-phase equipment, and the upper limit of the voltage range is equal to 240 V for single-phase equipment and 415 V for three-phase equipment.		P
0..5	Throughout this document, where there is a relevant Australian/New Zealand Standard, it replaces the IEC Standard unless otherwise specified.		N/A
0.5.2A	Capacitors shall comply with Clause 4.2A.		N/A
1.2(1.2.87)	installation coupler		N/A
1.2(1.2.88)	installation male connector		N/A
1.2(1.2.89)	installation female connector		N/A
1.2(1.2.90)	installation coupler system		N/A
2.2	Class 0 luminaires are not allowed in Australia or New Zealand.	Class I	N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.1	Move Item 3.2.21 from the center column to the right hand column.		P
3.2.12	In Australia, luminaires for household use and similar with supply cords which are not fitted with a plug shall be marked with a cord tag with the symbol for "must be installed by a licensed electrician".		P
3.3	In Australia and New Zealand, instructions and other texts required by this Standard shall be written in English.		P
3.3.7	Luminaires for use with metal halide lamps shall be provided with instructions that state the substance of the following:		N/A
	-complete with its protective shield; or		N/A
	-with a double jacketed lamp.		N/A
3.3.21	The instructions shall contain details related to components in the luminaire that require replacement as part of a maintenance program.		N/A
4.8	Switches that indicate an off position shall have contacts with an air break and comply with AS/NZS 3133 or AS/NZS 61058.1.		N/A
4.2A	CapacitorsType		N/A
5.2.1	Luminaires shall be provided with only one of the following means of connection and isolation to the supply.		P
(1)	Fixed luminaires:		P
	— device for the connection of luminaires;		N/A
	— terminals; plug for engagement with socket-outlets;		N/A
	— connecting lead (tails);		P
	— adapter for engagement with supply tracks;		N/A
	— appliance inlet;		N/A
	— installation coupler;		N/A
	— luminaire coupler; Portable luminaires:		N/A
	— supply cord with plug;		N/A
	— appliance inlet.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Track-mounted luminaires:		N/A
	— adaptor;		N/A
	— connector.		N/A
(3)	In Australia, non-portable luminaires with a supply cord shall be fitted with a plug complying with AS/NZS 3112 or a coupler complying with its standard, except where the luminaire has markings and instructions that comply with Clause 3.2.12, in which case, a plug or coupler is not required. However, for other than portable luminaires a plug is not required if the luminaire has markings and instructions in accordance with Clause 3.2.12.		N/A
	The plug portion of a luminaire with integral pins shall comply with the relevant requirements of AS/NZS 3112.		N/A
5.2.2	1-Supply cords used as a means of connection to the supply, when supplied by the luminaire manufacturer, shall be at least equal in their mechanical and electrical properties to those specified in IEC 60227 and IEC 60245, as indicated in Table 5.1, or AS/NZS 3191, and shall be capable of withstanding, without deterioration, the highest temperature to which they may be exposed under normal conditions of use.		N/A
	3-To provide adequate mechanical strength, the nominal cross-sectional area of the conductors shall be not less than:— 0,75 mm ² ;— 1,0 mm ² for portable rough service luminaires.		N/A
5.2.16	Class II luminaires for fixed wiring incorporating an appliance coupler shall not have means to allow further luminaires to be connected, including looping in by cascading.		N/A
	Luminaire couplers incorporated with the luminaire shall comply with IEC 61995-1.		N/A
5.2.18	All portable luminaires with a flexible supply cord shall be fitted with a plug complying with AS/NZS 3112. Other luminaires with flexible cords shall be fitted with a plug complying with AS/NZS 3112, unless they have the warning allowed by Clause 3.2.12.		N/A
5.2.19	Installation couplers incorporated within luminaires shall comply with the requirements of AS/NZS 61535.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Luminaires incorporating installation couplers may have means to allow further luminaires to be connected by cascading provided the through wiring is rated for the current rating of the installation coupler.		N/A
5.3.1	1-Internal wires coloured green, yellow or green/yellow combination shall be used for making protective earth connections only. Functional earth connections shall not be made by wires coloured green, yellow or green/yellow combination.		N/A
	2-NOTE 3 Internal wires of other colours are not precluded from making protective earthing connections.		N/A
7.2.11	All conductors, whether internal or external, coloured green, yellow or green/yellow combination, shall only be connected to an earthing terminal.		P
8.2.1	Luminaires shall be so constructed that their live parts and basic insulation are not accessible when the luminaire has been installed and wired as in normal use. Live parts shall not be accessible when the luminaire is opened as necessary for replacing lamps, replaceable light sources or (replaceable) starters, even if the operation cannot be achieved by hand.		P
	NOTE Examples of parts with basic insulation are cables intended for internal wiring, controlgear for building-in etc.		P
	This does not apply to the non-current -carrying parts of caps which comply with the relevant IEC safety standard.		N/A
	Where a protective cover is used over a non-user-replaceable light source to provide protection against electric shock, and the cover is marked with the "caution, electric shock risk" symbol in accordance with IEC 60417-6042, the cover shall be left in place during the tests and inspections detailed by Section 8 of this Standard. The cover shall be held securely in position by fixings requiring the use of a tool for their removal, and at least two independent fixings shall be used.	Non –user-replaceable	P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
TABLE 12.1	NOTE Luminaire manufacturers should consider the maximum ambient air temperature in the vicinity of components such as starting devices and electronic ballasts or converters. Component performance specifications advise manufacturers to mark or supply life data as maximum ambient air temperature based on 50,000 hrs. This t-life is often marked as t_a and is the temperature of the air in the vicinity of the component and is not related to the luminaire t_a . As such, luminaire manufacturers should measure air temperature in the vicinity of such components, within the luminaire, as even those complying with their t_c point measurements can still fail prematurely if t-life is exceeded		N/A
CLAUSE 13.3	Resistance to flame and ignition: Parts of non-metallic material shall be resistant to flame and ignition.		P
	For materials other than ceramic, compliance is checked by the tests of 13.3.1 and 13.3.2, 13.3.3 and 13.3.4, as appropriate.		P
	This requirement does not apply to decorative trims, knobs, wiring insulation and other parts not likely to be ignited or to propagate flames from inside the luminaire.		P
	This Clause applies to all parts, including components, even if they have been tested to their own standard.		P
13.3.1	Parts of non-metallic material supporting connections shall withstand the following test: Parts are subject to a test using a nickel-chromium glow-wire.		P
	The test apparatus and test procedure shall be those described in AS/NZS 60695.2.10.		P
	The glow wire is heated to 750 °C and applied to the test sample for 30 s.	Concect, no burning no flame	P
	For all tests, any flame or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4:2002, spread out horizontally 200 mm ± 5 mm below the sample.		P

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.2	All other parts of non-metallic material shall withstand the following test		N/A
	Parts are subject to a test using a nickel-chromium glow-wire.		N/A
	The test apparatus and test procedure shall be those described in AS/NZS 60695.2.10.		N/A
	The glow wire is heated to 650 °C and applied to the test sample for 30 s.		N/A
	For all tests, any flame or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4:2002, spread out horizontally 200 mm ± 5 mm below the sample.		N/A
13.3.3	During the application of the 750 °C glow wire test of Clause 13.3.1, if a flame is produced that persists for longer than 2 s, the luminaire is further tested as follows:		N/A
	The needle-flame test of AS/NZS 60695.11.5 is applied to non-metallic parts that encroach within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm above the point of application of the glow wire. The needle flame is applied to the test sample for 30 s.		N/A
	Parts shielded by a barrier that meets the needle-flame test of AS/NZS 60695.11.5 are not tested.		N/A
	The duration of burning shall not exceed 30 s after removal of the test flame and any burning drop shall not ignite the underlying parts or tissue paper specified in 4.187 of ISO 4046-4:2002, spread out horizontally 200 mm ± 5 mm below the sample.		N/A
	The needle-flame test is not carried out on parts that are made of material classified as V-0 or V-1 according to AS/NZS 60695.11.10. The sample of material classified in accordance with AS/NZS 60695.11.10 shall be no thicker than the relevant part.		N/A
13.3.4	PCBs in luminaires shall be subject to the needle-flame test of AS/NZS 60695.11.5. The needle flame shall be applied for 30 seconds to an edge of the PCB at least 10 mm from a corner.	V-0 approved	N/A

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IEC 60598-2-1_ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The duration of burning shall not exceed 15 s after removal of the needle flame and any burning droplets shall not ignite the tissue paper placed underneath the PCB.		N/A
	The needle-flame test is not carried out on PCBs made of material that is V-0 rated according to AS/NZS 60695.11.10.		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

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

Attachment 3: Variations to IEC 60598-2-1:1979+A1:1987 for application in Australia and New Zealand (AS/NZS 60598.2.1:2016)			P
1	SCOPE		P
5	CLASSIFICATION OF LUMINAIRES		P
6	MARKING		P
	LED luminaires with G5 or G13 lampholders shall be marked with the following warning: WARNING: NOT FOT USE WITH ANY FLUORESCENT LAMP-FOR USE ONLY WITH TYPE X LED LAMPS		N/A
7	CONSTRUCTION		N/A
	LED luminaires with G5 and G13 lampholders shall include a fuse to protect a fluorescent lamp that is inadvertently installed:		N/A
	Be of the 250V HRC type		N/A
	Have a 0.5 A max. quick-acting type rating		N/A
	Be used to protect a maximum of two lamps		N/A
8	CREEPAGE DISTANCES AND CLEARANCE		P
9	PROVISION FOR EARTHING		P
10	TERMINALS		N/A
11	EXTERNAL AND INTERNAL WIRING		P
12	PROTCETION AGAINST ELECTRONIC SHOCK		P
13	ENDURANCE TESTS AND THERMAL TESTS		P
14	RESISTANCE TO DUST AND MOISTURE		P
15	INSULATION RESISTANCE AND ELECTRONIC STRENGTH		P
16	RESISTANCE TO HEAT, FIRE AND TRACKING		N/A

	APPENDIX A		N/A
	SAFETY REQUIREMENTS FOR DOUBLE-CAPPED LED LAMPS		N/A

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

	APPENDIX B		N/A
	SAFETY REQUIREMENTS FOR T8 TO T5 LAMP CONVERTERS		N/A

TRF No. IEC60598_2_1C_ATTACHMENT

	<p>Attachment 4: Photographs of test samples</p>	<p>-</p>
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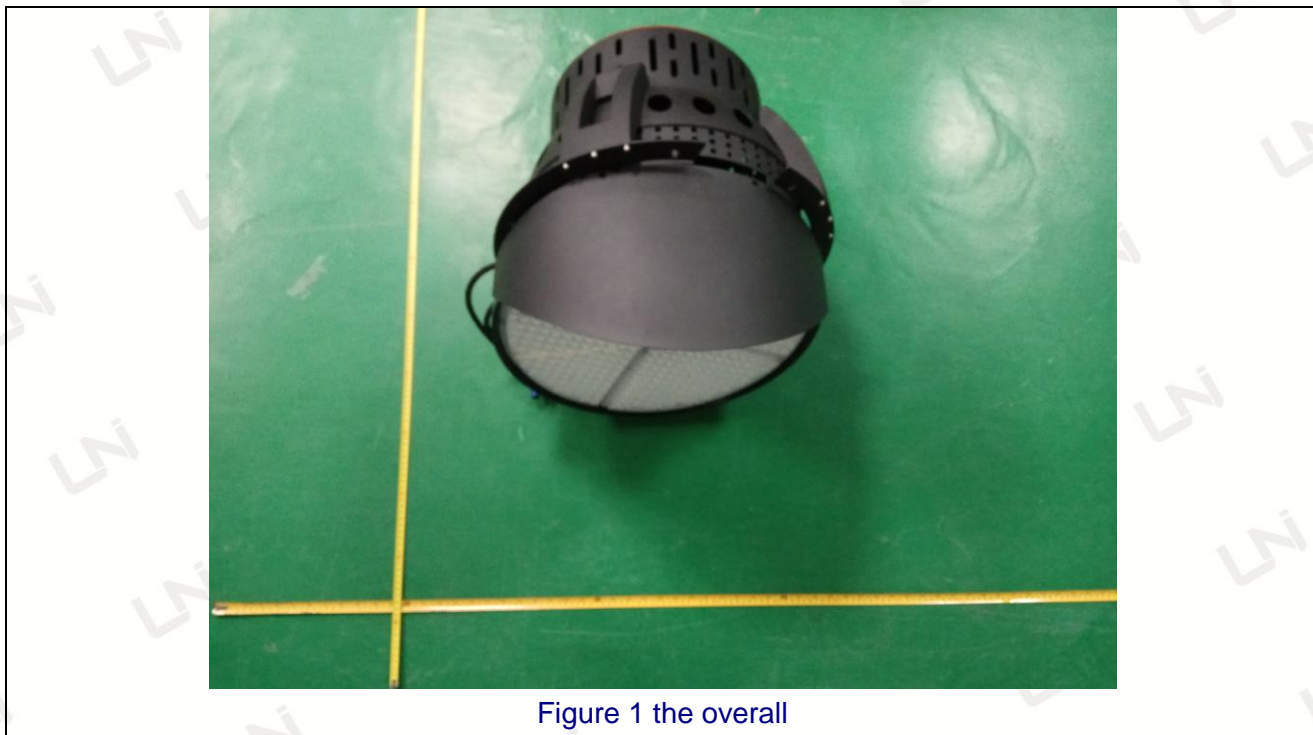


Figure 1 the overall



Figure 2 the rear

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Figure 3 the driver

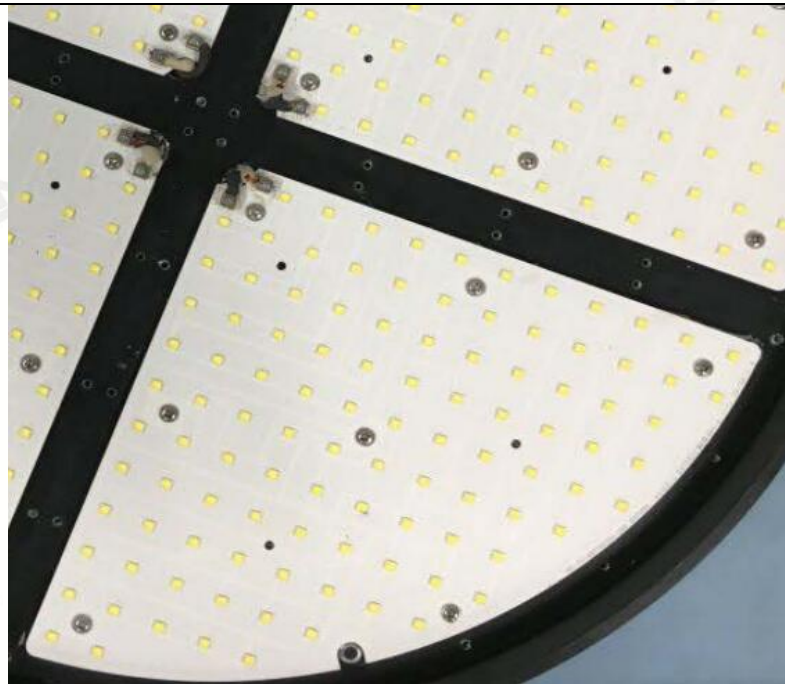


Figure 4 pcb of the LED

-- End of this test report --

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