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

Report Number.....:	SA2001209L 01001
Date of issue.....:	2020-01-17
Total number of pages.....	44
Name of Testing Laboratory preparing the Report.....:	DongGuan Anci Electronic Technology Co., Ltd.
Applicant's name.....:	Shenzhen Fluence Technology PLC.
Address.....:	A701 Room,07F,1# Building A,TianAn Cyber Park,Longgang, Shenzhen,Guangdong Province,China
Test specification:	
Standard.....:	IEC 60598-2-1:1979, AMD1:1987 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure.....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60598_2_1F
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	Dated 2017-10

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 CB 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.
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Test item description.....	LED High Bay Light
Trade Mark.....	超频3
Manufacturer.....	Same as applicant
Model/Type reference.....	See below model list on page 5
Ratings.....	220-240VAC, 50/60Hz, Class I, ta: 25℃

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

☐ **Testing Laboratory:**	DongGuan Anci Electronic Technology Co., Ltd.	
Testing location/ address.....	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.	
Tested by (name, function, signature).....	Strive Luo	Strive
Reviewed by (name, function, signature).....	Apple Hu	Apple Hu
Approved by (name, function, signature).....	Bruce Yu	Bruce Yu

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

Attachment No. 1: Test report of European group differences and National differences;

Attachment No. 2: Test report of IEC 62031:2014 and EN 62031: 2008+A1:2013+A2:2015 for LED modules;

Attachment No. 3: Test report of IEC TR 62778:2014 blue light hazard for luminaires;

Attachment No. 4: Photo documentation

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
IEC 60598-1:2014+A1:2017; IEC 60598-2-1:1979+A1:1987; EN 60598-2-1:1989; EN 60598-1: 2015+A1:2018; EN 62493: 2015; EN 62031:2008+A1:2013+A2:2015; The submitted samples were classified as RG1 according to IEC TR 62778:2014. The submitted sample was LED-light-source technology, they were found to comply with the requirement of EN 62493:2015 without test.	DongGuan Anci Electronic Technology Co., Ltd. 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Summary of compliance with National Differences:

☒ The product fulfils the requirements of Germany and European Group differences

EN 60598-2-1: 1989; EN 60598-1: 2015+A1: 2018; EN 62493: 2015

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.

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.

Remark:
The marking label for the other models are identical as above, expect the model name, power.

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

Test item particulars..... :	
Classification of installation and use.....:	Fixed general purpose luminaire for outdoor use.
Supply Connection.....:	Supply cord
.....:	Class I
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.....:	2020-01-05
Date (s) of performance of tests.....:	2020-01-05 to 2020-01-17
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.** Clause numbers between brackets refer to clauses in IEC 60598-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	Huizhou Fluence Optoelectronic Technology CO., Ltd. No.3 Xingping West Road, Dongjiang Hi-tech Industry Park, Zhongkai Hi-tech District, Huizhou City, GuangDong Province, China

General product information:

Fixed general purpose luminaire for outdoor use.
All models have the same circuit and construction. The difference lies in different rated electrical parameters, different models of LED control devices used, and different product sizes.
Model list:

Model	Rating	LED Driver No.	Dimensions (L*W*H)
H500	220-240VAC 50/60Hz 500W	HLG-240H-36A	500mm*384mm*374mm
H400	220-240VAC 50/60Hz 400W	XLG-200-H-A	500mm*327mm*374mm
H300	220-240VAC 50/60Hz 300W	HLG-150H-36A	461mm*327mm*374mm
H200	220-240VAC 50/60Hz 200W	ELG-240-36A-3Y	467mm*266mm*374mm
H150	220-240VAC 50/60Hz 150W	XLG-150-H-A	459mm*323mm*374mm
H120	220-240VAC 50/60Hz 120W	HLG-120H-36A	467mm*266mm*374mm
H100	220-240VAC 50/60Hz 100W	ELG-150-36A	459mm*246mm*374mm

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

1.2 (0)	**GENERAL TEST REQUIREMENTS**		—
1.2 (0.3)	More sections applicable.....:	Yes ☐ No ☒ Section/s:	—
1.2 (0.5)	Components	(see Annex 1)	—
1.2 (0.7)	**Information for luminaire design in light sources standards**		—
1.2 (0.7.2)	Light source safety standard ..... :	EN62031	—
	Luminaire design in the light source safety standard		P

1.4 (2)	**CLASSIFICATION OF LUMINAIRES**		—
1.4 (2.2)	Type of protection .....:	Class I	P
1.4 (2.3)	Degree of protection.....:	IP65	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☒ No ☐	—
1.4 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—

1.5 (3)	**MARKING**		—
1.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions	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 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Z	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 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
1.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
1.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P
1.6 (4)	**CONSTRUCTION**		---
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	**Lampholders**		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A
	- 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

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Clause	Requirement + Test	Result - Remark	Verdict
	- bending test (N) .....:		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	**Starter holders**		**N/A**
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	**Terminal blocks**		**N/A**
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	**Terminals and supply connections**		**P**
1.6 (4.7.1)	Contact to metal parts		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 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
1.6 (4.7.4)	Terminals other than supply connection		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	**Insulating lining and sleeves**		N/A
1.6 (4.9.1)	Retainment		N/A
	Method of fixing.....:		N/A
1.6 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....:		N/A
1.6 (4.10)	**Double or reinforced insulation**		N/A
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.10.4)	Protective impedance device		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
1.6 (4.11)	**Electrical connections and current-carrying parts**		**P**
1.6 (4.11.1)	Contact pressure		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A
1.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		P
1.6 (4.12)	**Screws and connections (mechanical) and glands**		**P**
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:	Screw for LED driver: 3.83mm, 1.2Nm	P
	Torque test: torque (Nm); part.....:	Fixing glass cover screwV: 5.56mm, 2.5Nm	P
	Torque test: torque (Nm); part.....:		N/A
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
1.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
1.6 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
1.6 (4.13)	**Mechanical strength**		**P**
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :	LED cover: 0.2Nm	P
	- other parts; energy (Nm)..... :	Metal enclosure: 0.35Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
1.6 (4.13.2)	Metal parts have adequate mechanical strength		P
1.6 (4.13.3)	Straight test finger		P
1.6 (4.13.4)	Rough service luminaires		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	For model H500: 13.01kg x4=52.04kg;	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track- mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N/A
	Metal rod. diameter (mm) .....:		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) .....:		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		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	**Flammable materials**		**P**
	- glow- wire test 650°C..... :	See Test Table 1.15 (13.3.2)	P
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear.....:	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
1.6 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	**Resistance to corrosion**		P
1.6 (4.18.1)	- rust- resistance		P
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A
1.6 (4.21)	**Protective shield**		N/A
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment.....:	See Test Table 1.15 (13.3.2)	N/A
1.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	**Photobiological hazards**		P
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.24.2)	Retinal blue light hazard		P
	Class of risk group assessed according to IEC/TR 62778 .....:	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
1.6 (4.25)	**Mechanical hazard**		**P**
	No sharp point or edges		P
1.6 (4.26)	**Short-circuit protection**		N/A
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
1.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
1.6 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage drop test, resistance < 0,05 Ω		N/A
1.6 (4.28)	**Fixing of thermal sensing control**		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) .....:		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
1.6 (4.29)	**Luminaires with non-replaceable light source**		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
1.6 (4.30)	**Luminaires with non-user replaceable light source**		**P**
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		N/A
	Minimum two fixing means		N/A
1.6 (4.31)	**Insulation between circuits**		**P**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
1.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage ≤ ELV		P
	Insulating of SELV circuits from LV supply		P
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
1.6 (4.31.3)	Other circuits		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
1.6 (4.32)	**Overvoltage protective devices**		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A

1.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**	—

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Clause	Requirement + Test	Result - Remark	Verdict

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

1.8 (7)	**PROVISION FOR EARTHING**		—
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω.....:	0.020 Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
1.9 (14)	**SCREW TERMINALS**		---
	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**		---
	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.....:	Supply cord	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
1.10 (5.2.2)	Type of cable.....:	H05RN-F	P
	Nominal cross-sectional area (mm²)..... :	2x1.0mm^2	P
	Cables equal to IEC 60227 or IEC 60245		P
1.10 (5.2.3)	Type of attachment, X, Y or Z	Z	P
1.10 (5.2.5)	Type Z not connected to screws		P
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
1.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
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		P
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	Z	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)..... :	60	P
	- torque test: torque (Nm)..... :	0.25	P
	- displacement ≤ 2 mm	0.21	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		N/A
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping- in terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
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)	P
	Green- yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²)..... :		N/A
	Insulation thickness (mm) ..... :		N/A
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Cross-sectional area (mm²)..... :	See annex 1	P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		N/A
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.10 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	N/A
	No damage to luminaire wiring after test		N/A

1.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
1.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load (V).....:		N/A
	- no-load voltage (V).....:		N/A
	- touch current if applicable (mA) .....:		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage (V) .....:		N/A
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
1.11 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection	0V	P
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
1.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13		—
1.12 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
1.12 (12.3)	**Endurance test**		**P**
	a) mounting- position .....:	As normal used	—
	b) test temperature (°C).....:	35	—
	c) total duration (h) .....:	240	—
	d) supply voltage (V).....:	264	—
	d) if not equipped with controlgear, constant voltage/current (V) or (A) .....:		—
	e) luminaire ceases to operate		—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	**Thermal test (normal operation)**	(see Annex 2)	P
1.12 (12.5)	**Thermal test (abnormal operation)**	(see Annex 2)	P
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.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
1.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions.....:		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) .....:		N/A
	- track-mounted luminaires		N/A
1.12 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W .....:		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions.....:		—
	- Ballast failure at supply voltage (V) .....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test.....:	See Test Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- measured winding temperature (°C): at 1,1 Un.....:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un..... :		—
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test.....:	See Test Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions.....:		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link.....:	Yes ☐ No ☐	—
	- manual reset cut-out.....:	Yes ☐ No ☐	—
	- auto reset cut-out..... :	Yes ☐ No ☐	—
	- case of abnormal conditions.....:		—
	- highest measured temperature of fixing point/ exposed part (°C):..... :		—
	Ball-pressure test:.....:	See Test Table 1.15 (13.2.1)	N/A

1.13 (9)	**RESISTANCE TO DUST AND MOISTURE**		---
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP65	—
	- mounting position during test.....:	As in normal used	—
	- fixing screws tightened; torque (Nm).....:	--	—
	- tests according to clauses.....:	Clause 9.2.2&9.2.6	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust- tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P

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Clause	Requirement + Test	Result - Remark	Verdict
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		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
1.13 (9.3)	Humidity test 48 h	25 ℃; 93%R.H.	P
1.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		---
1.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....:		—
	Insulation resistance (MΩ)..... :		—
	SELV		N/A
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:	100M(required: 1M)	P
	- between current-carrying parts and metal parts of the luminaire.....:	100M(required: 1M)	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		P
	- between live parts of different polarity..... :	Approved LED drivers used	N/A
	- between live parts and mounting surface.....:	100M(required: 2M)	P
	- between live parts and metal parts.....:	100M(required: 2M)	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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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).....:		P
	SELV		P
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:	500V	P
	- between current-carrying parts and metal parts of the luminaire.....:	500V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings as described in Section 5 .....:		N/A
	Other than SELV		P
	- between live parts of different polarity.....:	Approved LED drivers used	N/A
	- between live parts and mounting surface.....:	1480V	P
	- between live parts and metal parts.....:	1480V	P
	- between live parts of different polarity through action of a switch.....:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings as described in Section 5 .....:		N/A
1.14 (10.3)	Touch current or protective conductor current (mA).:	Protective conductor current:0.74mA < Limit 3.5mA	P

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

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Clause	Requirement + Test	Result - Remark	Verdict

1.7 (11.2)	TABLE I: Creepage distances and clearances							P
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages							P
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*							N/A
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance :								
Working voltage (V)..... :					240V			—
PTI..... :					< 600 ☒ ≥ 600 ☐			—
Pulse voltage or U_P if applicable (kV) ..... :								—
Supplementary information: Approved SELV driver and max 60VDC								

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

1.7 (11.2)	TABLE II: Creepage distances and clearances							N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages								
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2								
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:								
Working voltage (V)..... :								—
Frequency if applicable (kHz)..... :								—
PTI..... :					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Supplementary information:								

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

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) .....:		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Connector	/	125	1.1	
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Connector	/	10	No	0	P
Supplementary information:					

1.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)			P
Glow wire temperature .....:	650°C			—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED diffuser	/	No	0	Pass
Supplementary information:				

1.15 (13.4)	TABLE: Proof tracking test (IEC 60112)				N/A
Test voltage PTI ..... :	175 V				—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					P
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
LED lead wire	B	Guangdong Rifeng Electric Cable Co., Ltd.	H05RN-F	2x 1.0mm^2	EN 50525-2-21	VDE 40015999
(Alternative)	B	Ningbo Dabu Electric Appliance Co., Ltd.	H05RN-F	2x 1.0mm^2	EN 50525-2-21	VDE 40030691
LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	HLG-240H-36A	100-240V~ 50/60Hz, Uout:36VDC 6.7A. ta:50℃, tc:90℃, independent, Class I, SELV, IP65	EN61347-2-1/-2-13	TÜV RH R50171751
LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	XLG-200-H-A	100-240V~ 50/60Hz, Uout:27-56VDC max60vdc, 3.5-5.55A, 200W, ta:40℃, tc:90℃, independent, Class I,SELV, IP67	EN61347-2-1/-2-13	DEKRA ENEC 35-108699
LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	HLG-150H-36A	100-240V~ 50/60Hz Uout:36VDC, 4.2A ta:60℃, tc:90℃, independent, Class I,SELV, IP65	EN61347-2-1/-2-13	TÜV RH R 50185176
LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	ELG-240-36A-3Y	100-240V~ 50/60Hz, Uout:36VDC Max 239.76W, ta:50℃, tc:90℃, independent, Class I,SELV, IP65	EN61347-2-1/-2-13	TÜV RH: 69260037

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Clause	Requirement + Test	Result - Remark	Verdict

LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	XLG-150-H-A	100-240V~ 50/60Hz, Uout:27-56VDC max60vdc, 2.68-4.17A, 150W, ta:40℃, tc:90℃, independent, Class I,SELV, IP67	EN61347-2-1/-2-13	DEKRA ENEC 35-108587
LED Driver(Comes with input and output lines)	B	MEAN WELL Enterprise Co., Ltd.	HLG-120H-36A	100-240V~ 50/60Hz Max:2.8A Uout:36VDC 3.4A ta:60℃, tc:90℃, independent, Class I, SELV, IP65	EN61347-2-1/-2-13	TÜV RH R 50185176
Connector	B	SINEYI ELECTRONIC TECHNOLOGY Co.,LTD	XY16-3P	AC250V Max16A T85 1.5mm2 IP68	EN 60998-1 EN 60998-2-1	TÜV RH R50387445
LED PCB	B	Huizhou haichuanghui Industry Co., Ltd	H500-B	Φ132*2.0mm	--	UL
LED	B	CREE	XTE	1-5W,6000K, 2.85-3.4V, 350-1500mA	IEC TR62778	Tested with appliance
(Alternative)	B	Lumileds Commercial(Shanghai)Co.,Ltd	3030	5W 6000K 3V	IEC TR62778	Tested with appliance

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

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

ANNEX 2	TABLE: Thermal tests of Section 12		P
	Type reference.....:	H500	—
	Lamp used.....:	LED models	—
	Lamp control gear used.....:	HLG-240H-36A	—
	Mounting position of luminaire.....:	Acc. to user manual	—
	Supply wattage (W).....:	506.8W	—
	Supply current (A)..... :	2.41A	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) .....:	25°C	—
	- abnormal operating mode.....:	12.5.1 a) 4) Short-circuited output LED driver	—
1.12 (12.4)	- test 1: rated voltage .....:	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current .....:	254.4V, 2.1A, 505.3W, 0.97PF	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage..... :	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	--	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:	--	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
			254.4V				
Input wire	25	--	76.5	--	90	--	--
Driver Tc(1)	25	--	75.2	--	90	--	--
Driver Tc(2)	25	--	72.4	--	90		
LED lead wire	25	--	85.3	--	90	--	--
LED PCB	25	--	120.5	--	130	--	--
Mounting surface	25	--	78.5	--	90	--	--
Metal enclosure	25	--	77.2	--	Ref.	--	--
Lighted object 10cm	25	--	50.2	--	Ref.	--	--

Supplementary information: for 12.5.1 a) 4), after short circuit output of LED driver, the unit shut down immediately, no temperature data was recorded.

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

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

Attachment No.2

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

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

LUMINAIRES

PART 2: PARTICULAR REQUIREMENTS

Section 1: Fixed general purpose luminaires

Differences according to.....:	EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015+A1:2018
Attachment Form No..... :	EU_GD_IEC60598_2_1F
Master Attachment.....:	Date 2018-08

	CENELEC COMMON MODIFICATIONS (EN)		P
1.5 (3)	***MARKING***		P
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A
1.6 (4)	***CONSTRUCTION***		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.10 (5)	***EXTERNAL AND INTERNAL WIRING***		P
1.10 (5.2.1)	Connecting leads		N/A
	- without a means for connection to the supply		N/A
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
1.10 (5.2.2)	Cables equal to EN 50525		N/A
	Replace table 5.1- supply cord		N/A
1.12 (12)	***ENDURANCE TEST AND THERMAL TEST***		P
1.12 (12.4.2c)	Thermal test (normal operation) See footnote c table 12.2 relating to unsleeved fixed wiring		P
ZB	***ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)***		P
(3.3)	DK: power supply cord of Class I luminaire with label		N/A

Attachment No.2

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
(4.5.1)	DK: socket- outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A
ZC	***ANNEX ZC, NATIONAL DEVIATIONS (EN)***		N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings		N/A
	-850°C for luminaires in stairways and horizontal travel paths		N/A
	-650°C for indoors luminaires		N/A
(13.3)	GB; Requirement according to united kingdom Building Regulation		N/A

Attachment No.2

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict
6	Classification		---
	Built-in……:		N/A
	Independent…… ……		N/A
	Integral……..:		P
7	Marking		N/A
7.1	Mandatory marking for built-in or independent modules		N/A
7.2	Location of marking		N/A
7.3	Durability and legibility of marking		N/A
8	Terminals		N/A
9	Provisions for protective earthing		N/A
10	Protection against accidental contact with live parts		N/A
11	Moisture resistance and insulation		P
12	Electric strength		P
13	Fault conditions		P
13.1	Fault conditions accrding to IEC 61347-1, Clause 14		P
13.2	Overpower condition	No damage	P
14	Conformity testing during manufacture		N/A
15	Construction		P
	Non Wood, cotton, silk, paper and similar fibrous material used as insulation.		P
16	Creepage distances and clearances		N/A
17	Screws, current-carrying parts and connections		N/A
18	Resistance to heat, fire and tracking		N/A
19	Resistance to corrosion		N/A
20	Information for luminaire design		N/A
21	Heat management		N/A
22	Photobiological safety		P
22.1	UV radiation		P
22.2	Blue light hazard		P
22.3	Infrared radiation		N/A
Annex A	Test		--
Annex C	Conformity testing during manufacture		--
Annex D	Information for luminaire design		--

Attachment No.2

IEC 62031			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62031 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES LED modules for general lighting – Safety specifications
Differences according to.....: EN 62031:2008+A1:2013+A2:2015

	CENELEC COMMON MODIFICATIONS (EN)	**--**
	No Common modifications	N/A

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**	**--**
	No special National conditions	N/A

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**	**--**
	No National deviations	N/A

Attachment No.3

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

7	**MEASUREMENT INFORMATION FLOW**		**P**
7.1	**Basic flow**		**P**
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	**Conditions for the radiance measurement**		**P**
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
7.3	**Special cases (I): Replacement by a lamp or LED module of another type**		N/A
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	**Special cases (II): Arrays and clusters of primary light sources**		N/A
	LED package is evaluated as ..... :	☐ RG0 unlimited ☐ RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A
8	**RISK GROUP CLASSIFICATION**		**P**
	Risk group achieved:		P
	-... Risk Group 0 unlimited		N/A
	-... Risk Group 1 unlimited		P
	- E_{thr} ..... (lx) : Distance to reach RG1..... (m) :		N/A

Attachment No.3

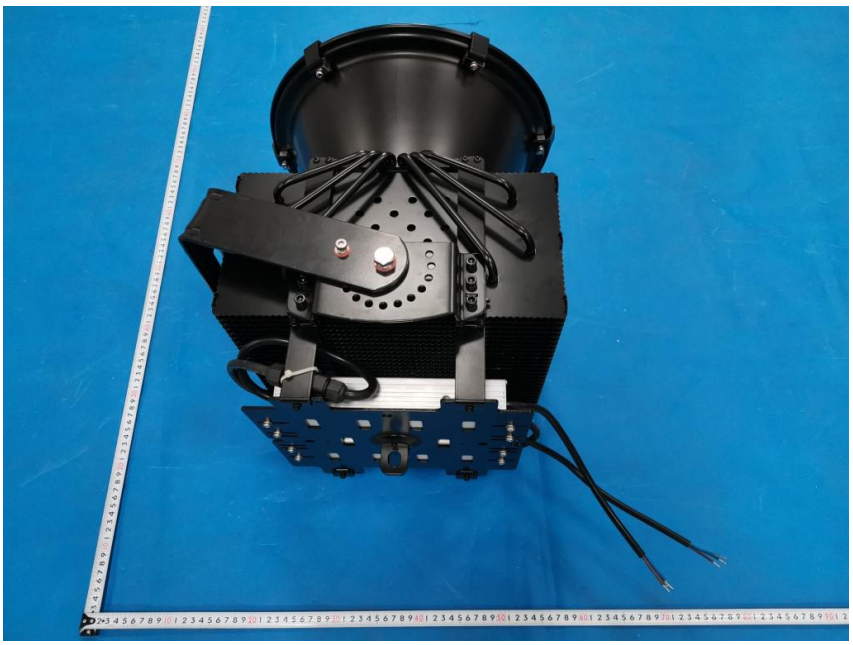
IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Spectroradiometric measurement		**P**
	Measurement performed on:	☐ **LED package** ☐ **LED module** ☐ **Lamp** ☒ **Luminaire**	
	Model number.....:	H500	
	Test voltage (V).....:	240V~	—
	Test current (mA).....:	--	—
	Test frequency (Hz)..... :	50Hz	—
	Ambient, t (°C).....:	25℃	—
	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	Result		Remark
			CREE	Lumileds	
Correlated colour temperature	CCT	K	/	/	/
x/y colour coordinates			/	/	/
Blue light hazard radiance	L_B	W/(m^2•sr^1)	2185	2028	RG1
Blue light hazard irradiance	E_B	W/m^2	2.586e+002	2.145e+002	/
Luminance	L	cd/m^2	3.452e+006	3.256e+006	/
Illuminance	E	lx	215689	209716	/
Supplementary information:-					

Photo documentation **Attachment No.4**

Details of: Outlook view
Remark: Model H500



Details of: Outlook view
Remark: Model H500

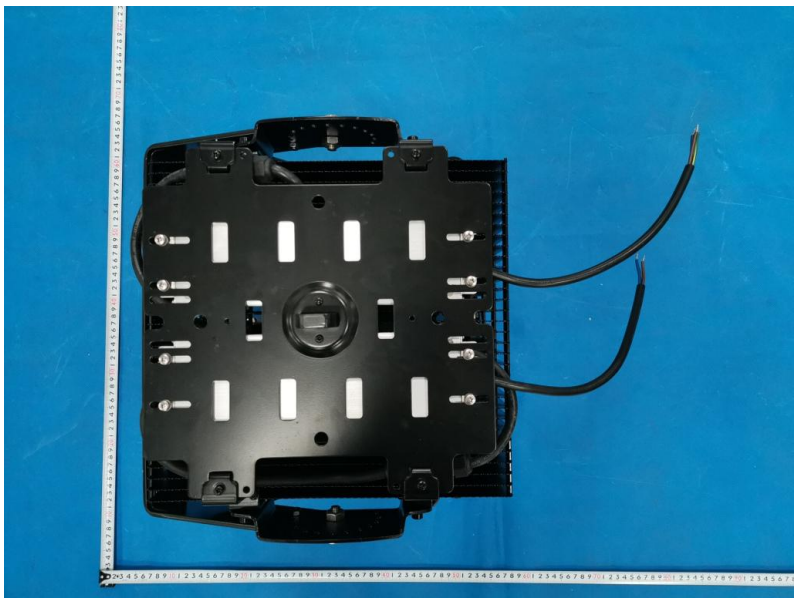


Photo documentation **Attachment No.4**

Details of: Internal view

Remark: Model H500

Details of: Exploded photo

Remark: Model H500

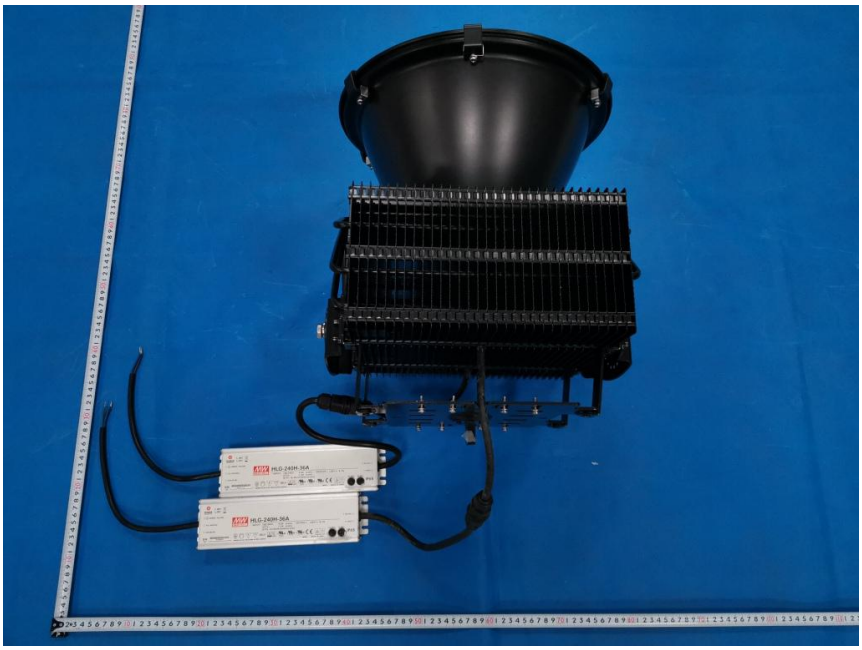


Photo documentation **Attachment No.4**

Details of: LED driver view

Remark: Model HLG-240H-36A

Details of: Connector

Remark: Model H500

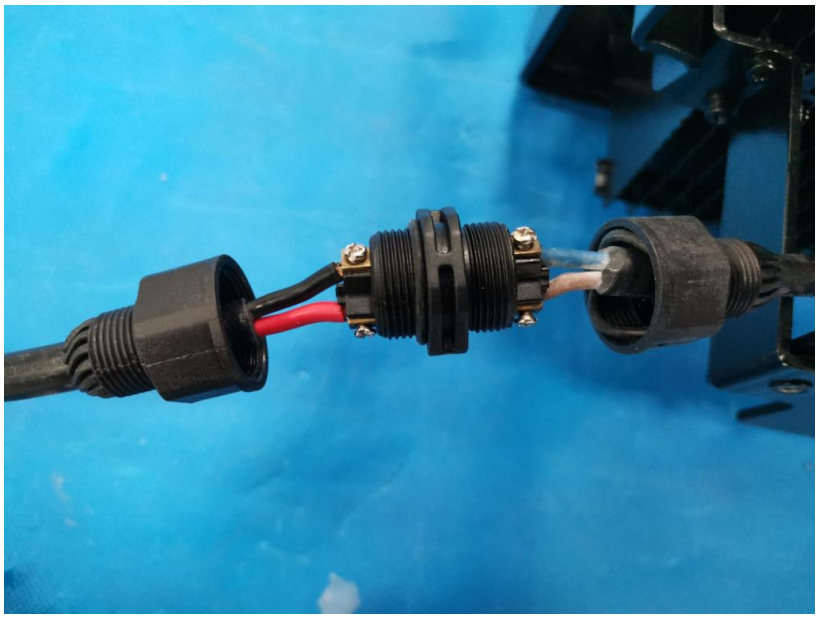


Photo documentation **Attachment No.4**

Details of: Exploded photo
Remark: Model H500

Details of: LED module
Remark: Model H500