Test Report issued under the responsibility of:

TEST REPORT
IEC 60598-2-24
Luminaires
Part 2: Particular requirements
Section 24: Luminaires with limited surface temperature

Report Number. ..... :	ETA20020005S-002
Date of issue ..... :	March 02, 2020
Total number of pages ..... :	85 pages
Name of Testing Laboratory preparing the Report..... :	Hangzhou ETA Testing Technology Co., Ltd 8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China
Applicant's name ..... :	Hangzhou Longlux Electronic Technology Co.,Ltd.
Address ..... :	The Western Science Park, Hangzhou City, China
Test specification:	
Standard ..... :	IEC 60598-2-24:2013 used in conjunction with IEC 60598-1:2014, AMD1:2017
Test procedure ..... :	Testing
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60598_2_24G
Test Report Form(s) Originator .... :	Intertek Semko AB
Master TRF ..... :	Dated 2018-04-13

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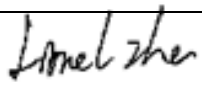
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Test item description ..... :	LED Waterproof Luminaire
Trade Mark ..... :	Longlux
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	LLX-H-20W-650; LLX-H-20W-1220; LLX-H-30W-1220; LLX-H-36W-1220; LLX-H-45W-1220; LLX-H-36W-1560; LLX-H-54W-1560; LLX-H-65W-1560
Ratings ..... :	220-240V~; 50/60Hz; Class I; IP66; LLX-H-20W-650, LLX-H-20W-1220: 20W; LLX-H-30W-1220: 30W; LLX-H-36W-1220, LLX-H-36W-1560: 36W; LLX-H-45W-1220: 45W; LLX-H-54W-1560: 54W; LLX-H-65W-1560: 65W

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

☒	**Testing Laboratory:**	Hangzhou ETA Testing Technology Co., Ltd	
Testing location/ address.....:		8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China	
Tested by (name, function, signature).....:		Colin Ma (Certification Engineer)	
Approved by (name, function, signature)...:		Lionel Zha (Reviewer)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			

Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature)...:		
Supervised by (name, function, signature) :		

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

-Page 1 – 63: test reports;

-Page 64 – 85: photos of the samples

Summary of testing:

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

Some representative samples of the product covered by this report have been tested and comply with the applicable requirements of this standard.

Tests performed (name of test and test clause):	**Testing location:**
All	Same as previous page.

Summary of compliance with National Differences:

List of countries addressed

☒ **The product fulfils the requirements of EN 60598-2-24:2013 and EN 60598-1:2015+A1:2018.**

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.

Refer to report ETA20020005S-001

Test item particulars.....:	LED Waterproof Luminaire
Classification of installation and use.....:	Class I
Supply Connection.....:	Connecting leads/Connector
.....:	
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 .....:	February 17, 2020
Date (s) of performance of tests.....:	February 17, 2020 ~ March 02, 2020

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).....:	Hangzhou Longlux Electronic Technology Co.,Ltd. The Western Science Park, Hangzhou City, China

General product information:

Refer to report ETA20020005S-001

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.3 (0)	**GENERAL TEST REQUIREMENTS**		
24.3 (0.3)	More sections applicable..... :	Yes ☐ No ☒ Section/s:	—
24.3 (0.5)	Components	(see Annex 1)	—
24.3 (0.7)	**Information for luminaire design in light sources standards**		—
24.3 (0.7.2)	Light source safety standard ..... :		—
	Luminaire design in the light source safety standard		P
24.5 (2)	**CLASSIFICATION OF LUMINAIRES**		
24.5 (2.2)	Type of protection ..... :	Class I	P
24.5 (2.3)	Degree of protection..... :	IP66	—
24.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ..... :	Yes ☒ No ☐	—
24.5 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—
24.5 (-)	a) Luminaire where no unusual accumulation of dust is expected		—
	b) Luminaire where an accumulation of non-conductive dust may be expected		—
	c) Luminaire where an accumulation of conductive dust may be expected		—
24.6 (3)	**MARKING**		
24.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
24.6 (3.3)	Additional information		P
	Language of instructions		P
24.6 (3.3.1)	Combination luminaires		N/A
24.6 (3.3.2)	Nominal frequency in Hz		P
24.6 (3.3.3)	Operating temperature		P
24.6 (3.3.5)	Wiring diagram		P
24.6 (3.3.6)	Special conditions		N/A
24.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.6 (3.3.8)	Limitation for semi-luminaires		N/A
24.6 (3.3.9)	Power factor and supply current		P
24.6 (3.3.10)	Suitability for use indoors		N/A
24.6 (3.3.11)	Luminaires with remote control		N/A
24.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
24.6 (3.3.13)	Specifications of protective shields		N/A
24.6 (3.3.14)	Symbol for nature of supply		P
24.6 (3.3.15)	Rated current of socket outlet		N/A
24.6 (3.3.16)	Rough service luminaire		N/A
24.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		P
24.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
24.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
24.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
24.6 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
24.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
24.6 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		N/A
24.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
24.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
24.6.1 (-)	Symbol for luminaire with limited surface temp.		P
	Marking visible		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.6.2 (-)	Classification of the luminaire according 24.5 in manufacturers literature		P
24.7 (4)	**CONSTRUCTION**		
24.7 (4.2)	Components replaceable without difficulty		N/A
24.7 (4.3)	Wireways smooth and free from sharp edges		P
24.7 (4.4)	**Lampholders**		
24.7 (4.4.1)	Integral lampholder		N/A
24.7 (4.4.2)	Wiring connection		N/A
24.7 (4.4.3)	Lampholder for end-to-end mounting		N/A
24.7 (4.4.4)	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) ..... :		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
24.7 (4.4.5)	Peak pulse voltage		N/A
24.7 (4.4.6)	Centre contact		N/A
24.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
24.7 (4.4.8)	Lamp connectors		N/A
24.7 (4.4.9)	Caps and bases correctly used		N/A
24.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
24.7 (4.5)	**Starter holders**		
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
24.7 (4.6)	**Terminal blocks**		
	Tails		N/A
	Unsecured blocks		N/A
24.7 (4.7)	**Terminals and supply connections**		
24.7 (4.7.1)	Contact to metal parts		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
24.7 (4.7.3)	Terminals for supply conductors		P
24.7 (4.7.3.1)	Welded method and material		
	- 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
24.7 (4.7.4)	Terminals other than supply connection		N/A
24.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
24.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
24.7 (4.8)	**Switches**		
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
24.7 (4.9)	**Insulating lining and sleeves**		
24.7 (4.9.1)	Retainment		P
	Method of fixing ..... :	Heat-shrinkable tube	P
24.7 (4.9.2)	Insulated linings and sleeves:		
	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
24.7 (4.10)	**Double or reinforced insulation**		
24.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
24.7 (4.10.2)	Assembly gaps:		
	- not coincidental		N/A
	- no straight access with test probe		N/A
24.7 (4.10.3)	Retainment of insulation:		
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
24.7 (4.10.4)	Protective impedance device		
	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
24.7 (4.11)	**Electrical connections and current-carrying parts**		
24.7 (4.11.1)	Contact pressure		P
24.7 (4.11.2)	Screws:		
	- self-tapping screws		P
	- thread-cutting screws		P
24.7 (4.11.3)	Screw locking:		
	- spring washer		N/A
	- rivets		N/A
24.7 (4.11.4)	Material of current-carrying parts		P
24.7 (4.11.5)	No contact to wood or mounting surface		P
24.7 (4.11.6)	Electro-mechanical contact systems		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.7 (4.12)	**Screws and connections (mechanical) and glands**		
24.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	0,6Nm; fixed terminal block	P
	Torque test: torque (Nm); part..... :	1,2Nm; fixed driver	P
	Torque test: torque (Nm); part..... :	0,6Nm; fixed LED board	P
	Torque test: torque (Nm); part..... :	1,2Nm; fixed buckle screw	P
24.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
24.7 (4.12.4)	Locked connections:		
	- fixed arms; torque (Nm) ..... :		N/A
	- lampholder; torque (Nm) ..... :		N/A
	- push-button switches; torque 0,8 Nm ..... :		N/A
24.7 (4.12.5)	Screwed glands; force (Nm)..... :	3,25Nm	P
24.7 (4.13)	**Mechanical strength**		
24.7 (4.13.1)	Impact tests:		
	- fragile parts; energy (Nm) ..... :		N/A
	- other parts; energy (Nm)..... :	Enclosure & cover; 0,35Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
24.7 (4.13.2)	Metal parts have adequate mechanical strength		N/A
24.7 (4.13.3)	Straight test finger		P
24.7 (4.13.4)	Rough service luminaires		
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	d) for temporary installations and suitable for mounting on a stand		N/A
24.7 (4.13.6)	Tumbling barrel		N/A
24.7 (4.14)	**Suspensions, fixings and means of adjusting**		
24.7 (4.14.1)	Mechanical load:		
	A) four times the weight		P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N/A
	Metal rod. diameter (mm) ..... :		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
24.7 (4.14.2)	Load to flexible cables		
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
24.7 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles..... :		N/A
	- strands broken ..... :		N/A
	- electric strength test afterwards		N/A
24.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
24.7 (4.14.5)	Guide pulleys		N/A
24.7 (4.14.6)	Strain on socket-outlets		N/A
24.7 (4.15)	**Flammable materials**		
	- glow-wire test 650°C ..... :	See Test Table 24.16 (13.3.2)	P
	- spacing ≥30 mm		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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
24.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
24.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		
	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
24.7 (4.16.1)	Lamp control gear spacing:		
	- spacing 35 mm		N/A
	- spacing 10 mm		P
24.7 (4.16.2)	Thermal protection:		
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
24.7 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
24.7 (4.17)	**Drain holes**		
	Clearance at least 5 mm		N/A
24.7 (4.18)	**Resistance to corrosion**		
24.7 (4.18.1)	- rust-resistance		N/A
24.7 (4.18.2)	- season cracking in copper		N/A
24.7 (4.18.3)	- corrosion of aluminium		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.7 (4.19)	Ignitors compatible with ballast		N/A
24.7 (4.20)	Rough service vibration		N/A
24.7 (4.21)	**Protective shield**		
24.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
24.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
24.7 (4.21.3)	No direct path		N/A
24.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment..... :	See Test Table 24.16 (13.3.2)	N/A
24.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
24.7 (4.23)	Semi-luminaires comply Class II		N/A
24.7 (4.24)	**Photobiological hazards**		
24.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
24.7 (4.24.2)	Retinal blue light hazard		
	Class of risk group assessed according to IEC/TR 62778 ..... :	Exempt group	—
	Luminaires with E_{thr} :		
	a) Fixed luminaires		P
	- 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
24.7 (4.25)	**Mechanical hazard**		
	No sharp point or edges		P
24.7 (4.26)	**Short-circuit protection**		

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
24.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
24.7 (4.27)	**Terminal blocks with integrated screwless earthing contacts**		
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
24.7 (4.28)	**Fixing of thermal sensing control**		
	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:		
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
24.7 (4.29)	**Luminaires with non-replaceable light source**		
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
24.7 (4.30)	**Luminaires with non-user replaceable light source**		
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		
	Minimum two fixing means		N/A
24.7 (4.31)	**Insulation between circuits**		
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	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
24.7 (4.31.1)	SELV circuits		
	Used SELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	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
	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
24.7 (4.31.2)	FELV circuits		
	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
24.7 (4.31.3)	Other circuits		
	Other circuits insulated from accessible parts according Table X.1		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		
	- 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
24.7 (4.32)	**Overvoltage protective devices**		
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
24.7.1 (-)	Degree of protection		
	IP4X at least	Yes ☒ No ☐	P
	IP5X if presence of dust	Yes ☒ No ☐	P
	IP6X if presence of conductive dust	Yes ☒ No ☐	P
	At least IP 5X or IP6X for certain locations according IEC 60364-4-42		P
24.7.2 (-)	Applicable surfaces comply with requirements of horizontal surfaces		P
	Vertical surfaces not complying with spacing requirements in 24.13 comply with the limits for horizontal surfaces		P
24.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		
24.8 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
24.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 24.8 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 24.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 24.8 (11.2) II	N/A
24.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 24.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		
	- Controlgear marked with U_P	See Test Table 24.8 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 24.8 (11.2) II	N/A

24.9 (7)	**PROVISION FOR EARTHING**		
24.9 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω..... :	Max.0,045Ω	P
	Self-tapping screws used		P
	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		P
24.9 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		P
24.9 (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
24.9 (7.2.5)	Earth terminal integral part of connector socket		N/A
24.9 (7.2.6)	Earth terminal adjacent to mains terminals		P
24.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
24.9 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
24.9 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
24.10 (14)	**TERMINALS AND ELECTRICAL CONNECTIONS**		
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 3)	N/A
24.10 (15)	**TERMINALS AND ELECTRICAL CONNECTIONS**		
	Separately approved; component list..... :	(see Annex 1)	P
	Part of the luminaire ..... :	(see Annex 4)	N/A
24.11 (5)	**EXTERNAL AND INTERNAL WIRING**		
24.11 (5.2)	**Supply connection and external wiring**		
24.11 (5.2.1)	Means of connection ..... :	Connecting leads/connector	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		P
24.11 (5.2.2)	Type of cable..... :	See Annex 1	P
	Nominal cross-sectional area (mm²) ..... :	See Annex 1	P
	Cables equal to IEC 60227 or IEC 60245		N/A
24.11 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
24.11 (5.2.5)	Type Z not connected to screws		N/A
24.11 (5.2.6)	Cable entries:		
	- suitable for introduction		P
	- adequate degree of protection		P
24.11 (5.2.7)	Cable entries through rigid material have rounded edges		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.11 (5.2.8)	Insulating bushings:		
	- 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
24.11 (5.2.9)	Locking of screwed bushings		N/A
24.11 (5.2.10)	Cord anchorage:		
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
24.11 (5.2.10.1)	Cord anchorage for type X attachment:		
	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
24.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
24.11 (5.2.10.3)	Tests:		
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) ..... :	60	P
	- torque test: torque (Nm) ..... :	0,25	P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	- no damage of cable or cord		P
	- function independent of electrical connection		P
24.11 (5.2.11)	External wiring passing into luminaire		P
24.11 (5.2.12)	Looping-in terminals		N/A
24.11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
24.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
24.11 (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
24.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
24.11 (5.2.18)	Used plug in accordance with		
	- IEC 60083		N/A
	- other standard		N/A
24.11 (5.3)	**Internal wiring**		
24.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		
	- not delivered/ mounting instruction		P
	- factory assembled		P
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(see Annex 2)	P
	Green-yellow for earth only		P
24.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		
	Cross-sectional area (mm²)..... :		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation thickness (mm) ..... :		P
	Extra insulation added where necessary		N/A
24.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		
	Cross-sectional area (mm²)..... :		N/A
24.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A
24.11 (5.3.1.4)	Conductors without insulation		N/A
24.11 (5.3.1.5)	SELV current-carrying parts		N/A
24.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
24.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
24.11 (5.3.3)	Insulating bushings:		
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
24.11 (5.3.4)	Joints and junctions effectively insulated		N/A
24.11 (5.3.5)	Strain on internal wiring		N/A
24.11 (5.3.6)	Wire carriers		N/A
24.11 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
24.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	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
24.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		
24.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
24.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
24.12 (8.2.3.a)	Class II luminaire:		
	- 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
24.12 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
24.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Ordinary luminaire:		
	- 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:		
	- 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
24.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
24.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
24.12 (8.2.6)	Covers reliably secured		P
24.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 µF not exceed 50 V 1 min after disconnection		N/A
	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

24.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		
24.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 24.14		—
24.13 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
24.13 (12.3)	**Endurance test**		
	a) mounting-position ..... :	Normal position	—
	b) test temperature (°C) ..... :	35°C	—
	c) total duration (h) ..... :	240h	—
	d) supply voltage (V) ..... :	264V	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	d) if not equipped with controlgear, constant voltage/current (V) or (A) ..... :		—
	e) luminaire ceases to operate		—
24.13 (12.3.2)	After endurance test:		
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
24.13 (12.4)	**Thermal test (normal operation)**	(see Annex 2)	P
24.13 (12.5)	**Thermal test (abnormal operation)**	(see Annex 2)	P
24.13 (12.6)	**Thermal test (failed lamp control gear condition):**		
24.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .... :		—
	- measured mounting surface temperature (°C) at 1,1 Un ..... :		N/A
	- calculated mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
24.13 (12.6.2)	Temperature sensing control		
	- 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
24.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
24.13 (12.7.1)	Luminaire without temperature sensing control		
24.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		
	Test method 12.7.1.1 or Annex W ..... :		—
	Test according to 12.7.1.1:		
	- 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:		
	- 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 24.16 (13.2.1)	N/A
24.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		
	- 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 24.16 (13.2.1)	N/A
24.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
24.13 (12.7.2)	Luminaire with temperature sensing control		
	- thermal link ..... :	Yes ☐ No ☐	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 24.16 (13.2.1)	N/A
24.13 (-)	Temperature limit for vertical surfaces with gap < 30 mm	(see Annex 2)	P
24.13.1 (-)	Special temperature limits – normal operation	(see Annex 2)	P
24.13.2 (-)	Special temperature limits – abnormal operation	(see Annex 2)	P
24.13.3 (-)	Special temperature limits – fault conditions	(see Annex 2)	N/A

24.14 (9)	**RESISTANCE TO DUST AND MOISTURE**		
24.14 (-)	The order of tests as specified in clause 24.13		
24.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		
	- classification according to IP..... :	IP66	—
	- mounting position during test ..... :	Normal position	—
	- fixing screws tightened; torque (Nm) ..... :	N/A	—
	- tests according to clauses..... :	9.2.2 & 9.2.7	—
	- 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
	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

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
24.14 (9.3)	Humidity test 48 h		P
24.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
24.15 (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		
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :	199	P
	- between current-carrying parts and metal parts of the luminaire..... :	199	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		
	- between live parts of different polarity ..... :		N/A
	- between live parts and mounting surface ..... :	199	P
	- between live parts and metal parts ..... :	199	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
24.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V) ..... :		P

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	SELV		
	- between current-carrying parts of different polarity:		N/A
	- between current-carrying parts and mounting surface.....:	500	P
	- between current-carrying parts and metal parts of the luminaire.....:	500	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		
	- between live parts of different polarity .....:		N/A
	- between live parts and mounting surface .....:	2960	P
	- between live parts and metal parts .....:	1480	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
24.15 (10.3)	Touch current or protective conductor current (mA).:	0,056	P

24.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		
24.16 (13.2.1)	Ball-pressure test .....:	See Test Table 24.16 (13.2.1)	P
24.16 (13.3.1)	Needle-flame test (10 s).....:	See Test Table 24.16 (13.3.1)	P
24.16 (13.3.2)	Glow-wire test (650°C) .....:	See Test Table 24.16 (13.3.2)	P
24.16 (13.4)	Proof tracking test (IEC 60112).....:	See Test Table 24.16 (13.4)	P

24.8 (11.2)	**TABLE I: Creepage distances and clearances**					**P**
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages					**P**
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*					**P**
	Insulation	**Measured**	**Required**	**Measured**	**Required**	

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

	type **	clearance	clearance	*Table	creepage	creepage	*Table	
Distance 1:	B	8,0	1,5	**11.1.B***	8,0	2,5	**11.1.A***	
Working voltage (V) .....:					220-240V~			—
PTI .....:					< 600 ☒	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:					N/A			—
Supplementary information:								
Distance 2:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:								—
Supplementary information:								
Distance 3:								
Working voltage (V) .....:								—
PTI .....:					< 600 ☐	≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) .....:								—
Supplementary information:								

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

24.8 (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:							
Distance 2:							
Working voltage (V) .....:							—
Frequency if applicable (kHz) .....:							—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

PTI ..... :					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Supplementary information:								
Distance 3:								
Working voltage (V) ..... :								—
Frequency if applicable (kHz) ..... :								—
PTI ..... :					< 600 ☐	≥ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) ..... :								—
Supplementary information:								

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

24.16 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**		**P**
Allowed impression diameter (mm) ..... :		2	—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Plastic enclosure	See Annex 1	80	0,7
Plastic cover	See Annex 1	80	0,7
LED PCB	See Annex 1	125	0,6
Supplementary information:			

24.16 (13.3.1)	**TABLE: Needle-flame test (IEC 60695-11-5)**				**P**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED PCB	See Annex 1	10	No	0	P
Terminal block	See Annex 1	10	No	0	P
Supplementary information:					

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

24.16 (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
Plastic enclosure	See Annex 1	No	0		P
Plastic cover	See Annex 1	No	0		P
Supplementary information:					

24.16 (13.4)	**TABLE: Proof tracking test (IEC 60112)**				**P**
Test voltage PTI ..... :		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Connector	See Annex 1	YES	YES	YES	P
Supplementary information:					

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Supply cord	B	NINGBO XUANHUA ELECTRIC CO. LTD.	H07RN-F	3x1,0mm²	EN 50525-2-21	VDE*/40037 611
Description:						
Plastic cover	C	GE China	2807, 143R, 666D, 80N	PC; PS; PMMA	EN 60598-1	Tested with appliance
Description:						
Plastic enclosure	C	GE China	2807, 1100, 757, 750	PC; ABS	EN 60598-1	Tested with appliance
Description:						
Terminal block	B	Ningbo Development Zone Hengda Electrical Co., Ltd.	TB-7020	AC250V; 24A; T85	EN 60998-1 EN 60998-2-1	VDE*/40022 436
Alternative	D	Cixi Ding Li Plastic Co., Ltd.	DL 06	AC450V; 24A; T110	EN 60998-1 EN 60998-2-1	VDE*/40024 873
Alternative	D	Heavy Power Co., Ltd.	PA9	AC450V; 24A; T110	EN 60998-1 EN 60998-2-1	VDE*/40016 425
Alternative	D	A.A.G. Stucchi S R L unico socio	1673, 1673/A, 1673/SP	AC450V; 16A; T85	EN 60998-1 EN 60998-2-2	ENEC/CA02. 02722
Alternative	D	Ningbo Economic & Technical Development Zone Hengda Electrical Co., Ltd.	TB-7020B/x(x=1-5)	AC450V; 16A; 2,5mm²	EN 60998-1 EN 60998-2-2	TUV Rh/R501608 73 0001
Description:						
Internal wire	B	Cixi Hongxin Wire and Cable Factory	H05V-U; H05V-K	1 x 0,5...1,0 mm²	EN 50525-2-31	VDE*/40028 426
Alternative	D	Ningbo Haoguang Electric Appliance Co.,Ltd.	H07V-U; H07V-K	1 x 1,5mm²	EN 50525-2-31	VDE*/12606 2
Alternative	D	Ningbo Haoguang Electric Appliance Co.,Ltd.	H05V-U; H05V-K	1 x 0,5...1,0 mm²	EN 50525-2-31	VDE*/12606 2
Alternative	D	Cixi Haosheng Wire & Cable Co., Ltd.	H05V-U; H05V-K	1 x 0,5...1,0 mm²	EN 50525-2-31	VDE*/40021 089

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Alternative	D	Ningbo Haoguang Electric Appliance Co.,Ltd.	H05S-K	1 x 0,5...1,5 mm²	EN 50525-2-31	VDE*/40038042
Description:						
Screwed gland	B	Cixi Ding Li Plastic Co., Ltd.	DL250-3-1-M; DL250-3-1-F	500V; 6A	EN 61984	VDE*/40043553
Alternative	D	Cixi Ding Li Plastic Co., Ltd.	PG13.5	NYLON; PA66	EN 60598-1	Tested with appliance
Alternative	D	Shanghai Shengyang Electronics Technology Co., Ltd.	PG13.5	NYLON; PA66	EN 60598-1	Tested with appliance
Description:						
Heat-Shrinkable tube	C	DONGGUAN SALIPT CO LTD	SALIPT S-901-600	600V; 125°C (UL/E209436)	EN 60598-1	Tested with appliance
Description:						
LED PCB	C	ZHEJIANG CHANGSHAN DEXUNDA ELECTRONIC TECHNOLOGY CO LTD	DXD-AL1	V-0; 90°C (UL/E474292)	EN 60598-1	Tested with appliance
Alternative	D	ZHEJIANG CHANGSHAN DEXUNDA ELECTRONIC TECHNOLOGY CO LTD	DXD-D1	V-0; 130°C (UL/E474292)	EN 60598-1	Tested with appliance
Description:						
LED	C	EVERLIGHT	67-21S	Vf=2,8-3,5V; If=150mA	IEC/TR 62778	Test with appliance
Alternative	D	LG	LEMWS28U80 XXXXXX	Vf=3,0-3,4V; If=150mA	IEC/TR 62778	Test with appliance
Alternative	D	Jiangxi Elite Optoelectronic Science And Technology Co., Ltd	EL-283580DBN30	Vf=3,0-3,4V; If=150mA	IEC/TR 62778	Test with appliance
Description:						
Driver for LLX-H-20W-650, LLX-H-20W-1220	B	Tridonic GmbH & Co KG	LC 19W 250-350mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=60Vdc, 250-350mA, Po=19W, tc=65°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Driver for LLX-H-36W-1220, LLX-H-36W-1560	B	Tridonic GmbH & Co KG	LC 38W 250-350mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=250Vdc, 250-350mA, Po=38W, tc=70°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-30W-1220, LLX-H-36W-1220, LLX-H-36W-1560	B	Tridonic GmbH & Co KG	LC 38W 500-700mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=60Vdc, 500-700mA, Po=38W, tc=80°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	Tridonic GmbH & Co KG	LC 53W 250-350mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=250Vdc, 250-350mA, Po=53W, tc=70°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	Tridonic GmbH & Co KG	LC 57W 800-1050mA flexClp ADV	Ui=AC 220-240V, 50/60Hz; Uo=60Vdc, 800-1050mA, Po=57W, tc=90°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-65W-1560	B	Tridonic GmbH & Co KG	LC 71W 250-350mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=250Vdc, 250-350mA, Po=71W, tc=70°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-65W-1560	B	Tridonic GmbH & Co KG	LC 81W 1200-1750mA flexC lp ADV	Ui=AC 220-240V, 50/60Hz; Uo=60Vdc, 1200-1750mA, Po=80,5W, tc=95°C	EN 61347-1 EN 61347-2-13	ENEC/7590-194
Driver for LLX-H-20W-650, LLX-H-20W-1220	B	Tridonic GmbH & Co KG	LC 25W 350mA fixC lp SNC	Ui=AC 220-240V, 50/60Hz; Uo=300Vdc, 350mA, Po=25W, tc=65°C	EN 61347-1 EN 61347-2-13	VDE*/40044698
Driver for LLX-H-36W-1220, LLX-H-36W-1560	B	Tridonic GmbH & Co KG	LC 35W 350mA fixC lp SNC	Ui=AC 220-240V, 50/60Hz; Uo=350Vdc, 350mA, Po=35W, tc=70°C	EN 61347-1 EN 61347-2-13	ENEC/7590-186
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	Tridonic GmbH & Co KG	LC 50W 350mA fixC lp SNC	Ui=AC 220-240V, 50/60Hz; Uo=350Vdc, 350mA, Po=50W, tc=75°C	EN 61347-1 EN 61347-2-13	ENEC/7590-186

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Driver for LLX-H-65W-1560	B	Tridonic GmbH & Co KG	LC 65W 700mA fixC lp SNC	Ui=AC 220-240V, 50/60Hz; Uo=300Vdc, 700mA, Po=65W, tc=85°C	EN 61347-1 EN 61347-2-13	ENEC/7590-186
Driver for LLX-H-30W-1220, LLX-H-36W-1220, LLX-H-36W-1560	B	OSRAM GmbH	OT FIT 35/220-240/700 CS L AP	Ui=AC 220-240V, 50/60Hz; Uo=27-54Vdc, 700mA, Po=38W, tc=80°C	EN 61347-1 EN 61347-2-13	ENEC/21984 30.01
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	OSRAM GmbH	OT FIT 55/220-240/1A0 CS L AP	Ui=AC 220-240V, 50/60Hz; Uo=27-54Vdc, 1050mA, Po=57W, tc=80°C	EN 61347-1 EN 61347-2-13	ENEC/21984 30.01
Driver for LLX-H-65W-1560	B	OSRAM GmbH	OT FIT 75/220-240/1A4 CS L AP	Ui=AC 220-240V, 50/60Hz; Uo=27-54Vdc, 1400mA, Po=76W, tc=80°C	EN 61347-1 EN 61347-2-13	ENEC/21984 30.01
Driver for LLX-H-30W-1220, LLX-H-36W-1220, LLX-H-36W-1560	B	OSRAM GmbH	OTi DALI 35/220-240/700 LT2 L	Ui=AC 220-240V, 50/60Hz; Uo=20-54Vdc, 200-700mA, Po=35W, tc=75°C	EN 61347-1 EN 61347-2-13	VDE*/40038 447
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	OSRAM GmbH	OTi DALI 50/220-240/1A4 LT2 L	Ui=AC 220-240V, 50/60Hz; Uo=20-54Vdc, 600-1400mA, Po=54W, tc=75°C	EN 61347-1 EN 61347-2-13	VDE*/40038 447
Driver for LLX-H-65W-1560	B	OSRAM GmbH	OTi DALI 80/220-240/2A1 LT2 L	Ui=AC 220-240V, 50/60Hz; Uo=20-54Vdc, 1000-2100mA, Po=80W, tc=75°C	EN 61347-1 EN 61347-2-13	VDE*/40038 447
Driver for LLX-H-30W-1220, LLX-H-36W-1220, LLX-H-36W-1560	B	Philips Lighting B.V.	CertaDrive 38W 0.7A 54V 230V	Ui=AC 220-240V, 50/60Hz; Uo=60Vdc, 700mA, Po=38W, tc=75°C	EN 61347-1 EN 61347-2-13	ENEC/21947 67.01
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	Philips Lighting B.V.	CertaDrive 57W 1.05A 54V 230V	Ui=AC 220-240V, 50/60Hz; Uo=32-54Vdc, Max.70Vdc, 1050mA, Po=57W, tc=75°C	EN 61347-1 EN 61347-2-13	ENEC/21984 09.01

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Driver for LLX-H-65W-1560	B	Philips Lighting B.V.	CertaDrive 65W 1.4A 46.5V 230V	Ui=AC 220-240V, 50/60Hz; Uo=32-46.5Vdc, Max.70Vdc, 1400mA, Po=65W, tc=75°C	EN 61347-1 EN 61347-2-13	ENEC/2033681.01
Driver for LLX-H-36W-1220, LLX-H-36W-1560	B	Philips Lighting B.V.	CertaDrive 40W 360mA 110V 230V	Ui=AC 220-240V, 50/60Hz; Uo=80-116Vdc, Max.300Vdc, 360mA, Po=42W, tc=75°C	EN 61347-1 EN 61347-2-13	ENEC/2183006.01
Driver for LLX-H-54W-1560	B	Philips Lighting B.V.	CertaDrive 60W 360mA 170V 230V	Ui=AC 220-240V, 50/60Hz; Uo=120-170Vdc, Max.340Vdc, 360mA, Po=61,2W, tc=80°C	EN 61347-1 EN 61347-2-13	ENEC/2183006.01
Driver for LLX-H-36W-1220, LLX-H-36W-1560	B	Shenzhen Xiezhen Electronics Co., Ltd.	XZ-ST50B-540XXX	Ui=AC 220-240V, 50/60Hz; Uo=30-54Vdc, 1050mA, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50332607
Driver for LLX-H-45W-1220	B	Shenzhen Xiezhen Electronics Co., Ltd.	XZ-ST50B-420XXX	Ui=AC 220-240V, 50/60Hz; Uo=27-42Vdc, 1050mA, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50332607
Driver for LLX-H-54W-1560	B	Shenzhen Xiezhen Electronics Co., Ltd.	XZ-ST60B-540XXX	Ui=AC 220-240V, 50/60Hz; Uo=30-54Vdc, 1050mA, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50332607
Driver for LLX-H-65W-1560	B	Shenzhen Xiezhen Electronics Co., Ltd.	XZ-ST60B-420XXX	Ui=AC 220-240V, 50/60Hz; Uo=27-42Vdc, 1400mA, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50332607
Driver for LLX-H-20W-650, LLX-H-20W-1220	B	Kegu Power Electronics Co., Ltd	KEDH025S0350NM08A1	Ui=AC 220-240V, 50/60Hz; Uo=43-72Vdc, 350mA, Po=25W, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50349491
Driver for LLX-H-36W-1220, LLX-H-36W-1560	B	Kegu Power Electronics Co., Ltd	KEDH035S0350NM08A1	Ui=AC 220-240V, 50/60Hz; Uo=60-100Vdc, 350mA, Po=35W, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50349491
Driver for LLX-H-45W-1220, LLX-H-54W-1560	B	Kegu Power Electronics Co., Ltd	KEDH050S0350NM08A1	Ui=AC 220-240V, 50/60Hz; Uo=86-143Vdc, 350mA, Po=50W, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50349491

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Driver for LLX-H-65W-1560	B	Kegu Power Electronics Co., Ltd	KEDH065S0350NM08A1	Ui=AC 220-240V, 50/60Hz; Uo=130-186Vdc, 350mA, Po=65W, tc=85°C	EN 61347-1 EN 61347-2-13	TUV Rh*/R50349491

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 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-20W-650	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 19W 250-350mA flexC Ip ADV	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	19,5	—
	Supply current (A) ..... :	0,088	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	Short-circuit output of controlgear	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,1x240=264V	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	25	--	35,9	--	90	--	--
Internal wire	25	--	47,8	--	90	--	--
Terminal block	25	--	39,4	--	85	--	--
LED PCB	25	--	57,7	--	Ball-pressure	--	--
Tc of driver	25	--	63,0	--	65	--	--
Horizontal surface of plastic cover(up)	25	--	39,7	--	90	26,9	90
Horizontal surface of plastic cover(low)	25	--	39,1	--	90	25,3	90
Vertical surface of plastic cover	25	--	41,0	--	150	26,6	150

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Mounting surface	25	--	42,2	--	90	27,3	130
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-20W-650	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	KEDH025S0350NM08A1	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	18,7	—
	Supply current (A) ..... :	0,084	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	56,2	--	85	--	--
Mounting surface	25	--	40,1	--	90	--	--
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-20W-650	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	LC 25W 350mA fixC Ip SNC	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	19,1	—
	Supply current (A) ..... :	0,086	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	57,0	--	65	--	--
Mounting surface	25	--	39,7	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	LC 38W 250-350mA flexC Ip ADV	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	34,7	—
	Supply current (A) ..... :	0,142	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	Short-circuit output of controlgear	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,1x240=264V	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	25	--	33,7	--	90	--	--
Internal wire	25	--	41,9	--	90	--	--
Terminal block	25	--	36,7	--	85	--	--
LED PCB	25	--	59,6	--	Ball-pressure	--	--
Tc of driver	25	--	67,4	--	70	--	--
Horizontal surface of plastic cover(up)	25	--	36,7	--	90	26,2	90
Horizontal surface of plastic cover(low)	25	--	33,4	--	90	25,6	90
Vertical surface of plastic cover	25	--	35,7	--	150	26,0	150
Mounting surface	25	--	42,8	--	90	27,2	130
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	KEDH035S0350NM08A1	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	35,6	—
	Supply current (A) ..... :	0,147	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	67,4	--	85	--	--
Mounting surface	25	--	44,7	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	CertaDrive 40W 360mA 110V 230V	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	34,6	—
	Supply current (A) ..... :	0,148	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	63,9	--	75	--	--
Mounting surface	25	--	40,2	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 35W 350mA fixC Lp SNC	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	34,2	—
	Supply current (A) ..... :	0,143	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	58,9	--	70	--	--
Mounting surface	25	--	40,0	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	OT FIT 35/220-240/700 CS L AP	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	36,6	—
	Supply current (A) ..... :	0,149	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	70,7	--	80	--	--

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Mounting surface	25	--	44,2	--	90	--	--
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	OTi DALI 35/220-240/700 LT2 L	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	36,8	—
	Supply current (A) ..... :	0,153	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	60,4	--	75	--	--
Mounting surface	25	--	39,7	--	90	--	--
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	CertaDrive 38W 0.7A 54V 230V	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	36,7	—
	Supply current (A) ..... :	0,150	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	66,2	--	75	--	--
Mounting surface	25	--	41,7	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	XZ-ST50B-540070	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	35,3	—
	Supply current (A) ..... :	0,156	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	57,1	--	85	--	--
Mounting surface	25	--	39,7	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-36W-1220	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 38W 500-700mA flexC lp ADV	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	36,7	—
	Supply current (A) ..... :	0,155	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	70,3	--	80	--	--
Mounting surface	25	--	44,3	--	90	--	--

Supplementary information: N/A

ANNEX 2	**TABLE: Thermal tests of Section 12**		
	Type reference ..... :	LLX-H-54W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	CertaDrive 60W 360mA 170V 230V	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	52,2	—
	Supply current (A) ..... :	0,219	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	Short-circuit output of controlgear	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,1x240=264V	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal	Cl. 12.5 – abnormal

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

		test 1	test 2	test 3	limit	test 4	limit
Supply cord	25	--	39,6	--	90	--	--
Internal wire	25	--	62,0	--	90	--	--
Terminal block	25	--	69,6	--	85	--	--
LED PCB	25	--	80,0	--	Ball-pressure	--	--
Tc of driver	25	--	74,5	--	80	--	--
Horizontal surface of plastic cover(up)	25	--	46,5	--	90	26,0	90
Horizontal surface of plastic cover(low)	25	--	54,9	--	90	25,4	90
Vertical surface of plastic cover	25	--	46,3	--	150	25,7	150
Mounting surface	25	--	49,6	--	90	26,8	130
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 71W 250-350mA flexC lp ADV	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	65,5	—
	Supply current (A) ..... :	0,268	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	Short-circuit output of controlgear	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,1x240=264V	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Supply cord	25	--	38,7	--	90	--	--
Internal wire	25	--	52,5	--	90	--	--
Terminal block	25	--	41,4	--	85	--	--
LED PCB	25	--	66,8	--	Ball-pressure	--	--
Tc of driver	25	--	65,2	--	70	--	--
Horizontal surface of plastic cover(up)	25	--	38,5	--	90	25,5	90
Horizontal surface of plastic cover(low)	25	--	36,4	--	90	25,0	90
Vertical surface of plastic cover	25	--	38,1	--	150	25,2	150
Mounting surface	25	--	39,2	--	90	25,8	130
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 81W 1200-1750mA flexC lp ADV	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	63,1	—
	Supply current (A) ..... :	0,257	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	89,3	--	95	--	--
Mounting surface	25	--	41,6	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	LC 65W 700mA fixC lp SNC	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	61,1	—
	Supply current (A) ..... :	0,254	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	74,5	--	85	--	--
Mounting surface	25	--	37,6	--	90	--	--
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	OT FIT 75/220-240/1A4 CS L AP	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	67,0	—
	Supply current (A) ..... :	0,269	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	66,9	--	80	--	--
Mounting surface	25	--	48,5	--	90	--	--
Supplementary information: N/A							

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	OTi DALI 80/220-240/2A1 LT2 L	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	62,5	—
	Supply current (A) ..... :	0,257	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	75,6	--	80	--	--
Mounting surface	25	--	45,9	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	CertaDrive 65W 1.4A 46.5V 230V	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	63,0	—
	Supply current (A) ..... :	0,256	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	66,7	--	75	--	--
Mounting surface	25	--	41,5	--	90	--	--

Supplementary information: N/A

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used ..... :	Original LEDs	—
	Lamp control gear used ..... :	XZ-ST60B-420140	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W) ..... :	62,4	—
	Supply current (A) ..... :	0,253	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	76,4	--	85	--	--
Mounting surface	25	--	42,3	--	90	--	--
Supplementary information: N/A							

ANNEX 2	TABLE: Thermal tests of Section 12		
	Type reference ..... :	LLX-H-65W-1560	—
	Lamp used..... :	Original LEDs	—
	Lamp control gear used..... :	KEDH065S0350NM08A1	—
	Mounting position of luminaire ..... :	Normal position	—
	Supply wattage (W)..... :	63,3	—
	Supply current (A) ..... :	0,258	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	N/A	—
1.12 (12.4)	- test 1: rated voltage ..... :	240V	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	1,06x240=254,4V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	N/A	—

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Tc of driver	25	--	77,3	--	85	--	--
Mounting surface	25	--	39,0	--	90	--	--
Supplementary information: N/A							

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		
(14)	**SCREW TERMINALS**		
(14.2)	Type of terminal.....:	N/A	—
	Rated current (A).....:	N/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).....:	N/A	—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		
(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 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict
(15.6.1)	Conductors		
	Terminal size and rating		N/A
15.6.2	Mechanical tests		
(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		
	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**									
	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)										

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60598-2-24 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 24: Luminaires with limited surface temperature
Differences according to..... EN 60598-2-24:2013 used in conjunction with EN 60598-1:2015 + A1:2018
Annex Form No...... EU_GD_IEC60598_2_24G **Annex Form Originator**..... OVE **Master Annex Form**..... 2019-01-24
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	CENELEC COMMON MODIFICATIONS (EN)		
24.6 (3)	**MARKING**		
24.6 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A
24.7 (4)	**CONSTRUCTION**		
24.7 (4.11.6)	Electro-mechanical contact systems		N/A
24.11 (5)	**EXTERNAL AND INTERNAL WIRING**		
24.11 (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
24.11 (5.2.2)	Cables equal to EN 50525		N/A
	Replace table 5.1 – Supply cord		N/A
24.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		
24.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

IEC 60598-2-24			
Clause	Requirement + Test	Result - Remark	Verdict

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
	GB: Requirements according to United Kingdom Building Regulation		N/A

Remarks

Overview

For LLX-H-20W-650



Side view



Remarks

Back view



Lamp side part for all models



Remarks

Lamp side part for all models



Lamp side part for all models



Remarks

Lamp side part for all models



Fixed screw used on every buckle

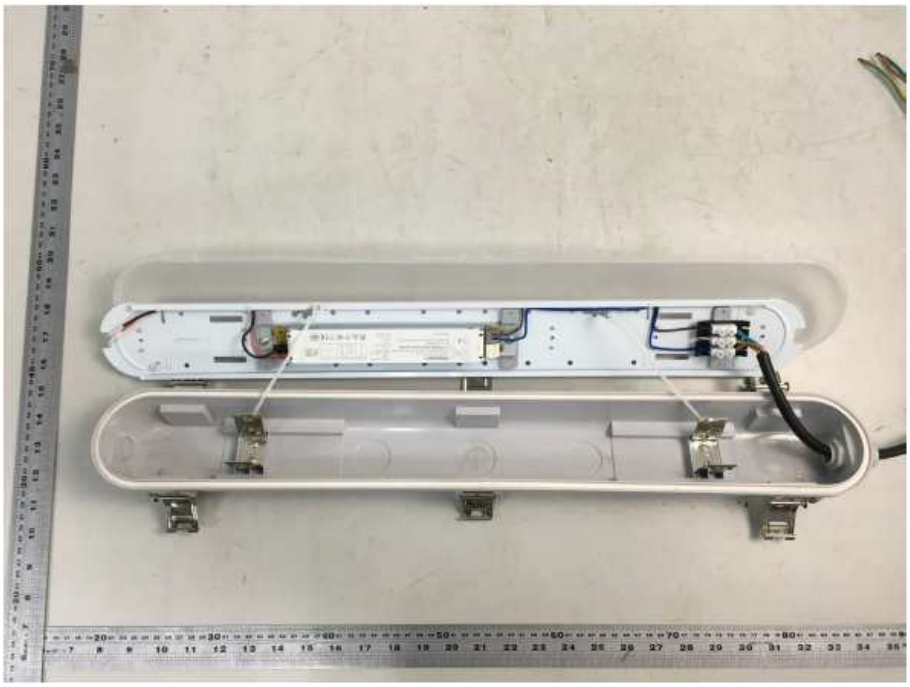


Remarks

Internal view for LLX-H-20W-650



Internal view for LLX-H-20W-650



Remarks

Internal view for LLX-H-20W-650

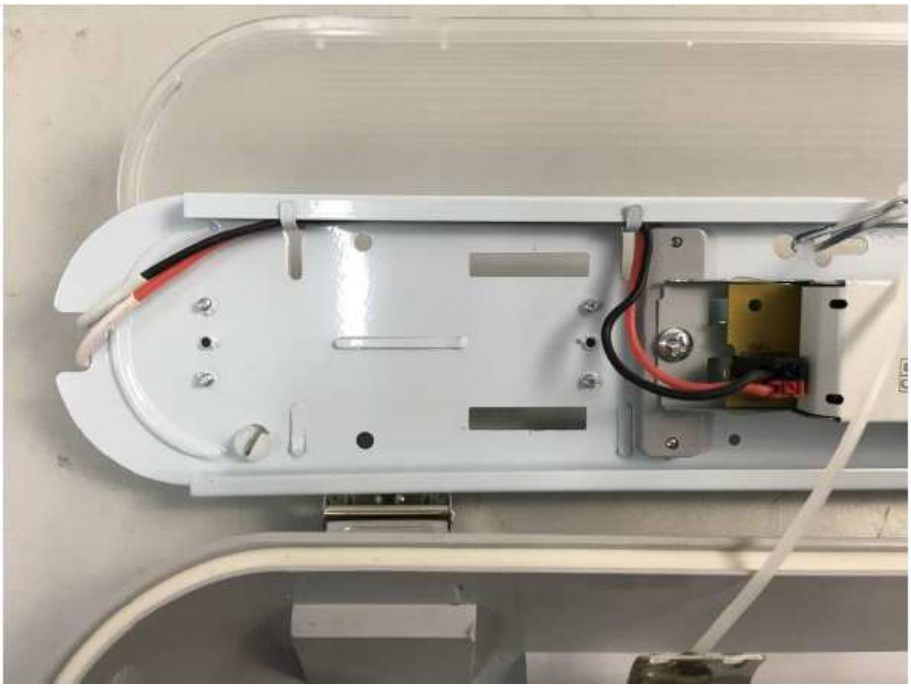


Internal view for LLX-H-20W-650

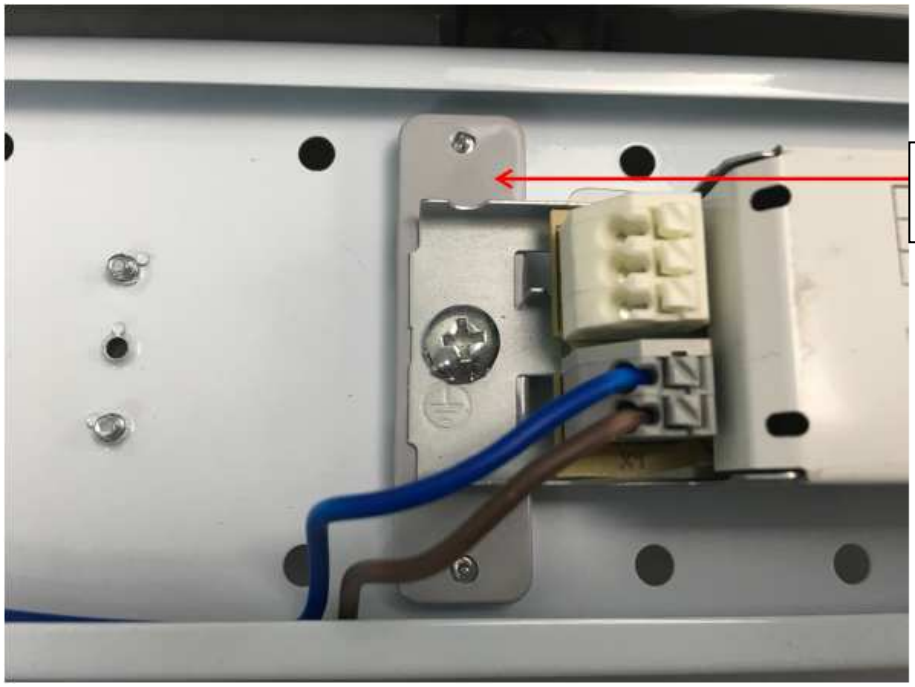


Remarks

Internal view for LLX-H-20W-650



Internal view for LLX-H-20W-650

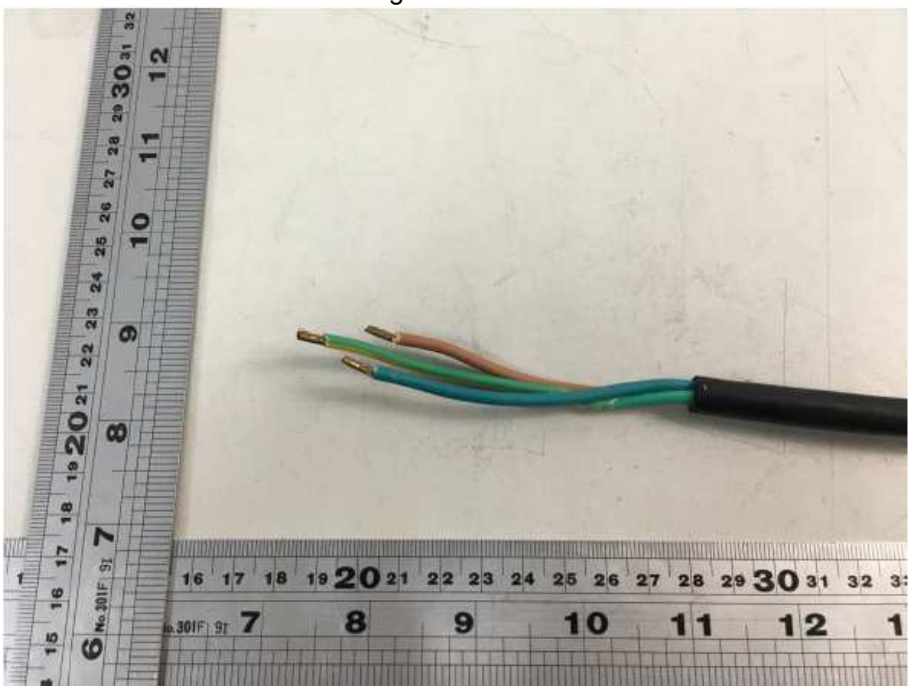


Remarks

Approved driver for LLX-H-20W-650



Connecting leads for all models

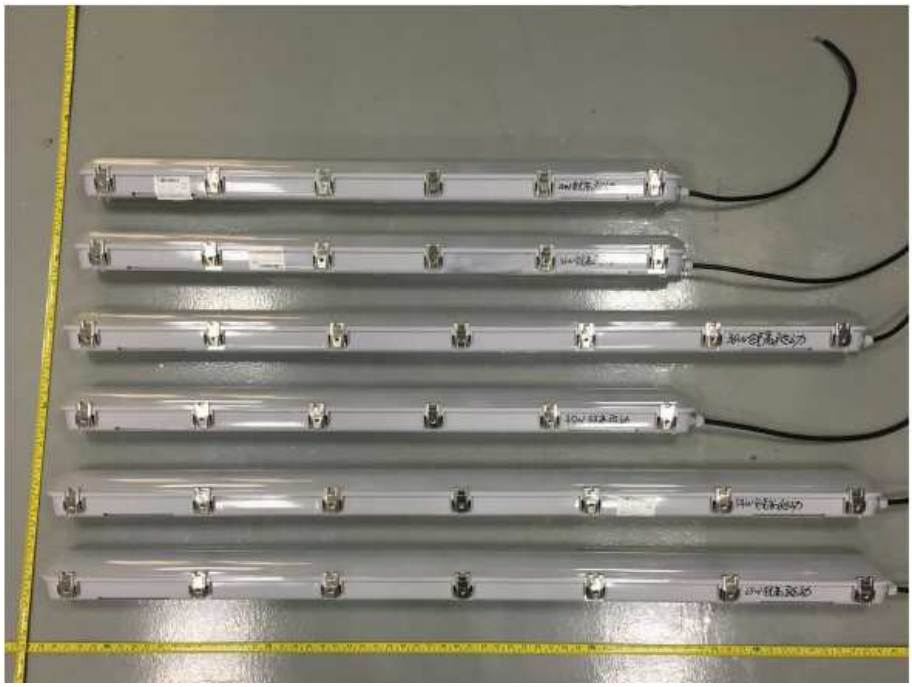


Remarks

From top to bottom LLX-H-20W-1220; LLX-H-36W-1220; LLX-H-36W-1560; LLX-H-45W-1220; LLX-H-54W-1560; LLX-H-65W-1560

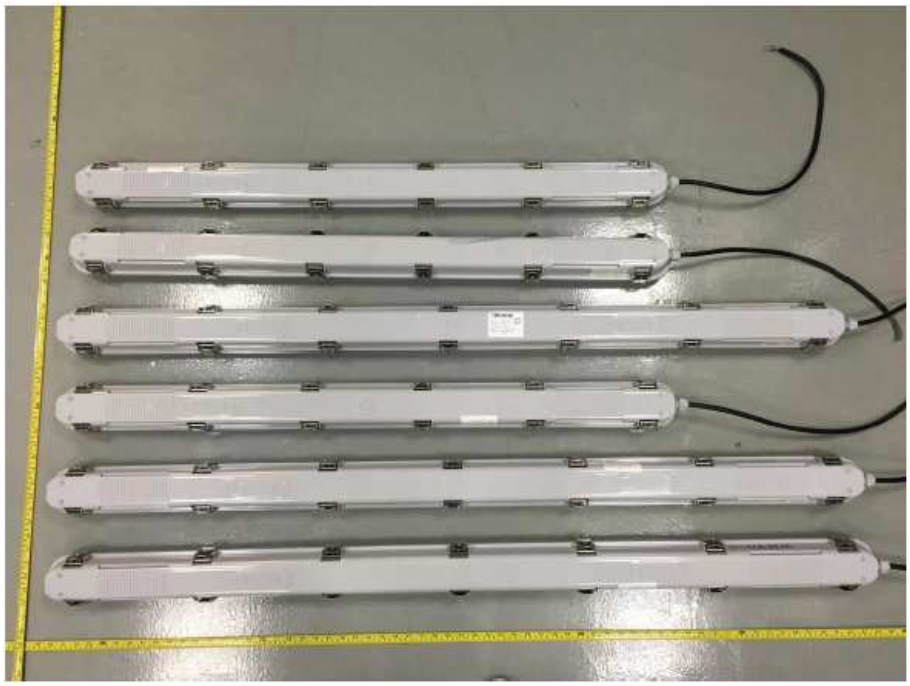


Side view



Remarks

Back view



Internal view

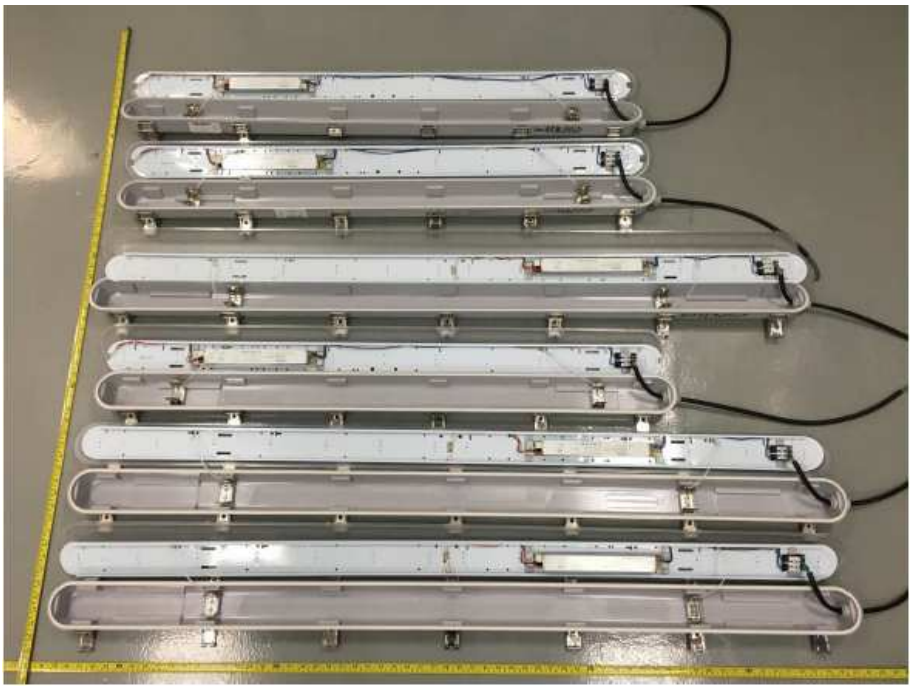


Remarks

Internal view for “-1560” models

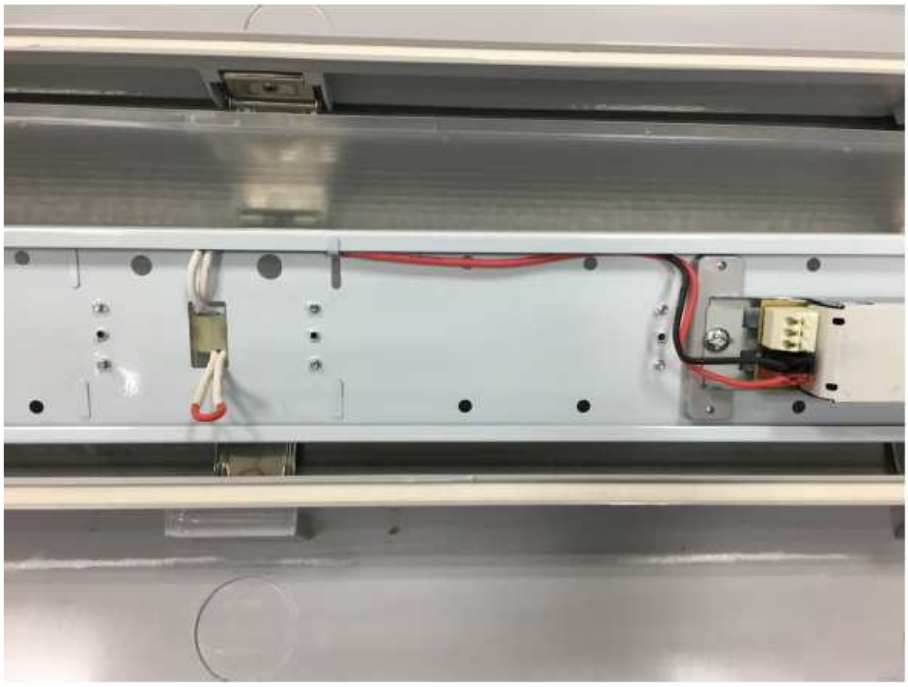


Internal view



Remarks

Internal view for “-1560” models



Approved driver for LLX-H-20W-1220



Remarks

Approved driver for LLX-H-36W-1220, LLX-H-36W-1560



Approved driver for LLX-H-45W-1220, LLX-H-54W-1560



Remarks

Approved driver for LLX-H-65W-1560



Alternative driver for LLX-H-20W-650, LLX-H-20W-1220



Remarks

Alternative driver for LLX-H-30W-1220



Alternative driver for LLX-H-36W-1220, LLX-H-36W-1560



Remarks

Alternative driver for LLX-H-45W-1220



Alternative driver for LLX-H-54W-1560



Remarks

Alternative driver for LLX-H-65W-1560



Alternative driver for LLX-H-65W-1560



Remarks

Alternative connector integrated in screw gland for all models





Remarks

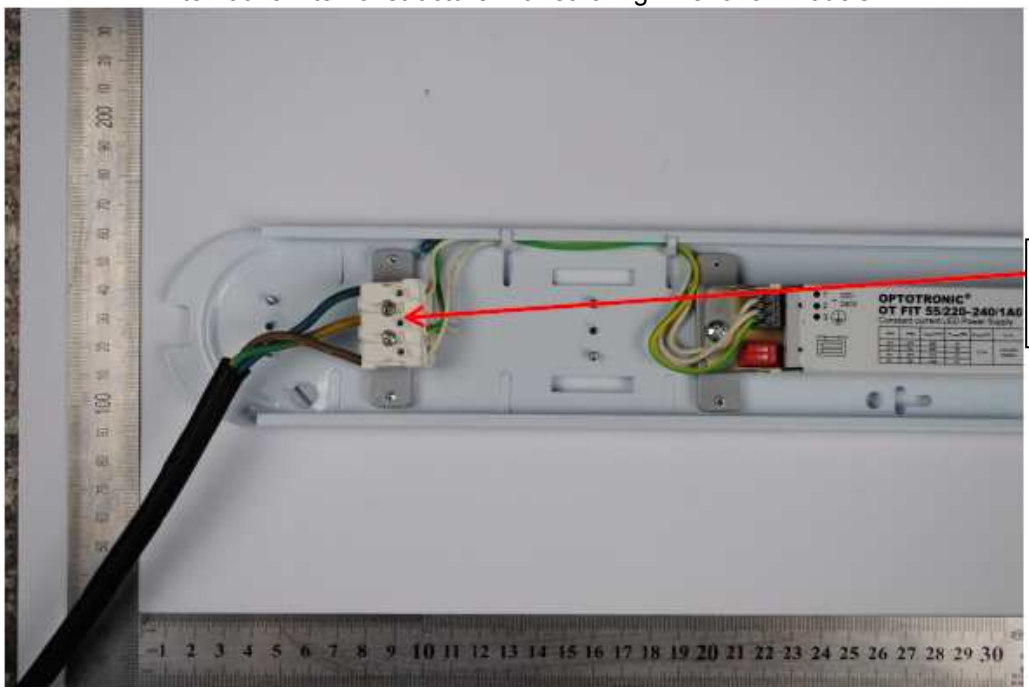




Remarks

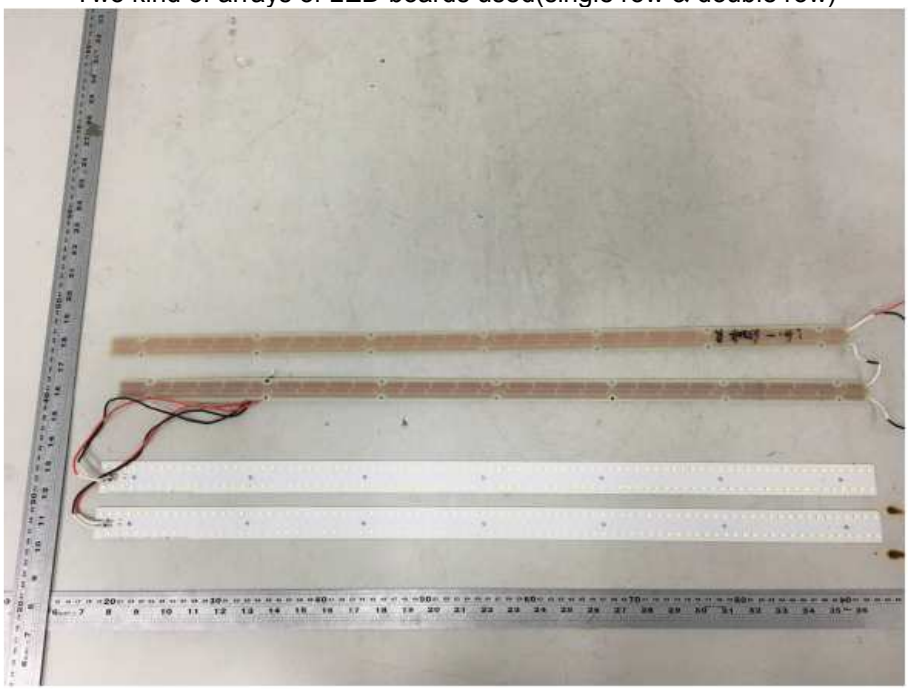


Alternative internal structure with earthing wire for all models



Remarks

Two kind of arrays of LED boards used(single row & double row)



Mounting accessories for all models



Remarks

Alternative plastic buckle for all models

