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

Report Number. .....:	64.140.11.02922.03
Date of issue .....:	2015-02-02
Total number of pages.....	45
Name of Testing Laboratory preparing the Report.....:	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
Applicant's name.....:	ZHONGSHAN LIANGYI LIGHTING CO., LTD.
Address .....:	BeiHai Industrial Zone, GuZhen Town, ZhongShan, Guangdong, P.R. China
Test specification:	
Standard.....:	IEC 60598-2-1:1979 (First Edition) + A1:1987 used in conjunction with IEC 60598-1:2014 (Eighth Edition)
Test procedure .....:	CE_LVD
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60598_2_1D
Test Report Form(s) Originator ....:	Intertek Semko AB
Master TRF.....:	2014-08

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 .....:	Fixed Gerneral Purpose Luminaires
Trade Mark .....:	EL
Manufacturer.....:	ZHONGSHAN LIANGYI LIGHTING CO., LTD. BeiHai Industrial Zone, GuZhen Town, ZhongShan, Guangdong, P.R. China
Model/Type reference .....:	See model list at page 6
Ratings .....:	220-240 V~, 50/60 Hz, detailed see model list at page 6.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☐ **Testing Laboratory:**		
Testing location/ address ..... :	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch 5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West,Guangzhou, 510656, P.R.China	
Tested by (name, function, signature) ..... :	Annie Wang	
Approved by (name, function, signature).. :	Peter Hu	

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

Attachment 1: deviation of EN 60598-2-1 and IEC 60598-2-1 (2 pages).

Attachment 2: EN 62493:2010 (1 page).

Summary of testing:

Tests performed (name of test and test clause):

1. This report was based on report 64.140.11.02922.01 and 64.140.11.02922.02. This report was to upgrade Standard from EN 60598-2-1:1989 used in conjunction with EN 60598-1:2008 to EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015.
2. All the products were complied according to the standard EN 60598-2-1:1989 and EN 60598-1:2015.
3. Considering the submitted samples have no electronic control gear, they were found to comply with the requirements of EN 62493:2010 without test.
4. The heating test is carried out on P749A, P634-4P, CL272(D30), WL314, WL190, GU10162C-4R, GU10131A-4R, WL443(L15), and P749A-4OVAL. And other tests are carried out on all models.
5. Added 1 model: GU10162C-3B; the construction of model GU10162C-1R had some change in this report. Details referred to copy of model list and photo documentation. No additional test was needed.

Testing location:

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Summary of compliance with National Differences:

N/A

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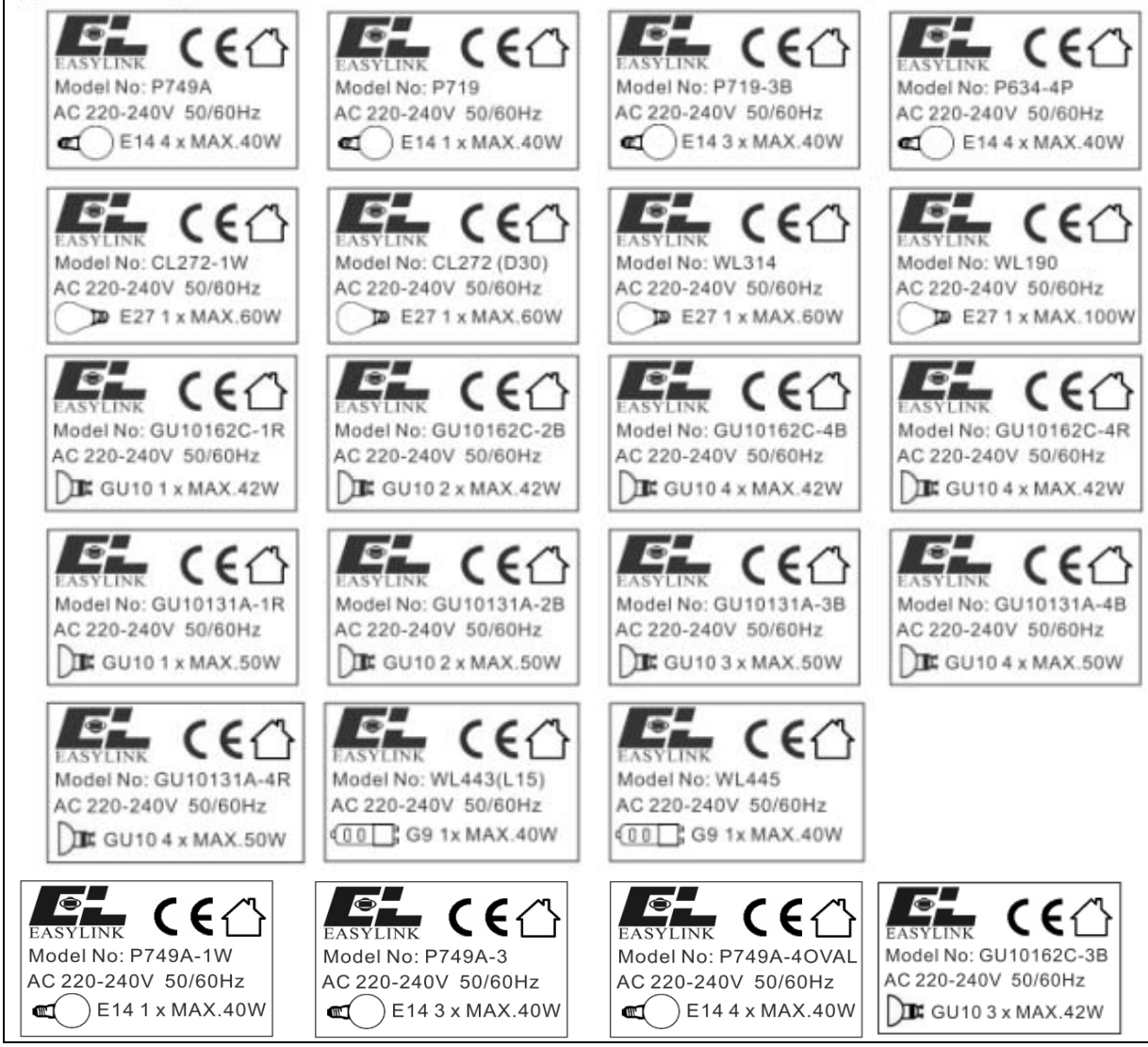
Copy of marking plate:

Main label:



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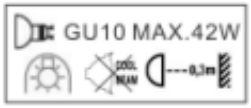
Marking near the lampholder

(for P749A, P719, P719-3B, P634-4P)

(for CL272-1W, CL272(D30), WL314)

(for WL190)



(for GU10162C series)

(for GU10131A series)

(for WL443(L15), WL445)

Note: The height of symbol was 5mm at least and the letter was at least 2mm.

Test item particulars.....:	Fixed Gerneral Purpose Luminaires
Classification of installation and use.....:	Class I
Supply Connection.....:	Terminal box
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 .....:	2015-01-09
Date (s) of performance of tests.....:	2015-01-12 to 2015-01-30
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	

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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) ..... : ZHONGSHAN LIANGYI LIGHTING CO., LTD.
BeiHai Industrial Zone, GuZhen Town, ZhongShan, Guangdong, P.R. China

General product information:

Those products are fixed luminaires for indoor use only. They have similar construction, but their bottoms and size are different. For more information see model list below.

Model list

Model	Rated voltage	Lamp
P749A	220-240V~, 50/60Hz	E14, 4xMAX.40W
P719	220-240V~, 50/60Hz	E14, 1xMAX.40W
P719-3B	220-240V~, 50/60Hz	E14, 3xMAX.40W
P634-4P	220-240V~, 50/60Hz	E14, 4xMAX.40W
CL272-1W	220-240V~, 50/60Hz	E27, 1xMAX.60W
CL272(D30)	220-240V~, 50/60Hz	E27, 1xMAX.60W
WL314	220-240V~, 50/60Hz	E27, 1xMAX.60W
WL190	220-240V~, 50/60Hz	E27, 1xMAX.100W
GU10162C-1R	220-240V~, 50/60Hz	GU10, 1x MAX.42W
GU10162C-2B	220-240V~, 50/60Hz	GU10, 2x MAX.42W
GU10162C-3B	220-240V~, 50/60Hz	GU10, 3x MAX.42W
GU10162C-4B	220-240V~, 50/60Hz	GU10, 4x MAX.42W
GU10162C-4R	220-240V~, 50/60Hz	GU10, 4x MAX.42W
GU10131A-1R	220-240V~, 50/60Hz	GU10, 1x MAX.50W
GU10131A-2B	220-240V~, 50/60Hz	GU10, 2x MAX.50W
GU10131A-3B	220-240V~, 50/60Hz	GU10, 3x MAX.50W
GU10131A-4B	220-240V~, 50/60Hz	GU10, 4x MAX.50W
GU10131A-4R	220-240V~, 50/60Hz	GU10, 4x MAX.50W
WL443(L15)	220-240V~, 50/60Hz	G9, 1xMAX.40W
WL445	220-240V~, 50/60Hz	G9, 1xMAX.40W
P749A-1W	220-240V~, 50/60Hz	E14, 1xMAX.40W
P749A-3	220-240V~, 50/60Hz	E14, 3xMAX.40W
P749A-4OVAL	220-240V~, 50/60Hz	E14, 4xMAX.40W

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

1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered ..... :	Standard Yes ☒ No ☐	—
1.2 (0.3)	More sections applicable..... :	Yes ☐ No ☒	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection ..... :	Class I	—
1.4 (2.3)	Degree of protection..... :	IP 20	—
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		P
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	50/60 Hz	P
1.5 (3.3.3)	Operating temperature	25°C	N/A
1.5 (3.3.4)	Symbol or warning notice		N/A
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		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		P
1.5 (3.3.11)	Luminaires with remote control		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
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		N/A
	Cautionary symbol		N/A
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
1.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
1.6 (4)	**CONSTRUCTION**		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	**Lampholders**		**P**
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		P
	- pressure test (N) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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) ..... :	1,2Nm (E14 lampholder); 2.0Nm (E27 lampholder)	—
	After test the lampholder have not moved from its position and show no permanent deformation		P
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		P
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**		**P**
	Tails	Approved terminal block	P
	Unsecured blocks	For GU10162C series	P
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		P
	Test 8 mm earth conductor		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		P
1.6 (4.7.5)	Heat-resistant wiring/sleeves		P
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	**Switches**		**P**
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	**Insulating lining and sleeves**		**P**
1.6 (4.9.1)	Retainment		P
	Method of fixing ..... :	Heat shrinkable tube	—
1.6 (4.9.2)	Insulated linings and sleeves:		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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 (4.11)	**Electrical connections and current-carrying parts**		**P**
1.6 (4.11.1)	Contact pressure		P
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:		P
	- spring washer		P
	- 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		N/A
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..... :	1,2Nm; Fixing bracket	P
	Torque test: torque (Nm); part..... :	0,5Nm; Fixing terminal	P
	Torque test: torque (Nm); part..... :	1.2Nm; Screw for earthing	P
	Torque test: torque (Nm); part..... :	0.5Nm; fixed lampholder	P
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
1.6 (4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm) ..... :	2.5 Nm	P
	- lampholder; torque (Nm) ..... :	1,2Nm (E14 lampholder); 2.0Nm (E27 lampholder)	P
	- 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**

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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :		N/A
	- other parts; energy (Nm)..... :	Enclosure; 0.35 Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
1.6 (4.13.3)	Straight test finger	30 N	P
1.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	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	Max. weight: 4×2.6=10.4kg	P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm)..... :	1.0	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		P
	Mass (kg) ..... :	Max. 0.5kg (for P719, P634-4P, P719-3B)	—
	Stress in conductors (N/mm²) ..... :	3.3	P

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	Mass (kg) of semi-luminaire ..... :		—
	Bending moment (Nm) of semi-luminaire ..... :		N/A
1.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles..... :	150 cycles (Adjust arm) for GU10131A series and GU10162C series)	P
	- strands broken ..... :		P
	- electric strength test afterwards		P
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)	N/A
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- 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)	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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**		**N/A**
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Igniters 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
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**		**N/A**
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		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict

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**		**N/A**
	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**		**N/A**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	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		N/A
	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
1.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage ≤ ELV		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 of above		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 control gear 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**		P
1.7 (11.2)	Creepage distances and clearances..... :	See Table 1.7 (11.2)	P
	Working voltage (V)..... :	220-240V~	—
	Rated pulse voltage (kV)..... :	2.5	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Voltage form ..... :	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI ..... :	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—

1.8 (7)	**PROVISION FOR EARTHING**		**P**
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω ..... :	Max. 0.04 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		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
	Length of earth conductor		N/A
1.9 (14)	**SCREW TERMINALS**		P
	Separately approved; component list..... :	(see Annex 1)	P
	Part of the luminaire ..... :	(see Annex 3)	N/A
1.9 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		P
	Separately approved; component list..... :	(see Annex 1)	P
	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 ..... :	Terminal block	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	For P719, P719-3B, P634-4P	P
1.10 (5.2.2)	Type of cable..... :	See CDF	P
	Nominal cross-sectional area (mm²) ..... :		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
1.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
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
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion	For GU10131A series, P719, P719-3B, P634-4P	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		N/A
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) ..... :	60 N	P
	- torque test: torque (Nm)..... :	0.15 Nm	P
	- displacement ≤ 2 mm	Max. 0.8mm (For GU10131A series, P719, P719-3B, P634-4P)	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	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	see CDF for details	P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(see Annex 2)	N/A
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²)..... :	see CDF for details	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation thickness		P
	Extra insulation added where necessary		P
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		N/A
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		P
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
1.10 (5.3.4)	Joints and junctions effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A

1.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
1.11 (8.2.1)	Live parts not accessible		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	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
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement	Class II construction	P
	- 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
	- touch current ..... :		N/A
	- no-load voltage..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Other than ordinary luminaire:		N/A
	- nominal voltage ..... :		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Discharging of capacitors $\geq$ 0,5 μF		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		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 4.13		—
1.12 (12.3)	Endurance test:		P
	- mounting-position..... :	As in normal use.	—
	- test temperature (°C) ..... :	35 °C	—
	- total duration (h)..... :	240 h	—
	- supply voltage: Un factor; calculated voltage (V)... :	238.7V~ (P749A); 241.5V~ (P634-4P); 240.2V~ (GU10162C-4R); 241.5V~ (GU10131A-4R); 241.9V~ (WL314); 240.5V~ (CL272(D30)); 236.0V~ (WL443(L15)); 241.5V~ (WL190); 245,8V~ (P749A-4OVAL)	—
	- lamp used..... :	See rating label for details	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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)	N/A
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .... :		—
	- measured mounting surface temperature (°C) at 1,1 Un..... :		N/A
	- calculated mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
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 ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 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 ..... :		—
	- 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 Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		
	- 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 ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- highest measured temperature of fixing point/ exposed part (°C): ..... :		—
	Ball-pressure test: ..... :	See Table 1.15 (13.2.1)	N/A

1.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		P
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:		—
	- classification according to IP..... :	IP 20	—
	- mounting position during test..... :	As in normal use	—
	- fixing screws tightened; torque (Nm) ..... :	-	—
	- tests according to clauses..... :	9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	25 °C, 95% RH	P

1.14 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
1.14 (10.2.1)	Insulation resistance test		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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..... :		N/A
	- between current-carrying parts and metal parts of the luminaire..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		P
	- between live parts of different polarity ..... :	>100MΩ	P
	- between live parts and mounting surface ..... :	>100MΩ	P
	- between live parts and metal parts ..... :	>100MΩ	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..... :	> 100MΩ	P
	- 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		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and metal parts of the luminaire..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV		P
	- between live parts of different polarity ..... :	Between L, N: 1480 V	P
	- between live parts and mounting surface ..... :	Between live parts and metal parts:1480 V Between live parts of lamphloder and metal parts near it for some models with Class II construction: 2960V	P
	- between live parts and metal parts ..... :	Between live parts and metal parts:1480 V Between live parts of lamphloder and metal parts near it for some models with Class II construction: 2960V	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..... :	1480 V	P
	- Insulation bushings as described in Section 5 ..... :		P
1.14 (10.3)	Touch current or protective conductor current (mA) :	Max. 0.04 mA	P

1.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
1.15 (13.2.1)	Ball-pressure test .....:	See Test Table 1.15 (13.2.1)	N/A
1.15 (13.3.1)	Needle-flame test (10 s).....:	See Test Table 1.15 (13.3.1)	N/A
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)	**TABLES: Creepage distances and clearances**	P
Table 11.1	**Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages**	P

RMS working voltage (V) not exceeding	50	150	250	500	750	1000
Creepage distances						
Required basic insulation, PTI ≥ 600	0,6	0,8	1,5	3	4	5,5
Measured	-	-	-	-	-	-
Required basic insulation, PTI < 600	1,2	1,6	2,5	5	8	10
Measured	-	-	> 4.0	-	-	-
Required supplementary insulation PTI ≥ 600	-	0,8	1,5	3	4	5,5
Measured	-	-	-	-	-	-
Required supplementary insulation PTI < 600	-	1,6	2,5	5	8	10
Measured	-	-	-	-	-	-
Required reinforced insulation	-	3,2	5	6	8	11
Measured	-	-	-	-	-	-
Clearances						
Required basic insulation	0,2	0,8	1,5	3	4	5,5
Measured	-	-	> 4.0	-	-	-
Required supplementary insulation	-	0,8	1,5	3	4	5,5
Measured	-	-	-	-	-	-
Required reinforced insulation	-	1,6	3	6	8	11
Measured	-	-	-	-	-	-

Table 11.2	**Minimum distances (mm) for non-sinusoidal pulse voltages**	**N/A**

Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured	-	-	-	-	-	-	-
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured	-	-	-	-	-	-	-
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-

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Clause	Requirement + Test	Result - Remark	Verdict

Required clearances	75	90	130	170	-	-	-
Measured	-	-	-	-	-	-	-

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**			**N/A**
Allowed impression diameter (mm) ..... :				—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information: Approved components				

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

1.15 (13.3.2)	**TABLE: Glow-wire test (IEC 60695-2-11)**				**P**
Glow wire temperature ..... :	650°C				—
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Insulating paper	-	0	No	0	P

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Clause	Requirement + Test	Result - Remark	Verdict

Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No) ..... :	No
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:					

ANNEX 1	**TABLE: Critical components information** (See CDF for detail)	P

ANNEX 2	**TABLE: Temperature measurements, thermal tests of Section 12**	P

	Type reference ..... :	GU10131A-4R	—
	Lamp used ..... :	GU10, 4x50W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	234.7V/210W	—
	Supply current (A) ..... :	0.894A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x200W=210W	—

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Clause	Requirement + Test	Result - Remark	Verdict

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

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(GU10)	---	201.1	---	250	---	---
Lampholder rim(GU10)	---	170.7	---	250	---	---
Internal wire to lampholder	---	159.4	---	180	---	---
Mounting surface	---	44.1	---	90	---	---
Terminal block	---	45.7	---	110	---	---
Earthing wire	---	46.1	---	105	---	---
End close terminal	---	45.7	---	150	---	---
Light objected surface 0.3m	---	65.4	---	90	---	---
Remark:						

	Type reference ..... :	GU10162C-4R	—
	Lamp used ..... :	GU10, 4x42W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	234.4V/176.4W	—
	Supply current (A) ..... :	0.753A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x168W=176.4W	—

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Clause	Requirement + Test	Result - Remark	Verdict

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

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(GU10)	---	221.2	---	250	---	---
Lampholder rim(GU10)	---	189.4	---	250	---	---
Internal wire to lampholder	---	149.3	---	180	---	---
Mounting surface	---	45.6	---	90	---	---
Terminal box	---	44.9	---	110	---	---
Earthing wire	---	49.3	---	105	---	---
End close terminal	---	46.5	---	150	---	---
Light objected surface 0.3m	---	56.3	---	90	---	---
Remark:						

	Type reference ..... :	CL272(D30)	—
	Lamp used ..... :	E27, 1x60W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	233.7V/63W	—
	Supply current (A) ..... :	0.267A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x60W=63W	—

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Clause	Requirement + Test	Result - Remark	Verdict

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

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(E27)	---	115.8	---	210	---	---
Lampholder rim(E27)	---	107.4	---	210	---	---
Lampholder thread(E27)	---	137.5	---	210	---	---
Input cable to lampholder	---	78.0	---	90	---	---
Mounting surface	---	28.1	---	90	---	---
Light objected surface 0.1m	---	37.5	---	90	---	---
Remark:						

	Type reference ..... :	P749A	—
	Lamp used ..... :	E14, 4x40W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	226.9V/168W	—
	Supply current (A) ..... :	0.741A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x160W=168W	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	---	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage ..... :	---	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Through wiring or looping-in wiring loaded by a current of A during the test .....:	---	—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(E14)	---	89.1	---	210	---	---
Lampholder rim(E14)	---	87.2	---	210	---	---
Lampholder thread(E14)	---	114.9	---	210	---	---
Internal wire to lampholder	---	65.3	---	180	---	---
Mounting surface	---	64.4	---	90	---	---
Terminal block	---	40.8	---	110	---	---
Internal wire(near terminal block)	---	40.9	---	90	---	---
End close terminal	---	41.1	---	150	---	---
Light objected surface 0.1m	---	40.4	---	90	---	---
Remark:						

	Type reference.....:	P634-4P	—
	Lamp used .....:	E14, 4x40W	—
	Lamp control gear used .....:	---	—
	Mounting position of luminaire .....:	As in normal use.	—
	Supply wattage (W) .....:	235.4V/168W	—
	Supply current (A).....:	0.714A	—
	Calculated power factor .....:	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode.....:	---	—
	- test 1: rated voltage .....:	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage .....:	1.05x160W=168W	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....:	---	—

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Clause	Requirement + Test	Result - Remark	Verdict

	- test 4: 1,1 times rated voltage or 1,05 times rated wattage ..... :	---	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	---	—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(E14)	---	124.0	---	210	---	---
Lampholder rim(E14)	---	145.3	---	210	---	---
Lampholder thread(E14)	---	142.3	---	210	---	---
Internal wire to lampholder	---	79.5	---	90	---	---
Mounting surface	---	26.2	---	90	---	---
Terminal block	---	28.7	---	110	---	---
End close terminal	---	27.8	---	150	---	---
Light objected surface 0.1m	---	40.0	---	90	---	---
External wire	---	44.0	---	90	---	---
Remark:						

	Type reference ..... :	WL314	—
	Lamp used ..... :	E27, 1x60W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	237.7V/63W	—
	Supply current (A) ..... :	0.265A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x60W=63W	—

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Clause	Requirement + Test	Result - Remark	Verdict

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

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(E27)	---	100.7	---	210	---	---
Lampholder rim(E27)	---	103.9	---	210	---	---
Lampholder thread(E27)	---	107.3	---	210	---	---
Input cable to lampholder	---	56.9	---	90	---	---
Mounting surface	---	37.2	---	90	---	---
Light objected surface 0.1m	---	29.4	---	90	---	---
Remark:						

	Type reference ..... :	WL443(L15)	—
	Lamp used ..... :	G9, 1x40W	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use.	—
	Supply wattage (W) ..... :	238.0V/42W	—
	Supply current (A) ..... :	0.178A	—
	Calculated power factor ..... :	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1.05x40W=42W	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	---	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage ..... :	---	—

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Clause	Requirement + Test	Result - Remark	Verdict

	Through wiring or looping-in wiring loaded by a current of A during the test .....:			----		—
temperature (°C) of part		Clause 12.4 – normal			Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(G9)	---	237.9	---	250	---	---
Lampholder rim(G9)	---	223.3	---	250	---	---
Internal wire to lampholder	---	121.2	---	180	---	---
Mounting surface	---	50.4	---	90	---	---
Terminal block	---	56.2	---	110	---	---
Earthing wire	---	55.6	---	105	---	---
Light objected surface 0.3m	---	29.1	---	90	---	---
Remark:						

	Type reference.....:	WL190	—
	Lamp used .....:	E27, 1x100W	—
	Lamp control gear used .....:	---	—
	Mounting position of luminaire .....:	As in normal use.	—
	Supply wattage (W) .....:	235.0V/105W	—
	Supply current (A).....:	0.448A	—
	Calculated power factor .....:	1.0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode.....:	---	—
	- test 1: rated voltage .....:	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage .....:	1.05x100W=105W	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....:	---	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage .....:	---	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....:	---	—

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Clause	Requirement + Test	Result - Remark	Verdict

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact(E27)	---	107.2	---	210	---	---
Lampholder rim(E27)	---	110.3	---	210	---	---
Lampholder thread(E27)	---	129.8	---	210	---	---
Internal wire to lampholder	---	70.9	---	90	---	---
Mounting surface	---	64.5	---	90	---	---
Terminal block	---	66.6	---	110	---	---
Internal wire(near terminal block)	---	67.0	---	90	---	---
Light objected surface 0.1m	---	27.9	---	90	---	---
Remark:						

	Type reference ..... :	P749A-4OVAL	—
	Lamp used ..... :	E14 4×40W tungsten filament lamp	—
	Lamp control gear used ..... :	---	—
	Mounting position of luminaire ..... :	As in normal use	—
	Supply wattage (W) ..... :	168,0W	—
	Supply current (A) ..... :	0,72A	—
	Calculated power factor ..... :	1,0	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	---	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage ..... :	1,05 times rated wattage: 168,0W /234,5V	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	---	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage ..... :	---	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	---	—

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

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Lampholder contact	---	83,9	---	210	---	---
Lampholder thread	---	106,1	---	210	---	---
Lampholder rim	---	82,0	---	210	---	---
Internal wires to lampholder	---	55,1	---	180	---	---
Terminal block	---	41,6	---	110	---	---
Mounting surface	---	41,6	---	90	---	---
Lighting surface (0,1m)	---	60,0	---	90	---	---
Metal enclosure	---	41,3	---	Ref.	---	---
Remark:						

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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

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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
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples) .....:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples) .....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....:		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(15.6)	Terminals external wiring		N/A
	Terminal size and rating		N/A
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....:		N/A
	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A

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

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Attachment 1

IEC60598_2_1D - ATTACHMENT			
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 60598-1:2014

Annex Form No.....: EU_GD_IEC60598_2_1D

Annex Form Originator.....: OVE

Master Annex Form.....: 2014-11

	CENELEC COMMON MODIFICATIONS (EN)	P

1.5 (3)	**MARKING**		**N/A**
1.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package		N/A

1.6 (4)	**CONSTRUCTION**		**N/A**
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		P
	- without a means for connection to the supply		P
	- 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

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Attachment 1

IEC60598_2_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

1.12 (12)	**ENDURANCE TESTS AND THERMAL TESTS**		**N/A**
1.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring		N/A

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		**N/A**
(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, 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
	GB: Requirements according to United Kingdom Building Regulation		N/A

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Attachment 2

Clause	Requirement - Test	Verdict

EMF quick start (EN 62493:2010)		
1	Scope	--
	☒ General lighting equipment	--
	☐ Lighting part for general lighting of multi-function equipment	--
	☐ Independent auxiliaries exclusively for the use with lighting equipment	--
	☐ Others, please specify:	--
4	Limits	--
4.2	Lighting equipment, as described in the scope, complies with this standard if it fulfils all of the following requirements	N/A
4.3	Lighting equipment deemed to comply without testing Lighting equipment without electronic control gear is deemed to comply with the requirements of the standard without testing. All kind of ignitors, starters, switches, dimmers (including phase control units e.g. triac, GTO) and sensors are not considered as electronic control gear.	P

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