

### CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

### LVD TEST REPORT

TEST REPORT NUMBER: CGZ3140307-00564-L





CTS (Guangzhou) Testing Service Technology Co., Ltd.
GZ test site: A101, No.65, Zhuji Road, Tianhe District,
Guangzhou, Guangdong, China







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### 1 General Information

#### 1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification (only telecommunication products).

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

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1.2 Tester

Tested by:

28 March 2014 **Kate Zhang** 

Date Name Signature

Reviewed by:

**Rock Weng** 28 March 2014

Date Signature Name

Approved by:

28 March 2014 Jun Yang

Signature Date Name

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### 1.3 Testing laboratory

#### 1.3.1 Location

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Guangzhou, Guangdong, China Telephone: +86-20-85543113 Telefax: +86-20-38780406

#### 1.3.2 Test location, where different from CTS:

 Name:
 ./.

 Street:
 ./.

 Town:
 ./.

 Country:
 ./.

 Telephone:
 ./.

 Fax:
 ./.

 Teletex:
 ./.

#### 1.4 Client details

#### 1.4.1 Details of applicant

Name : ZhongShan ZAWA Lighting Co., Ltd.

Street : No.13, LeFeng Six Road,

Town : HengLan Town, ZhongShan, GuangDong,

Country : China

Telephone : +86-0760-22537709 Fax : +86-0760-22537709

Teletex : ./.

Contact : YinWu Telephone : ./.

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1.4.2 Details of manufacturer

Name : ZhongShan ZAWA Lighting Co., Ltd.

Street : No.13, LeFeng Six Road,

Town : HengLan Town, ZhongShan, GuangDong,

Country : China

Telephone : +86-0760-22537709 Fax : +86-0760-22537709

Teletex : ./.

Contact : YinWu Telephone : ./.

1.4.3 Details of factory

Name : ZhongShan ZAWA Lighting Co., Ltd.

Street : No.13, LeFeng Six Road,

Town : HengLan Town, ZhongShan, GuangDong,

Country : China

1.4.4 Dates of application

Date of receipt of application : 10 March 2014

Date of receipt of test item : 10 March 2014

Date of test : 10 March - 28 March 2014

1.5 Test item Description

1.5.1 Description of test item

Type of product : Fixed Lamp

Model/Type reference : MX11047-4H

Serial number : ---

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#### 1.5.2 Test item particulars

Test item:	Fixed Lamp		
Trade Mark:	<b></b>		
Protection Class:	□ Class II; □ Class III.		
Rated Voltage(Range):	220-240V~		
Rated Frequency:	□ 50Hz; □ 60Hz; ⋈ 50/60Hz; □ DC; □ Other:		
Rated Wattage::	4 imesMax 50W		
IP Number:			
Supply Connection:	$\square$ Type X; $\square$ Type Y; $\square$ Type Z; $\square$ Pins; $\square$ Appliance inlet;		
	□ Terminals; □ connecting leads (tails); □ Adaptors;		
	☐ connectors; ☐ Other:		
Lamp(s) type:	☐ Tungsten filament lamps; ☐ Tungsten halogen lamps;		
	□ Discharge lamps; □ Metal halide lamps;		
	☐ High-pressure sodium vapour lamps;		
	☐ Single-capped fluorescent lamps ;		
	□ Double-capped fluorescent lamps;		
	☐ Self-ballasted lamps; ☐ Other: LED Lamp		
Luminaire Mobility::			
	☐ Recessed Luminaire; ☐ Track-mounted Luminaires;		
	☐ Semi-luminaires; ☐ Other:		
Mass of Equipment:	4,3 kg.		
Instructions language::	☑ English; ☐ French; ☐ Other:		
Mounting condition:	□ Luminaires suitable for direct mounting on normally flammable		
	surfaces;		
Ambient Temperature	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;		
Ambient Temperature:	$t_a = 25$ °C		

(all informations was provided by the applicant or detected at the sample) Please see also attachment

#### **Test standards** 1.6

EN 60598-1: 2008 + A11: 2009

Luminaires — Part 1: General requirements and tests (IEC 60598-1: 2008 (Modified))

EN 60598-2-1: 1989

Luminaires-Part 2: Particular requirementssection 1:Fixed general purpose luminaries (IEC 60598-2-1: 1979 + A1: 1987)

EN 62493: 2010

Assessment of lighting equipment related to human exposure to electromagnetic fields

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### 2 Technical test

### 2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



### 2.2 Test environment

Temperature: 18 ... 25 °C

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Details of power supply: 220 ... 280 V, AC

Other parameters: ---

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#### **Conformity verification - Summary of inspection** 2.3

Clause	Summary of inspection	T	est resu	lt
		N.A.	Pass	Fail
3	Marking		$\boxtimes$	
4	Construction		$\boxtimes$	
5	External and internal wiring		$\boxtimes$	
7	Provisions for earthing		$\boxtimes$	
8	Protection against electric shock		$\boxtimes$	
9	Resistance to dust and moisture		$\boxtimes$	
10	Insulation resistance and electric strength		$\boxtimes$	
11	Creepage distances and clearances		$\boxtimes$	
12	Endurance tests and thermal tests		$\boxtimes$	
13	Resistance to heat, fire and tracking		$\boxtimes$	
14	Terminals	$\boxtimes$		
15	Screwless terminals and electrical connections	$\boxtimes$		
Annexes			$\boxtimes$	

Test case verdicts

N.A.: Test case does not apply to the test object Pass: Test item does meet the requirement Fail: Test item does not meet the requirement

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### 3 Test results basic standard(s)

### 3.1 Particulars: test item vs. Test requirements

IEC 60598-2-1 and/or EN 60598-2-1				
Part	Part 2: Particular requirements			
Section one	-Fixed general purpose luminaries			
Possible test case verdicts:				
- test case does not apply to the test object	N(N/A)			
- test object does meet the requirement	P(Pass)			
- test object does not meet the requirement	F(Fail)			
Test specification:				
Standard:	☐ IEC 60598-2-1: 1979 + A1:1987 used in conjunction with IEC 60598-1: 2008 ☐ EN 60598-2-1: 1989 used in conjunction with EN 60598-1: 2008 + A11: 2009			
Test procedure:	LVD DOC approval.			
Non-standard test method:	N/A			
Test Report Form No	IEC60598_2_1E			
Test Report Form(s) Originator:	Centre of Testing Service			
Master TRF	Dated Nov 2009			
Copyright blank test report	Centre of Testing Service			

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#### General remarks:

"(see remark #)" refers to a remark appended to the report.

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

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

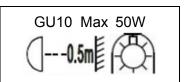
The test results presented in this report relate only to the object tested.

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#### Copy of marking plate:

Fixed Lamp
Model No.: MX11047-4H
220-240V~ 50/60Hz
GU10 4X Max 50W

ZhongShan ZAWA Lighting Co., Ltd.



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#### General requirements and results 3.2

	IEC 60598-2-1 and/or EN 6059	98-2-1	
Clause	Requirement - Test	Result	Verdict
1.2 (0)	GENERAL TEST REQUIREMENTS		Р
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		Р
1.4 (2.2)	Type of protection:	Class I	_
1.4 (2.3)	Degree of protection:	IP20	_
1.4 (2.4)	Luminaires suitable for direct mounting on normally flammable surfaces	Yes ⊠ No □	_
	Luminaires not 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		Р
1.5 (3.2)	Mandatory markings		Р
	Position of the marking		Р
	Format of symbols/text	Text=2mm,symbol=5mm	Р
1.5 (3.3)	Additional information		Р
<u> </u>	Language of instructions	English	Р
1.5 (3.3.1)	Combination luminaires		N
1.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	Р
1.5 (3.3.3)	Operating temperature		N
1.5 (3.3.4)	Symbol or warning notice		N
1.5 (3.3.5)	Wiring diagram		N
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N
1.5 (3.3.8)	Limitation for semi-luminaires		N
1.5 (3.3.9)	Power factor and supply current		N
1.5 (3.3.10)	Suitability for use indoors		Р
1.5 (3.3.11)	Luminaires with remote control		N

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1.5 (3.3.13)	Specifications of protective shields		N
1.5 (3.3.14)	Symbol for nature of supply	~	Р
1.5 (3.3.15)	Rated current of socket outlet		N
1.5 (3.3.16)	Rough service luminaire		N
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N
1.5 (3.3.19)	For luminaires which generate a protective conductor current greater than 10 mA and intended for permanent connection		N
1.5 (3.3.20)	Wall mounted and adjustable luminaires not intended to be mounted within arms reach		N
1.5 (3.4)	Test with water		Р
	Test with hexane		Р
	Legible after test		Р
	Label attached		Р

1.6 (4)	CONSTRUCTION		Р
1.6 (4.2)	Components replaceable without difficulty		Р
1.6 (4.3)	Wireways smooth and free from sharp edges		Р
1.6 (4.4)	Lampholders		Р
1.6 (4.4.1)	Integral lampholder		N
1.6 (4.4.2)	Wiring connection		N
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		Р
	- pressure test (N)		N
	- bending test (Nm)	GU10; 1,2 Nm	Р
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
1.6 (4.4.8)	Lamp connectors		N
1.6 (4.4.9)	Caps and bases correctly used		N
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II	No such parts	N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
1.6 (4.7)	Terminals and supply connections		Р

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1.6 (4.7.1)	Contact to metal parts	Р
1.6 (4.7.2)	Test 8 mm live conductor	Р
	Test 8 mm earth conductor	Р
1.6 (4.7.3)	Terminals for supply conductors	Р
1.6 (4.7.3.1)	Welded connections:	N
	- stranded or solid conductor No suc	h parts N
	- spot welding	N
	- welding between wires	N
	- Type Z attachment	N
	- mechanical test according to 15.8.2	N
	- electrical test according to 15.9	N
	- heat test according to 15.9.2.3 and 15.9.2.4	N
1.6 (4.7.4)	Terminals other than supply connection	Р
1.6 (4.7.5)	Heat-resistant wiring/sleeves	N
1.6 (4.7.6)	Multi-pole plug	N
	- test at 30 N	N
1.6 (4.8)	Switches:	N
	- adequate rating	N
	- adequate fixing	N
	- polarized supply	N
1.6 (4.9)	Insulating lining and sleeves	Р
1.6 (4.9.1)	Retainment	Р
	Method of fixing Reliably	y retained in position P
1.6 (4.9.2)	Insulated linings and sleeves	N
	a) & c) Insulation resistance and electric strength	N
	b) Ageing test. Temperature (°C)	N
1.6 (4.10)	Insulation of Class II luminaires	N
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	N
	Safe installation fixed luminaires	N
	Capacitors and switches	N
	Interference suppression capacitors according to IEC 60384-14	N
1.6 (4.10.2)	Assembly gaps:	N
	- not coincidental	N
	- no straight access with test probe	N
1.6 (4.10.3)	Retainment of insulation:	N
	- fixed	N
	- unable to be replaced; luminaire inoperative	N

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	- sleeves retained in position		N
	- lining in lampholder		N
1.6 (4.11)	Electrical connections		Р
1.6 (4.11.1)	Contact pressure		Р
1.6 (4.11.2)	Screws:		N
,	- self-tapping screws		N
	- thread-cutting screws		N
	- at least two self-tapping screws		N
1.6 (4.11.3)	Screw locking:		N
, ,	- spring washer		N
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts		Р
1.6 (4.11.5)	No contact to wood		Р
1.6 (4.11.6)	Electro-mechanical contact systems		N
1.6 (4.12)	Mechanical connections and glands		Р
1.6 (4.12.1)	Screws not made of soft metal		Р
	Screws of insulating material		N
	Torque test: torque (Nm); part	Screws fixed lampholder; 0,5Nm	Р
	Torque test: torque (Nm); part		N
	Torque test: torque (Nm); part		N
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		Р
1.6 (4.12.4)	Locked connections:		Р
	- fixed arms; torque (Nm)	2,5Nm	Р
	- lampholder; torque (Nm)	GU10; 1,2 Nm	Р
	- push-button switches; torque 0,8 Nm		N
1.6 (4.12.5)	Screwed glands; force (N)		N
1.6 (4.13)	Mechanical strength		Р
1.6 (4.13.1)	Impact tests:		Р
	- fragile parts; energy (Nm)		N
	- other parts; energy (Nm)	Body, 0,35Nm	Р
	1) live parts		Р
	2) linings		N
	3) protection		Р
	4) covers		Р
1.6 (4.13.3)	Straight test finger		Р
1.6 (4.13.4)	Rough service luminaires		N
	- IP54 or higher		N
	a) fixed		N
		•	•

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	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
1.6 (4.13.6)	Tumbling barrel		N
1.6 (4.14)	Suspensions and adjusting devices		Р
1.6 (4.14.1)	Mechanical load:		Р
(-)	A) Four times the weight	4 x 4,3kg=17,2kg	Р
	B) torque 2,5 Nm		Р
	C) bracket arm; bending moment (Nm)		N
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N
	metal rod. diameter (mm)		N
1.6 (4.14.2)	Load to flexible cable		N
	Mass (kg)		N
	Stress in conductors (N/mm²)		N
	Mass (kg) of semi-luminaire		N
	Bending moment (Nm) of semi-luminaire		N
1.6 (4.14.3. a)	Adjusting devices:		N
	- flexing test; number of cycles		N
	- strands broken		N
	- electric strength test afterwards		N
1.6 (4.14.3 b)	Luminaires with a means of adjustment intended to be installed within arms reach, shall allow the operation of its intended function without impairing the stability of the luminaire or causing deformation of any part of the construction, nor cause injury due to temperatures above those specified in Table 12.1.		N
1.6 (4.14.3 c)	For luminaires intended to be mounted within arms reach, the space surrounding any means of adjustment, except the light beam aperture, up to 5 cm away from the means of adjustment in any direction, shall comply with the temperature limits for the means of adjustment, as specified in Table 12.1.		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
1.6 (4.14.5)	Guide pulleys		N
1.6 (4.14.6)	Strain on socket-outlets		N
1.6 (4.15)	Flammable materials:		Р

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a) construction				
- screen withstanding test of 13.3.1 N - screen dimensions N - no fiercely burning material P - thermal protection N - electronic circuits exempted N - electronic circuits exempted N  1.6 (4.15.2) Luminaires made of thermoplastic material with lamp control gear N  a) construction N  b) temperature sensing control N  c) surface temperature N  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 - spacing 35 mm N - spacing 35 mm N - spacing 10 mm N  1.6 (4.16.2) Thermal protection: N - in lamp control gear N - external N - fixed position N - temperature marked lamp control gear N  1.6 (4.16.3) be so designed that it satisfies the test of 12.6 (see 12.6) N  1.6 (4.18) Resistance to corrosion: N  1.6 (4.18) Resistance to corrosion: N  1.6 (4.18) Ignitors compatible with ballast N  1.6 (4.19) Ignitors compatible with ballast N  1.6 (4.20) Rough service vibration N  1.6 (4.21) Protective shield: N  1.6 (4.21.3) No direct path N  1.6 (4.21.3) Impact test on shield N  1.6 (4.22.3) Attachments to lamps N  1.6 (4.23) Semi-luminaires comply Class II		- glow-wire test 650 °C		N
- screen dimensions		- spacing ≥ 30 mm		N
- no fiercely burning material - thermal protection - electronic circuits exempted N 1.6 (4.15.2) Luminaires made of thermoplastic material with lamp control gear N a) construction N) temperature sensing control C) surface temperature N No lamp control gear No		- screen withstanding test of 13.3.1		N
- thermal protection		- screen dimensions		N
- electronic circuits exempted  1.6 (4.15.2) Luminaires made of thermoplastic material with lamp control gear  a) construction  b) temperature sensing control  c) surface temperature  1.6 (4.16.1) 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:  - spacing 35 mm  - spacing 10 mm  N  1.6 (4.16.2) Thermal protection:  - in lamp control gear  - external  - fixed position - temperature marked lamp control gear  N  1.6 (4.16.3) be so designed that it satisfies the test of 12.6 (see 12.6) N  Clearance at least 5 mm  N  1.6 (4.18) Resistance to corrosion: N  1.6 (4.18.1) - rust-resistance N  N  1.6 (4.18.2) - season cracking in copper N  1.6 (4.19.1) Rough service with ablast N  1.6 (4.21) Protective shield: N  N  1.6 (4.21) Shield fitted N  N  1.6 (4.21.3) No direct path N  Indic (4.22.3) Semi-luminaires comply Class II		- no fiercely burning material		Р
1.6 (4.15.2)   Luminaires made of thermoplastic material with lamp control gear   N		- thermal protection		N
a) construction		- electronic circuits exempted		N
b) temperature sensing control   N	1.6 (4.15.2)	Luminaires made of thermoplastic material with lar	np control gear	N
C) surface temperature		a) construction		N
1.6 (4.16)   Luminaires for mounting on normally flammable surfaces   P		b) temperature sensing control		N
No lamp control gear   (compliance with Section 12)   P		c) surface temperature		N
1.6 (4.16.1)       Lamp control gear spacing:       N         - spacing 35 mm       N         - spacing 10 mm       N         1.6 (4.16.2)       Thermal protection:       N         - in lamp control gear       N         - external       N         - fixed position       N         - temperature marked lamp control gear       N         1.6 (4.16.3)       be so designed that it satisfies the test of 12.6 (see 12.6)       N         1.6 (4.17)       Drain holes       N         Clearance at least 5 mm       N       N         1.6 (4.18)       Resistance to corrosion:       N         1.6 (4.18.1)       - rust-resistance       N         1.6 (4.18.2)       - season cracking in copper       N         1.6 (4.18.3)       - corrosion of aluminium       N         1.6 (4.19)       Ignitors compatible with ballast       N         1.6 (4.21)       Rough service vibration       N         1.6 (4.21)       Protective shield:       N         1.6 (4.21)       Shield fitted       N         1.6 (4.21.3)       No direct path       N         1.6 (4.21.4)       Impact test on shield       N         1.6 (4.22)       Attachments to lamps	1.6 (4.16)	Luminaires for mounting on normally flammable su	ırfaces	Р
- spacing 35 mm		No lamp control gear	(compliance with Section 12)	Р
- spacing 10 mm	1.6 (4.16.1)	Lamp control gear spacing:		N
1.6 (4.16.2)   Thermal protection:		- spacing 35 mm		N
- in lamp control gear - external - fixed position - temperature marked lamp control gear N 1.6 (4.16.3) be so designed that it satisfies the test of 12.6 (see 12.6) N 1.6 (4.17) Drain holes N Clearance at least 5 mm N 1.6 (4.18) Resistance to corrosion: N 1.6 (4.18.1) - rust-resistance N 1.6 (4.18.2) - season cracking in copper N 1.6 (4.18.3) - corrosion of aluminium N 1.6 (4.19) Ignitors compatible with ballast N 1.6 (4.20) Rough service vibration N 1.6 (4.21.1) Shield fitted N 1.6 (4.21.2) Particles from a shattering lamp not impair safety N 1.6 (4.21.3) No direct path N 1.6 (4.22) Attachments to lamps N 1.6 (4.23) Semi-luminaires comply Class II		- spacing 10 mm		N
- external	1.6 (4.16.2)	Thermal protection:		N
- fixed position         N           - temperature marked lamp control gear         N           1.6 (4.16.3)         be so designed that it satisfies the test of 12.6         (see 12.6)         N           1.6 (4.17)         Drain holes         N           Clearance at least 5 mm         N         N           1.6 (4.18)         Resistance to corrosion:         N           1.6 (4.18.1)         - rust-resistance         N           1.6 (4.18.2)         - season cracking in copper         N           1.6 (4.18.3)         - corrosion of aluminium         N           1.6 (4.19)         Ignitors compatible with ballast         N           1.6 (4.20)         Rough service vibration         N           1.6 (4.21)         Protective shield:         N           1.6 (4.21.1)         Shield fitted         N           1.6 (4.21.2)         Particles from a shattering lamp not impair safety         N           1.6 (4.21.3)         No direct path         N           1.6 (4.21.4)         Impact test on shield         N           Glow-wire test on lamp compartment         N           1.6 (4.22)         Attachments to lamps         N           1.6 (4.23)         Semi-luminaires comply Class II         N		- in lamp control gear		N
- temperature marked lamp control gear  1.6 (4.16.3) be so designed that it satisfies the test of 12.6 (see 12.6) N  1.6 (4.17) Drain holes N  Clearance at least 5 mm N  1.6 (4.18) Resistance to corrosion: N  1.6 (4.18.1) - rust-resistance N  1.6 (4.18.2) - season cracking in copper N  1.6 (4.18.3) - corrosion of aluminium N  1.6 (4.19) Ignitors compatible with ballast N  1.6 (4.20) Rough service vibration N  1.6 (4.21) Protective shield: N  1.6 (4.21.1) Shield fitted N  1.6 (4.21.2) Particles from a shattering lamp not impair safety N  1.6 (4.21.3) No direct path N  1.6 (4.21.4) Impact test on shield N  Glow-wire test on lamp compartment N  1.6 (4.22) Attachments to lamps N  1.6 (4.23) Semi-luminaires comply Class II		- external		N
1.6 (4.16.3)         be so designed that it satisfies the test of 12.6         (see 12.6)         N           1.6 (4.17)         Drain holes         N           Clearance at least 5 mm         N           1.6 (4.18)         Resistance to corrosion:         N           1.6 (4.18.1)         - rust-resistance         N           1.6 (4.18.2)         - season cracking in copper         N           1.6 (4.18.3)         - corrosion of aluminium         N           1.6 (4.19)         Ignitors compatible with ballast         N           1.6 (4.20)         Rough service vibration         N           1.6 (4.21)         Protective shield:         N           1.6 (4.21.1)         Shield fitted         N           1.6 (4.21.2)         Particles from a shattering lamp not impair safety         N           1.6 (4.21.3)         No direct path         N           1.6 (4.21.4)         Impact test on shield         N           Glow-wire test on lamp compartment         N           1.6 (4.22)         Attachments to lamps         N           1.6 (4.23)         Semi-luminaires comply Class II         N		- fixed position		N
1.6 (4.17)         Drain holes         N           Clearance at least 5 mm         N           1.6 (4.18)         Resistance to corrosion:         N           1.6 (4.18.1)         - rust-resistance         N           1.6 (4.18.2)         - season cracking in copper         N           1.6 (4.18.3)         - corrosion of aluminium         N           1.6 (4.19)         Ignitors compatible with ballast         N           1.6 (4.20)         Rough service vibration         N           1.6 (4.21)         Protective shield:         N           1.6 (4.21.1)         Shield fitted         N           1.6 (4.21.2)         Particles from a shattering lamp not impair safety         N           1.6 (4.21.3)         No direct path         N           1.6 (4.21.4)         Impact test on shield         N           Glow-wire test on lamp compartment         N           1.6 (4.22)         Attachments to lamps         N           1.6 (4.23)         Semi-luminaires comply Class II         N		- temperature marked lamp control gear		N
Clearance at least 5 mm	1.6 (4.16.3)	be so designed that it satisfies the test of 12.6	(see 12.6)	N
1.6 (4.18)       Resistance to corrosion:       N         1.6 (4.18.1)       - rust-resistance       N         1.6 (4.18.2)       - season cracking in copper       N         1.6 (4.18.3)       - corrosion of aluminium       N         1.6 (4.19)       Ignitors compatible with ballast       N         1.6 (4.20)       Rough service vibration       N         1.6 (4.21)       Protective shield:       N         1.6 (4.21.1)       Shield fitted       N         1.6 (4.21.2)       Particles from a shattering lamp not impair safety       N         1.6 (4.21.3)       No direct path       N         1.6 (4.21.4)       Impact test on shield       N         Glow-wire test on lamp compartment       N         1.6 (4.22)       Attachments to lamps       N         1.6 (4.23)       Semi-luminaires comply Class II       N	1.6 (4.17)	Drain holes		N
1.6 (4.18.1)       - rust-resistance       N         1.6 (4.18.2)       - season cracking in copper       N         1.6 (4.18.3)       - corrosion of aluminium       N         1.6 (4.19)       Ignitors compatible with ballast       N         1.6 (4.20)       Rough service vibration       N         1.6 (4.21)       Protective shield:       N         1.6 (4.21.1)       Shield fitted       N         1.6 (4.21.2)       Particles from a shattering lamp not impair safety       N         1.6 (4.21.3)       No direct path       N         1.6 (4.21.4)       Impact test on shield       N         Glow-wire test on lamp compartment       N         1.6 (4.22)       Attachments to lamps       N         1.6 (4.23)       Semi-luminaires comply Class II       N		Clearance at least 5 mm		N
1.6 (4.18.2) - season cracking in copper  1.6 (4.18.3) - corrosion of aluminium  N  1.6 (4.19) Ignitors compatible with ballast  N  1.6 (4.20) Rough service vibration  N  1.6 (4.21) Protective shield:  N  1.6 (4.21.1) Shield fitted  N  1.6 (4.21.2) Particles from a shattering lamp not impair safety  N  1.6 (4.21.3) No direct path  N  Individual test on shield  R  Glow-wire test on lamp compartment  N  N  1.6 (4.22) Attachments to lamps  N  Semi-luminaires comply Class II	1.6 (4.18)	Resistance to corrosion:		N
1.6 (4.18.3) - corrosion of aluminium  1.6 (4.19) Ignitors compatible with ballast  1.6 (4.20) Rough service vibration  1.6 (4.21) Protective shield:  1.6 (4.21.1) Shield fitted  1.6 (4.21.2) Particles from a shattering lamp not impair safety  1.6 (4.21.3) No direct path  1.6 (4.21.4) Impact test on shield  Clow-wire test on lamp compartment  1.6 (4.22) Attachments to lamps  N  1.6 (4.23) Semi-luminaires comply Class II	1.6 (4.18.1)	- rust-resistance		N
1.6 (4.19) Ignitors compatible with ballast  1.6 (4.20) Rough service vibration  1.6 (4.21) Protective shield:  1.6 (4.21.1) Shield fitted  1.6 (4.21.2) Particles from a shattering lamp not impair safety  1.6 (4.21.3) No direct path  1.6 (4.21.4) Impact test on shield  Glow-wire test on lamp compartment  1.6 (4.22) Attachments to lamps  1.6 (4.23) Semi-luminaires comply Class II  N	1.6 (4.18.2)	- season cracking in copper		N
1.6 (4.20) Rough service vibration N 1.6 (4.21) Protective shield: N 1.6 (4.21.1) Shield fitted N 1.6 (4.21.2) Particles from a shattering lamp not impair safety N 1.6 (4.21.3) No direct path N 1.6 (4.21.4) Impact test on shield N Glow-wire test on lamp compartment N 1.6 (4.22) Attachments to lamps N 1.6 (4.23) Semi-luminaires comply Class II	1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.21) Protective shield:  1.6 (4.21.1) Shield fitted  1.6 (4.21.2) Particles from a shattering lamp not impair safety  1.6 (4.21.3) No direct path  1.6 (4.21.4) Impact test on shield  Glow-wire test on lamp compartment  N  1.6 (4.22) Attachments to lamps  N  1.6 (4.23) Semi-luminaires comply Class II	1.6 (4.19)	Ignitors compatible with ballast		N
1.6 (4.21.1) Shield fitted  1.6 (4.21.2) Particles from a shattering lamp not impair safety  1.6 (4.21.3) No direct path  1.6 (4.21.4) Impact test on shield  Glow-wire test on lamp compartment  N  1.6 (4.22) Attachments to lamps  N  1.6 (4.23) Semi-luminaires comply Class II	1.6 (4.20)	Rough service vibration		N
1.6 (4.21.2) Particles from a shattering lamp not impair safety 1.6 (4.21.3) No direct path 1.6 (4.21.4) Impact test on shield Clow-wire test on lamp compartment N 1.6 (4.22) Attachments to lamps N 1.6 (4.23) Semi-luminaires comply Class II	1.6 (4.21)	Protective shield:		N
1.6 (4.21.3)         No direct path         N           1.6 (4.21.4)         Impact test on shield         N           Glow-wire test on lamp compartment         N           1.6 (4.22)         Attachments to lamps         N           1.6 (4.23)         Semi-luminaires comply Class II         N	1.6 (4.21.1)	Shield fitted		N
1.6 (4.21.4) Impact test on shield N Glow-wire test on lamp compartment N 1.6 (4.22) Attachments to lamps N 1.6 (4.23) Semi-luminaires comply Class II N	1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
Glow-wire test on lamp compartment N  1.6 (4.22) Attachments to lamps N  1.6 (4.23) Semi-luminaires comply Class II N	1.6 (4.21.3)	No direct path		N
1.6 (4.22) Attachments to lamps N 1.6 (4.23) Semi-luminaires comply Class II N	1.6 (4.21.4)	Impact test on shield		N
1.6 (4.23) Semi-luminaires comply Class II N		Glow-wire test on lamp compartment		N
	1.6 (4.22)	Attachments to lamps		N
1.6 (4.24) UV radiation, metal halide lamps N	1.6 (4.23)	Semi-luminaires comply Class II		N
	1.6 (4.24)	UV radiation, metal halide lamps		N

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#### **CENTRE OF TESTING SERVICE**

1.6 (4.25)	No sharp point or edges	Р
1.6 (4.26)	Short-circuit protection:	N
1.6 (4.26.1)	Uninsulated accessible SELV parts	N
1.6 (4.26.2)	Short-circuit test	N
1.6 (4.26.3)	Test chain according to Figure 29	N
1.6 (4.27)	Terminal blocks with integrated screwless earthing contacts	N

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		Р
	Working voltage (V)	240V~	_
	Voltage form	Sinusoidal 🖂	
		Non-sinusoidal	
	PTI	< 600 ⊠ ≥ 600 □	
	Rated pulse voltage (kV)		_
	(1) Current-carrying parts of different polarity: cr	Cr>2,5mm,Cl>1,5mm	Р
	(mm); cl (mm)	(limit:Cr/Cl:2,5/1,5mm)	
	(2) Current-carrying parts and accessible parts: cr	Cr>2,5mm,Cl>1,5mm	Р
	(mm); cl (mm)	(limit:Cr/Cl:2,5/1,5mm)	
	(3) Parts becoming live due to breakdown of basic insulation and metal parts:		N
	cr (mm); cl (mm)		
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm)		N
	(5) Not used		_
	(6) Current-carrying parts and supporting surface:	Cr>2,5mm,Cl>1,5mm	Р
	cr (mm); cl (mm)	(limit:Cr/Cl:2,5/1,5mm)	

1.8 (7)	PROVISION FOR EARTHING		Р
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		Р
	Metal parts in contact with supporting surface		Р
	Resistance < 0,5 $\Omega$	0,084Ω	Р
	Two self-tapping screws used		N
	Thread-forming screws		N
	Thread-forming screw used in a grove		N
	Earth makes contact first		Р
	For terminal blocks with integrated screwless earthing contacts, the additional tests of Annex V are to be applied		N

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#### **CENTRE OF TESTING SERVICE**

1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		N
1.8 (7.2.4)	Locking of clamping means		Р
	Compliance with 4.7.3		Р
	For terminal blocks with integrated screwless earthing contacts, the additional tests of Annex V apply		N
1.8 (7.2.5)	Earth terminal integral part of connector socket		N
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		Р
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		Р
1.8 (7.2.8)	Material of earth terminal		Р
	Contact surface bare metal		Р
1.8 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
1.8 (7.2.11)	Earthing core coloured green-yellow		Р
	Length of earth conductor		N
1.9 (14)	SCREW TERMINALS		N
	Separately approved; component list	(see Annex 1)	Р
	Part of the luminaire	(see Annex 3)	N

1.9 (15)	SCREWLESS TERMINALS		N
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 4)	N
(-)	Springtype screwless terminals of the Type b shall not be used		N

1.10 (5)	EXTERNAL AND INTERNAL WIRING		Р
1.10 (5.2)	Supply connection and external wiring	Supply connection and external wiring	
1.10 (5.2.1)	Means of connection	Terminal	Р
	- devices for the connection of luminaires		N
	- plugs for engagement with socket-outlets		N
	- terminal block specified		Р
	- connecting leads and elevant information provided (EN)		N
	- supply cords		N
	- adapters		N
	- appliance inlets		N
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N

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#### **CENTRE OF TESTING SERVICE**

1.10 (5.2.2)	Type of cable:	N
	Cables equal to HD 21 S2 or HD22 S2 (EN)	N
	Nominal cross-sectional area (mm²)	N
1.10 (5.2.3)	Type of attachment, X, Y or Z	N
1.10 (5.2.5)	Type Z not connected to screws	N
1.10 (5.2.6)	Cable entries:	N
	- suitable for introduction	N
	- adequate degree of protection	N
1.10 (5.2.7)	Cable entries through rigid material have rounded edges	N
1.10 (5.2.8)	Insulating bushings:	Ν
	- suitably fixed	N
	- material in bushings	N
	- material not likely to deteriorate	N
	- tubes or guards made of insulating material	N
1.10 (5.2.9)	Locking of screwed bushings	N
1.10 (5.2.10)	Cord anchorage:	N
	- covering protected from abrasion	N
	- clear how to be effective	N
	- no mechanical or thermal stress	N
	- no tying of cables into knots etc.	N
	- insulating material or lining	N
1.10 (5.2.10.1)	Cord anchorage for type X attachment:	N
	a) at least one part fixed	N
	b) types of cable	N
	c) no damaging of the cable	N
	d) whole cable can be mounted	N
	e) no touching of clamping screws	N
	f) metal screw not directly on cable	N
	g) replacement without special tool	N
	Glands not used as anchorage	N
	Labyrinth type anchorages	N
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	N
1.10 (5.2.10.3)	Tests:	N
	- impossible to push cable; unsafe	N
	- pull test: 25 times; pull (N)	N
	- torque test: torque (Nm)	N

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#### **CENTRE OF TESTING SERVICE**

		<u> </u>	
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
1.10 (5.2.11)			N
1.10 (5.2.12)	Looping-in terminals		N
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.10 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		N
1.10 (5.2.17)	Non standardized interconnecting cables properly assembled		N
1.10 (5.2.18)	Used plug in accordance with:		N
	- IEC 60083		N
	- other standard		N
1.10 (5.3)	Internal wiring		Р
1.10 (5.3.1)	Internal wiring of suitable size and type		Р
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A)		N
	- temperatures:	(see Annex 2)	N
	Green-yellow for earth only		Р
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		Р
	Cross-sectional area (mm²):	0,5 mm²	Р
	Insulation thickness		Р
	Extra insulation added where necessary		N
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal	current-limiting device	N
	Adequate cross-sectional area and insulation thickness		N
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N
1.10 (5.3.1.4)	Conductors without insulation		N
1.10 (5.3.1.5)	SELV current-carrying parts		N
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N

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#### **CENTRE OF TESTING SERVICE**

1.10 (5.3.2)	Sharp edges etc.	Р
	No moving parts of switches etc.	N
	Joints, raising/lowering devices	N
	Telescopic tubes etc.	N
	No twisting over 360°	Р
1.10 (5.3.3)	Insulating bushings:	N
	- suitable fixed	N
	- material in bushings	N
	- material not likely to deteriorate	N
	- cables with protective sheath	N
1.10 (5.3.4)	Joints and junctions effectively insulated	Р
1.10 (5.3.5)	Strain on internal wiring	N
1.10 (5.3.6)	Wire carriers	N
1.10 (5.3.7)	Wire ends not tinned	Р
	Wire ends tinned: no cold flow	N

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK	Р
1.11 (8.2.1)	Live parts not accessible	Р
	Basic insulated parts not used on the outer surface without appropriate protection	Р
	No access to live parts with the standard test finger is permitted	Р
	Lampholders and starterholders shall comply to the electrical strength test and creepage distance and clearance requirements for double or reinforced insulation	Р
	Basic insulation may be accessible when the luminaire is opened for lamp or starter replacement	N
	Component comply with the relevant requirements applied to an independent component	Р
	Double-ended tungsten filament lamp	N
	Insulation lacquer not reliable	N
	Double-ended high pressure discharge lamp	N
	Relevant warning according to 3.2.18 fitted to the luminaire	N
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position	N
1.11 (8.2.3 a)	For protection against electric shock:	N
	- basic insulated metal parts not accessible during starter or lamp replacement	N
	- basic insulation not accessible other than during starter or lamp replacement	N

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	- glass protective shields not used as supplementary in	sulation	N
1.11 (8.2.3 b)	Class I luminaire with BC lampholder		N
1.11 (8.2.3 c)	Class III luminaires may have exposed current carrying parts in the SELV circuit under the following conditions		N
	Class III luminaires are accepted only for connection to a SELV source		N
1.11 (8.2.4)	Portable luminaire:		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		Р
1.11 (8.2.6)	Covers reliably secured		Р
1.11 (8.2.7)	Discharging of capacitors ≥ 0,5 μF		N
	Portable plug connected luminaire with capacitor		N
	Other plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		Р
1.12.1 (-)	The housing temperatures shall not exceed		Р
1.12 (12.3)	Endurance test:		Р
	- mounting-position	As in normal used	_
	- test temperature (°C)	35°C	_
	- total duration (h)	240h	_
	- supply voltage: Un factor; calculated voltage (V)	240,1V (1,05 times voltage at which the rated wattage of the lamp is obtained)	_
	- lamp used:	See data sheet	_
1.12 (12.3.2)	After endurance test:		Р
	- no part unserviceable		Р
	- luminaire not unsafe		Р
	- no damage to track system		N
	- marking legible		Р
	- no cracks, deformation etc.		Р
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	Р
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		_

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	- case of abnormal conditions:		_
	- electronic lamp control gear		N
	- measured winding temperature (°C): at 1,1 Un		_
	- measured mounting surface temperature (°C) at 1,1 Un:		N
	- calculated mounting surface temperature (°C)		N
	- track-mounted luminaires		N
1.12 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions:		_
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C):		N
	- track-mounted luminaires		N
1.12 (12.7)	Thermal test (failed lamp control gear in plastic lumin	aires):	N
1.12 (12.7.1.1)	Test for luminaires incorporating fluorescent lamps ≤ 70 W		N
1.12 (12.7.1.1)	Through wiring or looping-in wiring loaded by a current of (A):		_
	- case of abnormal conditions		_
	- test for 4h at 1.1 Un:		N
	If more than one ballast is used inside the luminaire		N
	- only one in fault condition, until ballast failure occurs, test voltage		N
	Following the test		
	- the components have been retained in place		N
	- Parts of the luminaire enclosure continue to protect live parts against access with the standard test finger		N
1.12 (12.7.1.2)	Test for luminaires with discharge lamps, fluorescent lamps >70 W, transformers >10 VA		_
1.12 (12.7.1.2)	Through wiring or looping-in wiring loaded by a current of (A)		_
	- case of abnormal conditions		_
1.12 (12.7.1.2)	- measured winding temperature (°C): at 1,1 Un:		_
	- measured temperature of fixing point/ exposed part (°C): at 1,1 Un		N

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	- calculated temperature of fixing point/ exposed part (°C)	N
	The thermoplastic material is then subjected to the ball pressure test as described in 13.2.1 at the estimated temperature determined by linear regression, but not less than 75 °C.	_
	- part tested; temperature (°C):	N
	- part tested; temperature (°C):	N
1.12 (12.7.1.3)	Test for luminaires with short circuit proof transformers ≤ 10 VA	N
1.12 (12.7.1.3)	Through wiring or looping-in wiring loaded by a current of (A)	_
	- case of abnormal conditions	_
	Following the test	_
	- Parts of the luminaire enclosure continue to protect live parts against access with the standard test finger	N
1.12 (12.7.2)	Temperature sensing control	N
	- thermal link	N
	- manual reset cut-out	N
	- auto reset cut-out	N
	- measured temperature of fixing point/ exposed part (°C):	N

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		Р
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		Р
	- classification according to IP	IP 20	_
	- mounting position during test	As in normal used	
	- fixing screws tightened; torque (Nm)		
	- tests according to clauses	Clause 9.2.0 of EN 60598-1	
	- electric strength test afterwards		Р
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	d) ii) For luminaires with drain holes – no hazardous water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		Р
	f) no entry into enclosure (IP 3X and IP 4X)		N

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	f) no contact with live parts (IP 3X and IP 4X)		N
	g) no trace of water on any part of a lamp		N
	h) no damage		N
1.13 (9.3)	Humidity test 48 h	30℃, 95% R.H.	Р

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRI	ENGTH	Р
1.14 (10.2.1)	Insulation resistance test		Р
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		_
	Insulation resistance (M $\Omega$ )		_
	SELV:		N
	- between current-carrying parts of different polarity		N
	:		
	- between current-carrying parts and mounting surface		N
	- between current-carrying parts and metal parts of the luminaire		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts:		N
	- insulating bushings as described in Section 5:		N
	Other than SELV:		Р
	- between live parts of different polarity	>50 MΩ	Р
	- between live parts and mounting surface	>50 MΩ	Р
	- between live parts and metal parts	>50 MΩ	Р
	- between live parts of different polarity through action of a switch:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N
	- insulating bushings as described in Section 5:		N
1.14 (10.2.2)	Electric strength test		Р
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		Р
	SELV:		N
	- between current-carrying parts of different polarity		N
	- between current-carrying parts and mounting surface:		N

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	- between current-carrying parts and metal parts of the luminaire		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts:		N
	- insulating bushings as described in Section 5:		N
	Other than SELV:		Р
	- between live parts of different polarity	1480V/MIN	Р
	- between live parts and mounting surface	1480V/MIN	Р
	- between live parts and metal parts	1480V/MIN	Р
	- between live parts of different polarity through action of a switch:		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts:		N
	- insulating bushings as described in Section 5:		N
1.14 (10.3.1)	Touch current or protective conductor current and electric burn (mA)	0,09mA	Р

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		Р
1.15 (13.2.1)	Ball-pressure test:		Р
	- part tested; temperature (°C):	Closed-end terminal; 125°C; 1,1mm	Р
	- part tested; temperature (°C):	Terminal; 125°C; 1,0mm	Р
1.15 (13.3.1)	Needle flame test (10 s):		Р
	- part tested:	Closed-end terminal	Р
	- part tested:	Terminal	Р
1.15 (13.3.2)	Glow-wire test (650°C):		N
	- part tested:		N
	- part tested		N
1.15 (13.4.1)	Tracking test: part tested:		N

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#### Annex as stated in the standards 3.3

IEC 60598-2-1 and/or EN 60598-2-1				
Clause	Requirement - Test	Result	Verdict	

V	ANNEX V, Alternative thermal test for thermoplastic luminaires  Thermal test in regard to fault conditions in lamp controlgear or electronic devices without temperature sensing controls in thermoplastic luminaires for fluorescent lamps ≤ 70W	
V.1		
	Thermal test (failed lamp control gear in plastic luminaires):	N
	Through wiring or looping-in wiring loaded by a current of (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:	N
	- calculated temperature of fixing point/ exposed part (°C):	N

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	Р
(2.2)	Class 0 not accepted	Р
(3.3)	DK: power supply cord with label	N
	IT: warning label on Class 0 luminaire	N
(4.5.1)	DK: socket-outlets	N
(5.2.1)	CY, DK, FI, SE, GB: type of plug	N

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	N
(4 & 5)	FR: Shuttered socket-outlets 10/16A	N
(13.3)	DK: Needle flame test during 30 s	N
(13.3)	GB: Requirements according to United Kingdom Building Regulation	N
(13.3.2)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public or 960°C for luminaires in emergency exits	N

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#### 3.4 **Tables**

IEC 60598-2-1 and/or EN 60598-2-1			
Clause	Requirement - Test	Result	Verdict

ANNEX 1: components	Р	

object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity	
Terminal	В	Zhongshan Lianjin Metal & Electrical Appliances Co., Ltd.	EJE-2315	AC 250V, T100°C		VDE 40030009	
Lampholder	В	Yacht Electric Lighting Co.,Ltd	AT819	GU10 250V 2A T250℃		VDE 40020697	
Lampholder Alt.	D	Yarncin Lighting Technology Co.Ltd	YX509L	GU10 2A 250V T250		VDE 40017435	
Internal wire 1	В	Shenzhen Dongju Wire & Cable Co.,Ltd	H03VVH2-F	2×0,75mm <sup>2</sup>		VDE 129988	
Internal wire 1 Alt.	D	Shenzhen Dongju Wire & Cable Co.,Ltd	H03VVH2-F	2×0,5mm <sup>2</sup>		VDE 129988	
Internal wire 1 Alt.	D	Top Resources Co. Ltd.	H03VVH2-F	$2\times0,75$ mm <sup>2</sup> $2\times0,5$ mm <sup>2</sup>		VDE 096273	
Internal wire 1 Alt.	D	Zhongshan Henglan Boyi Electrical Appliance Factory	H03VVH2-F	2×0,75mm <sup>2</sup> 2×0,5mm <sup>2</sup>	VDE 40036714		
Internal wire 2	В	Guangzhou Feng Tai Electronic Co. Ltd.	FEP-101	0,5mm <sup>2</sup> 180 °C 300/500V		VDE 136964	
Internal wire 2 Alt.	D	Guangzhou Tang Yao Wires Co.,Ltd	TY 1989	300/500V 20AWG 180℃		VDE 135486	
Internal wire 2 Alt.	D	Yang Tai Wire&Cable Co.,Ltd	(N)6YAF	450/750V 20AWG 180℃		VDE 40002489	
Earthing wire	В	Zhongshan Henglan Boyi Electrical Applicance factory	H05V-K	1×0,75mm <sup>2</sup>		VDE 40036731	
Earthing wire Alt.	D	Lucky United Electric Wire & Cable Co.,Ltd	H03VH7-H	1 x 0,5 mm²		VDE 119693	

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Earthing wire Alt.	D	Jiangyin Haocheng Electrical Appliances Wire & Cable Co., Ltd.	H05S-K	1 x 0,75 mm²	 VDE 40017754
Closed-end terminal	С	Heavy Power Co., Ltd.	CE5 CE2		 UL E113650 Tested with appliance
Heat-shrinkable tube	С	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2	600V 125℃	 UL E214175 Tested with appliance
Heat-shrinkable tube Alt.	D	DONGGUAN SALIPT CO LTD	SALIPT S- 901-300	600 V; 125 °C; VW-1	 UL E209436 Tested with appliance

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

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	IEC 60598-2-1 and/or EN 60598-2-1							
Clause	Requirement - Test Result							
	ANNEX 2: temperature measurements, thermal t	ests of Section 12	Р					
	Type reference:	MX11047-4H						
	Lamp used:	GU10 4×50W, Tungsten halogen lamps	_					
	Lamp control gear used:		_					
	Mounting position of luminaire:	As in normal used	_					
	Supply wattage (W):	210W						
	Supply current (A)		_					
	Calculated power factor	1						
	Table: measured temperatures corrected for ta = 25	5°C:	Р					
	- abnormal operating mode:		_					
	- test 1: rated voltage		_					
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	238,3V (1,05 times rated wattage)	_					
	- 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	
Mounting surface		51,9		90			
Internal wiring 1		69,3		90			
Internal wiring 2		125,1		180			
Terminal		65,1		For cl. 13			
Closed-end terminal		68,3		For cl. 13			
Lampholder		151,7		250			

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	IEC 60598-2-1 and/or EN 605	598-2-1				
Clause	Requirement - Test Result					
	ANNEX 3: screw terminals (part of the luminaire)		N			
(14)	SCREW TERMINALS		N			
(14.2)	Type of terminal		_			
	Rated current (A)		_			
(14.3.2.1)	One or more conductors		N			
(14.3.2.2)	Special preparation		N			
(14.3.2.3)	Terminal size		N			
	Cross-sectional area (mm²)		N			
(14.3.3)	Conductor space (mm)		N			
(14.4)	Mechanical tests		N			
(14.4.1)	Minimum distance		N			
(14.4.2)	Cannot slip out		N			
(14.4.3)	Special preparation		N			
(14.4.4)	Nominal diameter of thread (metric ISO thread):		N			
	External wiring		N			
	No soft metal		N			
(14.4.5)	Corrosion		N			
(14.4.6)	Nominal diameter of thread (mm)		N			
	Torque (Nm)		N			
(14.4.7)	Between metal surfaces		N			
	Lug terminal		N			
	Mantle terminal		N			
	Pull test; pull (N)		N			
(14.4.8)	Without undue damage		N			

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	IEC 60598-2-1 and/or EN 60598	-2-1	
Clause	Requirement - Test	Result	Verdict
	ANNEX 4: screwless terminals (part of the luminaire	<u> </u>	N
	ANNEX 4. Serewiess terminals (part of the fullilland	·)	
(15)	SCREWLESS TERMINALS		N
(15.2)	Type of terminal		_
	Rated current (A):		_
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N
(15.3.6)	Clear connection method		N
(15.3.7)	Clamping independently		N
(15.3.8)	Fixed in position		N
(15.3.10)	Conductor size		N
	Type of conductor		N
(15.5.1)	Terminals internal wiring		N
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples):		N
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples):		N
	Insertion force not exceeding 50 N		N
(15.5.2)	Permanent connections: pull-off test (20 N)		N
(15.6)	Electrical tests		N
	Voltage drop (mV) after 1 h (4 samples):		N
	Voltage drop of two inseparable joints		N
	Number of cycles		_
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples):		N
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples):		N
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples):		N
	After ageing, voltage drop (mV) after 50th alt.  100th cycle (4 samples):		N
(15.7)	Terminals external wiring		N
	Terminal size and rating		N

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			IEC	60598-2	2-1 and/c	or EN 60	598-2-1				
Clause		Requirement - Test Result							Verdict		
(15.8.1)		st spring-ty ctions (4 sa				:					N
		st pin or tab				:					N
(15.9)	Contac	ct resistanc	e test								N
	Voltag	e drop (mV	) after 1	h							N
terminal		1	2	3	4	5	6	7	8	9	10
voltage dro	p (mV)										
		Voltage dro	p of two	insepara	ble joints	5					N
	Voltage drop after 10th alt. 25th cycle										
		Max. allowe	ed voltag	e drop (r	nV)	:					
terminal		1	2	3	4	5	6	7	8	9	10
voltage dro	p (mV)										
	Voltage drop after 50th alt. 100th cycle								N		
		Max. allowe	ed voltag	e drop (r	nV)	:					
terminal		1	2	3	4	5	6	7	8	9	10
voltage dro	· · · ·										
		Continued	ageing: \	oltage d	rop after	10th alt.	25th cyc	le			N
		Max. allowed voltage drop (mV)									
terminal	terminal		2	3	4	5	6	7	8	9	10
voltage dro	· · · ·										
	Continued ageing: voltage drop after 50th alt. 100th cycle							N			
	Max. allowed voltage drop (mV):										
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)											

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Att	acnments
$\boxtimes$	Photo document
	BOM
	CDF (critical data form)
	Copies of certificates of certified components
	Instruction manual
	Circuit diagram
	Explosion block
	Other if necessary
	and of raport
	end of report

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Type Designation: Fixed Lamp, MX11047-4H Report Number: CGZ3140307-00564-L



Figure 1 (External view -front)



Figure 2 (External view -base)



Attachment Page 2 of 3

Type Designation: Fixed Lamp, MX11047-4H Report Number: CGZ3140307-00564-L



Figure 3 (External view - top)

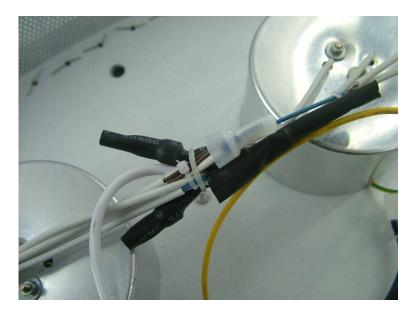


Figure 4 (Closed-end terminal)



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Type Designation: Fixed Lamp, MX11047-4H Report Number: CGZ3140307-00564-L

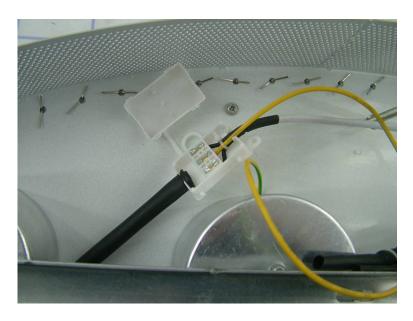


Figure 5 (Terminal)



Figure 6 (Lampholder)