

#### **TEST REPORT** IEC 60598-2-1 Luminaires

# Part 2: Particular requirements Section 1: Fixed general purpose luminaires

Report Number....: SHES160200076801

Date of issue ....:: 2016-05-18

Total number of pages.....

Name of Testing Laboratory SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. preparing the Report.....:

No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612

Shanghai CHINA

Applicant's name .....: Cixi Yuanpu Lighting Electric Co., Ltd.

Address .....: 555, Guanshen Road, Cidong Binhai Industry Zone, Cixi, Ningbo,

315300 Zhejiang, 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....: SGS CSTC

Non-standard test method....:

Test Report Form No. ....:: IEC60598 2 1D

Test Report Form(s) Originator ....: Intertek Semko AB

Master TRF .....: 2014-08

Copyright © 2014 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

#### General disclaimer:

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

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.





Test item description::	Fixed I	Fixed Luminaries (Absorb Dome Light)			
Trade Mark::					
Manufacturer:	Same	as applicant			
Model/Type reference::	YP315 YP323 YP313 YP321 YP311 YP325 YP315 YP323 YP313 YP322 YP312 YP321	58, YP5258, YP6258, YP7258, YP8258, YP258X; 58, YP5158, YP6158, YP7158, YP8158, YP158X; 56, YP5236, YP6236, YP7236, YP8236, YP236X; 56, YP5136, YP6136, YP7136, YP8136, YP136X; 18, YP5218, YP6218, YP7218, YP8218, YP218X; 18, YP5118, YP6118, YP7118, YP8118, YP118X; 54, YP5254, YP6254, YP7254, YP8254, YP9254, YP254X; 54, YP5154, YP6154, YP7154, YP8154, YP9154, YP154X; 55, YP5235, YP6235, YP7235, YP8235, YP9235, YP235X; 26, YP5135, YP6135, YP7135, YP8135, YP9135, YP135X; 27, YP5228, YP6228, YP7228, YP8228, YP9228, YP228X; 28, YP5128, YP6128, YP7128, YP8128, YP9128, YP128X; 14, YP5214, YP6214, YP7214, YP8214, YP9214, YP214X; 14, YP5114, YP6114, YP7114, YP8114, YP9114, YP114X;	· · · · · · · · · · · · · · · · · · ·		
Ratings:	258 se 236 se 218 se 254 se 235 se 228 se	240 V~; 50/60 Hz; IP65; Class I; ta: 50°C eries: 2 x 58 W; 158 series: 1 x 58 W; eries: 2 x 36 W; 136 series: 1 x 36 W; eries: 2 x 18 W; 118 series: 1 x 18 W; eries: 2 x 54 W; 154 series: 1 x 54 W; eries: 2 x 35 W; 135 series: 1 x 35 W; eries: 2 x 28 W; 128 series: 1 x 28 W; eries: 2 x 14 W; 114 series: 1 x 14 W			
Responsible Testing Laboratory (as a	applicat	ble), testing procedure and testing location(s):			
<b>—</b>					
☐ Testing Laboratory:		SGS-CSTC Standards Technical Services (Shanghai) CoLtd.	D.,		
Testing Laboratory:  Testing location/ address	:	Ltd.			
		Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District			
Testing location/ address		Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA			
Testing location/ address  Associated Testing Laboratory:	:	Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A			
Testing location/ address  Associated Testing Laboratory: Testing location/ address	):	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature)	):	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Steven BAO			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature)	: ):	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Steven BAO			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature) Approved by (name, function, signature)	): ure):	Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Henry HU			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature) Approved by (name, function, signature)  Testing procedure: TMP/CTF Sta	: ): ure): age 1:	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Henry HU  N/A			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature) Approved by (name, function, signature)  Testing procedure: TMP/CTF States	: ure): age 1:	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Henry HU  N/A  N/A			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature) Approved by (name, function, signature)  Testing procedure: TMP/CTF States In the state of th	age 1:	Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Henry HU  N/A  N/A  N/A  N/A			
Testing location/ address  Associated Testing Laboratory: Testing location/ address  Tested by (name, function, signature) Approved by (name, function, signature)  Testing procedure: TMP/CTF Statesting location/ address  Tested by (name, function, signature)	age 1:::	Ltd.  No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai CHINA  N/A  N/A  Steven BAO  Henry HU  N/A  N/A  N/A			



### Page 3 of 35

Report No. SHES160200076801

Test	ed by (name + signature):	N/A	
Witr	nessed by (name, function, signature):	N/A	
App	roved by (name, function, signature):	N/A	
	Testing procedure: SMT/CTF Stage 3 or 4:	N/A	
Test	ing location/ address:	N/A	
Test	ted by (name, function, signature):	N/A	
Witr	nessed by (name, function, signature):	N/A	
App	roved by (name, function, signature):	N/A	
Sup	ervised by (name, function, signature) :	N/A	
		•	



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

- 1. Attachment A European group differences according to EN 60598-2-1:1989 used in conjunction with EN 60598-1:2015 2 pages
- 2. Attachment B Photographs 5 pages

#### **Summary of testing:**

Tests performed (name of test and test clause):

Full clauses

**Testing location:** 

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai China

#### **Summary of compliance with National Differences:**

#### List of countries addressed

1. EU Group Differences: Yes

2. EU Special National Conditions: No

3. EU A-deviations: No

☐ The product fulfils the requirements of

EN 60598-2-1:1989 EN 60598-1:2015

#### Copy of marking plate:

YP258X

220 - 240 V~; 50/60 Hz;

lamp type: 2 x 58 W; IP65; ta: 50 °C





Cixi Yuanpu Lighting Electric Co., Ltd.

555, Guanshen Road, Cidong Binhai Industry Zone, Cixi, Ningbo, 315300 Zhejiang, China

Importer registered trade name or registered trade mark:

Importer name:

Importer postal address:

Note 1: other models are same as the above example except for model name.

Note 2: The height of graphical symbols shall not be less than 5 mm, and the height of letters and numerals shall not be less than 2 mm. The height of WEEE symbol shall not be less than 7 mm.

Note 3: As declared by the applicant, the importer's name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

Note 4: Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.



Test item particulars:
Classification of installation and use Fixed Luminaries (Absorb Dome Light)
Supply Connection Terminal block
<del></del>
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: 2016-02-02
Date (s) of performance of tests: 2016-02-02 to 2016-05-18
General remarks:
The test results presented in this report relate only to the object tested.  This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  "(see Enclosure #)" refers to additional information appended to the report.  "(see appended table)" refers to a table appended to the report.  Throughout this report a comma is used as the decimal separator.  This document is issued by the company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined there in. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.  Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 3 months. This document cannot be reproduced except in full, without prior approval of the company.  Throughout this report a comma / point is used as the decimal separator.
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided
When differences exist; they shall be identified in the General product information section.
Name and address of factory (ies): Same as Manufacturer





#### **General product information:**

The products are LED fixed luminaries with fluorescent lamps for outdoor use, intended for ceiling mounting.

Due to similar construction, YP258X is selected to complete tests after review.



#### Page 7 of 35

Report No. SHES160200076801

	r ago r or oo	110000111010112010020	0070001
	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
1.2 (0)	GENERAL TEST REQUIREMENTS		Р
1.2 (0.1)	Information for luminaire design considered:	Yes ⊠ No □	_
1.2 (0.3)	More sections applicable:	Yes □ No ⊠	
	1		
1.4 (2)	CLASSIFICATION		Р
1.4 (2.2)	Type of protection:	Class I	
1.4 (2.3)	Degree of protection:	IP 65	_
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		Р
1.5 (3.2)	Mandatory markings		Р
	Position of the marking		Р
	Format of symbols/text		Р
1.5 (3.3)	Additional information		Р
	Language of instructions	English	Р
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz	50 Hz	Р
1.5 (3.3.3)	Operating temperature	ta: 50°C	Р
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		Р
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply	~	Р
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A



	Page 8 of 35	Report No. SHES	3160200076801
	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
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		Р
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		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		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
16(443)	Lampholder for end-to-end mounting		N/A

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/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		Р
	- pressure test (N)	30 N	_
	After test the lampholder comply with relevant standard sheets and show no damage		Р
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		_
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
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
	•		



### Page 9 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
1.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		Р
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 method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		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		Р
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves	•	N/A
1.6 (4.9.1)	Retainment		N/A
	Method of fixing:		_



### Page 10 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.9.2)	Insulated linings and sleeves:		N/A
(	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)		N/A
1.6 (4.10)	Double or reinforced insulation		N/A
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.11)	Electrical connections and current-carrying parts		Р
1.6 (4.11.1)	Contact pressure		Р
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts		Р
1.6 (4.11.5)	No contact to wood or mounting surface		Р
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	Screws and connections (mechanical) and glands		Р
1.6 (4.12.1)	Screws not made of soft metal		Р
	Screws of insulating material		N/A
	Torque test: torque (Nm); part:	Φ3,8mm 1,2Nm, 5times; Fixing Electrical ballast	Р



### Page 11 of 35

	IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict	
	Torque test: torque (Nm); part:		N/A	
	Torque test: torque (Nm); part		N/A	
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A	
1.6 (4.12.4)	Locked connections:	1	N/A	
	- fixed arms; torque (Nm)		N/A	
	- lampholder; torque (Nm)		N/A	
	- push-button switches; torque 0,8 Nm:		N/A	
1.6 (4.12.5)	Screwed glands; force (Nm):	5 Nm	Р	
1.6 (4.13)	Mechanical strength		Р	
1.6 (4.13.1)	Impact tests:		Р	
	- fragile parts; energy (Nm):		N/A	
	- other parts; energy (Nm):	Enclosure and lamp cover; 0,35 Nm	Р	
	1) live parts		Р	
	2) linings		N/A	
	3) protection		Р	
	4) covers		Р	
1.6 (4.13.3)	Straight test finger		Р	
1.6 (4.13.4)	Rough service luminaires	1	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		Р	
1.6 (4.14.1)	Mechanical load:		Р	
	A) four times the weight		Р	
	B) torque 2,5 Nm		N/A	
	C) bracket arm; bending moment (Nm)		N/A	
	D) load track-mounted luminaires		N/A	
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A	
	Metal rod. Diameter (mm)		N/A	



### Page 12 of 35

	IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict	
	Fixed luminaire or independent control gear without fixing devices		N/A	
1.6 (4.14.2)	Load to flexible cables		N/A	
	Mass (kg)		_	
	Stress in conductors (N/mm²):		N/A	
	Mass (kg) of semi-luminaire		_	
	Bending moment (Nm) of semi-luminaire:		N/A	
1.6 (4.14.3)	Adjusting devices:		N/A	
	- flexing test; number of cycles:		N/A	
	- strands broken:		N/A	
	- electric strength test afterwards		N/A	
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A	
1.6 (4.14.5)	Guide pulleys		N/A	
1.6 (4.14.6)	Strain on socket-outlets		N/A	
1.6 (4.15)	Flammable materials		Р	
	- glow-wire test 650°C	See Test Table 1.15 (13.3.2)	Р	
	- spacing ≥30 mm		N/A	
	- screen withstanding test of 13.3.1		N/A	
	- screen dimensions		N/A	
	- no fiercely burning material		Р	
	- thermal protection		N/A	
	- electronic circuits exempted		N/A	
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp of	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 so	urfaces	Р	
	No lamp control gear:	(compliance with Section 12)	N/A	
1.6 (4.16.1)	Lamp control gear spacing:		Р	
	- spacing 35 mm		N/A	
	- spacing 10 mm		Р	
1.6 (4.16.2)	Thermal protection:	•	N/A	
	- in lamp control gear		N/A	
	- external		N/A	



### Page 13 of 35

	IEC 60598-2-1	·	
Clause	Requirement + Test	Result - Remark	Verdict
	- 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	(666 6.6466 1.2.6)	N/A
- ( )	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion		Р
1.6 (4.18.1)	- rust-resistance		Р
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 <sub>thr:</sub>		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2:		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
1.6 (4.25)	Mechanical hazard		P



### Page 14 of 35

	IEC 60598-2-1	
Clause	Requirement + Test Result - Remark	Verdict
	T	I _
	No sharp point or edges	Р
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 $\Omega$	N/A
	Pull test of mechanical connection (50 N)	N/A
	After test, resistance < 0,05 $\Omega$	N/A
	Voltage drop test, resistance $< 0.05 \Omega$	N/A
1.6 (4.28)	Fixing of thermal sensing control	N/A
	Not plug-in or easily replaceable type	N/A
	Reliably kept in position	N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing	N/A
	Not outside the luminaire enclosure	N/A
	Test of adhesive fixing:	N/A
	Max. temperature on adhesive material (°C):	_
	100 cycles between t min and t max	N/A
	Temperature sensing control still in position	N/A
1.6 (4.29)	Luminaires with non-replaceable light source	N/A
	Not possible to replace light source	Р
	Live part not accessible after parts have been opened by hand or tools	Р
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



### Page 15 of 35

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
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
	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 prot with live parts:	tection against indirect contacts	N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3 of above		N/A



### Page 16 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
	- 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	T	Р
1.7 (11.2)	Creepage distances and clearances	See Table 1.7 (11.2)	Р
	Working voltage (V):	240 V	_
	Rated pulse voltage (kV):	2,5 kV	
	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		
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		Р
	Metal parts in contact with supporting surface		Р
	Resistance < 0,5 Ω	0,049 Ω	Р
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		Р
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		Р
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		Р



### Page 17 of 35

	IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict	
1.8 (7.2.4)	Locking of clamping means		Р	
	Compliance with 4.7.3		Р	
	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		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/A	
	Double or reinforced insulation to functional earth		N/A	
1.8 (7.2.11)	Earthing core coloured green-yellow		Р	
	Length of earth conductor		Р	

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

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

1.10 (5)	EXTERNAL AND INTERNAL WIRING		Р
1.10 (5.2)	Supply connection and external wiring		Р
1.10 (5.2.1)	Means of connection	Terminal block	Р
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment		N/A
1.10 (5.2.2)	Type of cable:		N/A
	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:		Р
	- suitable for introduction		Р
	- adequate degree of protection		Р



### Page 18 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
1.10 (5.2.8)	Insulating bushings:	1	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
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		Р
	- covering protected from abrasion		Р
	- clear how to be effective		Р
	- no mechanical or thermal stress		Р
	- no tying of cables into knots etc.		Р
	- insulating material or lining		Р
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:		Р
	- impossible to push cable; unsafe		Р
	- pull test: 25 times; pull (N)	60	Р
	- torque test: torque (Nm)	0,25	Р
	- displacement ≤ 2 mm		Р
	- no movement of conductors		Р
	- no damage of cable or cord		Р



### Page 19 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
	- function independent of electrical connection		Р
1.10 (5.2.11)	External wiring passing into luminaire		N/A
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		Р
1.10 (5.3.1)	Internal wiring of suitable size and type		Р
	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		N/A
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring	I	Р
	Cross-sectional area (mm²)	(see Annex 2)	Р
	Insulation thickness		Р
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal cu	rrent-limiting device	N/A



### Page 20 of 35

	IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict	
	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		N/A	
1.10 (5.3.2)	Sharp edges etc.		Р	
	No moving parts of switches etc.		Р	
	Joints, raising/lowering devices		N/A	
	Telescopic tubes etc.		N/A	
	No twisting over 360°		Р	
1.10 (5.3.3)	Insulating bushings:		N/A	
	- suitable fixed		N/A	
	- material in bushings		N/A	
	- material not likely to deteriorate		N/A	
	- cables with protective sheath		N/A	
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A	
1.10 (5.3.5)	Strain on internal wiring		N/A	
1.10 (5.3.6)	Wire carriers		N/A	
1.10 (5.3.7)	Wire ends not tinned		Р	
	Wire ends tinned: no cold flow		N/A	

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
	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		Р
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A



### Page 21 of 35

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		Р
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- touch current:		N/A
	- no-load voltage:		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage:		N/A
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
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	0 V < 50 V	Р
	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



### Page 22 of 35

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

1.12 (12)	ENDURANCE TEST AND THERMAL TEST				
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:				
	- mounting-position	Ceiling mounting	_		
	- test temperature (°C):	60 °C	_		
	- total duration (h)	168 h			
	- supply voltage: Un factor; calculated voltage (V):	1,1; 264 V	_		
	- lamp used:	Fluorescent lamp	_		
1.12 (12.3.2)	After endurance test:		Р		
	- no part unserviceable		Р		
	- luminaire not unsafe		Р		
	- no damage to track system		N/A		
	- 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)	Р		
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		



### Page 23 of 35

	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
4 40 (40 7)	<u></u>	· \	<b></b>
1.12 (12.7)	Thermal test (failed lamp control gear in plastic lumina	iires):	N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W		_
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		_
	- Ballast failure at supply voltage (V)		_
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions:		_
	- measured winding temperature (°C): at 1,1 Un:		_
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un:		_
	- calculated temperature of fixing point/exposed part (°C):		_
	Ball-pressure test:	See Table 1.15 (13.2.1)	N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70	W, 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		N/A
	- case of abnormal conditions:		_
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link:	Yes No No	_
	- manual reset cut-out:	Yes No	_



#### Page 24 of 35

	F age 24 01 33	Report No. 31123100	200070001
	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
	T	I	
	- auto reset cut-out	Yes   No	
	- case of abnormal conditions		
	- 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 MO	ISTURE	Р
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1	.12	Р
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		
	- classification according to IP	IP65	_
	- mounting position during test:	Ceiling mounting	
	- fixing screws tightened; torque (Nm)		
	- tests according to clauses	Clause 9.2.2 & 9.2.6	_
	- electric strength test afterwards		Р
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		Р
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		Р
	d) i) For luminaires without drain holes – no water entry		Р
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		Р
1.13 (9.3)	Humidity test 48 h	93%; 25 °C	Р
1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STREN	GTH	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:	16 mm	_
	Insulation resistance (M $\Omega$ ):	See below	_



### Page 25 of 35

ı	IEC 60598-2-1		
Clause	Requirement + Test	Result - Remark	Verdict
	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		Р
	- between live parts of different polarity:		N/A
	- between live parts and mounting surface:	>500 MΩ	Р
	- between live parts and metal parts:	>500 MΩ	Р
	- between live parts of different polarity through action of a switch:		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts:		N/A
	- Insulation bushings as described in Section 5:		N/A
1.14 (10.2.2)	Electric strength test		Р
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):	See below	Р
	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		Р
	- between live parts of different polarity:		N/A





### Page 26 of 35

	IEC 60598-2-1						
Clause	Requirement + Test	Result - Remark	Verdict				
	- between live parts and mounting surface:	2960V	Р				
	- between live parts and metal parts:	1480V	Р				
	- between live parts of different polarity through action of a switch		N/A				
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts:		N/A				
	- Insulation bushings as described in Section 5:		N/A				
1.14 (10.3)	Touch current or protective conductor current (mA).:	Max. 0,03 mA	Р				

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		
1.15 (13.2.1)	Ball-pressure test:	See Test Table 1.15 (13.2.1)	Р
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)	Р
1.15 (13.4)	Proof tracking test (IEC 60112)	See Test Table 1.15 (13.4)	Р



Page 27 of 35

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

1.7 (11.2)	TABLES: Creepage dista	nces and	cleara	nces						Р
<b>Table 11.1</b>	Minimum distances (mm	) for a.c. (	50/60 H	lz) sin	usoidal v	oltages				Р
RMS working voltage (V) not exceeding			50	150		250		500	750	1000
Creepage d	istances		•							
Required bas	sic insulation, PTI ≥ 600		0,6	0,8		1,5		3	4	5,5
Measured			-	-		-		-	-	-
Required bas	sic insulation, PTI < 600		1,2	1,6		2,5		5	8	10
Measured			-	-		4,0		-	-	-
Required sup	pplementary insulation PTI	≥ 600	-	0,8		1,5		3	4	5,5
Measured			-	-		-		-	-	-
Required sup	oplementary insulation PTI	< 600	-	1,6		2,5		5	8	10
Measured			-	-		-		-	-	-
Required rein	nforced insulation		-	3,2		5		6	8	11
Measured				-		6,5		-	-	-
Clearances										
Required basic insulation			0,2	0,8		1,5		3	4	5,5
Measured			-	-		4,0		-	-	-
Required sup	oplementary insulation		-	0,8		1,5		3	4	5,5
Measured				-		-		-	-	-
Required rein	nforced insulation		-	1,6		3		6	8	11
Measured				-		6,5		-	-	-
Table 11.2	Minimum distances (m	nm) for no	n-sinu	soidal	pulse vo	ltages				Р
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 -		4,0		ı	-	-	-	-		
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	-	-	-	
Required cle	arances	75		90		130	170	-	-	-
Measured		-		-		-	-			



Page 28 of 35

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

Р	15 3.2.1) TABLE: Ball Pressure Test of Thermoplastics					
_		Allowed impression diameter (mm) 2 mm				
n diameter (mm)	Impression diamete	Те	Manufacturer/ trademark	: No./ Material	Object/ Part	
	0,2	97	See Annex 1		Enclosure	
	0,2	92	See Annex 1	•	Lamp cover	
	1,2	12	See Annex 1	r	Lamp holder	
	1,2	12		r tary information: N/A	•	

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

1.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)						
Glow wire temperature: 650°C						_	
		Manufacturer/ trademark	Duration of application of test flame (ta); (s)		Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Enclosure		See Annex 1	30		No	0	Р
Lamp cover		See Annex 1		30	No	0	Р
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)							
Supplementa	ary inform	ation: N/A				•	

1.15 (13.4) TABLE: Proof tracking test (IEC 60112)					Р
Test voltage PTI 175 V					_
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Enclosure	See Annex 1	Yes Yes Yes		Р	
Lamp cover	ver See Annex 1 Yes Yes Yes				Р



Page 29 of 35

Report No. SHES160200076801

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

Supplementary information: N/A



Page 30 of 35

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

ANNEX 1 TAE	BLE: Cri	itical components	information			Р
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>
Lampholder (for T8 series)	В	Cixi Ding Li Plastic Co., Ltd.	LL01	AC 250V; 2A; G13 ; T110°C	EN 60400	VDE 40008084
Lampholder (for T5 series)	В	Cixi Ding Li Plastic Co., Ltd.	LL05	AC 250V; 2A; G5 T110°C	EN 60400	VDE 40022627
Electronic ballast (154 series, 158 series)	В	Cixi Rohs Electrical Co., Ltd.	RSB-E154- 158S	AC 220-240V; 50/60Hz; tc 70°C; ta: 50°C; 1×58W	EN 61347-1 EN 61347-2-3	TÜV 50342137 0001
Electronic ballast (254 series, 258 series)	В	Cixi Rohs Electrical Co., Ltd.	RSB-E254- 258S	AC 220-240V; 50/60Hz; tc 70°C; ta: 50°C; 2×58W	EN 61347-1 EN 61347-2-3	TÜV 50342137 0001
Electronic ballast (114 series, 118 series, 128 series, 135 series, 136 series)	В	Cixi Rohs Electrical Co., Ltd.	RSB- E118/210S	AC 220-240V; 50/60Hz; tc 70°C; ta: 50°C; 1×18W	EN 61347-1 EN 61347-2-3	TÜV 50342137 0001
Electronic ballast (214 series, 218 series, 228 series, 235 series, 236 series)	В	Cixi Rohs Electrical Co., Ltd.	RSB-E236/3- 418S	AC 220-240V; 50/60Hz; tc 70°C; ta: 50°C; 2×36W	EN 61347-1 EN 61347-2-3	TÜV 50342137 0001
Terminal block	В	Cixi Ding Li Plastic Co., Ltd.	DL 06	AC 450V; 1,02,5mm <sup>2</sup> ; T110	EN 60998	VDE 40024873
Internal wire	С	Xiangshan Haoguang Electric Wire & Cable Co. Ltd.	H05V-U	300/500V 1×0.5mm <sup>2</sup>	DIN VDE 0281- 3	VDE 126062



#### Page 31 of 35

Report No. SHES160200076801

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

Enclosure and cover	С	Cixi Yuanpu Lighting Electric	PC	PC; min. thickness: 1,6	 Test With appliance
		Co., Ltd.		mm	

Supplementary information:

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

<sup>&</sup>lt;sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.



Page 32 of 35

			IEC 60598-2-1		
Claus	е	Requirement + Test		Result - Remark	Verdict

ANNEX 2	TAE	BLE: Temp	erature mea	surements, t	thermal tests	of Section 12		Р
	Тур	Type reference:				YP258X	_	
		p used:				Fluorescent La	mp 2 x 58 W	_
	Lan	np control g	ear used			See Annex 1		_
	Моц	unting posit	ion of lumina	aire		Ceiling mountir	ng	_
	Sup	ply wattage	e (W)		:	122,7 W		_
	Sup	ply current	(A)		:	0,411 A		_
	Cal	culated pov	ver factor		:	0,98		_
	Tab	le: measur	ed temperati	ures corrected	d for ta = 50	°C:		
	- ab	normal ope	erating mode		:	1,1 Un		_
	- tes	st 1: rated v	oltage		:	N/A		_
				oltage or 1,05		1,06 X 240= 25	_	
	- test 3: Load on wiring to socket-outlet, 1,06 tir				N/A		_	
				es rated voltage or 1,05 times rated		1,1 X 240= 264 V		_
				n wiring loade		N/A		_
			Ten	nperature me	easurements	s, (°C)		
				Clause 1	2.4 – normal		Clause 12.5	– abnorma
Part		Ambient	test 1	test 2	test 3	limit	test 4	limit
Mounting su	rface	See	-	47,0	-	90	57,6	130
Enclosure		above	-	71,3	-	Ref.	-	-
Lamp cover			-	66,8	-	Ref.	-	-
lampholder			-	75,4	-	110	-	-
Terminal block			-	80,6	-	110	-	-
Electronic ballast tc			-	68,5	-	70	-	-
Internal wire			-	63,3	-	90	-	-
Supply cord(stresse	d)		-	67,8	-	75	-	-
Supply	/	1	_	59,6	_	90	_	_



Page 33 of 35

			IEC 60598-2-1		
Claus	е	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):	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

ANNEX 4	Screwless terminals (part of the luminaire)	
(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



### Page 34 of 35

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



Page 35 of 35

IEC 60598-2-1					
Claus	е	Requirement + Test		Result - Remark	Verdict

(15.6.3.1)	TABI	E: Contact	resista	nce test							N/A
	Volta	ge drop (mV	') after 1	h							
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop	(mV)										
		Voltage dro	p of two	insepara	ble joints	S					
		Voltage dro	p after 1	0th alt. 2	:5th cycle	)					
		Max. allowe	ed voltag	e drop (r	nV)	:					
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop	(mV)										
		Voltage dro	p after 5	0th alt. 1	00th cyc	le	•				
		Max. allowe	ed voltag	e drop (r	nV)	:					_
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop	(mV)										
		Continued	ageing: v	oltage d	rop after	10th alt.	25th cyc	le	l		
		Max. allowe	ed voltag	e drop (r	nV)	:					_
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop	(mV)										
		Continued	ageing: v	oltage d	rop after	50th alt.	100th cy	cle			
		Max. allowe	ed voltag	e drop (r	nV)	:					_
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop	(mV)										
Supplement	ary info	ormation:			<u> </u>	1		l	1	l	1

- End of main report -





Attachment A

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 60598-1:2015

Annex Form No. .....: EU\_GD\_IEC60598\_2\_1D

Annex Form Originator .....: OVE

Master Annex Form .....: 2015-04

Copyright © 2015 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

CENELEC COMMON MODIFICATIONS (EN)

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

1.6 (4)	CONSTRUCTION		Р
1.6 (4.11.6)	Electro-mechanical contact systems		N/A

1.10 (5)	EXTERNAL AND INTERNAL WIRING	Р
1.10 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
1.10 (5.2.2)	Cables equal to EN 50525	N/A
	Replace table 5.1 – Supply cord	N/A

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

Report No.: SHES160200076801



IEC60598\_2\_1D - ATTACHMENT

Clause Requirement + Test Result - Remark Verdict

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

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

End of Attachment A —

Report No.: SHES160200076801



Attachment B **Photo documentation** 

Type of equipment, model: Fixed Luminaries (Absorb Dome Light); YP154X, YP258X

Details of: YP258X



Details of: YP258X



Report No.: SHES160200076801



# Attachment B

Details of: Screwed gland



Details of: Open view of YP258X





# Attachment B

Details of: Open view of YP258X



Details of: Open view of YP258X



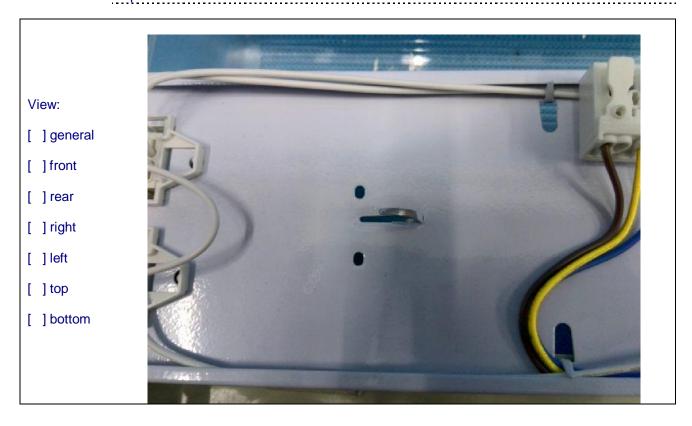


# Attachment B

Details of: Open view of YP258X



Details of: Open view of YP258X





# Attachment B

Details of: YP154X



— End of Attachment B—