

TEST REPORT
IEC 60598-2-17
Luminaires
Part 2: Particular requirements:
Section Seventeen -

Report Number. WST16050046-1SR

Date of issue 2016-05-26

Total number of pages 52

Applicant's name..... GuangZhou STS Lighting Equipment Co.,Ltd.

Address No.251 Tingshi North Road Chaoyang Shijing Town Baiyun District
Guangzhou China

Test specification:

Standard EN 60598-2-17:1989 + A2:1991 used in conjunction with
EN 60598-1:2015

Test procedure CE-LVD

Non-standard test method..... N/A

Test Report Form No...... IEC60598_2_17D

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

Master TRF..... 2015-08

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Test item description 75W LED Moving Head

Trade Mark STS

Manufacturer..... GuangZhou STS Lighting Equipment Co.,Ltd.
No.251 Tingshi North Road Chaoyang Shijing Town Baiyun District
Guangzhou China

Model/Type reference M SPOT 75, M SPOT 60, M BEAM 60, M BEAM 75,
M SPOT 90, M BEAM 90, M SPOT 120, M BEAM 120,
M SPOT 150, M BEAM 150

Ratings See model list
Class I, IP20

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	Testing Laboratory:	Shenzhen WST Testing Technology Co., LTD.
Testing location/ address		2nd Floor, Xiagu, Meishengchuangu Technology Park, Liuxian 2st. Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
<input type="checkbox"/>	Associated Laboratory:	
Testing location/ address		
Tested by (name + signature)		Mike Chen 
Approved by (name + signature)		Tony Chen 
		
<input type="checkbox"/>	Testing procedure: TMP	N/A
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT	N/A
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT	N/A
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		
<input type="checkbox"/>	Testing procedure: RMT	N/A
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

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

- Appendix 1: For requirement of European group national difference.
- Appendix 2: The LED control gear with applicable clauses of 10,11,12,14,16,17,18,20 of EN 61347-2-13:2014 used in conjunction with EN 61347-1:2008+A1:2011+A2:2013.
- Appendix 3: The LED module with applicable clauses of 12, 13 and 15 of EN 62031:2008+A1:2013.
- Appendix 4: For requirement of EN 62493:2015.
- Appendix 5: Photo documents.

Summary of testing:
Tests performed (name of test and test clause):

Clause 17.5: Marking
 Clause 17.6: Construction of luminaires
 Clause 17.7: Creepage distances and clearances
 Clause 17.8: provision for earthing
 Clause 17.9: Terminals
 Clause 17.10: External and internal wiring
 Clause 17.11: Protection against electric shock
 Clause 17.12: Endurance tests and thermal tests
 Clause 17.13: Resistance to dust and moisture
 Clause 17.14: Insulation resistance and electric strength
 Clause 17.15: Resistance to heat, fire and tracking

Testing location:

Shenzhen WST Testing Technology Co., LTD.
 2nd Floor, Xiagu, Meishengchuanggu Technology Park,
 Liuxian 2st. Road, Xin'an Street,
 Bao'an District, Shenzhen, Guangdong, China

Summary of compliance with National Differences:

European group national difference.

☒ The product fulfils the requirements of EN 60598-2-17:1988 + A2:1991 used in conjunction with EN 60598-1:2015

Copy of marking plate



When steady state is achieved, the temperature of the surface is 32.2°C
“Isolate electrically before re-lamping.”

Test item particulars	
Classification of installation and use	Portable luminaire and indoor use
Supply Connection	Appliance inlet
.....	
.....	
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	2016-05-19
Date (s) of performance of tests	2016-05-19 to 2016-05-26

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 / ☒ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

The related applicable OSM decisions have been considered and the requirements found fulfilled.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60598-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

☐ Yes

☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) : Same as applicant

General product information:

1, All products are identical, only different in the model name, power.

2, All tests are performed on the representative model M SPOT 75.

Model list

Model name	Input	Frequency	Power
M SPOT 75	100-240VAC	50/60Hz	200W
M SPOT 60	100-240VAC	50/60Hz	150W
M BEAM 60	100-240VAC	50/60Hz	150W
M BEAM 75	100-240VAC	50/60Hz	200W
M SPOT 90	100-240VAC	50/60Hz	250W
M BEAM 90	100-240VAC	50/60Hz	250W
M SPOT 120	100-240VAC	50/60Hz	250W
M BEAM 120	100-240VAC	50/60Hz	250W
M SPOT 150	100-240VAC	50/60Hz	300W
M BEAM 150	100-240VAC	50/60Hz	300W

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
17.2 (0)	GENERAL TEST REQUIREMENTS		P
17.2 (0.1)	Information for luminaire design considered	Standard Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
17.2 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
17.4 (2)	CLASSIFICATION		P
17.4 (2.2)	Type of protection	Class I	—
17.4 (2.3)	Degree of protection	IP20	—
17.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
17.4 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
17.5 (3)	MARKING		P
17.5 (3.2)	Mandatory markings		P
	Position of the marking	On the enclosure surface	P
	Format of symbols/text	See attached rating label	P
17.5 (3.3)	Additional information		P
	Language of instructions	English	P
17.5 (3.3.1)	Combination luminaires		N/A
17.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
17.5 (3.3.3)	Operating temperature		N/A
17.5 (3.3.4)	Symbol or warning notice		N/A
17.5 (3.3.5)	Wiring diagram		N/A
17.5 (3.3.6)	Special conditions		N/A
17.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
17.5 (3.3.8)	Limitation for semi-luminaires		N/A
17.5 (3.3.9)	Power factor and supply current		N/A
17.5 (3.3.10)	Suitability for use indoors		P
17.5 (3.3.11)	Luminaires with remote control		N/A
17.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
17.5 (3.3.13)	Specifications of protective shields		N/A
17.5 (3.3.14)	Symbol for nature of supply	AC	P
17.5 (3.3.15)	Rated current of socket outlet		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
17.5 (3.3.16)	Rough service luminaire		N/A
17.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
17.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
17.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
17.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
17.5 (3.3.21)	Non replaceable and non-user replaceable light sources information provided	Non-user replaceable light sources	P
	Cautionary symbol		N/A
17.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
17.5 (3.4)	Test with water	15s	P
	Test with hexane	15s	P
	Legible after test		P
	Label attached		P
17.5.1 (-)	If luminaire design imposes restriction of use the luminaire is marked with		N/A
	Indication of the "top"		N/A
	Designed position or range of angle		N/A
	Mounting arrangements		N/A
17.5.2 (-)	Warning if lamp $\leq 250W$		N/A
17.5.3 (-)	Maximum ambient temperature t_a		N/A
17.5.4 (-)	Minimum distances from flammable materials		N/A
17.5.5 (-)	Warning if applicable		N/A
17.5.6 (-)	Value of exterior surface temperature		P
	a) after 5 min	26,3°C	P
	b) when steady state	32,5°C	P
17.5.7 (-)	Instruction leaflet contain warnings		P
	Visibly damaged shields shall be changed		P
	Damaged or thermally deformed lamp shall be changed		P
17.6 (4)	CONSTRUCTION		P
17.6 (4.2)	Components replaceable without difficulty		P
17.6 (4.3)	Wireways smooth and free from sharp edges		P

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
17.6 (4.4)	Lampholders		N/A
17.6 (4.4.1)	Integral lampholder		N/A
17.6 (4.4.2)	Wiring connection		N/A
17.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
17.6 (4.4.4)	Positioning		N/A
	- pressure test (N) :		N/A
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N) :		N/A
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
17.6 (4.4.5)	Peak pulse voltage		N/A
17.6 (4.4.6)	Centre contact		N/A
17.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
17.6 (4.4.8)	Lamp connectors		N/A
17.6 (4.4.9)	Caps and bases correctly used		N/A
17.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
17.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
17.6 (4.7)	Terminals and supply connections		P
17.6 (4.7.1)	Contact to metal parts		P
17.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		N/A
17.6 (4.7.3)	Terminals for supply conductors		P
17.6 (4.7.3.1)	Welded connections:		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
17.6 (4.7.4)	Terminals other than supply connection		P
17.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
17.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
17.6 (4.8)	Switches:		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with 61058-1 for electronic switches		N/A
17.6 (4.9)	Insulating lining and sleeves		P
17.6 (4.9.1)	Retainment		N/A
	Method of fixing		N/A
17.6 (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
17.6 (4.10)	Insulation of Class II luminaires		N/A
17.6 (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
17.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
17.6 (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

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
17.6 (4.11)	Electrical connections		P
17.6 (4.11.1)	Contact pressure		P
17.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
17.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
17.6 (4.11.4)	Material of current-carrying parts		P
17.6 (4.11.5)	No contact to wood or mounting surface		P
17.6 (4.11.6)	Electro-mechanical contact systems		N/A
17.6 (4.12)	Mechanical connections and glands		N/A
17.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part	Screw of enclosure: 1,2 Nm	P
	Torque test: torque (Nm); part	Screw of PCB: 0,5Nm	P
	Torque test: torque (Nm); part	Screw of earthing: 0,8 Nm	P
17.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
17.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm).....		N/A
	- lampholder; torque (Nm).....		N/A
	- push-button switches; torque 0,8 Nm		N/A
17.6 (4.12.5)	Screwed glands; force (Nm)		N/A
17.6 (4.13)	Mechanical strength		P
17.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....		N/A
	- other parts; energy (Nm)	Enclosure, Lampshade: 0.5Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
17.6 (4.13.3)	Straight test finger		P
17.6 (4.13.4)	Rough service luminaires		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
17.6 (4.13.6)	Tumbling barrel		N/A
17.6 (4.14)	Suspensions and adjusting devices		N/A
17.6 (4.14.1)	Mechanical load:		N/A
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
17.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg)		N/A
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
17.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
17.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
17.6 (4.14.5)	Guide pulleys		N/A
17.6 (4.14.6)	Strain on socket-outlets		N/A
17.6 (4.15)	Flammable materials:		P
	- glow-wire test 650 °C	lampshade	P
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
17.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
17.6 (4.16)	Luminaires for mounting on normally flammable surfaces		N/A
	No lamp control gear		N/A
17.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
17.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
17.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N/A
17.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
17.6 (4.18)	Resistance to corrosion:		N/A
17.6 (4.18.1)	- rust-resistance		N/A
17.6 (4.18.2)	- season cracking in copper		N/A
17.6 (4.18.3)	- corrosion of aluminium		N/A
17.6 (4.19)	Igniters compatible with ballast		N/A
17.6 (4.20)	Rough service vibration		N/A
17.6 (4.21)	Protective shield:		N/A
17.6 (4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
17.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
17.6 (4.21.3)	No direct path		N/A
17.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
17.6 (4.22)	Attachments to lamps		N/A
17.6 (4.23)	Semi-luminaires comply Class II		N/A
17.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N/A
17.6 (4.25)	No sharp point or edges		P
17.6 (4.26)	Short-circuit protection:		N/A
17.6 (4.26.1)	Uninsulated accessible SELV parts		N/A
17.6 (4.26.2)	Short-circuit test		N/A
17.6 (4.26.3)	Test chain according to Figure 29		N/A
17.6 (4.27)	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
17.6 (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 ($^{\circ}\text{C}$).....		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
17.6 (4.29)	Luminaires with non-replaceable light source		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
17.6 (4.30)	Luminaires with non-user replaceable light source		P
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		N/A
	Minimum two fixing means		P
17.6 (4.31)	Insulation between circuits		P

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
17.6 (4.31.1)	SELV circuits		P
	Used SELV source		N/A
	Voltage \leq ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		P
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		P
	SELV circuits insulated from accessible parts according Table X.1		P
	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
17.6 (4.31.2)	FELV circuits		N/A
	Used FELV source		N/A
	Voltage \leq 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
17.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
17.6 (4.32)	Overvoltage protective devices		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
17.6.1 (-)	Not possible to insert a lamp into a "live" lampholder (for some luminaires)		N/A
17.6.2 (-)	Prevent immediate access to the lamp or marked according 17.5.5 if applicable		N/A
17.6.3 (-)	Fitted with a protective shield or marked only for lamps comply with Sheet 357-IEC-3155		N/A
17.6.4 (-)	Bearing parts of hanger are capable to support ten time the weight of the luminaire		N/A
	Non-combustible materials		N/A
	Parts of hanger carrying a proportion of the weight of the luminaire are capable to support ten time the proportion of weight		N/A
	Connection between hanger and luminaire locked		N/A
17.6.5 (-)	Removable accessories cannot fall out of the luminaire from any position		P
17.6.6 (-)	If applicable a secondary suspension provided and passed the test		N/A

17.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)	240VAC	—

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
	Rated pulse voltage (kV)	--	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)	Cr.>3.2mm, Cl.>3.2mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	Cr.>6.5mm, Cl.>6.5mm	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm)	Cr.>6.5mm, Cl.>6.5mm	P
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		N/A
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)	Cr.>6.5mm, Cl.>6.5mm	P

17.8 (7)	PROVISION FOR EARTHING		P
17.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	0.07Ω	P
	Self-tapping screws used		P
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
17.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
17.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
17.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
17.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
17.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
17.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
17.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
17.9 (14)	SCREW TERMINALS		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A
17.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 4)	N/A
17.10 (5)	EXTERNAL AND INTERNAL WIRING		P
17.10 (5.2)	Supply connection and external wiring		P
17.10 (5.2.1)	Means of connection.....: Appliance inlet		P
17.10 (5.2.2)	Type of cable:		N/A
	Nominal cross-sectional area (mm ²).....:		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
17.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
17.10 (5.2.5)	Type Z not connected to screws		N/A
17.10 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
17.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
17.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
17.10 (5.2.9)	Locking of screwed bushings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.10 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
17.10 (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
17.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
17.10 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) :		N/A
	- torque test: torque (Nm) :		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
17.10 (5.2.11)	External wiring passing into luminaire		N/A
17.10 (5.2.12)	Looping-in terminals		N/A
17.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
17.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
17.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
17.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
17.10 (5.3)	Internal wiring		P
17.10 (5.3.1)	Internal wiring of suitable size and type	1672 18AWG	P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures : (see Annex 2)		N/A
	Green-yellow for earth only		P
17.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm ²) :		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
17.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
17.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
17.10 (5.3.1.4)	Conductors without insulation		N/A
17.10 (5.3.1.5)	SELV current-carrying parts		P
17.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
17.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
17.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
17.10 (5.3.4)	Joints and junctions effectively insulated		P
17.10 (5.3.5)	Strain on internal wiring		N/A
17.10 (5.3.6)	Wire carriers		N/A
17.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
17.10.1 (-)	Cross-sectional area (mm ²) ≥ 0,75 for current ≤ 3A and ≥ 1,5 for current > 3A	for current ≤ 3A	P
17.10.2 (-)	Plugs and sockets not interchangeable		N/A
17.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
17.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arm's reach, on wall-mounted luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
17.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
17.11 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- basic insulation not accessible other than during starter or lamp replacement		N/A
17.11 (8.2.3.b)	- glass protective shields not used as supplementary insulation		N/A
	BC lampholder of metal in class I luminaires shall be earthed		N/A
17.11 (8.2.3.c)	Class III luminaires with exposed SELV 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
17.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N/A
17.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
17.11 (8.2.6)	Covers reliably secured		P
17.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		P
	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
17.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
17.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 17.13		—
17.12 (12.3)	Endurance test:		P
	- mounting-position	Mounted at the test corner as normal used	—
	- test temperature (°C)	35	—
	- total duration (h)	168	—
	- supply voltage: Un factor; calculated voltage (V):	264V	—
	- lamp used	LED lamp	—
17.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
17.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
17.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	P
17.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
17.12 (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
17.12 (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
17.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
17.12 (12.7.1)	Luminaire without temperature sensing control		N/A
17.12 (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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		N/A
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
17.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un.. :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un..... :		—
	- calculated temperature of fixing point/exposed part (°C) :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
17.12 (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
17.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):..... :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
17.12.1 (-)	Exterior surface temperature	(see Annex 2)	P
17.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
17.13 (-)	If IP > IP 20 the order of the test specified in clause 17.12		—
17.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP : IP 20		—
	- mounting position during test : As in normal use		—
	- fixing screws tightened; torque (Nm)..... : --		—
	- tests according to clauses : Clause 9.2.0		—
	- electric strength test afterwards		N/A
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A
17.13 (9.3)	Humidity test 48 h		P
17.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
17.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø :		—
	Insulation resistance (MΩ)		—
	SELV:		N/A
	- between current-carrying parts of different polarity :	>1.3MΩ	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and mounting surface	>1.3MΩ	P
	- between current-carrying parts and metal parts of the luminaire	>1.3MΩ	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
	Other than SELV:		P
	- between live parts of different polarity	>2.6MΩ	P
	- between live parts and mounting surface	>2.6MΩ	P
	- between live parts and metal parts	>2.6MΩ	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
17.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		N/A
	SELV:		P
	- between current-carrying parts of different polarity	500V	P
	- between current-carrying parts and mounting surface	500V	P
	- between current-carrying parts and metal parts of the luminaire	500V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5 ..		N/A
	Other than SELV:		P
	- between live parts of different polarity	1480V	P
	- between live parts and mounting surface	1480V	P
	- between live parts and metal parts	1480V	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
17.14 (10.3)	Touch current or protective conductor current (mA)	0.06	P
17.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
17.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C).....	Bobbin of transformer: 125°C 0.5mm	P
	- part tested; temperature (°C).....	PCB: 125°C 0.2mm	P
	- part tested; temperature (°C).....	Appliance inlet: 125°C 0.6mm	P
	- part tested; temperature (°C).....	Appliance connector: 125°C 0.7mm	P
	- part tested; temperature (°C).....	Connector: 125°C 1.1mm	P
	- part tested; temperature (°C).....	Lampshade: 75°C 0.5mm	P
17.15 (13.3.1)	Needle flame test (10 s):		P
	- part tested	Bobbin of transformer	P
	- part tested	PCB of controlgear	P
	- part tested	Appliance inlet	P
	- part tested	Appliance connector	P
	- part tested	Connector	P
17.15 (13.3.2)	Glow-wire test (650°C):		P
	- part tested	Lampshade	P
	- part tested		N/A
17.15 (13.4.1)	Tracking test:		N/A
	- part tested		N/A
	- part tested		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 1: components	P
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object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Plug	B	Ningbo Qiaopu Electric Co., Ltd.	D03	250VAC, 16A	VDE 0620-1	VDE 40002872
Supply cord	B	Ningbo Qiaopu Electric Co., Ltd	H05VV-F	3G0.75mm ²	VDE 0281-5	VDE 40035976
Connector	B	Guangzhou Sinojoint Electronics Co., Ltd.	--	PC	EN 60598-1 EN 60598-2-17	Tested with appliance
Internal wire	C	DONGGUAN WENCHANG ELECTRONIC CO LTD	1612	300VAC, 18AWG,105 °C	EN 60598-1 EN 60598-2-17	UL E214500 and tested with appliance
PCB	C	NANTONG RODA ELECTRON CO LTD	RD140	130°C,V-0	EN 60598-1 EN 60598-2-17	UL E320689 and tested with appliance
LED	C	GUANGHAO ELECTRONICS	--	60W	EN 60598-1 EN 60598-2-17	tested with appliance
Fuse	B	Shenzhen Lanson Electronics Co. LTD	3JFxxx250V	250VAC, 2A	VDE 0820-1 VDE 0820 Teil 3	VDE 40009301
Varistor	B	Cerglass MFG Inc	10D471K	2500VAC, 500A,85 °C	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40028836
Transformer	C	GuangZhou STS Lighting Equipment Co., Ltd.	HK-U100W	Class B	EN 60598-1 EN 60598-2-17	Tested with appliance
-Bobbin	C	GuangZhou STS Lighting Equipment Co., Ltd.	EFD20 4+4	PHENOLICS T373J 94V0, Class B	EN 60598-1 EN 60598-2-17	Tested with appliance
-Tape	C	JINGJIANG FUWEI ADHESIVE PRODUCT CO LTD	FW	130°C	EN 60598-1 EN 60598-2-17	UL E302608 and tested with appliance

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Clause	Requirement + Test			Result - Remark		Verdict
-Triple insulated winding	B	E&B Technology Co., Ltd	E&B- XXXB	Triple insulation (reinforced), 130℃	EN 60598-1 EN 60598-2-17	VDE 40023473 and tested with appliance
-Primary wire	C	SHANGHAI ZHONGMA MAGNETIC WIRE CO	UEW(QA)	Poyurethane, 155℃[#]	EN 60598-1 EN 60598-2-17	UL E226756 and tested with appliance
Lampshade	C	GuangZhou STS Lighting Equipment Co., Ltd.	--	PC	EN 60598-1 EN 60598-2-17	tested with appliance
Earth wire	B	Wuxi Huacheng Cable Co., Ltd.	H05S-K	450/750V, 1 x 0.75mm ²	DIN VDE 0281-5	VDE 124381
X capacitor	B	Tenda Electric Industrial Co. Ltd.	MEX	275VAC, 0.1Uf, 100 ℃	DIN VDE 0565 Teil 1-1	VDE 119119
Y capacitor	B	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	400VAC, 2200pF, 125 ℃	DIN VDE 0565 Teil 1-1	VDE 40025754
Winding of L1	C	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO., LTD	MW 75-C	130[#]	EN 60598-1 EN 60598-2-17	UL E239508 and tested with appliance
Appliance inlet	B	DongGuan NarKen Industry Investment Co. Ltd.	XD-102	250VAC, 10A	DIN EN 60320-1	VDE 40023560
Heat shrinkable tube	C	DONGGUAN SALIPT CO LTD	SALIPT S-901-600	600 V, 125℃	IEC 60968	UL E209436 and tested with appliance
Appliance connector	B	Ningbo Qiaopu Electric Co., Ltd.	QT3	AC 250V 10A	DIN EN 60320-1	VDE 40005934
Switch	C	GuangZhou STS Lighting Equipment Co., Ltd.	--	PC	EN 60598-1 EN 60598-2-17	Tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

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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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 2: temperature measurements, thermal tests of Section 12	P
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Type reference	M SPOT 75	—
Lamp used.....	LED lamp	—
Lamp control gear used	Integral LED controlgear	—
Mounting position of luminaire	As in normal use	—
Supply wattage (W).....	178,7	—
Supply current (A)	0,823	—
Calculated power factor	--	—
Table: measured temperatures corrected for $t_a = 25\text{ }^{\circ}\text{C}$:		P
- abnormal operating mode	Shut-circuit output of LED control gear	—
- test 1: rated voltage	N/A	—
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1.06x240=254,4V	—
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	N/A	—
- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	1.1x240V=264V	—
Through wiring or looping-in wiring loaded by a current of A during the test	N/A	—

temperature ($^{\circ}\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Winding of L1	--	110,2	--	130	--	--
Appliance inlet	--	43,8	--	Cl. 13.1	--	--
Appliance connector	--	47,8	--	Cl. 13.1	--	--
connector	--	42,5	--	Cl. 13.1	--	--
Internal wire	--	51,2	--	105	--	--
PCB	--	71,2	--	130	--	--
X capacitor	--	79,5	--	100	--	--
Transformer	--	110,1	--	130	--	--
Transformer bobbin	--	102,1		Cl. 13.1	--	--
Y capacitor	--	70,3	--	125	--	--

IEC 60598-2-17						
Clause	Requirement + Test			Result - Remark		Verdict
Switch	--	35,1	--	55	--	--
Metal enclosure	--	42,5	--	60	--	--
Lampshade	--	39,2	--	Cl. 13.1	--	--
Lighted Objected(0.1m)	--	33.3	--	90	--	--
Mounting Surface	--	33,2	--	90	30,6	130

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 3: screw terminals (part of the luminaire)		N/A
--	---	--	-----

(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²).....:		N/A
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) ..:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm)		N/A
	Torque (Nm)		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 4: screwless terminals (part of the luminaire)	N/A
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(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples).....:		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	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

IEC 60598-2-17										
Clause	Requirement + Test								Result - Remark	Verdict
(15.7)	Terminals external wiring									N/A
	Terminal size and rating									N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)									N/A
	Pull test pin or tab terminals (4 samples); pull (N)									N/A
(15.9)	Contact resistance test									N/A
	Voltage drop (mV) after 1 h									N/A
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop of two inseparable joints									
	Voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

EN 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

	Appendix 1: European Group National Differences	P
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ATTACHMENT TO TEST REPORT IEC 60598-2-17 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements: Section Seventeen - Luminaires for stage lighting, television and film studios (outdoor and indoor)	
Differences according	EN 60598-2-17:1988 + A2:1991 used in conjunction with EN 60598-1:2015
Annex Form No.	EU_GD_IEC60598_2_17C
Annex Form Originator	IMQ S.p.A.
Master Annex Form	2010-08
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	CENELEC COMMON MODIFICATIONS (EN)	P
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17.5 (3)	MARKING	P
17.5 (3.3.101)	Adequate warning on the package	N/A

17.6 (4)	CONSTRUCTION	P
17.6 (4.11.6)	Electro-mechanical contact systems	N/A

17.10 (5)	EXTERNAL AND INTERNAL WIRING	P
17.10 (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
17.10 (5.2.2)	Cables equal to HD21 S2 or HD22 S2	N/A

17.12 (12)	ENDURANCE TEST AND THERMAL TEST	P
17.12 (12.4.2c)	Thermal test (normal operation)	P

EN 60598-2-17			
Clause	Requirement + Test	Result - Remark	Verdict

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
(3.3)	DK: power supply cord with label		N/A
	IT: warning label on Class 0 luminaire		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
(13.3)	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/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A

EN 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

-Appendix 2: The Integrated LED driver tested with EN 61347-2-13:2014 and EN 61347-1:2008+ A1:2011 + A2:2011+A2:2013

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 k Ω		P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device		P
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μ F: voltage after 1 min (V): < 50 V :	1V	P
- (10.3)	Controlgear providing SELV		P
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		P
	No connection between output circuit and the body or protective earthing circuit		P
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1		P
- (10.4)	Accessible conductive parts in SELV circuits		P
	Output voltage under load \leq 25 V r.m.s. or \leq 60 V d.c.		P
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output \leq 35 V peak or \leq 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. :		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		P
	Y1 or Y2 capacitors comply with IEC 60384-14		P

EN 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
8.1	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation according 8.6 and 13.1 in IEC 60065		N/A
8.2	Exposed terminals of SELV or SELV-equivalent controlgear if: - the rated or maximum rated output voltages ≤ 25 V r.m.s. - the no-load output voltage ≤ 30 V r.m.s. or $33\sqrt{2}$ V peak	No such terminal used	N/A
	Insulated terminals if convertor with rated output voltage > 25 V		N/A
	One capacitor Y1 or two capacitors Y2 complying with IEC 60384-14 of the same values used in series between SELV or SELV-equivalent output and primary circuits		N/A
	Other components bridging the separating transformer complying with IEC 60065, clause 14		N/A

11 (11)	MOISTURE RESISTANCE AND INSULATION		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (M Ω):		P
	For basic insulation ≥ 2 M Ω :	>2.6 M Ω	P
	For double or reinforced insulation ≥ 4 M Ω :	>5.2 M Ω	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A
11 (-)	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A

12 (12)	ELECTRIC STRENGTH		P
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		P
	Working voltage ≤ 50 V, test voltage 500 V		P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, $2U + 1000$ V	1480	P
	Supplementary insulation, $2U + 1000$ V	1480	P

EN 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation, 4U + 2000 V	2960	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		N/A
12 (-)	Windings in separating transformers in SELV-equivalent convertors according to 14.3.2 of IEC 60065		N/A

14 (14)	FAULT CONDITIONS		P
- (14)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table)	P
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		P
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	P
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$:	$>1.3 \text{ M}\Omega$	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P

EN 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.6)	Relevant fault condition tests with high-power supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A

16 (-)	ABNORMAL CONDITIONS		P
16.1 (-)	Control gear which are of the constant voltage output type:		N/A
	a) No LED module inserted		N/A
	b) Double LED modules or equivalent load connected to the output terminals		N/A
	c) Output terminal short-circuited (20 cm and 200 cm or declared length)		N/A
	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		N/A
16.2 (-)	Control gear which are of the constant current output type		P
	a) No LED module connected	Low output	P
	b) Double the LED modules or equivalent load connected in series to the output terminals		P
	c) Output terminal short-circuited (20 cm and 200 cm or declared length)	Low output	P
	Maximum output voltage not exceeded		P
	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P

17 (15)	CONSTRUCTION		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	Plugs and socket-outlets used in SELV or ELV circuits		N/A
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A

EN 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
17 (-)	Socket-outlet in the output circuit does not accept plugs complying with IEC 60083 and IEC 60906		N/A
	Not possible to engage plugs accepted by socket-outlet in the output circuit with socket-outlets complying with IEC 60083 and IEC 60906		N/A

18 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
- (16)	Creepage distances and clearances according to Table 3 and 4, as appropriate	(see appended table)	P
	Controlgears providing SELV comply with L.1 in Annex L		N/A
	Insulating lining of metallic enclosures		N/A
	Basic insulation on printed boards tested according to clause 14		P
	Distances subjected to both sinusoidal voltage as non-sinusoidal pulses not less than value in either Table 3 or 4		P
	Creepage distances not less than minimum clearance		P

14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
C3	Short-circuit, Fuse opened instantly, the appliance not working		NO
D2	Short-circuit, Fuse opened instantly, the appliance not working		NO
Q1(c-e)	Short-circuit, Fuse opened instantly, the appliance not working		NO
C7	Short-circuit, Output shut down, no hazard		NO
C6	Short-circuit, Output shut down, no hazard		NO
Output	Short-circuit, Output shut down, no hazard		NO

EN 61347-2-13							
Clause	Requirement + Test			Result - Remark			Verdict
18 (16)	TABLES: Creepage distances and clearances (All LED controlgear are encapsulated by epoxy resin)						P
Table 3	Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages						N/A
RMS working voltage (V) not exceeding	50	150	250	500	750	1000	
Creepage distances							
Required basic insulation, PTI ≥ 600	0,6	0,8	1,5	3	4	5,5	
Measured			--				
Required basic insulation, PTI < 600	1,2	1,6	2,5	5	8	10	
Measured			>3,2				
Required supplementary insulation PTI ≥ 600	-	0,8	1,5	3	4	5,5	
Measured			--				
Required supplementary insulation PTI < 600	-	1,6	2,5	5	8	10	
Measured			>3,2				
Required reinforced 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							
Required supplementary insulation	-	0,8	1,5	3	4	5,5	
Measured							
Required reinforced insulation	-	1,6	3	6	8	11	
Measured			>3,9				
Table 4	Minimum distances (mm) for non-sinusoidal pulse voltages						N/A
Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured							
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured							
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-
Required clearances	75	90	130	170	-	-	-
Measured							

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict

	Appendix 3: LED modules tested with EN 62031:2008+A1:2013	P
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12 (12)	ELECTRIC STRENGTH	P
	Immediately after clause 11 electric strength test for 1 min	P
	Basic insulation for SELV, test voltage 500 V	P
	Working voltage ≤ 50 V, test voltage 500 V	N/A
	Working voltage > 50 V ≤ 1000 V, test voltage (V):	N/A
	Basic insulation, $2U + 1000$ V	N/A
	Supplementary insulation, $2U + 1000$ V	N/A
	Double or reinforced insulation, $4U + 2000$ V	N/A
	No flashover or breakdown	N/A
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1	N/A

13 (14)	FAULT CONDITIONS	P
- (14)	When operated under fault conditions the controlgear:	P
	- does not emit flames or molten material	P
	- does not produce flammable gases	P
	- protection against accidental contact not impaired	P
	Thermally protected controlgear does not exceed the marked temperature value	N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table) P
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table) P
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3	N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table) P

EN 62031			
Clause	Requirement + Test	Result - Remark	Verdict
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	P
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table)	P
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$:	$>1.3 \text{ M}\Omega$	P
	No flammable gases		P
	No accessible parts have become live		N/A
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.6)	Relevant fault condition tests with high-power supply		—
13.2	Module withstands overpower condition $>15 \text{ min.}$		P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		P
	During the tests, tissue paper, spread below module, does not ignite		P
15	CONSTRUCTION		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
14	TABLE: tests of fault conditions		P
Part	Simulated fault		Hazard
C1	Short-circuit, the appliance works normally		NO
IC1	Short -circuit, the appliance not working		NO
LED	Short -circuit, the appliance not working		NO

-Appendix 4: For requirement of EN 62493:2015

4.2	Unintentional radiating part of lighting equipment		P
4.2.1	General		P
	This subclause 4.2 applies for lighting equipment, excluding the intentional radiating part (as far as applicable).		P
4.2.2	Lighting equipment deemed to comply with the Van der Hoofden test without testing		N/A
	1) it contains no electronic controlgear;		N/A
	2) it is incandescent-lamp technology, including halogen;		N/A
	3) it is a LED-light-source technology;		N/A
	4) it is an OLED light-source technology;		N/A
	5) it is high-pressure discharge lamp technologies;		N/A
	6) it is based on low-pressure discharge lamp technologies with an exposure distance larger than or equal to 50 cm (according to Table A.1);		N/A
	7) it is an independent auxiliary.		N/A
4.2.3	Application of limits		P
	Induced current density		P
	Induced current density 20 kHz – 10 MHz	See measurement results below	P

4.2.3	INDUCED CURRENT DENSITY	P
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	Power supply system utilised:		—
	Voltage	230 V	—
	Frequency.....	50 Hz	—
	Environmental conditions:		—
	Temperature	25 °C	—
	Humidity.....	56 %	—
	EuT operation mode:		—
	<input checked="" type="checkbox"/> Normal operation		—
	<input type="checkbox"/> Other operation:		—
			—

4.2.3	MEASUREMENT RESULTS			P
	Measuring with "Van der Hoofden" test head			P
Location of EuT	Measuring distance	Result (F)	Limit (F)	Verdict
On the table	15 cm	0,021	0,85	P

4.2.3	EQUIPMENT USED DURING TEST		
Equipment	Manufacturer	Type	Id. No.
EMI test receiver	R&S	ESCI 30	WST
Test Head	SCHWARZBECK	VDHH9502	WST

-Appendix 5: Photo document of product

For model: M SPOT 75



Photo 1



Photo 2



Photo 3

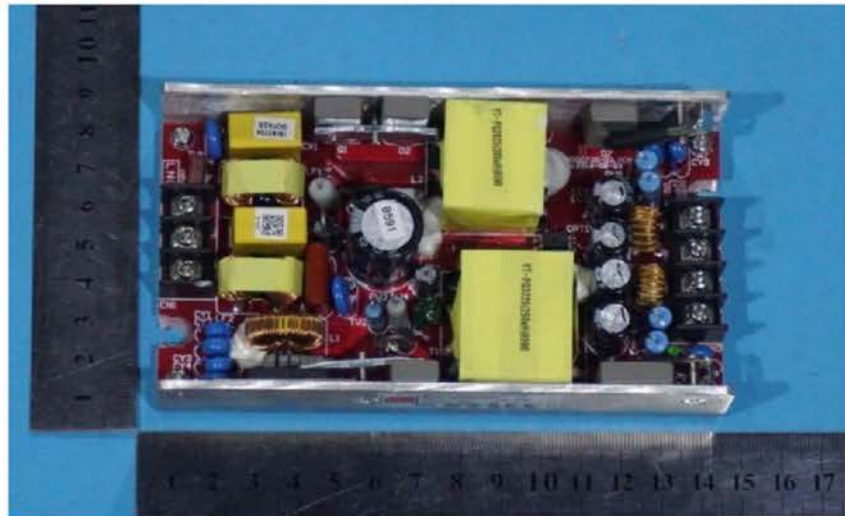


Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10

--- End of report ---