



TEST REPORT

Reference No...... : WTZ14F0614785S
Applicant..... : Zhongshan Dayuan Lighting Co., Ltd
Address..... : Dong'An Road, Haizhou, Guzhen Town, Zhongshan City, Guangdong Province, China
Manufacturer..... : The same as above
Address..... : The same as above
Product Name..... : Fixed Luminaires
Model No..... : See model list on page 3
Standards..... : Luminaires
Part 2-1:Fixed general purpose luminaires
EN 60598-2-1:1989
EN 60598-1:2008+A11:2009
Date of Receipt sample..... : 2014-06-08
Date of Test..... : 2014-06-09 to 2014-06-20
Date of Issue..... : 2014-06-23
Test Report Form No...... : WSL-6059821A-02A
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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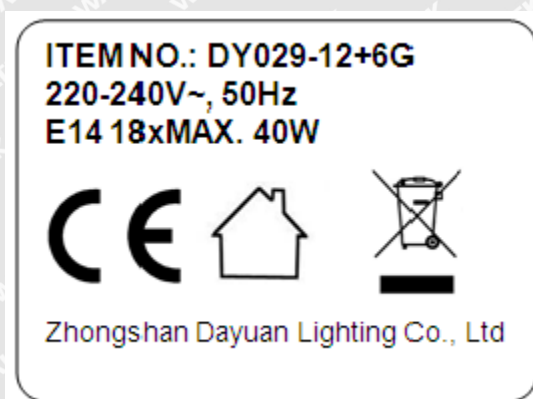
Test item description.....: Fixed Luminaires

Trade Mark.....: --

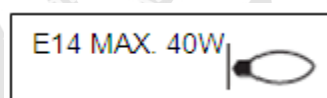
Model/Type reference.....: See model list on page 3

Ratings.....: See model list on page 3

Copy of marking plate:



On the luminaires surface



On the luminaries exterior Near Lampholder

Note: the marking labels for other models are identical as above, except the model name and rated wattage are different.

Summary of testing:

1. Unless otherwise specified, the model DY029-12+6G was chosen as representative model to perform all tests and the tests results complied with the requirements of the standards mentioned on page one. Construction had been checked on all models.
2. Lighting equipment related to human exposure to electromagnetic fields was assessed according to EN 62493:2010 and found to comply with the requirement.
3. Only the most unfavorable results are recorded in this report.

**Test items particulars:**

Classification of installation and use: Fixing mounting

Supply Connection: Terminal block

Possible test case verdicts:

- test case does not apply to the test object.....: N (Not applicable)

- test object does meet the requirement.....: P (Pass)

- test object does not meet the requirement: F (Fail)

General remarks:

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

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

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

General product information:

1. Fixed general purpose luminaries, for indoor use only.
2. All models have the same construction, except the shape is different.
3. For more details see model list below.

No	Model	Rated voltage	Rated frequency	Rated power input	Protection class	IP degree
1	DY029-6	220-240V~	50Hz	E14 6xMax.40W	Class I	IP20
2	DY029-6G	220-240V~	50Hz	E14 6xMax.40W	Class I	IP20
3	DY029-12+6	220-240V~	50Hz	E14 18xMax.40W	Class I	IP20
4	DY029-12+6G	220-240V~	50Hz	E14 18xMax.40W	Class I	IP20



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Clause	Requirement + Test	Result - Remark	Verdict
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1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
1.2 (0.3)	More sections applicable.....	Yes ☐ No ☒	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection (Class 0 excluded).....	Class I	—
1.4 (2.3)	Degree of protection (Requirement: Ordinary)	IP 20	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
	Luminaire not suitable for direct mounting on normally flammable surfaces	Yes ☐ No ☒	—
1.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings	See "Copy of marking plate"	P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions	In English	P
1.5 (3.3.1)	Combination luminaires		N
1.5 (3.3.2)	Nominal frequency in Hz	50Hz	P
1.5 (3.3.3)	Operating temperature		N
1.5 (3.3.4)	Symbol or warning notice		N
1.5 (3.3.5)	Wiring diagram		N
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N
1.5 (3.3.8)	Limitation for semi-luminaires		N
1.5 (3.3.9)	Power factor and supply current		N
1.5 (3.3.10)	Suitability for use indoors		N
1.5 (3.3.11)	Luminaires with remote control		N
1.5 (3.3.12)	Clip-mounted luminaire – warning		N
1.5 (3.3.13)	Specifications of protective shields		N
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N



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Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.16)	Rough service luminaire		N
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N
1.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N
1.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		P
1.6 (4.4.1)	Integral lampholder		N
1.6 (4.4.2)	Wiring connection		N
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		P
	- pressure test (N) : --		N
	After test the lampholder comply with relevant standard sheets and show no damage		N
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N
	- bending test (Nm) : E14, 1.2Nm		P
	After test the lampholder have not moved from its position and show no permanent deformation		P
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
1.6 (4.4.8)	Lamp connectors		N
1.6 (4.4.9)	Caps and bases correctly used		N
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II	No starter holder used	N



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Clause	Requirement + Test	Result - Remark	Verdict
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		P
	Tails		N
	Unsecured blocks		P
1.6 (4.7)	Terminals and supply connections		P
1.6 (4.7.1)	Contact to metal parts		P
1.6 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
1.6 (4.7.3)	Terminals for supply conductors		P
1.6 (4.7.3.1)	Welded connections:		N
	- stranded or solid conductor		N
	- spot welding		N
	- welding between wires		N
	- Type Z attachment		N
	- mechanical test according to 15.8.2		N
	- electrical test according to 15.9		N
	- heat test according to 15.9.2.3 and 15.9.2.4		N
1.6 (4.7.4)	Terminals other than supply connection		P
1.6 (4.7.5)	Heat-resistant wiring/sleeves		P
1.6 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N
1.6 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with 61058-1 for electronic switches		N
1.6 (4.9)	Insulating lining and sleeves		P
1.6 (4.9.1)	Retainment		P
	Method of fixing : Heat-shrinkable		P
1.6 (4.9.2)	Insulated linings and sleeves		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C) : --		N
1.6 (4.10)	Insulation of Class II luminaires		P



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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14		N
1.6 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
1.6 (4.10.3)	Retention of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		P
	- lining in lampholder		N
1.6 (4.11)	Electrical connections		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		N
	- thread-cutting screws		N
1.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N
1.6 (4.12)	Mechanical connections and glands		P
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part.....: Screw used for fixing enclosure: 1.2Nm		P
	Torque test: torque (Nm); part.....: Screw used as cord anchorage: 1.2Nm		P
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal	No such screw	N
1.6 (4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm).....: --		N
	- lampholder; torque (Nm).....: E14, 1.2Nm		P
	- push-button switches; torque 0,8 Nm.....: --		N



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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.12.5)	Screwed glands; force (Nm)	--	N
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)	--	N
	- other parts; energy (Nm)	Enclosure: 0.35Nm	P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
1.6 (4.13.3)	Straight test finger	Enclosure: 30N	P
1.6 (4.13.4)	Rough service luminaires		N
	- IP54 or higher		N
	a) fixed		N
	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
1.6 (4.13.6)	Tumbling barrel		N
1.6 (4.14)	Suspensions and adjusting devices		P
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	Max. for DY029-12+6G, 4 x 18.70kg	P
	B) torque 2,5 Nm		N
	C) bracket arm; bending moment (Nm)	--	N
	D) load track-mounted luminaires	--	N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)	--	N
	Metal rod. diameter (mm)	--	N
	Fixed luminaire or independent control gear without fixing devices		N
1.6 (4.14.2)	Load to flexible cables		N
	Mass (kg)	--	N
	Stress in conductors (N/mm ²)	--	N
	Mass (kg) of semi-luminaire	--	N
	Bending moment (Nm) of semi-luminaire	--	N
1.6 (4.14.3)	Adjusting devices:		N



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Clause	Requirement + Test	Result - Remark	Verdict
	- flexing test; number of cycles..... : --		N
	- strands broken		N
	- electric strength test afterwards		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
1.6 (4.14.5)	Guide pulleys		N
1.6 (4.14.6)	Strain on socket-outlets		N
1.6 (4.15)	Flammable materials:		N
	- glow-wire test 650 °C		N
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear		N
1.6 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
1.6 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N
1.6 (4.17)	Drain holes		N
	Clearance at least 5 mm		N
1.6 (4.18)	Resistance to corrosion:		N
1.6 (4.18.1)	- rust-resistance		N
1.6 (4.18.2)	- season cracking in copper		N



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Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Igniters compatible with ballast		N
1.6 (4.20)	Rough service vibration		N
1.6 (4.21)	Protective shield:		N
1.6 (4.21.1)	Shield fitted		N
	Shield of glass if tungsten halogen lamps		N
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
1.6 (4.21.3)	No direct path		N
1.6 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
1.6 (4.22)	Attachments to lamps		N
1.6 (4.23)	Semi-luminaires comply Class II		N
1.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N
1.6 (4.25)	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection:		N
1.6 (4.26.1)	Uninsulated accessible SELV parts		N
1.6 (4.26.2)	Short-circuit test		N
1.6 (4.26.3)	Test chain according to Figure 29		N

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)	Max.240V~	—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☐	—
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
	Rated pulse voltage (kV)	--	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)	Approved terminal block and lampholder	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	Cr=7.3mm, (required: 5mm) Cl=7.5mm, (required: 3mm) (minimum values were recorded)	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm)		N



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Clause	Requirement + Test	Result - Remark	Verdict
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm)..... :	Cr=3.8mm, (required: 2.5mm) Cl=3.5mm, (required: 1.5mm) (minimum values were recorded)	P
	(5) Not used		N
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm)..... :	Cr=7.3mm, (required: 5mm) Cl=7.5mm, (required: 3mm) (minimum values were recorded)	P

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	0.04	P
	Self-tapping screws used		N
	Thread-forming screws		N
	Thread-forming screw used in a grove		N
	Earth makes contact first		N
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
1.8 (7.2.5)	Earth terminal integral part of connector socket		N
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		N

1.9 (14)	SCREW TERMINALS		P
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire		N



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Clause	Requirement + Test		Verdict
1.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		N
	Separately approved; component list		N
	Part of the luminaire	(see Annex 4)	N
1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection	Terminal block	P
1.10 (5.2.2)	Type of cable.....	--	N
	Nominal cross-sectional area (mm ²)	--	N
	Cables equal to HD21 or HD22		N
1.10 (5.2.3)	Type of attachment, X, Y or Z		N
1.10 (5.2.5)	Type Z not connected to screws		N
1.10 (5.2.6)	Cable entries:		N
	- suitable for introduction		N
	- adequate degree of protection		N
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N
1.10 (5.2.8)	Insulating bushings:		N
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made of insulating material		N
1.10 (5.2.9)	Locking of screwed bushings		N
1.10 (5.2.10)	Cord anchorage:		N
	- covering protected from abrasion		N
	- clear how to be effective		N
	- no mechanical or thermal stress		N
	- no tying of cables into knots etc.		N
	- insulating material or lining		N
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N



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Clause	Requirement + Test	Result - Remark	Verdict
	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N
1.10 (5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N)		N
	- torque test: torque (Nm)		N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
1.10 (5.2.11)	External wiring passing into luminaire		N
1.10 (5.2.12)	Looping-in terminals		N
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.10 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		N
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N
1.10 (5.2.18)	Used plug in accordance with		N
	- IEC 60083		N
	- other standard		N
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type	(see Annex 1)	P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A)	--	N
	- temperatures	--	N
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P



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Clause	Requirement + Test	Result - Remark	Verdict
	Cross-sectional area (mm ²) : (see Annex 1)		P
	Insulation thickness		P
	Extra insulation added where necessary		N
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N
1.10 (5.3.1.4)	Conductors without insulation		N
1.10 (5.3.1.5)	SELV current-carrying parts		N
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber	PVC	N
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- cables with protective sheath		P
1.10 (5.3.4)	Joints and junctions effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		P
1.10 (5.3.6)	Wire carriers		N
1.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N
1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (8.2.1)	Live parts not accessible with standard test finger		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
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N



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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulation only accessible under lamp or starter replacement		N
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		N
	Double-ended high pressure discharge lamp		N
	Relevant warning according to 3.2.18 fitted to the luminaire		N
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
1.11 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		P
	- basic insulation not accessible other than during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation		P
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N
1.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		N
	Ordinary luminaire:		N
	- touch current : --		N
	- no-load voltage..... : --		N
	Other than ordinary luminaire:		N
	- nominal voltage : --		N
1.11 (8.2.4)	Portable luminaire:		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		N
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N
	Portable plug connected luminaire with capacitor		N
	Other plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N



EN 60598-2-1			
Clause	Requirement + Test		Verdict
1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (12.3)	Endurance test:		P
	- mounting-position..... :	Acc. to user manual	—
	- test temperature (°C)..... :	35 °C	—
	- total duration (h)..... :	240 h	—
	- supply voltage: Un factor; calculated voltage (V):	1.05U _T (U _T : the voltage at which the rated wattage of the lamp is obtained)	—
	- lamp used	E14 40W	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)	--	—
	- case of abnormal conditions..... :	--	—
	- electronic lamp control gear		N
	- measured winding temperature (°C): at 1,1 Un :	--	—
	- measured mounting surface temperature (°C) at 1,1 Un	--	N
	- calculated mounting surface temperature (°C) .. :	--	N
	- track-mounted luminaires		N
1.12 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions..... :	--	—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C) .. :	--	N
	- track-mounted luminaires		N
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N
1.12 (12.7.1)	Luminaire without temperature sensing control		N



EN 60598-2-1			
Clause	Requirement + Test		Verdict
1.12 (12.7.1.1)	Luminaire with fluorescent lamp $\leq 70W$		N
	Test method 12.7.1.1 or Annex V	--	—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)	--	—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex V:		N
	- case of abnormal conditions		—
	- measured winding temperature ($^{\circ}C$): at 1,1 Un . .	--	—
	- measured temperature of fixing point/exposed part ($^{\circ}C$): at 1,1 Un	--	—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$)	--	—
	Ball-pressure test:		N
	- part tested; temperature ($^{\circ}C$)	--	N
	- part tested; temperature ($^{\circ}C$)	--	N
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp $> 70W$, transformer $> 10 VA$		N
	- case of abnormal conditions		—
	- measured winding temperature ($^{\circ}C$): at 1,1 Un . .	--	—
	- measured temperature of fixing point/exposed part ($^{\circ}C$): at 1,1 Un	--	—
	- calculated temperature of fixing point/exposed part ($^{\circ}C$)	--	—
	Ball-pressure test:		N
	- part tested; temperature ($^{\circ}C$)	--	N
	- part tested; temperature ($^{\circ}C$)	--	N
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers $\leq 10 VA$		N
	- case of abnormal conditions		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
1.12 (12.7.2)	Luminaire with temperature sensing control		N
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—



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

	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):	--	—
	Ball-pressure test:		N
	- part tested; temperature (°C)	--	N
	- part tested; temperature (°C)	--	N

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP.....	IP 20	—
	- mounting position during test.....	Acc. to user manual	—
	- fixing screws tightened; torque (Nm).....	--	—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	d) ii) For luminaires with drain holes – no hazardous water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		N
1.13 (9.3)	Humidity test 48 h	25 °C, 93%RH	P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (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)		—



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Clause	Requirement + Test	Result - Remark	Verdict
	SELV:		N
	- between current-carrying parts of different polarity	--	N
	- between current-carrying parts and mounting surface	--	N
	- between current-carrying parts and metal parts of the luminaire.....	--	N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	--	N
	- Insulation bushings as described in Section 5 ..	--	N
	Other than SELV:		P
	- between live parts of different polarity.....	200MΩ	P
	- between live parts and mounting surface	200MΩ	P
	- between live parts and metal parts	200MΩ	P
	- between live parts of different polarity through action of a switch.....	--	N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	200MΩ	P
	- Insulation bushings as described in Section 5 ..	--	N
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		P
	SELV:		N
	- between current-carrying parts of different polarity	--	N
	- between current-carrying parts and mounting surface	--	N
	- between current-carrying parts and metal parts of the luminaire.....	--	N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	--	N
	- Insulation bushings as described in Section 5 ..	--	N
	Other than SELV:		P
	- between live parts of different polarity.....	Class I construction: 1480V Class II construction: 2960V	P



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Clause	Requirement + Test	Result - Remark	Verdict
	- between live parts and mounting surface	Class I construction: 1480V Class II construction: 2960V	P
	- between live parts and metal parts	Class I construction: 1480V Class II construction: 2960V	P
	- between live parts of different polarity through action of a switch	--	N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts	Class I construction: 1480V Class II construction: 2960V	P
	- Insulation bushings as described in Section 5 ..	--	N
1.14 (10.3)	Touch current (mA).....	0.064mA	P
	Protective conductor current	0.024mA	P

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



EN 60598-2-1						
Clause	Requirement + Test			Result - Remark		Verdict
	ANNEX 1 component					
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Terminal block	B	VASK Components Hong Kong Company	T04S	450VAC, 0,5-1mm ² ,T110	EN 60998-1 EN 60998-2-1	VDE 40023124
Alternative	D	Zhongshan Lianjin Metal & Electrical Appliances Co., Ltd.	EJE-2315	250VAC, 0.75-1.5mm ² , T100	EN 60998-1 EN 60998-2-1	VDE 40030009
External cable	B	Yu Jia Wire Electronics	H03VV-F	3 x 0.75 mm ²	DIN EN 50525-2-11	VDE 40022346
Internal wire for lampholder	B	Zhongshan Yiying Wire & Cable Co., Ltd.	FEP YY-101	300/500 V, 0.5 mm ² , T180	DIN VDE 0250	VDE 40022722
Alternative	D	Yang Tai Wire&Cable Co.,Ltd	(6)YAF	450/750V, 0.5 mm ² , 180°C	DIN VDE 0250	VDE 40002489
Alternative	D	Jiangmen Jiaqixing House Appliance Industry Co., Ltd.	(N)6YAF	300/500 V, 0.5 mm ² , T180	DIN VD E0250	VDE 40029535
E14 plastic lampholder	B	Gao Shi Electrical Appliances Factory	GS5556	250V,2A,T210	DIN EN60238	VDE 40027228
Alternative	D	Jiangmen Z&X Plastic Products Co. Ltd.	E14-H	250V,2A,T210°C	EN 60238	VDE 40032048
Sleeving	B	DONGGUAN JUYOU INSULATION MATERIALS CO LTD	JYT	--	--	UL E255729
Closed-end connector	B	Heavy Power Co.,Ltd	CE2; CE5	600V; 150°C	--	UL E113650
Heat shrinkable tube	B	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V, 125°C	--	UL E203950
Alternative	D	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	--	UL E225897

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



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

ANNEX 2	Temperature measurements, thermal tests of Section 12	P
----------------	--	----------

Annex 2-1	Type reference	DY029-12+6G	—
	Lamp used	E14 18×40W	—
	Lamp control gear used	--	—
	Mounting position of luminaire	Acc. to user manual	—
	Supply wattage (W)	756	—
	Supply current (A)	3.179	—
	Calculated power factor	0.99	—
	Table: measured temperatures corrected for $t_a = 25\text{ }^{\circ}\text{C}$:		P
	- abnormal operating mode :		—
	- test 1: rated voltage	--	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	1.05×720=756W	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	--	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage	--	—
	Through wiring or looping-in wiring loaded by a current of A during the test	--	—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Terminal block	--	27.2	--	85	--	--
Power cord (clamped)	--	28.6	--	75	--	--
Branching of cord	--	27.9	--	90	--	--
Lampholder lead wire	--	45.4	--	180	--	--
Lampholder contact	--	62.6	--	210	--	--
Lampholder rim	--	65.6	--	210	--	--
Closed-end connector	--	25.2	--	Ref.	--	--
Mounting surface	--	39.7	--	90	--	--
Illuminated surface (0.1m)	--	25.5	--	90	--	--



EN 60598-2-1

Clause	Requirement + Test	Result - Remark	Verdict
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ANNEX 3	Screw terminals (part of the luminaire)		N
----------------	--	--	----------

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

ANNEX 4	Screwless terminals (part of the luminaire)		N
----------------	--	--	----------

(15)	SCREWLESS TERMINALS		—
(15.2)	Type of terminal		—
	Rated current (A).....		—
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N



EN 60598-2-1										
Clause	Requirement + Test					Result - Remark				Verdict
(15.3.6)	Clear connection method									N
(15.3.7)	Clamping independently									N
(15.3.8)	Fixed in position									N
(15.3.10)	Conductor size									N
	Type of conductor									N
(15.5.1)	Terminals internal wiring									N
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....					--				N
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....									N
	Insertion force not exceeding 50 N									N
(15.5.2)	Permanent connections: pull-off test (20 N)									N
(15.6)	Electrical tests									N
	Voltage drop (mV) after 1 h (4 samples)									N
	Voltage drop of two inseparable joints									N
	Number of cycles					--				—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)									N
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)					--				N
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....					--				N
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....					--				N
(15.7)	Terminals external wiring									N
	Terminal size and rating									N
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)					--				N
	Pull test pin or tab terminals (4 samples); pull (N)					--				N
(15.9)	Contact resistance test									N
	Voltage drop (mV) after 1 h									N
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	--	--	--	--	--	--	--	--	--	--
	Voltage drop of two inseparable joints					--				N
	Voltage drop after 10th alt. 25th cycle									N
	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									N



EN 60598-2-1											
Clause		Requirement + Test					Result - Remark				Verdict
		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									N
		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									N
		Max. allowed voltage drop (mV) :					--				—
terminal		1	2	3	4	5	6	7	8	9	10
voltage drop (mV)		--	--	--	--	--	--	--	--	--	--
ANNEX 5		National Differences for (country name) or Group Differences									P
		CENELEC COMMON MODIFICATIONS (EN)									P
1.5 (3)		MARKING									N
1.5 (3.3.101)		Adequate warning on the package									N
1.6 (4)		CONSTRUCTION									N
1.6 (4.11.6)		Electro-mechanical contact systems									N
1.10 (5)		EXTERNAL AND INTERNAL WIRING									N
1.10 (5.2.1)		Connecting leads									N
		- without a means for connection to the supply									N
		- terminal block specified									N
		- relevant information provided									N
		- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1					Assessed with terminal block specified in user manual.				N
1.10 (5.2.2)		Cables equal to HD21 S2 or HD22 S2									N
1.12 (12)		ENDURANCE TEST AND THERMAL TEST									P
1.12 (12.4.2c)		Thermal test (normal operation)									P
ZB		ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)									N
(3.3)		DK: power supply cord with label									N
		IT: warning label on Class 0 luminaire									N



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

(4.5.1)	DK: socket-outlets		N
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N

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

	EN 60598-1:2008 + A11:2009		P
	Replace the existing definition 1.2.76 with the following:		P
1.2.76	Impulse withstand category (former term "overvoltage categories")		P
	Numeral defining a transient overvoltage condition		P
Note 1	Impulse withstand categories I, II, III and IV are used.		P
Note 2	Explanation is taken from IEC 60364-4-44:2007		P
	Table 1.1		P

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EN 62493			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 8	Assessment Of Lighting Equipment Related To Human Exposure To Electromagnetic Fields according to standard EN 62493		P
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4.2	Application of limits (Test summary)		N
	Specific absorption rate (SAR)		N
a)	CISPR 15 clause 4.3.1 Disturbance voltage mains terminals 20 kHz to 30 MHz		N
b)	CISPR 15 clause 4.4 Radiated electromagnetic disturbances 100 kHz to 30 MHz		N
c)	CISPR 15 clause 4.4.2 Radiated electromagnetic disturbances 30MHz to 300MHz		N
	Induced current density		N
d)	Induced current density 20 kHz - 10 MHz	See measurement results below	N

4.2.d	INDUCED CURRENT DENSITY		N
-------	-------------------------	--	---

	Power supply system utilized:		—
	Voltage	--	—
	Frequency	--	—
	Environmental conditions:		—
	Temperature.....	--	—
	Humidity.....	--	—
	EuT operation mode:		—
	☒ Normal operation	--	—
	☐ Other operation:		—
			—

4.2.d	MEASUREMENT RESULTS				N
	Measuring with “Van der Hoofden” test head				
Location of EUT		Measuring distance	Result(F)	Limit(F)	Verdict
Reference Figure B.2a of EN 62493:2010		50cm		0,85	N



EN 62493			
Clause	Requirement + Test	Result - Remark	Verdict
4.3	Lighting equipment deemed to comply without testing		P
	Lighting equipment without electronic control gear is deemed to comply with the requirements of the standard without testing. All kind of ignitors, starters, switches, dimmers (including phase control units e.g. triac, GTO) and sensors are not considered as electronic control gear.		P

===== End of Report =====



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Photo Documentation

Reference No.: WTZ14F0614785S

Model: DY029-12+6G



Photo 1



Photo 2



Photo Documentation

Reference No.: WTZ14F0614785S



Photo 3

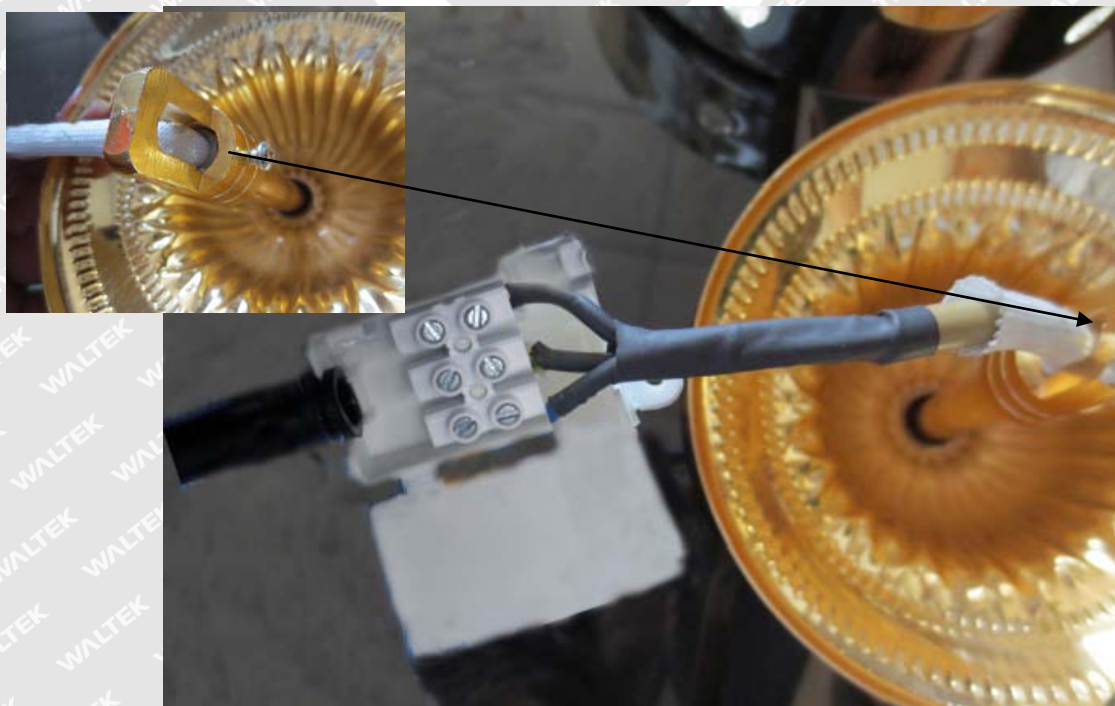


Photo 4



Photo Documentation

Reference No.: WTZ14F0614785S

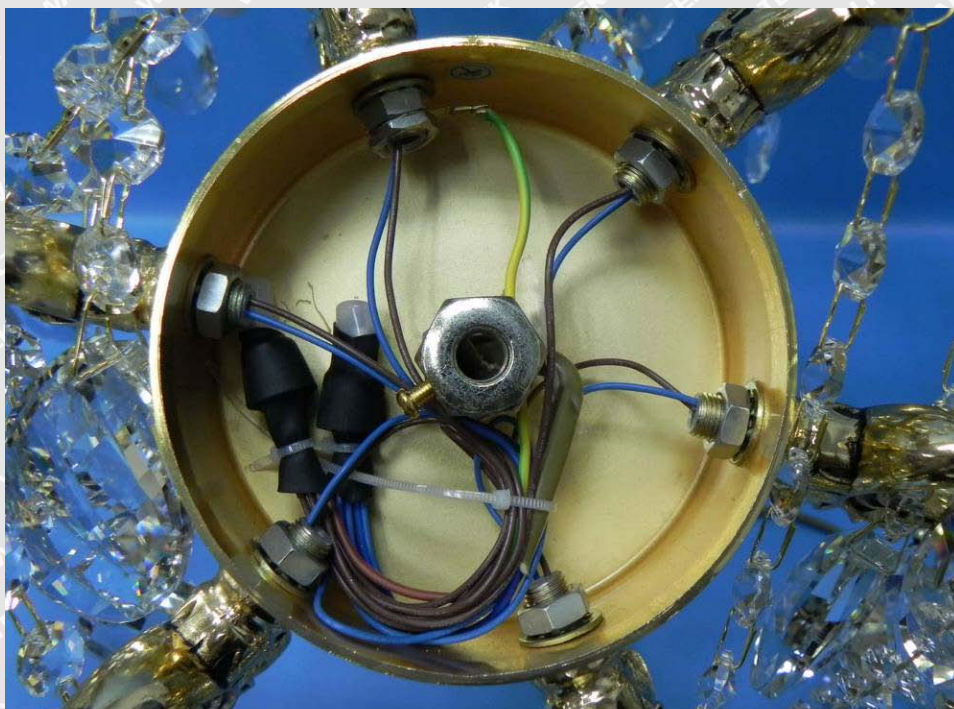


Photo 5



Photo 6



Photo Documentation

Reference No.: WTZ14F0614785S

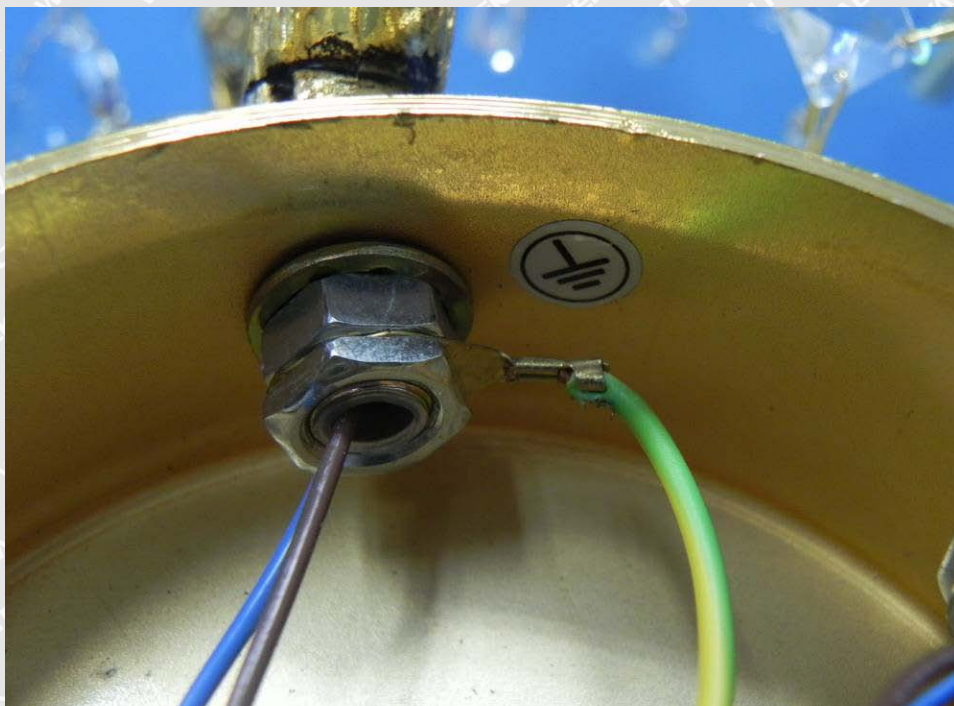


Photo 7



Photo 8



Photo Documentation

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Photo 9



Photo 10



Photo Documentation

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Photo 11

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Photo 12



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Photo 13

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