Test Report issued under the responsibility of:

TEST REPORT
IEC 62776
Double-capped LED lamps designed to retrofit linear fluorescent lamps – Safety specifications

Report Number.....:	AOC250815001S
Date of issue.....:	2025-08-20
Total number of pages.....	29 pages
Name of Testing Laboratory preparing the Report.....:	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name.....:	ALI AUAD ALSHALABIEST
Address.....:	JORDANN-AMMAN-NAZAL-ALSHALABI ELECTRICITY
Test specification:	
Standard.....:	IEC 62776:2014
Test procedure.....:	Type testing
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62776B
Test Report Form(s) Originator.....:	VDE Testing and Certification Institute
Master TRF.....:	2018-08-16

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

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

General disclaimer:

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

Test item description.....:	LED Tube
Trade Mark.....:	POLO-LIGHT
Manufacturer.....:	ALI AUAD ALSHALABIEST JORDANN-AMMAN-NAZAL-ALSHALABI ELECTRICITY
Model/Type reference.....:	LED T8 TUBE-46W, LED T8 TUBE-38W, LED T8 TUBE-15W
Ratings.....:	220-240 V~, 50/60 Hz, 46 W, ta: 25℃

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	Shenzhen AOCE Electronic Technology Service Co., Ltd	
Testing location/ address.....:		Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature).....:		ZhiCong Xian Technical Engineer	ZhiCong
Approved by (name, function, signature)...:		Robin Liu Technical Manager	Robin
☐	**Testing procedure: TMP/CTF Stage 1:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: WMT/CTF Stage 2:**	N/A	
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: SMT/CTF Stage 3 or 4:**	N/A	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

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

Attachment No.1: Clause 4.11, 4.12, 4.25, 5.3 of IEC 60598-1:2015+A1:2018 (See attachment No. 1);
Attachment No.2: Photo document.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
- IEC 62776:2014 Full test were performed on model LED T8 TUBE-46W	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

Summary of compliance with National Differences:

N/A

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

POLO-LIGHT

LED Tube

LED T8 TUBE-46W

220-240 V~, 50/60 Hz, 46 W

Manufacturer: ALI AUAD ALSHALABIEST
Address: JORDANN-AMMAN-NAZAL-ALSHALABI ELECTRICITY

Remark:

1. The above mark is the minimum requirements required by the safety standard. For the final production, the additional marks which do not give rise to misunderstanding may be added.
2. The height of graphical symbols shall not be less than 5 mm
3. The height of letters shall not be less than 2 mm.

Test item particulars..... :	Double-capped LED lamps
Classification of installation and use..... :	Indoor used
Supply Connection..... :	G13
..... :	
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..... :	2025-07-31
Date (s) of performance of tests..... :	2025-07-31 to 2025-08-20

General remarks:

The tested sample(s) and the sample information are provided by the client.
"(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.

The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Note: clauses marked '*' not included in CNAS scope.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

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

Name and address of factory (ies)..... :	Same as manufacturer

General product information:

/

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		**P**
4.1	The lamp shall be so designed and constructed that in normal use cause no danger to the user or surroundings		P
4.2	Double-capped LED lamps shall be specially prepared for fault condition. Opened lamps to verify conformity with clause 11, 12 and 14 of this standard.		P
4.3	All tests are carried out on each type or each power or representative selection of lamps.		P
4.4	When the lamp fails safely during one of the tests, it is replaced if no fire, smoke or flammable gas is produced.		P
4.5	Internal wiring shall be carried out as in Clause 5.3 of IEC 60598-1.	See attachment No. 1	P
4.6	For construction of electrical circuit, cl.15.1, 15.2 of IEC 61347-1. For other parts, cl.4.11, 4.12, 4.25 of IEC 60598-1 shall be regarded.	See attachment No. 1	P

5	**MARKING**		**P**
5.1	Marking on the lamp		P
a)	– mark of origin	See “copy of marking plate”	P
b)	– rated supply voltage (V).....:	See “copy of marking plate”	P
c)	– rated power (W).....:	See “copy of marking plate”	P
d)	– rated frequency (Hz).....:	50/60Hz	P
e)	– marked with symbol fig. 1.		N/A
	– marked with symbol fig 2.	See “copy of marking plate”	P
f)	– symbol acc. to Fig.3 and “This lamp is not suitable to be used in emergency luminaires…”	See “copy of marking plate”	P
g)	– replaced starter, tube marking “type ref”, starter marking “LED”, Fig.4	See “copy of marking plate”	P
h)	– information on the ingress of dust and water marked with Fig. 5	See “copy of marking plate”	P
i)	– rated ambient temperature range of the lamp.	See “copy of marking plate”	P
5.2	Marking on the lamp, on the immediate lamp wrapping or in the instructions		P
	– explanation of Fig. 1 and Fig. 2 shall be given in instruction manual	See “instruction manual”	P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
a)	– rated current (A)..... :	See “copy of marking plate”	P
b)	– special conditions or restrictions; not suitable for dimming, symbol fig.6	See “copy of marking plate”	P
5.3	Instruction manual		P
5.3.1	General		P
	– instruction, describing all necessary steps for replacement LED lamp, replacement of starter.		P
	– required instructions shall be given either on the lamp,		N/A
	– on the product packaging		N/A
	– or in the manufacturer’s instructions provided with the lamp		P
	– explanation of the symbols in the instruction manual		P
5.3.2	Declaration of the product		P
(1)	– list of all supplied parts		P
(2)	– declaration of the replaced fluorescent lamps		P
(3)	– Warning that no modification of the luminaire is to be made.		P
(4)	– The ambient temperature range shall be declared.		P
	– if higher than -20°C or lower than +60°C, additional information necessary		P
	– sentence “The lamp may not be suitable for use in all application …”		P
(5)	– Declare: “This lamp is designed for general lighting service (excluding explosive atmospheres)”		P
5.3.3	Graphical instruction		P
	– Graphical instruction, Fig.7 or description		P
5.3.4	Mounting		P
	– Described steps instead of graphical instruction 5.3.3		P
5.4	Compliance		P
	rubbing 15 s water, 15 s petroleum; marking legible		P

6	**INTERCHANGEABILITY**		**P**

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	Interchangeability of the cap		P
	Cap interchangeability in accordance with IEC 60061-1	See appended table 2	P
	Gauge in accordance with IEC 60061-3, G5/G13		P
	LED replacement starter in accordance with the dimensions, electrical, mechanical and thermal tests required in Section 1 of IEC 60155	See attachment No. 2	P
6.2	Mass		P
	G5-capped lamp: limit 200g G13-capped lamp: limit 500g	G13-capped lamp used, Max. 180g	P
6.3	Dimensions		P
6.3.1	The length of the lamp shall not change significantly within specified ambient temperature range of the lamp.	See appended table 3	P
6.3.2	Double-capped LED lamps for use in FL luminaires shall comply with the dimensions and tolerances of the corresponding lamps as defined in IEC 60081 at 25 °C.	See appended table 3	P
6.3.3	Variation of dimension A due self-heating at 25° C.	See appended table 4	P
6.3.4	Dimensions of corresponding lamps of IEC 60081. min ambient temp.(e.g. -20 °C)	See appended table 4	P
6.3.5	Dimensions of corresponding lamps of IEC 60081. max ambient temp. (e.g. +60 °C)	See appended table 4	P
6.3.6	Compliance		P
	Dimensions A1, B1 of corresponding lamps of IEC 60081.	See appended table 5	P
6.4	Temperature		P
6.4.1	Temperature requirement		P
	LED temperature shall not be higher than 75 °C on any location of the lamp.		P
6.4.2	Power requirement		P
	Power consumed of LED lamp shall not higher than replaced FL lamp (described in 60081)		P
6.4.3	Compliance		P
	Compliance; ta 25 °C, horizontally, rated supply voltage. Max surface temp. shall not exceed 6.4.1 and 6.4.2.		P
6.5	Safety of the lamp in case a wrong starter-lamp combination is used		P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	– FL starter with LED lamp		P
	– LED starter with FL lamp		N/A
	– Starter compliance for all possible combinations in case of two fluorescent lamps in series.		P
	– For LED replacement which replace shorted starter: combination “replaced starter for LED lamp and FL lamp” test not required.		N/A
	Rated voltage is taken as maximum voltage range.		P
13.2	Testing under extreme electrical conditions		P
	Lamp withstands overpower condition (150 % of the rated power) >15 min.		P
	A lamp fails safe after 15 min overpower condition		N/A
	Lamp with automatic protective device or power limiter, test performed 15 min. at limit.		P
13.3	Short-circuit across capacitors		P
	Only one component at a time allowed		P
13.4	Fault conditions across electronic components		P
	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected.	see appended table 7	P
	Only one component at the time subjected.		P
13.5	Compliance		P
	During the tests 13.2 to 13.5 the lamp shall not:		P
	– catch fire		P
	– does not produce flammable gases or smoke		P
	– live parts not accessible		P
	After the tests the insulation resistance with d.c. 500 V complies with requirements of Cl. 8.3:	>100MΩ	P
	To avoid any overheating during fault conditions, the impedance of the lamp shall be checked.	>100MΩ	P
	Overload due to rectifications of supply current shall be prevent. The difference of pos. and neg. semi waveform <30% of max. value.	Steady-state r.m.s. current through the lamp stays lower than the r.m.s. current of the corresponding fluorescent lamp in normal condition	N/A
- (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 7	P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664- 3		N/A
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
13.7	Safety of the lamp with different types of controlgear		P
	LED lamp operate safely with any type of controlgear as following		P
	– with magnetic ballast		P
	– with HF ballast (fic. A.5, IEC 60081)		P
	LED lamp tested at max. rated voltage with max. rated power.		P

7	**PIN-SAFETY DURING INSERTION**		**P**
	G5 and G13 lamps shall not be any electrical continuity between two ends of lamp.		P
	Basic insulation during lamp insertion (IEC 60598-1 clause 8)		P
	Deactivation of the protection against electric shock is not permissible		P
	Electric strength test conducted with 1500 V (2 U + 1000 V) between both ends of the lamp	1500V for 1min.	P
	Insulation resistance measured with about 500 V d.c. the minimum resistance shall be 2 MΩ	>100 MΩ	P
	Clearance (according to IEC 61347-1) shall be applied based on 250V working voltage		P
	Creepage distances shall not be less than the required minimum clearance.	see appended table 8	P
	Touch current shall not exceed 0,7mA peak at a test voltage of 500 V r.m.s. (50 Hz or 60Hz) acc. to Fig. 8	0.003mA	P

8	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
8.1	General		P
	Adequate insulation resistance and electrical strength between live and accessible parts. For caps requirements of IEC 61195 clauses 2.4 and 2.5		P
8.2	Test to establish whether a conductive part may cause an electric shock during operation		P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	Lamp construction without any additional luminaire enclosure. Following parts are not accessible when lamp is installed:		P
	– internal metal parts		P
	– basic insulated external metal parts, other than caps		N/A
	– live metal parts of the lamp cap		P
	– live metal parts of the lamp itself		P
	Tested with a test finger with a force of 10 N		P
	External metal parts other than current-carrying parts of the cap shall not be live.		P
8.3	Insulation resistance		P
	After storage 48 h at 91- 95% relative humidity and 20- 30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	≥ 4 MΩ for double or reinforced insulation.....:	>100MΩ	P
8.4	Electric strength		P
	Immediately after clause 8.3 electric strength test for 1 min		P
	Basic insulation; pcb-board, SELV-circuits: 500 V		P
	Double or reinforced insulation, 4U + 2000 V		P
	No flashover or breakdown		P

9	**MECHANICAL REQUIREMENTS FOR CAPS**		**P**
9.1	Construction and assembly		P
	Caps shall be constructed and assembled to the bulb that they remain attached during and after operation as following		P
9.2	Torque test on unused lamps		P
	Compliance is checked by applying a torque test to the pins. The lamp cap shall remain firmly attached to the bulb. Angular displacement < 6°.	No displacement	P
	Lamps with adjustable caps. Rotated to both extreme positions		N/A
9.3	Torque test after heat treatment		N/A
	Fixing the cap by crimp, screw or similar connection, lamps are exempt from this clause		N/A
	Heat treatment for 2000h at 80°C		P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	Heat treatment for 100h at 80°C for other kind of fixing		N/A
	Lamps with adjustable caps. Rotated to its extreme positions (both)		N/A
9.4	Repetition of Clause 8.2		P
	Clause 8.2 shall comply after the mechanical strength test.		P
10	**CAP TEMPERATURE RISE**		**P**
	Lamp cap temperature shall not exceed 120 °C.	See annex 1	P
11	**RESISTANCE TO HEAT**		**P**
	Parts of insulating material retaining live parts in position and other parts, enclosure of starter, ball-pressure test:		P
	– part; test temperature (°C) .....:	See appended table 6	P
12	**RESISTANCE TO FLAME AND IGNITION**		**P**
	External parts of insulating material preventing electric shock, enclosure of starter, glow-wire test 650 °C	Plastic of lamp cap, Bobbin of LED driver, Driver PCB	P
	– flame extinguished within 30 s		P
	– no flaming drops igniting tissue paper		P
13	**FAULT CONDITIONS**		**P**
13.1	General		P
	Lamps shall not impair safety		P
13.2	Testing under extreme electrical conditions		P
	Lamp withstands overpower condition (150 % of the rated power) >15 min.		P
	A lamp fails safe after 15 min overpower condition		N/A
	Lamp with automatic protective device or power limiter, test performed 15 min. at limit.		P
13.3	Short-circuit across capacitors		P
	Only one component at a time allowed		P
13.4	Fault conditions across electronic components		P

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected.	see appended table 7	P
	Only one component at the time subjected.		P
13.5	Compliance		P
	During the tests 13.2 to 13.5 the lamp shall not:		P
	– catch fire		P
	– does not produce flammable gases or smoke		P
	– live parts not accessible		P
	After the tests the insulation resistance with d.c. 500 V complies with requirements of Cl. 8.3:	>100MΩ	P
	To avoid any overheating during fault conditions, the impedance of the lamp shall be checked.	>40Ω	P
	Overload due to rectifications of supply current shall be prevent. The difference of pos. and neg. semi waveform <30% of max. value.	Steady-state r.m.s. current through the lamp stays lower than the r.m.s. current of the corresponding fluorescent lamp in normal condition	N/A
13.6	Further requirements		P
	In add. to fault conditions 13.2 to 13.5, fault conditions Cl.14.1 of IEC 61347-1 and 14.3 and the additional tests in 13.7 are carried out.		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 7	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
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
13.7	Safety of the lamp with different types of controlgear		N/A
	LED lamp operate safely with any type of controlgear as following		N/A
	– with magnetic ballast		N/A
	– with HF ballast (fic. A.5, IEC 60081)		N/A
	LED lamp tested at max. rated voltage with max. rated power.		N/A
13.8	Compliance for test with different type of controlgears		N/A

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	During tests of 13.7 shall not catch fire, produce flammable gases or smoke, live parts shall not become accessible.		N/A
	Low impedance: max. 0,51 A when 3,6 V applied to the pins of a cap.		N/A
13.9	Safety of the lamp in case the luminaire controlgear short circuits		P
	Ballast and starter are short-circuited in the luminaire.		P
14	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Creepage distances and clearances according to IEC 61347-1 with add. requirements.	see appended table 8	P
	Creepage distance between contact pins or metal shell of the cap according to IEC 60061-4		P
	For other parts creepage distances and clearances IEC 61347-1; accessible conductive parts IEC 60598-1, double or reinforced insulation.		P
15	**LAMP WITH PROTECTION AGAINST DUST AND MOISTURE**		**N/A**
15.1	Aim of the test		N/A
	Where the lamp is not marked acc. to Fig.5 tests 15.2 and 15.3 have to be conducted.		N/A
15.2	Thermal endurance		N/A
	- mounting- position:		N/A
	- test temperature (°C):		N/A
	- total duration (h):		N/A
	- supply voltage:		N/A
	Lamp shall not have become unsafe		N/A
	Marking legible		N/A
15.3	IP testing		N/A
- (9.2)	Tests for ingress of dust, solid objects and moisture:		N/A
	- classification according to IP:	IP20	N/A
	- mounting position during test:		N/A
	- fixing screws tightened; torque (Nm):		N/A
	- tests according to clauses:		N/A
	- electric strength test afterwards		N/A

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	a) no deposit in dust-proof lamp		N/A
	b) no talcum in dust- tight lamp		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	d) i) For lamps without drain holes – no water entry		N/A
	d) ii) For lamps with drain holes – no hazardous water entry		N/A
	e) no water in watertight lamps		N/A
	h) no damage of protective shield or glass envelope		N/A
16	**PHOTOBIOLOGICAL HAZARD**		N/A
16.1	UV radiation		N/A
	UV radiation of LED lamp shall not exceed 2 mW/klm		N/A
16.2	Blue light hazard		P
	Blue light hazard acc. IEC/TR 62778. LED lamps shall be classified as RG0 or RG1 unlimited.		P
16.3	Infrared radiation		N/A
	LED lamps do not require measurement		N/A

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE 1	: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1)
Plastic of lamp cap	SABIC INNOVATIVE PLASTICS B V	940A	PC, V-2, 120°C	IEC 62776	Tested with appliance + UL (E45329)
(Alt.)	AVERY (CHINA) CO LTD	ADFR	PI, V-0, 130°C	IEC 62776	Tested with appliance + UL (E352533)
Fuse in dummy end of lamp cap	Dongguan Reomax Electronics Technology Co., Ltd.	TBP	500mA, 300V	IEC 60127-1, IEC 60127-3	VDE (40032053)
internal wire	JUNHAO WIRE TECHNOLOGY CO LTD (DONGGUAN)	3239	200°C, 3000VDC, 22-24AWG	IEC 62776	Tested with appliance + UL (E357447)
(Alt.)	DONGGUAN ZHONGZHENG WIRE & CABLE TECH CO LTD	3239	200°C, 3000VDC, 22-24AWG	IEC 62776	Tested with appliance + UL (E336285)
LED	Lumileds Holding B.V	SMD2835	VF: 2,8-3,0 V; IF:60mA; CCT: 2800K-6300K	IEC 62776, IEC 62471	Tested with appliance
LED driver	Shenzhen Dark Energy Power Supply Co.,Ltd.	11G2-18242N-C00-0	Input: AC220-240, 50/60Hz Output: DC30-80V 260mA	EN 61347-2-13 EN 61347-1	CE
Insulation sheet for LED driver	CHI MEI CORPORATION	PC-110V(+)	PC, V-2, 105°C	IEC 62776	Tested with appliance + UL (E56070)
Driver PCB	LIANXIANG ELECTRONICS CO LTD	LX-D	V-0, 130°C	IEC 62776	Tested with appliance + UL (E328148)
(Alt.)	SHENZHEN RUIBOXINYUAN ELECTRONICS CO LTD	RBXY-2	V-0, 130°C	IEC 62776	Tested with appliance + UL (E339633)

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

Fuse	Dongguan Reomax Electronics Technology Co., Ltd.	TBP	T1A, 300V	IEC 60127-1, IEC 60127-3	VDE (40032053)
Inductor winding	SIHUI HENGHUI ELECTRICAL APPLIANCES CO LTD	*UEW/155 or QA*/155 (@)	155°C	--	UL (E337948)
Bobbin	CHANG CHUN PLASTICS CO LTD	EME-1200	EP – Casting, V-0, 130°C	IEC 62776	Tested with appliance + UL (E59481)
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE 2:	Dimensions according to Cap sheet in IEC 60061-1; 7004-51 (G13)						P
Object / part No.	A	D	E	F	G	H	N
Limit	Max. 31.5mm	12.70mm	2.29-2.67mm	6.60-7.62mm	--	--	min. 8.71mm
LED T8 TUBE-46W	27.53mm	12.68mm	2.53mm	7.11mm	--	--	33.0mm

TABLE 3	Dimensions of the corresponding lamps of IEC 60081 25 °C				P
Object / part No.	A	B		C	D
	max	min	max	max	max
Limit: 1.5m	1500,0	1504,7	1507,1	1514,2	34,1
Limit: 1.2m	1199.4	1204.1	1206.5	1213.6	34.1
Limit: 0.9m	894,6	899,3	901,7	908,8	28,0
Limit: 0.6m	589,8	594,5	596,9	604,0	28,1
46 W	1499.1	1505.4		1512.3	31.0

TABLE 4	Variation of dimension A and B		
Object / part No.	A (in operation)	A: 35°C	B: -15 °C
	max		min
LED T8 TUBE-46W	1499.2mm	1499.3mm	1505.1mm

TABLE 5	Compliance acc. to clause 6.3.6 $A1 = Atmax + \Delta A - A25°C\ (tmax - 25\ °C)\ 11,7*10^{-6}$ $B1 = B\ tmin - A25°C\ (tmin - 25\ °C)\ 11,7*10^{-6}$		P
Object / part No.	A1	B1	
	Max.	Min.	Max.
Limit: 1500mm	1500	1504.7	1507.1
IL-20W	1499.2	1505.8	

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE 6	Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm) ..... :		≤2mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Plastic of lamp cap		125	0.73
Bobbin of LED driver		125	0.65
PCB of LED driver		125	0.63

TABLE 7	Tests of fault conditions		P
Part	Simulated fault	Result	Hazard
LED driver output	Short-circuit	Unit shut down immediately, observed 10mins, recoverable, no hazards.	NO
C1	Short-circuit	Fuse opened immediately (non-power end), no hazards.	NO
U1 pin1 and pin5	Short-circuit	Unit shut down immediately, observed 10mins, recoverable, no hazards.	NO
D5	Short-circuit	Fuse opened immediately (non-power end), no hazards.	NO
D1	Short-circuit	Fuse opened immediately (non-power end), no hazards.	NO
Supplementary information: Remark: All tests with the approved electromagnetic ballast.			

TABLE 8	Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance decry at/of:	Up (V)	U rms. (V)	required cr (mm)	Measured cr (mm)	required cl (mm)	measured cl (mm)
L&N (before fuse)	/	240	2.5	>3.0	1.5	>1.5
Two pin of fuse	/	240	2.5	>3.0	1.5	>1.5
Live part to accessible part	/	240	5.0	>6.0	3.0	>3.0
Supplementary information:						

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

	EMF		P
	EMF; The tested product complies to the requirements of EN 62493		P
L	**ANNEX L: PARTICULAR ADDITIONAL REQUIREMENTS FOR integrated HF-TRANSFORMERS PROVIDING SELV (IEC 61347-1)**		N/A
L.3	Classification		N/A
	non-inherently short circuit proof controlgear	Yes ☒ No ☐	—
	inherently short circuit proof controlgear	Yes ☒ No ☐	—
	fail safe controlgear	Yes ☒ No ☐	—
	non-short-circuit proof controlgear	Yes ☒ No ☐	—
L.6	Heating		N/A
	No excessive temperatures in normal use		N/A
	Value if capacitor tc marked ..... :		—
	Winding insulation classified as Class ..... :		—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		N/A
L.9	Construction		N/A
L.9.1	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		N/A
	HF transformer comply with 19 of IEC 61558-2-16		N/A
L.10	Components		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
L.11	Creepage distances and clearances		N/A
	1. Insulation between input and output circuits, basic insulation:		N/A
	a) measured values > specified values (mm) ..... :		N/A
	b) measured values > specified values (mm) ..... :		N/A
	c) measured values > specified values (mm) ..... :		N/A
	2. Insulation between input and output circuits, double or reinforced insulation:		N/A
	a) measured values > specified values (mm) ..... :		N/A
	b) measured values > specified values (mm) ..... :		N/A
	c) measured values > specified values (mm) ..... :		N/A
	3. Insulation between adjacent input circuits		N/A

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict
	- measured values > specified values (mm) ..... :		N/A
	3. Insulation between adjacent output circuits		N/A
	- measured values > specified values (mm) ..... :		N/A
	4. Insulation between terminals for external connection:		N/A
	- measured values > specified values (mm) ..... :		N/A
	5. Basic or supplementary insulation:		N/A
	a) measured values > specified values (mm) ..... :		N/A
	b) measured values > specified values (mm) ..... :		N/A
	c) measured values > specified values (mm) ..... :		N/A
	d) measured values > specified values (mm) ..... :		N/A
	e) measured values > specified values (mm) ..... :		N/A
	6. Reinforced insulation or insulation:		N/A
	Between body and output circuit: measured values > specified values (mm) .....:		N/A
	Between body and output circuit if provision against transient voltages: measured values > specified values (mm) .....:		N/A
	7. Distance through insulation:		N/A
	a) measured values > specified values (mm) ..... :		N/A
	b) measured values > specified values (mm) ..... :		N/A
	c) measured values > specified values (mm) ..... :		N/A

IEC 62776			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Cap temperature rise and thermal tests		P
	Type reference.....:	LED T8 TUBE-46W	—
	Lamp used.....:	LED module	—
	Ballast used.....:	Approved electromagnetic ballast	—
	Mounting position of luminaire.....:	Annex B of IEC 61195	—
	Supply voltage (V).....:	1.06×240V	
	Supply current (A)..... :	-	—
	Supply wattage (W).....:	46 W	—
	Supply frequency (Hz).....:	50Hz	
	Calculated power factor.....:	-	—
	Table: measured temperatures corrected for ta = 25 °C:		—

Temperature measurements, (°C)		
Part	Test value(°C)	limit
Lamp cap	48.7	120°C (95K)
Lamp body	40.4	75

Attachment No.1 IEC 60598-1

Clause	Requirement + Test	Result - Remark	Verdict
4	**CONSTRUCTION**		P
4.11	**Electrical connections and current-carrying parts**		P
4.11.1	Contact pressure		P
4.11.2	Screws:		N/A
	- self-tapping screws		N/A
	- thread- cutting screws		N/A
4.11.3	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
4.11.4	Material of current-carrying parts		P
4.11.5	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
4.12	**Screws and connections (mechanical) and glands**		P
4.12.1	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
	Torque test: torque (Nm); part.....:		N/A
4.12.2	Screws with diameter < 3 mm screwed into metal		N/A
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
4.12.5	Screwed glands; force (Nm)..... :		N/A
4.25	**Mechanical hazard**		P
	No sharp point or edges		P

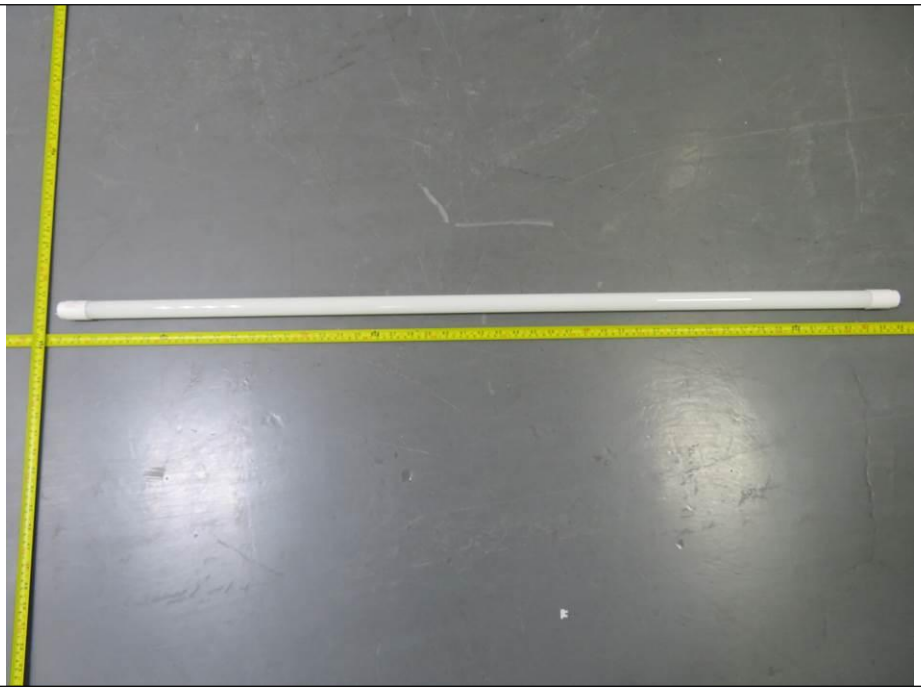
5	**EXTERNAL AND INTERNAL WIRING**		P
5.3	**Internal wiring**		P
5.3.1	Internal wiring of suitable size and type		P
	Through wiring		N/A

Attachment No.1 IEC 60598-1

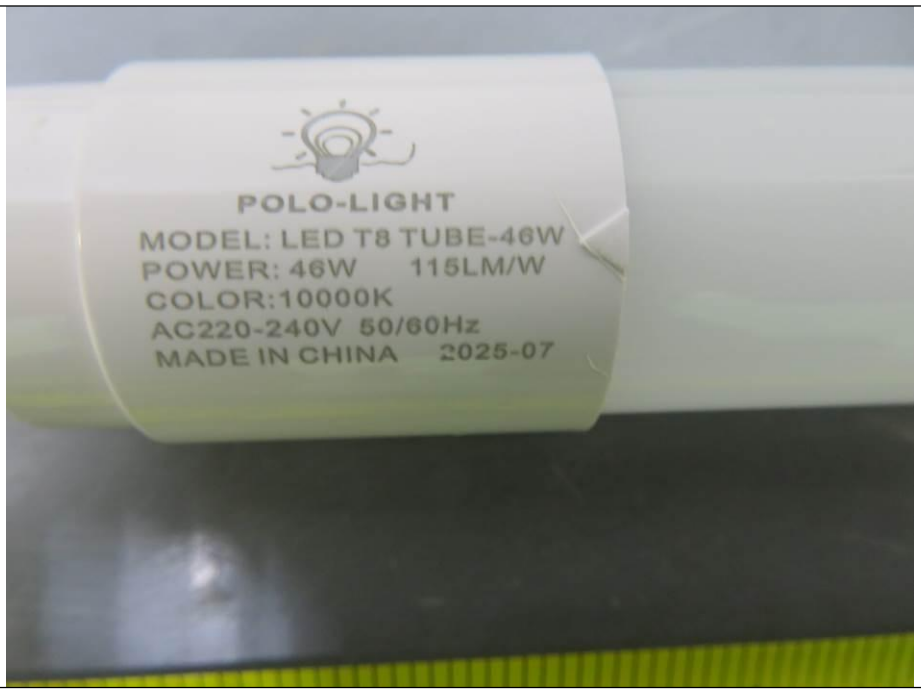
Clause	Requirement + Test	Result - Remark	Verdict
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures.....:		N/A
	Green- yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²)..... :	(see table 1)	P
	Insulation thickness		P
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness	(see table 1)	P
5.3.1.3	Double or reinforced insulation for class II		P
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		N/A
5.3.1.6	Insulation thickness other than PVC or rubber		N/A
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
5.3.3	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P

Attachment No.2 **Product Photos**

Details of: Fig. 1

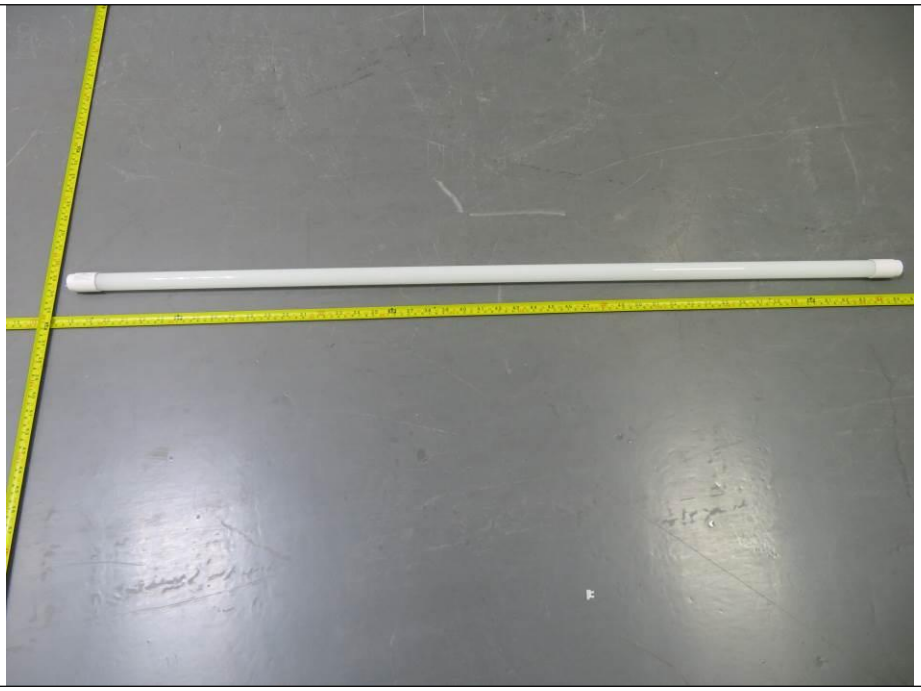


Details of: Fig. 2



Attachment No.2 **Product Photos**

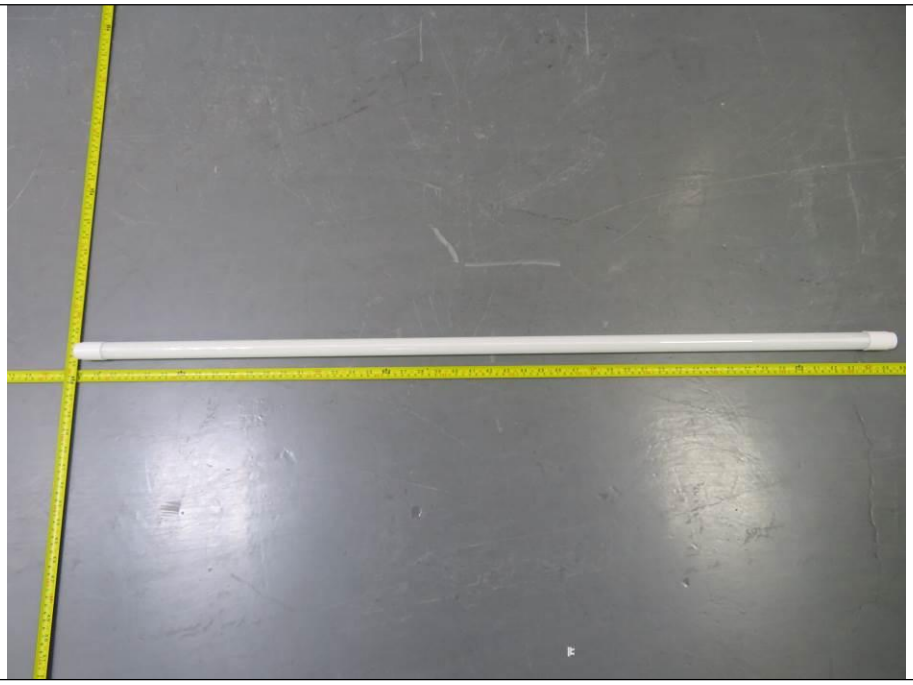
Details of: Fig. 3



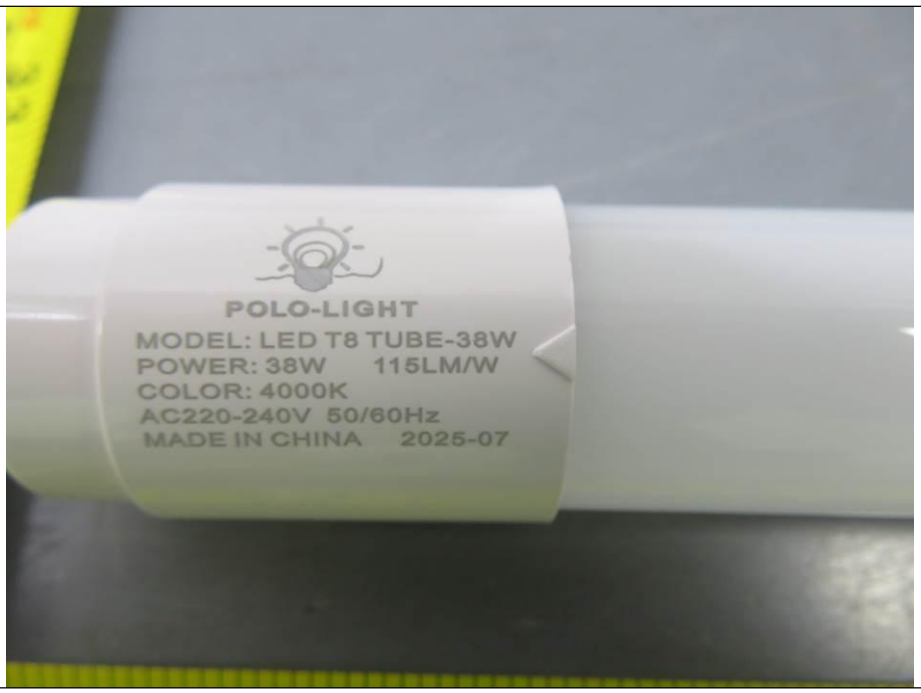
Details of: Fig. 4

Attachment No.2 **Product Photos**

Details of: Fig. 5

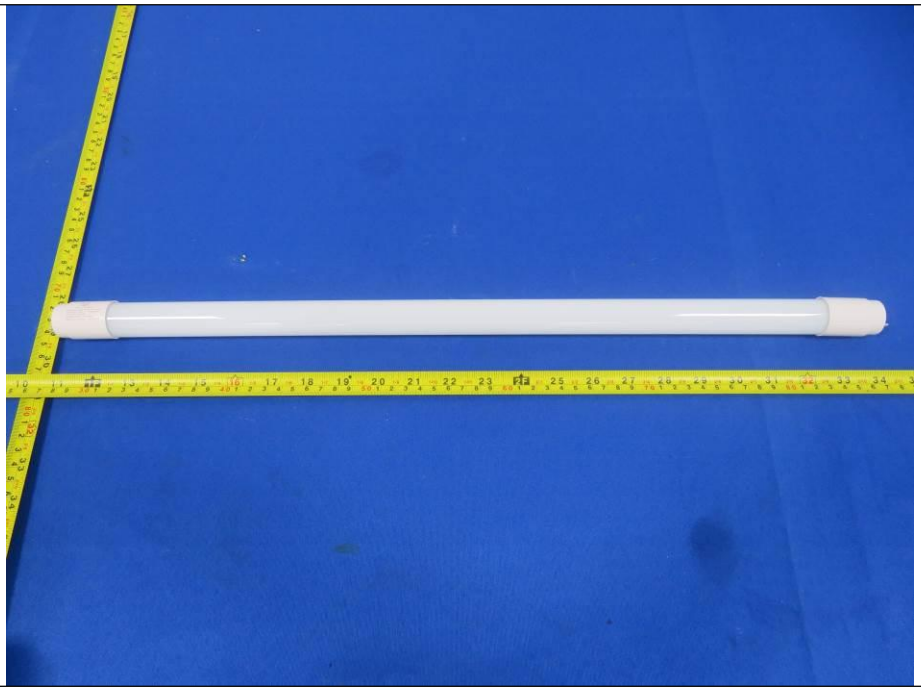


Details of: Fig. 6

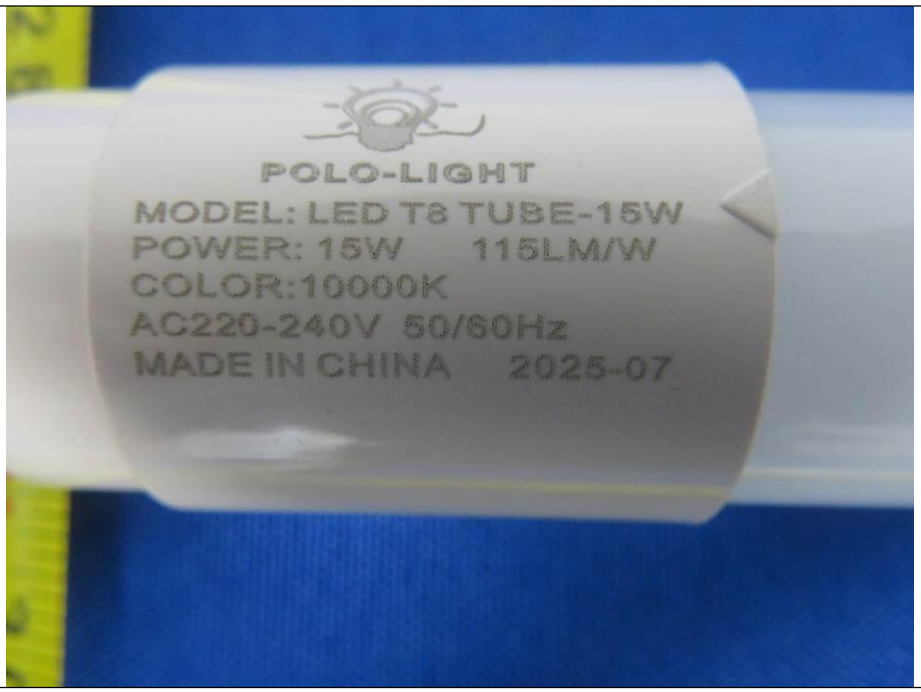


Attachment No.2 **Product Photos**

Details of: Fig. 7



Details of: Fig. 8



-- **End of Report** --