



TEST REPORT
IEC 62560
Self-Ballasted LED-Lamp
for general lighting services by voltage > 50V Safety specifications

Report Number.....: AOC250522002S

Date of issue.....: 2025-06-18

Total number of pages.....: 21 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.....: CIRCADIAN LIGHTING LTD

Address.....: THE CATALYST, 3 SCIENCE SQUARE, NEWCASTLE UPON TYNE, NE4 5TG

Test specification:

Standard.....: IEC 62560:2011+A1:2015

Test procedure.....: Typeing test

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

Test Report Form No.....: IEC62560C

Test Report Form(s) Originator.....: DEKRA Certification B.V.

Master TRF.....: Dated 2018-12-21

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Test item description..... :	HOME MONITORING SMART BULB WITH CIRCADIAN LIGHTING	
Trade Mark..... :	N/A	
Manufacturer..... :	OLAM TECH LTD BLDG 41 YEE ON INDUSTRIAL CITY, YAN TAN DISTRICT, FENGANG, GANGDONG, CHINA	
Model/Type reference..... :	GU10	
Ratings..... :	100-240 V~, 50/60 Hz, 14 W, GU10, IP 54	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	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 <i>ZhiCong Xian</i>
	Approved by (name, function, signature)... :	Robin Liu Technical Manager <i>Robin. Liu</i>
Testing procedure: CTF Stage 1:		
<input type="checkbox"/>	Testing location/ address..... :	N/A
	Testing location/ address..... :	
	Tested by (name, function, signature)..... :	
	Approved by (name, function, signature)... :	
Testing procedure: CTF Stage 2:		
<input type="checkbox"/>	Testing location/ address..... :	N/A
	Testing location/ address..... :	
	Tested by (name + signature)..... :	
	Witnessed by (name, function, signature).. :	
	Approved by (name, function, signature)... :	
Testing procedure: CTF Stage 3:		
<input type="checkbox"/>	Testing location/ address..... :	N/A
Testing procedure: CTF Stage 4:		
<input type="checkbox"/>	Testing location/ address..... :	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:** EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**Attachment No.2:** Photo document.**Summary of testing:****Tests performed (name of test and test clause):**

- EN 62560:2012+A11:2019+A1:2015

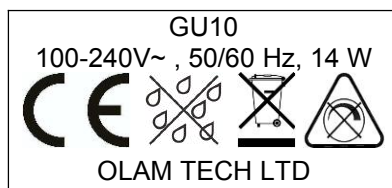
Testing location:

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 (List of countries addressed):

None

Copy of marking plate:**Remark:**

1. The marking plate of others models are identical with models GU10, except with different model number, and rated power.
2. 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.
3. The height of graphical symbols shall not be less than 5 mm
4. The height of letters shall not be less than 2 mm.


Test item particulars..... :	
Classification of installation and use.....: Direct insert into lampholder	
Supply Connection.....: Lamp cap	
.....:	
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..... : 2025-05-08	
Date (s) of performance of tests..... : 2025-05-08 to 2025-06-18	
General remarks:	
<p>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. Note: National Conditions, if any, are in the Appendix to the main body of this TRF. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> 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.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
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.....:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 and other remarks:

/

IEC 62560			
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.		P
4.2	Self-ballasted LED-Lamp are non-repairable.		N/A

5	MARKING		P
5.1	Mandatory marking		P
	- mark of origin		P
	- rated supply voltage (V)..... :	100-240 V	P
	- rated wattage (W)..... :	14 W	P
	- rated frequency (Hz)..... :	50/60 Hz	P
5.2	Addition marking		N/A
	- rated current (A)..... :		N/A
	- weight significantly higher		N/A
	- special conditions or restrictions		N/A
	Not suitable for dimming; used	 symbol	P
	- not suitable for water contact		P
5.3	Marking durable and legible		P
	rubbing 15 s water, 15 s petroleum; marking legible		P

6	INTERCHANGEABILITY		P
6.1	Cap interchangeability in accordance with IEC 60061-1		P
	Gauge in accordance with IEC 60061-3		P
6.2	Bending moment and mass imparted by the lamp at the lampholder		P
	Bending moment imparted by the lamp at the lampholder (Nm)..... :		P
	Mass not exceeding value table 2 or as specified in IEC 60061-1 (kg)..... :		P

7	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
	Internal, basic insulated or live metal parts not accessible		P

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict
	Tested with a test finger with a force of 10 N		P
	Compliance checked with appropriate gauges		P
8	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
8.2	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.....:	>100 MΩ	P
8.3	Immediately after clause 8.2 electric strength test for 1 min		P
	Double or reinforced insulation, 4U + 2000 V	2960 V	P
	No flashover or breakdown		P

9	MECHANICAL STRENGTH		N/A
9.2.1	Torsion resistance of unused lamps		N/A
	B15d or E14 Cap..... 1,15 Nm		N/A
	B22d, E26, E26d or E27 Cap..... 3,0 Nm		N/A
	E11 or E12 Cap..... 0,8 Nm		N/A
	E17 Cap..... 1,5 Nm		N/A
	E39 or E40 Cap..... 5,0 Nm		N/A
	GX53 Cap..... 3,0 Nm		N/A
9.3	Compliance criteria		P
	Clause 8 shall comply after the mechanical strength test.		P
9.4	Axial strength of Edison caps		P
	After full insertion into the gauge an axial force of Table 4 is applied to the central contact (N).....:		P
	The insulation around the central contact shall remain intact		P

10	CAP TEMPERATURE RISE		P
	The cap temperature rise Δt_s of the lamp shall not exceed 120 K.		P

11	RESISTANCE TO HEAT		P
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Clause	Requirement + Test	Result - Remark	Verdict
	Parts of insulating material providing protection against electric shock, retaining live parts in position, ball-pressure test:	(see appended table)	P

12	RESISTANCE TO FLAME AND IGNITION		P
	External parts of insulating material preventing electric shock glow-wire test 650 °C	(see appended table)	P

13	FAULT CONDITIONS		P
13.2	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected	(see appended table)	P
13.3	When operated under fault conditions the lamp		P
	- does not emit flames or molten material		P
	- does not produce flammable gases or smoke		P
	- live parts not accessible		P
	After the tests the insulation resistance with d.c. 1000 V complies with requirements of Cl. 8.1.....:		P
14 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
	Creepage distances and clearances according to IEC 61347-1	(see appended table)	P
	Conductive accessible parts according to IEC 60598-1	(see appended table)	P

15	ABNORMAL OPERATION		P
	Non-dimmable self-ballasted lamps are tested on a dimmer or an electronic switch according the test circuit shown in Figure 8		P
	Operate the lamp for 8 h at most onerous dimming level		P
	When operated under abnormal operation the lamp		P
	- does not catch fire		P
	- does not produce flammable gases		P
	- live parts not accessible		P

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Clause	Requirement + Test	Result - Remark	Verdict
16	TEST CONDITIONS FOR DIMMABLE LAMPS		P
	Test are carried out at maximum power setting for Clause 10 and Clause 17		P

17	PHOTOBIOLOGICAL SAFETY		P
17.1	UV radiation		P
	The LED lamp doesn't exceed 2mW/klm		P
17.2	Blue light hazard		P
	Assessed according to IEC TR 62778		P
	LED lamps shall be RG0 or RG1	RG0	P

18	INGRESS PROTECTION		N/A
18.1	Lamps shall be suitable for water contact unless marked with Figure 6	marked with figure 6	N/A
18.2	The lamp is subjected to an IPX4 test according to IEC 60598-1		N/A
	The lamp complies with the compliance provisions of 9.2 of IEC 60598-1		N/A
	Lamps constructed so that it is sealed to exclude water need not to be tested		N/A

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

11	TABLE: Ball Pressure Test of Thermoplastics			N/A
Allowed impression diameter (mm):		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Lamp cover	See ANNEX 1	80	1.0	
Plastic enclosure	See ANNEX 1	80	1.4	
Inductor bobbin	See ANNEX 1	125	0.6	
Supplementary information:				

12	TABLE: Resistance to heat and fire - Glow wire tests				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Glow wire test (GWT); (°C)		Verdict	
		650			
		te	ti		
Lamp cover	See ANNEX 1	0	0	P	
Plastic enclosure	See ANNEX 1	0	0	P	

13	TABLE: tests of fault conditions			P
Part	Simulated fault	Result	Hazard	
BD1	Short-circuit	Fusible resistor (F1) was opened	NO	
C1	Short-circuit	Fusible resistor (F1) was opened	NO	
C4	Short-circuit	LED packages no working	NO	
D1	Short-circuit	LED packages no working	NO	

14	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Between L and N	-	240	1.5	>1.5	2.5	>2.5
Between live parts and accessible surface	-	240	3.0	>3.0	5	>5.0

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1 TABLE: Critical components information						P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
LED package	C	JIANGMEN ZHONGYANG OPTOELECTRONICS CO., LTD	2835	3 V, 60 mA	IEC 62560	Tested with appliance
LED module PCB	C	JIANGMEN ZHONGHAO PRECISION ELECTRONICS CO LTD	ZH-M	130 °C, V-0	IEC 62560	UL E364454 tested with appliance
Fusible resistor (F1)	C	SHENZHEN LONG JIAN DA CO., LTD.	-	2.2 R, 1/2 W	IEC 62560	Tested with appliance
Alt.	C	QIAN ZHI(SHENZHEN) CO., LTD.	-	2.2 R, 1/2 W	IEC 62560	Tested with appliance
Alt.	C	ANHUI CHANG SHENGELECTRONICS CO., LTD.	-	2.2 R, 1/2 W	IEC 62560	Tested with appliance
Internal wire	C	BO SUNG SILICONE CO	3135	600 V, 22 AWG, 200 °C	IEC 62560	UL E131290 tested with appliance
PCB	C	DALIAN ASIA PACIFIC ELECTRONICS CO LTD	JX-02	V-0, 130 °C	IEC 62560	UL E246715 tested with appliance
Heat shrinkable tube	C	Shezhen Woer Heat-Shrinkable Material Co Ltd	RSFR-H	600 V, 125 °C, VW-1, min 0.3 mm thickness	IEC 62560	UL E203950 tested with appliance
Plastic enclosure	C	Zhongshan Fantas Lighting Co., Ltd	Fantas-1	V-0, 130 °C	IEC 60560	Tested with appliance
Lamp cover	C	LOTTE ADVANCED MATERIALS CO LTD	SC-110(+)	PC	IEC 60560	UL E115797 tested with appliance
Inductor (T1)	B	Zhongshan Fantas Lighting Co., Ltd	EE10-016A	130 °C	IEC 60560	Tested with appliance

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Clause	Requirement + Test			Result - Remark		Verdict
-Bobbin	C	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150 °C	IEC 62560	UL E41429 tested with appliance
<p>Supplementary information:</p> <p>¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>The codes above have the following meaning:</p> <p>A - The component is replaceable with another one, also certified, with equivalent characteristics</p> <p>B - The component is replaceable if authorised by the test house</p> <p>C - Integrated component tested together with the appliance</p> <p>D - Alternative component</p>						

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2:	temperature measurements, thermal tests of Section 10			P
	Type referencet.....:	GU10		—
	Used ballast.....:	/		—
	Mounting position of luminaire.....:	Cap Up and Cap down		—
	Supply wattage (W).....:	14 W		
	Supply current (A).....:	--		
	Calculated power factor.....:	--		
	Table: measured temperatures corrected for ta = 25°C:			—
	Test: rated voltage.....:	240 V		—
Temperature (°C) of part		Test value	Result	
		Normal (°C)	Abnormal(°C)	Limit(°C)
internal wire		81.4	-	200
E-cap.		76.8	-	180
U2		90.3	-	130

Attachment No.1**IEC 62560C - ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
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<p align="center">ATTACHMENT TO TEST REPORT IEC 62031</p> <p align="center">EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</p> <p align="center">LED modules for general lighting – Safety specifications</p>			
Differences according to: EN 62560:2012+A11:2019			
Attachment Form No: EU_GD_IEC62560C			
Attachment Originator: DEKRA Certification B.V.			
Master Attachment: Dated 2018-12-21			
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	CENELEC COMMON MODIFICATIONS (EN)	N/A
	No Common modifications	N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	N/A
	No special National conditions	N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	N/A
	No National deviations	N/A

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

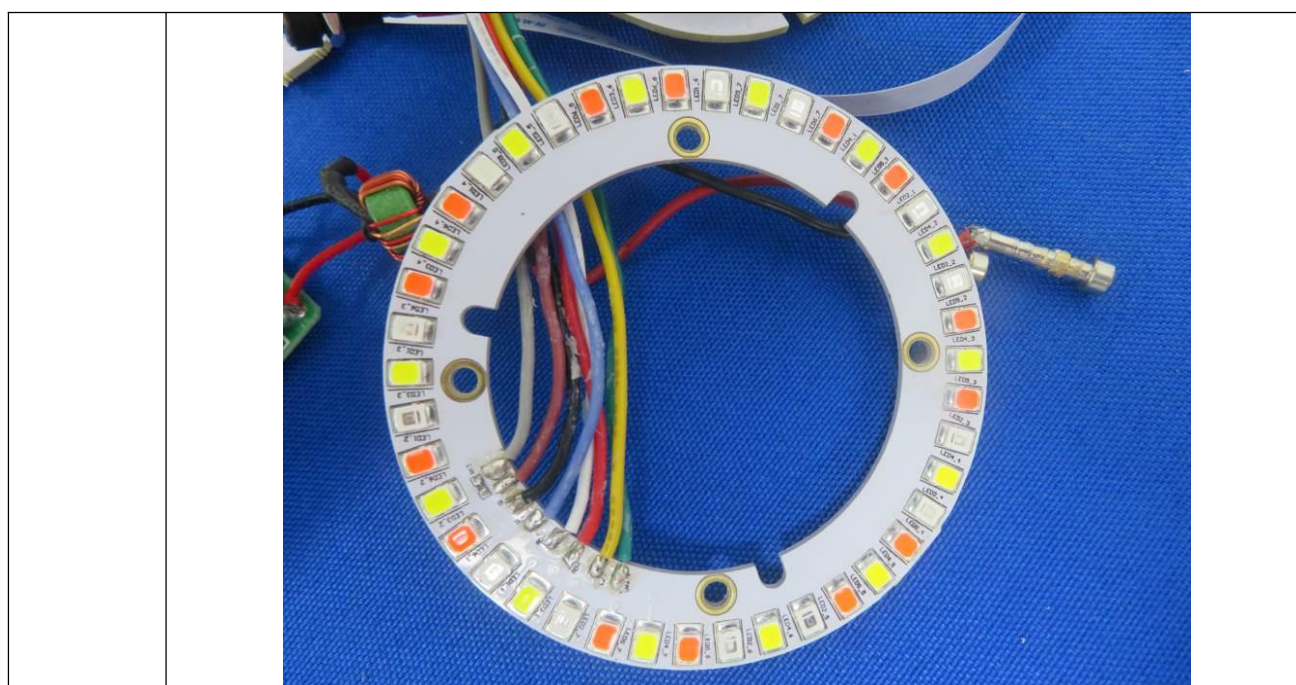


Attachment No.2**Product Photos**

Details of: Fig. 5

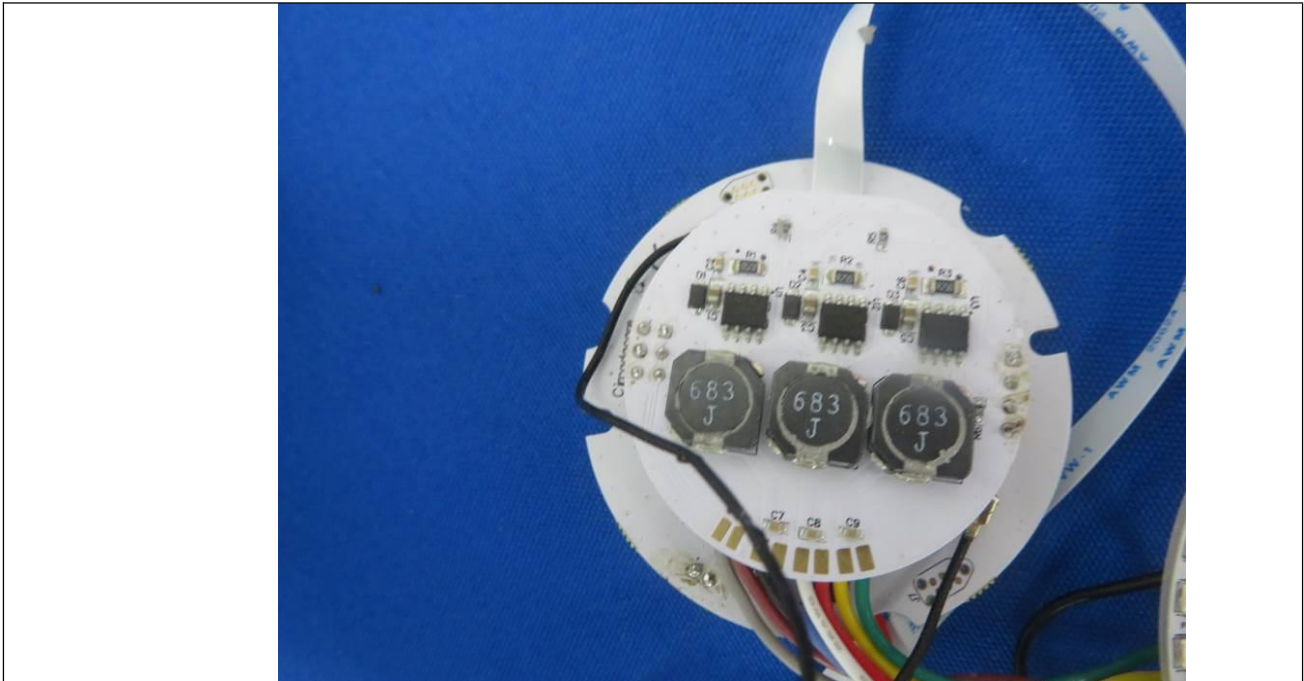


Details of: Fig. 6

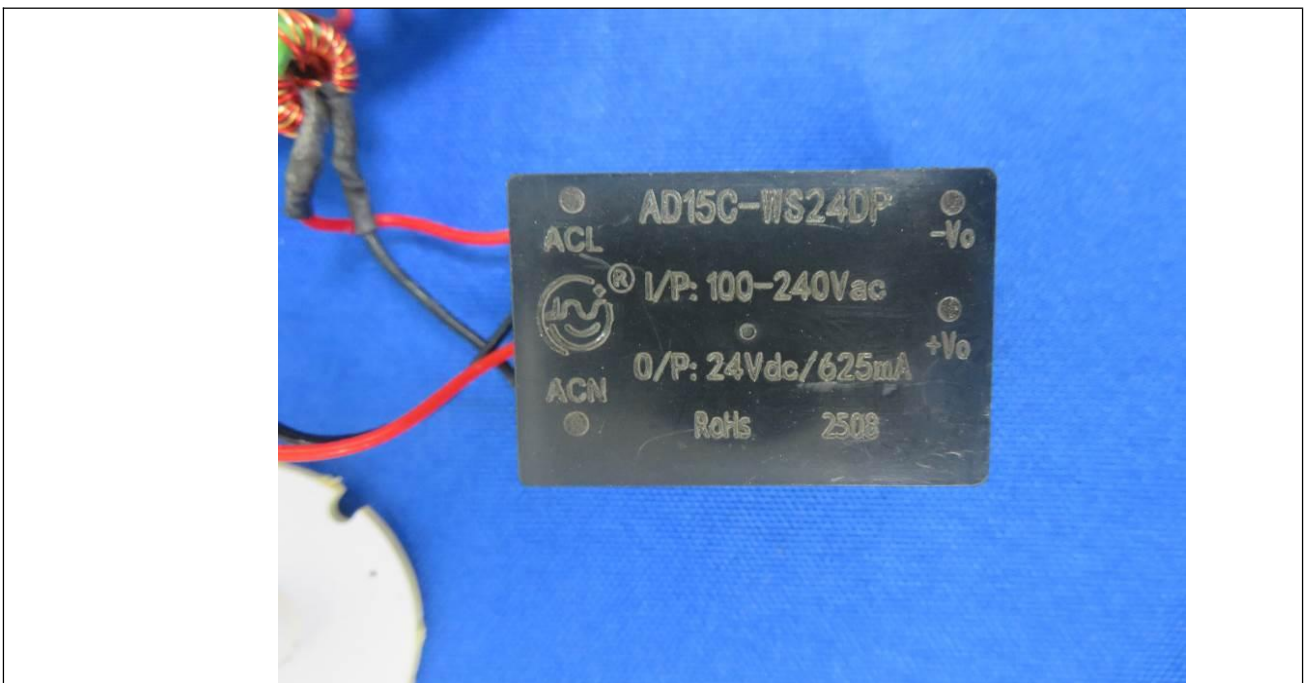


Attachment No.2**Product Photos**

Details of: Fig. 7

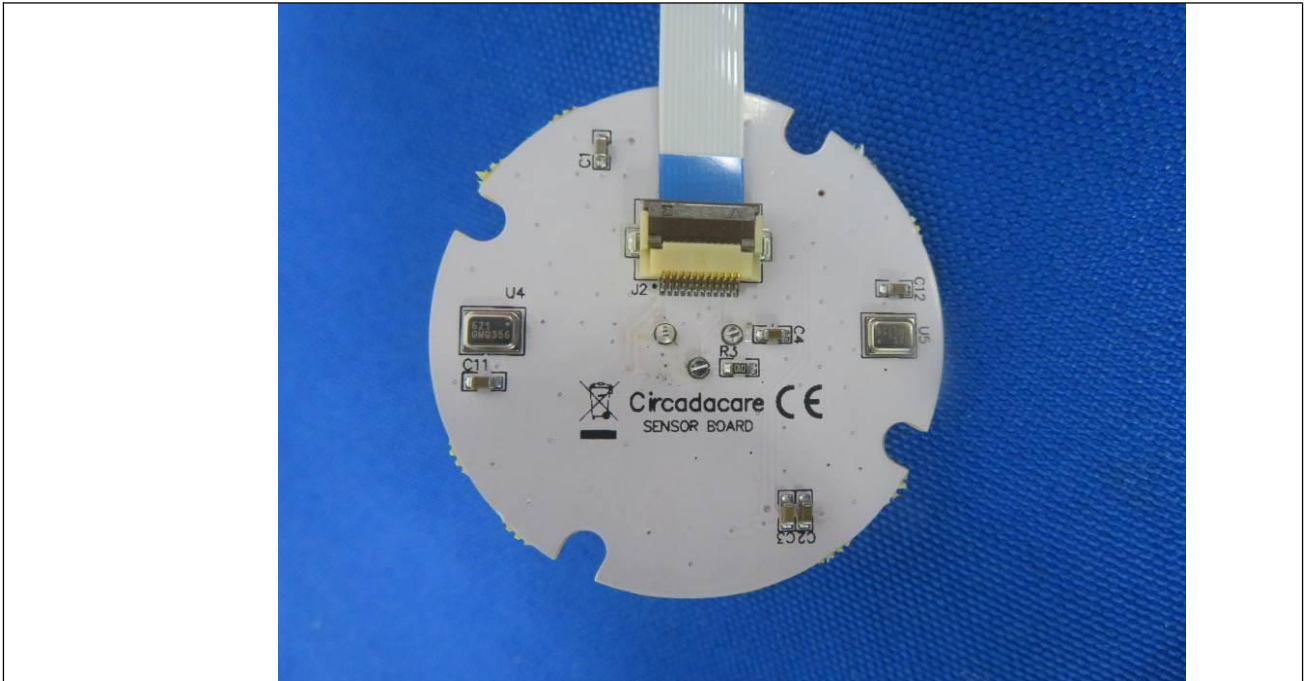


Details of: Fig. 8

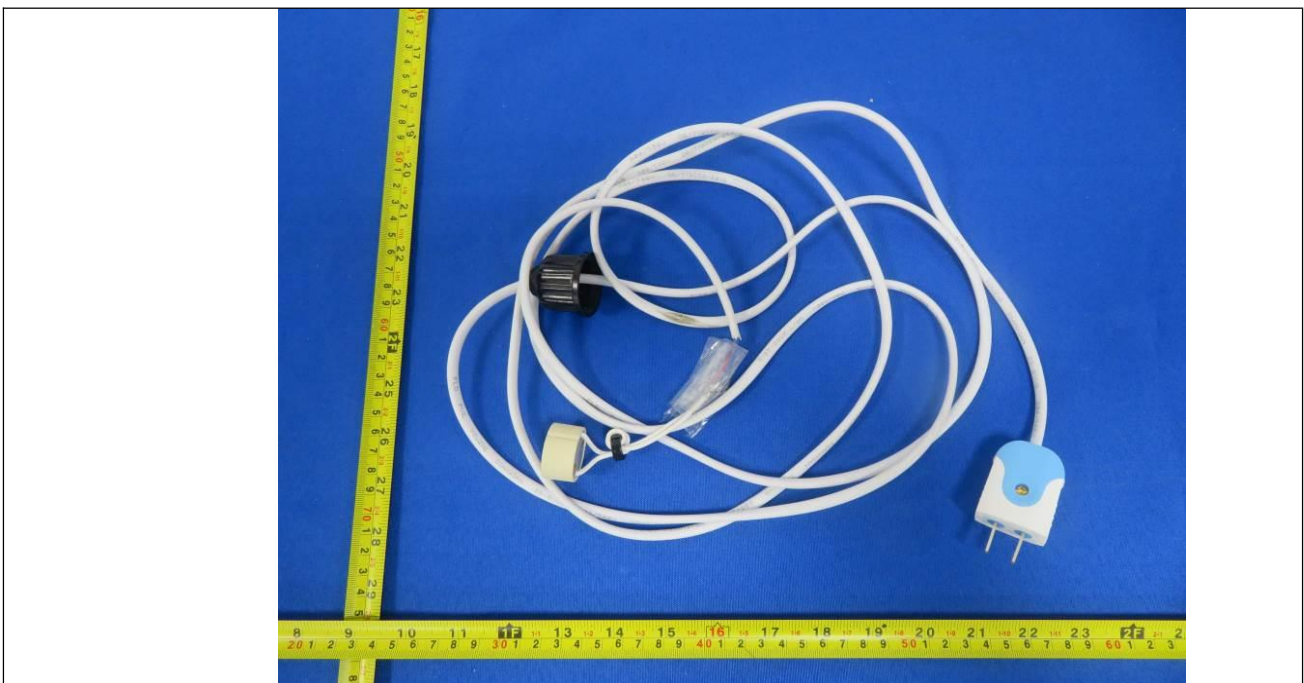


Attachment No.2**Product Photos**

Details of: Fig. 9



Details of: Fig. 10

**-- End of Report --**