

TEST REPORT

Client company : Zhongshan ZhongGuan Lighting Co., Ltd.
Client address : 7th Floor, Building 2, Caoyi Tianhong Optoelectronic Industrial Park North
Zhongxing Avenue, Guzhen Town, Zhongshan City, Guangdong Province
Manufacturer : Zhongshan ZhongGuan Lighting Co., Ltd.
Address : 7th Floor, Building 2, Caoyi Tianhong Optoelectronic Industrial Park North
Zhongxing Avenue, Guzhen Town, Zhongshan City, Guangdong Province

Report on the submitted samples said to be:

Sample Name : Fan light
Trade Mark : N/A
Style/ Item No. : See Model List
Sample Receiving Date : October 20, 2025
Testing Period : October 20, 2025 ~ October 27, 2025
Results : Please refer to next page(s).

Summary of Test Results:

TEST REQUEST

CONCLUSION

A RoHS Directive (EU) 2017/2102 amending Annex II to Directive 2011/65/EU.

POSITIVE

Signed for and on behalf of AOCE

Written By:

Sunny Su

Sunny Su
File administrators

Approved by:

Alice Zhou

Alice Zhou
Manager

Results:

A. EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Test method: With reference to IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Seq. No.	Tested Part(s)	Results				
		Pb	Cd	Hg	Cr	Br
1	Plastic enclosure	BL	BL	BL	BL	BL
2	Metal enclosure	BL	BL	BL	BL	BL
3	Silver metal screw	BL	BL	BL	BL	BL
4	Motor	BL	BL	BL	BL	BL
5	White wire	BL	BL	BL	BL	BL
6	Blue wire	BL	BL	BL	BL	BL
7	Red wire	BL	BL	BL	BL	BL
8	Lamp shade	BL	BL	BL	BL	BL
9	Lamp bead	BL	BL	BL	BL	BL
10	Fan blade	BL	BL	BL	BL	BL
11	Chips of resistance	BL	BL	BL	BL	BL
12	Chips of capacitance	BL	BL	BL	BL	BL
13	PCB	BL	BL	BL	BL	BL
14	Solder on PCB	BL	BL	BL	BL	BL

Note:

-- = Not Conducted
* = Screening by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

- i Results were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 50 - 3\sigma < X < 150 + 3\sigma \leq OL$
Pb	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Hg	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	mg/kg	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

Note:

BL = Below Limit
OL = Over Limit
X = Inconclusive

- ii The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- iii The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2011/65/EU:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000
Bis(2-ethylhexyl) phthalate(DEHP)	1000
Butyl benzyl phthalate(BBP)	1000
Dibutyl phthalate(DBP)	1000
Diisobutyl phthalate(DIBP)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

B. The Test Results of Chemical Method:

Test method:

Lead & Cadmium Content:

With reference to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-AES)

Mercury Content:

With reference to IEC 62321-4:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-AES)

Hexavalent Chromium Content:

With reference to IEC 62321-7-1:2013, by alkaline digestion and analysis was performed by UV-visible spectrophotometer (UV-Vis)

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

Phthalates Content:

With reference to IEC 62321-8:2017, by gas chromatography-mass spectrometry (GC-MS)

1) The test results of Lead (Pb)

Item	Unit	MDL	Results		Limit
			(1)	(2)	
Lead Content (Pb)	mg/kg	2	38	21	1000 mg/kg
Conclusion	/	/	Pass	Pass	/

2) The test results of PBBs & PBDEs

Item	Unit	MDL	Results		Limit
			1	2	
Polybrominated Biphenyls (PBBs)					
Monobromobiphenyl	mg/kg	5	N.D.	N.D.	
Dibromobiphenyl	mg/kg	5	N.D.	N.D.	
Tribromobiphenyl	mg/kg	5	N.D.	N.D.	
Tetrabromobiphenyl	mg/kg	5	N.D.	N.D.	
Pentabromobiphenyl	mg/kg	5	N.D.	N.D.	
Hexabromobiphenyl	mg/kg	5	N.D.	N.D.	
Heptabromobiphenyl	mg/kg	5	N.D.	N.D.	
Octabromobiphenyl	mg/kg	5	N.D.	N.D.	
Nonabromodiphenyl	mg/kg	5	N.D.	N.D.	
Decabromodiphenyl	mg/kg	5	N.D.	N.D.	
Total content	mg/kg	/	N.D.	N.D.	1000 mg/kg
Polybrominated Diphenylethers (PBDEs)(Mon-Deca)					
Monobromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Dibromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Tribromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Tetrabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Pentabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Hexabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Heptabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Octabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Nonabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Decabromodiphenyl ether	mg/kg	5	N.D.	N.D.	
Total content	mg/kg	/	N.D.	N.D.	1000 mg/kg

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

Tel: (86)755-85277785

Fax: (86)755-23705230

Http://www.aoc-cert.com

Email: postmaster@aoc-cert.com

Report No.:AOC251027019R

Item	Unit	MDL	Results					Limit
			(1)	(2)	(3)	(4)	(5)	
Dibutyl Phthalate(DBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Benzylbutyl Phthalate(BBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Bis(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Diisobutyl phthalate(DIBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg

Item	Unit	MDL	Results					Limit
			(6)	(7)	(8)	(9)	(10)	
Dibutyl Phthalate(DBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Benzylbutyl Phthalate(BBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Bis(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg
Diisobutyl phthalate(DIBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000 mg/kg

Item	Unit	MDL	Results					Limit
			(11)	(12)	(13)	(14)	--	
Dibutyl Phthalate(DBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	--	1000 mg/kg
Benzylbutyl Phthalate(BBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	--	1000 mg/kg
Bis(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	--	1000 mg/kg
Diisobutyl phthalate(DIBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	--	1000 mg/kg

Note:

- N.D. = Not Detected or less than MDL
- mg/kg = ppm
- MDL = Method Detection Limit
- Photo appendix is included.

Appendix

Photograph of Sample

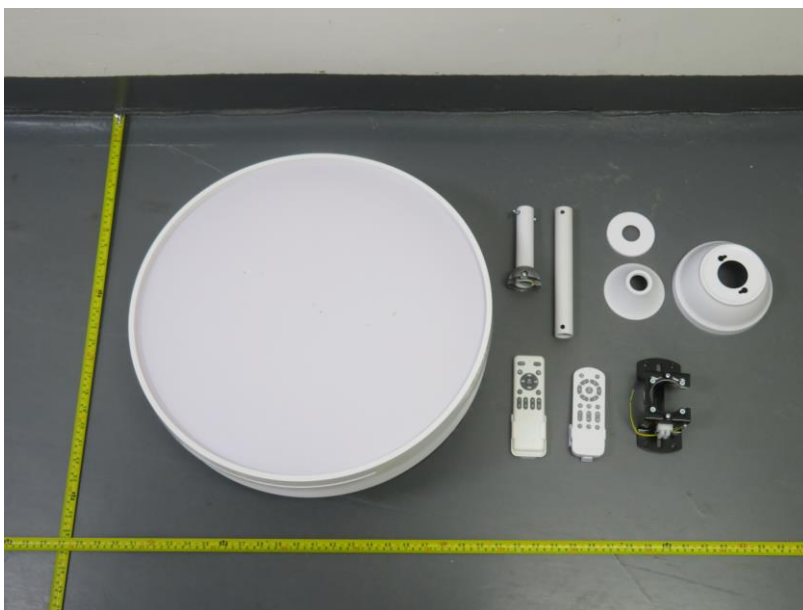


Fig.1

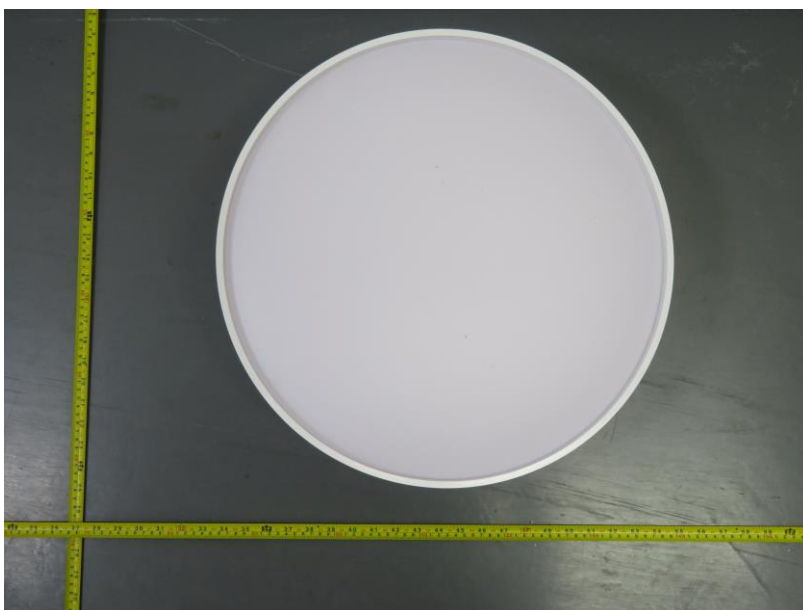


Fig.2

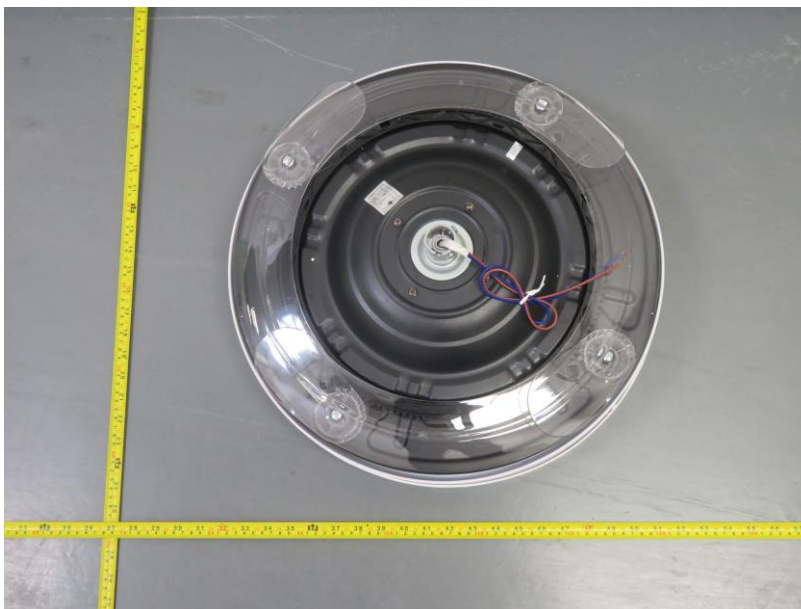


Fig.3

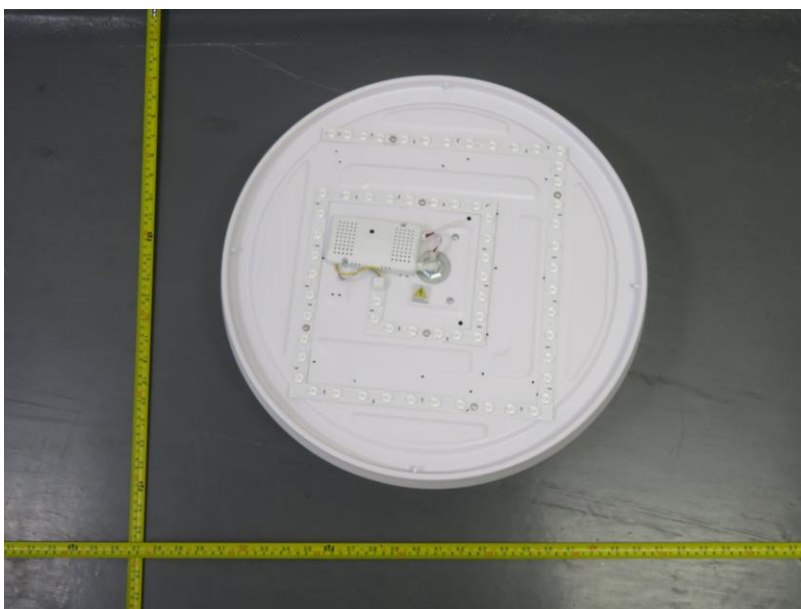


Fig.4

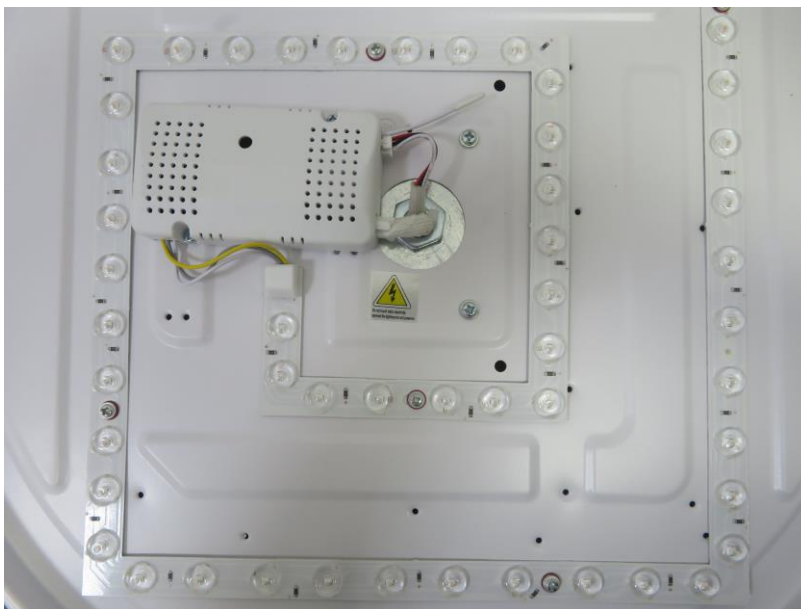


Fig.5

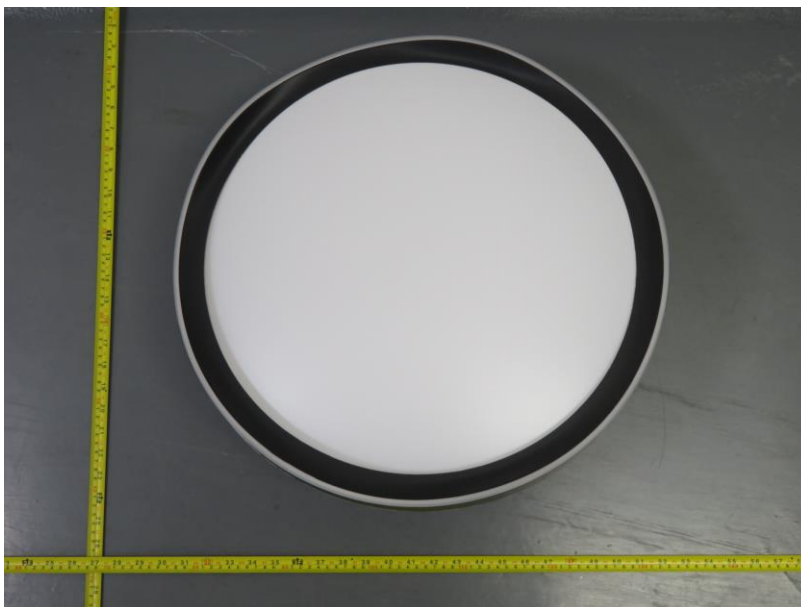


Fig.6

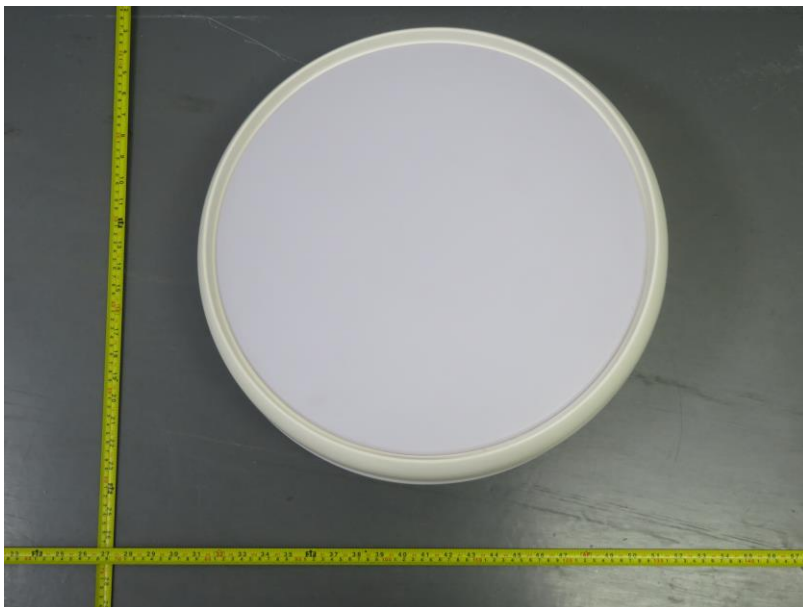


Fig.7

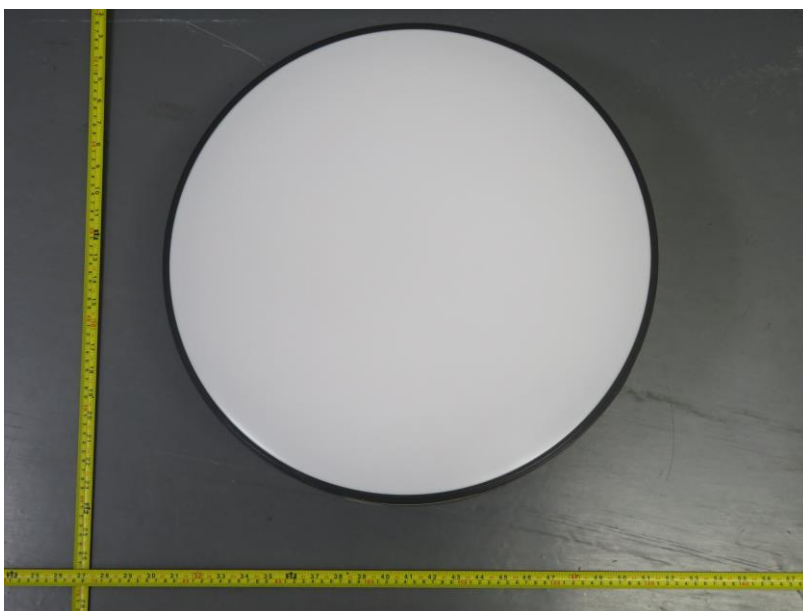


Fig.8



Fig.9

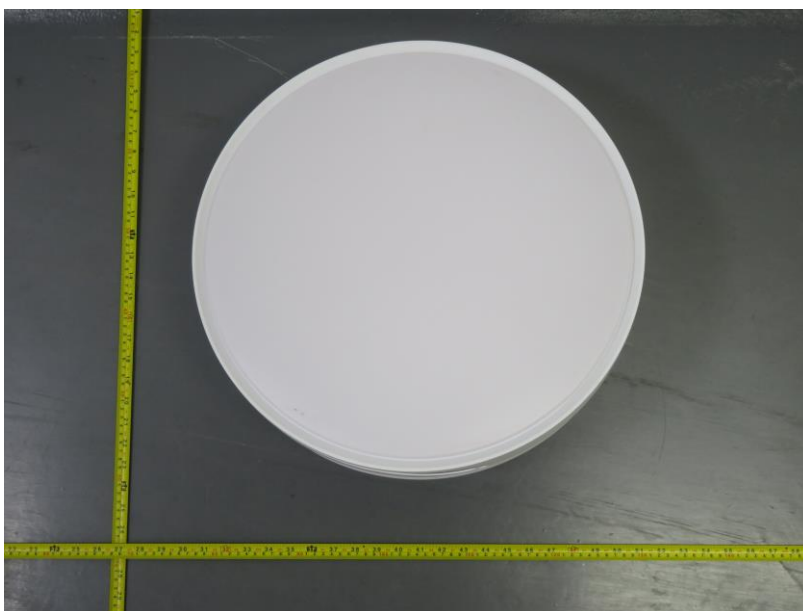


Fig.10

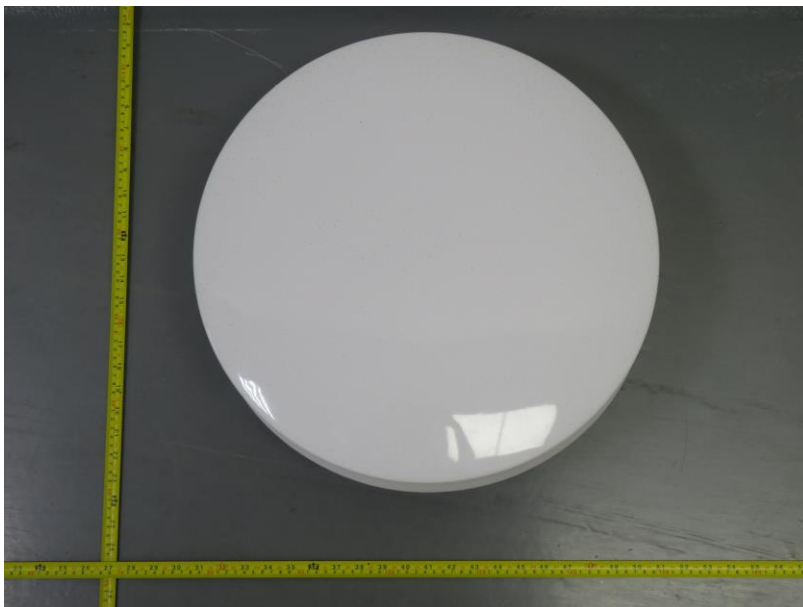


Fig.11

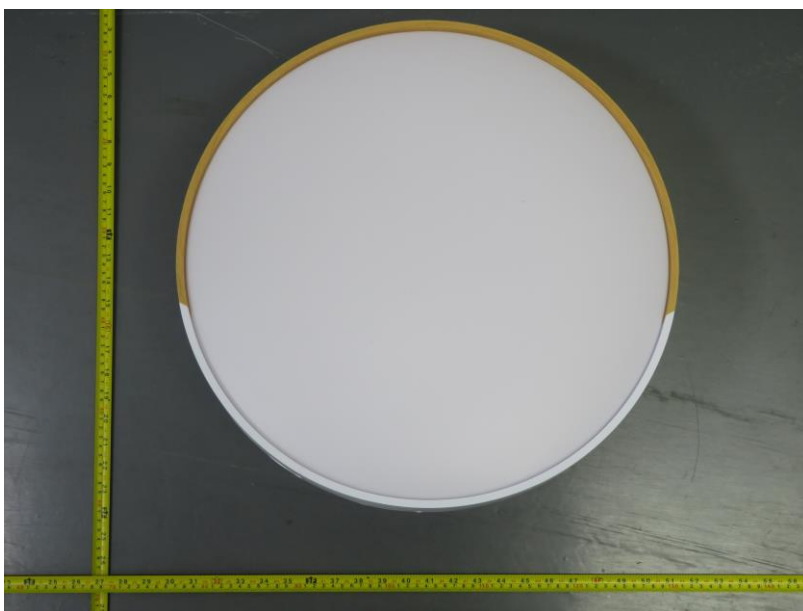


Fig.12

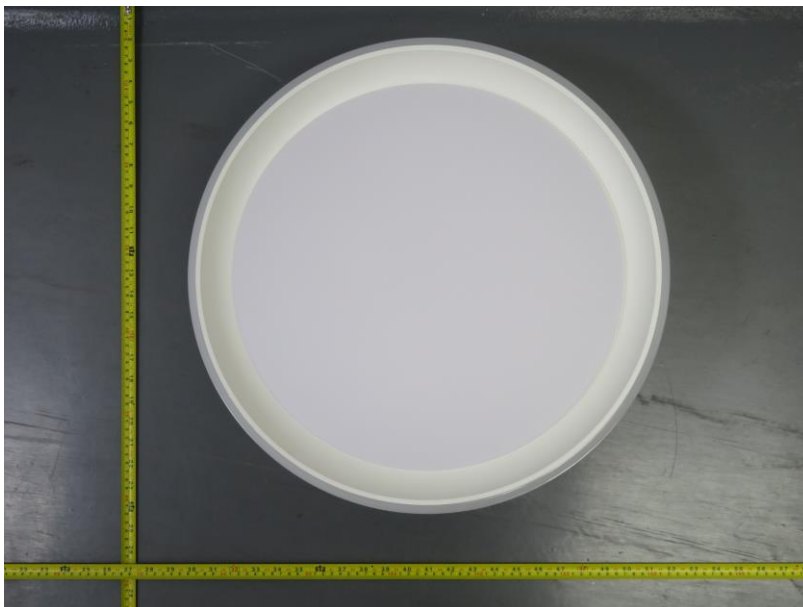


Fig.13

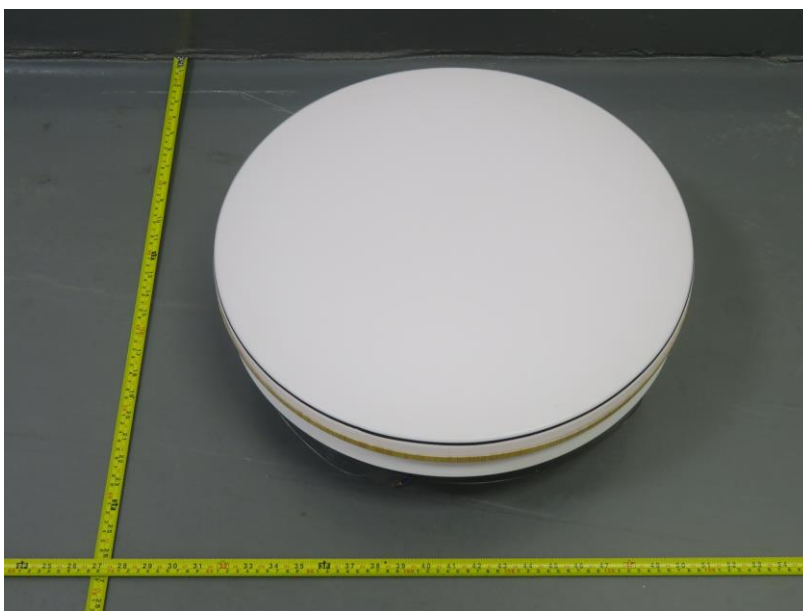


Fig.14

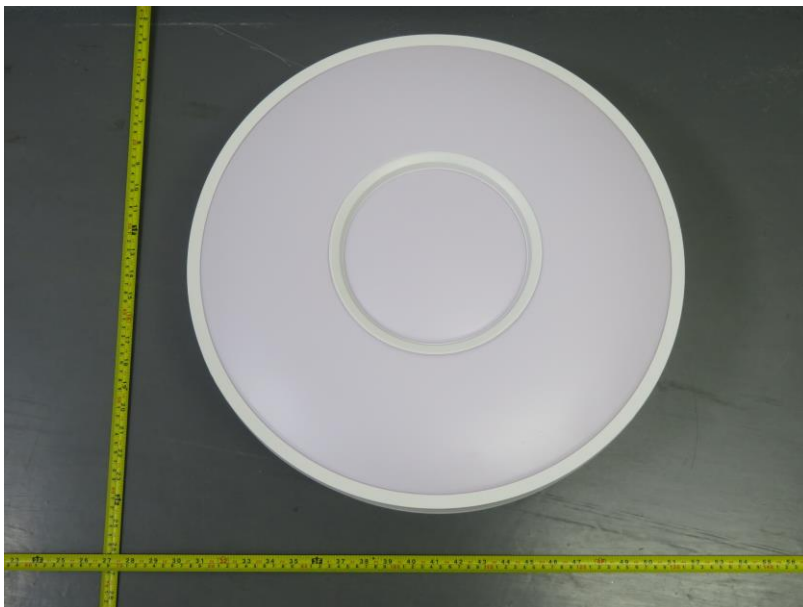


Fig.15

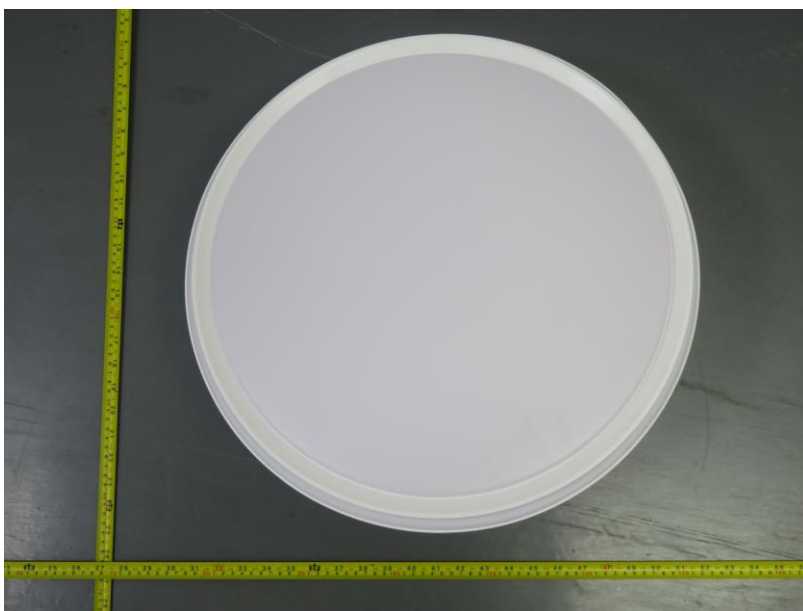


Fig.16

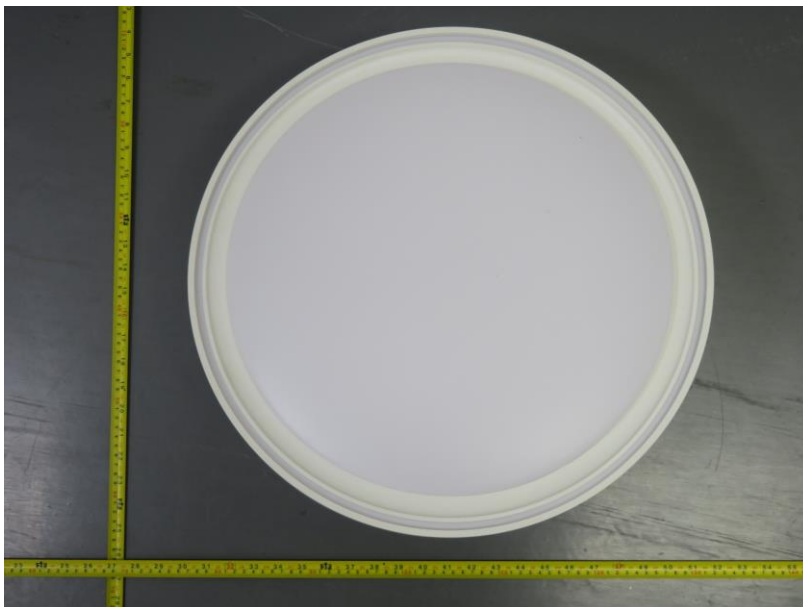


Fig.17

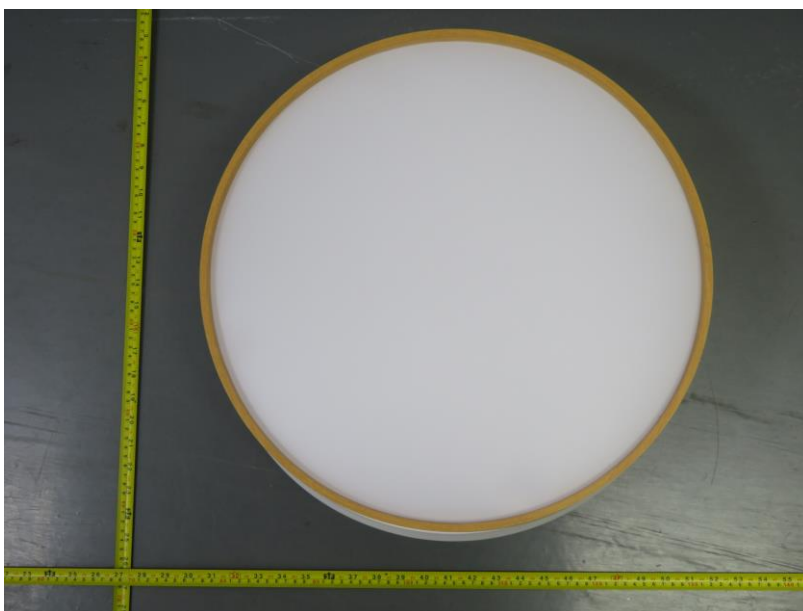


Fig.18



Fig.19



Fig.20

AOCE authenticate the photo on original report only

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

Tel: (86)755-85277785

Fax: (86)755-23705230

Http://www.aoc-cert.com

Email: postmaster@aoc-cert.com

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Model List

1001	1002	1003	1004	1005
1006	1007	1008	1009	1010
1011	1012	1013	1014	1015
1016	1017	1018	1019	1020
1021	1022	1023	1024	1025
1026	1027	1028	1029	1030
1031	1032	1033	1034	1035
1036	1037	1038	1039	1040
1041	1042	1043	1044	1045
1046	1047	1048	1049	1050
1051	1052	1053	1054	1055
1056	1057	1058	1059	1060
1061	1062	1063	1064	1065
1066	1067	1068	1069	1070
186099001	186099009	186099014	186099003	186091401
186091409	186091414	186091403	165399001	165399002
165399009	165399014	165399020	165391401	165391402
165391409	165391414	165391420	208891301	6960036BL AP
6960036NEAP	6960036NS AP	6960036CU AP	6960036MA AP	6960042BL AP
6960042NEAP	6960042NS AP	6960042CU AP	6960042MA AP	6960136BL AP
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85-455-54-180	85-456-75- 000	85-457-48- 000	85-094-36-0 00	85-980-24- 101
85-980-24-186	85-980-36- 101	85-980-36- 186	85-633-60-0 00	85-021-36- 188
85-021-42-188	9716811	9716810	85-458-48-0 00	85-458-48- 100
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27-301-72-000	27-302-72- 000	26-303-46- 000	27-303-72-0 00	28-303-78- 000
26-304-46-000	27-304-72- 000	28-304-78- 000	26-305-46-1 02	27-305-72- 102
28-305-78-102	27-306-72- 000	27-307-72- 000	85-915-20-1 00	85-950-20- 106
85-102-22-106	85-102-22- 100	85-915-20- 188	85-915-20-1 06	85-102-22- 180
85-925-20-106	85-925-20- 188	85-950-20- 188	85-090-36-1 06	85-401-22- 100
85-401-22-106	85-002-52- 100	85-002-52- 180	85-915-20-1 80	85-925-20- 100
85-925-20-180	85-950-20- 100	85-950-20- 180	85-102-22-1 88	85-400-22- 100

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
Tel: (86)755-85277785 Fax: (86)755-23705230
Http://www.aoc-cert.com Email: postmaster@aoc-cert.com

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85-400-22-180	85-401-22-180	85-401-22-188	85-950-48-100	9716809
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85-069-10-000	85-069-25-100	85-069-25-180	85-069-42-000	85-069-42-180
85-070-42-000	85-073-45-000	85-073-45-180	85-078-42-000	85-078-42-180
85-981-45-100	85-981-45-101	85-981-45-105	85-981-45-108	85-981-45-109
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85-011-42-000	85-011-42-180	85-011-42-281	85-021-36-102	85-021-36-106
85-021-36-180	85-021-42-102	85-021-42-106	85-021-42-180	85-021-90-000
85-065-46-000	85-065-46-002	85-065-46-180	85-065-46-281	85-065-72-000
85-065-72-002	85-065-72-006	85-065-72-180	85-065-72-281	85-066-72-000
85-066-72-002	85-066-72-006	85-066-72-180	85-066-72-186	85-067-45-100
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85-075-72-180	85-075-72-281	85-076-72-000	85-077-60-000	85-077-90-000
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85-094-22-100	85-094-22-180	85-094-22-281	85-094-36-180	85-094-36-281
85-094-42-000	85-094-42-180	85-094-42-281	85-100-42-000	85-101-42-106
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85-442-36-008	85-442-36-100	85-442-42-002	85-442-42-006	85-442-42-008
85-442-42-100	85-500-36-000	85-500-36-180	85-500-42-000	85-500-42-180
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ZG-3002RGB	--	--	--	--

***** End of Report *****