



TEST REPORT

Applicant : Foshan Rayven Lighting Co., Ltd.
Address : A1 New Lighting Source Industry Zone, Luocun, Nanhai District, Foshan city, Guangdong province 528200, P.R. China

Report on the submitted samples said to be:

Sample Name(s) : LED CEILING LIGHT
Trade Mark :  Rayvenlights™
Tested Model No. : RAVOLK1400A,
RAVOLK1400B
Model List : See appendix (See page 8)
Sample Received Date : July 25, 2024
Testing Period : July 25, 2024 ~ August 01, 2024
Date of Report : August 01, 2024
Testing Location : 901, No.40 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming District, Shenzhen, Guangdong, China
Results : Please refer to next page(s).

TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	PASS

Signed for and on behalf of LCS



Terry Luo

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

Test method: Refer to IEC 62321-1:2013&IEC 62321-2:2021&IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF).

Test result(s):

Sample No.	Sample Description	Screening Result(s)						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
1	Grey plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
2	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
3	Silver metal wire	BL	BL	BL	BL	/	/	2024-07-25
4	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
5	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
6	Grey plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
7	Red plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
8	Silver metal wire	BL	BL	BL	BL	/	/	2024-07-25
9	Grey plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
10	Orange LED beads	BL	BL	BL	BL	BL	BL	2024-07-25
11	Yellow LED beads	BL	BL	BL	BL	BL	BL	2024-07-25
12	Grey PCB board	BL	BL	BL	BL	BL	BL	2024-07-25
13	Silver metal screw	BL	BL	BL	BL	/	/	2024-07-25
14	Silver Label	BL	BL	BL	BL	BL	BL	2024-07-25
15	Grey plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
16	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
17	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
18	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
19	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
20	Red plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
21	Red plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
22	Grey plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
23	Silver metal wire	BL	BL	BL	BL	/	/	2024-07-25
24	Blue plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
25	Brown plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
26	Black plastic wire cover	BL	BL	BL	BL	BL	BL	2024-07-25
27	Blue capacitor	BL	BL	BL	BL	BL	BL	2024-07-25

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Sample No.	Sample Description	Screening Result(s)						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
28	Brown capacitor	BL	BL	BL	BL	BL	BL	2024-07-25
29	Purple capacitor casing	BL	BL	BL	BL	BL	BL	2024-07-25
30	Green capacitor casing	BL	BL	BL	BL	BL	BL	2024-07-25
31	Capacitor metal casing	BL	BL	BL	BL	/	/	2024-07-25
32	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
33	Black plastic ring	BL	BL	BL	BL	BL	BL	2024-07-25
34	Transparent plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
35	Grey plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
36	Grey plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
37	Yellow plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
38	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
39	Silver metal sheet	BL	BL	BL	BL	/	/	2024-07-25
40	Silver metal ball	BL	BL	BL	BL	/	/	2024-07-25
41	Silver metal spring	BL	BL	BL	BL	/	/	2024-07-25
42	Black plastic sheet	BL	BL	BL	BL	BL	BL	2024-07-25
43	Black IC	BL	BL	BL	BL	BL	BL	2024-07-25
44	Black IC	BL	BL	BL	BL	BL	BL	2024-07-25
45	Green PCB board	BL	BL	BL	BL	BL	BL	2024-07-25
46	Tin solder	BL	BL	BL	BL	/	/	2024-07-25

Note:

- 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(Unit: mg/kg).

Element	Polymers	Metals	Composite material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

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Remark:

- BL= Below Limit
 - OL= Over Limit
 - X= The range of needing to do further testing
 - 3σ = The reproducibility of analytical instruments
 - N/A= Not applicable
 - LOD= Detection limit
2. The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
 3. The maximum permissible limit is quoted from the document RoHS Directive 2011/65/EU with amendment (EU) 2015/863.
 4. ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.





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
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	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. EU RoHS Directive 2011/65/EU with amendment (EU) 2015/863 on DBP, BBP, DEHP & DIBP content**

Test method:

Phthalates(DBP, BBP, DEHP &DIBP) Content:

Refer to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatography-mass spectrometer (GC-MS).

Test result(s):

1) Phthalates(DBP, BBP, DEHP &DIBP)

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)		Limit (mg/kg)
		4	45	
Dibutyl Phthalate(DBP) Content	50	N.D.	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	N.D.	1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)		Limit (mg/kg)
		1+6+7+9+10+11		
Dibutyl Phthalate(DBP) Content	50	N.D.		1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.		1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.		1000
Diisobutyl phthalate(DIBP) Content	50	N.D.		1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)		Limit (mg/kg)
		12+14+15+16+17+19		
Dibutyl Phthalate(DBP) Content	50	N.D.		1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.		1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.		1000
Diisobutyl phthalate(DIBP) Content	50	N.D.		1000

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Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		20+21+22+24+25+26	
Dibutyl Phthalate(DBP) Content	50	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		27+28+29+30+33+34	
Dibutyl Phthalate(DBP) Content	50	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		35+36+37+42+43+44	
Dibutyl Phthalate(DBP) Content	50	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	1000

Note:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg= milligram per kilogram=ppm
- According to customer's requirement, only the appointed materials have been tested.



**APPENDIX :**

According to client's declaration, tested material would be produced as relevant product(s).

Model name	Power
RAVOLK1250A	8W/13W
RAVOLK1250A-1	8W/13W
RAVOLK1300A	17W/21W
RAVOLK1300A-1	17W/21W
RAVOLK1400A	21W/30W
RAVOLK1400A-1	21W/30W
RAVOLK1400A-2	21W/30W
RAVOLI2250A	8W/13W
RAVOLI2300A	17W/21W
RAVOLI2400A	21W/30W
RAVOLK1250I	8.5W / 10W
RAVOLK1250I-1	8.5W / 10W
RAVOLK2250I	13W / 18W
RAVOLK2250I-1	13W / 18W
RAVOLK2250A	13W / 18W
RAVOLK2250A-1	13W / 18W
RAVOLK1300I	10W / 15W
RAVOLK1300I-1	10W / 15W
RAVOLK2300I	17W/21W
RAVOLK2300I-1	17W/21W
RAVOLK1400I	16.5W / 23W
RAVOLI2250I	8.5W / 10W
RAVOLI2300I	10W / 15W
RAVOLI2400I	16.5W / 23W
RAVOLK1250B	8W/13W
RAVOLK1250B-1	8W/13W
RAVOLK1300B	17W/21W
RAVOLK1300B-1	17W/21W
RAVOLK1400B	21W/30W
RAVOLK1400B-1	21W/30W
RAVOLK1400B-2	21W/30W
RAVOLI2250B	8W/13W
RAVOLI2300B	17W/21W
RAVOLI2400B	21W/30W
RAVOLK1250J	8.5W / 10W

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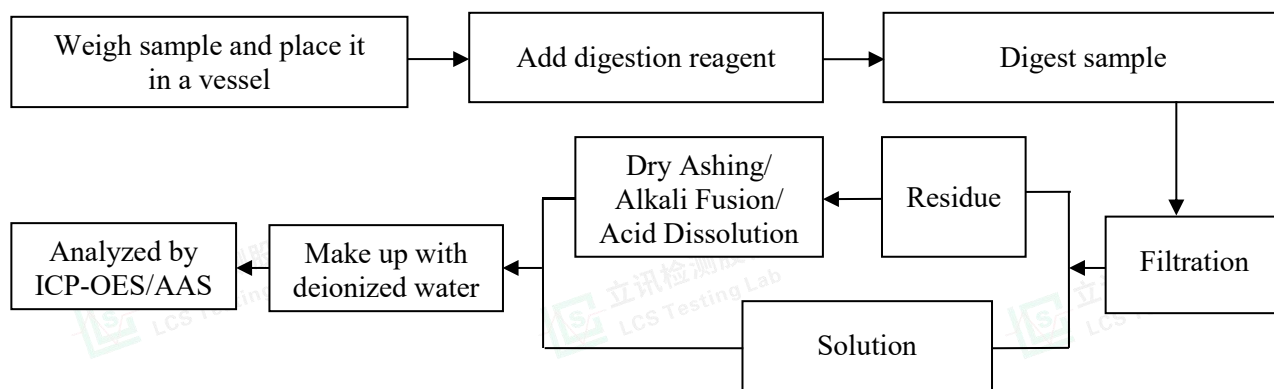
RAVOLK1250J-1	8.5W / 10W
RAVOLK2250J	13W / 18W
RAVOLK2250J-1	13W / 18W
RAVOLK2250B	13W / 18W
RAVOLK2250B-1	13W / 18W
RAVOLK1300J	10W / 15W
RAVOLK1300J-1	10W / 15W
RAVOLK2300J	17W/21W
RAVOLK2300J-1	17W/21W
RAVOLK1400J	16.5W / 23W
RAVOLI2250J	8.5W / 10W
RAVOLI2300J	10W / 15W
RAVOLI2400J	16.5W / 23W



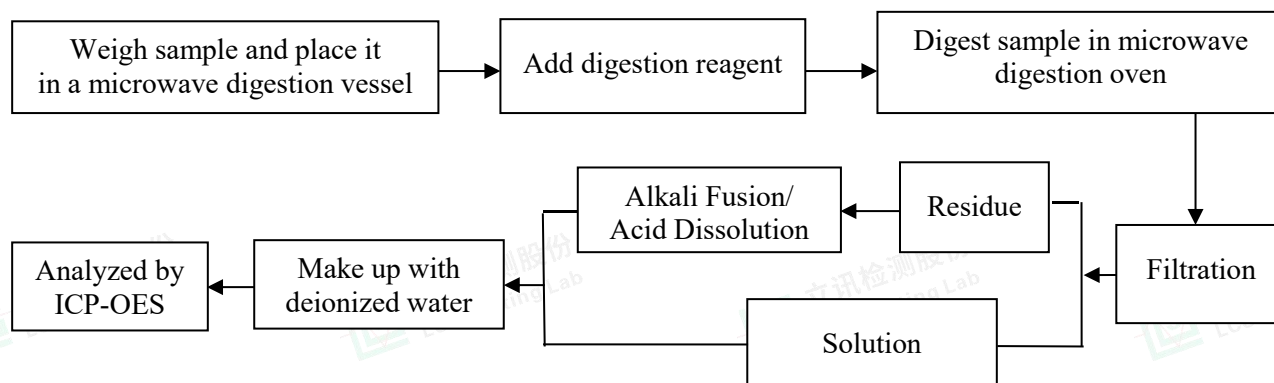


Test Process

1. Lead(Pb) & Cadmium(Cd): IEC 62321-5:2013

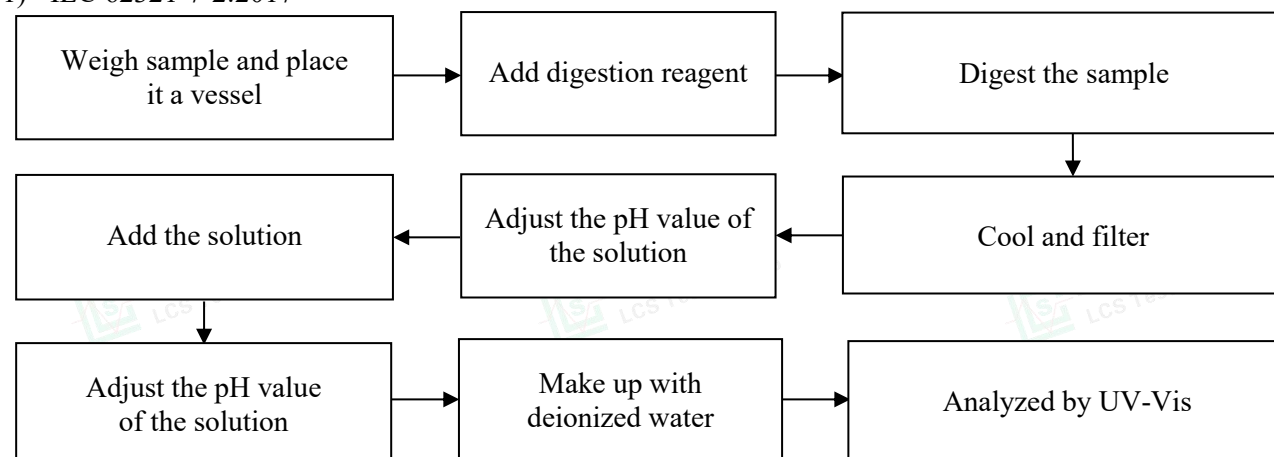


2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV



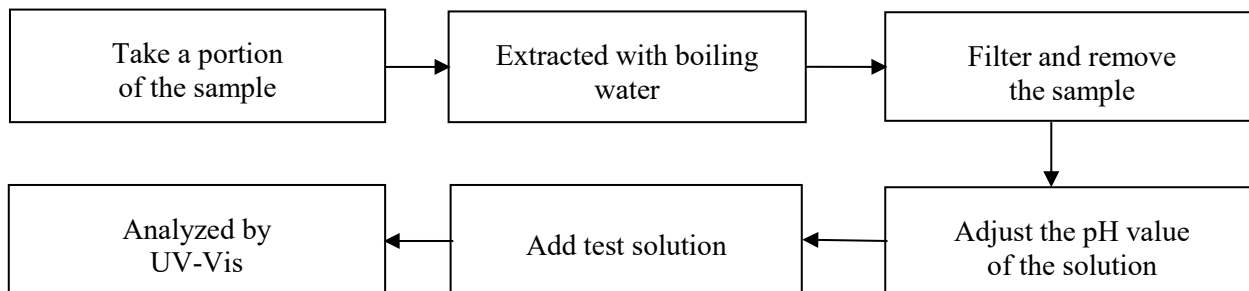
3. Hexavalent Chromium(Cr(VI))

1) IEC 62321-7-2:2017

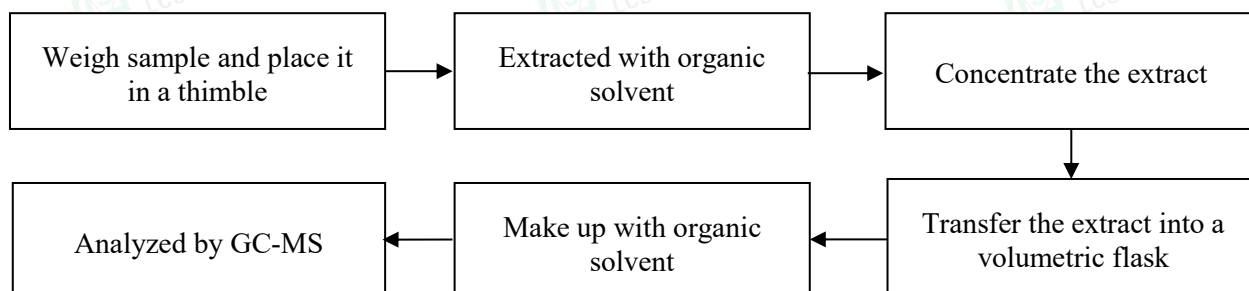




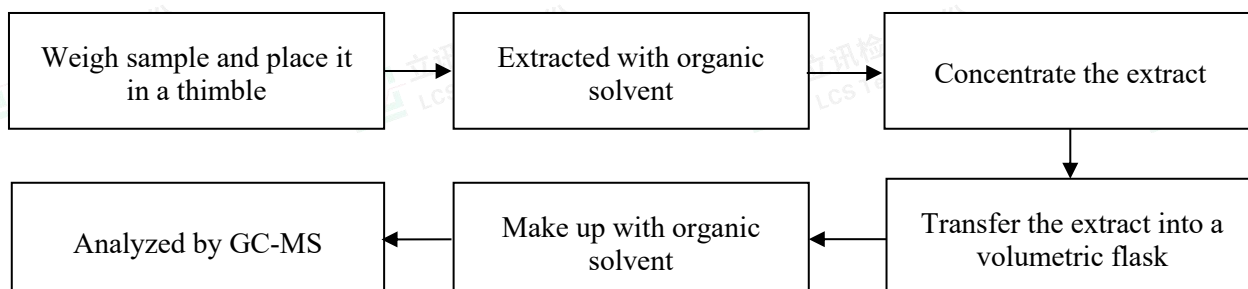
2) IEC 62321-7-1:2015



4. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015

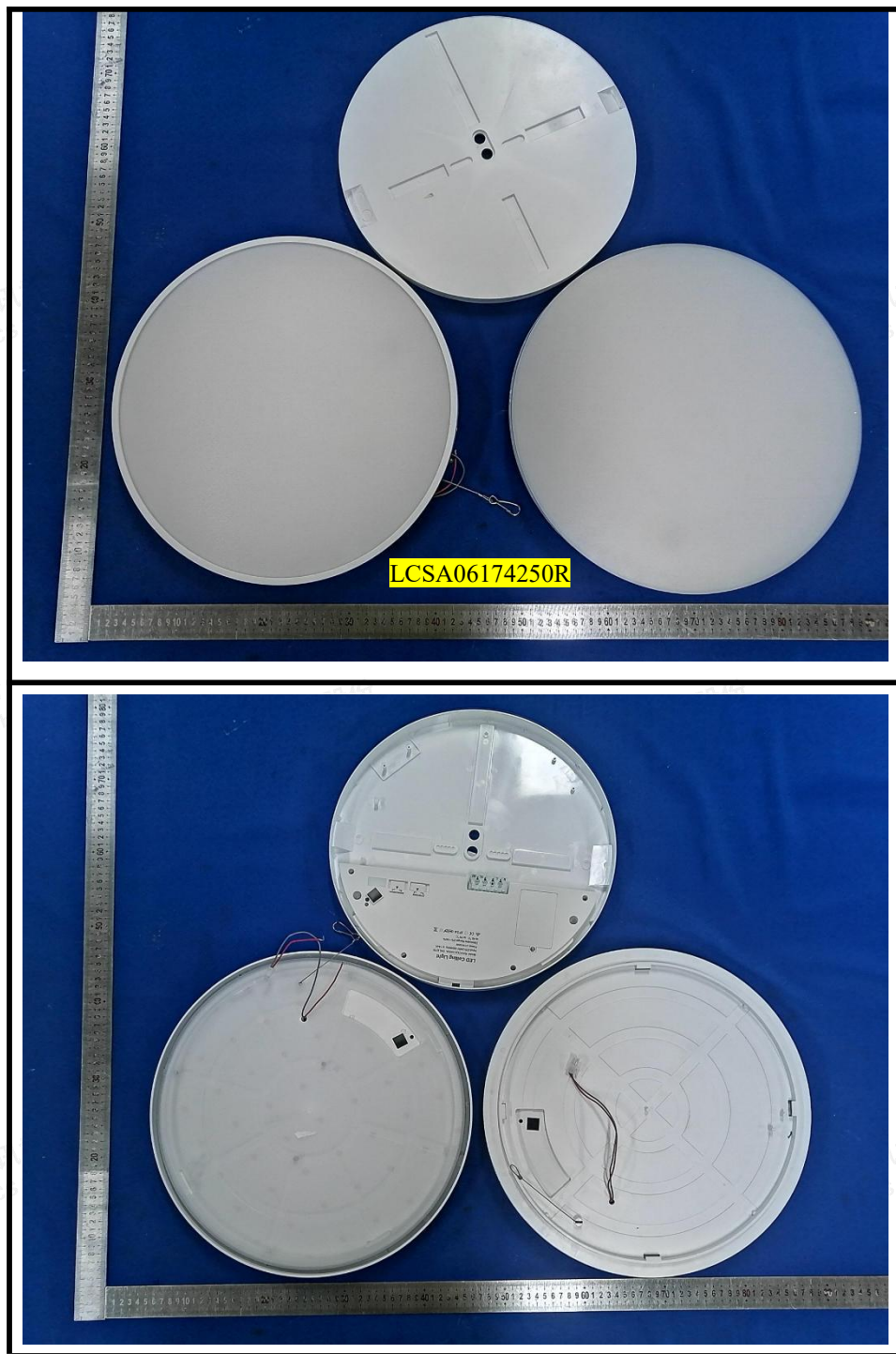


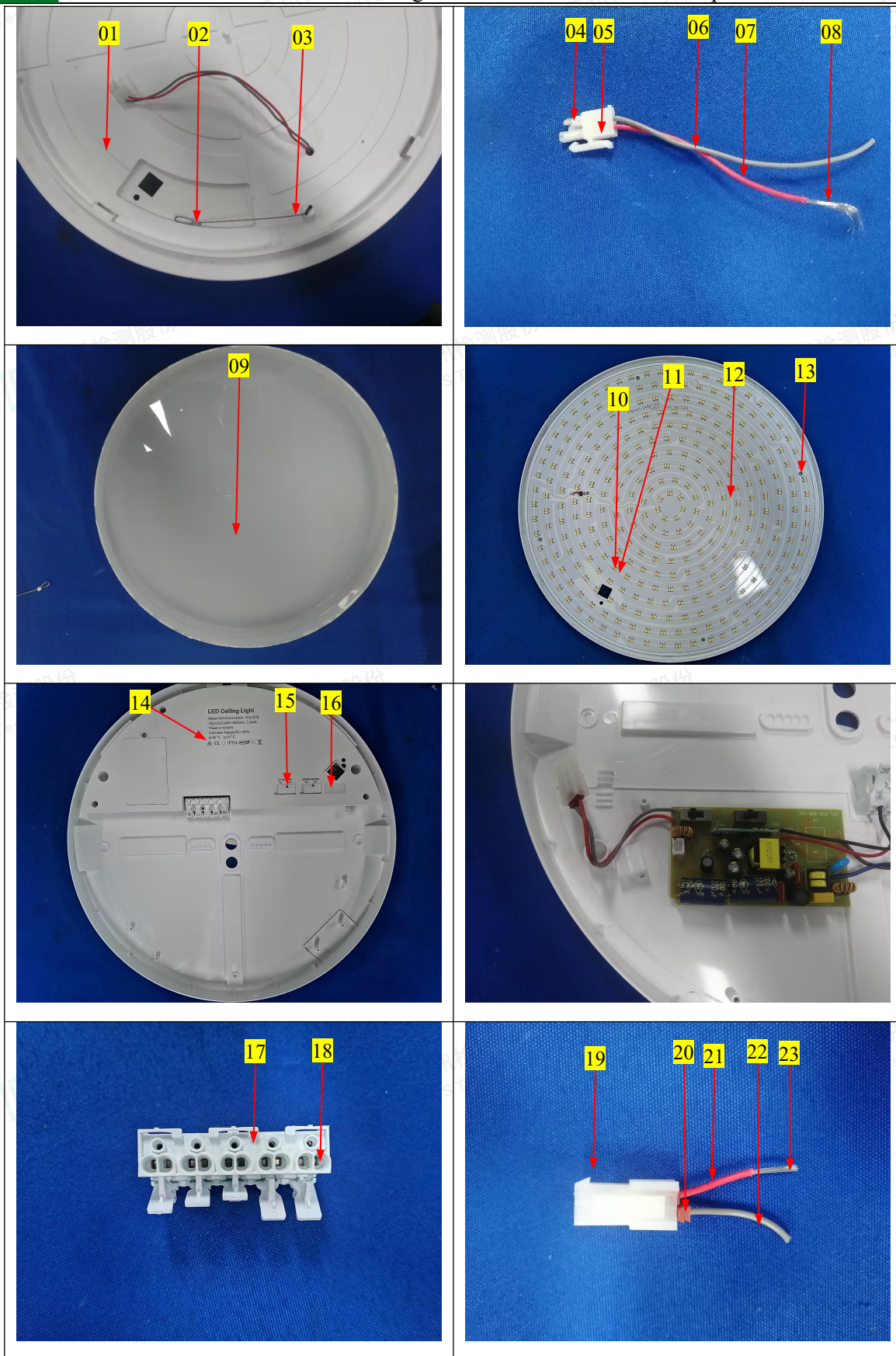
5. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017

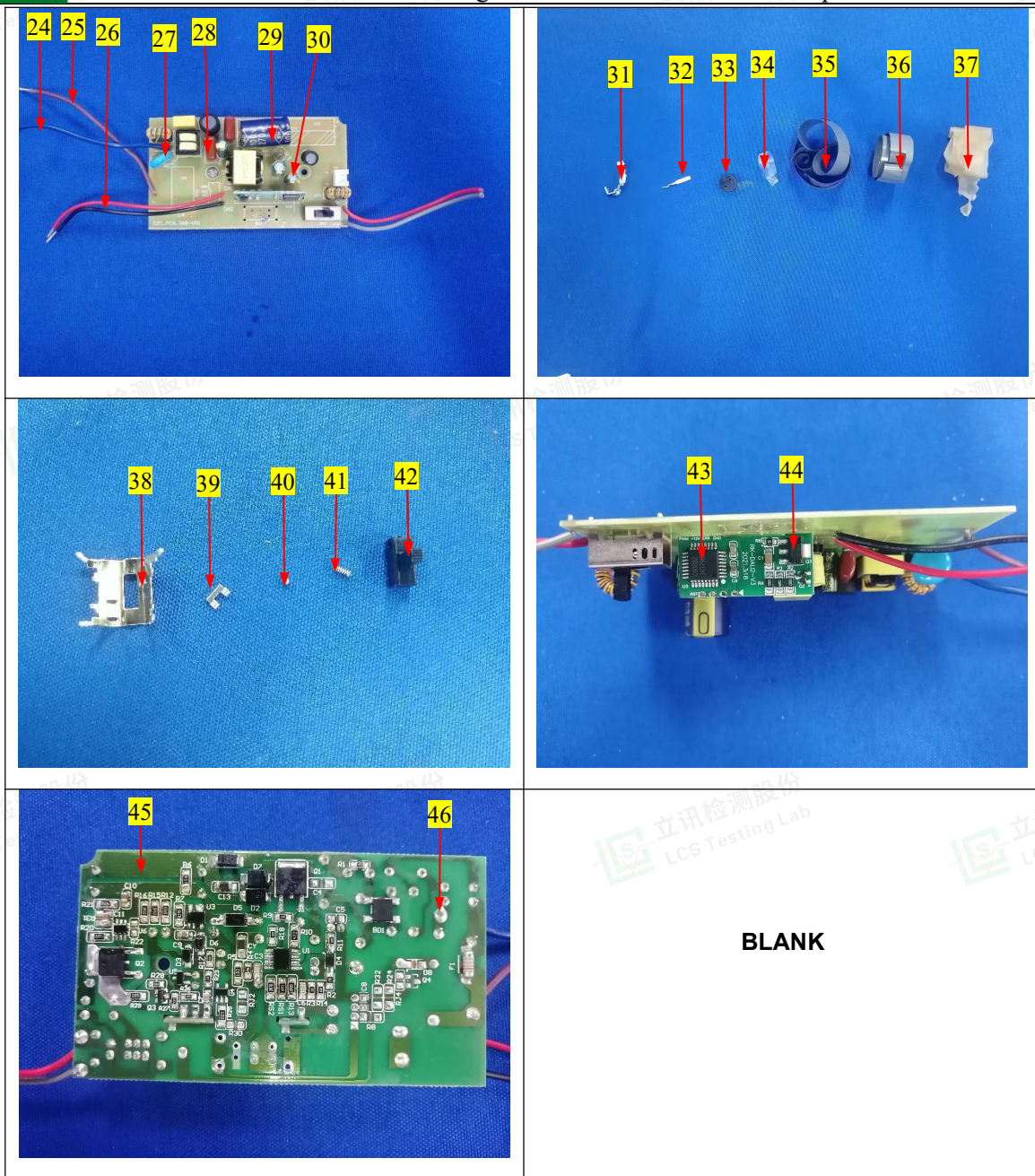




The photo(s) of the sample







**Statement:**

1. The test report is invalid without the signature of the approver and the special seal for the company's report;
2. The company name, address and sample information shown on the report were provided by the applicant who should be responsible for the authenticity which are not verified by LCS;
3. The test results in this report are only responsible for the tested samples;
4. Without written approval of LCS, this report can't be reproduced except in full;
5. In case of any discrepancy between the corresponding Chinese and English contents in the test report, the Chinese version shall prevail.

*** End of Report ***

