



TEST REPORT

Applicant : Sundopt LED Lighting Co., Ltd.
Address : Bldg 8-6#, TongFuYu Industrial Park Ai Qun Rd Shiyan Town Baoan District Shenzhen, Guangdong 518108

Report on the submitted samples said to be:

Sample Name(s) : LED LUMINAIRES
Trade Mark : N/A
Tested Model No. : NCP1-1205025-ND-R, NCP1-1205025-ND-M
Model List : See appendix (See page 7)
Sample Received Date : November 29, 2024
Testing Period : November 29, 2024 ~ December 04, 2024
Date of Report : December 06, 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 62321-3-1:2013, 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	Silver plastic sticker	BL	BL	BL	BL	BL	BL	2024-11-29
2	White metal case	BL	BL	BL	BL	/	/	2024-11-29
3	Black plastic stopper	BL	BL	BL	BL	BL	BL	2024-11-29
4	White plastic thread outer skin	BL	BL	BL	BL	BL	BL	2024-11-29
5	Silver plastic sticker	BL	BL	BL	BL	BL	BL	2024-11-29
6	Blue plastic thread	BL	BL	BL	BL	BL	BL	2024-11-29
7	Silver tinsel	BL	BL	BL	BL	/	/	2024-11-29
8	Light brown plastic thread	BL	BL	BL	BL	BL	BL	2024-11-29
9	Yellow plastic thread	BL	BL	BL	BL	BL	BL	2024-11-29
10	Yellow plastic lamp beads	BL	BL	BL	BL	BL	BL	2024-11-29
11	White sheet metal	BL	BL	BL	BL	/	/	2024-11-29
12	White plastic film	BL	BL	BL	BL	BL	BL	2024-11-29
13	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-11-29
14	Silver metal case	BL	BL	BL	BL	/	/	2024-11-29
15	Silver metal screws	BL	BL	BL	BL	/	/	2024-11-29
16	Silver metal ring	BL	BL	BL	BL	/	/	2024-11-29
17	PCB board	BL	BL	BL	BL	BL	BL	2024-11-29
18	Black plastic sheet	BL	BL	BL	BL	BL	BL	2024-11-29
19	White plastic sheet	BL	BL	BL	BL	BL	BL	2024-11-29
20	Silver plastic sticker	BL	BL	BL	BL	BL	BL	2024-11-29
21	White metal case	BL	BL	BL	BL	/	/	2024-11-29
22	White gel	BL	BL	BL	BL	BL	BL	2024-11-29
23	Blue gel	BL	BL	BL	BL	BL	BL	2024-11-29
24	Black plastic sheet	BL	BL	BL	BL	BL	BL	2024-11-29
25	Yellow capacitor	BL	BL	BL	BL	BL	BL	2024-11-29
26	Yellow plastic film	BL	BL	BL	BL	BL	BL	2024-11-29
27	Blue plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
28	White fixing glue	BL	BL	BL	BL	BL	BL	2024-11-29
29	Black plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
30	Gray plastic case	BL	BL	BL	BL	BL	BL	2024-11-29

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Sample No.	Sample Description	Screening Result(s)						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr [▼]	Br [▼]		
						PBBs	PBDEs	
31	Black plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
32	Red plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
33	Blue capacitor	BL	BL	BL	BL	BL	BL	2024-11-29
34	Solder	BL	BL	BL	BL	/	/	2024-11-29
35	PCB board	BL	BL	BL	BL	BL	BL	2024-11-29
36	Black body (patch)	BL	BL	BL	BL	BL	BL	2024-11-29
37	Black plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
38	Black plastic case	BL	BL	BL	BL	BL	BL	2024-11-29
39	White metal case	BL	BL	BL	BL	/	/	2024-11-29
40	Red soft plastic	BL	BL	BL	BL	BL	BL	2024-11-29
41	Silver metal flakes	BL	BL	BL	BL	/	/	2024-11-29
42	Silver metal bracket	BL	BL	BL	BL	/	/	2024-11-29
43	Silver metal tubes	BL	BL	BL	BL	/	/	2024-11-29
44	Silver steel wire	BL	BL	BL	BL	/	/	2024-11-29
45	White plastic thread outer skin	BL	BL	BL	BL	BL	BL	2024-11-29

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	$BL \leq (250-3\sigma) < X$

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
- The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

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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)
		12	13	45	
Dibutyl Phthalate(DBP) Content	50	N.D.	N.D.	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	N.D.	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	N.D.	N.D.	1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		1+3+4+5+6+8	
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)
		9+10+17+18+19+20	
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)
		22+23+24+25+26+27	
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)
		28+29+30+31+32+33	
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+38+40	
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).

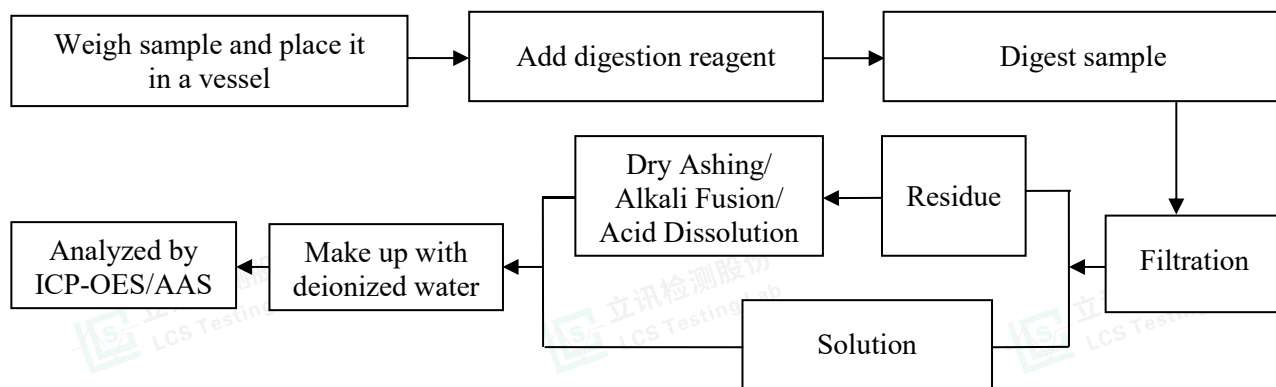
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NCP1-1205025-DD-M, NCP1-1205025-PD-R, NCP1-1205025-PD-RM, NCP1-1205025-PD-M,
NCP1-1506030-ND-R, NCP1-1506030-ND-RM, NCP1-1506030-ND-M, NCP1-1506030-VD-R,
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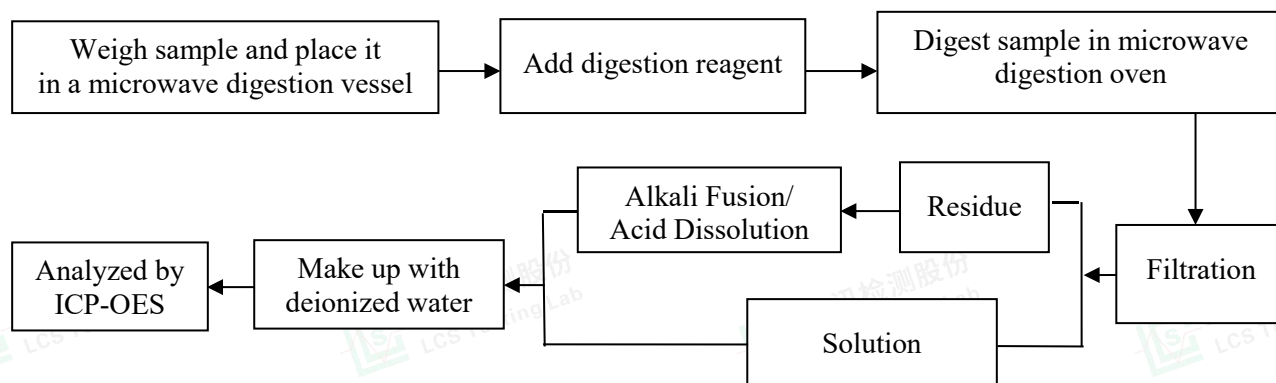


Test Process

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

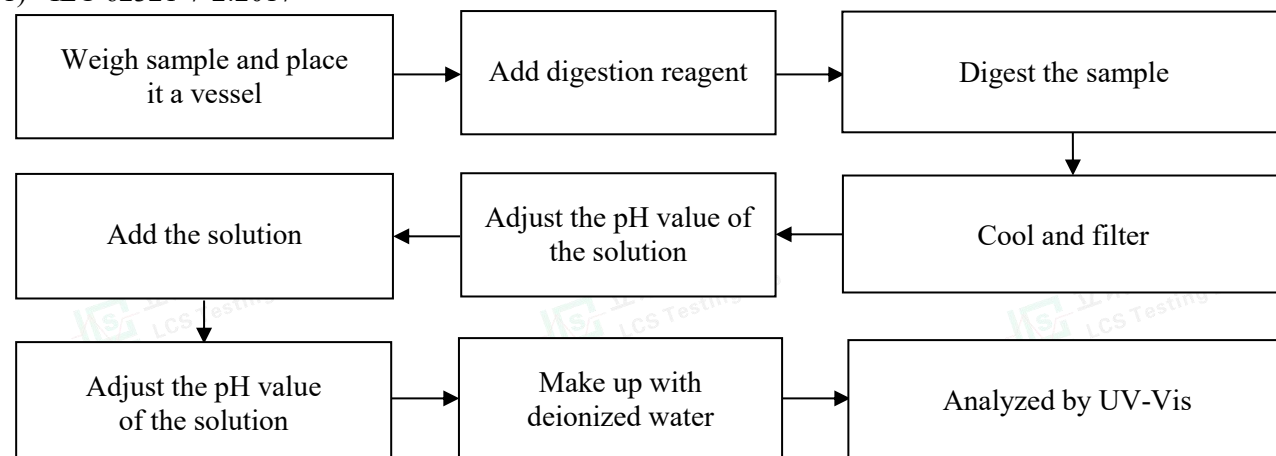


2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV



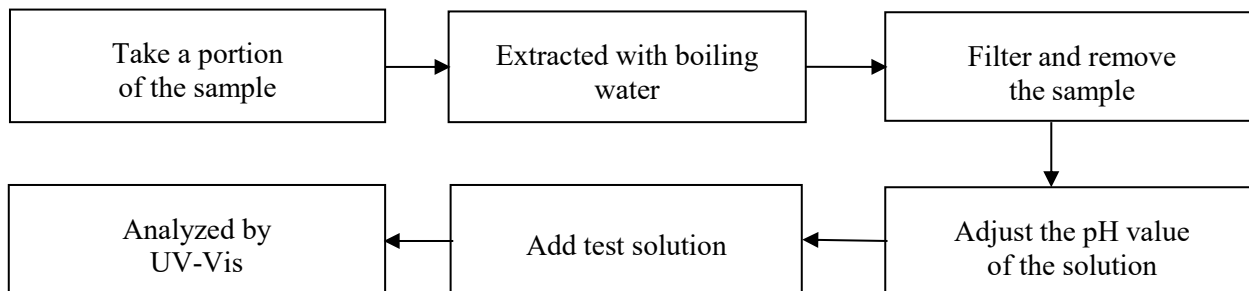
3. Hexavalent Chromium(Cr(VI))

1) IEC 62321-7-2:2017

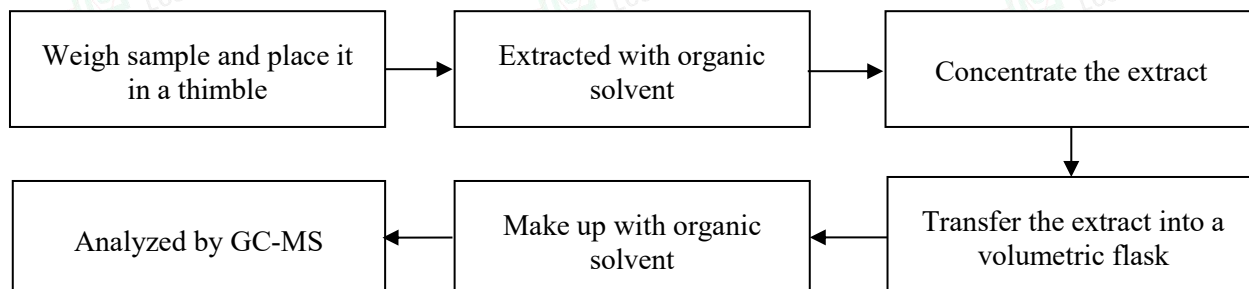




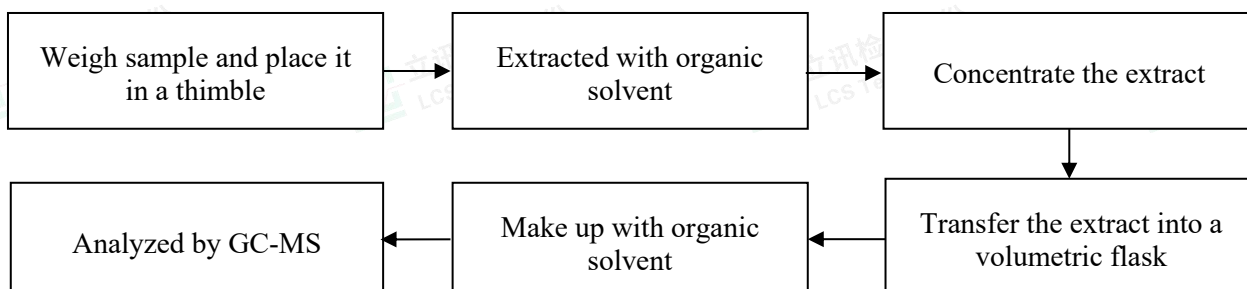
2) IEC 62321-7-1:2015



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



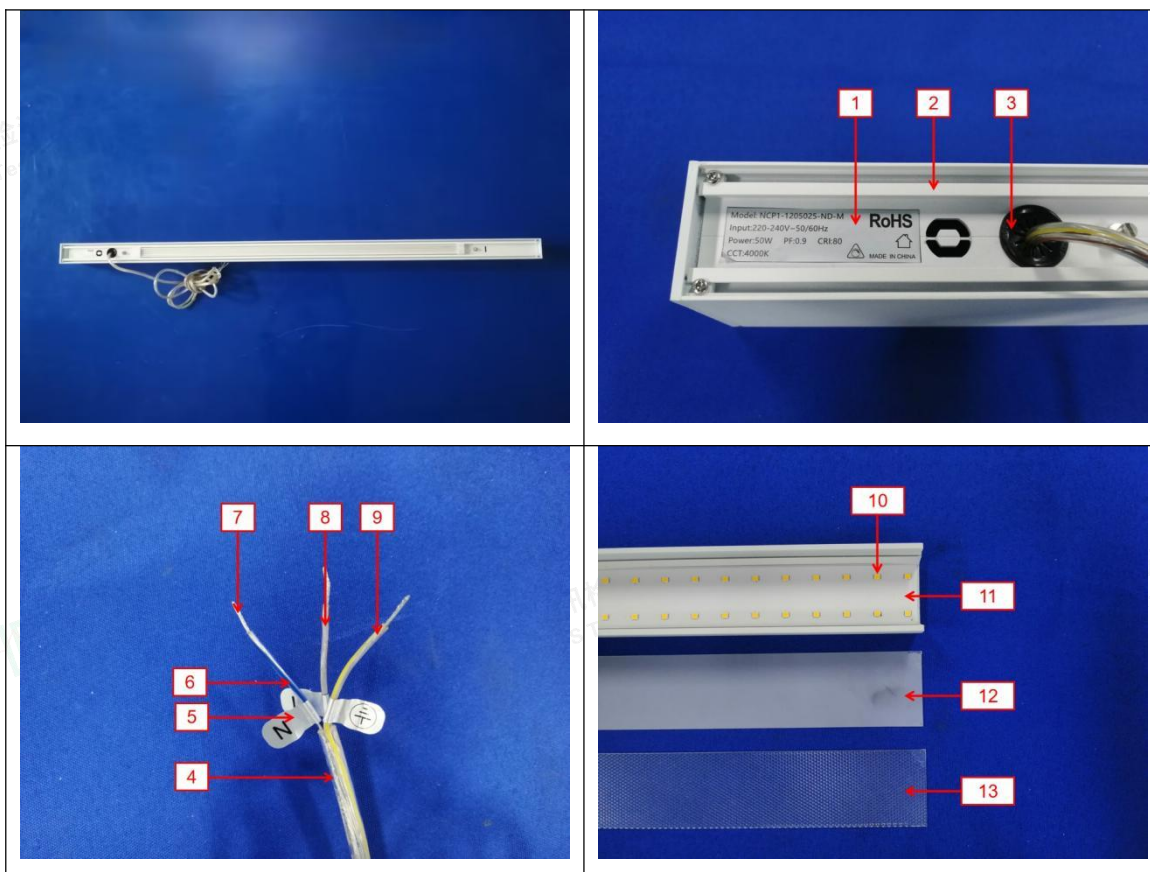
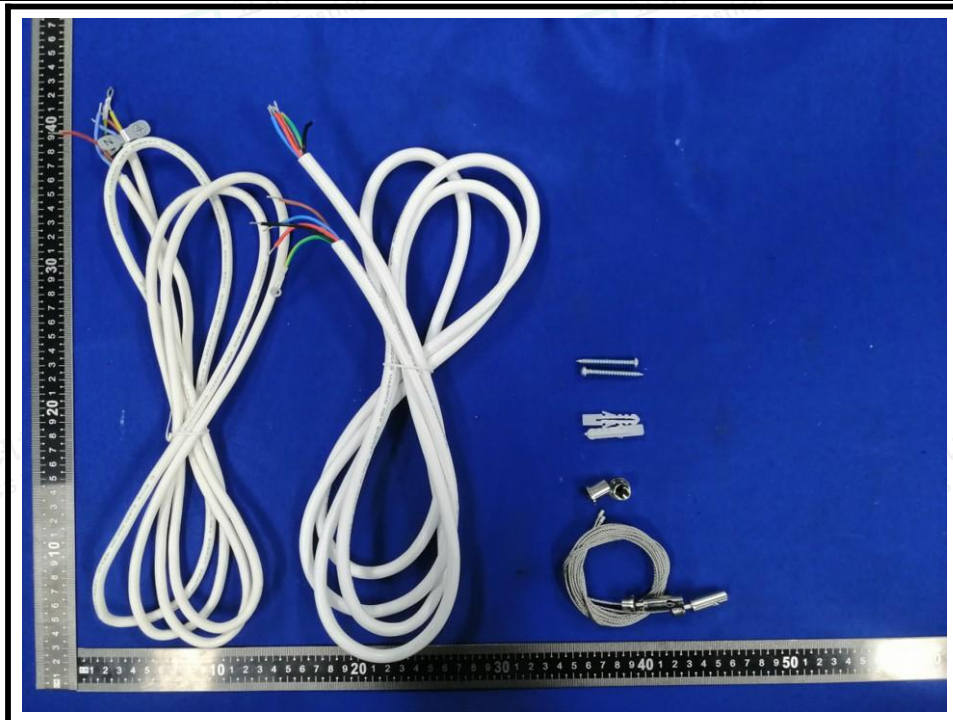
5. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017





The photo(s) of the sample

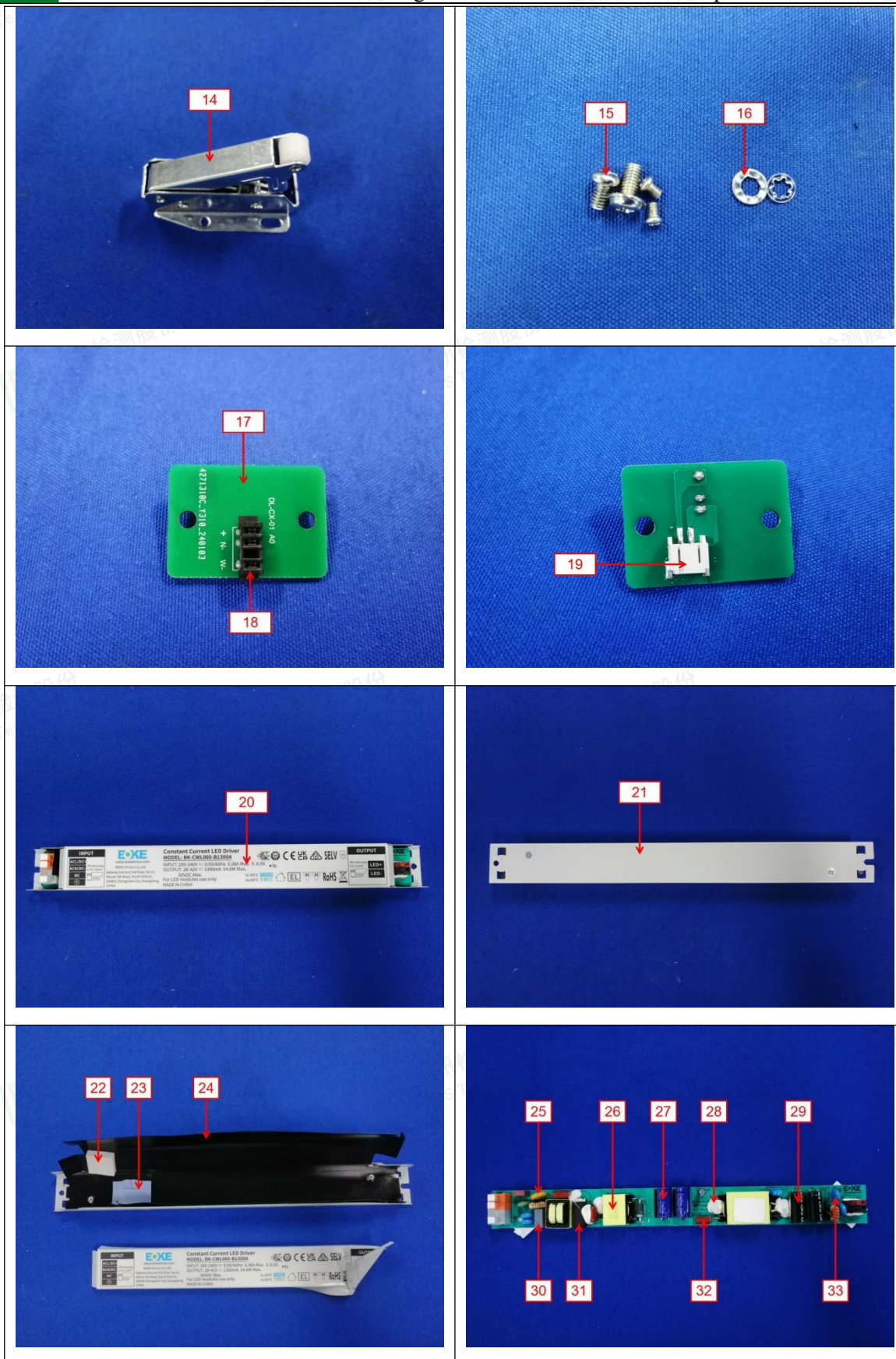




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2. The company name, address and sample information shown on the report were provided by the applicant who should be responsible for the authenticity which are not verified by LCS;
3. The test results in this report are only responsible for the tested samples;
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*** End of Report ***

