




# Verification Report

**Applicant** : Dongguan Ruizi Technology Co., Ltd  
**Address** : Floor 7-10, Building S7, Fenggang Tian'an Digital City, 208 Fenggang  
Section, Dongshen Road, Fenggang Town, Dongguan City, Guangdong  
Province, China

## Report on the submitted samples said to be:

**Sample Name(s)** : LED Line Light

**Trade Mark** : 

**Part No.** : See attached table

**Sample Received Date** : June 25, 2023

**Testing Period** : June 25, 2023 ~ June 28, 2023

**Date of Report** : June 28, 2023

**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.	<b>PASS</b>

Signed for and on behalf of LCS



Lily dan



**Model**

NU30XX-XX-XX-XXXXX-XXX, NU31XX-XX-XX-XXXXX-XXX,  
NC32XX-XX-XX-XXXXX-XXX

The first "X" can be A, C, B, means version.

The second "X" can be G, P, means regular PMMA, means PC diffuser.

The third "X" can be C, L, means method of wiring. C= Non-linkable, L= Linkable.

The fourth "X" can be C, D, M, E, W, Y, means electrical function. C= Common, D= DALI, M= Microwave, E= Emergency, W= DALI+Emergency, Y= Microwave+Emergency.

The fifth or sixth "X" can be 16, 20, 31, 40, 47, means power. 16= 16W, 20= 20W, 31= 31W, 40= 40W, 47= 47W. Each power can be turned to four powers on the driver.

The seventh to tenth "X" can be 0600, 1200, 1500, means length. 0600= 600mm, 1200= 1200mm, 1500= 1500mm.

The eleventh "X" can be K, T, means diffuser type. K= Frosted, T= Transparent.

The 12th to 13th "X" can be "XX" or 27~65, means CCT. 27~65 means any color temperature from 2700K to 6500K, "XX" means any two color temperatures from 2700K to 6500K can be chosen.

The 14th "X" can be L, M, H, G, means efficiency. L= Standard efficiency, M= Medium efficiency, H= High efficiency, G= Ultra high efficiency.

For example as below

Model	Rating	Interconnected
NC32AG-LY-40-1500K-65H	220-240V~, 50/60Hz, 40W, IP44, IK06, ta.40°C	Maximum 1520W



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

Test method: With reference 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 <sup>▼</sup>	Br <sup>▼</sup>		
						PBBs	PBDEs	
1	Clear plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
2	White plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
3	Translucent plastic sheets	BL	BL	BL	BL	BL	BL	2023-06-25
4	White soft plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
5	White soft plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
6	White soft plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
7	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
8	Silver metal spring	BL	BL	BL	BL	/	/	2023-06-25
9	White plastic housing	BL	BL	BL	BL	BL	BL	2023-06-25
10	Clear plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
11	Yellow lamp beads	BL	BL	BL	BL	BL	BL	2023-06-25
12	White PCB board	BL	BL	BL	BL	BL	BL	2023-06-25
13	White sheet metal	BL	BL	BL	BL	/	/	2023-06-25
14	Silver plastic labels	BL	BL	BL	BL	BL	BL	2023-06-25
15	Clear plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
16	Orange plastic sheets	BL	BL	BL	BL	BL	BL	2023-06-25
17	Yellow tape	BL	BL	BL	BL	BL	BL	2023-06-25
18	Black ceramic	BL	BL	BL	BL	BL	BL	2023-06-25
19	Black plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
20	Red metal wire	BL	BL	BL	BL	/	/	2023-06-25
21	Black plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
22	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
23	Black plastic ring	BL	BL	BL	BL	BL	BL	2023-06-25
24	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
25	Yellow wet paper	BL	BL	BL	BL	BL	BL	2023-06-25
26	Gray metal sheet	BL	BL	BL	BL	/	/	2023-06-25
27	Silver metal pins	BL	BL	BL	BL	/	/	2023-06-25
28	Green ceramic	BL	BL	BL	BL	BL	BL	2023-06-25



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Sample No.	Sample Description	Screening Result(s)						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr <sup>▼</sup>	Br <sup>▼</sup>		
						PBBs	PBDEs	
29	Gold metal wire	BL	BL	BL	BL	/	/	2023-06-25
30	Solder	BL	BL	BL	BL	/	/	2023-06-25
31	Green PCB board	BL	BL	BL	BL	BL	BL	2023-06-25
32	White PCB board	BL	BL	BL	BL	BL	BL	2023-06-25
33	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
34	Black plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
35	Silver metal spring	BL	BL	BL	BL	/	/	2023-06-25
36	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
37	Silver metal ball	BL	BL	BL	BL	/	/	2023-06-25
38	White plastic snap	BL	BL	BL	BL	BL	BL	2023-06-25
39	Silver metal screws	BL	BL	BL	BL	/	/	2023-06-25
40	Silver metal sheet	BL	BL	BL	BL	/	/	2023-06-25
41	Green plastic wire leather	BL	BL	BL	BL	BL	BL	2023-06-25
42	Red plastic wire leather	BL	BL	BL	BL	BL	BL	2023-06-25
43	Black plastic wire leather	BL	BL	BL	BL	BL	BL	2023-06-25
44	Blue plastic wire leather	BL	BL	BL	BL	BL	BL	2023-06-25
45	Silver metal wire	BL	BL	BL	BL	/	/	2023-06-25
46	White plastic sheet	BL	BL	BL	BL	BL	BL	2023-06-25
47	Silver metal pins	BL	BL	BL	BL	/	/	2023-06-25

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
  - $3\sigma$ = 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 Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, DBP, BBP, DEHP & DIBP content**

Test method:

Lead(Pb) & Cadmium(Cd) Content:

Refer to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES) or atomic absorption spectrometer (AAS).

Mercury(Hg) Content:

Refer to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES).

Hexavalent Chromium(Cr(VI)) Content:

Refer to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, analysis was performed by UV-visible spectrophotometer (UV-Vis).

PBBs & PBDEs Content:

Refer to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatography-mass spectrometer (GC-MS).

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)
		1	2	3	5	
Dibutyl Phthalate(DBP) Content	50	N.D.	N.D.	N.D.	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	50	N.D.	N.D.	N.D.	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	50	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP) Content	50	N.D.	N.D.	N.D.	N.D.	1000

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		4+6+9+10+11+12	
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)
		14+15+16+17+18+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

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		21+23+25+28+31+32	
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)
		34+38+41+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

Tested Item(s)	MDL (mg/kg)	Test Result(s) (mg/kg)	Limit (mg/kg)
		46	
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= milligram
- According to customer's requirement, only the appointed materials have been tested.



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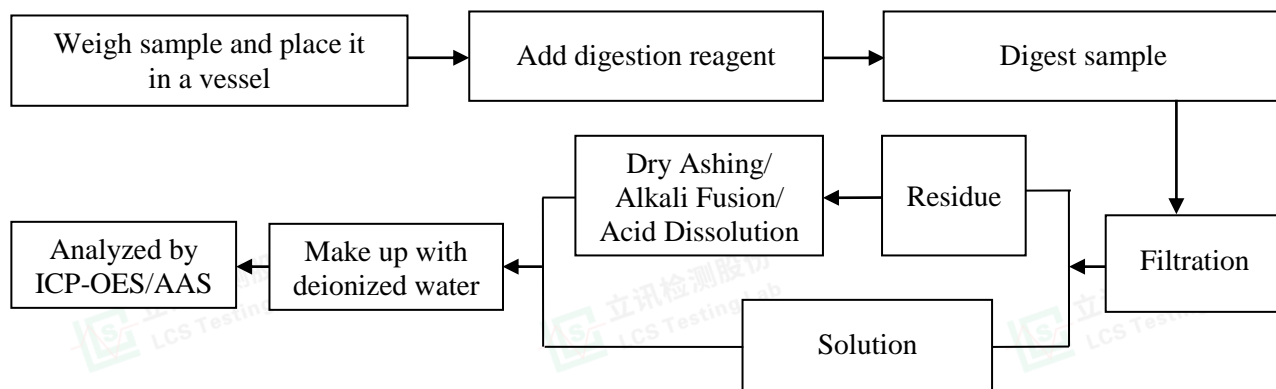
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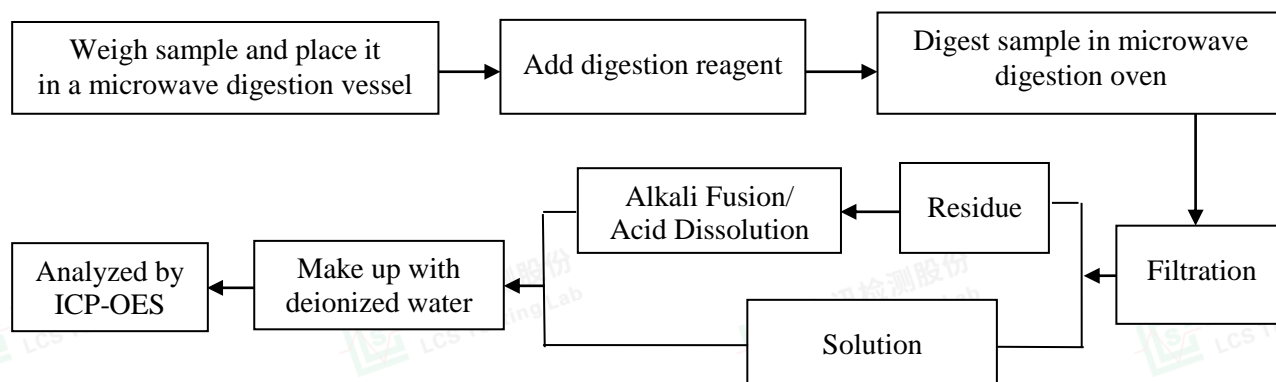


## Test Process

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

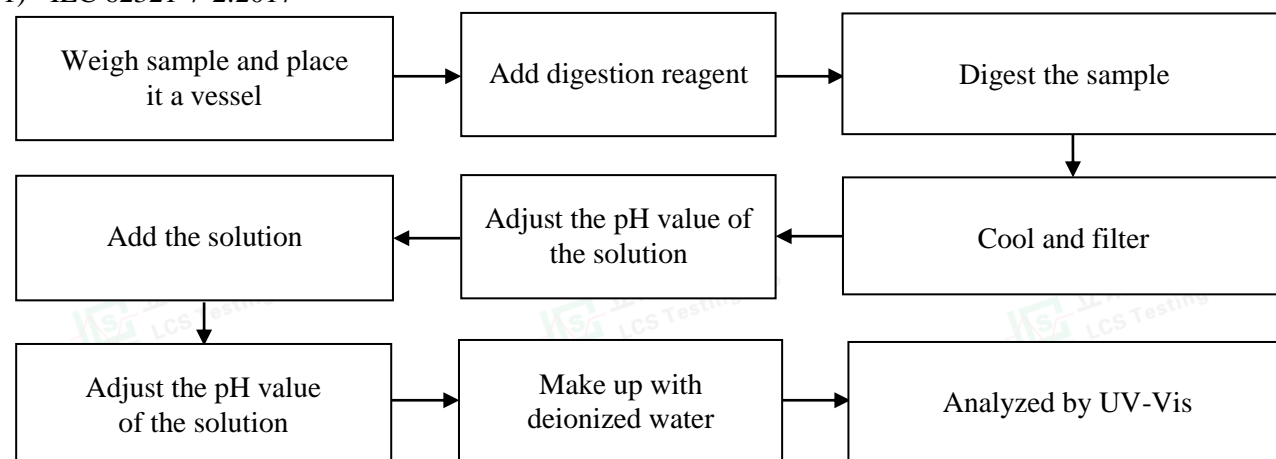


### 2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV



### 3. Hexavalent Chromium(Cr(VI))

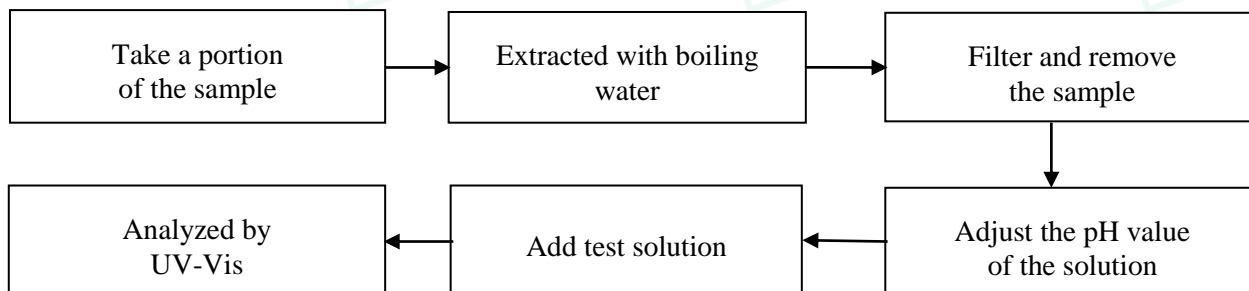
#### 1) IEC 62321-7-2:2017



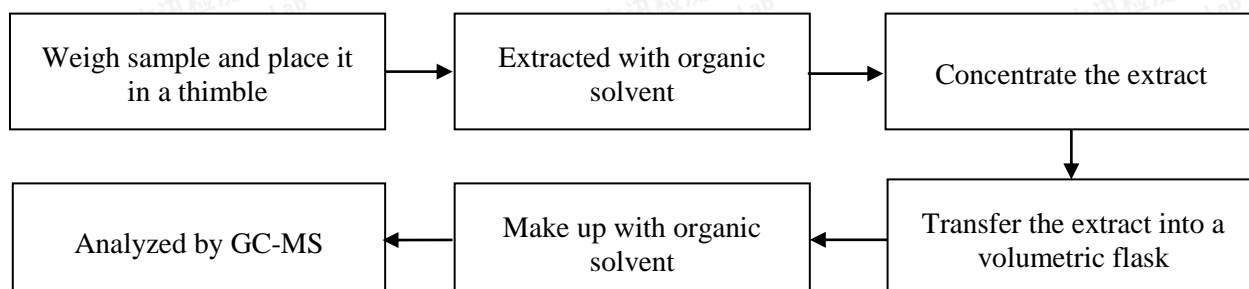




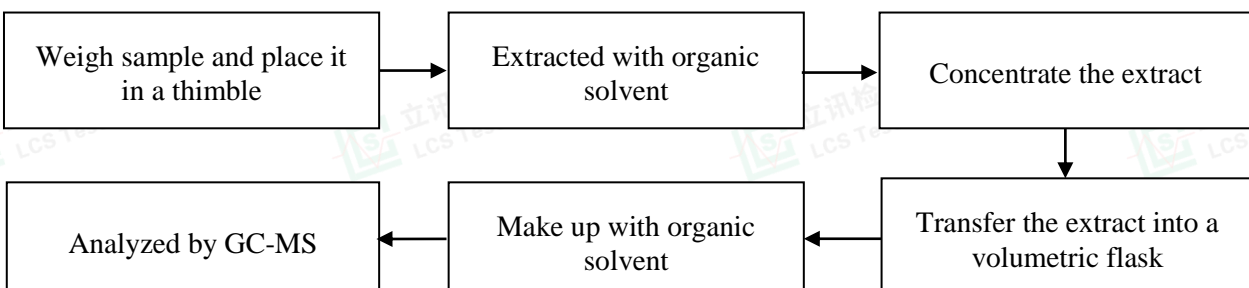
## 2) IEC 62321-7-1:2015



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



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





## The photo(s) of the sample

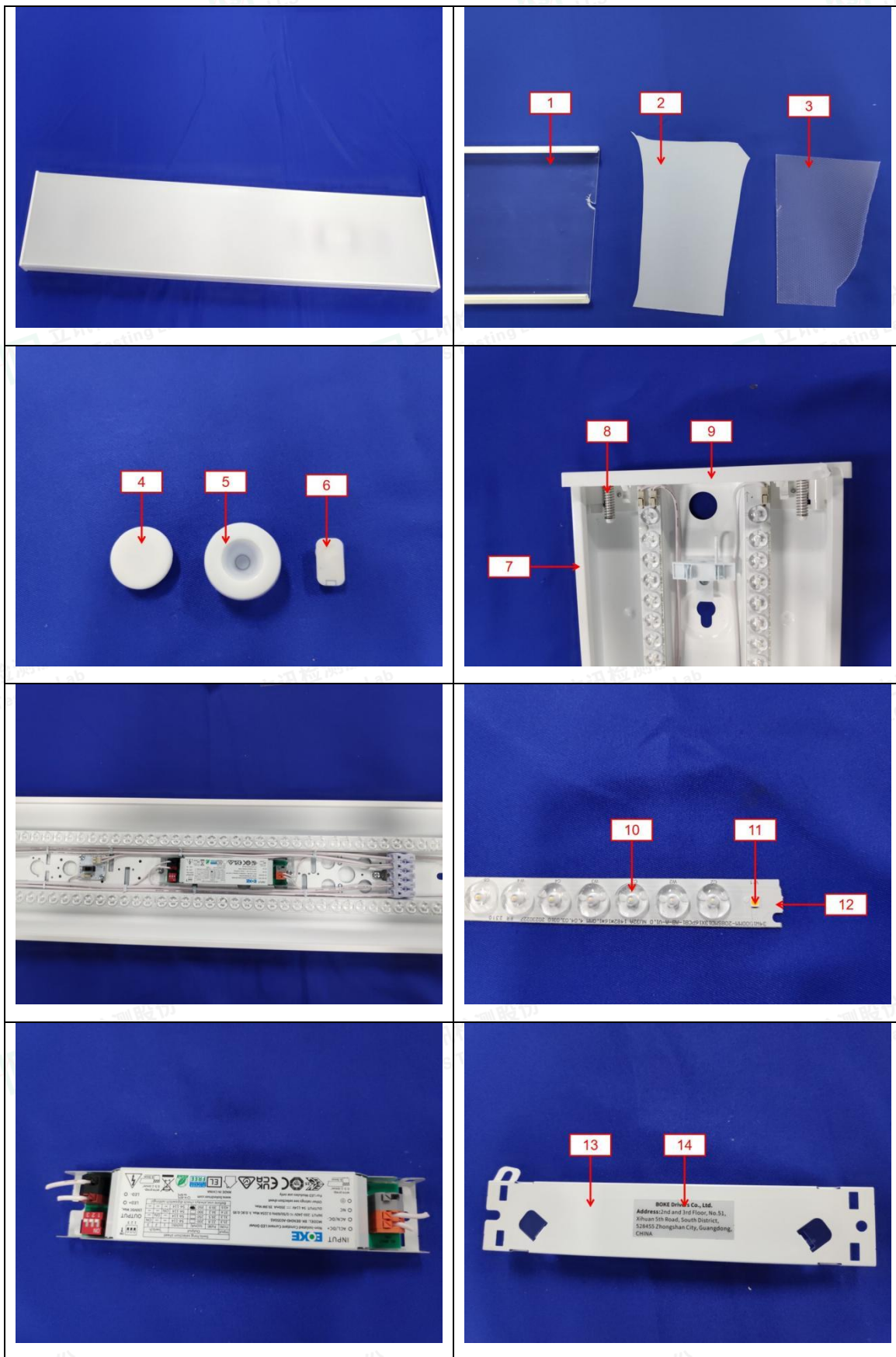


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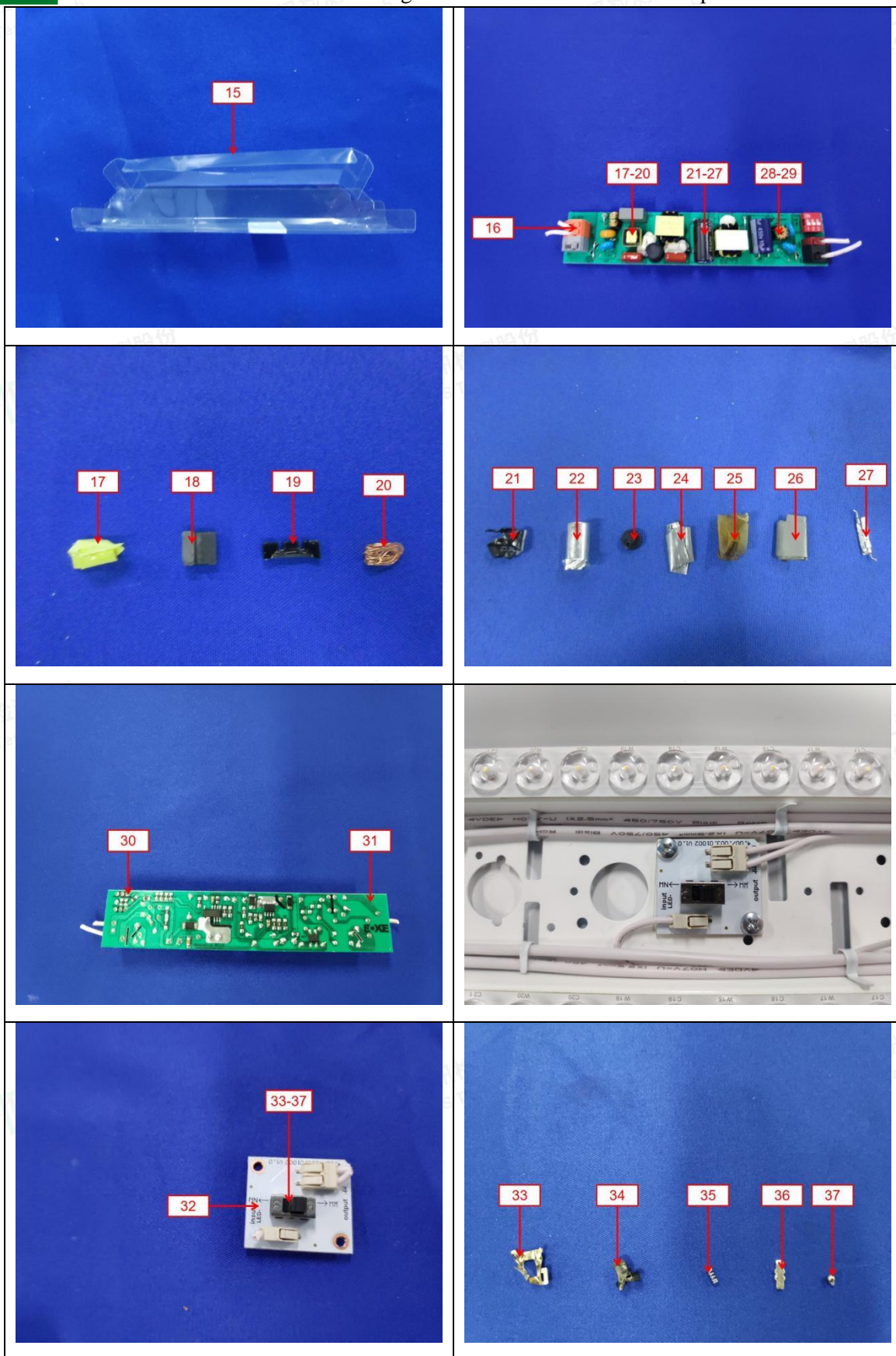
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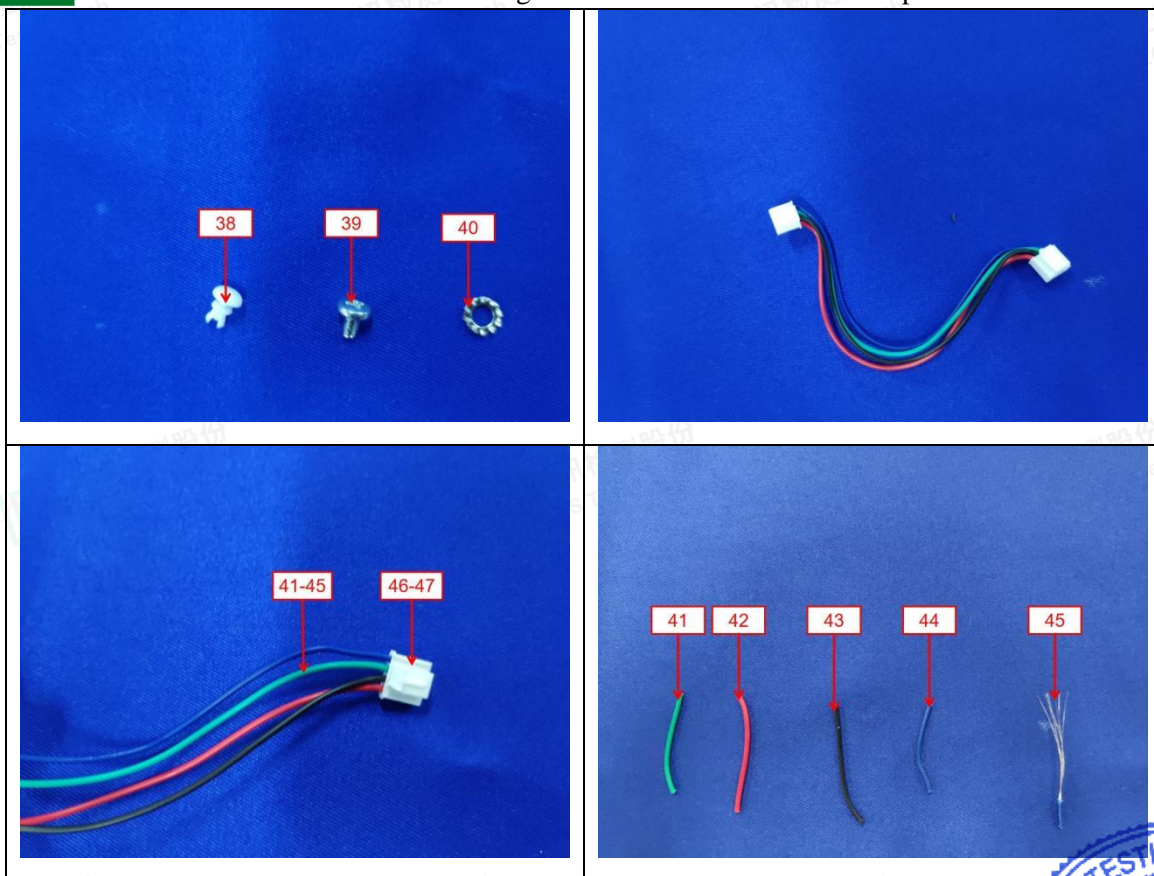


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