Verification Report

Applicant	:	**NEKO LIGHTING AG**
Address	:	**Kreuzstrasse 2, CH-8008 Zürich, Switzerland**
Factory	:	**NEKO LIGHTING AG**
Address	:	**Nairui Industrial Park, No.9, Xin Le Wu Road, Ma'an Town, Huicheng District, Huizhou, Guangdong, China**

Report on the submitted samples said to be:

Sample Name(s)	:	**Ourdoorlight**
Trade Mark	:	neko
Part No.	:	**See next page**
Sample Received Date	:	**September 21, 2022**
Testing Period	:	**September 21, 2022 ~ October 08, 2022**
Date of Report	:	**October 11, 2022**
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

Young/Laboratory Manager

Part No.:

TERRACE NANO, TERRACE NANO V1, TERRACE NANO V2, NAUTICA NANO, NAUTICA NANO V1, NAUTICA NANO V2, TERRACE MINI, TERRACE MINI S316, NAUTICA MINI, NAUTICA MINI S316, TERRACE Maxi, TERRACE Maxi S316, NAUTICA Maxi, NAUTICA Maxi S316, EYE S, EYE R, TERARACE Micro, TERARACE Nano, TERARACE Mini, AFTER7 Mini, TERARACE Maxi, AFTER7 Maxi

Results:

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)

Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
1	Gray sheet metal	BL	BL	BL	BL	/	/	2022-09-21
2	Silver plastic label	BL	BL	BL	BL	BL	BL	2022-09-21
3	Transparent plastic sheet	BL	BL	BL	BL	BL	BL	2022-09-21
4	Silver metal screw	BL	BL	BL	X	/	/	2022-09-21
5	Silver metal ring	BL	BL	BL	X	/	/	2022-09-21
6	Silver metal gasket	BL	BL	BL	X	/	/	2022-09-21
7	Silver metal screw	BL	BL	BL	X	/	/	2022-09-21
8	Black plastic sheet	BL	BL	BL	BL	BL	BL	2022-09-21
9	Silver metal sheet	BL	BL	BL	X	/	/	2022-09-21
10	Black plastic sheet	BL	BL	BL	BL	BL	BL	2022-09-21
11	Silver metal screw	X	BL	BL	X	/	/	2022-09-21
12	White plastic screw	BL	BL	BL	BL	BL	BL	2022-09-21
13	Black plastic gasket	BL	BL	BL	BL	BL	BL	2022-09-21
14	Black plastic sheet	BL	BL	BL	BL	BL	BL	2022-09-21
15	Black plastic wire cover	BL	BL	BL	BL	BL	BL	2022-09-21
16	Black plastic wire cover	BL	BL	BL	BL	BL	BL	2022-09-21
17	Pink plastic thread cover	BL	BL	BL	BL	BL	BL	2022-09-21
18	Gold wire	BL	BL	BL	BL	/	/	2022-09-21
19	Copper metal pin	BL	BL	BL	BL	/	/	2022-09-21
20	Black plastic sheet	BL	BL	BL	BL	X	X	2022-09-21
21	Silver metal sheet	BL	BL	BL	BL	/	/	2022-09-21
22	Transparent glass sheet	BL	BL	BL	BL	BL	BL	2022-09-21
23	Silver metal sheet	BL	BL	BL	BL	/	/	2022-09-21
24	Brown metal wrench	BL	X	BL	X	/	/	2022-09-21
25	Silver metal screw	X	BL	BL	X	/	/	2022-09-21
26	White plastic sheet	BL	BL	BL	BL	BL	BL	2022-09-21

Note:

1. 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≤(70-3σ)<X<(130+3σ)≤OL	BL≤(70-3σ)<X<(130+3σ)≤OL	LOD<X<(150+3σ)≤OL
Pb	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Hg	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<X
Br	BL≤(300-3σ)<X	N/A	BL≤(250-3σ)<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

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:

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

Mercury(Hg) Content:

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

Hexavalent Chromium(Cr(VI)) Content:

With reference to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, 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(DBP, BBP, DEHP &DIBP) Content:

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

1) The test results of Lead(Pb) & Cadmium(Cd)

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		(24)	
Lead(Pb) Content	5	33	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		(11)	(25)	
Cadmium(Cd) Content	5	N.D.	N.D.	100

2) The test results of Hexavalent Chromium(Cr(VI))(for coating on metal)

Tested Items	MDL ($\mu g/cm^2$)	Results ($\mu g/cm^2$)			Limit ($\mu g/cm^2$)
		(4)	(5)	(6)	
Hexavalent Chromium(Cr(VI)) Content★	0.10 (LOQ)	N.D.	N.D.	N.D.	1000

Tested Items	MDL ($\mu g/cm^2$)	Results ($\mu g/cm^2$)			Limit ($\mu g/cm^2$)
		(7)	(9)	(11)	
Hexavalent Chromium(Cr(VI)) Content★	0.10 (LOQ)	N.D.	N.D.	N.D.	1000

Tested Items	MDL ($\mu g/cm^2$)	Results ($\mu g/cm^2$)		Limit ($\mu g/cm^2$)
		(24)	(25)	
Hexavalent Chromium(Cr(VI)) Content★	0.10 (LOQ)	N.D.	N.D.	1000

3) The test results of Phthalates(DBP, BBP, DEHP &DIBP)

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		26	
Dibutyl Phthalate(DBP) Content	100	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	100	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	100	N.D.	1000
Diisobutyl phthalate(DIBP) Content	100	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		2+3+8+10+12+13	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		14+15+16+17+20+22	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

4) The test results of PBBs & PBDEs

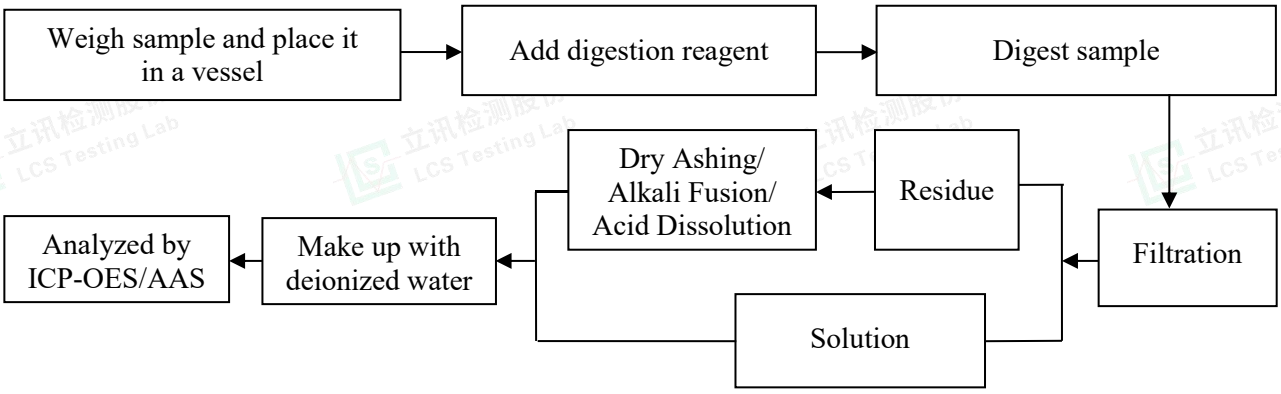
Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		(20)	
Polybrominated Biphenyls(PBBs) Content			
Monobromobiphenyl	5	N.D.	/
Dibromobiphenyl	5	N.D.	/
Tribromobiphenyl	5	N.D.	/
Tetrabromobiphenyl	5	N.D.	/
Pentabromobiphenyl	5	N.D.	/
Hexabromobiphenyl	5	N.D.	/
Heptabromobiphenyl	5	N.D.	/
Octabromobiphenyl	5	N.D.	/
Nonabromodiphenyl	5	N.D.	/
Decabromodiphenyl	5	N.D.	/
Total content	/	N.D.	1000
Polybrominated Diphenylethers(PBDEs) Content			
Monobromodiphenyl ether	5	N.D.	/
Dibromodiphenyl ether	5	N.D.	/
Tribromodiphenyl ether	5	N.D.	/
Tetrabromodiphenyl ether	5	N.D.	/
Pentabromodiphenyl ether	5	N.D.	/
Hexabromodiphenyl ether	5	N.D.	/
Heptabromodiphenyl ether	5	N.D.	/
Octabromodiphenyl ether	5	N.D.	/
Nonabromodiphenyl ether	5	N.D.	/
Decabromodiphenyl ether	5	N.D.	/
Total content	/	N.D.	1000

Note:

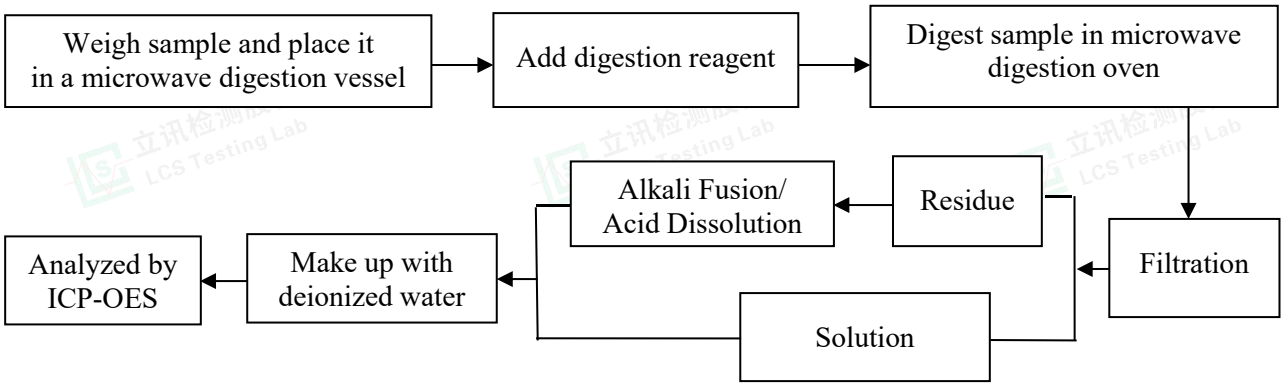
- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL or LOQ)
- mg/kg = milligrams per kilogram
- LOQ = Limit Of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2
- ★ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13μg/cm^2. The sample coating is considered to contain Cr(VI).
  b. The sample is negative for Cr(VI) if Cr(VI) is N.D.(concentration less than 0.10μg/cm^2). The sample coating is considered a non- Cr(VI) based coating.
  c. The result between 0.10μg/cm^2 and 0.13μg/cm^2 is considered to be inconclusive, unavoidable coating variations may influence the determination.
- Information on storage conditions and production date of the tested samples is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.
- According to customer's requirement, only the appointed materials have been tested.
- According to the customer's statement, the materials of points 1 ~ 26 in this report are consistent with those of points 1 ~ 26 in LCSA082322065R. The raw data are directly quoted, and the referenced samples are not tested this time.

Test Process

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

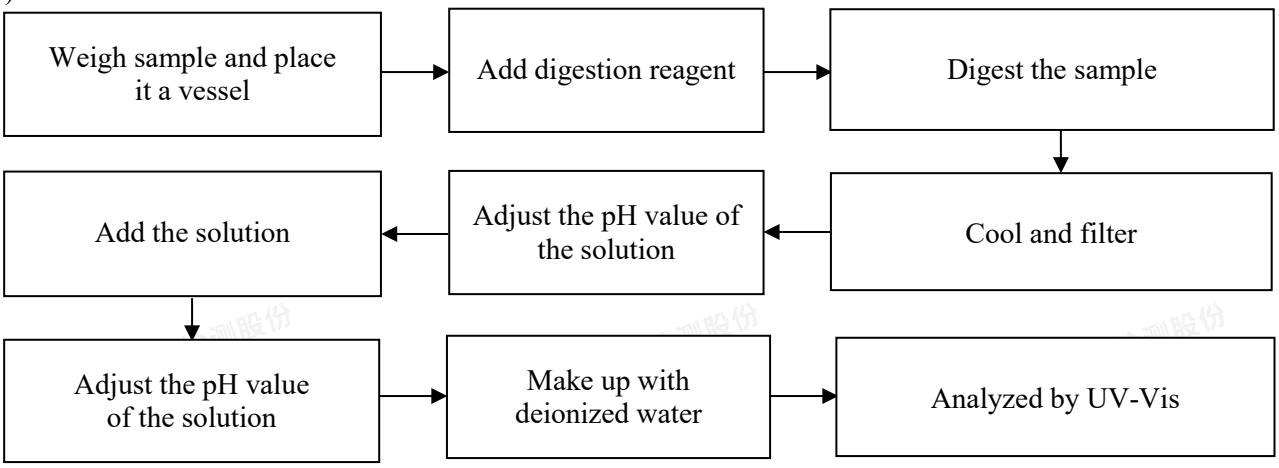


2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV

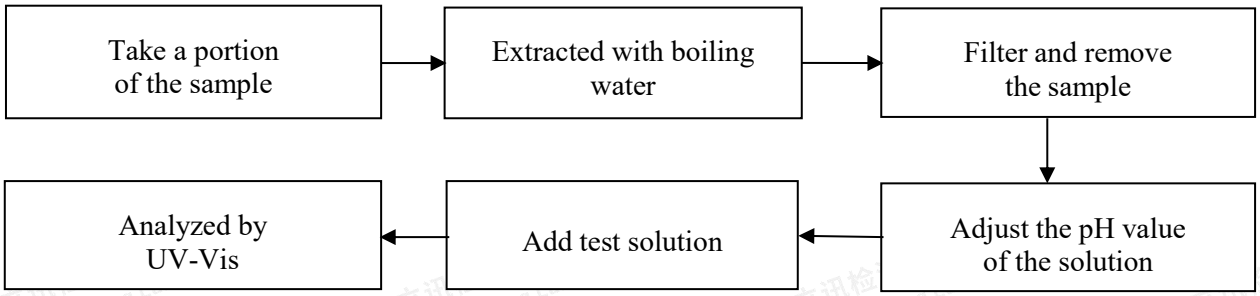


3. Hexavalent Chromium(Cr(VI))

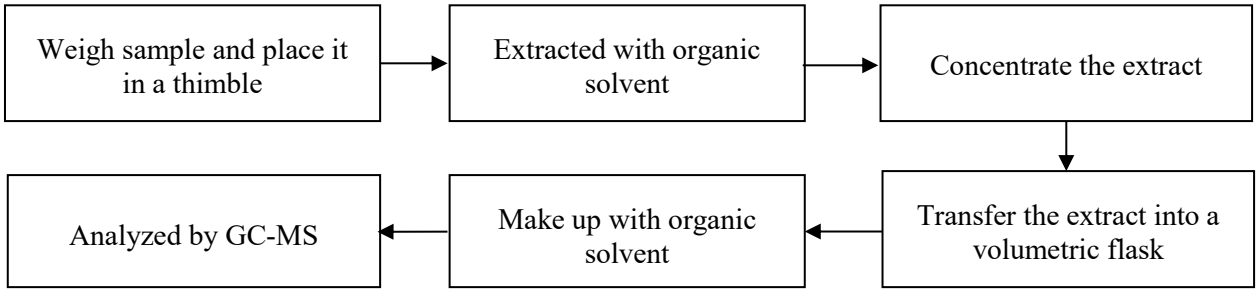
1) IEC 62321-7-2:2017



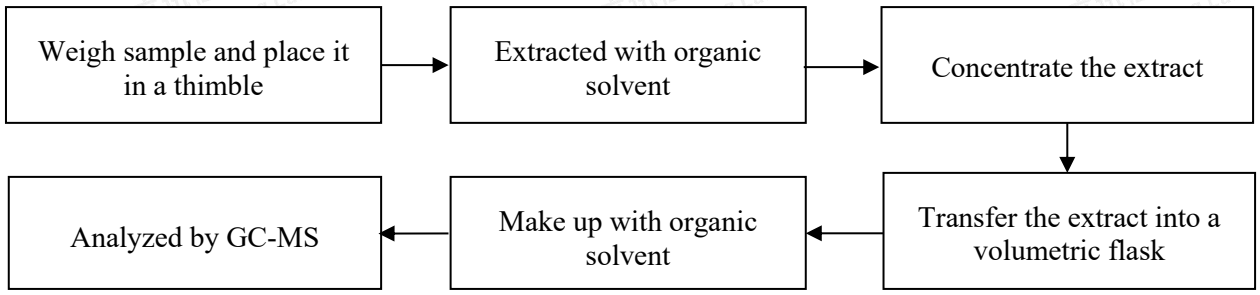
2) IEC 62321-7-1:2015



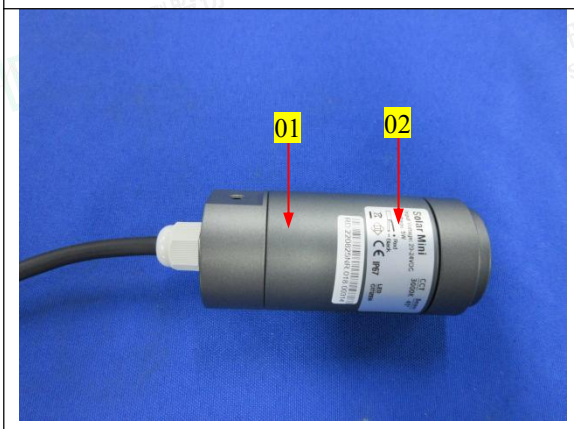
4. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015



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



The photo(s) of the sample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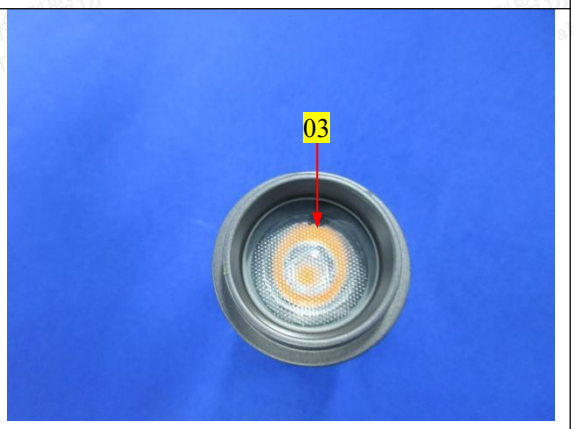
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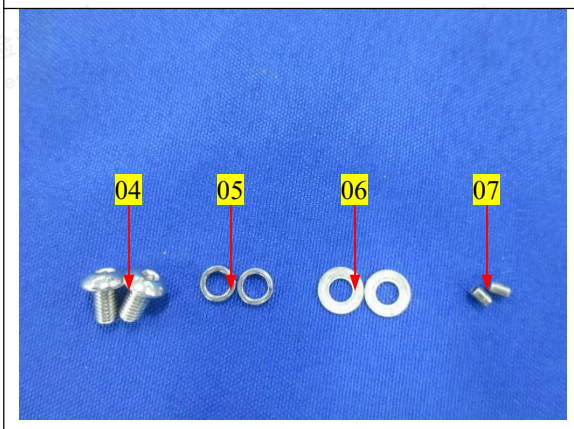
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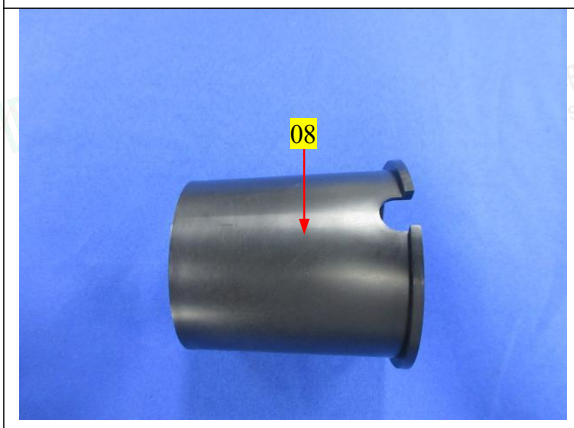
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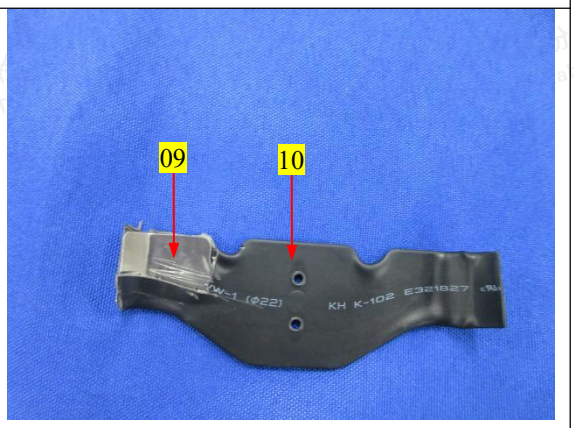
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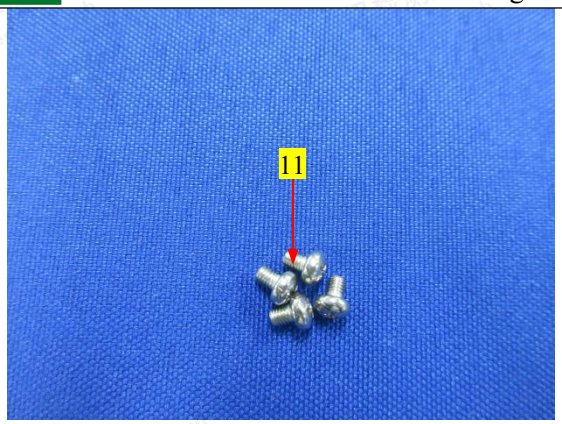
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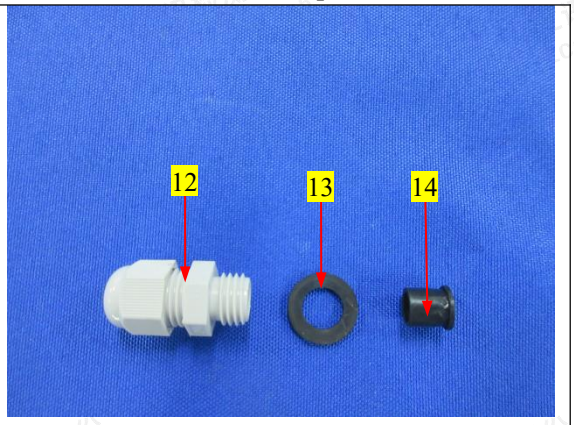
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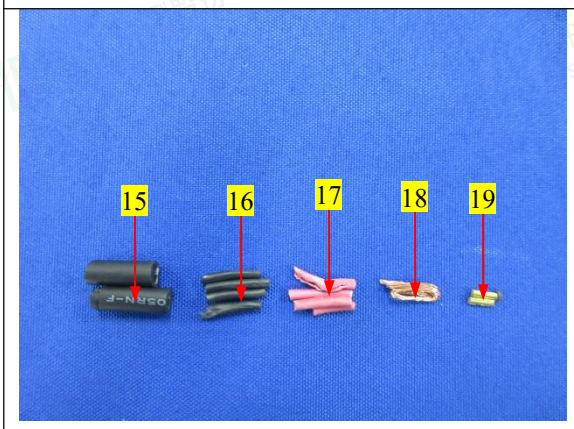
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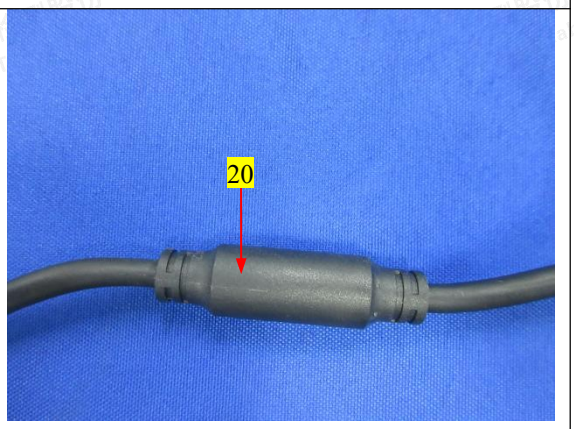
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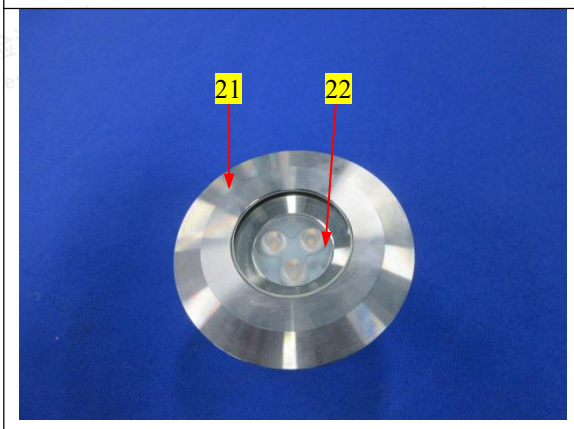
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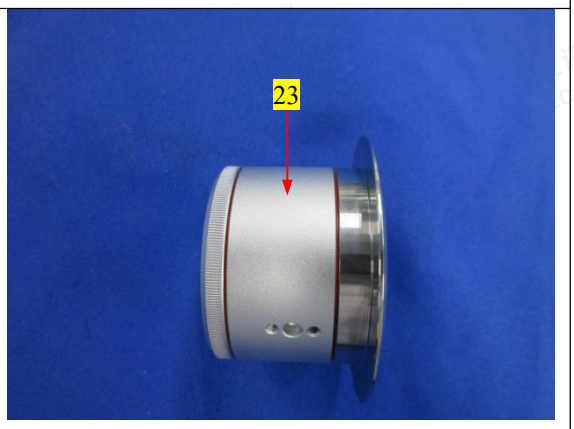
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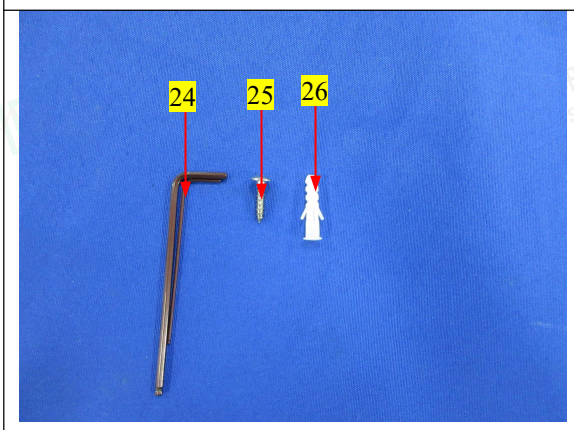
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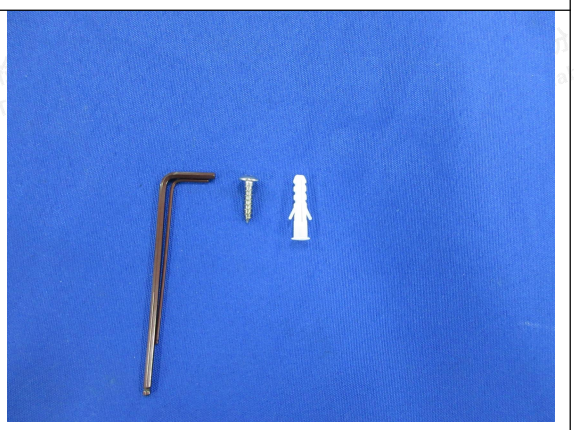

Statement:

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 English version shall prevail.

*** End of Report ***