Test Report No.: 87.400.24.0590.01-00.01
Rev.: 00
Dated: 2024-10-12

Applicant:	ZHEJIANG LEFOO CONTROLS CO., LTD
Address:	NO.220, WEISHIWU ROAD,ECONOMIC DEVELOPMENT ZONE, YUEOING ZHEJLANG CHINA
Attn:	Dai Peihong
Sample Description:	Pressure switch
Model No.:	LFB
Sample Received Date:	2024-09-12, 2024-09-30, Ningbo, Shanghai
Test Period:	From 2024-09-12 to 2024-10-11, Ningbo, Shanghai
Purpose of examination:	Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples
Test Results:	Refer to following page(s)
Remark:	- The result relates only to the items tested. - The reference model(s) was declared by client. - The test sample(s) and item(s) was specified by client.

TüV SüD Certification and Testing (China) Co., Ltd. Ningbo Branch
TüV SüD Group

Prepared by:

Ni Kai kai

Ni, Kaikai
Project Engineer

Reviewed by:

Mandy Wu

Wu, Mandy
Project Manager

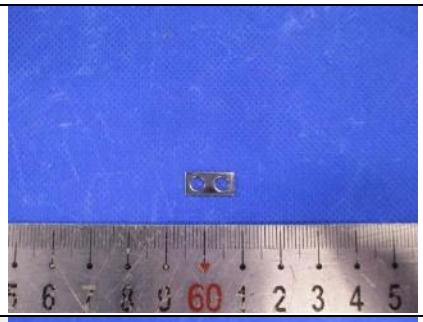
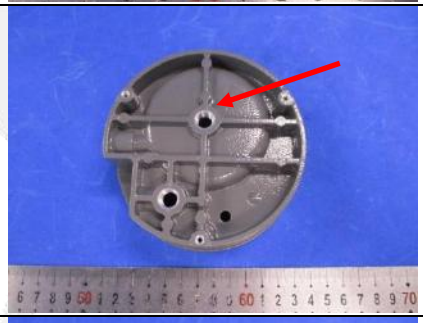
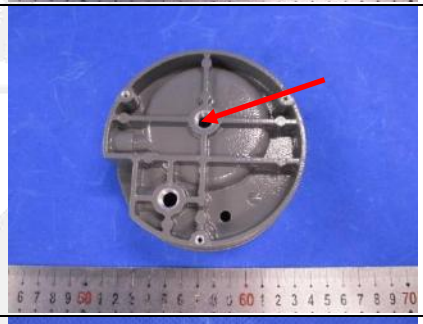
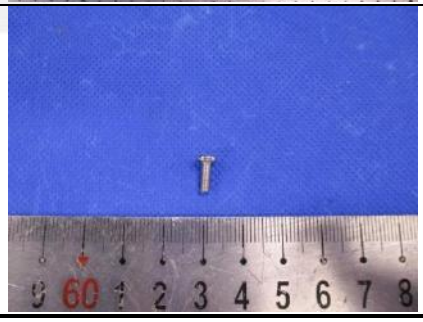
TÜV SÜD Certification and Testing (China) Co., Ltd. Ningbo Branch
Building 2, No. 350, Jinghua Road, Essence Adream of Space II, National Hi-Tech Industrial Development Zone, Ningbo, Zhejiang
Tel.: +86-574-2786-6658
www.tuv-sud.cn info@tuv-sud.cn

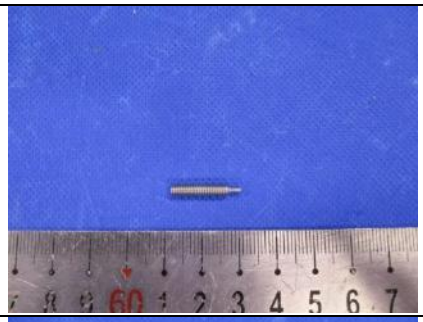
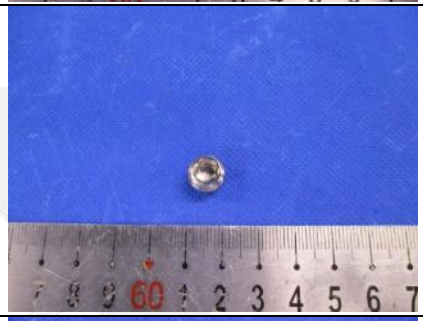
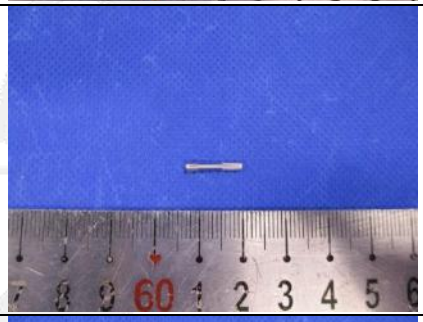
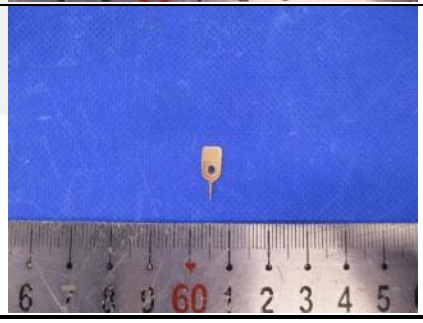
Laboratory: TüV SüD Certification and Testing (China) Co., Ltd. Shanghai Branch Testing Center
No. 1999 Du Hui Rd, Minhang District, Shanghai 201108 P.R. China
Tel.: +86-21-6037-6501

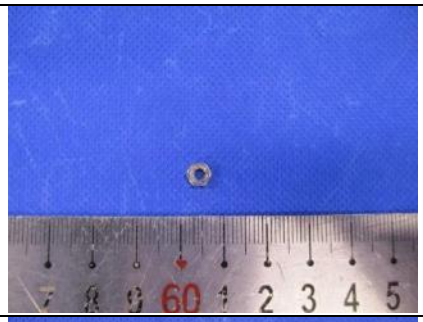
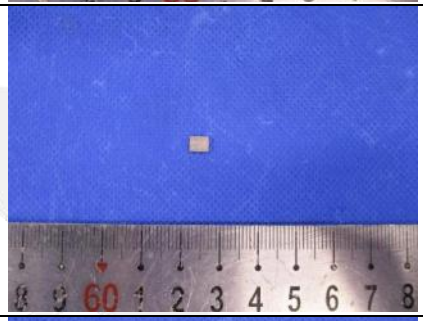
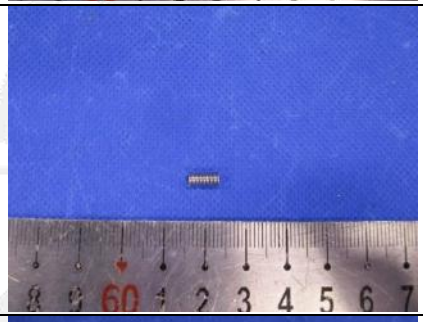
SUMMARY OF TEST RESULTS

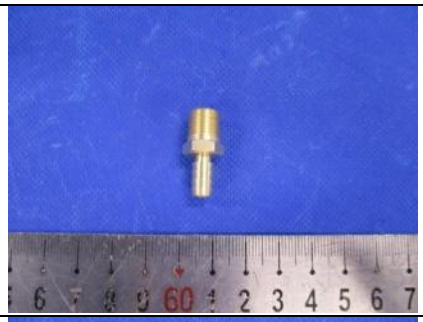
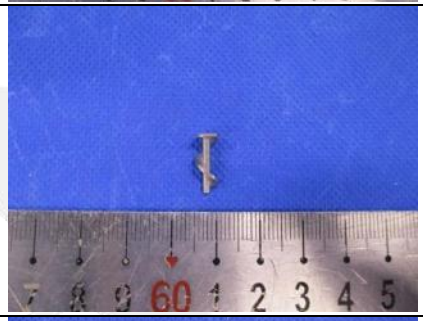
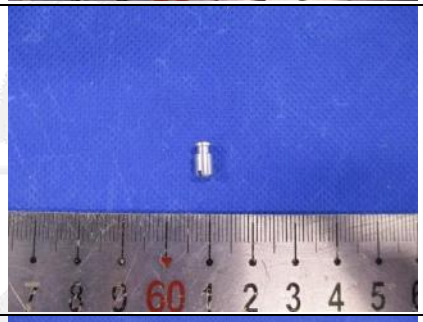
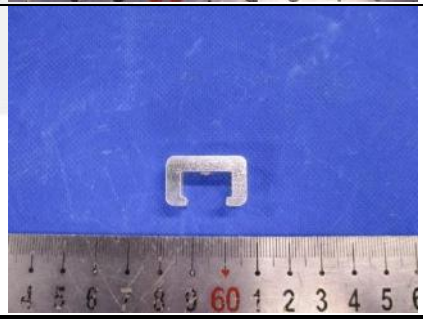
No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	**PASS**	
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	**PASS**	
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	**PASS**	

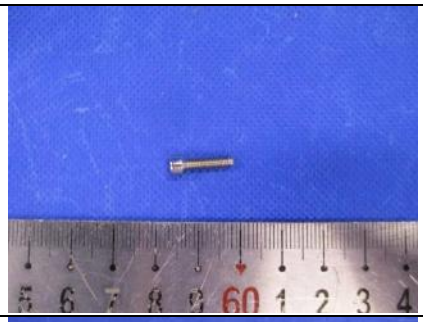
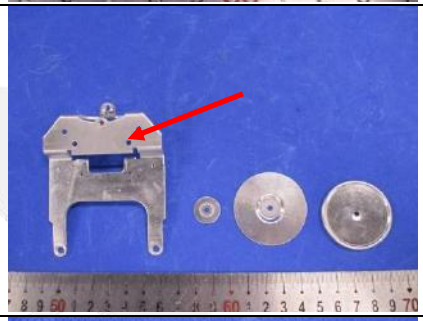
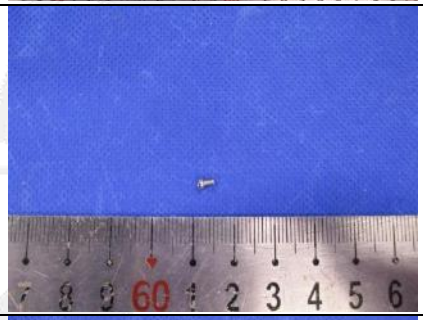
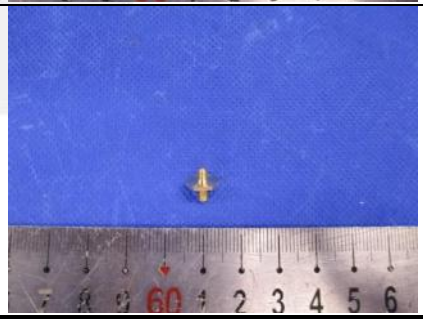
1. TESTED SUBJECT DESCRIPTION

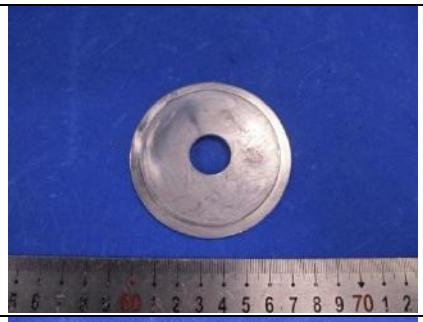
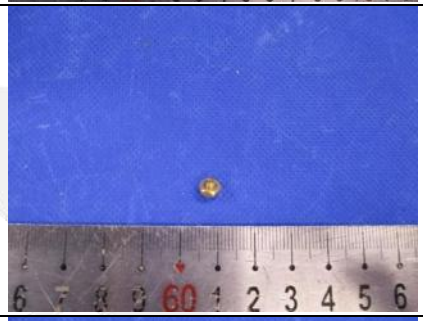
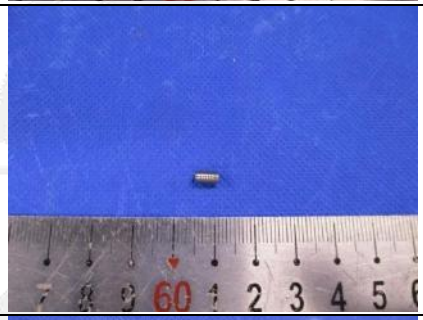
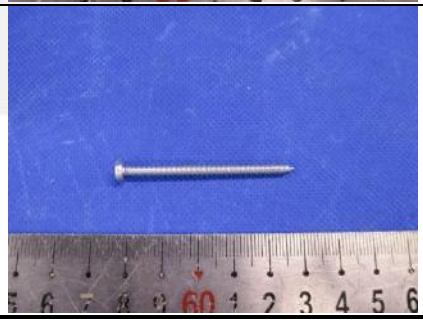
T Number	Sample Number	Tested Material Description	Photo
T1	**001**	Base metal silvery	
T2	**002**	Coating gray	
T3	**003**	Base metal silvery	
T4	**004**	Screw metal silvery	

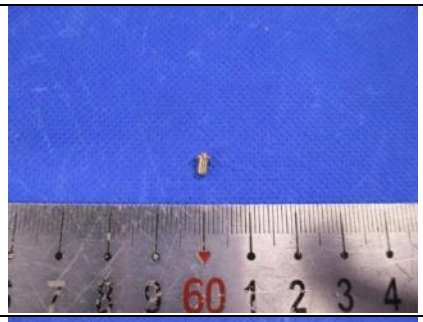
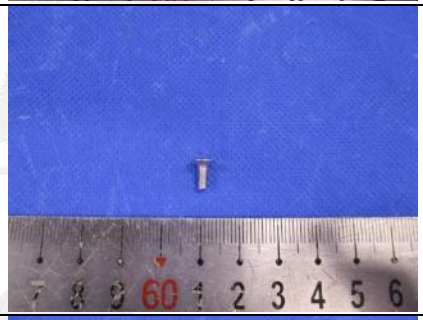
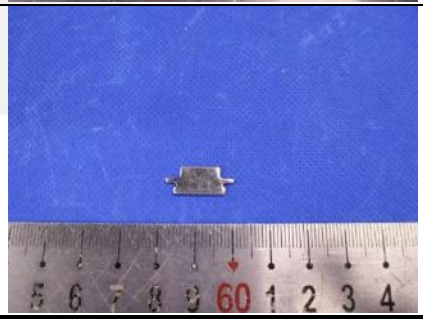
T Number	Sample Number	Tested Material Description	Photo
T5	**005**	Screw metal silvery	
T6	**006**	Screw metal silvery	
T7	**007**	Rod metal silvery	
T8	**008**	Piece metal copper	

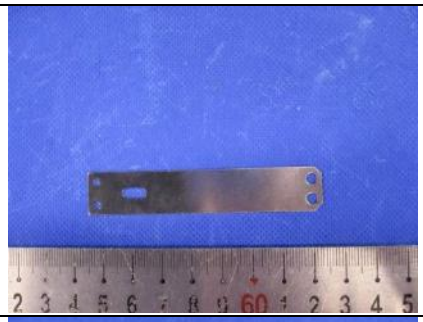
T Number	Sample Number	Tested Material Description	Photo
T9	**009**	Nut metal silvery	
T10	**010**	Block magnet gray	
T11	**011**	Spring metal gray	
T12	**012**	Block metal silvery	

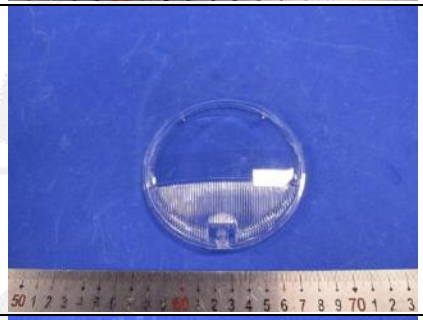
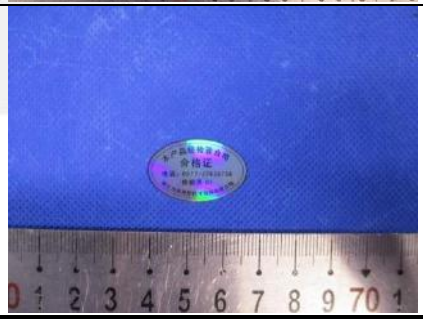
T Number	Sample Number	Tested Material Description	Photo
T13	**013**	Block metal copper	
T14	**014**	Block metal gray	
T15	**015**	Block metal silvery	
T16	**016**	Block metal silvery	

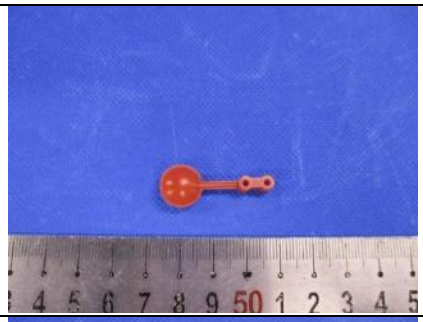
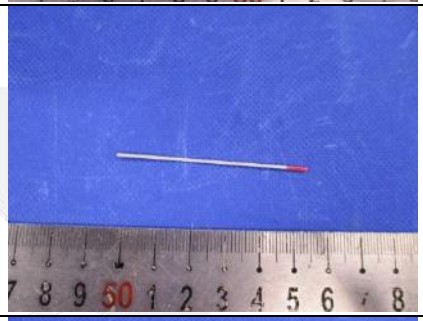
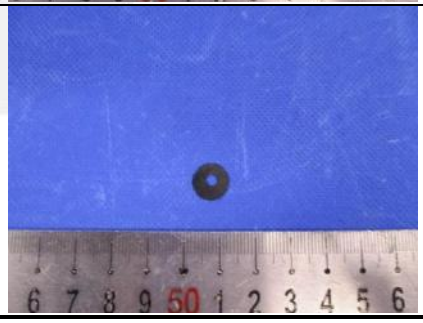
T Number	Sample Number	Tested Material Description	Photo
T17	**017**	Screw metal silvery	
T18	**018**	Block metal silvery	
T19	**019**	Screw metal silvery	
T20	**020**	Block metal copper	

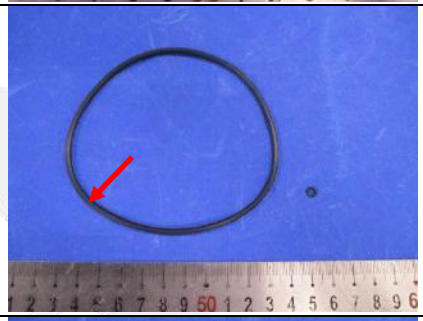
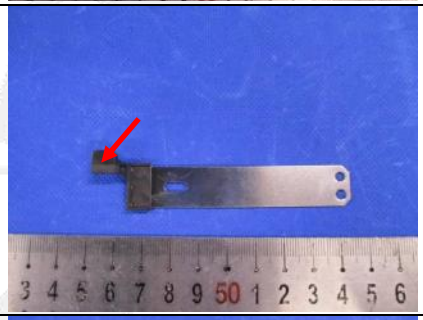
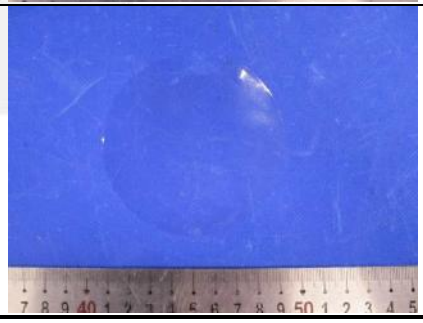
T Number	Sample Number	Tested Material Description	Photo
T21	**021**	Block metal silvery	
T22	**022**	Block metal copper	
T23	**023**	Screw metal gray	
T24	**024**	Screw metal silvery	

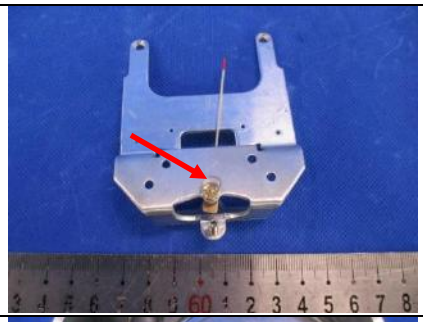
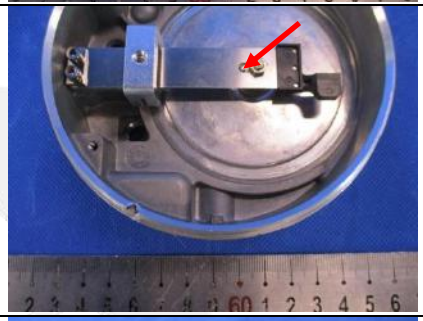
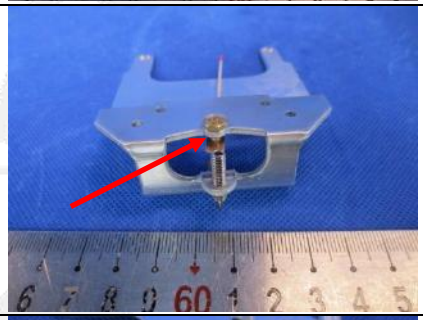
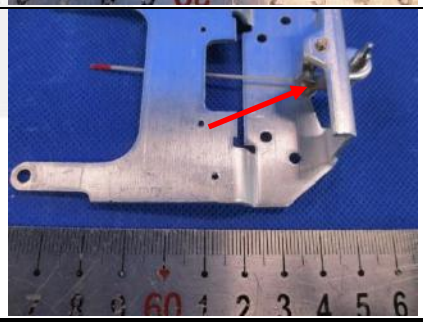
T Number	Sample Number	Tested Material Description	Photo
T25	**025**	Block metal copper	
T26	**026**	Pin metal silvery	
T27	**027**	Screw metal silvery	
T28	**028**	Block metal silvery	

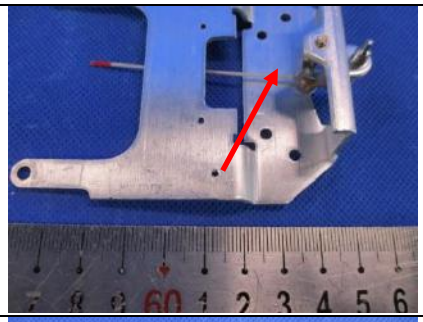
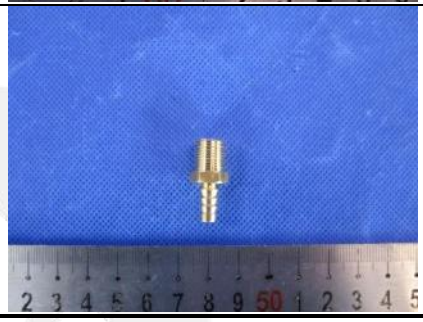
T Number	Sample Number	Tested Material Description	Photo
T29	**029**	Block metal silvery	
T30	**030**	Block metal silvery	
T31	**031**	Base metal silvery	
T32	**032**	Coating white with printing	

T Number	Sample Number	Tested Material Description	Photo
T33	**033**	Label plastic yellow/black with printing and adheisve	
T34	**034**	Block soft plastic red	
T35	**035**	Block plastic transparent	
T36	**036**	Label plastic silvery with printing and adhesive	

T Number	Sample Number	Tested Material Description	Photo
T37	**037**	Block soft plastic red	
T38	**038**	Rod plastic gray/red	
T39	**039**	Block plastic black	
T40	**040**	Block soft plastic black	

T Number	Sample Number	Tested Material Description	Photo
T41	**041**	Block soft plastic black	
T42	**042**	Ring soft plastic black	
T43	**043**	Block plastic black	
T44	**044**	Piece soft plastic transparent	

T Number	Sample Number	Tested Material Description	Photo
T45	**045**	Adhesive solid transparent	
T46	**046**	Adhesive solid white	
T47	**047**	Solid transparent	
T48	**048**	Adhesive solid transparent	

T Number	Sample Number	Tested Material Description	Photo
T49	**049**	Adhesive solid transparent	
T50	**050**	Block metal copper	

2. TEST RESULT(S)

2.1 SCREENING TEST

Test method: With reference to EN 62321-1:2013, EN IEC 62321-2:2021, EN 62321-3-1:2014 and EN 62321-8:2017. For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
001	BL	BL	BL	BL	NA	NA	NA	NA	NA
002	BL	BL	BL	BL	BL	BL	BL	BL	BL
003	BL	BL	BL	BL	NA	NA	NA	NA	NA
004	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
005	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
006	BL	BL	BL	BL	NA	NA	NA	NA	NA
007	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
008	Inc.[a]	BL	BL	BL	NA	NA	NA	NA	NA
009	BL	BL	BL	BL	NA	NA	NA	NA	NA
010	BL	BL	BL	BL	NA	NA	NA	NA	NA
011	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
012	BL	BL	BL	BL	NA	NA	NA	NA	NA
013	BL	BL	BL	BL	NA	NA	NA	NA	NA
014	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
015	BL	BL	BL	BL	NA	NA	NA	NA	NA
016	BL	BL	BL	BL	NA	NA	NA	NA	NA
017	BL	BL	BL	BL	NA	NA	NA	NA	NA
018	BL	BL	BL	BL	NA	NA	NA	NA	NA
019	BL	BL	BL	BL	NA	NA	NA	NA	NA
020	BL	BL	BL	BL	NA	NA	NA	NA	NA
021	BL	BL	BL	BL	NA	NA	NA	NA	NA
022	BL	BL	BL	BL	NA	NA	NA	NA	NA
023	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
024	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA
025	BL	BL	BL	BL	NA	NA	NA	NA	NA
026	BL	Inc.[a]	BL	BL	NA	NA	NA	NA	NA

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
027	BL	**Inc.**[(a)]	BL	BL	NA	NA	NA	NA	NA
028	BL	**Inc.**[(a)]	BL	BL	NA	NA	NA	NA	NA
029	BL	**Inc.**[(a)]	BL	BL	NA	NA	NA	NA	NA
030	BL	**Inc.**[(a)]	BL	BL	NA	NA	NA	NA	NA
031	BL	BL	BL	BL	NA	NA	NA	NA	NA
032	BL	BL	BL	BL	BL	BL	BL	BL	BL
033	BL	BL	BL	BL	BL	BL	BL	BL	BL
034	BL	BL	BL	BL	BL	BL	BL	BL	BL
035	BL	BL	BL	BL	BL	BL	BL	BL	BL
036	BL	BL	BL	BL	BL	BL	BL	BL	BL
037	BL	BL	BL	BL	BL	BL	BL	BL	BL
038	BL	BL	BL	BL	BL	BL	BL	BL	BL
039	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
040	BL	BL	BL	BL	BL	BL	BL	BL	BL
041	BL	BL	BL	BL	BL	BL	BL	BL	BL
042	BL	BL	BL	BL	BL	BL	BL	BL	BL
043	BL	BL	BL	BL	**Inc.**[(a)]	BL	BL	BL	BL
044	BL	BL	BL	BL	BL	BL	BL	BL	BL
045	BL	BL	BL	BL	BL	BL	BL	BL	BL
046	BL	BL	BL	BL	BL	BL	BL	BL	BL
047	BL	BL	BL	BL	BL	BL	BL	BL	BL
048	BL	BL	BL	BL	BL	BL	BL	BL	BL
049	BL	BL	BL	BL	BL	BL	BL	BL	BL
050	BL	BL	BL	**Inc.**[(a)]	NA	NA	NA	NA	NA

Note:

- "BL" denotes below limit
- "OL" denotes over limit
- "Inc." denotes inconclusive
- "NA" denotes not applicable
- "(a)" denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.

-XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL

Cd	X≤(70-3σ)	(70-3σ)<X<(130+3σ)	X≥(130+3σ)
Pb	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Hg	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Br	X≤(300-3σ)	X>(300-3σ)	NA
Cr	X≤(700-3σ)	X>(700-3σ)	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	X≤(70-3σ)	(70-3σ)<X<(130+3σ)	X≥(130+3σ)
Pb	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Hg	X≤(700-3σ)	(700-3σ)<X<(1300+3σ)	X≥(1300+3σ)
Cr	X≤(700-3σ)	X>(700-3σ)	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	X≤(50-3σ)	(50-3σ)<X<(150+3σ)	X≥(150+3σ)
Pb	X≤(500-3σ)	(500-3σ)<X<(1500+3σ)	X≥(1500+3σ)
Hg	X≤(500-3σ)	(500-3σ)<X<(1500+3σ)	X≥(1500+3σ)
Br	X≤(250-3σ)	X>(250-3σ)	NA
Cr	X≤(500-3σ)	X>(500-3σ)	NA

-Screening limits in mg/kg for regulated phthalates in various matrices

PHTHALATES	BL	INCONCLUSIVE
DEHP	X<600	X≥ 600
BBP	X<600	X≥ 600
DBP	X<600	X≥ 600
DIBP	X<600	X≥ 600

2.2 HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014 /A1:2017, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321-7-2:2017, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Ultraviolet–visible spectrophotometer (UV-Vis).
[Reporting Limit: 2.0 mg/kg for Cadmium; 10.0 mg/kg or 0.10 μg/cm² for Hexavalent Chromium, 10.0 mg/kg for Lead and Mercury.]

Sample No.	Result(s)				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
004	--	/	Negative	--	--
005	--	/	Negative	--	--
007	--	/	Negative	--	--
008	<2.0	--	--	--	--
011	--	/	Negative	--	--
014	--	/	Negative	--	--
023	--	/	Negative	--	--
024	--	/	Negative	--	--
026	--	/	Negative	--	--
027	--	/	Negative	--	--
028	--	/	Negative	--	--
029	--	/	Negative	--	--
030	--	/	Negative	--	--
050	--	--	--	--	144.0
Unit	mg/kg	mg/kg	μg/cm²	mg/kg	mg/kg
RoHS Requirement	100	1000	Negative[#]	1000	1000

Note:

- "mg/kg" denotes milligram per kilogram
- "μg/cm²" denotes micrograms per square centimeter
- "<" denotes less than
- "Positive" denotes the absorbance value of sample is > 0.13 μg/cm², the sample is considered to be positive for Hexavalent Chromium.
- "Inconclusive" denotes the absorbance value of sample is ≥ 0.10 μg/cm² and ≤ 0.13 μg/cm², the sample is considered to be Inconclusive for Hexavalent Chromium.
- "Negative" denotes the absorbance value of sample is < 0.10 μg/cm², the sample is considered to be negative for Hexavalent Chromium.
- "[#]" According to DIRECTIVE 2011/65/EU Article 4(1) and Annex II. While, positive means the presence of CrVI on tested areas and the result(s) was (were) regarded as in conflict

with European Parliament and Council Directive 2011/65/EU, Article 4(1) and Annex II.

- "--" denotes tested by XRF, result is listed in 2.1

2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

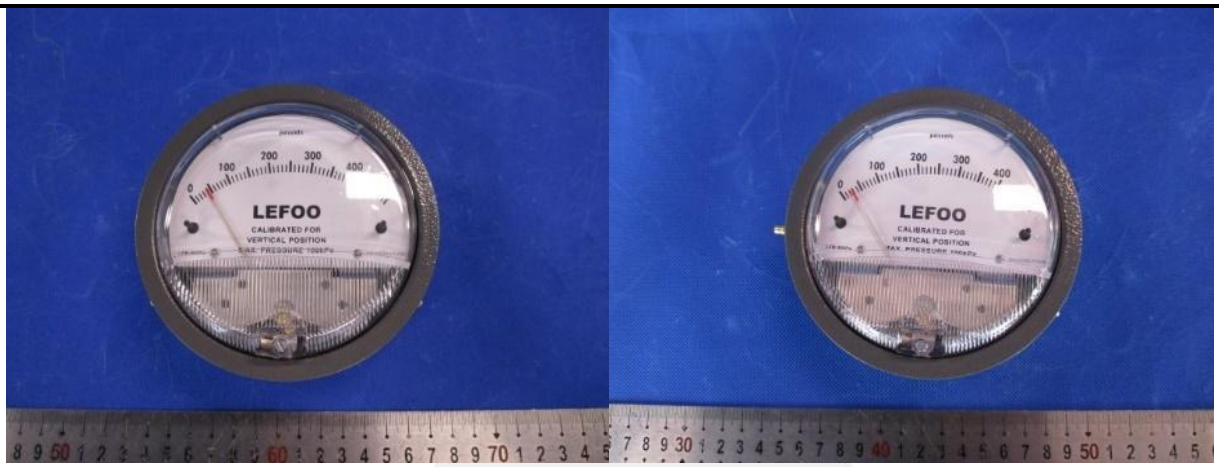
Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]	RoHS Requirement [mg/kg]
		Sample 039+043	
PBBs	Monobromobiphenyl	<5	-
	Dibromobiphenyl	<5	-
	Tribromobiphenyl	<5	-
	Tetrabromobiphenyl	<5	-
	Pentabromobiphenyl	<5	-
	Hexabromobiphenyl	<5	-
	Heptabromobiphenyl	<5	-
	Octabromobiphenyl	<5	-
	Nonabromobiphenyl	<5	-
	Decabromobiphenyl	<5	-
	Sum of detected PBBs	<50	1000
PBDEs	Monobromodiphenyl ether	<5	-
	Dibromodiphenyl ether	<5	-
	Tribromodiphenyl ether	<5	-
	Tetrabromodiphenyl ether	<5	-
	Pentabromodiphenyl ether	<5	-
	Hexabromodiphenyl ether	<5	-
	Heptabromodiphenyl ether	<5	-
	Octabromodiphenyl ether	<5	-
	Nonabromodiphenyl ether	<5	-
	Decabromodiphenyl ether	<5	-
	Sum of detected PBDEs	<50	1000

Note:

- "mg/kg" denotes milligram per kilogram
- "<" denotes less than

APPENDIX I:
Photos of submitted products



Product Name: Pressure switch
Model No.: LFB

---------End of Report---------