



Technical Report No. 68.164.16.1128.01
Dated 2017-03-21

Client: NEKO LIGHTING AG

Address: Kreuzstrasse 2, Ch-8008 Zürich, Switzerland

Attn.: SVEN SPEISSEGGER

Sample Description: LED Downlight

Model No.: FF3-7W

Reference Model No.: FF1-2W, FF2-4W, FF5-11W, FF10-22W, FG5-11W, FG10-22W, FW5-11W, W10-22W, FS1-2W, FS2-4W, FS3-7W, FS6-14W, FF3-FS1-9W, FF6-FS2-18W, FA5-11W, FA10-22W, FFT5-11W, FFT10-22W, FGT5-11W, FGT10-22W, FWT5-11W, FWT10-22W, FST3-7W, FST6-14W, FFT3-FST1-9W, FFT6-FST2-18W, FL1200P, FL1200S, FL1500P, FL1500S

Country of origin: CHINA

Exported to: Europe

Location of Testing: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Sample Received Date: 2017-03-01

Test Period: From 2017-03-01 to 2017-03-10

Test Requested and Conclusion: Test according to RoHS (Restriction of Hazardous Substances) directive 2011/65/EU on submitted samples

- Heavy Metal (Pb, Cd, Hg and CrVI) Content **PASS**
- Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content **PASS**

Test Result: Refer to the following page(s)

Remark:

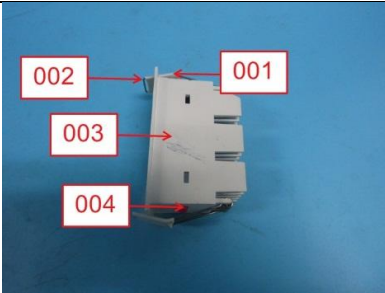
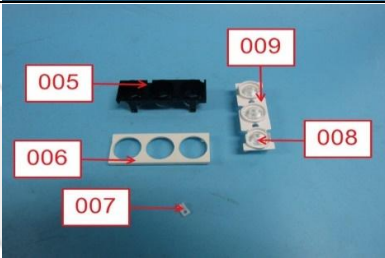
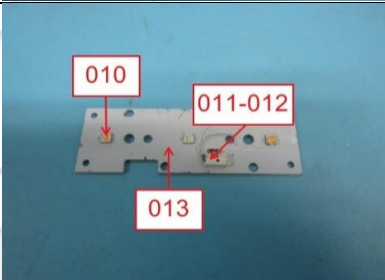
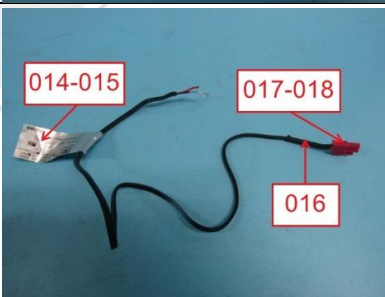

- The result relates only to the items tested.
- The reference model(s) was declared by client.

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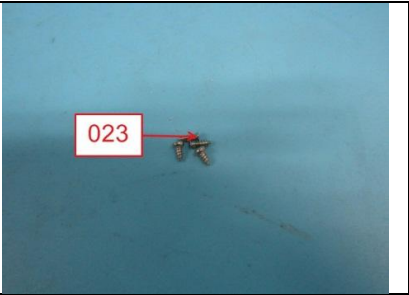

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1. TESTED SUBJECT DESCRIPTION

Sample Number	Item Name	Tested Material Description	Photo
001	Shell parts	White soft plastic	
002		Silvery metal holder	
003		White coating	
004		Pink soft plastic	
005	Parts	Black plastic	
006		White plastic	
007		White plastic holder	
008		White plastic	
009		Transparent plastic	
010	Parts	Transparent/orange body	
011		White plastic	
012		Silvery metal holder	
013		Silvery metal with grey coating	
014	Label	Black printed white plastic label	
015		Black printed silvery plastic label	
016	Sleeve	Black soft plastic sleeve	
017	Port	Pink plastic shell	
018		Silvery metal pin	
019	Wire	White printed black soft plastic wire cable	
020		Red soft plastic wire jacket	
021		Silvery metal wire	
022		Black soft plastic wire jacket	

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Sample Number	Item Name	Tested Material Description	Photo
023	Screw	Silvery metal screw	
024	Shell	Silvery metal shell	





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2. TEST RESULTS

2.1. SCREENING

Test method: With reference to EN 62321-1:2013, EN 62321-2:2014 and EN 62321-3-1:2014, analyzed by Energy Dispersive X-ray Fluorescence Spectrometers (XRF).

Sample No.	Total Cadmium	Total Chromium	Total Mercury	Total Lead	Total Bromine
001	BL	BL	BL	BL	BL
002	BL	BL	BL	BL	N.A.
003	BL	BL	BL	BL	BL
004	BL	BL	BL	BL	BL
005	BL	BL	BL	BL	BL
006	BL	BL	BL	BL	BL
007	BL	BL	BL	BL	BL
008	BL	BL	BL	BL	BL
009	BL	BL	BL	BL	BL
010	BL	BL	BL	BL	BL
011	BL	BL	BL	BL	BL
012	BL	BL	BL	BL	N.A.
013	BL	BL	BL	BL	N.A.
014	BL	BL	BL	BL	BL
015	BL	BL	BL	BL	BL
016	BL	BL	BL	BL	BL
017	BL	BL	BL	BL	BL
018	BL	BL	BL	BL	N.A.
019	BL	BL	BL	BL	BL
020	BL	BL	BL	BL	BL
021	BL	BL	BL	BL	N.A.
022	BL	BL	BL	BL	BL
023	BL	BL	BL	BL	N.A.
024	BL	BL	BL	OL ^(a)	N.A.

Note:

- “BL” denotes below limit
- “OL” denotes over limit
- “N.A.” denotes not applicable
- “(a)” denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.

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

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	$X < (70 - 3\sigma)$	$(70 - 3\sigma) < X < (130 + 3\sigma)$	$X > (130 + 3\sigma)$
Pb	$X < (700 - 3\sigma)$	$(700 - 3\sigma) < X < (1300 + 3\sigma)$	$X > (1300 + 3\sigma)$
Hg	$X < (700 - 3\sigma)$	$(700 - 3\sigma) < X < (1300 + 3\sigma)$	$X > (1300 + 3\sigma)$
Br	$X < (300 - 3\sigma)$	$X > (300 - 3\sigma)$	NA
Cr	$X < (700 - 3\sigma)$	$X > (700 - 3\sigma)$	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	$X < (70 - 3\sigma)$	$(70 - 3\sigma) < X < (130 + 3\sigma)$	$X > (130 + 3\sigma)$
Pb	$X < (700 - 3\sigma)$	$(700 - 3\sigma) < X < (1300 + 3\sigma)$	$X > (1300 + 3\sigma)$
Hg	$X < (700 - 3\sigma)$	$(700 - 3\sigma) < X < (1300 + 3\sigma)$	$X > (1300 + 3\sigma)$
Cr	$X < (700 - 3\sigma)$	$X > (700 - 3\sigma)$	NA

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

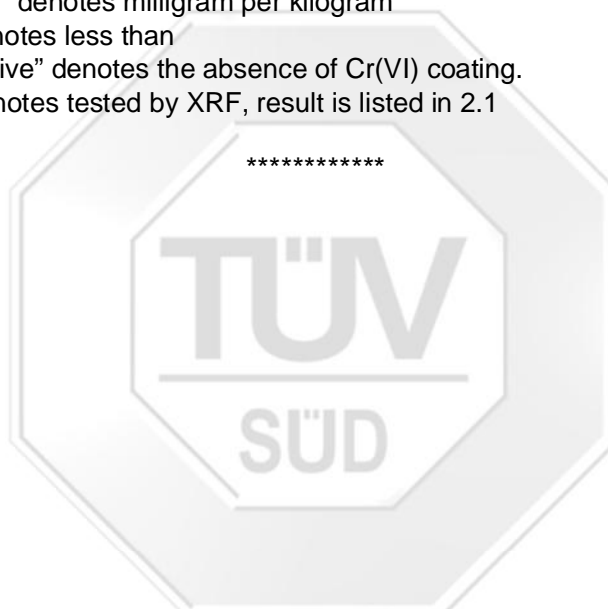
2.2. HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321:2009, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and UV-Vis spectrophotometer. [Reporting Limit: 2 mg/kg for Cadmium; 10 mg/kg for Hexavalent Chromium, Lead and Mercury.]

Sample No.	Result [mg/kg]			
	Total Cadmium	Hexavalent Chromium	Total Mercury	Total Lead
024	--	--	--	395.9
RoHS Requirement	100	1000	1000	1000

Note:

- “mg/kg” denotes milligram per kilogram
- “<” denotes less than
- “Negative” denotes the absence of Cr(VI) coating.
- “--” denotes tested by XRF, result is listed in 2.1



TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
 TÜV SÜD Group

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Project Handler



Reviewed by:



Scarlett Liang
Designated Reviewer

APPENDIX:

Photos of submitted products