



TEST REPORT

Applicant: Zhongshan sunde Lighting Co., Ltd
Address: Third floor, building 1, No.10, Xinmao Industrial Avenue, Henglan Town, Zhongshan City, China
Manufacturer: Zhongshan sunde Lighting Co., Ltd
Address: Third floor, building 1, No.10, Xinmao Industrial Avenue, Henglan Town, Zhongshan City, China
Product Name: Solar Floodlight
Trade Mark: N/A
Model Number: SD-SF101F-30
Series Model No.: SD-SF101A-100, SD-SF101B-200, SD-SF101C-300, SD-SF101D-400, SD-SF101E-500, SD-SF102A-100, SD-SF102B-200, SD-SF102C-300, SD-SF102D-400, SD-SF102E-500, D-SF105A-50, SD-SF105B-100, SD-SF105C-200, SD-SF105D-300, SD-SF105E-400, SD-SF105F-500, SD-SF106A-100, SD-SF106B-200, SD-SF106C-300, SD-SF106D-400, SD-SF106F-500, SD-FL102A-50, SD-FL102B-100, SD-FL102C-200, SD-FL102D-300, SD-FL102E-400, SD-FL102F-500, SD-MJ309001, SD-MJ309XX, SD-SZ048001, SD-SZ0480XX, MG-C050B-AE, MG-CYY0B-AE, SD-SF108(JH-FG), SD-GG185001, SD-GG1850XX, SD-GG219001, SD-GG2190, SD-AH040000, SD-AH0400XX, SD-JY4101, SD-JY41XX, SD-XX550026
Date of Receipt: Apr. 28, 2023
Date of Test: Apr. 28, 2023 - May. 06, 2023
Date of Report: Aug.12, 2024
Test Requested: With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.
Test Standard: Please refer to next page(s).
Test Results: Please refer to next page(s).

Conclusion:

As requested by applicant, the submitted sample was were tested, with is listed as specimen description in the following page. the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Prepared (Engineer):

Ava liu

Approved (Manager):

Xiaoshan Ni



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

**Version**

Version No.	Date	Description
00	May. 08, 2023	Original
01	Aug.12, 2024	Update the model information of the series according to the report DL-20230428011R

Remark:

(1) There are the results on total Br while test items on restricted substances are PBBs and PBDEs. There are the results on total Cr while test items on restricted substances Cr(VI)

(2) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg),UV-Vis (for Cr(VI) and GC-MS (for PBBs,PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013 (unit:mg/kg)

Element	Polymer Materials	Metal Materials	Composite Materials
Cd	$BL \leq 70-3\sigma < X < 130+3\sigma \leq OL$	$BL \leq 70-3\sigma < X < 130+3\sigma \leq OL$	$BL \leq 50-3\sigma < X < 150+3\sigma \leq OL$
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	$BL \leq 700-3\sigma < X < 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < X < 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < X < 1500+3\sigma \leq OL$
Br	$BL \leq 300-3\sigma < X$	----	$BL \leq 250-3\sigma < X$
Cr	$BL \leq 700-3\sigma < X$	$BL \leq 700-3\sigma < X$	$BL \leq 500-3\sigma < X$

(a) BL=Below Limit,OL=Over Limit, X=Inconclusive, LOD=Limit of Detection,----=Not regulated.

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

(3) Chemical Method

① With reference to IEC 62321-5:2013,determination of Cadmium,Lead by ICP-OES.

② With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES.

③ With reference to IEC 62321-7-1:2015▼& IEC 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric method using UV-Vis.

④ With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

⑤ With reference to IEC 62321-8:2017, determination of Phthalates by GC-MS.

(4) (a) mg/kg=0.0001%,MDL=MDL=Method Detection Limit,(c)ND=Not Detected(<MDL),
----=Not Regulated

(b) Unit and MDL in wet chemical test

Test Item	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg

MDL of Cr(VI) for polymer and composite sample is 10 mg/kg

MDL of Cr(VI) for metal sample is 0.10ug/cm²

(c) ▼=Metal sample

a. The sample is negative for Cr⁶⁺ if Cr⁶⁺ is N.D. (below the limit 0.10ug/cm²). The coating is considered a non Cr⁶⁺ based coating.

b. The sample positive for Cr⁶⁺ if the Cr⁶⁺ concentration is greater than 0.13ug/cm². The sample coating is considered to contain Cr⁶⁺.

c.The result between 0.10ug/cm² and 0.13ug/cm² is considered to be inconclusive unavoidable coating variations may influence the determination.

**Tested Sample/Part Description:**

Specimen No.	Component Description(s)	Style
01	Grey plastic	-
02	Transparent plastic	-
03	Yellow LED	-
04	Silvery metal	-
05	White plastic film	-
06	Black IC	-
07	Black IC	-
08	Silver solder	-
09	Black IC	-
10	White sheet metal	-
11	Black rubber skin	-
12	Brown rubber wire leather	-
13	Blue rubber wire leather	-
14	Black heat absorbing plate	-
15	Silver label	-
16	Black plastic	-
17	Black plastic	-
18	Black rubber skin	-
19	Brown rubber wire leather	-
20	Blue rubber wire leather	-
21	Black plastic	-
22	Gray silicone	-

**Test Results:**

The results of XRF screening and chemical test (Unit: mg/kg)

Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
01	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
02	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
03	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
04	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	OL	N.D.		
	Br(PBBs&PBDEs)	---	---		
	DBP,BBP,DEHP,DIBP	---	---		
05	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
06	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
07	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		

address:

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Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
08	Pb	OL	N.D.	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	---	---		
	DBP,BBP,DEHP,DIBP	---	---		
09	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
10	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	---	---		
	DBP,BBP,DEHP,DIBP	---	---		
11	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
12	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
13	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
14	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		



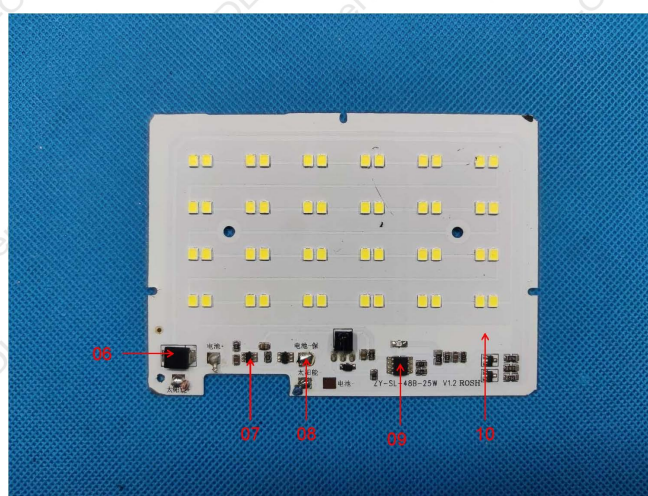
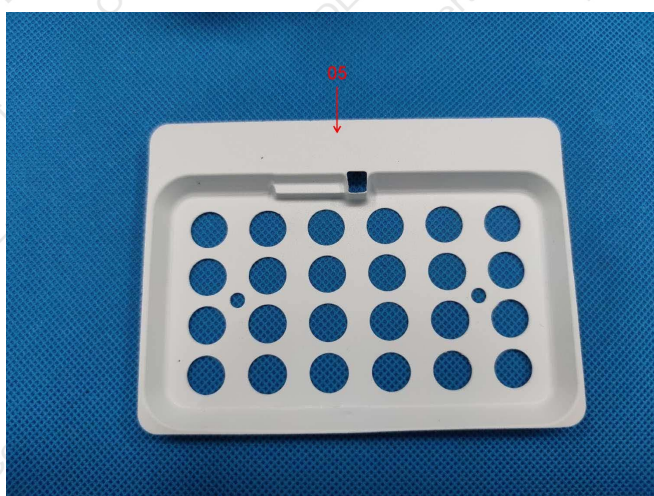
Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
15	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
16	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
17	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	OL	N.D.		
	DBP,BBP,DEHP,DIBP	---	N.D.		
18	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
19	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
20	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		
21	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	OL	N.D.		
	DBP,BBP,DEHP,DIBP	---	N.D.		

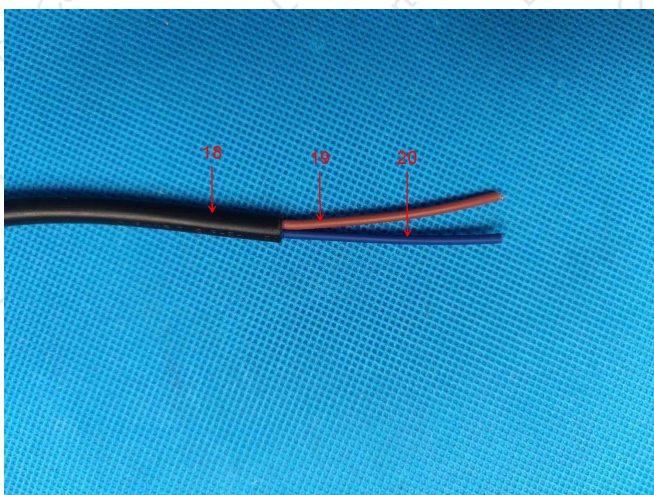
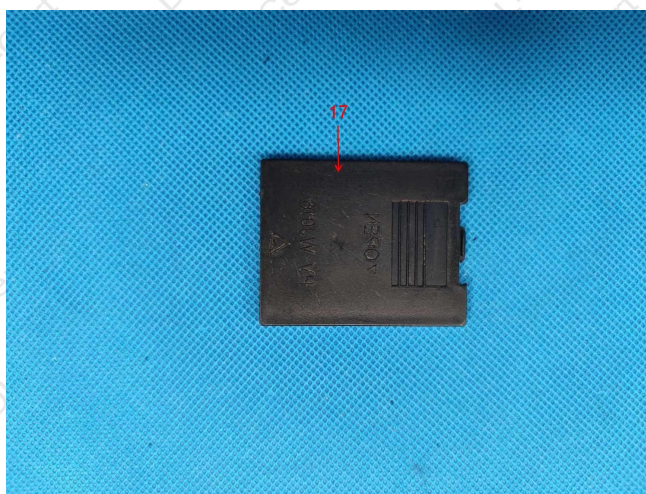
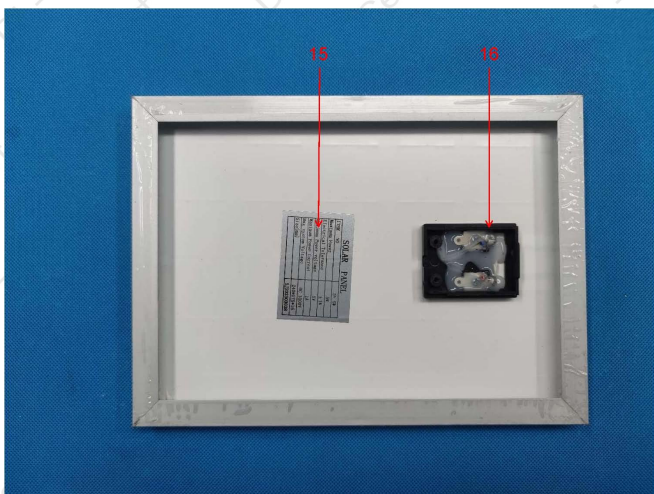
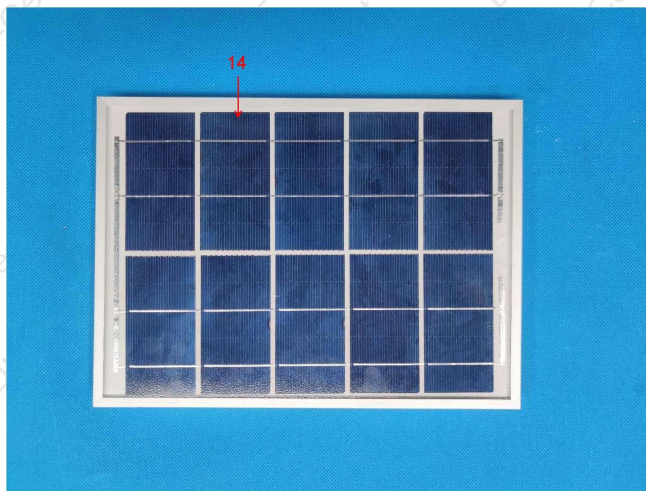
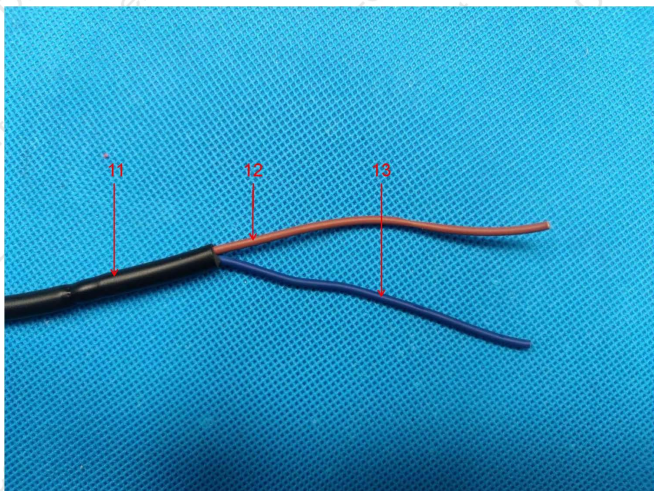


Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
22	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	Br(PBBs&PBDEs)	BL	---		
	DBP,BBP,DEHP,DIBP	---	N.D.		



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***** END OF REPORT *****