

# TEST REPORT

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Applicant:

### ZHEJIANG ERA SOLAR TECHNOLOGY CO.,LTD.

SIHAI ROAD, HUANGYAN ECONOMIC DEVELOPMENT ZONE, TAIZHOU, ZHEJIANG, CHINA

Date of Submission: 2021-12-10

Test Period: 2021-12-10 to 2021-12-22
Sample Mode: Sample Presentation
BV EE Ref. No.: ERA-ESH-Q21120901-A0

Sample Description:	Sample(s) received is(are) stated to be: SOLAR LIGHT						
Manufacturer:	/	Buyer:	/				
Style No(s):	2322012	PO No.:	/				
Country of Origin:	/	Country of Destination:	Oversea Country				

## SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION
Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the	
Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its	PASS
Amendments (EU) 2015/863	

#### REMARK

Technical enquiry

If there are questions or concerns on this report, please contact the following persons:

General enquiry and invoicing Mr. Speed Yu/ Ms. Cabell Chen

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Mr. Gorden Yu/ Ken He (021) 24166888\*6852/6859

Gorden.yu @bureauveritas.com/ Kenny. he@bureauveritas.com

BUREAU VERITAS

CONSUMER PRODUCTS SERVICES DIVISION (SHANGHAI)

Laboratory Test Location:

No.368, Guangzhong Road, Zhuanqiao Town, Minhang, Shanghai No.168, Guanghua Road, Zhuanqiao Town, Minhang, Shanghai

PREPARED BY: Ann

Connie Ye

Analytical Technical Specialist



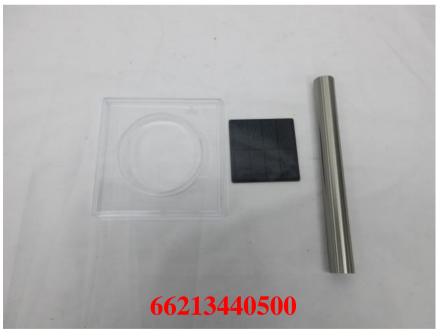
Http: www. bureauveritas.com/cps



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# **Photo of the Submitted Sample**







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# **TEST RESULT**

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments (EU) 2015/863

**Test Method** : See Appendix.

# See Analytes and their corresponding Maximum Allowable Limit in Appendix

	-		Result									
	Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	DBP	BBP	DEHP	DIBP	Conclusion	
Unit			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item	Description	Location	-	-	-	-	-	-				-
主测												
1	Silvery metal		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
2	Black coating		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
3	Silvery metal screw		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
4	Black plastic	Housing	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
5	Black plastic	nousing	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
6	Silvery metal with black plating		2.36x 10 <sup>3</sup> *	6.77*	ND	ND	NA	NA	NA	NA	NA	EX#
7	Transparent glass		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
8	Translucent plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
9	Black plastic with silvery coating	Inside	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
10	White plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
11	Silvery metal screw with black plating		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
12	Black plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
13	Black glue		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
14	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
15	Green plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
16	Silvery metal	Battery box	ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
17	Transparent plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
18	Transparent glue		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
19	Black plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
20	Silvery metal		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
21	Silvery metal		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
22	Silvery metal spring		ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
23	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
24	Red plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
25	Black EC		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
26	Black magnet		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
27	Yellow LED		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
28	Brown chip capacitor	PCB	ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
29	Black EC		ND	ND	ND	ND	ND*	ND*	ND*	ND*	ND*	PASS
30	White PCB		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
31	Black plastic wire jacket		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
32	Coppery meta wire		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS



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	-		Result									
Parameter			Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	DBP	BBP	DEHP	DIBP	Conclusion
	Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item	Description	Location	-	-	-	-	-	-				1
33	Green plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
34	Silvery metal solder		ND	ND	ND	ND	NA	NA	NA	NA	NA	PASS
35	Silvery metal	Parts	ND	ND	ND	Negative*	NA	NA	NA	NA	NA	PASS
36	Transparent plastic		ND	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS
37	Transparent plastic		< 500	ND	ND	ND	ND	ND*	ND*	ND*	ND*	PASS

#### Note / Key:

ND = Not detected ">" = Greater than "<" = Less than NR = Not requested mg/kg = milligram(s) per kilogram = ppm = part(s) per million Detection Limit: See Appendix. NA = Not applicable EX= Exempted

#### Remark:

- The testing approach is listed in table of Appendix.
- \*denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
- Only selected example(s) is (are) indicated on the photograph(s) in Comment.
- According to European Parliament and Council Directive 2011/65/EU, Article 5 "Adaptation of the Annexes to scientific and technical progress", exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- For item 6:

#According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(b) is reiterated here "Lead as an alloying element in aluminium containing up to 0.4 % lead by weight.". Test Item(s) was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.



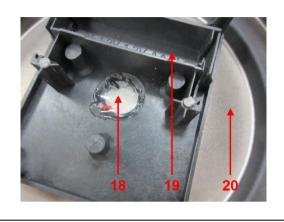
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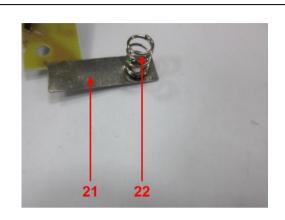
Photograph depicting Test Item(s) 3 10 13 16 17

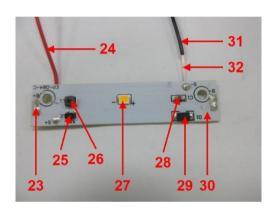


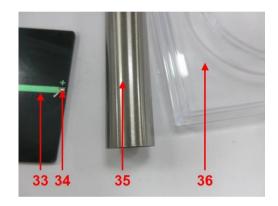
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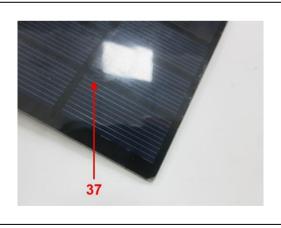
**Photograph depicting Test Item(s)** 













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#### **APPENDIX**

			Detection I	Limit (mg/kg)		
No.	Name of Analyte(s)	X-ra	y fluorescence (X	Maximum Allowable Limit (mg/kg)		
	Name of Hamye(s)	Metallic / Plastic glass / ceramic		Others	Wet Chemistry	(-19-19)
1	Lead (Pb)	100	200	200	10 <sup>[b]</sup>	1000
2	Cadmium (Cd)	50	50	50	10 <sup>[b]</sup>	100
3	Mercury (Hg)	100	200	200	10 <sup>[c]</sup>	1000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	3 <sup>[g, h]</sup> / 10 <sup>[d]</sup> / See <sup>[e, i]</sup>	1000 / Negative <sup>[i]</sup>
6	Bromine (Br)	200	NA	200	NA	NA
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HexaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (NonaBB)	NA	NA	NA	Each 50 <sup>[f]</sup>	Sum 1000
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HexaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 <sup>[t]</sup>	Sum 1000
9	Dibutyl phthalate (DBP) Butyl benzyl phthalate (BBP) Di-2-ethylhexyl phthalate (DEHP) Diisobutyl phthalate (DIBP)	NA	NA	NA	Each 500 <sup>[j]</sup>	Each 1000

- NA = Not applicable IEC = International Electrotechnical Commission
- $\begin{tabular}{ll} \begin{tabular}{ll} \hline \end{tabular} \hline \end$
- Test method with reference to International Standard IEC 62321-5: 2013.
- $\label{eq:continuous} \ensuremath{^{[c]}} \qquad \text{Test method with reference to International Standard IEC 62321-4: 2013+AMD1: 2017 CSV.}$
- Polymers and Electronics Test method with reference to International Standard IEC 62321-7-2: 2017.
- [e] Metal Test method with reference to International Standard IEC 62321-7-1: 2015.
- Test method with reference to International Standard IEC 62321-6: 2015.
- Leather Test method International Standard ISO 17075: 2017.
- Other Than Metal, Leather, Polymers and Electronics Test method with reference to International Standard ISO 17075: 2017.
- Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI 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).
- Test method with reference to International Standard IEC 62321-8: 2017

#### $Testing\ Approach\ [\ Compliance\ Test\ for\ European\ Parliament\ and\ Council\ Directive\ 2011/65/EU\ ]\ :$

The testing approach was with reference to the following document(s).

- 1 International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
- 2 "RoHS Enforcement Guidance Document Version 1" by EU RoHS Enforcement Authorities Informal Network. (May 2006)
- 3 "RoHS Regulations Government Guidance Notes" by United Kingdom Department for Business Innovation & Skills. (February 2011)
- 4 "Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)



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#### Annex

The client declared the below sample was the same material as the tested sample.

EC2355, EC11014, EC11037, EC11044, EC11045, EC11045-1, EC11046, EC11047. EC11048, EC11050, EC11052, EC11053, EC11055, EC11056, EC11058, EC11060, EC11060-3, EC11062, EC11069, EC11070, EC11085, EC11088, EC11095, EC11103-D1, EC11103-D2, EC11111, EC11115, EC11116, EC11117, EC11118, EC11119, EC11120, EC11122, EC11123, EC11124, EC11125, EC11126, EC11127, EC11128, EC11129-1, EC11129-5, EC11132, EC11135, EC11136, EC11137, EC11146, EC11149, EC14011, EC21156, EC21229, EC23133-B1, EC23435, EC41057, EC41075, EC23133-C1, EC23134, EC23134-B1, EC23134-D1, EC23137, EC23184, EC23184-D1, EC23185, EC23201, EC23204, EC23211, EC23211-1, EC23216, EC23216-B1, EC23216-C1, EC23216-D1, EC23217, EC23221, EC23230, EC23230-D1, EC23230-D2, EC23234, EC23235, EC23236, EC23241, EC23242, EC23245, EC23245-C1, EC23252, EC23262, EC23276-1, EC23280, EC23288, EC23289, EC23291-1, EC23291-2, EC23291-5, EC23291-6, EC23291-D2, EC23291-D3, EC23310, EC23311, EC23322, EC23329, EC23330, EC23331, EC23333, EC23334, EC23335, EC23336, EC23341, EC23342, EC23343, EC23344, EC23345, EC23346, EC23346-1, EC23348, EC23351, EC23352, EC23353, EC23357, EC23357-C1, EC23359, EC23366, EC23374, EC23379, EC23379-C1, EC23386, EC23387, EC25219, EC25226, EC41012, EC41013, EC41015, EC41018, EC41025, EC23347, EC23388, EC23401, EC41026, EC41028, EC41037, EC61012, EC61013, EC61015-D1, EC61015-D4, EC61015-D5, EC61015-D6, EC61016-D1, EC61016-D2, EC61017, EC61018-D1, EC61018-D2, EC61018-D3, EC61019-D1, EC61019-D2, EC41046, EC41053, EC41052, EC41051, EC41055, EC11155, EC61026-1, EC61026-2 EC23400, EC23402, EC23405, EC23403, EC23413, EC23433, EC23428, EC23423, EC41073, EC23429, EC23432, EC11153, EC11150, EC61029, EC61030, EC61013-1, EC61013-2, EC61023, EC11075, EC11157, EC11017, EC11103-2, EC23211C, EC41029, EG1001, EG1002, EG1003, EG1004, EG1005, EG1006, EG1007, EG1008, EC23451, EC23438, EC23453, EC23445, EC11165, EC11163, EC11166, EC11167, EG1009, EG1010, EG1011, EG1012, EC23452, EC23439, EC23439-1, EG1015, EG1016, EG1017, EC23404, EC32101, EC23443, EG1014, EC41059, EG1013, EG1018, EG1019, EG1020, EG1021, EG1022, EG1023, EG1024, EG1025, EG1026, EG23442, EG11168, EC23446, EC23441, EC23456, EC23440, EC23465, EC23379-C2, EC23467, EC23457, EC23449, EC23458-1, EC23459, EC11171, EC41069, EC41070, EC41071, EC41072, EC23461, EC41027, EC41028, EC41040, EC23437, EC11103-20RB, EC2306, EC61039, EC61040, EC11129-5BRONE,



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EC11132BRONZE, EC41049-D1, EC11151, EC11103-2, EC23418, EC23460-1, EC23443-1, EC23455, EC23436, EC23133-D1, EG1028, EG1033, EG1034, EG1032, EC11088-B1, EC11115-2, EC11187, EC11188, EC11189, EC23356, EC23356-1, EC23375, EC23389, EC23466, EC23482, EC23482-1, EC23483, EC23489, EC23490, EC23493, EC23495, EC23496, EC23496-C1, EC11190, EC23486, EC23487, EC23498, EC41089, EC41090, EC41090-C1, EC41060, EC41087 (2322013) , EC41088 (1594087) , EC41089 (2322017), EC41091 (1605155) , 1600217 (8535264), 2010500 (8541159), 8541156, EC11173 , EC11172 , EC11175 , EC11176, EC11176G, EC11176ORB



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EC11014 EC2355 EC11037 EC11045 EC11044 EC11045-1 EC11048 EC11046 EC11047



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EC11050 EC11052 EC11053 EC11055 EC11056 EC11058 EC11060 EC11060-3 EC11062



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EC11116 EC11117 EC11118 EC11119 EC11120 EC11122 EC11123 EC11125 EC11124



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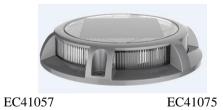
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EC11146 EC11149 EC14011

EC21229



EC21156





EC23133-B1



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EC23204 EC23211 EC23211-1 EC23216 EC23216-B1 EC23216-C1 EC23216-D1 EC23217 EC23221



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EC23230 EC23230-D1 EC23230-D2 EC23234 EC23235 EC23236 EC23241 EC23242 EC23245



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EC23245-C1 EC23252 EC23262 EC23276-1 EC23280 EC23288 EC23289 EC23291-1 EC23291-2



EC23322

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EC23330

EC23291-5 EC23291-6 EC23291-D2 EC23310 EC23311 EC23291-D3

EC23329



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EC23331 EC23333 EC23334 T...muk EC23336 EC23335 EC23341 EC23342 EC23344 EC23343

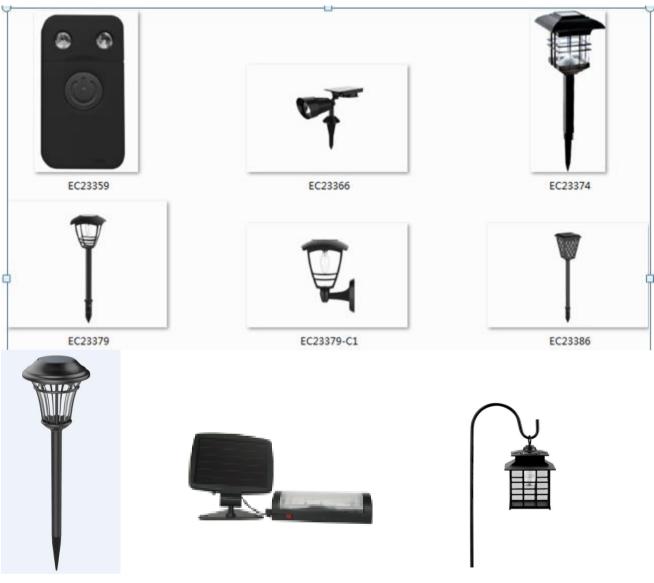


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EC23133-D1

EC25216

EC23387



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EC25226

EC41012

EC41013

EC41015

EC41018

EC41025





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EC61015-D4



EC41028



EC61013



EC61015-D5



EC41037



EC61015-D1



EC61015-D6



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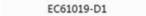




EC61018-D2









EC41046



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EC41053

















EC61026-2

EC23400

EC23402



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EC61030

EC61013-1

EC61013-2









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EC41029







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EG1006 EG1007





EG1008









EC23445 EC11165 EC11163



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EC11167



EG1009



EG1010



EG1011



EG1012



EC23452



EC23439



EC23439-1



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EG1015 EG1016 EG1017







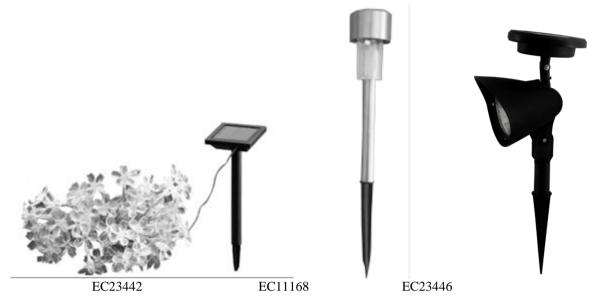
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EC23457

EC23449

EC23458-1













EC41070 E

EC41072



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EC41040 EC23437 EC11103-2 ORB







EC2306 EC61039

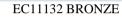
EC61040



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EC41049-D1











EC23443-1 EC

EC23460-1



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EC23436

EG1028

EG1033







EG1034

EG1032

EC11088-B1







EC11115-2

EC11187

EC11188



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EC11189

EC23356

EC23356-1







EC23375

EC23389

EC23466







EC23482 EC23482-1

EC23483



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EC23490



EC23493



EC23495



EC23496



EC23496-C1



EC11190



EC23486



EC23487



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EC23498

EC41089

EC 41090







EC41060



EC41087(2322013)





1087)



8541156





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EC11172

EC11173

EC11175







EC11176

EC11176G

EC11176ORB



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# Remark:

Since the client was not able to provide the sample of additional Style, above additional Style(s) hasn't been tested, but only based on the guarantee letter provided by the client. Bureau Veritas-CPS takes no responsibility for any mistakes and the problems of product consistency caused by inaccurate and/or invalid information submitted by the client. The client will take the responsibility of all discrepancy and risk.