



# CMA Testing and Certification Laboratories

廠商會檢定中心

## TEST REPORT

Report No. : AS0055184(1)

Date : 17 Sep 2014

Application No. : LS029217(0)

Client : GOTOLO LIMITED  
ROOM 517, 5/F, KWONG LOONG TAI BLDG,  
1016-1018 TAI NAN WEST STREET,  
LAI CHI KOK, KOWLOON, HONG KONG

Sample Description : One (1) submitted sample stated to be LAMP.  
Model no. : CUP LAMP  
Country of origin : CHINA  
Country of destination : EUROPE  
Test part : Details refer to Appendix I on page 4 to 5.



Date Received : 05 Aug 2014, 18 Aug 2014 & 02 Sep 2014

Test Period : 05 Aug 2014 to 05 Sep 2014.

Test Requested : Mercury, Cadmium, Lead, Hexavalent Chromium, PBBs and PBDEs content for the limits specified in 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Test Method : Refer to test method(s) on page 2.

Conclusion : Based on the said tests, Mercury, Cadmium, Lead, Hexavalent Chromium, PBBs and PBDEs content **comply with** the limit(s) specified in 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) in the submitted sample(s).

Test Result : Refer to the results on page 2 to 3

Remark : All data are copied from test report no. AS0048132(7) issued on 15 Sep 2014.

For and on behalf of  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_

  
Wu Chun Fai  
Assistant Manager  
Environmental Division

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Test Method : 1. XRF screening method (Reference to IEC 62321 edition 1 : 2008, part 6).  
2. Chemical test method (Reference to IEC 62321 edition 1 : 2008).  
Mercury, Cadmium and Lead content is analysed by AAS or ICP-OES.  
Hexavalent Chromium content is analysed by spot test or UV-VIS.  
PBBs and PBDEs content is analysed by GC-MS.

Test Result of XRF Screening Method:

Test Part	Test Item				
	Lead content	Mercury content	Cadmium content	Chromium content	Bromine content
2C-1	Pass	Pass	Pass	Pass	Inconclusive
2C-2	<b>Pass</b> <u>High Tm Solder Ex</u>	Pass	Pass	Pass	Pass
2D-1	Pass	Pass	Pass	<b>Inconclusive</b>	Pass
3A	Pass	Pass	Pass	Pass	<b>Inconclusive</b>
3F	Pass	Pass	Pass	<b>Inconclusive</b>	Pass
5B	Pass	Pass	Pass	Pass	<b>Inconclusive</b>
Other parts	Pass	Pass	Pass	Pass	Pass

Note 1 : The threshold value of the Lead, Chromium, Mercury content are  $\pm 500$  mg/kg. The threshold value of the Bromine and Cadmium content are  $\pm 300$ mg/kg and  $\pm 50$  mg/kg respectively.

Note 2 : Pass denotes the submitted sample(s) are below the threshold value.

Note 3 : Fail denotes the submitted sample(s) are clearly higher the threshold value.

Note 4 : Inconclusive denotes the submitted sample(s) are required additional investigation, due to inconclusive analysis.

Note 5 : mg/kg denotes milligram per kilogram.

Note 6 : Pass of Chromium content denotes the submitted sample(s) contain less than 500 mg/kg Chromium (VI) content.

Note 7 : Pass of Bromine content denotes the submitted sample(s) contain less than 300 mg/kg Polybrominated Biphenyls (PBBs) and Polybrominated Diphenylethers (PBDEs).

Note 8 : Test part 2C-1 = Black molded plastic of diode.  
Test part 2C-2 = Cross-section of diode.  
Test part 2D-1 = Silvery metal plate.  
Test part 2D-2 = Silvery solder joint on metal plate.

Note 9 : Guideline for XRF Screening:

Test Item	Result (mg/kg)		
	Pass	Inconclusive	Fail
1. Lead content	$\leq 500$	501 – 1500	>1500
2. Mercury content	$\leq 500$	501 – 1500	>1500
3. Cadmium content	$\leq 50$	51 – 150	>150
4. Chromium content	$\leq 500$	>500	--
5. Bromine content	$\leq 300$	>300	--

Remark 1: **Pass** High Tm Solder Ex means pass by exemption according to the RoHS Directive 2011/65/EU ANNEX, Lead is exempted in high melting temperature solders.



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### Result of Chemical Test:

Test Part	<u>Result (mg/kg)</u>					
	<u>Lead (Pb)</u>	<u>Mercury (Hg)</u>	<u>Cadmium (Cd)</u>	<u>Hexavalent chromium (Cr(VI))</u>	<u>PBBs<sup>^</sup></u>	<u>PBDEs<sup>*</sup></u>
	<u>Limit (mg/kg) in RoHS</u>					
	<u>1000</u>	<u>1000</u>	<u>100</u>	<u>1000</u>	<u>1000</u>	<u>1000</u>
2C-1	NA	NA	NA	NA	<100	<100
2D-1	NA	NA	NA	Negative <sup>#</sup>	NA	NA
3A	NA	NA	NA	NA	<100	<100
3F	NA	NA	NA	Negative <sup>#</sup>	NA	NA
5B	NA	NA	NA	NA	<100	<100

Note 1 : < denotes less than

Note 2 : NA denotes not applicable

Note 3 : <sup>^</sup> denotes total content of Polybrominated Biphenyls (PBBs)

Note 4 : <sup>\*</sup> denotes total content of Polybrominated Diphenylethers (PBDEs)

Note 5 : <sup>◇</sup> = Spot - Test:

Negative = Absence of Cr(VI) coating, Positive = Presence of Cr(VI) coating;

(The tested sample should be further verified by boiling-water-extraction method if the spot Test result is negative or cannot be confirmed.)

<sup>#</sup>Boiling-water-extraction:

Negative = Absence of Cr(VI) coating

Positive = Presence of Cr(VI) coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50cm<sup>2</sup> sample surface area.





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### Appendix I



Test Part 1



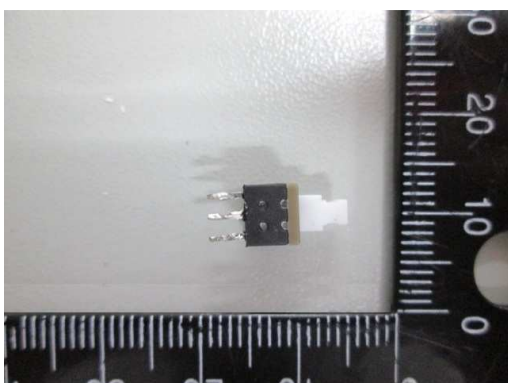
Disassembly of Test Part 1 (A-F)



Test Part 2



Disassembly of Test Part 2 (A-D)



Test Part 3



Disassembly of Test Part 3 (A-G)



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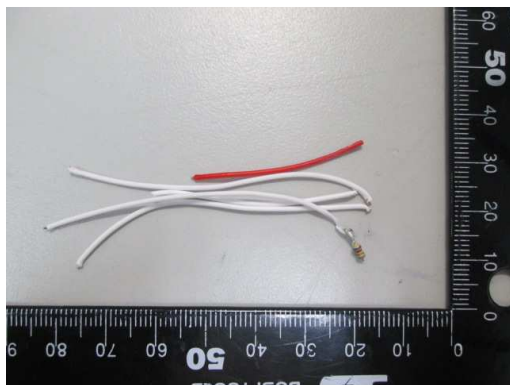
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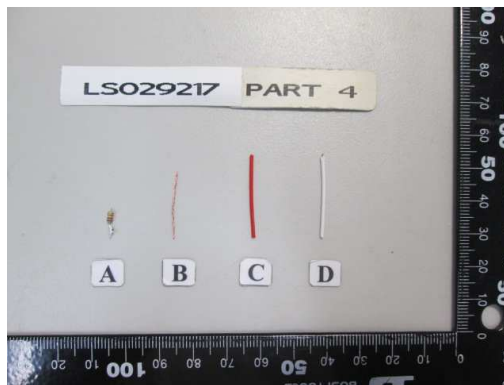
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Test Part 4



Disassembly of Test Part 4 (A-D)



Test Part 5



Disassembly of Test Part 5 (A-B)



Test Part 6A

\*\*\*\*\* End of Report \*\*\*\*\*