Report No.	**70.400.18.090.03-00/02**
Dated	**2018-08-06**

China

Technical Report

Applicant: SHANGHAI HAIFENG ELECTRICAL LIGHTING CO., LTD
No.33, Luda RD, Liuzao Town, Pudong New Area
201322 SHANGHAI
PEOPLE'S REPUBLIC OF CHINA

Attn: Huang Jilong

Manufacturer: SHANGHAI HAIFENG ELECTRICAL LIGHTING CO., LTD

Test subject: **Product Name:** LED LAMP

Model No.: SL90

Tested components: Refer to Page 3~8

Test specification: **2011/65/EU (RoHS) Directive**
Test with reference to EN 62321-1:2013
EN 62321-2:2014
EN 62321-3-1:2014
EN 62321-4:2014
EN 62321-5:2014
EN 62321-6:2015
EN 62321-7-1:2015
EN 62321-7-2:2017

Test result: Refer to the data listed in following pages

Conclusion: With regard to the data of tested components, the requirements of Directive 2011/65/EU (RoHS) are complied.

Remarks:
1. The result relates only to the items tested
2. Samples were tested as received

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

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1 Order

1.1 Date of Purchase Order
2018-04-02

1.2 Customer's Reference
Nil

1.3 Receipt Date of Test Sample
2018-02-11
2018-03-23 (sample 005,006,014,016,017,018)
2018-05-14 (sample 005,006)
2018-05-31 (sample 005)
2018-07-09 (sample 005)

1.4 Date of Testing
2018-02-12~2018-02-24
2018-03-26~2018-03-29 (sample 005,006,014,016,017,018)
2018-05-15~2018-05-17 (sample 005,006)
2018-06-01~2018-06-05 (sample 005)
2018-07-10~2018-07-12 (sample 005)

1.5 Document submitted
Bill of Material

1.6 Location of Testing
TÜV PS SHA

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

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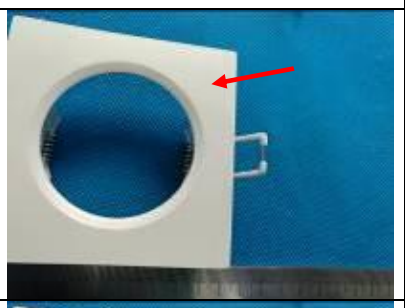
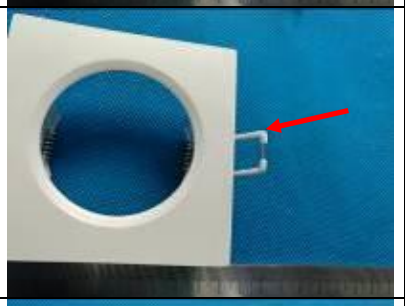
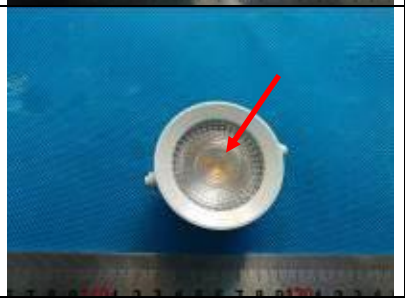
2. Description of the tested specimen

No.	Tested sample	Conclusion	Picture
001	block,plastic,white	Pass	
002	block,plastic,white	Pass	
003	cover,plastic,transparent	Pass	

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Shanghai 200 070
P. R. China

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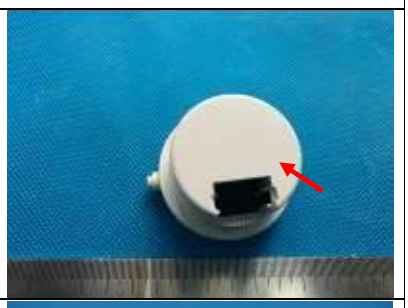
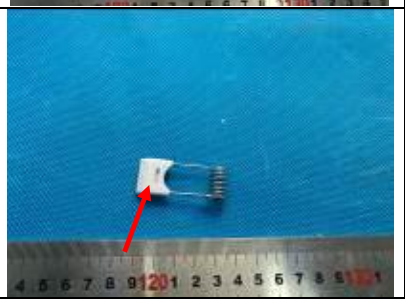
Tel.: +86-21-6037-6501

No.	Tested sample	Conclusion	Picture
004	block,plastic,white	Pass	
005	shell,silvery	Pass	
006	shell,plastic,black	Pass	
007	block,plastic,white	Pass	

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

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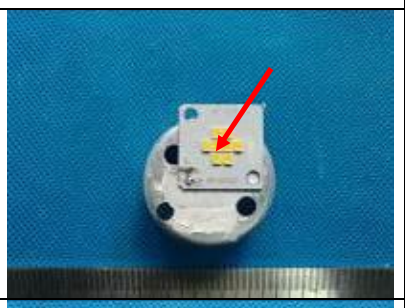
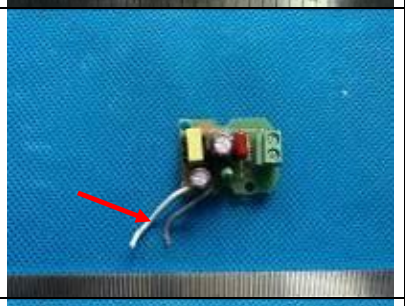
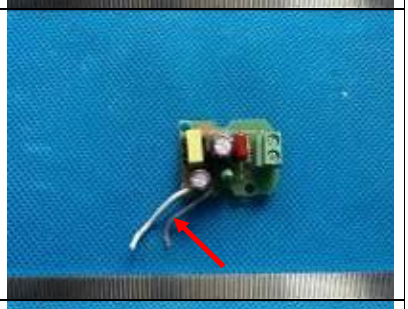
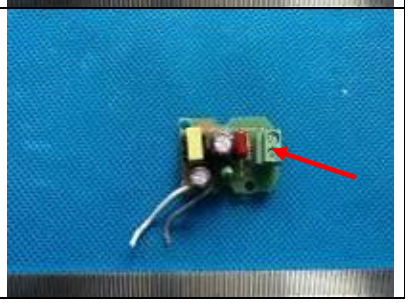
No.	Tested sample	Conclusion	Picture
008	LED,yellow	Pass	
009	jacket,plastic,white	Pass	
010	jacket,plastic,gray	Pass	
011	block,plastic,green	Pass	

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
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Shanghai Chemical Lab
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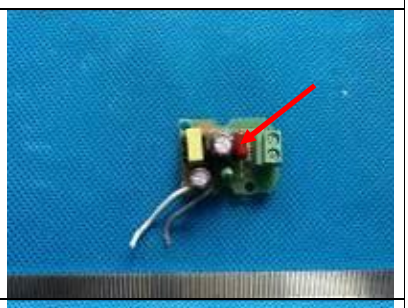
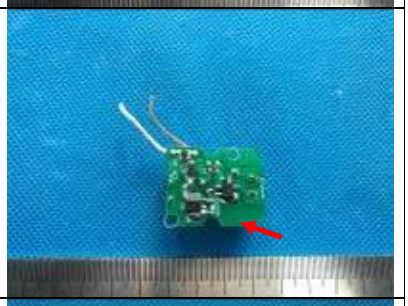
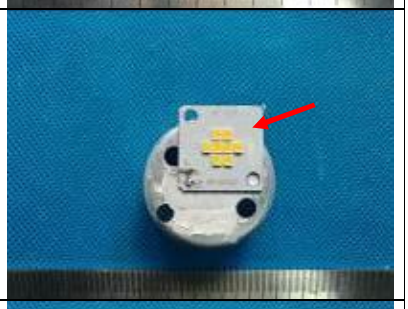
No.	Tested sample	Conclusion	Picture
012	shell,plastic,red	Pass	
013	PCB,green	Pass	
014	board,metal,silvery	Pass	
015	block,metal,silvery	Pass	

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
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info@tuv-sud.cn

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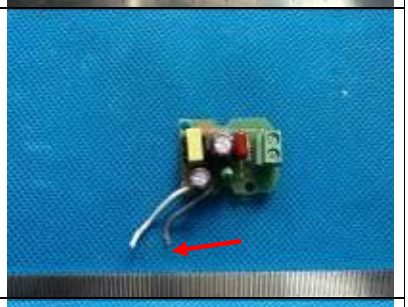
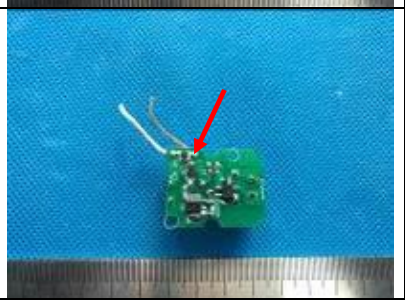
Tel.: +86-21-6037-6501

No.	Tested sample	Conclusion	Picture
016	solder,metal,silvery	Pass	
017	screw,metal,silvery	Pass	
018	core,metal,silvery	Pass	
019	solder,metal,silvery	Pass	

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

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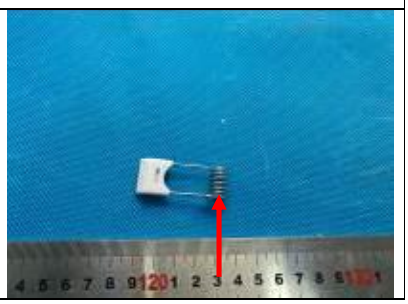
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

No.	Tested sample	Conclusion	Picture
020	block,metal,silvery	Pass	

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

3. Test Results

3.1 ED-XRF Spectrometer test for total Cadmium, Chromium, Mercury, Lead and Bromine according to EN 62321-3-1:2014

Criteria of XRF test results

Pass:

Because of the nature of the testing procedure (caused by the uncertainty of the used, XRF method), a definite pass is given only if the XRF test score is less than 60% of the respective RoHS limit.

Inconclusive:

If the XRF test score is between 60% and 150% of the respective RoHS limit, further chemical test on the sample is required.

Fail:

A definite FAIL is given if the XRF test score is above 150% of the respective RoHS limit

***Explanation for RoHS limit**

Regarding Chromium and Bromine, the XRF test score shows the total Chromium and the total Bromine, but the RoHS limit of 1000 mg/kg, according to the directive 2011/65/EU, is only for Hexavalent Chromium and Brominated Flame Retardants. Therefore, if the XRF test result for the total Chromium and the total Bromine is more than 600 mg/kg and 300 mg/kg respectively, further analytical tests are necessary to find out the exact amount of Hexavalent Chromium and Brominated Flame Retardants

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
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P. R. China

Tel.: +86-21-6141-0123
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www.tuv-sud.cn
info@tuv-sud.cn

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No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

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	TOTAL CADMIUM [mg/kg]	TOTAL LEAD [mg/kg]	TOTAL MERCURY [mg/kg]	TOTAL CHROMIUM [mg/kg]	TOTAL BROMINE [mg/kg]	RESULT
ROHS LIMIT	**100**	**1000**	**1000**	**1000***	**1000***	
Pass result	**< 60**	**< 600**	**< 600**	**< 600**	**< 300**	
Inconclusive result	**60 – 150**	**600 – 1500**	**600 – 1500**	**> 600**	**> 300**	
Fail result	**> 150**	**> 1500**	**> 1500**	**-**	**-**	
Test score, sample 001	<30	<50	<50	<50	**7029**	**Inconclusive**
Test score, sample 002	<30	<50	<50	<50	<50	**Pass**
Test score, sample 003	<30	<50	<50	<50	<50	**Pass**
Test score, sample 004	<30	<50	<50	<50	**11042**	**Inconclusive**
Test score, sample 005	<30	<50	<50	<50	**31037**	**Inconclusive**
Test score, sample 006	<30	244	<50	<50	**49502**	**Inconclusive**
Test score, sample 007	<30	<50	<50	<50	<50	**Pass**
Test score, sample 008	<30	<50	225	<50	<50	**Pass**
Test score, sample 009	<30	298	<50	<50	<50	**Pass**
Test score, sample 010	<30	166	<50	<50	<50	**Pass**
Test score, sample 011	<30	<50	<50	<50	<50	**Pass**
Test score, sample 012	<30	<50	<50	<50	<50	**Pass**
Test score, sample 013	<30	<50	<50	<50	**56184**	**Inconclusive**
Test score, sample 014	<30	<50	<50	--	--	**Pass**

Disclaimer Measurement Uncertainty:
Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

	TOTAL CADMIUM [mg/kg]	TOTAL LEAD [mg/kg]	TOTAL MERCURY [mg/kg]	TOTAL CHROMIUM [mg/kg]	TOTAL BROMINE [mg/kg]	RESULT
ROHS LIMIT	**100**	**1000**	**1000**	**1000***	**1000***	
Pass result	**< 60**	**< 600**	**< 600**	**< 600**	**< 300**	
Inconclusive result	**60 – 150**	**600 – 1500**	**600 – 1500**	**> 600**	**> 300**	
Fail result	**> 150**	**> 1500**	**> 1500**	**-**	**-**	
Test score, sample 015	<30	<50	<50	--	--	**Pass**
Test score, sample 016	--	<50	<50	<50	--	**Pass**
Test score, sample 017	<30	51	<50	505	--	**Pass**
Test score, sample 018	<30	--	<50	<50	--	**Pass**
Test score, sample 019	--	138	<50	<50	--	**Pass**
Test score, sample 020	<30	<50	<50	<50	--	**Pass**

Remark:
1. "<" means "less than".
2. "mg/kg" denotes "milligram per kilogram".
3. With regard to the stoichiometry of Br in PBBs and PBDEs, the lower limit for Br is set at 300 mg/kg.
4. " --" means the substance for this sample are not tested.

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3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

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No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

3.2 Wet chemical test

Main instruments used for wet chemical test

Testing Target	Instrument	**Method**
Lead & Cadmium	ICP-OES	**EN 62321-5:2014**
Mercury	ICP-OES	**EN 62321-4:2014**
Hexavalent Chromium	UV-Vis	**EN 62321-7-1:2015** **EN 62321-7-2:2017**
PBBs & PBDEs	GC/MS	**EN 62321-6:2015**

Criteria of chemical test results

Pass:

A definite Pass is given If the chemical test result meets the requirements of RoHS.

Fail:

A definite Fail is given If the chemical test result exceeds the full respective RoHS limit.

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

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No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

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Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium (VI) [mg/kg]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	RESULT
Limit	**100**	**1000**	**1000**	**1000**	**1000**	**1000**	
sample 001	--	--	--	--	ND	ND	**Pass**
sample 004	--	--	--	--	ND	ND	**Pass**
sample 005	--	--	--	--	ND	151	**Pass**
sample 006	--	--	--	--	ND	ND	**Pass**
sample 013	--	--	--	--	ND	ND	**Pass**
sample 016	ND	--	--	--	--	--	**Pass**
sample 018	--	ND	--	--	--	--	**Pass**
sample 019	ND	--	--	--	--	--	**Pass**

Remark:
1. ND = Not detected (Detected limit of Cd :2mg/kg;Pb, Hg, and Cr(VI):10mg/kg; PBBs and PBDEs: 5mg/kg)
2. " mg/kg " denotes " milligram per kilogram ".
3. " --" means the substance for this sample are not tested.

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P. R. China

Tel.: +86-21-6141-0123
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www.tuv-sud.cn
info@tuv-sud.cn

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Tel.: +86-21-6037-6501

Test Sample	Cadmium [mg/kg]	Lead [mg/kg]	Mercury [mg/kg]	Chromium# (VI) [mg/kg]	PBBs (Sum) [mg/kg]	PBDEs (Sum) [mg/kg]	RESULT
Limit	**100**	**1000**	**1000**	§	**1000**	**1000**	
sample 014	--	--	--	Negative	--	--	**Pass**
sample 015	--	--	--	Negative	--	--	**Pass**

Remark:

1. " --" means the substance for this sample are not tested.
2. "mg/kg" denotes "milligram per kilogram"
3. "§" The Chromium (VI) content in surface layer have been confirmed with reference to EN 62321-7-1:2015

Result	Chromium (VI) concentration	Qualitative result
Negative	<0.1μg/cm^2	The sample is negative for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
Inconclusive	⩾0.1μg/cm^2 and ⩽0.13 μg/cm^2	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trails for the final determination.
Positive	>0.13 μg/cm^2	The sample is positive for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

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P. R. China

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info@tuv-sud.cn

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No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

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Shanghai Branch
Chemical Lab

Engineer:

Mr. Yang Sirong

Checked by:

Ms. Qi Nannan

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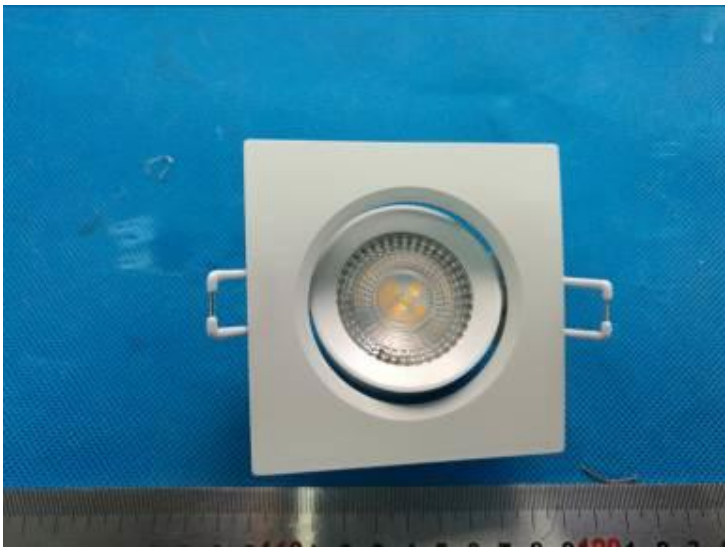
APPENDIX I: Product photos



SL90

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P. R. China

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Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

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Tel.: +86-21-6037-6501

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APPENDIX II: Additional Style.
The client declared that the materials used of below styles are same as tested style SL90**.**

	
SL82 SL82-LD-3S SL82-SD	SL110
SL82-W SL82-LD-3S-W SL-SD-W SL82-B SL82-LD-3S-B SL-SD-B SL82-Si SL82-LD-3S-Si SL-SD-Si SL82-G SL82-LD-3S-G SL-SD-G SL82-Br SL82-LD-3S-Br SL-SD-Br SL82-Ni SL82-LD-3S-Ni SL-SD-Ni SL110-W SL110-B SL110-Si SL110-G SL111-Br SL110-Ni	

Remark：
1. The report covers material testing on specified samples
2. The tested materials covered by the report were declared by the manufacturer to be used on the models listed in the APPENDIX of the report.

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APPENDIX III:Official Exemption Items

Below items are quoted based on Directives of 2011/65/EU and its valid Amending Directives.

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner)	
1(a)	For general lighting purpose< 30 W:5mg	Expires on 31 December 2011; 3,5mg maybe used per burner after 31 December 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes ≥ 30 W and < 50 W:5mg	Expires on 31 December 2011; 3,5mg maybe used per burner after 31 December 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012
1(c)	For general lighting purposes ≥ 50 W and < 150 W:5mg	
1(d)	For general lighting purpose ≥ 30 W and ≥ 150 W:15mg	
1(e)	For general lighting purpose with circular or square structural shape san tube diameter <17mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f)	For special purposes:5mg	
2(a)	Mercury in double capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp)	
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5mg	Expires on 31 December 2011; 4mg may be used per lamp after 31 December 2011
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17mm (e.g. T5): 5mg	Expires on 31 December 2011; 3mg may be used per lamp after 31 December 2011
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter >17 mm and ≤ 28mm (e.g. T8): 5mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011

Exemption		Scope and dates of applicability
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter >28mm (e.g. T12): 5mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(5)	Tri-band phosphor with long lifetime(≥25 000h):8mg	Expires on 13 December 2011;5mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1)	Linear halophosphate lamps with tube >28 mm(e.g.T10 and T12): 10mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters):15mg	Expires on 13 April 2016
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter >17mm (e.g. T9)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp)	
3(a)	Short length(≤500mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500mm and ≤ 1 500mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1 500mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011

Exemption		Scope and dates of applicability
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra >60;	
4(b)-I	P≤155 W	No limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011
4(b)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner)	
4(c)-I	P≤155 W	No limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011
4(c)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W	No limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	

TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch
3-13, No.151 Heng Tong Road
Shanghai 200 070
P. R. China

Tel.: +86-21-6141-0123
Fax: +86-21-6140-8600
www.tuv-sud.cn
info@tuv-sud.cn

Shanghai Chemical Lab
No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

	Exemption	Scope and dates of applicability
4(g)	Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light-artwork, where the mercury content shall be limited as follows: (a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.	Expires on 1 December 2018
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	Expires on: — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments; — 21 July 2023 for category 8 in vitro diagnostic medical devices; — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0,35 % lead by weight and in batch hot dip galvanised steel components containing up to 0,2 % lead by weight	Expires on 21 July 2021 for categories 1-7 and 10.'
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	Expires on: — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in

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P. R. China

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www.tuv-sud.cn
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No. 1999 Du Hui Road

Tel.: +86-21-6037-6501

Exemption		Scope and dates of applicability
		vitro diagnostic medical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.
6(b)-I	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling	Expires on 21 July 2021 for categories 1-7 and 10.
6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4 % by weight	Expires on 18 May 2021 for categories 1-7 and 10.'
6(c)	Copper alloy containing up to 4 % lead by weight	Expires on: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than in vitro diag-nostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical de-vices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.'
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Applies to categories 1-7 and 10 (except applications covered by point 24 of this Annex) and expires on 21 July 2021. For categories 8 and 9 other than in vitro diagnostic medical de-vices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 in vitro diagnostic medical devices expires on 21 July 2023. For category 9 industrial monitoring and control instruments, and for category 11 expires on 21 July 2024.'

Exemption		Scope and dates of applicability
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	Applies to categories 1-7 and 10 (except applications covered under point 34) and expires on 21 July 2021. For categories 8 and 9 other than in vitro diagnostic medical devices and industrial monitoring and control instruments expires on 21 July 2021. For category 8 in vitro diagnostic medical devices expires on 21 July 2023. For category 9 industrial monitoring and control instruments, and for category 11 expires on 21 July 2024.
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors'	
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b)	Cadmium and its compounds in electrical contacts	
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption	

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Exemption		Scope and dates of applicability
	refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing	Expires on 1 January 2011

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	Exemption	Scope and dates of applicability
	phosphors such as SMS ($(Sr,Ba)_2MgSi_2O_7$:Pb)	
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP($BaSi_2O_5$:Pb)	
19	Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Expires on: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than in vitro diagnostic medical devices and industrial moni-toring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic med-ical devices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.’
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27	Lead alloys as solder for transducers used in high-powered (designated to operate for several	Expired on 24 September 2010

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	Exemption	Scope and dates of applicability
	hours at acoustic power levels of 125 dB SPL and above) loudspeakers	
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	Lead in solders for the soldering of thin copper wires of 100 um diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	Applies to all categories; expires on: — 21 July 2021 for categories 1-7 and 10, — 21 July 2021 for categories 8 and 9 other than in vitro diag-nostic medical devices and industrial monitoring and control instruments, — 21 July 2023 for category 8 in vitro diagnostic medical de-vices, — 21 July 2024 for category 9 industrial monitoring and control instruments, and for category 11.'
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	

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	Exemption	Scope and dates of applicability
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm2 of display screen area)	Expires for all categories on [two years after the publication of the Delegated Directive in the Official Journal]
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council.	Expires on 1 December 2018

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