

SHEN ZHEN XU AN ELECTRONICS CO.,LTD

TEST REPORT

Prepared For:	SHEN ZHEN XU AN ELECTRONICS CO.,LTD Shenzhen City,Bao'an district,Fuyong Street,Huai de community GuiGang Huai De industrial Park FiveThirtieth building,two layer A Zone,A Zone Three
Product Name:	Lamp Bead
Model:	XA-0.5W2835WXX-1
Prepared By:	Shenzhen BST Technology Co., Ltd. Building No.23-24, Zhiheng industrial park, Guankouer Road, Nantou, Nanshan District, Shenzhen, Guangdong, China.
Test Date:	Nov. 16, 2016 – Sep. 17, 2017
Date of Report:	Sep. 17, 2017
Report No.:	BST1610604250001SR-2



TEST REPORT LUMEN MAINTENANCE TESTING ACCORDING TO THE IESNA LM-80-08 TEST STANDARD	
Testing laboratory	Shenzhen BST Technology Co., Ltd.
Address	Building No.23-24, Zhiheng industrial park, Guankouer Road, Nantou, Nanshan District, Shenzhen, Guangdong, China.
Testing location	Shenzhen BST Technology Co., Ltd.
Applicant	SHEN ZHEN XU AN ELECTRONICS CO.,LTD
Address	Shenzhen City,Bao'an district,Fuyong Street,Huai de community GuiGang Huai De industrial Park FiveThirtieth building,two layer A Zone,A Zone Three
Test Procedure	The IESNA LM-80-2008: Measuring Lumen Maintenance of LED Light Sources.
Non-standard test method	N.A.
Type of test object	Lamp Bead
Trademark	N.A.
Model/type reference	XA-0.5W2835WXX-1
Rating	3.2-3.4V $\overline{\text{---}}$, 150mA, 0.5W
Manufacturer	SHEN ZHEN XU AN ELECTRONICS CO.,LTD
Address	Shenzhen City,Bao'an district,Fuyong Street,Huai de community GuiGang Huai De industrial Park FiveThirtieth building,two layer A Zone,A Zone Three



Name and address of the testing laboratory:

Shenzhen BST Technology Co., Ltd.
Building No.23-24, Zhiheng industrial park,
Guankouer Road, Nantou, Nanshan District,
Shenzhen, Guangdong, China

Prepared by :

Owen

Engineer

Reviewer :

Mei S.

Supervisor

Approved & Authorized Signer :





Test Results Summary:

Summary	I	II	III
Condition	Ts=54.8℃ T _A =54.7℃ R.H.<65% I=150mA	Ts=84.8℃ T _A =84.6℃ R.H.<65% I=150mA	Ts=104.9℃ T _A =104.7℃ R.H.<65% I=150mA
Duration(hour)	6000	6000	6000
Interval(hour)	0,1000,2000,3000,4000, 5000, 6000	0,1000,2000,3000,4000, 5000, 6000	0,1000,2000,3000,4000, 5000, 6000
Sample Size	20	20	20
Average Lumen Maintenance at 6000 hour	97.09%	96.25%	95.48%
Average Chromaticity Shift Δu'v' at 6000 hour	0.0018	0.0025	0.0033
Failure	0	0	0

Equipments Used for Testing:

Equipment	Model	Equipment No.
DC Power Supply	IT6122	BSTNX001
Power meter	WT210	BSTNX001
Spectroradiometer	SPEC300	BN067
0.3m Integrating Sphere	0.3m	BSTNX002

**Test Data:****Operating Condition: 55°C/150mA**

No.	Φ (lm)	V_F (V)	Lumen maintenance (%)					
			0h(Initial)	1000h	2000h	3000h	4000h	5000h
1	57.1	3.2	99.89	99.08	98.65	97.95	97.93	97.11
2	56.4	3.2	99.91	99.13	98.63	98.12	97.92	97.08
3	56.9	3.3	100.05	99.12	98.56	98.08	97.68	96.95
4	57.2	3.2	99.92	99.21	98.74	98.09	97.86	96.88
5	57.4	3.2	100.08	99.26	98.56	98.06	97.88	97.08
6	56.8	3.2	99.92	99.11	98.55	98.11	97.87	97.23
7	57.2	3.3	99.86	99.31	98.38	98.06	97.82	97.25
8	56.5	3.2	99.91	99.25	98.61	97.92	97.36	96.88
9	57.1	3.2	99.88	99.18	98.74	98.13	97.77	97.08
10	57.4	3.2	99.86	99.11	98.55	98.08	97.85	97.18
11	56.9	3.2	99.91	99.23	98.46	98.12	97.86	97.22
12	56.8	3.2	99.93	99.32	98.45	98.14	97.88	97.26
13	56.8	3.2	100.02	99.18	98.66	98.08	97.92	97.09
14	57.5	3.2	99.91	99.22	98.55	97.96	97.79	97.11
15	57.4	3.2	99.93	99.15	98.61	98.23	97.88	96.98
16	57.3	3.2	99.91	99.13	98.56	98.22	97.86	96.91
17	56.9	3.2	99.88	99.11	98.58	98.26	97.91	97.19
18	57.1	3.3	99.86	99.08	98.64	98.31	97.92	96.91
19	56.8	3.2	99.91	99.22	98.65	98.25	97.88	97.22
20	56.5	3.2	99.88	99.05	98.66	98.33	97.96	97.11
Average	57.0	3.2	99.92	99.17	98.59	98.13	97.84	97.09
Median	57.0	3.2	99.91	99.17	98.60	98.12	97.88	97.10
St. Dev.	0.3	0.0	0.06	0.08	0.09	0.11	0.13	0.13
Max	57.5	3.3	100.08	99.32	98.74	98.33	97.96	97.26
Min	56.4	3.2	99.86	99.05	98.38	97.92	97.36	96.88



Operating Condition: 85°C/150mA

No.	Φ (lm)	V_F (V)	Lumen maintenance (%)					
	0h(Initial)		1000h	2000h	3000h	4000h	5000h	6000h
1	57.3	3.3	99.82	99.11	98.25	97.66	97.11	96.18
2	56.8	3.2	99.77	98.79	98.08	97.79	97.22	96.23
3	56.5	3.3	99.88	98.82	98.11	97.87	97.26	96.39
4	57.2	3.2	99.69	98.77	98.08	97.85	97.18	96.33
5	57.1	3.2	99.85	98.78	98.12	97.96	97.31	96.25
6	56.9	3.3	99.91	98.65	98.16	97.81	97.22	96.33
7	57.2	3.3	99.88	98.77	98.08	97.77	97.18	96.28
8	56.7	3.2	99.77	98.87	98.17	97.66	97.16	95.68
9	57.1	3.3	99.88	98.82	98.25	97.82	97.25	96.19
10	57.5	3.2	99.79	98.78	98.08	97.92	97.26	96.39
11	56.9	3.2	99.82	98.65	98.11	97.79	97.25	96.33
12	57.6	3.2	99.77	98.77	98.08	97.87	97.26	95.89
13	56.8	3.3	99.88	98.87	98.12	97.85	97.22	96.33
14	56.7	3.2	99.69	98.82	98.26	97.96	97.25	96.28
15	57.1	3.2	99.85	99.11	98.65	97.66	97.26	96.38
16	57.0	3.3	99.84	98.79	98.08	97.82	97.25	96.29
17	56.9	3.2	99.88	98.82	98.12	97.92	97.26	96.28
18	57.1	3.3	99.86	98.77	98.16	97.79	97.22	96.32
19	56.7	3.2	99.79	98.78	98.08	97.62	97.31	96.33
20	56.4	3.3	99.88	98.65	98.17	97.92	97.33	96.25
Average	57.0	3.2	99.83	98.81	98.16	97.82	97.24	96.25
Median	57.0	3.2	99.85	98.79	98.12	97.82	97.25	96.29
St. Dev.	0.3	0.1	0.06	0.12	0.13	0.10	0.05	0.17
Max	57.6	3.3	99.91	99.11	98.65	97.96	97.33	96.39
Min	56.4	3.2	99.69	98.65	98.08	97.62	97.11	95.68



Operating Condition: 105°C/150mA

No.	Φ(lm)	V _F (V)	Lumen maintenance (%)					
			0h(Initial)	1000h	2000h	3000h	4000h	5000h
1	57.2	3.2	99.48	99.05	98.22	97.68	97.02	95.96
2	56.9	3.2	99.54	98.41	98.33	97.75	96.76	95.79
3	56.7	3.3	99.86	99.51	98.65	97.78	97.23	96.06
4	57.0	3.2	100.12	99.11	98.41	97.91	97.33	96.08
5	57.2	3.2	99.87	99.25	98.12	97.33	96.39	95.74
6	56.8	3.3	99.67	99.16	98.25	97.36	96.78	95.47
7	57.0	3.3	99.85	98.57	98.54	97.56	96.46	95.38
8	56.4	3.2	99.88	99.65	97.52	97.11	96.25	95.87
9	57.1	3.2	99.92	98.96	97.58	96.25	96.12	95.77
10	57.3	3.2	99.78	99.25	98.62	97.25	96.37	95.37
11	56.8	3.3	99.69	99.16	98.36	97.33	96.87	95.86
12	56.7	3.2	99.59	98.57	97.58	96.51	96.12	95.62
13	56.7	3.2	99.58	99.65	98.47	97.63	96.33	95.78
14	56.6	3.3	100.06	99.28	98.76	97.44	96.52	95.85
15	57.3	3.2	99.36	98.75	97.52	96.58	95.74	94.95
16	57.2	3.3	99.88	98.76	97.36	96.32	95.62	95.28
17	56.7	3.2	99.67	98.74	97.28	96.45	95.14	94.36
18	57.1	3.2	99.85	98.36	97.33	96.18	95.33	94.25
19	56.6	3.2	99.74	98.74	97.29	96.65	95.88	95.11
20	56.7	3.3	99.69	98.52	97.45	96.45	95.84	95.05
Average	56.9	3.2	99.75	98.97	97.98	97.08	96.31	95.48
Median	56.9	3.2	99.76	99.01	98.17	97.29	96.35	95.68
St, Dev.	0.3	0.0	0.19	0.40	0.53	0.59	0.60	0.52
Max	57.3	3.3	100.12	99.65	98.76	97.91	97.33	96.08
Min	56.4	3.2	99.36	98.36	97.28	96.18	95.14	94.25



Operating Condition: 55°C/150mA

No.	CCT(K)	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	3107	0.0006	0.0010	0.0013	0.0016	0.0018	0.0019
2	3131	0.0007	0.0011	0.0012	0.0014	0.0016	0.0017
3	3076	0.0007	0.0009	0.0011	0.0013	0.0016	0.0019
4	3110	0.0007	0.0010	0.0012	0.0016	0.0019	0.0019
5	3043	0.0007	0.0011	0.0013	0.0015	0.0017	0.0020
6	3132	0.0006	0.0011	0.0013	0.0015	0.0017	0.0019
7	3057	0.0007	0.0010	0.0013	0.0015	0.0016	0.0018
8	3063	0.0007	0.0011	0.0013	0.0017	0.0019	0.0018
9	3066	0.0006	0.0011	0.0013	0.0015	0.0018	0.0019
10	3041	0.0007	0.0011	0.0013	0.0016	0.0017	0.0019
11	3093	0.0007	0.0010	0.0012	0.0014	0.0016	0.0018
12	3080	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017
13	3134	0.0007	0.0010	0.0012	0.0016	0.0019	0.0018
14	3144	0.0007	0.0009	0.0014	0.0016	0.0018	0.0019
15	3053	0.0006	0.0011	0.0013	0.0016	0.0019	0.0018
16	3065	0.0007	0.0011	0.0013	0.0015	0.0018	0.0019
17	3052	0.0007	0.0011	0.0014	0.0017	0.0018	0.0019
18	3133	0.0007	0.0011	0.0013	0.0015	0.0017	0.0018
19	3078	0.0006	0.0009	0.0012	0.0014	0.0016	0.0019
20	3106	0.0007	0.0010	0.0012	0.0014	0.0016	0.0017
Average	3088	0.0007	0.0010	0.0013	0.0015	0.0017	0.0018
Median	3079	0.0007	0.0011	0.0013	0.0015	0.0017	0.0019
St, Dev.	34	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001
Max	3144	0.0007	0.0011	0.0014	0.0017	0.0019	0.0020
Min	3041	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017



Operating Condition: 85°C/150mA

No.	CCT(K)	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	3099	0.0008	0.0012	0.0015	0.0017	0.0019	0.0025
2	3045	0.0007	0.0010	0.0013	0.0015	0.0017	0.0026
3	3096	0.0007	0.0009	0.0012	0.0015	0.0017	0.0026
4	3107	0.0007	0.0011	0.0013	0.0016	0.0018	0.0023
5	3053	0.0007	0.0011	0.0014	0.0016	0.0018	0.0025
6	3057	0.0008	0.0011	0.0013	0.0015	0.0017	0.0026
7	3102	0.0007	0.0010	0.0015	0.0017	0.0019	0.0024
8	3063	0.0007	0.0010	0.0014	0.0015	0.0018	0.0025
9	3085	0.0008	0.0011	0.0013	0.0015	0.0018	0.0024
10	3133	0.0007	0.0011	0.0014	0.0017	0.0020	0.0026
11	3086	0.0007	0.0009	0.0014	0.0016	0.0019	0.0025
12	3085	0.0007	0.0010	0.0013	0.0017	0.0021	0.0026
13	3061	0.0008	0.0011	0.0013	0.0015	0.0017	0.0025
14	3067	0.0007	0.0011	0.0014	0.0017	0.0019	0.0026
15	3105	0.0008	0.0010	0.0014	0.0016	0.0020	0.0026
16	3067	0.0007	0.0011	0.0012	0.0014	0.0017	0.0027
17	3139	0.0007	0.0011	0.0015	0.0017	0.0022	0.0026
18	3138	0.0007	0.0011	0.0013	0.0016	0.0019	0.0026
19	3087	0.0008	0.0011	0.0014	0.0017	0.0020	0.0025
20	3126	0.0007	0.0010	0.0013	0.0016	0.0019	0.0026
Average	3090	0.0007	0.0011	0.0014	0.0016	0.0019	0.0025
Median	3087	0.0007	0.0011	0.0014	0.0016	0.0019	0.0026
St, Dev.	29	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001
Max	3139	0.0008	0.0012	0.0015	0.0017	0.0022	0.0027
Min	3045	0.0007	0.0009	0.0012	0.0014	0.0017	0.0023



Operating Condition: 105°C/150mA

No.	CCT(K)	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	3112	0.0010	0.0014	0.0018	0.0022	0.0027	0.0032
2	3036	0.0010	0.0013	0.0017	0.0021	0.0026	0.0035
3	3098	0.0010	0.0013	0.0017	0.0022	0.0027	0.0034
4	3115	0.0009	0.0014	0.0018	0.0022	0.0028	0.0034
5	3138	0.0009	0.0014	0.0018	0.0023	0.0028	0.0031
6	3134	0.0010	0.0013	0.0016	0.0019	0.0025	0.0035
7	3106	0.0010	0.0013	0.0016	0.0021	0.0026	0.0032
8	3063	0.0010	0.0013	0.0017	0.0022	0.0026	0.0035
9	3082	0.0010	0.0013	0.0016	0.0021	0.0026	0.0033
10	3136	0.0009	0.0013	0.0017	0.0022	0.0026	0.0035
11	3095	0.0010	0.0013	0.0017	0.0021	0.0025	0.0033
12	3088	0.0009	0.0015	0.0018	0.0023	0.0026	0.0031
13	3042	0.0010	0.0013	0.0017	0.0021	0.0025	0.0033
14	3064	0.0010	0.0014	0.0019	0.0023	0.0027	0.0033
15	3118	0.0009	0.0012	0.0016	0.0021	0.0026	0.0032
16	3065	0.0009	0.0013	0.0018	0.0022	0.0027	0.0032
17	3041	0.0009	0.0012	0.0016	0.0021	0.0025	0.0033
18	3136	0.0009	0.0013	0.0016	0.0022	0.0026	0.0034
19	3083	0.0008	0.0013	0.0016	0.0021	0.0026	0.0033
20	3117	0.0010	0.0013	0.0017	0.0022	0.0025	0.0032
Average	3093	0.0010	0.0013	0.0017	0.0022	0.0026	0.0033
Median	3097	0.0010	0.0013	0.0017	0.0022	0.0026	0.0033
St. Dev.	33	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	3138	0.0010	0.0015	0.0019	0.0023	0.0028	0.0035
Min	3036	0.0008	0.0012	0.0016	0.0019	0.0025	0.0031



Photo 1 General Appearance of the EUT

