



Shenzhen Hongweixing photoelectric Co Ltd

TEST REPORT

Prepared For:	Shenzhen Hongweixing photoelectric Co Ltd Guangdong Province Shenzhen Guangming New District, Gongming Tong Mei community Xinghua Second Industrial District 6 Building 4 floor
Product Name:	2835 LEDS
Model :	HWX-2835WHA-H-R80
Prepared By :	Shenzhen BST Technology Co., Ltd. Building No.23-24, Zhiheng industrial park, Guankouer Road, Nantou, Nanshan District, Shenzhen, Guangdong, China.
Test Date:	Aug. 28, 2014 –Apr. 24, 2015
Date of Report :	Apr. 24, 2015
Report No.:	BSTDG1504634461SR-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	Shenzhen Hongweixing photoelectric Co Ltd
Address	Guangdong Province Shenzhen Guangming New District, Gongming Tong Mei community Xinghua Second Industrial District 6 Building 4 floor
Test Procedure	The IESNA LM-80-08: Measuring Lumen Maintenance of LED Light Sources.
Non-standard test method	N.A.
Type of test object	2835 LEDS
Trademark	N.A
Model/type reference	HWX-2835WHA-H-R80
Rating	2.95-3.05V $\overline{\text{---}}$, 60mA, 0.2W
Manufacturer	Shenzhen Hongweixing photoelectric Co Ltd
Address	Guangdong Province Shenzhen Guangming New District, Gongming Tong Mei community Xinghua Second Industrial District 6 Building 4 floor



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 :

Jacky Zhang

Engineer

Reviewer :

CS Chan

Supervisor

Approved & Authorized Signer :

[Signature]

Possible test case verdicts :

Test case does not apply to the test object : N(.A.)

Test object does meet the requirement : P(ass)

Test object does not meet the requirement : F(ail)

General remarks:

Throughout this report a point is used as the decimal separator. The test results presented in this report relate only to the object tested.

**Test Results Summary:**

Summary	I	II	III
Condition	T _s =54.5℃ T _A =53.7℃ R.H.<65% I=60mA	T _s =84.3℃ T _A =83.4℃ R.H.<65% I=60mA	T _s =104.3℃ T _A =104.7℃ R.H.<65% I=60mA
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	95.07%	94.24%	93.38%
Average Chromaticity Shift $\Delta u'v'$ at 6000 hour	0.0019	0.0025	0.0036
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/60mA**

No.	Φ (lm)	V_F (V)	Lumen maintenance (%)					
	0h(Initial)		1000h	2000h	3000h	4000h	5000h	6000h
1	24.2	3.0	100.08	99.09	98.32	97.66	96.23	95.28
2	24.3	3.1	99.65	99.06	98.11	97.38	96.34	95.36
3	25.2	3.0	99.86	98.65	98.13	97.66	96.89	95.85
4	24.1	3.1	100.08	98.64	97.26	97.05	95.82	95.12
5	25.3	3.1	99.69	98.63	97.23	96.08	95.33	95.11
6	24.6	3.1	99.87	99.11	97.25	96.33	96.22	95.36
7	24.7	3.1	99.68	98.23	97.36	97.12	96.81	95.48
8	25.1	3.0	99.24	98.36	97.24	96.86	96.11	95.33
9	24.8	3.1	99.36	98.25	97.26	97.11	96.32	95.36
10	25.3	3.0	99.33	98.31	97.28	96.28	95.85	95.12
11	24.6	3.1	98.98	98.12	97.25	96.21	95.87	95.11
12	25.4	3.0	99.69	98.63	97.23	96.41	96.12	95.08
13	24.9	3.1	99.62	98.54	97.25	96.52	95.85	94.87
14	24.3	3.0	99.18	98.75	97.36	96.25	95.68	95.12
15	24.6	3.0	99.12	98.25	97.08	96.33	95.64	95.08
16	25.3	3.1	99.33	99.11	97.15	96.14	95.14	94.18
17	24.6	3.1	99.36	98.33	97.06	96.23	95.17	94.33
18	25.6	3.1	99.41	98.26	97.22	96.17	95.33	94.96
19	24.8	3.1	99.62	98.21	97.23	96.18	95.14	94.39
20	25.6	3.0	99.54	98.11	97.18	96.12	95.33	94.92
Average	24.87	3.10	99.53	98.53	97.37	96.61	95.86	95.07
Median	24.7	3.10	99.58	98.45	97.25	96.33	95.85	95.12
St, Dev.	0.8	0.06	0.30	0.34	0.36	0.55	0.53	0.40
Max	25.6	3.10	100.08	99.11	98.32	97.66	96.89	95.85
Min	24.1	3.10	98.98	98.11	97.06	96.08	95.14	94.18

TM-21 PROJECTION:

Test duration: 6000h

Failure: 0

 α : 9.128E-06 β : 1.003Calculated L_{70} : 39000hReported L_{70} : >36000h

**Operating Condition: 85°C/60mA**

No.	Φ (lm)	V_F (V)	Lumen maintenance (%)					
	0h(Initial)		1000h	2000h	3000h	4000h	5000h	6000h
1	24.1	3.0	99.63	98.45	97.45	96.21	95.21	94.26
2	25.3	3.1	99.28	98.72	97.23	96.25	95.33	94.33
3	24.6	3.0	99.65	98.33	97.31	96.33	95.18	94.25
4	24.7	3.1	99.28	98.14	97.22	96.21	95.22	94.32
5	25.1	3.1	99.14	98.56	97.08	96.23	95.14	94.65
6	24.8	3.1	99.52	98.33	97.12	96.54	95.33	94.23
7	25.3	3.1	99.36	98.75	97.36	96.12	95.28	94.25
8	24.6	3.0	99.28	98.65	97.25	96.33	95.27	94.12
9	25.4	3.1	99.54	98.45	97.24	96.25	95.36	94.33
10	24.9	3.0	99.22	98.33	97.33	96.14	95.12	94.25
11	24.6	3.1	99.51	98.65	97.21	96.23	95.28	94.21
12	25.3	3.0	98.44	98.47	97.36	96.17	95.32	94.36
13	24.6	3.1	98.15	98.56	97.45	96.25	95.36	94.12
14	25.6	3.0	99.33	98.36	97.36	96.22	95.12	94.15
15	24.8	3.0	99.14	98.06	97.25	96.18	95.18	94.63
16	25.6	3.1	99.28	98.26	97.24	96.11	95.14	93.89
17	24.2	3.1	99.34	98.33	97.36	96.23	95.36	93.66
18	24.3	3.1	99.08	98.26	97.21	96.25	95.33	94.25
19	25.2	3.1	98.29	98.11	97.33	96.33	95.21	94.36
20	24.1	3.0	99.19	98.26	97.22	96.15	95.14	94.27
Average	24.85	3.10	99.18	98.40	97.28	96.24	95.24	94.24
Median	24.8	3.10	99.28	98.35	97.25	96.23	95.25	94.25
St, Dev.	0.6	0.05	0.42	0.20	0.10	0.10	0.09	0.21
Max	25.6	3.10	99.65	98.75	97.45	96.54	95.36	94.65
Min	24.1	3.10	98.15	98.06	97.08	96.11	95.12	93.66

TM-21 PROJECTION:

Test duration: 6000h

Failure: 0

 α : 1.040E-05 β : 1.003Calculated L_{70} : 35000hReported L_{70} : 35000h

**Operating Condition: 105°C/60mA**

No.	Φ (lm)	V_F (V)	Lumen maintenance (%)					
	0h(Initial)		1000h	2000h	3000h	4000h	5000h	6000h
1	24.8	3.0	99.52	98.23	97.36	96.23	95.25	94.23
2	25.3	3.1	99.33	97.25	97.22	96.14	95.31	94.12
3	24.6	3.0	99.62	97.36	96.28	95.16	94.38	93.16
4	25.4	3.1	99.28	98.25	96.25	95.18	94.96	93.28
5	24.9	3.1	99.26	98.36	96.08	95.85	94.86	93.82
6	24.6	3.1	99.22	98.54	96.33	95.47	94.87	93.25
7	25.3	3.1	99.23	97.33	96.27	95.36	94.39	93.26
8	24.6	3.0	99.26	97.25	96.34	95.24	94.78	93.56
9	25.6	3.1	99.33	97.36	96.25	95.23	94.85	93.47
10	24.8	3.0	99.52	98.21	96.37	95.16	94.65	93.26
11	25.6	3.1	99.14	97.33	96.25	95.17	94.25	93.28
12	24.2	3.0	99.26	97.29	96.21	95.26	94.36	93.12
13	24.3	3.1	99.33	98.23	96.35	95.45	94.25	93.15
14	25.2	3.0	99.21	97.36	96.14	95.36	94.32	93.16
15	24.1	3.0	99.25	97.25	96.18	95.14	94.18	93.15
16	24.1	3.1	99.32	97.62	96.14	95.74	93.85	93.13
17	25.3	3.1	99.25	98.08	96.21	95.26	94.48	93.52
18	24.6	3.1	99.26	98.09	97.26	95.31	94.12	93.26
19	24.7	3.1	99.33	98.25	97.12	95.41	93.65	93.15
20	25.1	3.0	99.21	98.23	97.08	95.33	94.85	93.26
Average	24.86	3.10	99.31	97.79	96.48	95.42	94.53	93.38
Median	24.7	3.10	99.26	97.85	96.28	95.32	94.44	93.26
St. Dev.	0.4	0.05	0.12	0.48	0.44	0.32	0.44	0.32
Max	25.6	3.10	99.62	98.54	97.36	96.23	95.31	94.23
Min	24.1	3.10	99.14	97.25	96.08	95.14	93.65	93.12

TM-21 PROJECTION:

Test duration: 6000h

Failure: 0

 α : 1.202E-05 β : 1.003Calculated L_{70} : 30000hReported L_{70} : 30000h

**Operating Condition: 55°C/60mA**

No.	Ra	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	80.6	0.0008	0.0011	0.0015	0.0018	0.0018	0.0019
2	80.3	0.0007	0.0012	0.0015	0.0017	0.0017	0.0018
3	80.2	0.0008	0.0011	0.0012	0.0016	0.0017	0.0018
4	80.5	0.0006	0.0012	0.0015	0.0015	0.0016	0.0017
5	80.6	0.0007	0.0011	0.0012	0.0017	0.0018	0.0019
6	80.7	0.0006	0.0012	0.0013	0.0018	0.0019	0.0020
7	80.3	0.0008	0.0012	0.0015	0.0016	0.0017	0.0018
8	80.6	0.0006	0.0011	0.0012	0.0017	0.0017	0.0018
9	80.5	0.0007	0.0011	0.0013	0.0015	0.0016	0.0018
10	80.3	0.0008	0.0011	0.0015	0.0016	0.0017	0.0018
11	80.2	0.0006	0.0012	0.0016	0.0018	0.0018	0.0019
12	80.5	0.0007	0.0013	0.0015	0.0017	0.0018	0.0020
13	80.6	0.0008	0.0011	0.0013	0.0018	0.0019	0.0021
14	80.4	0.0007	0.0011	0.0012	0.0017	0.0018	0.0019
15	80.5	0.0006	0.0012	0.0016	0.0016	0.0017	0.0019
16	80.6	0.0007	0.0013	0.0014	0.0015	0.0016	0.0018
17	80.4	0.0008	0.0011	0.0015	0.0017	0.0018	0.0020
18	80.6	0.0007	0.0011	0.0013	0.0016	0.0017	0.0019
19	80.6	0.0006	0.0011	0.0014	0.0016	0.0017	0.0018
20	80.5	0.0007	0.0013	0.0015	0.0017	0.0017	0.0021
Average	80.5	0.0007	0.0012	0.0014	0.0017	0.0017	0.0019
Median	80.5	0.0007	0.0011	0.0015	0.0017	0.0017	0.0019
St, Dev.	0.1	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	80.7	0.0008	0.0013	0.0016	0.0018	0.0019	0.0021
Min	80.2	0.0006	0.0011	0.0012	0.0015	0.0016	0.0017

**Operating Condition: 85°C/60mA**

No.	Ra	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	80.5	0.0008	0.0009	0.0012	0.0016	0.0019	0.0022
2	80.6	0.0006	0.0011	0.0013	0.0015	0.0020	0.0025
3	80.3	0.0006	0.0012	0.0013	0.0017	0.0019	0.0026
4	80.5	0.0007	0.0011	0.0012	0.0015	0.0018	0.0024
5	80.6	0.0007	0.0009	0.0012	0.0016	0.0019	0.0025
6	80.6	0.0006	0.0011	0.0013	0.0017	0.0021	0.0026
7	80.5	0.0006	0.0012	0.0012	0.0015	0.0019	0.0027
8	80.3	0.0007	0.0011	0.0012	0.0015	0.0019	0.0027
9	80.6	0.0006	0.0011	0.0013	0.0017	0.0019	0.0026
10	80.3	0.0007	0.0012	0.0012	0.0016	0.0019	0.0027
11	80.6	0.0006	0.0012	0.0013	0.0017	0.0021	0.0026
12	80.3	0.0007	0.0011	0.0012	0.0015	0.0019	0.0025
13	80.3	0.0008	0.0011	0.0012	0.0015	0.0018	0.0024
14	80.3	0.0007	0.0011	0.0012	0.0015	0.0018	0.0026
15	80.4	0.0006	0.0012	0.0013	0.0016	0.0019	0.0025
16	80.3	0.0007	0.0011	0.0012	0.0017	0.0021	0.0026
17	80.5	0.0006	0.0011	0.0012	0.0015	0.0018	0.0024
18	80.3	0.0007	0.0012	0.0013	0.0016	0.0019	0.0026
19	80.6	0.0006	0.0011	0.0013	0.0016	0.0019	0.0025
20	80.6	0.0007	0.0012	0.0013	0.0016	0.0021	0.0025
Average	80.5	0.0007	0.0011	0.0012	0.0016	0.0019	0.0025
Median	80.5	0.0007	0.0011	0.0012	0.0016	0.0019	0.0026
St, Dev.	0.1	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	80.6	0.0008	0.0012	0.0013	0.0017	0.0021	0.0027
Min	80.3	0.0006	0.0009	0.0012	0.0015	0.0018	0.0022

**Operating Condition: 105°C/60mA**

No.	Ra	Chromaticity Shift $\Delta u'v'$					
	0h(Initial)	1000h	2000h	3000h	4000h	5000h	6000h
1	80.5	0.0009	0.0013	0.0017	0.0022	0.0027	0.0035
2	80.4	0.0011	0.0014	0.0016	0.0023	0.0026	0.0033
3	80.6	0.0012	0.0013	0.0018	0.0022	0.0026	0.0035
4	80.4	0.0009	0.0015	0.0017	0.0024	0.0027	0.0036
5	80.5	0.0008	0.0015	0.0017	0.0025	0.0027	0.0037
6	80.6	0.0012	0.0013	0.0018	0.0023	0.0028	0.0036
7	80.4	0.0011	0.0015	0.0019	0.0024	0.0028	0.0035
8	80.3	0.0012	0.0014	0.0018	0.0025	0.0028	0.0037
9	80.2	0.0011	0.0014	0.0019	0.0023	0.0026	0.0036
10	80.3	0.0010	0.0015	0.0019	0.0022	0.0026	0.0036
11	80.3	0.0009	0.0013	0.0018	0.0024	0.0026	0.0037
12	80.6	0.0008	0.0015	0.0017	0.0022	0.0027	0.0038
13	80.4	0.0011	0.0014	0.0018	0.0023	0.0028	0.0038
14	80.5	0.0011	0.0014	0.0019	0.0023	0.0026	0.0037
15	80.6	0.0012	0.0015	0.0017	0.0025	0.0027	0.0038
16	80.4	0.0011	0.0013	0.0018	0.0026	0.0027	0.0037
17	80.6	0.0011	0.0015	0.0019	0.0021	0.0026	0.0036
18	82.4	0.0011	0.0015	0.0019	0.0022	0.0027	0.0038
19	80.3	0.0012	0.0013	0.0018	0.0023	0.0028	0.0037
20	80.4	0.0011	0.0014	0.0019	0.0021	0.0026	0.0036
Average	80.5	0.0011	0.0014	0.0018	0.0023	0.0027	0.0036
Median	80.4	0.0011	0.0014	0.0018	0.0023	0.0027	0.0037
St, Dev.	0.5	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	82.4	0.0012	0.0015	0.0019	0.0026	0.0028	0.0038
Min	80.2	0.0008	0.0013	0.0016	0.0021	0.0026	0.0033

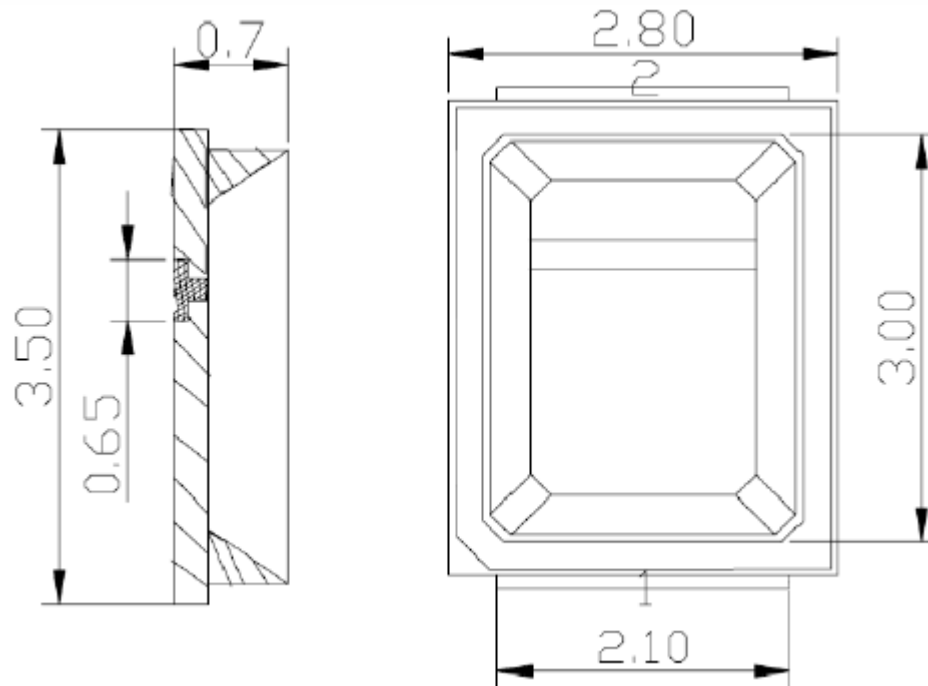


ANNEX A:

Photo-documentation



Photo 1 General Appearance of the EUT (Mechanical Dimensions)



TMP_{LED}

