



IESNA LM-80-2008

MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES

MEASUREMENT AND TEST REPORT

For

Xiamen Dacol Photoelectronics Technology Co., Ltd.

8021 Xiang' an West Road(Xiang' an)industrial zone, Torch Hi-Tech Industrial Development Zone,
Xiamen City, Fujian, China

Model: SMD 2835

Report Type: 6000 Hours Test Report	Product Type: LED Package
Test Engineer: Pote Wang	<i>Pote Wang</i>
Report Number: R2DG160114050-10	
Test Date: 2016-01-25 to 2016-10-01	
Report Date: 2016-10-17	
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Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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1 - General Information

1.1 Description of LED Light Sources

Devices tested

Part Number: SMD 2835
 Part Type: LED Package
 Nominal CCT: 3500K

1.2 Standards Used:

- IESNA LM-80-08: IES Approved Method for Measuring Lumen Maintenance of LED Light Sources.
- ENERGY STAR® Program Guidance Regarding LED Package, LED Array and LED Module Lumen Maintenance Performance Data Supporting Qualification of Lighting Products(This test method was not accredited by IAS)

1.3 Test Facility

The testing facility used by Bay Area Compliance Laboratories Corp. (Dongguan). is located at Pu Long Cun 69, Puxinghu Industrial Area, Tangxia Town, Dongguan, Guangdong, P.R.China.

1.4 Description of Auxiliary Equipment

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
Integral Sphere	EVERFINE	Diameter 0.3m	1011119	0.3m	2016-03-10	2017-03-09
Programmable Test Power for LEDs	EVERFINE	LED300E	1008002	15V/2000mA	2016-03-04	2017-03-03
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	380-780nm	2016-03-10	2017-03-09
Standard Light Source	EVERFINE	D062	1011093	3000K	2016-09-13	2017-09-12
Precision digital stabilized DC power supply	EVERFINE	WY605-V110	G115987C J7321114	300VA	2016-03-04	2017-03-03
Multilayer aging machine	BACL	B2-270	20015	25 °C~110 °C	2016-03-04	2017-03-03
DC Power Supply	GUTE	LLA120011 2-U	201208200 1	0~120V,0~1A	2015-12-22	2016-12-21
DC Power Supply	Taishan Xingguang	T0100F	ST05474	0~100mA	2016-03-04	2017-03-03
DC Power Supply	BACL	B25001	90020	250V,0~1A	2015-12-22	2016-12-21

1.5 Operating Cycle

Samples are driven with a constant direct current (DC)

1.6 Ambient Conditions

For lumen maintenance test, samples were operated in thermal chambers with minimal ambient airflow. For long term reliability test, the case temperature was controlled by mounting several thermocouples on a sample reliability stress board at the designated thermal measurement point, as shown in APPENDIX. The ambient temperature T_A was measured by several thermocouples at a distance of 5 mm above the reliability test board. The relative humidity within chamber was less than 65%.

For photometry measurement, temperature was set to $25\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, RH <65%.

1.7 Photometry Measurement Uncertainty

The uncertainty of the light output measurements is $U=1.59\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=21\text{K}$ ($K=2$), at the 95% confidence level. This calibration results traceable to the NATIONAL INSTITUTE OF METROLOGY (NIM).

1.8 Sample Set

Sampling Method:

LED samples for IESNA LM-80 testing consist of units built from a minimum of three manufacturing lots with each manufacturing lot built from different wafer lots built on non-consecutive days.

These manufacturing lots are picked to represent a wide parametric distribution.

Each Sample is soldered to all of the reliability stress boards for a given set of IESNA LM-80 tests.

Sample Size:

Total 75Pcs;

Each Ts test condition 25Pcs

The samples tested at Ts 55 °C, Ts 85 °C and Ts 105 °C were received at 2016-01-14 and tested during 2016-01-25 to 2016-10-01. The samples were numbered from 1 to 25, 26 to 50 and 51 to 75

Data Set 1: 55 °C, 60mA

Part Number:	SMD 2835
Number of Units:	25
Actual Case Temperature(T _S):	T _S =54.2 °C
Actual Ambient Temperature(T _A):	T _A =53.5 °C
Life Test Drive Current:	I _F = 60mA
Measurement Current:	I _F = 60mA

Data Set 2: 85 °C,60mA

Part Number:	SMD 2835
Number of Units:	25
Actual Case Temperature(T _S):	T _S =84.3 °C
Actual Ambient Temperature(T _A):	T _A =82.6 °C
Life Test Drive Current:	I _F =60mA
Measurement Current:	I _F = 60mA

Data Set 3: 105 °C, 60mA

Part Number:	SMD 2835
Number of Units:	25
Actual Case Temperature(T _S):	T _S =103.9 °C
Actual Ambient Temperature(T _A):	T _A =102.1 °C
Life Test Drive Current:	I _F = 60mA
Measurement Current:	I _F = 60mA

2 - Summary of Test Result

Data Set:	Data Set 1, 55 °C, 60mA
Number of Units:	25
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h,4000h,5000h,6000h
Average. Lumen Maintenance at 6000 hours:	98.95%
Average Chromaticity Shift at 6000 hours ($\Delta u'v'$):	0.0017
Reported TM-21 L ₇₀ Lifetime:	>36,000 hours

Data Set:	Data Set 2, 85 °C, 60mA
Number of Units:	25
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h,4000h,5000h,6000h
Average. Lumen Maintenance at 6000 hours:	98.37%
Average Chromaticity Shift at 6000 hours($\Delta u'v'$):	0.0019
Reported TM-21 L ₇₀ Lifetime:	>36,000 hours

Data Set:	Data Set 3, 105 °C, 60mA
Number of Units:	25
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h,4000h,5000h,6000h
Average. Lumen Maintenance at 6000 hours:	97.88%
Average Chromaticity Shift at 6000 hours($\Delta u'v'$):	0.0021
Reported TM-21 L ₇₀ Lifetime:	>36,000 hours

3 - Test Data

3.1 Data Set 1, 55 °C, 60mA (Lumen Maintenance)

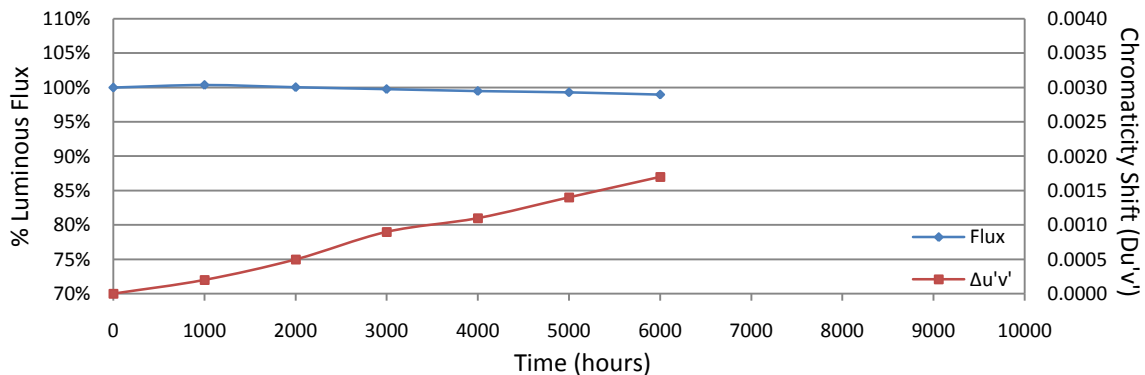
No.	V _F (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	8.792	73.18	100.37	100.14	99.73	99.43	99.10	98.73
2	8.775	73.81	100.51	100.31	100.16	99.89	99.77	99.62
3	8.722	72.89	100.30	100.11	99.79	99.46	99.36	98.98
4	8.727	73.01	100.36	100.10	99.97	99.58	99.48	99.19
5	8.783	71.41	100.07	99.66	99.22	98.91	98.67	98.17
6	8.789	71.68	100.35	100.21	100.11	99.92	99.55	99.26
7	8.783	71.53	100.21	99.87	99.50	99.09	98.74	98.60
8	8.793	71.82	100.17	99.82	99.46	99.23	99.08	98.77
9	8.852	70.30	100.06	99.64	99.20	99.00	98.76	98.46
10	8.755	72.11	100.49	100.32	100.12	99.97	99.78	99.58
11	8.770	69.41	100.63	100.19	99.84	99.55	99.34	98.93
12	8.797	71.44	100.38	100.03	99.90	99.71	99.52	99.03
13	8.798	71.53	100.07	99.65	99.37	99.05	98.74	98.29
14	8.732	71.80	100.60	100.40	100.11	99.81	99.54	99.23
15	8.720	72.64	100.63	100.28	99.97	99.75	99.59	99.27
16	8.769	71.30	100.50	100.13	99.86	99.52	99.28	98.89
17	8.755	72.61	100.26	100.04	99.81	99.67	99.39	99.15
18	8.805	72.24	100.32	99.75	99.53	99.35	99.13	98.91
19	8.817	70.67	100.44	100.25	100.07	99.83	99.65	99.33
20	8.801	69.68	100.30	100.13	99.70	99.56	99.47	99.31
21	8.780	72.56	100.23	99.92	99.79	99.57	99.24	98.91
22	8.734	72.39	100.12	99.71	99.38	99.25	98.95	98.52
23	8.735	72.65	100.43	100.23	99.92	99.60	99.52	99.34
24	8.733	72.99	100.27	99.99	99.47	99.33	99.07	98.67
25	8.773	72.56	100.33	99.74	99.26	98.93	98.84	98.57
Ave.	8.772	71.93	100.34	100.02	99.73	99.48	99.26	98.95
Med.	8.775	72.11	100.33	100.10	99.79	99.55	99.34	98.93
st dev	0.033	1.08	0.1686	0.2352	0.3052	0.3155	0.3371	0.3854
Min.	8.720	69.41	100.06	99.64	99.20	98.91	98.67	98.17
Max.	8.852	73.81	100.63	100.40	100.16	99.97	99.78	99.62

TM-21 Projection:

Test Duration: 6,000 hours
Failures Observed: 0
 α : 2.718E-06
 β : 1.006
Reported L₇₀: >3,6000 hours

3.2 Data Set 1, 55 °C, 60mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2368	0.5118	3461	0.0004	0.0008	0.0012	0.0011	0.0014	0.0016
2	0.2363	0.5119	3474	0.0004	0.0009	0.0013	0.0012	0.0015	0.0017
3	0.2374	0.5127	3433	0.0004	0.0009	0.0013	0.0015	0.0017	0.0021
4	0.2374	0.5127	3433	0.0004	0.0006	0.0010	0.0012	0.0015	0.0017
5	0.2376	0.5108	3448	0.0004	0.0006	0.0008	0.0010	0.0014	0.0015
6	0.2377	0.5107	3444	0.0003	0.0006	0.0010	0.0012	0.0015	0.0017
7	0.2367	0.5114	3469	0.0004	0.0008	0.0010	0.0012	0.0016	0.0017
8	0.2363	0.5130	3462	0.0001	0.0004	0.0009	0.0012	0.0014	0.0017
9	0.2375	0.5088	3472	0.0002	0.0005	0.0010	0.0012	0.0015	0.0017
10	0.2379	0.5119	3427	0.0002	0.0006	0.0010	0.0013	0.0016	0.0018
11	0.2358	0.5050	3569	0.0001	0.0004	0.0009	0.0012	0.0016	0.0018
12	0.2375	0.5095	3465	0.0001	0.0005	0.0010	0.0012	0.0016	0.0019
13	0.2362	0.5124	3473	0.0002	0.0004	0.0007	0.0009	0.0014	0.0016
14	0.2378	0.5122	3427	0.0002	0.0004	0.0008	0.0009	0.0011	0.0016
15	0.2371	0.5108	3463	0.0002	0.0004	0.0008	0.0010	0.0012	0.0016
16	0.2373	0.5137	3426	0.0001	0.0004	0.0008	0.0011	0.0014	0.0017
17	0.2359	0.5136	3468	0.0001	0.0003	0.0005	0.0010	0.0013	0.0017
18	0.2367	0.5110	3471	0.0001	0.0004	0.0005	0.0010	0.0013	0.0016
19	0.2378	0.5130	3417	0.0002	0.0006	0.0008	0.0011	0.0015	0.0019
20	0.2374	0.5115	3446	0.0004	0.0007	0.0008	0.0011	0.0014	0.0020
21	0.2372	0.5113	3454	0.0001	0.0004	0.0005	0.0007	0.0012	0.0015
22	0.2365	0.5121	3467	0.0001	0.0004	0.0005	0.0009	0.0013	0.0016
23	0.2374	0.5119	3441	0.0001	0.0004	0.0005	0.0009	0.0014	0.0017
24	0.2381	0.5127	3412	0.0002	0.0006	0.0007	0.0012	0.0016	0.0019
25	0.2363	0.5125	3468	0.0001	0.0002	0.0006	0.0009	0.0013	0.0017
Ave.	0.2371	0.5116	3456	0.0002	0.0005	0.0009	0.0011	0.0014	0.0017
Med.	0.2373	0.5119	3461	0.0002	0.0005	0.0008	0.0011	0.0014	0.0017
st dev	0.0007	0.0018	30	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001
Min.	0.2358	0.5050	3412	0.0001	0.0002	0.0005	0.0007	0.0011	0.0015
Max.	0.2381	0.5137	3569	0.0004	0.0009	0.0013	0.0015	0.0017	0.0021



3.3 Data Set 2, 85 °C, 60mA (Lumen Maintenance)

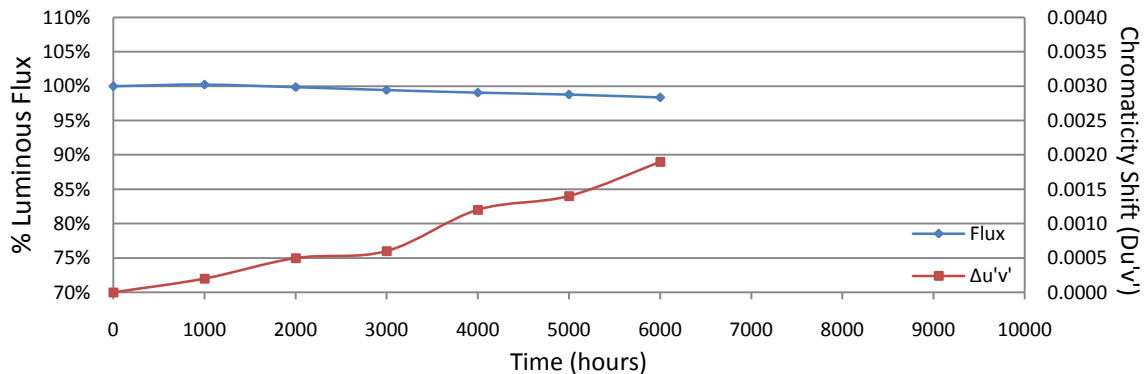
No.	V _F (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	8.819	70.80	100.17	99.53	99.22	98.91	98.52	98.09
27	8.772	71.36	100.31	99.85	99.34	99.06	98.85	98.47
28	8.779	71.28	100.55	100.34	99.94	99.65	99.44	98.92
29	8.735	72.61	100.34	100.06	99.71	99.23	99.09	98.64
30	8.776	73.09	100.45	100.30	100.15	99.79	99.48	99.10
31	8.796	72.04	100.36	100.03	99.47	99.07	98.74	98.40
32	8.790	70.06	100.29	99.79	99.16	98.69	98.37	97.99
33	8.781	73.08	100.16	99.96	99.44	99.12	98.92	98.56
34	8.777	73.12	100.22	99.84	99.10	98.69	98.44	98.11
35	8.791	72.75	100.41	99.82	99.20	98.83	98.76	98.21
36	8.814	72.60	100.07	99.63	99.16	98.61	98.40	97.88
37	8.792	72.34	100.22	99.99	99.38	98.89	98.74	98.37
38	8.798	72.02	100.14	99.81	99.36	98.89	98.65	98.21
39	8.746	72.63	100.07	99.63	99.20	98.97	98.49	98.21
40	8.729	71.74	100.17	99.58	99.29	99.08	98.75	98.54
41	8.810	71.17	100.04	99.89	99.44	99.14	98.78	98.37
42	8.784	70.84	100.18	99.65	99.29	98.80	98.49	98.15
43	8.776	70.23	100.17	100.06	99.79	99.43	99.17	98.62
44	8.770	70.39	100.33	99.94	99.49	99.12	98.95	98.54
45	8.760	71.02	100.49	100.23	99.94	99.72	99.59	99.14
46	8.771	73.84	100.15	99.67	99.38	99.00	98.74	98.44
47	8.782	71.74	100.14	99.68	99.34	99.02	98.62	98.22
48	8.766	72.85	100.18	99.96	99.53	99.12	98.65	98.12
49	8.784	72.43	100.11	99.49	99.21	98.77	98.25	97.94
50	8.735	71.70	100.07	99.69	99.16	98.87	98.41	98.08
Ave.	8.777	71.91	100.23	99.86	99.43	99.06	98.77	98.37
Med.	8.779	72.02	100.18	99.84	99.36	99.02	98.74	98.37
st dev	0.023	1.01	0.1401	0.2311	0.2780	0.3108	0.3556	0.3341
Min.	8.729	70.06	100.04	99.49	99.10	98.61	98.25	97.88
Max.	8.819	73.84	100.55	100.34	100.15	99.79	99.59	99.14

TM-21 Projection:

Test Duration: 6,000 hours
Failures Observed: 0
α: 3.723E-06
β: 1.006
Reported L₇₀: >3,6000 hours

3.4 Data Set 2, 85 °C, 60mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	0.2375	0.5116	3441	0.0003	0.0005	0.0007	0.0013	0.0014	0.0019
27	0.2366	0.5108	3478	0.0003	0.0005	0.0007	0.0012	0.0013	0.0020
28	0.2360	0.5105	3500	0.0004	0.0006	0.0008	0.0014	0.0015	0.0021
29	0.2370	0.5137	3435	0.0001	0.0003	0.0005	0.0011	0.0012	0.0017
30	0.2359	0.5130	3475	0.0001	0.0004	0.0005	0.0011	0.0013	0.0018
31	0.2367	0.5104	3477	0.0001	0.0003	0.0005	0.0011	0.0014	0.0019
32	0.2376	0.5123	3429	0.0001	0.0003	0.0004	0.0010	0.0013	0.0019
33	0.2370	0.5107	3468	0.0002	0.0005	0.0006	0.0013	0.0015	0.0019
34	0.2384	0.5118	3413	0.0002	0.0006	0.0007	0.0014	0.0016	0.0020
35	0.2365	0.5114	3475	0.0002	0.0005	0.0006	0.0012	0.0014	0.0018
36	0.2362	0.5114	3483	0.0001	0.0005	0.0006	0.0013	0.0014	0.0018
37	0.2373	0.5140	3423	0.0002	0.0004	0.0006	0.0012	0.0014	0.0018
38	0.2358	0.5118	3493	0.0002	0.0005	0.0007	0.0013	0.0015	0.0019
39	0.2376	0.5122	3432	0.0002	0.0004	0.0006	0.0012	0.0014	0.0018
40	0.2369	0.5117	3458	0.0002	0.0006	0.0008	0.0013	0.0016	0.0019
41	0.2375	0.5127	3431	0.0001	0.0004	0.0006	0.0012	0.0014	0.0019
42	0.2379	0.5121	3422	0.0002	0.0005	0.0007	0.0013	0.0015	0.0019
43	0.2362	0.5101	3498	0.0001	0.0004	0.0005	0.0012	0.0014	0.0018
44	0.2377	0.5097	3453	0.0001	0.0004	0.0006	0.0012	0.0014	0.0018
45	0.2378	0.5111	3436	0.0001	0.0004	0.0006	0.0011	0.0013	0.0018
46	0.2364	0.5146	3444	0.0002	0.0005	0.0006	0.0012	0.0015	0.0018
47	0.2371	0.5134	3434	0.0002	0.0004	0.0007	0.0013	0.0015	0.0018
48	0.2365	0.5133	3453	0.0001	0.0004	0.0005	0.0012	0.0014	0.0017
49	0.2372	0.5124	3440	0.0001	0.0006	0.0008	0.0014	0.0017	0.0020
50	0.2380	0.5114	3427	0.0002	0.0005	0.0007	0.0013	0.0016	0.0019
Ave.	0.2370	0.5119	3453	0.0002	0.0005	0.0006	0.0012	0.0014	0.0019
Med.	0.2370	0.5118	3444	0.0002	0.0005	0.0006	0.0012	0.0014	0.0019
st dev	0.0007	0.0013	26	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2358	0.5097	3413	0.0001	0.0003	0.0004	0.0010	0.0012	0.0017
Max.	0.2384	0.5146	3500	0.0004	0.0006	0.0008	0.0014	0.0017	0.0021



3.5 Data Set 3, 105 °C, 60mA (Lumen Maintenance)

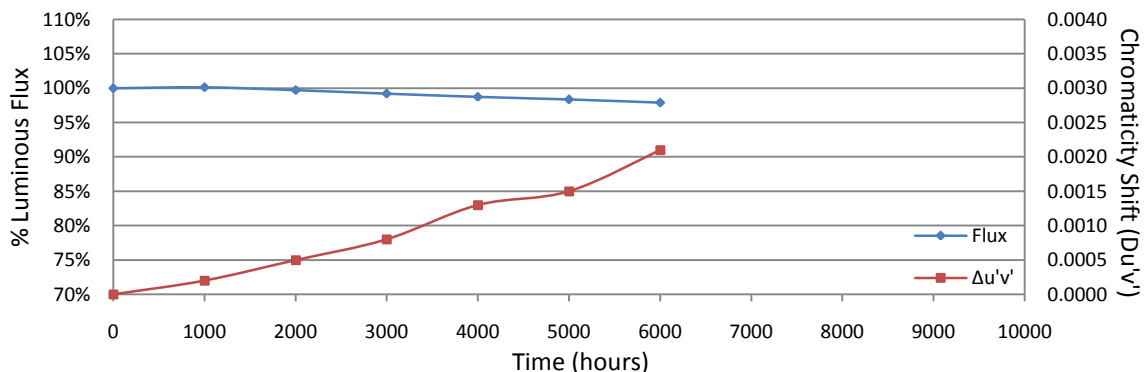
No.	V _F (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
51	8.796	72.44	100.08	99.83	99.49	99.06	98.63	98.25
52	8.777	72.95	100.18	99.81	99.25	98.79	98.68	98.22
53	8.754	72.05	100.15	99.65	99.14	98.51	98.11	97.63
54	8.776	71.43	100.20	99.83	99.38	98.89	98.61	97.93
55	8.788	73.95	100.09	99.49	98.95	98.44	97.94	97.39
56	8.788	72.52	100.12	99.70	99.48	99.02	98.69	98.21
57	8.728	72.64	100.04	99.60	99.22	98.69	98.53	98.03
58	8.778	72.06	99.97	99.79	99.15	98.64	98.27	97.77
59	8.737	72.73	99.63	99.20	98.68	98.24	97.94	97.42
60	8.736	71.89	100.10	99.50	98.94	98.47	97.93	97.38
61	8.780	71.45	100.38	99.75	99.27	98.80	98.70	98.15
62	8.758	72.52	100.08	99.42	98.91	98.36	98.07	97.60
63	8.974	73.08	99.79	99.41	98.80	98.37	97.91	97.32
64	8.713	71.28	100.07	99.45	98.86	98.37	98.06	97.73
65	8.784	72.77	100.19	99.78	99.20	98.76	98.34	98.02
66	8.751	72.62	100.25	99.71	99.53	98.94	98.68	98.24
67	8.726	72.61	100.28	99.92	99.66	99.15	98.84	98.53
68	8.791	72.90	100.29	100.07	99.78	99.12	98.94	98.56
69	8.741	71.60	100.10	99.76	99.12	98.65	98.24	97.88
70	8.806	71.04	100.28	99.87	99.35	98.72	98.35	97.90
71	8.786	71.19	99.82	99.49	98.96	98.48	98.05	97.61
72	8.719	73.07	100.23	99.73	99.23	98.71	98.41	97.78
73	8.800	72.37	100.23	99.83	99.31	98.91	98.45	97.97
74	8.748	72.62	100.28	100.17	99.64	99.20	98.94	98.50
75	8.757	72.63	99.85	99.28	98.68	98.18	97.44	96.96
Ave.	8.772	72.34	100.11	99.68	99.20	98.70	98.35	97.88
Med.	8.776	72.52	100.12	99.73	99.22	98.71	98.35	97.90
st dev	0.050	0.70	0.1791	0.2320	0.3021	0.2915	0.3798	0.4084
Min.	8.713	71.04	99.63	99.20	98.68	98.18	97.44	96.96
Max.	8.974	73.95	100.38	100.17	99.78	99.20	98.94	98.56

TM-21 Projection:

Test Duration: 6,000 hours
Failures Observed: 0
α: 4.514E-06
β: 1.006
Reported L₇₀: >3,6000 hours

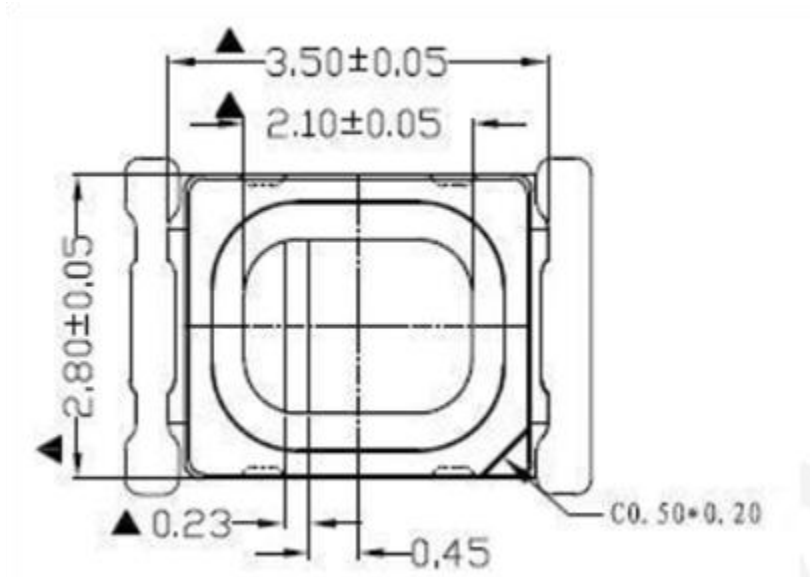
3.6 Data Set 3, 105 °C, 60mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
51	0.2363	0.5106	3489	0.0002	0.0005	0.0006	0.0013	0.0014	0.0020
52	0.2367	0.5135	3446	0.0002	0.0004	0.0006	0.0012	0.0013	0.0020
53	0.2379	0.5125	3420	0.0002	0.0006	0.0010	0.0014	0.0016	0.0023
54	0.2369	0.5130	3444	0.0001	0.0004	0.0008	0.0014	0.0015	0.0021
55	0.2373	0.5125	3439	0.0001	0.0004	0.0008	0.0014	0.0016	0.0021
56	0.2374	0.5132	3428	0.0001	0.0003	0.0006	0.0012	0.0014	0.0021
57	0.2374	0.5120	3440	0.0001	0.0003	0.0006	0.0013	0.0014	0.0021
58	0.2371	0.5127	3441	0.0002	0.0004	0.0005	0.0011	0.0013	0.0019
59	0.2378	0.5125	3422	0.0004	0.0007	0.0008	0.0014	0.0016	0.0023
60	0.2363	0.5124	3469	0.0002	0.0004	0.0006	0.0010	0.0011	0.0018
61	0.2380	0.5117	3424	0.0002	0.0004	0.0008	0.0012	0.0015	0.0022
62	0.2367	0.5132	3450	0.0003	0.0005	0.0009	0.0014	0.0017	0.0023
63	0.2367	0.5142	3438	0.0004	0.0007	0.0010	0.0015	0.0016	0.0023
64	0.2373	0.5105	3460	0.0003	0.0006	0.0009	0.0013	0.0016	0.0022
65	0.2377	0.5116	3435	0.0002	0.0004	0.0007	0.0011	0.0012	0.0019
66	0.2370	0.5098	3476	0.0002	0.0005	0.0008	0.0013	0.0014	0.0020
67	0.2380	0.5127	3415	0.0003	0.0004	0.0007	0.0012	0.0013	0.0019
68	0.2367	0.5131	3450	0.0003	0.0004	0.0008	0.0012	0.0014	0.0019
69	0.2367	0.5110	3472	0.0002	0.0004	0.0007	0.0012	0.0014	0.0020
70	0.2369	0.5099	3477	0.0003	0.0005	0.0007	0.0012	0.0014	0.0020
71	0.2373	0.5111	3454	0.0004	0.0006	0.0010	0.0014	0.0016	0.0022
72	0.2378	0.5124	3423	0.0002	0.0004	0.0005	0.0012	0.0015	0.0020
73	0.2363	0.5104	3492	0.0003	0.0004	0.0007	0.0011	0.0013	0.0019
74	0.2383	0.5115	3417	0.0003	0.0008	0.0013	0.0018	0.0019	0.0025
75	0.2378	0.5122	3425	0.0001	0.0005	0.0009	0.0013	0.0015	0.0022
Ave.	0.2372	0.5120	3446	0.0002	0.0005	0.0008	0.0013	0.0015	0.0021
Med.	0.2373	0.5124	3441	0.0002	0.0004	0.0008	0.0013	0.0014	0.0021
st dev	0.0006	0.0012	23	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
Min.	0.2363	0.5098	3415	0.0001	0.0003	0.0005	0.0010	0.0011	0.0018
Max.	0.2383	0.5142	3492	0.0004	0.0008	0.0013	0.0018	0.0019	0.0025



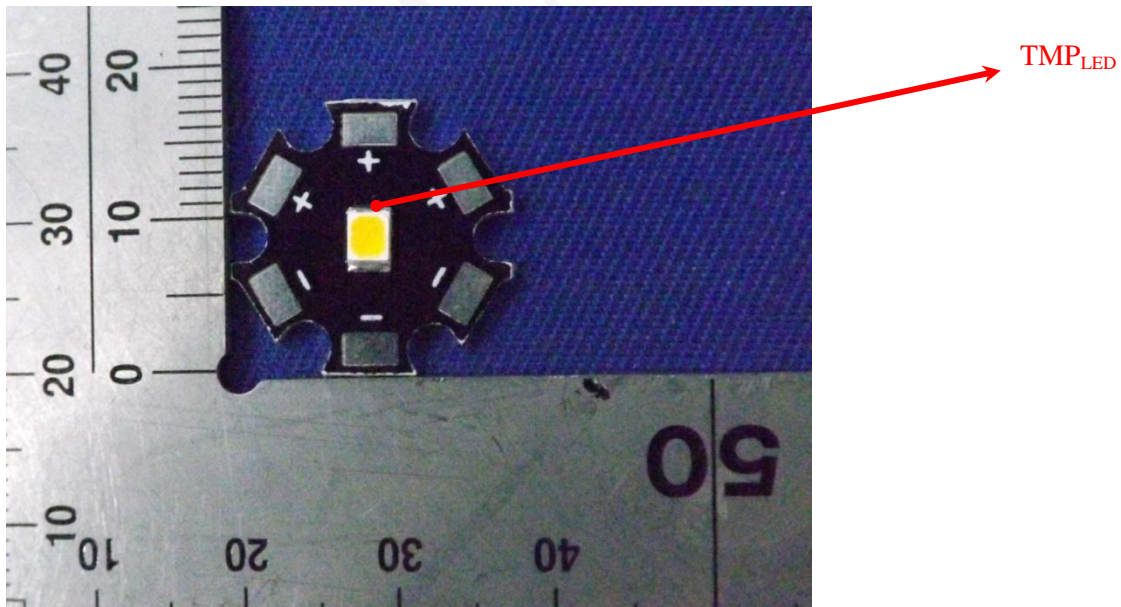
Attachment A – EUT Photo

A.1 Mechanical Dimensions (Ta = 25 °C)



All dimensions are in millimeter

A.2 EUT Photo



*****END OF REPORT*****