



# IESNA LM-80-2008

MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES

## MEASUREMENT AND TEST REPORT

For

### Fujian Lightning Optoelectronic Co., Ltd. Shenzhen Branch

5F, Building B, second phase of Chuangjian Industrial Area, YingRenShi community, Shiyan Street,  
Baonan District,

**Model: T3C**

<b>Report Type:</b> 3000 Hours Test Report	<b>Product Type:</b> LED Package
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<b>Report Number:</b> RSZ150323502-10	
<b>Test Date:</b> 2015-03-24 to 2015-07-27	
<b>Report Date:</b> 2015-08-10	
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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: T3C  
 Part Name: 3030  
 Part Type: LED Package  
 Nominal CCT: 3000K

### 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	380-780nm, Diameter:0.3m,0-1999Lumen	2015-03-25	2016-03-25
Programmable Test Power for LEDs	EVERFINE	LED300E	1008002	15V/2000mA	2015-03-05	2016-03-05
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	380-780nm	2015-03-25	2016-03-25
Standard Light Source	EVERFINE	D062	1011093	N/A	2015-08-05	2016-08-05
Precision digital stabilized DC power supply	EVERFINE	WY605	G115987C J7321114	300VA	2015-03-05	2016-03-05
Multilayer aging machine	BACL	B2-270	20022	25°C~110°C	2014-10-27	2015-10-27
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090007	(50V/15A)	2015-03-05	2016-03-05
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090005	(50V/15A)	2015-3-5	2016-3-4

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090006	(50V/15A)	2015-3-5	2016-3-4

### 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 66Pcs;

Each Ts test condition 22Pcs

The samples tested at Ts 55 °C, Ts 85 °C and Ts 105 °C were received at 2015-03-23 and tested during 2015-03-24 to 2015-07-27. The samples were numbered from 1 to 22, 23 to 44 and 45 to 66

#### Data Set 1: 55 °C, 60mA

Part Number:	T3C
Number of Units:	22
Actual Case Temperature(T <sub>S</sub> ):	T <sub>S</sub> =54.3 °C
Actual Ambient Temperature(T <sub>A</sub> ):	T <sub>A</sub> =51.4 °C
Life Test Drive Current:	I <sub>F</sub> = 60mA
Measurement Current:	I <sub>F</sub> = 60mA

#### Data Set 2: 85 °C,60mA

Part Number:	T3C
Number of Units:	22
Actual Case Temperature(T <sub>S</sub> ):	T <sub>S</sub> =84.2 °C
Actual Ambient Temperature(T <sub>A</sub> ):	T <sub>A</sub> =82.4 °C
Life Test Drive Current:	I <sub>F</sub> =60mA
Measurement Current:	I <sub>F</sub> = 60mA

#### Data Set 3: 105 °C, 60mA

Part Number:	T3C
Number of Units:	22
Actual Case Temperature(T <sub>S</sub> ):	T <sub>S</sub> =104.4 °C
Actual Ambient Temperature(T <sub>A</sub> ):	T <sub>A</sub> =103.2 °C
Life Test Drive Current:	I <sub>F</sub> = 60mA
Measurement Current:	I <sub>F</sub> = 60mA

## 2 - SUMMARY OF TEST RESULT

<b>Data Set:</b>	<b>Data Set 1, 55 °C, 60mA</b>
Number of Units:	22
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h
Average. Lumen Maintenance at 3000 hours:	98.50%
Average Chromaticity Shift at 3000 hours ( $\Delta u'v'$ ):	0.0012
Reported TM-21 L <sub>70</sub> Lifetime:	>TBD hours

<b>Data Set:</b>	<b>Data Set 2, 85 °C, 60mA</b>
Number of Units:	22
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h
Average. Lumen Maintenance at 3000 hours:	98.06%
Average Chromaticity Shift at 3000 hours( $\Delta u'v'$ ):	0.0012
Reported TM-21 L <sub>70</sub> Lifetime:	>TBD hours

<b>Data Set:</b>	<b>Data Set 3, 105 °C, 60mA</b>
Number of Units:	22
Failures Observed:	0
Test Interval and Test Duration:	0h,1000h,2000h,3000h
Average. Lumen Maintenance at 3000 hours:	97.51%
Average Chromaticity Shift at 3000 hours( $\Delta u'v'$ ):	0.0014
Reported TM-21 L <sub>70</sub> Lifetime:	>TBD hours

### 3 - Test Data

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

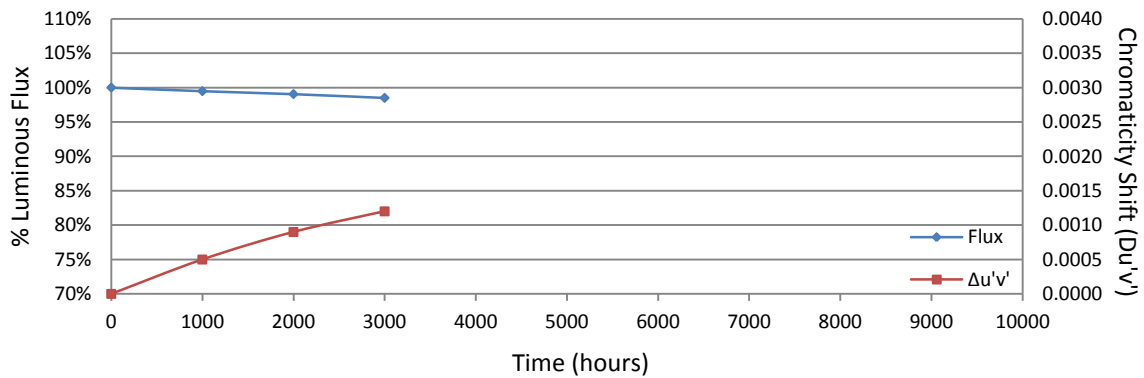
No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	18.34	135.2	99.63	99.11	98.67	TBD	TBD	TBD
2	18.17	135.4	99.34	98.97	98.08	TBD	TBD	TBD
3	18.07	129.0	99.38	98.99	98.22	TBD	TBD	TBD
4	18.10	131.3	99.31	98.93	98.17	TBD	TBD	TBD
5	18.08	133.5	99.55	99.18	98.88	TBD	TBD	TBD
6	18.09	132.1	99.55	99.17	99.02	TBD	TBD	TBD
7	18.28	135.6	99.34	98.75	98.60	TBD	TBD	TBD
8	18.11	134.3	99.63	99.18	98.29	TBD	TBD	TBD
9	17.95	129.6	99.77	99.15	98.15	TBD	TBD	TBD
10	18.15	135.1	99.56	99.11	98.30	TBD	TBD	TBD
11	18.20	136.5	99.71	99.49	98.24	TBD	TBD	TBD
12	18.01	128.4	99.69	99.22	98.52	TBD	TBD	TBD
13	18.33	137.3	99.71	99.56	98.98	TBD	TBD	TBD
14	18.23	134.5	99.55	99.11	98.59	TBD	TBD	TBD
15	18.14	139.3	99.64	99.21	98.64	TBD	TBD	TBD
16	18.22	135.3	99.33	99.04	98.37	TBD	TBD	TBD
17	18.36	135.0	99.41	98.96	98.52	TBD	TBD	TBD
18	18.08	131.3	99.39	98.71	98.40	TBD	TBD	TBD
19	18.16	133.6	99.40	98.88	98.43	TBD	TBD	TBD
20	18.03	134.7	99.48	98.81	98.52	TBD	TBD	TBD
21	18.20	134.3	99.11	98.66	98.59	TBD	TBD	TBD
22	18.19	135.7	99.34	98.82	98.75	TBD	TBD	TBD
Ave.	18.16	134.0	99.49	99.05	98.50	TBD	TBD	TBD
Med.	18.16	134.6	99.51	99.07	98.52	TBD	TBD	TBD
st dev	0.11	2.7	0.1688	0.2300	0.2622	TBD	TBD	TBD
Min.	17.95	128.4	99.11	98.66	98.08	TBD	TBD	TBD
Max.	18.36	139.3	99.77	99.56	99.02	TBD	TBD	TBD

#### TM-21 Projection:

**Test Duration:** 3000 hours  
**Failures Observed:** 0  
**α:** TBD  
**β:** TBD  
**Calculated L<sub>70</sub>:** TBD hours  
**Reported L<sub>70</sub>:** TBD hours

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

No.	u'	v'	CCT(K)	Chromaticity Shift ( $\Delta u'v'$ )					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2507	0.5212	2998	0.0005	0.0009	0.0012	TBD	TBD	TBD
2	0.2514	0.5225	2973	0.0004	0.0008	0.0012	TBD	TBD	TBD
3	0.2512	0.5223	2979	0.0006	0.0009	0.0013	TBD	TBD	TBD
4	0.2518	0.5207	2973	0.0005	0.0008	0.0011	TBD	TBD	TBD
5	0.2510	0.5215	2989	0.0005	0.0008	0.0011	TBD	TBD	TBD
6	0.2509	0.5223	2986	0.0004	0.0009	0.0013	TBD	TBD	TBD
7	0.2521	0.5239	2949	0.0006	0.0010	0.0014	TBD	TBD	TBD
8	0.2514	0.5227	2971	0.0004	0.0009	0.0013	TBD	TBD	TBD
9	0.2521	0.5203	2970	0.0006	0.0010	0.0013	TBD	TBD	TBD
10	0.2519	0.5247	2947	0.0005	0.0009	0.0013	TBD	TBD	TBD
11	0.2513	0.5222	2978	0.0005	0.0009	0.0014	TBD	TBD	TBD
12	0.2520	0.5222	2961	0.0006	0.0010	0.0014	TBD	TBD	TBD
13	0.2498	0.5204	3026	0.0006	0.0010	0.0014	TBD	TBD	TBD
14	0.2515	0.5205	2984	0.0004	0.0009	0.0012	TBD	TBD	TBD
15	0.2514	0.5222	2975	0.0005	0.0008	0.0010	TBD	TBD	TBD
16	0.2513	0.5225	2974	0.0004	0.0008	0.0011	TBD	TBD	TBD
17	0.2521	0.5224	2958	0.0006	0.0010	0.0012	TBD	TBD	TBD
18	0.2510	0.5202	2998	0.0006	0.0009	0.0011	TBD	TBD	TBD
19	0.2518	0.5208	2975	0.0006	0.0009	0.0012	TBD	TBD	TBD
20	0.2513	0.5222	2977	0.0005	0.0009	0.0011	TBD	TBD	TBD
21	0.2508	0.5214	2994	0.0005	0.0010	0.0013	TBD	TBD	TBD
22	0.2527	0.5233	2936	0.0004	0.0009	0.0014	TBD	TBD	TBD
Ave.	0.2514	0.5219	2976	0.0005	0.0009	0.0012	TBD	TBD	TBD
Med.	0.2514	0.5222	2975	0.0005	0.0009	0.0012	TBD	TBD	TBD
st dev	0.0006	0.0012	19.4483	0.0001	0.0001	0.0001	TBD	TBD	TBD
Min.	0.2498	0.5202	2936	0.0004	0.0008	0.0010	TBD	TBD	TBD
Max.	0.2527	0.5247	3026	0.0006	0.0010	0.0014	TBD	TBD	TBD





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

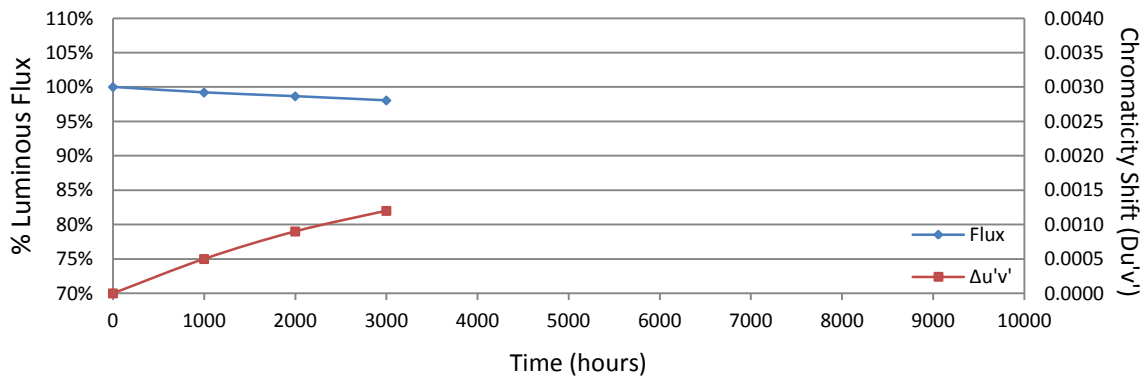
No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
23	18.29	136.7	99.05	98.46	98.17	TBD	TBD	TBD
24	18.19	135.3	99.48	99.04	98.37	TBD	TBD	TBD
25	18.18	136.0	99.34	98.90	98.38	TBD	TBD	TBD
26	18.22	136.5	99.34	98.75	98.10	TBD	TBD	TBD
27	18.27	134.7	99.33	98.74	98.14	TBD	TBD	TBD
28	18.26	135.5	99.41	98.67	98.08	TBD	TBD	TBD
29	18.12	128.5	99.53	99.07	98.37	TBD	TBD	TBD
30	18.04	134.5	99.48	98.96	98.29	TBD	TBD	TBD
31	18.20	132.4	99.62	99.02	98.34	TBD	TBD	TBD
32	18.23	135.0	99.33	98.89	98.22	TBD	TBD	TBD
33	18.13	135.0	99.26	98.74	98.15	TBD	TBD	TBD
34	18.17	137.0	99.27	98.69	98.10	TBD	TBD	TBD
35	18.48	136.2	98.83	98.09	97.58	TBD	TBD	TBD
36	18.38	135.2	98.89	98.30	97.93	TBD	TBD	TBD
37	18.18	136.2	99.05	98.38	97.94	TBD	TBD	TBD
38	18.07	131.3	99.01	98.40	97.87	TBD	TBD	TBD
39	18.42	137.1	98.91	98.54	97.81	TBD	TBD	TBD
40	18.24	133.0	99.10	98.72	98.05	TBD	TBD	TBD
41	18.16	135.4	99.11	98.52	98.01	TBD	TBD	TBD
42	18.08	134.4	99.40	98.88	98.14	TBD	TBD	TBD
43	18.26	133.5	98.95	98.35	97.68	TBD	TBD	TBD
44	18.12	135.9	98.97	98.31	97.50	TBD	TBD	TBD
Ave.	18.21	134.8	99.21	98.66	98.06	TBD	TBD	TBD
Med.	18.20	135.3	99.26	98.70	98.10	TBD	TBD	TBD
st dev	0.11	2.0	0.2341	0.2759	0.2504	TBD	TBD	TBD
Min.	18.04	128.5	98.83	98.09	97.50	TBD	TBD	TBD
Max.	18.48	137.1	99.62	99.07	98.38	TBD	TBD	TBD

TM-21 Projection:

**Test Duration:** 3000 hours  
**Failures Observed:** 0  
**α:** TBD  
**β:** TBD  
**Calculated L<sub>70</sub>:** TBD hours  
**Reported L<sub>70</sub>:** TBD hours

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

No.	u'	v'	CCT(K)	Chromaticity Shift ( $\Delta u'v'$ )					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
23	0.2517	0.5219	2970	0.0006	0.0009	0.0014	TBD	TBD	TBD
24	0.2516	0.5221	2971	0.0005	0.0008	0.0011	TBD	TBD	TBD
25	0.2515	0.5211	2979	0.0004	0.0008	0.0011	TBD	TBD	TBD
26	0.2531	0.5248	2919	0.0004	0.0008	0.0013	TBD	TBD	TBD
27	0.2532	0.5239	2922	0.0005	0.0008	0.0013	TBD	TBD	TBD
28	0.2518	0.5227	2961	0.0004	0.0008	0.0011	TBD	TBD	TBD
29	0.2522	0.5239	2947	0.0005	0.0009	0.0012	TBD	TBD	TBD
30	0.2506	0.5222	2994	0.0004	0.0008	0.0011	TBD	TBD	TBD
31	0.2525	0.5213	2953	0.0004	0.0008	0.0011	TBD	TBD	TBD
32	0.2519	0.5218	2965	0.0005	0.0010	0.0013	TBD	TBD	TBD
33	0.2510	0.5214	2988	0.0004	0.0008	0.0011	TBD	TBD	TBD
34	0.2522	0.5237	2946	0.0004	0.0008	0.0011	TBD	TBD	TBD
35	0.2524	0.5231	2946	0.0004	0.0009	0.0013	TBD	TBD	TBD
36	0.2514	0.5229	2972	0.0005	0.0010	0.0013	TBD	TBD	TBD
37	0.2510	0.5226	2981	0.0004	0.0010	0.0013	TBD	TBD	TBD
38	0.2526	0.5218	2949	0.0004	0.0009	0.0012	TBD	TBD	TBD
39	0.2516	0.5247	2956	0.0004	0.0010	0.0012	TBD	TBD	TBD
40	0.2528	0.5228	2939	0.0004	0.0009	0.0014	TBD	TBD	TBD
41	0.2495	0.5207	3030	0.0005	0.0009	0.0012	TBD	TBD	TBD
42	0.2514	0.5217	2978	0.0004	0.0010	0.0012	TBD	TBD	TBD
43	0.2518	0.5221	2966	0.0004	0.0010	0.0012	TBD	TBD	TBD
44	0.2505	0.5208	3006	0.0005	0.0011	0.0013	TBD	TBD	TBD
Ave.	0.2517	0.5225	2965	0.0005	0.0009	0.0012	TBD	TBD	TBD
Med.	0.2518	0.5222	2966	0.0004	0.0009	0.0012	TBD	TBD	TBD
st dev	0.0009	0.0012	25.9937	0.0000	0.0001	0.0001	TBD	TBD	TBD
Min.	0.2495	0.5207	2919	0.0004	0.0008	0.0011	TBD	TBD	TBD
Max.	0.2532	0.5248	3030	0.0006	0.0011	0.0014	TBD	TBD	TBD



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

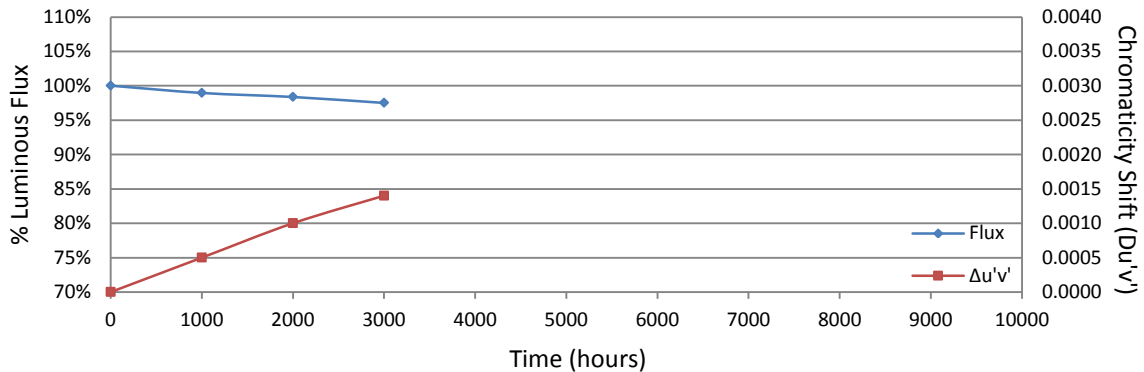
No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
45	18.16	133.5	99.03	98.43	97.75	TBD	TBD	TBD
46	18.15	128.1	98.91	98.20	97.42	TBD	TBD	TBD
47	18.17	128.3	98.91	98.36	97.12	TBD	TBD	TBD
48	18.27	134.8	98.89	98.37	97.33	TBD	TBD	TBD
49	18.29	132.8	98.80	98.34	97.36	TBD	TBD	TBD
50	18.19	132.1	99.02	98.49	97.50	TBD	TBD	TBD
51	18.36	134.5	99.11	98.44	97.47	TBD	TBD	TBD
52	18.07	132.6	99.02	98.42	97.44	TBD	TBD	TBD
53	18.35	131.0	98.93	98.47	97.71	TBD	TBD	TBD
54	18.04	133.0	98.87	98.42	97.67	TBD	TBD	TBD
55	18.20	134.9	98.89	98.30	97.78	TBD	TBD	TBD
56	18.05	132.8	98.95	98.34	97.82	TBD	TBD	TBD
57	18.19	135.9	99.19	98.60	97.94	TBD	TBD	TBD
58	18.13	129.4	99.00	98.38	98.15	TBD	TBD	TBD
59	18.14	131.0	98.78	98.09	97.18	TBD	TBD	TBD
60	18.46	136.2	99.19	98.68	97.14	TBD	TBD	TBD
61	18.03	129.1	99.15	98.53	97.91	TBD	TBD	TBD
62	18.21	133.0	98.80	98.35	97.37	TBD	TBD	TBD
63	18.25	134.2	98.81	98.21	97.32	TBD	TBD	TBD
64	18.22	134.8	98.81	98.29	97.40	TBD	TBD	TBD
65	18.14	134.9	98.89	98.37	97.48	TBD	TBD	TBD
66	18.31	136.6	98.98	98.10	96.93	TBD	TBD	TBD
Ave.	18.20	132.9	98.95	98.37	97.51	TBD	TBD	TBD
Med.	18.19	133.0	98.92	98.37	97.45	TBD	TBD	TBD
st dev	0.11	2.5	0.1264	0.1429	0.3025	TBD	TBD	TBD
Min.	18.03	128.1	98.78	98.09	96.93	TBD	TBD	TBD
Max.	18.46	136.6	99.19	98.68	98.15	TBD	TBD	TBD

TM-21 Projection:

**Test Duration:** 3000 hours  
**Failures Observed:** 0  
**α:** TBD  
**β:** TBD  
**Calculated L<sub>70</sub>:** TBD hours  
**Reported L<sub>70</sub>:** TBD hours

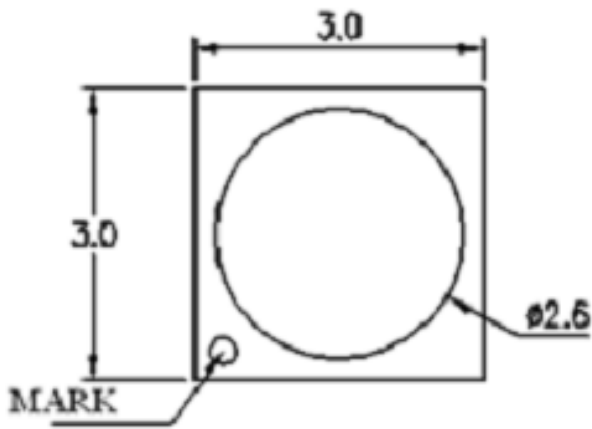
### 3.6 Data Set 3, 105 °C, 60 mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ( $\Delta u'v'$ )					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
45	0.2511	0.5206	2992	0.0005	0.0010	0.0014	TBD	TBD	TBD
46	0.2514	0.5208	2984	0.0006	0.0011	0.0014	TBD	TBD	TBD
47	0.2523	0.5217	2956	0.0004	0.0010	0.0014	TBD	TBD	TBD
48	0.2518	0.5223	2965	0.0006	0.0011	0.0015	TBD	TBD	TBD
49	0.2522	0.5223	2955	0.0005	0.0010	0.0013	TBD	TBD	TBD
50	0.2513	0.5229	2972	0.0005	0.0010	0.0013	TBD	TBD	TBD
51	0.2528	0.5230	2937	0.0004	0.0009	0.0013	TBD	TBD	TBD
52	0.2516	0.5233	2963	0.0004	0.0009	0.0014	TBD	TBD	TBD
53	0.2523	0.5233	2946	0.0005	0.0011	0.0014	TBD	TBD	TBD
54	0.2509	0.5202	3000	0.0006	0.0011	0.0014	TBD	TBD	TBD
55	0.2511	0.5202	2995	0.0004	0.0010	0.0013	TBD	TBD	TBD
56	0.2500	0.5214	3014	0.0004	0.0010	0.0013	TBD	TBD	TBD
57	0.2533	0.5236	2922	0.0004	0.0011	0.0015	TBD	TBD	TBD
58	0.2520	0.5217	2963	0.0004	0.0011	0.0013	TBD	TBD	TBD
59	0.2522	0.5222	2957	0.0006	0.0011	0.0015	TBD	TBD	TBD
60	0.2526	0.5228	2941	0.0004	0.0010	0.0014	TBD	TBD	TBD
61	0.2509	0.5221	2988	0.0004	0.0011	0.0015	TBD	TBD	TBD
62	0.2529	0.5228	2936	0.0004	0.0009	0.0014	TBD	TBD	TBD
63	0.2516	0.5246	2955	0.0004	0.0010	0.0014	TBD	TBD	TBD
64	0.2518	0.5237	2955	0.0004	0.0010	0.0014	TBD	TBD	TBD
65	0.2518	0.5218	2968	0.0004	0.0011	0.0015	TBD	TBD	TBD
66	0.2507	0.5215	2995	0.0004	0.0011	0.0015	TBD	TBD	TBD
Ave.	0.2518	0.5222	2966	0.0005	0.0010	0.0014	TBD	TBD	TBD
Med.	0.2518	0.5223	2963	0.0004	0.0010	0.0014	TBD	TBD	TBD
st dev	0.0008	0.0012	23.8335	0.0001	0.0001	0.0001	TBD	TBD	TBD
Min.	0.2500	0.5202	2922	0.0004	0.0009	0.0013	TBD	TBD	TBD
Max.	0.2533	0.5246	3014	0.0006	0.0011	0.0015	TBD	TBD	TBD



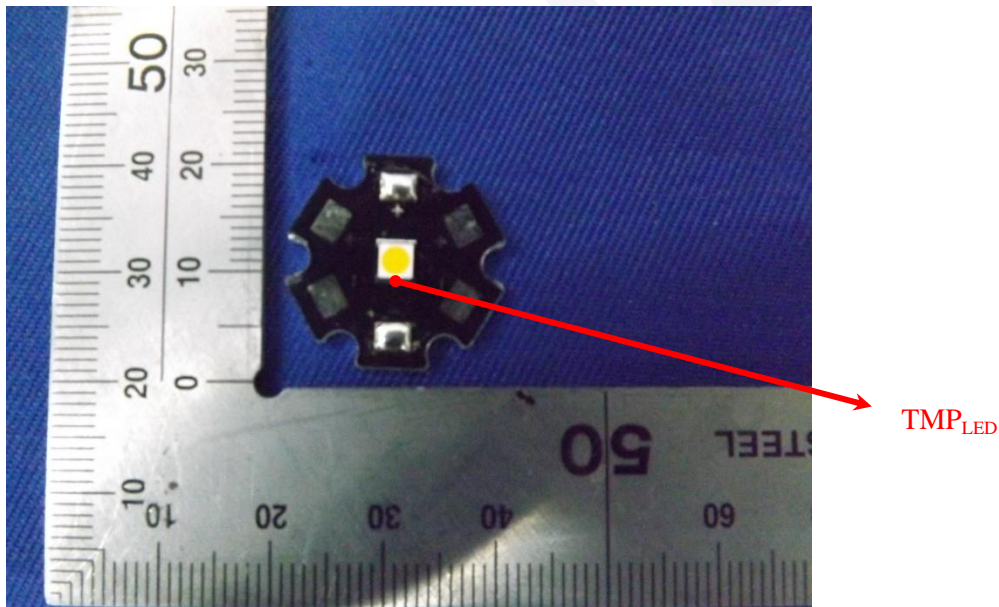
## Appendix A – EUT PHOTO

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



All dimensions are in millimeter

### A.2 EUT Photo



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