

# IESNA LM-80-2008

## MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES

### MEASUREMENT AND TEST REPORT

For

### Shenzhen Runlite Technology Co.,Ltd

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ShenZhen City, GuangDong Province , CHINA

**Model: T2835**

<b>Report Type:</b> 6000 Hours Test Report		<b>Product Type:</b> LED Package	
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<b>Report Number:</b>	RSZ121114501-10		
<b>Test Date:</b>	2012-11-15 to 2013-07-23		
<b>Report Date:</b>	2013-08-02		
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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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## TABLE OF CONTENTS

<b>1 - GENERAL INFORMATION.....</b>	<b>3</b>
1.1 DESCRIPTION OF LED LIGHT SOURCES .....	3
1.2 STANDARDS USED:.....	3
1.3 TEST FACILITY .....	3
1.4 DESCRIPTION OF AUXILIARY EQUIPMENT .....	3
1.5 OPERATING CYCLE.....	3
1.6 AMBIENT CONDITIONS .....	3
1.7 PHOTOMETRY MEASUREMENT UNCERTAINTY .....	4
1.8 SAMPLE SET .....	4
<b>2 - SUMMARY OF TEST RESULT .....</b>	<b>5</b>
<b>3 - TEST DATA .....</b>	<b>6</b>
3.1 DATA SET 1, 55°C, 60MA (LUMEN MAINTENANCE) .....	6
3.2 DATA SET 1, 55°C, 60MA (CHROMATICITY SHIFT) .....	7
3.3 DATA SET 2, 70°C, 60MA (LUMEN MAINTENANCE) .....	8
3.4 DATA SET 2, 70°C, 60MA (CHROMATICITY SHIFT) .....	9
3.5 DATA SET 3, 85°C, 60MA (LUMEN MAINTENANCE) .....	10
3.6 DATA SET 3, 85°C, 60MA (CHROMATICITY SHIFT) .....	11
<b>APPENDIX A – EUT PHOTO .....</b>	<b>12</b>
A.1 MECHANICAL DIMENSIONS (TA = 25°C) .....	12
A.2 EUT PHOTO .....	12

## 1 - GENERAL INFORMATION

### 1.1 Description of LED Light Sources

Devices tested

Part Number: T2835  
 Part Name: /  
 Part Type: LED Package  
 Nominal CCT: 2700K

### 1.2 Standards Used:

- IESNA LM-80-08: IESNA 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, length:0.3M ,0-1999LUMEN	2013-03-08	2014-03-08
Programmable Test Power for LEDs	EVERFINE	LED300E	1008002	15V/2000mA	2013-03-25	2014-03-25
Standard Light Source	EVERFINE	D062	1011064	N/A	2013-03-08	2014-03-08
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	380-780nm	2013-03-08	2014-03-08

### 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  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , 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

### Data Set 1: 55°C, 60mA

Part Number:	T2835
Number of Units:	25
Actual Case Temperature( $T_S$ ):	$T_S = 55.6^{\circ}\text{C}$
Actual Ambient Temperature( $T_A$ ):	$T_A = 54.3^{\circ}\text{C}$
Life Test Drive Current:	$I_F = 60\text{mA}$
Measurement Current:	$I_F = 60\text{mA}$

### Data Set 2: 70°C, 60mA

Part Number:	T2835
Number of Units:	25
Actual Case Temperature( $T_S$ ):	$T_S = 71.1^{\circ}\text{C}$
Actual Ambient Temperature( $T_A$ ):	$T_A = 69.8^{\circ}\text{C}$
Life Test Drive Current:	$I_F = 60\text{mA}$
Measurement Current:	$I_F = 60\text{mA}$

### Data Set 3: 85°C, 60mA

Part Number:	T2835
Number of Units:	25
Actual Case Temperature( $T_S$ ):	$T_S = 84.4^{\circ}\text{C}$
Actual Ambient Temperature( $T_A$ ):	$T_A = 83.5^{\circ}\text{C}$
Life Test Drive Current:	$I_F = 60\text{mA}$
Measurement Current:	$I_F = 60\text{mA}$

## 2 - SUMMARY OF TEST RESULT

<b>Data Set:</b>	<b>Data Set 1, 55°C, 60mA</b>
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:	96.55%
Average Chromaticity Shift at 6000 hours ( $\Delta u'v'$ ):	0.0014
Reported TM-21 L <sub>70</sub> Lifetime:	>36,000 hours

<b>Data Set:</b>	<b>Data Set 2, 70°C, 60mA</b>
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:	96.14%
Average Chromaticity Shift at 6000 hours( $\Delta u'v'$ ):	0.0014
Reported TM-21 L <sub>70</sub> Lifetime	>36,000 hours

<b>Data Set:</b>	<b>Data Set 3, 85°C, 60mA</b>
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:	95.47%
Average Chromaticity Shift at 6000 hours( $\Delta u'v'$ ):	0.0014
Reported TM-21 L <sub>70</sub> Lifetime	>36,000 hours

### 3 - Test Data

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

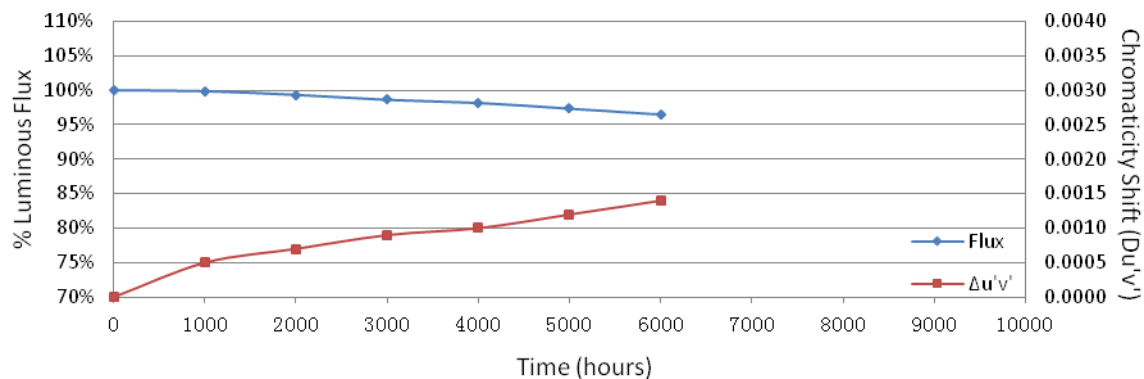
No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	3.115	20.15	99.55	99.16	98.61	98.21	97.42	96.72
2	3.136	20.40	99.51	99.07	98.63	98.28	97.40	96.47
3	3.096	19.94	99.95	99.40	98.80	98.35	97.29	96.44
4	3.108	19.85	99.40	99.09	98.59	98.19	97.43	96.73
5	3.130	20.29	99.90	99.36	98.67	98.37	97.29	96.50
6	3.119	19.99	99.75	99.05	98.30	98.15	97.35	96.55
7	3.119	19.58	100.15	99.64	98.47	98.21	97.45	96.73
8	3.132	19.72	99.95	99.34	98.48	98.02	97.21	96.50
9	3.128	19.06	99.42	99.06	98.43	98.16	97.38	96.64
10	3.129	19.36	100.05	99.59	98.81	98.30	97.21	96.69
11	3.125	20.04	99.80	99.40	98.75	98.30	97.21	96.41
12	3.130	20.02	99.75	99.20	98.50	98.10	97.30	96.65
13	3.132	19.61	100.10	99.49	98.78	98.16	97.50	96.63
14	3.132	20.19	99.95	99.36	98.81	98.17	97.23	96.43
15	3.135	19.67	99.90	99.29	98.63	98.07	97.36	96.39
16	3.105	20.09	100.00	99.55	98.51	98.11	97.31	96.57
17	3.120	19.49	100.05	99.54	98.72	98.31	97.43	96.41
18	3.124	20.07	100.00	99.40	98.60	98.26	97.36	96.36
19	3.103	20.08	99.70	99.10	98.61	98.21	97.41	96.56
20	3.133	19.91	99.65	99.25	98.54	98.14	97.39	96.48
21	3.130	19.95	99.90	99.35	98.80	98.30	97.59	96.74
22	3.111	20.04	100.15	99.55	98.65	98.20	97.50	96.66
23	3.086	19.69	99.95	99.44	98.58	98.02	97.56	96.39
24	3.089	20.23	99.95	99.36	98.76	98.07	97.53	96.69
25	3.130	19.74	99.95	99.49	98.83	98.13	97.32	96.40
Ave.	3.120	19.89	99.86	99.34	98.63	98.19	97.38	96.55
Med.	3.125	19.95	99.95	99.36	98.63	98.19	97.38	96.55
st dev	0.0146	0.3113	0.2156	0.1791	0.1403	0.0983	0.1096	0.1286
Min.	3.086	19.06	99.40	99.05	98.30	98.02	97.21	96.36
Max.	3.136	20.40	100.15	99.64	98.83	98.37	97.59	96.74

TM-21 Projection:

**Test Duration:** 6000 hours  
**Failures Observed:** 0  
 $\alpha$ : 6.651E-06  
 $\beta$ : 1.006  
**Calculated L<sub>70</sub>:** 55,000 hours  
**Reported L<sub>70</sub>:** >36,000 hours

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

No.	u'	v'	Chromaticity Shift ( $\Delta u'v'$ )					
	Ohr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2621	0.5260	0.0006	0.0007	0.0008	0.0009	0.0010	0.0013
2	0.2602	0.5256	0.0005	0.0005	0.0007	0.0008	0.0013	0.0015
3	0.2590	0.5207	0.0008	0.0005	0.0008	0.0008	0.0012	0.0013
4	0.2634	0.5279	0.0007	0.0009	0.0010	0.0013	0.0015	0.0015
5	0.2596	0.5227	0.0005	0.0004	0.0005	0.0007	0.0008	0.0008
6	0.2632	0.5269	0.0004	0.0005	0.0006	0.0009	0.0011	0.0014
7	0.2607	0.5243	0.0008	0.0010	0.0011	0.0012	0.0011	0.0011
8	0.2611	0.5264	0.0004	0.0004	0.0006	0.0006	0.0013	0.0016
9	0.2613	0.5270	0.0006	0.0009	0.0011	0.0013	0.0014	0.0015
10	0.2627	0.5293	0.0003	0.0005	0.0007	0.0009	0.0013	0.0014
11	0.2603	0.5219	0.0005	0.0005	0.0007	0.0009	0.0010	0.0013
12	0.2624	0.5277	0.0006	0.0008	0.0009	0.0011	0.0011	0.0012
13	0.2609	0.5279	0.0006	0.0007	0.0009	0.0011	0.0013	0.0016
14	0.2598	0.5239	0.0005	0.0007	0.0008	0.0009	0.0014	0.0016
15	0.2628	0.5281	0.0005	0.0008	0.0010	0.0011	0.0013	0.0013
16	0.2605	0.5255	0.0005	0.0007	0.0008	0.0010	0.0014	0.0015
17	0.2623	0.5257	0.0004	0.0010	0.0012	0.0013	0.0013	0.0016
18	0.2621	0.5253	0.0004	0.0005	0.0006	0.0007	0.0009	0.0015
19	0.2606	0.5228	0.0004	0.0007	0.0008	0.0009	0.0008	0.0013
20	0.2627	0.5283	0.0005	0.0008	0.0009	0.0011	0.0013	0.0013
21	0.2621	0.5270	0.0004	0.0006	0.0008	0.0009	0.0010	0.0014
22	0.2608	0.5267	0.0005	0.0006	0.0009	0.0012	0.0012	0.0012
23	0.2629	0.5273	0.0006	0.0011	0.0013	0.0014	0.0016	0.0018
24	0.2594	0.5241	0.0004	0.0008	0.0011	0.0011	0.0011	0.0014
25	0.2612	0.5249	0.0003	0.0006	0.0007	0.0009	0.0013	0.0014
Ave.	0.2614	0.5258	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014
Med.	0.2612	0.5260	0.0005	0.0007	0.0008	0.0009	0.0013	0.0014
st dev	0.0013	0.0022	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002
Min.	0.2590	0.5207	0.0003	0.0004	0.0005	0.0006	0.0008	0.0008
Max.	0.2634	0.5293	0.0008	0.0011	0.0013	0.0014	0.0016	0.0018



### 3.3 Data Set 2, 70°C, 60mA (Lumen Maintenance)

No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	3.132	19.81	99.80	99.24	98.74	98.18	97.27	96.01
2	3.103	20.19	99.65	99.01	98.66	98.12	97.13	96.24
3	3.129	19.81	99.75	99.19	98.64	98.08	97.02	96.21
4	3.133	19.96	99.60	99.25	98.55	98.05	97.19	96.19
5	3.134	19.91	99.50	99.05	98.64	98.14	97.04	96.08
6	3.099	19.92	99.95	99.50	98.64	97.94	97.19	96.18
7	3.131	19.84	99.40	99.14	98.74	98.14	96.93	96.12
8	3.124	19.81	100.10	99.44	98.74	98.08	97.27	96.16
9	3.090	19.84	99.85	99.45	98.54	97.98	97.18	96.37
10	3.132	20.13	99.65	99.06	98.46	98.06	96.97	96.13
11	3.103	19.90	99.70	99.10	98.49	97.99	97.19	96.08
12	3.131	19.90	100.05	99.50	98.54	97.89	97.29	96.23
13	3.117	20.01	99.80	99.25	98.80	98.05	97.00	96.15
14	3.097	20.07	99.90	99.30	98.65	97.81	97.11	96.26
15	3.129	19.90	100.35	99.55	98.44	98.04	97.14	95.98
16	3.133	20.22	99.80	99.36	98.42	97.82	96.98	96.09
17	3.118	20.02	100.15	99.55	98.45	97.90	97.00	96.10
18	3.108	20.13	99.60	99.01	98.46	97.86	97.07	96.37
19	3.139	19.94	100.05	99.40	98.80	98.04	97.04	96.24
20	3.136	19.70	99.59	99.04	98.48	97.87	97.01	95.99
21	3.134	19.27	99.74	99.12	98.70	97.92	97.25	96.00
22	3.129	19.88	100.20	99.55	98.79	97.99	97.18	96.13
23	3.139	20.30	99.70	99.31	98.52	98.08	96.95	96.01
24	3.128	19.95	99.85	99.40	98.45	98.10	97.29	96.14
25	3.129	20.12	100.00	99.55	98.76	98.11	96.92	96.02
Ave.	3.123	19.94	99.83	99.29	98.60	98.01	97.10	96.14
Med.	3.129	19.92	99.80	99.30	98.64	98.04	97.11	96.13
st dev	0.0144	0.2032	0.2332	0.1909	0.1301	0.1064	0.1215	0.1091
Min.	3.090	19.27	99.40	99.01	98.42	97.81	96.92	95.98
Max.	3.139	20.30	100.35	99.55	98.80	98.18	97.29	96.37

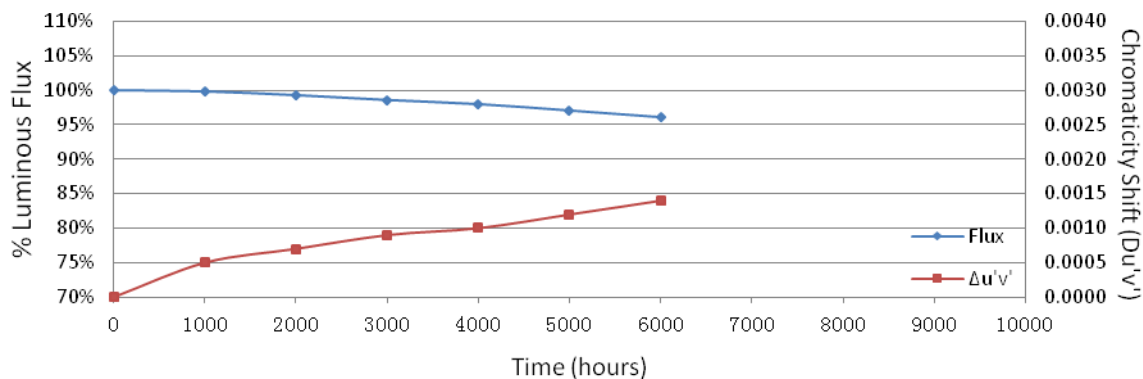
#### TM-21 Projection:

**Test Duration:** 6000 hours  
**Failures Observed:** 0  
 $\alpha$ : 7.464E-06  
 $\beta$ : 1.008  
**Calculated L<sub>70</sub>:** 49,000 hours  
**Reported L<sub>70</sub>:** >36,000 hours



### 3.4 Data Set 2, 70°C, 60mA (Chromaticity Shift)

No.	u'	v'	Chromaticity Shift ( $\Delta u'v'$ )					
	Ohr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2615	0.5251	0.0006	0.0008	0.0010	0.0011	0.0012	0.0015
2	0.2636	0.5278	0.0002	0.0009	0.0010	0.0013	0.0013	0.0015
3	0.2621	0.5255	0.0006	0.0007	0.0008	0.0008	0.0010	0.0012
4	0.2623	0.5270	0.0003	0.0006	0.0007	0.0009	0.0012	0.0016
5	0.2588	0.5223	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015
6	0.2597	0.5241	0.0004	0.0007	0.0009	0.0009	0.0012	0.0013
7	0.2607	0.5230	0.0004	0.0009	0.0011	0.0011	0.0012	0.0013
8	0.2630	0.5269	0.0005	0.0006	0.0007	0.0008	0.0011	0.0015
9	0.2622	0.5256	0.0005	0.0006	0.0009	0.0011	0.0011	0.0012
10	0.2596	0.5228	0.0004	0.0008	0.0010	0.0013	0.0013	0.0013
11	0.2613	0.5263	0.0008	0.0010	0.0011	0.0010	0.0011	0.0013
12	0.2618	0.5267	0.0005	0.0007	0.0009	0.0011	0.0014	0.0015
13	0.2597	0.5238	0.0006	0.0007	0.0009	0.0012	0.0015	0.0014
14	0.2585	0.5218	0.0005	0.0005	0.0006	0.0008	0.0014	0.0016
15	0.2590	0.5218	0.0003	0.0006	0.0008	0.0009	0.0010	0.0013
16	0.2599	0.5277	0.0004	0.0006	0.0009	0.0012	0.0012	0.0014
17	0.2593	0.5259	0.0004	0.0005	0.0007	0.0007	0.0009	0.0013
18	0.2596	0.5230	0.0003	0.0008	0.0010	0.0011	0.0015	0.0016
19	0.2601	0.5253	0.0004	0.0006	0.0007	0.0010	0.0011	0.0015
20	0.2611	0.5256	0.0005	0.0006	0.0007	0.0007	0.0009	0.0010
21	0.2642	0.5298	0.0004	0.0008	0.0010	0.0013	0.0015	0.0015
22	0.2585	0.5225	0.0006	0.0009	0.0010	0.0009	0.0007	0.0012
23	0.2602	0.5238	0.0003	0.0007	0.0010	0.0014	0.0014	0.0015
24	0.2622	0.5257	0.0002	0.0008	0.0009	0.0012	0.0014	0.0015
25	0.2590	0.5230	0.0005	0.0005	0.0007	0.0009	0.0010	0.0015
Ave.	0.2607	0.5249	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014
Med.	0.2602	0.5253	0.0004	0.0007	0.0009	0.0010	0.0012	0.0015
st dev	0.0016	0.0021	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002
Min.	0.2585	0.5218	0.0002	0.0005	0.0006	0.0007	0.0007	0.0010
Max.	0.2642	0.5298	0.0008	0.0010	0.0011	0.0014	0.0015	0.0016



**3.5 Data Set 3, 85°C, 60mA (Lumen Maintenance)**

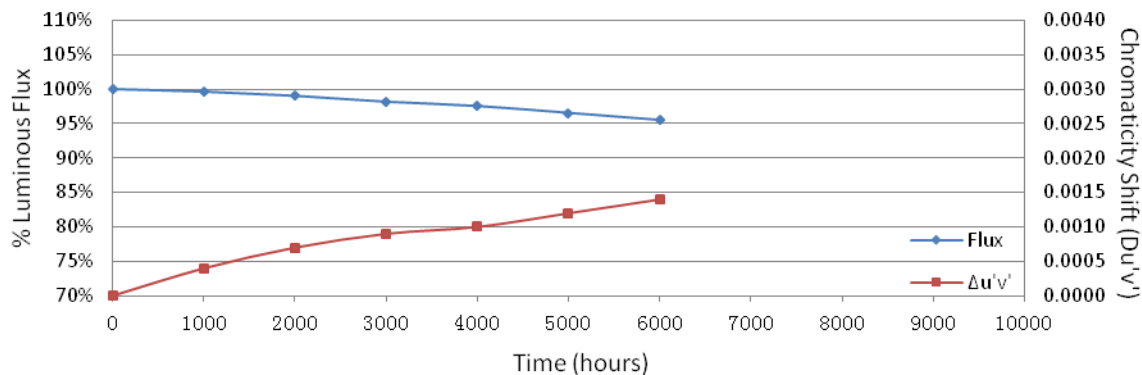
No.	V <sub>F</sub> (V)	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	3.087	19.69	99.85	99.14	98.37	97.51	96.65	95.63
2	3.128	19.98	99.65	99.00	98.35	97.40	96.65	95.55
3	3.129	20.05	99.35	98.70	98.05	97.61	96.51	95.36
4	3.117	19.76	99.24	98.73	98.13	97.42	96.51	95.45
5	3.120	19.74	99.70	98.99	98.02	97.62	96.40	95.44
6	3.115	19.82	99.70	99.19	98.13	97.63	96.77	95.61
7	3.125	19.50	99.85	99.28	98.10	97.59	96.67	95.54
8	3.109	20.12	99.65	98.96	98.06	97.61	96.42	95.43
9	3.122	19.88	99.80	99.14	98.39	97.43	96.48	95.42
10	3.104	19.94	99.75	98.95	98.04	97.44	96.54	95.29
11	3.108	19.88	99.45	98.99	98.34	97.54	96.33	95.57
12	3.128	19.97	99.30	98.80	98.10	97.40	96.54	95.54
13	3.131	19.70	99.75	98.98	98.22	97.61	96.40	95.53
14	3.116	19.86	99.40	98.99	98.24	97.53	96.48	95.47
15	3.124	19.02	99.74	99.16	98.05	97.58	96.53	95.58
16	3.131	19.83	99.45	98.84	98.18	97.53	96.37	95.41
17	3.126	19.43	99.54	99.02	98.20	97.63	96.60	95.63
18	3.124	19.57	99.34	98.72	97.80	97.55	96.37	95.66
19	3.133	19.79	99.80	99.24	98.03	97.47	96.46	95.60
20	3.126	19.77	99.60	98.84	98.43	97.42	96.56	95.45
21	3.103	19.95	99.75	98.95	98.10	97.54	96.64	95.34
22	3.093	20.06	99.95	99.15	98.06	97.46	96.51	95.36
23	3.095	19.57	99.69	99.13	98.16	97.50	96.37	95.25
24	3.104	20.08	99.80	99.25	98.16	97.51	96.36	95.27
25	3.124	19.61	99.69	99.08	98.11	97.45	96.69	95.41
Ave.	3.117	19.78	99.63	99.01	98.15	97.52	96.51	95.47
Med.	3.122	19.82	99.69	98.99	98.13	97.53	96.51	95.45
st dev	0.0130	0.2441	0.1949	0.1691	0.1424	0.0778	0.1192	0.1196
Min.	3.087	19.02	99.24	98.70	97.80	97.40	96.33	95.25
Max.	3.133	20.12	99.95	99.28	98.43	97.63	96.77	95.66

**TM-21 Projection:**

**Test Duration:** 6000 hours  
**Failures Observed:** 0  
 $\alpha$ : 8.469E-06  
 $\beta$ : 1.006  
**Calculated L<sub>70</sub>:** 43,000 hours  
**Reported L<sub>70</sub>:** >36,000 hours

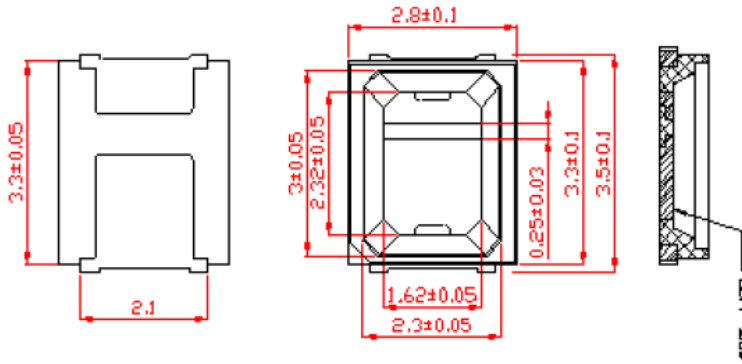
### 3.6 Data Set 3, 85°C, 60mA (Chromaticity Shift)

No.	u'	v'	Chromaticity Shift ( $\Delta u'v'$ )					
	Ohr(Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2634	0.5256	0.0005	0.0008	0.0009	0.0011	0.0014	0.0015
2	0.2606	0.5276	0.0005	0.0006	0.0008	0.0012	0.0013	0.0015
3	0.2596	0.5258	0.0002	0.0006	0.0008	0.0011	0.0015	0.0016
4	0.2613	0.5247	0.0006	0.0006	0.0007	0.0010	0.0014	0.0017
5	0.2614	0.5248	0.0002	0.0006	0.0008	0.0010	0.0014	0.0015
6	0.2635	0.5286	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016
7	0.2601	0.5259	0.0006	0.0007	0.0008	0.0010	0.0009	0.0014
8	0.2599	0.5257	0.0002	0.0007	0.0009	0.0010	0.0011	0.0011
9	0.2580	0.5223	0.0004	0.0007	0.0009	0.0009	0.0013	0.0016
10	0.2639	0.5263	0.0005	0.0006	0.0008	0.0008	0.0011	0.0016
11	0.2627	0.5250	0.0007	0.0009	0.0010	0.0010	0.0010	0.0010
12	0.2601	0.5254	0.0004	0.0008	0.0009	0.0012	0.0012	0.0014
13	0.2643	0.5278	0.0005	0.0008	0.0010	0.0013	0.0014	0.0016
14	0.2613	0.5236	0.0006	0.0006	0.0008	0.0009	0.0008	0.0009
15	0.2636	0.5318	0.0003	0.0009	0.0009	0.0012	0.0013	0.0015
16	0.2611	0.5246	0.0003	0.0006	0.0008	0.0009	0.0011	0.0013
17	0.2601	0.5238	0.0004	0.0005	0.0006	0.0006	0.0006	0.0008
18	0.2630	0.5273	0.0003	0.0007	0.0009	0.0009	0.0009	0.0013
19	0.2623	0.5292	0.0004	0.0005	0.0007	0.0009	0.0010	0.0010
20	0.2599	0.5251	0.0002	0.0007	0.0009	0.0010	0.0011	0.0014
21	0.2597	0.5254	0.0002	0.0008	0.0010	0.0011	0.0012	0.0014
22	0.2583	0.5206	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016
23	0.2623	0.5272	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015
24	0.2600	0.5250	0.0005	0.0005	0.0007	0.0009	0.0013	0.0015
25	0.2595	0.5272	0.0002	0.0006	0.0007	0.0009	0.0009	0.0011
Ave.	0.2612	0.5259	0.0004	0.0007	0.0009	0.0010	0.0012	0.0014
Med.	0.2611	0.5256	0.0004	0.0007	0.0008	0.0010	0.0012	0.0015
st dev	0.0018	0.0023	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002
Min.	0.2580	0.5206	0.0005	0.0006	0.0006	0.0006	0.0008	0.0005
Max.	0.2643	0.5318	0.0009	0.0010	0.0013	0.0015	0.0017	0.0009



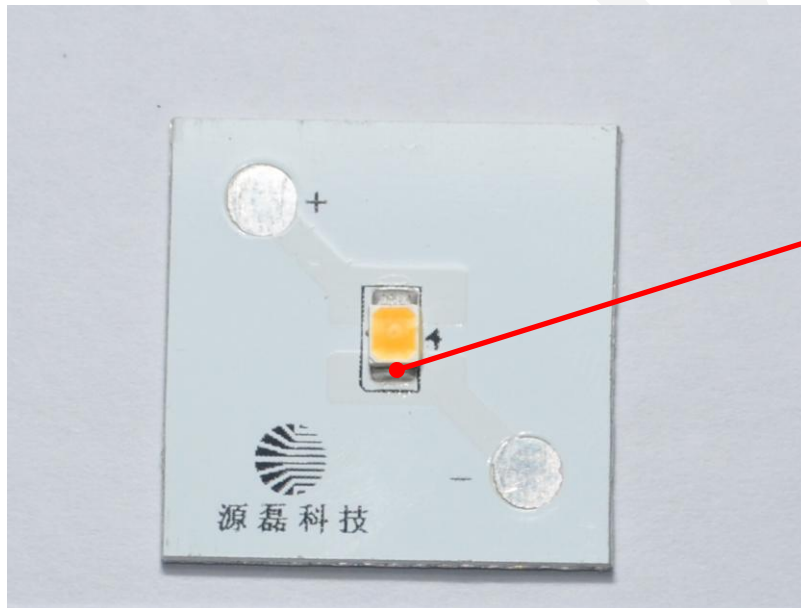
## Appendix A – EUT PHOTO

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



All dimensions are in millimeter

### A.2 EUT Photo



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