



# TEST REPORT

According to IES LM-80-2015  
For

## HuNan Pusiasat Opto Technology Co.,LTD

1-6Floor ,2 Building ,Changsha International business Center, No 188 Enviromental Protection Road, Yuhua Distric, Changsha City, HuNan Province

**Model: 2835 0.5W 150mA**

<b>Report Type:</b> 9000 Hours Test Report		<b>Product Type:</b> LED Package
<b>Test Engineer:</b>	Pote Wang <i>Pote Wang</i>	
<b>Report Number:</b>	RSZ161129514-10-9000	
<b>Test Date:</b>	2016-12-03 to 2017-12-13	
<b>Report Date:</b>	2017-12-20	
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<b>Test Facility:</b>	Test facility was located at No.69,Pulongcun ,Puxinhu Industrial Area, Tangxia , Dongguan, Guangdong, China.	
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<b>Accreditation:</b>	The IAS Accreditation Number TL-460.	

**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 Testing Equipment .....	3
1.4 Drive Level .....	4
1.5 Ambient Conditions for Maintenance Test .....	4
1.6 Photometric Measurement Method and Uncertainty .....	4
1.7 Statement of Traceability .....	4
1.8 Sample Set .....	5
<b>2 - Summary of Test Result .....</b>	<b>6</b>
<b>3 - Test Data .....</b>	<b>7</b>
3.1 Data Set 1, 85°C, 150mA (Lumen Maintenance) .....	7
3.2 Data Set 1, 85°C, 150mA (Forward Voltage) .....	8
3.3 Data Set 1, 85°C, 150mA (Chromaticity Shift) .....	9
3.4 Data Set 2, 105°C, 150mA (Lumen Maintenance) .....	10
3.5 Data Set 2, 105°C, 150mA (Forward Voltage) .....	11
3.6 Data Set 2, 105°C, 150mA (Chromaticity Shift) .....	12
<b>4 - DUT Photo .....</b>	<b>13</b>
4.1 Mechanical Dimensions .....	13
4.2 DUT Photo .....	13

## 1 - General Information

### 1.1 Description of LED Light Sources

#### Sample Size:

50 PCS samples were received on 2016-11-29. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer: HuNan Pusiasat Opto Technology Co.,LTD  
Part Number: 2835 0.5W 150mA  
Part Type: LED Package  
Drive Level: DC 150mA  
Nominal CCT: 2700K  
Power: 0.5W  
Current Density per LED die: 1000mA/mm<sup>2</sup>  
Power Density per LED die: 0.05W/mm<sup>2</sup>  
CRI: 85  
Die Spacing: N/A

#### 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.

### 1.2 Standards Used:

- IESNA LM-80-15: IES Approved Method for Measuring Lumen Maintenance of LED Light Sources.
- CIE 127:2007: Measurement of LEDs (This standard was not accredited by IAS)
- ENERGY STAR® Requirements for the Use of LM-80 Data (This standard was not accredited by IAS)

### 1.3 Testing Equipment

Device	Manufacture	Model No	Serial No	Test Range	Calibration date	Calibration due date
0.3m integrating sphere	EVERFINE	Diameter 0.3m	1011119	0.3m	2017-03-09	2018-03-09
Programmable Test Power for LEDs	EVERFINE	LED300E	1008002	15V/2000mA	2017-03-03	2018-03-03
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	380-780nm	2017-03-09	2018-03-09
Standard Light Source	EVERFINE	D062	1011093	3000K	2017-09-13	2018-09-13
Precision digital stabilized DC power supply	EVERFINE	WY605-V110	G115987CJ7321114	300VA	2017-03-03	2018-03-03
Multilayer aging machine	BACL	B2-270	20015	25°C~130°C	2017-03-03	2018-03-03
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090008	(50/15A)	2017-07-07	2018-07-07
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11060002	(50/15A)	2017-07-07	2018-07-07

#### **1.4 Drive Level**

Samples are driven with a constant direct current (DC) during maintenance test, photometric and electrical measurement. The current value was regulated to within  $\pm 3\%$  of the specified value of the manufacturer during maintenance test, and was within  $\pm 0.5\%$  during photometric and electrical measurement test.

#### **1.5 Ambient Conditions for Maintenance Test**

For lumen maintenance test, samples within one data set, were installed on cooling boards in thermal chambers with minimal ambient airflow. The case temperature and ambient temperature was monitored by thermocouples which one was soldered to the coldest DUTs' case (TMP<sub>LED</sub>) location, while the other is mounted at a distance of 5 mm above the TMP location.

During life testing, TMP<sub>LED</sub> of the coldest LEDs were maintained at a temperature that was greater than or equal to 2°C below the corresponding nominal case temperature. Surrounding air was maintained at a temperature that was greater than or equal to 5°C below the corresponding nominal case temperature. Thermocouples were shielded from direct DUT optical radiation and comply with ASTM E230 Table 1 "Special Limits".

Samples were connected to DC power supply in series circuits with a constant current. The forward current was regulated to within  $\pm 3\%$  of the specified value of the manufacturer.

The relative humidity within chamber was kept less than 65% during test.

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

#### **1.6 Photometric Measurement Method and Uncertainty**

Integrating sphere and spectroradiometer is used to measure luminous flux and chromaticity coordinate u'v'. 2 $\pi$  measurement was used and sample was driven by DC power supply. The forward current was regulated to within  $\pm 0.5\%$  of the nominal value. The test system was calibrated by halogen reference lamp. The ambient temperature during test was set to  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , RH <65%. The temperature measurement point was located in the sphere and the temperature was detected by a temperature probe.

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.

The uncertainty of the temperature is  $U=0.8671^{\circ}\text{C}$  ( $K=2$ ), at the 95% confidence level.

#### **1.7 Statement of Traceability**

Bay Area Compliance Laboratories Corp. (Dongguan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

## 1.8 Sample Set

### Data Set 1: 85°C, 150mA

Part Number: 2835 0.5W 150mA  
Number of Units: 25  
Case Temperature: >83°C  
Ambient Temperature: >80°C  
Life Test Drive Current: 150mA  
Measurement Current: 150mA

### Data Set 2: 105°C, 150mA

Part Number: 2835 0.5W 150mA  
Number of Units: 25  
Case Temperature: >103°C  
Ambient Temperature: >100°C  
Life Test Drive Current: 150mA  
Measurement Current: 150mA

## 2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	$\alpha$ :	$\beta$ :	Reported TM-21 L <sub>70</sub> Lifetime
1	25	0	1000hrs	9000hrs	2.396E-06	1.004	>54000
2	25	0	1000hrs	9000hrs	3.002E-06	1.003	>54000

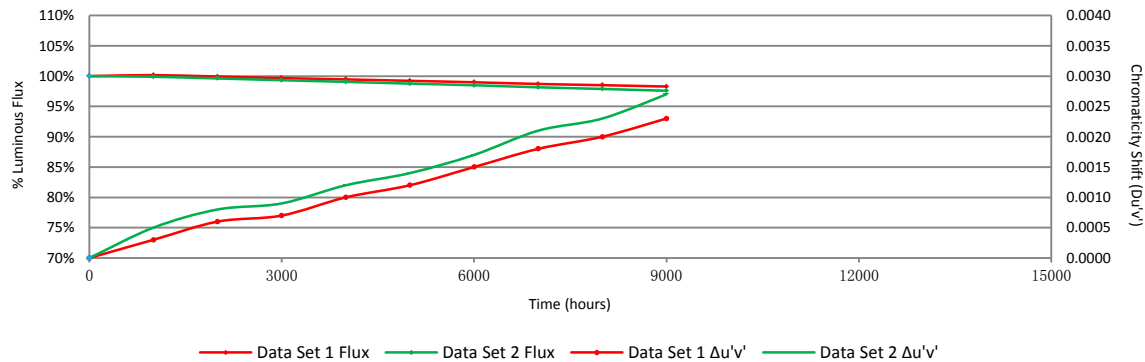
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	100.16%	99.92%	99.67%	99.45%	99.22%	98.98%	98.70%	98.50%	98.28%
2	99.89%	99.61%	99.32%	99.05%	98.76%	98.49%	98.15%	97.88%	97.58%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	0.0003	0.0006	0.0007	0.0010	0.0012	0.0015	0.0018	0.0020	0.0023
2	0.0005	0.0008	0.0009	0.0012	0.0014	0.0017	0.0021	0.0023	0.0027

Average Lumen Maintenance and Chromaticity Shift VS. Time



### 3 - Test Data

#### 3.1 Data Set 1, 85°C, 150mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	54.08	100.04	99.78	99.43	99.11	98.87	98.69	98.45	98.19	98.10
2	52.15	100.06	99.85	99.73	99.46	99.06	98.93	98.83	98.68	98.47
3	56.00	100.05	99.70	99.41	99.21	98.93	98.59	98.36	98.30	98.20
4	53.06	100.17	99.89	99.66	99.42	99.15	98.77	98.44	98.27	98.02
5	54.32	100.13	100.04	99.74	99.58	99.25	98.99	98.73	98.51	98.32
6	54.08	100.30	100.13	99.85	99.63	99.37	99.24	99.00	98.67	98.58
7	53.10	100.17	99.87	99.47	99.19	99.15	98.89	98.59	98.21	97.97
8	54.70	100.11	99.91	99.62	99.43	99.21	99.07	98.92	98.61	98.26
9	53.44	100.13	99.96	99.63	99.33	99.23	99.06	98.75	98.54	98.47
10	56.42	100.09	99.77	99.47	99.27	99.04	98.78	98.51	98.42	98.17
11	54.89	100.22	100.04	99.82	99.60	99.31	99.03	98.60	98.42	98.21
12	54.60	100.26	99.89	99.80	99.45	99.23	99.05	98.79	98.63	98.21
13	55.57	100.22	99.87	99.68	99.42	99.17	98.90	98.67	98.52	98.24
14	54.65	100.18	99.87	99.69	99.54	99.41	99.19	98.83	98.59	98.35
15	54.78	100.07	99.89	99.62	99.45	99.18	98.89	98.43	98.16	97.97
16	53.56	100.24	100.09	99.79	99.61	99.33	98.94	98.71	98.24	98.04
17	54.93	100.22	99.89	99.60	99.33	99.00	98.82	98.67	98.42	98.12
18	54.60	100.26	99.93	99.47	99.18	98.92	98.57	98.32	98.08	97.86
19	53.60	100.11	99.79	99.37	99.03	98.71	98.36	98.15	97.80	97.37
20	54.22	100.06	99.78	99.54	99.37	99.04	98.78	98.54	98.38	98.19
21	56.76	100.23	100.14	99.95	99.84	99.54	99.42	98.29	98.91	98.85
22	56.07	100.25	99.95	99.91	99.80	99.59	99.41	99.23	99.13	98.84
23	57.33	100.09	99.90	99.83	99.65	99.55	99.37	99.13	98.97	98.69
24	57.29	100.16	99.91	99.74	99.65	99.60	99.53	99.30	99.04	98.87
25	57.52	100.14	100.05	99.98	99.79	99.62	99.36	99.20	98.78	98.59
Ave.	54.87	100.16	99.92	99.67	99.45	99.22	98.98	98.70	98.50	98.28
Med.	54.65	100.16	99.89	99.68	99.45	99.21	98.94	98.67	98.51	98.21
st dev	1.44	0.0764	0.1145	0.1740	0.2178	0.2444	0.2944	0.3088	0.3171	0.3440
Min.	52.15	100.04	99.70	99.37	99.03	98.71	98.36	98.15	97.80	97.37
Max.	57.52	100.30	100.14	99.98	99.84	99.62	99.53	99.30	99.13	98.87

### 3.2 Data Set 1, 85°C, 150mA (Forward Voltage)

No.	Forward Voltage (V)									
	Ohr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	3.101	3.106	3.108	3.094	3.102	3.097	3.098	3.094	3.095	3.096
2	3.090	3.093	3.101	3.082	3.091	3.086	3.084	3.082	3.089	3.091
3	3.161	3.156	3.153	3.137	3.146	3.134	3.147	3.138	3.138	3.142
4	3.108	3.098	3.103	3.093	3.114	3.087	3.111	3.102	3.095	3.094
5	3.141	3.144	3.142	3.128	3.148	3.126	3.126	3.126	3.125	3.134
6	3.148	3.153	3.162	3.142	3.150	3.139	3.150	3.142	3.143	3.148
7	3.129	3.139	3.144	3.126	3.135	3.126	3.126	3.128	3.126	3.141
8	3.131	3.138	3.142	3.130	3.139	3.125	3.125	3.128	3.133	3.130
9	3.119	3.127	3.130	3.118	3.131	3.111	3.114	3.115	3.115	3.121
10	3.068	3.074	3.082	3.063	3.083	3.062	3.065	3.063	3.062	3.067
11	3.122	3.134	3.142	3.133	3.122	3.120	3.120	3.118	3.114	3.124
12	3.091	3.104	3.117	3.086	3.121	3.090	3.093	3.106	3.088	3.092
13	3.101	3.111	3.105	3.093	3.111	3.092	3.094	3.093	3.091	3.095
14	3.141	3.146	3.155	3.136	3.144	3.132	3.155	3.136	3.134	3.141
15	3.131	3.130	3.140	3.120	3.126	3.117	3.129	3.127	3.127	3.125
16	3.070	3.067	3.085	3.072	3.068	3.066	3.066	3.097	3.062	3.063
17	3.099	3.104	3.106	3.092	3.109	3.090	3.095	3.098	3.091	3.094
18	3.105	3.097	3.103	3.089	3.094	3.090	3.091	3.098	3.087	3.093
19	3.088	3.085	3.092	3.077	3.080	3.078	3.078	3.079	3.076	3.080
20	3.117	3.125	3.130	3.114	3.119	3.115	3.121	3.117	3.117	3.122
21	3.146	3.145	3.145	3.141	3.141	3.141	3.142	3.142	3.140	3.143
22	3.144	3.143	3.143	3.144	3.143	3.143	3.146	3.139	3.140	3.145
23	3.058	3.056	3.056	3.055	3.054	3.058	3.058	3.052	3.055	3.052
24	3.069	3.067	3.066	3.067	3.065	3.071	3.069	3.063	3.065	3.067
25	3.073	3.070	3.070	3.071	3.070	3.078	3.065	3.070	3.070	3.069
Ave.	3.110	3.112	3.117	3.104	3.112	3.103	3.107	3.106	3.103	3.107
Med.	3.108	3.111	3.117	3.094	3.119	3.097	3.111	3.106	3.095	3.096
st dev	0.029	0.031	0.030	0.028	0.029	0.027	0.030	0.027	0.029	0.030
Min.	3.058	3.056	3.056	3.055	3.054	3.058	3.058	3.052	3.055	3.052
Max.	3.161	3.156	3.162	3.144	3.150	3.143	3.155	3.142	3.143	3.148



### 3.3 Data Set 1, 85°C, 150mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ( $\Delta u'v'$ )								
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	0.2613	0.5291	2718	0.0004	0.0007	0.0008	0.0011	0.0014	0.0016	0.0020	0.0021	0.0021
2	0.2621	0.5314	2693	0.0003	0.0007	0.0008	0.0010	0.0013	0.0016	0.0019	0.0020	0.0020
3	0.2582	0.5255	2799	0.0003	0.0006	0.0009	0.0011	0.0014	0.0017	0.0020	0.0021	0.0022
4	0.2615	0.5317	2704	0.0004	0.0006	0.0008	0.0011	0.0014	0.0016	0.0020	0.0020	0.0022
5	0.2607	0.5300	2726	0.0003	0.0005	0.0007	0.0010	0.0012	0.0016	0.0018	0.0022	0.0023
6	0.2595	0.5292	2755	0.0003	0.0005	0.0007	0.0010	0.0012	0.0016	0.0019	0.0022	0.0023
7	0.2623	0.5304	2692	0.0003	0.0006	0.0007	0.0010	0.0013	0.0016	0.0019	0.0023	0.0025
8	0.2592	0.5268	2772	0.0003	0.0006	0.0007	0.0010	0.0012	0.0016	0.0019	0.0022	0.0024
9	0.2612	0.5309	2712	0.0003	0.0006	0.0008	0.0010	0.0013	0.0015	0.0018	0.0022	0.0025
10	0.2573	0.5274	2810	0.0003	0.0006	0.0007	0.0010	0.0013	0.0015	0.0018	0.0023	0.0027
11	0.2592	0.5297	2760	0.0003	0.0005	0.0006	0.0009	0.0013	0.0016	0.0018	0.0022	0.0026
12	0.2582	0.5302	2779	0.0003	0.0006	0.0007	0.0010	0.0013	0.0015	0.0018	0.0022	0.0026
13	0.2580	0.5282	2792	0.0004	0.0007	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0026
14	0.2588	0.5280	2776	0.0003	0.0006	0.0007	0.0010	0.0013	0.0017	0.0021	0.0024	0.0029
15	0.2558	0.5261	2851	0.0003	0.0006	0.0007	0.0010	0.0014	0.0016	0.0020	0.0023	0.0028
16	0.2606	0.5300	2728	0.0003	0.0006	0.0006	0.0010	0.0012	0.0015	0.0017	0.0022	0.0025
17	0.2612	0.5293	2720	0.0004	0.0007	0.0007	0.0010	0.0013	0.0016	0.0018	0.0022	0.0027
18	0.2592	0.5291	2761	0.0004	0.0006	0.0007	0.0012	0.0015	0.0018	0.0021	0.0024	0.0029
19	0.2612	0.5310	2713	0.0004	0.0007	0.0007	0.0010	0.0012	0.0016	0.0018	0.0022	0.0026
20	0.2607	0.5314	2720	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0018	0.0022	0.0027
21	0.2588	0.5266	2782	0.0004	0.0007	0.0008	0.0008	0.0011	0.0013	0.0016	0.0016	0.0017
22	0.2613	0.5322	2706	0.0002	0.0006	0.0006	0.0007	0.0008	0.0009	0.0011	0.0013	0.0015
23	0.2583	0.5279	2787	0.0001	0.0004	0.0006	0.0007	0.0007	0.0010	0.0013	0.0014	0.0016
24	0.2600	0.5288	2746	0.0001	0.0001	0.0006	0.0007	0.0008	0.0026	0.0011	0.0013	0.0015
25	0.2593	0.5274	2768	0.0001	0.0003	0.0005	0.0006	0.0007	0.0007	0.0012	0.0013	0.0015
Ave.	0.2598	0.5291	2751	0.0003	0.0006	0.0007	0.0010	0.0012	0.0015	0.0018	0.0020	0.0023
Med.	0.2595	0.5292	2755	0.0003	0.0006	0.0007	0.0010	0.0013	0.0016	0.0018	0.0022	0.0025
st dev	0.0016	0.0018	41	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	0.0003	0.0004	0.0005
Min.	0.2558	0.5255	2692	0.0001	0.0001	0.0005	0.0006	0.0007	0.0007	0.0011	0.0013	0.0015
Max.	0.2623	0.5322	2851	0.0004	0.0007	0.0009	0.0012	0.0015	0.0026	0.0021	0.0024	0.0029

### 3.4 Data Set 2, 105°C, 150mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
26	55.51	99.84	99.46	99.26	98.97	98.67	98.43	98.20	97.95	97.68
27	56.23	99.77	99.36	99.25	98.97	98.76	98.40	98.13	97.72	97.49
28	54.88	99.78	99.51	98.98	98.54	98.31	98.18	98.03	97.58	97.21
29	54.94	99.98	99.49	99.31	98.96	98.47	98.23	97.94	97.72	97.47
30	55.09	99.82	99.40	99.04	98.80	98.49	98.08	97.71	97.46	97.28
31	55.21	99.95	99.64	99.40	99.18	98.84	98.51	98.21	97.95	97.54
32	55.26	99.96	99.78	99.46	99.17	98.82	98.59	98.10	97.81	97.39
33	54.68	99.93	99.76	99.38	99.20	98.79	98.54	98.17	97.99	97.49
34	54.46	99.82	99.47	99.06	98.77	98.48	98.35	98.05	97.83	97.39
35	53.11	100.02	99.81	99.55	99.19	98.68	98.34	98.23	97.89	97.59
36	52.95	99.98	99.66	99.41	99.15	98.85	98.56	98.22	97.87	97.64
37	54.94	99.93	99.62	99.44	99.16	98.80	98.42	98.07	97.69	97.54
38	53.79	99.87	99.57	99.14	98.77	98.36	98.03	97.64	97.36	96.97
39	54.01	99.72	99.46	99.17	98.82	98.52	98.35	98.04	97.89	97.56
40	56.17	99.75	99.47	99.16	98.97	98.61	98.29	97.99	97.67	97.61
41	56.15	99.80	99.61	99.36	99.04	98.74	98.36	98.01	97.67	97.40
42	55.40	99.91	99.57	99.35	99.06	98.75	98.50	98.27	97.89	97.69
43	55.17	99.75	99.40	99.06	98.82	98.64	98.22	97.73	97.59	97.23
44	56.15	99.93	99.73	99.34	98.97	98.66	98.34	97.93	97.65	97.28
45	54.23	99.72	99.32	98.88	98.67	98.36	98.03	97.60	97.36	97.10
46	56.20	100.16	99.91	99.77	99.70	99.61	99.47	99.00	98.67	98.49
47	56.83	100.11	99.70	99.44	99.24	99.35	99.30	98.89	98.66	98.36
48	57.30	100.14	99.97	99.70	99.32	99.09	98.80	98.45	98.31	98.18
49	54.93	99.87	99.78	99.62	99.51	99.27	98.98	98.51	98.40	98.02
50	58.30	99.78	99.71	99.52	99.42	99.19	98.94	98.66	98.42	97.98
Ave.	55.28	99.89	99.61	99.32	99.05	98.76	98.49	98.15	97.88	97.58
Med.	55.17	99.87	99.61	99.35	99.04	98.74	98.40	98.10	97.83	97.54
st dev	1.23	0.1266	0.1737	0.2247	0.2683	0.3245	0.3618	0.3472	0.3608	0.3737
Min.	52.95	99.72	99.32	98.88	98.54	98.31	98.03	97.60	97.36	96.97
Max.	58.30	100.16	99.97	99.77	99.70	99.61	99.47	99.00	98.67	98.49

### 3.5 Data Set 2, 105°C, 150mA (Forward Voltage)

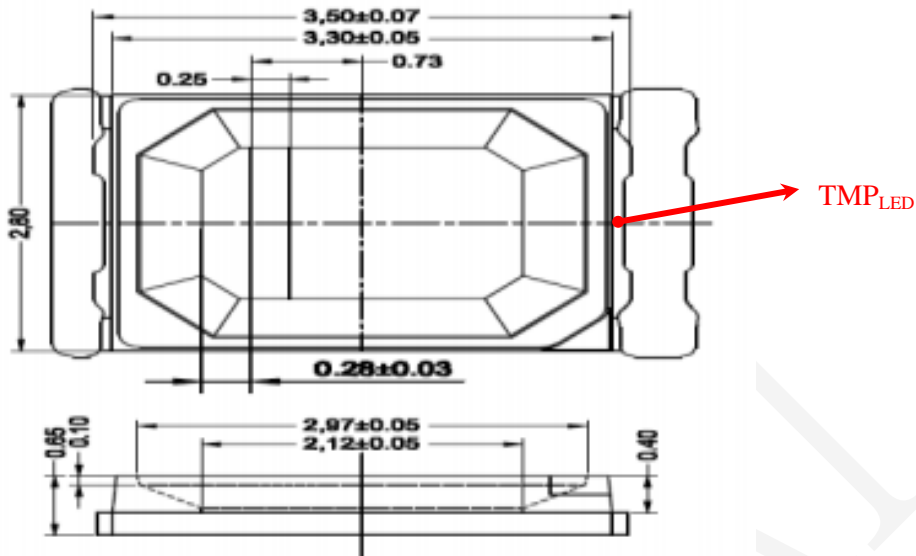
No.	Forward Voltage (V)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
26	3.142	3.139	3.151	3.131	3.135	3.131	3.129	3.130	3.128	3.132
27	3.135	3.138	3.145	3.126	3.133	3.127	3.131	3.129	3.144	3.130
28	3.099	3.103	3.108	3.093	3.097	3.095	3.090	3.098	3.091	3.090
29	3.141	3.142	3.144	3.132	3.136	3.130	3.133	3.132	3.132	3.132
30	3.138	3.144	3.151	3.131	3.136	3.132	3.132	3.133	3.132	3.138
31	3.142	3.140	3.147	3.131	3.138	3.131	3.146	3.132	3.130	3.138
32	3.132	3.135	3.141	3.129	3.135	3.133	3.126	3.127	3.123	3.130
33	3.133	3.130	3.142	3.123	3.131	3.123	3.124	3.133	3.122	3.130
34	3.124	3.136	3.133	3.119	3.131	3.120	3.120	3.118	3.122	3.123
35	3.134	3.138	3.147	3.124	3.143	3.126	3.130	3.130	3.125	3.128
36	3.144	3.148	3.155	3.136	3.138	3.136	3.152	3.135	3.132	3.140
37	3.132	3.138	3.143	3.776	3.133	3.133	3.298	3.124	3.124	3.133
38	3.135	3.136	3.142	3.125	3.132	3.128	3.128	3.197	3.129	3.127
39	3.146	3.115	3.171	3.117	3.134	3.130	3.125	3.115	3.110	3.109
40	3.141	3.148	3.154	3.136	3.142	3.136	3.137	3.135	3.135	3.141
41	3.143	3.162	3.159	3.135	3.141	3.137	3.136	3.154	3.130	3.140
42	3.100	3.100	3.104	3.094	3.102	3.093	3.096	3.093	3.105	3.098
43	3.142	3.139	3.154	3.134	3.138	3.129	3.136	3.130	3.130	3.139
44	3.124	3.126	3.158	3.118	3.130	3.119	3.118	3.127	3.122	3.120
45	3.124	3.121	3.140	3.111	3.123	3.114	3.110	3.112	3.112	3.120
46	3.145	3.146	3.147	3.144	3.146	3.145	3.146	3.147	3.147	3.148
47	3.056	3.055	3.057	3.055	3.055	3.056	3.057	3.056	3.055	3.058
48	3.140	3.138	3.139	3.140	3.141	3.144	3.138	3.139	3.139	3.139
49	3.113	3.116	3.117	3.112	3.113	3.117	3.115	3.115	3.117	3.117
50	3.071	3.069	3.069	3.066	3.068	3.070	3.069	3.069	3.071	3.071
Ave.	3.127	3.128	3.137	3.146	3.126	3.121	3.129	3.124	3.120	3.123
Med.	3.135	3.138	3.144	3.126	3.134	3.129	3.129	3.130	3.125	3.130
st dev	0.023	0.024	0.027	0.133	0.023	0.022	0.042	0.027	0.021	0.022
Min.	3.056	3.055	3.057	3.055	3.055	3.056	3.057	3.056	3.055	3.058
Max.	3.146	3.162	3.171	3.776	3.146	3.145	3.298	3.197	3.147	3.148

### 3.6 Data Set 2, 105°C, 150mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ( $\Delta u'v'$ )								
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
26	0.2603	0.5307	2732	0.0005	0.0008	0.0007	0.0011	0.0012	0.0016	0.0020	0.0022	0.0026
27	0.2592	0.5297	2759	0.0004	0.0006	0.0008	0.0012	0.0013	0.0018	0.0021	0.0025	0.0029
28	0.2628	0.5318	2677	0.0005	0.0008	0.0007	0.0012	0.0013	0.0016	0.0020	0.0022	0.0026
29	0.2631	0.5332	2665	0.0005	0.0009	0.0008	0.0012	0.0015	0.0018	0.0021	0.0024	0.0029
30	0.2611	0.5308	2716	0.0005	0.0008	0.0010	0.0012	0.0013	0.0017	0.0020	0.0022	0.0026
31	0.2606	0.5309	2725	0.0005	0.0008	0.0009	0.0012	0.0013	0.0017	0.0020	0.0022	0.0024
32	0.2570	0.5250	2830	0.0006	0.0008	0.0009	0.0012	0.0014	0.0019	0.0022	0.0025	0.0028
33	0.2575	0.5255	2816	0.0005	0.0008	0.0009	0.0012	0.0014	0.0017	0.0021	0.0023	0.0029
34	0.2579	0.5268	2801	0.0005	0.0008	0.0009	0.0012	0.0014	0.0018	0.0022	0.0024	0.0027
35	0.2648	0.5316	2637	0.0006	0.0009	0.0009	0.0012	0.0013	0.0018	0.0021	0.0023	0.0028
36	0.2652	0.5346	2620	0.0005	0.0008	0.0009	0.0012	0.0013	0.0018	0.0021	0.0022	0.0026
37	0.2623	0.5320	2686	0.0005	0.0009	0.0010	0.0012	0.0014	0.0017	0.0020	0.0022	0.0027
38	0.2596	0.5293	2753	0.0005	0.0008	0.0009	0.0012	0.0014	0.0017	0.0021	0.0023	0.0028
39	0.2612	0.5305	2714	0.0005	0.0007	0.0009	0.0012	0.0013	0.0018	0.0021	0.0023	0.0027
40	0.2566	0.5262	2832	0.0005	0.0008	0.0009	0.0012	0.0013	0.0017	0.0021	0.0023	0.0026
41	0.2561	0.5252	2849	0.0006	0.0009	0.0010	0.0013	0.0016	0.0021	0.0026	0.0030	0.0035
42	0.2575	0.5258	2813	0.0005	0.0008	0.0009	0.0012	0.0016	0.0019	0.0023	0.0027	0.0032
43	0.2608	0.5295	2727	0.0006	0.0008	0.0008	0.0011	0.0013	0.0018	0.0022	0.0026	0.0032
44	0.2563	0.5254	2842	0.0007	0.0008	0.0010	0.0012	0.0016	0.0021	0.0026	0.0031	0.0036
45	0.2595	0.5290	2756	0.0005	0.0008	0.0009	0.0011	0.0014	0.0019	0.0025	0.0029	0.0033
46	0.2621	0.5304	2697	0.0004	0.0007	0.0008	0.0011	0.0011	0.0014	0.0015	0.0017	0.0018
47	0.2620	0.5322	2691	0.0004	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0019
48	0.2596	0.5294	2752	0.0004	0.0007	0.0009	0.0011	0.0012	0.0013	0.0017	0.0018	0.0018
49	0.2615	0.5313	2705	0.0004	0.0007	0.0008	0.0009	0.0011	0.0012	0.0015	0.0016	0.0018
50	0.2565	0.5270	2831	0.0004	0.0006	0.0010	0.0011	0.0013	0.0016	0.0017	0.0019	0.0020
Ave.	0.2600	0.5294	2745	0.0005	0.0008	0.0009	0.0012	0.0014	0.0017	0.0021	0.0023	0.0027
Med.	0.2603	0.5297	2732	0.0005	0.0008	0.0009	0.0012	0.0013	0.0017	0.0021	0.0023	0.0027
st dev	0.0026	0.0028	67	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005
Min.	0.2561	0.5250	2620	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0015	0.0016	0.0018
Max.	0.2652	0.5346	2849	0.0007	0.0009	0.0010	0.0013	0.0016	0.0021	0.0026	0.0031	0.0036

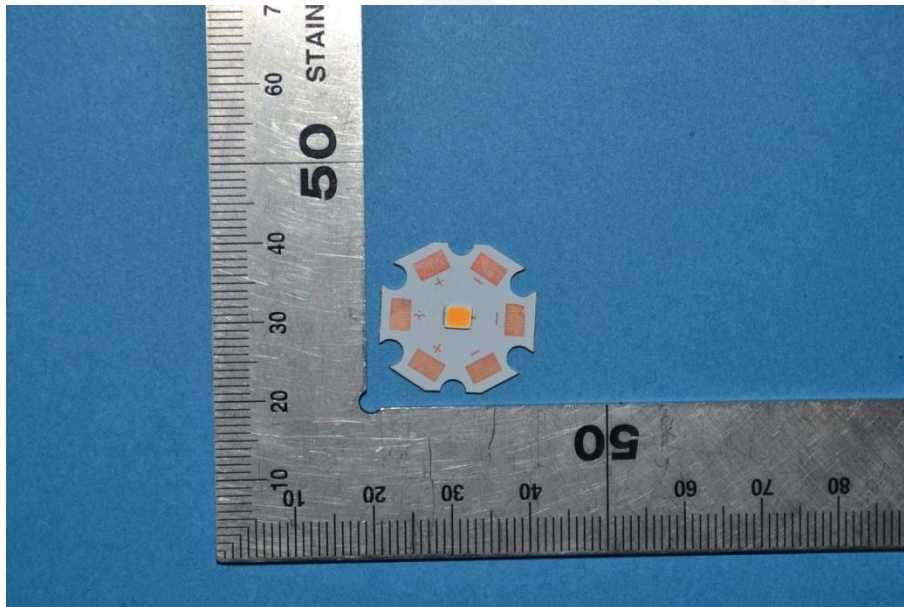
#### 4 - DUT Photo

##### 4.1 Mechanical Dimensions



All dimensions are in millimeter

##### 4.2 DUT Photo



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