TEST REPORT

According to ANSI/IES LM-80-15
For

EVERSTAR OPTO ELECTRONICS

1011,FILIX TOWERS,LBS MARG , BHANDUP WEST, MUMBAI 400078, INDIA.

Model: ES-2835-053V-L1-830

Report Type: 9000 Hours Test Report	**Product Type:** LED Package
Test Engineer:	Pote Wang
Report Number:	R2DG180607051-10
Test Date:	2014-11-14 to 2017-05-03
Report Date:	2018-06-08
Reviewed By:	Blake Zhang / EE Engineer
Test Facility:	Test facility was located at No.69,Pulongcun ,Puxinhu Industrial Area, Tangxia , Dongguan, Guangdong, China.
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.69,Pulongcun ,Puxinhu Industrial Area, Tangxia , Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax:+86-0769-86858588
Accreditation:	The IAS Accreditation Number TL-460.

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1 - General Information

1.1 Description of LED Light Sources

Sample Size:

52 PCS samples were received on 2014-11-10. The samples tested at T_S 85°C were numbered from 1 to 22, the samples tested at T_S 105°C were numbered from 23 to 52.

Part Number:	ES-2835-053V-L1-830
Part Type:	LED Package
Drive Level:	DC 180mA
Nominal CCT:	3000K
Power:	0.5W
Average Current Density per LED die:	395mA/mm^2
Average Power Density per LED die:	1.185W/mm^2
CRI:	80
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.

Family products covered by this report:

According to *ENERGY STAR® Requirements for the Use of LM-80 Data*, the following products can be covered by this report base on the information and declaration provided by manufacturer. The information of these models shows that the covered products meet all section 4 requirements of *ENERGY STAR® Requirements for the Use of LM-80 Data* (September 28, 2017)

This report covers the following models:

Model Number	CCT（K）
Tested Model: ES-2835-053V-L1-830	3000K
ES-2835-053V-**-827	2700K
ES-2835-053V-**-830	3000K
ES-2835-053V-**-840	4000K
ES-2835-053V-**-857	5700K
ES-2835-053V-**-860	6000K
ES-2835-053V-**-865	6500K

Note: The first and second *means Sorting revision,

Note:

1. The applicant EVERSTAR OPTO ELECTRONICS declare that their products with model ES-2835-053V-L1-830 are the same to the products in report#R2DG180604050-10 and is authorized by original applicant to use their test data.

2. All the data in previous report (R2DG180604050-10) is shared in this report.

1.2 Standards Used:

- ANSI/IES 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	Calibration date	Calibration due date
0.3m integrating sphere	EVERFINE	Diameter 0.3m	1011119	2017-03-09	2018-03-09
Programmable Test Power for LEDs	EVERFINE	LED300E	1008002	2017-03-03	2018-03-03
High accuracy array spectroradiometer	EVERFINE	HAAS-2000	1012016T	2017-03-09	2018-03-09
Standard Light Source	EVERFINE	D062	1011093	2017-09-13	2018-09-13
Precision digital stabilized DC power supply	EVERFINE	WY605-V110	G115987CJ7321114	2017-03-03	2018-03-03
Multilayer aging machine	BACL	B2-270	20005	2017-09-01	2018-09-01
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090004	2017-03-03	2018-03-03
Multilayer aging machine	BACL	B2-270	20022	2015-11-23	2016-11-22
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090007	2015-03-05	2016-03-05

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 ±3% of the specified value of the manufacturer during maintenance test, and was within ±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_{LED}) location, while the other is mounted at a distance of 5 mm above the TMP location.

During life testing, TMP_{LED} 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 ±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°C ± 2°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'. 2π measurement was used and sample was drived by DC power supply. The forward current was regulated to within ±0.5% of the nominal value. The test system was calibrated by halogen reference lamp. The ambient temperature during test was set to 25°C ± 2°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=1.6% (K=2), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is U=20K (K=2), at the 95% confidence level.

The uncertainty of the temperature is U=0.8671°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, 180mA

Part Number:	ES-2835-053V-L1-830
Number of Units:	22
Case Temperature:	>83°C
Ambient Temperature:	>80°C
Life Test Drive Current:	180mA
Measurement Current:	180mA

Data Set 2: 105°C, 180mA

Part Number:	ES-2835-053V-L1-830
Number of Units:	30
Case Temperature:	>103°C
Ambient Temperature:	>100°C
Life Test Drive Current:	180mA
Measurement Current:	180mA

2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α:	β:	Reported TM-21 L_{70} Lifetime
1	22	0	1000hrs	9000hrs	2.846E-06	0.996	>54000 hours
2	30	0	1000hrs	9000hrs	6.047E-06	1.003	>54000 hours

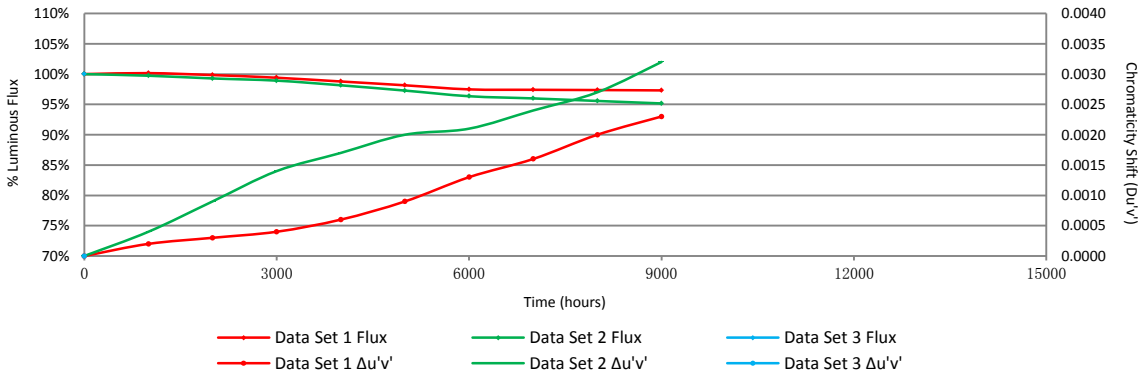
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	100.16%	99.84%	99.40%	98.78%	98.15%	97.48%	97.41%	97.37%	97.31%
2	99.73%	99.28%	98.92%	98.15%	97.28%	96.35%	95.99%	95.57%	95.16%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	0.0002	0.0003	0.0004	0.0006	0.0009	0.0013	0.0016	0.0020	0.0023
2	0.0004	0.0009	0.0014	0.0017	0.0020	0.0021	0.0024	0.0027	0.0032

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

3.1 Data Set 1, 85°C, 180mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	72.83	100.03	99.86	99.56	98.68	97.93	96.42	96.33	96.28	96.21
2	73.43	100.05	99.89	99.44	98.47	98.01	97.07	96.99	96.96	96.88
3	72.38	100.08	99.97	99.59	98.58	97.86	97.08	97.02	96.96	96.91
4	73.51	100.37	99.92	99.70	98.99	98.42	97.66	97.59	97.54	97.50
5	70.17	100.23	100.09	99.96	99.40	98.77	98.15	98.12	98.09	98.03
6	73.30	100.12	100.04	99.51	99.28	98.44	97.80	97.72	97.67	97.57
7	73.86	100.20	99.91	99.32	98.55	97.39	96.71	96.66	96.56	96.52
8	72.31	100.17	100.06	99.49	98.89	98.56	97.59	97.52	97.47	97.37
9	73.17	100.19	99.96	99.38	98.84	98.36	97.49	97.42	97.36	97.32
10	72.87	100.15	99.88	99.36	98.68	98.37	97.50	97.42	97.41	97.37
11	71.96	100.36	100.06	99.61	98.76	98.10	97.65	97.62	97.58	97.53
12	72.43	100.14	99.78	99.31	99.02	98.29	97.87	97.82	97.78	97.72
13	73.83	100.04	99.78	99.15	98.67	98.36	97.67	97.62	97.58	97.49
14	74.18	100.01	99.74	99.35	98.69	98.00	97.56	97.47	97.40	97.34
15	73.57	99.99	99.77	99.31	98.70	98.49	97.65	97.59	97.55	97.51
16	71.86	100.04	99.54	99.10	98.39	98.16	97.33	97.27	97.24	97.19
17	72.33	100.22	99.63	99.25	98.88	97.83	97.41	97.33	97.29	97.26
18	74.46	100.24	99.76	99.40	98.60	97.90	97.49	97.39	97.33	97.27
19	73.39	100.16	99.63	99.26	98.62	97.81	97.52	97.49	97.45	97.40
20	72.13	100.37	99.71	99.22	98.86	97.96	97.56	97.48	97.42	97.31
21	73.44	100.30	99.88	99.46	98.86	98.27	97.83	97.81	97.77	97.74
22	71.06	99.96	99.68	99.13	98.65	97.90	97.50	97.41	97.35	97.28
Avg.	72.84	100.16	99.84	99.40	98.78	98.15	97.48	97.41	97.37	97.31
Med.	73.02	100.16	99.87	99.37	98.69	98.13	97.54	97.47	97.41	97.35
st dev	1.0284	0.1242	0.1530	0.2023	0.2426	0.3195	0.3817	0.3898	0.3966	0.3975
Min.	70.17	99.96	99.54	99.10	98.39	97.39	96.42	96.33	96.28	96.21
Max.	74.46	100.37	100.09	99.96	99.40	98.77	98.15	98.12	98.09	98.03

3.2 Data Set 1, 85°C, 180mA (Forward Voltage)

No.	Forward Voltage (V)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	3.322	3.322	3.318	3.320	3.329	3.334	3.322	3.315	3.296	3.290
2	3.363	3.363	3.361	3.364	3.369	3.363	3.361	3.353	3.343	3.345
3	3.365	3.375	3.365	3.366	3.376	3.372	3.365	3.354	3.336	3.327
4	3.262	3.262	3.268	3.276	3.283	3.281	3.273	3.263	3.245	3.237
5	3.264	3.265	3.260	3.262	3.273	3.260	3.260	3.247	3.234	3.228
6	3.320	3.319	3.318	3.337	3.330	3.345	3.316	3.302	3.259	3.222
7	3.266	3.283	3.265	3.265	3.258	3.260	3.259	3.260	3.260	3.281
8	3.340	3.341	3.341	3.340	3.338	3.342	3.340	3.342	3.342	3.364
9	3.286	3.291	3.287	3.288	3.285	3.288	3.289	3.293	3.298	3.327
10	3.273	3.272	3.272	3.273	3.268	3.273	3.271	3.274	3.275	3.299
11	3.272	3.286	3.269	3.275	3.274	3.289	3.274	3.274	3.259	3.264
12	3.300	3.298	3.302	3.300	3.299	3.306	3.295	3.291	3.276	3.277
13	3.256	3.258	3.258	3.264	3.259	3.244	3.256	3.253	3.262	3.288
14	3.286	3.266	3.270	3.269	3.270	3.269	3.262	3.254	3.239	3.236
15	3.248	3.249	3.257	3.250	3.249	3.247	3.249	3.249	3.251	3.273
16	3.327	3.324	3.324	3.325	3.324	3.324	3.333	3.342	3.336	3.337
17	3.275	3.273	3.273	3.276	3.277	3.274	3.272	3.267	3.260	3.268
18	3.350	3.349	3.349	3.351	3.349	3.354	3.352	3.355	3.356	3.358
19	3.254	3.255	3.253	3.255	3.253	3.252	3.251	3.249	3.246	3.261
20	3.377	3.376	3.378	3.380	3.373	3.375	3.371	3.369	3.363	3.375
21	3.272	3.274	3.273	3.273	3.273	3.269	3.267	3.261	3.253	3.259
22	3.256	3.258	3.259	3.259	3.258	3.259	3.255	3.252	3.245	3.255
Avg.	3.2970	3.2981	3.2964	3.2985	3.2985	3.2991	3.2951	3.2918	3.2834	3.2896
Med.	3.2805	3.2845	3.2730	3.2760	3.2800	3.2845	3.2735	3.2740	3.2610	3.2790
st dev	0.0411	0.0411	0.0406	0.0414	0.0420	0.0438	0.0417	0.0422	0.0426	0.0459
Min.	3.2480	3.2490	3.2530	3.2500	3.2490	3.2440	3.2490	3.2470	3.2340	3.2220
Max.	3.3770	3.3760	3.3780	3.3800	3.3760	3.3750	3.3710	3.3690	3.3630	3.3750

3.3 Data Set 1, 85°C, 180mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')								
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	0.2472	0.5184	3107	0.0000	0.0003	0.0004	0.0006	0.0007	0.0012	0.0019	0.0026	0.0032
2	0.2439	0.5172	3202	0.0001	0.0002	0.0003	0.0004	0.0006	0.0011	0.0018	0.0025	0.0032
3	0.2463	0.5188	3126	0.0001	0.0001	0.0003	0.0004	0.0005	0.0011	0.0017	0.0024	0.0031
4	0.2471	0.5189	3105	0.0001	0.0002	0.0004	0.0005	0.0007	0.0012	0.0019	0.0026	0.0028
5	0.2471	0.5175	3114	0.0001	0.0002	0.0004	0.0005	0.0007	0.0012	0.0019	0.0026	0.0029
6	0.2440	0.5180	3193	0.0001	0.0007	0.0009	0.0011	0.0012	0.0017	0.0023	0.0021	0.0020
7	0.2465	0.5181	3127	0.0003	0.0004	0.0004	0.0009	0.0013	0.0014	0.0016	0.0020	0.0024
8	0.2465	0.5154	3147	0.0002	0.0004	0.0004	0.0009	0.0011	0.0013	0.0016	0.0018	0.0021
9	0.2467	0.5126	3163	0.0001	0.0002	0.0002	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016
10	0.2462	0.5152	3157	0.0002	0.0003	0.0004	0.0009	0.0010	0.0013	0.0016	0.0018	0.0021
11	0.2499	0.5197	3028	0.0002	0.0003	0.0004	0.0009	0.0010	0.0011	0.0013	0.0014	0.0016
12	0.2444	0.5137	3219	0.0001	0.0003	0.0003	0.0007	0.0010	0.0013	0.0016	0.0018	0.0021
13	0.2456	0.5176	3153	0.0001	0.0002	0.0002	0.0004	0.0009	0.0011	0.0013	0.0016	0.0018
14	0.2469	0.5187	3112	0.0003	0.0004	0.0004	0.0005	0.0010	0.0013	0.0016	0.0018	0.0021
15	0.2481	0.5176	3089	0.0001	0.0004	0.0004	0.0005	0.0011	0.0013	0.0014	0.0016	0.0017
16	0.2470	0.5107	3170	0.0001	0.0001	0.0001	0.0004	0.0011	0.0013	0.0015	0.0017	0.0019
17	0.2500	0.5195	3027	0.0002	0.0004	0.0004	0.0006	0.0010	0.0014	0.0017	0.0021	0.0024
18	0.2458	0.5185	3142	0.0003	0.0003	0.0004	0.0005	0.0009	0.0013	0.0016	0.0020	0.0024
19	0.2467	0.5174	3126	0.0001	0.0002	0.0003	0.0004	0.0008	0.0012	0.0016	0.0019	0.0023
20	0.2450	0.5185	3163	0.0002	0.0002	0.0003	0.0005	0.0009	0.0013	0.0016	0.0020	0.0024
21	0.2461	0.5176	3141	0.0003	0.0003	0.0004	0.0006	0.0009	0.0013	0.0016	0.0020	0.0024
22	0.2477	0.5186	3090	0.0001	0.0002	0.0003	0.0005	0.0009	0.0013	0.0018	0.0022	0.0026
Avg.	0.2466	0.5172	3132	0.0002	0.0003	0.0004	0.0006	0.0009	0.0013	0.0016	0.0020	0.0023
Med.	0.2466	0.5178	3134	0.0001	0.0003	0.0004	0.0005	0.0009	0.0013	0.0016	0.0020	0.0023
st dev	0.0016	0.0023	48.1350	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0002	0.0004	0.0005
Min.	0.2439	0.5107	3027	0.0000	0.0001	0.0001	0.0004	0.0005	0.0011	0.0013	0.0014	0.0016
Max.	0.2500	0.5197	3219	0.0003	0.0007	0.0009	0.0011	0.0013	0.0017	0.0023	0.0026	0.0032

3.4 Data Set 2, 105°C, 180mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
23	61.21	99.69	99.33	98.87	97.09	96.44	95.34	94.84	94.36	94.02
24	63.23	99.73	99.24	98.94	98.51	97.99	97.23	96.98	96.82	96.46
25	62.81	99.63	99.20	99.84	99.04	98.15	97.21	96.94	96.34	96.07
26	62.65	99.62	99.35	98.85	98.02	97.17	96.63	96.39	95.87	95.56
27	60.00	99.62	99.22	98.83	97.78	97.68	96.52	96.33	95.93	95.22
28	62.87	99.84	99.28	99.05	98.17	96.58	95.64	94.94	94.51	94.27
29	60.64	99.84	99.32	99.04	98.96	97.30	96.57	96.22	95.94	95.48
30	62.97	99.65	99.08	98.62	97.87	97.00	95.86	95.30	94.84	94.30
31	63.43	99.75	99.35	99.23	98.05	96.71	95.19	95.03	94.80	94.48
32	63.24	99.72	99.16	98.67	97.94	97.19	95.62	95.45	95.34	94.99
33	63.28	99.72	99.40	98.97	98.61	97.85	96.97	96.70	96.38	96.08
34	62.54	99.70	99.26	98.88	98.05	97.19	96.00	95.76	95.28	94.71
35	62.75	99.54	99.08	98.69	97.71	96.94	96.24	95.94	95.60	95.17
36	63.05	99.78	99.30	98.91	98.49	97.73	96.99	96.56	96.13	96.00
37	63.50	99.70	99.24	99.09	98.43	97.75	96.47	95.98	95.67	95.43
38	62.52	99.82	99.42	99.14	98.75	98.06	97.71	97.42	96.93	96.42
39	62.47	99.71	99.25	98.91	98.43	97.01	96.33	96.13	95.52	95.15
40	61.17	99.75	99.31	98.66	97.71	96.63	95.06	94.85	94.44	94.05
41	61.87	99.68	99.26	98.98	97.56	96.96	96.43	96.23	95.73	95.44
42	61.14	99.71	99.26	98.63	97.68	96.58	95.39	95.19	94.73	94.36
43	62.09	99.76	99.42	99.07	98.65	98.12	97.49	97.00	96.60	96.05
44	62.49	99.76	99.30	98.70	97.71	96.51	95.02	94.35	94.13	93.84
45	60.29	99.80	99.52	99.07	98.87	98.44	97.64	97.46	96.72	96.17
46	62.15	99.77	99.26	98.86	97.46	96.03	95.30	95.06	94.34	93.79
47	62.21	99.74	99.24	98.55	98.26	97.49	96.58	96.06	95.85	95.55
48	63.26	99.89	99.30	98.78	97.83	96.71	95.40	94.99	94.40	93.90
49	62.04	99.69	99.31	99.18	98.68	98.21	97.82	97.42	97.24	96.73
50	62.16	99.74	99.24	98.79	97.59	97.43	97.06	96.35	95.79	95.33
51	61.62	99.68	99.19	98.69	97.96	97.73	96.77	96.33	96.06	95.50
52	62.72	99.78	99.38	99.09	98.50	96.83	96.01	95.46	94.74	94.18
Avg.	62.28	99.73	99.28	98.92	98.15	97.28	96.35	95.99	95.57	95.16
Med.	62.51	99.72	99.27	98.89	98.05	97.19	96.45	96.09	95.70	95.28
st dev	0.9342	0.0747	0.0948	0.2522	0.4955	0.6298	0.8395	0.8634	0.8786	0.8753
Min.	60.00	99.54	99.08	98.55	97.09	96.03	95.02	94.35	94.13	93.79
Max.	63.50	99.89	99.52	99.84	99.04	98.44	97.82	97.46	97.24	96.73

3.5 Data Set 2, 105°C, 180mA (Forward Voltage)

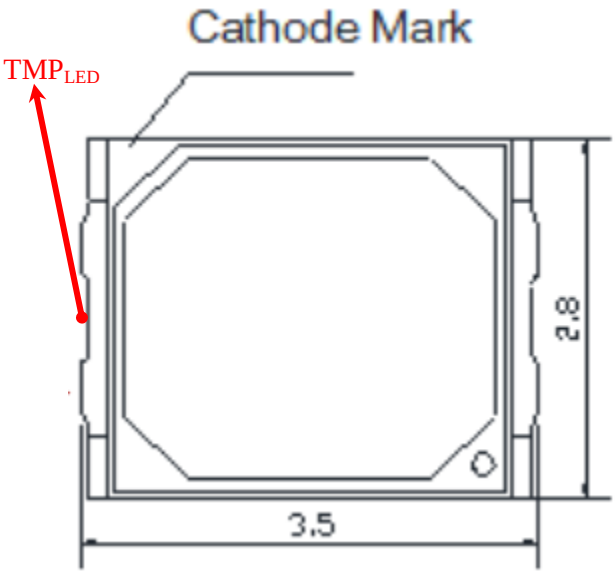
No.	Forward Voltage (V)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
23	3.448	3.434	3.452	3.469	3.488	3.484	3.489	3.489	3.443	3.441
24	3.413	3.404	3.430	3.475	3.452	3.454	3.479	3.461	3.456	3.439
25	3.447	3.440	3.437	3.488	3.468	3.479	3.486	3.484	3.494	3.465
26	3.389	3.384	3.391	3.391	3.407	3.411	3.408	3.406	3.395	3.396
27	3.416	3.422	3.416	3.447	3.468	3.451	3.442	3.449	3.495	3.502
28	3.392	3.386	3.390	3.387	3.391	3.404	3.406	3.428	3.401	3.401
29	3.430	3.404	3.409	3.425	3.480	3.466	3.453	3.448	3.405	3.409
30	3.422	3.423	3.424	3.420	3.450	3.477	3.483	3.502	3.411	3.428
31	3.466	3.442	3.423	3.465	3.425	3.442	3.448	3.490	3.433	3.474
32	3.448	3.422	3.428	3.440	3.454	3.495	3.475	3.485	3.483	3.509
33	3.425	3.421	3.448	3.479	3.481	3.471	3.495	3.497	3.459	3.454
34	3.398	3.393	3.405	3.434	3.438	3.433	3.444	3.407	3.406	3.401
35	3.393	3.404	3.399	3.417	3.423	3.427	3.398	3.403	3.402	3.405
36	3.410	3.402	3.405	3.392	3.372	3.404	3.404	3.434	3.403	3.409
37	3.420	3.406	3.436	3.423	3.421	3.427	3.440	3.447	3.496	3.475
38	3.395	3.378	3.401	3.419	3.413	3.403	3.416	3.415	3.395	3.407
39	3.428	3.415	3.453	3.423	3.477	3.466	3.425	3.463	3.413	3.417
40	3.431	3.408	3.429	3.419	3.449	3.438	3.397	3.440	3.435	3.445
41	3.416	3.406	3.466	3.418	3.404	3.485	3.478	3.437	3.504	3.501
42	3.398	3.419	3.403	3.403	3.409	3.388	3.385	3.423	3.467	3.479
43	3.445	3.447	3.440	3.422	3.417	3.453	3.422	3.428	3.502	3.494
44	3.433	3.429	3.391	3.404	3.464	3.438	3.412	3.449	3.444	3.493
45	3.336	3.325	3.365	3.395	3.388	3.504	3.393	3.395	3.453	3.472
46	3.403	3.391	3.396	3.442	3.436	3.419	3.434	3.429	3.429	3.421
47	3.417	3.410	3.417	3.418	3.457	3.418	3.412	3.416	3.434	3.414
48	3.389	3.374	3.402	3.409	3.413	3.407	3.404	3.427	3.479	3.463
49	3.387	3.383	3.385	3.412	3.393	3.414	3.399	3.444	3.451	3.478
50	3.427	3.422	3.428	3.448	3.449	3.456	3.445	3.476	3.451	3.433
51	3.400	3.395	3.419	3.407	3.404	3.402	3.425	3.437	3.501	3.494
52	3.400	3.386	3.463	3.440	3.427	3.433	3.393	3.434	3.430	3.406
Avg.	3.4141	3.4058	3.4184	3.4277	3.4339	3.4416	3.4330	3.4448	3.4457	3.4475
Med.	3.4160	3.4060	3.4180	3.4210	3.4315	3.4380	3.4250	3.4385	3.4435	3.4430
st dev	0.0256	0.0247	0.0246	0.0270	0.0314	0.0316	0.0337	0.0297	0.0360	0.0367
Min.	3.3360	3.3250	3.3650	3.3870	3.3720	3.3880	3.3850	3.3950	3.3950	3.3960
Max.	3.4660	3.4470	3.4660	3.4880	3.4880	3.5040	3.4950	3.5020	3.5040	3.5090

3.6 Data Set 2, 105°C, 180mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')								
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
23	0.2504	0.5226	2998	0.0005	0.0008	0.0014	0.0018	0.0027	0.0036	0.0039	0.0043	0.0048
24	0.2524	0.5247	2937	0.0005	0.0012	0.0015	0.0018	0.0025	0.0034	0.0040	0.0043	0.0048
25	0.2510	0.5236	2977	0.0004	0.0010	0.0014	0.0017	0.0021	0.0027	0.0032	0.0038	0.0042
26	0.2512	0.5240	2970	0.0004	0.0009	0.0016	0.0019	0.0021	0.0028	0.0033	0.0039	0.0043
27	0.2512	0.5219	2982	0.0003	0.0005	0.0009	0.0012	0.0013	0.0016	0.0020	0.0027	0.0033
28	0.2516	0.5234	2962	0.0006	0.0009	0.0014	0.0017	0.0019	0.0022	0.0026	0.0033	0.0038
29	0.2525	0.5244	2935	0.0004	0.0009	0.0014	0.0016	0.0018	0.0020	0.0022	0.0030	0.0036
30	0.2510	0.5228	2982	0.0004	0.0008	0.0013	0.0015	0.0017	0.0019	0.0021	0.0027	0.0035
31	0.2520	0.5242	2948	0.0007	0.0011	0.0014	0.0019	0.0020	0.0023	0.0025	0.0031	0.0039
32	0.2528	0.5239	2931	0.0005	0.0009	0.0015	0.0017	0.0019	0.0021	0.0022	0.0029	0.0037
33	0.2512	0.5249	2964	0.0006	0.0009	0.0004	0.0010	0.0013	0.0017	0.0018	0.0020	0.0026
34	0.2516	0.5237	2960	0.0006	0.0009	0.0008	0.0004	0.0007	0.0013	0.0015	0.0022	0.0028
35	0.2508	0.5240	2977	0.0003	0.0006	0.0011	0.0008	0.0008	0.0012	0.0015	0.0023	0.0030
36	0.2523	0.5248	2938	0.0006	0.0010	0.0012	0.0012	0.0007	0.0006	0.0010	0.0013	0.0022
37	0.2513	0.5241	2967	0.0004	0.0009	0.0011	0.0016	0.0003	0.0009	0.0007	0.0009	0.0015
38	0.2524	0.5246	2936	0.0007	0.0011	0.0017	0.0018	0.0020	0.0013	0.0012	0.0015	0.0023
39	0.2523	0.5235	2946	0.0006	0.0011	0.0014	0.0013	0.0012	0.0011	0.0010	0.0011	0.0016
40	0.2524	0.5209	2959	0.0004	0.0011	0.0013	0.0014	0.0013	0.0013	0.0013	0.0019	0.0023
41	0.2529	0.5243	2927	0.0006	0.0010	0.0016	0.0021	0.0021	0.0020	0.0021	0.0023	0.0028
42	0.2506	0.5215	2999	0.0000	0.0006	0.0010	0.0014	0.0013	0.0013	0.0016	0.0018	0.0023
43	0.2525	0.5245	2936	0.0005	0.0011	0.0019	0.0023	0.0023	0.0022	0.0024	0.0030	0.0032
44	0.2512	0.5236	2971	0.0003	0.0008	0.0010	0.0013	0.0014	0.0013	0.0015	0.0021	0.0022
45	0.2490	0.5205	3046	0.0007	0.0012	0.0009	0.0010	0.0007	0.0017	0.0022	0.0030	0.0031
46	0.2532	0.5226	2929	0.0004	0.0008	0.0019	0.0029	0.0031	0.0026	0.0024	0.0024	0.0026
47	0.2506	0.5218	2997	0.0001	0.0006	0.0012	0.0021	0.0024	0.0018	0.0020	0.0020	0.0022
48	0.2512	0.5227	2977	0.0002	0.0008	0.0015	0.0026	0.0030	0.0023	0.0023	0.0022	0.0022
49	0.2531	0.5238	2925	0.0004	0.0009	0.0019	0.0027	0.0036	0.0037	0.0040	0.0035	0.0038
50	0.2512	0.5229	2975	0.0003	0.0009	0.0017	0.0025	0.0037	0.0038	0.0040	0.0039	0.0041
51	0.2531	0.5230	2929	0.0003	0.0007	0.0014	0.0023	0.0036	0.0037	0.0040	0.0038	0.0040
52	0.2525	0.5233	2941	0.0004	0.0010	0.0019	0.0023	0.0035	0.0040	0.0043	0.0041	0.0045
Avg.	0.2517	0.5234	2961	0.0004	0.0009	0.0014	0.0017	0.0020	0.0021	0.0024	0.0027	0.0032
Med.	0.2516	0.5236	2961	0.0004	0.0009	0.0014	0.0017	0.0019	0.0020	0.0022	0.0027	0.0032
st dev	0.0010	0.0012	27.9373	0.0002	0.0002	0.0004	0.0006	0.0009	0.0009	0.0010	0.0010	0.0009
Min.	0.2490	0.5205	2925	0.0000	0.0005	0.0004	0.0004	0.0003	0.0006	0.0007	0.0009	0.0015
Max.	0.2532	0.5249	3046	0.0007	0.0012	0.0019	0.0029	0.0037	0.0040	0.0043	0.0043	0.0048

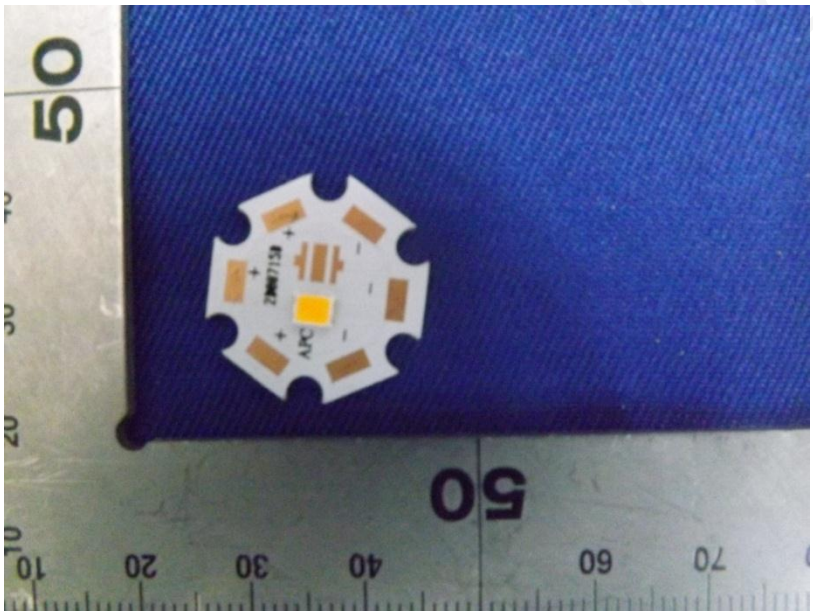
4 - DUT Photo

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 DUT Photo



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