

TEST REPORT

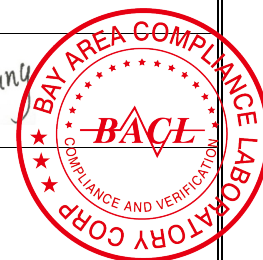
According to ANSI/IES LM-80-21
For

Bridgelux Inc.

46410 Fremont Boulevard , Fremont ,CA 94538 USA

Model: BXML-30E-22H-6BL

Report Type: 17000 Hours Test Report		Product Type: LED Package	
Reviewed By:	Pote Wang <i>Pote Wang</i>		
Report Number:	2602P42401E-EE		
Test Date:	2021-04-06 to 2023-04-27		
Report Date:	2026-01-21		
Approved by:	Blake Zhang / EE Engineer <i>Blake Zhang</i>		
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F (B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D Shihua Road, Futian Free Trade Zone Shenzhen 518038 China Tel: +86-755-33320018 Fax: +86-755-33320008		
Test Facility:	Test facility was located at No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China.		



Note: 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.(Shenzhen). This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, or any agency of the U.S. Government. *This report contains data that are not covered by the NVLAP accreditation.

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1 - General Information

1.1 Description of LED Light Sources[#]

Sample Size:

50 PCS test samples were in good condition and received on 2021-04-05. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Bridgelux Inc.
Part Number:	BXLM-30E-22H-6BL
Part Type:	LED Package
Drive Level:	DC 150mA
Nominal CCT:	3000K
Power:	1W
Average Current Density per LED die:	150.9mA/mm ²
Average Power Density per LED die:	0.966W/mm ²
CRI:	80
Die Spacing:	0.15mm

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.

Note:

1. The applicant Bridgelux Inc. declare that their products with model BXLM-30E-22H-6BL are the same to the products in report #DG3210405-56368E-EE-1-17000 and is authorized by original applicant to use their test data.
2. All the data in previous report (DG3210405-56368E-EE-1-17000) is shared in this report.

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 Name	Total Input Current (mA)	Power (W)	CCT (K)	Number of dies	Current Density per Die(mA/mm ²)	Power Density per PCB (W/mm ²)	Die Spacing (mm)
BXLM-30E-22H-6BL	150	1	3000	4	150.9	0.106	0.15
BXLM-***-12H-6RB	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6RC	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6B	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6C	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6D	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6E	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-6RBL	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-12H-3DL	60	0.2	2700-6500	2	60.38	0.0186	0.15
BXLM-***-12H-6BL	150	1	2700-6500	2	150.9	0.106	0.15
BXLM-***-22H-6BL	150	1	2700-6500	4	150.9	0.106	0.15
BXLM-***B-11L-3CFZ	65	0.2	2700-6500	1	60.38	0.0186	0.15

Model Name	Total Input Current (mA)	Power (W)	CCT (K)	Number of dies	Current Density per Die (mA/mm ²)	Power Density per PCB (W/mm ²)	Die Spacing (mm)
BXLM-**E-11L-3CFZ1	65	0.2	2700-6500	1	60.38	0.0186	0.15
BXLM-**E-11L-3CFZ2	65	0.2	2700-6500	1	60.38	0.0186	0.15

NOTES:

1. The first and second * denote designates nominal CCT (27=2700K, 30=3000K, 35=3500K, 40=4000K, 45=4500K, 50=5000K, 57=5700K, 60=6000K, 65=6500K).
2. The third * is a different product solution (Color coordinate and applications and special solution etc...)

1.2 Standards and Reference Documentations

- ANSI/IES LM-80-21: IES Approved method: measuring maintenance of light output characteristics of solid-state light sources
- *CIE 127:2007: Measurement of LEDs (This standard was not accredited by NVLAP)
- *ENERGY STAR® Requirements for the Use of LM-80 Data (This standard was not accredited by NVLAP)

1.3 Testing Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
High Accuracy Array Spectroradiometer	EVERFINE	HAAS 2000	P600674CM5391140	2022-06-23	2023-06-22
0.5M Integrating Sphere	EVERFINE	0.5m	NA	2022-11-18	2023-11-17
LED Test Source	EVERFINE	LTS-300	P185616CJ1391143	2022-11-18	2023-11-17
Standard Light Source	EVERFINE	D062	1011093	2021-10-15	2023-10-14
Multilayer aging machine	BACL	B2-270	20015	2022-10-19	2023-10-18
Program-controlled D.C. Stabilized Voltage Supply	Hanshenpuyuan	HSPY-60-03	N/A	2022-10-19	2023-10-18

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_{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 $\pm 3\%$ 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°C $\pm$ 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 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. (Shenzhen) 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: BXML-30E-22H-6BL
Number of Units: 25
TMP Temperature: $>83^{\circ}\text{C}$
Ambient Temperature: $>80^{\circ}\text{C}$
Life Test Drive Current: 150mA
Measurement Current: 150mA

Data Set 2: 105°C , 150mA

Part Number: BXML-30E-22H-6BL
Number of Units: 25
TMP Temperature: $>103^{\circ}\text{C}$
Ambient Temperature: $>100^{\circ}\text{C}$
Life Test Drive Current: 150mA
Measurement Current: 150mA

2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α	B	Reported TM-21 L ₇₀ Lifetime	Reported TM-21 L ₉₀ Lifetime
1	25	0	1000hrs	17000hrs	1.927E-06	1.002	>102000 hours	56,000 hours
2	25	0	1000hrs	17000hrs	1.831E-06	0.997	>102000 hours	56,000 hours

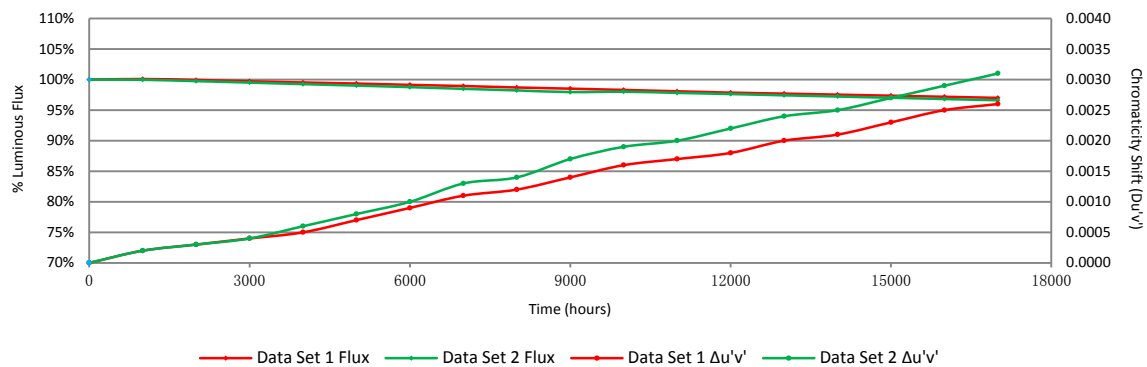
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	100.10%	99.95%	99.73%	99.53%	99.36%	99.14%	98.95%	98.71%	98.52%
2	99.97%	99.75%	99.51%	99.26%	99.02%	98.77%	98.49%	98.23%	97.96%
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	
	98.31%	98.09%	97.87%	97.71%	97.54%	97.37%	97.19%	97.01%	
	98.02%	97.83%	97.64%	97.43%	97.23%	97.03%	96.82%	96.62%	

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	0.0002	0.0003	0.0004	0.0005	0.0007	0.0009	0.0011	0.0012	0.0014
2	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0014	0.0017
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	
	0.0016	0.0017	0.0018	0.0020	0.0021	0.0023	0.0025	0.0026	
	0.0019	0.0020	0.0022	0.0024	0.0025	0.0027	0.0029	0.0031	

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	158.00	100.13	100.06	99.87	99.68	99.43	99.24	99.11	98.80	98.54
2	159.10	100.06	99.81	99.50	99.31	99.18	99.06	98.87	98.68	98.43
3	159.50	100.06	99.87	99.62	99.44	99.37	99.25	99.12	98.81	98.62
4	158.60	99.94	99.81	99.62	99.37	99.24	99.05	98.87	98.61	98.49
5	157.30	100.19	100.06	99.87	99.62	99.49	99.30	99.17	98.86	98.60
6	157.00	99.87	99.94	99.75	99.55	99.43	99.30	99.11	98.92	98.66
7	156.20	100.26	100.19	100.06	99.74	99.62	99.42	99.23	98.98	98.72
8	159.50	100.25	100.13	99.81	99.56	99.44	99.18	98.87	98.62	98.43
9	158.70	100.13	99.75	99.56	99.37	99.24	99.05	98.80	98.55	98.24
10	156.90	100.06	99.94	99.81	99.68	99.55	99.30	99.04	98.92	98.73
11	159.00	100.19	99.87	99.69	99.43	99.31	99.12	98.93	98.62	98.43
12	157.90	99.87	99.68	99.49	99.24	99.11	98.86	98.61	98.42	98.29
13	157.80	100.13	99.94	99.62	99.49	99.37	99.18	98.99	98.67	98.48
14	158.70	100.25	100.13	99.94	99.68	99.50	99.24	99.05	98.80	98.55
15	157.90	100.32	100.19	99.94	99.75	99.49	99.18	98.99	98.80	98.61
16	158.30	99.87	99.68	99.56	99.43	99.24	98.99	98.80	98.67	98.55
17	157.50	99.94	99.87	99.62	99.49	99.37	99.11	98.86	98.54	98.41
18	157.10	100.19	100.06	99.75	99.55	99.43	99.17	98.98	98.73	98.54
19	157.00	100.06	100.13	99.94	99.75	99.55	99.36	99.17	98.98	98.73
20	156.70	99.81	99.68	99.49	99.36	99.17	98.92	98.79	98.47	98.28
21	158.90	100.25	100.19	99.94	99.81	99.62	99.37	99.06	98.74	98.62
22	157.70	100.19	100.06	99.75	99.62	99.30	99.05	98.86	98.60	98.48
23	159.60	100.13	99.87	99.62	99.44	99.19	98.87	98.75	98.56	98.50
24	158.30	100.32	100.13	99.81	99.49	99.24	98.93	98.74	98.55	98.42
25	157.00	100.06	99.75	99.55	99.43	99.24	99.04	98.92	98.79	98.73
Avg.	158.01	100.10	99.95	99.73	99.53	99.36	99.14	98.95	98.71	98.52
Med.	157.90	100.13	99.94	99.75	99.49	99.37	99.17	98.93	98.68	98.54
st dev	0.97	0.1474	0.1718	0.1661	0.1542	0.1468	0.1591	0.1592	0.1556	0.1395
Min.	156.20	99.81	99.68	99.49	99.24	99.11	98.86	98.61	98.42	98.24
Max.	159.60	100.32	100.19	100.06	99.81	99.62	99.42	99.23	98.98	98.73

No.	Lumen Maintenance (%)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	98.29	98.10	97.78	97.59	97.34	97.22	97.09	96.90
2	98.30	98.05	97.67	97.42	97.30	96.98	96.61	96.54
3	98.43	98.18	97.87	97.68	97.43	97.18	96.87	96.68
4	98.36	98.30	98.11	97.79	97.60	97.41	97.23	97.04
5	98.22	98.09	97.77	97.52	97.46	97.27	97.08	96.88
6	98.54	98.22	97.90	97.71	97.58	97.39	97.13	97.01
7	98.46	98.21	98.02	97.82	97.70	97.57	97.44	97.25
8	98.12	97.93	97.74	97.55	97.37	97.18	96.99	96.80
9	98.05	97.79	97.54	97.35	97.29	97.10	97.04	96.85
10	98.53	98.34	98.15	97.96	97.77	97.58	97.39	97.20
11	98.30	98.24	97.99	97.86	97.67	97.48	97.30	97.11
12	98.16	98.04	97.85	97.66	97.47	97.28	97.09	96.90
13	98.23	97.97	97.85	97.72	97.59	97.40	97.28	97.08
14	98.36	97.98	97.86	97.73	97.61	97.48	97.35	97.16
15	98.29	97.97	97.78	97.72	97.66	97.59	97.40	97.34
16	98.29	97.98	97.85	97.79	97.60	97.54	97.28	97.09
17	98.22	97.97	97.71	97.65	97.40	97.21	97.02	96.83
18	98.35	98.03	97.84	97.71	97.52	97.45	97.26	96.94
19	98.47	98.22	98.09	97.90	97.71	97.52	97.32	97.13
20	98.09	97.83	97.64	97.57	97.32	97.26	97.06	96.87
21	98.49	98.24	98.05	97.92	97.80	97.55	97.36	97.29
22	98.29	98.03	97.97	97.91	97.65	97.53	97.46	97.27
23	98.37	98.31	97.93	97.62	97.43	97.24	97.12	96.87
24	98.17	98.10	98.04	97.85	97.66	97.41	97.28	97.16
25	98.41	98.03	97.83	97.71	97.52	97.32	97.26	97.01
Avg.	98.31	98.09	97.87	97.71	97.54	97.37	97.19	97.01
Med.	98.30	98.05	97.85	97.71	97.58	97.40	97.26	97.01
st dev	0.1354	0.1464	0.1531	0.1539	0.1504	0.1670	0.1978	0.1989
Min.	98.05	97.79	97.54	97.35	97.29	96.98	96.61	96.54
Max.	98.54	98.34	98.15	97.96	97.80	97.59	97.46	97.34

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

No.	Forward Voltage (V)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
1	5.737	5.673	5.672	5.676	5.674	5.669	5.670	5.667	5.664	5.682
2	5.694	5.702	5.697	5.700	5.695	5.701	5.695	5.689	5.687	5.709
3	5.682	5.702	5.696	5.700	5.697	5.710	5.696	5.696	5.689	5.724
4	5.685	5.715	5.698	5.700	5.698	5.718	5.700	5.695	5.692	5.714
5	5.684	5.711	5.698	5.702	5.698	5.700	5.699	5.697	5.691	5.710
6	5.683	5.694	5.692	5.693	5.690	5.693	5.692	5.697	5.696	5.696
7	5.723	5.711	5.701	5.706	5.703	5.706	5.701	5.710	5.710	5.703
8	5.715	5.694	5.685	5.687	5.685	5.712	5.683	5.696	5.700	5.692
9	5.677	5.690	5.686	5.690	5.688	5.692	5.686	5.711	5.702	5.688
10	5.694	5.715	5.704	5.710	5.701	5.709	5.700	5.708	5.727	5.703
11	5.676	5.681	5.683	5.684	5.678	5.710	5.678	5.679	5.700	5.682
12	5.668	5.677	5.683	5.675	5.673	5.674	5.670	5.677	5.684	5.671
13	5.680	5.677	5.683	5.672	5.668	5.672	5.665	5.671	5.685	5.667
14	5.688	5.694	5.689	5.692	5.688	5.693	5.688	5.691	5.702	5.689
15	5.680	5.698	5.689	5.694	5.690	5.697	5.694	5.692	5.706	5.694
16	5.692	5.677	5.666	5.672	5.670	5.675	5.668	5.673	5.679	5.674
17	5.701	5.702	5.692	5.697	5.693	5.698	5.691	5.695	5.703	5.697
18	5.698	5.694	5.686	5.689	5.688	5.691	5.686	5.692	5.684	5.693
19	5.664	5.673	5.663	5.673	5.671	5.679	5.667	5.671	5.698	5.669
20	5.712	5.702	5.695	5.699	5.701	5.701	5.693	5.699	5.696	5.704
21	5.680	5.694	5.687	5.694	5.689	5.690	5.685	5.692	5.696	5.688
22	5.689	5.677	5.667	5.675	5.670	5.675	5.668	5.672	5.692	5.669
23	5.739	5.706	5.693	5.698	5.693	5.697	5.691	5.696	5.698	5.694
24	5.673	5.681	5.673	5.678	5.675	5.676	5.673	5.676	5.689	5.673
25	5.711	5.686	5.678	5.680	5.679	5.683	5.677	5.682	5.695	5.679
Avg.	5.693	5.693	5.686	5.689	5.686	5.693	5.685	5.689	5.695	5.691
Med.	5.688	5.694	5.687	5.692	5.688	5.693	5.686	5.692	5.696	5.692
st dev	0.020	0.013	0.011	0.012	0.011	0.014	0.012	0.013	0.012	0.015
Min.	5.664	5.673	5.663	5.672	5.668	5.669	5.665	5.667	5.664	5.667
Max.	5.739	5.715	5.704	5.710	5.703	5.718	5.701	5.711	5.727	5.724

No.	Forward Voltage (V)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	5.677	5.661	5.732	5.678	5.671	5.667	5.664	5.662
2	5.691	5.683	5.698	5.695	5.695	5.688	5.686	5.686
3	5.691	5.688	5.699	5.693	5.701	5.691	5.692	5.688
4	5.693	5.684	5.700	5.694	5.701	5.695	5.693	5.692
5	5.693	5.680	5.698	5.696	5.703	5.696	5.693	5.692
6	5.684	5.674	5.696	5.687	5.693	5.686	5.685	5.682
7	5.694	5.683	5.704	5.700	5.704	5.698	5.692	5.692
8	5.682	5.664	5.687	5.683	5.690	5.680	5.678	5.678
9	5.682	5.662	5.690	5.685	5.691	5.684	5.679	5.676
10	5.698	5.681	5.711	5.701	5.710	5.698	5.696	5.696
11	5.672	5.659	5.680	5.677	5.683	5.673	5.673	5.672
12	5.665	5.654	5.676	5.672	5.674	5.669	5.667	5.666
13	5.664	5.648	5.669	5.666	5.670	5.666	5.662	5.663
14	5.686	5.665	5.690	5.688	5.691	5.685	5.683	5.679
15	5.689	5.670	5.693	5.691	5.695	5.690	5.687	5.684
16	5.665	5.648	5.672	5.667	5.671	5.666	5.664	5.665
17	5.686	5.671	5.695	5.690	5.697	5.690	5.687	5.688
18	5.684	5.668	5.691	5.686	5.691	5.683	5.679	5.680
19	5.662	5.649	5.670	5.666	5.670	5.667	5.662	5.660
20	5.690	5.676	5.724	5.696	5.700	5.694	5.690	5.689
21	5.682	5.665	5.689	5.685	5.689	5.685	5.680	5.683
22	5.661	5.651	5.667	5.666	5.671	5.667	5.662	5.663
23	5.696	5.676	5.694	5.691	5.694	5.688	5.685	5.688
24	5.670	5.657	5.676	5.672	5.676	5.671	5.668	5.667
25	5.677	5.664	5.680	5.676	5.682	5.675	5.674	5.673
Avg.	5.681	5.667	5.691	5.684	5.689	5.682	5.679	5.679
Med.	5.684	5.665	5.691	5.686	5.691	5.685	5.680	5.680
st dev	0.012	0.012	0.016	0.011	0.012	0.011	0.011	0.011
Min.	5.661	5.648	5.667	5.666	5.670	5.666	5.662	5.660
Max.	5.698	5.688	5.732	5.701	5.710	5.698	5.696	5.696

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	0.2495	0.5221	3022	0.0002	0.0003	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0016
2	0.2488	0.5191	3059	0.0002	0.0004	0.0003	0.0005	0.0006	0.0007	0.0009	0.0011	0.0013
3	0.2477	0.5209	3075	0.0003	0.0004	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0013
4	0.2499	0.5202	3024	0.0002	0.0003	0.0004	0.0006	0.0007	0.0008	0.0009	0.0011	0.0012
5	0.2497	0.5206	3027	0.0001	0.0001	0.0002	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017
6	0.2485	0.5204	3059	0.0001	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012
7	0.2466	0.5175	3127	0.0001	0.0002	0.0003	0.0004	0.0007	0.0010	0.0011	0.0014	0.0014
8	0.2492	0.5217	3032	0.0000	0.0001	0.0004	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013
9	0.2473	0.5187	3102	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0009	0.0011	0.0013
10	0.2484	0.5165	3088	0.0003	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0013	0.0014
11	0.2485	0.5199	3060	0.0000	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0014
12	0.2499	0.5220	3013	0.0003	0.0005	0.0006	0.0007	0.0010	0.0011	0.0013	0.0015	0.0017
13	0.2487	0.5198	3058	0.0001	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011	0.0013
14	0.2474	0.5193	3094	0.0002	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0011	0.0012
15	0.2486	0.5200	3059	0.0001	0.0003	0.0003	0.0004	0.0007	0.0010	0.0011	0.0013	0.0015
16	0.2485	0.5207	3058	0.0003	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016
17	0.2506	0.5214	2999	0.0001	0.0002	0.0001	0.0004	0.0006	0.0008	0.0011	0.0011	0.0013
18	0.2485	0.5191	3066	0.0002	0.0004	0.0005	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017
19	0.2481	0.5175	3088	0.0001	0.0001	0.0002	0.0003	0.0005	0.0007	0.0008	0.0009	0.0011
20	0.2499	0.5211	3019	0.0002	0.0003	0.0005	0.0007	0.0009	0.0010	0.0012	0.0013	0.0017
21	0.2485	0.5229	3041	0.0001	0.0001	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0013
22	0.2500	0.5207	3020	0.0002	0.0003	0.0004	0.0004	0.0006	0.0008	0.0011	0.0013	0.0015
23	0.2471	0.5166	3122	0.0001	0.0001	0.0003	0.0004	0.0007	0.0010	0.0011	0.0012	0.0013
24	0.2474	0.5211	3082	0.0000	0.0001	0.0002	0.0003	0.0005	0.0008	0.0009	0.0010	0.0011
25	0.2491	0.5182	3057	0.0001	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0011	0.0013
Avg.	0.2487	0.5199	3058	0.0002	0.0003	0.0004	0.0005	0.0007	0.0009	0.0011	0.0012	0.0014
Med.	0.2485	0.5202	3059	0.0001	0.0002	0.0003	0.0004	0.0007	0.0009	0.0011	0.0012	0.0013
st dev	0.0010	0.0017	34	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
Min.	0.2466	0.5165	2999	0.0000	0.0001	0.0001	0.0003	0.0005	0.0006	0.0008	0.0009	0.0011
Max.	0.2506	0.5229	3127	0.0003	0.0005	0.0006	0.0007	0.0010	0.0011	0.0013	0.0015	0.0017

No.	Chromaticity Shift ($\Delta u'v'$)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	0.0017	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030
2	0.0014	0.0016	0.0018	0.0020	0.0021	0.0023	0.0025	0.0027
3	0.0014	0.0015	0.0017	0.0019	0.0021	0.0022	0.0024	0.0025
4	0.0015	0.0016	0.0018	0.0021	0.0022	0.0023	0.0024	0.0025
5	0.0019	0.0021	0.0023	0.0025	0.0026	0.0027	0.0028	0.0030
6	0.0013	0.0013	0.0016	0.0018	0.0020	0.0022	0.0025	0.0027
7	0.0016	0.0017	0.0019	0.0021	0.0021	0.0023	0.0025	0.0026
8	0.0016	0.0017	0.0019	0.0022	0.0023	0.0025	0.0026	0.0028
9	0.0015	0.0016	0.0019	0.0019	0.0020	0.0023	0.0025	0.0027
10	0.0015	0.0016	0.0017	0.0019	0.0021	0.0023	0.0024	0.0026
11	0.0016	0.0017	0.0019	0.0021	0.0023	0.0024	0.0026	0.0027
12	0.0018	0.0019	0.0021	0.0021	0.0023	0.0025	0.0027	0.0029
13	0.0016	0.0016	0.0017	0.0018	0.0018	0.0021	0.0022	0.0024
14	0.0014	0.0015	0.0016	0.0017	0.0018	0.0020	0.0021	0.0022
15	0.0016	0.0017	0.0018	0.0018	0.0019	0.0020	0.0021	0.0022
16	0.0017	0.0018	0.0019	0.0020	0.0021	0.0023	0.0025	0.0026
17	0.0016	0.0016	0.0018	0.0019	0.0021	0.0023	0.0025	0.0026
18	0.0018	0.0018	0.0020	0.0021	0.0023	0.0023	0.0024	0.0025
19	0.0014	0.0015	0.0016	0.0016	0.0018	0.0020	0.0021	0.0022
20	0.0018	0.0019	0.0021	0.0022	0.0023	0.0024	0.0025	0.0026
21	0.0016	0.0017	0.0020	0.0021	0.0023	0.0024	0.0025	0.0025
22	0.0016	0.0017	0.0018	0.0019	0.0021	0.0022	0.0024	0.0025
23	0.0016	0.0017	0.0018	0.0020	0.0022	0.0023	0.0025	0.0026
24	0.0012	0.0013	0.0015	0.0017	0.0019	0.0021	0.0023	0.0025
25	0.0014	0.0016	0.0018	0.0018	0.0020	0.0022	0.0023	0.0025
Avg.	0.0016	0.0017	0.0018	0.0020	0.0021	0.0023	0.0025	0.0026
Med.	0.0016	0.0017	0.0018	0.0020	0.0021	0.0023	0.0025	0.0026
st dev	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Min.	0.0012	0.0013	0.0015	0.0016	0.0018	0.0020	0.0021	0.0022
Max.	0.0019	0.0021	0.0023	0.0025	0.0026	0.0027	0.0028	0.0030

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	157.30	100.06	99.87	99.55	99.17	98.73	98.41	98.03	97.71	97.27
27	158.40	99.94	99.75	99.56	99.31	99.18	98.99	98.80	98.61	98.30
28	156.90	100.06	99.87	99.68	99.49	99.24	98.98	98.73	98.53	98.28
29	157.60	99.81	99.68	99.43	99.18	98.79	98.48	98.16	97.84	97.40
30	156.60	100.32	99.94	99.62	99.30	98.98	98.66	98.34	98.02	97.70
31	156.70	100.13	99.94	99.55	99.23	98.92	98.53	98.09	97.64	97.26
32	157.60	100.19	99.87	99.56	99.43	99.24	98.98	98.79	98.48	98.29
33	158.00	99.94	99.81	99.68	99.43	99.11	98.86	98.61	98.42	98.29
34	158.00	99.81	99.68	99.49	99.30	99.11	98.92	98.73	98.42	98.23
35	159.10	99.69	99.56	99.31	99.18	99.06	98.81	98.55	98.30	98.05
36	159.60	99.81	99.62	99.37	99.00	98.87	98.75	98.56	98.37	98.12
37	158.00	99.87	99.62	99.43	99.18	98.99	98.73	98.48	98.29	98.10
38	160.10	100.06	99.88	99.63	99.31	99.00	98.69	98.38	98.13	97.75
39	158.00	99.94	99.75	99.49	99.37	99.05	98.86	98.67	98.35	98.16
40	156.80	100.13	99.81	99.55	99.17	98.85	98.34	97.90	97.58	97.19
41	157.60	100.06	99.81	99.56	99.43	99.30	99.18	98.92	98.54	98.29
42	157.00	100.13	99.94	99.68	99.43	99.24	98.98	98.73	98.47	98.34
43	158.40	99.94	99.81	99.56	99.31	99.12	98.86	98.55	98.30	98.17
44	156.50	99.94	99.74	99.49	99.23	98.98	98.85	98.59	98.34	98.15
45	159.80	99.81	99.62	99.44	99.12	98.94	98.69	98.44	98.31	98.06
46	159.70	99.75	99.50	99.19	99.00	98.87	98.69	98.43	98.31	98.06
47	158.30	99.87	99.62	99.37	99.18	99.05	98.86	98.55	98.36	98.17
48	156.90	99.87	99.68	99.49	99.17	98.85	98.53	98.15	97.83	97.51
49	156.30	99.81	99.55	99.30	99.17	99.04	98.85	98.66	98.53	98.27
50	158.10	100.25	99.94	99.68	99.30	98.99	98.73	98.42	98.04	97.66
Avg.	157.89	99.97	99.75	99.51	99.26	99.02	98.77	98.49	98.23	97.96
Med.	158.00	99.94	99.75	99.55	99.23	99.00	98.81	98.55	98.31	98.12
st dev	1.10	0.1646	0.1339	0.1303	0.1300	0.1494	0.2006	0.2619	0.2991	0.3747
Min.	156.30	99.69	99.50	99.19	99.00	98.73	98.34	97.90	97.58	97.19
Max.	160.10	100.32	99.94	99.68	99.49	99.30	99.18	98.92	98.61	98.34

No.	Lumen Maintenance (%)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	98.09	97.90	97.65	97.39	97.27	97.08	96.82	96.69
27	97.98	97.85	97.66	97.54	97.35	97.16	96.84	96.72
28	98.15	98.02	97.90	97.77	97.64	97.51	97.39	97.26
29	97.97	97.65	97.46	97.27	97.08	96.89	96.70	96.51
30	98.21	98.02	97.83	97.70	97.57	97.45	97.25	97.06
31	98.02	97.83	97.64	97.45	97.19	97.00	96.81	96.55
32	98.10	97.78	97.65	97.40	97.14	96.89	96.70	96.45
33	97.97	97.91	97.59	97.34	97.22	97.03	96.84	96.46
34	97.97	97.59	97.41	97.28	97.09	96.77	96.52	96.33
35	97.86	97.74	97.49	97.30	97.11	96.86	96.67	96.42
36	97.99	97.87	97.68	97.24	96.93	96.68	96.43	96.30
37	97.78	97.53	97.47	97.28	97.03	96.77	96.58	96.39
38	98.38	98.06	97.88	97.63	97.44	97.13	96.88	96.63
39	97.91	97.72	97.53	97.28	96.96	96.71	96.52	96.33
40	98.09	97.90	97.70	97.58	97.32	97.07	96.81	96.56
41	98.16	97.97	97.78	97.59	97.40	97.21	97.02	96.89
42	98.03	97.83	97.64	97.45	97.26	97.07	96.88	96.69
43	97.92	97.85	97.66	97.47	97.29	97.10	96.97	96.84
44	97.96	97.83	97.70	97.57	97.51	97.38	97.25	97.12
45	97.81	97.56	97.31	97.00	96.81	96.62	96.43	96.25
46	97.93	97.75	97.56	97.43	97.24	97.06	96.87	96.68
47	97.85	97.73	97.47	97.22	97.03	96.84	96.65	96.46
48	98.09	97.83	97.64	97.39	97.26	97.13	96.88	96.69
49	98.14	97.95	97.76	97.57	97.44	97.25	97.06	96.93
50	98.17	98.04	97.85	97.60	97.22	97.03	96.65	96.27
Avg.	98.02	97.83	97.64	97.43	97.23	97.03	96.82	96.62
Med.	97.99	97.83	97.65	97.43	97.24	97.06	96.82	96.56
st dev	0.1374	0.1466	0.1505	0.1763	0.2038	0.2316	0.2481	0.2765
Min.	97.78	97.53	97.31	97.00	96.81	96.62	96.43	96.25
Max.	98.38	98.06	97.90	97.77	97.64	97.51	97.39	97.26

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	5.715	5.698	5.691	5.696	5.692	5.697	5.689	5.694	5.714	5.697
27	5.680	5.702	5.692	5.694	5.691	5.695	5.691	5.690	5.707	5.693
28	5.652	5.661	5.656	5.658	5.660	5.660	5.656	5.655	5.697	5.663
29	5.689	5.698	5.695	5.699	5.697	5.698	5.692	5.691	5.704	5.697
30	5.674	5.694	5.685	5.695	5.688	5.691	5.686	5.684	5.696	5.690
31	5.686	5.706	5.701	5.709	5.702	5.706	5.699	5.698	5.716	5.702
32	5.671	5.690	5.691	5.692	5.689	5.692	5.685	5.682	5.696	5.690
33	5.664	5.686	5.677	5.684	5.680	5.697	5.677	5.673	5.686	5.678
34	5.667	5.690	5.678	5.685	5.679	5.685	5.676	5.676	5.687	5.674
35	5.664	5.681	5.677	5.684	5.678	5.695	5.676	5.675	5.689	5.674
36	5.673	5.694	5.683	5.692	5.687	5.689	5.683	5.684	5.696	5.684
37	5.666	5.690	5.682	5.688	5.685	5.707	5.682	5.677	5.686	5.683
38	5.671	5.694	5.688	5.692	5.691	5.696	5.685	5.685	5.690	5.686
39	5.654	5.673	5.669	5.676	5.670	5.674	5.667	5.670	5.674	5.667
40	5.648	5.669	5.662	5.670	5.666	5.668	5.661	5.662	5.670	5.660
41	5.671	5.698	5.692	5.698	5.693	5.696	5.689	5.691	5.731	5.689
42	5.645	5.673	5.663	5.670	5.668	5.669	5.661	5.664	5.672	5.663
43	5.669	5.694	5.686	5.691	5.690	5.693	5.684	5.686	5.692	5.685
44	5.675	5.702	5.693	5.701	5.696	5.702	5.691	5.696	5.698	5.691
45	5.663	5.690	5.683	5.693	5.686	5.691	5.679	5.683	5.687	5.683
46	5.676	5.702	5.690	5.698	5.694	5.701	5.690	5.691	5.698	5.694
47	5.672	5.698	5.688	5.696	5.693	5.696	5.688	5.692	5.695	5.691
48	5.658	5.681	5.670	5.676	5.674	5.678	5.670	5.673	5.679	5.673
49	5.678	5.702	5.695	5.704	5.699	5.702	5.695	5.695	5.707	5.701
50	5.674	5.702	5.690	5.701	5.694	5.698	5.689	5.692	5.699	5.692
Avg.	5.670	5.691	5.683	5.690	5.686	5.691	5.682	5.682	5.695	5.684
Med.	5.671	5.694	5.686	5.692	5.689	5.695	5.685	5.684	5.696	5.686
st dev	0.014	0.012	0.012	0.012	0.011	0.012	0.011	0.011	0.014	0.012
Min.	5.645	5.661	5.656	5.658	5.660	5.660	5.656	5.655	5.670	5.660
Max.	5.715	5.706	5.701	5.709	5.702	5.707	5.699	5.698	5.731	5.702

No.	Forward Voltage (V)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	5.690	5.676	5.701	5.693	5.695	5.687	5.691	5.687
27	5.684	5.670	5.703	5.690	5.692	5.694	5.690	5.686
28	5.650	5.638	5.668	5.658	5.659	5.661	5.653	5.649
29	5.691	5.679	5.701	5.697	5.694	5.699	5.691	5.689
30	5.680	5.673	5.698	5.690	5.688	5.691	5.683	5.682
31	5.695	5.684	5.711	5.713	5.702	5.704	5.697	5.697
32	5.685	5.671	5.693	5.690	5.689	5.688	5.682	5.682
33	5.674	5.660	5.686	5.684	5.680	5.679	5.676	5.674
34	5.674	5.663	5.694	5.684	5.678	5.680	5.675	5.675
35	5.673	5.663	5.693	5.683	5.677	5.680	5.676	5.673
36	5.678	5.669	5.698	5.693	5.685	5.686	5.680	5.679
37	5.677	5.667	5.702	5.690	5.682	5.685	5.679	5.678
38	5.682	5.666	5.708	5.695	5.687	5.689	5.685	5.683
39	5.662	5.650	5.684	5.676	5.667	5.668	5.664	5.665
40	5.656	5.642	5.676	5.668	5.660	5.664	5.658	5.658
41	5.684	5.673	5.710	5.698	5.690	5.692	5.685	5.689
42	5.659	5.645	5.679	5.670	5.662	5.665	5.656	5.660
43	5.679	5.665	5.711	5.691	5.684	5.687	5.682	5.684
44	5.687	5.680	5.718	5.701	5.693	5.695	5.690	5.691
45	5.674	5.667	5.751	5.690	5.680	5.684	5.677	5.679
46	5.688	5.674	5.731	5.697	5.692	5.693	5.690	5.688
47	5.685	5.676	5.718	5.697	5.688	5.690	5.687	5.687
48	5.669	5.655	5.678	5.680	5.671	5.673	5.670	5.669
49	5.692	5.681	5.706	5.706	5.696	5.697	5.694	5.694
50	5.686	5.678	5.701	5.700	5.691	5.692	5.687	5.689
Avg.	5.678	5.667	5.701	5.689	5.683	5.685	5.680	5.679
Med.	5.680	5.669	5.701	5.690	5.687	5.687	5.682	5.682
st dev	0.012	0.012	0.018	0.012	0.012	0.011	0.012	0.012
Min.	5.650	5.638	5.668	5.658	5.659	5.661	5.653	5.649
Max.	5.695	5.684	5.751	5.713	5.702	5.704	5.697	5.697

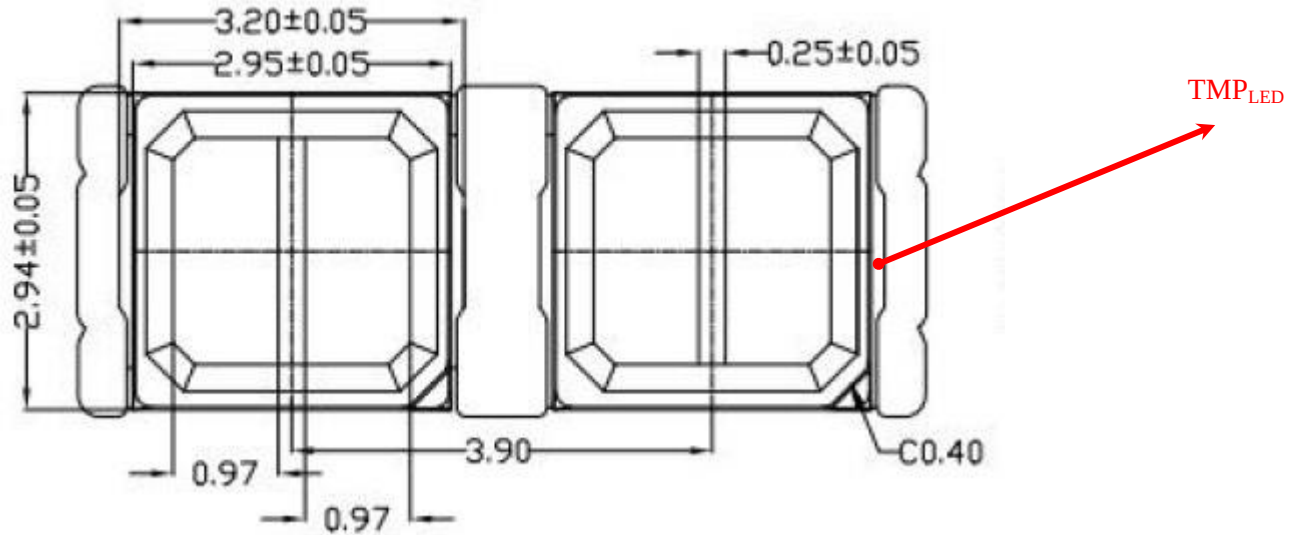
3.6 Data Set 2, 105°C, 150mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)								
	Ohr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs
26	0.2487	0.5180	3069	0.0001	0.0001	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013	0.0014
27	0.2508	0.5218	2992	0.0002	0.0002	0.0004	0.0005	0.0006	0.0008	0.0011	0.0012	0.0015
28	0.2486	0.5201	3059	0.0000	0.0001	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012
29	0.2498	0.5197	3031	0.0003	0.0004	0.0004	0.0005	0.0007	0.0010	0.0013	0.0016	0.0018
30	0.2500	0.5205	3020	0.0001	0.0003	0.0004	0.0006	0.0009	0.0011	0.0013	0.0015	0.0017
31	0.2481	0.5180	3084	0.0001	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015
32	0.2494	0.5198	3040	0.0001	0.0002	0.0003	0.0005	0.0007	0.0010	0.0012	0.0014	0.0016
33	0.2479	0.5199	3077	0.0001	0.0002	0.0004	0.0006	0.0008	0.0009	0.0012	0.0012	0.0014
34	0.2481	0.5212	3063	0.0002	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013	0.0015	0.0016
35	0.2500	0.5217	3013	0.0003	0.0004	0.0006	0.0007	0.0008	0.0010	0.0013	0.0016	0.0019
36	0.2483	0.5196	3069	0.0001	0.0002	0.0005	0.0006	0.0008	0.0010	0.0012	0.0013	0.0015
37	0.2500	0.5197	3026	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0015	0.0016	0.0017
38	0.2483	0.5197	3068	0.0000	0.0002	0.0004	0.0005	0.0008	0.0011	0.0013	0.0016	0.0018
39	0.2488	0.5201	3053	0.0000	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0013	0.0016
40	0.2494	0.5205	3035	0.0001	0.0002	0.0004	0.0006	0.0009	0.0011	0.0011	0.0013	0.0015
41	0.2491	0.5216	3036	0.0001	0.0003	0.0004	0.0006	0.0007	0.0010	0.0013	0.0015	0.0017
42	0.2499	0.5192	3030	0.0000	0.0003	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016
43	0.2508	0.5223	2989	0.0001	0.0002	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016
44	0.2517	0.5200	2980	0.0002	0.0004	0.0005	0.0006	0.0009	0.0011	0.0014	0.0016	0.0018
45	0.2497	0.5212	3022	0.0003	0.0004	0.0005	0.0006	0.0009	0.0012	0.0014	0.0017	0.0020
46	0.2482	0.5191	3075	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0016	0.0018
47	0.2502	0.5209	3014	0.0003	0.0006	0.0006	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016
48	0.2487	0.5164	3080	0.0002	0.0005	0.0005	0.0008	0.0009	0.0011	0.0013	0.0016	0.0019
49	0.2507	0.5197	3008	0.0002	0.0004	0.0005	0.0007	0.0010	0.0011	0.0014	0.0016	0.0018
50	0.2500	0.5202	3022	0.0001	0.0004	0.0006	0.0007	0.0009	0.0012	0.0015	0.0017	0.0018
Avg.	0.2494	0.5200	3038	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0014	0.0017
Med.	0.2494	0.5200	3035	0.0001	0.0003	0.0004	0.0006	0.0008	0.0011	0.0013	0.0015	0.0016
st dev	0.0010	0.0013	30	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
Min.	0.2479	0.5164	2980	0.0000	0.0001	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012
Max.	0.2517	0.5223	3084	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017	0.0020

No.	Chromaticity Shift ($\Delta u'v'$)							
	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	0.0015	0.0016	0.0019	0.0021	0.0023	0.0026	0.0029	0.0030
27	0.0016	0.0018	0.0019	0.0021	0.0023	0.0024	0.0027	0.0028
28	0.0014	0.0015	0.0016	0.0018	0.0019	0.0021	0.0023	0.0024
29	0.0021	0.0022	0.0023	0.0024	0.0025	0.0025	0.0028	0.0030
30	0.0020	0.0021	0.0023	0.0025	0.0026	0.0028	0.0030	0.0032
31	0.0016	0.0017	0.0021	0.0024	0.0025	0.0026	0.0027	0.0030
32	0.0017	0.0018	0.0019	0.0021	0.0023	0.0026	0.0028	0.0029
33	0.0017	0.0018	0.0020	0.0021	0.0022	0.0024	0.0025	0.0026
34	0.0018	0.0019	0.0022	0.0023	0.0025	0.0027	0.0028	0.0031
35	0.0021	0.0022	0.0024	0.0026	0.0028	0.0030	0.0032	0.0034
36	0.0017	0.0018	0.0019	0.0022	0.0023	0.0024	0.0026	0.0028
37	0.0020	0.0021	0.0023	0.0025	0.0026	0.0028	0.0030	0.0033
38	0.0020	0.0021	0.0023	0.0026	0.0027	0.0029	0.0031	0.0033
39	0.0019	0.0020	0.0021	0.0023	0.0026	0.0027	0.0030	0.0032
40	0.0017	0.0018	0.0021	0.0023	0.0025	0.0027	0.0029	0.0031
41	0.0019	0.0020	0.0022	0.0024	0.0026	0.0029	0.0031	0.0033
42	0.0019	0.0020	0.0022	0.0024	0.0027	0.0029	0.0032	0.0034
43	0.0018	0.0020	0.0023	0.0025	0.0026	0.0028	0.0030	0.0032
44	0.0020	0.0021	0.0022	0.0023	0.0025	0.0027	0.0030	0.0032
45	0.0022	0.0023	0.0025	0.0026	0.0028	0.0029	0.0030	0.0032
46	0.0021	0.0022	0.0026	0.0028	0.0029	0.0030	0.0032	0.0033
47	0.0018	0.0019	0.0022	0.0024	0.0026	0.0029	0.0031	0.0032
48	0.0022	0.0023	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035
49	0.0020	0.0021	0.0022	0.0024	0.0026	0.0029	0.0032	0.0034
50	0.0020	0.0021	0.0023	0.0025	0.0027	0.0029	0.0031	0.0035
Avg.	0.0019	0.0020	0.0022	0.0024	0.0025	0.0027	0.0029	0.0031
Med.	0.0019	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0032
st dev	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003
Min.	0.0014	0.0015	0.0016	0.0018	0.0019	0.0021	0.0023	0.0024
Max.	0.0022	0.0023	0.0026	0.0028	0.0029	0.0031	0.0033	0.0035

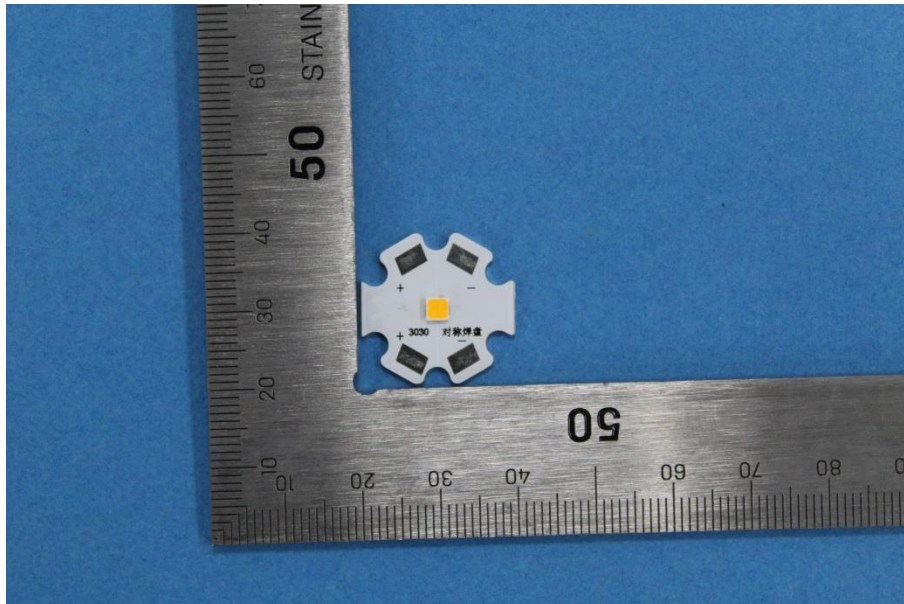
4 - DUT Photo

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 DUT Photo



Statement

1. The information marked “superscript #” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. This report includes some test methods are not in NVLAP accreditation scope marked *.
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
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*****END OF REPORT*****