



TEST REPORT

According to ANSI/IES LM-80-21
For

Bridgelux Inc.

46410 Fremont Boulevard , Fremont ,CA 94538 USA

Model: BXLP-27C-185-24DL

Report Type: 17000 Hours Test Report	Product Type: LED Package
Reviewed By:	Bruce Lu <i>Bruce Lu</i>
Report Number:	2602P42402E-EE
Test Date:	2023-04-22 to 2025-05-07
Report Date:	2026-01-21
Approved by:	Blake Zhang / EE Engineer <i>Blake Zhang</i>
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax: +86-0769-86858588
Test Facility:	Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

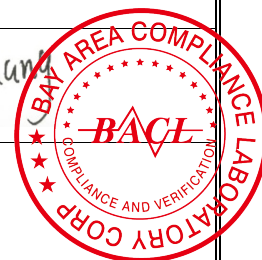


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1 - General Information

1.1 Description of LED Light Sources[#]

Sample Size:

50 PCS test samples were in good condition and received on 2023-04-20. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Bridgelux Inc.
Part Number:	BXLP-27C-185-24DL
Part Type:	LED Package
Drive Level:	DC 60mA
Nominal CCT:	2700K
Power:	2.2W
Average Current Density per LED die:	206mA/mm ²
Average Power Density per LED die:	0.63W/mm ²
CRI:	70
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:

Except for 9000hrs to 17000hrs test data, the test facility of the data of other test was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

Note:

1. The applicant Bridgelux Inc. declare that their products with model BXLP-27C-185-24DL are the same to the products in report #2302S82501E-EE-1-17000 and is authorized by original applicant to use their test data.
2. All the data in previous report (2302S82501E-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)
BXLP-27C-185-24DL	60	2.2	2700	12	206	0.088	0.15
BXLP-***-185-24DL	45	1	2200-6500	8	155	0.043	0.15
BXLP-***-1A5-30DL	30	1	2200-6500	10	103	0.043	0.15

NOTES:

1. The first and second * denote designates nominal CCT (22=2200K, 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
- 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
0.5m Integrating Sphere	Hangzhouyuming	0.5m	NA	2024-07-25	2025-07-24
0.5m Integrating Sphere/CCD Spectrometer	Hangzhouyuming	0.5m /SPM-5000	C612012A	2024-07-25	2025-07-24
CC&CV DC Power Supply	Hangzhouyuming	DPS-500	W412022M	2024-07-25	2025-07-24
Standard Light Source	EVERFINE	D062	M133799CM1381112	2023-05-12	2025-05-11
Multilayer aging machine	BACL	B2-270	20015	2024-07-26	2025-07-25
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11060002	2024-07-26	2025-07-25

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 $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, RH <65%.

1.6 Photometric Measurement Method and Uncertainty

Integrating sphere and spectroradiometer is used to measure luminous flux and chromaticity coordinate u'v'. 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. (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, 60mA

Part Number: BXLP-27C-185-24DL

Number of Units: 25

TMP Temperature: >83°C

Ambient Temperature: >80°C

Life Test Drive Current: 60mA

Measurement Current: 60mA

Data Set 2: 105°C, 60mA

Part Number: BXLP-27C-185-24DL

Number of Units: 25

TMP Temperature: >103°C

Ambient Temperature: >100°C

Life Test Drive Current: 60mA

Measurement Current: 60mA

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	2.000e-6	1.0043	> 102,000 hours	54,800 hours
2	25	0	1000hrs	17000hrs	2.153e-6	1.0039	> 102,000 hours	50,800 hours

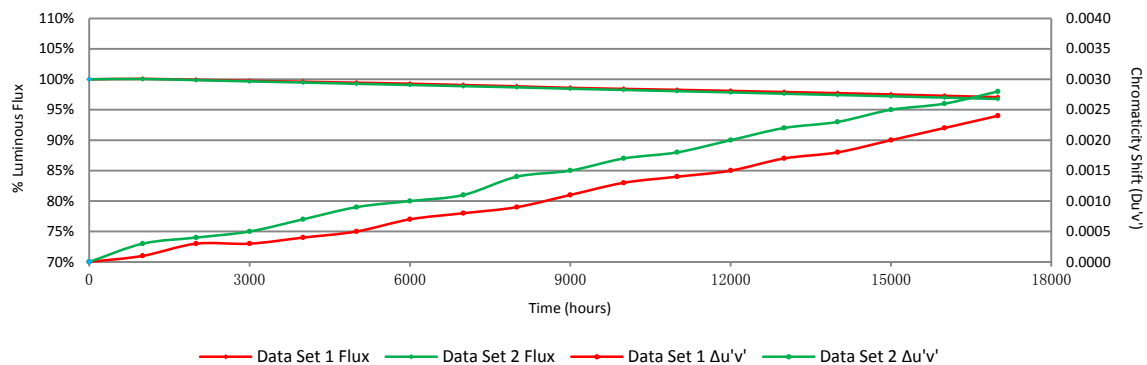
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.08%	99.92%	99.75%	99.60%	99.44%	99.28%	99.06%	98.85%	98.60%	98.43%
2	100.05%	99.86%	99.66%	99.47%	99.26%	99.07%	98.87%	98.68%	98.45%	98.25%
	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs			
	98.27%	98.10%	97.91%	97.73%	97.51%	97.29%	97.07%			
	98.05%	97.85%	97.63%	97.42%	97.21%	96.99%	96.77%			

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.0001	0.0003	0.0003	0.0004	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013
2	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0011	0.0014	0.0015	0.0017
	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs			
	0.0014	0.0015	0.0017	0.0018	0.0020	0.0022	0.0024			
	0.0018	0.0020	0.0022	0.0023	0.0025	0.0026	0.0028			

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

3.1 Data Set 1, 85°C, 60mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)											
	Ohr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
1	430.20	100.07	99.91	99.74	99.63	99.47	99.35	99.16	98.84	98.58	98.16	97.93	97.70
2	423.70	100.14	100.00	99.83	99.69	99.55	99.43	99.22	99.08	98.91	98.84	98.65	98.47
3	426.70	100.16	99.88	99.65	99.39	99.18	99.02	98.66	98.55	98.27	97.96	97.91	97.84
4	426.10	100.07	99.93	99.77	99.65	99.48	99.34	99.13	98.99	98.85	98.76	98.71	98.62
5	430.00	100.09	99.93	99.77	99.65	99.51	99.33	99.16	98.93	98.40	98.26	97.98	97.74
6	424.10	100.07	99.93	99.79	99.65	99.50	99.32	99.17	99.03	98.89	98.75	98.61	98.42
7	428.40	100.07	99.91	99.79	99.63	99.44	99.32	99.21	99.02	98.90	98.69	98.60	98.44
8	426.30	100.09	99.95	99.81	99.65	99.48	99.39	99.18	99.09	98.85	98.76	98.62	98.38
9	427.40	100.07	99.91	99.79	99.63	99.44	99.32	99.20	99.04	98.83	98.74	98.62	98.41
10	422.80	100.07	99.95	99.79	99.62	99.46	99.31	98.98	98.68	98.51	98.23	97.99	97.73
11	426.60	100.07	99.95	99.79	99.65	99.53	99.34	99.20	99.02	98.85	98.71	98.59	98.45
12	422.40	100.14	100.00	99.83	99.69	99.53	99.38	99.24	99.10	98.96	98.77	98.67	98.48
13	427.10	100.09	99.74	99.63	99.44	99.30	99.18	98.99	98.85	98.64	98.55	98.38	98.24
14	427.30	100.07	99.93	99.77	99.63	99.46	99.37	99.13	99.02	98.88	98.69	98.57	98.41
15	426.60	100.00	99.81	99.62	99.51	99.39	99.25	99.13	98.97	98.76	98.66	98.59	98.55
16	425.70	100.16	100.02	99.86	99.74	99.58	99.41	99.20	98.80	98.26	98.10	97.84	97.56
17	425.10	100.07	99.93	99.76	99.60	99.51	99.34	99.13	99.01	98.61	98.38	97.91	97.67
18	424.70	100.09	99.88	99.65	99.39	99.15	99.03	98.73	98.52	98.19	98.00	97.83	97.55
19	436.10	100.00	99.95	99.79	99.63	99.47	99.27	99.08	98.85	98.69	98.42	98.28	98.23
20	432.00	100.12	99.98	99.81	99.68	99.56	99.31	98.96	98.29	97.75	97.59	97.29	97.11
21	423.90	100.00	99.81	99.67	99.58	99.41	99.29	99.08	98.96	98.77	98.63	98.42	97.95
22	421.20	100.07	99.93	99.76	99.64	99.48	99.34	99.12	99.07	98.86	98.74	98.58	98.46
23	427.60	99.93	99.77	99.58	99.49	99.30	99.13	98.74	98.29	98.06	97.99	97.90	97.80
24	433.60	100.12	99.98	99.82	99.70	99.52	99.38	99.22	99.08	98.87	98.78	98.71	98.62
25	425.20	100.16	100.00	99.74	99.44	99.20	98.85	98.52	98.21	97.93	97.65	97.60	97.55
Avg.	426.83	100.08	99.92	99.75	99.60	99.44	99.28	99.06	98.85	98.60	98.43	98.27	98.10
Med.	426.60	100.07	99.93	99.77	99.63	99.47	99.32	99.13	98.97	98.76	98.63	98.42	98.24
st dev	3.47	0.06	0.07	0.08	0.10	0.12	0.14	0.20	0.27	0.34	0.38	0.41	0.43
Min.	421.20	99.93	99.74	99.58	99.39	99.15	98.85	98.52	98.21	97.75	97.59	97.29	97.11
Max.	436.10	100.16	100.02	99.86	99.74	99.58	99.43	99.24	99.10	98.96	98.84	98.71	98.62

No.	Lumen Maintenance (%)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	97.44	97.28	97.07	96.89	96.75
2	98.37	98.14	97.95	97.78	97.62
3	97.73	97.54	97.40	97.23	96.98
4	98.38	98.01	97.84	97.68	97.42
5	97.63	97.44	97.26	96.98	96.79
6	98.30	98.14	97.95	97.69	97.52
7	98.16	97.99	97.71	97.57	97.46
8	98.19	98.10	97.87	97.70	97.49
9	98.29	98.20	97.94	97.78	97.68
10	97.59	97.42	97.35	97.11	96.93
11	98.12	97.89	97.73	97.52	97.42
12	98.15	97.96	97.68	97.44	97.16
13	98.01	97.87	97.68	97.59	97.35
14	98.24	98.03	97.73	97.40	97.03
15	98.36	98.24	97.96	97.70	97.42
16	97.32	97.20	96.99	96.69	96.43
17	97.62	97.53	97.29	97.11	96.75
18	97.27	97.20	96.92	96.68	96.59
19	98.12	97.84	97.48	97.25	96.90
20	97.04	96.97	96.90	96.74	96.41
21	97.85	97.66	97.48	97.00	96.77
22	98.34	97.96	97.63	97.48	97.29
23	97.66	97.45	97.19	96.96	96.70
24	98.36	98.15	97.99	97.69	97.46
25	97.27	97.11	96.80	96.57	96.38
Avg.	97.91	97.73	97.51	97.29	97.07
Med.	98.12	97.87	97.63	97.40	97.03
st dev	0.42	0.39	0.38	0.39	0.41
Min.	97.04	96.97	96.80	96.57	96.38
Max.	98.38	98.24	97.99	97.78	97.68

3.2 Data Set 1, 85°C, 60mA (Forward Voltage)

No.	Forward Voltage (V)												
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
1	33.21	33.25	33.26	33.24	33.16	33.29	33.28	33.26	33.19	33.23	33.26	33.29	33.23
2	33.17	33.25	33.26	33.24	33.23	33.29	33.25	33.21	33.27	33.23	33.25	33.28	33.23
3	33.16	33.25	33.26	33.30	33.23	33.29	33.24	33.21	33.27	33.23	33.25	33.28	33.23
4	33.13	33.25	33.26	33.30	33.24	33.29	33.24	33.21	33.27	33.23	33.25	33.28	33.23
5	33.18	33.24	33.26	33.30	33.23	33.30	33.26	33.21	33.27	33.23	33.25	33.27	33.23
6	33.21	33.24	33.26	33.29	33.23	33.30	33.25	33.21	33.27	33.22	33.26	33.27	33.23
7	33.13	33.24	33.26	33.30	33.23	33.30	33.25	33.20	33.27	33.22	33.26	33.27	33.22
8	33.16	33.23	33.26	33.29	33.23	33.29	33.25	33.20	33.29	33.22	33.26	33.27	33.22
9	33.13	33.23	33.26	33.30	33.23	33.29	33.25	33.20	33.39	33.21	33.26	33.27	33.22
10	33.23	33.32	33.26	33.30	33.22	33.31	33.24	33.20	33.38	33.21	33.26	33.27	33.21
11	33.13	33.31	33.26	33.31	33.29	33.31	33.24	33.20	33.38	33.21	33.26	33.27	33.21
12	33.20	33.31	33.26	33.30	33.29	33.19	33.25	33.20	33.37	33.21	33.26	33.26	33.19
13	33.13	33.31	33.26	33.21	33.29	33.19	33.25	33.20	33.37	33.21	33.26	33.26	33.19
14	33.13	33.30	33.23	33.21	33.29	33.20	33.25	33.25	33.36	33.22	33.25	33.26	33.19
15	33.21	33.30	33.23	33.20	33.29	33.19	33.24	33.24	33.36	33.22	33.25	33.26	33.18
16	33.13	33.30	33.23	33.20	33.28	33.19	33.24	33.24	33.36	33.22	33.25	33.26	33.18
17	33.18	33.29	33.22	33.19	33.28	33.19	33.24	33.24	33.35	33.22	33.25	33.26	33.18
18	33.23	33.29	33.22	33.19	33.28	33.19	33.24	33.24	33.35	33.23	33.25	33.26	33.18
19	33.12	33.29	33.22	33.19	33.28	33.20	33.24	33.24	33.35	33.23	33.25	33.25	33.18
20	33.17	33.29	33.22	33.18	33.28	33.19	33.24	33.24	33.35	33.25	33.35	33.30	33.18
21	33.20	33.28	33.22	33.22	33.28	33.20	33.24	33.26	33.35	33.30	33.33	33.30	33.18
22	33.23	33.28	33.22	33.22	33.17	33.19	33.23	33.26	33.36	33.30	33.33	33.30	33.29
23	33.11	33.28	33.23	33.21	33.17	33.19	33.23	33.26	33.35	33.29	33.33	33.30	33.29
24	33.15	33.28	33.24	33.21	33.18	33.19	33.23	33.26	33.35	33.29	33.32	33.29	33.28
25	33.18	33.28	33.24	33.20	33.18	33.19	33.23	33.26	33.34	33.29	33.32	33.29	33.28
Avg.	33.17	33.27	33.24	33.24	33.24	33.24	33.24	33.23	33.33	33.24	33.27	33.27	33.22
Med.	33.17	33.28	33.26	33.22	33.23	33.20	33.24	33.24	33.35	33.23	33.26	33.27	33.22
st dev	0.04	0.03	0.02	0.05	0.04	0.05	0.01	0.03	0.05	0.03	0.03	0.02	0.04
Min.	33.11	33.23	33.22	33.18	33.16	33.19	33.23	33.20	33.19	33.21	33.25	33.25	33.18
Max.	33.23	33.32	33.26	33.31	33.29	33.31	33.28	33.26	33.39	33.30	33.35	33.30	33.29

No.	Forward Voltage (V)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	33.23	33.25	33.28	33.32	33.26
2	33.36	33.27	33.35	33.32	33.31
3	33.34	33.27	33.29	33.31	33.29
4	33.35	33.31	33.26	33.32	33.27
5	33.32	33.31	33.34	33.33	33.32
6	33.30	33.28	33.29	33.31	33.32
7	33.28	33.25	33.27	33.29	33.27
8	33.36	33.30	33.30	33.33	33.27
9	33.44	33.30	33.29	33.34	33.30
10	33.40	33.31	33.28	33.36	33.24
11	33.46	33.26	33.34	33.32	33.22
12	33.43	33.23	33.30	33.30	33.26
13	33.42	33.24	33.26	33.35	33.28
14	33.37	33.22	33.29	33.26	33.20
15	33.36	33.30	33.30	33.32	33.24
16	33.36	33.30	33.27	33.33	33.22
17	33.40	33.27	33.33	33.28	33.19
18	33.44	33.31	33.30	33.28	33.22
19	33.37	33.23	33.32	33.33	33.26
20	33.38	33.30	33.41	33.35	33.18
21	33.43	33.40	33.42	33.31	33.24
22	33.39	33.36	33.42	33.33	33.35
23	33.39	33.34	33.34	33.39	33.36
24	33.39	33.31	33.38	33.31	33.37
25	33.37	33.39	33.33	33.34	33.29
Avg.	33.37	33.29	33.32	33.32	33.27
Med.	33.37	33.30	33.30	33.32	33.27
st dev	0.05	0.05	0.05	0.03	0.05
Min.	33.23	33.22	33.26	33.26	33.18
Max.	33.46	33.40	33.42	33.39	33.37

3.3 Data Set 1, 85°C, 60mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)											
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
1	0.2549	0.5200	2903	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0013
2	0.2601	0.5225	2771	0.0002	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
3	0.2585	0.5209	2816	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013	0.0014
4	0.2590	0.5220	2798	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013	0.0014
5	0.2581	0.5265	2797	0.0003	0.0002	0.0003	0.0003	0.0005	0.0005	0.0008	0.0014	0.0020	0.0021	0.0022	0.0024
6	0.2588	0.5208	2809	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
7	0.2580	0.5241	2810	0.0002	0.0003	0.0004	0.0006	0.0007	0.0009	0.0009	0.0009	0.0009	0.0010	0.0012	0.0013
8	0.2588	0.5230	2798	0.0001	0.0002	0.0003	0.0004	0.0005	0.0007	0.0007	0.0007	0.0007	0.0009	0.0010	0.0011
9	0.2583	0.5211	2819	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0010	0.0012	0.0013	0.0015	0.0016
10	0.2587	0.5212	2808	0.0001	0.0002	0.0004	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
11	0.2594	0.5200	2799	0.0001	0.0002	0.0002	0.0004	0.0004	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013	0.0014
12	0.2601	0.5206	2781	0.0001	0.0003	0.0003	0.0005	0.0006	0.0007	0.0008	0.0010	0.0012	0.0013	0.0015	0.0016
13	0.2590	0.5210	2802	0.0002	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
14	0.2580	0.5228	2818	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0005	0.0005	0.0005	0.0007	0.0008	0.0009
15	0.2550	0.5191	2906	0.0000	0.0002	0.0003	0.0003	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
16	0.2583	0.5212	2818	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0010	0.0012	0.0013	0.0015	0.0016
17	0.2596	0.5206	2791	0.0001	0.0004	0.0003	0.0004	0.0006	0.0007	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019
18	0.2597	0.5199	2793	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0011	0.0013	0.0014
19	0.2586	0.5252	2793	0.0002	0.0004	0.0006	0.0009	0.0009	0.0010	0.0012	0.0016	0.0020	0.0021	0.0022	0.0024
20	0.2577	0.5236	2820	0.0001	0.0003	0.0004	0.0004	0.0004	0.0006	0.0006	0.0006	0.0006	0.0008	0.0009	0.0010
21	0.2603	0.5223	2768	0.0000	0.0003	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
22	0.2600	0.5215	2779	0.0002	0.0002	0.0004	0.0005	0.0005	0.0007	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019
23	0.2592	0.5206	2801	0.0001	0.0003	0.0003	0.0004	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
24	0.2586	0.5255	2790	0.0003	0.0002	0.0005	0.0007	0.0008	0.0009	0.0010	0.0012	0.0014	0.0015	0.0016	0.0018
25	0.2590	0.5206	2804	0.0000	0.0001	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
Avg.	0.2586	0.5219	2808	0.0001	0.0003	0.0003	0.0004	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013	0.0014	0.0015
Med.	0.2588	0.5212	2801	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0015
st dev	0.0013	0.0019	32	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	0.0003	0.0003	0.0003
Min.	0.2549	0.5191	2768	0.0000	0.0001	0.0002	0.0002	0.0003	0.0004	0.0005	0.0005	0.0005	0.0007	0.0008	0.0009
Max.	0.2603	0.5265	2906	0.0003	0.0004	0.0006	0.0009	0.0009	0.0010	0.0012	0.0016	0.0020	0.0021	0.0022	0.0024

No.	Chromaticity Shift ($\Delta u'v'$)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
1	0.0014	0.0016	0.0017	0.0018	0.0020
2	0.0016	0.0017	0.0019	0.0020	0.0021
3	0.0015	0.0017	0.0018	0.0019	0.0021
4	0.0015	0.0017	0.0018	0.0019	0.0021
5	0.0026	0.0028	0.0030	0.0032	0.0034
6	0.0017	0.0018	0.0020	0.0022	0.0024
7	0.0014	0.0016	0.0017	0.0018	0.0020
8	0.0013	0.0014	0.0015	0.0017	0.0018
9	0.0017	0.0018	0.0020	0.0021	0.0022
10	0.0016	0.0017	0.0019	0.0020	0.0021
11	0.0017	0.0019	0.0022	0.0025	0.0027
12	0.0017	0.0018	0.0020	0.0021	0.0022
13	0.0016	0.0017	0.0019	0.0020	0.0021
14	0.0011	0.0013	0.0016	0.0018	0.0020
15	0.0016	0.0017	0.0019	0.0020	0.0021
16	0.0017	0.0018	0.0020	0.0021	0.0022
17	0.0021	0.0023	0.0025	0.0028	0.0030
18	0.0015	0.0017	0.0018	0.0019	0.0021
19	0.0026	0.0028	0.0030	0.0032	0.0034
20	0.0012	0.0014	0.0016	0.0018	0.0021
21	0.0016	0.0017	0.0019	0.0020	0.0021
22	0.0021	0.0023	0.0025	0.0028	0.0030
23	0.0017	0.0018	0.0020	0.0022	0.0024
24	0.0019	0.0020	0.0022	0.0023	0.0024
25	0.0017	0.0019	0.0022	0.0024	0.0026
Avg.	0.0017	0.0018	0.0020	0.0022	0.0024
Med.	0.0016	0.0017	0.0019	0.0020	0.0021
st dev	0.0003	0.0004	0.0004	0.0004	0.0004
Min.	0.0011	0.0013	0.0015	0.0017	0.0018
Max.	0.0026	0.0028	0.0030	0.0032	0.0034

3.4 Data Set 2, 105°C, 60mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)											
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
26	423.10	99.91	99.74	99.53	99.34	99.15	99.05	98.84	98.70	98.53	98.27	98.06	97.80
27	425.70	99.98	99.81	99.55	99.44	99.25	99.06	98.92	98.64	98.50	98.36	98.19	98.17
28	423.50	99.88	99.67	99.57	99.36	99.13	98.98	98.70	98.58	98.32	98.13	97.95	97.87
29	429.50	100.07	99.86	99.74	99.53	99.39	99.12	98.93	98.81	98.63	98.35	98.04	98.00
30	430.00	100.07	99.88	99.72	99.47	99.35	99.09	98.98	98.74	98.49	98.40	98.21	97.98
31	429.50	100.07	99.88	99.67	99.56	99.30	99.21	98.95	98.77	98.58	98.44	98.28	98.02
32	434.30	100.12	99.93	99.77	99.52	99.36	99.24	98.96	98.80	98.60	98.39	98.25	98.16
33	428.30	100.07	99.91	99.67	99.49	99.21	98.79	98.65	98.46	98.20	97.95	97.64	97.53
34	426.00	100.12	99.91	99.74	99.51	99.15	98.85	98.73	98.54	98.29	97.96	97.70	97.51
35	421.90	100.14	99.95	99.79	99.57	99.36	99.15	99.08	98.79	98.60	98.41	98.29	98.17
36	424.70	100.99	100.82	100.61	100.42	100.24	100.07	99.88	99.69	99.46	99.29	99.11	98.94
37	425.30	99.86	99.74	99.44	99.27	99.18	98.85	98.57	98.45	98.12	97.95	97.67	97.39
38	425.00	100.09	99.93	99.67	99.46	99.06	98.92	98.64	98.42	98.21	98.00	97.81	97.46
39	424.00	99.98	99.76	99.55	99.48	99.27	99.03	98.80	98.68	98.42	98.18	97.95	97.81
40	428.00	99.98	99.79	99.63	99.42	99.18	99.07	98.83	98.67	98.43	98.15	98.01	97.71
41	425.70	99.95	99.79	99.55	99.34	99.22	99.06	98.78	98.47	98.26	98.12	97.82	97.53
42	425.70	100.07	99.88	99.74	99.58	99.34	99.25	98.90	98.80	98.54	98.43	98.29	97.93
43	424.30	99.98	99.81	99.60	99.39	99.22	99.03	98.96	98.73	98.54	98.35	98.19	97.93
44	422.40	99.95	99.74	99.64	99.43	99.27	99.05	98.84	98.65	98.46	98.32	98.15	97.87
45	425.70	99.95	99.77	99.65	99.41	99.18	99.08	98.92	98.66	98.52	98.36	98.17	97.98
46	428.40	100.09	99.79	99.56	99.42	99.23	99.02	98.90	98.76	98.41	98.37	98.16	97.97
47	427.00	100.16	99.81	99.60	99.48	99.25	99.16	98.92	98.64	98.48	98.29	98.08	98.01
48	424.00	99.95	99.79	99.60	99.48	99.29	99.06	98.82	98.66	98.49	98.23	97.95	97.67
49	422.80	99.98	99.76	99.39	99.17	98.91	98.70	98.49	98.25	97.97	97.71	97.59	97.23
50	429.30	99.95	99.77	99.49	99.28	99.09	98.88	98.67	98.51	98.25	97.90	97.76	97.51
Avg.	426.16	100.05	99.86	99.66	99.47	99.26	99.07	98.87	98.68	98.45	98.25	98.05	97.85
Med.	425.70	99.98	99.81	99.63	99.46	99.23	99.06	98.84	98.66	98.48	98.29	98.06	97.87
st dev	2.92	0.21	0.21	0.22	0.22	0.23	0.25	0.26	0.26	0.27	0.29	0.31	0.35
Min.	421.90	99.86	99.67	99.39	99.17	98.91	98.70	98.49	98.25	97.97	97.71	97.59	97.23
Max.	434.30	100.99	100.82	100.61	100.42	100.24	100.07	99.88	99.69	99.46	99.29	99.11	98.94

No.	Lumen Maintenance (%)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	97.52	97.19	97.05	96.81	96.57
27	97.93	97.63	97.30	97.16	96.99
28	97.57	97.43	97.10	96.95	96.72
29	97.74	97.46	97.21	97.04	96.76
30	97.74	97.58	97.35	97.12	96.86
31	97.93	97.58	97.46	97.23	97.04
32	98.07	97.77	97.49	97.31	97.08
33	97.31	97.03	96.87	96.61	96.33
34	97.32	97.23	97.09	96.90	96.62
35	97.94	97.80	97.56	97.32	97.13
36	98.56	98.23	98.07	97.93	97.62
37	97.15	97.01	96.90	96.45	96.31
38	97.39	97.13	96.85	96.61	96.56
39	97.55	97.31	97.08	96.89	96.65
40	97.48	97.24	97.15	96.87	96.54
41	97.39	97.16	96.92	96.73	96.52
42	97.67	97.53	97.39	97.23	96.92
43	97.71	97.53	97.24	97.01	96.77
44	97.73	97.44	97.25	97.02	96.80
45	97.86	97.70	97.56	97.32	97.16
46	97.62	97.48	97.39	97.29	97.15
47	97.73	97.54	97.17	96.91	96.63
48	97.55	97.36	97.08	96.84	96.53
49	97.02	96.93	96.64	96.40	96.31
50	97.27	97.18	97.09	96.81	96.65
Avg.	97.63	97.42	97.21	96.99	96.77
Med.	97.62	97.44	97.17	96.95	96.72
st dev	0.32	0.29	0.29	0.33	0.31
Min.	97.02	96.93	96.64	96.40	96.31
Max.	98.56	98.23	98.07	97.93	97.62

3.5 Data Set 2, 105°C, 60mA (Forward Voltage)

No.	Forward Voltage (V)												
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
26	33.15	33.31	33.24	33.21	33.18	33.20	33.23	33.27	33.34	33.29	33.32	33.30	33.19
27	33.12	33.29	33.33	33.21	33.22	33.20	33.21	33.26	33.33	33.29	33.23	33.23	33.19
28	33.17	33.28	33.33	33.21	33.22	33.25	33.21	33.26	33.33	33.29	33.23	33.22	33.19
29	33.15	33.28	33.32	33.21	33.21	33.25	33.20	33.26	33.33	33.29	33.23	33.22	33.19
30	33.12	33.28	33.32	33.20	33.21	33.24	33.20	33.25	33.33	33.29	33.23	33.22	33.19
31	33.16	33.27	33.32	33.20	33.21	33.25	33.20	33.25	33.33	33.29	33.22	33.22	33.19
32	33.18	33.27	33.32	33.20	33.21	33.24	33.20	33.25	33.33	33.29	33.23	33.22	33.19
33	33.17	33.27	33.32	33.20	33.21	33.24	33.20	33.25	33.33	33.29	33.23	33.22	33.18
34	33.12	33.26	33.32	33.20	33.21	33.24	33.20	33.25	33.32	33.29	33.22	33.22	33.18
35	33.21	33.26	33.23	33.24	33.20	33.24	33.20	33.25	33.32	33.29	33.23	33.22	33.18
36	33.12	33.26	33.23	33.24	33.20	33.23	33.19	33.24	33.31	33.29	33.22	33.21	33.18
37	33.25	33.23	33.24	33.24	33.24	33.24	33.25	33.24	33.25	33.29	33.22	33.22	33.18
38	33.24	33.22	33.23	33.23	33.23	33.23	33.25	33.25	33.25	33.29	33.23	33.22	33.17
39	33.18	33.22	33.23	33.23	33.23	33.28	33.25	33.24	33.24	33.29	33.24	33.26	33.18
40	33.13	33.22	33.23	33.23	33.23	33.27	33.25	33.24	33.24	33.29	33.24	33.26	33.18
41	33.14	33.21	33.23	33.23	33.22	33.27	33.25	33.19	33.24	33.29	33.23	33.26	33.18
42	33.13	33.21	33.22	33.22	33.22	33.27	33.25	33.19	33.23	33.28	33.30	33.26	33.18
43	33.20	33.21	33.22	33.18	33.22	33.28	33.25	33.20	33.23	33.28	33.30	33.26	33.18
44	33.16	33.27	33.22	33.17	33.22	33.28	33.25	33.19	33.23	33.28	33.30	33.26	33.18
45	33.17	33.26	33.22	33.17	33.22	33.28	33.25	33.20	33.24	33.27	33.30	33.25	33.17
46	33.23	33.26	33.22	33.17	33.28	33.27	33.25	33.19	33.23	33.26	33.30	33.26	33.17
47	33.14	33.26	33.22	33.17	33.27	33.27	33.24	33.19	33.23	33.25	33.30	33.25	33.17
48	33.20	33.25	33.22	33.16	33.27	33.27	33.24	33.19	33.22	33.25	33.29	33.25	33.17
49	33.19	33.25	33.23	33.16	33.27	33.27	33.24	33.19	33.22	33.25	33.29	33.25	33.17
50	33.18	33.25	33.24	33.16	33.26	33.27	33.25	33.19	33.22	33.25	33.29	33.25	33.17
Avg.	33.17	33.25	33.26	33.20	33.23	33.25	33.23	33.23	33.27	33.28	33.26	33.24	33.18
Med.	33.17	33.26	33.23	33.20	33.22	33.25	33.24	33.24	33.25	33.29	33.23	33.25	33.18
st dev	0.04	0.03	0.05	0.03	0.03	0.02	0.02	0.03	0.05	0.01	0.04	0.02	0.01
Min.	33.12	33.21	33.22	33.16	33.18	33.20	33.19	33.19	33.22	33.25	33.22	33.21	33.17
Max.	33.25	33.31	33.33	33.24	33.28	33.28	33.25	33.27	33.34	33.29	33.32	33.30	33.19

No.	Forward Voltage (V)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	33.41	33.29	33.35	33.32	33.23
27	33.40	33.30	33.30	33.26	33.24
28	33.36	33.35	33.30	33.31	33.22
29	33.40	33.35	33.28	33.23	33.21
30	33.41	33.38	33.30	33.30	33.21
31	33.33	33.36	33.24	33.23	33.22
32	33.38	33.33	33.23	33.27	33.27
33	33.36	33.29	33.23	33.27	33.19
34	33.36	33.30	33.31	33.27	33.18
35	33.41	33.36	33.29	33.27	33.21
36	33.41	33.33	33.30	33.26	33.18
37	33.26	33.32	33.27	33.28	33.27
38	33.29	33.33	33.24	33.29	33.27
39	33.28	33.37	33.30	33.29	33.22
40	33.27	33.34	33.33	33.31	33.26
41	33.24	33.38	33.28	33.33	33.24
42	33.32	33.38	33.35	33.29	33.20
43	33.33	33.36	33.36	33.34	33.28
44	33.26	33.32	33.34	33.27	33.23
45	33.30	33.37	33.32	33.28	33.27
46	33.32	33.26	33.31	33.35	33.23
47	33.26	33.30	33.31	33.28	33.20
48	33.27	33.27	33.36	33.32	33.26
49	33.27	33.28	33.37	33.26	33.23
50	33.29	33.27	33.35	33.32	33.17
Avg.	33.33	33.33	33.30	33.29	33.23
Med.	33.32	33.33	33.30	33.28	33.23
st dev	0.06	0.04	0.04	0.03	0.03
Min.	33.24	33.26	33.23	33.23	33.17
Max.	33.41	33.38	33.37	33.35	33.28

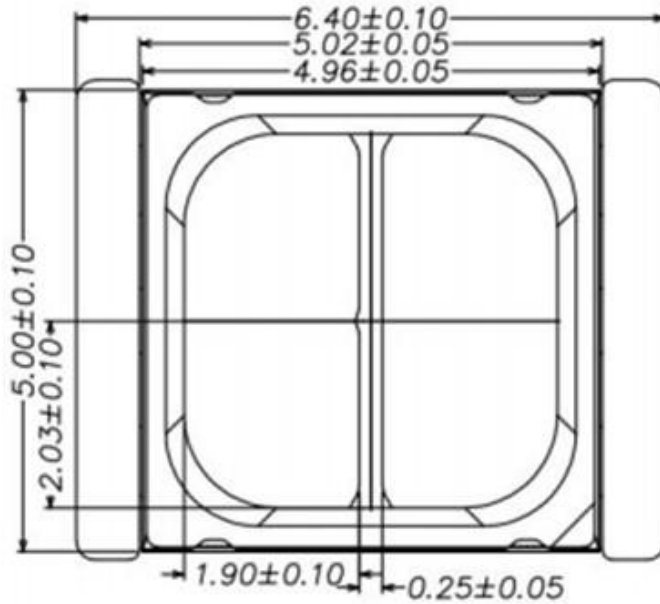
3.6 Data Set 2, 105°C, 60mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift ($\Delta u'v'$)											
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs
26	0.2586	0.5203	2815	0.0002	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0013	0.0014	0.0016	0.0018
27	0.2598	0.5214	2784	0.0002	0.0004	0.0006	0.0006	0.0009	0.0010	0.0011	0.0014	0.0014	0.0016	0.0019	0.0020
28	0.2595	0.5208	2793	0.0002	0.0003	0.0006	0.0007	0.0009	0.0010	0.0011	0.0014	0.0016	0.0017	0.0019	0.0021
29	0.2575	0.5234	2826	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0013	0.0015	0.0017	0.0018	0.0019	0.0021
30	0.2588	0.5204	2810	0.0002	0.0003	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0017	0.0019
31	0.2583	0.5262	2795	0.0002	0.0004	0.0005	0.0006	0.0009	0.0010	0.0011	0.0014	0.0015	0.0016	0.0019	0.0020
32	0.2586	0.5267	2785	0.0003	0.0003	0.0004	0.0004	0.0007	0.0009	0.0009	0.0013	0.0013	0.0014	0.0016	0.0018
33	0.2583	0.5212	2819	0.0002	0.0004	0.0004	0.0006	0.0009	0.0010	0.0011	0.0014	0.0015	0.0016	0.0019	0.0019
34	0.2593	0.5216	2794	0.0003	0.0003	0.0004	0.0005	0.0008	0.0009	0.0010	0.0012	0.0014	0.0015	0.0016	0.0018
35	0.2596	0.5204	2793	0.0001	0.0002	0.0004	0.0004	0.0007	0.0009	0.0009	0.0012	0.0013	0.0014	0.0016	0.0018
36	0.2599	0.5225	2777	0.0004	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0019	0.0021
37	0.2596	0.5221	2785	0.0002	0.0004	0.0006	0.0006	0.0009	0.0010	0.0011	0.0014	0.0015	0.0016	0.0018	0.0020
38	0.2601	0.5225	2771	0.0003	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0019	0.0021
39	0.2606	0.5226	2761	0.0002	0.0004	0.0007	0.0009	0.0011	0.0014	0.0014	0.0015	0.0018	0.0020	0.0019	0.0022
40	0.2585	0.5215	2813	0.0002	0.0005	0.0005	0.0006	0.0008	0.0010	0.0011	0.0014	0.0015	0.0016	0.0018	0.0020
41	0.2589	0.5214	2804	0.0004	0.0004	0.0004	0.0006	0.0007	0.0010	0.0011	0.0013	0.0015	0.0016	0.0017	0.0019
42	0.2596	0.5221	2785	0.0002	0.0004	0.0005	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0019	0.0021
43	0.2595	0.5207	2793	0.0003	0.0004	0.0006	0.0006	0.0009	0.0010	0.0011	0.0014	0.0015	0.0016	0.0018	0.0020
44	0.2594	0.5207	2795	0.0003	0.0002	0.0006	0.0008	0.0010	0.0011	0.0013	0.0015	0.0017	0.0018	0.0019	0.0021
45	0.2588	0.5208	2809	0.0002	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0019	0.0021
46	0.2558	0.5206	2878	0.0002	0.0004	0.0005	0.0007	0.0009	0.0011	0.0012	0.0015	0.0016	0.0017	0.0019	0.0021
47	0.2597	0.5224	2780	0.0003	0.0005	0.0005	0.0006	0.0009	0.0010	0.0012	0.0014	0.0015	0.0016	0.0018	0.0020
48	0.2590	0.5210	2804	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0018	0.0019	0.0020	0.0022
49	0.2608	0.5236	2753	0.0003	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0015	0.0015	0.0017	0.0018	0.0021
50	0.2587	0.5266	2783	0.0002	0.0002	0.0004	0.0004	0.0007	0.0008	0.0009	0.0012	0.0013	0.0014	0.0016	0.0018
Avg.	0.2591	0.5221	2796	0.0003	0.0004	0.0005	0.0007	0.0009	0.0010	0.0011	0.0014	0.0015	0.0017	0.0018	0.0020
Med.	0.2593	0.5215	2793	0.0002	0.0004	0.0005	0.0006	0.0009	0.0010	0.0011	0.0014	0.0015	0.0016	0.0019	0.0020
st dev	0.0010	0.0019	24	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2558	0.5203	2753	0.0001	0.0002	0.0004	0.0004	0.0007	0.0008	0.0009	0.0012	0.0013	0.0014	0.0016	0.0018
Max.	0.2608	0.5267	2878	0.0004	0.0005	0.0007	0.0009	0.0011	0.0014	0.0014	0.0016	0.0018	0.0020	0.0020	0.0022

No.	Chromaticity Shift ($\Delta u'v'$)				
	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs
26	0.0021	0.0023	0.0025	0.0026	0.0028
27	0.0021	0.0023	0.0024	0.0025	0.0027
28	0.0023	0.0025	0.0027	0.0029	0.0030
29	0.0025	0.0030	0.0034	0.0035	0.0037
30	0.0021	0.0022	0.0023	0.0025	0.0026
31	0.0024	0.0028	0.0033	0.0034	0.0035
32	0.0019	0.0021	0.0022	0.0023	0.0025
33	0.0019	0.0019	0.0020	0.0021	0.0022
34	0.0017	0.0016	0.0016	0.0017	0.0019
35	0.0018	0.0018	0.0019	0.0020	0.0021
36	0.0021	0.0021	0.0021	0.0023	0.0024
37	0.0021	0.0022	0.0023	0.0025	0.0026
38	0.0020	0.0020	0.0020	0.0022	0.0023
39	0.0022	0.0023	0.0023	0.0025	0.0026
40	0.0022	0.0024	0.0026	0.0028	0.0029
41	0.0021	0.0023	0.0025	0.0027	0.0028
42	0.0022	0.0023	0.0025	0.0026	0.0028
43	0.0023	0.0025	0.0028	0.0030	0.0031
44	0.0024	0.0027	0.0030	0.0031	0.0033
45	0.0022	0.0023	0.0025	0.0026	0.0028
46	0.0023	0.0025	0.0027	0.0029	0.0030
47	0.0022	0.0024	0.0026	0.0028	0.0029
48	0.0025	0.0028	0.0030	0.0032	0.0033
49	0.0023	0.0025	0.0027	0.0029	0.0030
50	0.0020	0.0022	0.0024	0.0026	0.0027
Avg.	0.0022	0.0023	0.0025	0.0026	0.0028
Med.	0.0022	0.0023	0.0025	0.0026	0.0028
st dev	0.0002	0.0003	0.0004	0.0004	0.0004
Min.	0.0017	0.0016	0.0016	0.0017	0.0019
Max.	0.0025	0.0030	0.0034	0.0035	0.0037

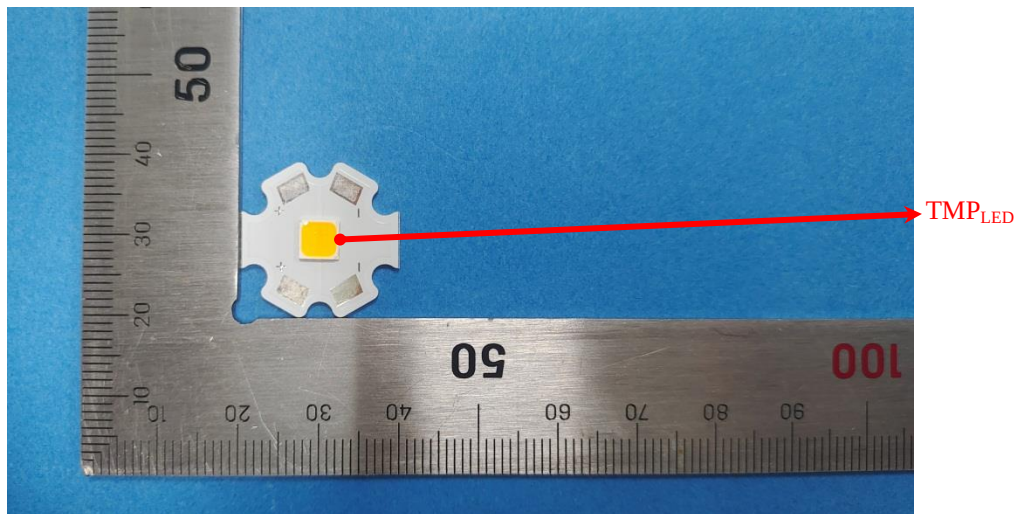
4 - DUT Photo

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. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. 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*****