TEST REPORT

According to ANSI/IES LM-80-15
For

Gui Zhou Lian Shang Photoelectric Co.,Ltd.

33 factories inQixingguan District EconomicDevelopment Zone,Bihai StreetWhinQixingguan District, Bijie,Guizhou China

Model: L11580-TXXXX-90C5B-XXK80R-XX

Report Type: 6000 Hours Test Report	**Product Type:** LED Module
Reviewed By:	Bruce Lu
Report Number:	2302Y83951E-EE-6000
Test Date:	2023-12-08 to 2024-08-14
Report Date:	2024-10-28
Approved by:	Blake Zhang / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.12, Pulong East 1st 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 2023-12-06. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Gui Zhou Lian Shang Photoelectric Co.,Ltd.
Part Number:	L11580-TXXXX-90C5B-XXK80R-XX
Part Type:	LED Module
Drive Level:	DC 50mA
Nominal CCT:	2700K
Power:	11.9W
Average Current Density per LED die:	258.4mA/mm^2
Average Power Density per LED die:	0.136W/mm^2
CRI:	80
Die Spacing:	0.24mm

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 4000hrs to 6000hrs 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.

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	CCT(K)	Drive current of die(mA)	Power (W)	Power Density (W/mm^2)	Number of Die (Pcs)	Drive current of die density (mA/mm^2)	Distance between of dies (mm)
L11580-TXXXX-90C5B-XXK80R-XX (test model)	2700	50	11.9	0.014	450	258.4	0.24
L115XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤2.01	≤0.002	76	≤51.7	0.29
		≤50	≤2.33	≤0.003	88	≤51.7	0.25
		≤50	≤2.39	≤0.003	90	≤51.7	0.24
		≤50	≤3.02	≤0.004	114	≤155.1	0.58
		≤50	≤3.51	≤0.004	132	≤155.1	0.5
		≤50	≤4.66	≤0.006	176	≤103.4	0.25
		≤50	≤4.77	≤0.006	180	≤155.1	0.37
		≤50	≤6.99	≤0.008	264	≤155.1	0.25
		≤50	≤9.54	≤0.011	360	≤206.7	0.24
		≤50	≤11.9	≤0.014	450	≤258.4	0.24
L88XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.43	≤0.002	54	≤51.7	0.41

Model Name	CCT(K)	Drive current of die(mA)	Power (W)	Power Density (W/mm^2)	Number of Die (Pcs)	Drive current of die density (mA/mm^2)	Distance between of dies (mm)
L88XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤2.01	≤0.003	76	≤51.7	0.29
		≤50	≤2.33	≤0.004	88	≤51.7	0.25
		≤50	≤2.39	≤0.004	90	≤51.7	0.24
		≤50	≤3.02	≤0.005	114	≤155.1	0.58
		≤50	≤3.51	≤0.005	132	≤155.1	0.5
		≤50	≤4.66	≤0.007	176	≤155.1	0.25
		≤50	≤4.95	≤0.007	180	≤155.1	0.37
		≤50	≤7.26	≤0.010	264	≤206.7	0.25
		≤50	≤9.35	≤0.013	270	≤258.4	0.24
L68XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L64XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L52XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L40XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58

Model Name	CCT(K)	Drive current of die(mA)	Power (W)	Power Density (W/mm^2)	Number of Die (Pcs)	Drive current of die density (mA/mm^2)	Distance between of dies (mm)
L40XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L38XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L26XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24
L20XX-TXXXX-XXCXB-XXKXXR-XX	2200-6500	≤50	≤1.00	≤0.002	38	≤51.7	0.58
		≤50	≤1.17	≤0.003	44	≤51.7	0.5
		≤50	≤1.33	≤0.003	50	≤51.7	0.44
		≤50	≤1.59	≤0.004	60	≤51.7	0.37
		≤50	≤2.01	≤0.004	76	≤103.4	0.29
		≤50	≤2.64	≤0.005	96	≤103.4	0.58
		≤50	≤3.14	≤0.006	114	≤155.1	0.37
		≤50	≤3.63	≤0.006	132	≤155.1	0.5
		≤50	≤4.84	≤0.009	144	≤206.7	0.25
		≤50	≤7.56	≤0.011	165	≤258.4	0.24

Product model remarks

Note: The "X" in the series model is the internal code and it can be 0-9 or A-Z.

1.2 Standards and Reference Documentations

- ANSI/IES LM-80-15: IES Approved Method for Measuring Lumen Maintenance of LED 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
1.0m integrating sphere	SENSING	SCD-20008	N/A	2024-07-25	2025-07-24
spectroradiometer	SENSING	SSP 3112-D	N/A	2024-07-25	2025-07-24
Test power supply	DUOHE	DH-3002	/	2024-07-25	2025-07-24
Standard Light Source	EVERFINE	D204	N/A	2023-05-12	2025-05-11
Programmable Test Power for LEDs	EVERFINE	LED300E	N/A	2024-07-25	2025-07-24
Digital power meter	EVERFINE	PF9811	G135717CN1361159	2024-07-25	2025-07-24
Multilayer aging machine	BACL	B2-270	20013	2024-07-25	2025-07-24
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090006	2024-07-25	2025-07-24

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=1.59% (K=2), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is U=21K (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: 55°C, 50mA

Part Number:	L11580-TXXXX-90C5B-XXK80R-XX
Number of Units:	25
Case Temperature:	>53°C
Ambient Temperature:	>50°C
Life Test Drive Current:	50mA
Measurement Current:	50mA

Data Set 2: 85°C, 50mA

Part Number:	L11580-TXXXX-90C5B-XXK80R-XX
Number of Units:	25
Case Temperature:	>83°C
Ambient Temperature:	>80°C
Life Test Drive Current:	50mA
Measurement Current:	50mA

2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α	B	Reported TM-21 L_{70} Lifetime
1	25	0	1000hrs	6000hrs	3.924E-06	1.005	>36000 hours
2	25	0	1000hrs	6000hrs	4.359E-06	1.005	>36000 hours

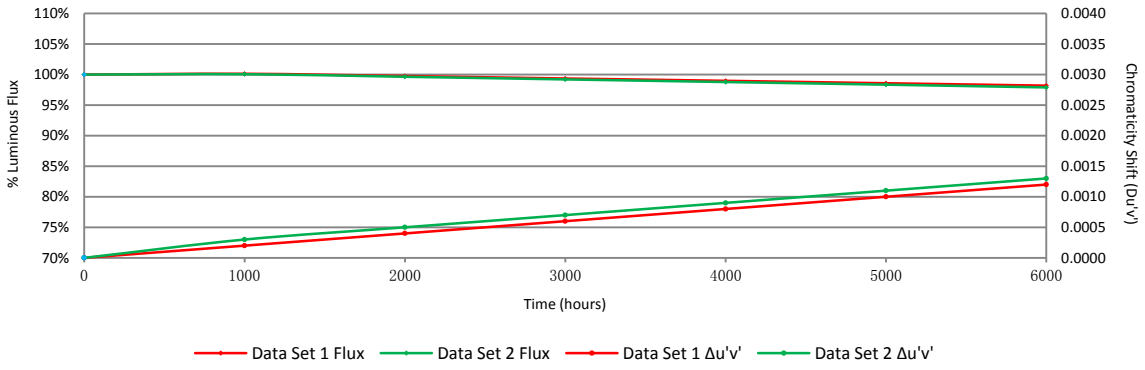
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	100.13%	99.76%	99.36%	98.98%	98.58%	98.19%
2	100.06%	99.64%	99.21%	98.78%	98.35%	97.90%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012
2	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

3.1 Data Set 1, 55°C, 50mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	2232.94	100.14	99.73	99.33	98.97	98.56	98.16
2	2114.38	100.12	99.76	99.37	98.97	98.56	98.16
3	2298.81	100.11	99.73	99.31	98.92	98.54	98.17
4	2213.18	100.16	99.77	99.39	99.02	98.61	98.24
5	2107.79	100.15	99.77	99.38	98.97	98.55	98.16
6	2292.23	100.12	99.74	99.39	99.01	98.63	98.27
7	2279.05	100.11	99.78	99.34	98.98	98.58	98.21
8	2081.45	100.13	99.72	99.32	98.91	98.49	98.10
9	2101.21	100.14	99.78	99.39	99.00	98.60	98.20
10	2074.86	100.12	99.75	99.32	98.92	98.50	98.08
11	2252.70	100.15	99.77	99.39	99.03	98.65	98.27
12	2081.45	100.12	99.75	99.32	98.90	98.48	98.09
13	2232.94	100.12	99.78	99.40	99.03	98.63	98.22
14	2265.88	100.11	99.80	99.43	99.04	98.66	98.29
15	2279.05	100.14	99.74	99.37	99.00	98.62	98.23
16	2048.51	100.12	99.75	99.34	98.91	98.50	98.06
17	2246.12	100.15	99.76	99.39	98.99	98.60	98.22
18	2279.05	100.14	99.75	99.37	98.97	98.58	98.22
19	2068.27	100.12	99.75	99.32	98.93	98.50	98.08
20	2120.97	100.16	99.76	99.37	98.96	98.53	98.13
21	2088.03	100.12	99.74	99.34	98.95	98.53	98.13
22	2292.23	100.14	99.77	99.40	99.04	98.66	98.31
23	2246.12	100.13	99.76	99.39	99.01	98.63	98.27
24	2292.23	100.16	99.77	99.39	99.04	98.66	98.29
25	2107.79	100.10	99.74	99.33	98.94	98.53	98.13
Avg.	2187.89	100.13	99.76	99.36	98.98	98.58	98.19
Med.	2232.94	100.13	99.76	99.37	98.97	98.58	98.20
st dev	91.52	0.02	0.02	0.03	0.05	0.06	0.07
Min.	2048.51	100.10	99.72	99.31	98.90	98.48	98.06
Max.	2298.81	100.16	99.80	99.43	99.04	98.66	98.31

3.2 Data Set 1, 55°C, 50mA (Forward Voltage)

No.	Forward Voltage (V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	240.15	240.10	239.37	239.56	239.67	239.73	239.72
2	240.51	240.02	239.28	239.51	239.63	239.69	239.71
3	240.35	239.94	239.21	239.40	239.58	239.62	239.65
4	240.84	239.87	239.14	239.35	239.53	239.60	239.53
5	240.53	239.84	239.07	239.29	239.50	239.52	239.52
6	240.24	239.79	239.00	239.25	239.45	239.47	239.49
7	239.73	239.77	238.94	239.18	239.41	239.42	239.40
8	240.90	239.74	238.89	239.16	239.34	239.36	239.36
9	240.22	239.70	238.83	239.12	239.31	239.34	239.33
10	240.44	239.67	238.75	239.06	239.29	239.31	239.32
11	240.05	239.67	238.70	238.97	239.24	239.22	239.24
12	240.26	239.63	239.38	238.92	239.21	239.21	239.17
13	239.84	239.60	239.30	238.87	239.14	239.18	239.17
14	240.26	239.56	239.23	238.86	239.14	239.14	239.09
15	239.69	239.49	239.16	238.80	239.07	239.10	239.08
16	239.76	239.43	239.09	238.79	239.06	239.08	239.07
17	240.74	239.39	239.01	238.75	239.03	239.02	239.00
18	239.70	239.33	238.94	238.72	238.99	238.98	238.97
19	239.91	239.27	238.90	238.70	238.94	238.94	238.94
20	240.66	239.20	238.83	240.77	238.92	238.96	238.94
21	239.93	239.09	238.75	240.65	238.91	238.91	238.86
22	240.33	239.08	238.70	240.54	238.90	238.91	238.87
23	239.54	240.31	239.98	240.48	238.86	238.88	238.86
24	240.09	240.22	239.89	240.41	238.81	238.86	238.83
25	239.84	240.14	239.79	240.30	238.79	238.83	238.86
Avg.	240.18	239.67	239.13	239.42	239.19	239.21	239.20
Med.	240.22	239.67	239.07	239.18	239.14	239.18	239.17
st dev	0.38	0.34	0.35	0.68	0.27	0.28	0.29
Min.	239.54	239.08	238.70	238.70	238.79	238.83	238.83
Max.	240.90	240.31	239.98	240.77	239.67	239.73	239.72

3.3 Data Set 1, 55°C, 50mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2631	0.5328	2668	0.0002	0.0005	0.0007	0.0009	0.0010	0.0012
2	0.2651	0.5319	2630	0.0002	0.0004	0.0006	0.0008	0.0009	0.0013
3	0.2630	0.5317	2674	0.0002	0.0005	0.0007	0.0008	0.0011	0.0013
4	0.2669	0.5339	2590	0.0001	0.0004	0.0005	0.0006	0.0009	0.0010
5	0.2632	0.5298	2676	0.0001	0.0004	0.0006	0.0008	0.0011	0.0013
6	0.2636	0.5312	2662	0.0001	0.0003	0.0006	0.0008	0.0011	0.0012
7	0.2626	0.5304	2686	0.0003	0.0006	0.0008	0.0010	0.0009	0.0012
8	0.2643	0.5308	2650	0.0002	0.0004	0.0007	0.0009	0.0011	0.0014
9	0.2642	0.5301	2654	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013
10	0.2646	0.5309	2644	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011
11	0.2624	0.5304	2690	0.0003	0.0005	0.0007	0.0008	0.0010	0.0012
12	0.2645	0.5307	2648	0.0001	0.0004	0.0005	0.0008	0.0011	0.0013
13	0.2626	0.5307	2684	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013
14	0.2627	0.5307	2684	0.0003	0.0005	0.0007	0.0009	0.0012	0.0012
15	0.2636	0.5315	2662	0.0002	0.0004	0.0006	0.0009	0.0011	0.0014
16	0.2631	0.5292	2680	0.0003	0.0006	0.0008	0.0011	0.0013	0.0013
17	0.2625	0.5309	2686	0.0002	0.0004	0.0006	0.0009	0.0011	0.0011
18	0.2629	0.5308	2678	0.0001	0.0003	0.0006	0.0008	0.0010	0.0013
19	0.2630	0.5295	2680	0.0002	0.0005	0.0007	0.0009	0.0012	0.0013
20	0.2637	0.5294	2668	0.0002	0.0005	0.0008	0.0009	0.0009	0.0013
21	0.2635	0.5299	2670	0.0001	0.0004	0.0005	0.0006	0.0009	0.0011
22	0.2626	0.5305	2686	0.0001	0.0004	0.0006	0.0008	0.0011	0.0013
23	0.2640	0.5314	2654	0.0003	0.0004	0.0006	0.0008	0.0011	0.0013
24	0.2624	0.5306	2690	0.0002	0.0005	0.0006	0.0009	0.0011	0.0013
25	0.2624	0.5291	2694	0.0002	0.0004	0.0006	0.0007	0.0008	0.0011
Avg.	0.2635	0.5308	2668	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012
Med.	0.2631	0.5307	2674	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013
st dev	0.0011	0.0011	23	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2624	0.5291	2590	0.0001	0.0003	0.0005	0.0006	0.0008	0.0010
Max.	0.2669	0.5339	2694	0.0003	0.0006	0.0008	0.0011	0.0013	0.0014

3.4 Data Set 2, 85°C, 50mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	2285.64	100.03	99.58	99.16	98.72	98.25	97.80
27	2272.46	100.04	99.64	99.22	98.78	98.37	97.92
28	2285.64	100.05	99.63	99.21	98.76	98.32	97.88
29	2101.21	100.07	99.67	99.23	98.82	98.41	97.96
30	2134.14	100.03	99.65	99.22	98.78	98.35	97.90
31	2279.05	100.09	99.66	99.24	98.78	98.35	97.90
32	2292.23	100.11	99.69	99.27	98.83	98.39	97.99
33	2081.45	100.11	99.65	99.21	98.79	98.34	97.89
34	2035.34	100.05	99.63	99.22	98.79	98.34	97.89
35	2292.23	100.08	99.64	99.22	98.79	98.37	97.93
36	2279.05	100.07	99.67	99.26	98.84	98.44	98.03
37	2279.05	100.06	99.63	99.19	98.77	98.31	97.87
38	2246.12	100.08	99.67	99.23	98.76	98.32	97.86
39	2298.81	100.07	99.66	99.24	98.80	98.40	97.93
40	2285.64	100.04	99.62	99.21	98.76	98.35	97.91
41	2061.69	100.06	99.59	99.17	98.72	98.31	97.85
42	2292.23	100.05	99.63	99.20	98.77	98.32	97.91
43	2285.64	100.05	99.66	99.21	98.80	98.37	97.92
44	2292.23	100.10	99.66	99.23	98.81	98.40	97.97
45	2285.64	100.05	99.64	99.23	98.82	98.35	97.91
46	2265.88	100.03	99.60	99.19	98.76	98.33	97.88
47	2074.86	100.03	99.64	99.23	98.77	98.31	97.87
48	2272.46	100.06	99.63	99.19	98.78	98.32	97.85
49	2285.64	100.03	99.62	99.20	98.75	98.33	97.92
50	2285.64	100.04	99.61	99.14	98.71	98.28	97.88
Avg.	2234.00	100.06	99.64	99.21	98.78	98.35	97.90
Med.	2279.05	100.05	99.64	99.22	98.78	98.34	97.90
st dev	89.44	0.02	0.03	0.03	0.03	0.04	0.05
Min.	2035.34	100.03	99.58	99.14	98.71	98.25	97.80
Max.	2298.81	100.11	99.69	99.27	98.84	98.44	98.03

3.5 Data Set 2, 85°C, 50mA (Forward Voltage)

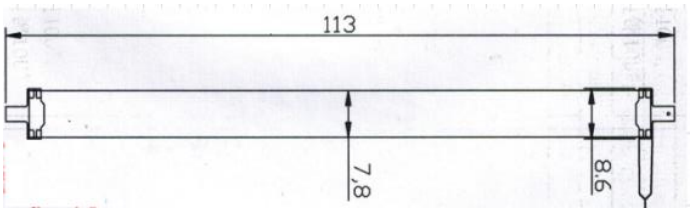
No.	Forward Voltage (V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	240.27	240.07	239.72	240.25	238.80	238.79	238.81
27	241.30	240.00	239.65	240.16	238.77	238.75	238.75
28	239.52	239.93	239.59	240.13	238.73	238.72	238.73
29	240.75	239.87	239.52	240.04	238.75	238.70	238.70
30	240.48	239.82	239.49	239.98	238.70	238.66	238.68
31	239.78	239.75	239.52	239.90	238.72	240.45	240.52
32	240.30	239.69	239.47	239.86	238.68	240.35	240.44
33	240.64	239.64	239.57	239.80	240.44	240.25	240.38
34	241.63	239.58	239.56	239.72	240.35	240.19	240.30
35	240.79	239.52	239.53	239.69	240.24	240.12	240.21
36	240.58	239.48	239.57	239.60	240.19	240.08	240.13
37	240.48	239.93	239.52	239.57	240.11	239.99	240.04
38	239.56	239.86	240.13	239.51	240.07	239.95	239.98
39	240.45	239.80	240.04	239.52	240.00	239.88	239.91
40	240.47	239.75	239.95	239.45	239.91	239.83	239.82
41	239.92	239.71	239.85	239.40	239.85	239.76	239.75
42	240.42	239.66	239.80	239.36	239.82	239.68	239.70
43	240.39	239.60	239.73	239.33	239.76	239.62	239.64
44	240.77	239.55	239.66	239.29	239.72	239.56	239.58
45	240.05	239.52	239.58	239.25	239.63	239.52	239.54
46	239.87	239.47	239.52	239.22	239.58	239.51	239.51
47	239.67	239.40	239.45	239.19	239.55	239.45	239.45
48	240.03	239.36	239.39	239.19	239.49	239.36	239.38
49	240.44	239.34	239.32	239.13	239.46	239.34	239.36
50	240.21	239.29	239.27	239.10	239.38	239.27	239.30
Avg.	240.35	239.66	239.62	239.59	239.55	239.59	239.62
Med.	240.42	239.66	239.57	239.52	239.63	239.62	239.64
st dev	0.50	0.21	0.21	0.35	0.58	0.54	0.57
Min.	239.52	239.29	239.27	239.10	238.68	238.66	238.68
Max.	241.63	240.07	240.13	240.25	240.44	240.45	240.52

3.6 Data Set 2, 85°C, 50mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	0.2625	0.5304	2688	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013
27	0.2646	0.5323	2638	0.0002	0.0005	0.0007	0.0010	0.0012	0.0014
28	0.2621	0.5304	2696	0.0003	0.0006	0.0006	0.0009	0.0011	0.0012
29	0.2628	0.5291	2688	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013
30	0.2629	0.5293	2684	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013
31	0.2623	0.5306	2692	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013
32	0.2639	0.5318	2654	0.0002	0.0005	0.0007	0.0008	0.0010	0.0011
33	0.2651	0.5310	2634	0.0002	0.0004	0.0006	0.0009	0.0011	0.0014
34	0.2662	0.5315	2610	0.0001	0.0004	0.0006	0.0007	0.0009	0.0011
35	0.2628	0.5305	2682	0.0002	0.0004	0.0006	0.0008	0.0009	0.0011
36	0.2625	0.5308	2686	0.0002	0.0004	0.0006	0.0008	0.0011	0.0012
37	0.2633	0.5315	2668	0.0003	0.0005	0.0007	0.0010	0.0012	0.0014
38	0.2629	0.5304	2680	0.0002	0.0005	0.0007	0.0009	0.0011	0.0013
39	0.2619	0.5304	2702	0.0002	0.0004	0.0006	0.0009	0.0012	0.0013
40	0.2627	0.5308	2682	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013
41	0.2641	0.5302	2658	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013
42	0.2628	0.5308	2680	0.0005	0.0006	0.0009	0.0008	0.0011	0.0013
43	0.2640	0.5316	2654	0.0004	0.0004	0.0006	0.0007	0.0009	0.0012
44	0.2630	0.5304	2678	0.0003	0.0004	0.0006	0.0009	0.0011	0.0012
45	0.2636	0.5315	2662	0.0002	0.0004	0.0006	0.0007	0.0009	0.0011
46	0.2626	0.5305	2686	0.0005	0.0004	0.0009	0.0008	0.0009	0.0011
47	0.2629	0.5291	2684	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013
48	0.2629	0.5309	2678	0.0002	0.0005	0.0007	0.0010	0.0012	0.0015
49	0.2623	0.5309	2690	0.0003	0.0005	0.0007	0.0010	0.0013	0.0014
50	0.2626	0.5310	2684	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013
Avg.	0.2632	0.5307	2674	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013
Med.	0.2629	0.5308	2682	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013
st dev	0.0010	0.0008	22	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2619	0.5291	2610	0.0001	0.0004	0.0006	0.0007	0.0009	0.0011
Max.	0.2662	0.5323	2702	0.0005	0.0006	0.0009	0.0010	0.0013	0.0015

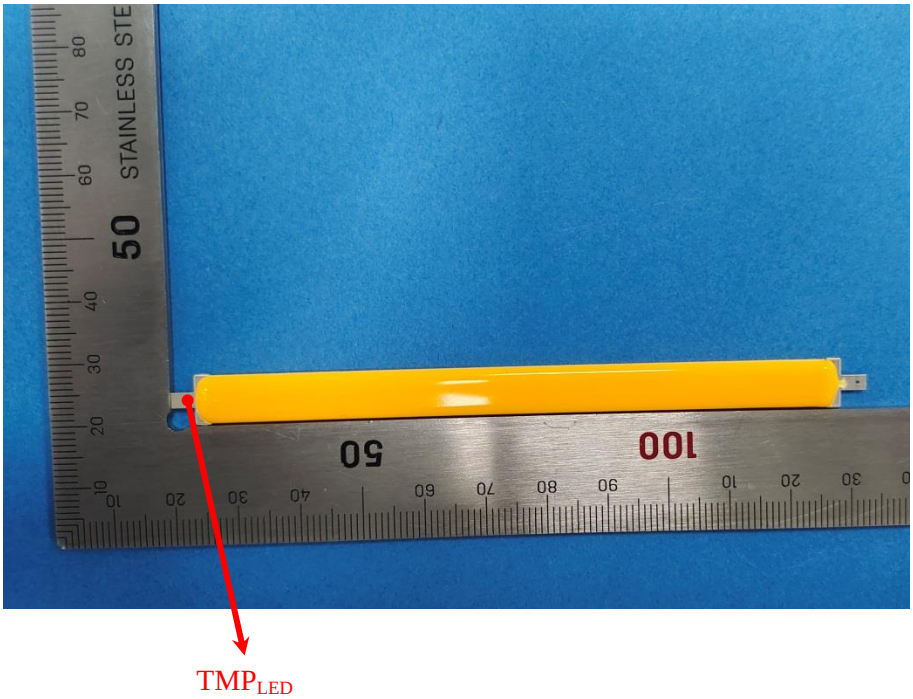
4 - DUT Photo

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 DUT Photo



Directions

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.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K=2 with the 95% confidence interval.
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**********END OF REPORT**********