Test Report

Client	:	Panailo Smart Technology Co., Ltd.
Address	:	18#301, Liando U Valley, 17 Qianwan Road, Economic Development Zone, Yangzhou, Jiangsu, China

Description of the submitted sample(s):

Sample Name	:	LED Package
Model/Type	:	LUXEON 5050
Trademark	:	PANAILO
Ratings	:	Vf: 22-23Vdc; If:60mA
Test Item	:	LM-80-21
State of Sample(s)	:	Normal
Sample Quantity	:	75 PCS
Manufacturer	:	Lumileds Malaysia Sdn Bhd
Address	:	No.3, Lintang Bayan Lepas 8, Kawasan Perindustrian Bayan Lepas Fasa 4, Mukim 12
Sample Received Date	:	2022-11-20
Sample tested Date	:	2022-11-20
Test Standard	:	LM-80-21
Test Laboratory	:	Shenzhen AOCE Electronic Technology Service Co., Ltd
Testing location	:	Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Remark	:	The tested sample(s) and the sample information are provided by the client.

Compiled by: Bruce Lin Reviewed by:

Approved by: Robin.Liu Date : 2025-07-08

Robin Liu
Lab Supervisor

General Information

Sampling Method:
LED samples for IESNA LM-80 testing consist of units built from 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)

Disclaimer:
The truthfulness and accuracy of all the technical information above for the covered LED products is ensured by manufacturer of LED light source. Shenzhen AOCE Electronic Technology Service Co., Ltd. isn't responsible or gives any guarantees for the truthfulness of the technical information.

1 Test Condition

1.1 Air Temperature

The ambient temperature in which measurements are being taken shall be maintained at 25°C±1°C, measured at a point not more than 1 m from the SSL product and at the same height as the SSL product. The temperature sensor shall be shielded from direct optical radiation from the SSL product and optical radiation from any other source. If measurements are performed at other than this recommended temperature, this is a non-standard condition and shall be noted in the test report.

1.2 Thermal Conditions for Mounting SSL Products

The method of mounting can be the primary path for heat flow away from the device and can affect measurement results significantly. The SSL product under test shall be mounted to the measuring instrument so that heat conduction through supporting objects causes negligible cooling effects. If the SSL product under test is provided with a support structure that is designated to be used as a component of the luminaire thermal management system, the product shall be tested with the support structure attached. Any such support structure included in the measurement shall be reported.

1.3 Air Movement

The incidence of air movements on the surface of a SSL product under test may substantially after electrical and photometric values. Air flow around the SSL product being tested should be such that normal convective air flow induced by device under test is not affected.

1.4 Waveshape of AC Power Supply

The AC power supply, while operating the SSL product, shall have a sinusoidal voltage waveshapeat the prescribed frequency typically 50/60 Hz or 50 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

1.5 Voltage Regulation

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.

1.6 Seasoning

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning.

1.7 Stabilization

Before measurements are taken, the SSL product under test shall be operated long enough to reach stabilization and temperature equilibrium. The time required for stabilization depends on the type of SSL products under test. The stabilization time typically ranges from 30 min to 2 or more hours for large SSL products.

1.8 Operating Orientation

The SSL product under test shall be evaluated in the operating orientation recommended by the manufacturer for an intended use of the SSL product. Stabilization and photometric measurements of SSL products shall be done in such operating orientation.

2 Test Method

2.1 Integrating Sphere Measurement

The integrating sphere system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to the National Primary Standard.

The 4π geometry was used to measure total luminous, luminous efficacy, chromaticity coordinates, correlated color temperature, and color rendering index, the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm. The product was operated in its intended orientation and was recorded in the report.

2.2 Goniophotometer Measurement

The goniophotometer system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous efficacy, luminous intensity distribution, and color angular uniformity, which were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. The product was operated in its intended orientation and was recorded in the report.

2.3 Electrical Measurement

According to ANSI C82.77-2002, the measurement was made using a digital power meter and power supply, the SSL product under test was operated at rated voltage and stabilized enough before measurement. The total harmonic distortion of current and power factor can be calculated from the digital power meter. The digital power meter was calibrated regularly and traced to National Primary Standards.

3 Test Result

3.1 Sample Set

Data Set 1:70°C,60mA	
Model:	LUXEON 5050
Number of Units:	25
Case Temperature (T_S):	＞68°C
Ambient Temperature (T_A):	＞65°C
Life Test Drive Current:	60mA
Measurement Current:	60mA

Data Set 2:85°C,60mA	
Model:	LUXEON 5050
Number of Units:	25
Case Temperature (T_S):	＞83°C
Ambient Temperature (T_A):	＞50°C
Life Test Drive Current:	60mA
Measurement Current:	60mA

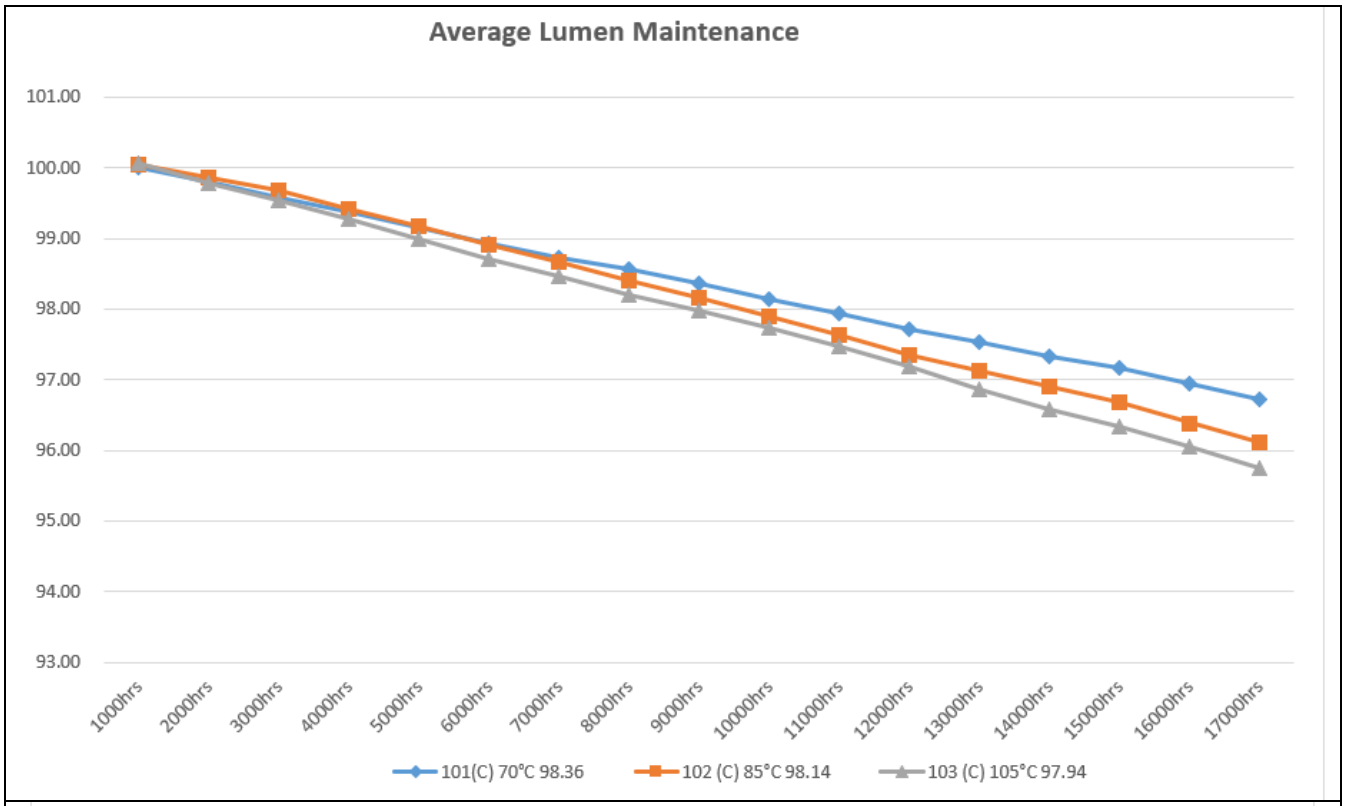
Data Set 3:105°C,60mA	
Model:	LUXEON 5050
Number of Units:	25
Case Temperature (T_S):	＞103°C
Ambient Temperature (T_A):	＞100°C
Life Test Drive Current:	60mA
Measurement Current:	60mA

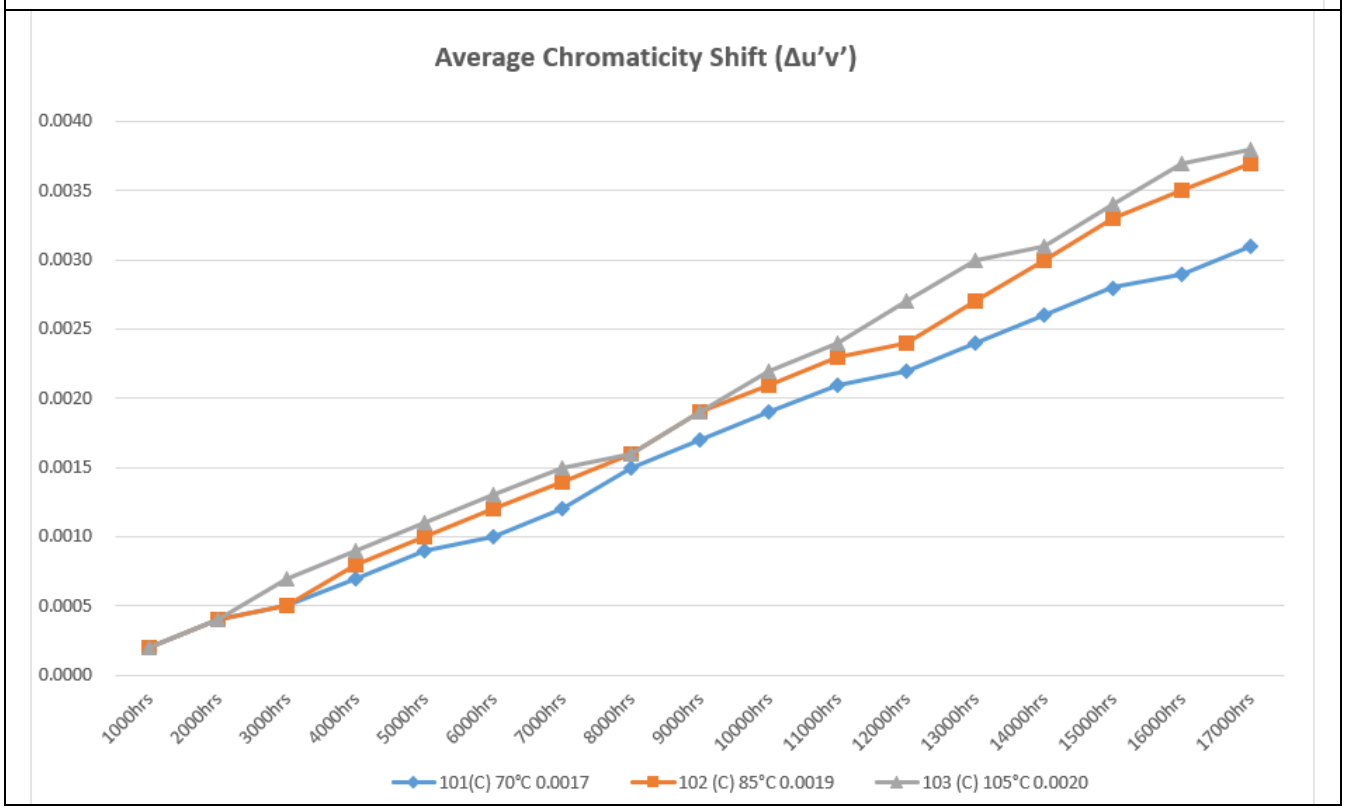
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.00	99.80	99.59	99.38	99.15	98.94	98.74	98.56	98.37	98.15
2	100.04	99.86	99.68	99.42	99.17	98.92	98.67	98.41	98.16	97.90
3	100.06	99.79	99.54	99.28	99.00	98.71	98.46	98.21	97.98	97.74
Data Set:	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
1	97.95	97.72	97.53	97.34	97.17	96.95	96.73	--	--	--
2	97.63	97.36	97.13	96.9	96.68	96.39	96.12	--	--	--
3	97.47	97.20	96.86	96.59	96.34	96.05	95.75	--	--	--

Average Chromaticity Shift (Δu'v')

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
2	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021
3	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0019	0.0022
Data Set:	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
1	0.0021	0.0022	0.0024	0.0026	0.0028	0.0029	0.0031	--	--	--
2	0.0023	0.0024	0.0027	0.0030	0.0033	0.0035	0.0037	--	--	--
3	0.0024	0.0027	0.0030	0.0031	0.0034	0.0037	0.0038	--	--	--


Average Lumen Maintenance
101.00
100.00
99.00
98.00
97.00
96.00
95.00
94.00
93.00
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
11000hrs
12000hrs
13000hrs
14000hrs
15000hrs
16000hrs
17000hrs
101(C) 70°C 98.36
102 (C) 85°C 98.14
103 (C) 105°C 97.94


Average Chromaticity Shift (Δu'v')
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
11000hrs
12000hrs
13000hrs
14000hrs
15000hrs
16000hrs
17000hrs
101(C) 70°C 0.0017
102 (C) 85°C 0.0019
103 (C) 105°C 0.0020

3.2. Test data

3.2.1 Data Set 1, 70°C,60mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	248.46	100.06	99.84	99.63	99.41	99.21	99.01	98.84	98.67	98.50	98.25
S02	247.33	100.03	99.82	99.62	99.40	99.14	98.89	98.72	98.51	98.29	98.13
S03	247.82	100.08	99.88	99.68	99.43	99.23	99.01	98.79	98.61	98.40	98.15
S04	250.16	100.04	99.85	99.63	99.38	99.13	98.90	98.73	98.56	98.39	98.23
S05	257.66	100.06	99.86	99.65	99.42	99.17	98.97	98.75	98.54	98.37	98.12
S06	250.47	100.06	99.86	99.67	99.44	99.22	99.02	98.85	98.68	98.51	98.26
S07	256.41	100.03	99.84	99.64	99.42	99.16	98.96	98.79	98.62	98.40	98.24
S08	255.63	100.07	99.86	99.65	99.40	99.20	99.00	98.82	98.60	98.43	98.19
S09	254.10	100.07	99.88	99.68	99.43	99.23	99.03	98.81	98.59	98.42	98.17
S10	254.19	100.06	99.86	99.66	99.46	99.27	99.15	98.83	98.67	98.39	98.21
S11	250.91	100.07	99.86	99.65	99.43	99.20	98.98	98.76	98.60	98.43	98.18
S12	246.31	100.05	99.84	99.62	99.63	99.18	98.95	98.78	98.68	98.39	98.15
S13	248.55	100.06	99.87	99.67	99.45	99.23	99.03	98.85	98.67	98.46	98.21
S14	252.63	100.03	99.84	99.64	99.44	99.24	99.04	98.87	98.65	98.48	98.32
S15	250.10	100.05	99.83	99.62	99.40	99.17	98.97	98.80	98.58	98.36	98.12
S16	246.91	100.07	99.86	99.65	99.42	99.17	98.92	98.70	98.52	98.30	98.06
S17	246.57	100.06	99.87	99.67	99.42	99.19	98.94	98.77	98.55	98.39	98.23
S18	246.49	100.04	99.83	99.63	99.43	99.18	98.95	98.78	98.61	98.43	98.27
S19	255.49	100.07	99.86	99.65	99.45	99.25	99.02	98.81	98.63	98.46	98.22
S20	250.05	100.05	99.83	99.62	99.40	99.17	98.92	98.75	98.57	98.41	98.25
S21	250.76	100.05	99.84	99.64	99.44	99.24	99.04	98.88	98.66	98.48	98.24
S22	248.35	100.04	99.83	99.62	99.42	99.22	99.02	98.84	98.62	98.41	98.16
S23	253.25	100.08	99.88	99.67	99.47	99.25	99.05	98.88	98.66	98.49	98.34
S24	250.61	100.04	99.83	99.63	99.43	99.18	98.98	98.76	98.59	98.41	98.16
S25	248.56	98.69	98.49	98.29	98.09	97.89	97.68	97.46	97.29	97.13	96.98
Average	250.71	100.00	99.80	99.59	99.38	99.15	98.94	98.74	98.56	98.37	98.15
Median	250.16	100.06	99.85	99.64	99.43	99.20	98.98	98.79	98.61	98.41	98.21
Std.dev	3.29	0.27	0.27	0.27	0.27	0.26	0.26	0.27	0.26	0.26	0.25
Max	257.66	100.08	99.88	99.68	99.63	99.27	99.15	98.88	98.68	98.51	98.34
Min	246.31	98.69	98.49	98.29	98.09	97.89	97.68	97.46	97.29	97.13	96.98

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	248.46	98.09	97.85	97.63	97.46	97.31	97.06	96.84	--	--	--
S02	247.33	97.88	97.64	97.43	97.28	97.11	96.88	96.68	--	--	--
S03	247.82	97.90	97.75	97.53	97.39	97.24	97.02	96.82	--	--	--
S04	250.16	97.99	97.74	97.57	97.39	97.27	97.04	96.80	--	--	--
S05	257.66	97.96	97.72	97.54	97.33	97.11	96.87	96.62	--	--	--
S06	250.47	98.02	97.77	97.59	97.45	97.31	97.06	96.81	--	--	--
S07	256.41	98.00	97.75	97.58	97.40	97.19	96.96	96.71	--	--	--
S08	255.63	98.03	97.87	97.70	97.48	97.27	97.04	96.81	--	--	--
S09	254.10	98.02	97.72	97.57	97.45	97.23	97.01	96.78	--	--	--
S10	254.19	98.05	97.80	97.59	97.41	97.23	97.01	96.81	--	--	--
S11	250.91	97.96	97.70	97.48	97.27	97.05	96.83	96.80	--	--	--
S12	246.31	97.90	97.65	97.48	97.30	97.12	96.87	96.68	--	--	--
S13	248.55	97.97	97.81	97.60	97.45	97.24	97.04	96.84	--	--	--
S14	252.63	98.08	97.83	97.69	97.33	97.37	97.14	96.89	--	--	--
S15	250.10	97.88	97.72	97.54	97.36	97.19	96.96	96.73	--	--	--
S16	246.91	97.81	97.57	97.35	97.14	96.96	96.76	96.51	--	--	--
S17	246.57	98.07	97.91	97.70	97.48	97.31	97.08	96.88	--	--	--
S18	246.49	98.03	97.78	97.57	97.39	97.25	97.02	96.79	--	--	--
S19	255.49	98.06	97.81	97.64	97.46	97.28	97.03	96.83	--	--	--
S20	250.05	98.01	97.76	97.55	97.37	97.19	96.96	96.71	--	--	--
S21	250.76	98.08	97.83	97.69	97.55	97.40	97.21	96.96	--	--	--
S22	248.35	97.92	97.76	97.62	97.40	97.23	97.03	96.83	--	--	--
S23	253.25	98.18	97.94	97.76	97.61	97.40	97.15	96.95	--	--	--
S24	250.61	97.92	97.68	97.46	97.25	97.04	96.84	96.59	--	--	--
S25	248.56	96.82	96.58	96.40	96.19	96.02	95.82	95.62	--	--	--
Average	250.71	97.95	97.72	97.53	97.34	97.17	96.95	96.73	--	--	--
Median	250.16	98.00	97.76	97.57	97.39	97.23	97.02	96.80	--	--	--
Std.dev	3.29	0.24	0.25	0.25	0.25	0.26	0.25	0.25	--	--	--
Max	257.66	98.18	97.94	97.76	97.61	97.40	97.21	96.96	--	--	--
Min	246.31	96.82	96.58	96.40	96.19	96.02	95.82	95.62	--	--	--

3.2.2 Data Set 1, 70°C,60mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	22.35	22.33	22.35	22.36	22.37	22.37	22.35	22.36	22.36	22.35	22.37
S02	22.39	22.40	22.41	22.37	22.39	22.39	22.40	22.42	22.39	22.39	22.41
S03	22.36	22.40	22.44	22.37	22.38	22.41	22.39	22.38	22.40	22.39	22.40
S04	22.49	22.51	22.51	22.50	22.36	22.39	22.36	22.42	22.36	22.36	22.36
S05	22.51	22.53	22.54	22.53	22.38	22.37	22.36	22.38	22.38	22.38	22.36
S06	22.49	22.48	22.47	22.51	22.34	22.34	22.35	22.35	22.35	22.34	22.36
S07	22.57	22.59	22.59	22.59	22.43	22.42	22.60	22.57	22.59	22.44	22.45
S08	22.50	22.52	22.50	22.51	22.35	22.36	22.52	22.51	22.52	22.37	22.34
S09	22.57	22.59	22.59	22.59	22.41	22.44	22.58	22.57	22.59	22.41	22.43
S10	22.51	22.55	22.52	22.52	22.36	22.38	22.53	22.51	22.52	22.41	22.37
S11	22.53	22.54	22.54	22.52	22.39	22.37	22.55	22.53	22.54	22.39	22.39
S12	22.52	22.53	22.52	22.52	22.53	22.54	22.50	22.54	22.54	22.36	22.39
S13	22.38	22.38	22.40	22.40	22.58	22.54	22.54	22.53	22.55	22.40	22.37
S14	22.39	22.38	22.41	22.41	22.56	22.56	22.39	22.39	22.44	22.41	22.41
S15	22.39	22.40	22.39	22.38	22.54	22.56	22.39	22.39	22.39	22.41	22.43
S16	22.42	22.41	22.44	22.42	22.59	22.56	22.43	22.42	22.41	22.56	22.57
S17	22.40	22.40	22.41	22.42	22.56	22.57	22.42	22.41	22.42	22.55	22.54
S18	22.39	22.41	22.40	22.41	22.54	22.55	22.41	22.40	22.40	22.56	22.55
S19	22.42	22.43	22.43	22.42	22.57	22.59	22.42	22.42	22.43	22.57	22.59
S20	22.36	22.37	22.37	22.37	22.53	22.52	22.37	22.37	22.38	22.52	22.52
S21	22.41	22.42	22.43	22.41	22.58	22.56	22.41	22.44	22.41	22.57	22.58
S22	22.34	22.34	22.36	22.34	22.34	22.35	22.36	22.36	22.34	22.33	22.34
S23	22.35	22.36	22.34	22.36	22.37	22.37	22.33	22.35	22.35	22.36	22.35
S24	22.41	22.41	22.43	22.41	22.42	22.41	22.44	22.43	22.43	22.43	22.43
S25	22.33	22.33	22.31	22.33	22.33	22.32	22.31	22.33	22.33	22.34	22.33
Average	22.43	22.44	22.44	22.44	22.45	22.45	22.43	22.43	22.43	22.42	22.43
Median	22.41	22.41	22.43	22.41	22.41	22.41	22.41	22.42	22.41	22.40	22.40
Std.dev	0.07	0.08	0.08	0.08	0.09	0.09	0.08	0.07	0.08	0.08	0.08
Max	22.57	22.59	22.59	22.59	22.59	22.59	22.60	22.57	22.59	22.57	22.59
Min	22.33	22.33	22.31	22.33	22.33	22.32	22.31	22.33	22.33	22.33	22.33

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	22.35	22.35	22.35	22.36	22.35	22.36	22.36	22.35	--	--	--
S02	22.39	22.40	22.41	22.41	22.40	22.41	22.39	22.40	--	--	--
S03	22.36	22.40	22.39	22.40	22.38	22.40	22.41	22.39	--	--	--
S04	22.49	22.36	22.34	22.36	22.36	22.36	22.41	22.36	--	--	--
S05	22.51	22.38	22.35	22.37	22.38	22.42	22.38	22.35	--	--	--
S06	22.49	22.36	22.34	22.35	22.43	22.35	22.33	22.36	--	--	--
S07	22.57	22.55	22.59	22.57	22.57	22.59	22.43	22.44	--	--	--
S08	22.50	22.50	22.49	22.52	22.52	22.50	22.37	22.34	--	--	--
S09	22.57	22.58	22.57	22.59	22.57	22.60	22.41	22.44	--	--	--
S10	22.51	22.52	22.49	22.51	22.53	22.52	22.37	22.38	--	--	--
S11	22.53	22.54	22.54	22.54	22.54	22.52	22.54	22.52	--	--	--
S12	22.52	22.53	22.51	22.51	22.54	22.52	22.54	22.51	--	--	--
S13	22.38	22.55	22.53	22.53	22.52	22.54	22.55	22.55	--	--	--
S14	22.39	22.56	22.56	22.56	22.56	22.57	22.57	22.51	--	--	--
S15	22.39	22.54	22.53	22.56	22.56	22.55	22.56	22.53	--	--	--
S16	22.42	22.57	22.59	22.59	22.58	22.59	22.58	22.57	--	--	--
S17	22.40	22.54	22.56	22.57	22.54	22.55	22.56	22.57	--	--	--
S18	22.39	22.39	22.36	22.40	22.38	22.39	22.41	22.38	--	--	--
S19	22.42	22.41	22.42	22.44	22.40	22.42	22.42	22.44	--	--	--
S20	22.36	22.37	22.37	22.37	22.35	22.36	22.37	22.36	--	--	--
S21	22.41	22.43	22.43	22.43	22.41	22.41	22.41	22.44	--	--	--
S22	22.34	22.34	22.33	22.34	22.35	22.36	22.34	22.36	--	--	--
S23	22.35	22.37	22.36	22.35	22.35	22.34	22.33	22.37	--	--	--
S24	22.41	22.40	22.43	22.41	22.40	22.43	22.41	22.42	--	--	--
S25	22.33	22.34	22.34	22.33	22.35	22.35	22.34	22.34	--	--	--
Average	22.43	22.45	22.45	22.45	22.45	22.46	22.43	22.43	--	--	--
Median	22.41	22.41	22.43	22.43	22.41	22.42	22.41	22.40	--	--	--
Std.dev	0.07	0.09	0.09	0.09	0.09	0.09	0.08	0.08	--	--	--
Max	22.57	22.58	22.59	22.59	22.58	22.60	22.58	22.57	--	--	--
Min	22.33	22.34	22.33	22.33	22.35	22.34	22.33	22.34	--	--	--

3.2.3 Data Set 1, 70°C,60mA (Chromaticity Shift)

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	0.2562	0.5214	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S02	0.2562	0.5213	0.0002	0.0004	0.0006	0.0008	0.0009	0.0008	0.0010	0.0012	0.0014	0.0016
S03	0.2559	0.5211	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S04	0.2557	0.5239	0.0001	0.0003	0.0005	0.0009	0.0008	0.0010	0.0016	0.0018	0.0021	0.0023
S05	0.2558	0.5217	0.0002	0.0004	0.0006	0.0008	0.0010	0.0013	0.0013	0.0015	0.0018	0.0020
S06	0.2551	0.5215	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0018
S07	0.2564	0.5217	0.0001	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0020
S08	0.2562	0.5213	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0014	0.0018
S09	0.2567	0.5217	0.0002	0.0003	0.0005	0.0007	0.0009	0.0013	0.0010	0.0017	0.0016	0.0022
S10	0.2557	0.5214	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0011	0.0015	0.0017	0.0019
S11	0.2546	0.5239	0.0001	0.0004	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013	0.0018	0.0018
S12	0.2544	0.5236	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0019
S13	0.2542	0.5241	0.0002	0.0004	0.0006	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0022
S14	0.2548	0.5239	0.0001	0.0004	0.0005	0.0008	0.0009	0.0007	0.0010	0.0012	0.0014	0.0019
S15	0.2551	0.5241	0.0002	0.0004	0.0006	0.0008	0.0009	0.0009	0.0011	0.0014	0.0016	0.0022
S16	0.2545	0.5238	0.0002	0.0003	0.0004	0.0006	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
S17	0.2545	0.5236	0.0002	0.0004	0.0005	0.0007	0.0009	0.0011	0.0014	0.0017	0.0018	0.0022
S18	0.2547	0.5238	0.0002	0.0004	0.0005	0.0008	0.0009	0.0011	0.0014	0.0015	0.0018	0.0019
S19	0.2545	0.5237	0.0002	0.0004	0.0005	0.0007	0.0008	0.0012	0.0014	0.0013	0.0019	0.0020
S20	0.2541	0.5238	0.0001	0.0003	0.0004	0.0006	0.0007	0.0010	0.0012	0.0014	0.0017	0.0019
S21	0.2545	0.5227	0.0002	0.0004	0.0006	0.0009	0.0010	0.0009	0.0011	0.0013	0.0016	0.0018
S22	0.2566	0.5238	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019
S23	0.2542	0.5224	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0014	0.0016	0.0019	0.0021
S24	0.2563	0.5229	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011	0.0013	0.0015	0.0016
S25	0.2555	0.5226	0.0002	0.0003	0.0005	0.0008	0.0009	0.0010	0.0012	0.0015	0.0017	0.0018
Average	0.2553	0.5228	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
Median	0.2551	0.5229	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
Std.dev	0.0008	0.0011	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
Max	0.2567	0.5241	0.0002	0.0004	0.0006	0.0009	0.0010	0.0013	0.0016	0.0018	0.0021	0.0023
Min	0.2541	0.5211	0.0001	0.0003	0.0004	0.0006	0.0007	0.0007	0.0010	0.0012	0.0014	0.0016

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	0.2562	0.5214	0.0021	0.0024	0.0022	0.0024	0.0025	0.0027	0.0030	--	--	--
S02	0.2562	0.5213	0.0019	0.0021	0.0023	0.0025	0.0027	0.0029	0.0031	--	--	--
S03	0.2559	0.5211	0.0021	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S04	0.2557	0.5239	0.0024	0.0025	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S05	0.2558	0.5217	0.0022	0.0025	0.0028	0.0030	0.0032	0.0028	0.0034	--	--	--
S06	0.2551	0.5215	0.0019	0.0021	0.0025	0.0026	0.0028	0.0030	0.0030	--	--	--
S07	0.2564	0.5217	0.0021	0.0022	0.0025	0.0024	0.0026	0.0028	0.0034	--	--	--
S08	0.2562	0.5213	0.0023	0.0022	0.0025	0.0026	0.0029	0.0029	0.0033	--	--	--
S09	0.2567	0.5217	0.0023	0.0025	0.0025	0.0026	0.0029	0.0030	0.0033	--	--	--
S10	0.2557	0.5214	0.0021	0.0022	0.0023	0.0025	0.0029	0.0028	0.0030	--	--	--
S11	0.2546	0.5239	0.0019	0.0021	0.0024	0.0026	0.0028	0.0029	0.0030	--	--	--
S12	0.2544	0.5236	0.0021	0.0023	0.0027	0.0028	0.0029	0.0032	0.0034	--	--	--
S13	0.2542	0.5241	0.0019	0.0020	0.0025	0.0027	0.0029	0.0031	0.0033	--	--	--
S14	0.2548	0.5239	0.0017	0.0019	0.0025	0.0027	0.0029	0.0031	0.0033	--	--	--
S15	0.2551	0.5241	0.0020	0.0022	0.0025	0.0027	0.0028	0.0030	0.0031	--	--	--
S16	0.2545	0.5238	0.0022	0.0022	0.0023	0.0025	0.0026	0.0029	0.0030	--	--	--
S17	0.2545	0.5236	0.0023	0.0025	0.0026	0.0026	0.0030	0.0032	0.0030	--	--	--
S18	0.2547	0.5238	0.0023	0.0022	0.0025	0.0026	0.0029	0.0031	0.0034	--	--	--
S19	0.2545	0.5237	0.0021	0.0021	0.0024	0.0025	0.0027	0.0031	0.0033	--	--	--
S20	0.2541	0.5238	0.0021	0.0023	0.0024	0.0026	0.0027	0.0029	0.0033	--	--	--
S21	0.2545	0.5227	0.0020	0.0022	0.0025	0.0028	0.0028	0.0030	0.0032	--	--	--
S22	0.2566	0.5238	0.0020	0.0021	0.0024	0.0026	0.0027	0.0029	0.0030	--	--	--
S23	0.2542	0.5224	0.0022	0.0024	0.0023	0.0025	0.0026	0.0027	0.0028	--	--	--
S24	0.2563	0.5229	0.0019	0.0020	0.0021	0.0022	0.0024	0.0026	0.0027	--	--	--
S25	0.2555	0.5226	0.0020	0.0022	0.0024	0.0025	0.0027	0.0029	0.0031	--	--	--
Average	0.2553	0.5228	0.0021	0.0022	0.0024	0.0026	0.0028	0.0029	0.0031	--	--	--
Median	0.2551	0.5229	0.0021	0.0022	0.0024	0.0026	0.0028	0.0029	0.0031	--	--	--
Std.dev	0.0008	0.0011	0.0002	0.0002	0.0001	0.0002	0.0002	0.0001	0.0002	--	--	--
Max	0.2567	0.5241	0.0024	0.0025	0.0028	0.0030	0.0032	0.0032	0.0034	--	--	--
Min	0.2541	0.5211	0.0017	0.0019	0.0021	0.0022	0.0024	0.0026	0.0027	--	--	--

3.2.4 Data Set 2, 85°C,60mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S26	240.54	100.01	99.82	99.64	99.38	99.10	98.88	98.61	98.38	98.12	97.87
S27	243.67	100.05	99.87	99.69	99.43	99.15	98.93	98.71	98.43	98.15	97.88
S28	243.76	100.01	99.83	99.65	99.43	99.17	98.91	98.64	98.38	98.12	97.87
S29	240.09	100.07	99.89	99.70	99.48	99.26	98.99	98.76	98.50	98.22	97.96
S30	240.79	100.07	99.88	99.69	99.44	99.16	98.83	98.58	98.32	98.06	97.79
S31	249.63	100.07	99.88	99.70	99.43	99.17	98.84	98.62	98.36	98.08	97.82
S32	243.22	100.07	99.89	99.70	99.48	99.20	98.90	98.62	98.39	98.17	97.90
S33	242.67	100.06	99.87	99.69	99.41	99.19	98.86	98.60	98.35	98.09	97.83
S34	241.93	100.07	99.88	99.70	99.44	99.22	98.94	98.72	98.49	98.23	97.96
S35	238.29	100.07	99.88	99.69	99.47	99.25	98.99	98.77	98.51	98.23	97.95
S36	242.59	100.09	99.91	99.72	99.44	99.19	98.97	98.69	98.43	98.20	97.94
S37	251.25	100.06	99.88	99.69	99.44	99.16	98.91	98.68	98.45	98.19	97.91
S38	247.96	100.07	99.89	99.70	99.48	99.26	98.98	98.75	98.50	98.27	98.00
S39	240.25	100.05	99.86	99.68	99.40	99.14	98.89	98.63	98.40	98.18	97.89
S40	246.81	100.04	99.85	99.66	99.39	99.13	98.96	98.73	98.45	98.23	97.97
S41	238.99	100.00	99.82	99.64	99.38	99.16	98.95	98.70	98.44	98.18	97.91
S42	245.03	100.02	99.84	99.66	99.41	99.13	98.92	98.65	98.37	98.09	97.84
S43	248.63	100.03	99.85	99.67	99.42	99.14	98.92	98.64	98.38	98.15	97.87
S44	244.92	100.01	99.83	99.64	99.36	99.14	98.92	98.69	98.46	98.21	97.95
S45	237.01	100.01	99.83	99.65	99.43	99.21	98.99	98.76	98.48	98.26	97.99
S46	241.31	100.04	99.86	99.67	99.39	99.12	98.84	98.56	98.29	98.06	97.77
S47	247.66	100.05	99.87	99.69	99.47	99.25	98.97	98.74	98.52	98.26	97.97
S48	242.75	100.01	99.83	99.64	99.37	99.11	98.86	98.58	98.32	98.06	97.78
S49	247.72	100.03	99.85	99.66	99.40	99.18	98.93	98.67	98.41	98.15	97.90
S50	245.39	100.04	99.86	99.68	99.40	99.14	98.87	98.64	98.36	98.14	97.88
Average	243.71	100.04	99.86	99.68	99.42	99.17	98.92	98.67	98.41	98.16	97.90
Median	243.22	100.05	99.86	99.68	99.43	99.16	98.92	98.67	98.41	98.17	97.90
Std.dev	3.66	0.03	0.02	0.02	0.03	0.05	0.05	0.06	0.06	0.07	0.06
Max	251.25	100.09	99.91	99.72	99.48	99.26	98.99	98.77	98.52	98.27	98.00
Min	237.01	100.00	99.82	99.64	99.36	99.10	98.83	98.56	98.29	98.06	97.77

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S26	240.54	97.60	97.33	97.12	96.89	96.68	96.39	96.10	--	--	--
S27	243.67	97.62	97.36	97.12	96.88	96.67	96.43	96.14	--	--	--
S28	243.76	97.65	97.38	97.17	96.93	96.72	96.42	96.13	--	--	--
S29	240.09	97.75	97.47	97.23	96.99	96.75	96.41	96.12	--	--	--
S30	240.79	97.56	97.27	97.06	96.83	96.59	96.25	96.01	--	--	--
S31	249.63	97.60	97.33	97.09	96.88	96.65	96.36	96.11	--	--	--
S32	243.22	97.68	97.40	97.18	96.95	96.74	96.40	96.16	--	--	--
S33	242.67	97.60	97.34	97.13	96.92	96.69	96.35	96.06	--	--	--
S34	241.93	97.71	97.44	97.23	97.00	96.79	96.45	96.16	--	--	--
S35	238.29	97.66	97.38	97.14	96.90	96.67	96.33	96.04	--	--	--
S36	242.59	97.68	97.41	97.18	96.94	96.72	96.43	96.14	--	--	--
S37	251.25	97.64	97.36	97.12	96.89	96.66	96.32	96.03	--	--	--
S38	247.96	97.74	97.47	97.26	97.02	96.78	96.48	96.24	--	--	--
S39	240.25	97.55	97.27	97.03	96.82	96.61	96.31	96.03	--	--	--
S40	246.81	97.65	97.40	97.19	96.95	96.74	96.45	96.16	--	--	--
S41	238.99	97.61	97.32	97.09	96.88	96.67	96.38	96.09	--	--	--
S42	245.03	97.53	97.27	97.03	96.80	96.58	96.39	96.10	--	--	--
S43	248.63	97.55	97.29	97.07	96.84	96.61	96.37	96.08	--	--	--
S44	244.92	97.63	97.35	97.11	96.90	96.68	96.49	96.20	--	--	--
S45	237.01	97.73	97.48	97.25	97.01	96.77	96.53	96.24	--	--	--
S46	241.31	97.51	97.25	97.02	96.79	96.58	96.34	96.05	--	--	--
S47	247.66	97.71	97.42	97.21	96.97	96.76	96.56	96.32	--	--	--
S48	242.75	97.51	97.23	97.01	96.77	96.55	96.25	95.97	--	--	--
S49	247.72	97.63	97.36	97.14	96.90	96.67	96.38	96.13	--	--	--
S50	245.39	97.59	97.34	97.13	96.90	96.66	96.37	96.08	--	--	--
Average	243.71	97.63	97.36	97.13	96.90	96.68	96.39	96.12	--	--	--
Median	243.22	97.63	97.36	97.13	96.90	96.67	96.39	96.11	--	--	--
Std.dev	3.66	0.07	0.07	0.07	0.07	0.07	0.07	0.08	--	--	--
Max	251.25	97.75	97.48	97.26	97.02	96.79	96.56	96.32	--	--	--
Min	237.01	97.51	97.23	97.01	96.77	96.55	96.25	95.97	--	--	--

3.2.5 Data Set 2, 85°C,60mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S26	22.21	22.22	22.17	22.19	22.18	22.21	22.22	22.28	22.18	22.22	22.19
S27	22.26	22.22	22.24	22.27	22.25	22.36	22.27	22.33	22.23	22.24	22.25
S28	22.23	22.23	22.21	22.23	22.24	22.37	22.24	22.30	22.23	22.21	22.23
S29	22.23	22.27	22.20	22.21	22.22	22.36	22.21	22.31	22.35	22.21	22.40
S30	22.19	22.16	22.16	22.17	22.21	22.28	22.16	22.29	22.33	22.20	22.33
S31	22.27	22.24	22.35	22.22	22.21	22.34	22.21	22.30	22.38	22.22	22.42
S32	22.23	22.32	22.31	22.18	22.18	22.30	22.38	22.30	22.30	22.20	22.35
S33	22.29	22.42	22.38	22.27	22.40	22.39	22.44	22.35	22.40	22.25	22.42
S34	22.27	22.38	22.36	22.23	22.40	22.38	22.40	22.31	22.34	22.25	22.42
S35	22.25	22.34	22.35	22.20	22.38	22.32	22.38	22.28	22.35	22.20	22.38
S36	22.25	22.36	22.36	22.22	22.38	22.26	22.40	22.32	22.37	22.23	22.43
S37	22.19	22.29	22.31	22.26	22.31	22.19	22.37	22.25	22.32	22.19	22.34
S38	22.21	22.34	22.31	22.29	22.38	22.21	22.39	22.29	22.34	22.37	22.38
S39	22.20	22.24	22.31	22.30	22.36	22.19	22.36	22.27	22.31	22.36	22.36
S40	22.22	22.22	22.31	22.32	22.35	22.23	22.40	22.28	22.33	22.36	22.37
S41	22.21	22.23	22.30	22.28	22.22	22.20	22.38	22.27	22.36	22.37	22.37
S42	22.26	22.26	22.39	22.35	22.23	22.27	22.27	22.32	22.27	22.39	22.42
S43	22.21	22.21	22.18	22.30	22.20	22.22	22.19	22.29	22.21	22.33	22.18
S44	22.26	22.27	22.23	22.36	22.23	22.23	22.24	22.33	22.24	22.42	22.27
S45	22.19	22.18	22.16	22.19	22.16	22.18	22.17	22.20	22.20	22.32	22.20
S46	22.21	22.22	22.22	22.20	22.20	22.20	22.18	22.22	22.19	22.37	22.22
S47	22.24	22.22	22.25	22.24	22.25	22.21	22.21	22.22	22.22	22.36	22.25
S48	22.19	22.20	22.20	22.17	22.17	22.18	22.19	22.17	22.16	22.33	22.19
S49	22.25	22.26	22.26	22.24	22.23	22.25	22.25	22.25	22.23	22.23	22.26
S50	22.25	22.25	22.26	22.26	22.26	22.23	22.26	22.26	22.25	22.23	22.23
Average	22.23	22.26	22.27	22.25	22.26	22.26	22.29	22.28	22.28	22.28	22.31
Median	22.23	22.24	22.26	22.24	22.23	22.23	22.26	22.29	22.30	22.25	22.34
Std.dev	0.03	0.06	0.07	0.05	0.08	0.07	0.09	0.04	0.07	0.07	0.09
Max	22.29	22.42	22.39	22.36	22.40	22.39	22.44	22.35	22.40	22.42	22.43
Min	22.19	22.16	22.16	22.17	22.16	22.18	22.16	22.17	22.16	22.19	22.18

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S26	22.21	22.21	22.20	22.21	22.17	22.19	22.22	22.17	--	--	--
S27	22.26	22.37	22.25	22.27	22.24	22.22	22.24	22.40	--	--	--
S28	22.23	22.36	22.21	22.30	22.21	22.23	22.21	22.34	--	--	--
S29	22.23	22.34	22.24	22.30	22.24	22.39	22.21	22.33	--	--	--
S30	22.19	22.31	22.18	22.26	22.19	22.31	22.30	22.33	--	--	--
S31	22.27	22.34	22.24	22.32	22.22	22.38	22.34	22.38	--	--	--
S32	22.23	22.33	22.35	22.30	22.20	22.33	22.33	22.33	--	--	--
S33	22.29	22.37	22.43	22.33	22.23	22.39	22.35	22.37	--	--	--
S34	22.27	22.36	22.42	22.30	22.25	22.40	22.35	22.34	--	--	--
S35	22.25	22.33	22.38	22.32	22.20	22.38	22.31	22.36	--	--	--
S36	22.25	22.26	22.40	22.33	22.26	22.41	22.37	22.38	--	--	--
S37	22.19	22.18	22.35	22.17	22.15	22.20	22.32	22.31	--	--	--
S38	22.21	22.22	22.39	22.22	22.22	22.23	22.30	22.20	--	--	--
S39	22.20	22.17	22.36	22.21	22.17	22.21	22.30	22.21	--	--	--
S40	22.22	22.19	22.38	22.20	22.23	22.21	22.33	22.23	--	--	--
S41	22.21	22.19	22.35	22.18	22.31	22.20	22.32	22.23	--	--	--
S42	22.26	22.27	22.43	22.24	22.36	22.23	22.39	22.23	--	--	--
S43	22.21	22.20	22.34	22.21	22.32	22.21	22.21	22.21	--	--	--
S44	22.26	22.24	22.42	22.23	22.36	22.24	22.24	22.23	--	--	--
S45	22.19	22.20	22.17	22.17	22.32	22.17	22.17	22.18	--	--	--
S46	22.21	22.22	22.20	22.18	22.35	22.20	22.20	22.20	--	--	--
S47	22.24	22.22	22.23	22.22	22.35	22.22	22.23	22.23	--	--	--
S48	22.19	22.17	22.19	22.17	22.30	22.18	22.18	22.17	--	--	--
S49	22.25	22.25	22.26	22.25	22.36	22.23	22.23	22.25	--	--	--
S50	22.25	22.24	22.26	22.22	22.26	22.24	22.23	22.26	--	--	--
Average	22.23	22.26	22.31	22.24	22.26	22.26	22.28	22.27	--	--	--
Median	22.23	22.24	22.34	22.23	22.24	22.23	22.30	22.25	--	--	--
Std.dev	0.03	0.07	0.09	0.05	0.07	0.08	0.06	0.07	--	--	--
Max	22.29	22.37	22.43	22.33	22.36	22.41	22.39	22.40	--	--	--
Min	22.19	22.17	22.17	22.17	22.15	22.17	22.17	22.17	--	--	--

3.2.6 Data Set 2, 85°C,60mA (Chromaticity Shift)

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S26	0.2602	0.5237	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0019
S27	0.2600	0.5236	0.0002	0.0004	0.0005	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0022
S28	0.2611	0.5262	0.0002	0.0004	0.0006	0.0007	0.0011	0.0013	0.0014	0.0016	0.0018	0.0021
S29	0.2599	0.5233	0.0002	0.0004	0.0005	0.0008	0.0010	0.0013	0.0014	0.0016	0.0018	0.0022
S30	0.2597	0.5233	0.0002	0.0003	0.0006	0.0007	0.0010	0.0012	0.0015	0.0016	0.0019	0.0020
S31	0.2596	0.5236	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013	0.0012	0.0017	0.0018	0.0021
S32	0.2609	0.5259	0.0002	0.0003	0.0005	0.0008	0.0011	0.0012	0.0014	0.0017	0.0019	0.0021
S33	0.2569	0.5260	0.0002	0.0003	0.0005	0.0007	0.0010	0.0012	0.0014	0.0014	0.0020	0.0019
S34	0.2569	0.5261	0.0002	0.0004	0.0005	0.0008	0.0011	0.0013	0.0014	0.0017	0.0019	0.0020
S35	0.2567	0.5257	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013	0.0015	0.0017	0.0019	0.0020
S36	0.2574	0.5264	0.0002	0.0003	0.0005	0.0008	0.0010	0.0012	0.0015	0.0016	0.0018	0.0020
S37	0.2569	0.5263	0.0002	0.0004	0.0005	0.0008	0.0010	0.0013	0.0015	0.0018	0.0019	0.0022
S38	0.2569	0.5259	0.0002	0.0003	0.0005	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0022
S39	0.2579	0.5291	0.0002	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0016	0.0019	0.0020
S40	0.2565	0.5260	0.0002	0.0004	0.0006	0.0009	0.0011	0.0011	0.0014	0.0015	0.0018	0.0021
S41	0.2571	0.5261	0.0002	0.0003	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0022
S42	0.2572	0.5233	0.0002	0.0004	0.0006	0.0008	0.0010	0.0011	0.0013	0.0015	0.0018	0.0021
S43	0.2579	0.5261	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0022
S44	0.2572	0.5233	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013	0.0015	0.0017	0.0020	0.0020
S45	0.2576	0.5258	0.0002	0.0004	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0023
S46	0.2574	0.5261	0.0002	0.0003	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0021
S47	0.2584	0.5265	0.0002	0.0004	0.0005	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0019
S48	0.2569	0.5231	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017	0.0020	0.0021
S49	0.2566	0.5236	0.0002	0.0003	0.0005	0.0007	0.0010	0.0012	0.0014	0.0016	0.0018	0.0019
S50	0.2578	0.5259	0.0002	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0020	0.0022
Average	0.2581	0.5252	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021
Median	0.2574	0.5259	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021
Std.dev	0.0014	0.0015	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	0.2611	0.5291	0.0002	0.0004	0.0006	0.0009	0.0011	0.0013	0.0015	0.0018	0.0020	0.0023
Min	0.2565	0.5231	0.0002	0.0003	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0016	0.0019

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S26	0.2602	0.5237	0.0021	0.0022	0.0026	0.0028	0.0031	0.0033	0.0034	--	--	--
S27	0.2600	0.5236	0.0023	0.0025	0.0028	0.0030	0.0032	0.0033	0.0035	--	--	--
S28	0.2611	0.5262	0.0021	0.0024	0.0028	0.0028	0.0036	0.0034	0.0036	--	--	--
S29	0.2599	0.5233	0.0022	0.0025	0.0027	0.0031	0.0030	0.0034	0.0036	--	--	--
S30	0.2597	0.5233	0.0023	0.0023	0.0029	0.0033	0.0032	0.0038	0.0039	--	--	--
S31	0.2596	0.5236	0.0024	0.0024	0.0026	0.0028	0.0036	0.0034	0.0036	--	--	--
S32	0.2609	0.5259	0.0022	0.0025	0.0026	0.0030	0.0031	0.0032	0.0039	--	--	--
S33	0.2569	0.5260	0.0022	0.0024	0.0029	0.0033	0.0033	0.0034	0.0038	--	--	--
S34	0.2569	0.5261	0.0021	0.0023	0.0026	0.0029	0.0033	0.0038	0.0037	--	--	--
S35	0.2567	0.5257	0.0021	0.0023	0.0025	0.0027	0.0031	0.0036	0.0036	--	--	--
S36	0.2574	0.5264	0.0022	0.0023	0.0026	0.0028	0.0031	0.0033	0.0034	--	--	--
S37	0.2569	0.5263	0.0023	0.0025	0.0027	0.0031	0.0033	0.0035	0.0037	--	--	--
S38	0.2569	0.5259	0.0024	0.0025	0.0029	0.0033	0.0036	0.0038	0.0039	--	--	--
S39	0.2579	0.5291	0.0022	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	--	--	--
S40	0.2565	0.5260	0.0022	0.0024	0.0026	0.0030	0.0032	0.0034	0.0036	--	--	--
S41	0.2571	0.5261	0.0024	0.0025	0.0029	0.0033	0.0036	0.0038	0.0039	--	--	--
S42	0.2572	0.5233	0.0023	0.0024	0.0028	0.0031	0.0035	0.0036	0.0038	--	--	--
S43	0.2579	0.5261	0.0024	0.0025	0.0028	0.0030	0.0034	0.0035	0.0037	--	--	--
S44	0.2572	0.5233	0.0022	0.0023	0.0027	0.0031	0.0033	0.0035	0.0036	--	--	--
S45	0.2576	0.5258	0.0025	0.0026	0.0030	0.0034	0.0038	0.0040	0.0042	--	--	--
S46	0.2574	0.5261	0.0023	0.0024	0.0026	0.0030	0.0034	0.0036	0.0038	--	--	--
S47	0.2584	0.5265	0.0021	0.0022	0.0025	0.0027	0.0030	0.0032	0.0033	--	--	--
S48	0.2569	0.5231	0.0023	0.0024	0.0027	0.0029	0.0031	0.0033	0.0035	--	--	--
S49	0.2566	0.5236	0.0021	0.0022	0.0025	0.0028	0.0031	0.0033	0.0035	--	--	--
S50	0.2578	0.5259	0.0024	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035	--	--	--
Average	0.2581	0.5252	0.0023	0.0024	0.0027	0.0030	0.0033	0.0035	0.0037	--	--	--
Median	0.2574	0.5259	0.0022	0.0024	0.0027	0.0030	0.0032	0.0034	0.0036	--	--	--
Std.dev	0.0014	0.0015	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	--	--	--
Max	0.2611	0.5291	0.0025	0.0026	0.0030	0.0034	0.0038	0.0040	0.0042	--	--	--
Min	0.2565	0.5231	0.0021	0.0022	0.0025	0.0027	0.0030	0.0032	0.0033	--	--	--

3.2.7 Data Set 3, 105°C,60mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S51	242.84	99.98	99.76	99.54	99.28	99.02	98.72	98.48	98.29	98.05	97.78
S52	242.86	99.97	99.75	99.45	99.34	99.04	98.73	98.49	98.14	97.85	97.58
S53	248.46	99.99	99.69	99.39	99.30	99.00	98.70	98.46	98.13	97.94	97.67
S54	244.19	99.99	99.77	99.47	99.34	99.06	98.80	98.56	98.33	98.09	97.83
S55	246.04	99.99	99.69	99.47	99.38	99.12	98.84	98.55	98.33	98.14	97.87
S56	247.57	100.18	99.96	99.74	99.43	99.17	98.87	98.68	98.46	98.17	97.90
S57	245.91	100.17	99.87	99.65	99.37	99.11	98.80	98.57	98.24	97.95	97.68
S58	247.87	100.14	99.84	99.55	99.27	99.01	98.73	98.54	98.32	98.03	97.76
S59	249.71	100.19	99.89	99.59	99.33	99.05	98.75	98.56	98.29	98.00	97.72
S60	249.71	100.20	99.90	99.61	99.35	99.04	98.79	98.50	98.22	97.98	97.71
S61	245.02	100.14	99.84	99.55	99.10	98.84	98.53	98.25	98.19	98.00	97.74
S62	246.92	100.20	99.90	99.68	99.25	98.95	98.67	98.38	98.32	98.14	97.87
S63	242.04	100.16	99.86	99.64	99.19	98.88	98.60	98.36	98.26	98.02	97.75
S64	249.36	100.15	99.93	99.63	99.16	98.86	98.58	98.39	98.21	97.97	97.69
S65	249.33	100.14	99.92	99.69	99.24	98.96	98.68	98.39	98.21	97.92	97.64
S66	244.76	100.01	99.79	99.57	99.29	98.98	98.72	98.49	98.25	98.06	97.80
S67	247.52	100.00	99.77	99.55	99.25	98.99	98.71	98.42	98.13	97.89	97.62
S68	248.46	99.98	99.68	99.38	99.08	98.78	98.47	98.18	98.00	97.71	97.43
S69	244.04	99.97	99.74	99.52	99.24	98.98	98.68	98.39	98.15	97.86	97.73
S70	245.67	99.97	99.67	99.45	99.32	99.01	98.71	98.47	98.12	97.93	97.79
S71	244.91	100.01	99.72	99.49	99.40	99.15	98.87	98.58	98.22	97.93	97.80
S72	249.55	100.00	99.70	99.48	99.34	99.09	98.78	98.49	98.08	97.90	97.76
S73	245.43	99.98	99.68	99.46	99.35	99.09	98.83	98.59	98.24	98.05	97.91
S74	245.80	99.97	99.75	99.45	99.17	98.91	98.65	98.36	98.07	97.84	97.69
S75	242.14	99.98	99.68	99.46	99.20	98.94	98.64	98.45	98.16	97.98	97.70
Average	246.24	100.06	99.79	99.54	99.28	99.00	98.71	98.46	98.21	97.98	97.74
Median	245.91	100.00	99.77	99.54	99.29	99.01	98.72	98.48	98.22	97.98	97.74
Std.dev	2.40	0.09	0.09	0.09	0.09	0.10	0.10	0.11	0.10	0.10	0.10
Max	249.71	100.20	99.96	99.74	99.43	99.17	98.87	98.68	98.46	98.17	97.91
Min	242.04	99.97	99.67	99.38	99.08	98.78	98.47	98.18	98.00	97.71	97.43

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S51	242.84	97.51	97.23	96.95	96.67	96.40	96.16	95.83	--	--	--
S52	242.86	97.32	97.04	96.76	96.49	96.22	95.90	95.57	--	--	--
S53	248.46	97.39	97.12	96.71	96.44	96.28	95.96	95.71	--	--	--
S54	244.19	97.56	97.28	96.88	96.59	96.44	96.12	95.79	--	--	--
S55	246.04	97.61	97.33	96.93	96.65	96.50	96.17	95.92	--	--	--
S56	247.57	97.63	97.36	96.96	96.68	96.52	96.19	95.87	--	--	--
S57	245.91	97.41	97.14	96.74	96.47	96.32	96.07	95.82	--	--	--
S58	247.87	97.49	97.22	96.82	96.54	96.38	96.13	95.80	--	--	--
S59	249.71	97.45	97.17	96.76	96.48	96.33	96.00	95.68	--	--	--
S60	249.71	97.44	97.16	96.77	96.50	96.33	96.09	95.76	--	--	--
S61	245.02	97.47	97.21	96.80	96.52	96.37	96.13	95.80	--	--	--
S62	246.92	97.60	97.33	96.92	96.64	96.48	96.24	95.91	--	--	--
S63	242.04	97.48	97.21	96.81	96.54	96.27	96.02	95.69	--	--	--
S64	249.36	97.42	97.14	96.86	96.59	96.31	95.98	95.65	--	--	--
S65	249.33	97.37	97.10	96.83	96.56	96.29	96.04	95.80	--	--	--
S66	244.76	97.52	97.26	96.99	96.72	96.44	96.11	95.78	--	--	--
S67	247.52	97.36	97.09	96.81	96.53	96.25	96.01	95.68	--	--	--
S68	248.46	97.17	96.90	96.63	96.35	96.08	95.75	95.42	--	--	--
S69	244.04	97.46	97.19	96.92	96.64	96.23	95.98	95.65	--	--	--
S70	245.67	97.53	97.26	96.98	96.71	96.43	96.10	95.77	--	--	--
S71	244.91	97.52	97.26	96.99	96.71	96.42	96.09	95.84	--	--	--
S72	249.55	97.49	97.22	96.94	96.67	96.38	96.13	95.88	--	--	--
S73	245.43	97.64	97.37	97.10	96.82	96.41	96.08	95.75	--	--	--
S74	245.80	97.42	97.15	96.87	96.59	96.19	95.86	95.53	--	--	--
S75	242.14	97.43	97.16	96.88	96.61	96.33	96.00	95.75	--	--	--
Average	246.24	97.47	97.20	96.86	96.59	96.34	96.05	95.75	--	--	--
Median	245.91	97.47	97.21	96.87	96.59	96.33	96.08	95.77	--	--	--
Std.dev	2.40	0.10	0.10	0.10	0.10	0.10	0.11	0.12	--	--	--
Max	249.71	97.64	97.37	97.10	96.82	96.52	96.24	95.92	--	--	--
Min	242.04	97.17	96.90	96.63	96.35	96.08	95.75	95.42	--	--	--

3.2.8 Data Set 3, 105°C,60mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S51	22.66	22.60	22.63	22.66	22.63	22.62	22.66	22.63	22.65	22.66	22.61
S52	22.69	22.67	22.67	22.65	22.67	22.68	22.65	22.67	22.68	22.66	22.70
S53	22.63	22.60	22.64	22.64	22.59	22.59	22.62	22.58	22.59	22.59	22.60
S54	22.66	22.67	22.67	22.64	22.62	22.64	22.64	22.67	22.67	22.65	22.62
S55	22.69	22.65	22.70	22.70	22.65	22.70	22.66	22.54	22.59	22.53	22.54
S56	22.68	22.63	22.67	22.66	22.66	22.65	22.63	22.57	22.54	22.54	22.54
S57	22.70	22.68	22.68	22.67	22.71	22.67	22.65	22.60	22.58	22.60	22.57
S58	22.71	22.68	22.69	22.67	22.69	22.69	22.66	22.58	22.60	22.56	22.57
S59	22.71	22.68	22.67	22.71	22.68	22.66	22.66	22.59	22.55	22.57	22.55
S60	22.69	22.67	22.64	22.70	22.70	22.67	22.68	22.54	22.56	22.55	22.56
S61	22.67	22.66	22.63	22.66	22.64	22.67	22.62	22.52	22.52	22.51	22.51
S62	22.72	22.72	22.71	22.72	22.69	22.71	22.67	22.61	22.58	22.58	22.57
S63	22.69	22.68	22.65	22.64	22.65	22.65	22.67	22.52	22.57	22.55	22.54
S64	22.65	22.64	22.61	22.61	22.62	22.61	22.63	22.51	22.51	22.50	22.53
S65	22.77	22.78	22.78	22.78	22.73	22.75	22.75	22.65	22.66	22.62	22.62
S66	22.70	22.65	22.69	22.67	22.70	22.67	22.67	22.60	22.58	22.55	22.59
S67	22.73	22.70	22.70	22.73	22.70	22.69	22.69	22.68	22.69	22.74	22.73
S68	22.68	22.66	22.65	22.65	22.69	22.69	22.64	22.64	22.65	22.69	22.65
S69	22.54	22.50	22.52	22.55	22.55	22.55	22.51	22.61	22.66	22.63	22.62
S70	22.56	22.53	22.56	22.57	22.55	22.51	22.51	22.62	22.66	22.61	22.62
S71	22.64	22.63	22.63	22.59	22.62	22.59	22.60	22.65	22.71	22.71	22.71
S72	22.63	22.63	22.63	22.58	22.60	22.64	22.62	22.64	22.65	22.66	22.64
S73	22.60	22.61	22.58	22.58	22.61	22.61	22.61	22.67	22.63	22.67	22.65
S74	22.65	22.60	22.62	22.62	22.66	22.62	22.62	22.68	22.67	22.66	22.70
S75	22.57	22.58	22.58	22.55	22.56	22.53	22.55	22.65	22.67	22.67	22.65
Average	22.66	22.64	22.65	22.65	22.65	22.64	22.63	22.61	22.62	22.61	22.61
Median	22.68	22.65	22.65	22.65	22.65	22.65	22.64	22.61	22.63	22.61	22.61
Std.dev	0.05	0.06	0.05	0.06	0.05	0.06	0.05	0.05	0.06	0.06	0.06
Max	22.77	22.78	22.78	22.78	22.73	22.75	22.75	22.68	22.71	22.74	22.73
Min	22.54	22.50	22.52	22.55	22.55	22.51	22.51	22.51	22.51	22.50	22.51

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S51	22.66	22.62	22.63	22.53	22.53	22.54	22.57	22.52	--	--	--
S52	22.69	22.67	22.64	22.57	22.55	22.58	22.56	22.56	--	--	--
S53	22.63	22.60	22.64	22.61	22.62	22.62	22.61	22.62	--	--	--
S54	22.66	22.61	22.62	22.65	22.64	22.66	22.66	22.65	--	--	--
S55	22.69	22.53	22.55	22.70	22.65	22.66	22.66	22.66	--	--	--
S56	22.68	22.52	22.54	22.65	22.65	22.66	22.64	22.68	--	--	--
S57	22.70	22.56	22.56	22.71	22.68	22.69	22.68	22.66	--	--	--
S58	22.71	22.57	22.56	22.72	22.66	22.72	22.72	22.68	--	--	--
S59	22.71	22.56	22.56	22.68	22.68	22.68	22.70	22.67	--	--	--
S60	22.69	22.57	22.55	22.65	22.67	22.66	22.67	22.65	--	--	--
S61	22.67	22.57	22.57	22.50	22.53	22.53	22.53	22.51	--	--	--
S62	22.72	22.66	22.65	22.68	22.65	22.70	22.71	22.69	--	--	--
S63	22.69	22.64	22.63	22.66	22.66	22.64	22.63	22.64	--	--	--
S64	22.65	22.64	22.64	22.59	22.58	22.64	22.62	22.64	--	--	--
S65	22.77	22.71	22.73	22.76	22.72	22.76	22.71	22.73	--	--	--
S66	22.70	22.65	22.65	22.67	22.63	22.68	22.68	22.65	--	--	--
S67	22.73	22.67	22.67	22.73	22.69	22.61	22.57	22.59	--	--	--
S68	22.68	22.64	22.66	22.68	22.66	22.54	22.58	22.54	--	--	--
S69	22.54	22.63	22.63	22.63	22.61	22.50	22.51	22.49	--	--	--
S70	22.56	22.68	22.62	22.65	22.63	22.53	22.50	22.51	--	--	--
S71	22.64	22.71	22.67	22.65	22.65	22.56	22.55	22.55	--	--	--
S72	22.63	22.68	22.69	22.65	22.66	22.53	22.55	22.55	--	--	--
S73	22.60	22.61	22.67	22.62	22.63	22.50	22.53	22.56	--	--	--
S74	22.65	22.72	22.69	22.68	22.72	22.56	22.57	22.55	--	--	--
S75	22.57	22.69	22.64	22.65	22.64	22.58	22.56	22.52	--	--	--
Average	22.66	22.63	22.63	22.65	22.64	22.61	22.61	22.60	--	--	--
Median	22.68	22.64	22.64	22.65	22.65	22.62	22.61	22.62	--	--	--
Std.dev	0.05	0.06	0.05	0.06	0.05	0.07	0.07	0.07	--	--	--
Max	22.77	22.72	22.73	22.76	22.72	22.76	22.72	22.73	--	--	--
Min	22.54	22.52	22.54	22.50	22.53	22.50	22.50	22.49	--	--	--

3.2.9 Data Set 3, 105°C,60mA (Chromaticity Shift)

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S51	0.2531	0.5205	0.0003	0.0005	0.0008	0.0010	0.0012	0.0013	0.0015	0.0018	0.0020	0.0023
S52	0.2526	0.5206	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021	0.0023
S53	0.2531	0.5204	0.0001	0.0004	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0019	0.0022
S54	0.2543	0.5205	0.0003	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0017	0.0018	0.0021
S55	0.2574	0.5248	0.0002	0.0005	0.0006	0.0009	0.0011	0.0013	0.0014	0.0015	0.0023	0.0020
S56	0.2568	0.5245	0.0003	0.0004	0.0007	0.0009	0.0009	0.0013	0.0016	0.0018	0.0016	0.0019
S57	0.2571	0.5243	0.0003	0.0003	0.0006	0.0009	0.0011	0.0014	0.0016	0.0016	0.0020	0.0024
S58	0.2579	0.5247	0.0003	0.0006	0.0005	0.0008	0.0011	0.0012	0.0016	0.0015	0.0018	0.0020
S59	0.2581	0.5244	0.0002	0.0004	0.0008	0.0010	0.0012	0.0013	0.0015	0.0015	0.0020	0.0023
S60	0.2572	0.5246	0.0003	0.0004	0.0005	0.0008	0.0010	0.0012	0.0015	0.0017	0.0020	0.0023
S61	0.2568	0.5233	0.0003	0.0003	0.0008	0.0010	0.0012	0.0014	0.0017	0.0012	0.0023	0.0022
S62	0.2530	0.5194	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0016	0.0016	0.0019
S63	0.2529	0.5194	0.0003	0.0004	0.0005	0.0007	0.0011	0.0011	0.0013	0.0015	0.0020	0.0024
S64	0.2530	0.5195	0.0002	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0015	0.0022	0.0025
S65	0.2535	0.5199	0.0001	0.0003	0.0005	0.0009	0.0009	0.0011	0.0013	0.0017	0.0016	0.0018
S66	0.2544	0.5207	0.0002	0.0006	0.0008	0.0009	0.0012	0.0012	0.0016	0.0012	0.0023	0.0025
S67	0.2530	0.5203	0.0003	0.0004	0.0005	0.0009	0.0009	0.0013	0.0015	0.0015	0.0016	0.0019
S68	0.2566	0.5239	0.0002	0.0004	0.0006	0.0009	0.0011	0.0012	0.0015	0.0017	0.0020	0.0022
S69	0.2559	0.5232	0.0002	0.0003	0.0005	0.0009	0.0010	0.0011	0.0016	0.0015	0.0016	0.0019
S70	0.2558	0.5224	0.0003	0.0006	0.0008	0.0009	0.0013	0.0015	0.0015	0.0019	0.0022	0.0024
S71	0.2557	0.5224	0.0002	0.0003	0.0006	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019	0.0022
S72	0.2554	0.5224	0.0001	0.0004	0.0007	0.0009	0.0010	0.0013	0.0017	0.0016	0.0018	0.0021
S73	0.2558	0.5222	0.0003	0.0004	0.0007	0.0009	0.0010	0.0012	0.0012	0.0016	0.0019	0.0021
S74	0.2523	0.5194	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0018	0.0021	0.0023
S75	0.2529	0.5195	0.0003	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021	0.0024
Average	0.2550	0.5219	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0019	0.0022
Median	0.2554	0.5222	0.0003	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0020	0.0022
Std.dev	0.0019	0.0020	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002
Max	0.2581	0.5248	0.0003	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0023	0.0025
Min	0.2523	0.5194	0.0001	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0012	0.0016	0.0018

Sample Number	Chromaticity Shift (Δu'v')											
	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S51	0.2531	0.5205	0.0026	0.0028	0.0030	0.0031	0.0034	0.0035	0.0037	--	--	--
S52	0.2526	0.5206	0.0026	0.0029	0.0030	0.0031	0.0033	0.0034	0.0037	--	--	--
S53	0.2531	0.5204	0.0025	0.0027	0.0029	0.0031	0.0035	0.0038	0.0035	--	--	--
S54	0.2543	0.5205	0.0024	0.0030	0.0030	0.0032	0.0034	0.0036	0.0038	--	--	--
S55	0.2574	0.5248	0.0028	0.0024	0.0034	0.0033	0.0035	0.0038	0.0040	--	--	--
S56	0.2568	0.5245	0.0021	0.0031	0.0026	0.0031	0.0040	0.0038	0.0035	--	--	--
S57	0.2571	0.5243	0.0025	0.0024	0.0033	0.0033	0.0035	0.0038	0.0038	--	--	--
S58	0.2579	0.5247	0.0021	0.0024	0.0028	0.0031	0.0031	0.0035	0.0037	--	--	--
S59	0.2581	0.5244	0.0021	0.0031	0.0032	0.0033	0.0034	0.0033	0.0037	--	--	--
S60	0.2572	0.5246	0.0025	0.0024	0.0034	0.0031	0.0035	0.0043	0.0039	--	--	--
S61	0.2568	0.5233	0.0021	0.0028	0.0026	0.0031	0.0034	0.0038	0.0037	--	--	--
S62	0.2530	0.5194	0.0021	0.0024	0.0033	0.0030	0.0040	0.0036	0.0039	--	--	--
S63	0.2529	0.5194	0.0022	0.0025	0.0028	0.0027	0.0035	0.0032	0.0033	--	--	--
S64	0.2530	0.5195	0.0028	0.0030	0.0034	0.0033	0.0031	0.0033	0.0035	--	--	--
S65	0.2535	0.5199	0.0021	0.0024	0.0026	0.0031	0.0029	0.0043	0.0038	--	--	--
S66	0.2544	0.5207	0.0028	0.0031	0.0033	0.0033	0.0036	0.0038	0.0042	--	--	--
S67	0.2530	0.5203	0.0021	0.0024	0.0028	0.0031	0.0030	0.0032	0.0035	--	--	--
S68	0.2566	0.5239	0.0025	0.0028	0.0031	0.0031	0.0037	0.0040	0.0042	--	--	--
S69	0.2559	0.5232	0.0021	0.0024	0.0025	0.0033	0.0030	0.0033	0.0034	--	--	--
S70	0.2558	0.5224	0.0027	0.0029	0.0033	0.0031	0.0040	0.0043	0.0046	--	--	--
S71	0.2557	0.5224	0.0024	0.0027	0.0031	0.0033	0.0035	0.0038	0.0039	--	--	--
S72	0.2554	0.5224	0.0023	0.0026	0.0027	0.0029	0.0031	0.0034	0.0035	--	--	--
S73	0.2558	0.5222	0.0024	0.0026	0.0028	0.0031	0.0034	0.0035	0.0038	--	--	--
S74	0.2523	0.5194	0.0026	0.0029	0.0030	0.0031	0.0033	0.0036	0.0037	--	--	--
S75	0.2529	0.5195	0.0026	0.0029	0.0032	0.0035	0.0039	0.0041	0.0044	--	--	--
Average	0.2550	0.5219	0.0024	0.0027	0.0030	0.0031	0.0034	0.0037	0.0038	--	--	--
Median	0.2554	0.5222	0.0024	0.0027	0.0030	0.0031	0.0034	0.0036	0.0037	--	--	--
Std.dev	0.0019	0.0020	0.0002	0.0003	0.0003	0.0002	0.0003	0.0003	0.0003	--	--	--
Max	0.2581	0.5248	0.0028	0.0031	0.0034	0.0035	0.0040	0.0043	0.0046	--	--	--
Min	0.2523	0.5194	0.0021	0.0024	0.0025	0.0027	0.0029	0.0032	0.0033	--	--	--

4.Test Equipment

Equipment Name	Manufacturer	Model No.	Equipment No.	Calibration Due Date
2m Integating Sphere	SENSING	SL-300	AOC-S-126	2026-04-13
Horizontal Distribution Photometer	SENSING	GMS1800D	AOC-S-124	2026-04-13
Standard Lamp	SENSING	240V/150W	AOC-S-151	2025-08-01
Digital power meter	HENGHE	WT310E	AOC-S-012	2026-04-13
Digital power meter	SENSING	UI2008	AOC-S-123	2026-04-13
Digital power meter	SENSING	UI2021	AOC-S-123	2026-04-13
DC source	OYHS	OYHS-Z120V-50A	AOC-S-062	2026-04-13
Variable frequency power supply	WOSEN	BP6005	AOC-S-129	2026-04-13
Variable frequency power supply	AIPUSI	KDF-500	AOC-S-130	2026-04-13
Oscilloscope	TEKTRONIX	MDO3012	AOC-S-028	2026-04-13

Photo Document

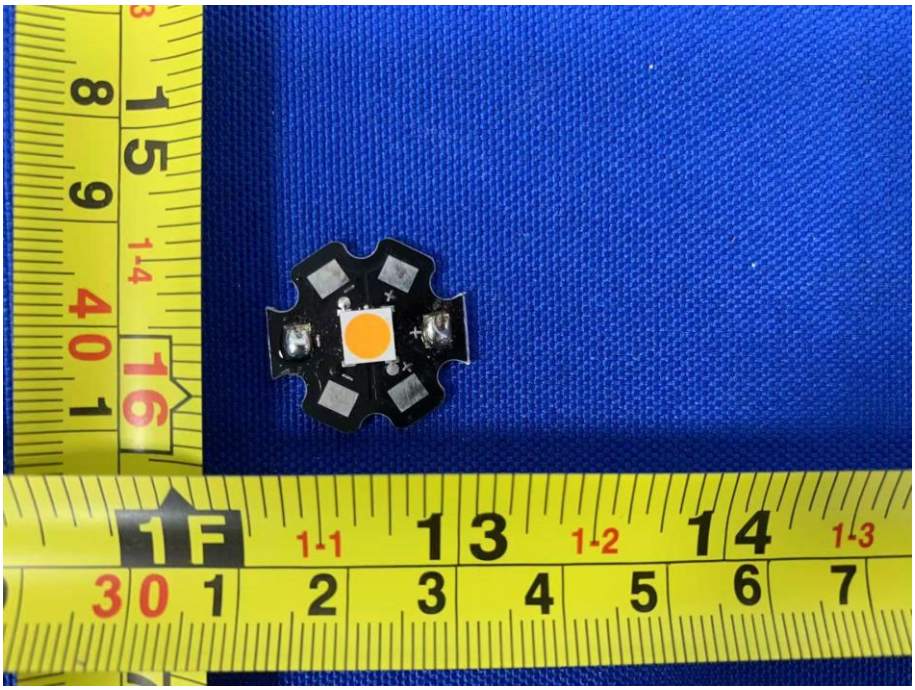


Fig.1

-- End of Report --

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