



ACCREDITED
Testing Laboratory

TL-1235

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Report No.: AOC251030019ER

Test Report

Client : Jiangsu Everstar Electronics Co., Ltd.
Address : Room 201, Building 13, No. 618, Matou West Street, Liyang City, Jiangsu Province

Description of the submitted sample(s):

Sample Name : 5050 SMD LED
Model/Type : ESS-5050XWC-X0K
Trademark : EVERSTAR
Ratings : Vf: 6.0-6.5Vdc; If:1000mA, 5000K, 70Ra
Test Item : LM-80-21
State of Sample(s) : Normal
Sample Quantity : 75 PCS
Manufacturer : Jiangsu Everstar Electronics Co., Ltd.
Address : Room 201, Building 13, No. 618, Matou West Street, Liyang City,
Jiangsu Province
Sample Received Date : 2023-09-20
Sample tested Date : 2023-09-20
Test Standard : LM-80-21
Test Laboratory : Shenzhen AOCE Electronic Technology Service Co., Ltd
Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu
Testing location : 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:

Bill Hu

Approved by:

Robin Liu

Robin Liu
Lab Supervisor
2025-11-13

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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.

Note:

ESS-5050XWC-X0K (5050: Package; X:W or N or T or C; W:3000K; N:4500K; T:6000K; C:8000K; X0K: Color Temperature center chromaticity coordinate)

1 Test Condition

1.1 Air Temperature

The ambient temperature in which measurements are being taken shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 affect 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 waveshape at 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 1:55°C,1000mA	
Model:	ESS-5050XWC-X0K
Number of Units:	25
Case Temperature (T _S):	> 53°C
Ambient Temperature (T _A):	> 50°C
Life Test Drive Current:	1000mA
Measurement Current:	1000mA

Data Set 2:85°C,1000mA	
Model:	ESS-5050XWC-X0K
Number of Units:	25
Case Temperature (T _S):	> 83°C
Ambient Temperature (T _A):	> 50°C
Life Test Drive Current:	1000mA
Measurement Current:	1000mA

Data Set 3:105°C,1000mA	
Model:	ESS-5050XWC-X0K
Number of Units:	25
Case Temperature (T _S):	> 103°C
Ambient Temperature (T _A):	> 100°C
Life Test Drive Current:	1000mA
Measurement Current:	1000mA

SUMMARY OF TEST RESULT

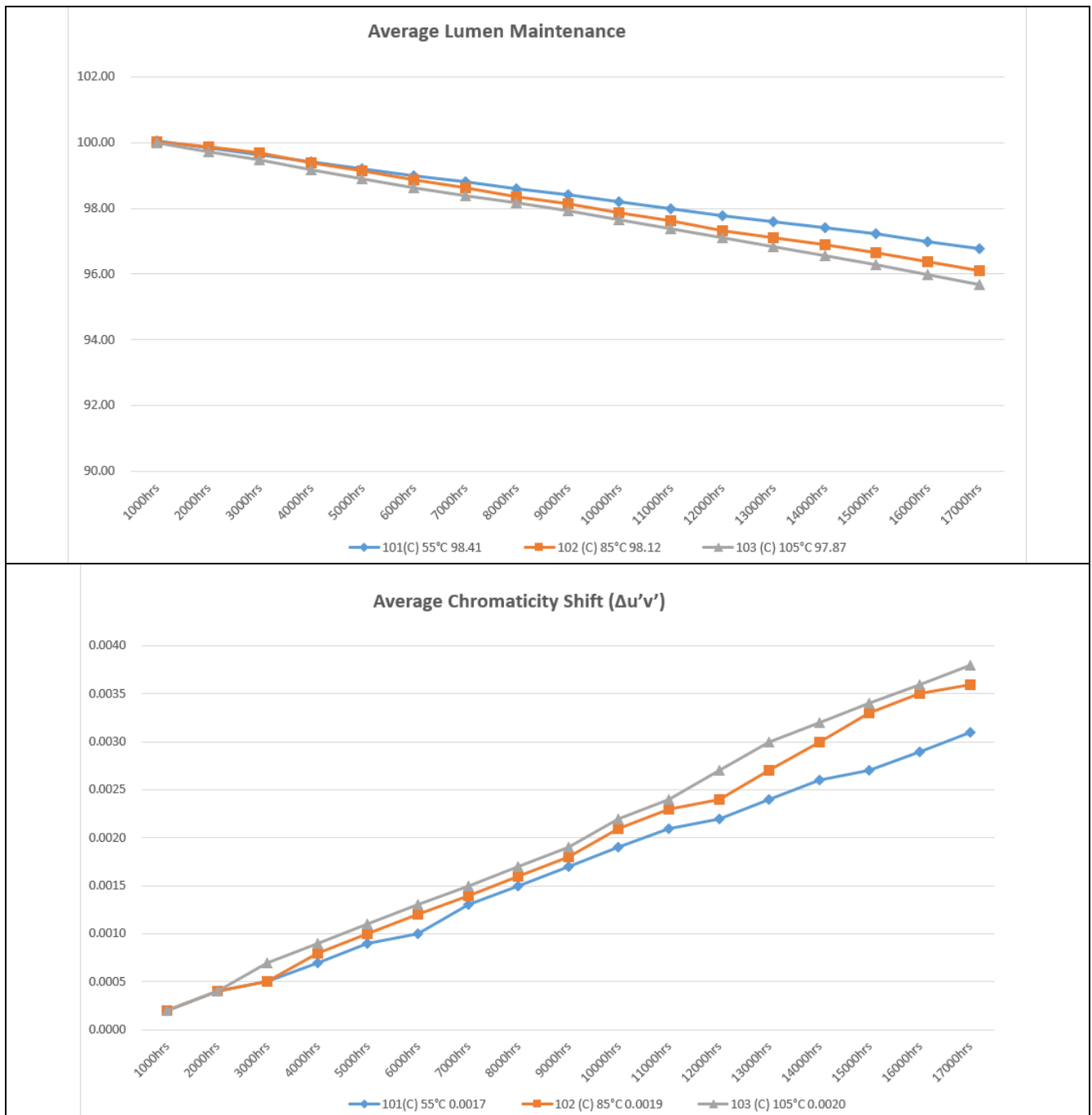
Data Set:	Sample Size	Failures Observed:	Test Interval (hrs)	Test Duration (hrs)	α	B	Reported TM-21 L70 Lifetime (hrs)	Reported TM-21 L90 Lifetime (hrs)
1	25	0	1000	17000	2.068E-06	1.0026	>102000	52000
2	25	0	1000	17000	2.566E-06	1.0041	>102000	43000
3	25	0	1000	17000	2.840E-06	1.0046	>102000	39000

Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.05	99.85	99.64	99.42	99.20	98.98	98.80	98.61	98.42	98.21
2	100.04	99.86	99.68	99.40	99.14	98.87	98.64	98.36	98.14	97.88
3	99.99	99.72	99.47	99.19	98.91	98.63	98.37	98.16	97.92	97.65
Data Set:	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
1	98.00	97.77	97.59	97.40	97.22	97.00	96.78	--	--	--
2	97.61	97.33	97.11	96.88	96.66	96.38	96.10	--	--	--
3	97.38	97.11	96.83	96.56	96.28	95.99	95.68	--	--	--

Average Chromaticity Shift ($\Delta u'v'$)

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	0.0013	0.0015	0.0017	0.0019
2	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021
3	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0017	0.0019	0.0022
Data Set:	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
1	0.0021	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
2	0.0023	0.0024	0.0027	0.0030	0.0033	0.0035	0.0036	--	--	--
3	0.0024	0.0027	0.0030	0.0032	0.0034	0.0036	0.0038	--	--	--



3.2. Test data**3.2.1 Data Set 1, 55°C,1000mA (Lumen Maintenance)**

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	827.2	100.04	99.83	99.63	99.43	99.23	99.01	98.79	98.62	98.46	98.30
S02	851.2	100.06	99.84	99.63	99.41	99.21	99.01	98.84	98.67	98.50	98.25
S03	860.5	100.03	99.82	99.62	99.40	99.14	98.89	98.72	98.51	98.29	98.13
S04	835.1	100.08	99.88	99.68	99.43	99.23	99.01	98.79	98.61	98.40	98.15
S05	840.0	100.04	99.85	99.63	99.38	99.13	98.90	98.73	98.56	98.39	98.23
S06	838.2	100.06	99.86	99.65	99.42	99.17	98.97	98.75	98.54	98.37	98.12
S07	839.6	100.06	99.86	99.67	99.44	99.22	99.02	98.85	98.68	98.51	98.26
S08	827.2	100.03	99.84	99.64	99.42	99.16	98.96	98.79	98.62	98.40	98.24
S09	826.3	100.07	99.86	99.65	99.40	99.20	99.00	98.82	98.60	98.43	98.19
S10	856.4	100.07	99.88	99.68	99.43	99.23	99.03	98.81	98.59	98.42	98.17
S11	841.0	100.06	99.86	99.66	99.46	99.27	99.01	98.83	98.67	98.45	98.21
S12	846.4	100.06	99.86	99.65	99.43	99.20	98.98	98.76	98.60	98.43	98.18
S13	832.8	100.05	99.84	99.62	99.40	99.18	98.95	98.78	98.61	98.39	98.15
S14	860.7	100.06	99.87	99.67	99.45	99.23	99.03	98.85	98.67	98.46	98.21
S15	861.6	100.03	99.84	99.64	99.44	99.24	99.04	98.87	98.65	98.48	98.32
S16	853.5	100.05	99.83	99.62	99.40	99.17	98.97	98.80	98.58	98.36	98.12
S17	861.6	100.07	99.86	99.65	99.42	99.17	98.92	98.70	98.52	98.30	98.06
S18	860.4	100.06	99.87	99.67	99.42	99.19	98.94	98.77	98.55	98.39	98.23
S19	862.2	100.04	99.83	99.63	99.43	99.18	98.95	98.78	98.61	98.43	98.27
S20	835.3	100.07	99.86	99.65	99.45	99.25	99.02	98.81	98.63	98.46	98.22
S21	843.2	100.05	99.83	99.62	99.40	99.17	98.92	98.75	98.57	98.41	98.25
S22	830.7	100.05	99.84	99.64	99.44	99.24	99.04	98.88	98.66	98.48	98.24
S23	829.8	100.04	99.83	99.62	99.42	99.22	99.02	98.84	98.62	98.41	98.16
S24	860.0	100.08	99.88	99.67	99.47	99.25	99.05	98.88	98.66	98.49	98.34
S25	844.5	100.04	99.83	99.63	99.43	99.18	98.98	98.76	98.59	98.41	98.16
Average	845.0	100.05	99.85	99.64	99.42	99.20	98.98	98.80	98.61	98.42	98.21
Median	843.2	100.06	99.85	99.64	99.43	99.20	99.00	98.79	98.61	98.42	98.21
Std.dev	12.5	0.01	0.02	0.02	0.02	0.04	0.05	0.05	0.05	0.05	0.07
Max	862.2	100.08	99.88	99.68	99.47	99.27	99.05	98.88	98.68	98.51	98.34
Min	826.3	100.03	99.82	99.62	99.38	99.13	98.89	98.70	98.51	98.29	98.06
Sample Number	Φ(lm)	Lumen Maintenance (%)									

	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	827.2	98.14	97.90	97.72	97.50	97.33	97.13	96.93	--	--	--
S02	851.2	98.09	97.85	97.63	97.46	97.31	97.06	96.84	--	--	--
S03	860.5	97.88	97.64	97.43	97.28	97.11	96.88	96.68	--	--	--
S04	835.1	97.90	97.75	97.53	97.39	97.24	97.02	96.82	--	--	--
S05	840.0	97.99	97.74	97.57	97.39	97.25	97.05	96.80	--	--	--
S06	838.2	97.96	97.72	97.54	97.33	97.11	96.87	96.62	--	--	--
S07	839.6	98.02	97.77	97.59	97.45	97.31	97.06	96.81	--	--	--
S08	827.2	98.00	97.75	97.58	97.40	97.19	96.96	96.71	--	--	--
S09	826.3	98.03	97.87	97.70	97.48	97.27	97.04	96.81	--	--	--
S10	856.4	98.02	97.77	97.63	97.45	97.23	97.01	96.78	--	--	--
S11	841.0	98.05	97.80	97.59	97.41	97.23	97.01	96.81	--	--	--
S12	846.4	97.94	97.70	97.48	97.27	97.05	96.83	96.63	--	--	--
S13	832.8	97.90	97.65	97.48	97.30	97.12	96.87	96.68	--	--	--
S14	860.7	97.97	97.81	97.60	97.45	97.24	97.04	96.84	--	--	--
S15	861.6	98.08	97.83	97.69	97.55	97.37	97.14	96.89	--	--	--
S16	853.5	97.88	97.72	97.54	97.36	97.19	96.96	96.73	--	--	--
S17	861.6	97.81	97.57	97.35	97.14	96.96	96.76	96.51	--	--	--
S18	860.4	98.07	97.91	97.70	97.48	97.31	97.08	96.88	--	--	--
S19	862.2	98.03	97.78	97.57	97.39	97.25	97.02	96.79	--	--	--
S20	835.3	98.06	97.81	97.64	97.46	97.28	97.03	96.83	--	--	--
S21	843.2	98.01	97.76	97.55	97.37	97.19	96.96	96.71	--	--	--
S22	830.7	98.08	97.83	97.69	97.55	97.40	97.21	96.96	--	--	--
S23	829.8	97.92	97.76	97.62	97.40	97.23	97.03	96.83	--	--	--
S24	860.0	98.18	97.94	97.76	97.61	97.40	97.15	96.95	--	--	--
S25	844.5	97.92	97.68	97.46	97.25	97.04	96.84	96.59	--	--	--
Average	845.0	98.00	97.77	97.59	97.40	97.22	97.00	96.78	--	--	--
Median	843.2	98.01	97.77	97.59	97.40	97.24	97.02	96.81	--	--	--
Std.dev	12.5	0.09	0.09	0.10	0.10	0.11	0.11	0.11	--	--	--
Max	862.2	98.18	97.94	97.76	97.61	97.40	97.21	96.96	--	--	--
Min	826.3	97.81	97.57	97.35	97.14	96.96	96.76	96.51	--	--	--

3.2.2 Data Set 1, 55°C,1000mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	6.33	6.31	6.33	6.34	6.35	6.35	6.33	6.34	6.34	6.33	6.35
S02	6.37	6.38	6.39	6.39	6.37	6.37	6.38	6.40	6.37	6.37	6.39
S03	6.36	6.38	6.38	6.35	6.36	6.39	6.37	6.36	6.38	6.37	6.38
S04	6.32	6.34	6.34	6.33	6.34	6.32	6.34	6.34	6.34	6.34	6.34
S05	6.34	6.36	6.37	6.36	6.36	6.35	6.34	6.36	6.36	6.36	6.34
S06	6.32	6.31	6.30	6.34	6.32	6.32	6.33	6.33	6.33	6.32	6.34
S07	6.40	6.42	6.42	6.42	6.41	6.40	6.43	6.40	6.42	6.42	6.43
S08	6.33	6.35	6.33	6.34	6.33	6.34	6.35	6.34	6.35	6.35	6.32
S09	6.40	6.42	6.42	6.42	6.39	6.42	6.41	6.40	6.42	6.39	6.41
S10	6.34	6.35	6.35	6.35	6.34	6.36	6.36	6.34	6.35	6.35	6.35
S11	6.36	6.37	6.37	6.35	6.37	6.35	6.36	6.36	6.37	6.37	6.37
S12	6.35	6.36	6.35	6.35	6.36	6.37	6.33	6.37	6.37	6.34	6.37
S13	6.36	6.36	6.38	6.38	6.39	6.37	6.37	6.36	6.38	6.38	6.35
S14	6.37	6.36	6.39	6.39	6.39	6.39	6.37	6.37	6.40	6.39	6.39
S15	6.37	6.38	6.37	6.36	6.37	6.39	6.37	6.37	6.37	6.39	6.36
S16	6.40	6.39	6.42	6.40	6.42	6.39	6.41	6.40	6.39	6.39	6.40
S17	6.38	6.38	6.39	6.40	6.39	6.40	6.40	6.39	6.40	6.38	6.37
S18	6.37	6.39	6.38	6.39	6.37	6.38	6.39	6.38	6.38	6.39	6.38
S19	6.40	6.41	6.41	6.40	6.40	6.42	6.40	6.40	6.41	6.40	6.42
S20	6.34	6.35	6.35	6.35	6.36	6.35	6.35	6.35	6.36	6.35	6.35
S21	6.39	6.40	6.41	6.39	6.41	6.39	6.39	6.42	6.39	6.40	6.41
S22	6.32	6.32	6.34	6.32	6.32	6.33	6.34	6.34	6.32	6.31	6.32
S23	6.33	6.34	6.32	6.34	6.35	6.35	6.31	6.33	6.33	6.34	6.33
S24	6.39	6.39	6.41	6.39	6.40	6.39	6.42	6.41	6.41	6.41	6.41
S25	6.31	6.31	6.29	6.31	6.31	6.30	6.29	6.31	6.31	6.32	6.31
Average	6.36	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37
Median	6.36	6.36	6.37	6.36	6.37	6.37	6.37	6.36	6.37	6.37	6.37
Std.dev	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Max	6.40	6.42	6.42	6.42	6.42	6.42	6.43	6.42	6.42	6.42	6.43
Min	6.31	6.31	6.29	6.31	6.31	6.30	6.29	6.31	6.31	6.31	6.31

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	6.33	6.33	6.33	6.34	6.33	6.34	6.34	6.33	--	--	--
S02	6.37	6.38	6.39	6.39	6.38	6.39	6.37	6.38	--	--	--
S03	6.36	6.38	6.37	6.38	6.36	6.38	6.39	6.37	--	--	--
S04	6.32	6.34	6.32	6.34	6.34	6.34	6.34	6.34	--	--	--
S05	6.34	6.36	6.33	6.35	6.36	6.36	6.36	6.33	--	--	--
S06	6.32	6.34	6.32	6.33	6.33	6.33	6.31	6.34	--	--	--
S07	6.40	6.42	6.42	6.40	6.40	6.42	6.41	6.42	--	--	--
S08	6.33	6.33	6.32	6.35	6.35	6.33	6.35	6.32	--	--	--
S09	6.40	6.41	6.40	6.40	6.40	6.43	6.39	6.42	--	--	--
S10	6.34	6.35	6.32	6.34	6.36	6.35	6.35	6.36	--	--	--
S11	6.36	6.37	6.37	6.37	6.37	6.35	6.37	6.35	--	--	--
S12	6.35	6.36	6.34	6.34	6.37	6.35	6.37	6.34	--	--	--
S13	6.36	6.38	6.36	6.36	6.35	6.37	6.38	6.38	--	--	--
S14	6.37	6.39	6.39	6.39	6.39	6.40	6.40	6.39	--	--	--
S15	6.37	6.37	6.36	6.39	6.39	6.38	6.39	6.36	--	--	--
S16	6.40	6.40	6.42	6.42	6.41	6.42	6.41	6.40	--	--	--
S17	6.38	6.37	6.39	6.40	6.37	6.38	6.39	6.40	--	--	--
S18	6.37	6.37	6.38	6.38	6.36	6.37	6.39	6.36	--	--	--
S19	6.40	6.39	6.40	6.42	6.38	6.40	6.40	6.42	--	--	--
S20	6.34	6.35	6.35	6.35	6.33	6.34	6.35	6.34	--	--	--
S21	6.39	6.41	6.41	6.41	6.39	6.39	6.39	6.42	--	--	--
S22	6.32	6.32	6.31	6.32	6.33	6.34	6.32	6.34	--	--	--
S23	6.33	6.35	6.34	6.33	6.33	6.32	6.31	6.35	--	--	--
S24	6.39	6.38	6.41	6.39	6.38	6.41	6.39	6.40	--	--	--
S25	6.31	6.32	6.32	6.31	6.33	6.33	6.32	6.32	--	--	--
Average	6.36	6.37	6.36	6.37	6.36	6.37	6.37	6.37	--	--	--
Median	6.36	6.37	6.36	6.37	6.36	6.37	6.37	6.36	--	--	--
Std.dev	0.03	0.03	0.04	0.03	0.02	0.03	0.03	0.03	--	--	--
Max	6.40	6.42	6.42	6.42	6.41	6.43	6.41	6.42	--	--	--
Min	6.31	6.32	6.31	6.31	6.33	6.32	6.31	6.32	--	--	--

3.2.3 Data Set 1, 55°C,1000mA (Chromaticity Shift)

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	5027	0.2021	0.4979	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S02	4918	0.2035	0.5004	0.0002	0.0004	0.0006	0.0008	0.0009	0.0008	0.0010	0.0012	0.0014	0.0016
S03	5146	0.2027	0.4984	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S04	4999	0.2037	0.5004	0.0001	0.0003	0.0005	0.0007	0.0008	0.0013	0.0016	0.0018	0.0021	0.0023
S05	4964	0.2025	0.4994	0.0002	0.0004	0.0006	0.0009	0.0010	0.0010	0.0013	0.0015	0.0018	0.0020
S06	5020	0.1950	0.4974	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0018
S07	5014	0.2023	0.4969	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0020
S08	4871	0.2031	0.4989	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.0018
S09	5151	0.2033	0.4984	0.0001	0.0003	0.0005	0.0007	0.0009	0.0013	0.0015	0.0017	0.0019	0.0022
S10	5145	0.2029	0.5004	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
S11	5015	0.2021	0.4989	0.0001	0.0003	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013	0.0016	0.0018
S12	5049	0.2018	0.4983	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0019
S13	4937	0.2032	0.5008	0.0002	0.0004	0.0006	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0018
S14	5058	0.2024	0.4988	0.0001	0.0003	0.0005	0.0008	0.0009	0.0007	0.0010	0.0012	0.0014	0.0015
S15	5015	0.2034	0.5008	0.0002	0.0004	0.0006	0.0008	0.0009	0.0009	0.0011	0.0014	0.0016	0.0018
S16	5014	0.2022	0.4998	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015	0.0017	0.0019
S17	5039	0.1947	0.4978	0.0002	0.0004	0.0005	0.0007	0.0008	0.0011	0.0014	0.0016	0.0018	0.0021
S18	5121	0.2020	0.4973	0.0002	0.0004	0.0005	0.0008	0.0009	0.0011	0.0014	0.0016	0.0018	0.0021
S19	5044	0.2028	0.4993	0.0002	0.0004	0.0005	0.0007	0.0008	0.0012	0.0014	0.0016	0.0019	0.0020
S20	5100	0.2030	0.4988	0.0001	0.0003	0.0004	0.0006	0.0007	0.0010	0.0012	0.0014	0.0017	0.0019
S21	5113	0.2026	0.5008	0.0002	0.0004	0.0006	0.0009	0.0010	0.0009	0.0011	0.0013	0.0016	0.0018
S22	4985	0.2018	0.4992	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019
S23	5019	0.2034	0.5008	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0014	0.0016	0.0019	0.0021
S24	4907	0.2022	0.4998	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011	0.0013	0.0015	0.0016
S25	5027	0.1947	0.4978	0.0002	0.0003	0.0005	0.0008	0.0009	0.0010	0.0012	0.0015	0.0017	0.0018
Average	5028	0.2017	0.4991	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
Median	5020	0.2025	0.4989	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
Std.dev	73	0.0026	0.0012	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
Max	5151	0.2037	0.5008	0.0002	0.0004	0.0006	0.0009	0.0010	0.0013	0.0016	0.0018	0.0021	0.0023
Min	4871	0.1947	0.4969	0.0001	0.0003	0.0004	0.0006	0.0007	0.0007	0.0010	0.0012	0.0014	0.0015

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	5027	0.2021	0.4979	0.0021	0.0024	0.0022	0.0024	0.0025	0.0027	0.0030	--	--	--
S02	4918	0.2035	0.5004	0.0019	0.0021	0.0023	0.0025	0.0027	0.0029	0.0031	--	--	--
S03	5146	0.2027	0.4984	0.0021	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S04	4999	0.2037	0.5004	0.0024	0.0025	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S05	4964	0.2025	0.4994	0.0022	0.0025	0.0028	0.0030	0.0032	0.0033	0.0034	--	--	--
S06	5020	0.1950	0.4974	0.0019	0.0021	0.0025	0.0026	0.0028	0.0030	0.0032	--	--	--
S07	5014	0.2023	0.4969	0.0021	0.0022	0.0022	0.0024	0.0026	0.0028	0.0030	--	--	--
S08	4871	0.2031	0.4989	0.0019	0.0022	0.0024	0.0026	0.0027	0.0028	0.0030	--	--	--
S09	5151	0.2033	0.4984	0.0023	0.0025	0.0024	0.0026	0.0028	0.0030	0.0031	--	--	--
S10	5145	0.2029	0.5004	0.0021	0.0022	0.0024	0.0025	0.0027	0.0028	0.0030	--	--	--
S11	5015	0.2021	0.4989	0.0019	0.0021	0.0024	0.0026	0.0027	0.0029	0.0030	--	--	--
S12	5049	0.2018	0.4983	0.0021	0.0023	0.0027	0.0028	0.0029	0.0032	0.0034	--	--	--
S13	4937	0.2032	0.5008	0.0019	0.0020	0.0025	0.0027	0.0029	0.0031	0.0033	--	--	--
S14	5058	0.2024	0.4988	0.0017	0.0019	0.0025	0.0027	0.0029	0.0031	0.0033	--	--	--
S15	5015	0.2034	0.5008	0.0020	0.0022	0.0025	0.0027	0.0028	0.0030	0.0031	--	--	--
S16	5014	0.2022	0.4998	0.0022	0.0024	0.0023	0.0025	0.0026	0.0027	0.0030	--	--	--
S17	5039	0.1947	0.4978	0.0023	0.0025	0.0026	0.0028	0.0030	0.0032	0.0034	--	--	--
S18	5121	0.2020	0.4973	0.0023	0.0024	0.0025	0.0027	0.0029	0.0030	0.0031	--	--	--
S19	5044	0.2028	0.4993	0.0021	0.0023	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S20	5100	0.2030	0.4988	0.0021	0.0023	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
S21	5113	0.2026	0.5008	0.0020	0.0022	0.0025	0.0027	0.0028	0.0030	0.0032	--	--	--
S22	4985	0.2018	0.4992	0.0020	0.0021	0.0024	0.0026	0.0027	0.0029	0.0030	--	--	--
S23	5019	0.2034	0.5008	0.0022	0.0024	0.0023	0.0025	0.0026	0.0027	0.0028	--	--	--
S24	4907	0.2022	0.4998	0.0019	0.0020	0.0021	0.0022	0.0024	0.0026	0.0027	--	--	--
S25	5027	0.1947	0.4978	0.0020	0.0022	0.0024	0.0025	0.0027	0.0029	0.0031	--	--	--
Average	5028	0.2017	0.4991	0.0021	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
Median	5020	0.2025	0.4989	0.0021	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	--	--	--
Std.dev	73	0.0026	0.0012	0.0002	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	--	--	--
Max	5151	0.2037	0.5008	0.0024	0.0025	0.0028	0.0030	0.0032	0.0033	0.0034	--	--	--
Min	4871	0.1947	0.4969	0.0017	0.0019	0.0021	0.0022	0.0024	0.0026	0.0027	--	--	--

3.2.4 Data Set 2, 85°C,1000mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	831.9	100.01	99.82	99.64	99.38	99.10	98.88	98.61	98.38	98.12	97.87
S02	845.4	100.05	99.87	99.69	99.43	99.15	98.93	98.71	98.43	98.15	97.88
S03	859.2	100.01	99.83	99.65	99.43	99.17	98.91	98.64	98.38	98.12	97.87
S04	818.7	100.02	99.84	99.65	99.43	99.21	98.99	98.76	98.50	98.22	97.96
S05	834.8	100.02	99.83	99.64	99.39	99.11	98.83	98.58	98.32	98.06	97.79
S06	839.2	100.02	99.83	99.65	99.38	99.12	98.84	98.62	98.36	98.08	97.82
S07	836.1	100.02	99.84	99.65	99.43	99.15	98.90	98.62	98.39	98.17	97.90
S08	820.0	100.01	99.82	99.64	99.36	99.14	98.86	98.60	98.35	98.09	97.83
S09	827.9	100.02	99.83	99.65	99.39	99.17	98.89	98.67	98.44	98.18	97.91
S10	846.4	100.02	99.83	99.64	99.42	99.20	98.94	98.72	98.46	98.18	97.90
S11	840.6	100.04	99.86	99.67	99.39	99.14	98.92	98.64	98.38	98.15	97.89
S12	829.3	100.01	99.83	99.64	99.39	99.11	98.86	98.63	98.40	98.14	97.86
S13	829.0	100.02	99.84	99.65	99.43	99.21	98.93	98.70	98.45	98.22	97.95
S14	849.4	100.00	99.81	99.63	99.35	99.09	98.84	98.58	98.35	98.13	97.84
S15	850.2	100.04	99.85	99.66	99.39	99.13	98.91	98.68	98.40	98.18	97.92
S16	851.5	100.00	99.82	99.64	99.38	99.16	98.90	98.65	98.39	98.13	97.86
S17	860.8	100.02	99.84	99.66	99.41	99.13	98.87	98.60	98.32	98.04	97.79
S18	869.8	100.03	99.85	99.67	99.42	99.14	98.87	98.59	98.33	98.10	97.82
S19	849.7	100.01	99.83	99.64	99.36	99.14	98.87	98.64	98.41	98.16	97.90
S20	838.8	100.01	99.83	99.65	99.43	99.21	98.99	98.76	98.48	98.26	97.99
S21	841.4	100.04	99.86	99.67	99.39	99.12	98.84	98.56	98.29	98.06	97.77
S22	846.4	100.05	99.87	99.69	99.47	99.25	98.97	98.74	98.52	98.26	97.97
S23	840.6	100.01	99.83	99.64	99.37	99.11	98.86	98.58	98.32	98.06	97.78
S24	829.3	100.03	99.85	99.66	99.40	99.18	98.93	98.67	98.41	98.15	97.90
S25	829.0	100.04	99.86	99.68	99.40	99.14	98.87	98.64	98.36	98.14	97.88
Average	840.6	100.02	99.84	99.65	99.40	99.15	98.90	98.65	98.39	98.14	97.87
Median	840.6	100.02	99.83	99.65	99.39	99.14	98.89	98.64	98.39	98.14	97.88
Std.dev	12.3	0.01	0.02	0.02	0.03	0.04	0.04	0.06	0.06	0.06	0.06
Max	869.8	100.05	99.87	99.69	99.47	99.25	98.99	98.76	98.52	98.26	97.99
Min	818.7	100.00	99.81	99.63	99.35	99.09	98.83	98.56	98.29	98.04	97.77

Sample Number	Φ (lm)	Lumen Maintenance (%)									
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	831.9	97.60	97.33	97.12	96.89	96.68	96.39	96.10	--	--	--
S02	845.4	97.62	97.36	97.12	96.88	96.67	96.43	96.14	--	--	--
S03	859.2	97.60	97.33	97.12	96.88	96.67	96.42	96.13	--	--	--
S04	818.7	97.70	97.42	97.18	96.94	96.70	96.41	96.12	--	--	--
S05	834.8	97.51	97.22	97.01	96.78	96.54	96.25	96.01	--	--	--
S06	839.2	97.55	97.28	97.04	96.83	96.60	96.36	96.11	--	--	--
S07	836.1	97.63	97.35	97.13	96.90	96.69	96.40	96.16	--	--	--
S08	820.0	97.55	97.29	97.08	96.87	96.64	96.35	96.06	--	--	--
S09	827.9	97.66	97.39	97.18	96.95	96.74	96.45	96.16	--	--	--
S10	846.4	97.61	97.33	97.09	96.85	96.62	96.33	96.04	--	--	--
S11	840.6	97.63	97.36	97.13	96.89	96.67	96.43	96.14	--	--	--
S12	829.3	97.59	97.31	97.07	96.84	96.61	96.32	96.03	--	--	--
S13	829.0	97.69	97.42	97.21	96.97	96.73	96.48	96.24	--	--	--
S14	849.4	97.55	97.27	97.03	96.82	96.61	96.31	96.03	--	--	--
S15	850.2	97.65	97.40	97.19	96.95	96.74	96.45	96.16	--	--	--
S16	851.5	97.61	97.32	97.09	96.88	96.67	96.38	96.09	--	--	--
S17	860.8	97.53	97.27	97.03	96.80	96.58	96.34	96.05	--	--	--
S18	869.8	97.55	97.29	97.07	96.84	96.61	96.32	96.03	--	--	--
S19	849.7	97.63	97.35	97.11	96.90	96.68	96.44	96.15	--	--	--
S20	838.8	97.73	97.48	97.25	97.01	96.77	96.48	96.19	--	--	--
S21	841.4	97.51	97.25	97.02	96.79	96.58	96.29	96.00	--	--	--
S22	846.4	97.71	97.42	97.21	96.97	96.76	96.51	96.27	--	--	--
S23	840.6	97.51	97.23	97.01	96.77	96.55	96.25	95.97	--	--	--
S24	829.3	97.63	97.36	97.14	96.90	96.67	96.38	96.13	--	--	--
S25	829.0	97.59	97.34	97.13	96.90	96.66	96.37	96.08	--	--	--
Average	840.6	97.61	97.33	97.11	96.88	96.66	96.38	96.10	--	--	--
Median	840.6	97.61	97.33	97.12	96.88	96.67	96.38	96.11	--	--	--
Std.dev	12.3	0.06	0.06	0.07	0.06	0.06	0.07	0.07	--	--	--
Max	869.8	97.73	97.48	97.25	97.01	96.77	96.51	96.27	--	--	--
Min	818.7	97.51	97.22	97.01	96.77	96.54	96.25	95.97	--	--	--

3.2.5 Data Set 2, 85°C,1000mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	6.36	6.37	6.32	6.34	6.33	6.36	6.37	6.34	6.33	6.37	6.34
S02	6.41	6.37	6.39	6.42	6.40	6.39	6.42	6.39	6.38	6.39	6.40
S03	6.38	6.38	6.36	6.38	6.39	6.40	6.39	6.36	6.38	6.36	6.38
S04	6.38	6.39	6.35	6.36	6.37	6.39	6.36	6.37	6.37	6.36	6.38
S05	6.34	6.31	6.31	6.32	6.36	6.31	6.31	6.35	6.35	6.35	6.31
S06	6.39	6.36	6.38	6.37	6.36	6.37	6.36	6.36	6.40	6.37	6.40
S07	6.35	6.32	6.34	6.33	6.33	6.33	6.36	6.36	6.32	6.35	6.33
S08	6.41	6.42	6.41	6.42	6.40	6.42	6.42	6.41	6.42	6.40	6.40
S09	6.39	6.38	6.39	6.38	6.40	6.41	6.38	6.37	6.36	6.40	6.40
S10	6.37	6.34	6.38	6.35	6.38	6.35	6.36	6.34	6.37	6.35	6.36
S11	6.40	6.39	6.39	6.37	6.38	6.41	6.38	6.38	6.39	6.38	6.41
S12	6.34	6.32	6.34	6.32	6.31	6.34	6.35	6.31	6.34	6.34	6.32
S13	6.36	6.37	6.34	6.35	6.38	6.36	6.37	6.35	6.36	6.37	6.36
S14	6.35	6.36	6.34	6.36	6.36	6.34	6.34	6.33	6.33	6.36	6.34
S15	6.37	6.34	6.34	6.38	6.35	6.38	6.38	6.34	6.35	6.36	6.35
S16	6.36	6.35	6.33	6.34	6.37	6.35	6.36	6.33	6.38	6.37	6.35
S17	6.41	6.38	6.42	6.41	6.38	6.42	6.42	6.38	6.42	6.39	6.40
S18	6.36	6.33	6.33	6.36	6.35	6.37	6.34	6.35	6.36	6.33	6.33
S19	6.41	6.42	6.38	6.42	6.38	6.38	6.39	6.39	6.39	6.42	6.42
S20	6.34	6.33	6.31	6.34	6.31	6.33	6.32	6.35	6.35	6.32	6.35
S21	6.36	6.37	6.37	6.35	6.35	6.35	6.33	6.37	6.34	6.37	6.37
S22	6.39	6.37	6.40	6.39	6.40	6.36	6.36	6.37	6.37	6.36	6.40
S23	6.34	6.35	6.35	6.32	6.32	6.33	6.34	6.32	6.31	6.33	6.34
S24	6.40	6.41	6.41	6.39	6.38	6.40	6.40	6.40	6.38	6.38	6.41
S25	6.40	6.40	6.41	6.41	6.41	6.38	6.41	6.41	6.40	6.38	6.38
Average	6.37	6.37	6.36	6.37	6.37	6.37	6.37	6.36	6.37	6.37	6.37
Median	6.37	6.37	6.36	6.36	6.37	6.37	6.36	6.36	6.37	6.37	6.37
Std.dev	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03
Max	6.41	6.42	6.42	6.42	6.41	6.42	6.42	6.41	6.42	6.42	6.42
Min	6.34	6.31	6.31	6.32	6.31	6.31	6.31	6.31	6.31	6.32	6.31

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	6.36	6.36	6.35	6.36	6.32	6.34	6.37	6.32	--	--	--
S02	6.41	6.40	6.40	6.42	6.39	6.37	6.39	6.42	--	--	--
S03	6.38	6.39	6.36	6.36	6.36	6.38	6.36	6.36	--	--	--
S04	6.38	6.37	6.39	6.36	6.39	6.39	6.36	6.35	--	--	--
S05	6.34	6.34	6.33	6.32	6.34	6.31	6.33	6.35	--	--	--
S06	6.39	6.37	6.39	6.38	6.37	6.38	6.37	6.40	--	--	--
S07	6.35	6.36	6.33	6.36	6.35	6.33	6.36	6.35	--	--	--
S08	6.41	6.40	6.41	6.39	6.38	6.39	6.38	6.39	--	--	--
S09	6.39	6.39	6.40	6.36	6.40	6.40	6.38	6.36	--	--	--
S10	6.37	6.36	6.36	6.38	6.35	6.38	6.34	6.38	--	--	--
S11	6.40	6.41	6.38	6.39	6.41	6.41	6.40	6.40	--	--	--
S12	6.34	6.33	6.33	6.32	6.30	6.35	6.35	6.33	--	--	--
S13	6.36	6.37	6.37	6.37	6.37	6.38	6.33	6.35	--	--	--
S14	6.35	6.32	6.34	6.36	6.32	6.36	6.33	6.36	--	--	--
S15	6.37	6.34	6.36	6.35	6.38	6.36	6.36	6.38	--	--	--
S16	6.36	6.34	6.33	6.33	6.33	6.35	6.35	6.38	--	--	--
S17	6.41	6.42	6.41	6.39	6.38	6.38	6.42	6.38	--	--	--
S18	6.36	6.35	6.32	6.36	6.34	6.36	6.36	6.36	--	--	--
S19	6.41	6.39	6.40	6.38	6.38	6.39	6.39	6.38	--	--	--
S20	6.34	6.35	6.32	6.32	6.34	6.32	6.32	6.33	--	--	--
S21	6.36	6.37	6.35	6.33	6.37	6.35	6.35	6.35	--	--	--
S22	6.39	6.37	6.38	6.37	6.37	6.37	6.38	6.38	--	--	--
S23	6.34	6.32	6.34	6.32	6.32	6.33	6.33	6.32	--	--	--
S24	6.40	6.40	6.41	6.40	6.38	6.38	6.38	6.40	--	--	--
S25	6.40	6.39	6.41	6.37	6.41	6.39	6.38	6.41	--	--	--
Average	6.37	6.37	6.37	6.36	6.36	6.37	6.36	6.37	--	--	--
Median	6.37	6.37	6.36	6.36	6.37	6.37	6.36	6.36	--	--	--
Std.dev	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.03	--	--	--
Max	6.41	6.42	6.41	6.42	6.41	6.41	6.42	6.42	--	--	--
Min	6.34	6.32	6.32	6.32	6.30	6.31	6.32	6.32	--	--	--

3.2.6 Data Set 2, 85°C,1000mA (Chromaticity Shift)

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	4972	0.2025	0.5007	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0019
S02	4929	0.2031	0.4987	0.0002	0.0004	0.0005	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0022
S03	5092	0.2029	0.5022	0.0002	0.0004	0.0006	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0021
S04	5000	0.2004	0.4972	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020
S05	4925	0.2031	0.5007	0.0002	0.0004	0.0006	0.0009	0.0012	0.0012	0.0014	0.0016	0.0018	0.0022
S06	4965	0.2017	0.5012	0.0002	0.0004	0.0006	0.0008	0.0011	0.0010	0.0012	0.0014	0.0017	0.0021
S07	4970	0.2029	0.5022	0.0002	0.0003	0.0005	0.0008	0.0011	0.0012	0.0014	0.0016	0.0018	0.0021
S08	4854	0.2021	0.4967	0.0002	0.0004	0.0005	0.0007	0.0010	0.0012	0.0014	0.0016	0.0019	0.0019
S09	5085	0.2023	0.4994	0.0002	0.0003	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0020
S10	5172	0.2025	0.4992	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013	0.0015	0.0017	0.0019	0.0020
S11	4964	0.2023	0.4998	0.0002	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020
S12	5011	0.2025	0.5007	0.0002	0.0004	0.0005	0.0008	0.0010	0.0013	0.0016	0.0018	0.0019	0.0022
S13	4883	0.2021	0.5012	0.0002	0.0003	0.0005	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018	0.0022
S14	5015	0.2027	0.4992	0.0002	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0016	0.0019	0.0020
S15	4964	0.2025	0.5027	0.0002	0.0004	0.0006	0.0009	0.0011	0.0011	0.0014	0.0015	0.0018	0.0021
S16	4984	0.2001	0.4977	0.0002	0.0003	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0022
S17	4934	0.2027	0.5012	0.0002	0.0004	0.0006	0.0008	0.0010	0.0011	0.0013	0.0015	0.0018	0.0021
S18	5065	0.2013	0.5017	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0022
S19	5025	0.2025	0.5027	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013	0.0015	0.0017	0.0020	0.0020
S20	5064	0.2017	0.4972	0.0002	0.0004	0.0005	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0023
S21	4864	0.2019	0.4999	0.0002	0.0003	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0021
S22	5095	0.2021	0.4997	0.0002	0.0004	0.0005	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0019
S23	5182	0.2019	0.5003	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017	0.0020	0.0021
S24	4974	0.2021	0.5012	0.0002	0.0003	0.0005	0.0007	0.0010	0.0012	0.0014	0.0016	0.0018	0.0019
S25	5021	0.2027	0.4992	0.0002	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0020	0.0022
Average	5000	0.2022	0.5001	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021
Median	4984	0.2023	0.5003	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021
Std.dev	83	0.0007	0.0017	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Max	5182	0.2031	0.5027	0.0002	0.0004	0.0006	0.0009	0.0012	0.0013	0.0016	0.0018	0.0020	0.0023
Min	4854	0.2001	0.4967	0.0002	0.0003	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0016	0.0019

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	4972	0.2025	0.5007	0.0021	0.0022	0.0026	0.0028	0.0031	0.0033	0.0034	--	--	--
S02	4929	0.2031	0.4987	0.0023	0.0025	0.0028	0.0030	0.0032	0.0033	0.0035	--	--	--
S03	5092	0.2029	0.5022	0.0022	0.0024	0.0028	0.0030	0.0032	0.0034	0.0036	--	--	--
S04	5000	0.2004	0.4972	0.0022	0.0024	0.0026	0.0028	0.0032	0.0034	0.0036	--	--	--
S05	4925	0.2031	0.5007	0.0024	0.0025	0.0029	0.0032	0.0036	0.0038	0.0039	--	--	--
S06	4965	0.2017	0.5012	0.0023	0.0024	0.0028	0.0030	0.0032	0.0034	0.0036	--	--	--
S07	4970	0.2029	0.5022	0.0023	0.0024	0.0026	0.0029	0.0031	0.0033	0.0035	--	--	--
S08	4854	0.2021	0.4967	0.0021	0.0023	0.0025	0.0029	0.0033	0.0035	0.0037	--	--	--
S09	5085	0.2023	0.4994	0.0021	0.0023	0.0026	0.0029	0.0033	0.0035	0.0037	--	--	--
S10	5172	0.2025	0.4992	0.0021	0.0023	0.0025	0.0027	0.0031	0.0032	0.0034	--	--	--
S11	4964	0.2023	0.4998	0.0022	0.0023	0.0026	0.0028	0.0031	0.0033	0.0034	--	--	--
S12	5011	0.2025	0.5007	0.0023	0.0025	0.0027	0.0031	0.0033	0.0035	0.0037	--	--	--
S13	4883	0.2021	0.5012	0.0024	0.0025	0.0029	0.0033	0.0036	0.0038	0.0039	--	--	--
S14	5015	0.2027	0.4992	0.0022	0.0023	0.0026	0.0028	0.0030	0.0032	0.0034	--	--	--
S15	4964	0.2025	0.5027	0.0022	0.0024	0.0026	0.0030	0.0032	0.0034	0.0036	--	--	--
S16	4984	0.2001	0.4977	0.0024	0.0025	0.0029	0.0033	0.0036	0.0038	0.0039	--	--	--
S17	4934	0.2027	0.5012	0.0023	0.0024	0.0028	0.0031	0.0035	0.0036	0.0038	--	--	--
S18	5065	0.2013	0.5017	0.0024	0.0025	0.0028	0.0030	0.0034	0.0035	0.0037	--	--	--
S19	5025	0.2025	0.5027	0.0022	0.0023	0.0027	0.0031	0.0033	0.0035	0.0036	--	--	--
S20	5064	0.2017	0.4972	0.0025	0.0026	0.0030	0.0034	0.0038	0.0040	0.0042	--	--	--
S21	4864	0.2019	0.4999	0.0023	0.0024	0.0026	0.0030	0.0034	0.0036	0.0038	--	--	--
S22	5095	0.2021	0.4997	0.0021	0.0022	0.0025	0.0027	0.0030	0.0032	0.0033	--	--	--
S23	5182	0.2019	0.5003	0.0023	0.0024	0.0027	0.0029	0.0031	0.0033	0.0035	--	--	--
S24	4974	0.2021	0.5012	0.0021	0.0022	0.0025	0.0028	0.0031	0.0033	0.0035	--	--	--
S25	5021	0.2027	0.4992	0.0024	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035	--	--	--
Average	5000	0.2022	0.5001	0.0023	0.0024	0.0027	0.0030	0.0033	0.0035	0.0036	--	--	--
Median	4984	0.2023	0.5003	0.0023	0.0024	0.0027	0.0030	0.0032	0.0034	0.0036	--	--	--
Std.dev	83	0.0007	0.0017	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	--	--	--
Max	5182	0.2031	0.5027	0.0025	0.0026	0.0030	0.0034	0.0038	0.0040	0.0042	--	--	--
Min	4854	0.2001	0.4967	0.0021	0.0022	0.0025	0.0027	0.0030	0.0032	0.0033	--	--	--

3.2.7 Data Set 3, 105°C,1000mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	818.6	99.98	99.76	99.54	99.28	99.02	98.72	98.48	98.29	98.05	97.78
S02	842.7	99.97	99.75	99.45	99.17	98.87	98.56	98.32	98.14	97.85	97.58
S03	852.0	99.99	99.69	99.39	99.13	98.83	98.53	98.29	98.00	97.81	97.54
S04	826.5	99.99	99.77	99.47	99.17	98.89	98.63	98.39	98.20	97.96	97.70
S05	831.5	99.99	99.69	99.47	99.21	98.95	98.67	98.38	98.20	98.01	97.74
S06	829.7	100.01	99.79	99.57	99.26	99.00	98.70	98.51	98.33	98.04	97.77
S07	831.1	100.00	99.70	99.48	99.20	98.94	98.63	98.40	98.11	97.82	97.55
S08	818.6	99.97	99.67	99.38	99.10	98.84	98.56	98.37	98.19	97.90	97.63
S09	817.7	100.02	99.72	99.42	99.16	98.88	98.58	98.39	98.16	97.87	97.59
S10	847.9	100.03	99.73	99.44	99.18	98.87	98.62	98.33	98.09	97.85	97.58
S11	832.4	99.97	99.67	99.38	99.10	98.84	98.53	98.25	98.06	97.87	97.61
S12	837.9	100.03	99.73	99.51	99.25	98.95	98.67	98.38	98.19	98.01	97.74
S13	824.2	99.99	99.69	99.47	99.19	98.88	98.60	98.36	98.13	97.89	97.62
S14	852.2	99.98	99.76	99.46	99.16	98.86	98.58	98.39	98.21	97.97	97.69
S15	853.1	99.97	99.75	99.52	99.24	98.96	98.68	98.39	98.21	97.92	97.64
S16	845.0	100.01	99.79	99.57	99.29	98.98	98.72	98.49	98.25	98.06	97.80
S17	853.1	100.00	99.77	99.55	99.25	98.99	98.71	98.42	98.13	97.89	97.62
S18	851.9	99.98	99.68	99.38	99.08	98.78	98.47	98.18	98.00	97.71	97.43
S19	853.7	99.97	99.74	99.52	99.24	98.98	98.68	98.39	98.15	97.86	97.60
S20	826.8	99.97	99.67	99.45	99.15	98.84	98.54	98.30	98.12	97.93	97.66
S21	837.3	100.01	99.72	99.49	99.23	98.98	98.70	98.41	98.22	97.93	97.67
S22	818.6	100.00	99.70	99.48	99.17	98.92	98.61	98.32	98.08	97.90	97.63
S23	842.7	99.98	99.68	99.46	99.18	98.92	98.66	98.42	98.24	98.05	97.78
S24	852.0	99.97	99.75	99.45	99.17	98.91	98.65	98.36	98.07	97.84	97.56
S25	826.5	99.98	99.68	99.46	99.20	98.94	98.64	98.45	98.16	97.98	97.70
Average	836.9	99.99	99.72	99.47	99.19	98.91	98.63	98.37	98.16	97.92	97.65
Median	837.3	99.99	99.72	99.47	99.18	98.92	98.63	98.39	98.16	97.90	97.63
Std.dev	12.6	0.02	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.09
Max	853.7	100.03	99.79	99.57	99.29	99.02	98.72	98.51	98.33	98.06	97.80
Min	817.7	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	--	--	--
S01	818.6	97.51	97.23	96.95	96.67	96.40	96.16	95.83	--	--	--
S02	842.7	97.32	97.04	96.76	96.49	96.22	95.90	95.57	--	--	--
S03	852.0	97.26	96.99	96.71	96.44	96.16	95.84	95.59	--	--	--
S04	826.5	97.43	97.15	96.88	96.59	96.32	96.00	95.67	--	--	--
S05	831.5	97.48	97.20	96.93	96.65	96.38	96.05	95.80	--	--	--
S06	829.7	97.50	97.23	96.96	96.68	96.40	96.07	95.75	--	--	--
S07	831.1	97.28	97.01	96.74	96.47	96.20	95.95	95.70	--	--	--
S08	818.6	97.36	97.09	96.82	96.54	96.26	96.01	95.68	--	--	--
S09	817.7	97.32	97.04	96.76	96.48	96.21	95.88	95.56	--	--	--
S10	847.9	97.31	97.03	96.77	96.50	96.21	95.97	95.64	--	--	--
S11	832.4	97.34	97.08	96.80	96.52	96.25	96.01	95.68	--	--	--
S12	837.9	97.47	97.20	96.92	96.64	96.36	96.12	95.79	--	--	--
S13	824.2	97.35	97.08	96.81	96.54	96.27	96.02	95.69	--	--	--
S14	852.2	97.42	97.14	96.86	96.59	96.31	95.98	95.65	--	--	--
S15	853.1	97.37	97.10	96.83	96.56	96.29	96.04	95.80	--	--	--
S16	845.0	97.52	97.26	96.99	96.72	96.44	96.11	95.78	--	--	--
S17	853.1	97.36	97.09	96.81	96.53	96.25	96.01	95.68	--	--	--
S18	851.9	97.17	96.90	96.63	96.35	96.08	95.75	95.42	--	--	--
S19	853.7	97.33	97.06	96.79	96.51	96.23	95.98	95.65	--	--	--
S20	826.8	97.40	97.13	96.85	96.58	96.31	95.98	95.65	--	--	--
S21	837.3	97.39	97.13	96.86	96.58	96.30	95.97	95.72	--	--	--
S22	818.6	97.36	97.09	96.81	96.54	96.26	96.01	95.76	--	--	--
S23	842.7	97.51	97.24	96.97	96.69	96.41	96.08	95.75	--	--	--
S24	852.0	97.29	97.02	96.74	96.46	96.19	95.86	95.53	--	--	--
S25	826.5	97.43	97.16	96.88	96.61	96.33	96.00	95.75	--	--	--
Average	836.9	97.38	97.11	96.83	96.56	96.28	95.99	95.68	--	--	--
Median	837.3	97.36	97.09	96.82	96.54	96.27	96.00	95.68	--	--	--
Std.dev	12.6	0.09	0.09	0.09	0.09	0.09	0.09	0.09	--	--	--
Max	853.7	97.52	97.26	96.99	96.72	96.44	96.16	95.83	--	--	--
Min	817.7	97.17	96.90	96.63	96.35	96.08	95.75	95.42	--	--	--

3.2.8 Data Set 3, 105°C,1000mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	6.37	6.31	6.34	6.37	6.34	6.33	6.37	6.34	6.36	6.37	6.32
S02	6.40	6.38	6.38	6.36	6.38	6.39	6.36	6.38	6.39	6.37	6.41
S03	6.34	6.31	6.35	6.35	6.30	6.30	6.33	6.29	6.30	6.30	6.31
S04	6.37	6.38	6.38	6.35	6.33	6.35	6.35	6.38	6.38	6.36	6.33
S05	6.38	6.34	6.39	6.39	6.34	6.39	6.35	6.34	6.39	6.33	6.34
S06	6.37	6.32	6.36	6.35	6.35	6.34	6.32	6.37	6.34	6.34	6.34
S07	6.39	6.37	6.37	6.36	6.40	6.36	6.34	6.40	6.38	6.40	6.37
S08	6.40	6.37	6.38	6.36	6.38	6.38	6.35	6.38	6.40	6.36	6.37
S09	6.40	6.37	6.36	6.40	6.37	6.35	6.35	6.39	6.35	6.37	6.35
S10	6.38	6.36	6.33	6.39	6.39	6.36	6.37	6.34	6.36	6.35	6.36
S11	6.36	6.35	6.32	6.35	6.33	6.36	6.31	6.32	6.32	6.31	6.31
S12	6.41	6.41	6.40	6.41	6.38	6.40	6.36	6.41	6.38	6.38	6.37
S13	6.38	6.37	6.34	6.33	6.34	6.34	6.36	6.32	6.37	6.35	6.34
S14	6.34	6.33	6.30	6.30	6.31	6.30	6.32	6.31	6.31	6.30	6.33
S15	6.46	6.47	6.47	6.47	6.42	6.44	6.44	6.45	6.46	6.42	6.42
S16	6.39	6.34	6.38	6.36	6.39	6.36	6.36	6.40	6.38	6.35	6.39
S17	6.42	6.39	6.39	6.42	6.39	6.38	6.38	6.37	6.38	6.43	6.42
S18	6.37	6.35	6.34	6.34	6.38	6.38	6.33	6.33	6.34	6.38	6.34
S19	6.34	6.30	6.32	6.35	6.35	6.35	6.31	6.30	6.35	6.32	6.31
S20	6.36	6.33	6.36	6.37	6.35	6.31	6.31	6.31	6.35	6.30	6.31
S21	6.39	6.38	6.38	6.34	6.37	6.34	6.35	6.34	6.40	6.40	6.40
S22	6.38	6.38	6.38	6.33	6.35	6.39	6.37	6.33	6.34	6.35	6.33
S23	6.35	6.36	6.33	6.33	6.36	6.36	6.36	6.36	6.32	6.36	6.34
S24	6.40	6.35	6.37	6.37	6.41	6.37	6.37	6.37	6.36	6.35	6.39
S25	6.37	6.38	6.38	6.35	6.36	6.33	6.35	6.34	6.36	6.36	6.34
Average	6.38	6.36	6.36	6.36	6.36	6.36	6.35	6.35	6.36	6.36	6.35
Median	6.38	6.36	6.37	6.36	6.36	6.36	6.35	6.34	6.36	6.36	6.34
Std.dev	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.03
Max	6.46	6.47	6.47	6.47	6.42	6.44	6.44	6.45	6.46	6.43	6.42
Min	6.34	6.30	6.30	6.30	6.30	6.30	6.31	6.29	6.30	6.30	6.31

Sample Number	Forward Voltage(V)										
	0hr (Initial)	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	6.37	6.33	6.34	6.33	6.33	6.34	6.37	6.32	--	--	--
S02	6.40	6.38	6.35	6.37	6.35	6.38	6.36	6.36	--	--	--
S03	6.34	6.31	6.35	6.30	6.31	6.31	6.30	6.31	--	--	--
S04	6.37	6.32	6.33	6.34	6.33	6.35	6.35	6.34	--	--	--
S05	6.38	6.33	6.35	6.39	6.34	6.35	6.35	6.35	--	--	--
S06	6.37	6.32	6.34	6.34	6.34	6.35	6.33	6.37	--	--	--
S07	6.39	6.36	6.36	6.40	6.37	6.38	6.37	6.35	--	--	--
S08	6.40	6.37	6.36	6.41	6.35	6.41	6.41	6.37	--	--	--
S09	6.40	6.36	6.36	6.37	6.37	6.37	6.39	6.36	--	--	--
S10	6.38	6.37	6.35	6.34	6.36	6.35	6.36	6.34	--	--	--
S11	6.36	6.37	6.37	6.30	6.33	6.33	6.33	6.31	--	--	--
S12	6.41	6.37	6.36	6.39	6.36	6.41	6.42	6.40	--	--	--
S13	6.38	6.35	6.34	6.37	6.37	6.35	6.34	6.35	--	--	--
S14	6.34	6.35	6.35	6.30	6.29	6.35	6.33	6.35	--	--	--
S15	6.46	6.42	6.44	6.47	6.43	6.47	6.42	6.44	--	--	--
S16	6.39	6.36	6.36	6.38	6.34	6.39	6.39	6.36	--	--	--
S17	6.42	6.36	6.36	6.42	6.38	6.41	6.37	6.39	--	--	--
S18	6.37	6.33	6.35	6.37	6.35	6.34	6.38	6.34	--	--	--
S19	6.34	6.32	6.32	6.32	6.30	6.30	6.31	6.29	--	--	--
S20	6.36	6.37	6.31	6.34	6.32	6.33	6.30	6.31	--	--	--
S21	6.39	6.40	6.36	6.34	6.34	6.36	6.35	6.35	--	--	--
S22	6.38	6.37	6.38	6.34	6.35	6.33	6.35	6.35	--	--	--
S23	6.35	6.30	6.36	6.31	6.32	6.30	6.33	6.36	--	--	--
S24	6.40	6.41	6.38	6.37	6.41	6.36	6.37	6.35	--	--	--
S25	6.37	6.38	6.33	6.34	6.33	6.38	6.36	6.32	--	--	--
Average	6.38	6.36	6.35	6.36	6.35	6.36	6.36	6.35	--	--	--
Median	6.38	6.36	6.35	6.34	6.34	6.35	6.36	6.35	--	--	--
Std.dev	0.03	0.03	0.02	0.04	0.03	0.04	0.03	0.03	--	--	--
Max	6.46	6.42	6.44	6.47	6.43	6.47	6.42	6.44	--	--	--
Min	6.34	6.30	6.31	6.30	6.29	6.30	6.30	6.29	--	--	--

3.2.9 Data Set 3, 105°C,1000mA (Chromaticity Shift)

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	4997	0.2028	0.5006	0.0003	0.0005	0.0008	0.0010	0.0012	0.0013	0.0015	0.0018	0.0020	0.0023
S02	4889	0.2032	0.4986	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021	0.0023
S03	5116	0.2030	0.5021	0.0001	0.0004	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0019	0.0022
S04	4969	0.2005	0.4971	0.0003	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0017	0.0018	0.0021
S05	4935	0.2032	0.5006	0.0003	0.0005	0.0006	0.0009	0.0011	0.0013	0.0014	0.0015	0.0018	0.0020
S06	4990	0.2018	0.5011	0.0003	0.0004	0.0007	0.0009	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022
S07	4984	0.2022	0.5021	0.0003	0.0004	0.0007	0.0009	0.0012	0.0014	0.0016	0.0017	0.0018	0.0021
S08	4843	0.2018	0.4966	0.0003	0.0004	0.0006	0.0008	0.0011	0.0013	0.0016	0.0017	0.0018	0.0020
S09	5121	0.2026	0.4993	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0018	0.0020	0.0023
S10	5114	0.2034	0.4991	0.0003	0.0004	0.0005	0.0008	0.0010	0.0012	0.0015	0.0018	0.0020	0.0023
S11	4986	0.2024	0.4997	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0017	0.0018	0.0019	0.0022
S12	5020	0.2028	0.5006	0.0001	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0013	0.0016	0.0019
S13	4908	0.2023	0.4993	0.0003	0.0004	0.0005	0.0007	0.0009	0.0011	0.0013	0.0016	0.0017	0.0020
S14	5028	0.2027	0.4973	0.0003	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0020	0.0022	0.0025
S15	4986	0.2025	0.5008	0.0001	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016	0.0018
S16	4984	0.2001	0.4958	0.0003	0.0006	0.0008	0.0011	0.0012	0.0015	0.0018	0.0021	0.0023	0.0025
S17	5009	0.2027	0.4993	0.0003	0.0004	0.0005	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0019
S18	5091	0.2013	0.4998	0.0001	0.0004	0.0006	0.0008	0.0011	0.0013	0.0016	0.0017	0.0020	0.0022
S19	4979	0.2017	0.5008	0.0001	0.0003	0.0005	0.0007	0.0010	0.0011	0.0014	0.0015	0.0016	0.0019
S20	5013	0.2013	0.4953	0.0003	0.0006	0.0008	0.0010	0.0013	0.0015	0.0016	0.0019	0.0022	0.0024
S21	4901	0.2021	0.4980	0.0001	0.0003	0.0006	0.0007	0.0010	0.0012	0.0014	0.0017	0.0019	0.0022
S22	5021	0.2029	0.4978	0.0001	0.0004	0.0007	0.0009	0.0010	0.0013	0.0015	0.0016	0.0018	0.0021
S23	4979	0.2019	0.4984	0.0003	0.0004	0.0007	0.0009	0.0010	0.0012	0.0015	0.0016	0.0019	0.0021
S24	4978	0.2023	0.4993	0.0003	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0018	0.0021	0.0023
S25	5002	0.2027	0.4973	0.0003	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021	0.0024
Average	4994	0.2022	0.4991	0.0002	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0017	0.0019	0.0022
Median	4986	0.2024	0.4993	0.0003	0.0004	0.0007	0.0009	0.0011	0.0013	0.0015	0.0017	0.0019	0.0022
Std.dev	67	0.0008	0.0018	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002
Max	5121	0.2034	0.5021	0.0003	0.0006	0.0008	0.0011	0.0013	0.0015	0.0018	0.0021	0.0023	0.0025
Min	4843	0.2001	0.4953	0.0001	0.0003	0.0005	0.0007	0.0009	0.0011	0.0012	0.0013	0.0016	0.0018

Sample Number	Chromaticity Shift ($\Delta u'v'$)												
	0hr CCT (Initial)	0hr (Initial)		11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	--	--	--
S01	4997	0.2028	0.5006	0.0026	0.0028	0.0030	0.0031	0.0034	0.0035	0.0037	--	--	--
S02	4889	0.2032	0.4986	0.0026	0.0029	0.0030	0.0031	0.0033	0.0034	0.0037	--	--	--
S03	5116	0.2030	0.5021	0.0025	0.0027	0.0029	0.0031	0.0035	0.0038	0.0040	--	--	--
S04	4969	0.2005	0.4971	0.0024	0.0026	0.0030	0.0032	0.0034	0.0036	0.0039	--	--	--
S05	4935	0.2032	0.5006	0.0023	0.0026	0.0029	0.0033	0.0035	0.0038	0.0040	--	--	--
S06	4990	0.2018	0.5011	0.0024	0.0027	0.0029	0.0031	0.0035	0.0038	0.0040	--	--	--
S07	4984	0.2022	0.5021	0.0024	0.0026	0.0030	0.0033	0.0035	0.0038	0.0039	--	--	--
S08	4843	0.2018	0.4966	0.0023	0.0026	0.0030	0.0031	0.0032	0.0035	0.0037	--	--	--
S09	5121	0.2026	0.4993	0.0026	0.0028	0.0032	0.0033	0.0034	0.0035	0.0037	--	--	--
S10	5114	0.2034	0.4991	0.0025	0.0028	0.0030	0.0031	0.0035	0.0036	0.0039	--	--	--
S11	4986	0.2024	0.4997	0.0025	0.0028	0.0029	0.0031	0.0034	0.0036	0.0037	--	--	--
S12	5020	0.2028	0.5006	0.0021	0.0024	0.0026	0.0030	0.0033	0.0036	0.0039	--	--	--
S13	4908	0.2023	0.4993	0.0022	0.0025	0.0026	0.0027	0.0031	0.0032	0.0033	--	--	--
S14	5028	0.2027	0.4973	0.0028	0.0030	0.0034	0.0037	0.0038	0.0041	0.0043	--	--	--
S15	4986	0.2025	0.5008	0.0021	0.0024	0.0026	0.0027	0.0029	0.0031	0.0032	--	--	--
S16	4984	0.2001	0.4958	0.0028	0.0031	0.0033	0.0034	0.0036	0.0039	0.0042	--	--	--
S17	5009	0.2027	0.4993	0.0021	0.0024	0.0028	0.0029	0.0030	0.0032	0.0035	--	--	--
S18	5091	0.2013	0.4998	0.0025	0.0028	0.0031	0.0035	0.0037	0.0040	0.0042	--	--	--
S19	4979	0.2017	0.5008	0.0021	0.0024	0.0025	0.0029	0.0030	0.0033	0.0034	--	--	--
S20	5013	0.2013	0.4953	0.0027	0.0029	0.0033	0.0037	0.0040	0.0043	0.0046	--	--	--
S21	4901	0.2021	0.4980	0.0024	0.0027	0.0031	0.0033	0.0035	0.0038	0.0039	--	--	--
S22	5021	0.2029	0.4978	0.0023	0.0026	0.0027	0.0029	0.0031	0.0034	0.0035	--	--	--
S23	4979	0.2019	0.4984	0.0024	0.0026	0.0028	0.0031	0.0034	0.0035	0.0038	--	--	--
S24	4978	0.2023	0.4993	0.0026	0.0029	0.0030	0.0031	0.0033	0.0036	0.0037	--	--	--
S25	5002	0.2027	0.4973	0.0026	0.0029	0.0032	0.0035	0.0039	0.0041	0.0044	--	--	--
Average	4994	0.2022	0.4991	0.0024	0.0027	0.0030	0.0032	0.0034	0.0036	0.0038	--	--	--
Median	4986	0.2024	0.4993	0.0024	0.0027	0.0030	0.0031	0.0034	0.0036	0.0039	--	--	--
Std.dev	67	0.0008	0.0018	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	--	--	--
Max	5121	0.2034	0.5021	0.0028	0.0031	0.0034	0.0037	0.0040	0.0043	0.0046	--	--	--
Min	4843	0.2001	0.4953	0.0021	0.0024	0.0025	0.0027	0.0029	0.0031	0.0032	--	--	--

4.Test Equipment

Equipment Name	Manufacturer	Model No.	Equipment No.	Calibration Due Date
2m Integrating Sphere	SENSING	SL-300	AOC-S-126	2026-04-13
Horizontal Distribution Photometer	SENSING	GMS1800D	AOC-S-124	2026-04-13
Standard Lamp	SENSING	220V/150W	AOC-S-156	2026-06-05
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

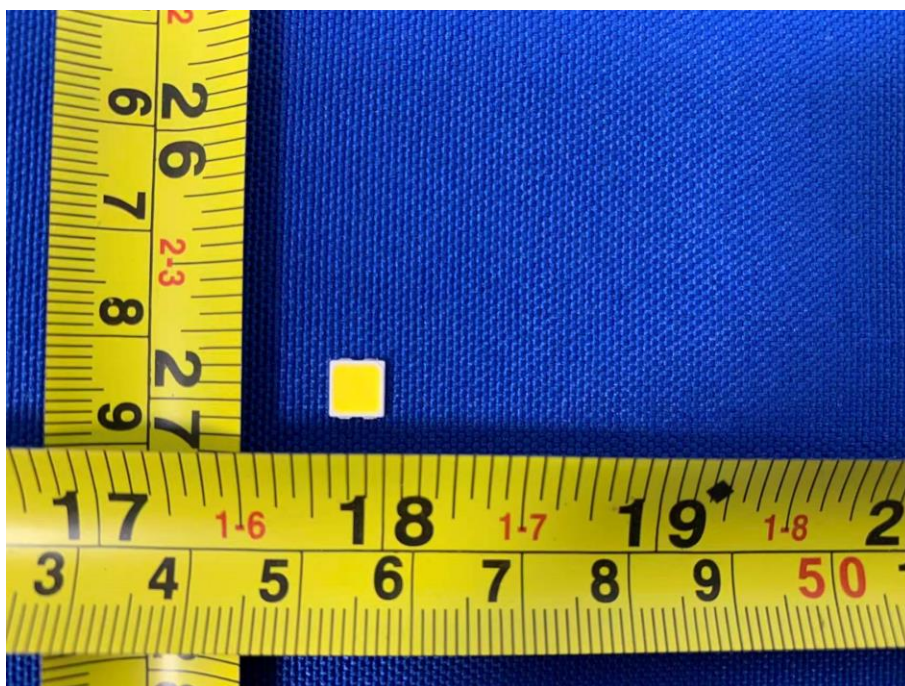


Fig.1

-- End of Report --

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