

Test Report

Client : GUANGDONG METALUX LED LIMITED
Address : 9F, A Building, Honglin Industrial Park, Wuyi Community, Chenjiang Town, Huicheng District, Huizhou city, China 516000

Description of the submitted sample(s):

Sample Name : LED STRIP LIGHT
Model/Type : YQ-S1N320/480
Trademark : Innopower
Ratings : Vf: 2.2-2.8Vdc; If:5mA
Test Item : LM-80-21
State of Sample(s) : Normal
Sample Quantity : 75 PCS
Manufacturer : GUANGDONG METALUX LED LIMITED
Address : 9F, A Building, Honglin Industrial Park, Wuyi Community, Chenjiang Town, Huicheng District, Huizhou city, China 516000
Sample Received Date : 2023-11-15
Sample tested Date : 2023-11-15
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
2025-12-03

Date :

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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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,60mA	
Model:	YQ-S1N320/480
Number of Units:	25
Case Temperature (T _S):	> 53°C
Ambient Temperature (T _A):	> 50°C
Life Test Drive Current:	5mA
Measurement Current:	5mA

Data Set 2:85°C,60mA	
Model:	YQ-S1N320/480
Number of Units:	25
Case Temperature (T _S):	> 83°C
Ambient Temperature (T _A):	> 50°C
Life Test Drive Current:	5mA
Measurement Current:	5mA

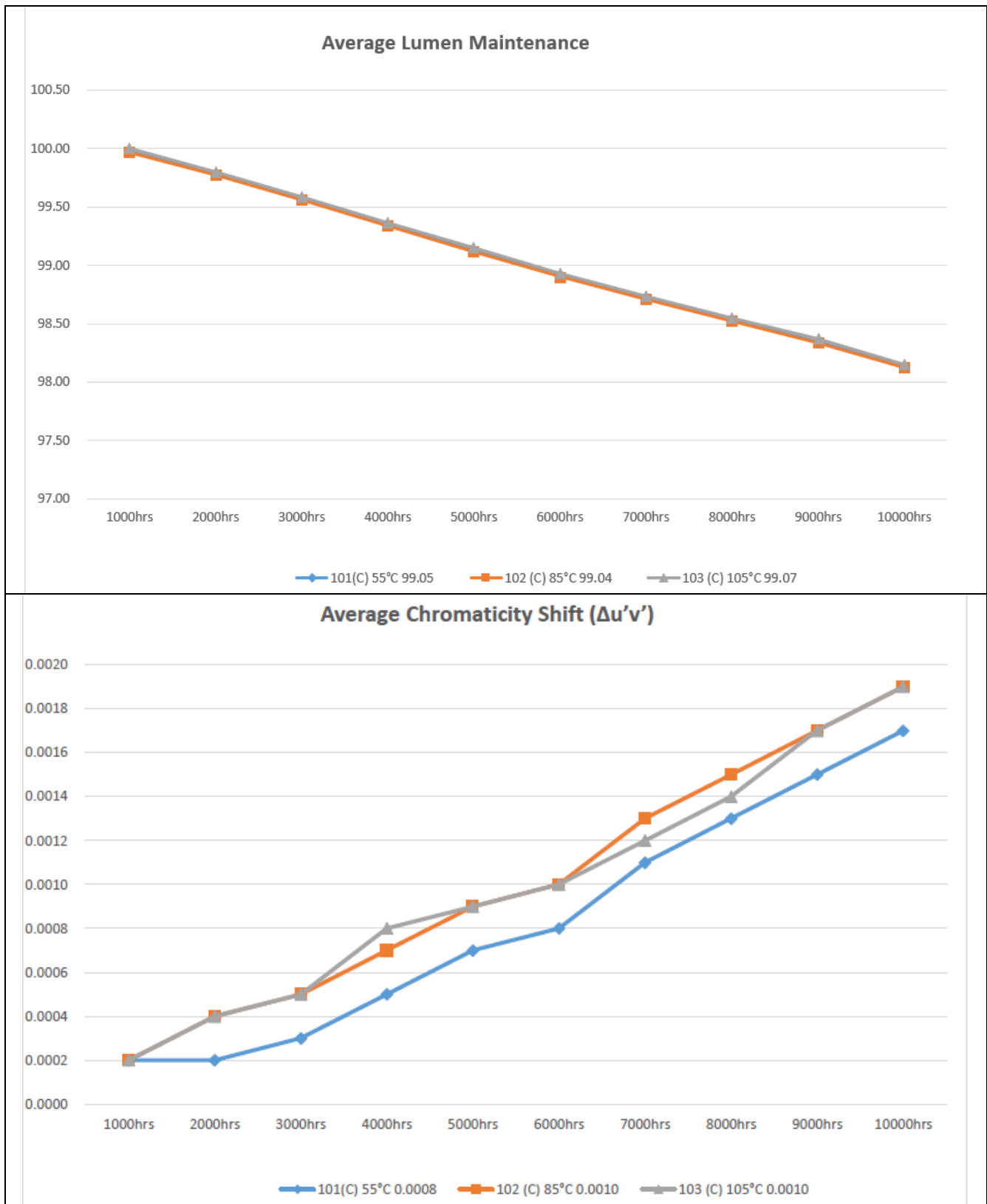
Data Set 3:105°C,60mA	
Model:	YQ-S1N320/480
Number of Units:	25
Case Temperature (T _S):	> 103°C
Ambient Temperature (T _A):	> 100°C
Life Test Drive Current:	5mA
Measurement Current:	5mA

Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	99.98%	99.78%	99.57%	99.35%	99.13%	98.91%	98.72%	98.53%	98.35%	98.13%
2	99.97%	99.77%	99.56%	99.34%	99.12%	98.90%	98.71%	98.52%	98.34%	98.12%
3	100.00%	99.80%	99.59%	99.37%	99.15%	98.93%	98.74%	98.55%	98.37%	98.15%

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

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.0002	0.0002	0.0003	0.0005	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017
2	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
3	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0012	0.0014	0.0017	0.0019



3.2. Test data**3.2.1 Data Set 1, 55°C,60mA (Lumen Maintenance)**

Sample Number	Φ(lm)	Lumen Maintenance (%)									
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	7.08	100.04	99.82	99.61	99.39	99.19	98.99	98.82	98.65	98.48	98.23
S02	5.95	100.01	99.80	99.60	99.38	99.12	98.87	98.70	98.49	98.27	98.11
S03	6.44	100.06	99.86	99.66	99.41	99.21	98.99	98.77	98.59	98.38	98.13
S04	8.78	100.02	99.83	99.61	99.36	99.11	98.88	98.71	98.54	98.37	98.21
S05	6.99	100.04	99.84	99.63	99.40	99.15	98.95	98.73	98.52	98.35	98.10
S06	9.09	100.04	99.84	99.65	99.42	99.20	99.00	98.83	98.66	98.49	98.24
S07	8.55	100.01	99.82	99.62	99.40	99.14	98.94	98.77	98.60	98.38	98.22
S08	7.68	100.05	99.84	99.63	99.38	99.18	98.98	98.80	98.58	98.41	98.17
S09	8.66	100.05	99.86	99.66	99.41	99.21	99.01	98.79	98.57	98.40	98.15
S10	8.21	100.04	99.84	99.64	99.44	99.25	98.99	98.81	98.65	98.43	98.19
S11	9.53	100.04	99.84	99.63	99.41	99.18	98.96	98.74	98.58	98.41	98.16
S12	6.88	100.03	99.82	99.60	99.38	99.16	98.93	98.76	98.59	98.37	98.13
S13	7.17	100.04	99.85	99.65	99.43	99.21	99.01	98.83	98.65	98.44	98.19
S14	8.66	100.01	99.82	99.62	99.42	99.22	99.02	98.85	98.63	98.46	98.30
S15	8.72	100.03	99.81	99.60	99.38	99.15	98.95	98.78	98.56	98.34	98.10
S16	7.77	100.05	99.84	99.63	99.40	99.15	98.90	98.68	98.50	98.28	98.04
S17	5.19	100.04	99.85	99.65	99.40	99.17	98.92	98.75	98.53	98.37	98.21
S18	5.11	100.02	99.81	99.61	99.41	99.16	98.93	98.76	98.59	98.41	98.25
S19	8.66	100.05	99.84	99.63	99.43	99.23	99.00	98.79	98.61	98.44	98.20
S20	8.67	100.03	99.81	99.60	99.38	99.15	98.90	98.73	98.55	98.39	98.23
S21	9.38	100.03	99.82	99.62	99.42	99.22	99.02	98.86	98.64	98.46	98.22
S22	6.97	100.02	99.81	99.60	99.40	99.20	99.00	98.82	98.60	98.39	98.14
S23	8.14	100.06	99.86	99.65	99.45	99.23	99.03	98.86	98.64	98.47	98.32
S24	9.23	100.02	99.81	99.61	99.41	99.16	98.96	98.74	98.57	98.39	98.14
S25	7.18	98.67	98.47	98.27	98.07	97.87	97.66	97.44	97.27	97.11	96.96
Average	7.79	99.98	99.78	99.57	99.35	99.13	98.91	98.72	98.53	98.35	98.13
Median	8.14	100.04	99.83	99.62	99.40	99.18	98.96	98.77	98.59	98.39	98.19
Std.dev	1.23	0.27	0.27	0.27	0.26	0.26	0.26	0.27	0.26	0.26	0.25
Max	9.53	100.06	99.86	99.66	99.45	99.25	99.03	98.86	98.66	98.49	98.32
Min	5.11	98.67	98.47	98.27	98.07	97.87	97.66	97.44	97.27	97.11	96.96

3.2.2 Data Set 1, 55°C,60mA (Forward Voltage)

Sample Number	Forward Voltage(V)										
	0hr (Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	2.54	2.52	2.54	2.55	2.56	2.56	2.54	2.55	2.55	2.54	2.56
S02	2.58	2.59	2.60	2.60	2.58	2.58	2.59	2.61	2.58	2.58	2.60
S03	2.57	2.59	2.59	2.56	2.57	2.60	2.58	2.57	2.59	2.58	2.59
S04	2.53	2.55	2.55	2.54	2.55	2.53	2.55	2.55	2.55	2.55	2.55
S05	2.55	2.57	2.58	2.57	2.57	2.56	2.55	2.57	2.57	2.57	2.55
S06	2.53	2.52	2.51	2.55	2.53	2.53	2.54	2.54	2.54	2.53	2.55
S07	2.61	2.63	2.63	2.63	2.62	2.61	2.64	2.61	2.63	2.63	2.64
S08	2.54	2.56	2.54	2.55	2.54	2.55	2.56	2.55	2.56	2.56	2.53
S09	2.61	2.63	2.63	2.63	2.60	2.63	2.62	2.61	2.63	2.60	2.62
S10	2.55	2.56	2.56	2.56	2.55	2.57	2.57	2.55	2.56	2.56	2.56
S11	2.57	2.58	2.58	2.56	2.58	2.56	2.57	2.57	2.58	2.58	2.58
S12	2.56	2.57	2.56	2.56	2.57	2.58	2.54	2.58	2.58	2.55	2.58
S13	2.57	2.57	2.59	2.59	2.60	2.58	2.58	2.57	2.59	2.59	2.56
S14	2.58	2.57	2.60	2.60	2.60	2.60	2.58	2.58	2.61	2.60	2.60
S15	2.58	2.59	2.58	2.57	2.58	2.60	2.58	2.58	2.58	2.60	2.57
S16	2.61	2.60	2.63	2.61	2.63	2.60	2.62	2.61	2.60	2.60	2.61
S17	2.59	2.59	2.60	2.61	2.60	2.61	2.61	2.60	2.61	2.59	2.58
S18	2.58	2.60	2.59	2.60	2.58	2.59	2.60	2.59	2.59	2.60	2.59
S19	2.61	2.62	2.62	2.61	2.61	2.63	2.61	2.61	2.62	2.61	2.63
S20	2.55	2.56	2.56	2.56	2.57	2.56	2.56	2.56	2.57	2.56	2.56
S21	2.60	2.61	2.62	2.60	2.62	2.60	2.60	2.63	2.60	2.61	2.62
S22	2.53	2.53	2.55	2.53	2.53	2.54	2.55	2.55	2.53	2.52	2.53
S23	2.54	2.55	2.53	2.55	2.56	2.56	2.52	2.54	2.54	2.55	2.54
S24	2.60	2.60	2.62	2.60	2.61	2.60	2.63	2.62	2.62	2.62	2.62
S25	2.52	2.52	2.50	2.52	2.52	2.51	2.50	2.52	2.52	2.53	2.52
Average	2.57	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
Median	2.57	2.57	2.58	2.57	2.58	2.58	2.58	2.57	2.58	2.58	2.58
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	2.61	2.63	2.63	2.63	2.63	2.63	2.64	2.63	2.63	2.63	2.64
Min	2.52	2.52	2.50	2.52	2.52	2.51	2.50	2.52	2.52	2.52	2.52

3.2.3 Data Set 1, 55°C,60mA (Chromaticity Shift)

Sample Number	Chromaticity Shift ($\Delta u'v'$)											
	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	0.2521	0.5159	0.0002	0.0002	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0017
S02	0.2521	0.5158	0.0001	0.0002	0.0004	0.0006	0.0007	0.0006	0.0008	0.0010	0.0012	0.0014
S03	0.2518	0.5156	0.0002	0.0001	0.0003	0.0005	0.0007	0.0008	0.0011	0.0013	0.0016	0.0017
S04	0.2520	0.5157	0.0002	0.0001	0.0003	0.0005	0.0006	0.0011	0.0014	0.0016	0.0019	0.0021
S05	0.2517	0.5158	0.0001	0.0002	0.0004	0.0007	0.0008	0.0008	0.0011	0.0013	0.0016	0.0018
S06	0.2521	0.5160	0.0002	0.0002	0.0003	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0016
S07	0.2523	0.5162	0.0002	0.0002	0.0003	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018
S08	0.2521	0.5158	0.0002	0.0002	0.0003	0.0005	0.0007	0.0008	0.0010	0.0013	0.0015	0.0016
S09	0.2526	0.5162	0.0002	0.0001	0.0003	0.0005	0.0007	0.0011	0.0013	0.0015	0.0017	0.0020
S10	0.2516	0.5159	0.0002	0.0002	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017
S11	0.2505	0.5184	0.0001	0.0001	0.0003	0.0005	0.0006	0.0007	0.0009	0.0011	0.0014	0.0016
S12	0.2503	0.5181	0.0001	0.0002	0.0004	0.0007	0.0008	0.0009	0.0011	0.0013	0.0016	0.0017
S13	0.2501	0.5184	0.0002	0.0002	0.0004	0.0006	0.0008	0.0008	0.0010	0.0012	0.0014	0.0016
S14	0.2507	0.5186	0.0002	0.0001	0.0003	0.0006	0.0007	0.0005	0.0008	0.0010	0.0012	0.0013
S15	0.2510	0.5186	0.0002	0.0002	0.0004	0.0006	0.0007	0.0007	0.0009	0.0012	0.0014	0.0016
S16	0.2504	0.5183	0.0002	0.0001	0.0002	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017
S17	0.2504	0.5181	0.0002	0.0002	0.0003	0.0005	0.0006	0.0009	0.0012	0.0014	0.0016	0.0019
S18	0.2506	0.5184	0.0002	0.0002	0.0003	0.0006	0.0007	0.0009	0.0012	0.0014	0.0016	0.0019
S19	0.2504	0.5182	0.0002	0.0002	0.0003	0.0005	0.0006	0.0010	0.0012	0.0014	0.0017	0.0018
S20	0.2500	0.5183	0.0001	0.0001	0.0002	0.0004	0.0005	0.0008	0.0010	0.0012	0.0015	0.0017
S21	0.2519	0.5172	0.0002	0.0002	0.0004	0.0007	0.0008	0.0007	0.0009	0.0011	0.0014	0.0016
S22	0.2525	0.5175	0.0002	0.0001	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013	0.0015	0.0017
S23	0.2519	0.5169	0.0002	0.0001	0.0002	0.0004	0.0006	0.0010	0.0012	0.0014	0.0017	0.0019
S24	0.2522	0.5174	0.0001	0.0001	0.0002	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0014
S25	0.2514	0.5171	0.0001	0.0001	0.0003	0.0006	0.0007	0.0008	0.0010	0.0013	0.0015	0.0016
Average	0.2514	0.5171	0.0002	0.0002	0.0003	0.0005	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017
Median	0.2517	0.5172	0.0002	0.0002	0.0003	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017
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	0.2526	0.5186	0.0002	0.0002	0.0004	0.0007	0.0008	0.0011	0.0014	0.0016	0.0019	0.0021
Min	0.2500	0.5156	0.0001	0.0001	0.0002	0.0004	0.0005	0.0005	0.0008	0.0010	0.0012	0.0013

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
S01	7.54	100.03	99.81	99.60	99.38	99.18	98.98	98.81	98.64	98.47	98.22
S02	6.41	100.00	99.79	99.59	99.37	99.11	98.86	98.69	98.48	98.26	98.10
S03	6.90	100.05	99.85	99.65	99.40	99.20	98.98	98.76	98.58	98.37	98.12
S04	9.24	100.01	99.82	99.60	99.35	99.10	98.87	98.70	98.53	98.36	98.20
S05	7.74	100.03	99.83	99.62	99.39	99.14	98.94	98.72	98.51	98.34	98.09
S06	9.55	100.03	99.83	99.64	99.41	99.19	98.99	98.82	98.65	98.48	98.23
S07	8.49	100.00	99.81	99.61	99.39	99.13	98.93	98.76	98.59	98.37	98.21
S08	8.35	100.04	99.83	99.62	99.37	99.17	98.97	98.79	98.57	98.40	98.16
S09	7.18	100.04	99.85	99.65	99.40	99.20	99.00	98.78	98.56	98.39	98.14
S10	7.27	100.03	99.83	99.63	99.43	99.24	98.98	98.80	98.64	98.42	98.18
S11	9.99	100.03	99.83	99.62	99.40	99.17	98.95	98.73	98.57	98.40	98.15
S12	5.39	100.02	99.81	99.59	99.37	99.15	98.92	98.75	98.58	98.36	98.12
S13	7.63	100.03	99.84	99.64	99.42	99.20	99.00	98.82	98.64	98.43	98.18
S14	8.71	100.00	99.81	99.61	99.41	99.21	99.01	98.84	98.62	98.45	98.29
S15	9.18	100.02	99.80	99.59	99.37	99.14	98.94	98.77	98.55	98.33	98.09
S16	8.23	100.04	99.83	99.62	99.39	99.14	98.89	98.67	98.49	98.27	98.03
S17	5.65	100.03	99.84	99.64	99.39	99.16	98.91	98.74	98.52	98.36	98.20
S18	5.57	100.01	99.80	99.60	99.40	99.15	98.92	98.75	98.58	98.40	98.24
S19	8.57	100.04	99.83	99.62	99.42	99.22	98.99	98.78	98.60	98.43	98.19
S20	9.13	100.02	99.80	99.59	99.37	99.14	98.89	98.72	98.54	98.38	98.22
S21	9.84	100.02	99.81	99.61	99.41	99.21	99.01	98.85	98.63	98.45	98.21
S22	7.43	100.01	99.80	99.59	99.39	99.19	98.99	98.81	98.59	98.38	98.13
S23	8.33	100.05	99.85	99.64	99.44	99.22	99.02	98.85	98.63	98.46	98.31
S24	9.69	100.01	99.80	99.60	99.40	99.15	98.95	98.73	98.56	98.38	98.13
S25	7.64	98.66	98.46	98.26	98.06	97.86	97.65	97.43	97.26	97.10	96.95
Average	7.99	99.97	99.77	99.56	99.34	99.12	98.90	98.71	98.52	98.34	98.12
Median	8.23	100.03	99.82	99.61	99.39	99.17	98.95	98.76	98.58	98.38	98.18
Std.dev	1.30	0.27	0.27	0.27	0.26	0.26	0.26	0.27	0.26	0.26	0.25
Max	9.99	100.05	99.85	99.65	99.44	99.24	99.02	98.85	98.65	98.48	98.31
Min	5.39	98.66	98.46	98.26	98.06	97.86	97.65	97.43	97.26	97.10	96.95

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
S01	2.61	2.59	2.61	2.62	2.63	2.63	2.61	2.62	2.62	2.61	2.63
S02	2.65	2.66	2.67	2.67	2.65	2.65	2.66	2.68	2.65	2.65	2.67
S03	2.64	2.66	2.66	2.63	2.64	2.67	2.65	2.64	2.66	2.65	2.66
S04	2.60	2.62	2.62	2.61	2.62	2.60	2.62	2.62	2.62	2.62	2.62
S05	2.62	2.64	2.65	2.64	2.64	2.63	2.62	2.64	2.64	2.64	2.62
S06	2.60	2.59	2.58	2.62	2.60	2.60	2.61	2.61	2.61	2.60	2.62
S07	2.68	2.70	2.70	2.70	2.69	2.68	2.71	2.68	2.70	2.70	2.71
S08	2.61	2.63	2.61	2.62	2.61	2.62	2.63	2.62	2.63	2.63	2.60
S09	2.68	2.70	2.70	2.70	2.67	2.70	2.69	2.68	2.70	2.67	2.69
S10	2.62	2.63	2.63	2.63	2.62	2.64	2.64	2.62	2.63	2.63	2.63
S11	2.64	2.65	2.65	2.63	2.65	2.63	2.64	2.64	2.65	2.65	2.65
S12	2.63	2.64	2.63	2.63	2.64	2.65	2.61	2.65	2.65	2.62	2.65
S13	2.64	2.64	2.66	2.66	2.67	2.65	2.65	2.64	2.66	2.66	2.63
S14	2.65	2.64	2.67	2.67	2.67	2.67	2.65	2.65	2.68	2.67	2.67
S15	2.65	2.66	2.65	2.64	2.65	2.67	2.65	2.65	2.65	2.67	2.64
S16	2.68	2.67	2.70	2.68	2.70	2.67	2.69	2.68	2.67	2.67	2.68
S17	2.66	2.66	2.67	2.68	2.67	2.68	2.68	2.67	2.68	2.66	2.65
S18	2.65	2.67	2.66	2.67	2.65	2.66	2.67	2.66	2.66	2.67	2.66
S19	2.68	2.69	2.69	2.68	2.68	2.70	2.68	2.68	2.69	2.68	2.70
S20	2.62	2.63	2.63	2.63	2.64	2.63	2.63	2.63	2.64	2.63	2.63
S21	2.67	2.68	2.69	2.67	2.69	2.67	2.67	2.70	2.67	2.68	2.69
S22	2.60	2.60	2.62	2.60	2.60	2.61	2.62	2.62	2.60	2.59	2.60
S23	2.61	2.62	2.60	2.62	2.63	2.63	2.59	2.61	2.61	2.62	2.61
S24	2.67	2.67	2.69	2.67	2.68	2.67	2.70	2.69	2.69	2.69	2.69
S25	2.59	2.59	2.57	2.59	2.59	2.58	2.57	2.59	2.59	2.60	2.59
Average	2.64	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
Median	2.64	2.64	2.65	2.64	2.65	2.65	2.65	2.64	2.65	2.65	2.65
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	2.68	2.70	2.70	2.70	2.70	2.70	2.71	2.70	2.70	2.70	2.71
Min	2.59	2.59	2.57	2.59	2.59	2.58	2.57	2.59	2.59	2.59	2.59

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

Sample Number	Chromaticity Shift ($\Delta u'v'$)											
	0hr (Initial)		1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
S01	0.2523	0.5156	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0018
S02	0.2523	0.5155	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0020
S03	0.2520	0.5153	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.0018
S04	0.2522	0.5154	0.0001	0.0003	0.0005	0.0007	0.0009	0.0013	0.0015	0.0017	0.0019	0.0022
S05	0.2519	0.5155	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
S06	0.2523	0.5157	0.0002	0.0004	0.0006	0.0008	0.0009	0.0008	0.0010	0.0012	0.0014	0.0016
S07	0.2525	0.5159	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S08	0.2523	0.5155	0.0001	0.0003	0.0005	0.0007	0.0008	0.0013	0.0016	0.0018	0.0021	0.0023
S09	0.2528	0.5159	0.0002	0.0004	0.0005	0.0008	0.0009	0.0011	0.0014	0.0016	0.0018	0.0021
S10	0.2518	0.5156	0.0002	0.0004	0.0005	0.0007	0.0008	0.0012	0.0014	0.0016	0.0019	0.0020
S11	0.2507	0.5181	0.0001	0.0003	0.0004	0.0006	0.0007	0.0010	0.0012	0.0014	0.0017	0.0019
S12	0.2505	0.5178	0.0002	0.0004	0.0006	0.0009	0.0010	0.0009	0.0011	0.0013	0.0016	0.0018
S13	0.2503	0.5181	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019
S14	0.2509	0.5183	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0014	0.0016	0.0019	0.0021
S15	0.2512	0.5183	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011	0.0013	0.0015	0.0016
S16	0.2506	0.5180	0.0002	0.0003	0.0005	0.0008	0.0009	0.0010	0.0012	0.0015	0.0017	0.0018
S17	0.2506	0.5178	0.0002	0.0004	0.0006	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0018
S18	0.2508	0.5181	0.0001	0.0003	0.0005	0.0008	0.0009	0.0007	0.0010	0.0012	0.0014	0.0015
S19	0.2506	0.5179	0.0002	0.0004	0.0006	0.0008	0.0009	0.0009	0.0011	0.0014	0.0016	0.0018
S20	0.2502	0.5180	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015	0.0017	0.0019
S21	0.2521	0.5169	0.0002	0.0004	0.0005	0.0007	0.0008	0.0011	0.0014	0.0016	0.0018	0.0021
S22	0.2527	0.5172	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
S23	0.2521	0.5166	0.0001	0.0003	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013	0.0016	0.0018
S24	0.2524	0.5171	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0019
S25	0.2516	0.5168	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0019
Average	0.2516	0.5168	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019
Median	0.2519	0.5169	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	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	0.2528	0.5183	0.0002	0.0004	0.0006	0.0009	0.0010	0.0013	0.0016	0.0018	0.0021	0.0023
Min	0.2502	0.5153	0.0001	0.0003	0.0004	0.0006	0.0007	0.0007	0.0010	0.0012	0.0014	0.0015

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
S01	7.57	100.06	99.84	99.63	99.41	99.21	99.01	98.84	98.67	98.50	98.25
S02	6.44	100.03	99.82	99.62	99.40	99.14	98.89	98.72	98.51	98.29	98.13
S03	6.93	100.08	99.88	99.68	99.43	99.23	99.01	98.79	98.61	98.40	98.15
S04	9.27	100.04	99.85	99.63	99.38	99.13	98.90	98.73	98.56	98.39	98.23
S05	6.77	100.06	99.86	99.65	99.42	99.17	98.97	98.75	98.54	98.37	98.12
S06	9.58	100.06	99.86	99.67	99.44	99.22	99.02	98.85	98.68	98.51	98.26
S07	7.52	100.03	99.84	99.64	99.42	99.16	98.96	98.79	98.62	98.40	98.24
S08	8.38	100.07	99.86	99.65	99.40	99.20	99.00	98.82	98.60	98.43	98.19
S09	7.21	100.07	99.88	99.68	99.43	99.23	99.03	98.81	98.59	98.42	98.17
S10	7.30	100.06	99.86	99.66	99.46	99.27	99.01	98.83	98.67	98.45	98.21
S11	7.02	100.06	99.86	99.65	99.43	99.20	98.98	98.76	98.60	98.43	98.18
S12	5.42	100.05	99.84	99.62	99.40	99.18	98.95	98.78	98.61	98.39	98.15
S13	7.66	100.06	99.87	99.67	99.45	99.23	99.03	98.85	98.67	98.46	98.21
S14	8.74	100.03	99.84	99.64	99.44	99.24	99.04	98.87	98.65	98.48	98.32
S15	9.21	100.05	99.83	99.62	99.40	99.17	98.97	98.80	98.58	98.36	98.12
S16	8.26	100.07	99.86	99.65	99.42	99.17	98.92	98.70	98.52	98.30	98.06
S17	5.68	100.06	99.87	99.67	99.42	99.19	98.94	98.77	98.55	98.39	98.23
S18	7.60	100.04	99.83	99.63	99.43	99.18	98.95	98.78	98.61	98.43	98.27
S19	8.60	100.07	99.86	99.65	99.45	99.25	99.02	98.81	98.63	98.46	98.22
S20	8.16	100.05	99.83	99.62	99.40	99.17	98.92	98.75	98.57	98.41	98.25
S21	7.87	100.05	99.84	99.64	99.44	99.24	99.04	98.88	98.66	98.48	98.24
S22	7.46	100.04	99.83	99.62	99.42	99.22	99.02	98.84	98.62	98.41	98.16
S23	7.36	100.08	99.88	99.67	99.47	99.25	99.05	98.88	98.66	98.49	98.34
S24	9.72	100.04	99.83	99.63	99.43	99.18	98.98	98.76	98.59	98.41	98.16
S25	7.67	98.69	98.49	98.29	98.09	97.89	97.68	97.46	97.29	97.13	96.98
Average	7.74	100.00	99.80	99.59	99.37	99.15	98.93	98.74	98.55	98.37	98.15
Median	7.60	100.06	99.85	99.64	99.42	99.20	98.98	98.79	98.61	98.41	98.21
Std.dev	1.07	0.27	0.27	0.27	0.26	0.26	0.26	0.27	0.26	0.26	0.25
Max	9.72	100.08	99.88	99.68	99.47	99.27	99.05	98.88	98.68	98.51	98.34
Min	5.42	98.69	98.49	98.29	98.09	97.89	97.68	97.46	97.29	97.13	96.98

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
S01	2.51	2.49	2.51	2.52	2.53	2.53	2.51	2.52	2.52	2.51	2.53
S02	2.55	2.56	2.57	2.57	2.55	2.55	2.56	2.58	2.55	2.55	2.57
S03	2.54	2.56	2.56	2.53	2.54	2.57	2.55	2.54	2.56	2.55	2.56
S04	2.50	2.52	2.52	2.51	2.52	2.50	2.52	2.52	2.52	2.52	2.52
S05	2.52	2.54	2.55	2.54	2.54	2.53	2.52	2.54	2.54	2.54	2.52
S06	2.50	2.49	2.48	2.52	2.50	2.50	2.51	2.51	2.51	2.50	2.52
S07	2.58	2.60	2.60	2.60	2.59	2.58	2.61	2.58	2.60	2.60	2.61
S08	2.51	2.53	2.51	2.52	2.51	2.52	2.53	2.52	2.53	2.53	2.50
S09	2.58	2.60	2.60	2.60	2.57	2.60	2.59	2.58	2.60	2.57	2.59
S10	2.52	2.53	2.53	2.53	2.52	2.54	2.54	2.52	2.53	2.53	2.53
S11	2.54	2.55	2.55	2.53	2.55	2.53	2.54	2.54	2.55	2.55	2.55
S12	2.53	2.54	2.53	2.53	2.54	2.55	2.51	2.55	2.55	2.52	2.55
S13	2.54	2.54	2.56	2.56	2.57	2.55	2.55	2.54	2.56	2.56	2.53
S14	2.55	2.54	2.57	2.57	2.57	2.57	2.55	2.55	2.58	2.57	2.57
S15	2.55	2.56	2.55	2.54	2.55	2.57	2.55	2.55	2.55	2.57	2.54
S16	2.58	2.57	2.60	2.58	2.60	2.57	2.59	2.58	2.57	2.57	2.58
S17	2.56	2.56	2.57	2.58	2.57	2.58	2.58	2.57	2.58	2.56	2.55
S18	2.55	2.57	2.56	2.57	2.55	2.56	2.57	2.56	2.56	2.57	2.56
S19	2.58	2.59	2.59	2.58	2.58	2.60	2.58	2.58	2.59	2.58	2.60
S20	2.52	2.53	2.53	2.53	2.54	2.53	2.53	2.53	2.54	2.53	2.53
S21	2.57	2.58	2.59	2.57	2.59	2.57	2.57	2.60	2.57	2.58	2.59
S22	2.50	2.50	2.52	2.50	2.50	2.51	2.52	2.52	2.50	2.49	2.50
S23	2.51	2.52	2.50	2.52	2.53	2.53	2.49	2.51	2.51	2.52	2.51
S24	2.57	2.57	2.59	2.57	2.58	2.57	2.60	2.59	2.59	2.59	2.59
S25	2.49	2.49	2.47	2.49	2.49	2.48	2.47	2.49	2.49	2.50	2.49
Average	2.54	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Median	2.54	2.54	2.55	2.54	2.55	2.55	2.55	2.54	2.55	2.55	2.55
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	2.58	2.60	2.60	2.60	2.60	2.60	2.61	2.60	2.60	2.60	2.61
Min	2.49	2.49	2.47	2.49	2.49	2.48	2.47	2.49	2.49	2.49	2.49

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
S01	0.2508	0.5153	0.0001	0.0003	0.0005	0.0007	0.0009	0.0010	0.0013	0.0015	0.0018	0.0016
S02	0.2508	0.5152	0.0001	0.0003	0.0005	0.0007	0.0008	0.0013	0.0016	0.0018	0.0021	0.0019
S03	0.2505	0.5150	0.0002	0.0004	0.0006	0.0009	0.0010	0.0010	0.0013	0.0015	0.0018	0.0023
S04	0.2507	0.5151	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0017	0.0021
S05	0.2504	0.5152	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0020
S06	0.2508	0.5154	0.0002	0.0004	0.0005	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
S07	0.2510	0.5156	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0018
S08	0.2508	0.5152	0.0002	0.0004	0.0006	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0019
S09	0.2513	0.5156	0.0001	0.0003	0.0005	0.0008	0.0009	0.0007	0.0010	0.0012	0.0014	0.0021
S10	0.2503	0.5153	0.0002	0.0004	0.0006	0.0008	0.0009	0.0009	0.0011	0.0014	0.0016	0.0016
S11	0.2492	0.5178	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015	0.0017	0.0018
S12	0.2490	0.5175	0.0002	0.0004	0.0005	0.0007	0.0008	0.0011	0.0014	0.0016	0.0018	0.0020
S13	0.2488	0.5178	0.0001	0.0003	0.0004	0.0006	0.0007	0.0010	0.0012	0.0014	0.0017	0.0018
S14	0.2494	0.5180	0.0002	0.0004	0.0006	0.0009	0.0010	0.0009	0.0011	0.0013	0.0016	0.0022
S15	0.2497	0.5180	0.0002	0.0003	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019
S16	0.2491	0.5177	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0014	0.0016	0.0019	0.0019
S17	0.2491	0.5175	0.0001	0.0003	0.0004	0.0006	0.0008	0.0009	0.0011	0.0013	0.0015	0.0021
S18	0.2493	0.5178	0.0002	0.0003	0.0005	0.0008	0.0009	0.0010	0.0012	0.0015	0.0017	0.0019
S19	0.2491	0.5176	0.0001	0.0003	0.0005	0.0007	0.0008	0.0009	0.0011	0.0013	0.0016	0.0018
S20	0.2487	0.5177	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0018
S21	0.2506	0.5166	0.0002	0.0004	0.0006	0.0008	0.0010	0.0010	0.0012	0.0014	0.0016	0.0015
S22	0.2512	0.5169	0.0001	0.0003	0.0005	0.0008	0.0009	0.0007	0.0010	0.0012	0.0014	0.0018
S23	0.2506	0.5163	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0013	0.0015	0.0018	0.0018
S24	0.2509	0.5168	0.0002	0.0004	0.0006	0.0008	0.0009	0.0008	0.0010	0.0012	0.0014	0.0019
S25	0.2501	0.5165	0.0002	0.0004	0.0006	0.0009	0.0010	0.0011	0.0013	0.0015	0.0018	0.0019
Average	0.2501	0.5165	0.0002	0.0004	0.0005	0.0008	0.0009	0.0010	0.0012	0.0014	0.0017	0.0019
Median	0.2504	0.5166	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	0.2513	0.5180	0.0002	0.0004	0.0006	0.0009	0.0010	0.0013	0.0016	0.0018	0.0021	0.0023
Min	0.2487	0.5150	0.0001	0.0003	0.0004	0.0006	0.0007	0.0007	0.0010	0.0012	0.0014	0.0015

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	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

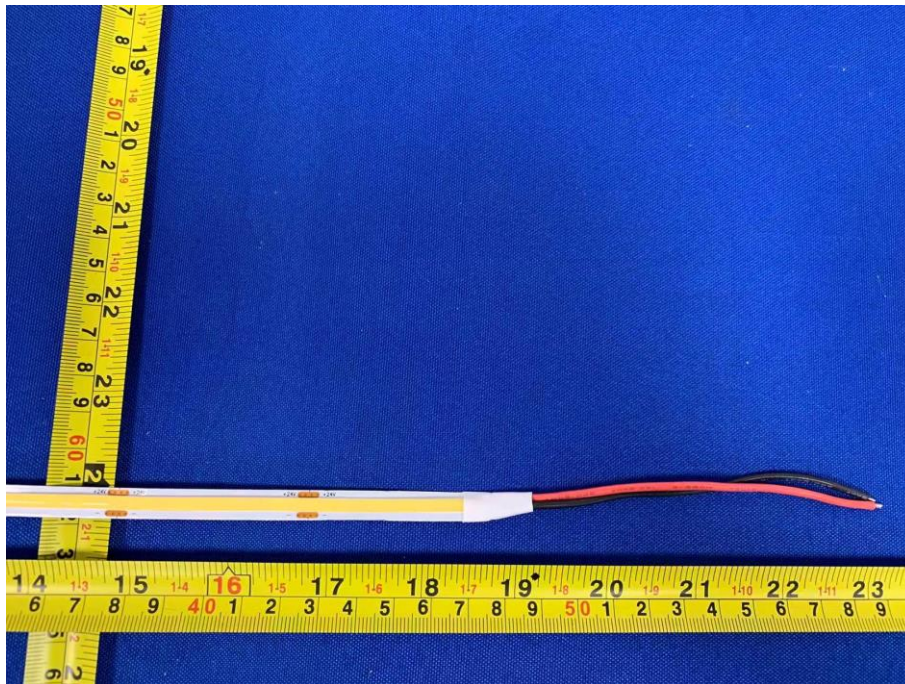


Fig.1

-- End of Report --

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