Test Report Of ANSI/IES LM-80-21

Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources

Report Number.....	:	N01A26110077L00401
Client.....	:	EVERSTAR OPTOELECTRONICS PVT.LTD
Address.....	:	809/810, 8th FLOOR, TOWER B, LODHA SUPREMUS, KOLSHET ROAD, THANE WEST400607
Test Model.....	:	2835WW020A2V12T1-C4R80
Brand Name.....	:	N/A
Testing Laboratory...	:	Guangdong GTG Testing Technology Co., Ltd.
Address.....	:	1-2/F., Building A, and 1/F., Building B, No.11, & Room 102, Unit 1, and Room 101 Unit 2, Building 1, No.9, Zongbu 2nd Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China
Testing Location.....	:	As above
Date of receipt.....	:	2023-01-27
Date of test	:	2023-01-30 to 2026-03-10
Date of report.....	:	2026-11-09

Tested by:	Checked by:	Approved by:
Allen Chen	Will Yang	Meiko Wang
Allen Chen/ Test Engineer	Will Yang/ Project Engineer	Meiko Wang/ Approver

Guangdong GTG Testing Technology Co., Ltd.

Note 1: The test data was only valid for the test sample(s).This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Guangdong GTG Testing Technology Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP,NIST, or any agency of the Federal Government.
Note 2: This report does not imply product certification, approval, or endorsement by NVLAP, NIST,or any agency of the Federal Government.

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1.General Information

1.1 Description of LED Light Sources

Sample Size:

75Pcs samples were received on 2023-01-27.The samples were numbered from S1 to S75.
(Sample No. A26030704 001 to A26030704 075 will be replaced with S1 to S75.)

Manufacture:	EVERSTAR OPTOELECTRONICS PVT.LTD
Part Number:	2835WW020A2V12T1-C4R80
Part Type:	LED package
Drive Level:	DC150mA
Tested CCT:	2200K
Nominal CCT:	≥2200
Power:	2.0W
CRI:	80

Note: Full test data were based on original report number N01A26030704L00101. This report only updates client, manufacture and brand 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)

This report covers the following models:

Model type	Model name	CCT (K)	Number of dies	Current density per die (mA/mm^2)	Current (mA)	Power density per die (W/mm^2)	Power (W)	Die Spacing (mm)	Current of die (mA)
2835	(Test Model) 2835WW020A2 V12T1-C4R80	2200	4	2528.3	150	0.204	2	0.1	150
	2835WW020A2 V12T1-C4R80	≥2200	4	2528.3	150	0.204	2	0.1	150
	2835**015**V12 **-C4***/-*	≥2200	4	2022.663844	120	0.153	1.5	0.1	120
	2835**012**V12 **-C4***/-*	≥2200	4	1685.553203	100	0.122	1.2	0.1	100
	2835**010**V12 **-C4***/-*	≥2200	4	1264.164903	75	0.102	1	0.1	75
	2835**015**V09 **-C3***/-*	≥2200	3	2528.329805	150	0.153	1.5	0.11	150
	2835**013**V09 **-C3***/-*	≥2200	3	2191.219164	130	0.133	1.3	0.11	130
	2835**012**V09 **-C3***/-*	≥2200	3	2022.663844	120	0.122	1.2	0.11	120

Model type	Model name	CCT (K)	Number of dies	Current density per die (mA/mm^2)	Current (mA)	Power density per die (W/mm^2)	Power (W)	Die Spacing (mm)	Current of die (mA)
	2835**010**V09**-C3***/-*	≥2200	3	1685.553203	100	0.102	1	0.11	100
	2835**006**V09**-C3***/-*	≥2200	3	1011.331922	60	0.061	0.6	0.11	60
	2835**005**V09**-C3***/-*	≥2200	3	842.7766017	50	0.051	0.5	0.11	50
	2835**010**V06**-C2***/-*	≥2200	2	2528.329805	150	0.102	1	0.12	150
	2835**005**V06**-C2***/-*	≥2200	2	1179.887242	70	0.051	0.5	0.12	70
	2835**004**V06**-C2***/-*	≥2200	2	1011.331922	60	0.041	0.4	0.12	60
	2835**010**V03**-B3***/-*	≥2200	3	1685.553203	300	0.102	1	0.11	100
	2835**005**V03**-B3***/-*	≥2200	3	842.7766017	150	0.051	0.5	0.11	50
	2835**010**V03**-B2***/-*	≥2200	3	2528.329805	300	0.102	1	0.11	150
	2835**005**V03**-B2***/-*	≥2200	3	1264.164903	150	0.051	0.5	0.11	75
	2835**005**V03**-00***/-*	≥2200	1	2528.329805	150	0.051	0.5	/	150
	2835**002**V03**-00***/-*	≥2200	1	1011.331922	60	0.020	0.2	/	60

Overlay mode description: 2835 XX XXX XX XXX XX - XX X XX /- X
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

X is for description
① Product Specification
② Luminous Color / CCT: CCT≥2200K, e.g. WW—Warm White, NW—Natural White, PW—Pure White
③ Power: 001-0.1W, 002-0.2W, 003-0.3W, 005-0.5W, 006-0.6W, 010-1W
④ Product Grade: e.g. B1-B8
⑤ Voltage Range: No limit
⑥ Bracket Type: e.g. TA, T7 Round Cup, T1, T9, T8 Square Cup, etc.
⑦ Series-parallel Mode: No limit
⑧ Process Code: L—Centrifugal, R—Non-centrifugal
⑨ CRI: No limit
⑩ Special Requirements: Generally not indicated

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

1.2 Standards Used

- ANSI/IES LM-80-21: Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources
- ANSI/IES TM-21-21: Projecting Long-Term Luminous, Photon, and Radiant Flux Maintenance of LED Light Sources(This standard was not accredited by NVLAP)
- ENERGY STAR® Requirements for the use of LM-80 Data(This standard was not accredited by NVLAP)

1.3 Test equipment list

Test Equipment	Serial No	Model No	Calibration due date
Integrating Sphere System	01-L-187	0.5m	2027/03/04
Standard Light Source	01-L-188	D062	2027/03/04
High Accuracy Array Spectroradio Meter	01-L-169	HAAS-3000	2027/03/04
Digital Power Meter	01-L-166	PF310	2027/03/04
Precision digital stabilized DC power supply	01-L-167	WY305	2027/03/04
Temperature Tester	01-L-192	UIS-D8036	2027/03/05

Statement of Traceability: Guangdong GTG Testing Technology Co., Ltd.attested that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit(SI).

1.4 Drive Level

Samples are driven with a constant direct current (DC) during maintenance test, photometric and electrical measurement. The current value was regulated to within ±3% of the specified value of the manufacturer during maintenance test, and was within ±0.5% during photometric and electrical measurement test.

1.5 Ambient Conditions for Maintenance Test

For lumen maintenance test, samples within one data set, were installed on cooling boards in thermal chambers with minimalambient airflow.The case temperature and Air Temperature was monitoredby thermocouples which one was soldered to the coldest DUTs' case (TMP_{LED}) location, while the other is mounted at a distance of 5 mm above the TMP location. During life testing, TMP_{LED} of the coldest LEDs were maintained at a temperature that was greater than or equal to 2°C below the corresponding nominal case temperature. Surrounding air was maintained at a temperature that was greater than or equal to 5°C below the corresponding nominal case temperature. Thermocouples were shielded from direct DUT optical radiation and comply with ASTM E230 Table 1 "Special Limits". Samples were connected to DC power supply in series circuits with a constant current.The forward current was regulated to within ±3% of the specified value of the manufacturer. The relative humidity within chamber was kept less than 65% during test. For photometry measurement, the Air Temperature during test was set to 25°C ± 2°C, RH＜65%.

1.6 Photometric Measurement Method

Integrating sphere and spectroradiometer is used to measure luminous flux and chromaticity coordinate u'v'.2π measurement was used and sample was drived by DC power supply. The forward current was regulated to within ±0.5% of the nominal value.The test system was calibrated by halogen reference lamp. The Air Temperature during test was set to 25°C ± 2°C, RH <65%. The temperature measurement point was located in the sphere and the temperature was detected by a temperature probe. The uncertainty of the light output(luminous flux) measurements is U=2.1%(K=2),at the 95% confidence level.The uncertainty of the correlated color temperature measurements is U=18K(K=2),at the 95% confidence level.The uncertainty of the temperature is U=0.5°C(K=2),at the 95% confidence level.

1.7 Sample Set

Data Set 1:55°C,150mA	
Part number：	2835WW020A2V12T1-C4R80
Number of Units:	25
Case Temperature(T_S):	＞53°C
Ambient Temperature(T_A):	＞50°C
Life Test Drive Current:	150mA
Measurement Current:	150mA

Data Set 2:85°C,150mA	
Part number：	2835WW020A2V12T1-C4R80
Number of Units:	25
Case Temperature(T_S):	＞83°C
Ambient Temperature(T_A):	＞80°C
Life Test Drive Current:	150mA
Measurement Current:	150mA

Data Set 3:105°C,150mA	
Part number：	2835WW020A2V12T1-C4R80
Number of Units:	25
Case Temperature(T_S):	＞103°C
Ambient Temperature(T_A):	＞100°C
Life Test Drive Current:	150mA
Measurement Current:	150mA

2. Summary of Test Result

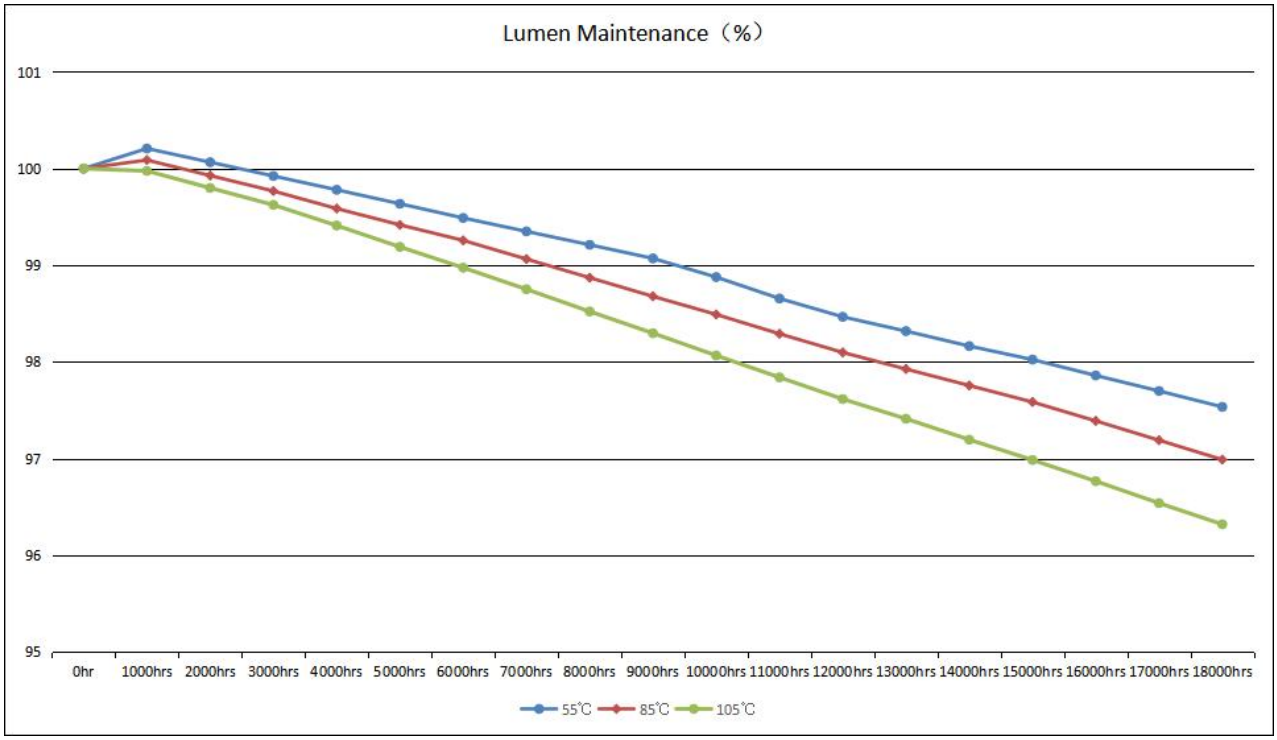
Data Set:	Nominal Case & Ambient Temp.	Drive Current	Sample Size	Failures Observed:	Test Interval	Test Duration	Reported TM-21 L_{70} Lifetime	Reported TM-21 L_{80} Lifetime	Reported TM-21 L_{90} Lifetime
1	55°C	150mA	25	0	1000hrs	18000hrs	>108000hrs	>108000hrs	58200hrs
2	85°C	150mA	25	0	1000hrs	18000hrs	>108000hrs	>108000hrs	55400hrs
3	105°C	150mA	25	0	1000hrs	18000hrs	>108000hrs	>108000hrs	48300hrs

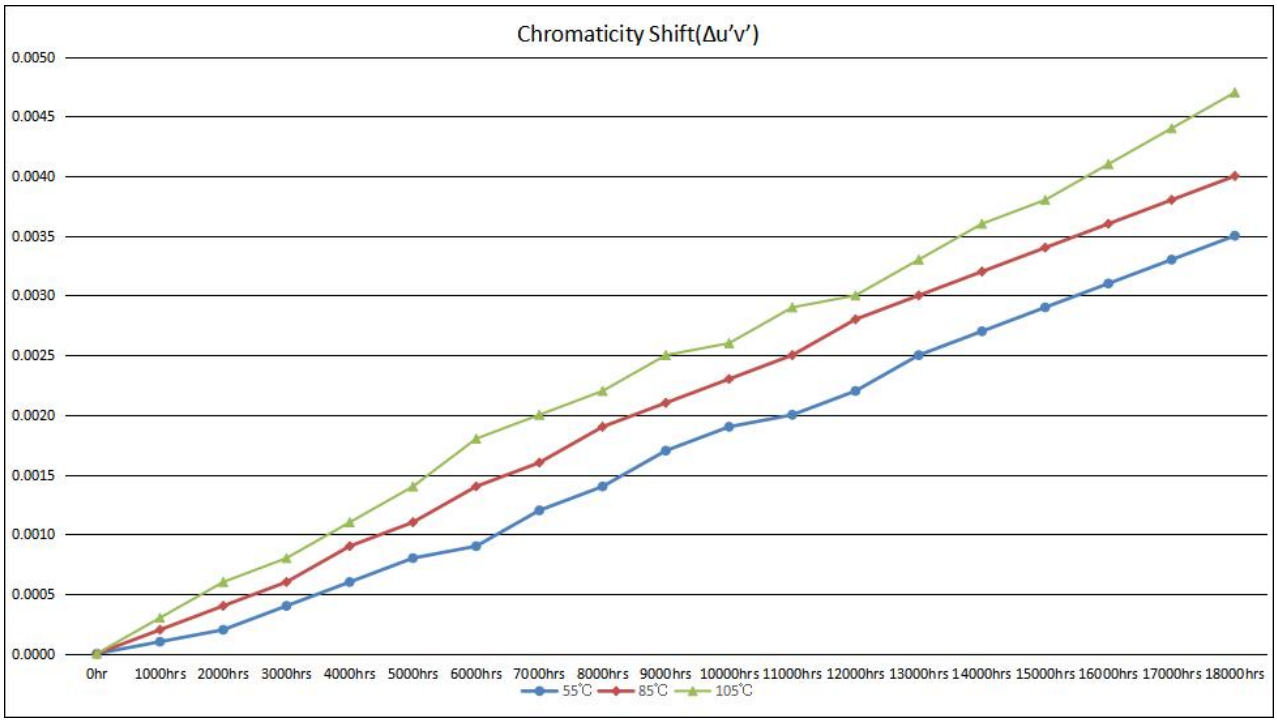
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	18000hrs
1	100.21%	100.07%	99.92%	99.78%	99.64%	99.49%	99.35%	99.21%	99.07%	98.88%	98.66%	98.47%	98.32%	98.16%	98.02%	97.86%	97.70%	97.53%
2	100.09%	99.93%	99.77%	99.59%	99.42%	99.26%	99.06%	98.87%	98.68%	98.49%	98.29%	98.10%	97.93%	97.76%	97.58%	97.39%	97.19%	96.99%
3	99.98%	99.80%	99.62%	99.41%	99.19%	98.97%	98.75%	98.52%	98.30%	98.07%	97.84%	97.62%	97.41%	97.19%	96.98%	96.77%	96.54%	96.32%

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

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs	11000hrs	12000hrs	13000hrs	14000hrs	15000hrs	16000hrs	17000hrs	18000hrs
1	0.0001	0.0002	0.0004	0.0006	0.0008	0.0009	0.0012	0.0014	0.0017	0.0019	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035
2	0.0002	0.0004	0.0006	0.0009	0.0011	0.0014	0.0016	0.0019	0.0021	0.0023	0.0025	0.0028	0.0030	0.0032	0.0034	0.0036	0.0038	0.0040
3	0.0003	0.0006	0.0008	0.0011	0.0014	0.0018	0.0020	0.0022	0.0025	0.0026	0.0029	0.0030	0.0033	0.0036	0.0038	0.0041	0.0044	0.0047


Lumen Maintenance（%）
101
100
99
98
97
96
95
0hr
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
11000hrs
12000hrs
13000hrs
14000hrs
15000hrs
16000hrs
17000hrs
18000hrs
55℃
85℃
105℃


Chromaticity Shift(Δu'v')
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0hr
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
11000hrs
12000hrs
13000hrs
14000hrs
15000hrs
16000hrs
17000hrs
18000hrs
55℃
85℃
105℃

3. Test Data

3.1 Data Set 1, 55° C,150mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)																	
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S1	143.1	100.22	100.09	99.94	99.79	99.65	99.50	99.39	99.24	99.08	98.93	98.77	98.57	98.35	98.21	98.08	97.95	97.75	97.63
S2	141.9	100.23	100.08	99.93	99.79	99.65	99.50	99.39	99.24	99.08	98.93	98.68	98.52	98.39	98.17	98.04	97.91	97.78	97.58
S3	141.8	100.17	100.04	99.89	99.74	99.60	99.45	99.33	99.18	99.03	98.87	98.62	98.47	98.36	98.14	98.03	97.83	97.70	97.58
S4	142.6	100.17	100.02	99.89	99.75	99.60	99.45	99.33	99.18	99.03	98.87	98.62	98.47	98.33	98.12	97.98	97.78	97.62	97.42
S5	142.0	100.14	99.99	99.84	99.70	99.55	99.41	99.26	99.14	98.99	98.83	98.58	98.43	98.21	98.07	97.96	97.77	97.57	97.41
S6	142.3	100.25	100.11	99.98	99.83	99.68	99.54	99.39	99.23	99.07	98.87	98.67	98.47	98.35	98.14	98.00	97.80	97.64	97.48
S7	142.5	100.26	100.11	99.96	99.83	99.68	99.53	99.37	99.26	99.10	98.94	98.79	98.58	98.47	98.34	98.23	98.06	97.94	97.78
S8	142.7	100.19	100.05	99.92	99.77	99.64	99.49	99.34	99.18	99.03	98.82	98.62	98.38	98.16	98.02	97.89	97.76	97.60	97.47
S9	145.1	100.25	100.10	99.97	99.83	99.70	99.54	99.43	99.28	99.12	98.92	98.68	98.47	98.34	98.12	97.98	97.82	97.70	97.57
S10	141.6	100.22	100.09	99.94	99.80	99.66	99.51	99.35	99.24	99.09	98.84	98.60	98.39	98.18	98.07	97.96	97.76	97.60	97.44
S11	141.9	100.19	100.05	99.90	99.76	99.61	99.46	99.35	99.20	99.04	98.80	98.55	98.40	98.28	98.17	98.04	97.88	97.68	97.52
S12	143.3	100.18	100.03	99.88	99.74	99.59	99.45	99.29	99.14	98.99	98.83	98.59	98.34	98.13	98.01	97.80	97.64	97.44	97.31
S13	143.6	100.22	100.09	99.94	99.80	99.66	99.51	99.36	99.21	99.10	98.85	98.61	98.40	98.29	98.16	98.02	97.82	97.66	97.50
S14	143.8	100.15	100.02	99.87	99.72	99.57	99.42	99.27	99.15	99.00	98.79	98.59	98.43	98.32	98.19	98.08	97.91	97.79	97.59
S15	143.3	100.23	100.08	99.94	99.80	99.65	99.50	99.39	99.24	99.12	98.97	98.72	98.52	98.38	98.27	98.16	98.03	97.87	97.67
S16	143.1	100.14	99.99	99.84	99.69	99.55	99.40	99.24	99.09	98.98	98.73	98.53	98.37	98.26	98.04	97.93	97.73	97.54	97.34
S17	143.8	100.25	100.12	99.97	99.83	99.69	99.55	99.39	99.24	99.09	98.88	98.68	98.43	98.32	98.21	98.07	97.88	97.72	97.56
S18	143.9	100.24	100.11	99.96	99.81	99.67	99.52	99.41	99.25	99.14	98.98	98.74	98.54	98.40	98.18	97.97	97.81	97.64	97.48
S19	143.2	100.21	100.06	99.93	99.79	99.65	99.51	99.36	99.20	99.09	98.84	98.64	98.43	98.30	98.16	98.03	97.87	97.71	97.54
S20	142.7	100.22	100.07	99.92	99.78	99.64	99.49	99.34	99.18	99.03	98.87	98.72	98.56	98.42	98.31	98.18	98.01	97.85	97.69
S21	143.1	100.19	100.05	99.92	99.78	99.63	99.48	99.33	99.22	99.07	98.91	98.66	98.46	98.35	98.24	98.13	97.97	97.77	97.57
S22	145.1	100.26	100.13	100.00	99.86	99.71	99.56	99.41	99.29	99.14	98.90	98.65	98.45	98.34	98.20	98.07	97.94	97.81	97.61
S23	142.1	100.20	100.05	99.92	99.78	99.63	99.50	99.34	99.23	99.11	98.91	98.71	98.50	98.39	98.26	98.14	98.02	97.86	97.73
S24	145.3	100.22	100.07	99.94	99.80	99.65	99.51	99.36	99.25	99.13	98.93	98.68	98.53	98.31	98.09	97.88	97.72	97.59	97.43
S25	141.8	100.18	100.03	99.88	99.73	99.59	99.44	99.33	99.21	99.10	98.90	98.69	98.54	98.32	98.18	97.97	97.81	97.64	97.45
Ave.	143.0	100.21	100.07	99.92	99.78	99.64	99.49	99.35	99.21	99.07	98.88	98.66	98.47	98.32	98.16	98.02	97.86	97.70	97.53
Med.	143.1	100.22	100.07	99.93	99.79	99.65	99.50	99.35	99.22	99.08	98.87	98.66	98.47	98.33	98.17	98.03	97.83	97.70	97.54
St dev	1.0596	0.0369	0.0389	0.0413	0.0438	0.0441	0.0441	0.0479	0.0464	0.0505	0.0581	0.0651	0.0661	0.0819	0.0841	0.0993	0.1092	0.1173	0.1156
Min.	141.6	100.14	99.99	99.84	99.69	99.55	99.40	99.24	99.09	98.98	98.73	98.53	98.34	98.13	98.01	97.80	97.64	97.44	97.31
Max.	145.3	100.26	100.13	100.00	99.86	99.71	99.56	99.43	99.29	99.14	98.98	98.79	98.58	98.47	98.34	98.23	98.06	97.94	97.78

3.2 Data Set 1, 55° C,150mA (Forward Voltage)

Sample Number	Forward Voltage(V)																		
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S1	13.66	13.64	13.64	13.64	13.64	13.64	13.65	13.64	13.64	13.63	13.64	13.64	13.64	13.64	13.65	13.63	13.63	13.63	13.64
S2	13.64	13.61	13.62	13.61	13.63	13.62	13.62	13.61	13.62	13.63	13.61	13.62	13.62	13.62	13.61	13.63	13.62	13.62	13.61
S3	13.62	13.61	13.59	13.60	13.61	13.59	13.61	13.60	13.59	13.59	13.60	13.60	13.59	13.60	13.61	13.60	13.60	13.59	13.60
S4	13.59	13.56	13.56	13.57	13.56	13.57	13.58	13.58	13.58	13.58	13.57	13.57	13.58	13.56	13.56	13.57	13.57	13.58	13.56
S5	13.62	13.59	13.61	13.59	13.59	13.60	13.60	13.60	13.59	13.59	13.59	13.61	13.60	13.59	13.60	13.59	13.60	13.59	13.59
S6	13.62	13.60	13.60	13.59	13.59	13.60	13.61	13.59	13.61	13.60	13.60	13.60	13.60	13.59	13.59	13.59	13.60	13.59	13.59
S7	13.61	13.58	13.59	13.58	13.58	13.58	13.59	13.59	13.59	13.58	13.59	13.59	13.59	13.59	13.60	13.58	13.58	13.59	13.60
S8	13.62	13.60	13.60	13.59	13.60	13.60	13.60	13.60	13.60	13.59	13.60	13.59	13.61	13.59	13.61	13.59	13.61	13.60	13.60
S9	13.61	13.60	13.59	13.60	13.59	13.58	13.59	13.60	13.59	13.58	13.60	13.59	13.58	13.59	13.60	13.59	13.59	13.59	13.58
S10	13.63	13.61	13.61	13.60	13.60	13.62	13.61	13.61	13.60	13.61	13.61	13.60	13.61	13.61	13.60	13.60	13.62	13.60	13.61
S11	13.63	13.61	13.60	13.61	13.60	13.60	13.60	13.62	13.62	13.62	13.60	13.60	13.60	13.61	13.60	13.60	13.61	13.60	13.62
S12	13.61	13.58	13.58	13.59	13.59	13.58	13.58	13.59	13.59	13.58	13.60	13.59	13.59	13.59	13.59	13.58	13.58	13.58	13.60
S13	13.60	13.58	13.57	13.59	13.57	13.57	13.58	13.58	13.57	13.59	13.57	13.58	13.57	13.58	13.58	13.57	13.59	13.59	13.58
S14	13.57	13.54	13.55	13.54	13.54	13.54	13.54	13.55	13.56	13.55	13.54	13.54	13.55	13.55	13.54	13.54	13.54	13.54	13.55
S15	13.60	13.58	13.57	13.58	13.58	13.59	13.58	13.57	13.57	13.57	13.58	13.58	13.58	13.58	13.58	13.57	13.57	13.57	13.57
S16	13.61	13.59	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.60	13.59	13.59	13.59	13.59	13.60	13.59	13.58	13.58	13.59
S17	13.59	13.57	13.57	13.57	13.56	13.57	13.57	13.57	13.57	13.56	13.57	13.56	13.58	13.57	13.57	13.56	13.57	13.57	13.56
S18	13.60	13.57	13.59	13.57	13.58	13.57	13.57	13.58	13.58	13.57	13.57	13.57	13.57	13.57	13.58	13.58	13.57	13.58	13.57
S19	13.59	13.58	13.56	13.57	13.57	13.56	13.56	13.56	13.56	13.57	13.57	13.57	13.58	13.56	13.56	13.57	13.56	13.56	13.57
S20	13.61	13.58	13.60	13.59	13.59	13.60	13.59	13.58	13.60	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.59	13.58
S21	13.60	13.57	13.57	13.57	13.58	13.58	13.58	13.57	13.58	13.57	13.58	13.58	13.58	13.57	13.57	13.58	13.57	13.58	13.58
S22	13.60	13.57	13.58	13.58	13.58	13.57	13.57	13.59	13.58	13.57	13.57	13.59	13.57	13.57	13.57	13.58	13.58	13.58	13.58
S23	13.59	13.56	13.57	13.56	13.56	13.57	13.58	13.56	13.57	13.57	13.57	13.57	13.58	13.56	13.56	13.56	13.56	13.57	13.56
S24	13.56	13.53	13.55	13.54	13.53	13.53	13.53	13.53	13.54	13.55	13.54	13.55	13.55	13.54	13.53	13.54	13.55	13.55	13.54
S25	13.60	13.58	13.58	13.57	13.57	13.59	13.58	13.58	13.58	13.57	13.57	13.59	13.58	13.57	13.58	13.59	13.58	13.59	13.58
Ave.	13.61	13.58	13.59	13.58	13.58	13.58	13.59	13.59	13.59	13.58	13.58	13.59	13.59	13.58	13.59	13.58	13.58	13.58	13.59
Med.	13.61	13.58	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.59	13.58	13.58	13.58	13.58	13.58	13.59	13.58
St dev	0.0211	0.0232	0.0217	0.0217	0.0233	0.0222	0.0237	0.0223	0.0215	0.0215	0.0219	0.0205	0.0201	0.0227	0.0244	0.0213	0.0218	0.0192	0.0227
Min.	13.56	13.53	13.55	13.54	13.53	13.53	13.53	13.53	13.54	13.55	13.54	13.54	13.55	13.54	13.53	13.54	13.54	13.54	13.54
Max.	13.66	13.64	13.64	13.64	13.64	13.64	13.65	13.64	13.64	13.63	13.64	13.64	13.64	13.64	13.65	13.63	13.63	13.63	13.64

3.3 Data Set 1, 55° C,150mA (Chromaticity Shift)

Sample Number	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')																
	0hr (Initial)			1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	12000 hrs	18000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S1	0.2848	0.5361	2279	0.0001	0.0001	0.0004	0.0007	0.0009	0.0010	0.0013	0.0015	0.0017	0.0019	0.0021	0.0022	0.0025	0.0027	0.0030	0.0032	0.0033	0.0035
S2	0.2884	0.5349	2228	0.0001	0.0001	0.0004	0.0006	0.0007	0.0009	0.0011	0.0014	0.0017	0.0018	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035
S3	0.2881	0.5345	2231	0.0001	0.0002	0.0004	0.0007	0.0008	0.0009	0.0011	0.0013	0.0016	0.0017	0.0019	0.0021	0.0024	0.0026	0.0028	0.0030	0.0032	0.0034
S4	0.2883	0.5346	2228	0.0001	0.0002	0.0004	0.0007	0.0008	0.0010	0.0013	0.0017	0.0018	0.0020	0.0023	0.0024	0.0027	0.0029	0.0031	0.0033	0.0035	0.0037
S5	0.2883	0.5351	2229	0.0001	0.0002	0.0004	0.0006	0.0007	0.0009	0.0012	0.0015	0.0018	0.0020	0.0021	0.0023	0.0025	0.0028	0.0031	0.0033	0.0034	0.0036
S6	0.2881	0.5344	2232	0.0001	0.0001	0.0004	0.0006	0.0007	0.0009	0.0010	0.0014	0.0015	0.0017	0.0019	0.0020	0.0022	0.0025	0.0028	0.0030	0.0031	0.0033
S7	0.2888	0.5358	2220	0.0001	0.0002	0.0005	0.0007	0.0008	0.0009	0.0012	0.0014	0.0016	0.0018	0.0020	0.0021	0.0024	0.0026	0.0029	0.0030	0.0032	0.0034
S8	0.2882	0.5360	2228	0.0001	0.0002	0.0004	0.0006	0.0007	0.0008	0.0010	0.0012	0.0015	0.0017	0.0019	0.0020	0.0023	0.0025	0.0027	0.0029	0.0031	0.0032
S9	0.2883	0.5362	2226	0.0001	0.0001	0.0004	0.0006	0.0007	0.0009	0.0012	0.0016	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0032	0.0034	0.0036
S10	0.2880	0.5345	2234	0.0001	0.0001	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0017	0.0019	0.0021	0.0023	0.0025	0.0028	0.0029	0.0031	0.0033
S11	0.2888	0.5357	2220	0.0001	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015	0.0017	0.0018	0.0019	0.0021	0.0023	0.0025	0.0028	0.0030	0.0031	0.0033
S12	0.2880	0.5361	2231	0.0001	0.0002	0.0004	0.0007	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0019	0.0020	0.0023	0.0025	0.0027	0.0029	0.0031	0.0033
S13	0.2876	0.5357	2237	0.0001	0.0002	0.0004	0.0007	0.0009	0.0010	0.0012	0.0015	0.0019	0.0020	0.0022	0.0024	0.0026	0.0029	0.0031	0.0032	0.0034	0.0036
S14	0.2880	0.5358	2232	0.0001	0.0001	0.0004	0.0006	0.0008	0.0010	0.0013	0.0016	0.0019	0.0022	0.0023	0.0024	0.0027	0.0029	0.0032	0.0033	0.0035	0.0037
S15	0.2878	0.5363	2233	0.0001	0.0001	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0015	0.0017	0.0019	0.0020	0.0023	0.0025	0.0027	0.0029	0.0031	0.0033
S16	0.2880	0.5365	2230	0.0001	0.0002	0.0005	0.0007	0.0008	0.0010	0.0012	0.0015	0.0018	0.0020	0.0021	0.0023	0.0025	0.0028	0.0030	0.0032	0.0034	0.0035
S17	0.2884	0.5370	2224	0.0001	0.0002	0.0004	0.0007	0.0008	0.0010	0.0011	0.0015	0.0017	0.0019	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0033	0.0034
S18	0.2878	0.5372	2232	0.0001	0.0002	0.0005	0.0007	0.0009	0.0011	0.0014	0.0016	0.0020	0.0021	0.0022	0.0024	0.0027	0.0029	0.0032	0.0033	0.0035	0.0037
S19	0.2882	0.5374	2227	0.0001	0.0002	0.0005	0.0007	0.0008	0.0009	0.0012	0.0014	0.0016	0.0018	0.0019	0.0022	0.0024	0.0026	0.0029	0.0030	0.0032	0.0033
S20	0.2876	0.5357	2237	0.0001	0.0001	0.0004	0.0007	0.0008	0.0009	0.0012	0.0014	0.0017	0.0019	0.0021	0.0023	0.0026	0.0028	0.0031	0.0032	0.0034	0.0035
S21	0.2883	0.5370	2226	0.0001	0.0002	0.0004	0.0006	0.0008	0.0010	0.0013	0.0016	0.0019	0.0021	0.0023	0.0024	0.0027	0.0029	0.0032	0.0034	0.0035	0.0037
S22	0.2892	0.5366	2212	0.0001	0.0001	0.0004	0.0007	0.0008	0.0009	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	0.0027	0.0029	0.0031	0.0033	0.0035	0.0036
S23	0.2892	0.5363	2213	0.0001	0.0002	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0014	0.0016	0.0019	0.0021	0.0023	0.0026	0.0028	0.0030	0.0032	0.0033
S24	0.2894	0.5363	2211	0.0001	0.0002	0.0004	0.0007	0.0009	0.0010	0.0011	0.0013	0.0016	0.0018	0.0020	0.0022	0.0024	0.0027	0.0029	0.0031	0.0033	0.0034
S25	0.2893	0.5368	2211	0.0001	0.0002	0.0004	0.0007	0.0008	0.0010	0.0013	0.0016	0.0018	0.0019	0.0022	0.0023	0.0026	0.0028	0.0031	0.0032	0.0034	0.0036
Ave.	0.2882	0.5359	2228	0.0001	0.0002	0.0004	0.0006	0.0008	0.0009	0.0012	0.0014	0.0017	0.0019	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035
Med.	0.2882	0.5361	2228	0.0001	0.0002	0.0004	0.0007	0.0008	0.0010	0.0012	0.0015	0.0017	0.0019	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0033	0.0035
St dev	0.0009	0.0009	13.0738	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Min.	0.2848	0.5344	2211	0.0001	0.0001	0.0004	0.0006	0.0007	0.0008	0.0010	0.0012	0.0014	0.0016	0.0019	0.0020	0.0022	0.0025	0.0027	0.0029	0.0031	0.0032
Max.	0.2894	0.5374	2279	0.0001	0.0002	0.0005	0.0007	0.0009	0.0011	0.0014	0.0017	0.0020	0.0022	0.0023	0.0024	0.0027	0.0029	0.0032	0.0034	0.0035	0.0037

3.4 Data Set 2, 85° C,150mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)																	
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S26	144.9	100.07	99.88	99.70	99.55	99.41	99.26	99.09	98.92	98.76	98.60	98.37	98.18	98.00	97.83	97.66	97.49	97.31	97.11
S27	142.1	100.04	99.89	99.71	99.49	99.27	99.11	98.95	98.78	98.53	98.33	98.10	97.87	97.70	97.54	97.36	97.19	97.01	96.79
S28	142.6	100.14	99.95	99.81	99.59	99.45	99.23	98.98	98.81	98.65	98.49	98.34	98.19	98.01	97.84	97.66	97.49	97.27	97.06
S29	145.6	100.15	100.01	99.86	99.64	99.50	99.35	99.18	99.02	98.77	98.62	98.42	98.26	98.10	97.93	97.75	97.54	97.36	97.16
S30	142.0	100.12	99.93	99.79	99.65	99.50	99.36	99.11	98.94	98.78	98.63	98.47	98.24	98.07	97.89	97.72	97.52	97.31	97.11
S31	144.5	100.13	99.98	99.80	99.65	99.43	99.29	99.12	98.96	98.79	98.59	98.36	98.21	98.03	97.86	97.69	97.50	97.28	97.08
S32	141.9	100.12	99.98	99.84	99.62	99.46	99.32	99.16	98.99	98.74	98.54	98.39	98.19	98.02	97.85	97.68	97.48	97.30	97.09
S33	141.3	100.08	99.94	99.76	99.62	99.47	99.33	99.08	98.83	98.66	98.43	98.20	98.05	97.88	97.71	97.54	97.34	97.16	96.96
S34	144.4	100.14	100.00	99.86	99.72	99.50	99.28	99.11	98.86	98.69	98.49	98.29	98.10	97.92	97.76	97.60	97.42	97.22	97.02
S35	141.6	100.07	99.93	99.74	99.52	99.30	99.16	98.91	98.75	98.50	98.30	98.10	97.87	97.70	97.53	97.36	97.16	96.94	96.74
S36	141.2	100.06	99.92	99.78	99.62	99.40	99.26	99.10	98.93	98.76	98.53	98.30	98.10	97.93	97.76	97.58	97.37	97.17	96.95
S37	141.0	100.08	99.94	99.76	99.62	99.40	99.26	99.01	98.84	98.59	98.44	98.24	98.01	97.84	97.68	97.51	97.34	97.12	96.94
S38	144.2	100.05	99.91	99.76	99.54	99.32	99.17	99.00	98.83	98.67	98.47	98.24	98.04	97.87	97.69	97.52	97.30	97.09	96.89
S39	141.7	100.14	99.95	99.81	99.67	99.53	99.38	99.13	98.97	98.80	98.60	98.40	98.17	98.01	97.85	97.68	97.47	97.27	97.07
S40	142.3	100.04	99.89	99.75	99.53	99.39	99.17	99.00	98.84	98.59	98.36	98.16	97.96	97.79	97.61	97.45	97.25	97.07	96.86
S41	145.0	100.06	99.88	99.69	99.54	99.40	99.25	99.08	98.83	98.67	98.47	98.24	98.04	97.87	97.69	97.52	97.34	97.14	96.96
S42	141.5	100.05	99.86	99.72	99.58	99.44	99.29	99.12	98.96	98.79	98.64	98.41	98.21	98.05	97.87	97.70	97.48	97.27	97.05
S43	141.9	100.12	99.94	99.80	99.58	99.42	99.27	99.10	98.85	98.69	98.49	98.34	98.18	98.01	97.84	97.67	97.45	97.24	97.06
S44	141.4	100.04	99.86	99.72	99.49	99.34	99.12	98.95	98.70	98.54	98.38	98.19	98.03	97.86	97.70	97.52	97.31	97.09	96.89
S45	141.5	100.11	99.96	99.78	99.56	99.41	99.27	99.10	98.85	98.60	98.45	98.22	98.07	97.89	97.72	97.54	97.37	97.19	97.01
S46	144.6	100.09	99.95	99.81	99.67	99.53	99.39	99.22	98.98	98.73	98.57	98.37	98.18	98.00	97.83	97.65	97.45	97.25	97.06
S47	141.2	100.04	99.90	99.76	99.61	99.38	99.25	99.08	98.91	98.75	98.52	98.36	98.21	98.04	97.86	97.70	97.52	97.31	97.09
S48	144.1	100.12	99.93	99.75	99.53	99.39	99.17	98.92	98.67	98.51	98.31	98.08	97.85	97.68	97.51	97.34	97.16	96.94	96.74
S49	141.2	100.11	99.93	99.75	99.61	99.47	99.32	99.07	98.90	98.74	98.54	98.34	98.14	97.98	97.80	97.63	97.45	97.23	97.03
S50	141.6	100.04	99.86	99.68	99.45	99.32	99.16	99.00	98.83	98.66	98.46	98.31	98.08	97.91	97.74	97.57	97.35	97.18	96.96
Ave.	142.6	100.09	99.93	99.77	99.59	99.42	99.26	99.06	98.87	98.68	98.49	98.29	98.10	97.93	97.76	97.58	97.39	97.19	96.99
Med.	141.9	100.08	99.93	99.76	99.59	99.41	99.26	99.08	98.85	98.69	98.49	98.31	98.10	97.93	97.76	97.60	97.42	97.22	97.02
St dev	1.5026	0.0381	0.0421	0.0493	0.0646	0.0709	0.0790	0.0821	0.0886	0.0940	0.0996	0.1084	0.1179	0.1185	0.1170	0.1177	0.1145	0.1149	0.1147
Min.	141.0	100.04	99.86	99.68	99.45	99.27	99.11	98.91	98.67	98.50	98.30	98.08	97.85	97.68	97.51	97.34	97.16	96.94	96.74
Max.	145.6	100.15	100.01	99.86	99.72	99.53	99.39	99.22	99.02	98.80	98.64	98.47	98.26	98.10	97.93	97.75	97.54	97.36	97.16

3.5 Data Set 2, 85° C,150mA (Forward Voltage)

Sample Number	Forward Voltage(V)																		
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S26	13.66	13.64	13.64	13.64	13.64	13.64	13.65	13.64	13.64	13.63	13.64	13.64	13.64	13.64	13.65	13.63	13.63	13.63	13.64
S27	13.64	13.61	13.62	13.61	13.63	13.62	13.62	13.61	13.62	13.63	13.61	13.62	13.62	13.62	13.61	13.63	13.62	13.62	13.61
S28	13.62	13.61	13.59	13.60	13.61	13.59	13.61	13.60	13.59	13.59	13.60	13.60	13.59	13.60	13.61	13.60	13.60	13.59	13.60
S29	13.59	13.56	13.56	13.57	13.56	13.57	13.58	13.58	13.58	13.58	13.57	13.57	13.58	13.56	13.56	13.57	13.57	13.58	13.56
S30	13.62	13.59	13.61	13.59	13.59	13.60	13.60	13.60	13.59	13.59	13.59	13.61	13.60	13.59	13.60	13.59	13.60	13.59	13.59
S31	13.62	13.60	13.60	13.59	13.59	13.60	13.61	13.59	13.61	13.60	13.60	13.60	13.60	13.59	13.59	13.59	13.60	13.59	13.59
S32	13.61	13.58	13.59	13.58	13.58	13.58	13.59	13.59	13.59	13.58	13.59	13.59	13.59	13.59	13.60	13.58	13.58	13.59	13.60
S33	13.62	13.60	13.60	13.59	13.60	13.60	13.60	13.60	13.60	13.59	13.60	13.59	13.61	13.59	13.61	13.59	13.61	13.60	13.60
S34	13.61	13.60	13.59	13.60	13.59	13.58	13.59	13.60	13.59	13.58	13.60	13.59	13.58	13.59	13.60	13.59	13.59	13.59	13.58
S35	13.63	13.61	13.61	13.60	13.60	13.62	13.61	13.61	13.60	13.61	13.61	13.60	13.61	13.61	13.60	13.60	13.62	13.60	13.61
S36	13.63	13.61	13.60	13.61	13.60	13.60	13.60	13.62	13.62	13.62	13.60	13.60	13.60	13.61	13.60	13.60	13.61	13.60	13.62
S37	13.61	13.58	13.58	13.59	13.59	13.58	13.58	13.59	13.59	13.58	13.60	13.59	13.59	13.59	13.59	13.58	13.58	13.58	13.60
S38	13.60	13.58	13.57	13.59	13.57	13.57	13.58	13.58	13.57	13.59	13.57	13.58	13.57	13.58	13.58	13.57	13.59	13.59	13.58
S39	13.57	13.54	13.55	13.54	13.54	13.54	13.54	13.55	13.56	13.55	13.54	13.54	13.55	13.55	13.54	13.54	13.54	13.54	13.55
S40	13.60	13.58	13.57	13.58	13.58	13.59	13.58	13.57	13.57	13.57	13.58	13.58	13.58	13.58	13.58	13.57	13.57	13.57	13.57
S41	13.61	13.59	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.60	13.59	13.59	13.59	13.59	13.60	13.59	13.58	13.58	13.59
S42	13.59	13.57	13.57	13.57	13.56	13.57	13.57	13.57	13.57	13.56	13.57	13.56	13.58	13.57	13.57	13.56	13.57	13.57	13.56
S43	13.60	13.57	13.59	13.57	13.58	13.57	13.57	13.58	13.58	13.57	13.57	13.57	13.57	13.57	13.58	13.58	13.57	13.58	13.57
S44	13.59	13.58	13.56	13.57	13.57	13.56	13.56	13.56	13.56	13.57	13.57	13.57	13.58	13.56	13.56	13.57	13.56	13.56	13.57
S45	13.61	13.58	13.60	13.59	13.59	13.60	13.59	13.58	13.60	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.59	13.58
S46	13.60	13.57	13.57	13.57	13.58	13.58	13.58	13.57	13.58	13.57	13.58	13.58	13.58	13.57	13.57	13.58	13.57	13.58	13.58
S47	13.60	13.57	13.58	13.58	13.58	13.57	13.57	13.59	13.58	13.57	13.57	13.59	13.57	13.57	13.57	13.58	13.58	13.58	13.58
S48	13.59	13.56	13.57	13.56	13.56	13.57	13.58	13.56	13.57	13.57	13.57	13.57	13.58	13.56	13.56	13.56	13.56	13.57	13.56
S49	13.56	13.53	13.55	13.54	13.53	13.53	13.53	13.53	13.54	13.55	13.54	13.55	13.55	13.54	13.53	13.54	13.55	13.55	13.54
S50	13.60	13.58	13.58	13.57	13.57	13.59	13.58	13.58	13.58	13.57	13.57	13.59	13.58	13.57	13.58	13.59	13.58	13.59	13.58
Ave.	13.61	13.58	13.59	13.58	13.58	13.58	13.59	13.59	13.59	13.58	13.58	13.59	13.59	13.58	13.59	13.58	13.58	13.58	13.59
Med.	13.61	13.58	13.59	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.59	13.58	13.58	13.58	13.58	13.58	13.59	13.58
St dev	0.0211	0.0232	0.0217	0.0217	0.0233	0.0222	0.0237	0.0223	0.0215	0.0215	0.0219	0.0205	0.0201	0.0227	0.0244	0.0213	0.0218	0.0192	0.0227
Min.	13.56	13.53	13.55	13.54	13.53	13.53	13.53	13.53	13.54	13.55	13.54	13.54	13.55	13.54	13.53	13.54	13.54	13.54	13.54
Max.	13.66	13.64	13.64	13.64	13.64	13.64	13.65	13.64	13.64	13.63	13.64	13.64	13.64	13.64	13.65	13.63	13.63	13.63	13.64

3.6 Data Set 2, 85° C,150mA (Chromaticity Shift)

Sample Number	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')																	
	0hr (Initial)			1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	12000 hrs	18000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S26	0.2895	0.5370	2208	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0017	0.0020	0.0022	0.0023	0.0026	0.0028	0.0031	0.0034	0.0035	0.0037	0.0038
S27	0.2893	0.5362	2212	0.0001	0.0004	0.0006	0.0008	0.0010	0.0012	0.0013	0.0014	0.0015	0.0017	0.0019	0.0021	0.0022	0.0025	0.0028	0.0029	0.0031	0.0033
S28	0.2900	0.5376	2200	0.0002	0.0005	0.0006	0.0010	0.0013	0.0017	0.0020	0.0023	0.0026	0.0028	0.0031	0.0034	0.0036	0.0038	0.0041	0.0043	0.0045	0.0048
S29	0.2891	0.5378	2212	0.0002	0.0005	0.0006	0.0008	0.0012	0.0016	0.0019	0.0022	0.0025	0.0026	0.0029	0.0032	0.0034	0.0036	0.0038	0.0040	0.0042	0.0044
S30	0.2896	0.5380	2204	0.0002	0.0004	0.0006	0.0008	0.0010	0.0014	0.0017	0.0019	0.0022	0.0025	0.0026	0.0028	0.0031	0.0034	0.0036	0.0038	0.0039	0.0041
S31	0.2890	0.5363	2217	0.0002	0.0005	0.0007	0.0009	0.0011	0.0014	0.0015	0.0016	0.0018	0.0020	0.0022	0.0024	0.0025	0.0027	0.0030	0.0032	0.0035	0.0036
S32	0.2898	0.5376	2202	0.0002	0.0005	0.0006	0.0010	0.0012	0.0014	0.0017	0.0020	0.0023	0.0026	0.0028	0.0029	0.0032	0.0034	0.0036	0.0039	0.0041	0.0043
S33	0.2850	0.5356	2277	0.0001	0.0004	0.0006	0.0010	0.0012	0.0016	0.0019	0.0021	0.0024	0.0026	0.0027	0.0029	0.0031	0.0033	0.0035	0.0037	0.0039	0.0040
S34	0.2845	0.5353	2286	0.0002	0.0004	0.0006	0.0008	0.0011	0.0015	0.0016	0.0019	0.0020	0.0023	0.0025	0.0027	0.0028	0.0031	0.0033	0.0036	0.0038	0.0040
S35	0.2850	0.5354	2277	0.0002	0.0005	0.0007	0.0009	0.0012	0.0013	0.0016	0.0017	0.0020	0.0023	0.0025	0.0026	0.0029	0.0031	0.0033	0.0035	0.0037	0.0040
S36	0.2848	0.5358	2279	0.0002	0.0005	0.0007	0.0011	0.0013	0.0016	0.0020	0.0021	0.0024	0.0027	0.0029	0.0031	0.0033	0.0036	0.0039	0.0040	0.0041	0.0042
S37	0.2850	0.5361	2275	0.0001	0.0004	0.0006	0.0008	0.0010	0.0013	0.0016	0.0018	0.0019	0.0021	0.0024	0.0026	0.0029	0.0030	0.0032	0.0034	0.0036	0.0037
S38	0.2845	0.5351	2285	0.0002	0.0005	0.0007	0.0011	0.0015	0.0018	0.0021	0.0024	0.0027	0.0029	0.0031	0.0034	0.0036	0.0038	0.0040	0.0042	0.0044	0.0046
S39	0.2855	0.5366	2268	0.0001	0.0002	0.0004	0.0006	0.0008	0.0012	0.0015	0.0018	0.0021	0.0024	0.0025	0.0027	0.0030	0.0032	0.0034	0.0035	0.0036	0.0039
S40	0.2849	0.5369	2276	0.0002	0.0005	0.0007	0.0009	0.0011	0.0013	0.0016	0.0017	0.0020	0.0021	0.0023	0.0025	0.0027	0.0029	0.0030	0.0033	0.0035	0.0037
S41	0.2850	0.5370	2275	0.0001	0.0002	0.0005	0.0007	0.0008	0.0011	0.0013	0.0016	0.0019	0.0022	0.0025	0.0028	0.0030	0.0033	0.0036	0.0037	0.0039	0.0042
S42	0.2846	0.5354	2283	0.0002	0.0005	0.0007	0.0009	0.0011	0.0015	0.0018	0.0019	0.0022	0.0023	0.0025	0.0028	0.0030	0.0032	0.0034	0.0036	0.0038	0.0040
S43	0.2854	0.5367	2269	0.0001	0.0004	0.0006	0.0010	0.0012	0.0014	0.0015	0.0017	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0032	0.0034	0.0036
S44	0.2902	0.5372	2198	0.0002	0.0005	0.0006	0.0008	0.0010	0.0013	0.0014	0.0016	0.0018	0.0019	0.0022	0.0024	0.0026	0.0028	0.0031	0.0032	0.0034	0.0037
S45	0.2899	0.5368	2203	0.0002	0.0005	0.0006	0.0010	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0024	0.0027	0.0029	0.0031	0.0034	0.0036	0.0039	0.0040
S46	0.2900	0.5368	2201	0.0001	0.0004	0.0005	0.0008	0.0012	0.0016	0.0019	0.0020	0.0024	0.0025	0.0027	0.0029	0.0031	0.0034	0.0036	0.0038	0.0040	0.0042
S47	0.2901	0.5374	2199	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0013	0.0016	0.0019	0.0022	0.0025	0.0028	0.0030	0.0032	0.0035	0.0037	0.0039	0.0041
S48	0.2900	0.5376	2200	0.0002	0.0005	0.0007	0.0011	0.0013	0.0015	0.0018	0.0021	0.0022	0.0025	0.0028	0.0030	0.0033	0.0035	0.0037	0.0040	0.0041	0.0043
S49	0.2898	0.5366	2203	0.0001	0.0004	0.0005	0.0007	0.0011	0.0013	0.0015	0.0018	0.0021	0.0022	0.0024	0.0026	0.0028	0.0030	0.0033	0.0034	0.0036	0.0038
S50	0.2906	0.5381	2191	0.0002	0.0005	0.0007	0.0009	0.0011	0.0013	0.0016	0.0017	0.0020	0.0023	0.0025	0.0027	0.0029	0.0032	0.0034	0.0036	0.0039	0.0041
Ave.	0.2876	0.5367	2236	0.0002	0.0004	0.0006	0.0009	0.0011	0.0014	0.0016	0.0019	0.0021	0.0023	0.0025	0.0028	0.0030	0.0032	0.0034	0.0036	0.0038	0.0040
Med.	0.2891	0.5368	2212	0.0002	0.0005	0.0006	0.0009	0.0011	0.0014	0.0016	0.0018	0.0020	0.0023	0.0025	0.0027	0.0030	0.0032	0.0034	0.0036	0.0039	0.0040
St dev	0.0025	0.0009	37.8517	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
Min.	0.2845	0.5351	2191	0.0001	0.0002	0.0004	0.0006	0.0008	0.0011	0.0013	0.0014	0.0015	0.0017	0.0019	0.0021	0.0022	0.0025	0.0028	0.0029	0.0031	0.0033
Max.	0.2906	0.5381	2286	0.0002	0.0005	0.0007	0.0011	0.0015	0.0018	0.0021	0.0024	0.0027	0.0029	0.0031	0.0034	0.0036	0.0038	0.0041	0.0043	0.0045	0.0048

3.7 Data Set 3, 105° C,150mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)																	
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S51	144.9	99.92	99.76	99.57	99.38	99.18	98.94	98.67	98.46	98.25	98.02	97.81	97.60	97.43	97.26	97.05	96.81	96.61	96.38
S52	141.4	99.92	99.76	99.60	99.39	99.20	99.00	98.79	98.57	98.31	98.08	97.84	97.63	97.39	97.15	96.91	96.71	96.48	96.25
S53	140.8	99.96	99.80	99.64	99.39	99.14	98.90	98.63	98.36	98.15	97.91	97.68	97.45	97.20	96.96	96.80	96.57	96.34	96.10
S54	141.3	99.92	99.76	99.57	99.37	99.12	98.93	98.72	98.45	98.24	98.00	97.79	97.56	97.32	97.11	96.87	96.64	96.41	96.21
S55	142.3	99.93	99.76	99.58	99.38	99.18	98.98	98.77	98.56	98.34	98.13	97.89	97.68	97.51	97.27	97.06	96.86	96.63	96.39
S56	142.5	99.92	99.73	99.54	99.35	99.15	98.90	98.63	98.42	98.21	97.98	97.77	97.53	97.29	97.05	96.81	96.61	96.38	96.15
S57	142.2	99.99	99.82	99.64	99.39	99.19	98.99	98.73	98.51	98.24	98.00	97.79	97.58	97.41	97.17	96.96	96.76	96.53	96.33
S58	142.0	100.03	99.85	99.68	99.49	99.24	99.04	98.83	98.62	98.41	98.19	97.96	97.75	97.51	97.34	97.10	96.87	96.64	96.44
S59	142.3	99.97	99.79	99.62	99.38	99.13	98.94	98.73	98.51	98.25	98.01	97.77	97.54	97.33	97.16	96.95	96.75	96.52	96.28
S60	142.6	100.03	99.84	99.68	99.48	99.23	99.03	98.82	98.61	98.40	98.19	97.94	97.73	97.56	97.32	97.15	96.93	96.69	96.46
S61	142.1	100.03	99.84	99.66	99.45	99.26	99.01	98.80	98.54	98.32	98.11	97.90	97.67	97.50	97.34	97.12	96.89	96.66	96.43
S62	141.7	100.01	99.85	99.69	99.49	99.29	99.09	98.88	98.66	98.45	98.21	97.97	97.73	97.52	97.28	97.07	96.87	96.64	96.40
S63	142.1	99.95	99.76	99.58	99.33	99.08	98.84	98.63	98.42	98.20	97.97	97.76	97.53	97.32	97.15	96.98	96.75	96.52	96.32
S64	141.9	99.95	99.77	99.60	99.40	99.16	98.96	98.74	98.53	98.32	98.09	97.84	97.60	97.36	97.15	96.98	96.75	96.52	96.29
S65	142.1	100.01	99.84	99.66	99.45	99.21	98.96	98.75	98.54	98.33	98.08	97.85	97.61	97.39	97.15	96.94	96.74	96.51	96.31
S66	144.8	99.96	99.80	99.61	99.36	99.17	98.97	98.75	98.54	98.33	98.12	97.89	97.68	97.51	97.30	97.06	96.82	96.59	96.35
S67	141.6	99.95	99.76	99.60	99.40	99.15	98.96	98.74	98.47	98.26	98.02	97.81	97.56	97.39	97.23	96.99	96.75	96.52	96.29
S68	144.9	99.99	99.82	99.64	99.44	99.24	99.04	98.83	98.62	98.35	98.12	97.89	97.66	97.49	97.25	97.01	96.81	96.58	96.35
S69	142.3	99.95	99.77	99.58	99.38	99.14	98.94	98.73	98.52	98.25	98.01	97.80	97.59	97.35	97.18	96.94	96.71	96.51	96.31
S70	143.8	99.96	99.80	99.61	99.36	99.12	98.92	98.70	98.44	98.23	97.98	97.75	97.54	97.37	97.13	96.92	96.69	96.46	96.22
S71	141.2	100.01	99.82	99.66	99.46	99.26	99.02	98.81	98.54	98.33	98.10	97.88	97.64	97.47	97.23	97.06	96.86	96.66	96.46
S72	141.4	99.96	99.77	99.61	99.36	99.17	98.97	98.76	98.50	98.28	98.04	97.83	97.60	97.38	97.17	96.96	96.72	96.49	96.29
S73	143.9	100.02	99.84	99.67	99.47	99.28	99.03	98.82	98.61	98.40	98.16	97.93	97.72	97.48	97.24	97.07	96.84	96.60	96.40
S74	141.1	100.02	99.83	99.67	99.47	99.22	99.02	98.75	98.48	98.27	98.06	97.82	97.59	97.37	97.13	96.89	96.66	96.43	96.20
S75	144.6	100.02	99.85	99.67	99.42	99.22	98.97	98.76	98.55	98.28	98.05	97.82	97.61	97.40	97.15	96.99	96.79	96.55	96.35
Ave.	142.5	99.98	99.80	99.62	99.41	99.19	98.97	98.75	98.52	98.30	98.07	97.84	97.62	97.41	97.19	96.98	96.77	96.54	96.32
Med.	142.1	99.96	99.80	99.62	99.39	99.18	98.97	98.75	98.53	98.28	98.06	97.83	97.60	97.39	97.17	96.98	96.75	96.52	96.32
St dev	1.2585	0.0392	0.0379	0.0418	0.0483	0.0546	0.0559	0.0647	0.0729	0.0717	0.0773	0.0718	0.0749	0.0868	0.0902	0.0920	0.0914	0.0925	0.0948
Min.	140.8	99.92	99.73	99.54	99.33	99.08	98.84	98.63	98.36	98.15	97.91	97.68	97.45	97.20	96.96	96.80	96.57	96.34	96.10
Max.	144.9	100.03	99.85	99.69	99.49	99.29	99.09	98.88	98.66	98.45	98.21	97.97	97.75	97.56	97.34	97.15	96.93	96.69	96.46

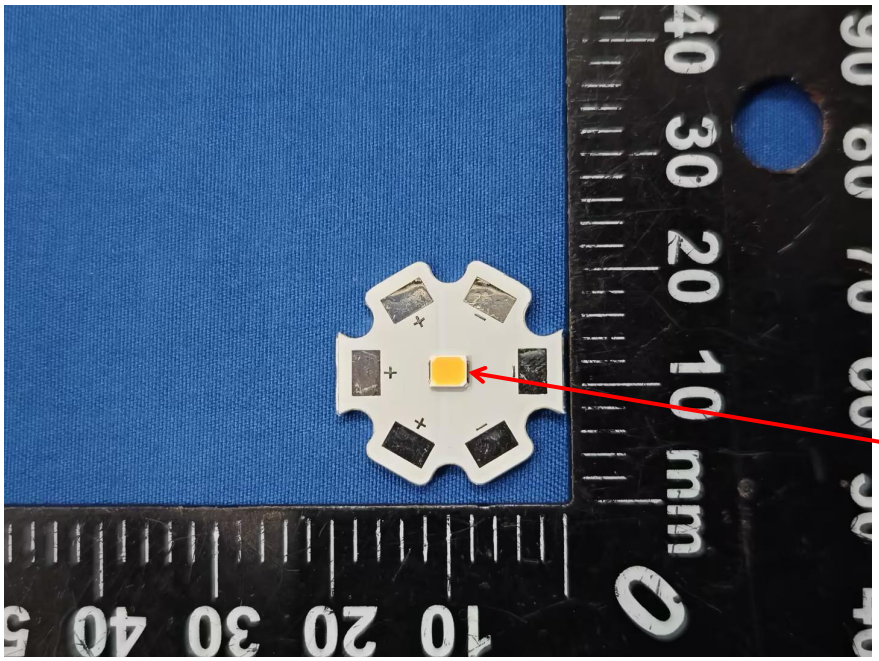
3.8 Data Set 3, 105° C,150mA (Forward Voltage)

Sample Number	Forward Voltage(V)																		
	0hr (Initial)	1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	11000 hrs	12000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S51	13.60	13.61	13.62	13.62	13.61	13.62	13.61	13.62	13.62	13.62	13.61	13.62	13.61	13.61	13.62	13.61	13.62	13.62	13.61
S52	13.60	13.62	13.61	13.62	13.61	13.62	13.61	13.61	13.62	13.61	13.62	13.62	13.62	13.62	13.61	13.62	13.61	13.61	13.61
S53	13.61	13.62	13.63	13.62	13.62	13.63	13.63	13.62	13.63	13.62	13.63	13.63	13.63	13.62	13.63	13.63	13.63	13.63	13.63
S54	13.61	13.62	13.63	13.63	13.62	13.63	13.62	13.62	13.63	13.63	13.63	13.63	13.63	13.63	13.63	13.63	13.62	13.62	13.63
S55	13.68	13.70	13.70	13.70	13.69	13.69	13.70	13.69	13.69	13.69	13.69	13.69	13.70	13.70	13.69	13.70	13.69	13.70	13.70
S56	13.67	13.69	13.69	13.68	13.69	13.68	13.68	13.69	13.69	13.68	13.69	13.68	13.68	13.69	13.68	13.69	13.69	13.68	13.69
S57	13.67	13.69	13.68	13.68	13.69	13.68	13.68	13.68	13.69	13.69	13.68	13.69	13.68	13.68	13.68	13.68	13.69	13.69	13.69
S58	13.68	13.69	13.70	13.69	13.70	13.69	13.70	13.70	13.69	13.69	13.70	13.70	13.69	13.70	13.70	13.69	13.69	13.69	13.70
S59	13.67	13.68	13.69	13.68	13.69	13.69	13.69	13.68	13.68	13.69	13.69	13.68	13.68	13.68	13.68	13.68	13.68	13.69	13.68
S60	13.66	13.67	13.68	13.68	13.68	13.67	13.68	13.67	13.67	13.67	13.68	13.68	13.68	13.67	13.68	13.68	13.68	13.67	13.67
S61	13.66	13.68	13.67	13.67	13.67	13.68	13.68	13.67	13.67	13.67	13.68	13.68	13.68	13.67	13.68	13.67	13.68	13.67	13.67
S62	13.68	13.69	13.70	13.69	13.69	13.70	13.69	13.70	13.70	13.70	13.70	13.69	13.69	13.70	13.69	13.69	13.69	13.70	13.70
S63	13.68	13.70	13.69	13.70	13.69	13.70	13.69	13.69	13.70	13.70	13.70	13.70	13.69	13.69	13.69	13.69	13.69	13.70	13.69
S64	13.54	13.55	13.55	13.56	13.56	13.55	13.56	13.56	13.55	13.56	13.56	13.56	13.56	13.55	13.56	13.55	13.56	13.55	13.55
S65	13.53	13.54	13.55	13.55	13.55	13.55	13.54	13.55	13.54	13.55	13.54	13.54	13.55	13.55	13.54	13.55	13.55	13.55	13.55
S66	13.54	13.56	13.56	13.56	13.55	13.55	13.55	13.56	13.56	13.55	13.55	13.55	13.56	13.55	13.56	13.56	13.56	13.55	13.56
S67	13.54	13.56	13.56	13.56	13.56	13.55	13.56	13.55	13.56	13.56	13.56	13.56	13.56	13.56	13.56	13.56	13.55	13.55	13.55
S68	13.53	13.55	13.54	13.54	13.55	13.55	13.54	13.54	13.54	13.55	13.55	13.55	13.55	13.54	13.55	13.55	13.54	13.54	13.55
S69	13.53	13.54	13.55	13.55	13.54	13.55	13.54	13.54	13.55	13.54	13.54	13.54	13.55	13.55	13.55	13.55	13.54	13.54	13.54
S70	13.60	13.61	13.61	13.61	13.62	13.62	13.62	13.62	13.61	13.61	13.61	13.61	13.62	13.61	13.62	13.62	13.61	13.62	13.61
S71	13.59	13.60	13.60	13.60	13.61	13.60	13.61	13.60	13.60	13.60	13.61	13.60	13.61	13.61	13.60	13.60	13.60	13.60	13.60
S72	13.56	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.57	13.57	13.57	13.57	13.57	13.58	13.58	13.58	13.58	13.57
S73	13.60	13.62	13.61	13.61	13.62	13.62	13.62	13.62	13.61	13.61	13.61	13.62	13.62	13.62	13.62	13.62	13.61	13.61	13.61
S74	13.60	13.61	13.62	13.62	13.62	13.61	13.62	13.61	13.62	13.61	13.62	13.62	13.62	13.61	13.62	13.61	13.61	13.61	13.61
S75	13.59	13.60	13.60	13.60	13.60	13.61	13.60	13.61	13.60	13.60	13.60	13.60	13.60	13.61	13.61	13.61	13.61	13.61	13.60
Ave.	13.61	13.62	13.62	13.62	13.62	13.63	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62
Med.	13.60	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.62	13.61	13.62	13.62	13.62	13.62	13.62	13.62	13.61	13.62	13.61
St dev	0.0552	0.0558	0.0551	0.0543	0.0551	0.0543	0.0551	0.0551	0.0549	0.0559	0.0562	0.0555	0.0541	0.0553	0.0537	0.0540	0.0555	0.0559	0.0563
Min.	13.53	13.54	13.54	13.54	13.54	13.55	13.54	13.54	13.54	13.54	13.54	13.54	13.55	13.54	13.54	13.55	13.54	13.54	13.54
Max.	13.68	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.69	13.70	13.70

3.9 Data Set 3, 105° C,150mA (Chromaticity Shift)

Sample Number	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')																	
	0hr (Initial)			1000 hrs	2000 hrs	3000 hrs	4000 hrs	5000 hrs	6000 hrs	7000 hrs	8000 hrs	9000 hrs	10000 hrs	12000 hrs	18000 hrs	13000 hrs	14000 hrs	15000 hrs	16000 hrs	17000 hrs	18000 hrs
S51	0.2898	0.5383	2202	0.0003	0.0006	0.0009	0.0011	0.0015	0.0019	0.0021	0.0024	0.0026	0.0029	0.0031	0.0033	0.0035	0.0036	0.0038	0.0041	0.0044	0.0047
S52	0.2902	0.5385	2195	0.0003	0.0005	0.0008	0.0010	0.0014	0.0018	0.0020	0.0023	0.0025	0.0028	0.0029	0.0032	0.0036	0.0037	0.0039	0.0042	0.0045	0.0048
S53	0.2898	0.5368	2203	0.0003	0.0006	0.0009	0.0013	0.0016	0.0019	0.0022	0.0025	0.0027	0.0028	0.0030	0.0032	0.0035	0.0039	0.0043	0.0045	0.0048	0.0051
S54	0.2906	0.5381	2191	0.0003	0.0006	0.0009	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0029	0.0031	0.0033	0.0035	0.0038	0.0041
S55	0.2895	0.5360	2208	0.0003	0.0006	0.0009	0.0011	0.0015	0.0017	0.0020	0.0022	0.0025	0.0026	0.0028	0.0029	0.0033	0.0035	0.0036	0.0039	0.0042	0.0045
S56	0.2894	0.5358	2211	0.0003	0.0005	0.0008	0.0012	0.0015	0.0017	0.0020	0.0023	0.0025	0.0026	0.0029	0.0030	0.0032	0.0036	0.0038	0.0041	0.0044	0.0047
S57	0.2895	0.5363	2208	0.0003	0.0006	0.0009	0.0011	0.0015	0.0019	0.0021	0.0024	0.0026	0.0029	0.0032	0.0033	0.0035	0.0037	0.0039	0.0042	0.0045	0.0048
S58	0.2897	0.5365	2205	0.0003	0.0006	0.0009	0.0011	0.0015	0.0019	0.0022	0.0024	0.0026	0.0027	0.0029	0.0031	0.0035	0.0037	0.0040	0.0043	0.0046	0.0049
S59	0.2895	0.5356	2210	0.0003	0.0006	0.0008	0.0011	0.0015	0.0017	0.0020	0.0023	0.0024	0.0026	0.0027	0.0030	0.0032	0.0033	0.0035	0.0038	0.0041	0.0044
S60	0.2902	0.5370	2198	0.0003	0.0006	0.0009	0.0011	0.0013	0.0016	0.0018	0.0020	0.0023	0.0025	0.0028	0.0029	0.0031	0.0033	0.0035	0.0038	0.0040	0.0043
S61	0.2898	0.5374	2203	0.0003	0.0006	0.0009	0.0012	0.0016	0.0019	0.0022	0.0024	0.0026	0.0028	0.0031	0.0034	0.0035	0.0039	0.0041	0.0044	0.0047	0.0050
S62	0.2893	0.5357	2212	0.0003	0.0006	0.0009	0.0012	0.0015	0.0017	0.0020	0.0022	0.0024	0.0026	0.0027	0.0028	0.0032	0.0036	0.0039	0.0042	0.0045	0.0048
S63	0.2900	0.5370	2200	0.0003	0.0006	0.0009	0.0011	0.0015	0.0017	0.0019	0.0022	0.0024	0.0026	0.0027	0.0028	0.0032	0.0036	0.0038	0.0040	0.0043	0.0046
S64	0.2922	0.5360	2171	0.0003	0.0005	0.0008	0.0010	0.0013	0.0017	0.0019	0.0021	0.0024	0.0026	0.0028	0.0029	0.0033	0.0034	0.0036	0.0039	0.0042	0.0045
S65	0.2919	0.5357	2175	0.0003	0.0006	0.0009	0.0013	0.0015	0.0018	0.0020	0.0023	0.0026	0.0027	0.0029	0.0032	0.0034	0.0038	0.0041	0.0044	0.0047	0.0050
S66	0.2920	0.5361	2173	0.0003	0.0005	0.0008	0.0010	0.0013	0.0017	0.0019	0.0022	0.0024	0.0025	0.0028	0.0031	0.0033	0.0034	0.0036	0.0039	0.0042	0.0045
S67	0.2922	0.5364	2170	0.0003	0.0006	0.0008	0.0010	0.0014	0.0017	0.0019	0.0022	0.0024	0.0025	0.0028	0.0031	0.0033	0.0035	0.0036	0.0039	0.0042	0.0045
S68	0.2918	0.5354	2177	0.0003	0.0006	0.0009	0.0011	0.0013	0.0016	0.0019	0.0021	0.0024	0.0026	0.0029	0.0032	0.0035	0.0039	0.0043	0.0046	0.0048	0.0051
S69	0.2927	0.5369	2163	0.0003	0.0006	0.0009	0.0012	0.0015	0.0017	0.0020	0.0022	0.0024	0.0025	0.0026	0.0028	0.0029	0.0031	0.0035	0.0038	0.0041	0.0043
S70	0.2845	0.5355	2285	0.0003	0.0006	0.0009	0.0012	0.0016	0.0020	0.0023	0.0026	0.0027	0.0030	0.0033	0.0034	0.0038	0.0039	0.0043	0.0046	0.0048	0.0051
S71	0.2842	0.5352	2290	0.0003	0.0006	0.0009	0.0011	0.0013	0.0017	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0033	0.0037	0.0039	0.0042	0.0045	0.0048
S72	0.2845	0.5353	2285	0.0003	0.0006	0.0009	0.0011	0.0013	0.0016	0.0019	0.0021	0.0022	0.0025	0.0026	0.0029	0.0031	0.0033	0.0034	0.0037	0.0040	0.0043
S73	0.2842	0.5357	2289	0.0003	0.0006	0.0009	0.0011	0.0013	0.0017	0.0019	0.0021	0.0024	0.0026	0.0028	0.0029	0.0031	0.0033	0.0035	0.0038	0.0040	0.0043
S74	0.2843	0.5350	2289	0.0003	0.0006	0.0008	0.0012	0.0014	0.0017	0.0020	0.0022	0.0025	0.0026	0.0029	0.0030	0.0032	0.0033	0.0037	0.0039	0.0042	0.0045
S75	0.2849	0.5364	2278	0.0003	0.0006	0.0009	0.0011	0.0014	0.0016	0.0018	0.0020	0.0023	0.0026	0.0028	0.0031	0.0035	0.0038	0.0042	0.0045	0.0048	0.0051
Ave.	0.2891	0.5363	2216	0.0003	0.0006	0.0008	0.0011	0.0014	0.0018	0.0020	0.0022	0.0025	0.0026	0.0029	0.0030	0.0033	0.0036	0.0038	0.0041	0.0044	0.0047
Med.	0.2898	0.5361	2203	0.0003	0.0006	0.0009	0.0011	0.0015	0.0017	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0033	0.0036	0.0038	0.0041	0.0044	0.0047
St dev	0.0028	0.0010	42.8193	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003
Min.	0.2842	0.5350	2163	0.0003	0.0005	0.0008	0.0010	0.0013	0.0016	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0029	0.0031	0.0033	0.0035	0.0038	0.0041
Max.	0.2927	0.5385	2290	0.0003	0.0006	0.0009	0.0013	0.0016	0.0020	0.0023	0.0026	0.0027	0.0030	0.0033	0.0034	0.0038	0.0039	0.0043	0.0046	0.0048	0.0051

4. EUT Photo



---End of Report---