



Shenzhen Belling Efficiency Testing Lab Co., Ltd



TEST REPORT

ANSI/IES LM-80-15

MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES For

Shenzhen HoneBright Technology Co.,Ltd

**Floor,5 Building, Hongyu Guangming Valley,11Youmagang Road, Gongming
Town,Guangming District, Shenzhen, China**

Report No.: BL210402013-9A

Product Description: SMD LED

Model No.: AW-21/DAB1D27Y29NJ

Test Initiation Date: 2021-04-02

Test Completion Date: 2021-04-05 to 2023-06-23

Report Issue Date: 2023-07-26

Test Standard: ANSI/IES LM-80-15

Test Laboratory: Shenzhen Belling Efficiency Testing Lab Co., Ltd

Tested by
Sam Chen

Reviewed by
Jason Zhou



Note: 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 Shenzhen Belling Efficiency Testing Lab 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 U.S. Government.

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1-GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Manufacturer: Shenzhen HoneBright Technology Co.,Ltd

Brand name: HoneBright

Part Number: AW-21/DAB1D27Y29NJ

Part Type: SMD LED

Product Description: VF 6V, IF 150mA, 1.0W

CCT: 2700K

Die Spacing(mm): N/A

Average Power Density per LED die(W/mm2): 1.1825

Average Current Density per LED die(mA/mm2): 394.166

**Repersnetative CRI (Ra) of the tested sample set
(Indicate whether the reported calue s the mean or
median value of the sample set, or per unit):** 80

Number of LED Light Source tested: See tables

Case temperature (test point temperature): See tables

**Drive current of the LED light source during lifetime
test:** See tables

**Observation of LED light source failure including the
failure conditions and time of failure.:** See tables

LED light source monitoring interval: The LED array are inspected at regular interval (24 hours) throughout the 17000 hours test.

Photometric measurement uncertainty: 1.8% on flux measurements for LM-80 testing.

**Chromaticity shift reported over the Measurement
time:** See tables

1.2 Report Revision

Original report BL210402013-9 dated at 2022-05-23 was recalled and declared as invalid by Shenzhen Belling Efficiency Testing Laboratory Co.,Ltd. Report BL210402013-9A was issued on to replace report BL210402013-9.

Report Number	Report Date	Contents
BL210402013-9	2022-05-23	Original report
BL210402013-9A	2023-07-26	Added the testing to 17000 hours; Updated the Product Description; Updated the Average Power and Current Density per LED die; Updated the Product Mechanical Dimensions.

1.3 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 $\pm 3\%$ of the specified value of the manufacturer during maintenance test, and was within $\pm 0.5\%$ during photometric and electrical measurement test.

1.4 Ambient Conditions for Maintenance Test

For lumen maintenance test, samples within one data set, were installed on cooling boards in thermal chambers with minimal ambient airflow. The case temperature and ambient temperature was monitored by thermocouples which one was soldered to the coldest DUTs' case (TMP_{LED}) location, while the other is mounted at a distance of 5 mm above the TMP location. During life testing, TMP_{LED} of the coldest LEDs were maintained at a temperature that was greater than or equal to 2°C below the corresponding nominal case temperature.

Surrounding air was maintained at a temperature that was greater than or equal to 5°C below the corresponding nominal case temperature. Thermocouples were shielded from direct DUT optical radiation and comply with Type K.

Samples were connected to DC power supply in series circuits with a constant current. The forward current was regulated to within $\pm 3\%$ of the specified value of the manufacturer.

Surrounding Air temperature for life test : controlled to within -5°C of the case temperature (T_s)

Humidity : $< 65\%$ RH

Ambient temperature for Photometry measurement : maintained at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$

1.5 Photometric measurement uncertainty

The uncertainty of the light output measurements is $U=1.8\%$ ($K=2$)

Long term measurement uncertainty is based on reproducibility tests done over a period of one year, calculated to $K=2$ coverage (i.e. 95% coverage).

1.6 Standards Used:

- ANSI/IES LM-80-15: IES Approved Method for Measuring Lumen Maintenance of LED Light Sources.
- CIE 127:2007: Measurement of LEDs(This test method was not accredited by NVLAP)

1.7 Test Facility Description

The test facility used by Shenzhen Belling Efficiency Testing Lab Co., Ltd is located at 1Floor, No.1 Building, Meibaohe Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong Prov.518101 China.

1.8 Statement of Traceability

Shenzhen Belling Efficiency Testing Lab Co., Ltd attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

1.9 Test Equipment List

Device	Manufacture	Model No.	Serial No.	Calibration due date
Digital Power Meter	YOKOGAWA	WT310	N.A	2024-03-27
Integral Sphere(0.5M)	SENSING	Ball0516	N.A	2024-03-27
Spectral radiometer	SENSING	SPR-3000	S1101108	2024-03-27
Stop watch	KISLO	K610	N/A	2024-04-19
LED aging equipment	Guangzhou CK	Box0516	N.A	2024-04-11
DC Power Supply	AIKESAI	APS300-5	N.A	2024-03-27
Thermocouple K	OMEGA	Type K	23736-1	2024-04-17

1.10 Sample Set

Sampling Method:

LED samples for ANSI/IES LM-80-15 testing consist of units built from a minimum of three manufacturing lots with each manufacturing lot built from different wafer lots built on non-consecutive days. These manufacturing lots are picked to represent a wide parametric distribution. Each Sample is soldered to all of the reliability stress boards for a given set of ANSI/IES LM-80-15 tests.

Sample Size:

Total 75Pcs; Each Ts test condition 25Pcs, The samples tested at T_s 55°C, T_s 85°C and T_s 105°C were received at 2021-04-02 and tested during 2021-04-05 to 2023-06-23. The samples were numbered from S01 to S25, S26 to S50 and S51 to S75.

1.11 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:

Test Model Name	Family Model Name	Difference
AW-21/DAB1D27Y29NJ	AW-21/AAB1DXXXXXXJ	First XXX: CCT code; Sencond XX: Flux code; Last X: CRI code.
	AW-21/BAB1DXXXXXXJ	
	AW-21/CAB1DXXXXXXJ	
	AW-21/DAB1DXXXXXXJ	

2-Summary of Test Result

Data Set	1	2	3
Nominal case temperatures	55°C	85°C	105°C
Drive Current	150mA	150mA	150mA
Condition	Ts=54.3°C Ta=53.6°C	Ts=84.1°C Ta=83.1°C	Ts=104.4°C Ta=103.2°C
Sample size	25	25	25
Duration (in Hours)	17000	17000	17000
Intervals (in Hours)	1000	1000	1000
Failure	0	0	0
α	2.158E-06	2.286E-06	2.265E-06
β	1.006	1.005	1.002
Reported L70 (17k) (17000h)	>102000	>102000	>102000
Reported L90 (17k) (17000h)	52,000	48,000	47,000

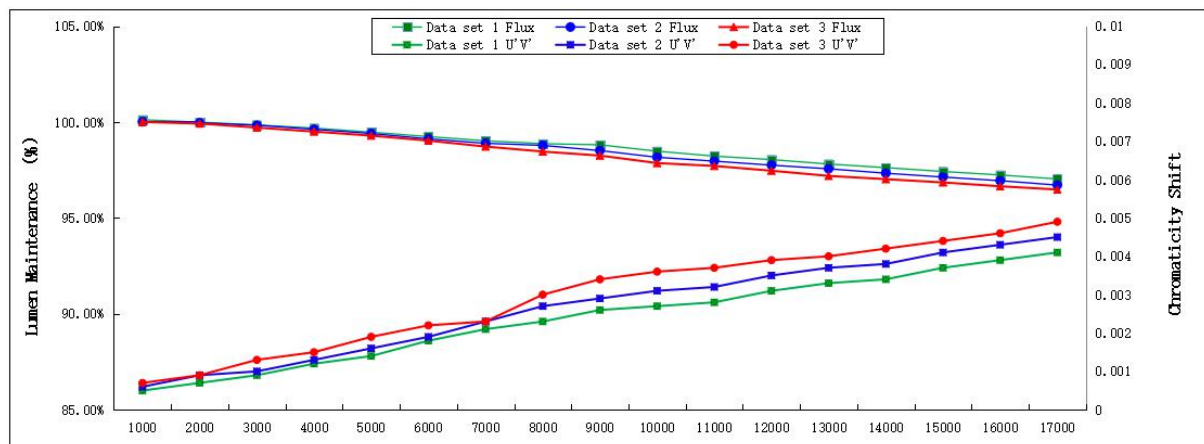
Average Lumen Maintenance (%)

Data Set	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
1	100.12	99.99	99.85	99.68	99.47	99.24	99.02	98.87	98.81
2	100.01	99.96	99.83	99.62	99.40	99.12	98.89	98.78	98.51
3	100.00	99.92	99.71	99.50	99.29	99.03	98.72	98.46	98.25
Data Set	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
1	98.48	98.22	98.04	97.81	97.62	97.42	97.24	97.03	-
2	98.16	97.96	97.75	97.56	97.33	97.13	96.94	96.71	-
3	97.86	97.71	97.46	97.19	97.02	96.85	96.65	96.48	-


Average Chromaticity Shift


Data Set	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
1	0.0005	0.0007	0.0009	0.0012	0.0014	0.0018	0.0021	0.0023	0.0026
2	0.0006	0.0009	0.0010	0.0013	0.0016	0.0019	0.0023	0.0027	0.0029
3	0.0007	0.0009	0.0013	0.0015	0.0019	0.0022	0.0023	0.0030	0.0034
Data Set	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
1	0.0027	0.0028	0.0031	0.0033	0.0034	0.0037	0.0039	0.0041	-
2	0.0031	0.0032	0.0035	0.0037	0.0038	0.0041	0.0043	0.0045	-
3	0.0036	0.0037	0.0039	0.0040	0.0042	0.0044	0.0046	0.0049	-

Average Lumen Maintenance and Chromaticity Shift Vs. Time



TM-21 Report for Lumen Maintenance

		TM-21 Report					
Description of LED Light Source Tested (manufacturer, model, catalog number)		Table 1: Report at each LM-80 Test Condition					
		Shenzhen HoneBright Technology Co.,Ltd AW-21/DAB1D27Y29NJ					
Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp		Table 2: Interpolation Report (projection based on <i>in-situ</i> temperature entered)	
Sample size	25	Sample size	25	Sample size	25	$T_{s,1}$ (°C)	105.00
Number of failures	0	Number of failures	0	Number of failures	0	$T_{s,1}$ (K)	378.15
DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150	α_1	2.265E-06
Test duration (hours)	17,000	Test duration (hours)	17,000	Test duration (hours)	17,000	B_1	1.002
Test duration used for projection (hour to hour)	8,000 - 17,000	Test duration used for projection (hour to hour)	8,000 - 17,000	Test duration used for projection (hour to hour)	8,000 - 17,000	$T_{s,2}$ (°C)	-
Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105	$T_{s,2}$ (K)	-
α	2.158E-06	α	2.286E-06	α	2.265E-06	α_2	-
B	1.006	B	1.005	B	1.002	B_2	-
Reported L70(17k) (hours)	>102000	Reported L70(17k) (hours)	>102000	Reported L70(17k) (hours)	>102000	E_a/k_b	-
						A	-
						B_0	1.002
						$T_{s,1}$ (°C)	105.00
						$T_{s,1}$ (K)	378.15
						α_1	2.265E-06
						Reported L70(17k) at 105°C (hours)	>102000

		TM-21 Report					
Description of LED Light Source Tested (manufacturer, model, catalog number)		Table 1: Report at each LM-80 Test Condition					
		Shenzhen HoneBright Technology Co.,Ltd AW-21/DAB1D27Y29NJ					
Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp		Table 2: Interpolation Report (projection based on <i>in-situ</i> temperature entered)	
Sample size	25	Sample size	25	Sample size	25	$T_{s,1}$ (°C)	105.00
Number of failures	0	Number of failures	0	Number of failures	0	$T_{s,1}$ (K)	378.15
DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150	α_1	2.265E-06
Test duration (hours)	17,000	Test duration (hours)	17,000	Test duration (hours)	17,000	B_1	1.002
Test duration used for projection (hour to hour)	8,000 - 17,000	Test duration used for projection (hour to hour)	8,000 - 17,000	Test duration used for projection (hour to hour)	8,000 - 17,000	$T_{s,2}$ (°C)	-
Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105	$T_{s,2}$ (K)	-
α	2.158E-06	α	2.286E-06	α	2.265E-06	α_2	-
B	1.006	B	1.005	B	1.002	B_2	-
Reported L90(17k) (hours)	52,000	Reported L90(17k) (hours)	48,000	Reported L90(17k) (hours)	47,000	E_a/k_b	-
						A	-
						B_0	1.002
						$T_{s,1}$ (°C)	105.00
						$T_{s,1}$ (K)	378.15
						α_1	2.265E-06
						Reported L90(17k) at 105°C (hours)	47,000

3 Test Data

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

Sample No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S1	156.4	100.09	99.98	99.83	99.78	99.65	99.47	99.28	99.07	98.99
S2	157.8	100.07	99.96	99.89	99.65	99.34	99.18	99.06	98.93	98.89
S3	156.5	100.06	99.97	99.87	99.78	99.44	99.29	99.07	98.71	98.68
S4	156.7	100.07	99.98	99.90	99.81	99.68	99.43	99.13	99.01	98.89
S5	157.5	100.04	99.97	99.81	99.55	99.46	99.22	99.17	98.97	98.86
S6	156.9	100.11	99.97	99.88	99.73	99.50	99.27	99.08	98.80	98.79
S7	157.2	100.21	100.10	99.89	99.75	99.46	99.23	99.09	98.86	98.84
S8	157.0	100.15	100.05	99.89	99.71	99.49	99.37	99.02	98.69	98.62
S9	156.1	100.14	100.05	99.89	99.64	99.37	99.18	98.95	98.62	98.61
S10	157.1	100.12	99.90	99.73	99.53	99.34	99.04	98.79	98.72	98.71
S11	157.0	100.16	100.07	99.81	99.63	99.41	99.15	98.81	98.76	98.71
S12	156.8	100.08	99.98	99.85	99.55	99.42	99.25	99.04	98.98	98.87
S13	156.2	100.12	99.99	99.84	99.68	99.56	99.28	99.06	98.85	98.78
S14	156.7	100.06	99.98	99.83	99.66	99.47	99.25	99.07	98.87	98.85
S15	156.9	100.06	99.97	99.87	99.69	99.58	99.23	99.06	98.84	98.82
S16	156.8	100.11	100.00	99.91	99.85	99.79	99.29	99.00	98.87	98.79
S17	157.6	100.10	99.93	99.76	99.55	99.35	99.14	98.94	98.90	98.86
S18	157.7	100.13	99.92	99.84	99.64	99.43	99.18	98.95	98.85	98.78
S19	156.6	100.14	99.92	99.76	99.58	99.44	99.19	98.91	98.92	98.82
S20	156.2	100.15	100.01	99.86	99.66	99.35	99.11	98.99	98.96	98.91
S21	157.0	100.17	100.06	99.92	99.72	99.59	99.39	99.17	99.11	98.98
S22	158.0	100.02	99.98	99.77	99.66	99.34	99.10	98.89	98.83	98.78
S23	156.5	100.18	99.94	99.83	99.68	99.48	99.31	99.05	98.98	98.92
S24	156.1	100.28	100.07	99.93	99.78	99.48	99.21	99.04	98.84	98.83
S25	157.0	100.17	100.05	99.91	99.72	99.42	99.16	98.83	98.80	98.76
Ave.	156.9	100.12	99.99	99.85	99.68	99.47	99.24	99.02	98.87	98.81
Med.	156.9	100.12	99.98	99.86	99.68	99.46	99.23	99.04	98.86	98.82
st dev	0.5283	0.0584	0.0532	0.0543	0.0862	0.1148	0.1034	0.1162	0.1183	0.0972
Min.	156.1	100.02	99.90	99.73	99.53	99.34	99.04	98.79	98.62	98.61
Max.	158.0	100.28	100.10	99.93	99.85	99.79	99.47	99.28	99.11	98.99

Sample No.	Lumen Maintenance (%)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L1	98.66	98.27	98.05	97.83	97.66	97.55	97.34	97.08	-
L2	98.41	98.16	98.02	97.84	97.73	97.47	97.36	97.13	-
L3	98.37	98.17	97.93	97.72	97.65	97.33	97.11	96.90	-
L4	98.51	98.25	98.09	97.84	97.60	97.48	97.25	97.01	-
L5	98.64	98.26	98.17	97.93	97.73	97.46	97.27	97.02	-
L6	98.42	98.24	97.99	97.69	97.51	97.38	97.27	97.11	-
L7	98.52	98.23	98.11	97.91	97.66	97.51	97.28	97.14	-
L8	98.37	98.17	97.99	97.83	97.73	97.49	97.31	97.12	-
L9	98.35	98.11	97.91	97.74	97.54	97.37	97.12	96.88	-
L10	98.36	98.23	97.97	97.77	97.59	97.38	97.19	97.01	-
L11	98.41	98.24	98.06	97.88	97.73	97.51	97.34	97.12	-
L12	98.61	98.37	98.10	97.77	97.48	97.32	97.17	96.94	-
L13	98.40	98.21	97.98	97.79	97.57	97.43	97.12	96.88	-
L14	98.49	98.35	98.14	97.84	97.59	97.44	97.33	97.13	-
L15	98.51	98.22	98.05	97.70	97.56	97.46	97.26	97.10	-
L16	98.36	98.09	97.96	97.68	97.50	97.35	97.12	96.98	-
L17	98.44	98.16	98.04	97.90	97.71	97.50	97.30	97.09	-
L18	98.57	98.22	98.05	97.91	97.71	97.55	97.37	97.14	-
L19	98.60	98.29	98.01	97.88	97.75	97.43	97.21	96.96	-
L20	98.59	98.33	98.12	97.86	97.57	97.44	97.21	97.02	-
L21	98.57	98.27	98.17	97.86	97.74	97.44	97.34	97.15	-
L22	98.43	98.10	97.93	97.73	97.62	97.32	97.13	96.91	-
L23	98.63	98.26	98.06	97.85	97.54	97.29	97.17	96.97	-
L24	98.35	98.16	98.09	97.82	97.52	97.35	97.11	96.88	-
L25	98.49	98.25	98.00	97.80	97.54	97.35	97.23	97.01	-
Ave.	98.48	98.22	98.04	97.81	97.62	97.42	97.24	97.03	-
Med.	98.49	98.23	98.05	97.83	97.60	97.44	97.25	97.02	-
st dev	0.1029	0.0725	0.0732	0.0732	0.0880	0.0756	0.0877	0.0938	-
Min.	98.35	98.09	97.91	97.68	97.48	97.29	97.11	96.88	-
Max.	98.66	98.37	98.17	97.93	97.75	97.55	97.37	97.15	-

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

Sample No.	Forward Voltage (V)									
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S1	6.110	6.018	6.006	6.024	6.194	6.018	6.150	6.112	6.040	6.183
S2	6.121	6.109	6.190	6.129	6.024	6.108	6.046	6.128	6.177	6.044
S3	6.135	6.121	6.169	6.122	6.011	6.035	6.199	6.035	6.139	6.037
S4	6.118	6.199	6.123	6.145	6.131	6.173	6.130	6.164	6.003	6.142
S5	6.122	6.195	6.179	6.101	6.134	6.024	6.018	6.154	6.141	6.157
S6	6.126	6.022	6.181	6.021	6.001	6.189	6.043	6.160	6.021	6.112
S7	6.125	6.116	6.106	6.047	6.032	6.174	6.173	6.022	6.129	6.040
S8	6.191	6.021	6.057	6.186	6.176	6.179	6.156	6.178	6.065	6.142
S9	6.182	6.168	6.120	6.196	6.028	6.009	6.026	6.041	6.040	6.153
S10	6.051	6.000	6.121	6.143	6.004	6.109	6.121	6.023	6.177	6.042
S11	6.119	6.115	6.137	6.140	6.016	6.017	6.177	6.146	6.139	6.104
S12	6.172	6.112	6.108	6.123	6.033	6.011	6.124	6.137	6.022	6.035
S13	6.016	6.013	6.008	6.113	6.008	6.027	6.038	6.026	6.122	6.188
S14	6.168	6.192	6.129	6.015	6.195	6.144	6.167	6.108	6.129	6.057
S15	6.121	6.168	6.153	6.172	6.063	6.175	6.110	6.165	6.037	6.046
S16	6.005	6.012	6.139	6.112	6.137	6.052	6.049	6.133	6.015	6.171
S17	6.124	6.031	6.021	6.127	6.001	6.036	6.164	6.052	6.158	6.025
S18	6.128	6.177	6.038	6.032	6.005	6.058	6.140	6.016	6.194	6.043
S19	6.122	6.018	6.160	6.105	6.029	6.033	6.007	6.187	6.034	6.048
S20	6.057	6.030	6.047	6.040	6.057	6.030	6.002	6.165	6.024	6.136
S21	6.121	6.198	6.033	6.008	6.126	6.103	6.044	6.019	6.054	6.163
S22	6.144	6.189	6.172	6.187	6.029	6.019	6.100	6.175	6.175	6.127
S23	6.185	6.179	6.172	6.123	6.019	6.148	6.165	6.056	6.174	6.013
S24	6.106	6.034	6.017	6.137	6.054	6.106	6.032	6.163	6.013	6.141
S25	6.119	6.117	6.025	6.183	6.185	6.056	6.167	6.048	6.154	6.187
Ave.	6.120	6.102	6.104	6.109	6.068	6.081	6.102	6.105	6.095	6.101
Med.	6.122	6.115	6.121	6.123	6.032	6.056	6.121	6.128	6.122	6.112
st dev	0.0466	0.0743	0.0633	0.0589	0.0684	0.0637	0.0640	0.0623	0.0663	0.0601
Min.	6.005	6.000	6.006	6.008	6.001	6.009	6.002	6.016	6.003	6.013
Max.	6.191	6.199	6.190	6.196	6.195	6.189	6.199	6.187	6.194	6.188

Sample No.	Forward Voltage (V)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L1	6.086	6.025	6.091	6.098	6.152	6.068	6.074	6.109	-
L2	6.045	6.149	6.111	6.013	6.090	6.095	6.051	6.095	-
L3	6.092	6.073	6.074	6.126	6.119	6.111	6.053	6.175	-
L4	6.168	6.005	6.089	6.089	6.176	6.083	6.061	6.060	-
L5	6.017	6.002	6.061	6.041	6.112	6.132	6.165	6.135	-
L6	6.038	6.037	6.071	6.104	6.166	6.109	6.070	6.040	-
L7	6.058	6.117	6.150	6.105	6.046	6.057	6.040	6.079	-
L8	6.164	6.091	6.170	6.116	6.172	6.180	6.088	6.039	-
L9	6.039	6.174	6.118	6.046	6.044	6.158	6.133	6.024	-
L10	6.132	6.119	6.013	6.161	6.080	6.046	6.043	6.033	-
L11	6.047	6.038	6.116	6.072	6.052	6.083	6.034	6.091	-
L12	6.145	6.048	6.032	6.082	6.185	6.000	6.113	6.176	-
L13	6.073	6.076	6.169	6.135	6.031	6.048	6.157	6.036	-
L14	6.011	6.036	6.088	6.111	6.180	6.044	6.011	6.081	-
L15	6.156	6.117	6.110	6.176	6.195	6.059	6.073	6.117	-
L16	6.069	6.063	6.068	6.123	6.122	6.008	6.164	6.114	-
L17	6.147	6.090	6.120	6.024	6.131	6.018	6.035	6.049	-
L18	6.103	6.043	6.129	6.169	6.176	6.194	6.133	6.136	-
L19	6.130	6.024	6.090	6.141	6.149	6.087	6.137	6.162	-
L20	6.112	6.076	6.176	6.142	6.145	6.144	6.104	6.052	-
L21	6.016	6.107	6.154	6.031	6.046	6.062	6.066	6.087	-
L22	6.155	6.103	6.039	6.119	6.136	6.170	6.017	6.008	-
L23	6.047	6.181	6.146	6.063	6.118	6.013	6.084	6.172	-
L24	6.066	6.041	6.114	6.137	6.021	6.135	6.049	6.192	-
L25	6.132	6.193	6.168	6.150	6.135	6.027	6.098	6.041	-
Ave.	6.090	6.081	6.107	6.103	6.119	6.085	6.082	6.092	-
Med.	6.086	6.076	6.111	6.111	6.131	6.083	6.073	6.087	-
st dev	0.0511	0.0540	0.0452	0.0464	0.0537	0.0563	0.0457	0.0546	-
Min.	6.011	6.002	6.013	6.013	6.021	6.000	6.011	6.008	-
Max.	6.168	6.193	6.176	6.176	6.195	6.194	6.165	6.192	-

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

Sample No.	u'	v'	CCT(K)	Chromaticity Shift Δu'v'								
	0hr(Initial)			1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S1	0.2606	0.5305	2726	0.0002	0.0007	0.0009	0.0012	0.0014	0.0017	0.0020	0.0025	0.0027
S2	0.2611	0.5301	2718	0.0006	0.0008	0.0008	0.0012	0.0015	0.0021	0.0022	0.0024	0.0025
S3	0.2613	0.5316	2709	0.0005	0.0008	0.0011	0.0011	0.0017	0.0017	0.0020	0.0024	0.0025
S4	0.2595	0.5285	2758	0.0002	0.0004	0.0007	0.0010	0.0012	0.0018	0.0023	0.0025	0.0026
S5	0.2616	0.5305	2706	0.0005	0.0008	0.0010	0.0012	0.0014	0.0019	0.0020	0.0021	0.0022
S6	0.2594	0.5277	2764	0.0006	0.0008	0.0008	0.0011	0.0013	0.0017	0.0022	0.0027	0.0032
S7	0.2602	0.5288	2743	0.0001	0.0002	0.0002	0.0005	0.0008	0.0011	0.0016	0.0023	0.0027
S8	0.2596	0.5311	2745	0.0002	0.0005	0.0005	0.0009	0.0009	0.0013	0.0015	0.0019	0.0025
S9	0.2625	0.5304	2688	0.0002	0.0007	0.0009	0.0015	0.0015	0.0016	0.0017	0.0017	0.0018
S10	0.2628	0.5298	2685	0.0004	0.0004	0.0007	0.0014	0.0016	0.0017	0.0019	0.0020	0.0021
S11	0.2601	0.5316	2732	0.0004	0.0005	0.0006	0.0008	0.0014	0.0019	0.0024	0.0025	0.0026
S12	0.2603	0.5286	2742	0.0006	0.0008	0.0009	0.0010	0.0015	0.0015	0.0019	0.0019	0.0020
S13	0.2623	0.5298	2695	0.0004	0.0007	0.0010	0.0012	0.0012	0.0015	0.0018	0.0024	0.0027
S14	0.2607	0.5299	2727	0.0001	0.0004	0.0004	0.0007	0.0008	0.0013	0.0018	0.0024	0.0028
S15	0.2585	0.5313	2767	0.0003	0.0006	0.0006	0.0010	0.0010	0.0014	0.0016	0.0020	0.0024
S16	0.2591	0.5302	2759	0.0006	0.0012	0.0012	0.0012	0.0015	0.0019	0.0021	0.0024	0.0025
S17	0.2606	0.5308	2725	0.0005	0.0007	0.0009	0.0014	0.0018	0.0020	0.0024	0.0025	0.0026
S18	0.2590	0.5301	2761	0.0007	0.0011	0.0014	0.0016	0.0017	0.0019	0.0021	0.0022	0.0023
S19	0.2590	0.5286	2768	0.0007	0.0009	0.0011	0.0014	0.0017	0.0020	0.0023	0.0026	0.0032
S20	0.2601	0.5287	2745	0.0007	0.0009	0.0011	0.0015	0.0019	0.0022	0.0026	0.0020	0.0023
S21	0.2613	0.5296	2715	0.0009	0.0010	0.0012	0.0013	0.0018	0.0020	0.0023	0.0027	0.0028
S22	0.2609	0.5312	2718	0.0010	0.0011	0.0014	0.0016	0.0020	0.0024	0.0027	0.0029	0.0031
S23	0.2619	0.5308	2699	0.0012	0.0014	0.0017	0.0019	0.0021	0.0023	0.0025	0.0028	0.0030
S24	0.2607	0.5312	2722	0.0004	0.0007	0.0007	0.0011	0.0013	0.0017	0.0021	0.0026	0.0031
S25	0.2606	0.5298	2729	0.0002	0.0004	0.0004	0.0007	0.0007	0.0014	0.0017	0.0023	0.0027
Ave.	0.2605	0.5300	2730	0.0005	0.0007	0.0009	0.0012	0.0014	0.0018	0.0021	0.0023	0.0026
Med.	0.2606	0.5301	2727	0.0005	0.0007	0.0009	0.0012	0.0015	0.0017	0.0021	0.0024	0.0026
st dev	0.0011	0.0011	24.95	0.0003	0.0003	0.0003	0.0003	0.0004	0.0003	0.0003	0.0003	0.0004
Min.	0.2585	0.5277	2685	0.0001	0.0002	0.0002	0.0005	0.0007	0.0011	0.0015	0.0017	0.0018
Max.	0.2628	0.5316	2768	0.0012	0.0014	0.0017	0.0019	0.0021	0.0024	0.0027	0.0029	0.0032

Sample No.	Chromaticity Shift $\Delta u'v'$								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L1	0.0028	0.0030	0.0032	0.0033	0.0035	0.0037	0.0039	0.0042	-
L2	0.0026	0.0027	0.0029	0.0031	0.0032	0.0035	0.0037	0.0039	-
L3	0.0017	0.0020	0.0023	0.0026	0.0027	0.0028	0.0029	0.0031	-
L4	0.0018	0.0020	0.0022	0.0023	0.0025	0.0028	0.0030	0.0033	-
L5	0.0023	0.0024	0.0027	0.0031	0.0033	0.0036	0.0038	0.0040	-
L6	0.0033	0.0035	0.0037	0.0038	0.0039	0.0041	0.0043	0.0044	-
L7	0.0029	0.0031	0.0034	0.0036	0.0038	0.0040	0.0042	0.0045	-
L8	0.0026	0.0027	0.0030	0.0033	0.0034	0.0037	0.0038	0.0040	-
L9	0.0020	0.0022	0.0024	0.0027	0.0029	0.0031	0.0033	0.0036	-
L10	0.0022	0.0025	0.0027	0.0029	0.0030	0.0033	0.0034	0.0037	-
L11	0.0027	0.0028	0.0031	0.0034	0.0035	0.0037	0.0039	0.0041	-
L12	0.0022	0.0024	0.0027	0.0030	0.0032	0.0035	0.0037	0.0038	-
L13	0.0028	0.0030	0.0032	0.0034	0.0036	0.0038	0.0041	0.0042	-
L14	0.0030	0.0031	0.0034	0.0037	0.0038	0.0039	0.0041	0.0043	-
L15	0.0026	0.0028	0.0031	0.0032	0.0034	0.0036	0.0038	0.0040	-
L16	0.0026	0.0027	0.0029	0.0031	0.0032	0.0035	0.0037	0.0039	-
L17	0.0028	0.0030	0.0033	0.0036	0.0037	0.0040	0.0043	0.0046	-
L18	0.0024	0.0025	0.0028	0.0029	0.0031	0.0033	0.0036	0.0038	-
L19	0.0033	0.0034	0.0036	0.0038	0.0040	0.0042	0.0044	0.0047	-
L20	0.0024	0.0025	0.0029	0.0031	0.0032	0.0035	0.0037	0.0039	-
L21	0.0029	0.0031	0.0033	0.0035	0.0036	0.0038	0.0040	0.0041	-
L22	0.0033	0.0035	0.0037	0.0038	0.0039	0.0041	0.0043	0.0045	-
L23	0.0031	0.0032	0.0035	0.0037	0.0038	0.0040	0.0041	0.0044	-
L24	0.0032	0.0034	0.0037	0.0039	0.0041	0.0044	0.0046	0.0048	-
L25	0.0028	0.0030	0.0033	0.0035	0.0037	0.0039	0.0040	0.0042	-
Ave.	0.0027	0.0028	0.0031	0.0033	0.0034	0.0037	0.0039	0.0041	-
Med.	0.0027	0.0028	0.0031	0.0033	0.0035	0.0037	0.0039	0.0041	-
st dev	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	-
Min.	0.0017	0.0020	0.0022	0.0023	0.0025	0.0028	0.0029	0.0031	-
Max.	0.0033	0.0035	0.0037	0.0039	0.0041	0.0044	0.0046	0.0048	-

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

Sample No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S26	158.0	100.09	100.04	99.95	99.63	99.45	99.24	98.94	98.86	98.61
S27	158.6	100.12	100.07	99.91	99.68	99.52	99.21	98.94	98.84	98.58
S28	156.7	99.99	99.97	99.87	99.54	99.39	99.11	98.75	98.68	98.51
S29	157.1	100.04	99.99	99.80	99.42	99.32	99.06	98.77	98.66	98.46
S30	157.0	99.92	99.85	99.70	99.58	99.32	99.08	98.76	98.67	98.52
S31	157.1	100.05	100.03	99.89	99.71	99.48	99.26	98.92	98.83	98.66
S32	156.7	99.92	99.89	99.81	99.68	99.42	99.16	99.03	98.82	98.69
S33	158.4	100.03	100.02	99.86	99.54	99.38	99.06	98.92	98.85	98.54
S34	156.1	99.98	99.96	99.84	99.65	99.45	99.14	98.92	98.87	98.49
S35	157.4	100.17	100.14	99.90	99.77	99.55	99.31	99.04	98.90	98.41
S36	156.8	100.14	100.10	99.84	99.65	99.48	99.21	98.96	98.85	98.48
S37	156.3	100.07	100.02	99.90	99.70	99.47	99.13	98.81	98.76	98.52
S38	157.8	99.99	99.96	99.88	99.56	99.43	99.13	99.09	98.86	98.54
S39	156.9	99.89	99.81	99.75	99.59	99.31	99.09	98.92	98.89	98.43
S40	157.4	100.05	99.98	99.91	99.73	99.63	99.09	98.87	98.73	98.61
S41	157.3	99.98	99.93	99.82	99.63	99.39	99.11	98.97	98.84	98.58
S42	158.2	99.93	99.87	99.70	99.54	99.34	99.17	98.80	98.77	98.45
S43	157.1	99.95	99.88	99.70	99.55	99.29	99.09	98.79	98.71	98.57
S44	157.7	100.12	100.09	99.84	99.67	99.55	99.23	98.89	98.77	98.53
S45	157.9	100.13	100.05	99.87	99.71	99.56	99.23	98.94	98.84	98.52
S46	156.4	99.89	99.83	99.73	99.45	99.05	98.85	98.72	98.68	98.51
S47	157.6	99.94	99.90	99.77	99.57	99.21	98.97	98.67	98.58	98.19
S48	156.3	99.89	99.86	99.70	99.46	99.16	98.83	98.74	98.69	98.45
S49	157.6	99.97	99.92	99.79	99.67	99.25	99.02	98.97	98.85	98.57
S50	157.9	100.02	99.93	99.90	99.82	99.57	99.32	99.08	98.78	98.45
Ave.	157.3	100.01	99.96	99.83	99.62	99.40	99.12	98.89	98.78	98.51
Med.	157.3	99.99	99.96	99.84	99.63	99.42	99.13	98.92	98.82	98.52
st dev	0.6806	0.0852	0.0905	0.0770	0.0997	0.1394	0.1218	0.1159	0.0864	0.0973
Min.	156.1	99.89	99.81	99.70	99.42	99.05	98.83	98.67	98.58	98.19
Max.	158.6	100.17	100.14	99.95	99.82	99.63	99.32	99.09	98.90	98.69

Sample No.	Lumen Maintenance (%)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L26	98.27	97.98	97.81	97.67	97.36	97.15	96.94	96.77	-
L27	98.22	98.04	97.85	97.66	97.41	97.14	97.05	96.87	-
L28	98.24	98.02	97.86	97.70	97.43	97.21	97.04	96.77	-
L29	98.10	97.90	97.66	97.49	97.23	97.08	96.85	96.65	-
L30	98.04	97.82	97.66	97.42	97.19	97.06	96.82	96.55	-
L31	98.25	98.04	97.88	97.67	97.46	97.25	97.08	96.77	-
L32	98.26	98.04	97.88	97.66	97.40	97.18	97.05	96.78	-
L33	98.18	97.99	97.79	97.58	97.44	97.28	97.11	96.84	-
L34	98.17	97.98	97.74	97.48	97.25	97.05	96.91	96.71	-
L35	98.05	97.83	97.66	97.49	97.31	97.00	96.90	96.77	-
L36	98.15	98.05	97.82	97.69	97.40	97.16	96.95	96.70	-
L37	98.15	97.88	97.68	97.51	97.29	97.03	96.80	96.60	-
L38	98.22	98.04	97.75	97.58	97.35	97.11	96.90	96.72	-
L39	98.07	97.94	97.69	97.47	97.23	97.05	96.89	96.59	-
L40	98.12	97.85	97.61	97.50	97.25	97.10	96.93	96.64	-
L41	98.27	98.03	97.77	97.50	97.31	97.13	96.93	96.71	-
L42	98.06	97.93	97.79	97.64	97.43	97.23	96.98	96.83	-
L43	98.27	98.00	97.80	97.51	97.20	97.00	96.80	96.60	-
L44	98.21	98.03	97.83	97.69	97.42	97.25	97.04	96.79	-
L45	98.04	97.86	97.64	97.47	97.36	97.28	97.04	96.78	-
L46	98.07	97.84	97.65	97.47	97.29	97.03	96.84	96.65	-
L47	98.02	97.83	97.66	97.48	97.25	97.04	96.85	96.66	-
L48	98.07	97.95	97.71	97.60	97.44	97.26	97.01	96.73	-
L49	98.18	98.00	97.83	97.66	97.40	97.12	96.97	96.71	-
L50	98.25	98.02	97.77	97.52	97.23	97.12	96.80	96.56	-
Ave.	98.16	97.96	97.75	97.56	97.33	97.13	96.94	96.71	-
Med.	98.17	97.98	97.77	97.52	97.35	97.12	96.93	96.71	-
st dev	0.0865	0.0807	0.0837	0.0904	0.0871	0.0900	0.0950	0.0888	-
Min.	98.02	97.82	97.61	97.42	97.19	97.00	96.80	96.55	-
Max.	98.27	98.05	97.88	97.70	97.46	97.28	97.11	96.87	-

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

Sample No.	Forward Voltage (V)									
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S26	6.123	6.163	6.151	6.032	6.148	6.170	6.138	6.137	6.198	6.032
S27	6.117	6.177	6.120	6.021	6.103	6.167	6.005	6.114	6.102	6.139
S28	6.123	6.029	6.011	6.145	6.197	6.014	6.153	6.193	6.142	6.156
S29	6.025	6.136	6.042	6.008	6.137	6.191	6.149	6.044	6.141	6.045
S30	6.129	6.173	6.034	6.120	6.130	6.112	6.018	6.191	6.126	6.178
S31	6.198	6.040	6.190	6.192	6.016	6.175	6.054	6.175	6.179	6.150
S32	6.154	6.178	6.140	6.012	6.026	6.164	6.127	6.143	6.193	6.164
S33	6.182	6.188	6.144	6.058	6.196	6.178	6.029	6.010	6.122	6.150
S34	6.199	6.052	6.028	6.047	6.137	6.106	6.163	6.056	6.175	6.020
S35	6.132	6.162	6.172	6.186	6.051	6.106	6.124	6.145	6.122	6.126
S36	6.172	6.148	6.196	6.010	6.140	6.199	6.006	6.049	6.195	6.183
S37	6.123	6.175	6.190	6.045	6.034	6.018	6.172	6.137	6.010	6.050
S38	6.002	6.141	6.117	6.147	6.017	6.149	6.151	6.041	6.167	6.001
S39	6.188	6.187	6.101	6.025	6.175	6.114	6.004	6.056	6.168	6.023
S40	6.123	6.014	6.134	6.059	6.177	6.189	6.186	6.045	6.012	6.192
S41	6.117	6.122	6.054	6.017	6.023	6.192	6.124	6.028	6.013	6.009
S42	6.058	6.147	6.173	6.001	6.107	6.162	6.061	6.120	6.123	6.006
S43	6.131	6.185	6.012	6.168	6.031	6.127	6.145	6.023	6.164	6.195
S44	6.143	6.040	6.012	6.044	6.003	6.150	6.155	6.188	6.005	6.031
S45	6.104	6.143	6.019	6.139	6.179	6.054	6.026	6.006	6.133	6.137
S46	6.121	6.144	6.171	6.051	6.052	6.182	6.195	6.101	6.133	6.123
S47	6.126	6.152	6.053	6.184	6.115	6.184	6.131	6.195	6.041	6.168
S48	6.181	6.125	6.002	6.015	6.004	6.191	6.143	6.049	6.196	6.008
S49	6.196	6.196	6.104	6.057	6.021	6.163	6.181	6.124	6.101	6.147
S50	6.153	6.172	6.169	6.150	6.132	6.183	6.025	6.054	6.159	6.060
Ave.	6.133	6.136	6.102	6.077	6.094	6.146	6.107	6.097	6.125	6.100
Med.	6.129	6.148	6.117	6.051	6.107	6.164	6.131	6.101	6.133	6.126
st dev	0.0496	0.0552	0.0678	0.0661	0.0672	0.0527	0.0657	0.0632	0.0624	0.0701
Min.	6.002	6.014	6.002	6.001	6.003	6.014	6.004	6.006	6.005	6.001
Max.	6.199	6.196	6.196	6.192	6.197	6.199	6.195	6.195	6.198	6.195

Sample No.	Forward Voltage (V)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L26	6.037	6.138	6.117	6.126	6.045	6.143	6.088	6.106	-
L27	6.038	6.116	6.139	6.095	6.154	6.130	6.078	6.118	-
L28	6.120	6.085	6.024	6.183	6.023	6.169	6.183	6.124	-
L29	6.067	6.142	6.071	6.101	6.043	6.018	6.159	6.093	-
L30	6.061	6.038	6.113	6.100	6.049	6.011	6.198	6.143	-
L31	6.161	6.035	6.123	6.127	6.098	6.022	6.181	6.123	-
L32	6.093	6.073	6.133	6.187	6.103	6.117	6.055	6.119	-
L33	6.022	6.102	6.048	6.051	6.003	6.024	6.129	6.062	-
L34	6.132	6.084	6.067	6.122	6.088	6.032	6.007	6.058	-
L35	6.059	6.052	6.060	6.150	6.125	6.096	6.079	6.007	-
L36	6.176	6.014	6.085	6.146	6.034	6.040	6.199	6.122	-
L37	6.090	6.030	6.174	6.066	6.129	6.011	6.029	6.057	-
L38	6.080	6.197	6.101	6.030	6.092	6.171	6.114	6.151	-
L39	6.120	6.058	6.038	6.072	6.135	6.121	6.169	6.110	-
L40	6.068	6.066	6.142	6.144	6.062	6.074	6.164	6.151	-
L41	6.098	6.084	6.032	6.112	6.158	6.152	6.119	6.038	-
L42	6.040	6.089	6.161	6.007	6.101	6.074	6.025	6.025	-
L43	6.010	6.199	6.134	6.086	6.089	6.042	6.174	6.146	-
L44	6.110	6.180	6.113	6.127	6.067	6.147	6.080	6.128	-
L45	6.013	6.147	6.115	6.143	6.037	6.034	6.085	6.125	-
L46	6.149	6.047	6.117	6.125	6.059	6.050	6.094	6.057	-
L47	6.159	6.164	6.105	6.118	6.167	6.156	6.164	6.059	-
L48	6.121	6.015	6.098	6.058	6.092	6.040	6.071	6.142	-
L49	6.058	6.153	6.092	6.089	6.016	6.116	6.184	6.066	-
L50	6.175	6.120	6.043	6.140	6.106	6.072	6.104	6.073	-
Ave.	6.090	6.097	6.098	6.108	6.083	6.082	6.117	6.096	-
Med.	6.090	6.085	6.105	6.118	6.089	6.074	6.114	6.110	-
st dev	0.0507	0.0561	0.0410	0.0440	0.0459	0.0550	0.0576	0.0423	-
Min.	6.010	6.014	6.024	6.007	6.003	6.011	6.007	6.007	-
Max.	6.176	6.199	6.174	6.187	6.167	6.171	6.199	6.151	-

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

Sample No.	u'	v'	CCT(K)	Chromaticity Shift $\Delta u'v'$								
	0hr(Initial)			1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S26	0.2613	0.5315	2709	0.0015	0.0018	0.0021	0.0025	0.0029	0.0031	0.0032	0.0033	0.0031
S27	0.2610	0.5301	2720	0.0012	0.0016	0.0019	0.0023	0.0025	0.0028	0.0030	0.0027	0.0030
S28	0.2603	0.5299	2736	0.0011	0.0013	0.0017	0.0021	0.0024	0.0027	0.0029	0.0032	0.0033
S29	0.2629	0.5308	2678	0.0014	0.0016	0.0019	0.0022	0.0027	0.0028	0.0030	0.0033	0.0034
S30	0.2585	0.5299	2774	0.0010	0.0013	0.0017	0.0019	0.0022	0.0026	0.0029	0.0028	0.0030
S31	0.2612	0.5309	2713	0.0003	0.0006	0.0007	0.0012	0.0016	0.0019	0.0025	0.0031	0.0032
S32	0.2610	0.5315	2715	0.0005	0.0008	0.0010	0.0015	0.0018	0.0022	0.0027	0.0033	0.0033
S33	0.2588	0.5309	2763	0.0008	0.0010	0.0012	0.0014	0.0018	0.0023	0.0027	0.0027	0.0030
S34	0.2612	0.5315	2711	0.0010	0.0012	0.0015	0.0017	0.0020	0.0025	0.0028	0.0029	0.0031
S35	0.2608	0.5307	2721	0.0007	0.0008	0.0010	0.0012	0.0016	0.0019	0.0024	0.0026	0.0027
S36	0.2607	0.5282	2733	0.0009	0.0010	0.0013	0.0015	0.0018	0.0024	0.0026	0.0028	0.0030
S37	0.2621	0.5309	2694	0.0007	0.0009	0.0011	0.0014	0.0016	0.0021	0.0024	0.0027	0.0028
S38	0.2596	0.5303	2748	0.0005	0.0007	0.0009	0.0010	0.0014	0.0018	0.0020	0.0025	0.0028
S39	0.2618	0.5316	2698	0.0002	0.0007	0.0011	0.0011	0.0013	0.0015	0.0019	0.0021	0.0024
S40	0.2598	0.5314	2738	0.0005	0.0006	0.0008	0.0009	0.0012	0.0019	0.0021	0.0023	0.0030
S41	0.2609	0.5303	2722	0.0004	0.0008	0.0005	0.0008	0.0010	0.0013	0.0020	0.0024	0.0030
S42	0.2613	0.5316	2709	0.0003	0.0008	0.0010	0.0012	0.0012	0.0016	0.0019	0.0020	0.0025
S43	0.2624	0.5308	2689	0.0006	0.0008	0.0008	0.0009	0.0010	0.0014	0.0016	0.0018	0.0022
S44	0.2619	0.5312	2697	0.0007	0.0009	0.0012	0.0014	0.0017	0.0020	0.0024	0.0028	0.0033
S45	0.2591	0.5296	2763	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0033	0.0037
S46	0.2605	0.5309	2728	0.0004	0.0006	0.0007	0.0012	0.0015	0.0020	0.0025	0.0031	0.0039
S47	0.2585	0.5311	2768	0.0004	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0006
S48	0.2597	0.5281	2755	0.0002	0.0003	0.0004	0.0008	0.0010	0.0014	0.0019	0.0025	0.0010
S49	0.2628	0.5301	2682	0.0003	0.0006	0.0007	0.0012	0.0016	0.0021	0.0028	0.0030	0.0035
S50	0.2599	0.5313	2737	0.0003	0.0005	0.0006	0.0011	0.0014	0.0019	0.0022	0.0028	0.0036
Ave.	0.2607	0.5306	2724	0.0006	0.0009	0.0010	0.0013	0.0016	0.0019	0.0023	0.0027	0.0029
Med.	0.2609	0.5309	2721	0.0005	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024	0.0028	0.0030
st dev	0.0013	0.0009	27.30	0.0004	0.0004	0.0005	0.0006	0.0007	0.0007	0.0007	0.0006	0.0007
Min.	0.2585	0.5281	2678	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0006
Max.	0.2629	0.5316	2774	0.0015	0.0018	0.0021	0.0025	0.0029	0.0031	0.0032	0.0033	0.0039

Sample No.	Chromaticity Shift $\Delta u'v'$								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L26	0.0033	0.0035	0.0037	0.0039	0.0041	0.0043	0.0044	0.0048	-
L27	0.0031	0.0032	0.0035	0.0037	0.0039	0.0042	0.0045	0.0047	-
L28	0.0034	0.0036	0.0038	0.0040	0.0043	0.0045	0.0047	0.0049	-
L29	0.0036	0.0037	0.0039	0.0041	0.0042	0.0044	0.0045	0.0048	-
L30	0.0032	0.0033	0.0036	0.0037	0.0038	0.0040	0.0041	0.0044	-
L31	0.0033	0.0035	0.0037	0.0039	0.0041	0.0043	0.0045	0.0047	-
L32	0.0035	0.0037	0.0039	0.0041	0.0043	0.0046	0.0048	0.0050	-
L33	0.0031	0.0032	0.0035	0.0036	0.0037	0.0039	0.0040	0.0043	-
L34	0.0033	0.0034	0.0037	0.0039	0.0040	0.0042	0.0045	0.0047	-
L35	0.0029	0.0031	0.0033	0.0035	0.0037	0.0040	0.0042	0.0045	-
L36	0.0032	0.0034	0.0036	0.0038	0.0041	0.0044	0.0046	0.0048	-
L37	0.0029	0.0030	0.0032	0.0034	0.0035	0.0037	0.0038	0.0041	-
L38	0.0030	0.0032	0.0035	0.0036	0.0037	0.0039	0.0041	0.0043	-
L39	0.0025	0.0027	0.0031	0.0033	0.0035	0.0038	0.0040	0.0042	-
L40	0.0032	0.0033	0.0035	0.0037	0.0038	0.0039	0.0042	0.0045	-
L41	0.0031	0.0032	0.0034	0.0037	0.0039	0.0041	0.0043	0.0046	-
L42	0.0026	0.0028	0.0031	0.0033	0.0035	0.0037	0.0039	0.0041	-
L43	0.0024	0.0026	0.0029	0.0031	0.0034	0.0035	0.0036	0.0038	-
L44	0.0035	0.0036	0.0038	0.0039	0.0041	0.0044	0.0046	0.0048	-
L45	0.0038	0.0039	0.0041	0.0043	0.0045	0.0047	0.0049	0.0050	-
L46	0.0040	0.0041	0.0044	0.0046	0.0047	0.0049	0.0050	0.0052	-
L47	0.0010	0.0014	0.0018	0.0020	0.0022	0.0026	0.0028	0.0029	-
L48	0.0013	0.0016	0.0020	0.0022	0.0024	0.0029	0.0033	0.0035	-
L49	0.0036	0.0037	0.0039	0.0041	0.0042	0.0043	0.0045	0.0047	-
L50	0.0037	0.0039	0.0041	0.0043	0.0045	0.0047	0.0049	0.0051	-
Ave.	0.0031	0.0032	0.0035	0.0037	0.0038	0.0041	0.0043	0.0045	-
Med.	0.0032	0.0033	0.0036	0.0037	0.0039	0.0042	0.0044	0.0047	-
st dev	0.0007	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005	-
Min.	0.0010	0.0014	0.0018	0.0020	0.0022	0.0026	0.0028	0.0029	-
Max.	0.0040	0.0041	0.0044	0.0046	0.0047	0.0049	0.0050	0.0052	-

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

Sample No.	Φ(lm)	Lumen Maintenance (%)								
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S51	158.2	100.07	99.97	99.67	99.31	99.16	98.82	98.42	98.35	98.29
S52	156.5	99.96	99.84	99.59	99.46	99.25	98.97	98.56	98.36	98.22
S53	157.7	100.12	99.99	99.78	99.57	99.25	99.00	98.74	98.55	98.32
S54	157.8	99.86	99.76	99.56	99.33	99.17	98.88	98.63	98.42	98.24
S55	157.8	99.95	99.85	99.70	99.58	99.32	99.08	98.76	98.47	98.26
S56	157.9	100.09	100.03	99.89	99.71	99.48	99.26	98.92	98.62	98.46
S57	156.6	100.06	99.98	99.76	99.58	99.43	99.18	98.99	98.61	98.44
S58	157.6	100.11	99.96	99.76	99.56	99.24	98.99	98.54	98.35	98.18
S59	156.6	100.06	99.93	99.69	99.47	99.27	98.85	98.63	98.41	98.16
S60	156.4	99.94	99.87	99.60	99.33	99.16	98.83	98.47	98.21	97.92
S61	156.1	99.97	99.84	99.58	99.38	99.25	98.96	98.63	98.38	98.19
S62	156.4	99.93	99.87	99.61	99.44	99.23	98.92	98.68	98.43	98.25
S63	156.5	100.11	100.07	99.84	99.62	99.40	99.22	98.89	98.51	98.35
S64	157.1	100.12	100.09	99.91	99.72	99.48	99.28	99.01	98.69	98.31
S65	157.5	100.09	99.97	99.81	99.66	99.43	99.28	99.00	98.75	98.37
S66	156.4	100.03	100.00	99.84	99.66	99.39	99.11	98.76	98.52	98.27
S67	157.0	99.99	99.87	99.70	99.54	99.34	99.17	98.80	98.57	98.25
S68	157.5	99.94	99.88	99.70	99.55	99.29	99.09	98.79	98.51	98.37
S69	156.6	100.13	100.09	99.84	99.67	99.55	99.23	98.89	98.47	98.17
S70	156.5	99.96	99.91	99.71	99.50	99.26	99.00	98.70	98.44	98.16
S71	156.3	99.94	99.88	99.60	99.25	99.10	98.99	98.68	98.46	98.27
S72	156.4	99.85	99.78	99.59	99.26	99.14	98.86	98.58	98.32	98.18
S73	156.1	99.94	99.89	99.66	99.42	99.20	98.91	98.59	98.38	98.21
S74	156.6	99.97	99.88	99.64	99.44	99.17	98.89	98.61	98.38	98.11
S75	156.0	99.92	99.90	99.82	99.57	99.32	99.08	98.78	98.45	98.23
Ave.	156.9	100.00	99.92	99.71	99.50	99.29	99.03	98.72	98.46	98.25
Med.	156.6	99.97	99.90	99.70	99.54	99.26	99.00	98.70	98.45	98.25
st dev	0.6612	0.0852	0.0890	0.1054	0.1387	0.1202	0.1497	0.1631	0.1216	0.1113
Min.	156.0	99.85	99.76	99.56	99.25	99.10	98.82	98.42	98.21	97.92
Max.	158.2	100.13	100.09	99.91	99.72	99.55	99.28	99.01	98.75	98.46

Sample No.	Lumen Maintenance (%)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L51	97.88	97.81	97.53	97.19	97.11	96.93	96.62	96.34	-
L52	97.97	97.71	97.45	97.22	97.06	96.78	96.52	96.38	-
L53	97.87	97.73	97.49	97.09	96.91	96.75	96.66	96.38	-
L54	97.92	97.81	97.56	97.20	96.93	96.83	96.74	96.60	-
L55	97.82	97.63	97.38	97.22	97.02	96.74	96.56	96.30	-
L56	97.97	97.77	97.52	97.12	97.05	96.92	96.72	96.64	-
L57	97.94	97.71	97.49	97.08	96.87	96.70	96.60	96.38	-
L58	97.72	97.59	97.41	97.32	97.14	96.94	96.72	96.59	-
L59	97.73	97.61	97.32	97.32	97.11	96.87	96.78	96.59	-
L60	97.73	97.63	97.36	97.24	96.99	96.87	96.71	96.52	-
L61	97.96	97.77	97.56	97.15	96.97	96.86	96.66	96.54	-
L62	97.78	97.69	97.38	97.14	96.88	96.76	96.60	96.45	-
L63	97.89	97.63	97.40	97.08	96.97	96.86	96.59	96.52	-
L64	97.79	97.59	97.37	97.09	97.01	96.85	96.59	96.33	-
L65	97.93	97.83	97.55	97.19	97.02	96.95	96.67	96.44	-
L66	97.78	97.59	97.38	97.15	96.95	96.79	96.62	96.43	-
L67	97.88	97.61	97.39	97.12	97.07	96.84	96.65	96.62	-
L68	97.96	97.82	97.58	97.09	96.95	96.71	96.62	96.40	-
L69	97.82	97.72	97.49	97.36	97.15	96.96	96.78	96.62	-
L70	97.88	97.74	97.46	97.28	97.14	96.91	96.70	96.49	-
L71	97.81	97.72	97.49	97.31	97.07	96.95	96.65	96.44	-
L72	97.86	97.60	97.33	97.32	97.11	96.95	96.68	96.64	-
L73	97.91	97.77	97.51	97.32	97.05	96.79	96.52	96.40	-
L74	97.83	97.76	97.51	97.17	97.02	96.74	96.52	96.44	-
L75	97.93	97.85	97.54	97.08	96.99	96.88	96.75	96.63	-
Ave.	97.86	97.71	97.46	97.19	97.02	96.85	96.65	96.48	-
Med.	97.88	97.72	97.49	97.19	97.02	96.86	96.65	96.45	-
st dev	0.0781	0.0856	0.0793	0.0925	0.0810	0.0825	0.0772	0.1087	-
Min.	97.72	97.59	97.32	97.08	96.87	96.70	96.52	96.30	-
Max.	97.97	97.85	97.58	97.36	97.15	96.96	96.78	96.64	-

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

Sample No.	Forward Voltage (V)									
	0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
S51	6.026	6.163	6.151	6.031	6.183	6.166	6.137	6.136	6.195	6.020
S52	6.117	6.177	6.120	6.021	6.103	6.168	6.005	6.113	6.101	6.137
S53	6.123	6.029	6.011	6.145	6.197	6.014	6.153	6.193	6.142	6.156
S54	6.025	6.136	6.042	6.008	6.137	6.191	6.149	6.044	6.141	6.045
S55	6.129	6.173	6.034	6.120	6.130	6.112	6.018	6.191	6.126	6.178
S56	6.198	6.040	6.190	6.192	6.016	6.175	6.054	6.175	6.179	6.150
S57	6.154	6.178	6.140	6.012	6.026	6.164	6.127	6.143	6.193	6.164
S58	6.182	6.188	6.144	6.058	6.196	6.178	6.029	6.010	6.122	6.150
S59	6.199	6.052	6.028	6.047	6.137	6.106	6.163	6.056	6.175	6.020
S60	6.132	6.162	6.172	6.186	6.051	6.106	6.124	6.145	6.122	6.126
S61	6.172	6.148	6.196	6.010	6.140	6.199	6.006	6.049	6.195	6.183
S62	6.123	6.175	6.190	6.045	6.034	6.018	6.172	6.137	6.010	6.050
S63	6.002	6.141	6.117	6.147	6.017	6.149	6.151	6.041	6.167	6.001
S64	6.188	6.187	6.101	6.025	6.175	6.114	6.004	6.056	6.168	6.023
S65	6.123	6.014	6.134	6.059	6.177	6.189	6.186	6.045	6.012	6.192
S66	6.117	6.122	6.054	6.017	6.023	6.192	6.124	6.028	6.013	6.009
S67	6.058	6.147	6.173	6.001	6.107	6.162	6.061	6.120	6.123	6.006
S68	6.131	6.185	6.012	6.168	6.031	6.127	6.145	6.023	6.164	6.195
S69	6.143	6.040	6.012	6.044	6.003	6.150	6.155	6.188	6.005	6.031
S70	6.104	6.143	6.019	6.139	6.179	6.054	6.026	6.006	6.133	6.137
S71	6.121	6.144	6.171	6.051	6.052	6.182	6.195	6.101	6.133	6.123
S72	6.126	6.152	6.053	6.184	6.115	6.184	6.131	6.195	6.041	6.168
S73	6.181	6.125	6.002	6.015	6.004	6.191	6.143	6.049	6.196	6.008
S74	6.196	6.196	6.104	6.057	6.021	6.163	6.181	6.124	6.101	6.147
S75	6.153	6.172	6.169	6.150	6.132	6.183	6.025	6.054	6.159	6.060
Ave.	6.129	6.136	6.102	6.077	6.095	6.145	6.107	6.097	6.125	6.099
Med.	6.129	6.148	6.117	6.051	6.107	6.164	6.131	6.101	6.133	6.126
st dev	0.0540	0.0552	0.0678	0.0661	0.0687	0.0527	0.0657	0.0631	0.0623	0.0705
Min.	6.002	6.014	6.002	6.001	6.003	6.014	6.004	6.006	6.005	6.001
Max.	6.199	6.196	6.196	6.192	6.197	6.199	6.195	6.195	6.196	6.195

Sample No.	Forward Voltage (V)								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L51	6.141	6.062	6.161	6.160	6.095	6.129	6.151	6.161	-
L52	6.091	6.117	6.149	6.043	6.160	6.099	6.165	6.070	-
L53	6.085	6.050	6.094	6.068	6.021	6.179	6.077	6.048	-
L54	6.030	6.051	6.035	6.139	6.197	6.137	6.036	6.103	-
L55	6.050	6.158	6.074	6.115	6.056	6.163	6.118	6.158	-
L56	6.086	6.113	6.111	6.104	6.030	6.174	6.151	6.057	-
L57	6.161	6.026	6.092	6.074	6.108	6.158	6.122	6.090	-
L58	6.162	6.064	6.048	6.151	6.094	6.132	6.127	6.077	-
L59	6.162	6.145	6.122	6.086	6.007	6.128	6.058	6.081	-
L60	6.053	6.053	6.112	6.122	6.089	6.035	6.083	6.003	-
L61	6.164	6.122	6.057	6.089	6.198	6.165	6.079	6.099	-
L62	6.116	6.176	6.079	6.070	6.004	6.169	6.132	6.185	-
L63	6.131	6.064	6.170	6.054	6.119	6.064	6.148	6.051	-
L64	6.130	6.037	6.179	6.105	6.185	6.083	6.021	6.117	-
L65	6.044	6.044	6.162	6.160	6.026	6.166	6.078	6.170	-
L66	6.122	6.186	6.176	6.121	6.025	6.120	6.027	6.117	-
L67	6.105	6.034	6.177	6.163	6.051	6.091	6.067	6.079	-
L68	6.034	6.099	6.078	6.054	6.135	6.042	6.020	6.170	-
L69	6.077	6.082	6.076	6.077	6.156	6.090	6.132	6.147	-
L70	6.052	6.140	6.059	6.086	6.027	6.099	6.140	6.025	-
L71	6.086	6.106	6.095	6.043	6.151	6.164	6.086	6.131	-
L72	6.128	6.035	6.125	6.173	6.026	6.172	6.059	6.004	-
L73	6.067	6.042	6.073	6.078	6.064	6.172	6.172	6.107	-
L74	6.141	6.023	6.090	6.137	6.120	6.152	6.046	6.092	-
L75	6.042	6.151	6.096	6.164	6.183	6.035	6.074	6.145	-
Ave.	6.098	6.087	6.108	6.105	6.093	6.125	6.095	6.099	-
Med.	6.091	6.064	6.095	6.104	6.094	6.132	6.083	6.099	-
st dev	0.0444	0.0506	0.0439	0.0415	0.0646	0.0467	0.0472	0.0515	-
Min.	6.030	6.023	6.035	6.043	6.004	6.035	6.020	6.003	-
Max.	6.164	6.186	6.179	6.173	6.198	6.179	6.172	6.185	-

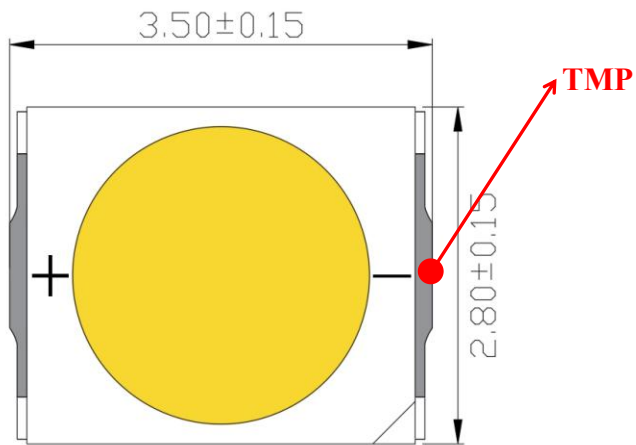
3.9 Data Set 3, 105°C, 150mA (Chromaticity Shift)

Sample No.	u'	v'	CCT(K)	Chromaticity Shift $\Delta u'v'$								
				0hr(Initial)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h
S51	0.2606	0.5303	2727	0.0010	0.0012	0.0015	0.0017	0.0018	0.0023	0.0026	0.0029	0.0037
S52	0.2613	0.5295	2716	0.0009	0.0011	0.0016	0.0016	0.0020	0.0024	0.0026	0.0027	0.0033
S53	0.2597	0.5292	2750	0.0007	0.0009	0.0012	0.0015	0.0019	0.0021	0.0026	0.0032	0.0039
S54	0.2603	0.5312	2729	0.0009	0.0011	0.0018	0.0024	0.0027	0.0028	0.0027	0.0033	0.0041
S55	0.2592	0.5297	2758	0.0010	0.0016	0.0016	0.0020	0.0026	0.0029	0.0032	0.0033	0.0035
S56	0.2614	0.5303	2711	0.0008	0.0012	0.0016	0.0017	0.0024	0.0027	0.0029	0.0031	0.0038
S57	0.2611	0.5311	2714	0.0009	0.0012	0.0019	0.0019	0.0021	0.0024	0.0027	0.0033	0.0039
S58	0.2593	0.5300	2757	0.0011	0.0015	0.0020	0.0024	0.0026	0.0028	0.0023	0.0029	0.0035
S59	0.2609	0.5278	2731	0.0006	0.0008	0.0014	0.0015	0.0018	0.0022	0.0023	0.0026	0.0031
S60	0.2599	0.5294	2745	0.0007	0.0008	0.0011	0.0014	0.0016	0.0019	0.0026	0.0028	0.0031
S61	0.2594	0.5316	2748	0.0007	0.0009	0.0012	0.0017	0.0019	0.0022	0.0025	0.0027	0.0030
S62	0.2605	0.5304	2730	0.0009	0.0011	0.0013	0.0015	0.0020	0.0024	0.0027	0.0031	0.0034
S63	0.2601	0.5297	2740	0.0008	0.0010	0.0013	0.0019	0.0022	0.0023	0.0023	0.0026	0.0031
S64	0.2613	0.5303	2714	0.0006	0.0007	0.0011	0.0012	0.0015	0.0018	0.0022	0.0027	0.0032
S65	0.2605	0.5316	2725	0.0006	0.0007	0.0016	0.0017	0.0019	0.0021	0.0024	0.0026	0.0030
S66	0.2613	0.5313	2709	0.0009	0.0011	0.0016	0.0020	0.0022	0.0025	0.0027	0.0032	0.0035
S67	0.2626	0.5303	2686	0.0005	0.0009	0.0010	0.0014	0.0018	0.0023	0.0028	0.0034	0.0037
S68	0.2585	0.5262	2791	0.0002	0.0004	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0030
S69	0.2607	0.5298	2728	0.0007	0.0009	0.0013	0.0016	0.0019	0.0022	0.0025	0.0031	0.0033
S70	0.2610	0.5304	2718	0.0007	0.0009	0.0012	0.0016	0.0019	0.0022	0.0025	0.0033	0.0040
S71	0.2616	0.5315	2702	0.0001	0.0001	0.0002	0.0003	0.0003	0.0003	0.0002	0.0031	0.0039
S72	0.2615	0.5314	2706	0.0006	0.0007	0.0009	0.0010	0.0015	0.0018	0.0021	0.0024	0.0033
S73	0.2621	0.5297	2698	0.0007	0.0012	0.0015	0.0020	0.0025	0.0031	0.0033	0.0035	0.0036
S74	0.2621	0.5304	2696	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0006	0.0034	0.0010
S75	0.2598	0.5293	2747	0.0004	0.0008	0.0010	0.0014	0.0019	0.0025	0.0010	0.0028	0.0036
Ave.	0.2607	0.5301	2727	0.0007	0.0009	0.0013	0.0015	0.0019	0.0022	0.0023	0.0030	0.0034
Med.	0.2607	0.5303	2727	0.0007	0.0009	0.0013	0.0016	0.0019	0.0023	0.0025	0.0031	0.0035
st dev	0.0010	0.0012	23.74	0.0003	0.0003	0.0005	0.0005	0.0006	0.0007	0.0007	0.0003	0.0006
Min.	0.2585	0.5262	2686	0.0001	0.0001	0.0002	0.0003	0.0003	0.0003	0.0002	0.0024	0.0010
Max.	0.2626	0.5316	2791	0.0011	0.0016	0.0020	0.0024	0.0027	0.0031	0.0033	0.0035	0.0041

Sample No.	Chromaticity Shift Au'v'								
	10000h	11000h	12000h	13000h	14000h	15000h	16000h	17000h	-
L51	0.0038	0.0039	0.0041	0.0043	0.0045	0.0047	0.0050	0.0054	-
L52	0.0035	0.0036	0.0037	0.0038	0.0040	0.0043	0.0045	0.0047	-
L53	0.0041	0.0042	0.0044	0.0045	0.0047	0.0049	0.0051	0.0054	-
L54	0.0043	0.0044	0.0045	0.0047	0.0048	0.0050	0.0053	0.0056	-
L55	0.0036	0.0038	0.0039	0.0041	0.0042	0.0045	0.0047	0.0049	-
L56	0.0040	0.0041	0.0042	0.0043	0.0045	0.0048	0.0050	0.0053	-
L57	0.0042	0.0043	0.0045	0.0046	0.0048	0.0050	0.0052	0.0055	-
L58	0.0037	0.0038	0.0039	0.0041	0.0042	0.0045	0.0048	0.0050	-
L59	0.0033	0.0034	0.0036	0.0038	0.0039	0.0042	0.0044	0.0047	-
L60	0.0034	0.0036	0.0037	0.0039	0.0041	0.0043	0.0045	0.0048	-
L61	0.0032	0.0033	0.0034	0.0035	0.0036	0.0038	0.0041	0.0043	-
L62	0.0036	0.0037	0.0038	0.0040	0.0041	0.0044	0.0047	0.0050	-
L63	0.0035	0.0036	0.0038	0.0039	0.0040	0.0042	0.0044	0.0046	-
L64	0.0034	0.0036	0.0037	0.0039	0.0041	0.0043	0.0045	0.0047	-
L65	0.0033	0.0034	0.0035	0.0036	0.0037	0.0040	0.0043	0.0045	-
L66	0.0037	0.0038	0.0039	0.0041	0.0043	0.0045	0.0047	0.0049	-
L67	0.0039	0.0041	0.0044	0.0045	0.0046	0.0048	0.0051	0.0054	-
L68	0.0031	0.0032	0.0035	0.0036	0.0037	0.0039	0.0041	0.0043	-
L69	0.0035	0.0036	0.0037	0.0039	0.0040	0.0042	0.0044	0.0047	-
L70	0.0042	0.0043	0.0045	0.0046	0.0048	0.0051	0.0053	0.0055	-
L71	0.0041	0.0042	0.0043	0.0044	0.0045	0.0047	0.0049	0.0051	-
L72	0.0035	0.0037	0.0038	0.0040	0.0041	0.0043	0.0046	0.0049	-
L73	0.0037	0.0038	0.0040	0.0041	0.0043	0.0045	0.0047	0.0050	-
L74	0.0014	0.0017	0.0019	0.0022	0.0023	0.0028	0.0030	0.0035	-
L75	0.0038	0.0039	0.0041	0.0042	0.0045	0.0047	0.0049	0.0052	-
Ave.	0.0036	0.0037	0.0039	0.0040	0.0042	0.0044	0.0046	0.0049	-
Med.	0.0036	0.0038	0.0039	0.0041	0.0042	0.0045	0.0047	0.0049	-
st dev	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	-
Min.	0.0014	0.0017	0.0019	0.0022	0.0023	0.0028	0.0030	0.0035	-
Max.	0.0043	0.0044	0.0045	0.0047	0.0048	0.0051	0.0053	0.0056	-

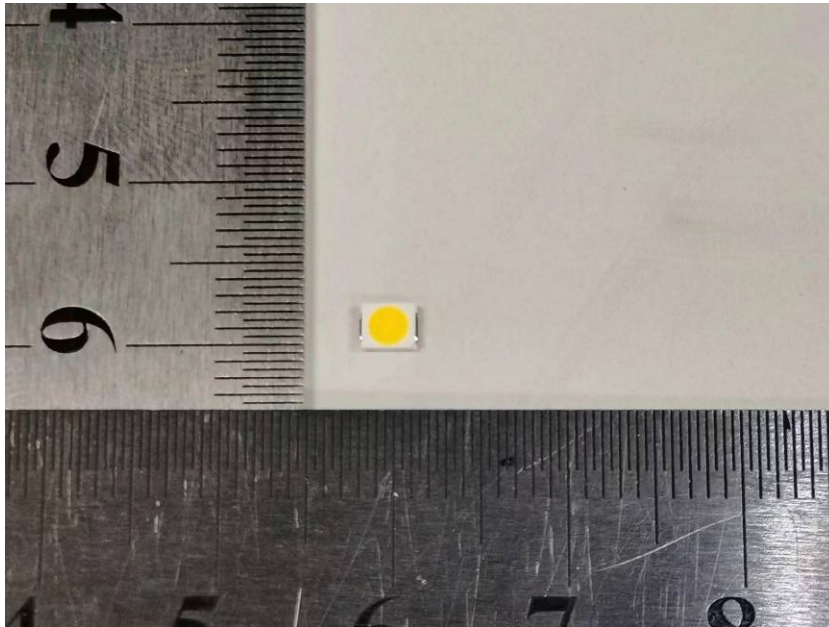
4-EUT Photos

4.1 Mechanical Dimensions



Note: All dimensions are in millimeters(mm).

4.2 EUT Photo



----End of report----