



IES LM-80 Test Report

Report Issue Date : October 27, 2016 **Report Number :** I-150529-25-K-04
Testing Start Date : June 20, 2015 **Testing Completion Date :** September 21, 2016
Revision Number : 04 **Test Duration :** 10 000 h

Manufacturer Information :

Applicant : Seoul Semiconductor Co., LTD
Address : 97-11, Sandan-ro 163, Danwon-gu, Ansan, Gyeonggi-do, Korea 15429

Description of Test Samples :

Classification : LED Package
PKG Name : 3030B
Part Number : STWxC2SB-xx
Drive Current : 150 mA

Test Procedure :

IES LM-80-08 Approved Method for Measuring Lumen Maintenance of LED Light Sources

Tested by

InHoi SIM, Research Engineer

Approved by

YoungJoon WON, Laboratory Manager



The above testing certificate is the accredited test result by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

Seoul Semiconductor Testing Laboratory

97-11, Sandan-ro 163, Danwon-gu, Ansan, Gyeonggi-do, Korea 15429

Accredited by KOLAS, Republic of KOREA

Applicable Series Model Numbers

This LM-80 report is applicable to the following

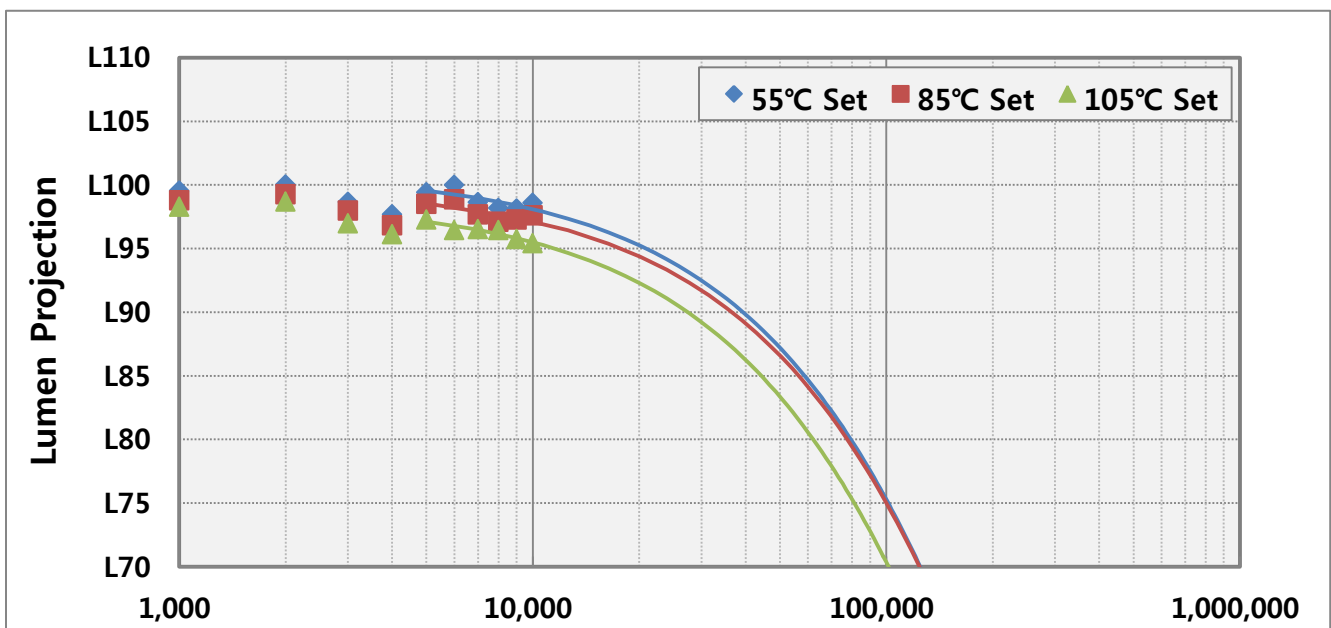
Series	Model Number	Case Temperature	Forward Current	Typical VF	Power	CCT
3030B	STWxC2PB-xx	55 °C	300 mA	3.15 V	0.95 W	≥2700 K
3030B	STWxC2PB-xx	85 °C	300 mA	3.15 V	0.95 W	≥2700 K
3030B	STWxC2PB-xx	105 °C	300 mA	3.15 V	0.95 W	≥2700 K


SEOUL SEMICONDUCTOR

1. Test Summary

Items	Nominal Case Temperature		
	55 °C	85 °C	105 °C
Number of LED tested	20	20	20
Drive Current	150 mA	150 mA	150 mA
Measurement Current	150 mA	150 mA	150 mA
Test Duration	10 000 h	10 000 h	10 000 h
Actual Case Temperature	≥55.1 °C	≥85.9 °C	≥103.3 °C
Actual Ambient Temperature	≥53.9 °C	≥82.5 °C	≥101.8 °C
Air Flow Velocity	≤0.87 m/s	≤0.61 m/s	≤0.18 m/s
Averaged Initial Luminous Flux	111.8 lm	111.9 lm	111.6 lm
Averaged Initial CCT	2820 K	2818 K	2806 K
Averaged Forward Voltage	6.42 V	6.42 V	6.43 V
Averaged Lumen Maintenance	98.6 %	97.6 %	95.4 %
Averaged Chromacity Shift	0.000 9	0.001 3	0.001 8
α	2.942E-06	2.873E-06	3.397E-06
B	1.010	1.000	0.988
TM-21 Projection L ₇₀	>60000	>60000	>60000
TM-21 Projection L ₈₀	>60000	>60000	>60000
TM-21 Projection L ₉₀	39000	37000	27000

※ The results shown in this certificate refer only to the sample(s) tested unless otherwise stated.
This test report cannot be reproduced, except in full.



2. IES LM-80-08 Test Report Requirement :

Number of LED Light Sources Tested

See the Test Summary

Description of LED Light Sources

See the Description of Test samples at the cover of certificate

Description of auxiliary equipment

Active cooling Test System

Temperature controlling chamber for LED package/array/module consists of the water cooling heat-sink plates to control the case temperature of each device and of the power supply required by LM-80 test conditions.

Measurement System

Photometric measurement tester for LED package/array/module consists of the integrating sphere with temperature controlling system(TEC) and of programmable current source meter.

Operating Cycle

Constant Direct Current (DC)

Ambient Conditions Including Airflow, Temperature and Relative Humidity

Airflow : < 1 m/s

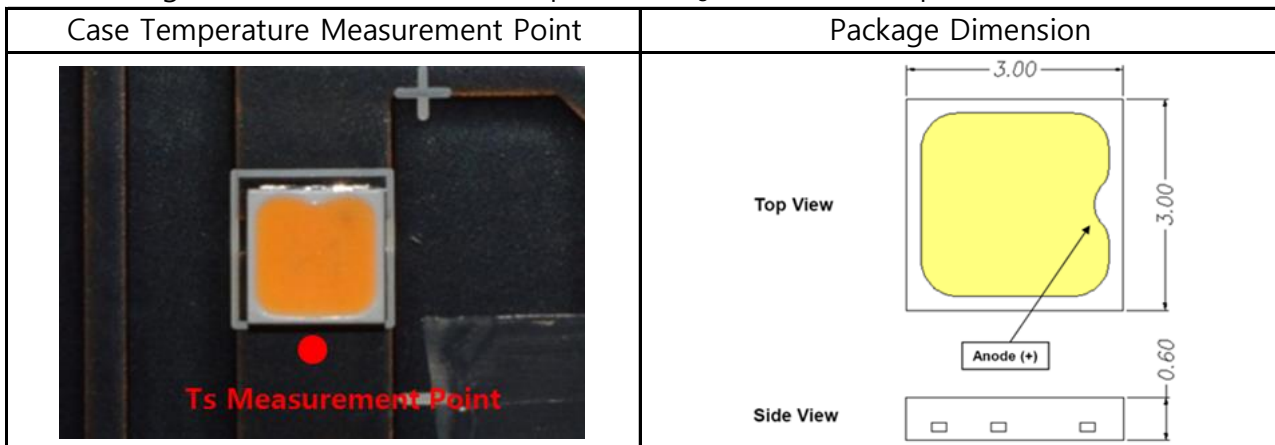
Ambient temperature : ≥ -5 °C of Nominal T_A

(See the Test Summary for actual T_A)

Relative Humidity : $\leq 65\%$ RH

Case Temperature (Test Point Temperature)

See the figure below, for the case temperature (T_S) measurement point and dimension



Drive Current of the LED Light Source During Lifetime Test

See the Test Summary

Initial Luminous Flux and Forward Voltage at Photometric Measurement Current

See the Test Summary

Lumen Maintenance Data for Each Individual LED Light Source Along with Median Value, Standard Deviation, Minimum and Maximum Lumen Maintenance Value for All of the LED Light Sources

See the table of each data set

Observation of LED light Sources Failures

No failure observed

LED Light Source Monitoring Interval

See the table of each data set

Photometric Measurement Uncertainty

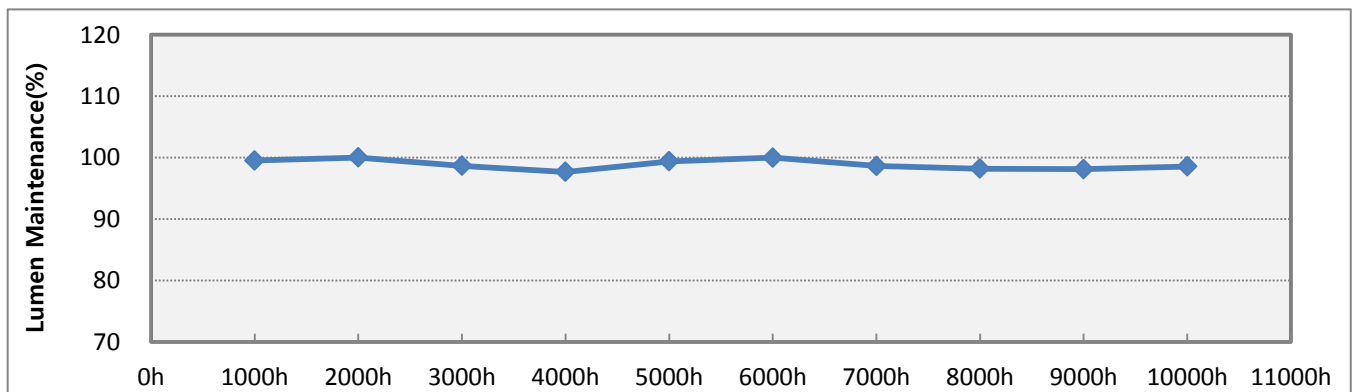
Seoul Semiconduc maintain a tolerance of ± 3.04 % at 95% confidence level ($k = 2$)

Chromaticity Shift Over the Measurement Time

See the table of each data set

3. 55°C Data Set

No.	Initial Characteristics			Lumen Maintenance								
	V _f (V)	Flux (lm)	CCT (K)	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	6.45	101.96	2757	98.9	99.5	98.0	96.5	98.0	99.0	97.5	97.3	97.0
02	6.39	112.84	2863	99.3	100.0	98.6	97.5	99.5	99.9	98.5	98.4	98.0
03	6.41	113.44	2862	99.3	99.5	98.1	97.2	99.1	99.7	98.2	97.8	97.7
04	6.40	114.21	2842	99.5	99.6	98.3	97.8	98.9	99.8	98.1	97.5	97.9
05	6.41	112.51	2821	99.7	100.0	98.9	97.9	99.9	100.2	99.2	99.0	98.2
06	6.43	110.37	2851	99.6	99.8	98.6	97.9	99.8	100.1	99.2	98.3	98.2
07	6.42	105.97	2830	99.5	99.4	98.4	97.9	99.9	100.1	98.4	98.1	97.8
08	6.40	112.86	2892	99.3	99.9	97.9	97.0	98.3	99.7	98.2	97.3	97.8
09	6.41	114.14	2839	99.4	99.7	98.4	97.4	99.6	100.4	98.5	97.8	97.8
10	6.42	114.08	2796	99.2	99.8	98.9	97.6	99.3	100.2	98.5	98.3	98.3
11	6.46	111.33	2793	100.2	100.3	99.3	98.2	99.5	100.2	99.1	98.5	98.6
12	6.52	113.42	2844	100.0	100.1	99.4	98.0	100.2	100.2	98.9	98.2	98.2
13	6.40	112.91	2808	99.9	100.7	98.9	98.2	100.3	100.3	98.9	98.3	98.2
14	6.41	108.69	2804	100.0	101.0	98.9	98.4	100.0	100.7	99.4	98.9	98.5
15	6.43	110.73	2769	99.6	99.8	98.1	97.0	98.7	99.2	97.9	98.3	98.4
16	6.41	113.46	2800	99.4	100.1	98.4	97.2	99.3	99.5	98.1	98.3	98.0
17	6.43	112.93	2773	99.5	99.9	98.9	98.2	99.3	100.0	99.4	98.6	98.9
18	6.39	114.90	2804	99.1	100.4	98.8	97.6	99.3	100.1	98.7	98.1	98.0
19	6.40	113.55	2862	99.6	100.4	99.0	98.0	99.7	99.9	99.0	98.7	98.8
20	6.41	111.44	2797	99.7	100.4	99.3	98.3	99.8	100.4	98.7	98.2	98.2
Ave.	6.42	111.79	2820	99.5	100.0	98.7	97.7	99.4	100.0	98.6	98.2	98.1
Med.	6.41	112.89	2815	99.5	100.0	98.7	97.9	99.5	100.1	98.6	98.3	98.2
Min.	6.39	101.96	2757	98.9	99.4	97.9	96.5	98.0	99.0	97.5	97.3	97.0
Max.	6.52	114.90	2892	100.2	101.0	99.4	98.4	100.3	100.7	99.4	99.0	98.9
σ	0.03	3.13	36	0.3	0.4	0.4	0.5	0.6	0.4	0.5	0.5	0.4



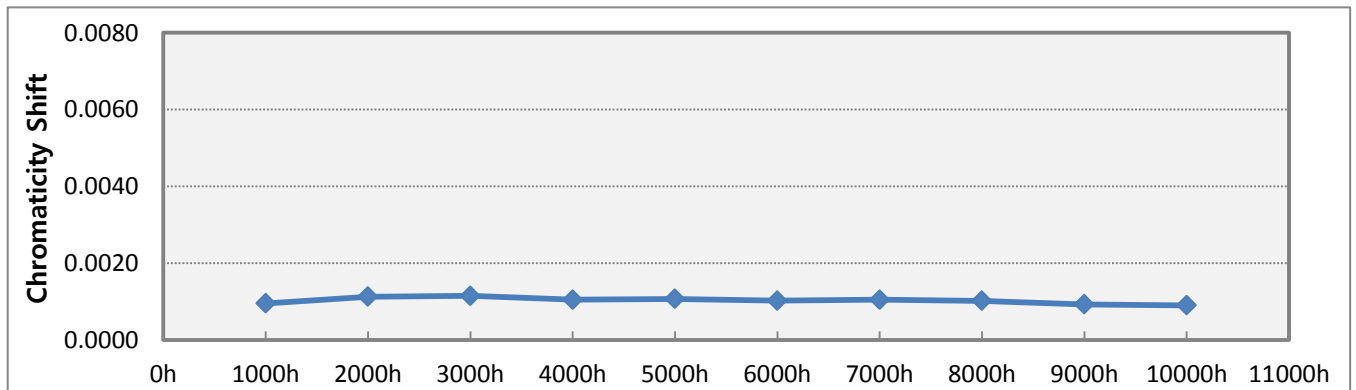


3. 55°C Data Set

No.	Lumen Maintenance										
				10000 h							
01				97.2							
02				98.8							
03				98.2							
04				98.4							
05				99.1							
06				99.3							
07				98.2							
08				98.4							
09				98.2							
10				98.4							
11				99.2							
12				98.5							
13				98.6							
14				98.9							
15				98.3							
16				98.5							
17				99.1							
18				98.9							
19				98.6							
20				98.7							
21											
22											
23											
24											
25											
Ave.				98.6							
Med.				98.5							
Min.				97.2							
Max.				99.3							
σ				0.5							

3. 55°C Data Set

No.	Initial Characteristics		Chromaticity Shift du'v'								
	CIE1976 u'	CIE1976 v'	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	0.2596	0.5284	0.0016	0.0017	0.0018	0.0017	0.0017	0.0017	0.0017	0.0020	0.0018
02	0.2560	0.5228	0.0007	0.0009	0.0009	0.0008	0.0009	0.0009	0.0009	0.0005	0.0006
03	0.2557	0.5243	0.0017	0.0018	0.0019	0.0018	0.0016	0.0016	0.0016	0.0020	0.0017
04	0.2564	0.5248	0.0011	0.0014	0.0017	0.0015	0.0015	0.0014	0.0014	0.0017	0.0015
05	0.2570	0.5264	0.0009	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0009	0.0009
06	0.2564	0.5230	0.0009	0.0012	0.0011	0.0010	0.0011	0.0009	0.0010	0.0010	0.0009
07	0.2569	0.5252	0.0009	0.0010	0.0011	0.0010	0.0010	0.0010	0.0010	0.0010	0.0009
08	0.2547	0.5228	0.0007	0.0010	0.0009	0.0008	0.0008	0.0009	0.0009	0.0008	0.0007
09	0.2567	0.5243	0.0007	0.0009	0.0009	0.0008	0.0010	0.0010	0.0009	0.0008	0.0007
10	0.2580	0.5275	0.0007	0.0009	0.0010	0.0009	0.0009	0.0009	0.0009	0.0007	0.0007
11	0.2582	0.5271	0.0008	0.0010	0.0009	0.0009	0.0008	0.0008	0.0009	0.0007	0.0007
12	0.2563	0.5253	0.0007	0.0009	0.0009	0.0008	0.0009	0.0008	0.0008	0.0008	0.0007
13	0.2577	0.5259	0.0007	0.0009	0.0009	0.0008	0.0009	0.0008	0.0008	0.0007	0.0007
14	0.2577	0.5268	0.0014	0.0014	0.0015	0.0013	0.0012	0.0011	0.0011	0.0013	0.0011
15	0.2589	0.5288	0.0008	0.0010	0.0010	0.0010	0.0010	0.0009	0.0009	0.0008	0.0008
16	0.2580	0.5265	0.0008	0.0010	0.0011	0.0010	0.0011	0.0010	0.0011	0.0008	0.0009
17	0.2591	0.5273	0.0009	0.0010	0.0011	0.0010	0.0010	0.0010	0.0011	0.0008	0.0009
18	0.2579	0.5260	0.0010	0.0011	0.0010	0.0010	0.0010	0.0009	0.0009	0.0010	0.0008
19	0.2557	0.5243	0.0010	0.0011	0.0011	0.0010	0.0009	0.0009	0.0009	0.0009	0.0009
20	0.2581	0.5263	0.0009	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0011	0.0009
Ave.	0.2572	0.5257	0.0010	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.0010	0.0009
Med.	0.2574	0.5260	0.0009	0.0010	0.0011	0.0010	0.0010	0.0009	0.0010	0.0009	0.0009
Min.	0.2547	0.5228	0.0007	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0005	0.0006
Max.	0.2596	0.5288	0.0017	0.0018	0.0019	0.0018	0.0017	0.0017	0.0017	0.0020	0.0018
σ	0.0013	0.0018	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002	0.0004	0.0003

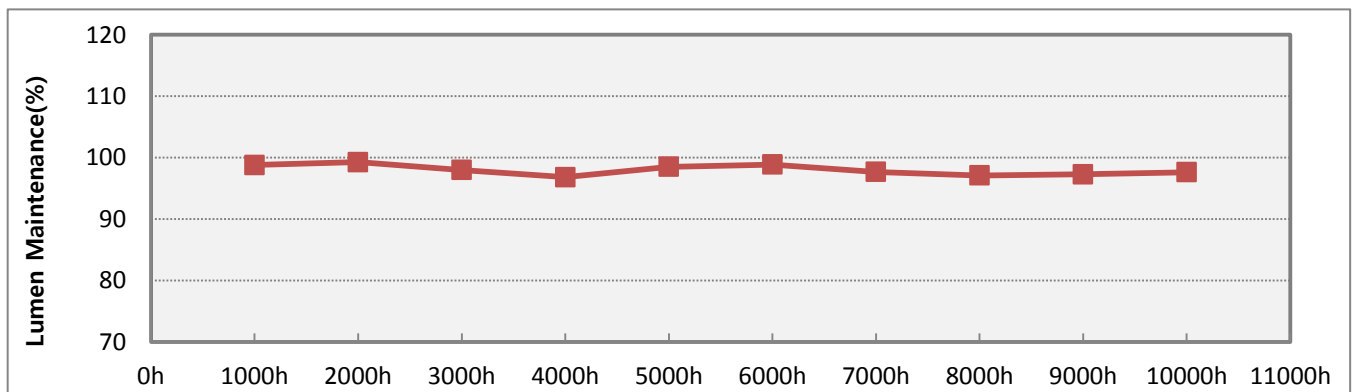


3. 55°C Data Set

No.	Chromaticity Shift du'v'									
			10000 h							
01			0.0018							
02			0.0007							
03			0.0016							
04			0.0013							
05			0.0008							
06			0.0009							
07			0.0008							
08			0.0007							
09			0.0006							
10			0.0006							
11			0.0007							
12			0.0007							
13			0.0007							
14			0.0010							
15			0.0008							
16			0.0009							
17			0.0009							
18			0.0008							
19			0.0009							
20			0.0009							
21										
22										
23										
24										
25										
Ave.			0.0009							
Med.			0.0008							
Min.			0.0006							
Max.			0.0018							
σ			0.0003							

3. 85°C Data Set

No.	Initial Characteristics			Lumen Maintenance								
	V _f (V)	Flux (lm)	CCT (K)	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	6.39	107.54	2785	98.3	98.9	97.9	96.7	98.5	99.2	97.2	97.2	97.0
02	6.49	111.40	2788	98.9	99.1	98.4	96.8	98.7	98.9	97.7	97.4	97.4
03	6.44	113.67	2848	98.3	98.9	98.1	96.6	98.0	98.7	97.8	96.8	97.0
04	6.41	113.40	2838	99.3	99.1	97.5	96.7	98.4	98.7	97.7	97.3	97.6
05	6.43	113.18	2894	97.9	98.6	97.7	95.9	97.6	98.3	96.9	96.5	96.5
06	6.40	104.41	2798	98.4	98.7	97.1	96.9	97.9	98.5	97.8	95.9	97.1
07	6.41	107.71	2813	98.4	99.0	98.4	96.2	98.2	98.3	97.0	97.0	96.6
08	6.44	112.77	2833	98.3	98.9	97.4	96.3	98.2	98.8	97.1	96.6	96.8
09	6.40	114.49	2801	98.4	98.9	97.7	96.5	98.3	99.0	97.6	97.4	97.1
10	6.47	113.45	2812	99.1	99.7	98.2	97.2	98.8	99.5	98.4	97.5	97.7
11	6.43	113.89	2828	99.3	100.2	98.3	97.7	99.3	99.3	98.3	97.8	98.0
12	6.43	110.44	2790	99.0	99.6	98.3	97.5	99.3	99.1	97.8	97.1	97.3
13	6.39	113.28	2812	98.8	99.8	98.4	97.1	98.5	98.9	97.8	97.3	97.9
14	6.40	109.14	2829	98.3	98.7	96.9	96.5	97.8	98.2	97.0	96.0	96.6
15	6.40	111.91	2826	99.0	99.8	98.6	96.8	98.3	99.1	98.0	97.5	97.0
16	6.40	113.41	2763	98.8	99.5	98.5	97.0	99.0	99.2	98.0	97.6	97.7
17	6.41	114.32	2807	99.2	99.5	98.1	96.9	98.8	98.5	97.4	96.8	97.2
18	6.42	114.48	2826	99.3	99.4	98.1	97.0	99.0	99.3	98.0	98.1	98.0
19	6.41	113.25	2834	99.3	99.9	98.2	96.9	98.8	99.4	98.0	97.4	97.7
20	6.41	111.29	2829	99.4	99.4	97.9	97.3	98.8	98.6	98.1	96.8	97.4
Ave.	6.42	111.87	2818	98.8	99.3	98.0	96.8	98.5	98.9	97.7	97.1	97.3
Med.	6.41	113.22	2819	98.9	99.2	98.1	96.9	98.5	98.9	97.8	97.2	97.2
Min.	6.39	104.41	2763	97.9	98.6	96.9	95.9	97.6	98.2	96.9	95.9	96.5
Max.	6.49	114.49	2894	99.4	100.2	98.6	97.7	99.3	99.5	98.4	98.1	98.0
σ	0.03	2.74	28	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.6	0.5



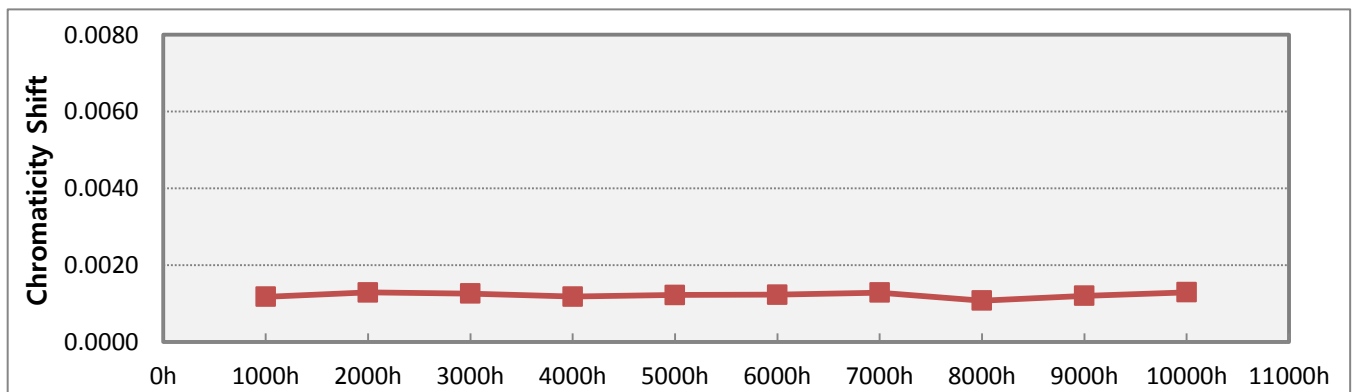


3. 85°C Data Set

No.	Lumen Maintenance										
				10000 h							
01				97.6							
02				97.8							
03				97.4							
04				97.8							
05				96.8							
06				98.3							
07				97.4							
08				96.9							
09				97.5							
10				97.9							
11				98.0							
12				97.4							
13				97.4							
14				97.7							
15				97.7							
16				97.7							
17				97.5							
18				97.7							
19				97.6							
20				98.2							
21											
22											
23											
24											
25											
Ave.				97.6							
Med.				97.6							
Min.				96.8							
Max.				98.3							
σ				0.4							

3. 85°C Data Set

No.	Initial Characteristics		Chromaticity Shift du'v'								
	CIE1976 u'	CIE1976 v'	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	0.2588	0.5261	0.0013	0.0013	0.0013	0.0012	0.0013	0.0013	0.0013	0.0012	0.0013
02	0.2584	0.5270	0.0009	0.0010	0.0010	0.0010	0.0011	0.0010	0.0011	0.0008	0.0009
03	0.2562	0.5246	0.0015	0.0014	0.0013	0.0013	0.0012	0.0012	0.0012	0.0013	0.0012
04	0.2565	0.5256	0.0015	0.0016	0.0018	0.0016	0.0016	0.0015	0.0016	0.0015	0.0015
05	0.2545	0.5236	0.0015	0.0014	0.0013	0.0013	0.0012	0.0012	0.0012	0.0013	0.0013
06	0.2579	0.5271	0.0018	0.0018	0.0018	0.0015	0.0015	0.0014	0.0015	0.0017	0.0016
07	0.2576	0.5258	0.0009	0.0011	0.0010	0.0010	0.0012	0.0011	0.0012	0.0008	0.0010
08	0.2565	0.5264	0.0011	0.0011	0.0011	0.0010	0.0011	0.0011	0.0011	0.0010	0.0010
09	0.2579	0.5266	0.0014	0.0015	0.0014	0.0013	0.0013	0.0013	0.0013	0.0011	0.0012
10	0.2576	0.5256	0.0009	0.0011	0.0010	0.0010	0.0010	0.0011	0.0012	0.0007	0.0009
11	0.2574	0.5235	0.0009	0.0011	0.0010	0.0010	0.0011	0.0010	0.0011	0.0007	0.0010
12	0.2584	0.5267	0.0012	0.0013	0.0013	0.0012	0.0014	0.0013	0.0015	0.0012	0.0014
13	0.2574	0.5266	0.0009	0.0011	0.0011	0.0009	0.0010	0.0010	0.0011	0.0006	0.0010
14	0.2572	0.5242	0.0010	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0008	0.0011
15	0.2570	0.5258	0.0012	0.0013	0.0012	0.0011	0.0011	0.0011	0.0012	0.0011	0.0011
16	0.2596	0.5268	0.0014	0.0014	0.0013	0.0012	0.0012	0.0011	0.0012	0.0011	0.0011
17	0.2575	0.5271	0.0012	0.0014	0.0015	0.0013	0.0013	0.0020	0.0018	0.0017	0.0017
18	0.2572	0.5245	0.0009	0.0011	0.0010	0.0009	0.0011	0.0010	0.0011	0.0006	0.0010
19	0.2564	0.5264	0.0012	0.0013	0.0015	0.0014	0.0014	0.0014	0.0015	0.0013	0.0014
20	0.2570	0.5249	0.0009	0.0012	0.0011	0.0011	0.0011	0.0013	0.0014	0.0009	0.0011
Ave.	0.2574	0.5257	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0013	0.0011	0.0012
Med.	0.2574	0.5259	0.0012	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.0011	0.0011
Min.	0.2545	0.5235	0.0009	0.0010	0.0010	0.0009	0.0010	0.0010	0.0011	0.0006	0.0009
Max.	0.2596	0.5271	0.0018	0.0018	0.0018	0.0016	0.0016	0.0020	0.0018	0.0017	0.0017
σ	0.0011	0.0012	0.0003	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0002

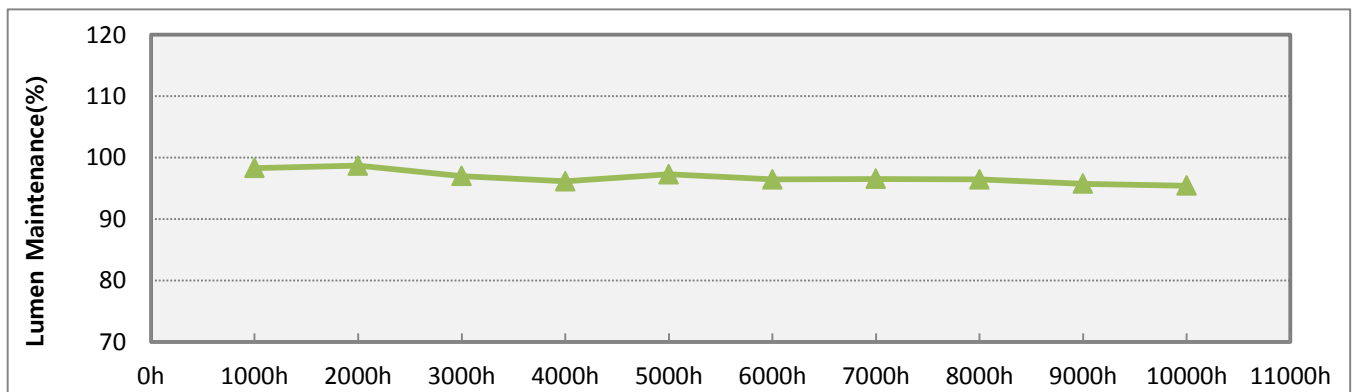


3. 85°C Data Set

No.	Chromaticity Shift du'v'									
			10000 h							
01			0.0014							
02			0.0010							
03			0.0012							
04			0.0016							
05			0.0013							
06			0.0016							
07			0.0013							
08			0.0010							
09			0.0012							
10			0.0011							
11			0.0011							
12			0.0015							
13			0.0010							
14			0.0013							
15			0.0012							
16			0.0012							
17			0.0018							
18			0.0011							
19			0.0015							
20			0.0014							
21										
22										
23										
24										
25										
Ave.			0.0013							
Med.			0.0012							
Min.			0.0010							
Max.			0.0018							
σ			0.0002							

3. 105°C Data Set

No.	Initial Characteristics			Lumen Maintenance								
	V _f (V)	Flux (lm)	CCT (K)	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h
01	6.45	109.03	2788	97.5	97.9	96.7	95.1	96.1	95.2	95.4	95.9	95.0
02	6.40	112.59	2785	98.4	98.6	96.8	95.7	96.9	96.2	96.2	96.6	95.7
03	6.42	113.09	2852	98.3	98.9	97.1	96.0	97.7	96.7	96.6	96.4	95.7
04	6.41	110.86	2779	99.1	99.4	97.3	96.8	97.6	96.8	97.2	96.8	96.3
05	6.44	109.18	2766	98.4	98.9	96.8	96.0	97.7	96.4	96.7	96.3	95.5
06	6.40	107.97	2768	97.3	98.2	96.5	95.0	96.4	95.7	95.6	95.7	95.4
07	6.51	111.06	2790	97.7	98.2	96.4	95.2	96.6	95.6	95.9	95.6	94.7
08	6.39	113.98	2817	98.8	99.2	97.5	96.9	97.8	96.9	97.6	97.2	96.9
09	6.43	113.73	2790	98.4	98.6	96.9	96.6	97.4	96.3	96.3	96.5	95.8
10	6.42	112.73	2792	98.6	99.0	97.1	96.9	97.7	96.8	97.0	96.8	96.1
11	6.44	113.65	2815	98.5	98.9	97.4	96.7	97.7	97.5	97.1	96.8	96.4
12	6.39	113.24	2836	98.7	99.3	97.3	96.7	97.9	97.2	97.3	96.9	96.1
13	6.45	109.50	2822	98.5	98.4	97.4	96.1	97.1	96.6	96.5	96.9	95.4
14	6.42	112.14	2805	97.4	97.8	96.4	95.3	96.6	95.8	95.7	96.0	95.0
15	6.45	111.73	2837	98.7	98.8	97.0	96.4	97.7	96.7	96.8	96.7	96.5
16	6.44	113.89	2805	98.5	99.3	97.2	96.3	97.4	96.9	96.6	96.8	95.8
17	6.42	113.90	2845	98.4	98.9	97.8	96.8	97.7	97.0	96.9	96.7	96.4
18	6.43	113.83	2822	98.3	98.8	97.4	96.2	97.5	96.6	97.0	96.7	96.0
19	6.47	109.72	2802	98.6	98.6	96.7	96.4	97.6	96.3	96.3	96.3	95.5
20	6.40	105.62	2812	97.7	97.9	96.0	95.5	96.6	95.8	95.6	95.3	94.4
Ave.	6.43	111.57	2806	98.3	98.7	97.0	96.1	97.3	96.4	96.5	96.4	95.7
Med.	6.42	112.37	2805	98.4	98.8	97.0	96.3	97.6	96.6	96.6	96.6	95.7
Min.	6.39	105.62	2766	97.3	97.8	96.0	95.0	96.1	95.2	95.4	95.3	94.4
Max.	6.51	113.98	2852	99.1	99.4	97.8	96.9	97.9	97.5	97.6	97.2	96.9
σ	0.03	2.38	25	0.5	0.5	0.4	0.6	0.6	0.6	0.6	0.5	0.6

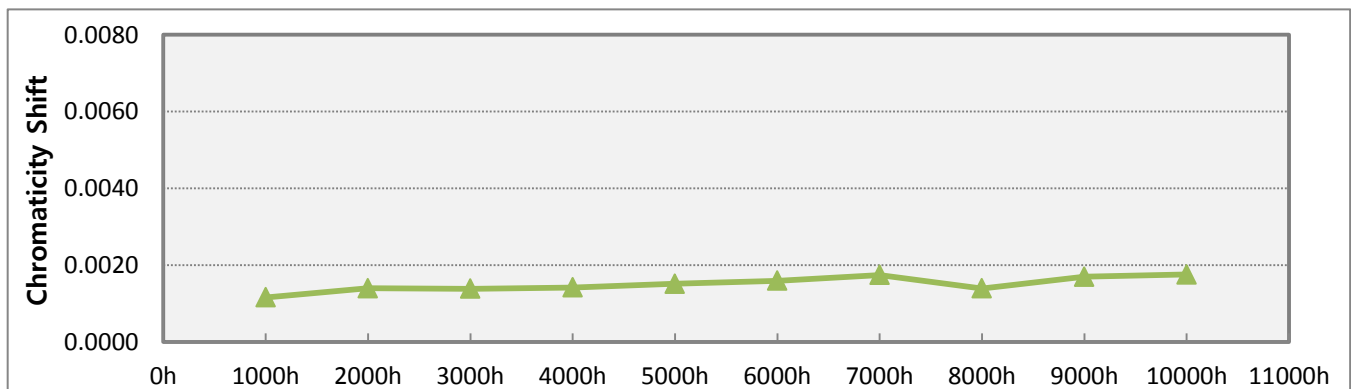


3. 105°C Data Set

No.	Lumen Maintenance										
				10000 h							
01				94.7							
02				95.2							
03				95.6							
04				95.9							
05				95.6							
06				95.2							
07				94.8							
08				96.0							
09				95.7							
10				95.6							
11				95.9							
12				96.0							
13				95.7							
14				95.0							
15				95.9							
16				95.3							
17				95.8							
18				95.5							
19				95.0							
20				94.2							
21											
22											
23											
24											
25											
Ave.				95.4							
Med.				95.6							
Min.				94.2							
Max.				96.0							
σ				0.5							

3. 105°C Data Set

No.	Initial Characteristics		Chromaticity Shift du'v'									
	CIE1976 u'	CIE1976 v'	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000 h	
01	0.2585	0.5264	0.0015	0.0016	0.0016	0.0016	0.0016	0.0016	0.0018	0.0019	0.0016	0.0018
02	0.2587	0.5264	0.0012	0.0015	0.0014	0.0014	0.0015	0.0015	0.0016	0.0017	0.0014	0.0017
03	0.2561	0.5244	0.0014	0.0016	0.0017	0.0016	0.0017	0.0017	0.0017	0.0019	0.0015	0.0017
04	0.2591	0.5259	0.0011	0.0014	0.0014	0.0015	0.0016	0.0016	0.0016	0.0018	0.0014	0.0018
05	0.2591	0.5287	0.0011	0.0014	0.0015	0.0014	0.0016	0.0016	0.0016	0.0018	0.0014	0.0017
06	0.2591	0.5282	0.0010	0.0012	0.0012	0.0012	0.0013	0.0014	0.0014	0.0015	0.0012	0.0015
07	0.2584	0.5268	0.0013	0.0015	0.0014	0.0015	0.0016	0.0016	0.0016	0.0018	0.0015	0.0018
08	0.2576	0.5247	0.0010	0.0013	0.0012	0.0014	0.0015	0.0015	0.0015	0.0018	0.0014	0.0018
09	0.2584	0.5265	0.0010	0.0013	0.0014	0.0014	0.0015	0.0015	0.0015	0.0017	0.0014	0.0017
10	0.2582	0.5270	0.0012	0.0014	0.0013	0.0015	0.0015	0.0016	0.0016	0.0017	0.0014	0.0017
11	0.2573	0.5267	0.0013	0.0014	0.0014	0.0014	0.0014	0.0014	0.0016	0.0017	0.0013	0.0016
12	0.2567	0.5247	0.0010	0.0013	0.0012	0.0013	0.0015	0.0016	0.0016	0.0018	0.0013	0.0017
13	0.2569	0.5268	0.0010	0.0013	0.0012	0.0012	0.0014	0.0015	0.0015	0.0016	0.0013	0.0015
14	0.2580	0.5255	0.0011	0.0013	0.0013	0.0014	0.0015	0.0015	0.0015	0.0016	0.0013	0.0016
15	0.2567	0.5247	0.0011	0.0015	0.0014	0.0014	0.0015	0.0015	0.0015	0.0017	0.0013	0.0017
16	0.2575	0.5274	0.0014	0.0015	0.0015	0.0015	0.0015	0.0015	0.0016	0.0017	0.0014	0.0016
17	0.2561	0.5259	0.0011	0.0013	0.0014	0.0014	0.0015	0.0016	0.0016	0.0017	0.0013	0.0018
18	0.2573	0.5248	0.0010	0.0013	0.0013	0.0013	0.0014	0.0015	0.0015	0.0017	0.0013	0.0016
19	0.2579	0.5267	0.0013	0.0015	0.0015	0.0015	0.0017	0.0016	0.0016	0.0019	0.0015	0.0018
20	0.2579	0.5243	0.0010	0.0013	0.0014	0.0014	0.0015	0.0015	0.0018	0.0018	0.0015	0.0018
Ave.	0.2578	0.5261	0.0012	0.0014	0.0014	0.0014	0.0015	0.0016	0.0016	0.0017	0.0014	0.0017
Med.	0.2579	0.5264	0.0011	0.0014	0.0014	0.0014	0.0015	0.0016	0.0016	0.0017	0.0014	0.0017
Min.	0.2561	0.5243	0.0010	0.0012	0.0012	0.0012	0.0013	0.0014	0.0014	0.0015	0.0012	0.0015
Max.	0.2591	0.5287	0.0015	0.0016	0.0017	0.0016	0.0017	0.0018	0.0018	0.0019	0.0016	0.0018
σ	0.0009	0.0013	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001



3. 105°C Data Set

No.	Chromaticity Shift du'v'									
			10000 h							
01			0.0017							
02			0.0017							
03			0.0017							
04			0.0019							
05			0.0018							
06			0.0016							
07			0.0020							
08			0.0018							
09			0.0018							
10			0.0017							
11			0.0016							
12			0.0019							
13			0.0018							
14			0.0018							
15			0.0017							
16			0.0016							
17			0.0017							
18			0.0017							
19			0.0018							
20			0.0018							
21										
22										
23										
24										
25										
Ave.			0.0018							
Med.			0.0018							
Min.			0.0016							
Max.			0.0020							
σ			0.0001							