TEST REPORT

According to ANSI/IES LM-80-15
For

Hongli Zhihui Group Co., Ltd. Guangzhou Branch

Room 316,Building 2,No.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou, China

Model: HL-AS-2835H466W-3C-S1-08L-PCT-HR3(R9)

Report Type: 6000 Hours Test Report	**Product Type:** LED Package
Reviewed By:	Pote Wang
Report Number:	SZ2230728-43912E-EE-6000
Test Date:	2023-06-20 to 2024-04-28
Report Date:	2024-05-06
Approved by:	Blake Zhang / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax:+86-0769-86858588

TABLE OF CONTENTS

1 - General Information

1.1 Description of LED Light Sources#

Sample Size:

50 PCS test samples were in good condition and received on 2023-07-28. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Hongli Zhihui Group Co., Ltd. Guangzhou Branch
Part Number:	HL-AS-2835H466W-3C-S1-08L-PCT-HR3(R9)
Part Type:	LED Package
Drive Level:	DC 100mA
Nominal CCT:	2700K
Power:	0.96W
Average Current Density per LED die:	688.890mA/mm^2
Average Power Density per LED die:	2.204W/mm^2
CRI:	80
Die Spacing:	0.15mm

Sampling Method:

LED samples for IESNA LM-80 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.

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	CRI(typ.)	CCT(typ.)	Series	Parallel	Power density（W/mm^2）	Current densityper LED die（mA/mm^2）	Current per die (mA)	Distance between of dies (mm)	Current (mA)
Test model	HL-AS-2835H466W-3C-S1-08L-PCT-HR3(R9)	80	2700K	3	1	0.098	688.890	100	0.15	100
Multiple models	HL-**-2835H***W-3C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	100
Multiple models	HL-**-2835D***W-3C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	100
Multiple models	HL-**-2835F***W-3C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	561.600	100	0.15	100
Multiple models	HL-**-2835D***CBW-3C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	100
Multiple models	HL-**-2835H***W-3-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	300
Multiple models	HL-**-2835D***W-3-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	300

Model type	Model name	CRI(typ.)	CCT(typ.)	Series	Parallel	Power density（W/mm^2）	Current densityper LED die（mA/mm^2）	Current per die (mA)	Distance between of dies (mm)	Current (mA)
Multiple models	HL-**-2835F***W-3-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	561.600	100	0.15	300
Multiple models	HL-**-2835D***CBW-3-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	3	1	0.098	688.890	100	0.15	300
Multiple models	HL-**-2835H***W-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	150
Multiple models	HL-**-2835D***W-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	150
Multiple models	HL-**-2835F***W-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	561.600	150	0.15	150
Multiple models	HL-**-2835H466WD***VW-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	150
Multiple models	HL-**-2835H421WD***VW-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	150
Multiple models	HL-**-2835D4WD***VW-2C-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	150
Multiple models	HL-**-2835H***W-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	300
Multiple models	HL-**-2835D***W-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	300
Multiple models	HL-**-2835F***W-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	561.600	150	0.15	300
Multiple models	HL-**-2835H466D***W-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	300
Multiple models	HL-**-2835H421D***W-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	300
Multiple models	HL-**-2835D4WD***VW-2-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	2	1	0.098	688.890	150	0.15	300
Multiple models	HL-**-2835H***W-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	1	1	0.098	688.890	300	/	300

Model type	Model name	CRI(typ.)	CCT(typ.)	Series	Parallel	Power density（W/mm^2）	Current densityper LED die（mA/mm^2）	Current per die (mA)	Distance between of dies (mm)	Current (mA)
Multiple models	HL-**-2835D***W-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	1	1	0.098	688.890	300	/	300
Multiple models	HL-**-2835F***W-S1-08*-PCT-HR*-**-***-**	70-80	2200K-6500K	1	1	0.098	561.600	300	/	300

Note:

The model name begins with "HL", such as “HL-**-2835H***W-3C-S1-08*-PCT-HR*-**-***-**”, " *" is described in detail as follows:
1. The first “**” is a letter A or AS which stands for the process type.
2. The second “***” is a number from 1 to 999 which stands for the brightness level.
3. The third “*” is a letter L or None which stands for the bonding wire style.
4. The fourth “*” is the number 1 or 2 or 3 or 4 which stands for the CRI style.
5. The fifth “**” is a letter T6 or K3 or K0 or L1 or None, which stands for the frame type.
6. The sixth “***” is a letter SPHO or P5 or P6 or None, which stands for the phosphor solution.
7. The seventh “**” is the letter, which stands for the customer code.

1.2 Standards and Reference Documentations

- ANSI/IES LM-80-15: IES Approved Method for Measuring Lumen Maintenance of LED Light Sources.
- CIE 127:2007: Measurement of LEDs
- ENERGY STAR® Requirements for the Use of LM-80 Data (This standard was not accredited by IAS)

1.3 Testing Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
High Accuracy Array Spectroradiometer	EVERFINE	HAAS 2000	P600674CM5391140	2023-09-02	2024-09-11
0.5M Integrating Sphere	EVERFINE	0.5m	NA	2023-09-02	2024-09-11
LED Test Source	EVERFINE	LTS-300	P185616CJ1391143	2023-09-02	2024-09-11
Standard Light Source	EVERFINE	D062	M133799CM1381112	2023-05-12	2025-05-11
Multilayer aging machine	BACL	B2-270	20022	2023-10-16	2024-10-15
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090003	2023-09-02	2024-09-01

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 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 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 ambient temperature during test was set to 25°C ± 2°C, RH <65%.

1.6 Photometric Measurement Method and Uncertainty

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 ambient 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 measurements is U=1.59% (K=2), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is U=21K (K=2), at the 95% confidence level.

The uncertainty of the temperature is U=0.8671°C (K=2), at the 95% confidence level.

1.7 Statement of Traceability

Bay Area Compliance Laboratories Corp. (Dongguan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

1.8 Sample Set

Data Set 1: 55°C, 100mA

Part Number:	HL-AS-2835H466W-3C-S1-08L-PCT-HR3(R9)
Number of Units:	25
Case Temperature:	>53°C
Ambient Temperature:	>50°C
Life Test Drive Current:	100mA
Measurement Current:	100mA

Data Set 2: 105°C, 100mA

Part Number:	HL-AS-2835H466W-3C-S1-08L-PCT-HR3(R9)
Number of Units:	25
Case Temperature:	>103°C
Ambient Temperature:	>100°C
Life Test Drive Current:	100mA
Measurement Current:	100mA

2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α	β	Reported TM-21 L_{70} Lifetime	Reported TM-21 L_{90} Lifetime
1	25	0	1000hrs	6000hrs	2.499E-06	1.005	>36000 hours	>36000 hours
2	25	0	1000hrs	6000hrs	3.290E-06	1.003	>36000 hours	33,000 hours

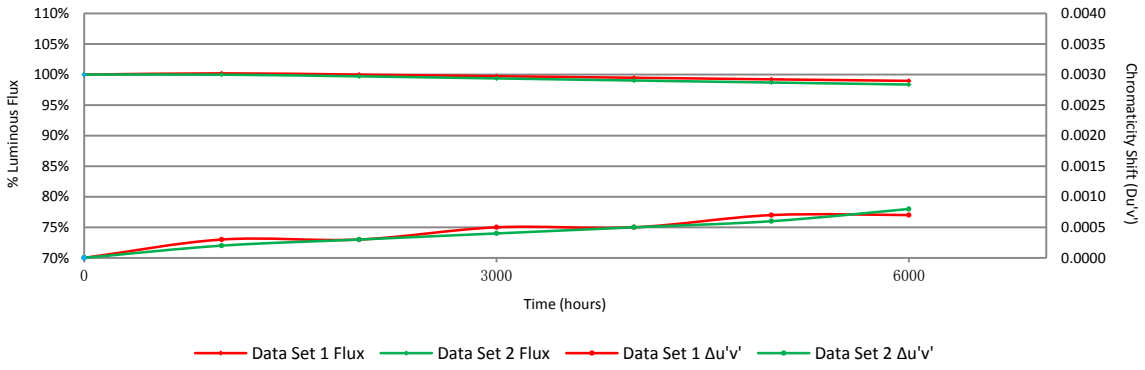
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	100.20%	99.99%	99.73%	99.48%	99.22%	98.97%
2	99.98%	99.71%	99.37%	99.03%	98.70%	98.37%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.0003	0.0003	0.0005	0.0005	0.0007	0.0007
2	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

3.1 Data Set 1, 55°C, 100mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	121.40	100.25	100.08	99.84	99.59	99.34	99.09
2	115.30	100.26	100.09	99.83	99.57	99.31	99.13
3	121.80	100.25	100.08	99.84	99.59	99.34	99.10
4	116.80	100.26	100.09	99.83	99.57	99.32	99.14
5	121.20	100.17	99.92	99.67	99.42	99.17	99.01
6	115.40	100.17	99.91	99.65	99.39	99.13	98.96
7	114.70	100.17	99.91	99.65	99.39	99.13	98.87
8	120.90	100.17	99.92	99.67	99.42	99.17	98.92
9	116.70	100.17	99.91	99.66	99.40	99.14	98.89
10	120.10	100.08	99.92	99.67	99.42	99.17	99.00
11	114.80	100.17	99.91	99.65	99.39	99.13	98.87
12	116.60	100.17	99.91	99.66	99.40	99.14	98.89
13	114.70	100.26	100.09	99.83	99.56	99.30	99.04
14	118.60	100.25	100.08	99.83	99.58	99.33	99.07
15	114.50	100.17	99.91	99.65	99.39	99.13	98.86
16	113.60	100.18	99.91	99.65	99.38	99.12	98.86
17	114.80	100.26	100.17	99.91	99.65	99.39	99.13
18	118.40	100.25	100.08	99.83	99.58	99.32	99.07
19	112.90	100.18	99.82	99.56	99.29	99.03	98.67
20	119.40	100.25	100.08	99.83	99.58	99.33	99.08
21	114.80	100.26	100.09	99.83	99.56	99.30	99.04
22	121.00	100.25	100.17	99.92	99.67	99.42	99.17
23	114.60	100.17	99.91	99.65	99.39	99.13	98.87
24	118.90	100.17	99.83	99.58	99.33	99.07	98.82
25	114.00	100.18	99.91	99.65	99.39	99.12	98.77
Avg.	117.04	100.20	99.99	99.73	99.48	99.22	98.97
Med.	116.60	100.18	99.92	99.67	99.42	99.17	99.00
st dev	2.85	0.05	0.11	0.11	0.11	0.11	0.13
Min.	112.90	100.08	99.82	99.56	99.29	99.03	98.67
Max.	121.80	100.26	100.17	99.92	99.67	99.42	99.17

3.2 Data Set 1, 55°C, 100mA (Forward Voltage)

No.	Forward Voltage (V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	8.852	8.866	8.845	8.869	8.887	8.863	8.859
2	8.878	8.891	8.872	8.903	8.884	8.913	8.889
3	8.874	8.886	8.861	8.886	8.882	8.885	8.887
4	8.929	8.942	8.919	8.943	8.943	8.957	8.936
5	8.863	8.878	8.857	8.890	8.875	8.884	8.870
6	8.888	8.902	8.880	8.924	8.903	8.900	8.896
7	8.880	8.892	8.874	8.923	8.905	8.899	8.888
8	8.860	8.869	8.848	8.903	8.883	8.893	8.867
9	8.878	8.887	8.866	8.905	8.899	8.898	8.888
10	8.861	8.869	8.851	8.892	8.877	8.877	8.873
11	8.856	8.864	8.843	8.877	8.876	8.876	8.869
12	8.902	8.912	8.894	8.924	8.924	8.916	8.925
13	8.873	8.881	8.861	8.891	8.888	8.886	8.877
14	8.853	8.859	8.841	8.881	8.870	8.864	8.858
15	8.895	8.901	8.882	8.910	8.913	8.906	8.907
16	8.875	8.881	8.867	8.899	8.892	8.886	8.905
17	8.854	8.860	8.845	8.871	8.864	8.863	8.863
18	8.849	8.856	8.839	8.888	8.868	8.855	8.863
19	8.888	8.893	8.876	8.908	8.923	8.895	8.894
20	8.959	8.965	8.943	8.944	8.948	8.973	8.965
21	8.880	8.884	8.865	8.908	8.916	8.890	8.885
22	8.846	8.852	8.836	8.867	8.906	8.859	8.851
23	8.886	8.893	8.874	8.911	8.922	8.906	8.893
24	8.808	8.819	8.795	8.830	8.827	8.825	8.815
25	8.850	8.861	8.841	8.870	8.863	8.879	8.860
Avg.	8.873	8.883	8.863	8.897	8.894	8.890	8.883
Med.	8.874	8.881	8.861	8.899	8.888	8.886	8.885
st dev	0.029	0.029	0.029	0.026	0.027	0.031	0.030
Min.	8.808	8.819	8.795	8.830	8.827	8.825	8.815
Max.	8.959	8.965	8.943	8.944	8.948	8.973	8.965

3.3 Data Set 1, 55°C, 100mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2573	0.5313	2792	0.0001	0.0001	0.0002	0.0004	0.0005	0.0006
2	0.2606	0.5313	2723	0.0003	0.0003	0.0003	0.0004	0.0004	0.0006
3	0.2589	0.5331	2752	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007
4	0.2578	0.5318	2780	0.0002	0.0002	0.0004	0.0005	0.0006	0.0007
5	0.2577	0.5321	2780	0.0001	0.0002	0.0002	0.0004	0.0004	0.0005
6	0.2585	0.5299	2774	0.0003	0.0004	0.0005	0.0006	0.0007	0.0007
7	0.2599	0.5324	2733	0.0003	0.0004	0.0004	0.0005	0.0006	0.0006
8	0.2597	0.5317	2741	0.0001	0.0003	0.0004	0.0005	0.0006	0.0007
9	0.2611	0.5313	2712	0.0004	0.0004	0.0005	0.0006	0.0007	0.0007
10	0.2576	0.5318	2784	0.0004	0.0004	0.0005	0.0005	0.0006	0.0006
11	0.2579	0.5317	2778	0.0004	0.0004	0.0005	0.0005	0.0007	0.0007
12	0.2603	0.5325	2725	0.0004	0.0005	0.0006	0.0007	0.0007	0.0008
13	0.2597	0.5313	2742	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008
14	0.2571	0.5305	2801	0.0004	0.0004	0.0005	0.0006	0.0007	0.0008
15	0.2593	0.5308	2753	0.0003	0.0004	0.0005	0.0005	0.0006	0.0006
16	0.2611	0.5305	2716	0.0002	0.0004	0.0005	0.0005	0.0007	0.0008
17	0.2604	0.5318	2725	0.0002	0.0004	0.0005	0.0006	0.0008	0.0008
18	0.2616	0.5325	2699	0.0003	0.0003	0.0004	0.0004	0.0006	0.0006
19	0.2631	0.5340	2663	0.0002	0.0003	0.0004	0.0006	0.0007	0.0008
20	0.2589	0.5318	2756	0.0004	0.0004	0.0006	0.0007	0.0008	0.0008
21	0.2581	0.5311	2776	0.0002	0.0003	0.0005	0.0006	0.0007	0.0008
22	0.2583	0.5325	2765	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007
23	0.2584	0.5311	2769	0.0001	0.0002	0.0004	0.0004	0.0005	0.0006
24	0.2588	0.5307	2764	0.0004	0.0004	0.0005	0.0006	0.0006	0.0007
25	0.2589	0.5331	2751	0.0003	0.0004	0.0005	0.0007	0.0008	0.0008
Avg.	0.2592	0.5317	2750	0.0003	0.0003	0.0005	0.0005	0.0007	0.0007
Med.	0.2589	0.5317	2753	0.0003	0.0004	0.0005	0.0005	0.0006	0.0007
st dev	0.0015	0.0009	33	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2571	0.5299	2663	0.0001	0.0001	0.0002	0.0004	0.0004	0.0005
Max.	0.2631	0.5340	2801	0.0004	0.0005	0.0006	0.0007	0.0008	0.0008

3.4 Data Set 2, 105°C, 100mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	120.40	100.08	99.92	99.58	99.25	99.00	98.67
27	118.20	100.08	99.83	99.49	99.15	98.82	98.48
28	118.90	100.08	99.75	99.41	99.07	98.74	98.40
29	114.30	99.91	99.56	99.21	98.86	98.51	98.16
30	115.30	99.91	99.65	99.31	98.96	98.61	98.27
31	116.10	99.91	99.66	99.31	98.97	98.62	98.28
32	118.20	99.92	99.66	99.32	98.98	98.73	98.39
33	115.30	99.91	99.65	99.31	98.96	98.70	98.35
34	115.20	100.09	99.83	99.48	99.13	98.70	98.35
35	115.40	99.22	98.96	98.61	98.27	98.01	97.66
36	122.30	100.08	99.84	99.51	99.18	98.86	98.53
37	112.60	100.09	99.73	99.38	99.02	98.67	98.31
38	113.30	100.09	99.82	99.47	99.12	98.76	98.41
39	120.80	99.92	99.67	99.34	99.01	98.76	98.43
40	113.30	99.91	99.74	99.38	99.03	98.68	98.32
41	120.80	99.92	99.67	99.34	99.01	98.68	98.34
42	115.90	100.09	99.83	99.48	99.14	98.88	98.53
43	119.00	100.08	99.83	99.50	99.16	98.82	98.57
44	113.90	99.91	99.56	99.21	98.86	98.60	98.33
45	118.90	100.08	99.83	99.50	99.16	98.82	98.49
46	115.00	99.91	99.65	99.30	98.96	98.70	98.43
47	114.40	100.09	99.74	99.39	99.04	98.69	98.34
48	119.60	100.08	99.92	99.58	99.25	98.91	98.58
49	114.60	99.91	99.65	99.30	98.95	98.60	98.25
50	117.10	100.09	99.83	99.49	99.15	98.72	98.38
Avg.	116.75	99.98	99.71	99.37	99.03	98.70	98.37
Med.	115.90	100.08	99.74	99.38	99.03	98.70	98.38
st dev	2.75	0.18	0.19	0.19	0.19	0.18	0.19
Min.	112.60	99.22	98.96	98.61	98.27	98.01	97.66
Max.	122.30	100.09	99.92	99.58	99.25	99.00	98.67

3.5 Data Set 2, 105°C, 100mA (Forward Voltage)

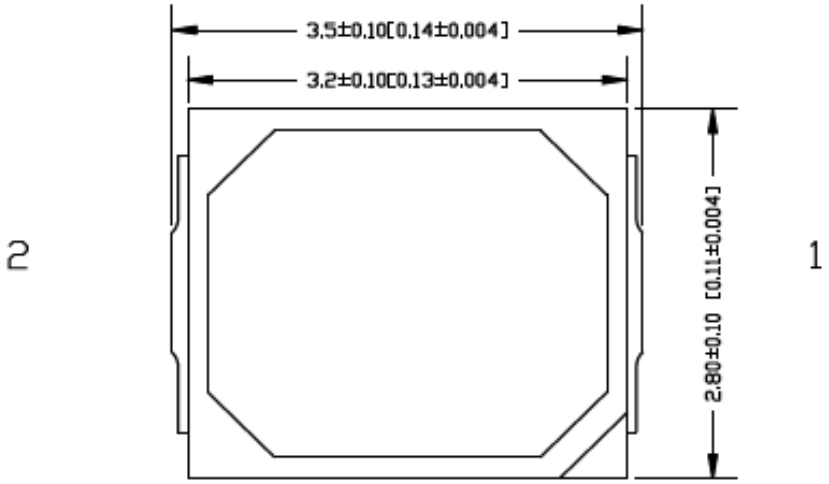
No.	Forward Voltage (V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	8.968	8.862	8.864	8.862	8.868	8.868	8.865
27	8.844	8.851	8.839	8.868	8.901	8.903	8.855
28	8.840	8.846	8.831	8.867	8.865	8.872	8.844
29	8.870	8.890	8.866	8.891	8.892	8.899	8.874
30	8.877	8.903	8.866	8.911	8.896	8.903	8.886
31	8.871	8.893	8.860	8.910	8.886	8.896	8.884
32	8.867	8.892	8.852	8.932	8.884	8.888	8.876
33	8.863	8.889	8.852	8.903	8.881	8.882	8.868
34	8.840	8.862	8.829	8.873	8.910	8.920	8.852
35	8.886	8.904	8.873	8.906	8.935	8.942	8.892
36	8.828	8.849	8.817	8.863	8.849	8.854	8.838
37	8.887	8.910	8.878	8.920	8.898	8.901	8.895
38	8.841	8.867	8.831	8.870	8.853	8.858	8.849
39	8.832	8.855	8.824	8.861	8.842	8.846	8.842
40	8.855	8.873	8.846	8.887	8.867	8.870	8.866
41	8.861	8.871	8.851	8.897	8.869	8.877	8.872
42	8.870	8.880	8.856	8.916	8.883	8.891	8.873
43	8.819	8.833	8.810	8.835	8.828	8.831	8.827
44	8.894	8.911	8.887	8.917	8.913	8.923	8.902
45	8.857	8.873	8.849	8.879	8.877	8.878	8.868
46	8.878	8.897	8.868	8.932	8.893	8.902	8.885
47	8.876	8.891	8.865	8.898	8.911	8.917	8.888
48	8.860	8.873	8.853	8.898	8.894	8.900	8.866
49	8.885	8.903	8.875	8.931	8.895	8.898	8.890
50	8.854	8.871	8.846	8.892	8.867	8.873	8.862
Avg.	8.865	8.878	8.852	8.893	8.882	8.888	8.869
Med.	8.863	8.873	8.852	8.897	8.884	8.891	8.868
st dev	0.029	0.022	0.020	0.026	0.024	0.026	0.019
Min.	8.819	8.833	8.810	8.835	8.828	8.831	8.827
Max.	8.968	8.911	8.887	8.932	8.935	8.942	8.902

3.6 Data Set 2, 105°C, 100mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	0.2604	0.5309	2729	0.0002	0.0003	0.0004	0.0005	0.0006	0.0007
27	0.2592	0.5320	2750	0.0003	0.0003	0.0004	0.0006	0.0008	0.0009
28	0.2587	0.5324	2758	0.0003	0.0004	0.0004	0.0006	0.0006	0.0008
29	0.2589	0.5309	2761	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009
30	0.2583	0.5321	2767	0.0003	0.0004	0.0005	0.0006	0.0006	0.0008
31	0.2597	0.5323	2738	0.0002	0.0003	0.0003	0.0005	0.0006	0.0007
32	0.2596	0.5302	2750	0.0001	0.0003	0.0004	0.0005	0.0006	0.0007
33	0.2582	0.5315	2772	0.0002	0.0003	0.0004	0.0005	0.0007	0.0008
34	0.2600	0.5329	2729	0.0003	0.0003	0.0004	0.0005	0.0005	0.0007
35	0.2603	0.5354	2714	0.0003	0.0004	0.0005	0.0007	0.0008	0.0009
36	0.2574	0.5320	2788	0.0003	0.0004	0.0005	0.0006	0.0006	0.0008
37	0.2623	0.5328	2682	0.0001	0.0003	0.0004	0.0005	0.0007	0.0009
38	0.2578	0.5297	2788	0.0002	0.0003	0.0004	0.0006	0.0007	0.0008
39	0.2583	0.5310	2772	0.0002	0.0003	0.0004	0.0005	0.0005	0.0006
40	0.2604	0.5300	2732	0.0003	0.0003	0.0005	0.0006	0.0007	0.0008
41	0.2589	0.5336	2748	0.0003	0.0004	0.0005	0.0006	0.0008	0.0009
42	0.2593	0.5314	2751	0.0002	0.0003	0.0003	0.0004	0.0006	0.0007
43	0.2581	0.5298	2782	0.0000	0.0001	0.0003	0.0004	0.0005	0.0006
44	0.2604	0.5314	2728	0.0003	0.0004	0.0005	0.0005	0.0007	0.0008
45	0.2575	0.5308	2792	0.0002	0.0002	0.0004	0.0005	0.0005	0.0008
46	0.2592	0.5308	2754	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007
47	0.2614	0.5323	2702	0.0001	0.0001	0.0002	0.0003	0.0005	0.0006
48	0.2589	0.5324	2755	0.0003	0.0004	0.0005	0.0006	0.0007	0.0009
49	0.2612	0.5341	2699	0.0002	0.0003	0.0004	0.0005	0.0007	0.0008
50	0.2595	0.5305	2750	0.0002	0.0002	0.0003	0.0003	0.0006	0.0009
Avg.	0.2594	0.5317	2748	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008
Med.	0.2592	0.5315	2750	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008
st dev	0.0012	0.0014	29	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Min.	0.2574	0.5297	2682	0.0000	0.0001	0.0002	0.0003	0.0005	0.0006
Max.	0.2623	0.5354	2792	0.0003	0.0004	0.0005	0.0007	0.0008	0.0009

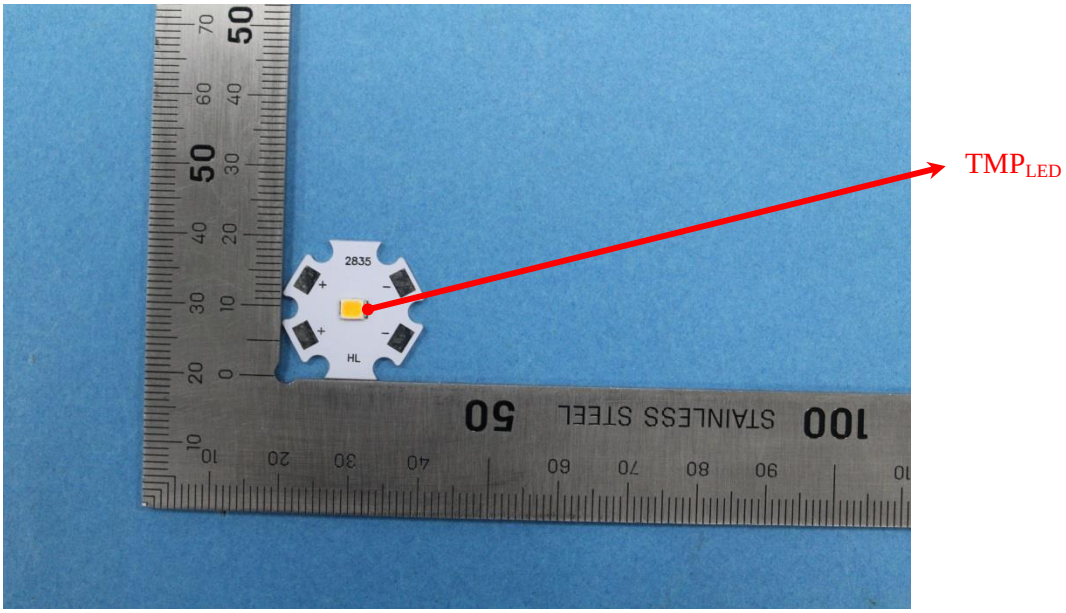
4 - DUT Photo

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 DUT Photo



Directions

1. The information marked “superscript #” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K=2 with the 95% confidence interval.
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**********END OF REPORT**********