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-AM-2835H421W-S1-08HL-HR6

Report Type: 10000 Hours Test Report	**Product Type:** LED Package
Reviewed By:	Pote Wang
Report Number:	SZ2220119-02805E-10-10000
Test Date:	2022-01-26 to 2023-04-12
Report Date:	2023-04-20
Approved by:	Blake Zhang / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5/F(B-West) -7/F, the 3rd Phase of Wan Li Industrial Building D, Shihua Road, Futian Free Trade Zone Shenzhen, Guangdong, China. Tel: +86-755-33320018 Fax: +86-755-33320008
Test Facility:	Test facility was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

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1 - General Information

1.1 Description of LED Light Sources#

Sample Size:

50 PCS test samples were in good condition and received on 2022-01-19. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch
Part Number:	HL-AM-2835H421W-S1-08HL-HR6
Part Type:	LED Package
Drive Level:	DC 150mA
Nominal CCT:	2700K
Power:	0.51 W
Average Current Density per LED die:	861.113 mA/mm^2
Average Power Density per LED die:	2.928W/mm^2
CRI:	95
Die Spacing:	/

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:

Series Name	Model Name	CRI (typ.)	Total Input Current (mA)	Power (W)	CCT (K)	Number of dies	Driver current per die(mA)	Current Density per Die (mA/mm^2)	Power Density per PCB (W/mm^2)	Die Spacing (mm)
Test model	HL-AM-2835H421W-S1-08HL-HR6	95	150	0.51	2700	1	150	861.113	0.0520	/
Multiple model	HL-AM-2835D***W-****-S1-08**-HR*-***	>90	150	0.51	2700-6500	1	150	861.113	0.0520	/
	HL-AM-2835H***W-****-S1-08**-HR*-***	>90	150	0.51	2700-6500	1	150	861.113	0.0520	/

Note: The model name begins with "HL", such as “HL-AM-2835D***W-****-S1-08**-HR*-***”, " *" is described in detail as follows:
1. The first “***” is the number from 1 to 999 which stands for the brightness level.
2. The second "****" which stands for the Zener chip code or None, no impact on product performances，Zener chip code refers to the electrostatic capacity.
3. The third “**” is the letter HL or None which stands for the bonding wire style.
4. The fourth “*” is the number above 5 which stands for the CRI style
5. The fifth “***” 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 (This standard was not accredited by NVLAP)

- *ENERGY STAR® Requirements for the Use of LM-80 Data (This standard was not accredited by NVLAP)

1.3 Testing Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
High Accuracy Array Spectroradiometer	EVERFINE	HAAS 2000	P600674CM5391140	2022-09-27	2023-09-26
0.5M Integrating Sphere	EVERFINE	0.5m	NA	2022-09-27	2023-09-26
LED Test Source	EVERFINE	LTS-300	P185616CJ1391143	2022-11-18	2023-11-17
Standard Light Source	EVERFINE	D062	1011093	2021-10-15	2023-10-14
Multilayer aging machine	BACL	B2-270	20015	2022-11-18	2023-11-17
Digital CC&CV DC Power Supply	EVERFINE	WY5015	11090004	2022-11-18	2023-11-17

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. (Shenzhen) 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, 150mA

Part Number:	HL-AM-2835H421W-S1-08HL-HR6
Number of Units:	25
Case Temperature:	>53°C
Ambient Temperature:	>50°C
Life Test Drive Current:	150mA
Measurement Current:	150mA

Data Set 2: 105°C, 150mA

Part Number:	HL-AM-2835H421W-S1-08HL-HR6
Number of Units:	25
Case Temperature:	>103°C
Ambient Temperature:	>100°C
Life Test Drive Current:	150mA
Measurement Current:	150mA

2 - Summary of Test Result

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α	β	Reported TM-21 L_{70} Lifetime
1	25	0	1000hrs	10000hrs	2.143E-06	1.002	>60000 hours
2	25	0	1000hrs	10000hrs	2.415E-06	1.001	>60000 hours

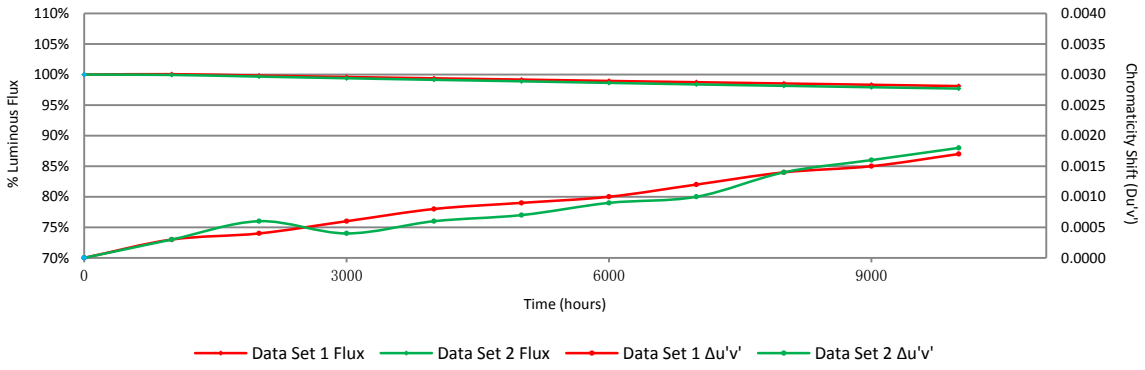
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.07%	99.83%	99.60%	99.39%	99.18%	98.96%	98.75%	98.54%	98.33%	98.12%
2	99.94%	99.67%	99.40%	99.14%	98.90%	98.64%	98.39%	98.16%	97.93%	97.71%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0014	0.0015	0.0017
2	0.0003	0.0006	0.0004	0.0006	0.0007	0.0009	0.0010	0.0014	0.0016	0.0018

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

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

No.	Φ(lm)	Lumen Maintenance (%)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	44.79	100.11	99.98	99.80	99.60	99.35	99.06	98.79	98.62	98.44	98.26
2	45.75	100.09	99.80	99.78	99.58	99.41	99.23	99.06	98.82	98.60	98.45
3	45.52	100.04	99.89	99.54	99.38	99.19	98.90	98.62	98.46	98.15	97.85
4	45.24	100.15	99.93	99.82	99.56	99.23	98.96	98.81	98.63	98.36	98.12
5	45.85	100.07	99.78	99.63	99.35	99.08	98.87	98.71	98.41	98.17	97.93
6	45.42	99.98	99.76	99.27	99.10	98.88	98.63	98.41	98.17	97.95	97.71
7	45.15	100.11	99.80	99.27	99.07	98.80	98.58	98.34	98.07	97.85	97.56
8	46.01	99.93	99.83	99.74	99.48	99.22	99.09	98.76	98.48	98.28	98.02
9	45.32	100.09	99.69	99.40	99.14	98.92	98.72	98.50	98.30	98.12	97.90
10	46.19	100.11	99.81	99.35	99.16	98.96	98.77	98.51	98.25	98.14	97.94
11	46.06	100.22	99.83	99.65	99.35	99.15	98.96	98.74	98.55	98.26	98.02
12	45.80	100.15	99.96	99.76	99.52	99.28	99.13	98.97	98.78	98.65	98.47
13	44.74	100.22	99.98	99.62	99.44	99.26	99.04	98.86	98.64	98.44	98.23
14	46.03	99.93	99.61	99.26	99.04	98.81	98.50	98.33	98.09	97.85	97.65
15	46.18	100.11	99.94	99.83	99.65	99.46	99.22	98.92	98.74	98.53	98.31
16	46.27	100.28	99.98	99.85	99.63	99.44	99.24	98.96	98.77	98.62	98.42
17	45.80	100.04	99.93	99.65	99.39	99.21	99.00	98.73	98.54	98.32	98.10
18	45.11	100.07	99.62	99.38	99.16	99.02	98.80	98.54	98.34	98.16	97.94
19	45.04	100.02	99.76	99.22	98.98	98.82	98.60	98.42	98.18	98.05	97.91
20	46.22	100.02	99.83	99.76	99.55	99.31	99.09	98.92	98.72	98.46	98.36
21	44.81	99.93	99.73	99.51	99.40	99.24	99.02	98.84	98.66	98.44	98.24
22	45.96	99.98	99.91	99.89	99.70	99.54	99.35	99.15	99.00	98.80	98.61
23	45.82	100.13	99.96	99.89	99.78	99.61	99.41	99.28	99.17	98.93	98.73
24	45.59	100.04	99.89	99.63	99.47	99.21	98.95	98.75	98.60	98.42	98.16
25	45.28	100.02	99.69	99.49	99.29	99.09	98.90	98.72	98.48	98.32	98.17
Avg.	45.60	100.07	99.83	99.60	99.39	99.18	98.96	98.75	98.54	98.33	98.12
Med.	45.75	100.07	99.83	99.63	99.40	99.21	98.96	98.75	98.55	98.32	98.12
st dev	0.48	0.09	0.11	0.22	0.22	0.23	0.24	0.25	0.27	0.27	0.29
Min.	44.74	99.93	99.61	99.22	98.98	98.80	98.50	98.33	98.07	97.85	97.56
Max.	46.27	100.28	99.98	99.89	99.78	99.61	99.41	99.28	99.17	98.93	98.73

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

No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	3.147	3.122	3.117	3.124	3.142	3.142	3.128	3.115	3.134	3.142	3.130
2	3.172	3.149	3.155	3.152	3.137	3.132	3.132	3.147	3.148	3.131	3.137
3	3.155	3.128	3.155	3.137	3.139	3.125	3.120	3.148	3.124	3.153	3.147
4	3.164	3.134	3.160	3.128	3.142	3.128	3.138	3.150	3.145	3.139	3.123
5	3.172	3.141	3.137	3.147	3.154	3.136	3.149	3.144	3.127	3.129	3.142
6	3.162	3.136	3.154	3.155	3.142	3.144	3.150	3.134	3.145	3.130	3.129
7	3.132	3.113	3.118	3.127	3.141	3.147	3.139	3.153	3.130	3.145	3.132
8	3.141	3.122	3.123	3.127	3.135	3.139	3.139	3.140	3.131	3.158	3.145
9	3.155	3.124	3.120	3.146	3.140	3.149	3.140	3.137	3.146	3.142	3.155
10	3.151	3.134	3.140	3.138	3.135	3.115	3.141	3.132	3.142	3.132	3.159
11	3.145	3.136	3.137	3.150	3.140	3.147	3.154	3.142	3.152	3.138	3.152
12	3.155	3.145	3.142	3.141	3.131	3.127	3.151	3.148	3.157	3.145	3.137
13	3.145	3.136	3.151	3.154	3.130	3.142	3.142	3.146	3.157	3.152	3.133
14	3.155	3.134	3.150	3.162	3.128	3.129	3.120	3.138	3.138	3.144	3.139
15	3.139	3.118	3.131	3.145	3.140	3.138	3.138	3.129	3.115	3.141	3.147
16	3.156	3.147	3.155	3.154	3.142	3.145	3.136	3.147	3.149	3.149	3.135
17	3.157	3.132	3.137	3.115	3.139	3.121	3.137	3.131	3.157	3.131	3.147
18	3.134	3.122	3.121	3.130	3.145	3.136	3.142	3.149	3.127	3.139	3.131
19	3.143	3.128	3.133	3.121	3.129	3.130	3.145	3.140	3.152	3.131	3.130
20	3.139	3.132	3.133	3.143	3.138	3.140	3.153	3.144	3.146	3.151	3.140
21	3.124	3.118	3.124	3.133	3.133	3.132	3.146	3.138	3.134	3.139	3.130
22	3.143	3.134	3.129	3.138	3.133	3.139	3.130	3.136	3.151	3.138	3.132
23	3.145	3.139	3.135	3.133	3.151	3.144	3.156	3.131	3.126	3.139	3.128
24	3.143	3.132	3.144	3.152	3.141	3.145	3.148	3.149	3.133	3.158	3.138
25	3.139	3.136	3.136	3.138	3.137	3.134	3.142	3.125	3.132	3.142	3.147
Avg.	3.149	3.132	3.137	3.140	3.139	3.136	3.141	3.140	3.140	3.142	3.139
Med.	3.145	3.134	3.137	3.138	3.139	3.138	3.141	3.140	3.142	3.141	3.137
st dev	0.012	0.009	0.013	0.012	0.006	0.009	0.010	0.009	0.012	0.008	0.009
Min.	3.124	3.113	3.117	3.115	3.128	3.115	3.120	3.115	3.115	3.129	3.123
Max.	3.172	3.149	3.160	3.162	3.154	3.149	3.156	3.153	3.157	3.158	3.159

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

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')									
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.2624	0.5280	2700	0.0002	0.0005	0.0005	0.0007	0.0009	0.0011	0.0012	0.0013	0.0016	0.0018
2	0.2607	0.5286	2733	0.0003	0.0004	0.0006	0.0007	0.0011	0.0012	0.0014	0.0016	0.0018	0.0022
3	0.2619	0.5285	2707	0.0001	0.0003	0.0007	0.0009	0.0011	0.0013	0.0014	0.0015	0.0017	0.0019
4	0.2599	0.5259	2761	0.0003	0.0003	0.0008	0.0010	0.0011	0.0013	0.0014	0.0016	0.0017	0.0018
5	0.2606	0.5262	2745	0.0002	0.0005	0.0006	0.0007	0.0008	0.0009	0.0011	0.0013	0.0015	0.0018
6	0.2598	0.5257	2764	0.0001	0.0002	0.0005	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017
7	0.2602	0.5260	2754	0.0002	0.0004	0.0008	0.0010	0.0011	0.0012	0.0014	0.0015	0.0016	0.0018
8	0.2609	0.5291	2726	0.0005	0.0002	0.0004	0.0004	0.0006	0.0008	0.0010	0.0010	0.0011	0.0013
9	0.2607	0.5252	2748	0.0004	0.0009	0.0008	0.0010	0.0011	0.0011	0.0012	0.0015	0.0016	0.0018
10	0.2588	0.5270	2781	0.0001	0.0006	0.0008	0.0009	0.0011	0.0013	0.0014	0.0016	0.0018	0.0018
11	0.2587	0.5264	2784	0.0002	0.0005	0.0006	0.0007	0.0009	0.0011	0.0014	0.0016	0.0017	0.0017
12	0.2608	0.5282	2733	0.0002	0.0002	0.0002	0.0003	0.0005	0.0008	0.0010	0.0010	0.0012	0.0014
13	0.2615	0.5263	2725	0.0002	0.0002	0.0002	0.0003	0.0005	0.0007	0.0011	0.0013	0.0015	0.0018
14	0.2573	0.5279	2809	0.0003	0.0006	0.0005	0.0007	0.0007	0.0008	0.0010	0.0011	0.0014	0.0016
15	0.2605	0.5294	2733	0.0002	0.0004	0.0007	0.0009	0.0010	0.0012	0.0013	0.0015	0.0017	0.0019
16	0.2576	0.5295	2795	0.0006	0.0005	0.0008	0.0010	0.0011	0.0012	0.0013	0.0015	0.0018	0.0021
17	0.2613	0.5293	2718	0.0004	0.0004	0.0006	0.0007	0.0007	0.0008	0.0010	0.0011	0.0013	0.0014
18	0.2613	0.5275	2724	0.0001	0.0005	0.0007	0.0009	0.0009	0.0010	0.0011	0.0012	0.0014	0.0015
19	0.2624	0.5272	2703	0.0003	0.0005	0.0009	0.0010	0.0010	0.0012	0.0013	0.0014	0.0016	0.0018
20	0.2578	0.5266	2804	0.0007	0.0004	0.0003	0.0005	0.0006	0.0008	0.0011	0.0012	0.0013	0.0015
21	0.2607	0.5278	2735	0.0003	0.0004	0.0007	0.0010	0.0011	0.0013	0.0014	0.0016	0.0018	0.0018
22	0.2608	0.5270	2737	0.0001	0.0005	0.0004	0.0006	0.0006	0.0008	0.0008	0.0011	0.0011	0.0013
23	0.2603	0.5277	2744	0.0002	0.0001	0.0006	0.0007	0.0007	0.0008	0.0009	0.0010	0.0012	0.0013
24	0.2602	0.5259	2756	0.0006	0.0002	0.0009	0.0011	0.0011	0.0014	0.0015	0.0016	0.0019	0.0021
25	0.2619	0.5286	2707	0.0004	0.0004	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0017	0.0020
Avg.	0.2604	0.5274	2745	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0014	0.0015	0.0017
Med.	0.2607	0.5275	2737	0.0002	0.0004	0.0006	0.0007	0.0009	0.0011	0.0012	0.0014	0.0016	0.0018
st dev	0.0014	0.0013	31	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003
Min.	0.2573	0.5252	2700	0.0001	0.0001	0.0002	0.0003	0.0005	0.0007	0.0008	0.0010	0.0011	0.0013
Max.	0.2624	0.5295	2809	0.0007	0.0009	0.0009	0.0011	0.0011	0.0014	0.0015	0.0016	0.0019	0.0022

3.4 Data Set 2, 105°C, 150mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	44.73	99.91	99.66	99.28	99.02	98.68	98.44	98.23	97.97	97.67	97.41
27	46.02	99.98	99.70	99.44	99.17	98.89	98.76	98.50	98.39	98.26	98.15
28	44.87	100.22	99.98	99.64	99.35	99.15	98.86	98.55	98.28	97.95	97.70
29	45.44	100.02	99.82	99.74	99.47	99.23	98.94	98.72	98.48	98.22	97.95
30	45.27	99.76	99.62	99.25	98.96	98.65	98.37	98.14	97.90	97.66	97.48
31	45.35	99.98	99.58	99.32	99.12	98.88	98.63	98.43	98.17	97.91	97.68
32	46.33	100.13	99.87	99.57	99.29	98.99	98.75	98.51	98.29	98.06	97.73
33	45.73	99.89	99.63	99.19	98.93	98.73	98.45	98.23	97.94	97.68	97.49
34	45.81	99.83	99.48	99.17	98.91	98.69	98.43	98.14	97.86	97.60	97.40
35	46.05	99.83	99.61	99.24	98.98	98.72	98.37	98.11	97.85	97.65	97.55
36	46.14	99.80	99.59	99.39	99.13	98.85	98.61	98.37	98.11	97.79	97.57
37	46.19	99.85	99.48	99.35	99.07	98.85	98.55	98.33	98.12	97.86	97.58
38	46.26	99.83	99.52	99.31	99.07	98.83	98.55	98.29	98.08	97.84	97.56
39	45.32	100.20	99.93	99.54	99.25	98.96	98.61	98.39	98.15	97.84	97.46
40	45.77	100.15	99.93	99.83	99.56	99.34	99.15	98.93	98.84	98.75	98.65
41	45.38	100.04	99.69	99.32	99.03	98.77	98.44	98.17	97.97	97.77	97.51
42	46.34	100.11	99.94	99.74	99.46	99.22	98.92	98.68	98.45	98.19	97.99
43	45.54	99.87	99.82	99.43	99.21	99.01	98.84	98.51	98.22	98.02	97.72
44	45.06	99.82	99.33	99.07	98.87	98.65	98.45	98.22	98.02	97.78	97.63
45	45.14	100.16	99.96	99.78	99.49	99.22	98.98	98.65	98.56	98.47	98.36
46	46.46	100.19	99.96	99.55	99.35	99.12	98.90	98.64	98.36	98.17	97.93
47	45.73	99.89	99.58	99.34	99.08	98.80	98.53	98.27	97.97	97.73	97.51
48	46.19	99.65	99.35	99.16	98.94	98.64	98.46	98.16	97.94	97.75	97.55
49	45.68	99.67	99.23	98.95	98.66	98.47	98.27	98.01	97.77	97.48	97.22
50	46.13	99.70	99.41	99.33	99.15	99.05	98.81	98.61	98.37	98.24	98.07
Avg.	45.72	99.94	99.67	99.40	99.14	98.90	98.64	98.39	98.16	97.93	97.71
Med.	45.73	99.89	99.63	99.34	99.12	98.85	98.61	98.37	98.12	97.84	97.58
st dev	0.49	0.17	0.22	0.23	0.22	0.23	0.23	0.23	0.26	0.30	0.33
Min.	44.73	99.65	99.23	98.95	98.66	98.47	98.27	98.01	97.77	97.48	97.22
Max.	46.46	100.22	99.98	99.83	99.56	99.34	99.15	98.93	98.84	98.75	98.65

3.5 Data Set 2, 105°C, 150mA (Forward Voltage)

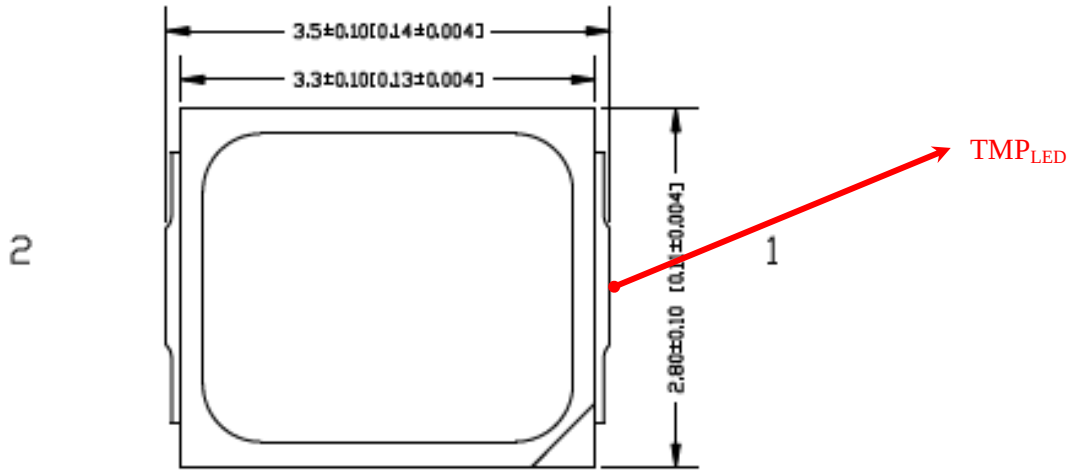
No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	3.143	3.134	3.142	3.137	3.163	3.150	3.140	3.145	3.136	3.137	3.155
27	3.147	3.136	3.132	3.128	3.143	3.164	3.131	3.132	3.149	3.144	3.120
28	3.147	3.130	3.150	3.140	3.127	3.126	3.132	3.130	3.144	3.126	3.125
29	3.153	3.136	3.158	3.150	3.158	3.152	3.145	3.133	3.128	3.120	3.133
30	3.172	3.134	3.130	3.122	3.138	3.147	3.134	3.129	3.143	3.147	3.131
31	3.149	3.136	3.143	3.135	3.130	3.133	3.135	3.147	3.147	3.149	3.139
32	3.143	3.134	3.138	3.117	3.141	3.143	3.130	3.136	3.124	3.136	3.135
33	3.149	3.141	3.138	3.136	3.137	3.140	3.138	3.134	3.130	3.142	3.136
34	3.151	3.134	3.125	3.117	3.148	3.127	3.142	3.150	3.156	3.130	3.141
35	3.124	3.118	3.110	3.119	3.130	3.124	3.122	3.127	3.128	3.126	3.123
36	3.157	3.128	3.130	3.137	3.135	3.130	3.135	3.134	3.137	3.136	3.131
37	3.130	3.126	3.129	3.127	3.157	3.143	3.160	3.125	3.148	3.132	3.136
38	3.136	3.132	3.133	3.130	3.140	3.148	3.136	3.132	3.147	3.138	3.138
39	3.136	3.130	3.132	3.132	3.155	3.127	3.134	3.132	3.159	3.135	3.142
40	3.139	3.136	3.146	3.146	3.139	3.152	3.143	3.139	3.143	3.154	3.151
41	3.143	3.139	3.136	3.128	3.142	3.149	3.150	3.138	3.141	3.146	3.146
42	3.153	3.147	3.146	3.146	3.125	3.154	3.142	3.152	3.142	3.125	3.142
43	3.141	3.130	3.134	3.156	3.155	3.137	3.150	3.125	3.140	3.132	3.150
44	3.124	3.122	3.127	3.128	3.148	3.129	3.127	3.124	3.121	3.136	3.142
45	3.132	3.128	3.131	3.127	3.143	3.132	3.127	3.139	3.131	3.124	3.124
46	3.145	3.136	3.135	3.133	3.130	3.126	3.140	3.135	3.135	3.154	3.137
47	3.132	3.122	3.127	3.126	3.143	3.131	3.141	3.142	3.140	3.143	3.136
48	3.153	3.143	3.135	3.136	3.145	3.149	3.148	3.147	3.140	3.157	3.144
49	3.145	3.143	3.149	3.150	3.131	3.133	3.145	3.130	3.150	3.142	3.129
50	3.147	3.145	3.149	3.147	3.143	3.132	3.136	3.142	3.147	3.142	3.145
Avg.	3.144	3.134	3.136	3.134	3.142	3.139	3.139	3.136	3.140	3.138	3.137
Med.	3.145	3.134	3.135	3.133	3.142	3.137	3.138	3.134	3.141	3.137	3.137
st dev	0.011	0.007	0.010	0.011	0.010	0.011	0.009	0.008	0.010	0.010	0.009
Min.	3.124	3.118	3.110	3.117	3.125	3.124	3.122	3.124	3.121	3.120	3.120
Max.	3.172	3.147	3.158	3.156	3.163	3.164	3.160	3.152	3.159	3.157	3.155

3.6 Data Set 2, 105°C, 150mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')									
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	0.2622	0.5261	2712	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0016	0.0017
27	0.2612	0.5299	2717	0.0004	0.0007	0.0005	0.0006	0.0009	0.0010	0.0012	0.0016	0.0017	0.0019
28	0.2619	0.5275	2711	0.0001	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0017	0.0018	0.0018
29	0.2595	0.5267	2766	0.0004	0.0001	0.0005	0.0006	0.0008	0.0010	0.0012	0.0015	0.0017	0.0019
30	0.2604	0.5253	2753	0.0001	0.0006	0.0006	0.0007	0.0009	0.0010	0.0011	0.0013	0.0016	0.0016
31	0.2598	0.5258	2763	0.0001	0.0003	0.0001	0.0004	0.0005	0.0006	0.0008	0.0013	0.0013	0.0015
32	0.2599	0.5282	2751	0.0003	0.0003	0.0002	0.0004	0.0004	0.0006	0.0008	0.0012	0.0013	0.0013
33	0.2597	0.5255	2767	0.0004	0.0003	0.0005	0.0006	0.0008	0.0010	0.0010	0.0013	0.0015	0.0018
34	0.2601	0.5279	2747	0.0004	0.0007	0.0007	0.0009	0.0010	0.0012	0.0014	0.0018	0.0021	0.0024
35	0.2609	0.5267	2737	0.0002	0.0006	0.0003	0.0001	0.0001	0.0004	0.0006	0.0010	0.0011	0.0016
36	0.2595	0.5292	2755	0.0004	0.0013	0.0016	0.0016	0.0017	0.0018	0.0020	0.0022	0.0023	0.0025
37	0.2580	0.5263	2801	0.0000	0.0006	0.0002	0.0004	0.0005	0.0006	0.0007	0.0012	0.0014	0.0016
38	0.2578	0.5267	2803	0.0003	0.0008	0.0004	0.0005	0.0006	0.0006	0.0007	0.0011	0.0015	0.0016
39	0.2609	0.5263	2737	0.0002	0.0006	0.0002	0.0004	0.0003	0.0006	0.0007	0.0011	0.0013	0.0016
40	0.2597	0.5254	2767	0.0004	0.0006	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0015	0.0017
41	0.2593	0.5253	2777	0.0004	0.0007	0.0003	0.0004	0.0005	0.0007	0.0008	0.0013	0.0015	0.0016
42	0.2595	0.5275	2762	0.0003	0.0008	0.0003	0.0004	0.0006	0.0006	0.0009	0.0013	0.0015	0.0020
43	0.2610	0.5264	2735	0.0002	0.0004	0.0003	0.0004	0.0005	0.0007	0.0009	0.0012	0.0013	0.0014
44	0.2626	0.5286	2694	0.0002	0.0006	0.0005	0.0006	0.0007	0.0008	0.0009	0.0014	0.0016	0.0020
45	0.2622	0.5282	2702	0.0004	0.0005	0.0004	0.0005	0.0005	0.0008	0.0009	0.0014	0.0016	0.0018
46	0.2581	0.5265	2799	0.0002	0.0008	0.0005	0.0006	0.0007	0.0011	0.0015	0.0019	0.0021	0.0022
47	0.2599	0.5279	2753	0.0001	0.0009	0.0005	0.0006	0.0008	0.0010	0.0012	0.0017	0.0019	0.0021
48	0.2605	0.5259	2749	0.0003	0.0007	0.0004	0.0005	0.0007	0.0008	0.0009	0.0015	0.0016	0.0019
49	0.2593	0.5253	2776	0.0002	0.0009	0.0004	0.0006	0.0007	0.0010	0.0013	0.0018	0.0021	0.0022
50	0.2587	0.5257	2789	0.0004	0.0004	0.0002	0.0003	0.0005	0.0006	0.0009	0.0015	0.0018	0.0020
Avg.	0.2601	0.5268	2753	0.0003	0.0006	0.0004	0.0006	0.0007	0.0009	0.0010	0.0014	0.0016	0.0018
Med.	0.2599	0.5265	2753	0.0003	0.0006	0.0004	0.0005	0.0006	0.0008	0.0009	0.0014	0.0016	0.0018
st dev	0.0013	0.0013	30	0.0001	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
Min.	0.2578	0.5253	2694	0.0000	0.0001	0.0001	0.0001	0.0001	0.0004	0.0006	0.0010	0.0011	0.0013
Max.	0.2626	0.5299	2803	0.0004	0.0013	0.0016	0.0016	0.0017	0.0018	0.0020	0.0022	0.0023	0.0025

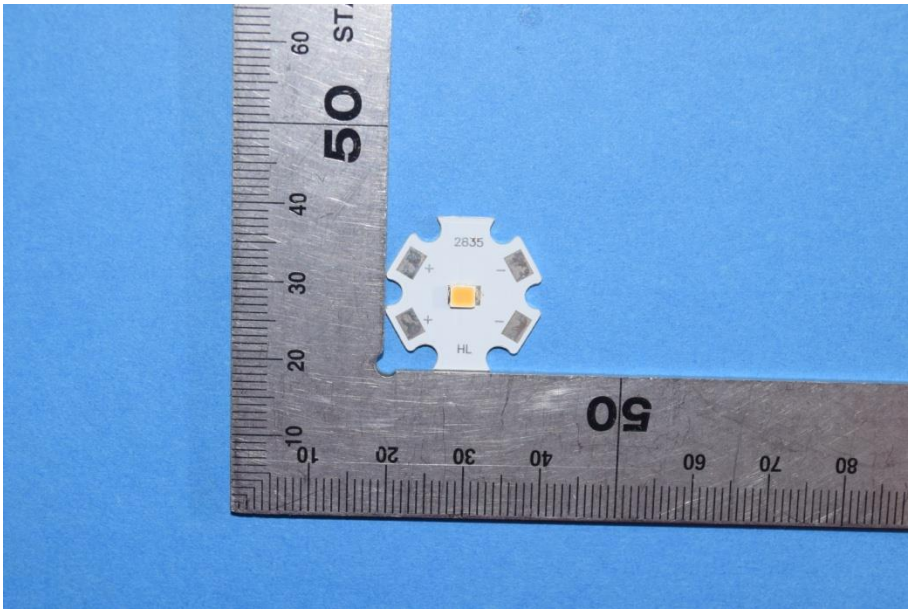
4 - DUT Photo

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 DUT Photo



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**********END OF REPORT**********