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-PST-1608H343W-LVR5-SH

Report Type: 10000 Hours Test Report	**Product Type:** LED Package
Reviewed By:	Pote Wang
Report Number:	RSZ210115504-10-10000
Test Date:	2021-01-22 to 2022-03-23
Report Date:	2022-03-27
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

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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 2021-01-15. The samples were numbered from 1 to 25 and 26 to 50.

Manufacturer:	Hongli Zhihui Group Co.,Ltd. Guangzhou Branch
Part Number:	HL-PST-1608H343W-LVR5-SH
Part Type:	LED Package
#Drive Level:	DC 10mA
#Nominal CCT:	2700K
#Power:	0.03W
#Average Current Density per LED die:	95.679mA/mm^2
#Average Power Density per LED die:	0.287W/mm^2
#CRI:	/
#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:

Model Name	Total Input Current (mA)	Power (W)	CCT (K)	Number of dies	Driver current per die (mA)	Current Density per Die (mA/mm2)	Power Density per PCB (W/mm2)	Die Spacing (mm)
HL-PST-1608H343W-LVR5-SH	10	0.03	2700K	1	10	95.679	0.0234	/
HL-***-1608H***W-****-***	10	0.03	2200-6500K	1	10	95.679	0.0234	/
HL-***-1608H***W-****	10	0.03	2200-6500K	1	10	95.679	0.0234	/
HL-***-1608H***W-****-04-***	10	0.03	2200-6500K	1	10	95.679	0.0234	/
HL-***-1608H***W-****-04	10	0.03	2200-6500K	1	10	95.679	0.0234	/
HL-***-1608H***W-****-***	5	0.015	2200-6500K	1	5	47.84	0.0117	/
HL-***-1608H***W-****	5	0.015	2200-6500K	1	5	47.84	0.0117	/
HL-***-1608H***W-****-04-***	5	0.015	2200-6500K	1	5	47.84	0.0117	/
HL-***-1608H***W-****-04	5	0.015	2200-6500K	1	5	47.84	0.0117	/

Note:
1. The first"***" is a letter PST or PT which stands for the Market demand.
2. The second"***" is a number from 1 to 999 which stands for the brightness level.
3. The third "****" which stands for the Zener chip code or None, no impact on product performances，Zener chip code refers to the electrostatic capacity.
4. The fourth"***"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	2021-10-21	2022-10-20
0.5M Integrating Sphere	EVERFINE	0.5m	NA	2021-09-27	2022-09-26
LED Test Source	EVERFINE	LTS-300	P185616CJ1391143	2022-01-05	2023-01-04
Standard Light Source	EVERFINE	D062	1011093	2021-10-15	2022-10-14
Multilayer aging machine	BACL	B2-270	20013	2022-01-04	2023-01-03
Program-controlled D.C. Stabilized Voltage Supply	Hanshenpuyuan	HSPY-60-03	N/A	2022-01-05	2023-01-04

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, 10mA

Part Number:	HL-PST-1608H343W-LVR5-SH
Number of Units:	25
Case Temperature:	>53°C
Ambient Temperature:	>50°C
Life Test Drive Current:	10mA
Measurement Current:	10mA

Data Set 2: 85°C, 10mA

Part Number:	HL-PST-1608H343W-LVR5-SH
Number of Units:	25
Case Temperature:	>83°C
Ambient Temperature:	>80°C
Life Test Drive Current:	10mA
Measurement Current:	10mA

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	2.794E-06	1.005	>60000 hours
2	25	0	1000hrs	10000hrs	3.204E-06	1.004	>60000 hours

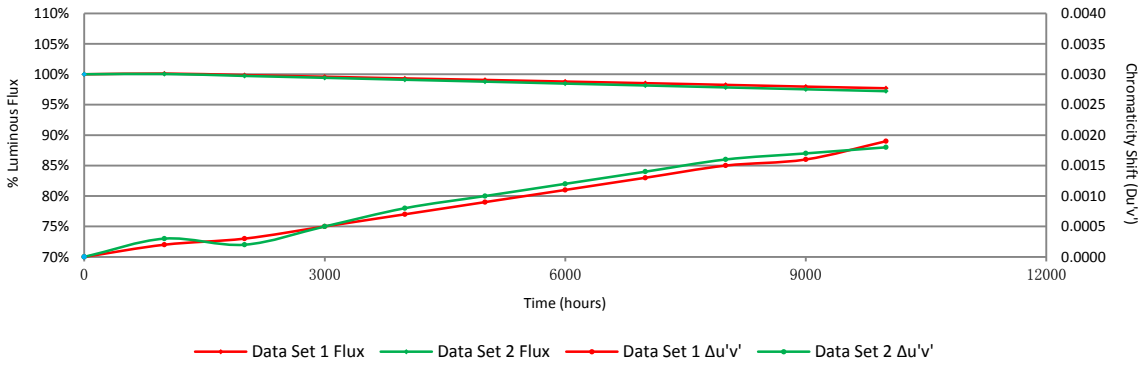
Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	100.12%	99.86%	99.59%	99.32%	99.07%	98.80%	98.54%	98.26%	97.97%	97.70%
2	100.05%	99.73%	99.42%	99.10%	98.79%	98.47%	98.16%	97.84%	97.53%	97.22%

Average Chromaticity Shift

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0019
2	0.0003	0.0002	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0017	0.0018

Average Lumen Maintenance and Chromaticity Shift VS. Time



3 - Test Data

3.1 Data Set 1, 55°C, 10mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	4.083	100.12	99.95	99.71	99.56	99.41	99.07	98.85	98.55	98.31	98.09
2	4.115	99.54	99.30	99.03	98.71	98.52	98.37	98.13	97.86	97.47	96.94
3	4.138	99.76	99.40	99.06	98.74	98.53	98.21	97.92	97.61	97.32	97.08
4	4.164	100.12	99.59	99.42	99.18	98.87	98.51	98.15	97.79	97.62	97.14
5	4.122	99.73	99.42	99.10	98.81	98.45	98.23	97.94	97.70	97.21	96.85
6	4.113	99.68	99.32	99.05	98.81	98.54	98.30	98.08	97.79	97.69	97.52
7	4.229	100.07	100.05	99.91	99.67	99.36	99.08	98.91	98.70	98.08	97.75
8	4.075	99.95	99.58	99.21	98.87	98.67	98.40	98.11	97.96	97.45	97.10
9	3.982	99.20	98.90	98.64	98.27	98.02	97.82	97.51	97.34	96.89	96.66
10	3.986	99.37	99.22	99.02	98.87	98.62	98.29	98.09	97.77	97.37	97.17
11	4.121	100.58	100.07	99.83	99.49	99.25	99.08	98.81	98.54	98.30	98.23
12	4.146	100.48	100.24	99.78	99.61	99.25	98.96	98.67	98.38	98.19	97.95
13	4.127	100.85	100.41	100.15	99.98	99.78	99.54	99.27	99.06	99.03	98.96
14	4.101	99.88	99.78	99.68	99.39	99.10	98.93	98.71	98.46	98.29	98.12
15	4.079	100.49	100.44	100.20	99.90	99.68	99.34	99.09	98.82	98.46	98.43
16	4.089	100.27	100.20	99.98	99.78	99.54	99.36	99.17	98.80	98.39	98.07
17	4.136	100.07	99.76	99.32	99.08	98.84	98.65	98.28	97.92	97.82	97.51
18	4.117	100.27	99.93	99.64	99.47	99.27	99.03	98.71	98.32	97.81	97.57
19	4.036	100.32	100.10	99.90	99.53	99.33	99.08	98.86	98.56	98.07	97.75
20	4.015	100.90	100.77	100.42	100.15	99.93	99.63	99.40	99.05	98.98	98.66
21	4.096	100.20	100.05	99.88	99.49	99.24	99.02	98.83	98.49	98.00	97.71
22	4.114	100.15	99.64	99.34	99.00	98.78	98.40	98.25	97.98	97.96	97.64
23	4.251	100.47	100.24	99.84	99.55	99.22	98.85	98.54	98.26	97.81	97.60
24	4.167	100.19	100.05	99.81	99.50	99.23	98.90	98.58	98.34	98.32	97.82
25	4.051	100.44	100.02	99.80	99.61	99.28	98.94	98.67	98.49	98.37	98.25
Avg.	4.106	100.12	99.86	99.59	99.32	99.07	98.80	98.54	98.26	97.97	97.70
Med.	4.114	100.15	99.95	99.71	99.49	99.23	98.93	98.67	98.34	98.00	97.71
st dev	0.063	0.42	0.44	0.44	0.46	0.47	0.46	0.48	0.47	0.52	0.58
Min.	3.982	99.20	98.90	98.64	98.27	98.02	97.82	97.51	97.34	96.89	96.66
Max.	4.251	100.90	100.77	100.42	100.15	99.93	99.63	99.40	99.06	99.03	98.96

3.2 Data Set 1, 55°C, 10mA (Forward Voltage)

No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	2.751	2.750	2.749	2.756	2.750	2.750	2.750	2.752	2.753	2.753	2.750
2	2.760	2.760	2.760	2.768	2.759	2.757	2.761	2.762	2.765	2.763	2.758
3	2.760	2.760	2.758	2.760	2.760	2.762	2.760	2.764	2.765	2.762	2.760
4	2.745	2.744	2.743	2.745	2.746	2.743	2.744	2.747	2.749	2.748	2.744
5	2.753	2.752	2.752	2.757	2.753	2.751	2.753	2.756	2.756	2.754	2.752
6	2.767	2.767	2.768	2.783	2.767	2.767	2.767	2.772	2.773	2.770	2.767
7	2.759	2.760	2.758	2.776	2.764	2.758	2.759	2.763	2.765	2.762	2.760
8	2.765	2.765	2.763	2.763	2.765	2.765	2.763	2.768	2.770	2.766	2.765
9	2.763	2.765	2.764	2.765	2.765	2.766	2.765	2.767	2.769	2.766	2.764
10	2.752	2.753	2.753	2.756	2.754	2.761	2.753	2.756	2.757	2.755	2.755
11	2.758	2.758	2.758	2.760	2.760	2.758	2.759	2.762	2.763	2.761	2.759
12	2.750	2.749	2.749	2.749	2.749	2.748	2.751	2.753	2.754	2.752	2.750
13	2.751	2.750	2.750	2.751	2.751	2.755	2.752	2.755	2.755	2.756	2.752
14	2.753	2.753	2.753	2.755	2.753	2.754	2.753	2.757	2.759	2.758	2.754
15	2.758	2.758	2.757	2.760	2.760	2.760	2.760	2.763	2.764	2.762	2.758
16	2.751	2.751	2.751	2.753	2.751	2.756	2.751	2.755	2.756	2.754	2.750
17	2.760	2.761	2.761	2.762	2.762	2.764	2.761	2.765	2.766	2.764	2.762
18	2.762	2.762	2.763	2.763	2.764	2.762	2.763	2.766	2.768	2.764	2.762
19	2.746	2.747	2.746	2.748	2.748	2.749	2.748	2.750	2.752	2.748	2.746
20	2.750	2.749	2.750	2.751	2.751	2.751	2.750	2.754	2.756	2.751	2.750
21	2.758	2.756	2.756	2.757	2.757	2.757	2.758	2.759	2.762	2.758	2.756
22	2.756	2.754	2.755	2.755	2.755	2.756	2.755	2.760	2.761	2.756	2.755
23	2.749	2.748	2.748	2.747	2.748	2.749	2.750	2.754	2.755	2.749	2.747
24	2.760	2.758	2.757	2.758	2.759	2.758	2.759	2.764	2.764	2.760	2.757
25	2.748	2.749	2.748	2.748	2.749	2.750	2.749	2.754	2.754	2.749	2.748
Avg.	2.755	2.755	2.755	2.758	2.756	2.756	2.756	2.759	2.760	2.758	2.755
Med.	2.756	2.754	2.755	2.757	2.755	2.757	2.755	2.759	2.761	2.758	2.755
st dev	0.006	0.006	0.006	0.009	0.006	0.006	0.006	0.006	0.006	0.006	0.006
Min.	2.745	2.744	2.743	2.745	2.746	2.743	2.744	2.747	2.749	2.748	2.744
Max.	2.767	2.767	2.768	2.783	2.767	2.767	2.767	2.772	2.773	2.770	2.767

3.3 Data Set 1, 55°C, 10mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')									
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
1	0.2600	0.5334	2727	0.0004	0.0003	0.0006	0.0009	0.0010	0.0013	0.0016	0.0018	0.0017	0.0016
2	0.2595	0.5329	2739	0.0001	0.0002	0.0005	0.0008	0.0011	0.0013	0.0016	0.0018	0.0021	0.0021
3	0.2600	0.5334	2726	0.0003	0.0001	0.0004	0.0005	0.0008	0.0012	0.0013	0.0016	0.0018	0.0019
4	0.2592	0.5320	2750	0.0001	0.0001	0.0004	0.0006	0.0009	0.0012	0.0013	0.0015	0.0016	0.0020
5	0.2607	0.5334	2712	0.0001	0.0006	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0023	0.0021
6	0.2611	0.5340	2702	0.0001	0.0003	0.0003	0.0005	0.0006	0.0008	0.0010	0.0011	0.0017	0.0017
7	0.2591	0.5331	2747	0.0002	0.0001	0.0003	0.0006	0.0008	0.0010	0.0012	0.0013	0.0020	0.0023
8	0.2598	0.5339	2729	0.0003	0.0005	0.0004	0.0008	0.0009	0.0010	0.0011	0.0012	0.0016	0.0021
9	0.2604	0.5312	2728	0.0002	0.0005	0.0005	0.0007	0.0009	0.0010	0.0012	0.0014	0.0017	0.0020
10	0.2598	0.5332	2732	0.0002	0.0001	0.0004	0.0007	0.0009	0.0013	0.0015	0.0016	0.0015	0.0021
11	0.2612	0.5340	2700	0.0001	0.0003	0.0001	0.0003	0.0005	0.0007	0.0009	0.0012	0.0015	0.0020
12	0.2602	0.5338	2721	0.0004	0.0003	0.0003	0.0005	0.0006	0.0009	0.0011	0.0014	0.0019	0.0028
13	0.2600	0.5335	2726	0.0003	0.0004	0.0005	0.0008	0.0010	0.0013	0.0015	0.0016	0.0008	0.0012
14	0.2602	0.5341	2721	0.0003	0.0006	0.0007	0.0008	0.0009	0.0011	0.0013	0.0014	0.0016	0.0022
15	0.2594	0.5313	2748	0.0005	0.0006	0.0008	0.0011	0.0013	0.0016	0.0017	0.0018	0.0021	0.0022
16	0.2595	0.5335	2737	0.0001	0.0001	0.0006	0.0006	0.0009	0.0011	0.0014	0.0015	0.0012	0.0019
17	0.2602	0.5332	2724	0.0001	0.0003	0.0004	0.0007	0.0009	0.0011	0.0013	0.0016	0.0013	0.0017
18	0.2598	0.5324	2736	0.0002	0.0000	0.0006	0.0009	0.0012	0.0013	0.0014	0.0016	0.0013	0.0016
19	0.2593	0.5324	2746	0.0001	0.0002	0.0005	0.0006	0.0009	0.0011	0.0013	0.0016	0.0015	0.0019
20	0.2604	0.5323	2724	0.0003	0.0004	0.0006	0.0007	0.0008	0.0009	0.0011	0.0013	0.0015	0.0017
21	0.2603	0.5330	2722	0.0002	0.0002	0.0005	0.0008	0.0010	0.0011	0.0013	0.0016	0.0013	0.0016
22	0.2597	0.5332	2734	0.0000	0.0003	0.0005	0.0007	0.0009	0.0012	0.0013	0.0014	0.0012	0.0016
23	0.2607	0.5345	2708	0.0002	0.0002	0.0004	0.0006	0.0009	0.0011	0.0014	0.0016	0.0016	0.0017
24	0.2602	0.5332	2725	0.0004	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0021	0.0021
25	0.2591	0.5334	2746	0.0004	0.0002	0.0002	0.0004	0.0005	0.0006	0.0009	0.0012	0.0018	0.0018
Avg.	0.2600	0.5331	2728	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013	0.0015	0.0016	0.0019
Med.	0.2600	0.5332	2727	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0013	0.0016	0.0016	0.0019
st dev	0.0006	0.0008	14	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
Min.	0.2591	0.5312	2700	0.0000	0.0000	0.0001	0.0003	0.0005	0.0006	0.0009	0.0011	0.0008	0.0012
Max.	0.2612	0.5345	2750	0.0005	0.0006	0.0008	0.0011	0.0013	0.0016	0.0018	0.0021	0.0023	0.0028

3.4 Data Set 2, 85°C, 10mA (Lumen Maintenance)

No.	Φ(lm)	Lumen Maintenance (%)									
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	3.994	100.13	99.97	99.55	99.25	98.85	98.42	98.25	98.00	97.92	97.85
27	4.183	100.91	100.57	100.19	99.88	99.67	99.45	99.07	98.78	98.14	97.90
28	4.119	100.07	99.49	99.08	98.71	98.37	98.15	97.89	97.52	97.43	97.21
29	4.244	99.91	99.29	99.18	98.92	98.59	98.23	97.93	97.60	97.36	96.84
30	4.068	100.44	100.17	99.90	99.53	99.29	98.92	98.53	98.08	98.03	97.74
31	4.084	100.44	99.98	99.61	99.31	99.07	98.78	98.46	98.14	98.09	97.99
32	4.175	99.66	99.59	99.14	98.83	98.54	98.23	97.89	97.56	97.27	96.81
33	4.073	100.22	99.85	99.46	99.09	98.77	98.48	98.26	97.94	97.20	96.73
34	4.046	100.47	100.44	100.12	99.85	99.56	99.28	98.99	98.57	98.34	98.07
35	4.066	99.98	99.56	99.46	99.07	98.79	98.50	98.20	97.86	97.84	97.64
36	4.045	100.17	100.05	99.65	99.23	98.94	98.47	98.07	97.73	97.40	97.11
37	4.113	99.32	99.08	98.69	98.54	98.23	97.88	97.69	97.45	97.28	96.86
38	4.096	100.05	99.68	99.56	99.17	98.95	98.68	98.32	98.07	97.58	97.05
39	4.257	99.98	99.58	99.37	99.06	98.75	98.29	97.89	97.49	97.28	96.88
40	4.039	100.20	99.95	99.75	99.38	99.16	98.79	98.39	98.04	97.82	97.70
41	4.269	99.79	99.32	99.02	98.66	98.36	98.01	97.77	97.54	96.91	96.77
42	4.212	100.28	99.79	99.36	99.07	98.74	98.43	98.15	97.86	97.46	97.15
43	4.201	99.71	99.57	99.31	99.07	98.76	98.41	98.14	97.67	96.95	96.60
44	4.240	100.47	100.02	99.79	99.46	99.22	98.92	98.63	98.30	98.09	97.69
45	3.934	100.36	100.13	99.92	99.49	99.14	98.73	98.37	98.14	97.99	97.46
46	4.159	99.93	99.64	99.18	98.85	98.51	98.29	98.08	97.69	97.33	96.90
47	4.092	100.15	99.71	99.44	99.02	98.70	98.44	98.12	97.85	97.70	97.46
48	4.156	99.33	99.09	98.87	98.60	98.24	97.79	97.45	97.16	96.58	96.41
49	4.033	99.50	99.06	98.81	98.54	98.17	97.97	97.67	97.35	97.12	96.83
50	4.068	99.78	99.61	99.12	98.80	98.35	98.11	97.76	97.64	97.25	96.90
Avg.	4.119	100.05	99.73	99.42	99.10	98.79	98.47	98.16	97.84	97.53	97.22
Med.	4.096	100.07	99.68	99.44	99.07	98.76	98.43	98.14	97.85	97.43	97.11
st dev	0.088	0.38	0.40	0.40	0.37	0.40	0.41	0.39	0.38	0.45	0.48
Min.	3.934	99.32	99.06	98.69	98.54	98.17	97.79	97.45	97.16	96.58	96.41
Max.	4.269	100.91	100.57	100.19	99.88	99.67	99.45	99.07	98.78	98.34	98.07

3.5 Data Set 2, 85°C, 10mA (Forward Voltage)

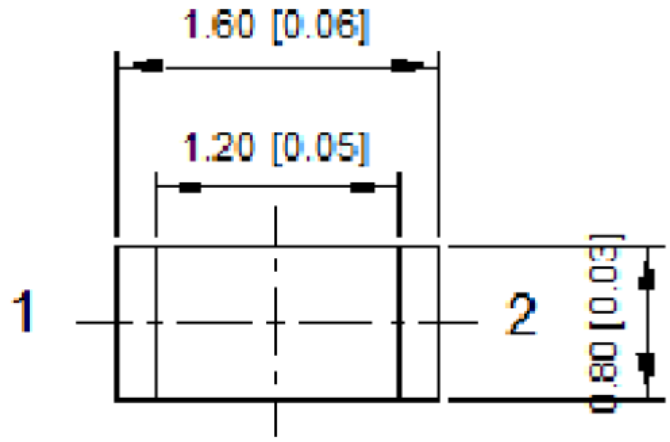
No.	Forward Voltage (V)										
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	2.757	2.756	2.756	2.756	2.756	2.757	2.757	2.762	2.762	2.758	2.758
27	2.768	2.766	2.767	2.767	2.767	2.767	2.768	2.774	2.773	2.768	2.769
28	2.753	2.752	2.752	2.754	2.754	2.753	2.753	2.761	2.759	2.754	2.755
29	2.761	2.760	2.760	2.761	2.761	2.760	2.763	2.766	2.766	2.762	2.763
30	2.743	2.742	2.743	2.743	2.744	2.742	2.743	2.749	2.748	2.744	2.745
31	2.756	2.755	2.756	2.760	2.756	2.755	2.756	2.761	2.761	2.757	2.755
32	2.763	2.761	2.761	2.763	2.762	2.762	2.762	2.767	2.767	2.763	2.763
33	2.769	2.766	2.766	2.768	2.768	2.768	2.768	2.778	2.772	2.769	2.769
34	2.763	2.762	2.762	2.764	2.763	2.763	2.763	2.772	2.767	2.765	2.763
35	2.757	2.755	2.757	2.758	2.757	2.756	2.756	2.765	2.762	2.758	2.756
36	2.767	2.763	2.765	2.765	2.767	2.765	2.767	2.775	2.770	2.768	2.765
37	2.755	2.751	2.753	2.754	2.755	2.754	2.753	2.759	2.756	2.754	2.754
38	2.746	2.744	2.744	2.745	2.745	2.745	2.745	2.750	2.749	2.745	2.744
39	2.762	2.760	2.760	2.762	2.764	2.763	2.762	2.765	2.765	2.762	2.762
40	2.750	2.748	2.748	2.751	2.753	2.752	2.749	2.755	2.753	2.751	2.751
41	2.750	2.747	2.749	2.749	2.752	2.755	2.750	2.755	2.754	2.750	2.749
42	2.753	2.751	2.752	2.756	2.760	2.753	2.754	2.758	2.758	2.753	2.756
43	2.754	2.751	2.752	2.755	2.761	2.753	2.753	2.761	2.759	2.753	2.755
44	2.749	2.748	2.748	2.750	2.754	2.749	2.749	2.756	2.753	2.750	2.750
45	2.743	2.742	2.743	2.746	2.748	2.753	2.746	2.750	2.748	2.745	2.745
46	2.748	2.745	2.746	2.749	2.749	2.748	2.747	2.753	2.751	2.749	2.747
47	2.745	2.743	2.743	2.746	2.746	2.746	2.744	2.750	2.748	2.745	2.745
48	2.751	2.751	2.750	2.755	2.753	2.756	2.753	2.759	2.756	2.754	2.752
49	2.756	2.755	2.754	2.757	2.757	2.760	2.757	2.762	2.758	2.756	2.755
50	2.754	2.752	2.754	2.756	2.757	2.757	2.754	2.761	2.758	2.756	2.754
Avg.	2.755	2.753	2.754	2.756	2.756	2.756	2.755	2.761	2.759	2.756	2.755
Med.	2.754	2.752	2.753	2.756	2.756	2.755	2.754	2.761	2.758	2.754	2.755
st dev	0.008	0.007	0.007	0.007	0.007	0.007	0.007	0.008	0.008	0.007	0.007
Min.	2.743	2.742	2.743	2.743	2.744	2.742	2.743	2.749	2.748	2.744	2.744
Max.	2.769	2.766	2.767	2.768	2.768	2.768	2.768	2.778	2.773	2.769	2.769

3.6 Data Set 2, 85°C, 10mA (Chromaticity Shift)

No.	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')									
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs	7000hrs	8000hrs	9000hrs	10000hrs
26	0.2594	0.5316	2746	0.0003	0.0001	0.0004	0.0006	0.0008	0.0009	0.0010	0.0011	0.0016	0.0015
27	0.2598	0.5323	2736	0.0002	0.0002	0.0004	0.0005	0.0008	0.0010	0.0011	0.0013	0.0013	0.0016
28	0.2598	0.5340	2728	0.0003	0.0004	0.0005	0.0008	0.0009	0.0012	0.0014	0.0017	0.0017	0.0018
29	0.2604	0.5330	2720	0.0001	0.0000	0.0003	0.0005	0.0007	0.0008	0.0010	0.0012	0.0016	0.0011
30	0.2616	0.5343	2692	0.0002	0.0002	0.0003	0.0008	0.0010	0.0013	0.0016	0.0018	0.0012	0.0015
31	0.2601	0.5335	2725	0.0002	0.0001	0.0001	0.0004	0.0006	0.0010	0.0013	0.0014	0.0013	0.0016
32	0.2605	0.5340	2715	0.0002	0.0001	0.0004	0.0006	0.0008	0.0010	0.0013	0.0015	0.0015	0.0018
33	0.2612	0.5340	2700	0.0004	0.0004	0.0005	0.0007	0.0009	0.0010	0.0011	0.0012	0.0017	0.0019
34	0.2608	0.5321	2715	0.0002	0.0001	0.0005	0.0009	0.0010	0.0013	0.0014	0.0015	0.0014	0.0017
35	0.2595	0.5339	2736	0.0002	0.0001	0.0003	0.0005	0.0008	0.0011	0.0014	0.0017	0.0015	0.0014
36	0.2602	0.5324	2728	0.0004	0.0002	0.0004	0.0006	0.0010	0.0014	0.0016	0.0018	0.0018	0.0021
37	0.2607	0.5343	2710	0.0002	0.0004	0.0004	0.0007	0.0009	0.0010	0.0013	0.0015	0.0014	0.0018
38	0.2601	0.5337	2724	0.0004	0.0004	0.0006	0.0009	0.0012	0.0013	0.0016	0.0017	0.0018	0.0021
39	0.2598	0.5328	2733	0.0003	0.0001	0.0002	0.0007	0.0008	0.0009	0.0011	0.0013	0.0013	0.0015
40	0.2594	0.5336	2739	0.0004	0.0003	0.0005	0.0009	0.0012	0.0016	0.0017	0.0018	0.0020	0.0021
41	0.2607	0.5338	2711	0.0003	0.0002	0.0006	0.0010	0.0014	0.0017	0.0019	0.0021	0.0017	0.0021
42	0.2596	0.5332	2736	0.0003	0.0003	0.0003	0.0007	0.0011	0.0013	0.0016	0.0019	0.0018	0.0016
43	0.2601	0.5339	2722	0.0003	0.0001	0.0004	0.0008	0.0010	0.0013	0.0016	0.0019	0.0021	0.0018
44	0.2597	0.5337	2732	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0015	0.0016	0.0017	0.0016
45	0.2631	0.5349	2659	0.0003	0.0003	0.0007	0.0010	0.0012	0.0015	0.0018	0.0020	0.0022	0.0023
46	0.2595	0.5327	2740	0.0002	0.0002	0.0007	0.0009	0.0011	0.0012	0.0013	0.0016	0.0018	0.0021
47	0.2595	0.5322	2741	0.0002	0.0003	0.0004	0.0005	0.0008	0.0009	0.0010	0.0011	0.0017	0.0015
48	0.2595	0.5328	2741	0.0001	0.0002	0.0006	0.0009	0.0013	0.0014	0.0015	0.0016	0.0018	0.0016
49	0.2603	0.5342	2718	0.0003	0.0004	0.0006	0.0007	0.0011	0.0014	0.0016	0.0018	0.0017	0.0019
50	0.2598	0.5329	2734	0.0002	0.0001	0.0007	0.0012	0.0016	0.0019	0.0021	0.0022	0.0018	0.0018
Avg.	0.2602	0.5334	2723	0.0003	0.0002	0.0005	0.0008	0.0010	0.0012	0.0014	0.0016	0.0017	0.0018
Med.	0.2601	0.5336	2728	0.0003	0.0002	0.0004	0.0007	0.0010	0.0012	0.0014	0.0016	0.0017	0.0018
st dev	0.0008	0.0008	19	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003
Min.	0.2594	0.5316	2659	0.0001	0.0000	0.0001	0.0004	0.0006	0.0008	0.0010	0.0011	0.0012	0.0011
Max.	0.2631	0.5349	2746	0.0004	0.0004	0.0007	0.0012	0.0016	0.0019	0.0021	0.0022	0.0022	0.0023

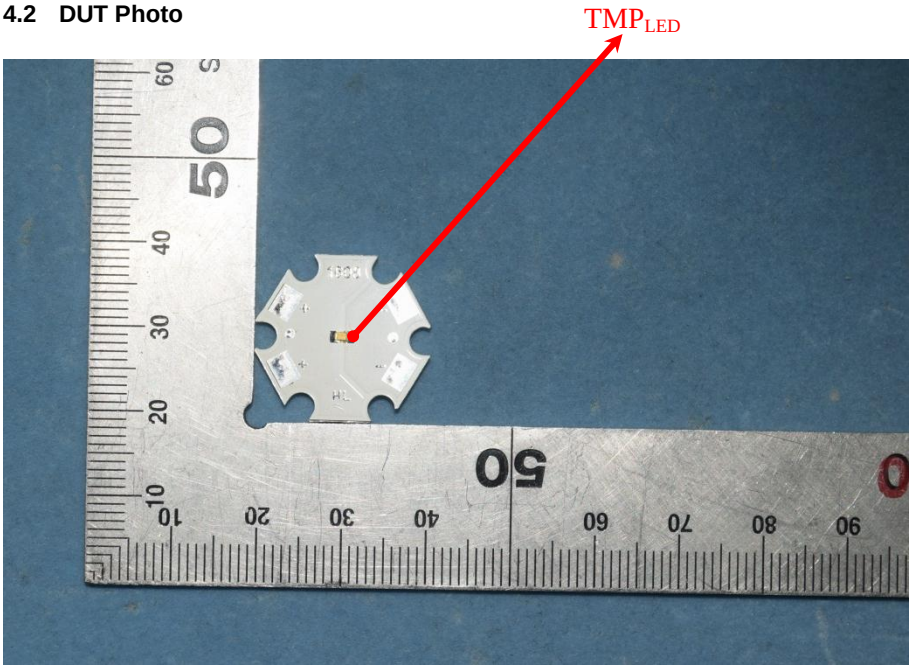
4 - DUT Photo

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**********