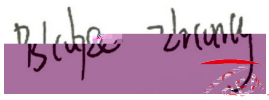
TEST REPORT

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-2835DVW-2C-S1-08L-PCT-HR5

Report Type: 6000 Hours Test Report	**Product Type:** LED Package
Reviewed By:	Pote Wang
Report Number:	RSZ200925503-10-6000
Test Date:	2020-09-30 to 2021-06-30
Report Date:	2021-07-20
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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1.6 Photometric Measurement Method and Uncertainty

Integrating sphere and spectroradiometer is used to measure luminous flux and chromaticity coordinate u ¶ ¶2 Œmeasurement 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: 5540.47 520( )-214(()5(D)6(o)4(n)4(g)4(g)4(u)1 06.504 519.04 reW*nBTF2 8.04 Tf1 0 0 1 120.26 490.75 T.26 9.67 Tm[ )

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3 - Test Data

3.1 Data Set 1, 55°C, 60mA (Lumen Maintenance)

No.	- O P	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	121.20	100.25	100.08	99.92	99.50	99.34	99.26
2	121.00	100.08	99.75	99.59	99.26	99.01	98.60
3	122.00	100.49	100.33	100.16	99.84	99.34	98.85
4	122.10	100.08	99.92	99.67	99.59	99.51	99.43
5	119.60	100.42	100.33	100.25	99.92	99.75	99.50
6	121.50	100.08	99.92	99.75	99.75	99.42	99.18
7	122.80	100.16	99.92	99.59	99.35	98.78	98.21
8	121.70	99.84	99.67	99.42	99.34	98.85	98.77
9	121.50	99.84	99.59	99.34	99.09	98.52	98.27
10	120.40	99.92	99.58	99.50	99.42	99.09	98.75
11	122.00	100.08	99.43	99.26	99.18	99.10	98.77
12	122.60	99.92	99.67	99.43	99.35	99.10	98.94
13	120.70	99.92	99.75	99.42	99.34	99.17	98.92
14	120.80	99.92	99.67	99.42	99.25	99.09	99.01
15	121.90	99.84	99.75	99.43	99.18	98.93	98.69
16	121.50	99.92	99.67	99.34	99.09	99.01	98.68
17	122.50	100.08	99.84	99.43	99.18	99.02	98.86
18	122.10	100.33	99.92	99.67	99.34	99.18	99.10
19	120.80	100.17	99.67	99.59	99.34	99.09	99.01
20	120.90	99.92	99.83	99.59	99.34	99.26	99.17
21	123.70	100.16	99.76	99.43	99.11	98.79	98.14
22	121.70	99.92	99.67	99.51	99.10	98.77	98.52
23	123.00	99.76	99.51	99.27	99.19	99.02	98.94
24	121.60	99.84	99.75	99.42	99.26	99.18	99.10
25	121.80	99.75	99.67	99.43	99.10	98.77	98.60
Avg.	121.66	100.03	99.79	99.55	99.34	99.08	98.85
Med.	121.70	99.92	99.75	99.43	99.34	99.09	98.86
st dev	0.89	0.20	0.22	0.25	0.23	0.27	0.35
Min.	119.60	99.75	99.43	99.26	99.09	98.52	98.14
Max.	123.70	100.49	100.33	100.25	99.92	99.75	99.50

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3.2 Data Set 1, 55°C, 60mA (Forward Voltage)

No.	Forward Voltage (V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	18.45	18.48	18.50	18.49	18.51	18.51	18.52
2	18.59	18.56	18.58	18.58	18.60	18.55	18.60
3	18.36	18.34	18.35	18.35	18.36	18.33	18.36
4	18.65	18.64	18.66	18.65	18.67	18.65	18.67
5	18.40	18.41	18.43	18.42	18.45	18.41	18.44
6	18.43	18.43	18.46	18.46	18.48	18.44	18.46
7	18.54	18.53	18.54	18.55	18.56	18.53	18.55
8	18.52	18.50	18.53	18.52	18.54	18.51	18.52
9	18.46	18.46	18.46	18.47	18.49	18.45	18.47
10	18.49	18.49	18.51	18.50	18.53	18.48	18.49
11	18.53	18.52	18.55	18.53	18.55	18.53	18.32
12	18.32	18.32	18.33	18.33	18.35	18.31	18.54
13	18.60	18.60	18.61	18.60	18.63	18.60	18.61
14	18.57	18.56	18.57	18.56	18.59	18.56	18.56
15	18.44	18.44	18.45	18.45	18.47	18.44	18.45
16	18.31	18.31	18.32	18.32	18.34	18.30	18.31
17	18.58	18.59	18.59	18.58	18.61	18.59	18.58
18	18.43	18.44	18.44	18.44	18.46	18.44	18.45
19	18.59	18.61	18.61	18.61	18.62	18.60	18.61
20	18.34	18.34	18.34	18.34	18.37	18.34	18.35
21	18.43	18.41	18.40	18.40	18.41	18.39	18.39
22	18.43	18.40	18.41	18.41	18.44	18.40	18.40
23	18.58	18.55	18.55	18.55	18.58	18.57	18.54
24	18.56	18.53	18.53	18.54	18.55	18.55	18.53
25	18.64	18.61	18.61	18.63	18.64	18.63	18.62
Avg.	18.49	18.48	18.49	18.49	18.51	18.48	18.49
Med.	18.49	18.49	18.51	18.50	18.53	18.51	18.52
st dev	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Min.	18.31	18.31	18.32	18.32	18.34	18.30	18.31
Max.	18.65	18.64	18.66	18.65	18.67	18.65	18.67

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3.3 Data Set 1, 55°C, 60mA (Chromaticity Shift)

No.	X ¶	Y ¶	CCT(K)	& K U R P D W L F L W \ 6 K L I W ¨ X ¶ Y ¶					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.2571	0.5346	2782	0.0002	0.0002	0.0001	0.0007	0.0009	0.0009
2	0.2571	0.5348	2781	0.0001	0.0003	0.0003	0.0011	0.0012	0.0010
3	0.2574	0.5328	2784	0.0004	0.0005	0.0006	0.0006	0.0005	0.0005
4	0.2584	0.5365	2747	0.0004	0.0004	0.0004	0.0006	0.0004	0.0007
5	0.2583	0.5356	2752	0.0003	0.0000	0.0002	0.0009	0.0006	0.0009
6	0.2561	0.5355	2799	0.0002	0.0001	0.0001	0.0011	0.0010	0.0012
7	0.2572	0.5352	2778	0.0005	0.0004	0.0005	0.0005	0.0002	0.0004
8	0.2573	0.5352	2775	0.0004	0.0003	0.0002	0.0007	0.0009	0.0010
9	0.2586	0.5343	2752	0.0004	0.0003	0.0002	0.0008	0.0006	0.0012
10	0.2574	0.5354	2772	0.0004	0.0006	0.0004	0.0004	0.0005	0.0007
11	0.2594	0.5357	2730	0.0005	0.0006	0.0004	0.0006	0.0004	0.0006
12	0.2571	0.5358	2776	0.0004	0.0005	0.0004	0.0004	0.0005	0.0012
13	0.2579	0.5355	2761	0.0006	0.0006	0.0005	0.0004	0.0005	0.0006
14	0.2581	0.5355	2759	0.0006	0.0007	0.0006	0.0003	0.0002	0.0001
15	0.2585	0.5350	2752	0.0004	0.0004	0.0004	0.0005	0.0008	0.0008
16	0.2569	0.5351	2785	0.0004	0.0004	0.0004	0.0006	0.0009	0.0007
17	0.2564	0.5350	2795	0.0006	0.0006	0.0006	0.0004	0.0004	0.0007
18	0.2596	0.5362	2724	0.0002	0.0001	0.0001	0.0009	0.0006	0.0009
19	0.2591	0.5359	2736	0.0005	0.0005	0.0004	0.0003	0.0004	0.0004
20	0.2566	0.5341	2795	0.0004	0.0005	0.0004	0.0005	0.0002	0.0005
21	0.2587	0.5354	2745	0.0004	0.0004	0.0004	0.0007	0.0008	0.0010
22	0.2592	0.5351	2736	0.0008	0.0006	0.0007	0.0003	0.0002	0.0005
23	0.2578	0.5351	2765	0.0006	0.0005	0.0006	0.0003	0.0004	0.0004
24	0.2568	0.5333	2795	0.0005	0.0006	0.0006	0.0006	0.0003	0.0004
25	0.2565	0.5355	2791	0.0007	0.0006	0.0005	0.0003	0.0003	0.0005
Avg.	0.2577	0.5351	2767	0.0004	0.0004	0.0004	0.0006	0.0006	0.0007
Med.	0.2574	0.5352	2772	0.0004	0.0005	0.0004	0.0006	0.0005	0.0007
st dev	0.0010	0.0008	22	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
Min.	0.2561	0.5328	2724	0.0001	0.0000	0.0001	0.0003	0.0002	0.0001
Max.	0.2596	0.5365	2799	0.0008	0.0007	0.0007	0.0011	0.0012	0.0012

3.6 Data Set 2, 105°C, 60mA (Chromaticity Shift)

No.	X ¶	Y ¶	CCT(K)	& K U R P D W L F L W \ 6 K L I W ¨ X ¶ Y ¶					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
26	0.2608	0.5358	2702	0.0003	0.0001	0.0001	0.0007	0.0007	0.0009
27	0.2573	0.5354	2774	0.0007	0.0008	0.0008	0.0002	0.0003	0.0004
28	0.2565	0.5339	[redacted]						

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