



IES LM-80-08 Test Report

For

ZHONGSHAN CITY GUANGYUANSHIJIA ELECTRONIC CO.LTD
NO.2,SOUTH OF XIAOLAN INDUSTRIAL AVENUE,ZHONGSHAN CITY,GUANGDONG PROVINCE

LED Package
Model: G2835XXXX-3V60

Laboratory: Leading Testing Laboratories
NVLAP CODE: 200960-0
3rd Floor, Bld. 2, NO. 96 Longchuanwu Rd Qianjiang Economy Dev. Zone, Yuhang Dist,
Hangzhou, Zhejiang Province, China 311100
Tel: +86571 86376106
www.ledtestlab.com

Report No.: HZ20110047a

The laboratory that conducted the testing detailed in this report has been accredited for SSL by NVLAP.

Test specifications:

Date of Receipt	: Nov.27, 2020
Date of Test	: Nov.30, 2020 to Dec. 22, 2021
Test item	: 9000 hours Lumen Maintenance, 9000 hours Chromaticity Shift
Reference Standard	: IES LM-80-2008 Approved Method for Measuring Lumen Maintenance of LED Light Source

Review by:

Engineer: April Zou
Dec. 24, 2021

Approved



Manager: Jim Zhang
Dec. 24, 2021

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.



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Test Summary

Model Number: G2835XXXX-3V60

Rated Ts (°C)	Measured Ts (°C)	Drive Current (A)	Number of LED Light Sources Tested	Average Lumen Maintenance (%) at 9000 hours	Average Chromaticity ($\Delta u'v'$) at 9000 hours
55	53	0.06	25	98.64%	0.0018
85	84	0.06	25	98.39%	0.0018
105	104	0.06	25	98.09%	0.0020

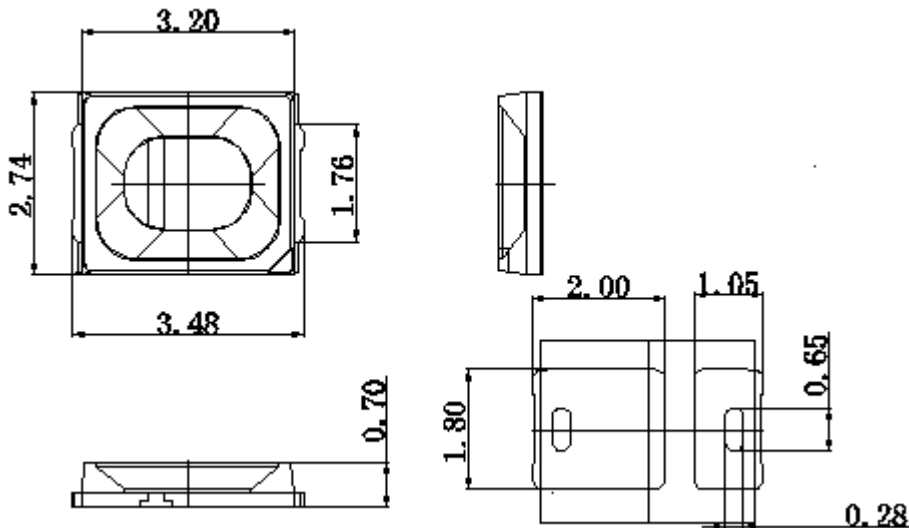
IES LM-80-08 Test Report Requirement:

1. Number of LED Light Sources Tested

See test summary.

2. Description of LED light sources

Device under test is LED PACKAGE with model number: G2835XXXX-3V60, Nominal CCT 2700K.



3. Description of auxiliary equipment

Lifetest thermal chamber	NMT 830
Lifetest current source	Itech IT6720
Lifetest data recorder	GRAPHTEC GL820
Photometric test current source	Itech IT6154
Photometric test system	0.5m Integrate Sphere system

4. Operating cycle

LEDs are driven with a constant direct current (DC).

5. Ambient conditions including airflow, temperature, and relative humidity

Ambient Temperature (Ta): See Tables

Humidity: <65%

No force air flow

6. Case temperatures (test point temperature)

In all cases, both T_s and T_a meet the IES LM-80-08 limits.



Ts Point (Cathode)

7. Drive current of the LED light source during Lumen maintenance test.

See tables.

8. Initial luminous flux and forward voltage at photometric measurement current

See tables.

9. Lumen maintenance for data for each individual light source along with median value, standard deviation, minimum and maximum lumen maintenance value for all of the light sources

See tables.

10. Observation of LED light source failures including the failure conditions and time of failure

No failures observed.

11. LED light source monitoring interval

See tables

12. Photometric measurement uncertainty

Flux measurement: 1.06% ($k=2$)

13. Chromaticity shift reported over the measurement time

See tables.

14. Sampling Method/Sample size

IES LM-80 tests require LED samples to be operated at a minimum of a single current 60mA and three temperatures of 55°C, 85°C and 105°C picked by the LED manufacturer.

75 pieces of LED samples are selected randomly from different production date of products. These samples are picked to represent a wide parametric distribution.



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Test Result:

Model Number: G2835XXXX-3V60

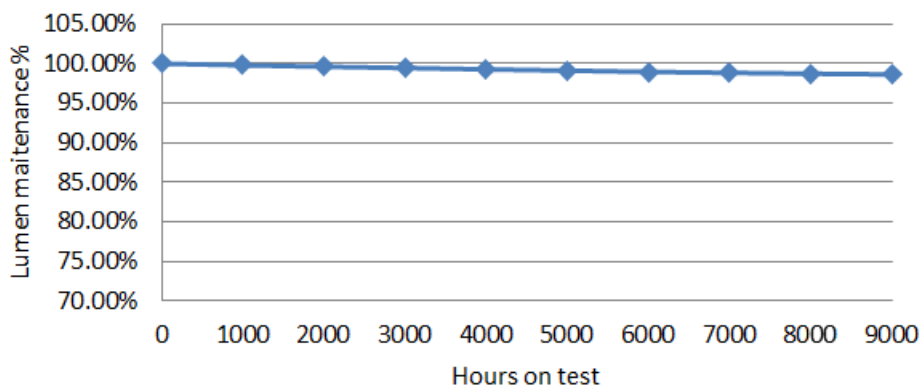
Case temperature: 55°C

Drive current: 0.06A

Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenance (%)								
	Vf(V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
1	2.872	27.24	99.76%	99.61%	99.49%	99.30%	99.11%	99.05%	98.99%	98.91%	98.84%
2	2.876	26.98	99.76%	99.56%	99.46%	99.29%	99.12%	98.91%	98.77%	98.67%	98.54%
3	2.872	27.36	99.85%	99.57%	99.38%	99.22%	99.06%	98.85%	98.77%	98.64%	98.51%
4	2.875	27.13	99.71%	99.61%	99.49%	99.35%	99.29%	99.12%	99.05%	98.94%	98.83%
5	2.884	27.74	99.85%	99.75%	99.54%	99.30%	99.10%	98.90%	98.75%	98.67%	98.58%
6	2.871	27.31	99.74%	99.60%	99.47%	99.38%	99.14%	98.98%	98.83%	98.74%	98.66%
7	2.882	27.43	99.71%	99.58%	99.45%	99.38%	99.18%	98.95%	98.87%	98.71%	98.63%
8	2.89	27.16	99.67%	99.49%	99.29%	99.04%	98.96%	98.73%	98.59%	98.43%	98.36%
9	2.877	26.69	99.79%	99.50%	99.37%	99.21%	99.02%	98.93%	98.80%	98.67%	98.62%
10	2.881	26.82	99.81%	99.58%	99.38%	99.23%	99.00%	98.84%	98.67%	98.55%	98.44%
11	2.876	27.41	99.69%	99.47%	99.29%	99.10%	99.01%	98.79%	98.65%	98.54%	98.46%
12	2.878	26.88	99.88%	99.74%	99.60%	99.39%	99.32%	99.14%	99.04%	98.90%	98.76%
13	2.885	27.32	99.79%	99.59%	99.41%	99.29%	99.09%	98.94%	98.85%	98.72%	98.65%
14	2.889	26.81	99.87%	99.65%	99.37%	99.16%	98.99%	98.81%	98.71%	98.57%	98.51%
15	2.881	27.34	99.69%	99.53%	99.43%	99.23%	99.10%	98.95%	98.89%	98.77%	98.67%
16	2.874	26.92	99.89%	99.80%	99.66%	99.42%	99.23%	99.00%	98.94%	98.79%	98.69%
17	2.871	26.76	99.89%	99.75%	99.55%	99.39%	99.30%	99.13%	99.07%	98.95%	98.86%
18	2.875	26.69	99.83%	99.65%	99.49%	99.26%	99.19%	99.02%	98.84%	98.74%	98.65%
19	2.88	26.42	99.86%	99.76%	99.66%	99.53%	99.34%	99.17%	99.05%	98.98%	98.95%
20	2.876	26.56	99.78%	99.60%	99.39%	99.14%	99.00%	98.81%	98.68%	98.58%	98.44%
21	2.874	26.72	99.89%	99.66%	99.57%	99.34%	99.11%	98.96%	98.89%	98.79%	98.71%
22	2.889	27.16	99.72%	99.44%	99.29%	99.10%	98.86%	98.76%	98.68%	98.56%	98.43%
23	2.887	26.74	99.84%	99.63%	99.44%	99.21%	99.07%	98.99%	98.85%	98.77%	98.71%
24	2.879	27.52	99.84%	99.72%	99.61%	99.51%	99.28%	99.12%	98.97%	98.89%	98.86%
25	2.889	27.05	99.72%	99.43%	99.25%	99.10%	99.00%	98.90%	98.80%	98.64%	98.55%
Avg.	2.88	27.05	99.79%	99.61%	99.45%	99.27%	99.11%	98.95%	98.84%	98.72%	98.64%
Median	2.88	27.05	99.79%	99.60%	99.45%	99.29%	99.10%	98.95%	98.84%	98.72%	98.65%
Standard	0.01	0.34	0.07%	0.10%	0.12%	0.13%	0.13%	0.12%	0.14%	0.15%	0.16%
Max	2.89	27.74	99.89%	99.80%	99.66%	99.53%	99.34%	99.17%	99.07%	98.98%	98.95%
Min	2.87	26.42	99.67%	99.43%	99.25%	99.04%	98.86%	98.73%	98.59%	98.43%	98.36%

Lumen Maintenance at 55 °C





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Model Number: G2835XXXX-3V60

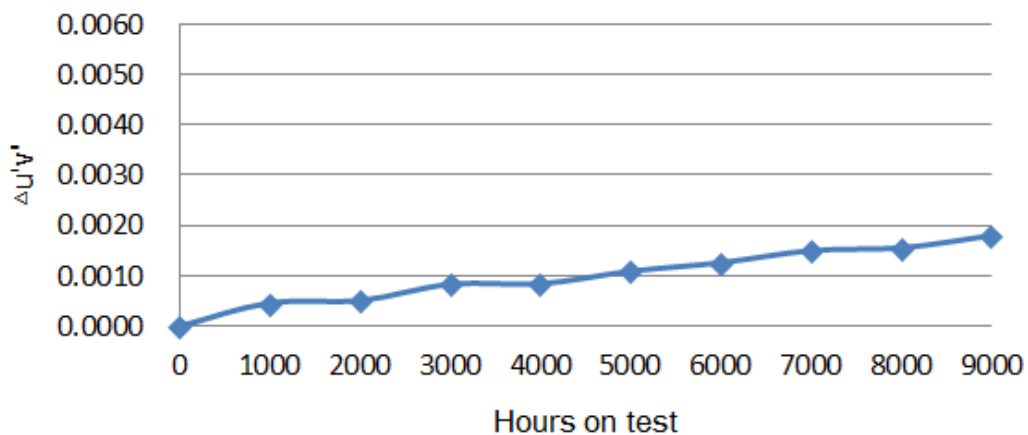
Case temperature: 55°C

Drive current: 0.06A

Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift								
	u'	v'	CCT	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
1	0.2609	0.5322	2713	0.0003	0.0003	0.0007	0.0007	0.0010	0.0011	0.0013	0.0014	0.0017
2	0.2608	0.5305	2723	0.0008	0.0008	0.0009	0.0009	0.0011	0.0013	0.0015	0.0016	0.0018
3	0.2587	0.5323	2758	0.0006	0.0007	0.0011	0.0011	0.0013	0.0014	0.0015	0.0015	0.0017
4	0.2609	0.5312	2717	0.0002	0.0002	0.0003	0.0003	0.0007	0.0008	0.0011	0.0012	0.0013
5	0.2607	0.5317	2719	0.0006	0.0006	0.0008	0.0008	0.0010	0.0012	0.0013	0.0013	0.0016
6	0.2589	0.5319	2757	0.0004	0.0005	0.0010	0.0010	0.0014	0.0015	0.0019	0.0019	0.0020
7	0.2597	0.5321	2739	0.0008	0.0009	0.0011	0.0011	0.0013	0.0014	0.0015	0.0015	0.0015
8	0.2603	0.5315	2728	0.0006	0.0007	0.0012	0.0012	0.0013	0.0015	0.0019	0.0020	0.0024
9	0.2612	0.5304	2715	0.0003	0.0003	0.0005	0.0005	0.0008	0.0010	0.0013	0.0013	0.0016
10	0.2589	0.5324	2754	0.0002	0.0003	0.0008	0.0008	0.0011	0.0012	0.0013	0.0014	0.0018
11	0.2595	0.5317	2745	0.0001	0.0002	0.0008	0.0008	0.0011	0.0012	0.0016	0.0017	0.0020
12	0.2606	0.5307	2726	0.0004	0.0005	0.0010	0.0010	0.0014	0.0017	0.0018	0.0018	0.0019
13	0.2612	0.5305	2715	0.0006	0.0007	0.0010	0.0011	0.0012	0.0013	0.0016	0.0017	0.0018
14	0.2588	0.5324	2755	0.0005	0.0006	0.0008	0.0008	0.0010	0.0011	0.0012	0.0013	0.0017
15	0.2607	0.5322	2717	0.0004	0.0004	0.0007	0.0007	0.0011	0.0012	0.0016	0.0016	0.0018
16	0.2607	0.5308	2723	0.0002	0.0003	0.0005	0.0005	0.0009	0.0011	0.0013	0.0013	0.0015
17	0.2605	0.5328	2720	0.0005	0.0005	0.0010	0.0010	0.0011	0.0013	0.0015	0.0016	0.0018
18	0.2611	0.5328	2707	0.0004	0.0005	0.0007	0.0007	0.0009	0.0011	0.0013	0.0014	0.0016
19	0.2604	0.5322	2724	0.0007	0.0007	0.0013	0.0013	0.0014	0.0016	0.0017	0.0018	0.0020
20	0.2609	0.531	2718	0.0003	0.0003	0.0005	0.0005	0.0009	0.0011	0.0014	0.0014	0.0017
21	0.2604	0.531	2728	0.0008	0.0008	0.0011	0.0011	0.0015	0.0017	0.0021	0.0021	0.0022
22	0.261	0.5315	2715	0.0006	0.0007	0.0010	0.0010	0.0014	0.0016	0.0018	0.0019	0.0022
23	0.2612	0.5322	2708	0.0001	0.0001	0.0005	0.0005	0.0006	0.0008	0.0011	0.0012	0.0016
24	0.2594	0.5328	2742	0.0008	0.0008	0.0010	0.0010	0.0011	0.0013	0.0015	0.0015	0.0019
25	0.2609	0.5311	2718	0.0003	0.0003	0.0005	0.0006	0.0007	0.0010	0.0014	0.0015	0.0019
Avg.	0.2603	0.5317	2727	0.0005	0.0005	0.0008	0.0008	0.0011	0.0013	0.0015	0.0016	0.0018
Median	0.2607	0.5317	2723	0.0004	0.0005	0.0008	0.0008	0.0011	0.0012	0.0015	0.0015	0.0018
Standard	0.0008	0.0008	16	0.0002	0.0002	0.0003	0.0003	0.0002	0.0002	0.0003	0.0003	0.0002
Max	0.2612	0.5328	2758	0.0008	0.0009	0.0013	0.0013	0.0015	0.0017	0.0021	0.0021	0.0024
Min	0.2587	0.5304	2707	0.0001	0.0001	0.0003	0.0003	0.0006	0.0008	0.0011	0.0012	0.0013

Chromaticity Shift at 55 °C





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Model Number: G2835XXXX-3V60

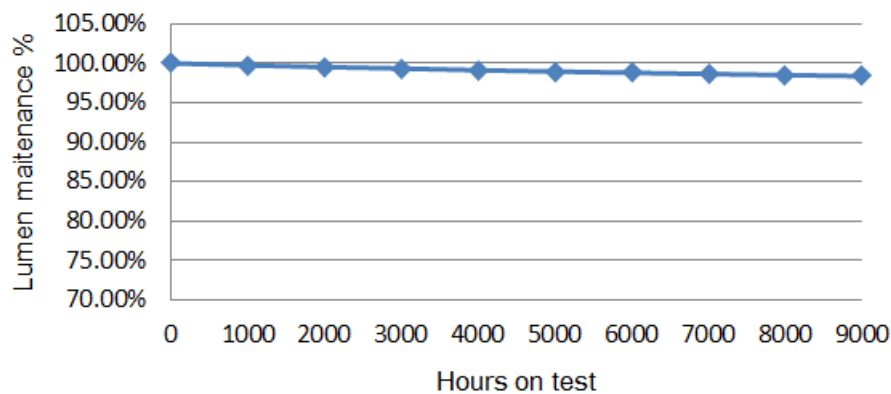
Case temperature: 85°C

Drive current: 0.06A

Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenance (%)								
	Vf(V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
26	2.887	27.01	99.67%	99.40%	99.25%	99.06%	98.95%	98.69%	98.55%	98.43%	98.22%
27	2.873	27.76	99.82%	99.52%	99.30%	99.04%	98.94%	98.88%	98.78%	98.61%	98.55%
28	2.873	27.47	99.76%	99.41%	99.22%	99.04%	98.75%	98.58%	98.37%	98.18%	98.08%
29	2.883	26.77	99.75%	99.60%	99.51%	99.31%	99.18%	99.11%	99.00%	98.86%	98.78%
30	2.883	27.63	99.63%	99.45%	99.31%	99.09%	99.01%	98.79%	98.57%	98.34%	98.20%
31	2.886	27.01	99.82%	99.70%	99.61%	99.41%	99.33%	99.20%	98.98%	98.79%	98.65%
32	2.89	27.67	99.75%	99.59%	99.30%	99.05%	98.91%	98.83%	98.60%	98.44%	98.37%
33	2.884	27.5	99.80%	99.46%	99.30%	99.02%	98.89%	98.75%	98.61%	98.55%	98.42%
34	2.87	27.75	99.88%	99.63%	99.47%	99.32%	99.11%	98.99%	98.84%	98.62%	98.43%
35	2.889	27.55	99.82%	99.56%	99.42%	99.26%	98.97%	98.86%	98.64%	98.42%	98.30%
36	2.877	26.97	99.77%	99.62%	99.48%	99.22%	99.01%	98.76%	98.67%	98.48%	98.31%
37	2.884	27.46	99.78%	99.57%	99.25%	99.10%	98.86%	98.78%	98.68%	98.59%	98.48%
38	2.879	26.51	99.68%	99.37%	99.10%	98.84%	98.75%	98.56%	98.42%	98.23%	98.18%
39	2.886	27.57	99.71%	99.37%	99.08%	98.86%	98.62%	98.41%	98.33%	98.19%	98.12%
40	2.88	26.5	99.69%	99.43%	99.35%	99.24%	99.00%	98.78%	98.70%	98.61%	98.53%
41	2.877	27.74	99.74%	99.56%	99.31%	99.18%	98.93%	98.73%	98.59%	98.47%	98.39%
42	2.878	26.78	99.75%	99.47%	99.30%	99.14%	98.96%	98.87%	98.68%	98.62%	98.42%
43	2.887	26.94	99.75%	99.64%	99.51%	99.26%	99.05%	98.90%	98.82%	98.67%	98.53%
44	2.882	26.44	99.81%	99.67%	99.49%	99.25%	99.15%	98.96%	98.76%	98.64%	98.45%
45	2.882	27.17	99.64%	99.42%	99.32%	99.07%	98.98%	98.79%	98.62%	98.53%	98.38%
46	2.871	27.28	99.78%	99.55%	99.23%	98.93%	98.84%	98.58%	98.48%	98.38%	98.27%
47	2.883	26.79	99.89%	99.66%	99.48%	99.35%	99.09%	98.86%	98.69%	98.46%	98.33%
48	2.887	27.28	99.72%	99.55%	99.44%	99.19%	98.93%	98.84%	98.65%	98.55%	98.42%
49	2.88	27.38	99.71%	99.42%	99.28%	98.98%	98.73%	98.64%	98.43%	98.31%	98.21%
50	2.89	26.64	99.84%	99.58%	99.46%	99.30%	99.19%	99.11%	98.94%	98.85%	98.70%
Avg.	2.88	27.18	99.76%	99.53%	99.35%	99.14%	98.97%	98.81%	98.66%	98.51%	98.39%
Median	2.88	27.28	99.75%	99.55%	99.31%	99.14%	98.96%	98.79%	98.65%	98.53%	98.39%
Standard	0.01	0.43	0.07%	0.10%	0.13%	0.15%	0.16%	0.18%	0.18%	0.18%	0.18%
Max	2.89	27.76	99.89%	99.70%	99.61%	99.41%	99.33%	99.20%	99.00%	98.86%	98.78%
Min	2.87	26.44	99.63%	99.37%	99.08%	98.84%	98.62%	98.41%	98.33%	98.18%	98.08%

Lumen Maintenance 85°C





Quality Assured

Model Number: G2835XXXX-3V60

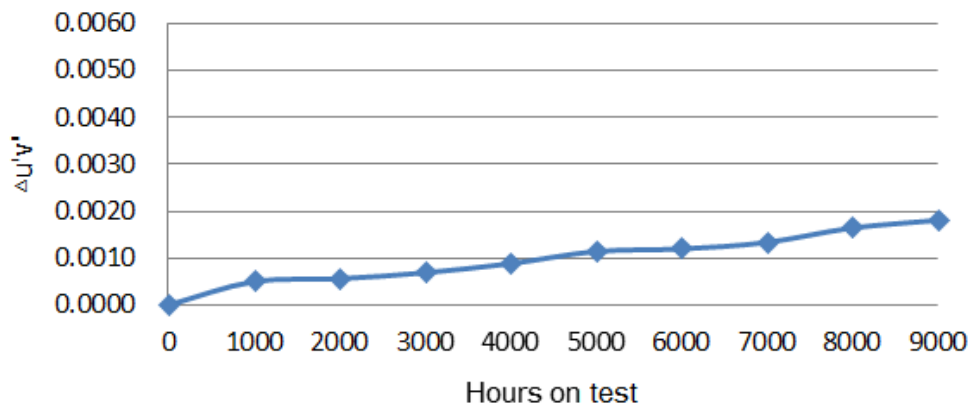
Case temperature: 85°C

Drive current: 0.06A

Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift								
	u'	v'	CCT	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
26	0.2606	0.5324	2719	0.0007	0.0008	0.0009	0.0011	0.0013	0.0014	0.0015	0.0020	0.0022
27	0.2589	0.5305	2762	0.0006	0.0007	0.0009	0.0012	0.0015	0.0015	0.0016	0.0017	0.0018
28	0.2591	0.5319	2752	0.0007	0.0007	0.0007	0.0011	0.0012	0.0012	0.0014	0.0016	0.0017
29	0.2596	0.5313	2745	0.0008	0.0008	0.0009	0.0011	0.0015	0.0016	0.0017	0.0019	0.0020
30	0.2603	0.5326	2724	0.0004	0.0005	0.0006	0.0008	0.0011	0.0011	0.0012	0.0015	0.0016
31	0.2589	0.5321	2756	0.0004	0.0004	0.0005	0.0006	0.0010	0.0010	0.0011	0.0013	0.0015
32	0.2596	0.5305	2747	0.0009	0.0010	0.0011	0.0013	0.0015	0.0016	0.0018	0.0021	0.0023
33	0.2601	0.5329	2727	0.0012	0.0013	0.0014	0.0015	0.0018	0.0019	0.0021	0.0024	0.0025
34	0.2604	0.5312	2728	0.0011	0.0012	0.0015	0.0016	0.0017	0.0018	0.0019	0.0020	0.0021
35	0.2595	0.5327	2740	0.0010	0.0011	0.0013	0.0016	0.0020	0.0020	0.0021	0.0024	0.0026
36	0.2611	0.5328	2707	0.0004	0.0005	0.0007	0.0008	0.0009	0.0009	0.0010	0.0013	0.0015
37	0.2592	0.5318	2750	0.0001	0.0001	0.0003	0.0005	0.0007	0.0008	0.0011	0.0013	0.0014
38	0.2589	0.5315	2757	0.0005	0.0006	0.0007	0.0008	0.0009	0.0010	0.0012	0.0016	0.0018
39	0.26	0.5316	2734	0.0007	0.0008	0.0010	0.0012	0.0015	0.0015	0.0015	0.0017	0.0019
40	0.2593	0.5321	2747	0.0001	0.0002	0.0003	0.0005	0.0009	0.0009	0.0011	0.0013	0.0015
41	0.2598	0.5307	2742	0.0007	0.0008	0.0010	0.0013	0.0014	0.0015	0.0016	0.0019	0.0021
42	0.2587	0.5324	2759	0.0004	0.0004	0.0005	0.0006	0.0009	0.0010	0.0013	0.0015	0.0016
43	0.259	0.5305	2761	0.0008	0.0008	0.0008	0.0010	0.0015	0.0015	0.0016	0.0022	0.0024
44	0.2608	0.5323	2715	0.0003	0.0004	0.0005	0.0006	0.0010	0.0011	0.0012	0.0016	0.0018
45	0.2611	0.5309	2715	0.0001	0.0001	0.0003	0.0004	0.0007	0.0007	0.0010	0.0012	0.0014
46	0.2589	0.5324	2754	0.0000	0.0000	0.0003	0.0006	0.0010	0.0011	0.0011	0.0015	0.0017
47	0.259	0.5326	2751	0.0003	0.0003	0.0004	0.0006	0.0008	0.0009	0.0009	0.0012	0.0014
48	0.259	0.5325	2751	0.0002	0.0003	0.0003	0.0004	0.0006	0.0006	0.0007	0.0012	0.0014
49	0.2609	0.5308	2719	0.0001	0.0002	0.0003	0.0005	0.0007	0.0008	0.0009	0.0013	0.0014
50	0.2596	0.5308	2746	0.0000	0.0001	0.0001	0.0004	0.0005	0.0006	0.0008	0.0014	0.0016
Avg.	0.2597	0.5318	2740	0.0005	0.0006	0.0007	0.0009	0.0011	0.0012	0.0013	0.0016	0.0018
Median	0.2596	0.5319	2746	0.0004	0.0005	0.0007	0.0008	0.0010	0.0011	0.0012	0.0016	0.0017
Standard	0.0008	0.0008	16	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
Max	0.2611	0.5329	2762	0.0012	0.0013	0.0015	0.0016	0.0020	0.0020	0.0021	0.0024	0.0026
Min	0.2587	0.5305	2707	0.0000	0.0000	0.0001	0.0004	0.0005	0.0006	0.0007	0.0012	0.0014

Chromaticity Shift at 85 °C



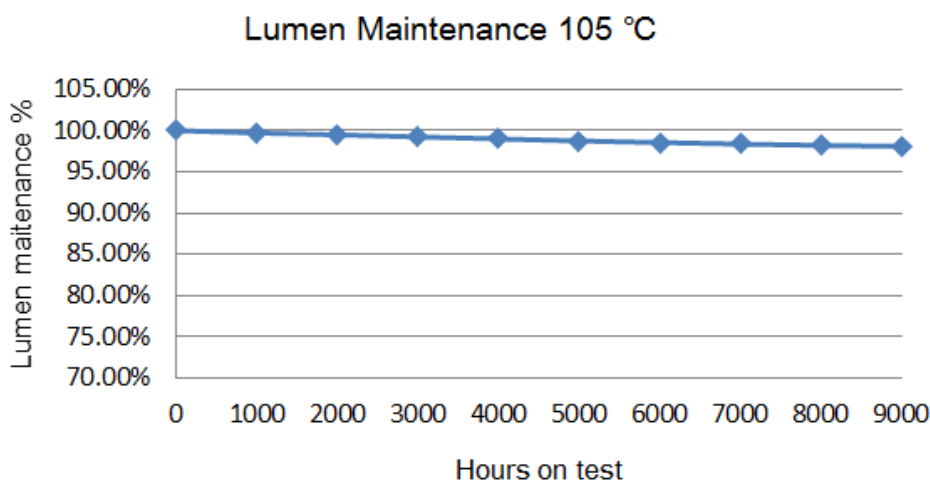
Model Number: G2835XXXX-3V60

Case temperature: 105°C

Drive current: 0.06A

Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenance (%)								
	Vf(V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
51	2.888	27	99.66%	99.40%	99.26%	99.13%	98.93%	98.75%	98.62%	98.42%	98.29%
52	2.872	27.78	99.76%	99.56%	99.31%	99.06%	98.84%	98.57%	98.45%	98.30%	98.14%
53	2.888	26.49	99.66%	99.53%	99.21%	99.04%	98.77%	98.62%	98.51%	98.29%	98.20%
54	2.881	27.63	99.59%	99.34%	99.22%	99.05%	98.78%	98.56%	98.43%	98.22%	98.10%
55	2.873	27.74	99.66%	99.38%	99.26%	98.96%	98.66%	98.50%	98.31%	98.14%	97.96%
56	2.881	27.64	99.62%	99.33%	98.98%	98.76%	98.63%	98.39%	98.13%	98.06%	97.97%
57	2.888	26.69	99.73%	99.60%	99.27%	99.02%	98.70%	98.40%	98.21%	98.01%	97.84%
58	2.88	26.7	99.82%	99.63%	99.26%	98.92%	98.75%	98.62%	98.49%	98.30%	98.14%
59	2.875	26.48	99.75%	99.63%	99.27%	98.97%	98.66%	98.38%	98.20%	98.13%	97.92%
60	2.875	26.85	99.81%	99.65%	99.46%	99.37%	99.08%	98.81%	98.68%	98.53%	98.35%
61	2.873	27.16	99.89%	99.49%	99.20%	98.94%	98.67%	98.37%	98.12%	97.91%	97.82%
62	2.884	27.38	99.82%	99.68%	99.57%	99.28%	99.02%	98.84%	98.71%	98.48%	98.34%
63	2.886	27.78	99.80%	99.58%	99.25%	98.96%	98.76%	98.66%	98.39%	98.18%	97.99%
64	2.871	27.56	99.65%	99.42%	99.12%	99.02%	98.73%	98.60%	98.35%	98.24%	98.06%
65	2.874	26.76	99.69%	99.47%	99.19%	99.03%	98.89%	98.69%	98.43%	98.33%	98.24%
66	2.88	27.09	99.82%	99.69%	99.40%	99.19%	98.93%	98.83%	98.57%	98.36%	98.29%
67	2.888	26.52	99.60%	99.34%	99.19%	98.89%	98.67%	98.40%	98.27%	98.15%	98.02%
68	2.877	27.5	99.72%	99.31%	99.17%	98.84%	98.60%	98.51%	98.41%	98.29%	98.19%
69	2.881	26.63	99.82%	99.64%	99.28%	99.11%	98.99%	98.84%	98.63%	98.51%	98.34%
70	2.888	27.4	99.80%	99.46%	99.18%	98.81%	98.47%	98.23%	98.03%	97.93%	97.78%
71	2.872	26.87	99.67%	99.57%	99.25%	99.09%	98.98%	98.74%	98.65%	98.54%	98.37%
72	2.888	27.58	99.77%	99.57%	99.28%	99.06%	98.74%	98.49%	98.28%	98.12%	98.05%
73	2.89	26.79	99.59%	99.40%	99.06%	98.70%	98.36%	98.19%	98.03%	97.85%	97.76%
74	2.885	27.59	99.63%	99.33%	99.07%	98.72%	98.62%	98.45%	98.38%	98.30%	98.19%
75	2.887	27.08	99.69%	99.43%	99.30%	98.93%	98.62%	98.34%	98.22%	98.14%	98.00%
Avg.	2.88	27.15	99.72%	99.50%	99.24%	98.99%	98.75%	98.55%	98.38%	98.23%	98.09%
Median	2.88	27.09	99.72%	99.49%	99.25%	99.02%	98.74%	98.56%	98.39%	98.24%	98.10%
Standard	0.01	0.45	0.09%	0.12%	0.12%	0.16%	0.17%	0.19%	0.20%	0.19%	0.19%
Max	2.89	27.78	99.89%	99.69%	99.57%	99.37%	99.08%	98.84%	98.71%	98.54%	98.37%
Min	2.87	26.48	99.59%	99.31%	98.98%	98.70%	98.36%	98.19%	98.03%	97.85%	97.76%





Quality Assured

Model Number: G2835XXXX-3V60

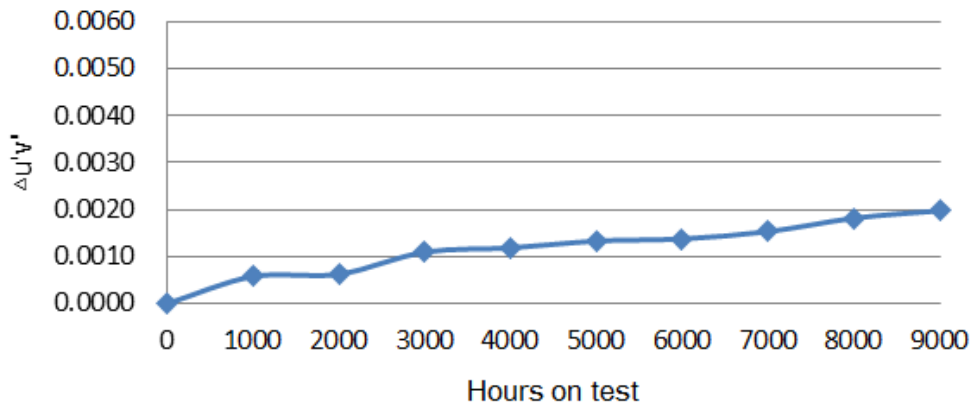
Case temperature: 105°C

Drive current: 0.06A

Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift								
	u'	v'	CCT	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h
51	0.2592	0.5312	2753	0.0007	0.0007	0.0014	0.0016	0.0018	0.0018	0.0020	0.0023	0.0024
52	0.26	0.5304	2740	0.0002	0.0003	0.0007	0.0007	0.0008	0.0009	0.0011	0.0014	0.0016
53	0.2599	0.5327	2731	0.0004	0.0004	0.0011	0.0011	0.0012	0.0012	0.0015	0.0018	0.0019
54	0.2589	0.531	2761	0.0004	0.0005	0.0012	0.0014	0.0015	0.0015	0.0017	0.0019	0.0021
55	0.261	0.5322	2711	0.0006	0.0007	0.0008	0.0008	0.0010	0.0010	0.0012	0.0013	0.0015
56	0.2587	0.531	2764	0.0009	0.0010	0.0012	0.0013	0.0014	0.0014	0.0015	0.0020	0.0021
57	0.2604	0.5317	2726	0.0008	0.0009	0.0016	0.0017	0.0018	0.0019	0.0021	0.0024	0.0026
58	0.2591	0.5319	2752	0.0008	0.0009	0.0011	0.0011	0.0013	0.0013	0.0015	0.0016	0.0017
59	0.261	0.531	2716	0.0009	0.0009	0.0014	0.0015	0.0017	0.0017	0.0018	0.0020	0.0022
60	0.2601	0.5316	2733	0.0007	0.0007	0.0009	0.0009	0.0010	0.0011	0.0013	0.0018	0.0020
61	0.2592	0.532	2749	0.0004	0.0004	0.0010	0.0010	0.0011	0.0011	0.0012	0.0016	0.0017
62	0.2607	0.5317	2719	0.0005	0.0006	0.0010	0.0010	0.0012	0.0012	0.0013	0.0016	0.0017
63	0.2588	0.5328	2755	0.0005	0.0005	0.0006	0.0007	0.0008	0.0008	0.0009	0.0014	0.0016
64	0.2594	0.5317	2746	0.0008	0.0009	0.0013	0.0014	0.0015	0.0016	0.0017	0.0021	0.0022
65	0.2592	0.5305	2756	0.0005	0.0005	0.0013	0.0014	0.0015	0.0016	0.0017	0.0020	0.0022
66	0.2589	0.5319	2757	0.0007	0.0007	0.0015	0.0016	0.0017	0.0018	0.0019	0.0022	0.0023
67	0.2611	0.5307	2716	0.0003	0.0004	0.0007	0.0008	0.0010	0.0010	0.0011	0.0015	0.0017
68	0.2597	0.5325	2737	0.0008	0.0009	0.0015	0.0016	0.0018	0.0018	0.0019	0.0023	0.0025
69	0.261	0.5319	2713	0.0002	0.0002	0.0007	0.0009	0.0010	0.0010	0.0011	0.0014	0.0016
70	0.2591	0.5323	2750	0.0010	0.0010	0.0015	0.0017	0.0018	0.0019	0.0021	0.0022	0.0024
71	0.2612	0.5319	2708	0.0010	0.0011	0.0019	0.0020	0.0022	0.0023	0.0025	0.0028	0.0029
72	0.2592	0.5327	2746	0.0003	0.0003	0.0007	0.0009	0.0011	0.0011	0.0013	0.0015	0.0017
73	0.2591	0.5313	2755	0.0005	0.0005	0.0008	0.0010	0.0012	0.0013	0.0014	0.0015	0.0016
74	0.2611	0.5328	2707	0.0003	0.0003	0.0010	0.0010	0.0012	0.0013	0.0015	0.0018	0.0020
75	0.2595	0.5326	2741	0.0002	0.0003	0.0005	0.0005	0.0007	0.0008	0.0010	0.0011	0.0012
Avg.	0.2598	0.5318	2738	0.0006	0.0006	0.0011	0.0012	0.0013	0.0014	0.0015	0.0018	0.0020
Median	0.2595	0.5319	2741	0.0005	0.0006	0.0011	0.0011	0.0012	0.0013	0.0015	0.0018	0.0020
Standard	0.0009	0.0007	18	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
Max	0.2612	0.5328	2764	0.0010	0.0011	0.0019	0.0020	0.0022	0.0023	0.0025	0.0028	0.0029
Min	0.2587	0.5304	2707	0.0002	0.0002	0.0005	0.0005	0.0007	0.0008	0.0009	0.0011	0.0012

Chromaticity Shift at 105 °C



TM-21 Report:

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)		ZHONGSHAN CITY GUANGYUANSHIJI ELECTRONIC CO.LTD Model Number: G2835XXXX-3V60			
Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp	
Sample size	25	Sample size	25	Sample size	25
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	60	DUT drive current used in the test (mA)	60	DUT drive current used in the test (mA)	60
Test duration (hours)	9,000	Test duration (hours)	9,000	Test duration (hours)	9,000
Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000
Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105
α	1.291E-06	α	1.524E-06	α	1.811E-06
B	0.998	B	0.997	B	0.997
Reported L70(9k) (hours)	>54000	Reported L70(9k) (hours)	>54000	Reported L70(9k) (hours)	>54000

End of the Report

This report is considered invalidated without the Special Seal for Inspection of the LTL. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of LTL, this test report shall not be copied except in full and published as advertisement.