IES LM-80-08 Test Report

For

Bridgelux Inc.

46430 Fremont Boulevard Fremont, CA 94538 USA

3V, 150mALED Chip

Model: BXVN-27E-11M-3A

Laboratory: Leading Testing Laboratories

NVLAP CODE: 200960-0

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Report No.: HZ18080014a/R2

This report is replaced the old report No. HZ18080014a/R1 dated Nov. 02, 2018

The test data in this report base on the report No. HZ18050052a/R1 dated Jun. 01, 2018 and NO. LM-80 HZ16090030d dated May 15, 2018

Test specifications:	
Date of Receipt	: Jul. 03, 2015
Date of Test	: Jul. 10, 2015 to Oct. 28, 2016
Test item	: 10000 hours Lumen Maintenance, 10000 hours Chromaticity Shift
Reference Standard	: IES LM-80-2008 Approved Method for Measuring Lumen Maintenance of LED Light Source

Review by: April Zou

Engineer: April Zou

Nov. 08, 2018

Approved by: Jim Zhang

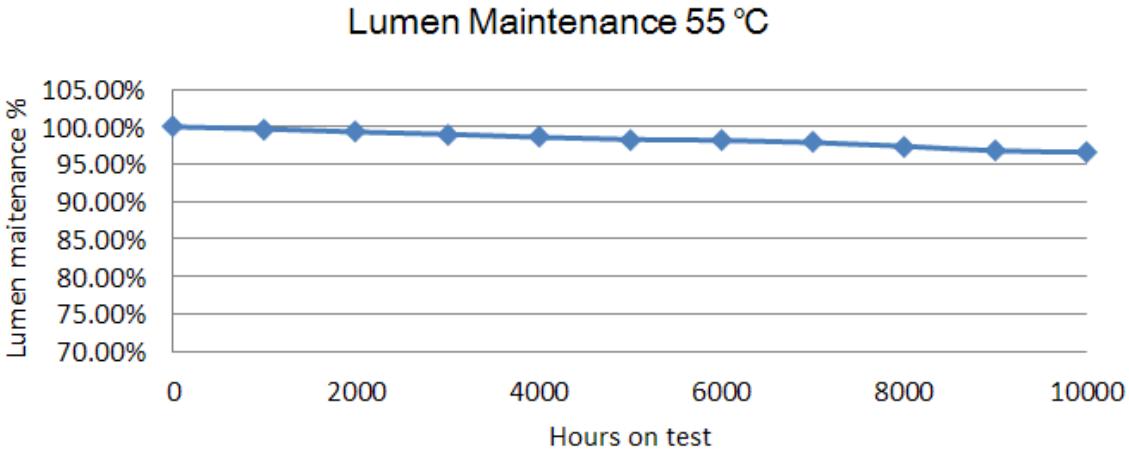
Manager: Jim Zhang

Nov. 08, 2018

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

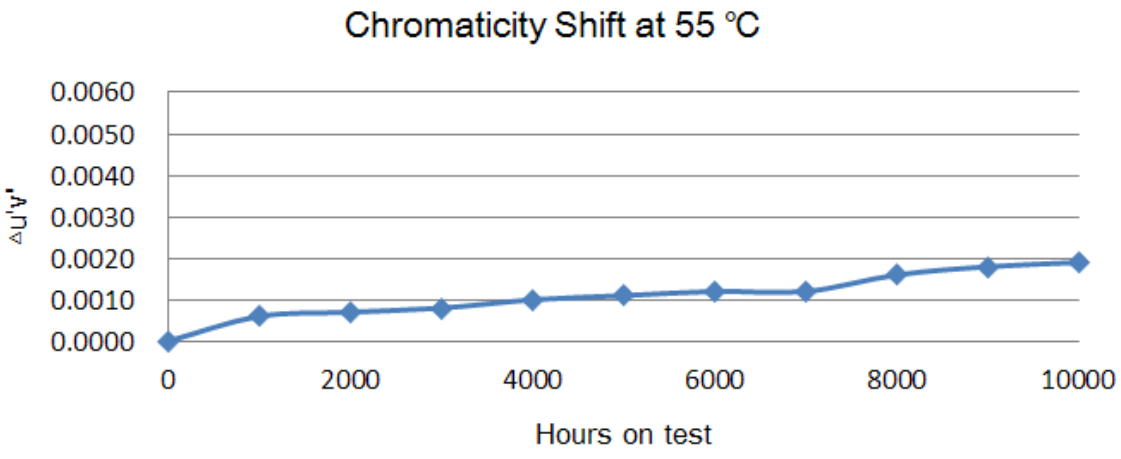
Test Result:
Model Number: BXVN-27E-11M-3A
Case temperature: 55℃
Drive current: 0.15 A
Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenace (%)									
	Vf (V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	3.17	48.89	99.7%	98.9%	98.2%	97.9%	97.9%	97.4%	98.0%	97.1%	96.5%	96.1%
2	3.22	49.12	100.3%	99.4%	99.1%	98.4%	98.0%	97.7%	98.0%	97.4%	96.9%	96.6%
3	3.14	50.06	100.7%	100.0%	99.5%	98.8%	98.7%	98.5%	97.9%	97.8%	97.3%	97.0%
4	3.33	47.95	99.9%	99.6%	99.4%	99.0%	98.4%	98.1%	97.9%	97.7%	96.9%	96.6%
5	3.22	49.04	99.0%	99.0%	98.2%	98.3%	97.8%	97.9%	97.8%	97.4%	96.5%	96.3%
6	3.21	49.11	99.7%	99.0%	98.9%	98.8%	98.3%	98.1%	97.9%	97.7%	97.2%	96.9%
7	3.21	48.70	100.0%	99.6%	98.9%	99.0%	98.9%	99.0%	97.8%	97.6%	96.8%	96.4%
8	3.12	47.13	99.4%	99.1%	98.2%	98.1%	98.0%	98.0%	97.9%	97.4%	96.8%	96.7%
9	3.18	48.50	99.3%	98.5%	98.1%	98.1%	97.8%	97.8%	98.0%	97.3%	96.8%	96.6%
10	3.18	49.46	100.3%	100.2%	100.0%	99.7%	99.4%	99.6%	97.8%	97.6%	97.1%	96.9%
11	3.22	47.04	99.9%	99.6%	99.2%	98.5%	98.4%	98.4%	98.1%	97.8%	97.1%	96.9%
12	3.27	46.84	99.6%	99.1%	99.0%	98.6%	98.6%	98.7%	97.9%	97.5%	96.7%	96.4%
13	3.22	48.79	99.6%	99.7%	99.6%	99.4%	99.0%	98.7%	98.1%	97.4%	96.9%	96.7%
14	3.12	49.28	99.7%	99.1%	98.7%	98.6%	98.0%	97.6%	98.1%	97.5%	97.0%	96.8%
15	3.23	50.25	99.8%	99.3%	98.6%	98.2%	98.0%	97.6%	97.8%	97.8%	96.9%	96.8%
16	3.16	48.11	99.6%	99.4%	98.9%	98.2%	97.8%	97.7%	98.1%	97.3%	96.7%	96.6%
17	3.20	48.76	99.6%	99.2%	98.9%	98.5%	97.9%	97.6%	97.8%	97.0%	96.5%	96.4%
18	3.13	50.32	99.8%	99.3%	99.2%	99.1%	99.3%	98.9%	97.8%	97.3%	96.7%	96.6%
19	3.19	50.60	99.4%	99.4%	99.4%	99.1%	98.9%	98.5%	98.0%	97.0%	96.2%	95.8%
20	3.26	48.18	100.2%	99.0%	99.8%	99.1%	97.9%	98.4%	98.1%	97.0%	96.8%	96.6%
21	3.32	49.78	99.4%	98.7%	99.7%	98.5%	97.9%	98.2%	97.8%	97.3%	96.3%	95.9%
22	3.13	50.29	99.8%	99.6%	99.7%	98.6%	97.9%	98.1%	97.9%	97.1%	96.9%	96.7%
23	3.28	50.54	99.5%	99.6%	98.2%	98.2%	99.1%	98.8%	97.9%	97.1%	97.0%	96.8%
24	3.12	50.44	99.7%	99.1%	98.3%	98.2%	97.9%	98.1%	98.0%	97.5%	97.1%	96.8%
25	3.17	47.95	99.7%	99.1%	98.7%	98.6%	98.0%	97.6%	98.1%	97.5%	97.0%	96.9%
Avg	3.20	49.01	99.7%	99.3%	99.0%	98.6%	98.3%	98.2%	97.9%	97.4%	96.8%	96.6%
Max	3.33	50.60	100.7%	100.2%	100.0%	99.7%	99.4%	99.6%	98.1%	97.8%	97.3%	97.0%
Min	3.12	46.84	99.0%	98.5%	98.1%	97.9%	97.8%	97.4%	97.8%	97.0%	96.2%	95.8%



Model Number: BXVN-27E-11M-3A
Case temperature: 55℃
Drive current: 0.15A
Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift									
	u'	v'	CCT K	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	0.2586	0.5285	2778	0.0007	0.0006	0.0009	0.0012	0.0015	0.0015	0.0013	0.0016	0.002	0.0022
2	0.2595	0.5277	2762	0.0007	0.0005	0.0006	0.0009	0.001	0.001	0.0012	0.0016	0.0019	0.0019
3	0.2575	0.5296	2795	0.0005	0.0008	0.0009	0.001	0.0011	0.0011	0.0012	0.0018	0.002	0.0020
4	0.2607	0.5308	2723	0.0004	0.0005	0.0007	0.0009	0.001	0.0011	0.0015	0.0013	0.0016	0.0018
5	0.2587	0.5262	2786	0.0007	0.0006	0.0007	0.0008	0.0007	0.0008	0.0011	0.0018	0.0019	0.0019
6	0.2592	0.5293	2761	0.0006	0.0008	0.0012	0.0015	0.0016	0.0015	0.0013	0.0017	0.0018	0.0017
7	0.2588	0.5260	2785	0.0007	0.0009	0.0009	0.0012	0.0013	0.0013	0.0011	0.0016	0.002	0.0022
8	0.2588	0.5292	2770	0.0006	0.0008	0.0009	0.0009	0.0011	0.0012	0.0011	0.0016	0.0018	0.0020
9	0.2607	0.5331	2714	0.0007	0.0008	0.0008	0.0007	0.0008	0.0008	0.0011	0.0017	0.0021	0.0024
10	0.2601	0.5308	2736	0.0003	0.0004	0.0005	0.001	0.0011	0.001	0.001	0.0014	0.0015	0.0015
11	0.2591	0.5272	2772	0.0007	0.0007	0.0007	0.001	0.001	0.0013	0.0012	0.0017	0.0016	0.0018
12	0.2584	0.5233	2805	0.0006	0.0005	0.0004	0.0007	0.001	0.0012	0.0011	0.0017	0.002	0.0022
13	0.2576	0.5269	2807	0.0008	0.001	0.0012	0.0015	0.0013	0.0014	0.0012	0.0013	0.0016	0.0017
14	0.2593	0.5316	2749	0.0007	0.0008	0.0006	0.0011	0.0012	0.0014	0.0014	0.0015	0.0014	0.0015
15	0.2599	0.5311	2739	0.0008	0.0008	0.0009	0.0011	0.0012	0.0013	0.0011	0.0017	0.0018	0.0020
16	0.2591	0.5271	2772	0.0003	0.0006	0.0008	0.0011	0.0012	0.0012	0.0011	0.0016	0.0016	0.0016
17	0.2595	0.5273	2764	0.0006	0.0007	0.0006	0.001	0.0008	0.0008	0.0015	0.0016	0.0016	0.0018
18	0.2579	0.5270	2800	0.0005	0.0006	0.0006	0.0006	0.0004	0.0008	0.0013	0.0014	0.0014	0.0015
19	0.2593	0.5319	2748	0.0005	0.0005	0.0006	0.0008	0.0011	0.0008	0.0013	0.0016	0.0019	0.0021
20	0.2611	0.5291	2722	0.0005	0.0006	0.0005	0.0004	0.0006	0.0006	0.0012	0.0013	0.0015	0.0014
21	0.2601	0.5249	2761	0.0006	0.0007	0.0011	0.0013	0.0014	0.0013	0.0011	0.0014	0.0015	0.0018
22	0.2592	0.5266	2773	0.0007	0.0007	0.0009	0.0005	0.0014	0.0013	0.0011	0.0015	0.0015	0.0015
23	0.2586	0.5316	2764	0.0005	0.0007	0.0005	0.0011	0.0009	0.0014	0.0015	0.0016	0.0021	0.0024
24	0.2606	0.5287	2734	0.0006	0.001	0.0009	0.0014	0.001	0.0016	0.0015	0.0014	0.0018	0.0018
25	0.2597	0.5293	2750	0.0005	0.0009	0.001	0.0011	0.0007	0.0013	0.0012	0.0015	0.0019	0.0020
Avg	0.2593	0.5286	2763	0.0006	0.0007	0.0008	0.0010	0.0011	0.0012	0.0012	0.0016	0.0018	0.0019
Max	0.2611	0.5331	2807	0.0008	0.0010	0.0012	0.0015	0.0016	0.0015	0.0015	0.0018	0.0021	0.0024
Min	0.2575	0.5233	2714	0.0003	0.0004	0.0004	0.0004	0.0004	0.0006	0.0010	0.0013	0.0014	0.0014



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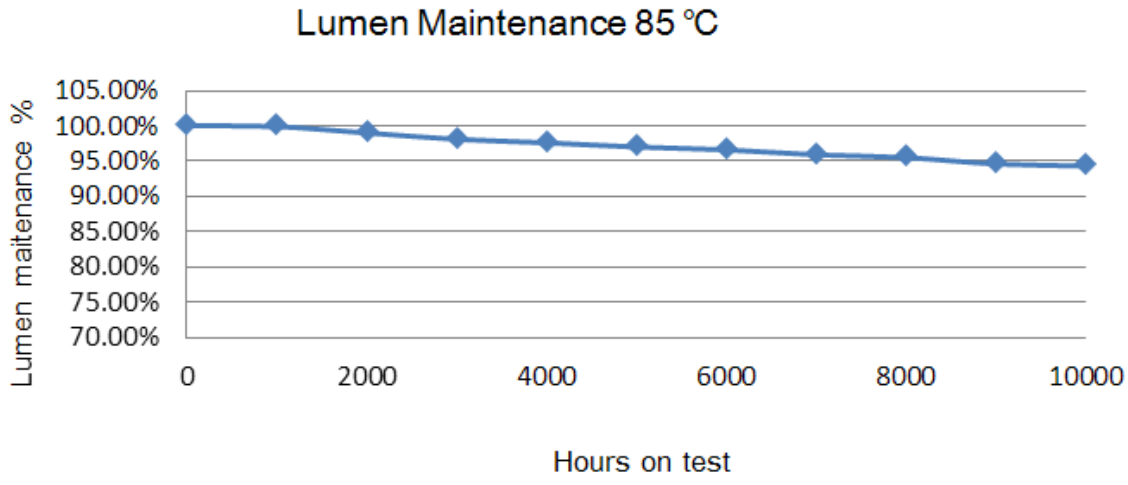
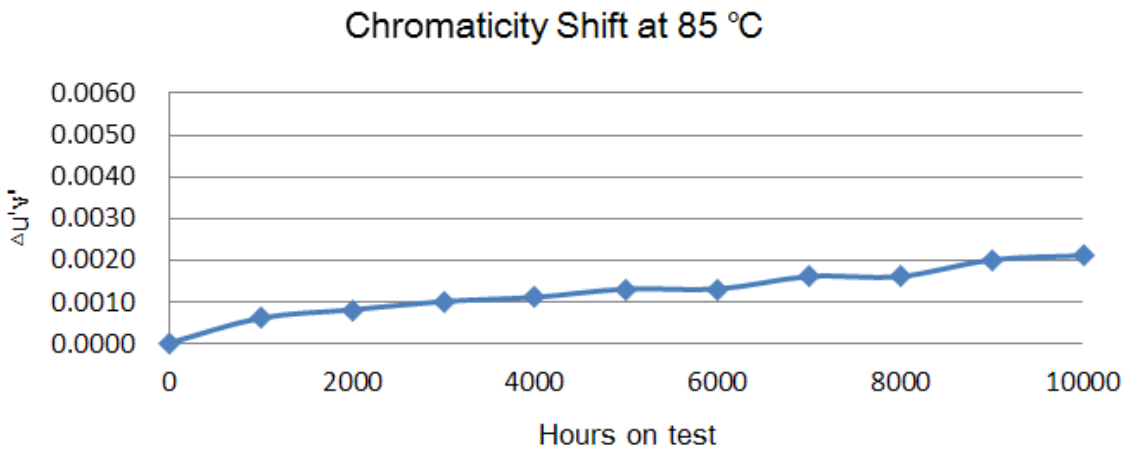
Model Number: BXVN-27E-11M-3A
Case temperature: **85**℃
Drive current: 0.15 A
Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenace (%)									
	Vf (V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	3.15	47.94	99.2%	98.1%	97.3%	97.2%	96.7%	96.0%	96.1%	95.3%	94.1%	94.0%
2	3.15	43.15	100.6%	99.9%	99.6%	98.5%	97.3%	97.1%	96.0%	95.1%	94.2%	93.9%
3	3.1	48.44	100.5%	99.3%	99.3%	98.9%	97.7%	97.5%	95.6%	95.8%	95.0%	94.8%
4	3.18	48.75	100.7%	99.2%	97.6%	97.5%	96.9%	96.2%	96.0%	95.3%	94.7%	94.4%
5	3.19	47.79	99.2%	98.9%	97.8%	97.1%	96.7%	96.6%	96.3%	95.8%	94.9%	94.4%
6	3.19	47.79	99.6%	98.9%	97.7%	97.0%	96.3%	96.0%	96.2%	95.7%	94.6%	94.2%
7	3.16	48.66	99.9%	99.7%	98.6%	97.6%	96.9%	95.9%	95.6%	95.5%	94.4%	94.0%
8	3.16	49.32	100.2%	99.0%	97.7%	96.7%	96.7%	96.1%	96.0%	95.2%	94.6%	94.3%
9	3.16	47.52	99.7%	99.0%	98.1%	97.8%	97.3%	96.6%	95.6%	95.3%	94.6%	94.4%
10	3.21	49.27	99.6%	99.2%	98.5%	97.7%	97.5%	97.4%	96.1%	95.2%	94.4%	94.1%
11	3.23	48.98	99.6%	98.7%	98.2%	98.2%	98.0%	97.6%	96.1%	95.5%	95.0%	94.7%
12	3.17	48.3	100.2%	98.7%	98.2%	97.6%	96.8%	96.4%	95.6%	95.7%	94.8%	94.6%
13	3.37	44.96	99.5%	99.4%	98.6%	98.3%	97.9%	97.0%	96.0%	95.8%	95.2%	94.7%
14	3.24	48.54	100.1%	99.3%	98.3%	97.1%	96.4%	96.4%	95.6%	95.8%	94.8%	94.5%
15	3.17	49.53	99.8%	98.2%	96.7%	96.7%	96.3%	96.3%	96.2%	95.3%	94.6%	94.3%
16	3.18	49.04	100.0%	98.7%	97.9%	97.4%	97.1%	96.7%	96.3%	95.4%	94.6%	94.2%
17	3.17	47.17	99.5%	98.1%	97.3%	96.9%	96.3%	96.3%	95.6%	95.6%	95.1%	94.8%
18	3.17	47.74	100.0%	99.0%	98.8%	97.9%	97.5%	97.5%	96.1%	95.7%	94.5%	94.3%
19	3.14	50.32	100.1%	98.8%	97.8%	97.2%	96.6%	96.4%	95.8%	95.3%	94.3%	93.8%
20	3.14	47.91	99.8%	99.2%	98.3%	98.3%	97.0%	96.3%	95.9%	95.2%	94.4%	94.0%
21	3.19	48.39	100.5%	98.4%	97.6%	97.1%	96.7%	96.3%	96.1%	95.8%	94.3%	94.0%
22	3.37	47.05	100.4%	99.7%	98.6%	98.6%	97.3%	96.6%	95.9%	95.6%	94.8%	94.4%
23	3.19	49.44	100.1%	99.4%	97.3%	97.2%	97.1%	97.0%	95.8%	95.5%	95.1%	94.8%
24	3.32	46.18	99.7%	98.6%	99.2%	97.1%	96.9%	96.5%	96.1%	95.3%	94.9%	94.4%
25	3.25	48.12	99.3%	98.6%	98.2%	98.9%	96.4%	97.1%	95.3%	95.1%	94.3%	94.0%
Avg	3.20	48.01	99.9%	99.0%	98.1%	97.6%	97.0%	96.6%	95.9%	95.5%	94.6%	94.3%
Max	3.37	50.32	100.7%	99.9%	99.6%	98.9%	98.0%	97.6%	96.3%	95.8%	95.2%	94.8%
Min	3.10	43.15	99.2%	98.1%	96.7%	96.7%	96.3%	95.9%	95.6%	95.1%	94.1%	93.8%



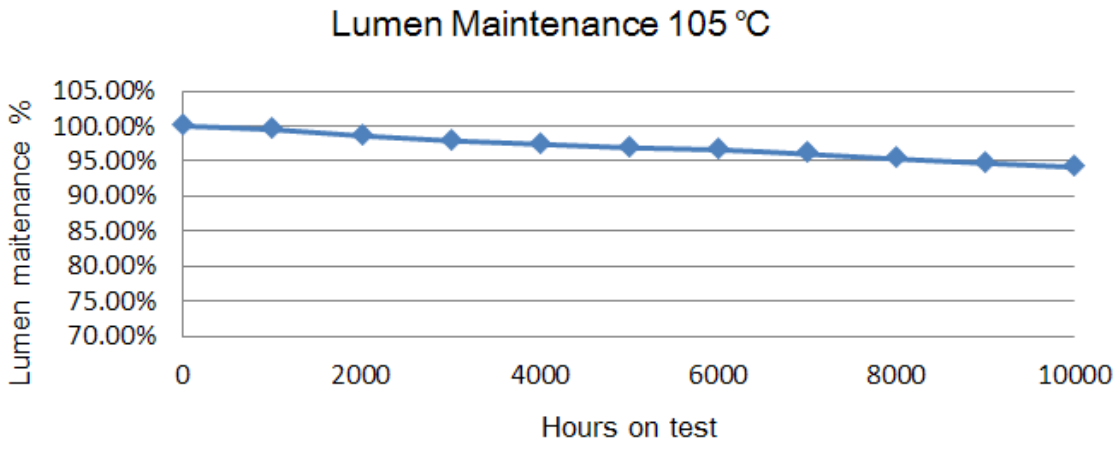
Model Number: BXVN-27E-11M-3A
Case temperature: **85**℃
Drive current: 0.15A
Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift									
	u'	v'	CCT K	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	0.2604	0.5326	2722	0.0003	0.0006	0.001	0.0009	0.0008	0.001	0.0017	0.0017	0.002	0.0022
2	0.2612	0.5327	2705	0.0013	0.0015	0.0018	0.0021	0.0023	0.0022	0.0015	0.0015	0.0018	0.0020
3	0.2585	0.5305	2771	0.0006	0.0009	0.0014	0.0018	0.002	0.002	0.0015	0.0017	0.0019	0.0020
4	0.2593	0.5304	2753	0.0002	0.0005	0.0005	0.0011	0.0013	0.0011	0.0017	0.002	0.0026	0.0028
5	0.2597	0.5313	2741	0.0011	0.0014	0.0016	0.0011	0.0011	0.0013	0.0017	0.0016	0.0019	0.0019
6	0.2599	0.5271	2756	0.0009	0.0007	0.0012	0.0009	0.0011	0.0012	0.0013	0.002	0.0023	0.0025
7	0.2623	0.5309	2690	0.0003	0.0004	0.0005	0.0004	0.0007	0.0005	0.0019	0.0021	0.0022	0.0023
8	0.2584	0.5265	2790	0.0005	0.0005	0.0003	0.0013	0.0015	0.0015	0.0018	0.0016	0.0022	0.0022
9	0.2610	0.5287	2725	0.0007	0.0009	0.0013	0.001	0.0016	0.0016	0.0013	0.0014	0.0016	0.0018
10	0.2588	0.5292	2770	0.0005	0.0006	0.0009	0.0007	0.001	0.0009	0.0018	0.002	0.0026	0.0027
11	0.2619	0.5311	2697	0.0004	0.0005	0.0007	0.0006	0.0007	0.0009	0.0017	0.0016	0.0019	0.0020
12	0.2612	0.5278	2726	0.0006	0.0007	0.0009	0.0011	0.0013	0.0014	0.0018	0.0013	0.0016	0.0015
13	0.2597	0.5255	2767	0.0008	0.0011	0.0009	0.001	0.0013	0.001	0.0015	0.0015	0.0016	0.0016
14	0.2579	0.5293	2789	0.0008	0.001	0.0014	0.0015	0.0017	0.0022	0.0014	0.0014	0.0017	0.0019
15	0.2587	0.5299	2769	0.0005	0.0009	0.0007	0.0017	0.002	0.002	0.0018	0.0018	0.0022	0.0022
16	0.2598	0.5281	2754	0.0004	0.0007	0.0009	0.0007	0.0008	0.001	0.0018	0.0014	0.0018	0.0021
17	0.2605	0.5298	2731	0.0004	0.0007	0.001	0.0004	0.0003	0.0003	0.0016	0.0021	0.0023	0.0025
18	0.2592	0.5280	2766	0.0006	0.0005	0.0006	0.0005	0.0008	0.0007	0.0016	0.0016	0.0018	0.0017
19	0.2595	0.5275	2763	0.0004	0.0006	0.001	0.0014	0.0014	0.0017	0.0016	0.0013	0.0017	0.0019
20	0.2597	0.5311	2742	0.0006	0.0009	0.0011	0.0016	0.0015	0.0018	0.0016	0.0016	0.0017	0.0018
21	0.2619	0.5327	2691	0.0009	0.0006	0.0011	0.0017	0.0014	0.0017	0.0017	0.0017	0.0025	0.0025
22	0.2607	0.5310	2722	0.0006	0.0006	0.0013	0.0012	0.0013	0.0021	0.0017	0.0015	0.0023	0.0024
23	0.2612	0.5315	2710	0.0004	0.0013	0.0009	0.0012	0.0015	0.0013	0.0014	0.0015	0.0023	0.0023
24	0.2617	0.5294	2708	0.0009	0.0012	0.0009	0.001	0.0008	0.0012	0.0013	0.002	0.0021	0.0021
25	0.2619	0.5317	2695	0.0003	0.0011	0.0012	0.001	0.0012	0.0007	0.0015	0.0013	0.0024	0.0026
Avg	0.2602	0.5298	2738	0.0006	0.0008	0.0010	0.0011	0.0013	0.0013	0.0016	0.0016	0.0020	0.0021
Max	0.2623	0.5327	2790	0.0013	0.0015	0.0018	0.0021	0.0023	0.0022	0.0019	0.0021	0.0026	0.0028
Min	0.2579	0.5255	2690	0.0002	0.0004	0.0003	0.0004	0.0003	0.0003	0.0013	0.0013	0.0016	0.0015



Model Number: BXVN-27E-11M-3A
Case temperature: **105**℃
Drive current: 0.15 A
Lumen Maintenance Data:

Sample No.	0h		Lumen Maintenace (%)									
	Vf (V)	Flux (lm)	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	2.79	53.22	99.70%	98.90%	97.80%	97.40%	97.1%	96.9%	96.0%	95.6%	95.1%	94.9%
2	2.79	52.82	99.70%	98.60%	98.20%	97.70%	97.0%	97.0%	96.2%	95.7%	95.4%	94.7%
3	2.79	52.67	99.40%	98.60%	97.50%	96.80%	96.5%	96.0%	95.5%	95.0%	94.3%	94.1%
4	2.79	53.68	99.50%	98.10%	97.30%	96.70%	96.0%	95.8%	95.1%	94.7%	93.9%	93.2%
5	2.80	53.42	99.60%	98.90%	98.40%	97.70%	97.4%	97.2%	96.7%	95.9%	95.4%	94.6%
6	2.78	51.31	99.50%	99.00%	98.50%	98.10%	97.6%	97.5%	96.7%	95.7%	95.0%	94.4%
7	2.79	53.17	99.40%	98.80%	98.10%	97.80%	97.5%	97.0%	96.4%	95.8%	95.3%	94.4%
8	2.79	52.24	99.40%	98.60%	98.20%	97.80%	97.3%	97.1%	96.6%	95.7%	94.9%	94.0%
9	2.79	53.03	99.60%	98.60%	97.60%	97.00%	96.5%	96.1%	95.3%	94.7%	94.1%	93.9%
10	2.79	52.1	99.30%	98.30%	97.60%	96.90%	96.5%	96.0%	95.5%	94.5%	93.9%	93.3%
11	2.79	52.84	99.60%	98.40%	97.30%	96.80%	96.5%	96.2%	95.6%	94.9%	94.6%	93.8%
12	2.79	51.81	99.50%	98.40%	97.70%	97.20%	96.9%	96.6%	96.0%	95.1%	94.6%	94.2%
13	2.78	52.71	99.50%	98.30%	97.10%	96.70%	96.2%	95.9%	95.5%	95.0%	94.6%	93.7%
14	2.79	52.96	99.40%	98.10%	97.00%	96.80%	96.4%	96.2%	95.4%	94.5%	93.7%	92.9%
15	2.79	52.61	99.50%	98.50%	97.50%	96.90%	96.2%	95.8%	95.2%	94.7%	94.0%	93.4%
16	2.80	53.32	99.70%	99.10%	98.60%	97.90%	97.5%	97.1%	96.3%	95.5%	95.0%	94.4%
17	2.84	52.59	99.50%	98.80%	98.30%	97.90%	97.7%	97.3%	96.5%	95.6%	95.0%	94.7%
18	2.79	52.93	99.60%	98.90%	98.20%	97.50%	96.8%	96.6%	96.1%	95.4%	94.9%	94.6%
19	2.78	51.55	99.70%	98.70%	98.00%	97.60%	96.9%	96.7%	96.2%	95.8%	95.3%	94.7%
20	2.79	52.08	99.60%	99.10%	98.20%	97.70%	97.0%	96.6%	96.2%	95.7%	95.3%	94.7%
21	2.82	53.55	99.30%	98.80%	97.70%	96.40%	96.0%	96.1%	96.5%	95.8%	95.2%	94.6%
22	2.79	52.21	99.50%	98.80%	98.10%	97.50%	96.8%	96.2%	96.5%	94.7%	94.1%	94.3%
23	2.81	51.69	99.60%	98.30%	98.20%	98.00%	97.1%	97.5%	96.6%	95.5%	94.2%	94.4%
24	2.82	53.45	99.40%	98.90%	97.90%	97。4%	96.7%	97.4%	96.5%	95.2%	94.8%	94.4%
25	2.79	53.11	99.40%	98.40%	98.30%	97.80%	97.6%	96.3%	95.5%	95.2%	94.1%	93.2%
Avg	2.79	52.68	99.5%	98.6%	97.9%	97.4%	96.9%	96.6%	96.0%	95.3%	94.7%	94.1%
Max	2.84	53.68	99.7%	99.1%	98.6%	98.1%	97.7%	97.5%	96.7%	95.9%	95.4%	94.9%
Min	2.78	51.31	99.3%	98.1%	97.0%	96.7%	96.0%	95.8%	95.1%	94.5%	93.7%	92.9%



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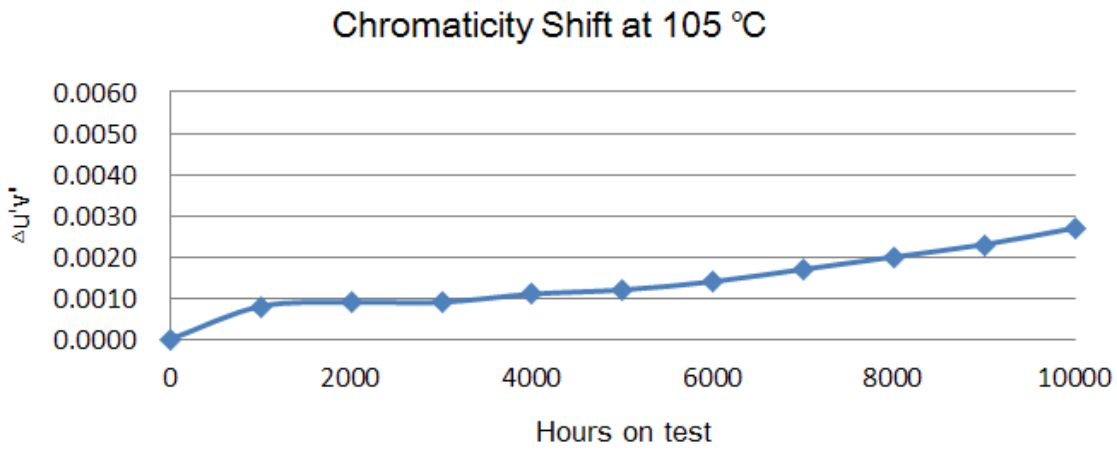
Model Number: BXVN-27E-11M-3A
Case temperature: **105**℃
Drive current: 0.15 A
Chromaticity Shift Data:

Sample No.	0h			Chromaticity Shift									
	u'	v'	CCT K	1000h	2000h	3000h	4000h	5000h	6000h	7000h	8000h	9000h	10000h
1	0.2591	0.5324	2750	0.0009	0.0005	0.0007	0.0007	0.0007	0.0007	0.0007	0.001	0.0013	0.0019
2	0.2592	0.5319	2750	0.0010	0.0007	0.0007	0.0008	0.0009	0.0012	0.0014	0.0018	0.002	0.0023
3	0.2602	0.5331	2724	0.0007	0.0011	0.0013	0.0012	0.0012	0.0011	0.0017	0.0021	0.0025	0.0030
4	0.2597	0.5333	2733	0.0009	0.0013	0.0014	0.0016	0.0017	0.0019	0.0022	0.0025	0.0029	0.0030
5	0.2602	0.5336	2722	0.0007	0.0005	0.0008	0.0010	0.0011	0.0014	0.0017	0.0021	0.0023	0.0030
6	0.2623	0.5333	2680	0.0008	0.0011	0.0013	0.0015	0.0018	0.0018	0.002	0.0024	0.0027	0.0029
7	0.2625	0.5337	2675	0.0008	0.0007	0.0009	0.0011	0.0013	0.0016	0.0016	0.0019	0.0021	0.0020
8	0.2623	0.5333	2681	0.0010	0.0007	0.0007	0.0009	0.0010	0.0011	0.0015	0.0019	0.0021	0.0026
9	0.26	0.5342	2723	0.0010	0.0011	0.0010	0.0012	0.0013	0.0013	0.0013	0.0016	0.002	0.0025
10	0.2601	0.5317	2732	0.0009	0.0011	0.0011	0.0011	0.0010	0.0012	0.0016	0.002	0.0024	0.0030
11	0.2608	0.5346	2705	0.0006	0.0011	0.0013	0.0015	0.0014	0.0014	0.0017	0.0022	0.0025	0.0026
12	0.2613	0.5343	2697	0.0008	0.0009	0.0011	0.0013	0.0015	0.0018	0.002	0.0023	0.0027	0.0029
13	0.2606	0.5327	2718	0.0007	0.0009	0.0008	0.0010	0.0012	0.0015	0.002	0.0023	0.0026	0.0032
14	0.2604	0.5315	2727	0.0007	0.0005	0.0006	0.0006	0.0009	0.0009	0.0015	0.0018	0.0021	0.0026
15	0.2612	0.5327	2705	0.0010	0.0007	0.0009	0.0009	0.0011	0.0013	0.0016	0.002	0.0022	0.0026
16	0.2601	0.5325	2729	0.0007	0.0009	0.0010	0.0012	0.0015	0.0017	0.002	0.0024	0.0026	0.0032
17	0.2603	0.5322	2725	0.0007	0.0007	0.0007	0.0009	0.0011	0.0011	0.0013	0.0016	0.0019	0.0026
18	0.2593	0.5337	2740	0.0009	0.0009	0.0009	0.0008	0.0010	0.0013	0.0018	0.0021	0.0024	0.0024
19	0.2612	0.5327	2706	0.0008	0.0007	0.0007	0.0009	0.0011	0.0012	0.0016	0.0019	0.0022	0.0029
20	0.261	0.5331	2708	0.0009	0.0011	0.0010	0.0012	0.0013	0.0015	0.0019	0.0021	0.0023	0.0030
21	0.2597	0.5317	2681	0.0010	0.0009	0.0008	0.0014	0.0008	0.0015	0.0021	0.0019	0.0016	0.0019
22	0.2623	0.5333	2712	0.0009	0.0012	0.0012	0.0013	0.0015	0.0016	0.0017	0.0019	0.0021	0.0021
23	0.2617	0.5330	2713	0.0006	0.0010	0.0008	0.0014	0.0007	0.0016	0.0021	0.0024	0.0028	0.0030
24	0.2611	0.5328	2691	0.0009	0.0013	0.0009	0.0015	0.0017	0.0016	0.0013	0.001	0.0016	0.0022
25	0.2621	0.5321	2741	0.0008	0.0007	0.0011	0.0010	0.0014	0.0015	0.0016	0.0012	0.0026	0.0031
Avg	0.2607	0.5329	2715	0.0008	0.0009	0.0009	0.0011	0.0012	0.0014	0.0017	0.0019	0.0023	0.0027
Max	0.2625	0.5346	2750	0.0010	0.0013	0.0014	0.0016	0.0018	0.0019	0.0022	0.0025	0.0029	0.0032
Min	0.2591	0.5315	2675	0.0006	0.0005	0.0006	0.0006	0.0007	0.0007	0.0007	0.0010	0.0013	0.0019



TM-21 Report:

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)	Bridgelux. Model Number: BXVN-27E-11M-3A Drive current: 0.15 A				
Test Condition 1 - 55℃ Case Temp		**Test Condition 2 - 85℃ Case Temp**		**Test Condition 3 -105℃ 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)	150	DUT drive current used in the test (mA)	150	DUT drive current used in the test (mA)	150
Test duration (hours)	10,000	Test duration (hours)	10,000	Test duration (hours)	10,000
Test duration used for projection (hour to hour)	5,000 - 10,000	Test duration used for projection (hour to hour)	5,000 - 10,000	Test duration used for projection (hour to hour)	5,000 - 10,000
Tested case temperature (℃)	55	Tested case temperature (℃)	85	Tested case temperature (℃)	105
α	3.87E-06	α	5.95E-06	α	6.01E-06
B	1.00	B	1.00	B	1.00
Calculated L70(10k) (hrs)	93000	Calculated L70(10k) (hrs):	60000	Calculated L70(10k) (hrs):	59000
Reported L70(10k) (hrs)	>60000	Reported L70(10k) (hrs)	>60000	Reported L70(10k) (hrs)	59000

United States Department of Commerce
National Institute of Standards and Technology

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Energy Efficient Lighting Products

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2017-11-27 through 2018-12-31
Effective Dates

For the National Voluntary Laboratory Accreditation Program

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2016-11-30 through 2017-12-31
Effective Dates

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2015-12-07 through 2016-12-31
Effective Dates

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2015-01-01 through 2015-12-31
Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

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NVLAP® National Voluntary Laboratory Accreditation Program

ENERGY EFFICIENT LIGHTING PRODUCTS **NVLAP LAB CODE 200960-**

22/S24	ANSI C62.41.2:2002	IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000V and Less) AC Power Circuits
22/S28	IEC 62301:2011	Household Electrical Appliances - Measurement of Standby Power

SSL Life Tests

Code	***Designation***	***Description***
22/S08	IES LM-80:2008	Solid State Lighting Luminaires - Lumen Maintenance
22/S08a	IES LM-80:2015	Solid State Lighting Luminaires - Lumen Maintenance
22/S14	EPA Integral LED Lamps v. 1.4 (Appendix E)	ENERGY STAR® Elevated Temperature Testing for Integral LED Lamps
22/S18	EPA Lamps v. 1.0	Ambient Temperature Life Testing
22/S19	EPA Lamps v. 1.0	Elevated Temperature Life Testing
22/S25	IES LM-84:2014	Approved Method for Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires

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.