



## Photometric Test Report

### Relevant Standards

- IES LM-79-2008
- ANSI C82.77-10-2014

### Prepared For

## GREEN INOVA LIGHTING TECHNOLOGY (SHENZHEN) LTD

EAST WING, FL9.10.11, BLDG2, NO.2, CHONGQING RD QIAOTOU COMMUNITY, FUYONG STREET, BAOAN DISTRICT, SHENZHEN, GUANGDONG 518103 CHINA  
Rose Meng, 1064624485@qq.com, 86-755-83405100

Test Laboratory: UL Verification Services (Guangzhou) Co., Ltd.

Test Laboratory Address: Building A1, 1F & 2F, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China

### Catalog Number

5SB(a)(b)(c)(d)(e)(f)(g)(h)(j)

### Project Number

4788254856

### Report Number

4788254856-6a

### Test Date

11/28/2017

### Issue Date

12/13/2017

### Revision Date

N/A

Prepared By

*Alvin Xie*

Alvin Xie

Approved By

*Dendi Lin*

Dendi Lin

The results contained in this report pertain only to the tested sample.

This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.



## 1.0 Test Summary

DLC Technical Requirements v4.2- issued 2017-04-28

Requirement Category	Test Method	Requirements	Test value	Results (Fail/Pass)
Minimum Light Output (lm)	IES LM-79-2008	≥10000	12420.1	Pass
Minimum Lamp Output (lm)	IES LM-79-2008	N/A	N/A	N/A
Spacing Criteria (0-180°)	IES LM-79-2008	N/A	N/A	N/A
Spacing Criteria (90-270°)	IES LM-79-2008	N/A	N/A	N/A
Zonal Lumen Requirement (0°-90°)	IES LM-79-2008	≥99%	99.70%	Pass
Zonal Lumen Requirement (80°-90°)	IES LM-79-2008	≤10%	2.20%	Pass
Minimum Luminaire Efficacy (lm/W)	IES LM-79-2008	≥120	123.46	Pass
Minimum Lamp Efficacy (lm/ft)	IES LM-79-2008	N/A	N/A	N/A
Allowable CCTs* (K)	IES LM-79-2008 ANSI C78.377-2015	≤5700	N/A	N/A
Minimum CRI	IES LM-79-2008 CIE 13.3-1995	≥65	N/A	N/A
Power Factor	ANSI C82.77-10-2014	≥0.9	0.946	Pass
Total Harmonic Distortion (A%)	ANSI C82.77-10-2014	≤20%	10.01%	Pass
Minimum Luminaire Warranty (years)	N/A	5	5	Pass

\* The standards are NOT covered by the NVLAP scope of test laboratory UL Verification Services (Guangzhou) Co., Ltd.



## 2.0 Test List

Test Item	Test	Test Date	Model Number	Tests Conducted By
1	Goniophotometer Test	11/28/2017	5SB100L40B2DIV	Vince Lin
2	THD and PF Test	11/28/2017	5SB100L40B2DIV	Vince Lin

### **Remark** (if any)

1. UL test equipment information is recorded on Meter Use in UL's Aurora database.



### 3.0 Production Description

**Luminaire Description:** Outdoor-High Output, Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

**Model Number:** 5SB100L40B2DIV

**Rated Input and CCT:** 100-277 Vac, 50/60 Hz, 100W, 4000K

**Driver Model Number :** ELG-150-42B-3Y

**LED Package:** SAW7C22B-xx

**Family Model and Variation:** 5SB(a)(b)(c)(d)(e)(f)(g)(h)(j)

where (a) may be any number, represent products wattage; (b) may be L and H, L represent input voltage is 100-277V, H represent input voltage is 347-480V, (c) represents color temperature, may be 40, 45 and 50; (d) represents case color, may be B, W and BK, instead of bronze, white and black; (e) represents the employing driver manufacture, may be 1 and 2, 1 for E-DRIVER CO LTD, 2 for MEAN WELL ENTERPRISED CO LTD; (f) represents provided with photocell, can be P for provided with photocell or blank for no photocell; (g) represents the dimmable, can be D for dimmable or Blank for non-dimmable; (h) represents motion Sensor, can be M for provided with Motion Sensor or blank for no motion sensor; (j) represent a variety of aisle lens, may be T, I, IV and V, T represent Type II lens, I represent Type III lens, IV represent Type IV lens, V represent Type V lens.

#### Photos of Luminaire Characteristics





#### 4.0 LM-79 Measurement and Test Results

<b>Model No.</b>	5SB100L40B2DIV	<b>Sample ID.</b>	1278276-S001
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

- 1.The sample was tested according to the IES LM-79-2008.
- 2.Photometric paramters were measured using a type C goniophotometer and software.
- 3.The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.The reference standard lamp is rated current 3.865A omni-directional Incandescent lamp and was calibrated by china seprei laboratory.
- 4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5° vertical intervals and 22.5° horizontal intervals..Photometric distance was more than five times of the largest dimension of the test SSL product.

#### Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.03	60	0.8402	100.6	0.9973	Face Down

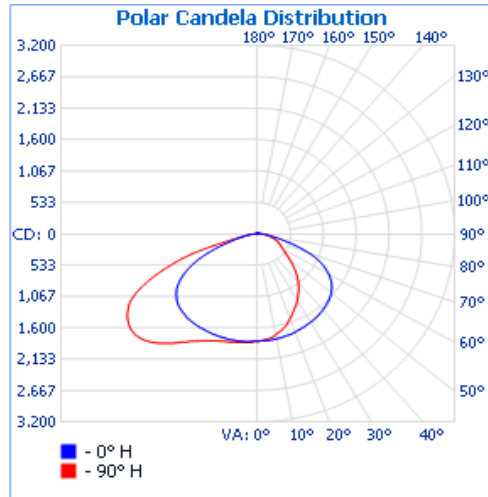
#### Test Result

Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
	Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
12420.1	111.5	164.5	51.9	149.6	123.46
<b>Zonal Lumen Requirement (0°-90°)</b>	<b>Zonal Lumen Requirement (80°-90°)</b>				
99.70%	2.20%				

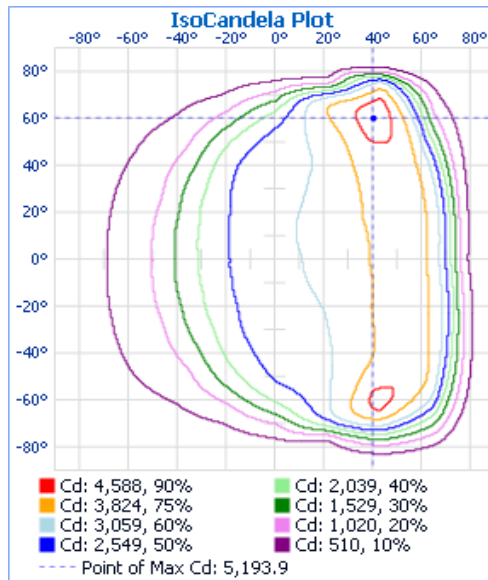


## 4.2 Goniophotometer Test (Cont'd)

### Light Distribution Curve



### IsoCandela Plot





## 4.2 Goniophotometer Test (Cont'd)

### Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	2,428.7	19.6%
0-40	4,168.5	33.6%
0-60	8,501.9	68.5%
60-90	3,886.9	31.3%
70-100	1,671.5	13.5%
90-120	13.6	0.1%
0-90	12,388.8	99.7%
90-180	31.3	0.3%
0-180	12,420.1	100%

### Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	71.5	0.6%	90-95	2.6	0%
5-10	213.5	1.7%	95-100	2.0	0%
10-15	350.2	2.8%	100-105	2.1	0%
15-20	480.0	3.9%	105-110	2.2	0%
20-25	600.2	4.8%	110-115	2.3	0%
25-30	713.3	5.7%	115-120	2.4	0%
30-35	820.7	6.6%	120-125	2.4	0%
35-40	919.1	7.4%	125-130	2.4	0%
40-45	1,004.8	8.1%	130-135	2.3	0%
45-50	1,072.9	8.6%	135-140	2.1	0%
50-55	1,116.6	9.0%	140-145	1.9	0%
55-60	1,139.2	9.2%	145-150	1.6	0%
60-65	1,139.3	9.2%	150-155	1.4	0%
65-70	1,080.7	8.7%	155-160	1.2	0%
70-75	866.0	7.0%	160-165	1.0	0%
75-80	526.4	4.2%	165-170	0.8	0%
80-85	223.9	1.8%	170-175	0.5	0%
85-90	50.6	0.4%	175-180	0.2	0%



## 4.2 Goniophotometer Test (Cont'd)

### Intensity Data(cd)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989	2989
1	2988	2985	2984	2984	2982	2986	2985	2988	2990	2993	2993	2991	2989	2986	2987	2987	2987
2	2995	2985	2980	2979	2974	2978	2980	2984	2990	2995	2998	2998	2996	2994	2994	2993	2989
3	2998	2986	2976	2969	2961	2966	2971	2982	2993	3004	3012	3013	3013	3010	3008	3004	2998
4	3001	2988	2969	2958	2947	2953	2961	2978	2994	3010	3021	3024	3023	3022	3020	3014	3004
5	3005	2985	2965	2948	2935	2942	2954	2974	2995	3014	3025	3030	3032	3031	3028	3020	3007
6	3008	2983	2958	2934	2924	2932	2944	2968	2994	3014	3030	3036	3037	3036	3032	3024	3009
7	3007	2982	2950	2926	2910	2918	2936	2964	2993	3017	3032	3038	3040	3040	3036	3026	3010
8	3009	2978	2942	2910	2889	2894	2920	2958	2990	3019	3034	3042	3046	3044	3040	3030	3011
9	3011	2975	2929	2886	2859	2867	2903	2948	2987	3020	3038	3046	3050	3049	3045	3034	3013
10	3010	2969	2913	2861	2829	2841	2883	2937	2986	3020	3041	3049	3054	3055	3050	3038	3013
11	3011	2963	2896	2834	2798	2813	2862	2927	2983	3021	3041	3052	3061	3062	3055	3041	3014
12	3013	2957	2879	2808	2769	2786	2841	2917	2980	3020	3044	3057	3066	3064	3059	3044	3014
13	3012	2952	2864	2781	2738	2760	2821	2908	2977	3021	3046	3060	3071	3071	3062	3044	3015
14	3013	2947	2846	2755	2709	2733	2801	2896	2976	3021	3045	3064	3076	3076	3065	3046	3016
15	3012	2939	2831	2730	2680	2708	2780	2888	2974	3020	3046	3068	3080	3081	3069	3047	3015
16	3010	2933	2815	2704	2651	2680	2760	2878	2969	3017	3048	3072	3087	3088	3071	3048	3015
17	3010	2930	2797	2679	2618	2646	2740	2868	2965	3016	3046	3076	3095	3093	3075	3048	3013
18	3010	2921	2780	2647	2580	2606	2718	2856	2960	3013	3048	3082	3103	3102	3078	3050	3012
19	3008	2915	2760	2614	2536	2565	2687	2840	2953	3011	3047	3088	3116	3112	3084	3051	3012
20	3007	2907	2737	2575	2491	2521	2654	2824	2948	3006	3049	3098	3132	3127	3088	3050	3009
25	2999	2857	2599	2375	2277	2325	2491	2736	2921	2985	3050	3158	3234	3220	3128	3047	3000
30	2988	2806	2463	2197	2092	2143	2338	2648	2890	2965	3064	3258	3382	3356	3188	3044	2991
35	2973	2741	2313	1995	1865	1917	2155	2538	2852	2939	3099	3428	3630	3576	3297	3045	2975
40	2940	2633	2102	1733	1594	1667	1931	2392	2804	2902	3150	3651	3924	3863	3446	3045	2941
45	2885	2482	1844	1432	1300	1386	1674	2217	2736	2878	3239	3911	4184	4155	3644	3066	2885
50	2788	2244	1517	1127	1041	1110	1370	1992	2614	2859	3394	4140	4304	4349	3888	3130	2786
55	2607	1890	1159	879	857	873	1065	1683	2409	2847	3666	4272	4238	4385	4178	3274	2616
60	2315	1441	846	713	725	716	806	1277	2082	2863	4120	4299	3988	4284	4552	3535	2312
65	1863	991	629	583	622	603	608	847	1594	2865	4664	4262	3394	3951	5002	3789	1840
70	1254	624	472	469	477	504	471	556	1008	2493	4787	4091	2439	3150	5187	3316	1232
75	636	374	341	366	372	364	365	380	567	1225	3559	3488	1137	1862	4624	1409	644
80	231	228	204	247	278	263	270	265	318	309	1651	2061	396	785	3040	352	230
85	64	84	95	132	152	158	146	134	148	102	468	568	161	311	351	98	62
90	2	3	5	8	9	23	21	23	21	17	36	33	16	5	4	3	2
95	2	4	6	6	4	5	6	4	3	2	3	3	2	2	3	2	2
100	2	4	7	7	5	6	7	5	3	2	2	2	2	2	2	2	2
105	3	5	8	7	6	7	8	6	4	2	2	2	2	1	2	2	3
110	4	6	8	8	7	8	8	6	4	2	2	2	1	2	2	2	3
115	4	6	8	8	7	8	8	6	4	3	2	2	2	2	2	3	4
120	4	6	9	8	8	9	9	6	4	3	2	2	2	2	2	3	4
125	4	6	9	9	8	9	9	7	5	4	3	2	2	2	2	4	4
130	5	7	9	9	8	9	10	7	5	4	3	3	2	2	3	4	5
135	5	6	8	9	8	9	9	7	6	4	4	3	3	3	3	4	5
140	6	7	8	8	8	8	8	7	6	5	4	3	3	3	4	4	5
145	6	6	7	8	7	8	7	6	6	5	4	4	4	4	4	5	5
150	6	6	6	7	7	7	7	6	6	5	5	4	4	4	4	5	5
155	6	6	6	6	7	6	6	6	6	5	5	5	4	4	5	5	6
160	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	6
165	6	6	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6
170	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
175	7	7	8	7	8	8	8	8	8	8	8	8	7	8	7	7	7
180	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8





## 5.0 THD and PF Test

### Test Method

1. The samples were tested according to the ANSI C82.77-2002.
2. The ambient temperature condition was maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

### Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD
25.1	120.06	60	0.8486	101.53	0.9972	2.60%
25.1	277	60	0.3808	99.78	0.946	10.01%



\*\*\*\*\* END OF REPORT. THIS PAGE INTENTIONALLY LEFT BLANK \*\*\*\*\*