



## Photometric Test Report

### Relevant Standards

IES LM-79-2008

### 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

4788254856-4a

### 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	$\geq 5000, \leq 10000$	7786.1	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	$\geq 99\%$	99.80%	Pass
Zonal Lumen Requirement (80°-90°)	IES LM-79-2008	$\leq 10\%$	1.00%	Pass
Minimum Luminaire Efficacy (lm/W)	IES LM-79-2008	$\geq 115$	129.77	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	$\leq 5700$	N/A	N/A
Minimum CRI	IES LM-79-2008 CIE 13.3-1995	$\geq 65$	N/A	N/A
Power Factor	ANSI C82.77-10-2014	$\geq 0.9$	N/A	N/A
Total Harmonic Distortion (A%)	ANSI C82.77-10-2014	$\leq 20\%$	N/A	N/A
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	5SB60L40B1DV	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-Mid Output, Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

**Model Number:** 5SB60L40B1DV

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

**Driver Model Number :** LS60W-40-C1500-RD

**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>	5SB60L40B1DV	<b>Sample ID.</b>	1278274-S001
<b>Operate time (Min.)</b>	90	<b>Stabilization time (Min.)</b>	45

#### Test Method

<p>1.The sample was tested according to the IES LM-79-2008.</p> <p>2.Photometric paramters were measured using a type C goniophotometer and software.</p> <p>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.</p> <p>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.</p>
---

#### Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	119.99	60	0.5015	60	0.9971	Face Down

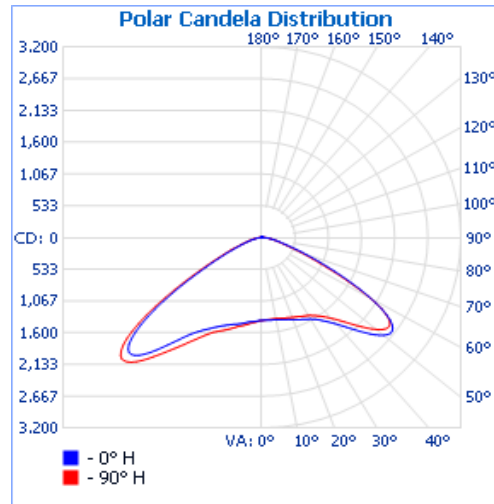
#### Test Result

Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
	Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
7786.1	140.7	137.8	107.8	99.1	129.77
<b>Zonal Lumen Requirement (0°-90°)</b>	<b>Zonal Lumen Requirement (80°-90°)</b>				
99.80%	1.00%				

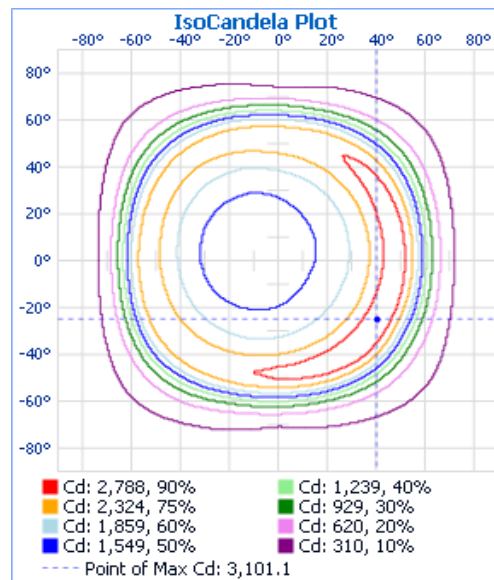


## 4.2 Goniophotometer Test (Cont'd)

### Light Distribution Curve



### IsoCandela Plot





## 4.2 Goniophotometer Test (Cont'd)

### Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,300.4	16.7%
0-40	2,497.8	32.1%
0-60	6,460.6	83%
60-90	1,307.0	16.8%
70-100	391.8	5%
90-120	6.9	0.1%
0-90	7,767.5	99.8%
90-180	18.6	0.2%
0-180	7,786.1	100%

### Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	33.5	0.4%	90-95	1.4	0%
5-10	101.6	1.3%	95-100	0.7	0%
10-15	172.7	2.2%	100-105	0.9	0%
15-20	247.3	3.2%	105-110	1.1	0%
20-25	327.9	4.2%	110-115	1.4	0%
25-30	417.5	5.4%	115-120	1.5	0%
30-35	525.0	6.7%	120-125	1.6	0%
35-40	672.4	8.6%	125-130	1.5	0%
40-45	868.7	11.2%	130-135	1.5	0%
45-50	1,062.3	13.6%	135-140	1.5	0%
50-55	1,112.3	14.3%	140-145	1.4	0%
55-60	919.5	11.8%	145-150	1.2	0%
60-65	587.9	7.6%	150-155	0.9	0%
65-70	329.3	4.2%	155-160	0.7	0%
70-75	192.6	2.5%	160-165	0.6	0%
75-80	116.7	1.5%	165-170	0.4	0%
80-85	61.1	0.8%	170-175	0.3	0%
85-90	19.3	0.2%	175-180	0.1	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	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396	1396
1	1392	1392	1392	1394	1392	1394	1394	1393	1394	1395	1396	1396	1395	1393	1394	1392	1390
2	1393	1389	1388	1388	1390	1390	1392	1394	1397	1400	1401	1401	1404	1401	1396	1394	1391
3	1393	1388	1385	1384	1386	1388	1392	1399	1405	1413	1414	1415	1416	1410	1404	1397	1392
4	1393	1388	1385	1382	1384	1388	1395	1404	1412	1421	1426	1428	1425	1420	1412	1402	1392
5	1394	1388	1380	1381	1384	1389	1397	1407	1419	1430	1435	1440	1433	1430	1417	1404	1395
6	1396	1386	1381	1380	1382	1388	1397	1410	1424	1437	1444	1447	1439	1434	1421	1408	1394
7	1396	1385	1381	1378	1382	1388	1400	1415	1428	1441	1449	1451	1452	1439	1425	1412	1397
8	1400	1388	1380	1379	1383	1391	1401	1418	1433	1450	1458	1463	1464	1448	1433	1416	1398
9	1402	1388	1380	1378	1382	1392	1406	1424	1442	1462	1474	1476	1480	1461	1442	1423	1401
10	1407	1390	1382	1380	1384	1395	1410	1432	1452	1474	1488	1492	1490	1473	1452	1430	1406
11	1411	1392	1383	1380	1387	1397	1416	1440	1464	1489	1504	1508	1504	1485	1463	1437	1411
12	1417	1394	1387	1381	1390	1404	1423	1448	1475	1501	1520	1524	1515	1498	1472	1443	1416
13	1421	1399	1390	1385	1393	1408	1430	1457	1487	1515	1534	1541	1527	1511	1484	1452	1421
14	1426	1403	1392	1387	1397	1411	1434	1467	1497	1529	1548	1557	1539	1523	1493	1459	1425
15	1432	1409	1394	1391	1401	1415	1442	1475	1509	1541	1564	1569	1553	1537	1502	1467	1432
16	1437	1413	1398	1395	1406	1421	1448	1484	1519	1552	1576	1587	1572	1548	1513	1474	1436
17	1443	1420	1403	1400	1409	1429	1454	1490	1529	1564	1590	1600	1592	1558	1523	1482	1443
18	1450	1424	1409	1406	1416	1436	1463	1501	1537	1577	1604	1615	1610	1573	1534	1491	1450
19	1461	1430	1417	1413	1423	1443	1473	1508	1550	1593	1623	1630	1629	1588	1549	1503	1459
20	1471	1435	1422	1419	1431	1452	1482	1522	1564	1609	1642	1649	1648	1609	1564	1515	1469
25	1520	1475	1453	1447	1464	1495	1540	1594	1652	1721	1763	1778	1747	1711	1652	1582	1520
30	1584	1528	1500	1496	1513	1557	1623	1699	1783	1867	1931	1960	1921	1850	1763	1670	1583
35	1706	1626	1589	1582	1615	1682	1764	1864	1978	2116	2212	2225	2199	2088	1957	1822	1706
40	1915	1779	1729	1716	1785	1889	2024	2181	2359	2548	2662	2676	2566	2468	2280	2083	1909
45	2232	2034	1957	1972	2067	2209	2389	2599	2802	2965	3059	3071	2964	2867	2669	2438	2218
50	2558	2383	2299	2326	2404	2534	2645	2734	2795	2887	2934	2898	2960	2939	2862	2714	2541
55	2556	2560	2518	2502	2514	2497	2340	2178	2105	2090	2071	1997	2259	2372	2499	2564	2581
60	1979	2135	2114	2033	1958	1790	1496	1263	1181	1120	1104	1070	1294	1449	1643	1858	2043
65	1146	1249	1244	1181	1038	912	812	672	628	592	594	594	688	773	878	1015	1112
70	576	645	648	616	493	498	461	416	328	371	370	389	359	438	474	526	553
75	291	374	385	366	268	304	284	260	181	223	234	248	210	265	299	323	293
80	156	220	240	226	146	181	135	142	86	119	111	140	115	156	182	205	165
85	72	114	103	120	62	80	46	42	24	38	37	47	52	76	79	115	78
90	17	31	20	17	2	1	1	1	1	1	1	1	2	12	17	26	17
95	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1
105	1	1	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2
110	2	2	2	2	2	2	3	3	3	3	3	3	3	2	2	2	2
115	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
120	3	3	3	3	3	3	4	4	3	4	3	3	3	3	3	3	3
125	3	4	4	3	4	4	4	3	4	3	4	3	4	3	4	3	3
130	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4
135	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
140	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
145	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
150	4	4	4	4	4	4	4	4	4	4	3	3	4	3	4	4	4
155	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	4	4
160	4	3	4	4	4	4	3	3	3	3	3	3	3	4	3	3	3
165	3	4	4	4	4	4	4	4	4	3	4	3	3	3	3	4	4
170	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
175	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
180	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4





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