

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P633037

Luminaire Tested: GWS-SA2D-830-U-SLL-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633037  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-37)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2D-830-U-SLL-W  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

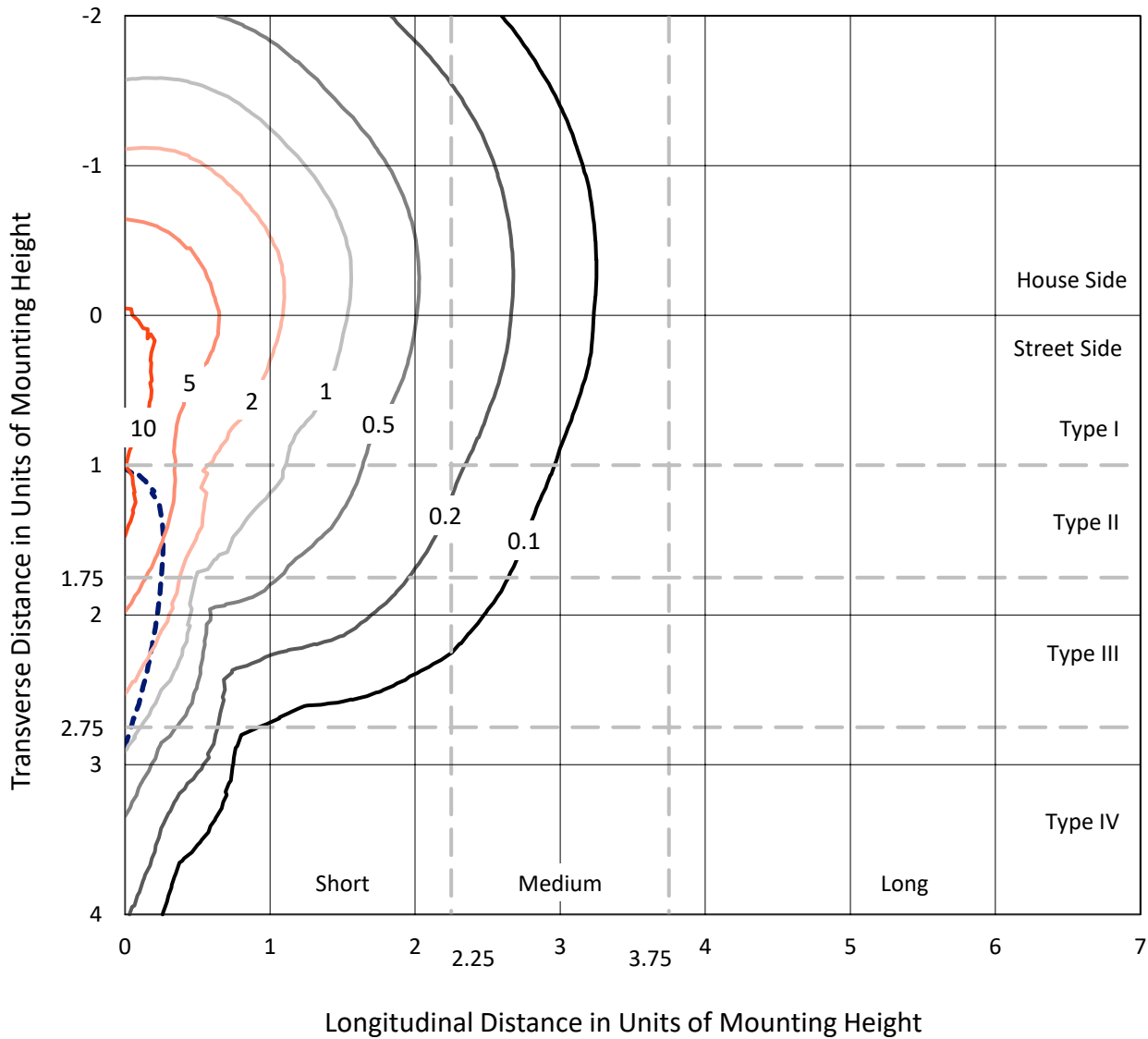
Lumens per Lamp: N/A  
Luminaire Lumens: 8693.2 lumens  
Efficiency: N/A  
Efficacy: 105.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 82.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

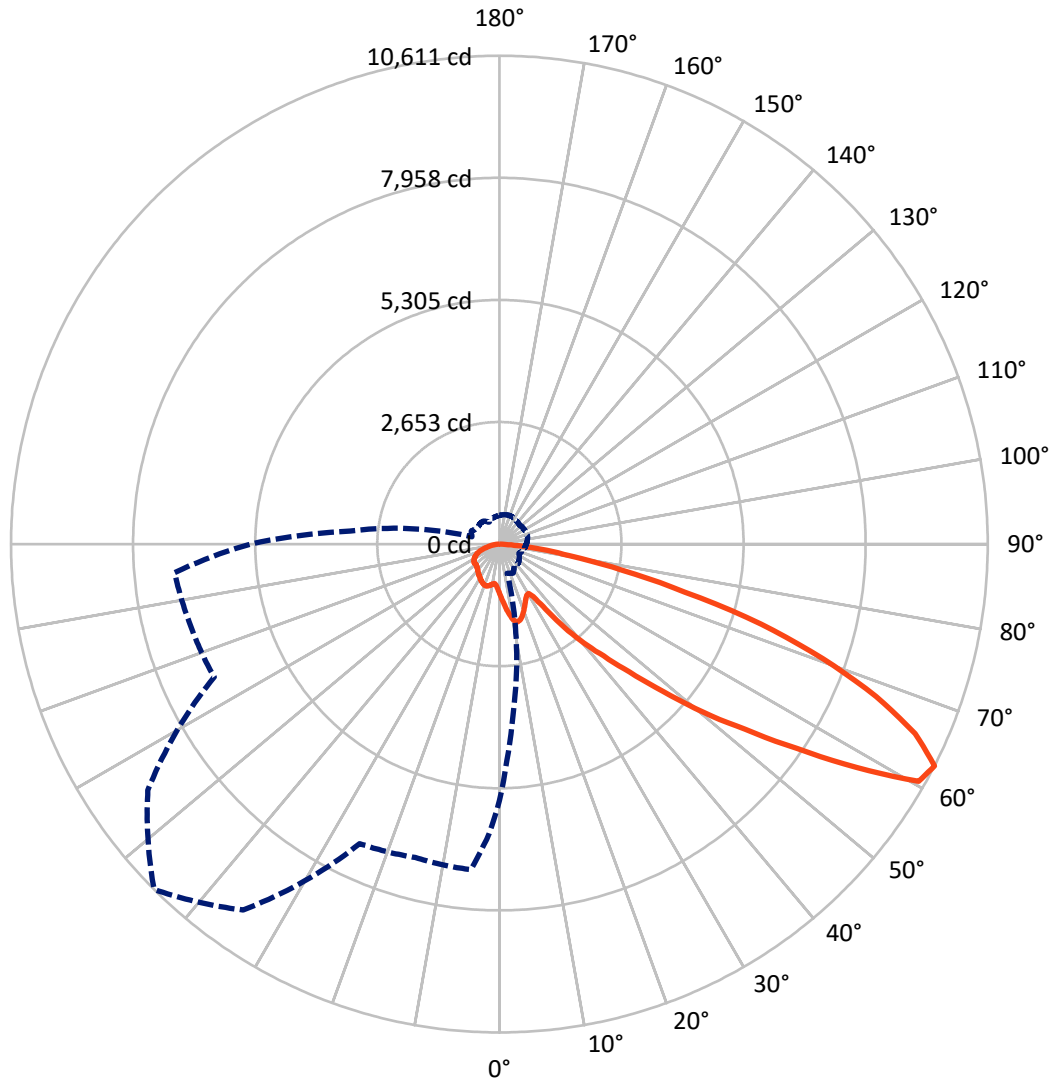
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.5 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 62.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2078.6	0.0	2078.6
	% Fixture	23.9	0.0	23.9
<b>Street Side</b>	Lumens	6614.6	0.0	6614.6
	% Fixture	76.1	0.0	76.1
<b>Total</b>	Lumens	8693.2	0.0	8693.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.8	1.2
10°-20°	347.0	4.0
20°-30°	546.3	6.3
30°-40°	748.8	8.6
40°-50°	1168.4	13.4
50°-60°	2014.5	23.2
60°-70°	2334.5	26.9
70°-80°	1232.3	14.2
80°-90°	194.7	2.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	8693.2	100.0
0°-180°	8693.2	100.0

**Coefficient of Utilization**



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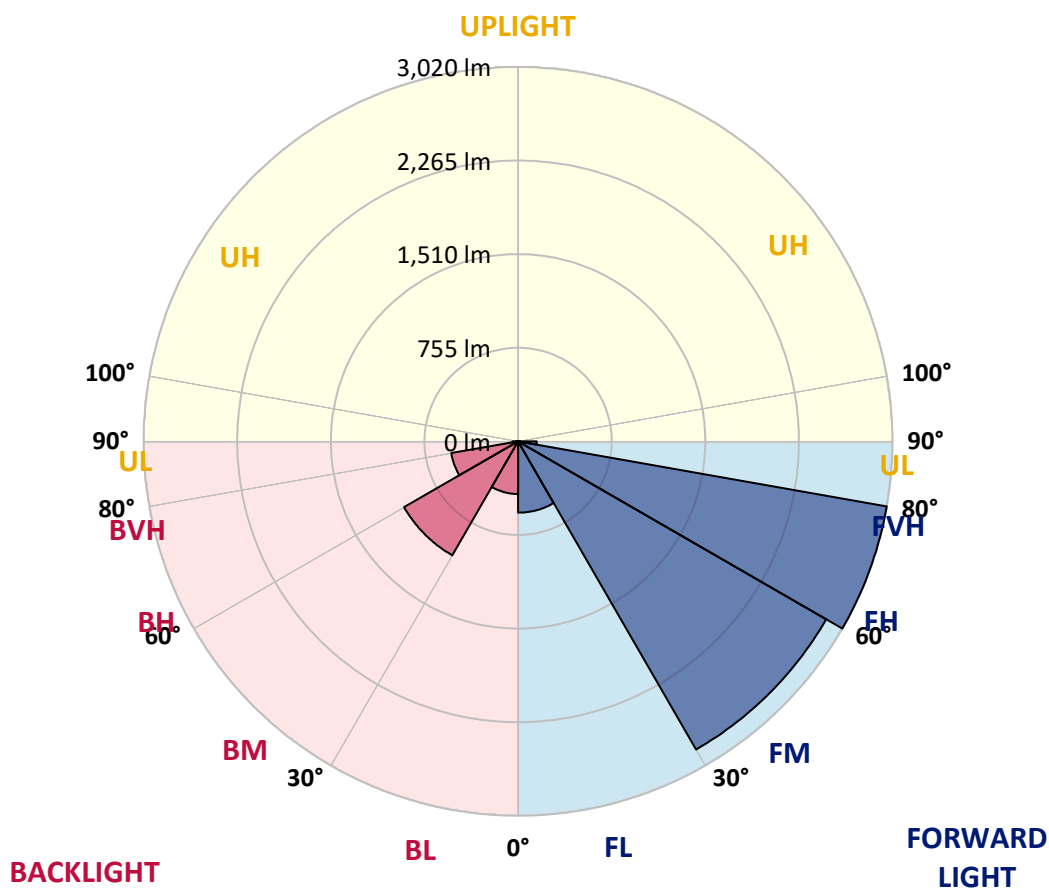
CATALOG NUMBER: GWS-SA2D-830-U-SLL-W

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	574.9	6.6			
FM (30°-60°)	2869.9	33.0			
FH (60°-80°)	3019.5	34.7			G2/5000
FVH (80°-90°)	150.2	1.7			G2/225
BL (0°-30°)	425.1	4.9	B1/500		
BM (30°-60°)	1061.7	12.2	B2/2500		
BH (60°-80°)	547.3	6.3	B2/1000		G2/1000
BVH (80°-90°)	44.4	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	2°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9
2.5°	1177.6	1173.0	1166.3	1143.7	1129.7	1113.8	1097.2	1077.9	1055.9	1040.6	1025.3
5°	1277.4	1270.0	1254.1	1200.2	1163.0	1122.4	1088.5	1049.9	1012.0	986.1	960.2
7.5°	1373.1	1363.8	1339.2	1256.7	1196.2	1137.7	1086.5	1030.7	974.1	935.6	905.0
10°	1468.9	1449.6	1418.3	1310.6	1230.8	1163.0	1104.5	1036.0	960.8	908.3	875.7
12.5°	1542.0	1524.1	1490.1	1359.8	1265.4	1180.3	1114.4	1051.3	987.4	931.6	898.3
15°	1610.5	1587.2	1548.7	1405.7	1294.0	1179.6	1094.5	1039.3	1030.0	1016.0	972.8
17.5°	1659.7	1638.4	1598.5	1442.9	1309.9	1159.0	1039.3	1006.7	1048.6	1091.2	1049.9
20°	1702.9	1678.3	1637.8	1468.9	1313.3	1113.1	972.2	972.8	1038.6	1097.2	1087.2
22.5°	1739.5	1712.2	1676.3	1498.1	1311.9	1049.3	913.6	953.5	1019.4	1065.2	1066.6
25°	1784.7	1762.1	1732.2	1541.3	1311.9	984.1	871.1	930.3	986.8	1025.3	1024.0
27.5°	1839.9	1824.6	1800.0	1607.2	1323.9	929.6	847.1	900.3	944.9	978.1	977.5
30°	1901.7	1887.8	1869.2	1677.0	1344.5	889.0	833.8	863.1	895.7	922.3	922.3
32.5°	1964.9	1959.6	1939.6	1732.8	1328.6	876.4	822.5	825.9	843.2	865.1	863.1
35°	2052.7	2047.4	2022.1	1776.1	1259.4	858.4	804.6	788.0	790.0	803.9	808.6
37.5°	2181.0	2173.0	2135.8	1826.6	1155.0	813.2	775.3	748.1	742.1	748.1	756.7
40°	2336.0	2324.0	2273.5	1895.1	1034.7	752.1	729.4	706.8	696.9	698.9	708.8
42.5°	2530.1	2504.9	2432.4	1967.6	915.6	698.2	678.2	664.3	653.0	651.6	670.9
45°	2845.3	2776.1	2661.1	2032.1	815.2	669.6	632.4	622.4	613.1	618.4	641.0
47.5°	3395.9	3268.2	3044.1	2087.3	754.0	670.3	595.8	585.2	584.5	595.1	620.4
50°	4152.6	3968.4	3622.6	2124.5	722.1	678.2	573.8	556.6	569.2	579.8	603.8
52.5°	4877.4	4596.1	4184.5	2123.8	708.2	679.6	579.8	530.0	569.2	571.9	594.5
55°	5496.4	4987.1	4336.1	1905.7	688.2	674.3	603.1	509.3	561.9	571.9	589.8
57.5°	5988.5	5235.8	4324.8	1539.4	748.7	645.0	617.1	504.7	540.6	573.2	593.8
60°	5934.0	5122.1	4046.2	944.9	742.7	593.1	615.1	513.3	504.7	555.2	589.1
62.5°	5571.6	4714.5	3566.8	655.6	697.5	563.2	582.5	528.6	471.4	529.3	566.5
65°	5064.2	4188.5	2972.3	502.7	577.8	564.5	527.3	518.0	442.2	488.1	528.0
67.5°	4393.3	3536.2	2346.6	398.3	403.0	488.7	478.8	460.1	414.9	451.5	487.4
70°	3302.8	2580.7	1614.5	320.5	305.2	408.3	430.2	413.6	388.3	399.0	436.9
72.5°	2327.3	1685.0	884.4	254.0	235.4	313.9	373.7	371.0	343.1	351.1	388.3
75°	1729.5	1192.2	552.6	200.8	191.5	224.8	313.2	321.2	297.9	307.2	335.8
77.5°	1151.0	772.0	307.2	148.9	148.9	164.2	233.4	270.6	253.3	260.7	280.6
80°	635.0	393.0	153.6	97.7	100.4	113.0	170.2	194.8	195.5	213.4	218.8
82.5°	200.8	125.0	68.5	57.2	53.9	64.5	109.7	139.6	130.3	166.2	152.9
85°	45.9	29.3	12.6	12.6	14.0	21.3	41.9	74.5	95.1	114.4	83.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	29.3	43.2	38.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9
2.5°	1016.0	1002.7	998.7	987.4	986.1	975.5	971.5	971.5	976.1	976.1	980.8
5°	949.5	932.9	923.6	910.3	907.0	899.0	893.7	894.4	900.3	904.3	912.3
7.5°	891.0	879.7	873.1	867.1	865.8	864.4	858.4	857.8	859.8	865.8	871.7
10°	866.4	858.4	860.4	865.1	872.4	876.4	871.1	868.4	866.4	870.4	875.7
12.5°	890.4	882.4	886.4	894.4	904.3	908.3	906.3	905.7	907.7	922.9	934.2
15°	942.9	927.6	922.3	925.6	933.6	937.6	935.6	938.2	950.9	990.8	1019.4
17.5°	1008.1	970.8	949.5	943.6	946.9	950.2	950.2	956.9	978.8	1037.3	1073.2
20°	1043.3	994.8	958.9	944.2	945.6	948.9	948.9	958.2	982.8	1045.3	1068.6
22.5°	1034.0	989.4	945.6	929.6	930.3	932.9	932.9	940.9	962.8	1018.0	1028.7
25°	997.4	958.2	915.0	901.0	902.3	907.0	905.7	910.3	926.9	972.2	978.1
27.5°	953.5	919.0	876.4	865.8	871.7	881.1	873.1	873.7	889.0	926.9	927.6
30°	906.3	877.7	839.8	831.8	843.2	847.8	840.5	840.5	855.8	881.7	881.1
32.5°	855.1	837.2	809.9	801.3	813.9	821.2	811.9	813.2	825.2	842.5	835.8
35°	807.2	797.9	785.3	779.3	787.3	793.9	788.0	790.6	801.9	806.6	797.3
37.5°	761.4	760.0	761.4	761.4	763.4	765.4	761.4	768.0	778.0	772.0	761.4
40°	721.5	726.8	739.4	736.1	734.1	736.1	733.4	744.7	754.7	744.1	731.4
42.5°	688.2	698.2	717.5	717.5	713.5	714.8	713.5	727.5	734.8	720.1	706.2
45°	659.6	674.3	698.9	702.2	695.5	695.5	698.2	715.5	718.1	698.2	683.6
47.5°	639.7	657.6	685.6	691.5	681.6	680.9	688.2	706.8	706.8	683.6	666.9
50°	625.7	645.7	678.9	686.9	676.9	674.3	686.2	704.2	700.2	672.3	655.6
52.5°	616.4	637.0	678.2	689.5	682.9	680.2	692.2	704.8	694.9	664.9	647.7
55°	610.4	633.0	680.2	689.5	682.2	677.6	689.5	700.9	695.5	661.0	644.3
57.5°	613.7	636.4	677.6	682.2	673.6	665.6	679.6	695.5	693.5	662.3	645.7
60°	608.4	629.0	663.0	664.3	649.7	637.0	657.6	681.6	681.6	657.6	643.0
62.5°	583.8	604.4	634.4	635.7	619.1	605.1	629.0	657.6	657.0	637.7	622.4
65°	543.3	562.5	596.5	599.8	583.2	568.5	593.1	619.7	621.7	604.4	591.1
67.5°	498.7	516.0	541.3	554.6	540.6	525.3	547.9	573.2	572.5	551.9	537.9
70°	445.5	461.5	484.7	496.0	487.4	472.8	493.4	506.7	500.7	490.7	481.4
72.5°	393.0	408.3	430.2	430.2	420.9	406.9	412.9	436.9	444.2	436.9	430.9
75°	337.8	351.1	366.4	369.7	349.1	323.8	351.8	372.4	381.0	377.7	370.4
77.5°	281.3	291.2	313.9	307.9	269.3	256.0	278.6	309.2	315.2	313.2	303.2
80°	216.8	222.8	246.7	234.7	204.8	196.2	206.1	230.1	231.4	224.8	212.1
82.5°	145.6	153.6	169.6	146.3	145.6	137.6	129.7	132.3	144.3	143.0	134.3
85°	74.5	78.5	93.8	87.8	75.1	65.2	61.8	65.8	59.2	53.9	46.5
87.5°	31.3	33.9	46.5	25.9	8.0	0.0	0.0	4.0	6.0	8.6	9.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9
2.5°	991.4	998.7	1016.7	1039.3	1061.3	1083.9	1108.5	1123.8	1142.4	1166.3	1167.0
5°	922.3	938.9	964.8	999.4	1035.3	1076.5	1124.4	1164.3	1212.2	1250.1	1265.4
7.5°	879.7	903.7	936.2	980.1	1027.3	1078.5	1141.0	1208.2	1286.7	1337.2	1367.1
10°	883.7	920.3	952.9	990.1	1032.7	1087.9	1168.3	1257.4	1353.8	1420.3	1457.6
12.5°	954.9	993.4	987.4	985.5	1014.0	1081.2	1190.3	1307.3	1425.0	1491.5	1536.0
15°	1044.6	1059.3	1002.7	960.2	977.5	1057.3	1202.2	1351.8	1484.2	1565.3	1609.2
17.5°	1090.5	1061.3	992.8	928.9	924.3	1020.7	1208.2	1397.1	1550.7	1631.8	1678.3
20°	1069.2	1026.7	968.8	908.3	875.1	970.8	1204.9	1433.0	1611.2	1701.6	1739.5
22.5°	1023.4	986.1	940.9	883.0	835.2	916.3	1196.2	1468.9	1665.0	1756.1	1789.4
25°	973.5	945.6	908.3	857.8	812.6	868.4	1190.3	1516.7	1726.9	1814.0	1835.3
27.5°	923.6	903.0	872.4	833.2	807.2	835.2	1192.2	1579.2	1806.7	1889.1	1880.5
30°	874.4	856.5	835.2	817.9	806.6	827.2	1186.9	1645.7	1894.4	1970.9	1919.7
32.5°	827.9	811.2	797.9	800.6	807.2	830.5	1159.7	1706.3	1974.9	2040.1	1962.3
35°	788.0	770.7	770.7	780.0	804.6	819.2	1089.2	1753.5	2064.0	2129.2	2022.8
37.5°	750.7	735.4	745.4	760.7	784.0	788.6	998.7	1799.3	2193.7	2254.8	2116.5
40°	718.1	702.8	720.8	740.1	752.1	750.1	907.0	1863.2	2346.6	2409.8	2240.9
42.5°	692.2	678.2	694.2	718.8	720.8	722.8	839.8	1924.4	2524.1	2604.6	2455.0
45°	670.9	661.0	668.9	693.5	693.5	724.1	797.9	1975.6	2791.4	2933.7	2848.0
47.5°	654.3	648.3	652.3	660.3	673.6	748.1	771.3	2014.8	3278.2	3557.5	3471.0
50°	645.0	639.0	644.3	627.7	667.6	760.0	762.7	2044.7	3919.9	4357.4	4250.3
52.5°	637.0	635.0	638.3	599.8	680.9	752.1	756.0	2004.8	4350.1	5144.7	5250.4
55°	634.4	635.7	619.7	579.2	696.9	725.5	736.1	1719.6	4467.1	5823.6	6479.9
57.5°	635.7	631.7	591.1	581.2	697.5	672.3	764.7	1226.8	4296.9	6118.8	7682.8
60°	631.0	611.1	556.6	599.1	666.9	609.8	744.1	799.9	3848.0	5892.1	7752.6
62.5°	610.4	581.2	526.6	609.1	612.4	572.5	675.6	616.4	3249.6	5406.7	7079.7
65°	580.5	541.3	501.4	588.5	557.2	555.2	508.0	494.1	2613.2	4828.8	6441.3
67.5°	531.3	492.1	482.8	541.3	501.4	492.1	408.3	409.6	2085.3	4213.1	5799.7
70°	475.4	436.2	443.5	489.4	446.2	408.9	330.5	341.1	1581.9	3510.3	4934.6
72.5°	438.9	386.3	387.0	430.9	392.3	331.1	272.0	281.3	1004.1	2645.8	3923.2
75°	370.4	340.5	325.8	349.1	333.1	258.0	228.7	226.7	595.1	1896.4	2937.7
77.5°	309.2	285.9	278.6	287.9	248.7	190.8	184.2	180.9	337.1	1214.9	1925.0
80°	224.1	218.1	217.4	222.1	191.5	140.3	140.3	141.0	181.5	659.6	1085.2
82.5°	142.3	155.6	137.6	152.9	130.3	99.7	93.1	105.7	104.4	281.3	457.5
85°	59.2	81.1	75.8	80.5	61.8	54.5	58.5	63.2	60.5	108.4	178.2
87.5°	11.3	13.3	14.6	14.0	14.0	17.3	19.3	23.3	23.3	31.3	53.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: GWS-SA2D-830-U-SLL-W

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	358°	360°
0°	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9	1083.9
2.5°	1192.2	1211.5	1207.5	1216.2	1204.9	1208.9	1186.3	1180.3	1176.3	1177.6
5°	1314.6	1353.8	1361.1	1375.8	1365.8	1365.8	1325.9	1296.0	1285.3	1277.4
7.5°	1438.9	1495.5	1532.7	1536.7	1531.4	1520.7	1462.9	1409.0	1389.7	1373.1
10°	1549.3	1617.1	1659.0	1679.0	1669.0	1652.4	1580.6	1506.8	1483.5	1468.9
12.5°	1633.8	1693.6	1721.5	1734.8	1733.5	1727.5	1669.0	1589.2	1564.6	1542.0
15°	1688.3	1718.2	1707.6	1706.9	1716.2	1740.2	1722.2	1659.7	1631.1	1610.5
17.5°	1723.5	1694.9	1647.7	1625.8	1645.7	1702.3	1743.5	1708.2	1682.3	1659.7
20°	1736.2	1634.4	1565.9	1525.4	1548.7	1630.4	1732.2	1743.5	1721.5	1702.9
22.5°	1721.5	1560.6	1467.5	1419.7	1442.3	1540.0	1698.9	1772.1	1757.5	1739.5
25°	1685.6	1483.5	1371.8	1328.6	1353.2	1452.9	1639.8	1798.7	1799.3	1784.7
27.5°	1641.1	1412.3	1304.6	1264.1	1288.0	1381.1	1581.9	1822.0	1845.2	1839.9
30°	1595.9	1369.8	1272.7	1244.1	1262.1	1344.5	1522.7	1845.9	1892.4	1901.7
32.5°	1575.3	1390.4	1347.8	1360.5	1337.2	1365.8	1501.4	1879.8	1949.6	1964.9
35°	1602.5	1573.3	1681.0	1730.9	1648.4	1540.0	1528.7	1931.0	2030.1	2052.7
37.5°	1734.8	1964.9	2125.8	2301.4	2158.4	1919.7	1663.7	2018.1	2145.1	2181.0
40°	2022.8	2306.7	2597.3	2824.0	2607.9	2286.7	1920.4	2147.8	2303.4	2336.0
42.5°	2294.1	2627.2	3027.5	3320.7	3040.1	2586.6	2197.0	2365.9	2512.2	2530.1
45°	2560.0	2941.7	3548.2	3955.8	3574.7	2871.9	2479.6	2734.3	2844.6	2845.3
47.5°	2871.9	3296.1	4201.1	4781.6	4284.2	3187.8	2744.9	3317.4	3471.0	3395.9
50°	3244.9	3648.6	4873.4	5742.5	5149.3	3576.1	3082.0	4028.2	4237.7	4152.6
52.5°	3744.3	4036.9	5614.1	6679.4	6092.2	4018.3	3570.8	4967.1	5036.3	4877.4
55°	4447.2	4597.4	6565.0	7836.4	7144.8	4562.9	4285.6	6145.4	5951.9	5496.4
57.5°	6047.7	5484.5	7785.9	9156.3	8335.8	5552.3	5852.2	7444.7	6756.5	5988.5
60°	7386.9	6561.7	8915.6	10466.3	9356.5	6642.8	7323.1	7670.8	6726.6	5934.0
62.5°	6935.4	6836.3	9323.2	10610.5	9704.9	7179.4	7049.8	7101.0	6287.7	5571.6
65°	6084.9	6306.3	8959.5	9926.3	9318.6	6698.7	6376.8	6574.3	5785.7	5064.2
67.5°	5582.9	5745.8	8312.5	8831.1	8616.4	6178.7	5853.5	5710.6	5006.4	4393.3
70°	5069.5	5204.5	7404.2	7456.7	7521.2	5314.2	4786.3	4360.7	3731.7	3302.8
72.5°	4380.7	4388.0	6255.8	5951.3	6073.6	4158.6	3852.7	3260.2	2716.3	2327.3
75°	3675.2	3474.3	4951.9	4159.9	4405.3	3235.0	3199.1	2457.0	2048.7	1729.5
77.5°	2802.1	2567.4	3617.3	2735.6	3094.0	2154.4	2405.1	1666.4	1441.6	1151.0
80°	1881.1	1734.8	1998.8	1544.0	2024.1	1484.8	1568.6	944.2	818.5	635.0
82.5°	992.1	847.1	1235.5	915.6	1220.8	815.9	588.5	291.9	248.7	200.8
85°	384.3	444.8	605.8	325.8	473.4	291.2	170.2	72.5	60.5	45.9
87.5°	74.5	115.0	63.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2408-195-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/07/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **GALN-SB1A-830-U-5WQ**  
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

**Spectral Parameters**

CCT (K): 3050  
 CIE u': 0.2476  
 CIE v': 0.5251  
 Duv: 0.0034  
 CIE x: 0.4383  
 CIE y: 0.4131  
 CIE z: 0.1487  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 581  
 Purity: 55.55201  
 Rf: 81.5  
 Rg: 99.2

CRI (Ra):	81.0		
R1:	79.6	R9:	7.1
R2:	85.6	R10:	67.0
R3:	92.0	R11:	82.7
R4:	82.6	R12:	63.2
R5:	78.9	R13:	80.3
R6:	81.7	R14:	95.0
R7:	85.2	R15:	71.7
R8:	62.0		



**Test Conditions**

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

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Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

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**CIE 1931 Chromaticity Diagram**



**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



CCT = 3050K  
 CIE x = 0.4383  
 CIE y = 0.4131  
 Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.27**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			



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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.32

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

**Summary**

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 81.0$   
 $R_9 = 7.1$



**Color Vector Graphics**



**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 95
CES08 = 41	CES33 = 71	CES58 = 78	CES83 = 90
CES09 = 29	CES34 = 82	CES59 = 92	CES84 = 94
CES10 = 76	CES35 = 90	CES60 = 95	CES85 = 86
CES11 = 59	CES36 = 93	CES61 = 93	CES86 = 72
CES12 = 65	CES37 = 87	CES62 = 83	CES87 = 85
CES13 = 43	CES38 = 75	CES63 = 77	CES88 = 83
CES14 = 74	CES39 = 94	CES64 = 83	CES89 = 75
CES15 = 71	CES40 = 89	CES65 = 77	CES90 = 81
CES16 = 47	CES41 = 85	CES66 = 80	CES91 = 96
CES17 = 50	CES42 = 86	CES67 = 79	CES92 = 73
CES18 = 56	CES43 = 81	CES68 = 84	CES93 = 84
CES19 = 72	CES44 = 99	CES69 = 91	CES94 = 64
CES20 = 66	CES45 = 87	CES70 = 78	CES95 = 80
CES21 = 87	CES46 = 82	CES71 = 76	CES96 = 84
CES22 = 79	CES47 = 77	CES72 = 92	CES97 = 87
CES23 = 92	CES48 = 71	CES73 = 71	CES98 = 81
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 74
CES25 = 72	CES50 = 89	CES75 = 74	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)