

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: P636983

Luminaire Tested: GWS-SA4B-830-U-RW-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636983  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-49)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4B-830-U-RW-W  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

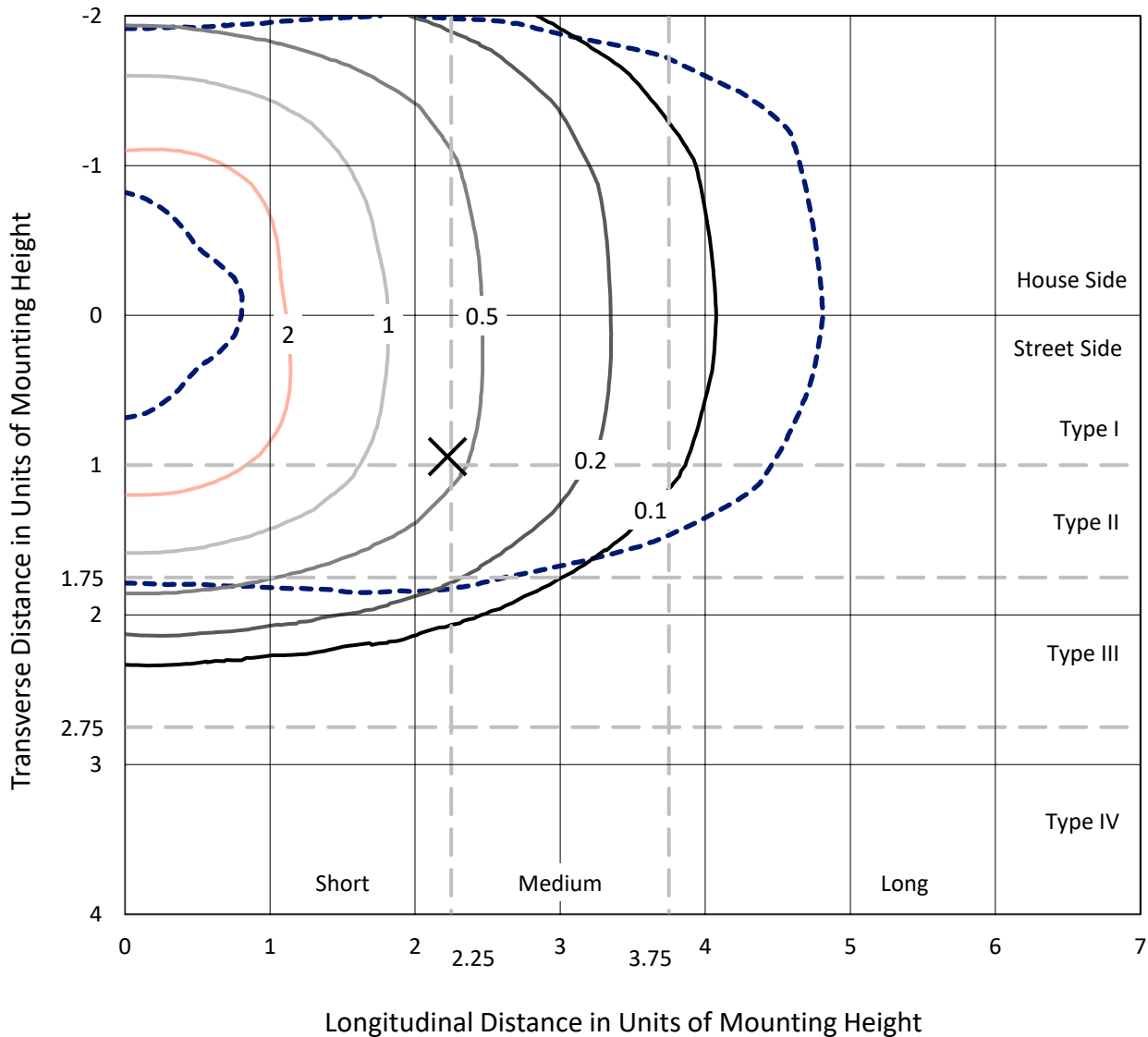
Lumens per Lamp: N/A  
Luminaire Lumens: 11836.6 lumens  
Efficiency: N/A  
Efficacy: 125.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 94.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
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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 CATALOG NUMBER: GWS-SA4B-830-U-RW-W

### Iso-Footcandle Lines of Horizontal Illumination

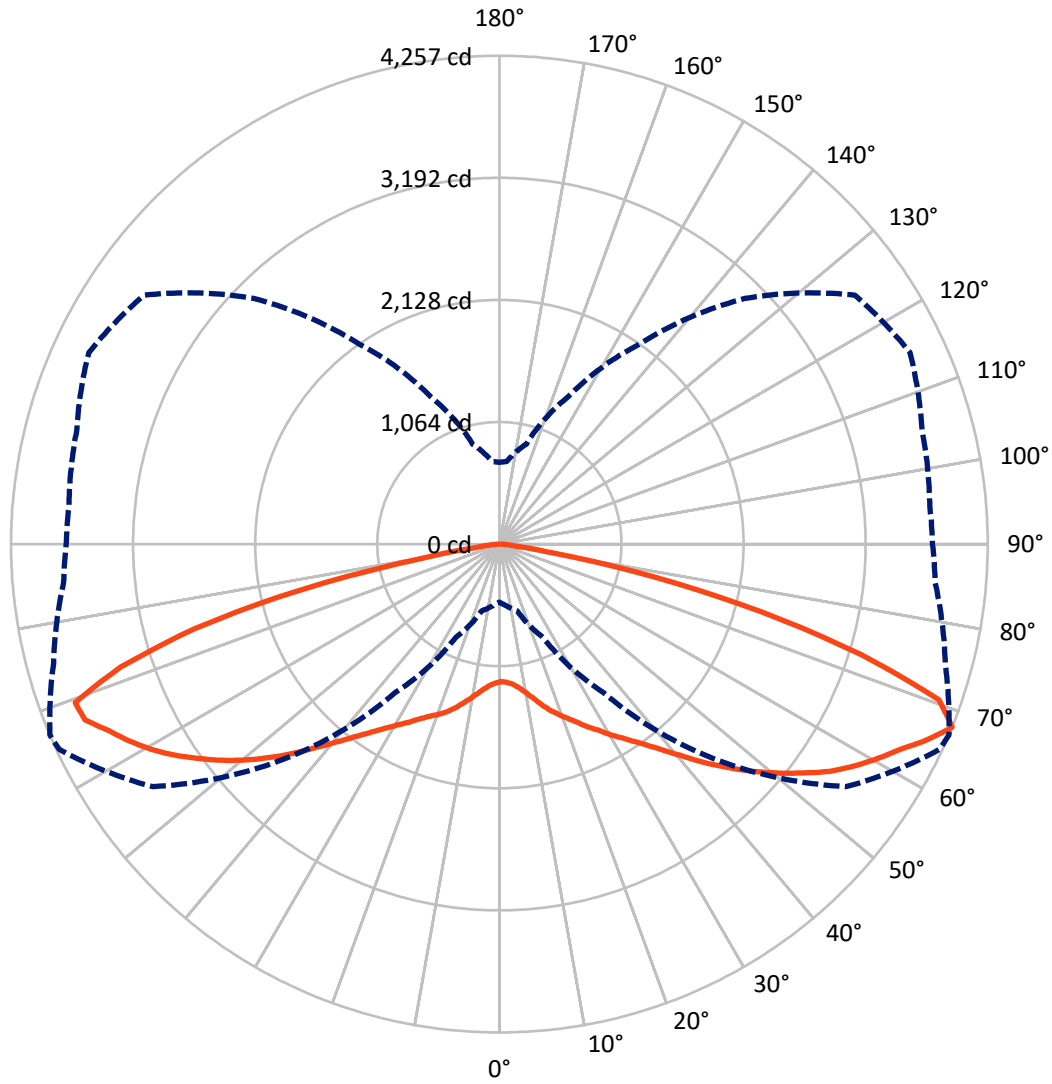
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.5 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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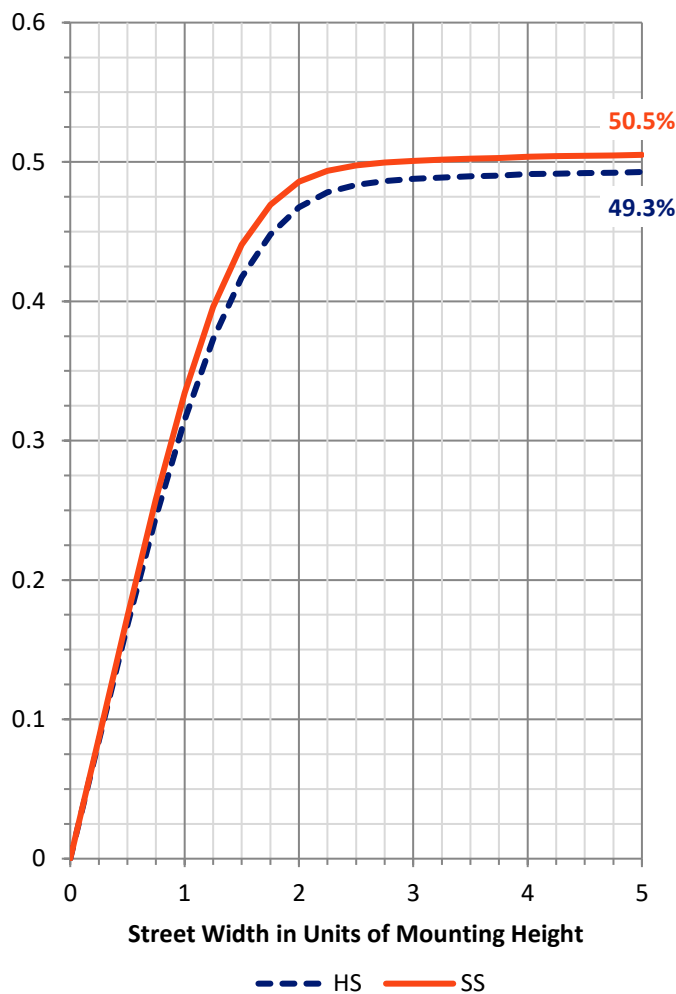
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	5853.0	0.0	5853.0
	% Fixture	49.4	0.0	49.4
<b>Street Side</b>	Lumens	5983.6	0.0	5983.6
	% Fixture	50.6	0.0	50.6
<b>Total</b>	Lumens	11836.6	0.0	11836.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.6	1.0
10°-20°	397.3	3.4
20°-30°	779.4	6.6
30°-40°	1327.9	11.2
40°-50°	2132.3	18.0
50°-60°	2897.4	24.5
60°-70°	2771.5	23.4
70°-80°	1317.7	11.1
80°-90°	95.5	0.8
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°	11836.6	100.0
0°-180°	11836.6	100.0

**Coefficient of Utilization**



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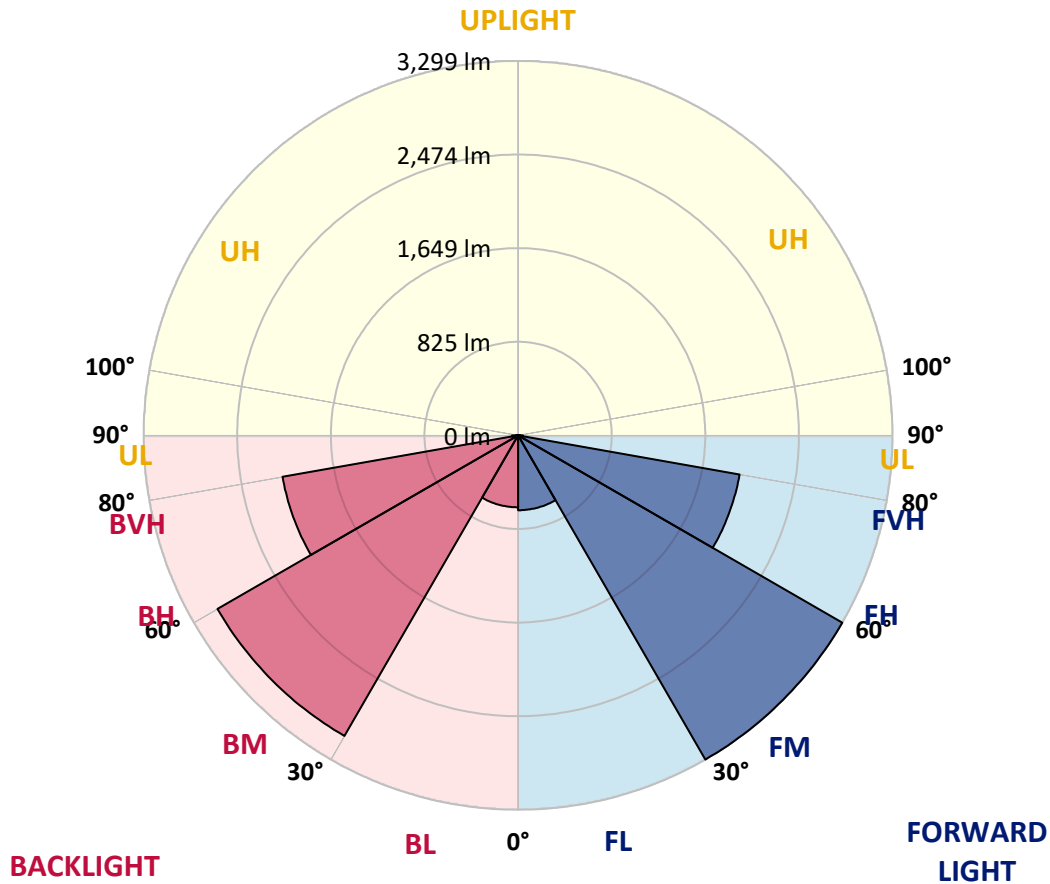
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	660.0	5.6			
FM (30°-60°)	3299.0	27.9			
FH (60°-80°)	1981.8	16.7			G2/5000
FVH (80°-90°)	42.9	0.4			G1/100
BL (0°-30°)	634.3	5.4	B2/1000		
BM (30°-60°)	3058.6	25.8	B3/5000		
BH (60°-80°)	2107.5	17.8	B3/2500		G3/2500
BVH (80°-90°)	52.6	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	67°	75°	85°
0°	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5
2.5°	1173.8	1175.4	1177.9	1182.9	1187.8	1195.2	1202.6	1201.8	1205.1	1207.6	1210.1
5°	1167.2	1168.8	1173.0	1179.6	1187.0	1199.3	1215.0	1221.6	1226.5	1235.6	1243.9
7.5°	1181.2	1184.5	1190.3	1199.3	1210.9	1226.5	1248.0	1259.5	1266.9	1283.4	1297.4
10°	1200.2	1204.3	1215.8	1233.1	1250.5	1274.4	1301.6	1318.9	1323.8	1345.2	1371.6
12.5°	1218.3	1223.3	1242.2	1273.5	1304.9	1337.0	1369.2	1390.6	1392.2	1421.1	1450.8
15°	1247.2	1251.3	1276.8	1317.2	1365.0	1409.5	1449.1	1463.9	1470.5	1491.1	1528.2
17.5°	1310.6	1315.6	1348.5	1392.2	1442.5	1489.5	1529.1	1541.4	1541.4	1558.7	1589.2
20°	1379.0	1384.0	1427.7	1483.7	1544.7	1592.5	1623.0	1611.5	1607.4	1612.3	1633.7
22.5°	1455.7	1464.8	1506.8	1571.9	1646.9	1705.5	1721.1	1686.5	1675.0	1663.4	1668.4
25°	1553.8	1564.5	1605.7	1675.0	1748.3	1810.1	1819.2	1765.6	1759.0	1718.7	1703.8
27.5°	1666.7	1675.0	1726.1	1794.5	1862.9	1914.8	1924.7	1858.8	1836.5	1780.5	1745.9
30°	1812.6	1820.0	1864.6	1932.1	1991.5	2027.8	2040.1	1949.5	1932.1	1846.4	1792.8
32.5°	1971.7	1975.0	2020.3	2085.5	2138.2	2172.8	2155.5	2050.0	2024.5	1928.0	1854.7
35°	2153.9	2153.9	2212.4	2265.2	2307.2	2317.1	2284.1	2163.8	2134.1	2029.4	1937.9
37.5°	2332.7	2337.7	2392.1	2454.7	2491.8	2490.2	2430.0	2298.1	2264.3	2150.6	2049.2
40°	2526.5	2537.2	2591.6	2661.6	2697.1	2692.1	2599.8	2453.1	2418.5	2284.1	2185.2
42.5°	2704.5	2721.8	2785.3	2857.0	2895.7	2892.4	2796.0	2631.1	2597.3	2445.7	2346.8
45°	2846.3	2864.4	2943.5	3043.3	3105.1	3099.3	3002.1	2815.8	2774.6	2615.5	2506.7
47.5°	2970.8	2989.7	3077.9	3183.4	3281.5	3291.4	3202.4	3002.1	2958.4	2797.6	2674.8
50°	3066.4	3075.4	3174.4	3289.8	3403.5	3458.7	3381.2	3189.2	3136.4	2977.3	2838.9
52.5°	3059.0	3071.3	3193.3	3349.9	3502.4	3593.1	3539.5	3365.6	3314.5	3141.4	3006.2
55°	2908.1	2920.5	3065.5	3293.9	3557.6	3691.2	3685.4	3533.7	3496.7	3308.7	3180.1
57.5°	2688.0	2715.2	2859.5	3105.9	3485.1	3769.5	3792.6	3687.1	3648.3	3472.7	3352.4
60°	2294.0	2330.3	2496.8	2816.6	3252.7	3743.1	3907.1	3816.5	3792.6	3625.2	3508.2
62.5°	1666.7	1693.1	1914.8	2334.4	2908.1	3555.2	4003.6	3950.0	3931.9	3762.1	3649.1
65°	998.2	1058.4	1236.4	1651.1	2345.9	3200.7	3950.8	4124.8	4105.8	3903.0	3769.5
67.5°	505.3	532.5	602.6	895.2	1577.7	2648.5	3686.2	4233.6	4256.6	4023.4	3812.4
70°	313.2	320.6	340.4	441.8	788.0	1740.1	3014.4	3950.0	4062.9	4004.4	3701.1
72.5°	251.4	253.1	256.4	275.3	378.4	813.6	1905.8	3093.6	3297.2	3739.8	3542.0
75°	208.5	209.4	210.2	216.0	235.7	332.2	927.3	2125.9	2364.1	3178.5	3284.0
77.5°	167.3	163.2	166.5	169.0	173.9	185.5	319.8	1134.2	1375.7	2086.3	2539.6
80°	108.8	107.2	113.8	116.2	121.2	128.6	170.6	384.9	467.4	759.2	807.8
82.5°	58.5	55.2	69.2	66.8	69.2	75.0	100.6	141.0	158.3	229.2	193.7
85°	18.1	18.1	19.0	22.3	27.2	26.4	43.7	69.2	76.7	98.1	72.5
87.5°	3.3	3.3	3.3	3.3	3.3	4.1	9.1	14.0	19.0	33.8	25.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P636983  
 CATALOG NUMBER: GWS-SA4B-830-U-RW-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5	1198.5
2.5°	1215.0	1207.6	1211.7	1214.2	1213.4	1211.7	1203.5	1201.8	1197.7	1191.1	1189.5
5°	1251.3	1243.0	1243.9	1241.4	1233.1	1222.4	1204.3	1195.2	1187.8	1179.6	1178.7
7.5°	1308.2	1299.1	1296.6	1285.1	1262.0	1237.3	1208.4	1191.9	1179.6	1168.8	1167.2
10°	1380.7	1371.6	1363.4	1336.2	1298.3	1265.3	1227.4	1203.5	1185.3	1172.1	1169.7
12.5°	1461.5	1454.1	1433.4	1393.9	1348.5	1309.8	1271.1	1241.4	1215.0	1195.2	1192.8
15°	1551.3	1534.8	1503.5	1452.4	1409.5	1378.2	1331.2	1290.8	1248.8	1222.4	1216.7
17.5°	1614.0	1600.0	1562.9	1513.4	1479.6	1452.4	1397.2	1339.5	1282.6	1243.9	1235.6
20°	1658.5	1643.6	1601.6	1565.3	1554.6	1531.5	1467.2	1400.5	1334.5	1286.7	1276.0
22.5°	1690.6	1675.0	1632.1	1614.0	1628.8	1624.7	1562.0	1486.2	1407.9	1351.0	1337.8
25°	1721.1	1706.3	1668.4	1675.0	1714.5	1726.9	1659.3	1571.1	1482.1	1415.3	1399.6
27.5°	1750.0	1731.0	1713.7	1750.0	1806.0	1829.1	1757.4	1657.7	1561.2	1492.8	1480.4
30°	1794.5	1772.2	1769.8	1822.5	1911.5	1931.3	1852.2	1752.4	1656.8	1587.6	1571.9
32.5°	1850.5	1829.9	1831.6	1910.7	2013.7	2030.2	1962.6	1869.5	1773.9	1704.6	1683.2
35°	1926.4	1900.8	1914.8	2012.1	2116.0	2146.5	2092.1	2014.6	1921.4	1850.5	1826.6
37.5°	2031.1	1994.0	2022.8	2125.0	2229.7	2275.0	2233.0	2175.3	2083.0	2011.3	1989.0
40°	2164.6	2134.1	2145.6	2258.6	2366.5	2420.9	2394.6	2337.7	2246.2	2171.2	2145.6
42.5°	2322.9	2292.4	2288.2	2408.6	2516.6	2599.0	2573.4	2521.5	2426.7	2341.0	2316.3
45°	2477.8	2449.8	2455.6	2578.4	2699.6	2789.4	2763.9	2702.9	2599.8	2500.9	2481.1
47.5°	2639.4	2616.3	2621.3	2751.5	2885.0	2974.9	2942.7	2868.5	2748.2	2642.7	2618.8
50°	2805.1	2778.7	2786.1	2922.9	3067.2	3152.1	3102.6	2993.0	2860.3	2757.3	2736.7
52.5°	2969.9	2938.6	2957.6	3087.0	3236.2	3303.8	3212.3	3079.6	2951.0	2848.8	2825.7
55°	3159.5	3126.5	3105.9	3244.4	3392.0	3420.0	3294.7	3139.7	2987.2	2871.0	2857.0
57.5°	3332.6	3304.6	3265.8	3404.3	3513.1	3492.5	3358.2	3123.2	2899.0	2749.8	2730.1
60°	3487.6	3463.7	3429.9	3547.8	3597.2	3551.1	3307.1	2927.9	2681.4	2525.6	2516.6
62.5°	3630.2	3604.6	3573.3	3673.9	3667.3	3560.1	3074.6	2627.8	2298.1	2130.8	2116.0
65°	3743.1	3720.0	3711.0	3790.1	3779.4	3382.9	2712.7	2136.6	1679.1	1490.3	1484.6
67.5°	3775.3	3766.2	3814.8	3949.2	3781.9	3026.8	2127.5	1417.0	901.8	722.9	712.2
70°	3654.9	3654.1	3793.4	3985.5	3438.9	2312.1	1255.4	638.8	453.4	402.3	395.7
72.5°	3498.3	3495.8	3606.3	3438.1	2550.4	1265.3	528.4	342.1	283.6	269.5	269.5
75°	3241.1	3234.5	3317.8	2615.5	1434.3	476.4	280.3	234.9	222.6	220.1	220.1
77.5°	2641.9	2586.6	2455.6	1616.4	500.3	234.1	185.5	184.6	177.2	176.4	176.4
80°	868.8	868.8	1009.8	616.6	220.9	144.3	131.1	137.7	130.2	125.3	124.5
82.5°	141.8	195.4	277.8	176.4	119.5	89.8	80.8	85.7	89.8	71.7	71.7
85°	56.1	73.4	107.2	82.4	55.2	36.3	38.7	42.9	37.9	33.0	32.1
87.5°	21.4	26.4	37.9	19.8	11.5	6.6	4.1	4.1	3.3	3.3	3.3
90°	0.0	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

REPORT NUMBER: SP1-2408-195-9

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



Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

$\lambda$ (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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**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)