

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: P639479

Luminaire Tested: GWS-SA5B-830-U-T2-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639479  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-21)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5B-830-U-T2-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS W/ FACTORY INSALLED GLARE SHIELD, WH  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

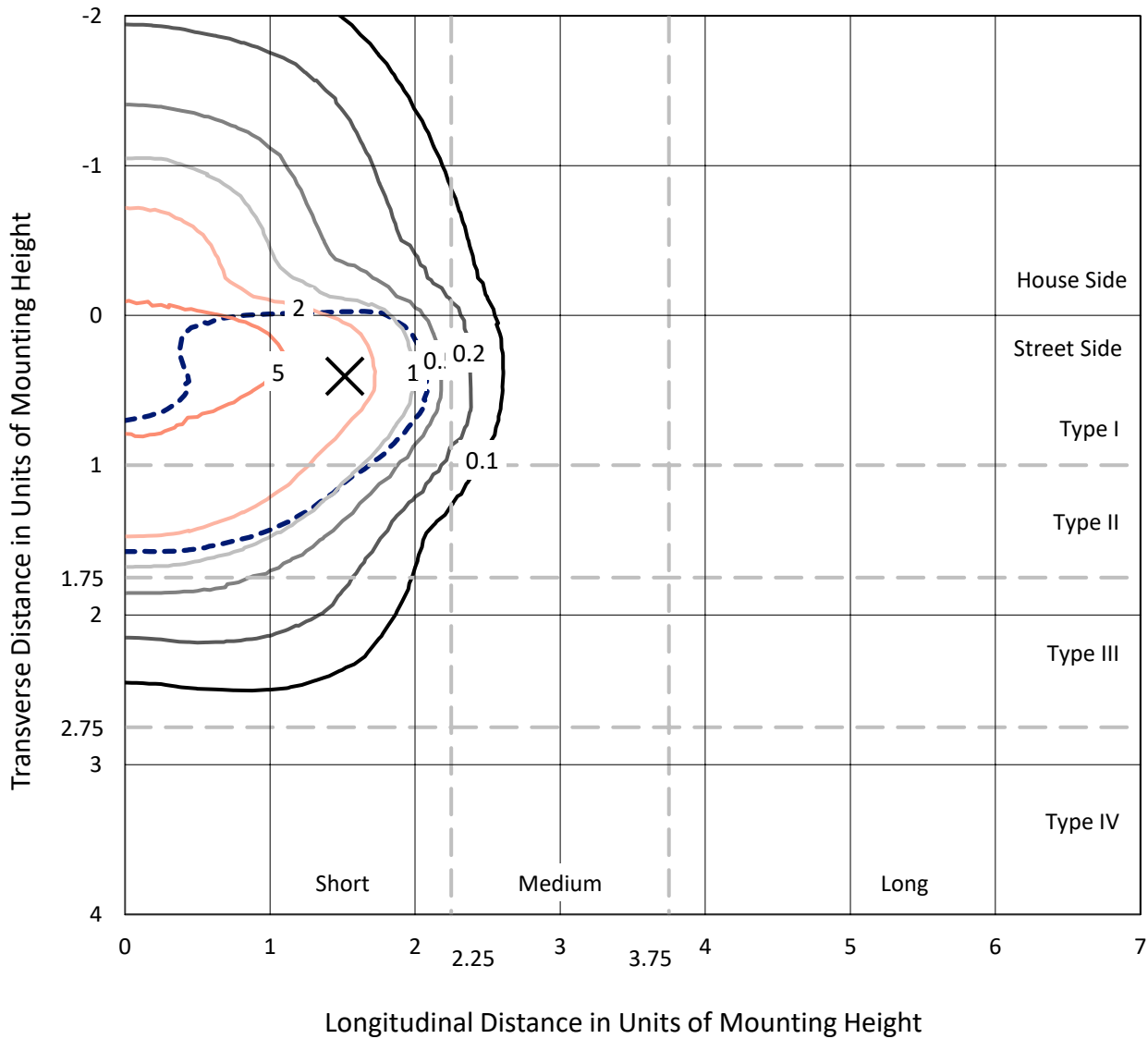
Lumens per Lamp: N/A  
Luminaire Lumens: 11759.7 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 115.7  
Input Voltage (V): 120  
Input Current (Ain): 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



REPORT NUMBER: P639479  
 CATALOG NUMBER: GWS-SA5B-830-U-T2-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

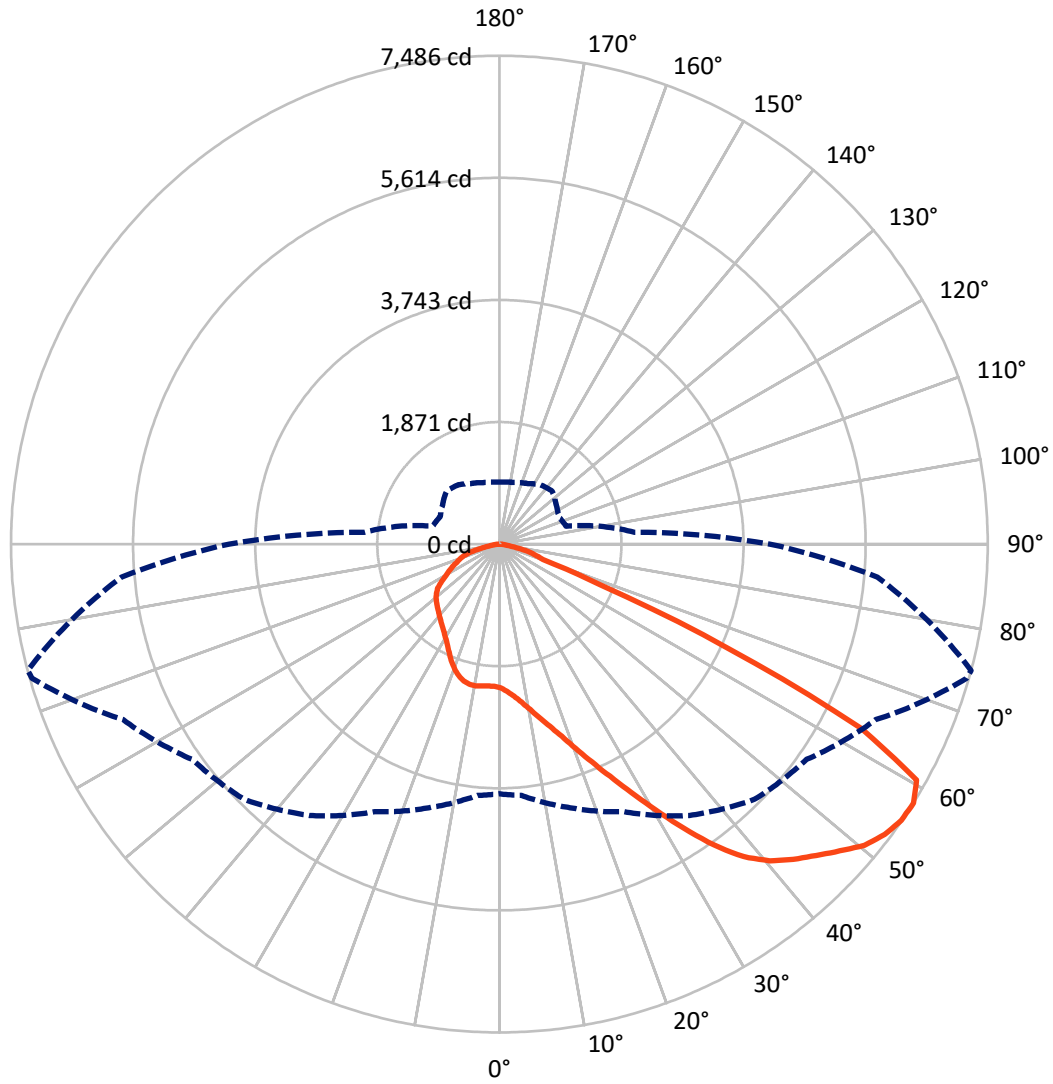
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.8 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3181.2	0.0	3181.2
	% Fixture	27.1	0.0	27.1
<b>Street Side</b>	Lumens	8578.5	0.0	8578.5
	% Fixture	72.9	0.0	72.9
<b>Total</b>	Lumens	11759.7	0.0	11759.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	220.4	1.9
10°-20°	701.7	6.0
20°-30°	1244.4	10.6
30°-40°	1904.9	16.2
40°-50°	2652.4	22.6
50°-60°	3039.2	25.8
60°-70°	1561.6	13.3
70°-80°	393.1	3.3
80°-90°	42.0	0.4
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°	11759.7	100.0
0°-180°	11759.7	100.0

**Coefficient of Utilization**



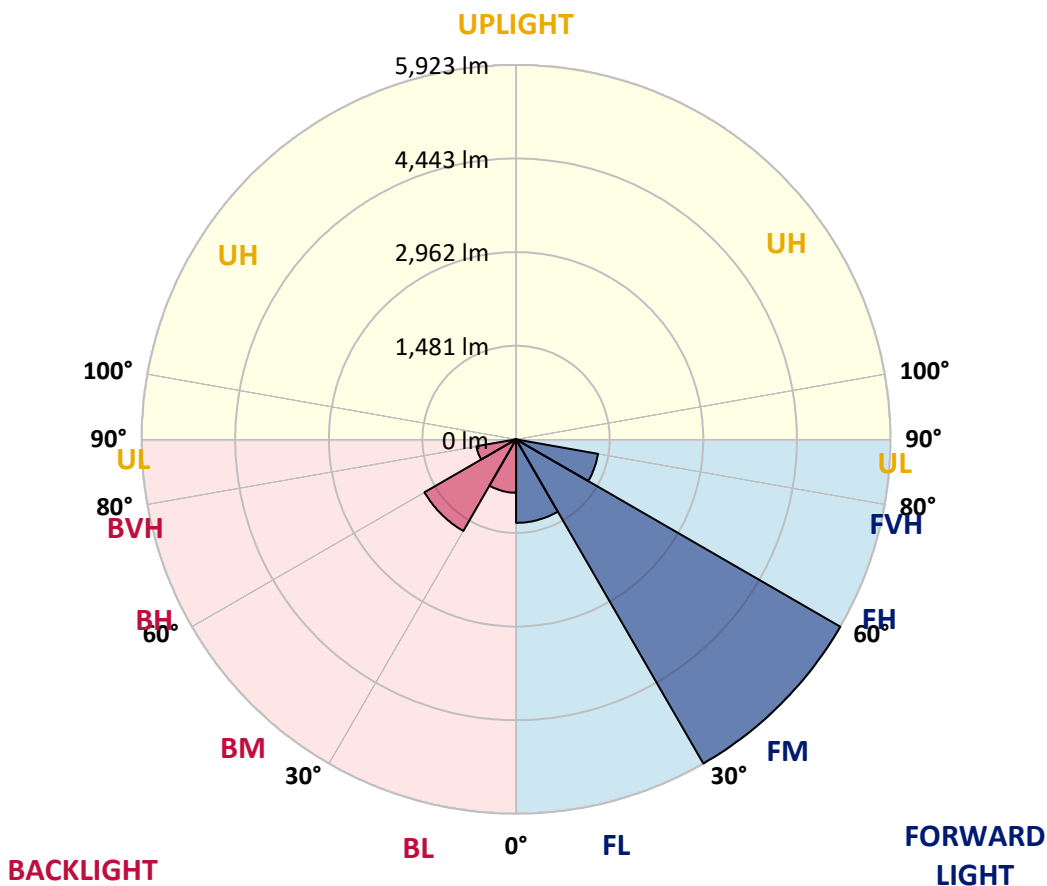
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1321.3	11.2			
FM (30°-60°)	5923.5	50.4			
FH (60°-80°)	1318.1	11.2			G1/1800
FVH (80°-90°)	15.6	0.1			G1/100
BL (0°-30°)	845.1	7.2	B2/1000		
BM (30°-60°)	1673.0	14.2	B2/2500		
BH (60°-80°)	636.6	5.4	B2/1000		G2/1000
BVH (80°-90°)	26.5	0.2			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 II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	74°	75°	85°
0°	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3
2.5°	2366.1	2372.2	2366.1	2376.2	2356.0	2346.9	2324.7	2291.3	2265.0	2261.0	2231.6
5°	2550.1	2563.3	2555.2	2551.2	2523.9	2503.6	2470.3	2403.5	2348.9	2340.8	2283.2
7.5°	2668.5	2677.6	2677.6	2680.6	2670.5	2647.2	2611.8	2533.0	2456.1	2444.0	2357.0
10°	2707.9	2715.0	2728.1	2753.4	2773.6	2780.7	2757.4	2681.6	2587.6	2575.4	2454.1
12.5°	2717.0	2725.1	2745.3	2791.8	2847.4	2898.0	2902.0	2846.4	2741.3	2728.1	2566.3
15°	2734.2	2742.3	2769.6	2827.2	2909.1	3006.2	3065.8	3027.4	2911.1	2897.0	2693.7
17.5°	2732.2	2741.3	2781.7	2858.6	2968.8	3109.3	3224.6	3240.8	3120.4	3096.2	2838.3
20°	2727.1	2735.2	2778.7	2872.7	3009.2	3202.3	3410.6	3494.6	3365.1	3342.9	3007.2
22.5°	2767.5	2776.6	2810.0	2887.9	3030.5	3274.1	3582.5	3784.8	3655.3	3624.0	3201.3
25°	2858.6	2871.7	2891.9	2945.5	3068.9	3337.8	3758.5	4113.4	3980.9	3943.5	3412.7
27.5°	2999.1	3015.3	3043.6	3068.9	3154.8	3418.7	3933.4	4481.5	4349.0	4309.6	3636.1
30°	3171.0	3192.2	3228.6	3245.8	3304.5	3538.1	4123.5	4860.7	4783.8	4729.2	3887.9
32.5°	3408.6	3437.9	3472.3	3477.4	3512.8	3719.1	4311.6	5236.8	5235.8	5197.4	4174.1
35°	3718.0	3749.4	3756.5	3763.5	3780.7	3967.8	4539.1	5579.6	5712.1	5667.6	4485.5
37.5°	4055.8	4101.3	4112.4	4081.0	4105.3	4267.1	4794.9	5854.6	6126.6	6079.1	4786.8
40°	4416.8	4435.0	4465.3	4415.7	4446.1	4609.9	5045.7	6030.6	6436.0	6385.5	5024.5
42.5°	4675.6	4709.0	4754.5	4736.3	4753.5	4903.1	5221.6	6115.5	6656.5	6605.9	5195.3
45°	4956.7	4966.8	4996.1	4992.1	5002.2	5141.8	5348.0	6152.9	6853.7	6808.1	5341.0
47.5°	5201.4	5216.6	5235.8	5213.5	5191.3	5282.3	5451.2	6185.3	7081.2	7026.6	5493.6
50°	5437.0	5450.2	5473.4	5408.7	5325.8	5349.0	5501.7	6229.8	7294.5	7256.1	5614.0
52.5°	5480.5	5494.7	5603.9	5617.0	5510.8	5428.9	5590.7	6327.8	7419.9	7395.6	5657.4
55°	4933.5	4958.7	5176.1	5425.9	5687.8	5661.5	5733.3	6379.4	7469.4	7475.5	5735.3
57.5°	3829.3	3865.7	4183.2	4526.0	5077.0	5533.1	5751.5	6366.3	7452.3	7485.6	5815.2
60°	2511.7	2533.0	2909.1	3293.4	3864.7	4495.6	5147.8	6129.7	7299.6	7347.1	5795.0
62.5°	1516.7	1541.0	1843.3	2134.6	2471.3	2892.9	3491.5	4926.4	6118.5	6224.7	4641.2
65°	1058.7	1091.0	1356.0	1595.6	1711.9	1624.9	1768.5	2751.4	3812.1	3856.6	2836.3
67.5°	767.5	789.7	1007.1	1292.3	1420.7	1147.7	874.7	1218.4	1660.3	1676.5	1169.9
70°	502.5	527.8	725.0	983.9	1159.8	930.3	654.2	659.3	698.7	706.8	679.5
72.5°	276.0	291.2	447.9	653.2	685.6	556.1	510.6	548.0	575.4	575.4	582.4
75°	142.6	155.7	183.0	215.4	259.9	304.4	368.1	423.7	453.0	455.0	452.0
77.5°	72.8	77.9	98.1	106.2	116.3	135.5	175.9	225.5	251.8	261.9	259.9
80°	34.4	36.4	41.5	48.5	59.7	75.8	95.0	113.3	129.4	131.5	142.6
82.5°	18.2	20.2	22.2	26.3	32.4	40.4	55.6	66.7	76.8	78.9	88.0
85°	7.1	8.1	9.1	10.1	14.2	17.2	23.3	31.3	38.4	38.4	45.5
87.5°	0.0	0.0	0.0	0.0	1.0	2.0	4.0	5.1	7.1	7.1	12.1
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°	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3	2202.3
2.5°	2224.6	2195.2	2182.1	2160.9	2143.7	2124.5	2109.3	2098.2	2091.1	2087.0	2083.0
5°	2261.0	2216.5	2181.1	2138.6	2109.3	2081.0	2057.7	2041.5	2033.4	2027.4	2023.3
7.5°	2317.6	2257.9	2191.2	2125.5	2073.9	2028.4	1999.1	1981.9	1970.8	1966.7	1963.7
10°	2395.4	2312.5	2202.3	2098.2	2021.3	1971.8	1951.5	1943.5	1944.5	1942.4	1941.4
12.5°	2483.4	2370.2	2199.3	2049.6	1964.7	1935.4	1936.4	1949.5	1964.7	1968.7	1969.7
15°	2578.5	2426.8	2170.0	1986.9	1920.2	1923.2	1949.5	1980.9	2009.2	2020.3	2022.3
17.5°	2681.6	2474.3	2116.4	1918.2	1883.8	1916.2	1964.7	2016.3	2057.7	2075.9	2081.0
20°	2796.9	2514.8	2040.5	1850.4	1849.4	1903.0	1973.8	2041.5	2094.1	2118.4	2122.4
22.5°	2919.2	2540.0	1947.5	1787.7	1814.0	1885.8	1966.7	2037.5	2093.1	2117.4	2122.4
25°	3042.6	2548.1	1845.4	1730.1	1777.6	1858.5	1932.3	1989.0	2041.5	2062.8	2066.8
27.5°	3157.9	2524.9	1748.3	1680.6	1744.3	1818.1	1867.6	1897.9	1934.4	1950.5	1953.6
30°	3275.2	2478.4	1666.4	1641.1	1706.8	1762.5	1784.7	1786.7	1800.9	1800.9	1802.9
32.5°	3393.5	2409.6	1594.6	1602.7	1660.3	1696.7	1699.8	1676.5	1659.3	1631.0	1630.0
35°	3530.0	2339.8	1536.0	1559.2	1605.7	1628.0	1618.9	1574.4	1532.9	1486.4	1484.4
37.5°	3656.4	2268.0	1486.4	1514.7	1544.0	1560.2	1539.0	1485.4	1451.0	1403.5	1396.4
40°	3760.5	2203.3	1438.9	1468.2	1482.4	1496.5	1462.1	1418.7	1423.7	1397.4	1396.4
42.5°	3821.2	2140.6	1394.4	1416.6	1425.7	1435.8	1405.5	1373.2	1400.5	1380.2	1381.2
45°	3865.7	2086.0	1353.9	1362.0	1384.3	1399.4	1371.1	1334.7	1340.8	1262.9	1244.7
47.5°	3916.2	2055.7	1315.5	1307.4	1346.9	1373.2	1329.7	1277.1	1240.7	1163.8	1156.8
50°	3969.8	2044.6	1275.1	1252.8	1300.4	1325.6	1275.1	1209.3	1161.8	1120.4	1116.3
52.5°	3988.0	2043.6	1224.5	1187.1	1234.6	1270.0	1227.5	1160.8	1104.2	1063.7	1061.7
55°	4059.8	2072.9	1159.8	1097.1	1141.6	1214.4	1183.1	1087.0	1041.5	1023.3	1021.3
57.5°	4143.7	2077.9	1057.7	999.0	1060.7	1146.7	1107.2	1024.3	974.8	952.5	950.5
60°	4109.4	1953.6	948.5	924.2	991.9	1083.0	1046.6	974.8	917.1	895.9	893.9
62.5°	3131.6	1379.2	868.6	859.5	918.1	990.9	983.9	909.0	854.4	839.3	837.2
65°	1883.8	968.7	791.7	790.7	832.2	902.0	911.1	850.4	792.8	771.5	771.5
67.5°	931.3	741.2	704.8	699.7	726.0	775.6	814.0	764.4	715.9	695.7	692.6
70°	658.3	653.2	641.1	626.9	632.0	652.2	668.4	626.9	575.4	555.1	551.1
72.5°	569.3	570.3	562.2	551.1	547.0	532.9	518.7	488.4	457.0	435.8	437.8
75°	441.9	443.9	449.0	444.9	433.8	418.6	403.5	365.0	339.8	319.5	315.5
77.5°	257.8	268.0	284.1	280.1	282.1	260.9	254.8	217.4	194.1	180.0	177.0
80°	145.6	151.7	158.8	163.8	157.7	148.6	135.5	115.3	108.2	98.1	96.1
82.5°	88.0	94.0	97.1	101.1	99.1	87.0	76.8	63.7	57.6	52.6	51.6
85°	44.5	48.5	51.6	53.6	47.5	39.4	35.4	28.3	24.3	21.2	21.2
87.5°	11.1	12.1	14.2	12.1	11.1	5.1	4.0	1.0	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	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**

$\lambda$ (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)