

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: P639489

Luminaire Tested: GWS-SA5B-830-U-T3-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639489  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5B-830-U-T3-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

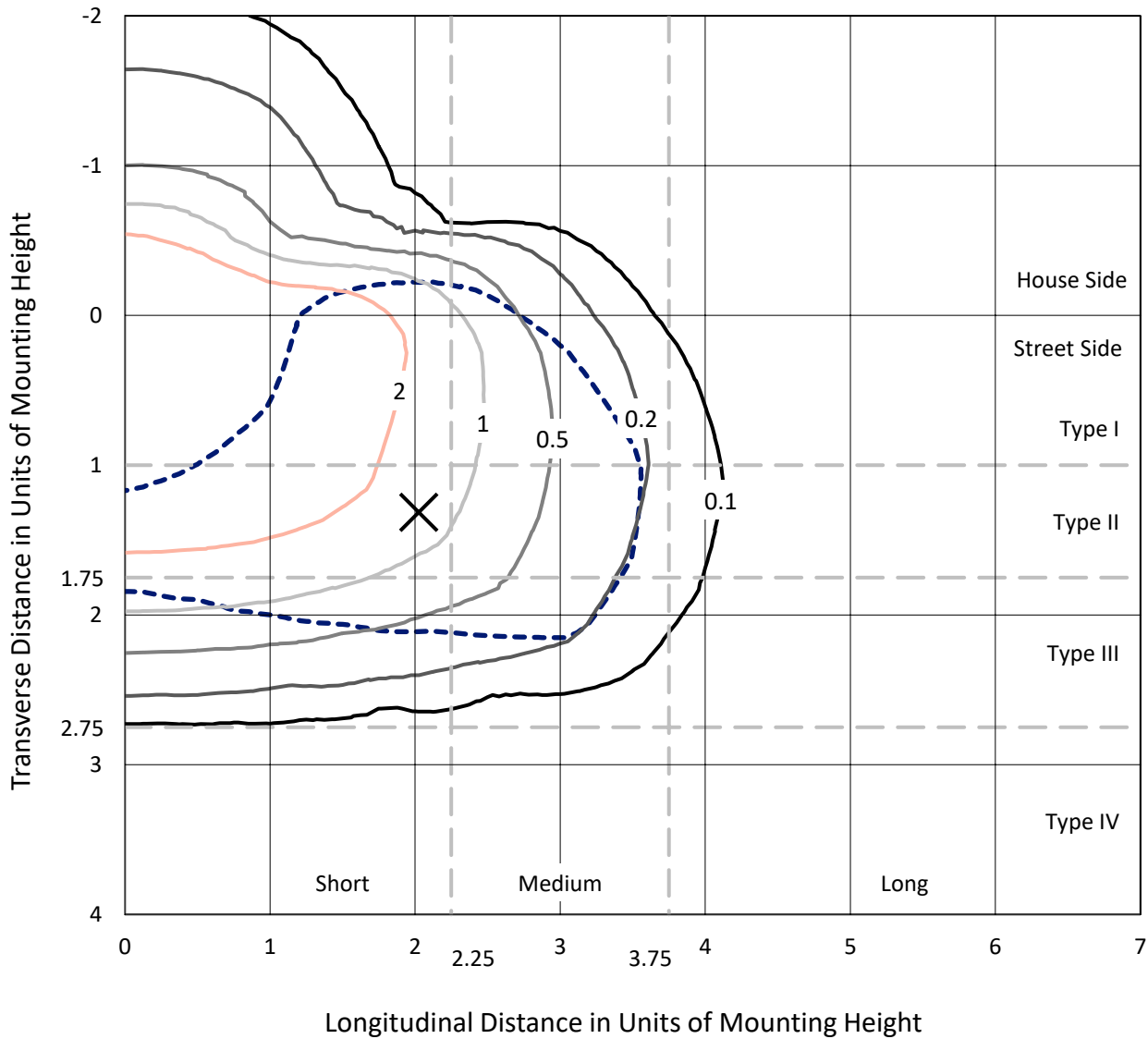
Lumens per Lamp: N/A  
Luminaire Lumens: 14114.6 lumens  
Efficiency: N/A  
Efficacy: 122.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 115.7  
Input Voltage (V): 120  
Input Current (Ain): 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



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### Iso-Footcandle Lines of Horizontal Illumination

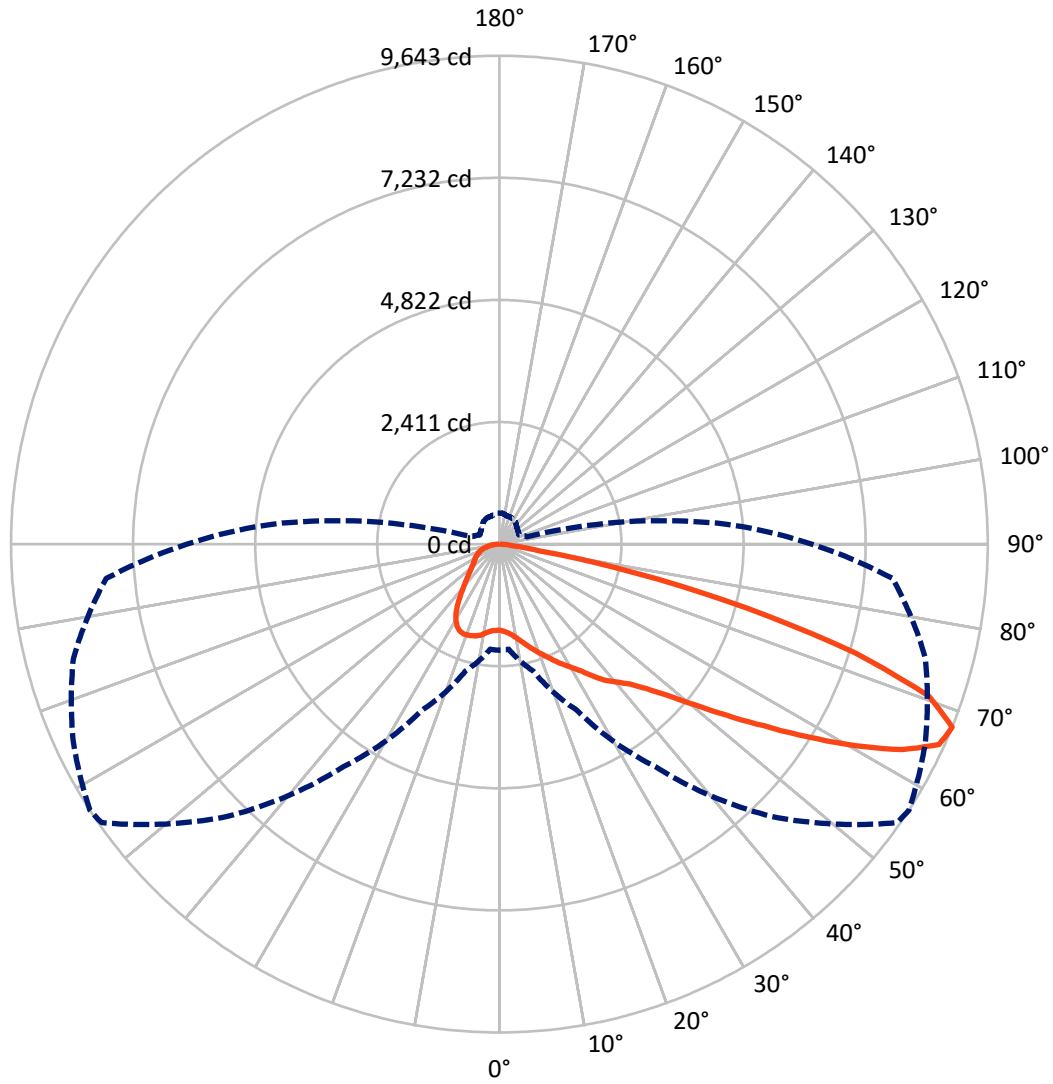
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3103.3	0.0	3103.3
	% Fixture	22.0	0.0	22.0
<b>Street Side</b>	Lumens	11011.3	0.0	11011.3
	% Fixture	78.0	0.0	78.0
<b>Total</b>	Lumens	14114.6	0.0	14114.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.7	1.2
10°-20°	558.4	4.0
20°-30°	995.5	7.1
30°-40°	1447.4	10.3
40°-50°	2094.8	14.8
50°-60°	3278.3	23.2
60°-70°	3824.4	27.1
70°-80°	1596.5	11.3
80°-90°	150.7	1.1
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°	14114.6	100.0
0°-180°	14114.6	100.0

**Coefficient of Utilization**



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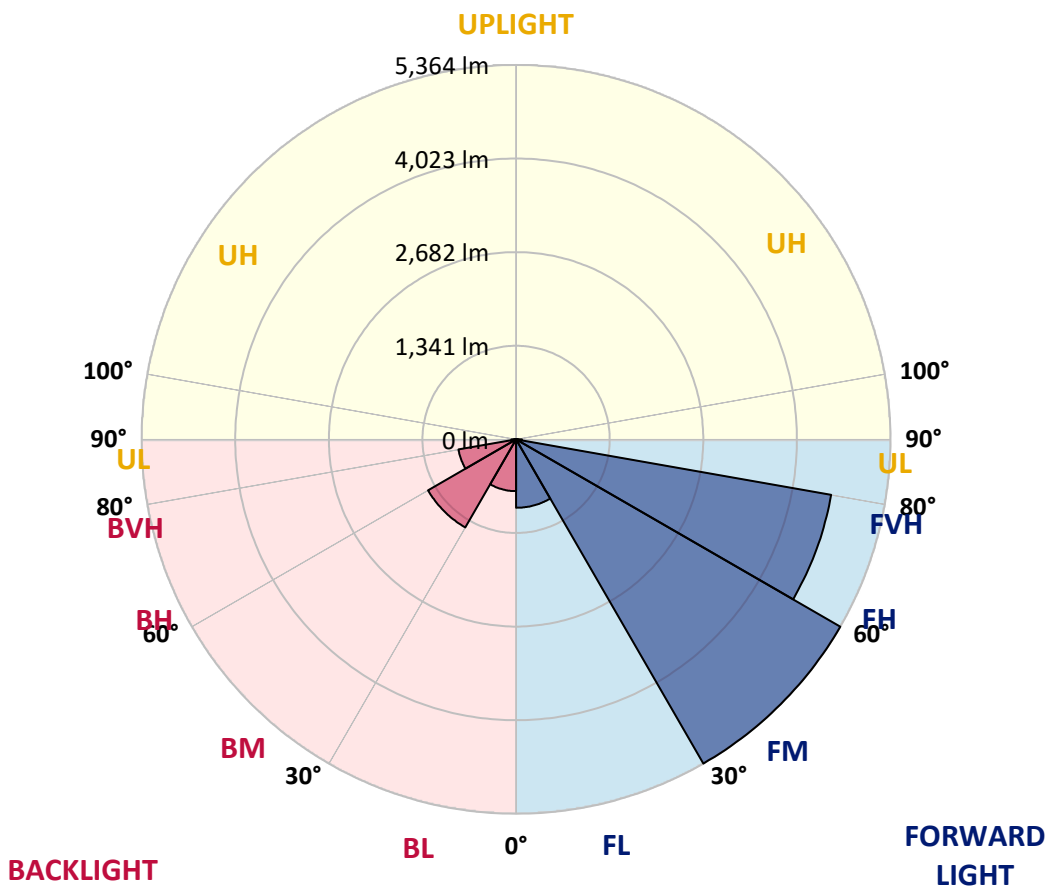
CATALOG NUMBER: GWS-SA5B-830-U-T3-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	980.4	6.9			
FM (30°-60°)	5363.8	38.0			
FH (60°-80°)	4583.3	32.5			G2/5000
FVH (80°-90°)	83.9	0.6			G1/100
BL (0°-30°)	742.2	5.3	B2/1000		
BM (30°-60°)	1456.8	10.3	B2/2500		
BH (60°-80°)	837.6	5.9	B2/1000		G2/1000
BVH (80°-90°)	66.7	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°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7
2.5°	1725.0	1723.0	1721.9	1728.0	1726.0	1725.0	1725.0	1724.0	1721.9	1713.9	1702.7
5°	1772.5	1768.5	1764.4	1769.5	1765.4	1761.4	1760.4	1758.3	1751.3	1739.1	1721.9
7.5°	1822.0	1818.0	1819.0	1822.0	1819.0	1817.0	1814.0	1811.9	1800.8	1781.6	1758.3
10°	1891.8	1891.8	1893.8	1896.9	1897.9	1894.8	1888.8	1885.7	1872.6	1848.3	1816.0
12.5°	1992.9	1990.9	1990.9	1988.9	1991.9	1988.9	1982.8	1977.8	1961.6	1930.2	1883.7
15°	2126.4	2118.3	2111.2	2098.1	2094.0	2082.9	2084.9	2081.9	2066.7	2024.3	1965.6
17.5°	2269.0	2268.0	2256.8	2230.5	2204.3	2186.1	2190.1	2189.1	2181.0	2123.4	2048.5
20°	2394.3	2399.4	2389.3	2369.1	2333.7	2299.3	2297.3	2302.3	2292.2	2234.6	2130.4
22.5°	2534.9	2530.8	2520.7	2494.4	2468.2	2431.8	2419.6	2415.6	2411.5	2345.8	2214.4
25°	2668.4	2680.5	2667.3	2643.1	2602.6	2563.2	2553.1	2557.1	2546.0	2459.1	2304.4
27.5°	2837.2	2842.3	2834.2	2800.8	2766.4	2710.8	2691.6	2691.6	2687.6	2565.2	2375.1
30°	3017.2	3031.4	3017.2	2989.9	2954.5	2874.6	2833.2	2829.1	2817.0	2674.4	2458.0
32.5°	3198.2	3208.3	3198.2	3171.9	3131.5	3061.7	3002.0	2992.9	2976.8	2793.7	2543.0
35°	3359.0	3368.1	3366.0	3372.1	3338.7	3250.8	3214.4	3210.3	3167.9	2949.5	2658.2
37.5°	3534.9	3546.0	3530.9	3543.0	3529.8	3446.9	3435.8	3415.6	3354.9	3096.1	2779.6
40°	3735.1	3745.2	3720.9	3726.0	3710.8	3664.3	3607.7	3580.4	3490.4	3254.8	2970.7
42.5°	3949.5	3972.7	3983.8	3974.7	3939.3	3913.1	3814.0	3779.6	3704.8	3541.0	3285.1
45°	4259.9	4294.3	4310.4	4287.2	4272.0	4234.6	4113.3	4071.8	4032.4	3944.4	3724.0
47.5°	4594.6	4625.9	4677.5	4687.6	4699.7	4671.4	4500.5	4460.1	4467.2	4457.0	4263.9
50°	4861.5	4887.8	5004.1	5128.4	5231.6	5239.7	5021.2	4977.8	5016.2	5048.5	4914.1
52.5°	5055.6	5078.9	5232.6	5489.4	5723.0	5895.9	5660.3	5610.7	5642.1	5714.9	5653.2
55°	5213.4	5245.7	5406.5	5800.8	6273.0	6546.0	6395.4	6332.7	6319.5	6409.5	6444.9
57.5°	5296.3	5306.4	5531.9	6044.5	6676.5	7184.0	7249.8	7179.0	7053.6	7103.2	7287.2
60°	5107.2	5124.4	5432.8	6107.2	6995.0	7817.0	8146.6	8088.0	7821.1	7848.4	8051.6
62.5°	4584.4	4608.7	4979.8	5808.9	7021.3	8239.7	8974.8	8937.3	8579.4	8431.8	8492.4
65°	3677.5	3685.6	4069.8	5070.8	6498.5	8292.2	9552.1	9543.0	9109.2	8763.4	8503.6
67.5°	2097.1	2082.9	2596.6	3616.8	5363.0	7608.7	9589.5	9643.1	9281.1	8708.8	7795.8
70°	909.0	911.0	1147.6	1784.6	3471.2	6149.7	8907.0	8999.0	8783.6	7799.8	6202.2
72.5°	420.6	426.7	528.8	772.5	1482.3	3815.0	7262.9	7345.8	7160.8	6242.7	4512.7
75°	297.3	302.3	352.9	442.9	681.5	1486.4	4858.5	5032.4	5122.4	4669.4	2973.7
77.5°	225.5	232.6	257.8	307.4	420.6	526.8	2324.6	2739.1	3262.9	2905.0	1531.9
80°	143.6	143.6	170.9	205.3	256.8	274.0	671.4	795.8	1596.6	1197.2	601.6
82.5°	97.1	100.1	116.3	130.4	147.6	155.7	288.2	307.4	461.1	407.5	247.7
85°	51.6	53.6	60.7	59.7	70.8	61.7	121.3	120.3	168.9	185.0	94.0
87.5°	0.0	0.0	1.0	1.0	2.0	3.0	13.1	14.2	35.4	56.6	31.3
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7	1700.7
2.5°	1708.8	1696.7	1702.7	1700.7	1706.8	1706.8	1695.7	1692.6	1693.6	1681.5	1677.5
5°	1724.0	1709.8	1712.8	1708.8	1714.9	1719.9	1714.9	1714.9	1720.9	1711.8	1706.8
7.5°	1758.3	1742.2	1742.2	1737.1	1744.2	1748.2	1744.2	1750.3	1761.4	1752.3	1747.2
10°	1812.9	1793.7	1794.7	1788.7	1791.7	1789.7	1773.5	1768.5	1771.5	1763.4	1759.4
12.5°	1883.7	1857.4	1857.4	1845.3	1838.2	1817.0	1783.6	1771.5	1773.5	1766.4	1763.4
15°	1951.5	1927.2	1922.1	1897.9	1865.5	1826.1	1795.8	1787.7	1789.7	1782.6	1777.6
17.5°	2031.4	2000.0	1981.8	1937.3	1877.7	1837.2	1806.9	1787.7	1771.5	1755.3	1751.3
20°	2105.2	2065.7	2032.4	1963.6	1890.8	1835.2	1778.6	1731.0	1691.6	1670.4	1665.3
22.5°	2181.0	2130.4	2071.8	1981.8	1889.8	1798.8	1694.6	1622.9	1564.2	1532.9	1538.9
25°	2252.8	2189.1	2109.2	1999.0	1857.4	1717.9	1576.3	1469.2	1402.4	1378.2	1371.1
27.5°	2312.4	2233.6	2143.6	1990.9	1790.7	1601.6	1414.6	1295.3	1230.5	1203.2	1196.2
30°	2379.2	2290.2	2193.1	1953.5	1685.5	1438.8	1231.6	1134.5	1088.0	1061.7	1062.7
32.5°	2456.0	2363.0	2262.9	1881.7	1551.1	1262.9	1080.9	1014.2	976.7	950.5	946.4
35°	2559.2	2467.1	2309.4	1773.5	1380.2	1101.1	977.8	923.2	876.6	842.3	835.2
37.5°	2686.6	2623.9	2314.5	1628.9	1197.2	989.9	903.9	845.3	788.7	743.2	738.1
40°	2905.0	2833.2	2273.0	1447.9	1041.5	918.1	842.3	774.5	708.8	658.2	651.2
42.5°	3216.4	3068.8	2184.0	1243.7	924.2	861.5	783.6	697.7	630.9	595.6	590.5
45°	3612.8	3331.7	2050.6	1051.6	837.2	805.9	721.9	632.0	596.6	571.3	566.2
47.5°	4098.1	3638.0	1896.9	901.9	769.5	755.3	659.3	609.7	578.4	557.1	552.1
50°	4678.5	4028.3	1770.5	784.6	708.8	696.7	639.0	596.6	571.3	554.1	550.1
52.5°	5340.8	4462.1	1708.8	700.7	656.2	644.1	632.0	593.5	572.3	559.2	554.1
55°	6028.3	4919.1	1651.2	636.0	611.7	618.8	633.0	603.6	587.5	570.3	565.2
57.5°	6692.6	5347.8	1509.6	585.4	579.4	606.7	638.0	613.8	594.5	577.4	571.3
60°	7150.7	5582.4	1270.0	545.0	555.1	591.5	624.9	598.6	574.3	567.2	564.2
62.5°	7274.0	5554.1	985.8	503.5	525.8	558.1	590.5	573.3	548.0	559.2	560.2
65°	6985.9	5250.8	740.1	463.1	487.4	514.7	555.1	548.0	538.9	569.3	570.3
67.5°	6169.9	4505.6	564.2	427.7	447.9	481.3	544.0	573.3	575.3	613.8	609.7
70°	4668.4	3366.0	441.9	394.3	417.6	481.3	579.4	592.5	568.3	603.6	595.6
72.5°	3227.5	2221.4	376.1	365.0	380.2	459.1	578.4	578.4	552.1	552.1	536.9
75°	2005.1	1306.4	327.6	327.6	327.6	401.4	562.2	532.9	486.4	465.1	453.0
77.5°	989.9	635.0	275.0	285.1	274.0	335.7	459.1	435.8	407.5	385.2	377.1
80°	422.7	317.5	222.4	233.6	220.4	252.8	364.0	358.9	331.6	302.3	293.2
82.5°	194.1	163.8	178.0	183.0	160.8	190.1	265.9	265.9	250.8	210.3	195.1
85°	82.9	87.0	123.4	123.4	101.1	107.2	142.6	135.5	121.3	99.1	91.0
87.5°	28.3	42.5	62.7	54.6	21.2	9.1	5.1	2.0	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



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**

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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**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)