

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: P639477

Luminaire Tested: GWS-SA5B-830-U-T1-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639477  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5B-830-U-T1-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

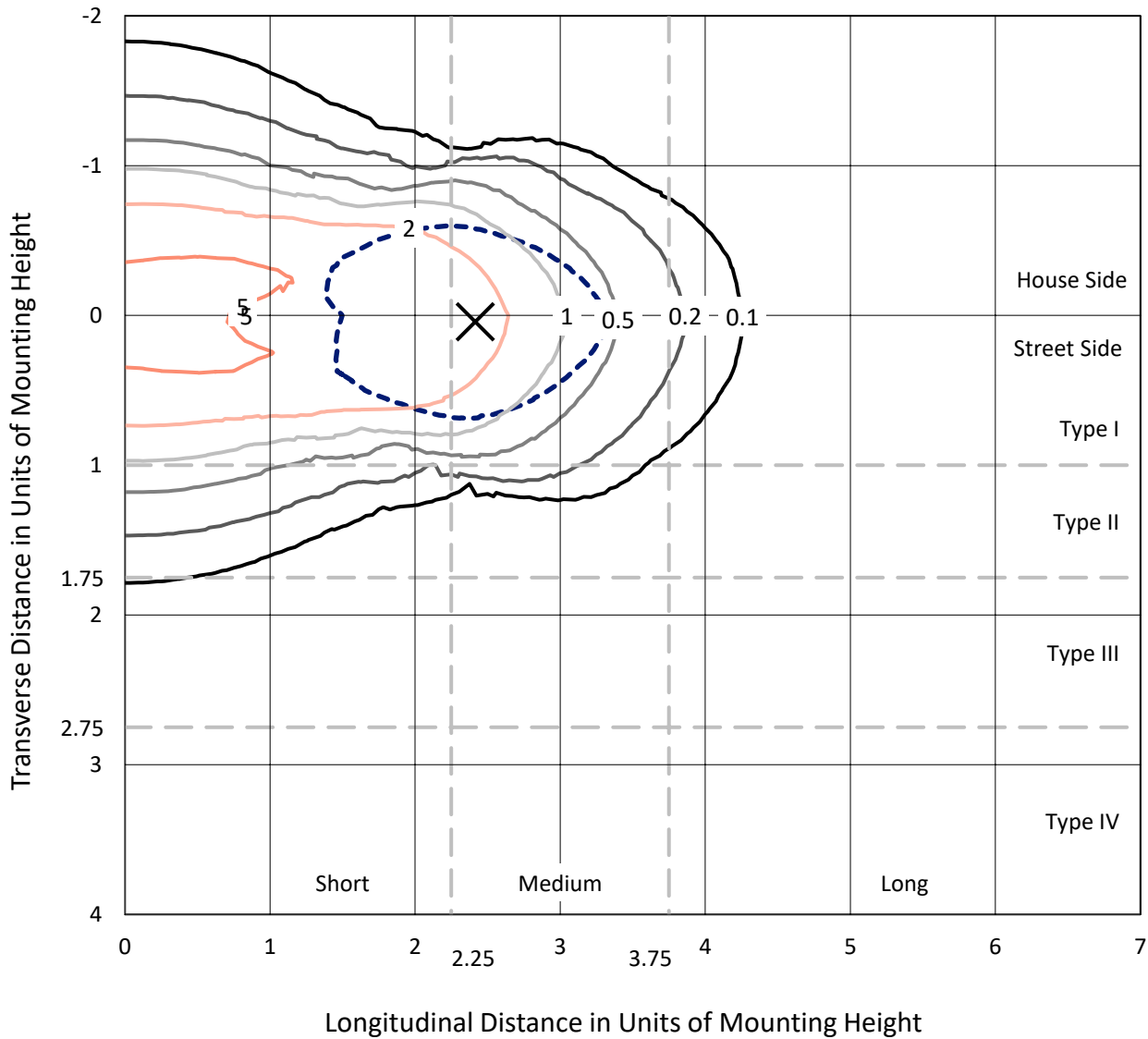
Lumens per Lamp: N/A  
Luminaire Lumens: 14079.2 lumens  
Efficiency: N/A  
Efficacy: 121.7 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type I - Medium  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 115.7  
Input Voltage (V): 120  
Input Current (Ain): 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: P639477  
 CATALOG NUMBER: GWS-SA5B-830-U-T1-W

### Iso-Footcandle Lines of Horizontal Illumination

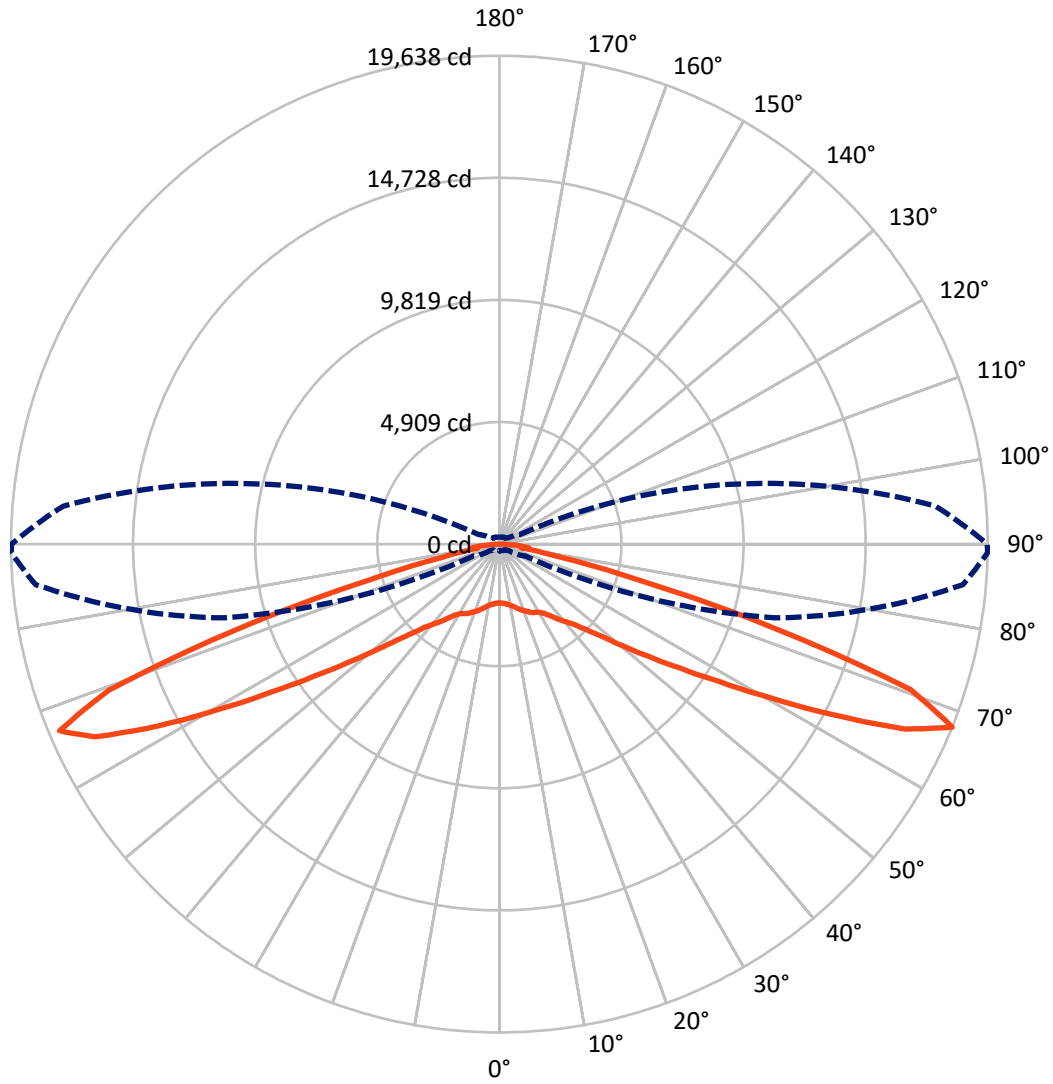
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.4 fc  
 Type I - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	6977.9	0.0	6977.9
	% Fixture	49.6	0.0	49.6
<b>Street Side</b>	Lumens	7101.3	0.0	7101.3
	% Fixture	50.4	0.0	50.4
<b>Total</b>	Lumens	14079.2	0.0	14079.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	237.0	1.7
10°-20°	771.8	5.5
20°-30°	1304.7	9.3
30°-40°	1790.6	12.7
40°-50°	2283.4	16.2
50°-60°	2864.9	20.3
60°-70°	3455.3	24.5
70°-80°	1250.0	8.9
80°-90°	121.6	0.9
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°	14079.2	100.0
0°-180°	14079.2	100.0

**Coefficient of Utilization**



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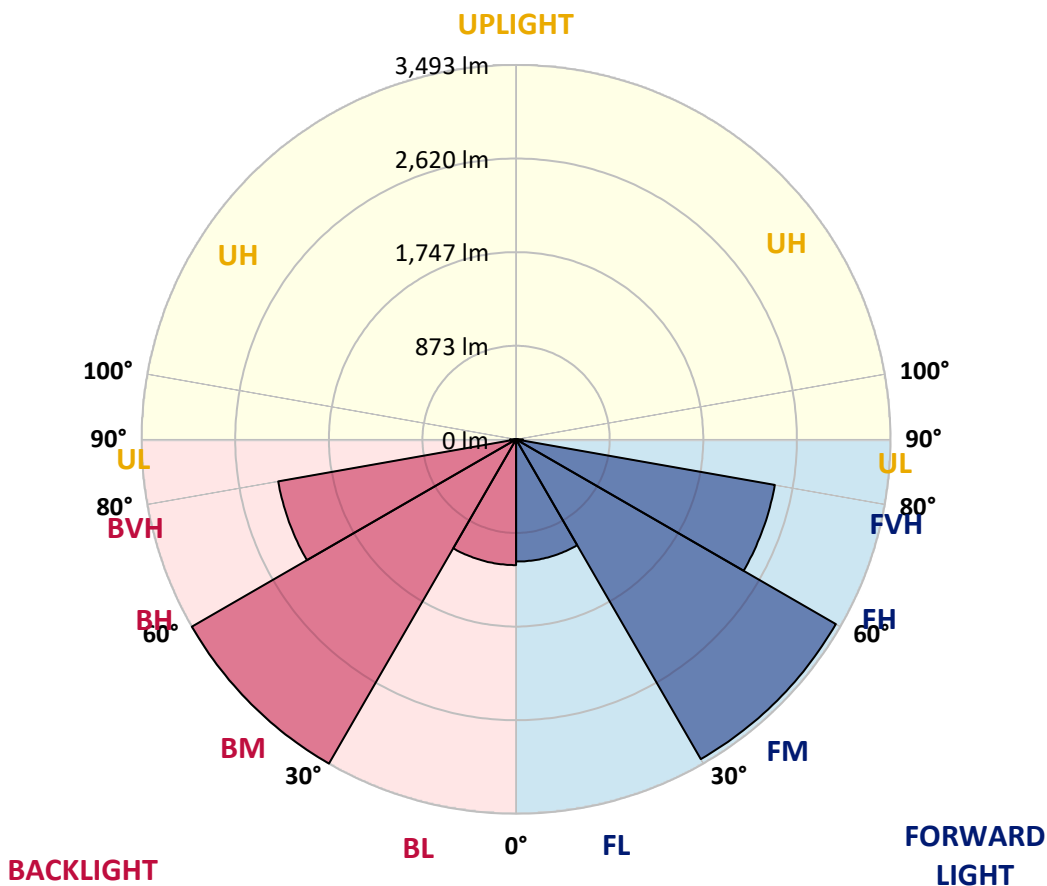
CATALOG NUMBER: GWS-SA5B-830-U-T1-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1140.3	8.1			
FM (30°-60°)	3445.5	24.5			
FH (60°-80°)	2451.4	17.4			G2/5000
FVH (80°-90°)	64.1	0.5			G1/100
BL (0°-30°)	1173.3	8.3	B3/2500		
BM (30°-60°)	3493.3	24.8	B3/5000		
BH (60°-80°)	2253.9	16.0	B3/2500		G3/2500
BVH (80°-90°)	57.4	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 I Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°
0°	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1
2.5°	2370.2	2368.1	2363.1	2378.2	2375.2	2376.2	2382.3	2378.2	2371.2	2359.0	2376.2
5°	2436.9	2435.9	2424.8	2433.9	2423.7	2416.7	2415.7	2405.5	2397.5	2384.3	2402.5
7.5°	2501.6	2500.6	2491.5	2507.7	2499.6	2491.5	2482.4	2462.2	2443.0	2423.7	2444.0
10°	2551.2	2550.1	2548.1	2571.4	2573.4	2576.4	2572.4	2538.0	2504.6	2481.4	2501.6
12.5°	2579.5	2582.5	2587.6	2630.0	2651.3	2671.5	2676.5	2648.2	2592.6	2559.2	2583.5
15°	2560.3	2566.3	2591.6	2668.5	2727.1	2772.6	2791.8	2768.6	2696.8	2641.1	2668.5
17.5°	2468.2	2473.3	2522.8	2640.1	2769.6	2874.7	2906.1	2891.9	2812.0	2744.3	2770.6
20°	2340.8	2352.0	2405.5	2569.4	2762.5	2945.5	3029.4	3024.4	2937.4	2833.3	2864.6
22.5°	2225.6	2238.7	2295.3	2476.3	2715.0	2963.7	3153.8	3167.0	3051.7	2922.3	2947.5
25°	2096.1	2108.3	2181.1	2366.1	2633.1	2949.6	3260.0	3319.6	3181.1	3024.4	3047.6
27.5°	1963.7	1972.8	2044.6	2241.7	2525.9	2923.3	3343.9	3487.5	3308.5	3095.2	3111.3
30°	1847.4	1859.5	1925.2	2117.4	2408.6	2870.7	3412.7	3666.5	3455.1	3175.0	3188.2
32.5°	1735.2	1745.3	1817.1	1995.0	2284.2	2789.8	3474.3	3876.8	3672.5	3323.7	3323.7
35°	1593.6	1611.8	1692.7	1877.7	2166.9	2682.6	3518.8	4121.5	3969.8	3543.1	3544.1
37.5°	1463.1	1473.3	1558.2	1745.3	2043.6	2561.3	3522.9	4375.3	4346.0	3822.2	3824.2
40°	1314.5	1327.7	1418.7	1603.7	1902.0	2433.9	3484.5	4611.9	4740.3	4109.4	4098.2
42.5°	1163.8	1183.1	1270.0	1451.0	1749.3	2278.1	3382.3	4837.4	5240.8	4442.0	4414.7
45°	1018.2	1030.4	1117.3	1288.2	1574.4	2092.1	3218.5	5053.8	5835.4	4947.6	4908.2
47.5°	854.4	859.5	949.5	1113.3	1393.4	1884.8	2983.9	5246.9	6488.6	5617.0	5549.2
50°	708.8	715.9	786.7	927.2	1171.9	1639.1	2691.7	5360.2	7320.8	6530.1	6412.8
52.5°	573.3	580.4	637.0	749.3	968.7	1359.0	2329.7	5333.9	8165.1	7663.6	7492.7
55°	463.1	468.2	506.6	594.6	762.4	1080.9	1902.0	5098.3	9102.5	9143.9	8775.9
57.5°	391.3	393.3	419.6	473.2	595.6	833.2	1468.2	4542.1	10085.3	11032.8	10428.1
60°	349.9	350.9	363.0	396.4	470.2	636.0	1075.9	3656.4	11103.5	13395.8	12566.7
62.5°	323.6	323.6	333.7	352.9	390.3	489.4	790.7	2626.0	11834.6	15967.2	15143.1
65°	298.3	298.3	305.4	321.5	341.8	399.4	593.6	1693.7	12193.6	18116.9	17933.9
67.5°	265.9	266.9	272.0	289.2	307.4	333.7	450.0	1145.6	11448.4	18711.5	19637.7
70°	235.6	236.6	243.7	254.8	270.0	288.2	351.9	789.7	8333.0	15584.0	17558.8
72.5°	202.2	206.3	211.3	223.5	232.6	245.7	287.2	511.6	4848.5	10024.6	11607.1
75°	165.8	170.9	177.0	189.1	195.2	200.2	236.6	365.0	2332.7	5080.1	5784.8
77.5°	128.4	133.5	140.6	151.7	155.7	161.8	181.0	263.9	1117.3	2251.9	2427.8
80°	85.9	88.0	94.0	107.2	114.3	118.3	133.5	180.0	485.4	904.0	895.9
82.5°	52.6	53.6	55.6	63.7	66.7	70.8	87.0	110.2	231.6	1027.3	1178.0
85°	19.2	18.2	17.2	22.2	26.3	30.3	40.4	55.6	101.1	705.8	789.7
87.5°	0.0	0.0	0.0	1.0	2.0	2.0	4.0	8.1	24.3	263.9	181.0
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°	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1	2363.1
2.5°	2371.2	2360.0	2374.2	2384.3	2406.6	2414.6	2416.7	2409.6	2409.6	2397.5	2399.5
5°	2398.5	2391.4	2414.6	2431.8	2464.2	2476.3	2484.4	2479.4	2482.4	2474.3	2476.3
7.5°	2439.9	2433.9	2474.3	2507.7	2541.0	2555.2	2562.3	2558.2	2559.2	2549.1	2552.2
10°	2497.6	2499.6	2548.1	2591.6	2636.1	2650.2	2653.3	2641.1	2631.0	2612.8	2613.8
12.5°	2576.4	2586.5	2655.3	2703.8	2749.3	2769.6	2747.3	2702.8	2661.4	2630.0	2626.0
15°	2662.4	2680.6	2779.7	2841.4	2890.9	2880.8	2815.1	2715.0	2633.1	2586.5	2577.4
17.5°	2765.5	2792.8	2917.2	2991.0	3033.5	2968.8	2831.2	2681.6	2567.3	2504.6	2492.5
20°	2862.6	2906.1	3062.8	3158.9	3163.9	3018.3	2824.2	2613.8	2470.3	2393.4	2377.2
22.5°	2951.6	3007.2	3215.5	3337.8	3272.1	3040.6	2780.7	2517.8	2353.0	2263.0	2248.8
25°	3048.6	3127.5	3393.5	3507.7	3380.3	3031.5	2689.7	2398.5	2211.4	2119.4	2109.3
27.5°	3115.4	3214.5	3572.4	3681.6	3469.3	2979.9	2572.4	2268.0	2082.0	1995.0	1980.9
30°	3192.2	3318.6	3769.6	3870.7	3523.9	2904.1	2447.0	2146.7	1961.6	1867.6	1857.5
32.5°	3331.8	3490.5	4014.3	4070.9	3541.1	2810.0	2326.7	2029.4	1836.3	1742.2	1728.1
35°	3556.2	3742.3	4358.1	4294.4	3527.9	2706.9	2212.4	1891.9	1707.8	1619.9	1605.7
37.5°	3839.4	4070.9	4741.3	4495.6	3491.5	2593.6	2076.9	1776.6	1592.6	1503.6	1495.5
40°	4103.3	4388.4	5171.1	4669.5	3417.7	2454.1	1946.5	1656.3	1468.2	1374.2	1356.0
42.5°	4433.9	4813.1	5668.6	4820.2	3296.4	2287.2	1799.9	1507.6	1312.5	1227.5	1205.3
45°	4936.5	5407.7	6246.9	4964.8	3115.4	2082.0	1615.8	1326.6	1141.6	1054.6	1037.4
47.5°	5563.4	6150.9	6873.9	5050.7	2840.3	1865.6	1407.5	1135.5	950.5	852.4	844.3
50°	6444.1	7231.8	7546.3	5035.6	2533.0	1608.8	1172.9	908.0	753.3	682.5	671.4
52.5°	7517.0	8588.8	8273.3	4853.6	2206.4	1316.5	914.1	712.9	597.6	547.0	537.9
55°	8862.8	10213.7	9038.8	4463.3	1793.8	1008.1	717.9	562.2	483.3	453.0	449.0
57.5°	10529.2	12317.9	9775.9	3806.0	1348.9	769.5	553.1	464.1	426.7	408.5	407.5
60°	12728.5	14551.6	10416.0	2957.6	965.7	588.5	457.0	414.6	385.3	373.1	372.1
62.5°	15343.3	16580.0	10814.4	2014.2	726.0	469.2	402.4	376.2	359.0	351.9	350.9
65°	18031.0	17862.1	10624.3	1319.6	551.1	398.4	361.0	346.8	331.7	324.6	324.6
67.5°	19618.5	17591.1	9165.2	916.1	436.8	349.9	325.6	312.4	287.2	281.1	281.1
70°	17376.8	14254.3	6007.3	670.4	353.9	306.4	283.1	264.9	254.8	248.7	247.7
72.5°	11492.8	9275.4	3194.3	465.1	295.3	260.9	239.6	232.6	220.4	214.4	213.4
75°	5720.1	4871.8	1637.1	335.7	245.7	209.3	200.2	197.2	187.1	179.0	177.0
77.5°	2384.3	2168.9	763.4	243.7	187.1	168.9	160.8	160.8	149.7	140.6	136.5
80°	898.9	800.8	361.0	166.8	138.5	125.4	120.3	116.3	107.2	96.1	90.0
82.5°	1202.3	785.7	177.0	104.1	91.0	80.9	73.8	70.8	65.7	60.7	56.6
85°	778.6	558.2	79.9	53.6	45.5	34.4	30.3	28.3	25.3	22.2	20.2
87.5°	158.8	187.1	24.3	10.1	6.1	3.0	3.0	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**

$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	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			

**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)