

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: P636030

Luminaire Tested: GWS-SA3E-830-U-T4FT-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636030  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-54)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3E-830-U-T4FT-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

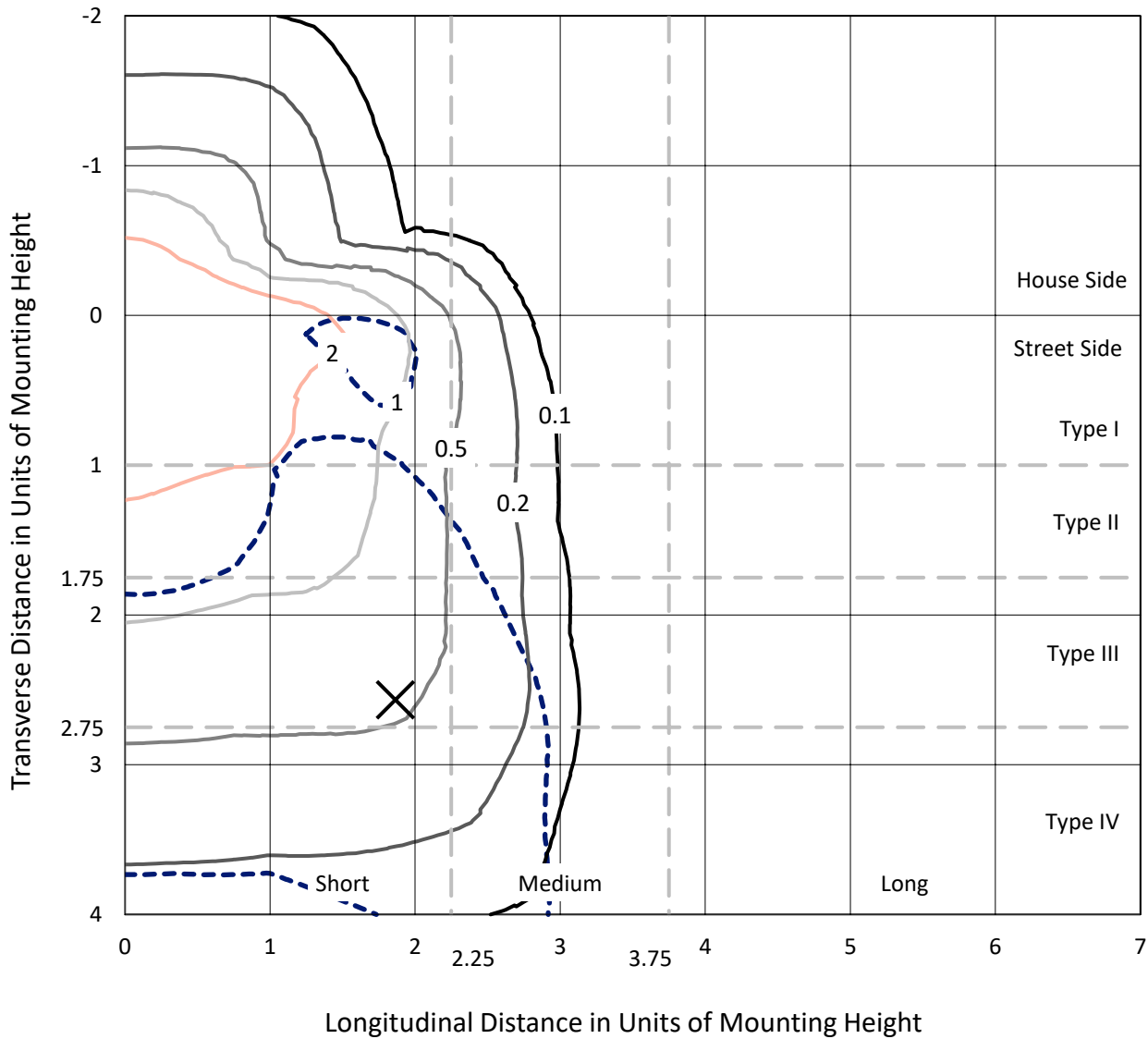
Lumens per Lamp: N/A  
Luminaire Lumens: 16874.3 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P636030  
 CATALOG NUMBER: GWS-SA3E-830-U-T4FT-W

### Iso-Footcandle Lines of Horizontal Illumination

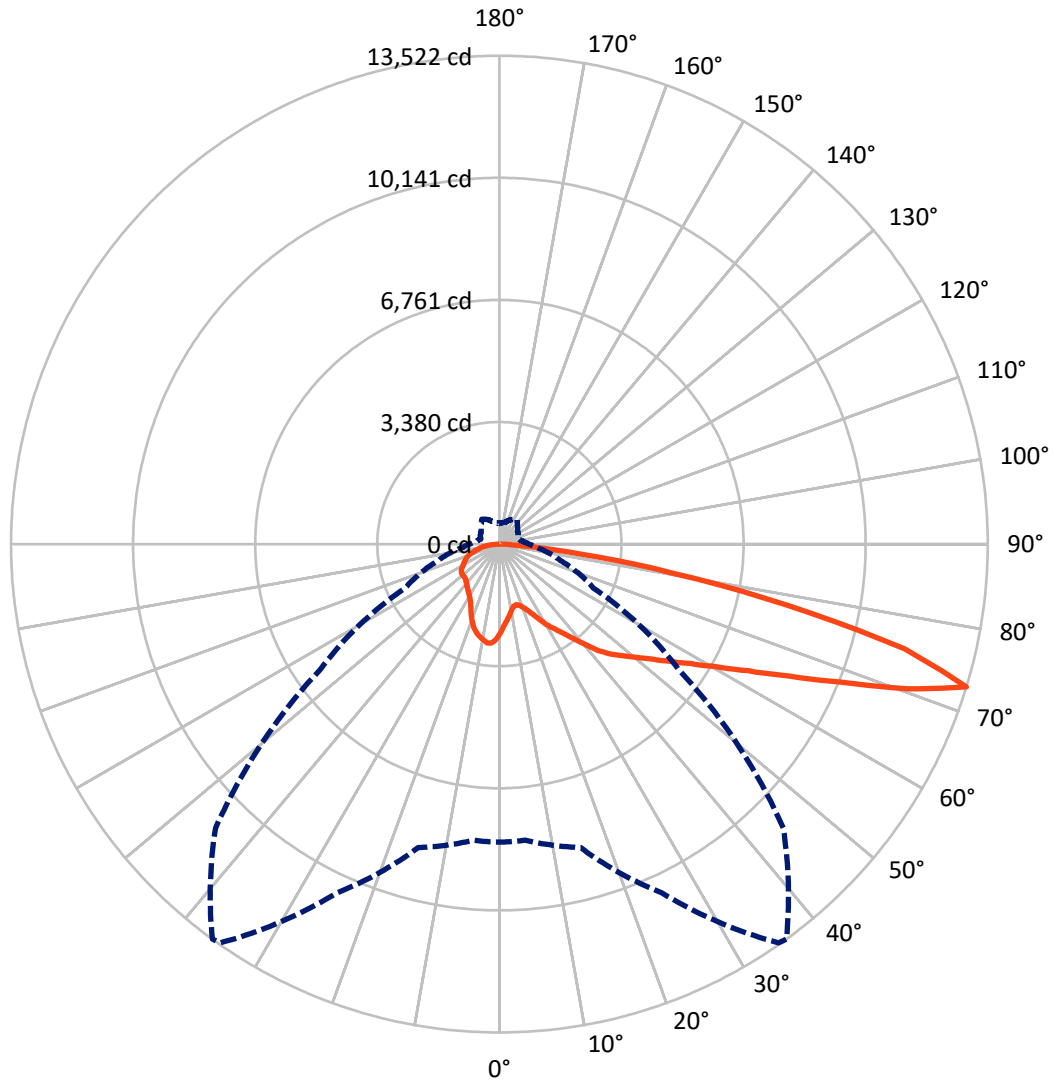
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.2 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3890.3	0.0	3890.3
	% Fixture	23.1	0.0	23.1
<b>Street Side</b>	Lumens	12984.0	0.0	12984.0
	% Fixture	76.9	0.0	76.9
<b>Total</b>	Lumens	16874.3	0.0	16874.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	230.8	1.4
10°-20°	651.3	3.9
20°-30°	1078.6	6.4
30°-40°	1615.3	9.6
40°-50°	2356.6	14.0
50°-60°	3354.2	19.9
60°-70°	4237.8	25.1
70°-80°	3019.8	17.9
80°-90°	329.7	2.0
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°	16874.3	100.0
0°-180°	16874.3	100.0

**Coefficient of Utilization**



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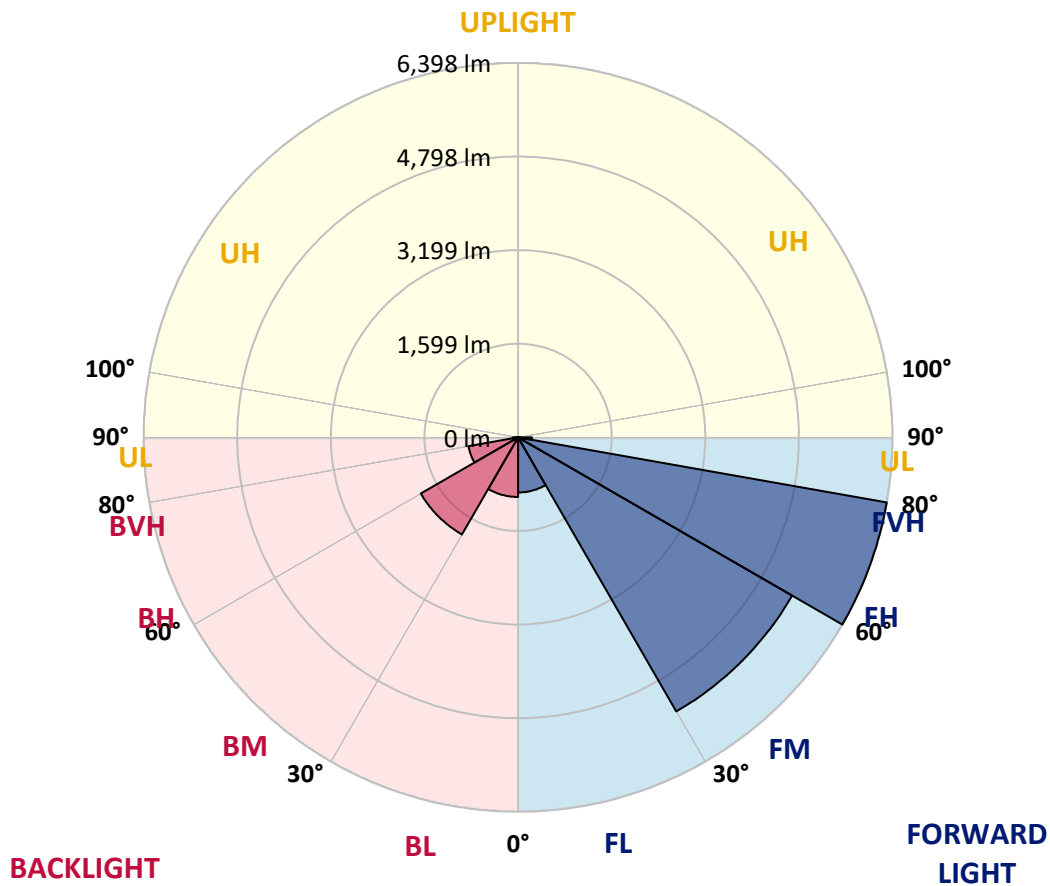
CATALOG NUMBER: GWS-SA3E-830-U-T4FT-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	942.0	5.6			
FM (30°-60°)	5407.8	32.0			
FH (60°-80°)	6397.6	37.9			G3/7500
FVH (80°-90°)	236.6	1.4			G3/500
BL (0°-30°)	1018.7	6.0	B3/2500		
BM (30°-60°)	1918.4	11.4	B2/2500		
BH (60°-80°)	860.0	5.1	B2/1000		G2/1000
BVH (80°-90°)	93.0	0.6			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 IV Short





REPORT NUMBER: P636030  
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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6
2.5°	2253.0	2249.2	2241.7	2264.2	2286.8	2284.3	2315.6	2345.6	2378.2	2412.0	2457.1
5°	2072.6	2070.1	2063.9	2097.7	2131.5	2130.2	2181.6	2230.4	2296.8	2369.4	2459.6
7.5°	1892.3	1886.0	1894.8	1937.4	1985.0	1990.0	2060.1	2140.3	2236.7	2345.6	2473.4
10°	1733.2	1732.0	1735.8	1783.3	1854.7	1859.7	1949.9	2061.4	2189.1	2334.4	2504.7
12.5°	1691.9	1689.4	1679.4	1703.2	1757.0	1764.6	1863.5	2000.0	2156.5	2340.6	2547.3
15°	1759.5	1753.3	1718.2	1706.9	1733.2	1739.5	1823.4	1963.7	2137.8	2351.9	2601.1
17.5°	1876.0	1872.3	1805.9	1759.5	1777.1	1782.1	1844.7	1957.4	2132.7	2374.5	2667.5
20°	2046.3	2030.1	1926.1	1856.0	1856.0	1863.5	1901.1	1985.0	2139.0	2402.0	2742.6
22.5°	2271.8	2239.2	2092.7	1997.5	1972.4	1982.5	1998.7	2053.8	2165.3	2448.3	2836.6
25°	2524.7	2494.7	2320.6	2186.6	2151.5	2155.3	2141.5	2151.5	2222.9	2512.2	2953.0
27.5°	2794.0	2773.9	2588.6	2418.3	2363.2	2363.2	2314.3	2290.5	2303.1	2584.8	3083.3
30°	3034.4	3006.9	2850.3	2663.7	2591.1	2591.1	2498.4	2447.1	2417.0	2673.8	3257.4
32.5°	3160.9	3144.6	3040.7	2897.9	2809.0	2795.2	2715.1	2655.0	2584.8	2805.3	3492.8
35°	3326.2	3322.5	3259.9	3148.4	3035.7	3015.7	2960.5	2913.0	2791.5	2969.3	3805.9
37.5°	3534.1	3527.9	3517.8	3451.5	3316.2	3312.5	3263.6	3206.0	3048.2	3206.0	4185.3
40°	3767.1	3755.8	3743.3	3742.0	3660.6	3646.8	3643.1	3578.0	3357.5	3491.5	4581.1
42.5°	4087.7	4048.8	3931.1	3983.7	4043.8	4031.3	4078.9	3981.2	3743.3	3830.9	4955.5
45°	4482.2	4387.0	4154.0	4169.1	4320.6	4345.6	4511.0	4487.2	4167.8	4222.9	5350.0
47.5°	4718.8	4636.2	4419.5	4407.0	4596.1	4627.4	4986.8	5031.9	4624.9	4695.1	5837.2
50°	4913.0	4855.4	4677.5	4695.1	4895.4	4926.7	5459.0	5555.4	5055.7	5178.5	6403.3
52.5°	5147.1	5064.5	4926.7	5009.4	5254.9	5292.4	5983.7	6087.7	5444.0	5709.5	6989.4
55°	5278.6	5244.8	5247.3	5373.8	5681.9	5733.2	6533.5	6516.0	5799.6	6164.1	7430.2
57.5°	5581.7	5569.2	5684.4	5732.0	6180.3	6246.7	7083.3	6933.0	6122.7	6516.0	7641.8
60°	6116.5	6085.2	6185.3	6258.0	6796.5	6890.4	7696.9	7341.3	6341.9	6777.7	7570.4
62.5°	6867.9	6829.1	6832.8	6948.0	7621.8	7720.7	8379.5	7681.9	6409.5	6817.8	7118.3
65°	7802.1	7745.8	7681.9	7838.4	8717.6	8800.2	9122.1	7929.9	6248.0	6432.1	6174.1
67.5°	8787.7	8741.4	8666.2	8994.4	10136.5	10186.6	9954.9	7908.6	5735.8	5400.1	4330.6
70°	8845.3	8856.6	9212.3	10399.5	11988.7	12001.2	10742.6	7480.3	4645.0	3500.3	2157.8
72.5°	8251.7	8232.9	8696.3	10656.2	13479.0	13521.6	11114.6	6060.1	2870.4	1745.8	1011.9
75°	6702.6	6735.1	7222.3	9323.7	11552.9	11590.5	9060.7	3572.9	1363.8	854.1	647.5
77.5°	2885.4	3067.0	4027.5	6568.6	8274.3	8157.8	4670.0	1447.7	727.6	608.6	495.9
80°	832.8	904.2	1435.2	3123.4	4958.0	4870.4	1848.5	542.3	507.2	457.1	355.7
82.5°	269.3	298.1	526.0	1243.6	2221.7	2219.2	701.3	320.6	331.9	310.6	229.2
85°	75.1	86.4	161.6	377.0	687.5	673.8	202.9	151.5	176.6	179.1	114.0
87.5°	0.0	0.0	1.3	2.5	2.5	2.5	5.0	22.5	51.3	65.1	46.3
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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 CATALOG NUMBER: GWS-SA3E-830-U-T4FT-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6	2469.6
2.5°	2484.7	2480.9	2532.2	2572.3	2609.9	2634.9	2642.5	2647.5	2657.5	2662.5	2657.5
5°	2502.2	2521.0	2606.1	2668.8	2718.8	2748.9	2750.2	2747.7	2755.2	2748.9	2745.1
7.5°	2539.8	2576.1	2683.8	2750.2	2782.7	2784.0	2753.9	2718.8	2701.3	2686.3	2681.3
10°	2589.9	2643.7	2761.4	2805.3	2795.2	2748.9	2682.5	2627.4	2596.1	2573.6	2568.6
12.5°	2658.7	2718.8	2830.3	2829.1	2766.4	2683.8	2606.1	2539.8	2494.7	2468.4	2459.6
15°	2723.9	2800.2	2880.4	2821.5	2722.6	2622.4	2522.2	2433.3	2373.2	2331.9	2324.4
17.5°	2804.0	2885.4	2916.7	2797.7	2667.5	2538.5	2404.5	2288.0	2206.6	2157.8	2154.0
20°	2896.7	2969.3	2934.3	2756.4	2596.1	2427.0	2245.5	2115.2	2027.6	1980.0	1983.7
22.5°	3004.4	3057.0	2939.3	2700.1	2497.2	2269.3	2066.4	1941.1	1882.3	1857.2	1858.5
25°	3119.6	3153.4	2930.5	2623.7	2345.6	2076.4	1882.3	1824.7	1819.7	1813.4	1815.9
27.5°	3256.1	3248.6	2904.2	2516.0	2141.5	1852.2	1753.3	1768.3	1788.4	1785.8	1788.4
30°	3438.9	3367.6	2870.4	2366.9	1898.6	1664.4	1676.9	1719.5	1745.8	1748.3	1755.8
32.5°	3648.1	3499.1	2816.5	2164.1	1666.9	1559.2	1605.5	1656.9	1688.2	1694.4	1704.4
35°	3897.3	3649.3	2721.4	1911.1	1500.3	1496.6	1539.1	1574.2	1608.0	1610.5	1610.5
37.5°	4184.1	3799.6	2569.8	1631.8	1397.6	1442.7	1482.8	1490.3	1499.1	1491.5	1495.3
40°	4447.1	3944.9	2354.4	1377.6	1313.7	1395.1	1428.9	1403.9	1376.3	1357.5	1361.3
42.5°	4667.5	4043.8	2068.9	1199.7	1228.6	1352.5	1378.8	1327.5	1273.6	1238.6	1243.6
45°	4915.5	4135.3	1733.2	1079.5	1155.9	1322.5	1340.0	1273.6	1204.8	1152.2	1144.6
47.5°	5257.4	4321.9	1435.2	995.6	1104.6	1306.2	1335.0	1244.8	1154.7	1075.8	1067.0
50°	5679.4	4586.1	1186.0	940.5	1080.8	1297.4	1333.8	1213.5	1105.8	1013.1	1006.9
52.5°	6140.3	4844.1	1001.9	897.9	1057.0	1271.1	1327.5	1178.5	1054.5	954.3	946.8
55°	6447.1	4945.5	877.9	857.9	1018.2	1229.8	1302.4	1144.6	976.8	885.4	874.1
57.5°	6537.3	4815.3	791.5	821.5	968.1	1172.2	1254.9	1073.3	929.2	856.6	847.8
60°	6382.0	4487.2	737.6	791.5	913.0	1098.3	1172.2	1031.9	891.7	826.5	820.3
62.5°	5943.6	3981.2	696.3	760.2	856.6	1020.7	1119.6	981.8	850.3	799.0	790.2
65°	5062.0	3264.9	662.5	727.6	802.8	946.8	1062.0	931.7	805.3	766.4	756.4
67.5°	3540.4	2293.0	626.2	688.8	748.9	875.4	1001.9	885.4	758.9	730.1	720.1
70°	1730.7	1216.0	582.3	643.7	691.3	802.8	941.8	829.1	697.6	681.3	667.5
72.5°	824.0	680.0	531.0	582.3	612.4	706.3	841.6	747.7	624.9	589.9	566.1
75°	552.3	483.4	463.4	509.7	517.2	592.4	721.4	645.0	551.0	511.0	490.9
77.5°	418.3	369.4	389.5	430.8	415.8	487.2	593.6	574.8	497.2	460.9	450.8
80°	294.3	269.3	309.3	334.4	323.1	414.5	534.8	492.2	409.5	369.4	361.9
82.5°	185.3	180.3	227.9	231.7	235.4	328.1	439.6	387.0	318.1	261.7	243.0
85°	92.7	102.7	136.5	136.5	135.3	169.1	250.5	217.9	171.6	136.5	132.7
87.5°	31.3	43.8	58.9	47.6	36.3	28.8	32.6	40.1	42.6	41.3	41.3
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

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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)