

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: P633020

Luminaire Tested: GWS-SA2D-830-U-AFL-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633020  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-45)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2D-830-U-AFL-W  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

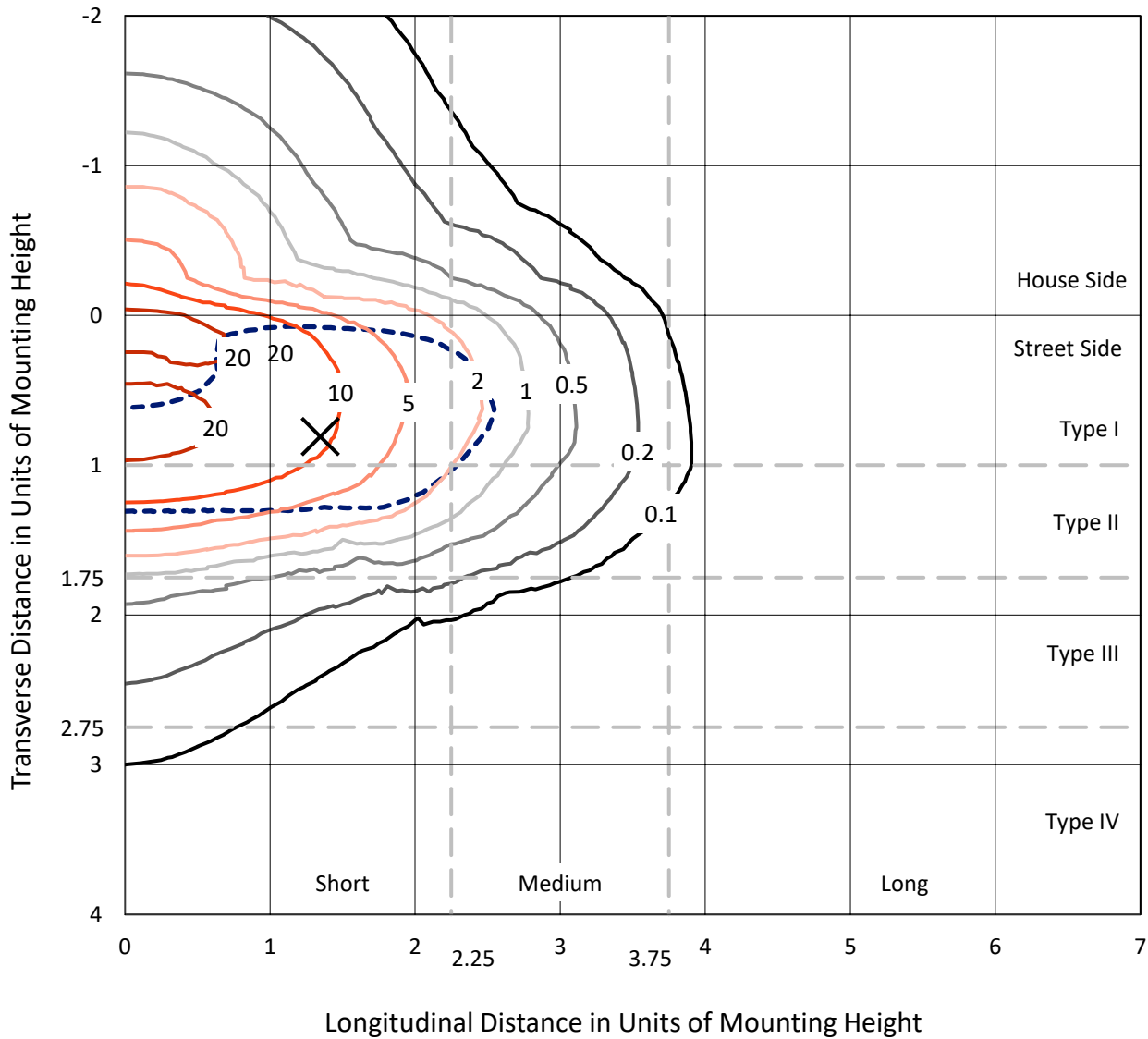
Lumens per Lamp: N/A  
Luminaire Lumens: 9445.3 lumens  
Efficiency: N/A  
Efficacy: 115.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 82.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P633020  
 CATALOG NUMBER: GWS-SA2D-830-U-AFL-W

### Iso-Footcandle Lines of Horizontal Illumination

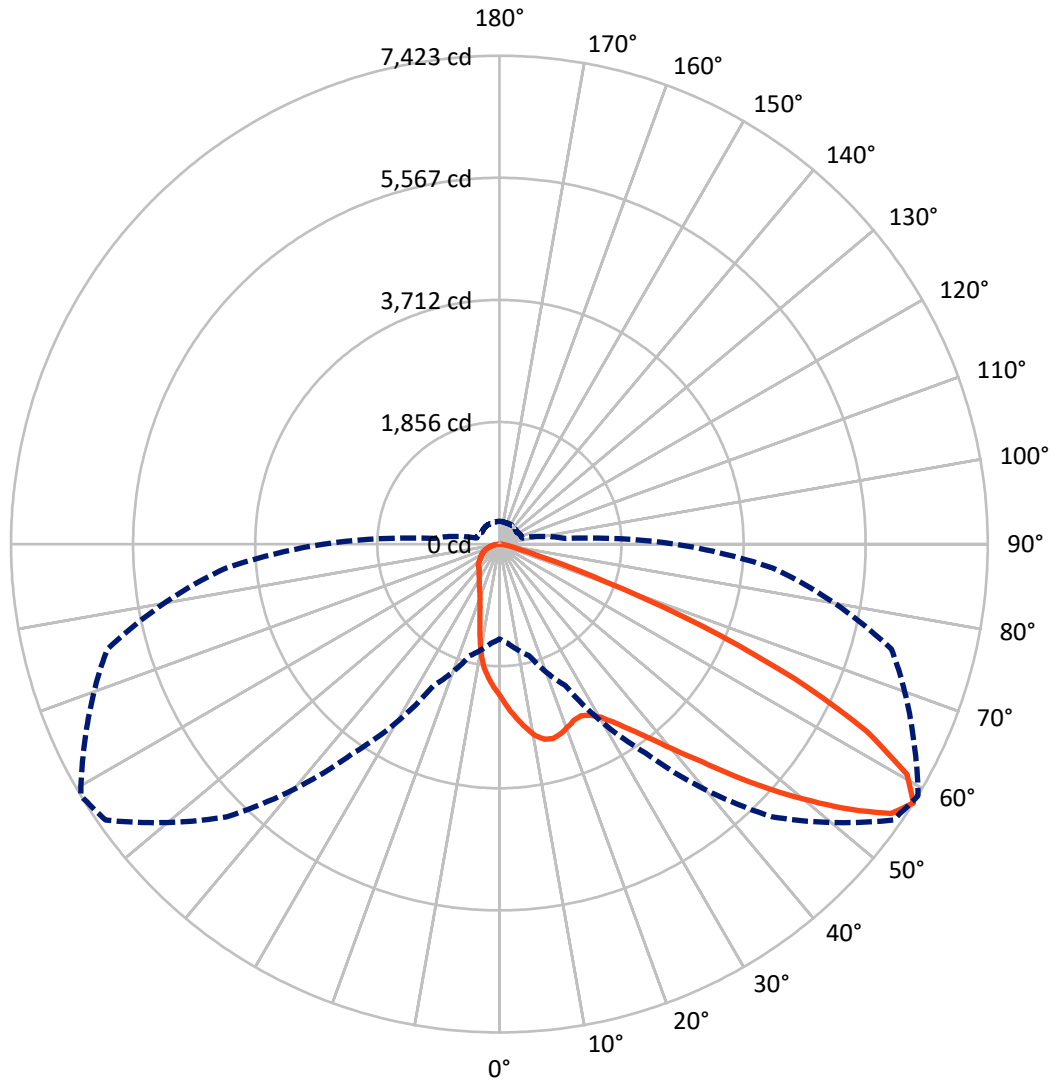
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 28.4 fc  
 Type II - Short - N/A

REPORT NUMBER: P633020  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1465.9	0.0	1465.9
	% Fixture	15.5	0.0	15.5
<b>Street Side</b>	Lumens	7979.4	0.0	7979.4
	% Fixture	84.5	0.0	84.5
<b>Total</b>	Lumens	9445.3	0.0	9445.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.3	2.3
10°-20°	545.5	5.8
20°-30°	884.3	9.4
30°-40°	1422.6	15.1
40°-50°	2209.1	23.4
50°-60°	2379.5	25.2
60°-70°	1381.0	14.6
70°-80°	360.5	3.8
80°-90°	47.5	0.5
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°	9445.3	100.0
0°-180°	9445.3	100.0

**Coefficient of Utilization**



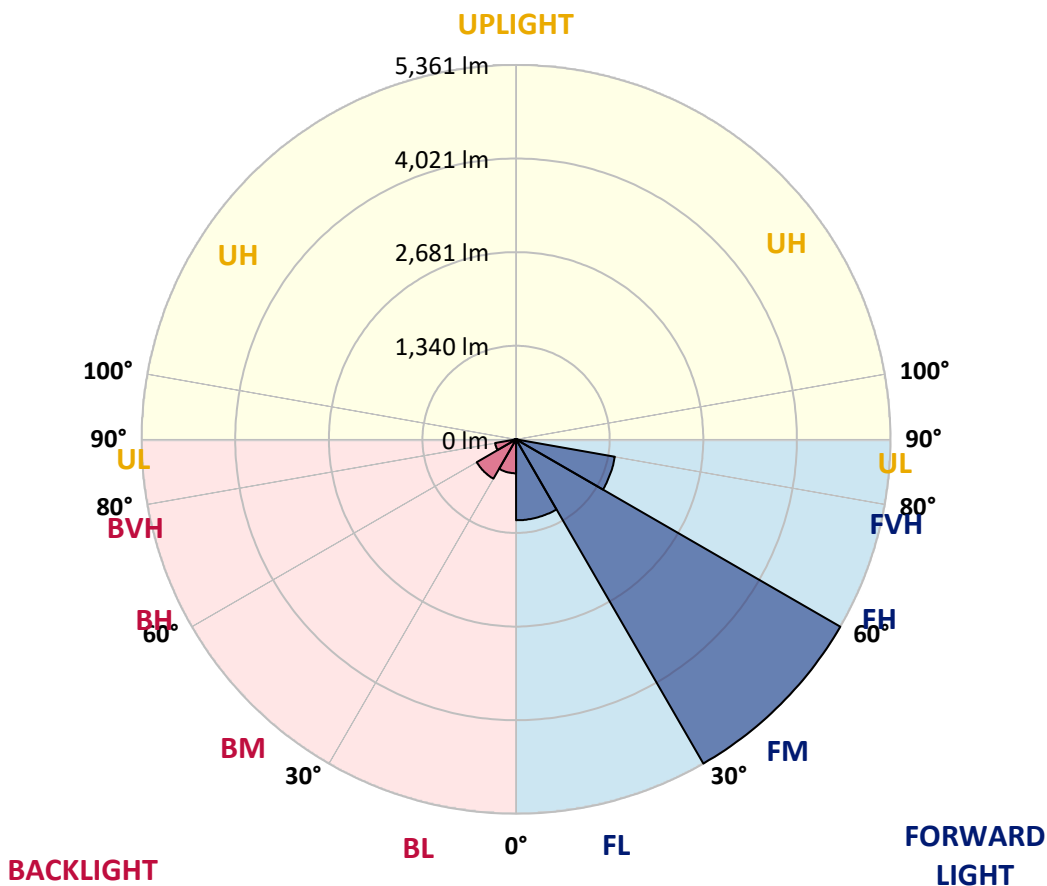
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1158.9	12.3			
FM (30°-60°)	5361.3	56.8			
FH (60°-80°)	1436.6	15.2			G1/1800
FVH (80°-90°)	22.7	0.2			G1/100
BL (0°-30°)	486.3	5.1	B1/500		
BM (30°-60°)	649.9	6.9	B1/1000		
BH (60°-80°)	304.9	3.2	B1/500		G1/500
BVH (80°-90°)	24.8	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6
2.5°	2629.8	2607.9	2623.2	2595.9	2584.6	2554.7	2516.1	2490.2	2450.3	2398.4	2353.2
5°	2891.1	2875.8	2879.2	2849.9	2824.0	2774.1	2695.0	2651.1	2583.3	2478.9	2381.8
7.5°	2883.2	2901.1	2911.1	2936.4	2943.7	2939.0	2867.9	2806.7	2732.2	2575.3	2429.0
10°	2584.6	2618.5	2649.1	2735.5	2840.6	2973.6	2990.2	2953.6	2878.5	2698.3	2485.5
12.5°	2259.5	2285.4	2312.6	2416.4	2577.3	2843.3	3023.5	3046.1	3016.2	2820.0	2549.4
15°	2099.9	2111.8	2137.8	2206.3	2334.6	2629.8	2965.6	3064.7	3118.6	2949.0	2621.2
17.5°	2093.2	2098.5	2111.2	2147.7	2236.8	2464.9	2861.2	3027.5	3199.0	3085.3	2705.0
20°	2230.9	2216.9	2208.9	2208.3	2252.1	2409.7	2760.1	2967.6	3236.9	3224.9	2794.7
22.5°	2421.7	2426.4	2409.1	2366.5	2361.2	2449.0	2709.6	2907.1	3248.2	3348.6	2877.8
25°	2692.3	2715.6	2664.4	2583.3	2543.4	2562.7	2740.9	2888.5	3246.9	3451.7	2929.7
27.5°	3008.2	3026.1	2974.3	2867.9	2785.4	2738.9	2834.0	2943.7	3258.2	3540.8	2961.0
30°	3367.9	3373.9	3302.7	3191.0	3070.7	2970.9	2988.9	3057.4	3316.0	3657.8	2997.5
32.5°	3807.4	3832.7	3725.0	3548.1	3379.9	3252.2	3197.0	3240.9	3441.0	3796.1	3054.1
35°	4365.3	4373.9	4237.0	3983.6	3745.6	3568.7	3453.0	3476.3	3631.2	3989.6	3139.2
37.5°	4891.3	4899.9	4754.3	4518.9	4178.5	3936.4	3768.9	3758.2	3874.6	4262.9	3278.1
40°	5225.1	5249.7	5184.5	5036.9	4711.7	4385.3	4157.8	4121.3	4193.8	4597.4	3471.6
42.5°	5404.6	5415.2	5413.9	5433.2	5239.7	4915.2	4596.7	4523.6	4572.1	4958.4	3667.1
45°	5405.9	5432.5	5503.7	5689.2	5697.8	5495.7	5151.3	5036.9	4992.3	5322.1	3871.3
47.5°	5163.9	5192.5	5388.0	5753.0	6022.3	6068.2	5815.5	5586.1	5398.6	5635.3	4038.8
50°	4431.1	4502.9	4875.3	5521.0	6086.2	6527.0	6449.2	6138.0	5759.7	5877.4	4143.9
52.5°	3794.8	3792.1	4021.5	4865.3	5819.5	6729.2	7062.3	6705.9	6116.7	6031.0	4170.5
55°	2778.8	2794.1	3028.8	3721.0	5108.0	6533.7	7399.4	7228.5	6526.3	6112.8	4159.8
57.5°	1440.9	1516.7	1757.4	2374.5	3881.2	5860.7	7309.6	7423.3	6942.6	6170.6	4173.8
60°	728.1	713.5	799.9	1133.7	2248.8	4577.4	6756.4	7118.8	7017.7	6215.8	4182.4
62.5°	486.1	482.1	458.1	525.3	918.9	2710.9	5759.7	6267.7	6495.8	6109.4	4072.1
65°	420.9	412.9	369.0	366.4	446.2	1124.4	4221.7	4927.2	5368.7	5636.7	3808.1
67.5°	379.0	367.0	322.5	300.6	320.5	494.0	2379.1	3304.7	3964.3	4766.9	3229.6
70°	338.5	332.5	287.9	256.0	254.0	301.2	876.4	1705.6	2425.7	3252.2	2361.2
72.5°	303.2	292.6	254.7	224.1	208.8	213.4	380.3	657.0	1255.4	2028.7	1412.3
75°	262.6	254.7	221.4	190.8	172.2	156.3	232.1	303.9	572.5	964.2	666.9
77.5°	202.8	197.5	174.9	151.6	141.0	116.4	141.0	191.5	264.6	406.3	347.1
80°	117.7	121.0	130.3	118.4	103.7	83.1	91.8	110.4	158.9	220.1	196.8
82.5°	59.2	63.2	84.4	68.5	61.8	48.5	54.5	65.2	83.1	121.7	77.1
85°	4.7	4.7	15.3	17.3	21.3	17.3	21.9	26.6	37.9	48.5	25.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.3	6.0	11.3	7.3
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: P633020  
 CATALOG NUMBER: GWS-SA2D-830-U-AFL-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6	2318.6
2.5°	2322.6	2288.7	2248.1	2214.9	2163.7	2136.4	2101.9	2059.3	2042.0	2034.0	2029.4
5°	2327.3	2267.4	2181.0	2101.2	2012.8	1942.9	1865.1	1784.0	1737.5	1726.2	1718.2
7.5°	2344.6	2260.8	2123.1	1991.5	1827.2	1675.0	1526.7	1379.7	1304.6	1276.0	1273.4
10°	2368.5	2258.1	2064.6	1845.9	1568.6	1327.9	1154.3	1039.3	990.8	974.8	969.5
12.5°	2398.4	2256.1	1987.5	1643.7	1270.0	1042.6	943.5	924.9	931.6	930.2	930.2
15°	2436.3	2258.8	1894.4	1415.0	1027.3	905.0	907.0	928.9	949.5	952.9	952.9
17.5°	2477.6	2256.1	1759.4	1185.6	881.7	872.4	903.0	933.6	952.2	954.8	954.8
20°	2522.1	2243.5	1589.2	969.5	817.9	851.8	885.0	909.0	920.3	922.9	922.9
22.5°	2548.7	2207.6	1404.3	820.5	777.3	819.2	841.1	865.7	867.1	845.8	845.1
25°	2544.7	2140.4	1193.6	724.8	734.1	770.7	798.6	781.3	760.0	748.1	746.1
27.5°	2519.4	2039.4	978.8	652.3	682.9	724.1	715.5	700.8	695.5	682.2	680.9
30°	2487.5	1915.0	786.0	595.8	629.7	667.6	654.3	653.0	647.6	633.0	633.0
32.5°	2456.9	1786.7	640.3	553.9	595.8	598.4	617.1	618.4	615.7	590.5	587.8
35°	2448.3	1658.4	541.9	520.6	562.5	561.2	587.8	587.1	541.3	506.0	505.4
37.5°	2474.2	1528.0	483.4	493.4	516.7	533.9	555.2	516.7	501.4	480.1	478.8
40°	2529.4	1407.7	453.5	477.4	487.4	512.7	479.4	482.1	478.1	462.1	460.1
42.5°	2602.6	1305.3	436.9	472.1	470.8	477.4	440.9	451.5	457.5	445.5	443.5
45°	2673.0	1216.2	428.2	452.2	458.8	420.2	412.9	422.9	432.2	427.6	425.6
47.5°	2724.9	1139.0	423.6	424.9	443.5	401.0	389.0	393.6	404.9	406.9	406.3
50°	2740.9	1073.2	418.2	402.3	398.3	381.7	372.4	371.0	384.3	393.6	395.0
52.5°	2710.3	1014.7	404.3	382.3	363.1	365.7	362.4	355.7	369.0	381.7	383.0
55°	2665.1	981.4	382.3	363.1	340.4	351.1	352.4	346.4	355.1	363.7	363.7
57.5°	2668.4	1000.7	361.1	345.1	320.5	334.5	341.8	339.1	339.1	345.8	346.4
60°	2690.3	1028.7	347.1	322.5	300.6	315.2	331.8	329.1	323.2	331.8	331.8
62.5°	2627.2	991.4	337.8	300.6	279.3	296.6	316.5	315.2	308.5	322.5	323.8
65°	2441.0	891.7	327.1	273.3	258.0	277.9	295.2	299.9	293.9	312.5	315.8
67.5°	2046.0	750.0	306.5	247.4	236.7	255.3	272.0	278.6	274.0	295.9	298.6
70°	1525.4	607.1	274.0	218.8	210.8	227.4	242.7	245.4	246.0	272.0	274.6
72.5°	972.8	472.1	230.7	186.8	180.9	193.5	204.8	215.4	220.1	244.7	244.0
75°	542.6	351.1	185.5	158.3	147.6	157.6	170.9	183.5	196.8	232.7	236.7
77.5°	312.5	246.7	147.0	127.0	114.4	125.0	136.3	154.3	194.2	225.4	221.4
80°	176.2	160.2	111.0	93.1	85.1	93.1	101.7	135.6	152.9	166.2	168.2
82.5°	82.5	89.8	75.8	57.2	57.2	62.5	70.5	105.1	115.7	94.4	82.5
85°	29.9	40.6	37.2	29.3	25.9	25.3	43.9	59.8	37.2	33.2	28.6
87.5°	8.0	11.3	10.6	7.3	4.0	3.3	0.0	0.0	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)