

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: P639985

Luminaire Tested: GWS-SA5C-830-U-T3R-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639985  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5C-830-U-T3R-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

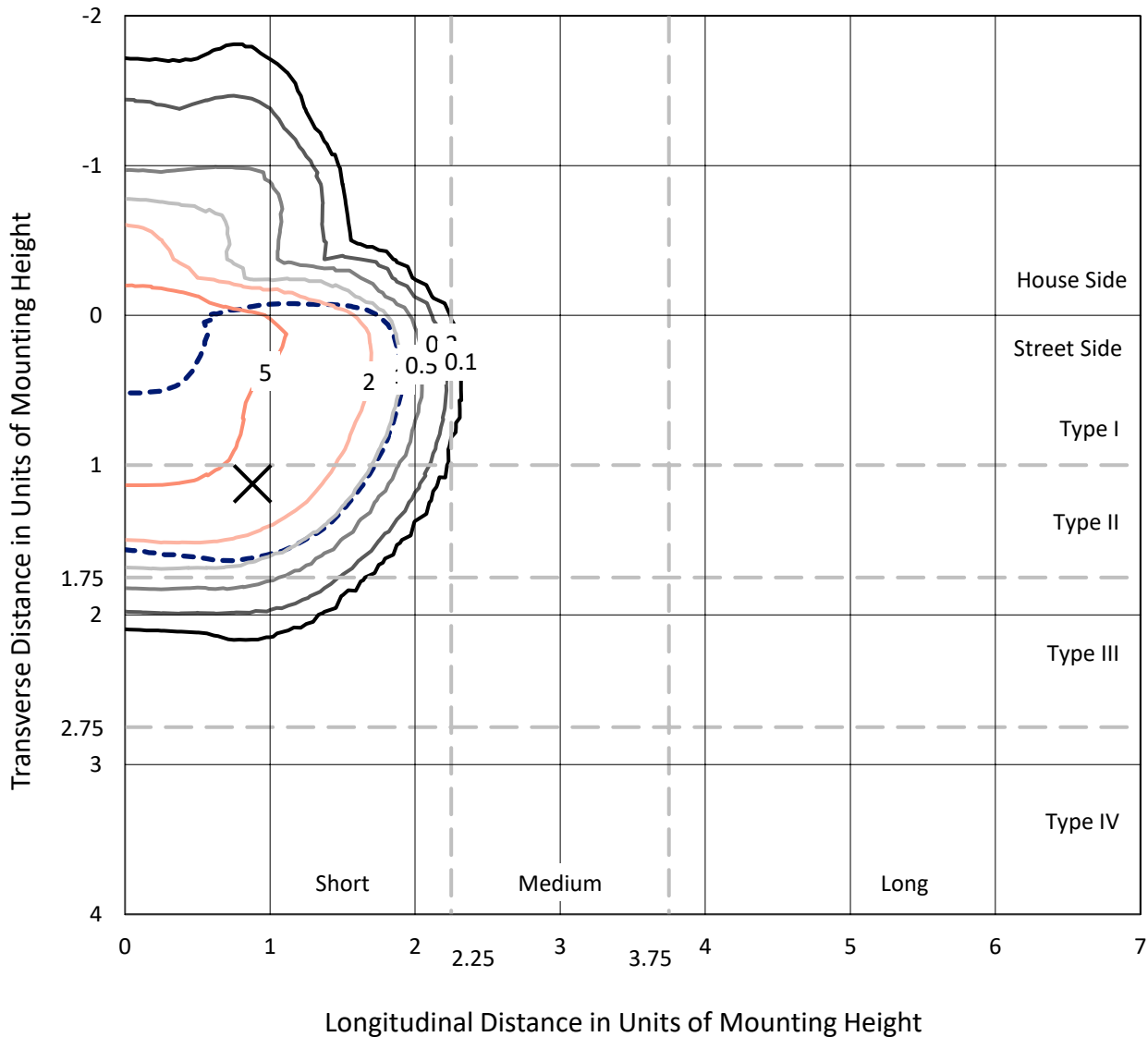
Lumens per Lamp: N/A  
Luminaire Lumens: 11864.2 lumens  
Efficiency: N/A  
Efficacy: 75.3 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 157.5  
Input Voltage (V): 120  
Input Current (Ain): 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: P639985  
 CATALOG NUMBER: GWS-SA5C-830-U-T3R-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

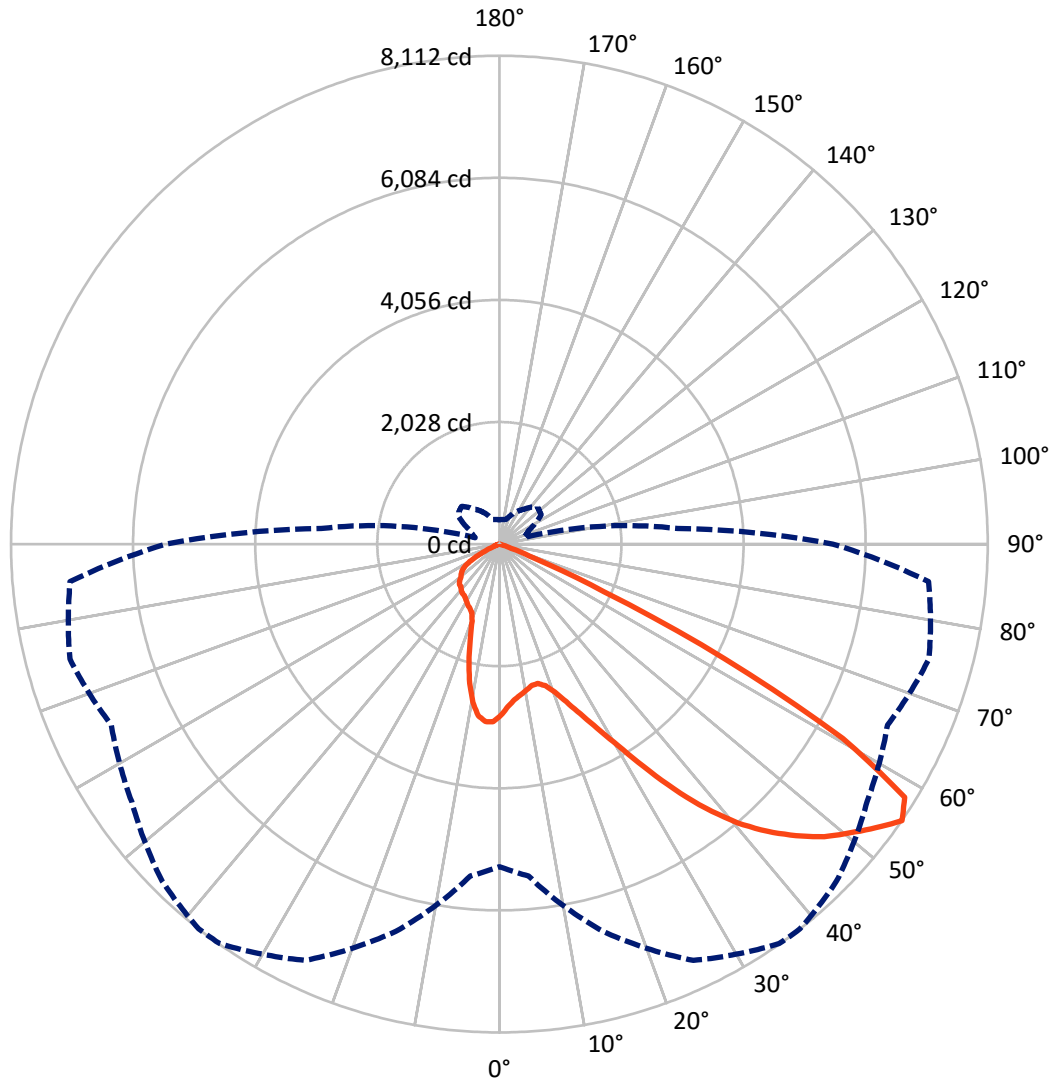
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.4 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 38-Deg Lateral    - - - Horizontal Cone Through 55-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2311.5	0.0	2311.5
	% Fixture	19.5	0.0	19.5
<b>Street Side</b>	Lumens	9552.7	0.0	9552.7
	% Fixture	80.5	0.0	80.5
<b>Total</b>	Lumens	11864.2	0.0	11864.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	263.1	2.2
10°-20°	708.2	6.0
20°-30°	1215.3	10.2
30°-40°	2015.7	17.0
40°-50°	2963.2	25.0
50°-60°	3462.6	29.2
60°-70°	1173.7	9.9
70°-80°	60.0	0.5
80°-90°	2.4	0.0
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°	11864.2	100.0
0°-180°	11864.2	100.0

**Coefficient of Utilization**



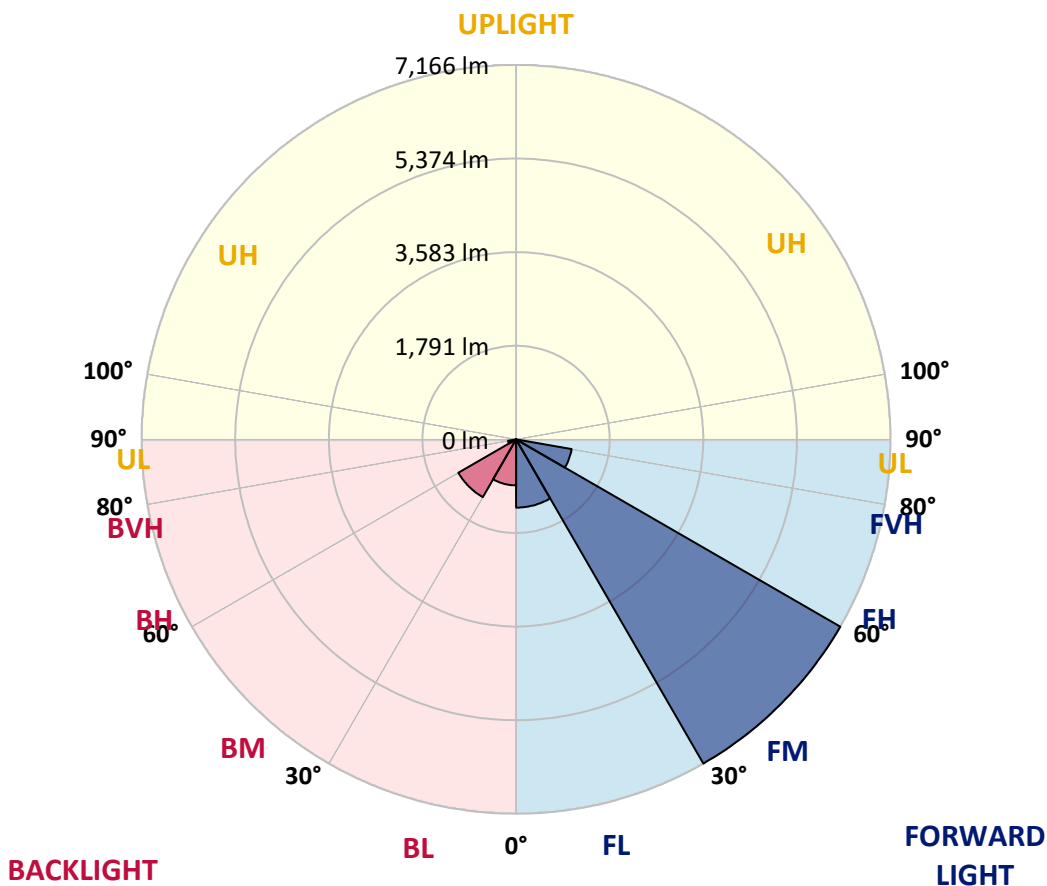
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1306.0	11.0			
FM (30°-60°)	7165.6	60.4			
FH (60°-80°)	1079.8	9.1			G1/1800
FVH (80°-90°)	1.3	0.0			G0/10
BL (0°-30°)	880.7	7.4	B2/1000		
BM (30°-60°)	1275.9	10.8	B2/2500		
BH (60°-80°)	153.9	1.3	B1/500		G1/500
BVH (80°-90°)	1.1	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G1**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	38°	45°	55°	65°	75°	85°
0°	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1
2.5°	2649.8	2644.4	2655.3	2677.0	2697.3	2704.1	2724.4	2752.9	2770.5	2812.6	2846.5
5°	2530.5	2527.8	2538.6	2557.6	2584.8	2594.2	2625.4	2672.9	2720.4	2793.6	2865.5
7.5°	2422.0	2420.7	2436.9	2479.0	2518.3	2530.5	2568.5	2626.8	2690.5	2803.1	2908.9
10°	2279.6	2281.0	2312.2	2371.8	2443.7	2468.1	2529.2	2613.2	2696.0	2841.1	2987.5
12.5°	2233.5	2236.2	2252.5	2298.6	2377.3	2408.5	2493.9	2621.4	2727.1	2895.3	3089.2
15°	2346.1	2346.1	2332.5	2337.9	2373.2	2401.7	2491.2	2648.5	2780.0	2960.4	3189.6
17.5°	2564.4	2556.3	2522.4	2476.3	2464.1	2473.6	2545.4	2706.8	2854.6	3036.3	3303.5
20°	2860.0	2862.8	2796.3	2700.0	2622.7	2621.4	2664.8	2809.9	2961.8	3127.2	3426.9
22.5°	3218.1	3207.2	3119.1	2987.5	2853.3	2842.4	2860.0	2967.2	3116.3	3270.9	3578.8
25°	3633.0	3627.6	3502.8	3326.5	3148.9	3123.1	3123.1	3228.9	3337.4	3475.7	3760.5
27.5°	4067.0	4067.0	3946.3	3742.9	3506.9	3460.8	3454.0	3578.8	3650.7	3677.8	3913.7
30°	4513.1	4507.7	4388.4	4179.5	3927.3	3879.8	3860.9	3953.1	4004.6	3923.2	4105.0
32.5°	4966.1	4975.6	4854.9	4661.0	4435.8	4404.7	4346.3	4346.3	4388.4	4274.5	4406.0
35°	5452.9	5450.2	5355.3	5223.7	5031.2	4995.9	4899.6	4749.1	4812.8	4762.7	4822.3
37.5°	5882.8	5903.2	5857.1	5759.4	5603.5	5568.2	5409.5	5137.0	5185.8	5264.4	5317.3
40°	6319.5	6335.8	6381.9	6350.7	6154.0	6088.9	5806.9	5359.4	5413.6	5683.5	5835.4
42.5°	6748.0	6756.2	6849.7	6901.3	6638.2	6524.3	6107.9	5495.0	5551.9	6011.7	6277.4
45°	7020.6	7038.2	7192.8	7350.1	7065.4	6909.4	6369.7	5668.6	5693.0	6239.5	6604.3
47.5°	7009.8	7050.4	7340.6	7626.8	7432.9	7264.7	6684.3	5946.6	5905.9	6453.7	6819.9
50°	6791.4	6840.2	7256.6	7710.9	7697.3	7541.3	7034.2	6349.3	6221.8	6643.6	6847.0
52.5°	6338.5	6479.5	7108.7	7721.7	7910.2	7831.6	7466.8	6891.8	6649.0	6916.2	6890.4
55°	5359.4	5532.9	6659.9	7629.5	8102.8	8112.3	7921.1	7457.3	7112.8	7385.4	7157.6
57.5°	4068.3	4206.7	5126.1	6791.4	7784.1	7940.0	8097.4	7755.6	7399.0	7705.4	7219.9
60°	2451.9	2611.9	3209.9	4983.7	6286.9	6552.7	7169.8	7103.3	6673.4	6805.0	5920.8
62.5°	994.0	1078.1	1482.2	2746.1	3957.1	4205.3	4796.6	4896.9	4791.1	4656.9	3591.0
65°	363.4	397.3	594.0	1135.1	1819.9	1910.8	2222.7	2400.3	2546.8	2168.4	1335.8
67.5°	225.1	246.8	386.5	583.1	661.8	615.7	626.5	747.2	713.3	440.7	238.7
70°	166.8	184.4	302.4	404.1	267.2	206.1	139.7	149.2	134.3	118.0	116.6
72.5°	115.3	131.5	226.5	238.7	103.1	73.2	51.5	71.9	81.4	80.0	82.7
75°	75.9	88.1	142.4	93.6	25.8	20.3	17.6	38.0	48.8	48.8	50.2
77.5°	44.8	51.5	50.2	19.0	5.4	5.4	4.1	6.8	10.8	12.2	14.9
80°	5.4	4.1	2.7	2.7	2.7	2.7	2.7	2.7	4.1	4.1	4.1
82.5°	1.4	1.4	1.4	2.7	2.7	2.7	2.7	2.7	2.7	4.1	4.1
85°	0.0	0.0	1.4	1.4	2.7	2.7	2.7	2.7	2.7	4.1	4.1
87.5°	0.0	0.0	1.4	1.4	2.7	2.7	2.7	2.7	2.7	4.1	4.1
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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 CATALOG NUMBER: GWS-SA5C-830-U-T3R-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1	2845.1
2.5°	2872.2	2862.8	2902.1	2930.6	2953.6	2964.5	2949.5	2948.2	2948.2	2918.4	2910.2
5°	2906.2	2910.2	2965.8	2990.2	2994.3	2980.7	2946.8	2923.8	2910.2	2879.0	2861.4
7.5°	2971.2	2984.8	3037.7	3033.6	2997.0	2934.6	2845.1	2776.0	2731.2	2682.4	2652.6
10°	3064.8	3090.6	3123.1	3066.2	2949.5	2790.9	2606.5	2474.9	2396.3	2340.7	2306.7
12.5°	3178.7	3204.5	3193.6	3059.4	2816.6	2533.2	2295.9	2106.0	2015.2	1965.0	1929.7
15°	3294.0	3310.3	3239.8	2978.0	2582.0	2201.0	1936.5	1748.0	1636.8	1596.1	1566.3
17.5°	3412.0	3407.9	3247.9	2818.0	2268.8	1826.7	1566.3	1437.5	1406.3	1399.5	1396.8
20°	3535.4	3498.8	3215.3	2588.8	1891.8	1456.5	1308.6	1316.8	1373.7	1400.9	1406.3
22.5°	3676.4	3584.2	3134.0	2278.3	1506.6	1213.7	1228.6	1308.6	1385.9	1422.6	1428.0
25°	3827.0	3662.9	2998.4	1879.6	1188.0	1116.1	1204.2	1296.4	1379.2	1423.9	1429.3
27.5°	3925.9	3681.8	2776.0	1478.2	1019.8	1078.1	1171.7	1259.8	1345.3	1394.1	1400.9
30°	4033.1	3673.7	2473.6	1139.1	962.8	1045.6	1126.9	1206.9	1285.6	1339.8	1345.3
32.5°	4190.4	3668.3	2104.7	924.9	939.8	1019.8	1079.5	1145.9	1200.2	1231.4	1227.3
35°	4396.5	3661.5	1674.8	834.0	926.2	999.5	1046.9	1078.1	1018.4	999.5	1003.5
37.5°	4661.0	3677.8	1312.7	796.0	922.2	994.0	1034.7	945.2	853.0	817.7	812.3
40°	4953.9	3719.8	1000.8	781.1	935.7	1007.6	988.6	840.8	726.9	657.7	642.8
42.5°	5248.2	3765.9	792.0	775.7	958.8	1045.6	912.7	764.8	594.0	554.7	549.2
45°	5466.5	3757.8	684.8	766.2	979.1	1067.3	892.3	656.4	530.2	512.6	514.0
47.5°	5576.3	3668.3	626.5	744.5	987.3	1045.6	842.1	611.6	486.8	505.8	522.1
50°	5518.0	3436.4	572.3	702.5	969.6	1017.1	762.1	577.7	465.1	543.8	580.4
52.5°	5447.5	3151.6	512.6	637.4	927.6	977.8	730.9	568.2	451.6	524.8	551.9
55°	5541.1	2971.2	415.0	537.0	844.9	885.5	706.5	566.9	420.4	408.2	404.1
57.5°	5409.5	2611.9	297.0	386.5	648.2	701.1	688.9	557.4	372.9	371.6	377.0
60°	4180.9	1593.4	203.4	245.5	397.3	447.5	625.2	533.0	321.4	295.6	297.0
62.5°	2375.9	678.1	139.7	151.9	203.4	241.4	477.4	484.1	297.0	282.1	297.0
65°	827.2	242.7	108.5	101.7	112.6	128.8	273.9	374.3	269.9	244.1	246.8
67.5°	170.9	120.7	96.3	84.1	84.1	84.1	139.7	233.3	222.4	193.9	196.6
70°	108.5	103.1	84.1	71.9	69.2	63.7	80.0	128.8	153.2	141.0	142.4
72.5°	80.0	78.7	66.4	58.3	51.5	46.1	50.2	63.7	78.7	81.4	82.7
75°	48.8	50.2	43.4	36.6	32.5	28.5	29.8	29.8	29.8	27.1	29.8
77.5°	14.9	16.3	13.6	10.8	9.5	9.5	9.5	8.1	6.8	4.1	4.1
80°	4.1	4.1	4.1	4.1	4.1	2.7	2.7	1.4	1.4	0.0	0.0
82.5°	4.1	4.1	4.1	4.1	2.7	2.7	1.4	1.4	0.0	0.0	0.0
85°	4.1	4.1	4.1	4.1	2.7	2.7	1.4	1.4	0.0	0.0	0.0
87.5°	4.1	4.1	4.1	4.1	2.7	2.7	1.4	1.4	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  
 R<sub>f</sub>: 81.5  
 R<sub>g</sub>: 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)