

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: P636012

Luminaire Tested: GWS-SA3E-830-U-T1-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636012  
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-SA3E-830-U-T1-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

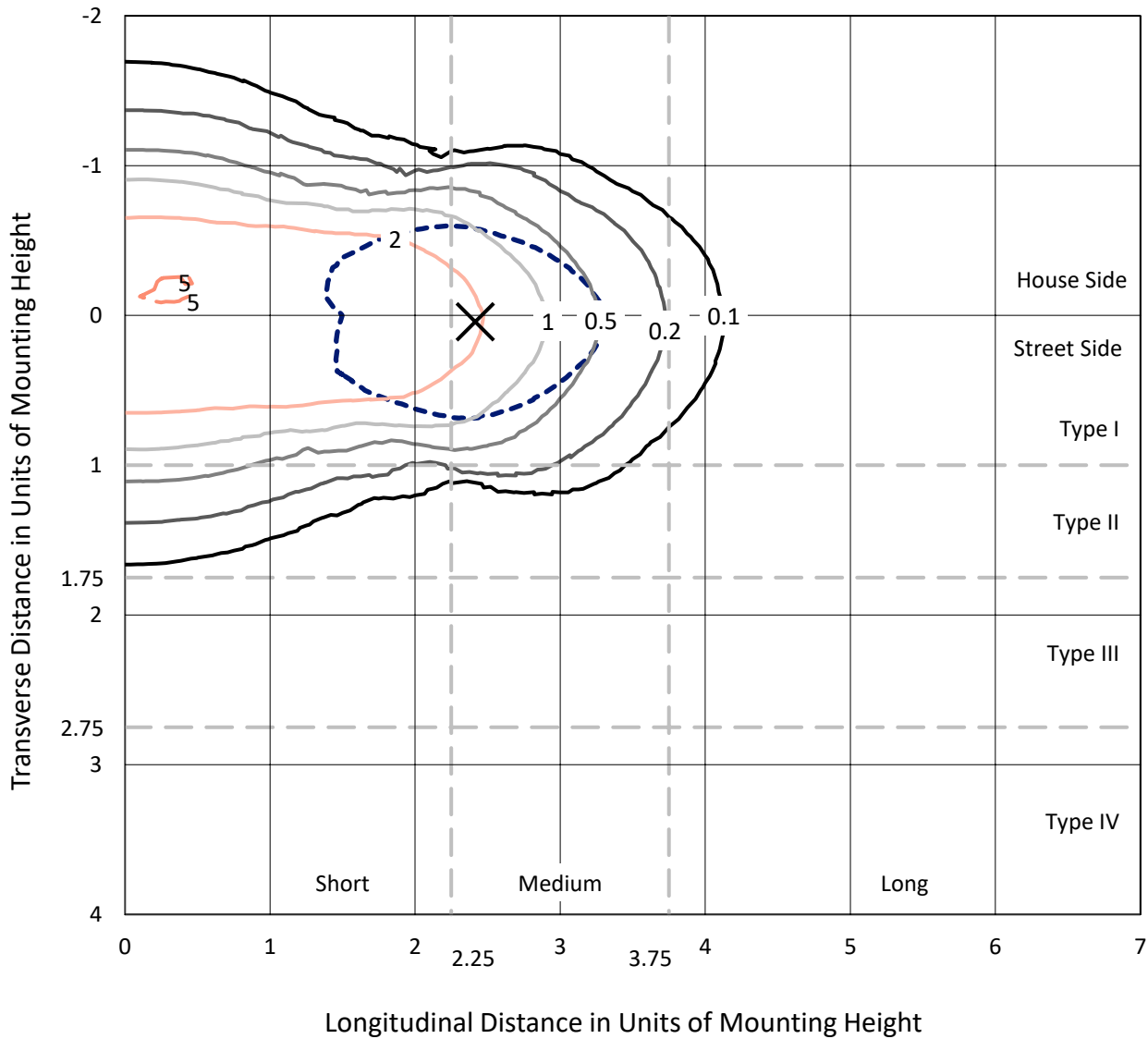
Lumens per Lamp: N/A  
Luminaire Lumens: 17437.9 lumens  
Efficiency: N/A  
Efficacy: 109.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type I - Medium  
BUG Rating: B4 - U0 - G4  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P636012  
 CATALOG NUMBER: GWS-SA3E-830-U-T1-W

### Iso-Footcandle Lines of Horizontal Illumination

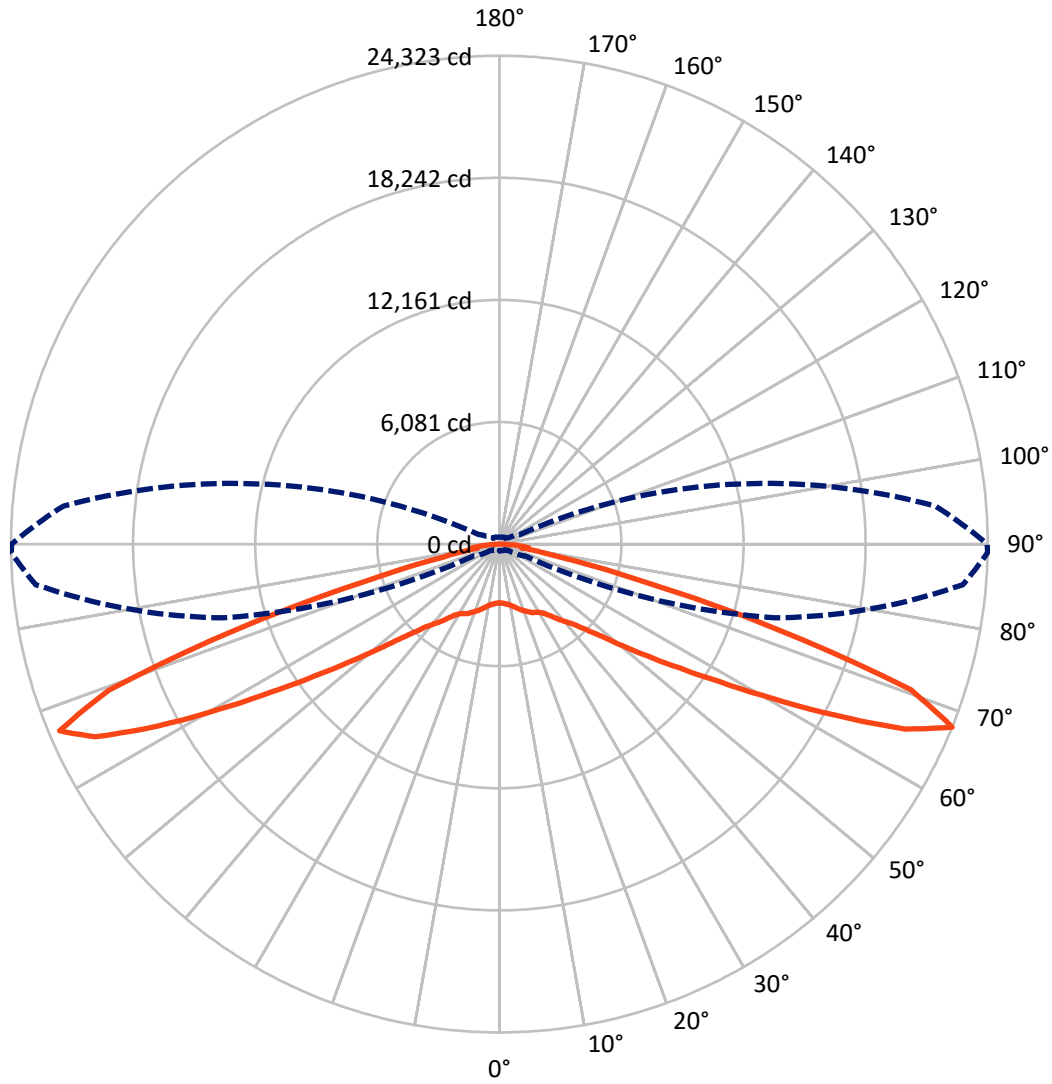
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.1 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	8642.5	0.0	8642.5
	% Fixture	49.6	0.0	49.6
<b>Street Side</b>	Lumens	8795.4	0.0	8795.4
	% Fixture	50.4	0.0	50.4
<b>Total</b>	Lumens	17437.9	0.0	17437.9
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	293.6	1.7
10°-20°	955.9	5.5
20°-30°	1616.0	9.3
30°-40°	2217.7	12.7
40°-50°	2828.1	16.2
50°-60°	3548.3	20.3
60°-70°	4279.5	24.5
70°-80°	1548.2	8.9
80°-90°	150.6	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°	17437.9	100.0
0°-180°	17437.9	100.0

**Coefficient of Utilization**



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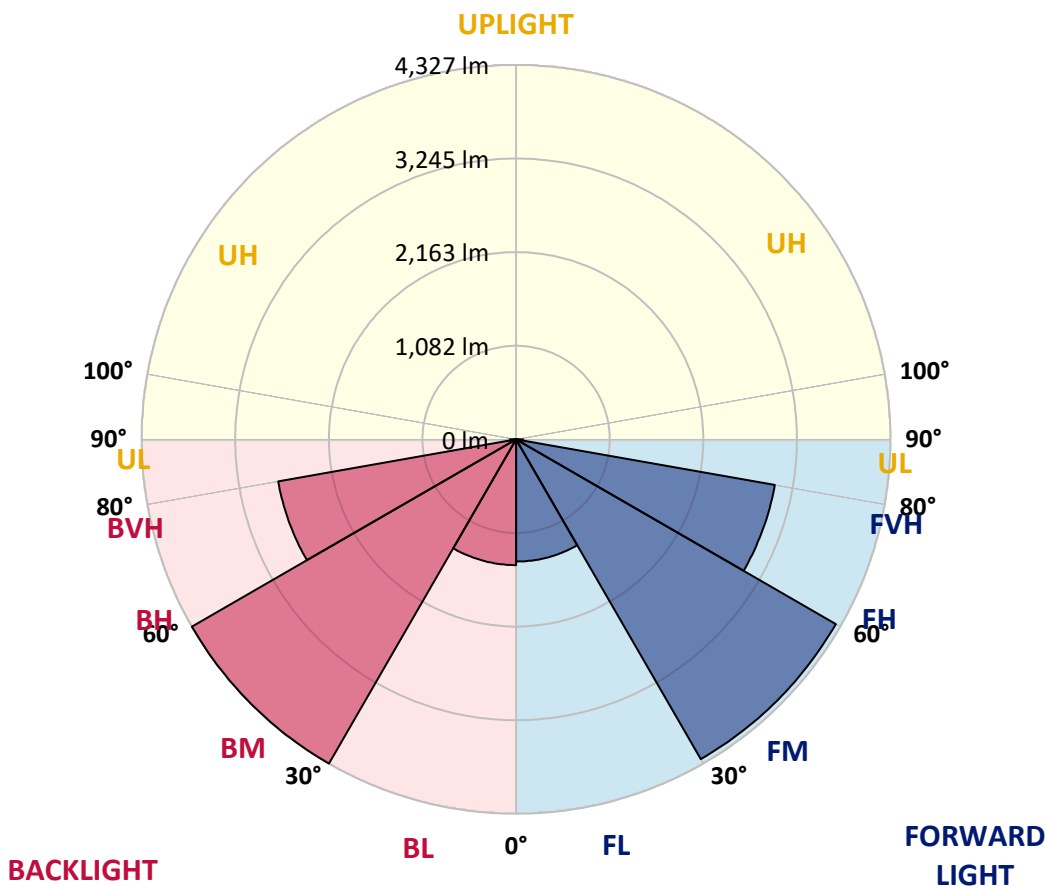
CATALOG NUMBER: GWS-SA3E-830-U-T1-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1412.3	8.1			
FM (30°-60°)	4267.4	24.5			
FH (60°-80°)	3036.2	17.4			G2/5000
FVH (80°-90°)	79.4	0.5			G1/100
BL (0°-30°)	1453.2	8.3	B3/2500		
BM (30°-60°)	4326.7	24.8	B3/5000		
BH (60°-80°)	2791.5	16.0	B4/5000		G4/5000
BVH (80°-90°)	71.1	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B4-U0-G4**

Type I Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°
0°	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8
2.5°	2935.6	2933.1	2926.8	2945.6	2941.8	2943.1	2950.6	2945.6	2936.8	2921.8	2943.1
5°	3018.2	3017.0	3003.2	3014.5	3002.0	2993.2	2991.9	2979.4	2969.4	2953.1	2975.7
7.5°	3098.4	3097.1	3085.9	3105.9	3095.9	3085.9	3074.6	3049.5	3025.7	3002.0	3027.0
10°	3159.8	3158.5	3156.0	3184.8	3187.3	3191.1	3186.1	3143.5	3102.1	3073.3	3098.4
12.5°	3194.8	3198.6	3204.8	3257.4	3283.7	3308.8	3315.0	3280.0	3211.1	3169.8	3199.8
15°	3171.0	3178.5	3209.8	3305.0	3377.7	3434.0	3457.8	3429.0	3340.1	3271.2	3305.0
17.5°	3057.1	3063.3	3124.7	3270.0	3430.3	3560.5	3599.3	3581.8	3482.9	3399.0	3431.5
20°	2899.3	2913.0	2979.4	3182.3	3421.5	3648.2	3752.1	3745.9	3638.2	3509.2	3548.0
22.5°	2756.5	2772.8	2842.9	3067.1	3362.6	3670.7	3906.2	3922.5	3779.7	3619.4	3650.7
25°	2596.2	2611.2	2701.4	2930.6	3261.2	3653.2	4037.7	4111.6	3940.0	3745.9	3774.7
27.5°	2432.1	2443.4	2532.3	2776.5	3128.4	3620.6	4141.6	4319.5	4097.8	3833.5	3853.6
30°	2288.1	2303.1	2384.5	2622.5	2983.2	3555.5	4226.8	4541.1	4279.4	3932.5	3948.8
32.5°	2149.1	2161.6	2250.5	2470.9	2829.1	3455.3	4303.2	4801.6	4548.6	4116.6	4116.6
35°	1973.8	1996.3	2096.5	2325.7	2683.8	3322.6	4358.3	5104.7	4916.8	4388.3	4389.6
37.5°	1812.2	1824.7	1929.9	2161.6	2531.1	3172.3	4363.3	5419.0	5382.7	4734.0	4736.5
40°	1628.1	1644.4	1757.1	1986.3	2355.7	3014.5	4315.7	5712.1	5871.2	5089.7	5075.9
42.5°	1441.5	1465.3	1573.0	1797.2	2166.6	2821.6	4189.2	5991.4	6491.1	5501.7	5467.9
45°	1261.1	1276.2	1383.9	1595.5	1950.0	2591.2	3986.3	6259.4	7227.5	6127.9	6079.1
47.5°	1058.3	1064.5	1176.0	1378.9	1725.8	2334.4	3695.8	6498.6	8036.5	6957.0	6873.1
50°	877.9	886.7	974.4	1148.4	1451.5	2030.1	3333.8	6638.9	9067.2	8087.9	7942.6
52.5°	710.1	718.9	789.0	928.0	1199.8	1683.2	2885.5	6606.3	10113.0	9491.8	9280.1
55°	573.6	579.9	627.4	736.4	944.3	1338.8	2355.7	6314.5	11273.9	11325.3	10869.4
57.5°	484.7	487.2	519.7	586.1	737.7	1032.0	1818.5	5625.7	12491.2	13664.7	12915.8
60°	433.3	434.6	449.6	490.9	582.4	787.7	1332.5	4528.6	13752.4	16591.5	15564.6
62.5°	400.8	400.8	413.3	437.1	483.4	606.2	979.4	3252.4	14657.9	19776.3	18755.6
65°	369.5	369.5	378.2	398.3	423.3	494.7	735.1	2097.7	15102.4	22438.9	22212.2
67.5°	329.4	330.6	336.9	358.2	380.7	413.3	557.3	1418.9	14179.4	23175.3	24322.5
70°	291.8	293.1	301.8	315.6	334.4	356.9	435.8	978.1	10320.9	19301.7	21747.6
72.5°	250.5	255.5	261.7	276.8	288.0	304.3	355.7	633.7	6005.2	12416.1	14376.1
75°	205.4	211.7	219.2	234.2	241.7	248.0	293.1	452.1	2889.2	6292.0	7164.9
77.5°	159.1	165.3	174.1	187.9	192.9	200.4	224.2	326.9	1383.9	2789.0	3007.0
80°	106.5	109.0	116.5	132.8	141.5	146.5	165.3	222.9	601.1	1119.6	1109.6
82.5°	65.1	66.4	68.9	78.9	82.7	87.7	107.7	136.5	286.8	1272.4	1459.0
85°	23.8	22.5	21.3	27.6	32.6	37.6	50.1	68.9	125.2	874.2	978.1
87.5°	0.0	0.0	0.0	1.3	2.5	2.5	5.0	10.0	30.1	326.9	224.2
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-T1-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8	2926.8
2.5°	2936.8	2923.1	2940.6	2953.1	2980.7	2990.7	2993.2	2984.4	2984.4	2969.4	2971.9
5°	2970.6	2961.9	2990.7	3012.0	3052.0	3067.1	3077.1	3070.8	3074.6	3064.6	3067.1
7.5°	3022.0	3014.5	3064.6	3105.9	3147.2	3164.8	3173.5	3168.5	3169.8	3157.2	3161.0
10°	3093.4	3095.9	3156.0	3209.8	3265.0	3282.5	3286.2	3271.2	3258.7	3236.1	3237.4
12.5°	3191.1	3203.6	3288.7	3348.9	3405.2	3430.3	3402.7	3347.6	3296.3	3257.4	3252.4
15°	3297.5	3320.1	3442.8	3519.2	3580.6	3568.0	3486.6	3362.6	3261.2	3203.6	3192.3
17.5°	3425.3	3459.1	3613.1	3704.5	3757.1	3677.0	3506.7	3321.3	3179.8	3102.1	3087.1
20°	3545.5	3599.3	3793.5	3912.4	3918.7	3738.4	3497.9	3237.4	3059.6	2964.4	2944.3
22.5°	3655.7	3724.6	3982.6	4134.1	4052.7	3765.9	3444.0	3118.4	2914.3	2802.8	2785.3
25°	3775.9	3873.6	4203.0	4344.5	4186.7	3754.6	3331.3	2970.6	2739.0	2625.0	2612.5
27.5°	3858.6	3981.3	4424.7	4559.9	4296.9	3690.8	3186.1	2809.1	2578.6	2470.9	2453.4
30°	3953.8	4110.3	4668.9	4794.1	4364.5	3596.8	3030.8	2658.8	2429.6	2313.1	2300.6
32.5°	4126.6	4323.2	4971.9	5042.1	4385.8	3480.4	2881.7	2513.5	2274.3	2157.8	2140.3
35°	4404.6	4635.1	5397.8	5318.9	4369.6	3352.6	2740.2	2343.2	2115.3	2006.3	1988.8
37.5°	4755.3	5042.1	5872.4	5568.1	4324.5	3212.4	2572.4	2200.4	1972.5	1862.3	1852.3
40°	5082.2	5435.3	6404.7	5783.5	4233.0	3039.5	2410.8	2051.4	1818.5	1702.0	1679.4
42.5°	5491.7	5961.3	7020.8	5970.1	4082.8	2832.9	2229.2	1867.3	1625.6	1520.4	1492.8
45°	6114.1	6697.7	7737.2	6149.2	3858.6	2578.6	2001.3	1643.1	1413.9	1306.2	1284.9
47.5°	6890.6	7618.2	8513.7	6255.6	3517.9	2310.6	1743.3	1406.4	1177.2	1055.8	1045.7
50°	7981.4	8957.0	9346.5	6236.9	3137.2	1992.5	1452.8	1124.6	933.0	845.4	831.6
52.5°	9310.2	10637.7	10247.0	6011.4	2732.7	1630.6	1132.2	882.9	740.2	677.5	666.3
55°	10977.1	12650.3	11195.0	5528.0	2221.7	1248.6	889.2	696.3	598.6	561.1	556.1
57.5°	13041.0	15256.5	12108.0	4714.0	1670.7	953.1	685.1	574.8	528.5	506.0	504.7
60°	15765.0	18023.0	12900.8	3663.2	1196.0	728.9	566.1	513.5	477.2	462.1	460.9
62.5°	19003.6	20535.3	13394.2	2494.7	899.2	581.1	498.4	465.9	444.6	435.8	434.6
65°	22332.4	22123.3	13158.8	1634.4	682.5	493.4	447.1	429.6	410.8	402.0	402.0
67.5°	24298.7	21787.6	11351.6	1134.7	541.0	433.3	403.3	387.0	355.7	348.2	348.2
70°	21522.1	17654.8	7440.4	830.3	438.3	379.5	350.7	328.1	315.6	308.1	306.8
72.5°	14234.5	11488.1	3956.3	576.1	365.7	323.1	296.8	288.0	273.0	265.5	264.3
75°	7084.7	6034.0	2027.6	415.8	304.3	259.2	248.0	244.2	231.7	221.7	219.2
77.5°	2953.1	2686.4	945.5	301.8	231.7	209.1	199.1	199.1	185.4	174.1	169.1
80°	1113.4	991.9	447.1	206.6	171.6	155.3	149.0	144.0	132.8	119.0	111.5
82.5°	1489.1	973.1	219.2	129.0	112.7	100.2	91.4	87.7	81.4	75.1	70.1
85°	964.3	691.3	98.9	66.4	56.4	42.6	37.6	35.1	31.3	27.6	25.0
87.5°	196.6	231.7	30.1	12.5	7.5	3.8	3.8	1.3	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**

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)