

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: P636989

Luminaire Tested: GWS-SA4B-830-U-SL3-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636989  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-33)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4B-830-U-SL3-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

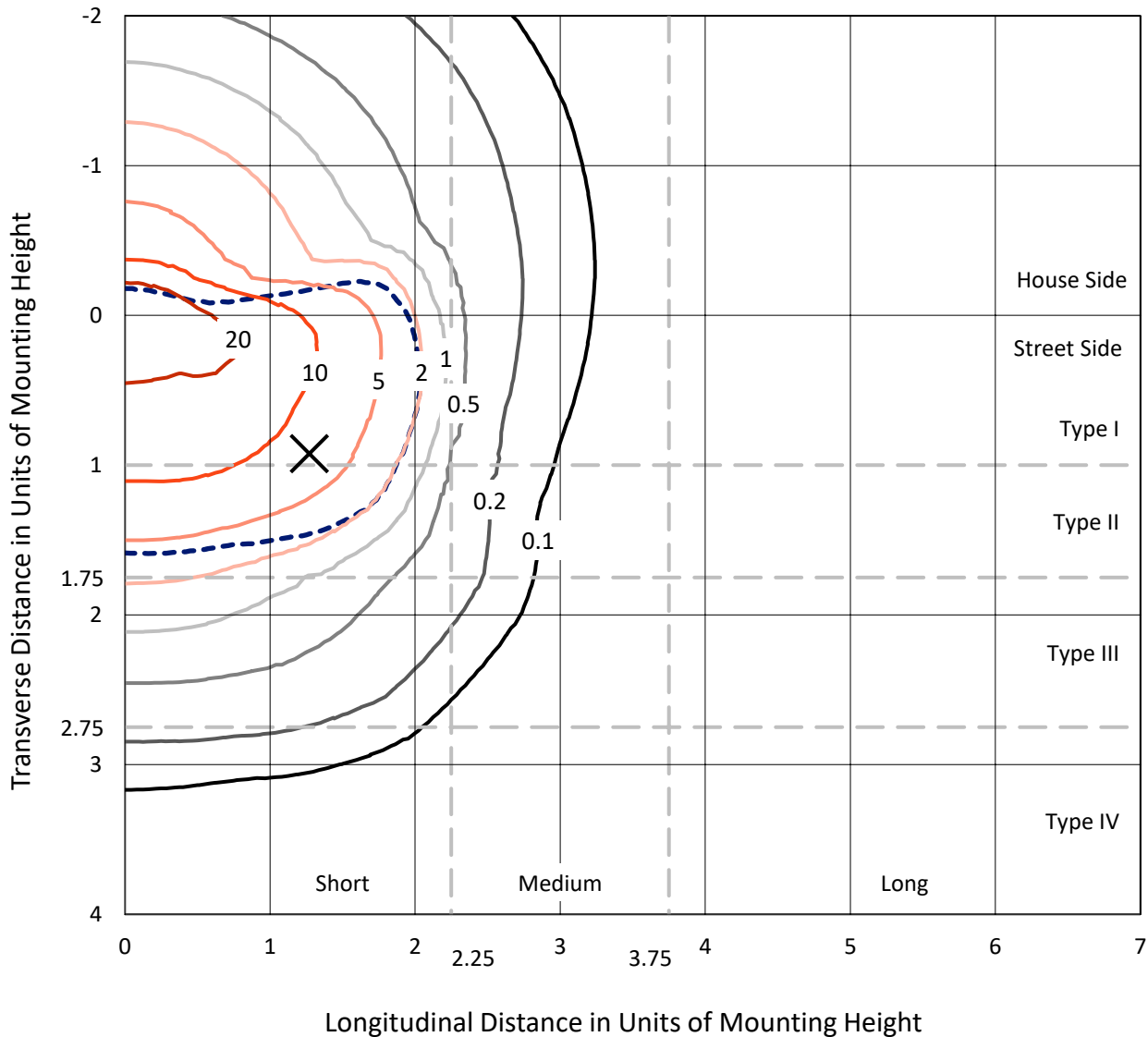
Lumens per Lamp: N/A  
Luminaire Lumens: 9629.2 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 94.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P636989  
 CATALOG NUMBER: GWS-SA4B-830-U-SL3-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

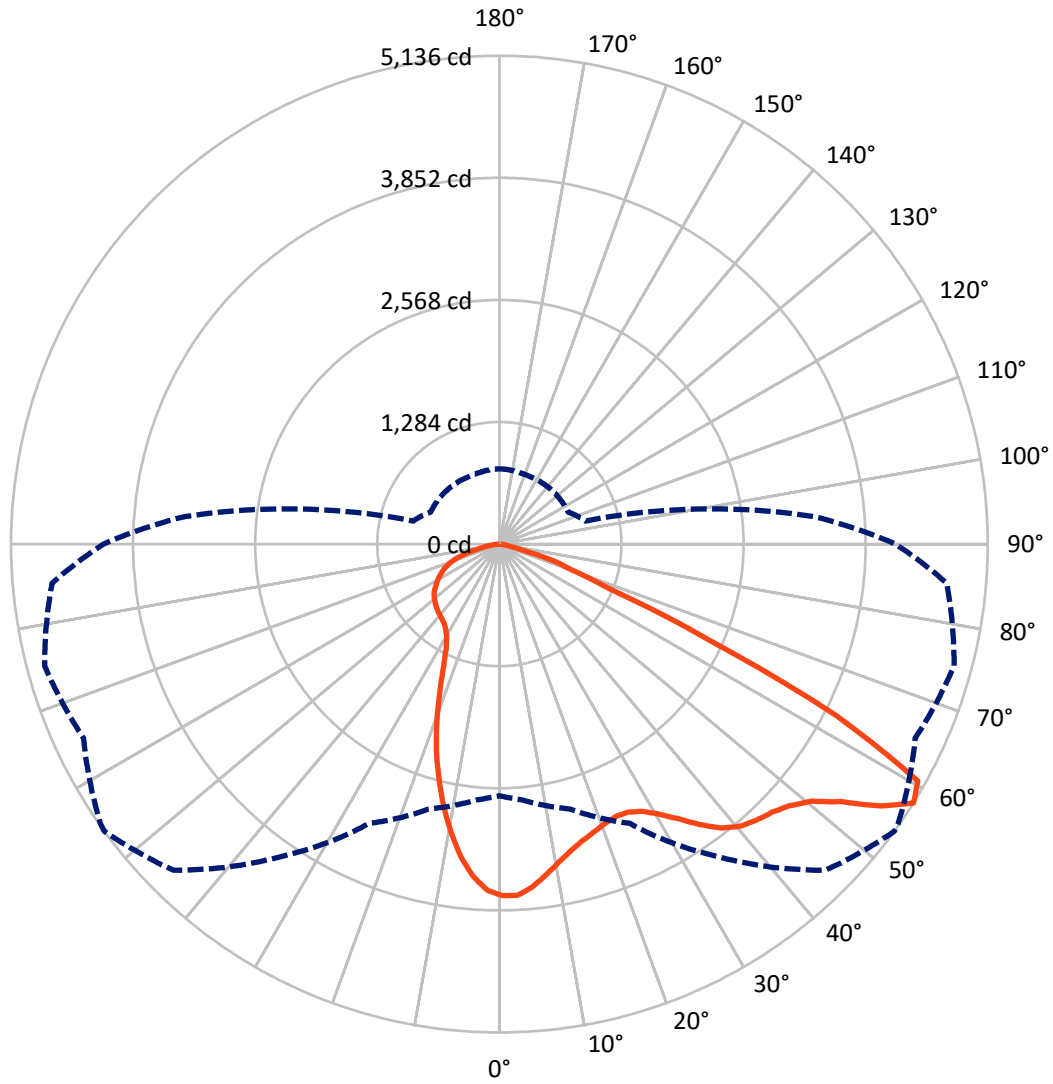
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 37 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 54-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2799.3	0.0	2799.3
	% Fixture	29.1	0.0	29.1
<b>Street Side</b>	Lumens	6829.9	0.0	6829.9
	% Fixture	70.9	0.0	70.9
<b>Total</b>	Lumens	9629.2	0.0	9629.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	324.9	3.4
10°-20°	775.4	8.1
20°-30°	1073.0	11.1
30°-40°	1490.9	15.5
40°-50°	1969.1	20.4
50°-60°	2340.0	24.3
60°-70°	1296.4	13.5
70°-80°	322.8	3.4
80°-90°	36.7	0.4
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°	9629.2	100.0
0°-180°	9629.2	100.0

**Coefficient of Utilization**



REPORT NUMBER: P636989

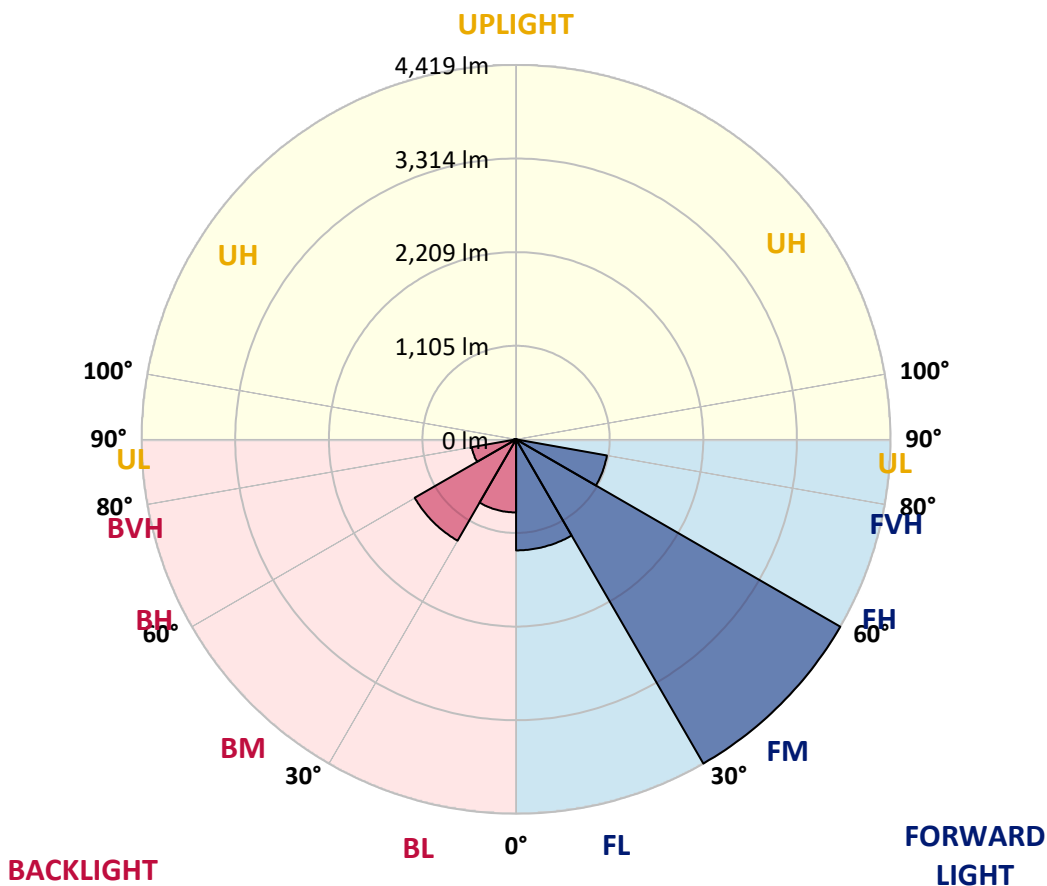
CATALOG NUMBER: GWS-SA4B-830-U-SL3-W-GRSWH

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1310.7	13.6			
FM (30°-60°)	4419.0	45.9			
FH (60°-80°)	1088.7	11.3			G1/1800
FVH (80°-90°)	11.5	0.1			G1/100
BL (0°-30°)	862.6	9.0	B2/1000		
BM (30°-60°)	1381.0	14.3	B2/2500		
BH (60°-80°)	530.5	5.5	B2/1000		G2/1000
BVH (80°-90°)	25.2	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Short





REPORT NUMBER: P636989  
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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	54°	55°	65°	75°	85°
0°	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9
2.5°	3627.6	3635.0	3640.0	3657.3	3672.1	3685.3	3699.3	3699.3	3698.5	3696.0	3691.1
5°	3484.2	3492.4	3504.0	3527.9	3560.0	3583.1	3621.0	3624.3	3640.8	3647.4	3644.1
7.5°	3317.7	3320.2	3335.0	3366.3	3417.4	3458.7	3513.1	3519.6	3559.2	3582.3	3578.2
10°	3135.5	3127.3	3153.7	3199.8	3266.6	3335.8	3405.9	3411.7	3475.1	3518.8	3515.5
12.5°	2969.0	2969.9	2996.2	3052.3	3135.5	3221.3	3315.2	3328.4	3406.7	3462.8	3457.0
15°	2829.7	2833.0	2865.2	2928.6	3023.4	3125.6	3242.7	3255.1	3354.0	3428.2	3411.7
17.5°	2718.5	2721.8	2749.8	2822.3	2923.7	3047.3	3189.9	3202.3	3325.1	3413.3	3379.5
20°	2641.8	2640.1	2667.4	2736.6	2841.3	2975.6	3143.8	3161.9	3316.1	3419.1	3358.1
22.5°	2610.5	2609.7	2629.4	2686.3	2784.4	2920.4	3115.8	3140.5	3325.9	3444.6	3344.9
25°	2626.1	2622.8	2640.1	2682.2	2760.5	2899.0	3124.0	3150.4	3368.0	3497.4	3347.4
27.5°	2674.8	2670.6	2685.5	2723.4	2782.7	2921.2	3181.7	3212.2	3457.0	3593.8	3380.3
30°	2749.0	2746.5	2761.3	2797.6	2849.5	2995.4	3292.2	3326.8	3594.7	3743.9	3452.1
32.5°	2835.5	2831.4	2857.8	2899.8	2960.0	3130.6	3440.5	3485.9	3757.9	3936.7	3572.4
35°	2932.8	2929.5	2965.7	3026.7	3113.3	3318.5	3620.2	3669.7	3924.4	4155.2	3732.3
37.5°	3027.6	3027.6	3097.6	3188.3	3297.1	3522.9	3789.2	3820.5	4039.8	4348.9	3903.8
40°	3111.6	3116.6	3222.1	3358.1	3496.6	3707.6	3900.5	3926.8	4090.9	4482.4	4053.0
42.5°	3204.8	3208.9	3331.7	3509.8	3674.6	3856.8	3968.1	3981.2	4100.8	4549.2	4158.5
45°	3279.0	3284.7	3437.2	3627.6	3829.6	3968.9	4021.6	4033.2	4114.8	4585.4	4235.1
47.5°	3317.7	3325.9	3500.7	3722.4	3934.3	4069.4	4109.8	4114.8	4172.5	4648.9	4327.4
50°	3311.1	3327.6	3524.6	3769.4	4011.7	4170.8	4251.6	4259.8	4290.3	4742.0	4435.4
52.5°	3369.6	3377.1	3575.7	3825.5	4122.2	4357.9	4498.1	4509.6	4495.6	4812.1	4499.7
55°	3272.4	3307.8	3512.2	3817.2	4290.3	4647.3	4863.2	4857.4	4681.9	4890.4	4606.9
57.5°	2646.7	2698.7	2885.8	3240.2	4013.4	4850.0	5136.1	5122.0	4826.1	4950.6	4723.1
60°	1832.4	1840.6	2009.6	2261.0	3097.6	4284.6	5056.1	5086.6	4852.5	4874.8	4508.0
62.5°	1465.6	1463.1	1478.7	1485.3	1970.0	3011.9	3991.1	4102.4	4031.5	3798.3	3194.9
65°	1251.2	1260.3	1306.5	1282.6	1285.9	1696.4	2384.6	2400.3	2350.8	2266.8	1689.8
67.5°	979.2	994.9	1076.5	1169.6	1140.0	1092.2	1237.2	1229.8	969.3	750.1	619.9
70°	613.3	623.2	710.5	918.2	992.4	896.8	795.4	792.1	519.3	427.0	468.2
72.5°	357.7	359.4	384.1	511.9	658.6	613.3	585.2	563.8	333.8	340.4	373.4
75°	197.0	197.0	196.2	220.9	259.6	230.0	222.6	216.8	223.4	253.1	277.8
77.5°	41.2	42.0	44.5	58.5	75.8	92.3	116.2	117.0	145.9	169.0	188.8
80°	19.0	19.8	24.7	31.3	40.4	53.6	70.9	71.7	88.2	106.3	119.5
82.5°	9.9	10.7	13.2	16.5	21.4	28.0	39.6	39.6	52.8	62.6	70.9
85°	3.3	3.3	4.9	6.6	9.1	11.5	15.7	15.7	23.1	30.5	35.4
87.5°	0.0	0.0	0.0	0.0	0.8	1.6	3.3	3.3	4.1	4.9	8.2
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-SA4B-830-U-SL3-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9	3696.9
2.5°	3680.4	3654.8	3655.7	3660.6	3644.9	3621.0	3605.4	3585.6	3573.2	3570.8	3579.8
5°	3627.6	3598.0	3577.3	3555.9	3511.4	3458.7	3417.4	3383.6	3361.4	3353.1	3343.3
7.5°	3555.1	3516.4	3464.4	3404.3	3323.5	3229.5	3163.6	3101.7	3058.9	3046.5	3040.7
10°	3482.6	3426.5	3334.2	3222.1	3087.7	2960.8	2841.3	2749.8	2677.2	2636.0	2649.2
12.5°	3407.5	3338.3	3194.1	3021.8	2834.7	2643.4	2486.8	2335.2	2218.1	2159.6	2142.3
15°	3341.6	3247.6	3046.5	2813.2	2564.3	2323.6	2097.0	1869.5	1721.1	1640.3	1618.0
17.5°	3285.6	3163.6	2890.7	2600.6	2303.0	1960.1	1681.5	1470.5	1369.1	1324.6	1321.3
20°	3230.3	3081.1	2736.6	2371.4	2001.3	1617.2	1368.3	1269.4	1233.1	1217.5	1216.6
22.5°	3180.9	2994.6	2574.2	2142.3	1701.3	1359.2	1222.4	1179.5	1169.6	1169.6	1168.0
25°	3138.8	2908.0	2407.7	1899.1	1430.1	1210.0	1146.6	1128.4	1132.6	1140.0	1140.8
27.5°	3121.5	2840.4	2247.0	1649.4	1243.0	1123.5	1094.6	1092.2	1103.7	1115.2	1116.9
30°	3139.7	2794.3	2082.1	1410.3	1130.9	1070.7	1057.5	1062.5	1076.5	1088.0	1088.0
32.5°	3195.7	2771.2	1914.0	1235.6	1065.8	1033.6	1029.5	1034.5	1045.2	1051.8	1052.6
35°	3290.5	2780.3	1740.0	1117.7	1023.7	1006.4	1005.6	1008.9	1013.0	1017.2	1018.0
37.5°	3410.0	2820.7	1553.8	1049.3	996.5	986.7	985.0	984.2	985.0	985.0	985.8
40°	3527.1	2881.7	1387.3	1008.9	977.6	969.3	965.2	959.5	958.6	957.0	956.2
42.5°	3613.6	2928.6	1254.5	980.1	960.3	950.4	945.4	936.4	935.6	934.7	933.9
45°	3678.7	2968.2	1144.1	952.0	942.1	933.1	922.4	914.1	915.8	917.4	917.4
47.5°	3752.1	3002.8	1063.3	925.7	919.9	910.8	897.6	891.9	897.6	903.4	903.4
50°	3841.1	3051.5	997.4	899.3	896.8	886.1	874.6	872.1	878.7	886.9	886.9
52.5°	3906.2	3093.5	950.4	872.9	872.9	858.9	849.0	848.2	855.6	863.8	864.7
55°	4028.2	3191.6	933.9	842.4	839.1	828.4	821.0	815.2	824.3	831.7	831.7
57.5°	4165.9	3321.8	938.0	798.7	794.6	791.3	785.5	778.9	781.4	789.7	790.5
60°	3874.1	3069.6	892.7	755.0	752.6	750.9	743.5	732.0	735.3	741.8	742.7
62.5°	2706.1	2040.1	722.1	700.6	708.9	708.1	698.2	685.0	685.8	694.9	694.9
65°	1404.6	1103.7	633.9	651.2	663.5	658.6	642.1	630.6	628.9	640.5	638.0
67.5°	605.8	602.5	577.0	599.2	612.4	601.7	584.4	565.5	567.1	571.2	567.9
70°	488.0	502.8	513.5	537.4	548.1	528.4	509.4	498.7	489.6	488.8	483.0
72.5°	389.9	410.5	434.4	459.1	462.4	442.6	418.7	408.8	394.8	394.0	388.2
75°	293.4	310.8	329.7	349.5	349.5	330.5	314.9	309.9	293.4	288.5	283.6
77.5°	200.3	211.0	225.9	230.8	235.7	228.3	212.7	204.4	185.5	180.5	173.9
80°	126.1	133.5	142.6	145.9	150.8	141.8	129.4	120.3	107.2	103.0	99.7
82.5°	75.8	80.8	86.5	88.2	92.3	85.7	74.2	67.6	60.2	56.9	54.4
85°	38.7	41.2	44.5	45.3	44.5	37.9	33.8	30.5	25.6	24.7	23.1
87.5°	9.9	11.5	12.4	11.5	10.7	8.2	5.8	4.1	1.6	1.6	0.8
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**

$\lambda$ (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)