

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: P638994

Luminaire Tested: GWS-SA4F-830-U-T3-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P638994  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4F-830-U-T3-W  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

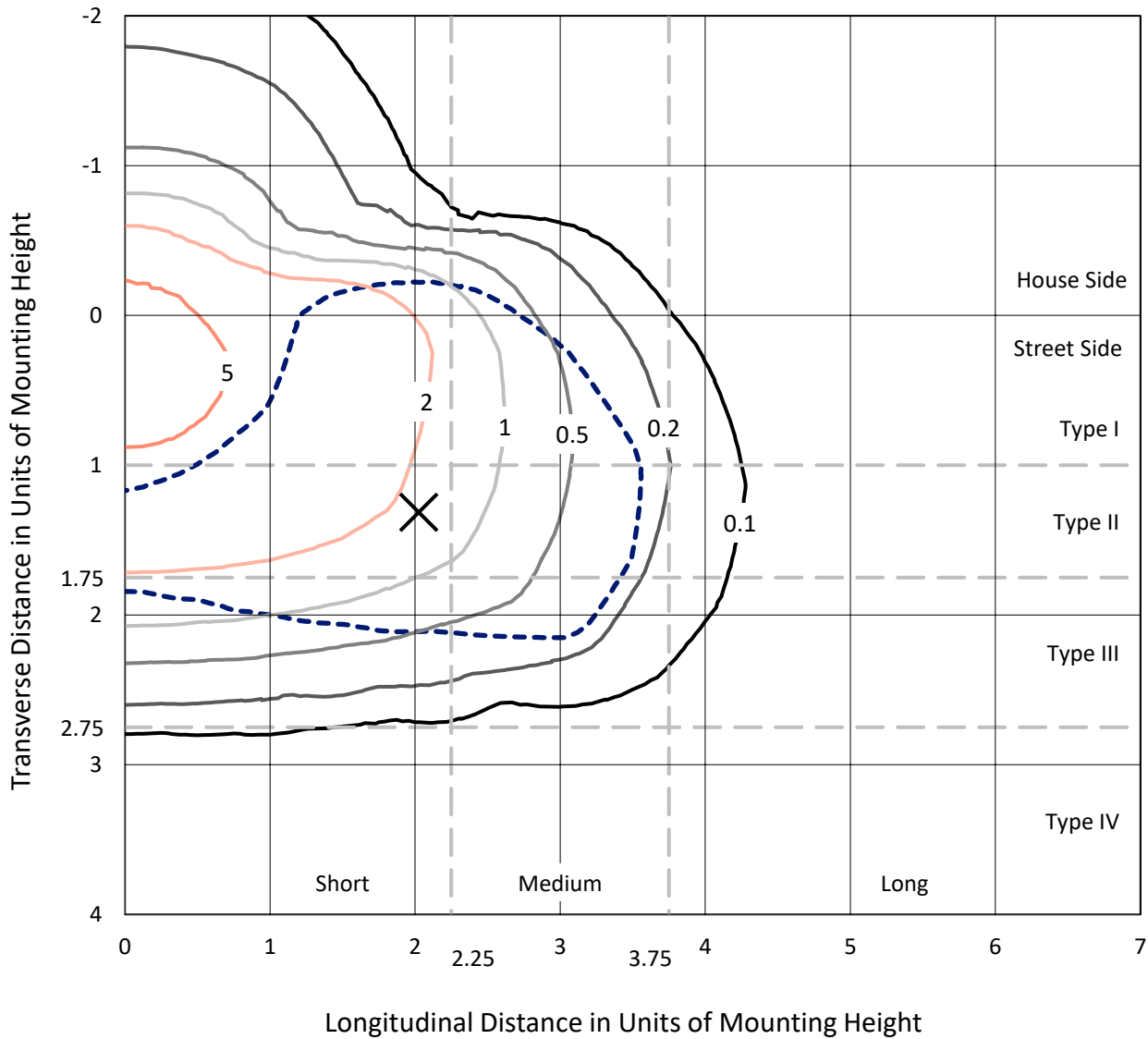
Lumens per Lamp: N/A  
Luminaire Lumens: 27047.1 lumens  
Efficiency: N/A  
Efficacy: 120.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G4  
  
Input Watts (W): 225.3  
Input Voltage (V): 120  
Input Current (Ain): 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



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 CATALOG NUMBER: GWS-SA4F-830-U-T3-W

### Iso-Footcandle Lines of Horizontal Illumination

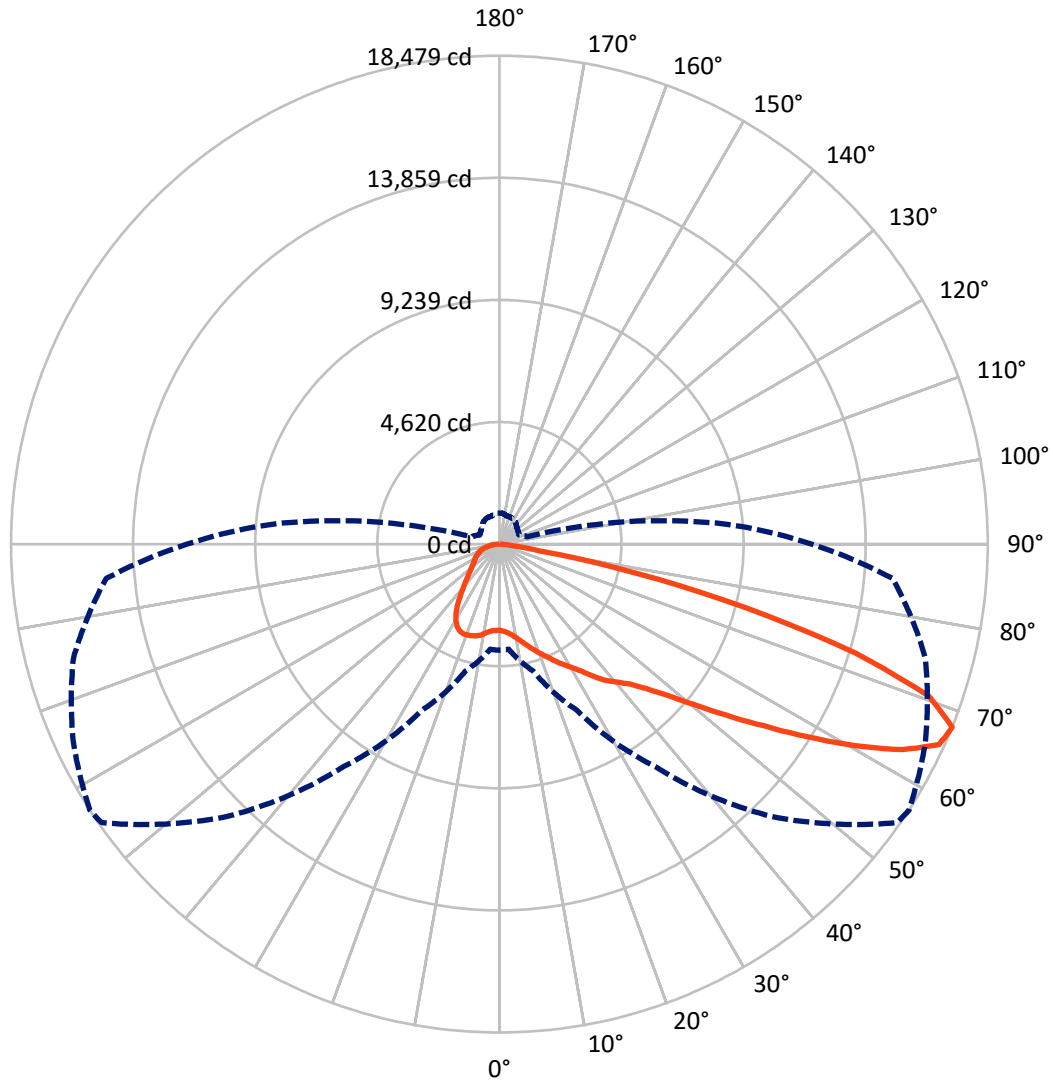
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.1 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	5946.6	0.0	5946.6
	% Fixture	22.0	0.0	22.0
<b>Street Side</b>	Lumens	21100.5	0.0	21100.5
	% Fixture	78.0	0.0	78.0
<b>Total</b>	Lumens	27047.1	0.0	27047.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	323.2	1.2
10°-20°	1070.0	4.0
20°-30°	1907.7	7.1
30°-40°	2773.5	10.3
40°-50°	4014.2	14.8
50°-60°	6282.1	23.2
60°-70°	7328.5	27.1
70°-80°	3059.2	11.3
80°-90°	288.7	1.1
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°	27047.1	100.0
0°-180°	27047.1	100.0

**Coefficient of Utilization**



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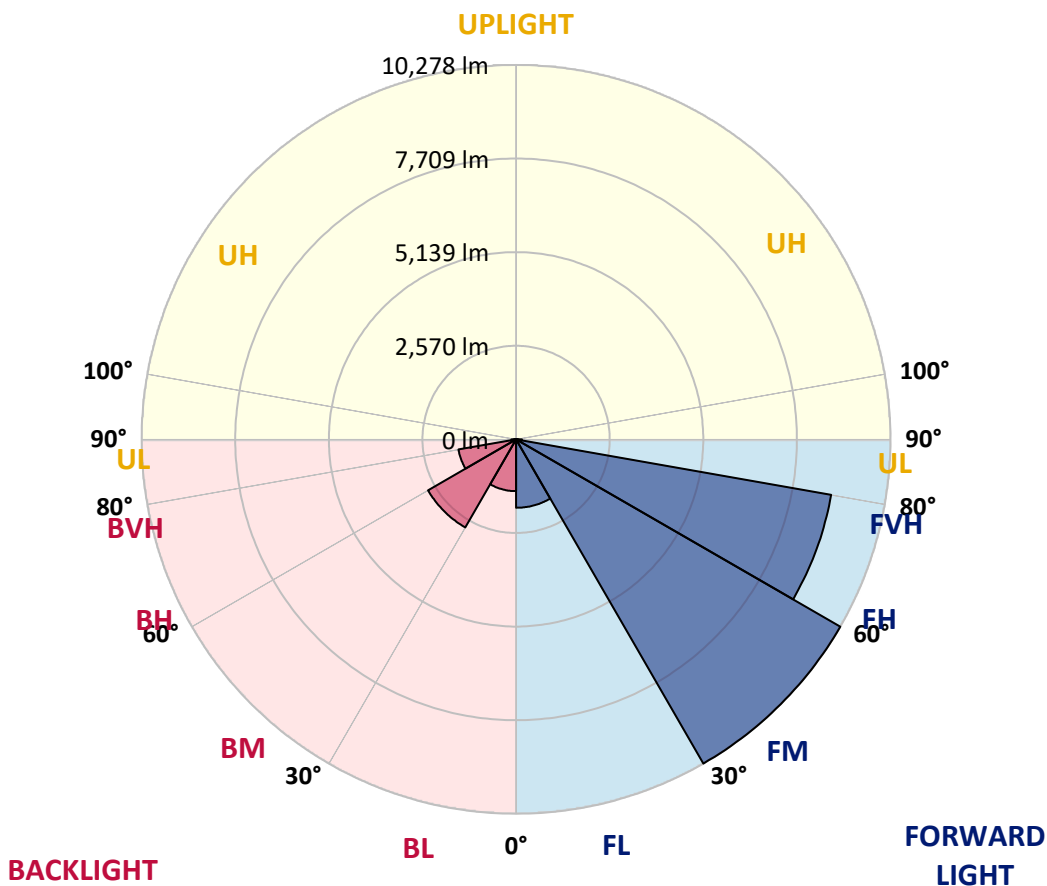
CATALOG NUMBER: GWS-SA4F-830-U-T3-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1878.7	6.9			
FM (30°-60°)	10278.3	38.0			
FH (60°-80°)	8782.7	32.5			G4/12000
FVH (80°-90°)	160.8	0.6			G2/225
BL (0°-30°)	1422.2	5.3	B3/2500		
BM (30°-60°)	2791.5	10.3	B3/5000		
BH (60°-80°)	1605.0	5.9	B3/2500		G3/2500
BVH (80°-90°)	127.9	0.5			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0
2.5°	3305.5	3301.6	3299.7	3311.3	3307.4	3305.5	3305.5	3303.6	3299.7	3284.2	3262.9
5°	3396.6	3388.8	3381.1	3390.7	3383.0	3375.2	3373.3	3369.4	3355.9	3332.6	3299.7
7.5°	3491.5	3483.7	3485.7	3491.5	3485.7	3481.8	3476.0	3472.1	3450.8	3414.0	3369.4
10°	3625.2	3625.2	3629.1	3634.9	3636.8	3631.0	3619.4	3613.6	3588.4	3541.9	3479.9
12.5°	3818.9	3815.1	3815.1	3811.2	3817.0	3811.2	3799.6	3789.9	3758.9	3698.8	3609.7
15°	4074.7	4059.2	4045.6	4020.5	4012.7	3991.4	3995.3	3989.5	3960.4	3879.0	3766.6
17.5°	4347.9	4346.0	4324.7	4274.3	4223.9	4189.0	4196.8	4194.8	4179.3	4068.9	3925.5
20°	4588.2	4597.9	4578.5	4539.7	4471.9	4406.0	4402.2	4411.8	4392.5	4282.0	4082.5
22.5°	4857.5	4849.7	4830.4	4780.0	4729.6	4659.9	4636.6	4628.9	4621.1	4495.2	4243.3
25°	5113.2	5136.5	5111.3	5064.8	4987.3	4911.7	4892.4	4900.1	4878.8	4712.2	4415.7
27.5°	5436.8	5446.5	5431.0	5367.1	5301.2	5194.6	5157.8	5157.8	5150.1	4915.6	4551.4
30°	5781.7	5808.8	5781.7	5729.4	5661.6	5508.5	5429.1	5421.3	5398.1	5124.9	4710.2
32.5°	6128.5	6147.9	6128.5	6078.2	6000.7	5867.0	5752.6	5735.2	5704.2	5353.5	4873.0
35°	6436.6	6454.0	6450.2	6461.8	6397.9	6229.3	6159.5	6151.8	6070.4	5651.9	5093.9
37.5°	6773.7	6795.1	6766.0	6789.2	6764.1	6605.2	6583.9	6545.1	6428.9	5932.8	5326.4
40°	7157.4	7176.8	7130.3	7139.9	7110.9	7021.8	6913.2	6860.9	6688.5	6237.0	5692.6
42.5°	7568.1	7612.7	7634.0	7616.6	7548.8	7498.4	7308.5	7242.6	7099.3	6785.4	6295.2
45°	8163.0	8228.9	8259.9	8215.3	8186.2	8114.5	7882.0	7802.6	7727.0	7558.5	7136.1
47.5°	8804.3	8864.4	8963.2	8982.6	9005.8	8951.6	8624.1	8546.6	8560.2	8540.8	8170.7
50°	9315.8	9366.2	9589.0	9827.4	10025.0	10040.5	9622.0	9538.7	9612.3	9674.3	9416.6
52.5°	9687.8	9732.4	10026.9	10519.1	10966.6	11298.0	10846.5	10751.6	10811.6	10951.1	10832.9
55°	9990.1	10052.1	10360.2	11115.8	12020.7	12543.8	12255.1	12135.0	12109.8	12282.3	12350.1
57.5°	10149.0	10168.4	10600.4	11582.8	12793.8	13766.4	13892.4	13756.7	13516.5	13611.4	13964.1
60°	9786.7	9819.6	10410.6	11702.9	13404.1	14979.3	15611.0	15498.6	14987.1	15039.4	15428.9
62.5°	8784.9	8831.4	9542.5	11131.3	13454.5	15789.3	17197.9	17126.2	16440.3	16157.4	16273.6
65°	7046.9	7062.4	7798.7	9716.9	12452.8	15890.0	18304.2	18286.8	17455.6	16792.9	16295.0
67.5°	4018.5	3991.4	4975.7	6930.7	10276.9	14580.2	18375.9	18478.6	17784.9	16688.3	14938.7
70°	1741.9	1745.7	2199.1	3419.8	6651.7	11784.3	17068.0	17244.4	16831.7	14946.4	11885.0
72.5°	806.0	817.7	1013.3	1480.3	2840.5	7310.4	13917.6	14076.4	13721.9	11962.6	8647.4
75°	569.6	579.3	676.2	848.7	1305.9	2848.2	9310.0	9643.3	9815.7	8947.7	5698.4
77.5°	432.1	445.6	494.1	589.0	806.0	1009.5	4454.5	5248.9	6252.5	5566.6	2935.4
80°	275.1	275.1	327.4	393.3	492.1	525.1	1286.5	1524.9	3059.4	2294.1	1152.9
82.5°	186.0	191.8	222.8	249.9	282.9	298.4	552.2	589.0	883.5	780.8	474.7
85°	98.8	102.7	116.3	114.3	135.6	118.2	232.5	230.6	323.6	354.6	180.2
87.5°	0.0	0.0	1.9	1.9	3.9	5.8	25.2	27.1	67.8	108.5	60.1
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-SA4F-830-U-T3-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0	3259.0
2.5°	3274.5	3251.2	3262.9	3259.0	3270.6	3270.6	3249.3	3243.5	3245.4	3222.2	3214.4
5°	3303.6	3276.4	3282.2	3274.5	3286.1	3295.8	3286.1	3286.1	3297.7	3280.3	3270.6
7.5°	3369.4	3338.4	3338.4	3328.7	3342.3	3350.1	3342.3	3353.9	3375.2	3357.8	3348.1
10°	3474.1	3437.2	3439.2	3427.6	3433.4	3429.5	3398.5	3388.8	3394.6	3379.1	3371.4
12.5°	3609.7	3559.3	3559.3	3536.1	3522.5	3481.8	3417.9	3394.6	3398.5	3384.9	3379.1
15°	3739.5	3693.0	3683.3	3636.8	3574.8	3499.2	3441.1	3425.6	3429.5	3415.9	3406.2
17.5°	3892.6	3832.5	3797.6	3712.4	3598.1	3520.6	3462.4	3425.6	3394.6	3363.6	3355.9
20°	4034.0	3958.5	3894.5	3762.8	3623.3	3516.7	3408.2	3317.1	3241.6	3200.9	3191.2
22.5°	4179.3	4082.5	3970.1	3797.6	3621.3	3446.9	3247.4	3109.8	2997.4	2937.4	2949.0
25°	4316.9	4194.8	4041.8	3830.6	3559.3	3291.9	3020.7	2815.3	2687.4	2640.9	2627.3
27.5°	4431.2	4280.1	4107.6	3815.1	3431.4	3069.1	2710.7	2482.0	2358.0	2305.7	2292.1
30°	4559.1	4388.6	4202.6	3743.4	3229.9	2757.2	2360.0	2174.0	2084.8	2034.4	2036.4
32.5°	4706.4	4528.1	4336.3	3605.8	2972.2	2420.0	2071.3	1943.4	1871.7	1821.3	1813.6
35°	4904.0	4727.7	4425.4	3398.5	2644.8	2110.0	1873.6	1769.0	1679.9	1614.0	1600.4
37.5°	5148.1	5028.0	4435.1	3121.4	2294.1	1896.9	1732.2	1619.8	1511.3	1424.1	1414.4
40°	5566.6	5429.1	4355.7	2774.6	1995.7	1759.3	1614.0	1484.2	1358.2	1261.4	1247.8
42.5°	6163.4	5880.5	4185.1	2383.2	1770.9	1650.8	1501.6	1336.9	1209.0	1141.2	1131.5
45°	6922.9	6384.3	3929.4	2015.1	1604.3	1544.2	1383.4	1211.0	1143.2	1094.7	1085.0
47.5°	7853.0	6971.4	3634.9	1728.3	1474.5	1447.4	1263.3	1168.4	1108.3	1067.6	1057.9
50°	8965.1	7719.3	3392.7	1503.6	1358.2	1335.0	1224.5	1143.2	1094.7	1061.8	1054.0
52.5°	10234.2	8550.5	3274.5	1342.7	1257.5	1234.2	1211.0	1137.4	1096.7	1071.5	1061.8
55°	11551.8	9426.3	3164.1	1218.7	1172.2	1185.8	1212.9	1156.7	1125.7	1092.8	1083.1
57.5°	12824.8	10247.8	2892.8	1121.9	1110.2	1162.5	1222.6	1176.1	1139.3	1106.4	1094.7
60°	13702.5	10697.3	2433.6	1044.3	1063.7	1133.5	1197.4	1147.0	1100.5	1087.0	1081.2
62.5°	13938.9	10643.1	1889.1	964.9	1007.5	1069.5	1131.5	1098.6	1050.2	1071.5	1073.4
65°	13386.7	10061.8	1418.3	887.4	933.9	986.2	1063.7	1050.2	1032.7	1090.9	1092.8
67.5°	11823.0	8633.8	1081.2	819.6	858.3	922.3	1042.4	1098.6	1102.5	1176.1	1168.4
70°	8945.8	6450.2	846.7	755.7	800.2	922.3	1110.2	1135.4	1088.9	1156.7	1141.2
72.5°	6184.7	4256.8	720.8	699.5	728.5	879.7	1108.3	1108.3	1057.9	1057.9	1028.8
75°	3842.2	2503.3	627.8	627.8	627.8	769.2	1077.3	1021.1	932.0	891.3	868.0
77.5°	1896.9	1216.8	527.0	546.4	525.1	643.3	879.7	835.1	780.8	738.2	722.7
80°	809.9	608.4	426.3	447.6	422.4	484.4	697.5	687.8	635.5	579.3	561.9
82.5°	372.0	313.9	341.0	350.7	308.1	364.3	509.6	509.6	480.5	403.0	374.0
85°	158.9	166.6	236.4	236.4	193.8	205.4	273.2	259.6	232.5	189.9	174.4
87.5°	54.3	81.4	120.1	104.6	40.7	17.4	9.7	3.9	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 $W^{\wedge}/nm$	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			

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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)