

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: P636493

Luminaire Tested: GWS-SA3F-830-U-SL3-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636493  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-32)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3F-830-U-SL3-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

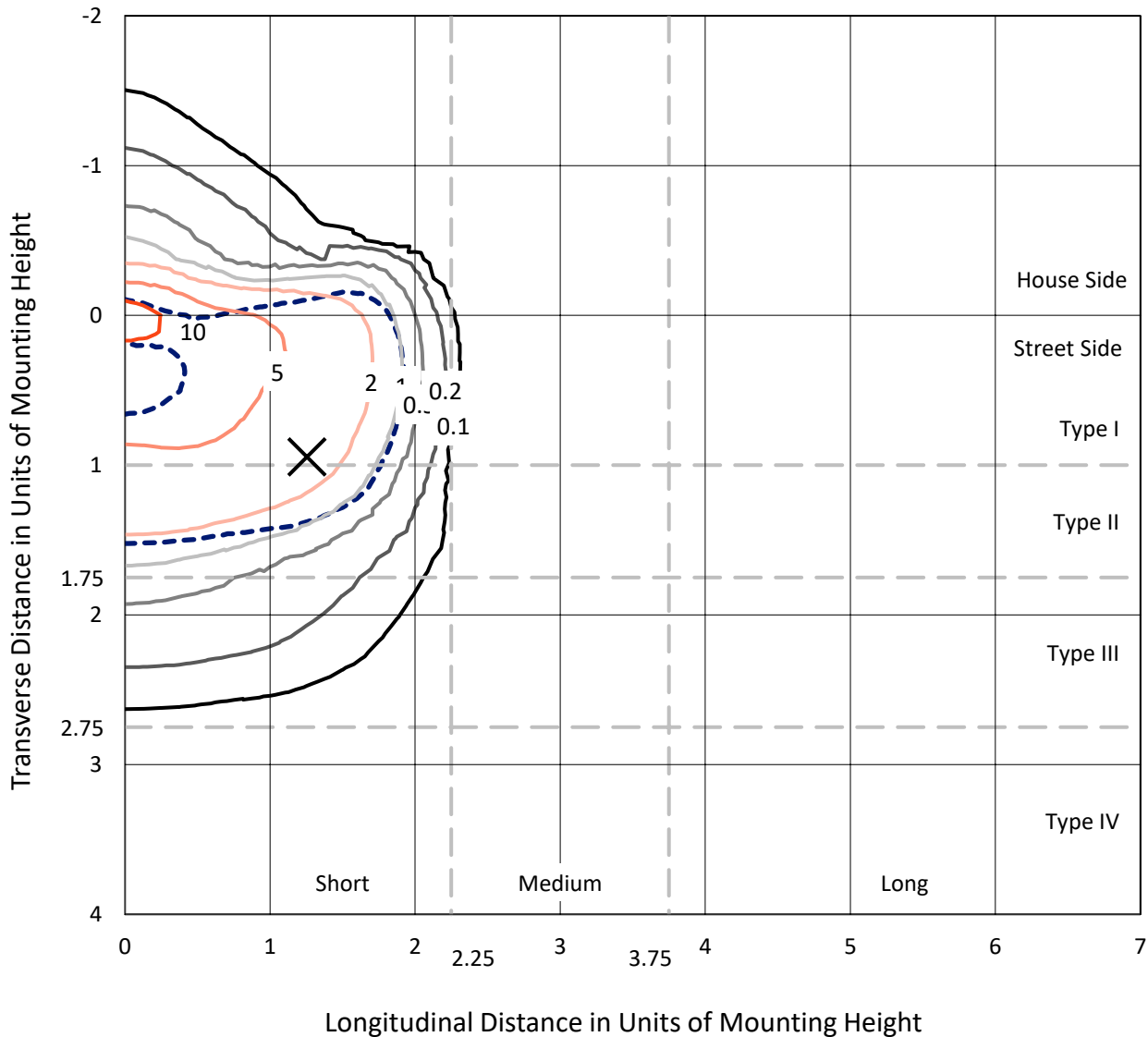
Lumens per Lamp: N/A  
Luminaire Lumens: 11360.6 lumens  
Efficiency: N/A  
Efficacy: 62.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 183.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P636493  
 CATALOG NUMBER: GWS-SA3F-830-U-SL3-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

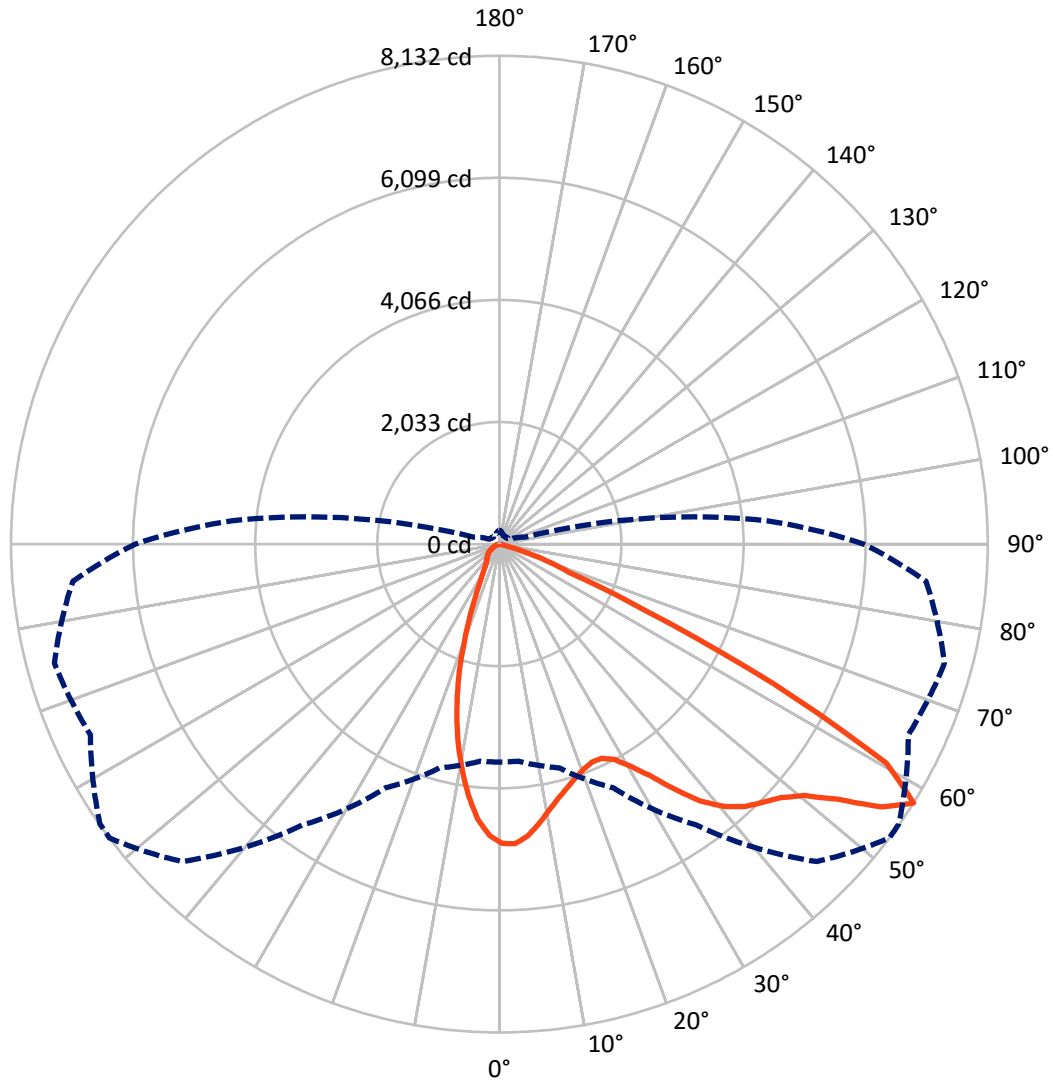
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.5 fc  
 Type II - Short - N/A

REPORT NUMBER: P636493  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1876.6	0.0	1876.6
	% Fixture	16.5	0.0	16.5
<b>Street Side</b>	Lumens	9484.0	0.0	9484.0
	% Fixture	83.5	0.0	83.5
<b>Total</b>	Lumens	11360.6	0.0	11360.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	426.4	3.8
10°-20°	936.0	8.2
20°-30°	1219.4	10.7
30°-40°	1768.8	15.6
40°-50°	2552.2	22.5
50°-60°	3086.7	27.2
60°-70°	1258.0	11.1
70°-80°	113.0	1.0
80°-90°	0.0	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°	11360.6	100.0
0°-180°	11360.6	100.0

**Coefficient of Utilization**



REPORT NUMBER: P636493

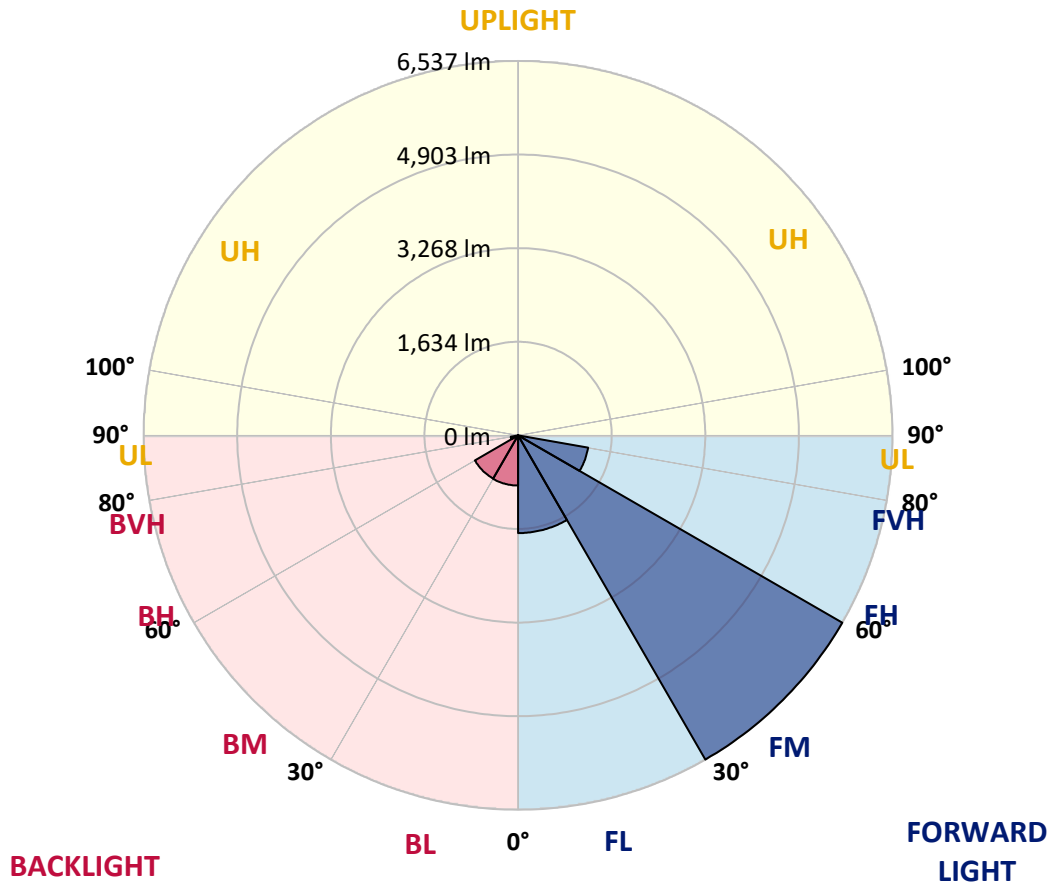
CATALOG NUMBER: GWS-SA3F-830-U-SL3-W-GRSBK

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1706.0	15.0			
FM (30°-60°)	6536.7	57.5			
FH (60°-80°)	1241.3	10.9			G1/1800
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	875.8	7.7	B2/1000		
BM (30°-60°)	871.0	7.7	B1/1000		
BH (60°-80°)	129.7	1.1	B1/500		G1/500
BVH (80°-90°)	0.0	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°	45°	53°	55°	65°	75°	85°
0°	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4
2.5°	4913.8	4924.9	4944.4	4969.5	4986.2	4994.5	4994.5	5018.2	5002.9	4990.4	4976.4
5°	4703.5	4714.7	4741.1	4781.5	4821.9	4851.1	4884.5	4909.6	4919.4	4919.4	4895.7
7.5°	4407.0	4422.3	4439.0	4494.7	4582.4	4647.8	4704.9	4741.1	4794.0	4810.7	4777.3
10°	4088.1	4103.4	4141.0	4217.6	4317.8	4415.3	4512.8	4558.7	4649.2	4696.6	4659.0
12.5°	3818.0	3824.9	3875.1	3967.0	4095.1	4228.7	4347.1	4394.4	4522.5	4593.5	4549.0
15°	3595.2	3599.4	3649.5	3751.1	3898.7	4063.0	4212.0	4260.8	4418.1	4525.3	4458.5
17.5°	3426.7	3428.1	3471.3	3581.3	3735.8	3918.2	4095.1	4154.9	4358.2	4487.7	4387.5
20°	3341.8	3337.6	3368.2	3464.3	3610.5	3792.9	4001.8	4075.6	4324.8	4482.1	4333.2
22.5°	3343.2	3333.4	3345.9	3414.2	3538.1	3709.4	3943.3	4026.8	4327.6	4505.8	4287.2
25°	3422.5	3408.6	3411.4	3447.6	3535.3	3691.3	3951.6	4040.8	4383.3	4585.2	4270.5
27.5°	3556.2	3540.9	3540.9	3559.0	3606.3	3748.3	4056.1	4157.7	4532.3	4739.7	4305.3
30°	3728.9	3713.5	3708.0	3726.1	3765.1	3895.9	4288.6	4394.4	4787.1	4993.2	4416.7
32.5°	3926.6	3908.5	3918.2	3943.3	3980.9	4161.9	4588.0	4728.6	5105.9	5334.3	4617.2
35°	4135.4	4120.1	4164.7	4219.0	4277.5	4530.9	5001.5	5124.0	5497.2	5759.0	4923.5
37.5°	4334.5	4327.6	4420.9	4535.1	4656.2	4973.7	5422.0	5516.7	5832.8	6221.3	5298.1
40°	4533.7	4532.3	4692.4	4892.9	5086.4	5415.1	5740.9	5818.8	6037.5	6580.5	5657.3
42.5°	4756.4	4756.4	4977.8	5245.2	5502.8	5788.2	5974.8	6009.6	6129.4	6788.0	5927.5
45°	4969.5	4982.0	5238.2	5548.7	5853.7	6079.2	6136.3	6139.1	6166.9	6910.5	6151.6
47.5°	5138.0	5149.1	5455.4	5813.3	6141.9	6300.6	6309.0	6296.4	6265.8	7027.5	6324.3
50°	5274.4	5291.1	5611.4	5990.1	6339.6	6513.7	6577.7	6565.2	6487.2	7152.8	6445.4
52.5°	5341.3	5364.9	5665.7	6077.8	6559.6	6878.5	7056.7	7085.9	6818.6	7222.4	6561.0
55°	4806.6	4841.4	5118.5	5682.4	6682.1	7442.4	7722.3	7716.7	7177.8	7429.9	6842.3
57.5°	3630.0	3627.2	3857.0	4473.8	5707.5	7474.4	8131.6	8120.5	7513.4	7670.7	7130.5
60°	2471.5	2454.8	2516.1	2814.0	3990.6	6089.0	7400.6	7551.0	7275.3	7085.9	6054.2
62.5°	2034.3	2019.0	1999.5	1917.3	2291.9	3792.9	5112.9	5341.3	5305.1	4924.9	3797.1
65°	1665.3	1677.8	1732.1	1697.3	1594.3	1945.2	2653.9	2789.0	2549.5	2145.7	1327.0
67.5°	1228.1	1233.7	1304.7	1488.5	1432.8	1294.9	1249.0	1271.3	744.9	342.5	221.4
70°	725.4	729.6	795.1	1041.5	1162.7	994.2	843.8	831.3	295.2	91.9	100.3
72.5°	410.8	402.4	414.9	495.7	633.5	527.7	434.4	395.4	89.1	51.5	51.5
75°	194.9	189.4	162.9	153.2	139.2	89.1	55.7	47.3	22.3	20.9	20.9
77.5°	1.4	4.2	2.8	4.2	4.2	2.8	1.4	1.4	4.2	4.2	5.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	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



REPORT NUMBER: P636493

CATALOG NUMBER: GWS-SA3F-830-U-SL3-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4	4983.4
2.5°	4951.4	4909.6	4899.9	4897.1	4858.1	4816.3	4773.2	4756.4	4731.4	4716.1	4728.6
5°	4858.1	4798.2	4745.3	4696.6	4610.2	4515.6	4433.4	4380.5	4330.4	4297.0	4305.3
7.5°	4725.8	4647.8	4526.7	4402.8	4244.0	4102.0	3943.3	3845.8	3755.3	3705.2	3728.9
10°	4585.2	4482.1	4288.6	4078.3	3829.1	3606.3	3379.4	3194.2	3087.0	2985.3	2996.4
12.5°	4447.3	4310.9	4021.3	3702.4	3387.7	3059.1	2716.6	2460.4	2284.9	2158.2	2138.7
15°	4319.2	4143.8	3760.9	3340.4	2911.5	2474.3	2037.1	1670.9	1467.6	1342.3	1333.9
17.5°	4205.1	3987.8	3490.8	2961.6	2424.2	1864.4	1361.8	1087.5	970.5	916.2	910.6
20°	4095.1	3830.5	3215.1	2577.3	1892.3	1308.9	939.9	813.2	775.6	753.3	756.1
22.5°	3989.2	3659.2	2925.4	2151.3	1418.9	919.0	728.2	679.5	675.3	678.1	679.5
25°	3900.1	3501.9	2627.5	1740.5	1012.3	700.4	608.5	594.6	607.1	625.2	628.0
27.5°	3854.2	3373.8	2336.5	1327.0	732.4	569.5	527.7	533.3	555.6	575.1	577.8
30°	3866.7	3277.7	2035.7	962.1	563.9	480.4	466.5	477.6	499.9	518.0	520.8
32.5°	3955.8	3229.0	1728.0	700.4	463.7	419.1	413.5	421.9	441.4	455.3	456.7
35°	4132.6	3240.1	1435.6	536.1	398.2	373.2	371.8	377.3	387.1	396.8	398.2
37.5°	4393.0	3330.6	1147.3	445.6	360.6	342.5	337.0	337.0	343.9	348.1	350.9
40°	4672.9	3467.1	919.0	394.0	334.2	314.7	303.5	299.4	304.9	310.5	311.9
42.5°	4904.0	3603.5	746.3	357.8	313.3	286.8	272.9	270.1	277.1	286.8	289.6
45°	5080.9	3709.4	622.4	328.6	289.6	260.4	245.1	245.1	257.6	274.3	277.1
47.5°	5242.4	3794.3	530.5	302.2	267.3	236.7	221.4	224.2	245.1	267.3	271.5
50°	5352.4	3862.5	462.3	278.5	249.2	217.2	203.3	208.9	233.9	260.4	264.6
52.5°	5470.7	3946.1	417.7	257.6	232.5	201.9	189.4	193.5	221.4	250.6	256.2
55°	5798.0	4225.9	416.3	229.7	203.3	181.0	175.4	176.8	204.7	238.1	245.1
57.5°	6065.3	4472.4	444.2	193.5	169.9	158.7	155.9	157.3	182.4	220.0	228.4
60°	5018.2	3475.4	367.6	160.1	142.0	139.2	135.1	137.8	161.5	194.9	201.9
62.5°	2970.0	1987.0	175.4	122.5	121.1	118.4	114.2	119.7	142.0	171.3	175.4
65°	1015.1	589.0	111.4	100.3	103.0	98.9	94.7	100.3	119.7	136.5	137.8
67.5°	194.9	155.9	89.1	83.5	84.9	76.6	75.2	80.8	91.9	94.7	93.3
70°	101.6	90.5	68.2	68.2	65.4	54.3	54.3	59.9	59.9	55.7	54.3
72.5°	52.9	50.1	44.6	50.1	41.8	33.4	33.4	36.2	33.4	27.8	27.8
75°	20.9	20.9	19.5	25.1	18.1	15.3	13.9	16.7	12.5	9.7	9.7
77.5°	5.6	5.6	5.6	7.0	4.2	4.2	2.8	2.8	1.4	0.0	0.0
80°	0.0	1.4	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	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



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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

REPORT NUMBER: SP1-2408-195-9

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

REPORT NUMBER: SP1-2408-195-9

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

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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)