

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: P636516

Luminaire Tested: GWS-SA3F-830-U-T3-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636516  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-24)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3F-830-U-T3-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

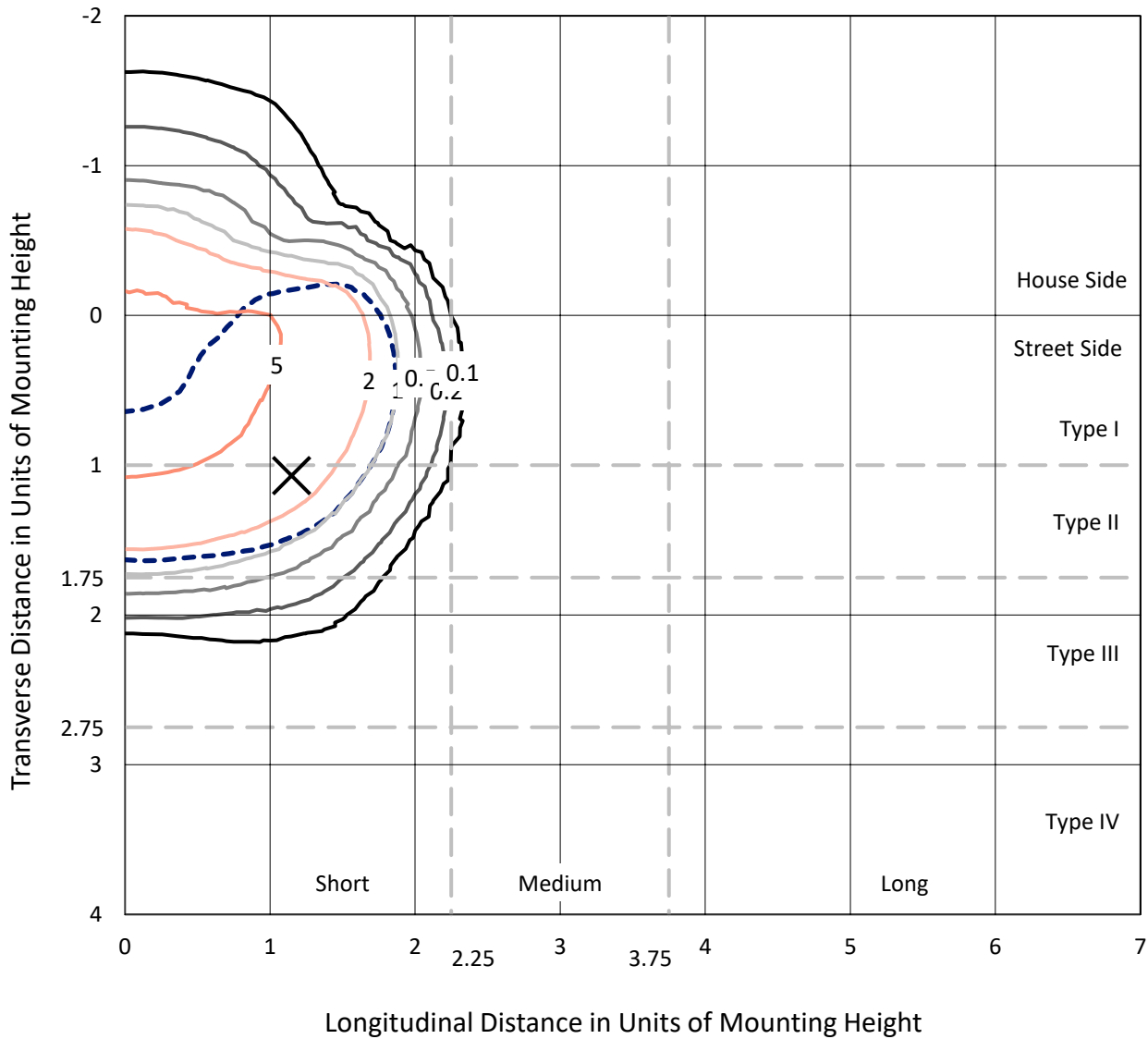
Lumens per Lamp: N/A  
Luminaire Lumens: 11994.1 lumens  
Efficiency: N/A  
Efficacy: 65.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 183.2  
Input Voltage (V): 120  
Input Current (Ain): 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



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### Iso-Footcandle Lines of Horizontal Illumination

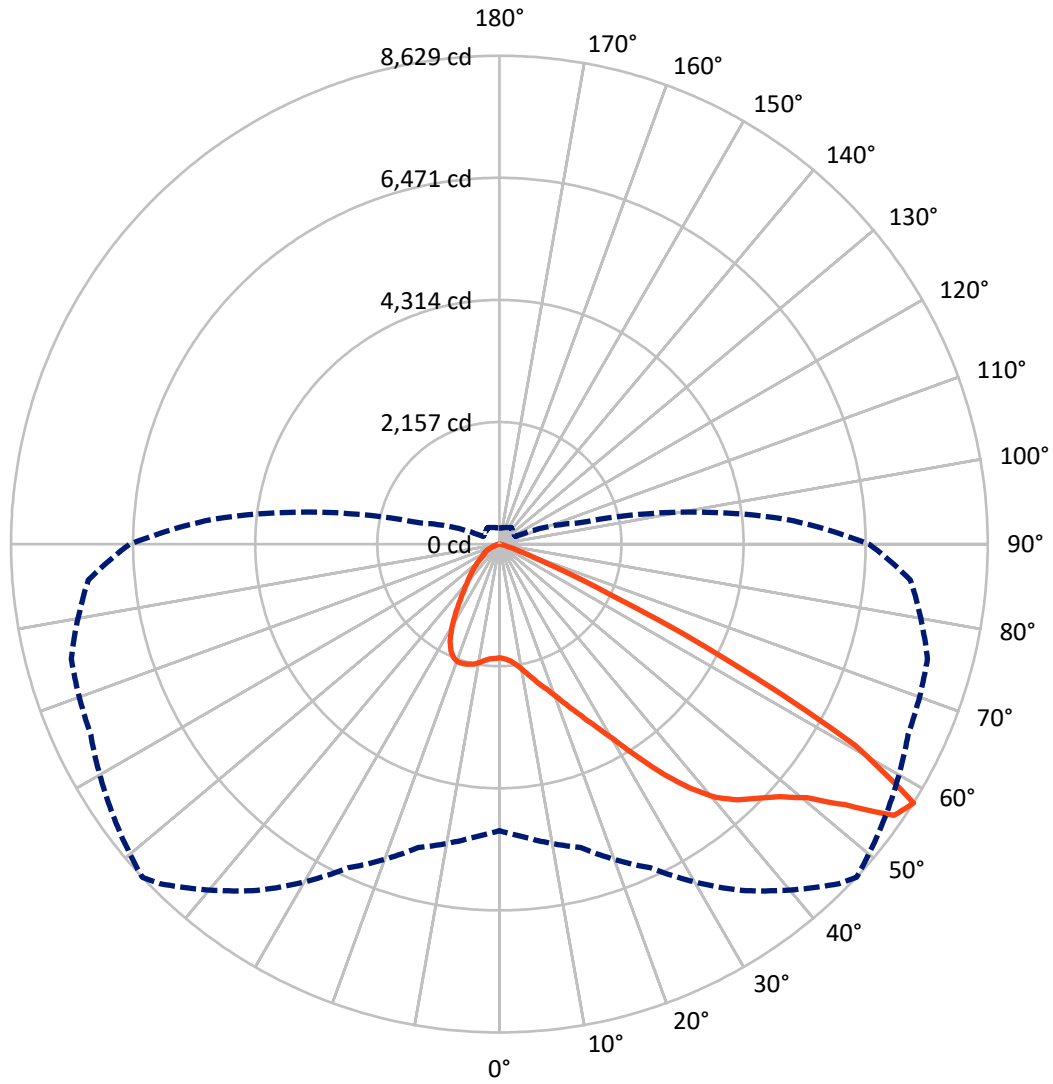
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.1 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2602.1	0.0	2602.1
	% Fixture	21.7	0.0	21.7
<b>Street Side</b>	Lumens	9392.0	0.0	9392.0
	% Fixture	78.3	0.0	78.3
<b>Total</b>	Lumens	11994.1	0.0	11994.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.8	1.7
10°-20°	674.0	5.6
20°-30°	1251.5	10.4
30°-40°	2003.4	16.7
40°-50°	2928.5	24.4
50°-60°	3614.3	30.1
60°-70°	1207.7	10.1
70°-80°	112.5	0.9
80°-90°	2.3	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°	11994.1	100.0
0°-180°	11994.1	100.0

**Coefficient of Utilization**



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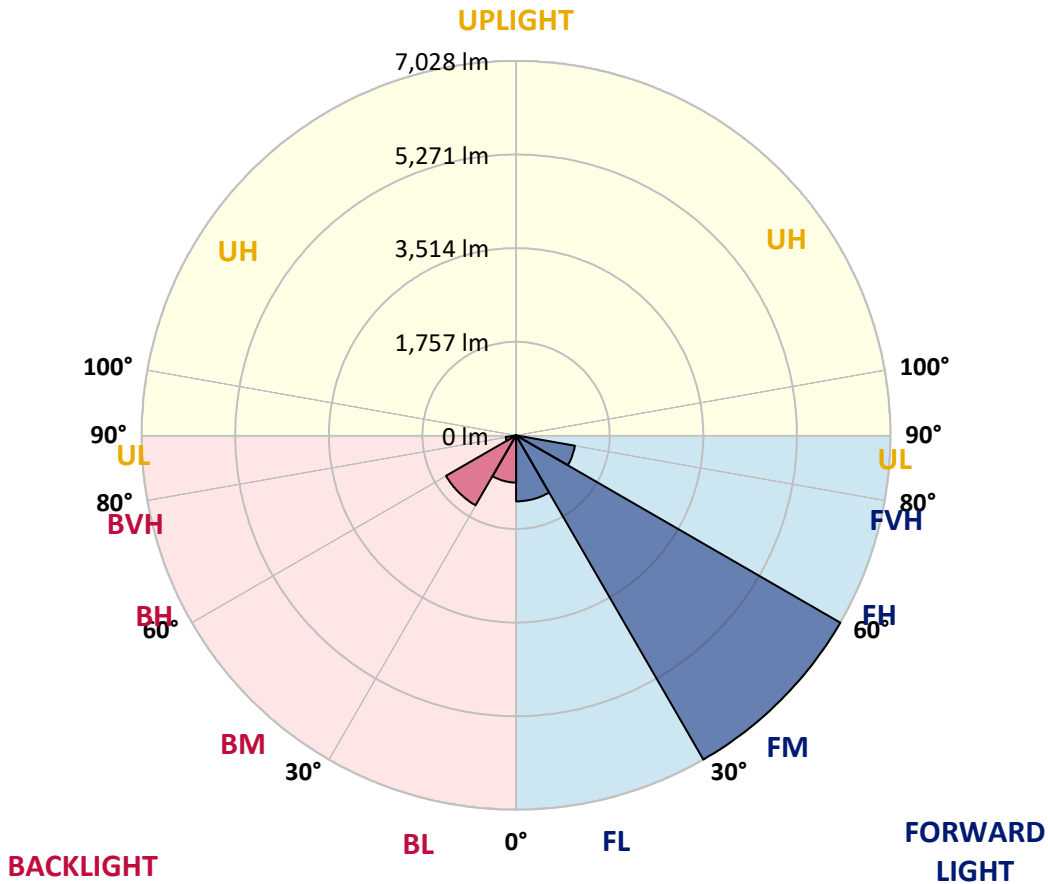
CATALOG NUMBER: GWS-SA3F-830-U-T3-W-GRSBK

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1239.6	10.3			
FM (30°-60°)	7028.4	58.6			
FH (60°-80°)	1122.4	9.4			G1/1800
FVH (80°-90°)	1.6	0.0			G0/10
BL (0°-30°)	885.7	7.4	B2/1000		
BM (30°-60°)	1517.8	12.7	B2/2500		
BH (60°-80°)	197.8	1.6	B1/500		G1/500
BVH (80°-90°)	0.7	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°	47°	55°	65°	75°	85°
0°	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8
2.5°	2028.7	2027.3	2025.9	2034.3	2031.5	2030.1	2032.9	2032.9	2032.9	2024.5	2007.8
5°	2077.4	2077.4	2076.1	2084.4	2077.4	2073.3	2074.7	2074.7	2069.1	2053.8	2032.9
7.5°	2154.0	2151.2	2148.5	2156.8	2149.8	2148.5	2151.2	2142.9	2133.1	2108.1	2078.8
10°	2264.0	2264.0	2259.8	2268.2	2262.6	2259.8	2259.8	2254.3	2236.2	2197.2	2154.0
12.5°	2415.8	2408.8	2399.1	2392.1	2389.3	2387.9	2389.3	2381.0	2361.5	2311.4	2251.5
15°	2581.5	2575.9	2560.6	2549.5	2534.1	2531.4	2539.7	2532.8	2513.3	2445.0	2360.1
17.5°	2790.3	2797.3	2758.3	2734.7	2690.1	2687.3	2690.1	2701.2	2687.3	2599.6	2475.7
20°	2968.6	2974.1	2944.9	2928.2	2887.8	2869.7	2875.3	2893.4	2878.1	2775.0	2602.4
22.5°	3159.3	3166.3	3135.7	3100.9	3082.7	3082.7	3103.6	3128.7	3107.8	2972.8	2747.2
25°	3387.7	3393.3	3368.2	3322.2	3290.2	3330.6	3361.2	3428.1	3393.3	3209.5	2918.4
27.5°	3649.5	3650.8	3614.6	3567.3	3550.6	3625.8	3656.4	3759.5	3745.5	3475.4	3099.5
30°	3929.3	3930.7	3922.4	3890.3	3875.0	3973.9	4015.7	4164.6	4154.9	3805.4	3345.9
32.5°	4220.3	4220.3	4235.6	4232.9	4251.0	4412.5	4479.3	4649.2	4639.4	4209.2	3652.2
35°	4512.7	4514.1	4540.6	4607.4	4682.6	4897.0	4984.8	5190.8	5168.5	4692.4	4043.5
37.5°	4845.5	4831.6	4867.8	4968.0	5135.1	5383.0	5466.5	5662.8	5637.8	5186.6	4554.5
40°	5246.5	5221.5	5221.5	5338.4	5527.8	5813.2	5884.2	5981.7	5896.8	5586.3	5055.8
42.5°	5689.3	5665.6	5635.0	5738.0	5896.8	6119.6	6178.0	6151.6	6082.0	5963.6	5626.6
45°	6137.7	6101.4	6122.3	6185.0	6276.9	6382.7	6405.0	6282.5	6250.4	6283.9	6098.7
47.5°	6478.8	6453.7	6505.2	6593.0	6668.2	6683.5	6668.2	6498.3	6495.5	6613.8	6425.9
50°	6593.0	6595.7	6737.8	6929.9	7051.1	7063.6	7042.7	6847.8	6821.3	6856.1	6602.7
52.5°	6604.1	6615.2	6822.7	7188.9	7518.9	7669.3	7652.6	7442.3	7183.3	7145.7	6870.0
55°	6335.4	6400.8	6690.4	7225.1	7926.9	8407.2	8462.9	8060.5	7676.2	7644.2	7445.1
57.5°	5064.1	5197.8	5547.3	6308.9	7471.6	8483.8	8628.6	8339.0	7967.3	7830.8	7290.5
60°	3027.1	3192.7	3528.3	4462.6	5686.5	6973.1	7222.3	7262.7	7091.4	6697.4	5593.2
62.5°	1299.1	1285.2	1698.7	2414.4	3382.1	4432.0	4544.8	4720.2	4869.2	4457.0	3394.6
65°	445.6	484.6	673.9	1088.8	1693.1	2058.0	2158.2	2315.5	2527.2	2085.8	1243.4
67.5°	275.7	292.4	388.5	643.3	913.4	899.5	854.9	829.9	807.6	552.8	341.1
70°	200.5	214.4	272.9	442.8	614.0	431.6	374.6	303.5	337.0	310.5	242.3
72.5°	135.1	146.2	188.0	268.7	314.7	210.3	194.9	221.4	267.3	254.8	197.7
75°	80.8	87.7	107.2	130.9	128.1	108.6	110.0	155.9	204.7	190.8	140.6
77.5°	55.7	58.5	71.0	84.9	62.7	33.4	30.6	43.2	69.6	69.6	47.3
80°	13.9	18.1	18.1	11.1	9.7	8.4	8.4	12.5	19.5	13.9	7.0
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	2.8	2.8	2.8
85°	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	2.8	2.8	2.8
87.5°	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8	2.8
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-SA3F-830-U-T3-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8	2007.8
2.5°	2017.6	2000.9	2012.0	2009.2	2017.6	2020.4	2007.8	2005.0	2006.4	1989.7	1984.2
5°	2037.1	2017.6	2023.1	2017.6	2027.3	2035.7	2031.5	2037.1	2044.0	2031.5	2025.9
7.5°	2078.8	2059.3	2058.0	2049.6	2063.5	2069.1	2067.7	2083.0	2096.9	2088.6	2080.2
10°	2151.2	2124.8	2122.0	2115.0	2119.2	2123.4	2108.1	2110.9	2123.4	2113.6	2109.5
12.5°	2240.4	2208.3	2201.4	2184.7	2184.7	2163.8	2130.4	2123.4	2133.1	2126.2	2119.2
15°	2336.4	2293.3	2282.1	2252.9	2225.0	2186.1	2151.2	2142.9	2149.8	2141.5	2135.9
17.5°	2443.6	2394.9	2358.7	2307.2	2245.9	2200.0	2161.0	2142.9	2131.7	2115.0	2113.6
20°	2549.5	2485.4	2424.1	2342.0	2261.2	2191.6	2127.6	2080.2	2039.9	2014.8	2005.0
22.5°	2672.0	2577.3	2478.5	2362.9	2247.3	2141.5	2028.7	1948.0	1878.3	1854.7	1843.5
25°	2802.9	2680.3	2532.8	2382.4	2200.0	2030.1	1876.9	1757.2	1665.3	1634.7	1622.1
27.5°	2947.7	2779.2	2588.5	2378.2	2102.5	1871.4	1668.1	1519.1	1428.6	1400.7	1410.5
30°	3131.5	2907.3	2658.1	2335.0	1956.3	1648.6	1410.5	1285.2	1216.9	1190.5	1191.9
32.5°	3376.5	3091.1	2759.7	2243.1	1768.3	1395.2	1186.3	1094.4	1048.5	1013.7	1010.9
35°	3727.4	3371.0	2854.4	2095.5	1540.0	1169.6	1017.8	945.4	881.4	841.0	848.0
37.5°	4147.9	3723.2	2905.9	1896.4	1283.8	994.2	891.1	817.3	744.9	685.1	692.0
40°	4646.4	4184.1	2901.7	1634.7	1049.9	874.4	785.3	699.0	608.5	554.2	559.7
42.5°	5202.0	4619.9	2811.2	1357.6	870.2	777.0	683.7	575.1	487.3	453.9	455.3
45°	5683.7	4973.6	2652.5	1070.7	732.4	682.3	577.8	466.5	427.5	403.8	402.4
47.5°	6040.2	5232.6	2425.5	842.4	621.0	595.9	474.8	417.7	387.1	367.6	364.8
50°	6239.3	5323.1	2174.9	660.0	524.9	505.4	424.7	378.7	357.8	345.3	342.5
52.5°	6506.6	5431.7	1995.3	520.8	440.0	413.5	391.3	352.3	338.4	328.6	324.4
55°	6929.9	5642.0	1839.3	413.5	366.2	360.6	369.0	337.0	328.6	313.3	307.7
57.5°	6531.7	5068.3	1428.6	320.2	309.1	330.0	356.5	321.6	300.8	286.8	281.3
60°	4596.3	3369.6	718.5	257.6	275.7	309.1	335.6	291.0	270.1	272.9	270.1
62.5°	2534.1	1686.2	323.0	215.8	239.5	272.9	286.8	252.0	238.1	261.8	265.9
65°	828.5	573.7	186.6	167.1	189.4	222.8	247.8	239.5	236.7	264.6	272.9
67.5°	254.8	189.4	126.7	119.7	130.9	164.3	208.9	259.0	278.5	286.8	291.0
70°	190.8	149.0	108.6	101.6	107.2	125.3	176.8	215.8	203.3	204.7	201.9
72.5°	153.2	118.4	93.3	89.1	89.1	86.3	93.3	117.0	132.3	139.2	139.2
75°	107.2	83.5	71.0	65.4	51.5	41.8	37.6	37.6	33.4	32.0	30.6
77.5°	36.2	30.6	27.8	22.3	15.3	12.5	11.1	9.7	7.0	4.2	2.8
80°	5.6	4.2	2.8	2.8	2.8	1.4	1.4	1.4	0.0	0.0	0.0
82.5°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	0.0	0.0	0.0	0.0
85°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	0.0	0.0	0.0	0.0
87.5°	2.8	2.8	2.8	2.8	1.4	1.4	1.4	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



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**

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**



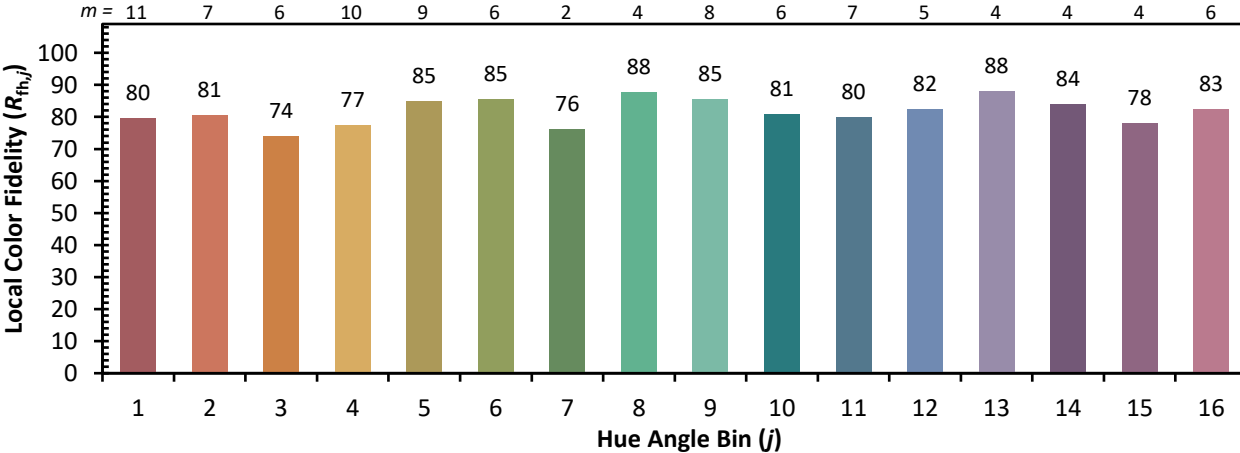


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

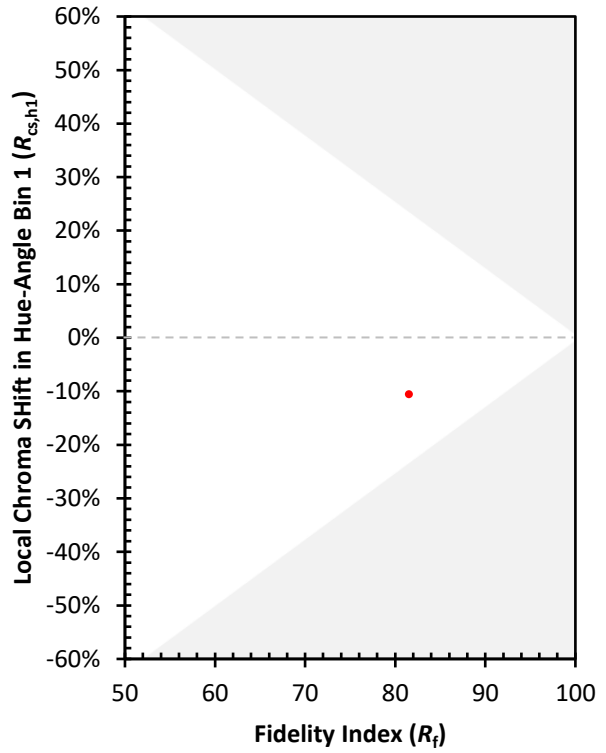
CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 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)