

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: P639981

Luminaire Tested: GWS-SA5C-830-U-T3-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639981  
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-SA5C-830-U-T3-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

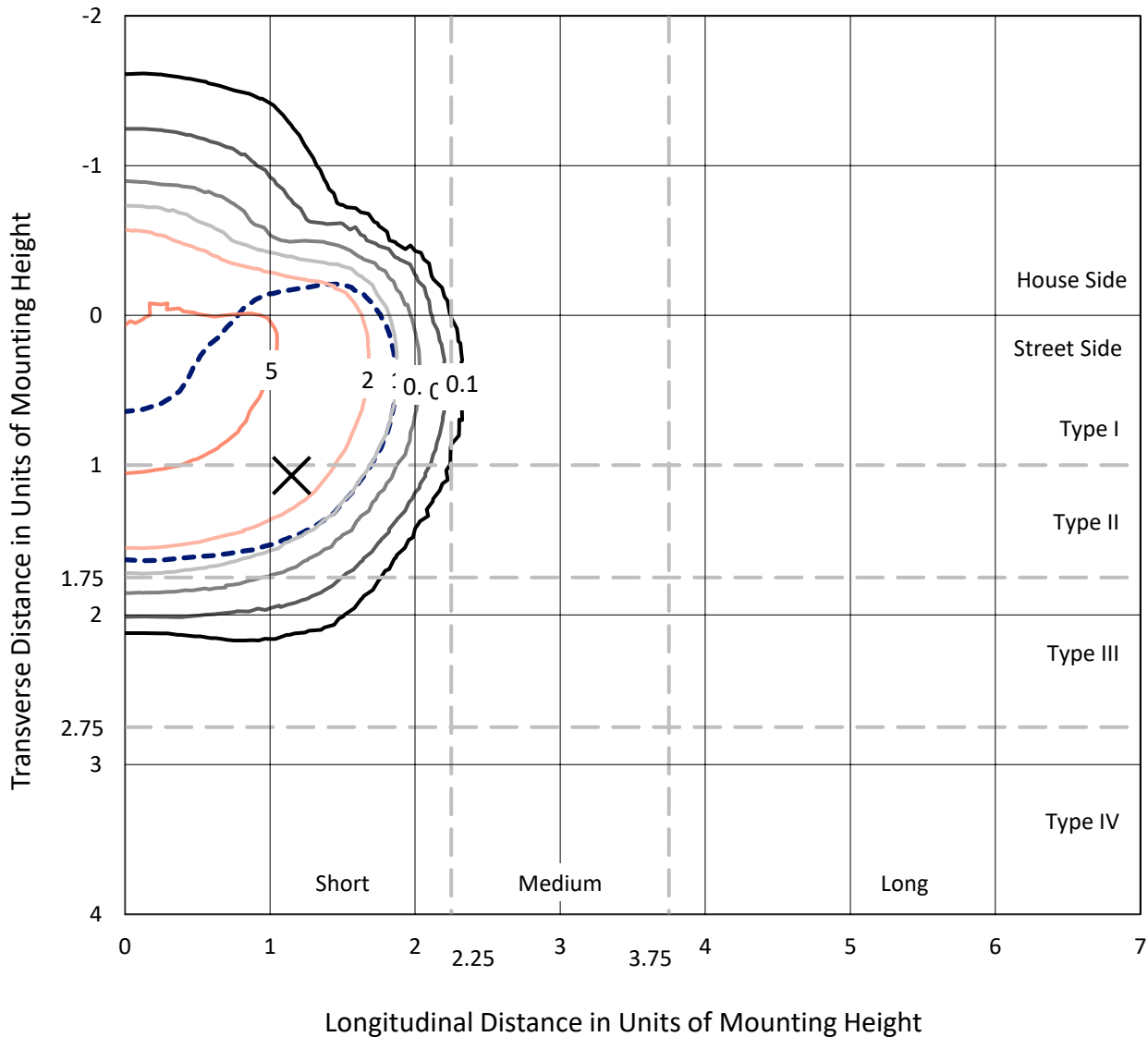
Lumens per Lamp: N/A  
Luminaire Lumens: 11681.1 lumens  
Efficiency: N/A  
Efficacy: 74.2 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 157.5  
Input Voltage (V): 120  
Input Current (Ain): 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-SA5C-830-U-T3-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

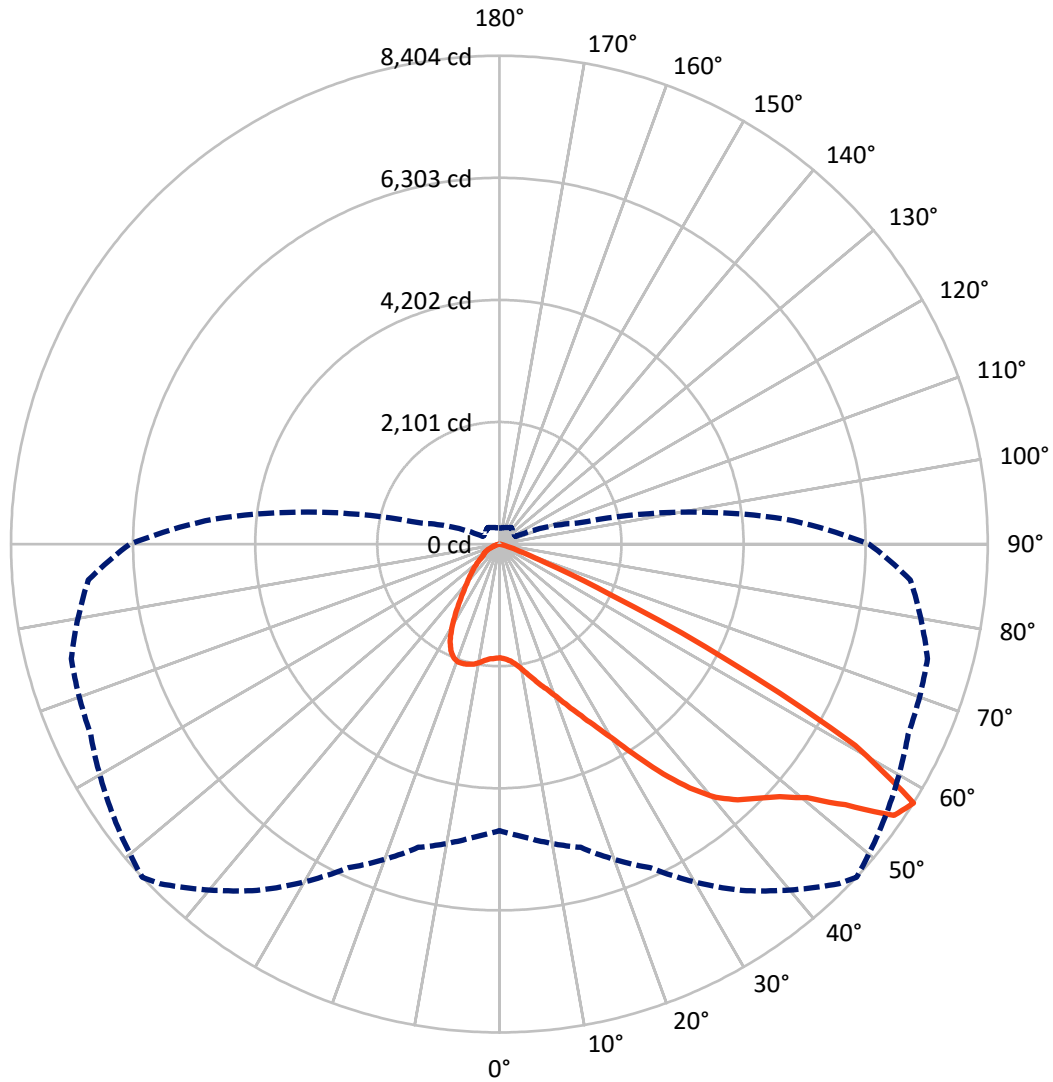
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.9 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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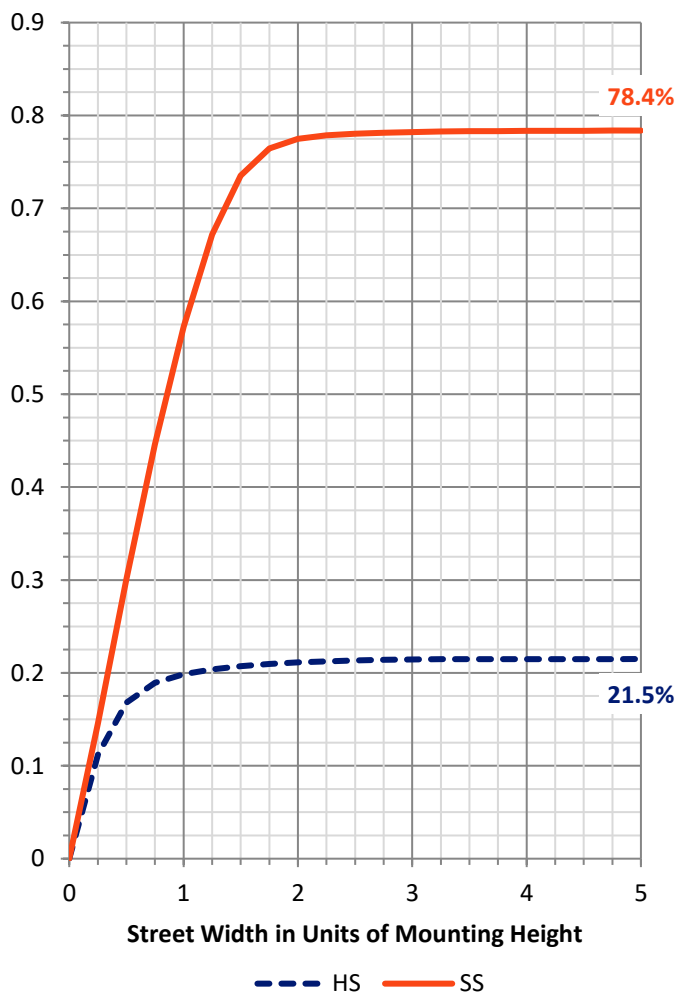
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2534.2	0.0	2534.2
	% Fixture	21.7	0.0	21.7
<b>Street Side</b>	Lumens	9146.9	0.0	9146.9
	% Fixture	78.3	0.0	78.3
<b>Total</b>	Lumens	11681.1	0.0	11681.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.5	1.7
10°-20°	656.4	5.6
20°-30°	1218.8	10.4
30°-40°	1951.1	16.7
40°-50°	2852.1	24.4
50°-60°	3520.0	30.1
60°-70°	1176.2	10.1
70°-80°	109.6	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°	11681.1	100.0
0°-180°	11681.1	100.0

**Coefficient of Utilization**



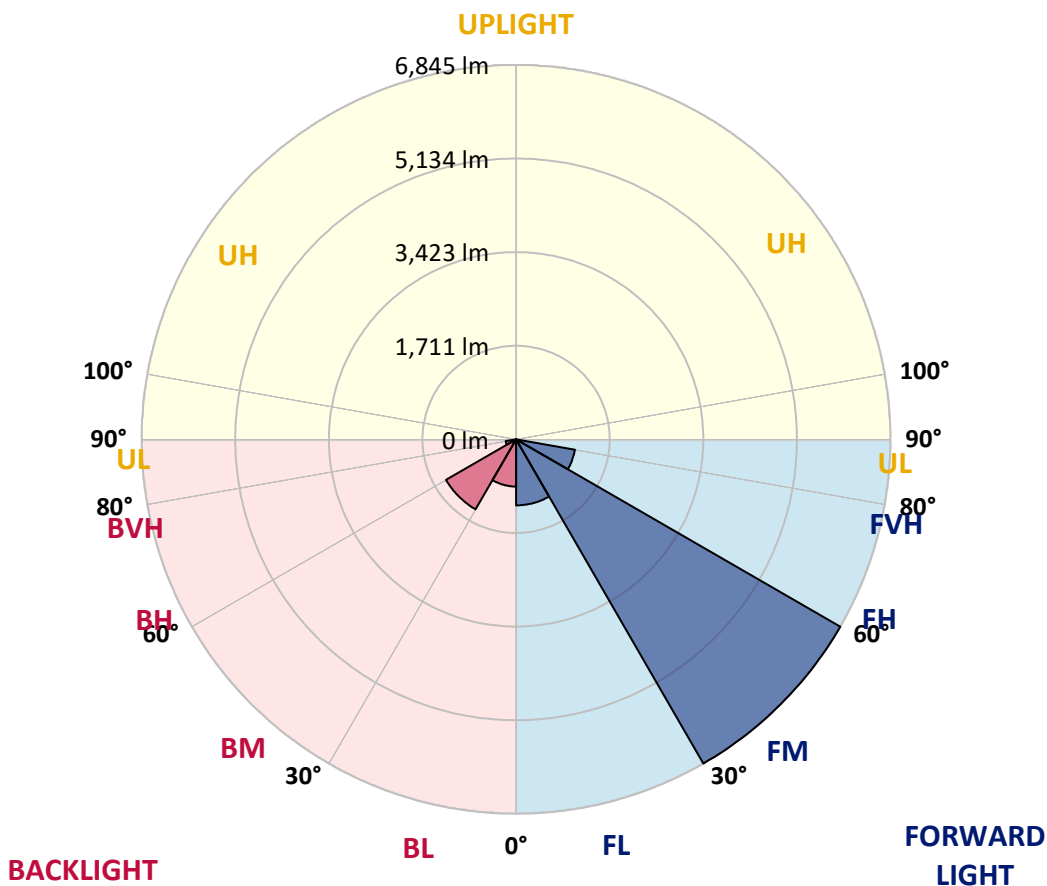
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1207.2	10.3			
FM (30°-60°)	6845.0	58.6			
FH (60°-80°)	1093.1	9.4			G1/1800
FVH (80°-90°)	1.6	0.0			G0/10
BL (0°-30°)	862.6	7.4	B2/1000		
BM (30°-60°)	1478.2	12.7	B2/2500		
BH (60°-80°)	192.7	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





REPORT NUMBER: P639981

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4
2.5°	1975.8	1974.4	1973.1	1981.2	1978.5	1977.1	1979.8	1979.8	1979.8	1971.7	1955.4
5°	2023.2	2023.2	2021.9	2030.0	2023.2	2019.2	2020.5	2020.5	2015.1	2000.2	1979.8
7.5°	2097.8	2095.1	2092.4	2100.5	2093.7	2092.4	2095.1	2087.0	2077.5	2053.1	2024.6
10°	2204.9	2204.9	2200.9	2209.0	2203.6	2200.9	2200.9	2195.5	2177.8	2139.9	2097.8
12.5°	2352.8	2346.0	2336.5	2329.7	2327.0	2325.6	2327.0	2318.9	2299.9	2251.0	2192.7
15°	2514.1	2508.7	2493.8	2482.9	2468.0	2465.3	2473.4	2466.7	2447.7	2381.2	2298.5
17.5°	2717.5	2724.3	2686.3	2663.3	2619.9	2617.2	2619.9	2630.7	2617.2	2531.8	2411.1
20°	2891.1	2896.5	2868.1	2851.8	2812.5	2794.8	2800.2	2817.9	2803.0	2702.6	2534.5
22.5°	3076.9	3083.7	3053.8	3019.9	3002.3	3002.3	3022.6	3047.1	3026.7	2895.2	2675.5
25°	3299.3	3304.7	3280.3	3235.5	3204.4	3243.7	3273.5	3338.6	3304.7	3125.7	2842.3
27.5°	3554.2	3555.6	3520.3	3474.2	3457.9	3531.2	3561.0	3661.3	3647.8	3384.7	3018.6
30°	3826.8	3828.1	3820.0	3788.8	3773.9	3870.2	3910.9	4056.0	4046.5	3706.1	3258.6
32.5°	4110.2	4110.2	4125.1	4122.4	4140.0	4297.3	4362.4	4527.9	4518.4	4099.3	3556.9
35°	4395.0	4396.3	4422.1	4487.2	4560.4	4769.2	4854.7	5055.4	5033.7	4569.9	3938.0
37.5°	4719.1	4705.5	4740.8	4838.4	5001.1	5242.5	5323.9	5515.1	5490.7	5051.3	4435.6
40°	5109.6	5085.2	5085.2	5199.1	5383.5	5661.5	5730.7	5825.6	5742.9	5440.5	4923.8
42.5°	5540.8	5517.8	5487.9	5588.3	5742.9	5959.9	6016.8	5991.0	5923.2	5808.0	5479.8
45°	5977.5	5942.2	5962.6	6023.6	6113.1	6216.1	6237.8	6118.5	6087.3	6119.9	5939.5
47.5°	6309.7	6285.3	6335.5	6420.9	6494.1	6509.1	6494.1	6328.7	6326.0	6441.3	6258.2
50°	6420.9	6423.6	6561.9	6749.1	6867.1	6879.3	6858.9	6669.1	6643.3	6677.2	6430.4
52.5°	6431.8	6442.6	6644.7	7001.3	7322.7	7469.1	7452.9	7248.1	6995.9	6959.3	6690.8
55°	6170.0	6233.8	6515.8	7036.6	7720.0	8187.8	8242.1	7850.2	7475.9	7444.7	7250.8
57.5°	4932.0	5062.1	5402.5	6144.3	7276.6	8262.4	8403.5	8121.4	7759.3	7626.4	7100.3
60°	2948.1	3109.4	3436.2	4346.2	5538.1	6791.1	7033.8	7073.2	6906.4	6522.6	5447.3
62.5°	1265.2	1251.6	1654.4	2351.4	3293.9	4316.3	4426.2	4597.0	4742.1	4340.7	3306.1
65°	433.9	471.9	656.3	1060.4	1649.0	2004.2	2101.9	2255.1	2461.2	2031.4	1211.0
67.5°	268.5	284.8	378.3	626.5	889.6	876.0	832.6	808.2	786.5	538.4	332.2
70°	195.3	208.8	265.8	431.2	598.0	420.4	364.8	295.6	328.2	302.4	236.0
72.5°	131.5	142.4	183.1	261.7	306.5	204.8	189.8	215.6	260.4	248.2	192.6
75°	78.7	85.4	104.4	127.5	124.8	105.8	107.1	151.9	199.3	185.8	137.0
77.5°	54.2	57.0	69.2	82.7	61.0	32.5	29.8	42.0	67.8	67.8	46.1
80°	13.6	17.6	17.6	10.8	9.5	8.1	8.1	12.2	19.0	13.6	6.8
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7	2.7	2.7
85°	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7	2.7
87.5°	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
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-SA5C-830-U-T3-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4	1955.4
2.5°	1964.9	1948.6	1959.5	1956.8	1964.9	1967.6	1955.4	1952.7	1954.1	1937.8	1932.4
5°	1983.9	1964.9	1970.3	1964.9	1974.4	1982.5	1978.5	1983.9	1990.7	1978.5	1973.1
7.5°	2024.6	2005.6	2004.2	1996.1	2009.7	2015.1	2013.7	2028.7	2042.2	2034.1	2025.9
10°	2095.1	2069.3	2066.6	2059.8	2063.9	2068.0	2053.1	2055.8	2068.0	2058.5	2054.4
12.5°	2181.9	2150.7	2143.9	2127.6	2127.6	2107.3	2074.8	2068.0	2077.5	2070.7	2063.9
15°	2275.5	2233.4	2222.6	2194.1	2167.0	2129.0	2095.1	2087.0	2093.7	2085.6	2080.2
17.5°	2379.9	2332.4	2297.2	2247.0	2187.3	2142.6	2104.6	2087.0	2076.1	2059.8	2058.5
20°	2482.9	2420.6	2360.9	2280.9	2202.2	2134.4	2072.0	2025.9	1986.6	1962.2	1952.7
22.5°	2602.3	2510.1	2413.8	2301.2	2188.7	2085.6	1975.8	1897.1	1829.3	1806.3	1795.4
25°	2729.7	2610.4	2466.7	2320.2	2142.6	1977.1	1828.0	1711.3	1621.8	1592.0	1579.8
27.5°	2870.8	2706.7	2520.9	2316.1	2047.6	1822.5	1624.6	1479.5	1391.3	1364.2	1373.7
30°	3049.8	2831.4	2588.7	2274.1	1905.3	1605.6	1373.7	1251.6	1185.2	1159.4	1160.8
32.5°	3288.4	3010.4	2687.7	2184.6	1722.2	1358.8	1155.4	1065.9	1021.1	987.2	984.5
35°	3630.2	3283.0	2779.9	2040.9	1499.8	1139.1	991.3	920.8	858.4	819.1	825.8
37.5°	4039.7	3626.1	2830.1	1846.9	1250.3	968.2	867.9	796.0	725.5	667.2	674.0
40°	4525.1	4074.9	2826.0	1592.0	1022.5	851.6	764.8	680.7	592.6	539.7	545.1
42.5°	5066.2	4499.4	2737.9	1322.2	847.5	756.7	665.8	560.0	474.6	442.1	443.4
45°	5535.4	4843.8	2583.3	1042.8	713.3	664.5	562.8	454.3	416.3	393.3	391.9
47.5°	5882.6	5096.0	2362.2	820.4	604.8	580.4	462.4	406.8	377.0	358.0	355.3
50°	6076.5	5184.2	2118.2	642.8	511.2	492.2	413.6	368.8	348.5	336.3	333.6
52.5°	6336.8	5290.0	1943.2	507.2	428.5	402.7	381.1	343.1	329.5	320.0	316.0
55°	6749.1	5494.7	1791.3	402.7	356.6	351.2	359.4	328.2	320.0	305.1	299.7
57.5°	6361.2	4936.0	1391.3	311.9	301.0	321.4	347.1	313.2	292.9	279.3	273.9
60°	4476.3	3281.6	699.7	250.9	268.5	301.0	326.8	283.4	263.1	265.8	263.1
62.5°	2468.0	1642.2	314.6	210.2	233.2	265.8	279.3	245.4	231.9	254.9	259.0
65°	806.9	558.7	181.7	162.7	184.4	217.0	241.4	233.2	230.5	257.7	265.8
67.5°	248.2	184.4	123.4	116.6	127.5	160.0	203.4	252.2	271.2	279.3	283.4
70°	185.8	145.1	105.8	99.0	104.4	122.0	172.2	210.2	198.0	199.3	196.6
72.5°	149.2	115.3	90.9	86.8	86.8	84.1	90.9	113.9	128.8	135.6	135.6
75°	104.4	81.4	69.2	63.7	50.2	40.7	36.6	36.6	32.5	31.2	29.8
77.5°	35.3	29.8	27.1	21.7	14.9	12.2	10.8	9.5	6.8	4.1	2.7
80°	5.4	4.1	2.7	2.7	2.7	1.4	1.4	1.4	0.0	0.0	0.0
82.5°	2.7	2.7	2.7	2.7	2.7	1.4	1.4	0.0	0.0	0.0	0.0
85°	2.7	2.7	2.7	2.7	2.7	1.4	1.4	0.0	0.0	0.0	0.0
87.5°	2.7	2.7	2.7	2.7	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



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			

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**



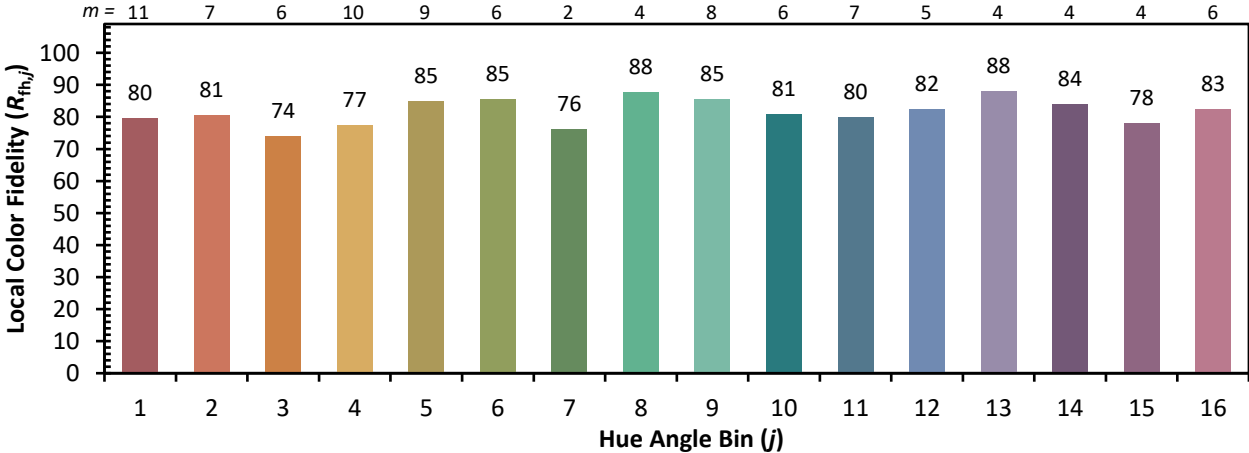


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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)