

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: P641462

Luminaire Tested: GWS-SA5F-830-U-T2R-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641462  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-12)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-T2R-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

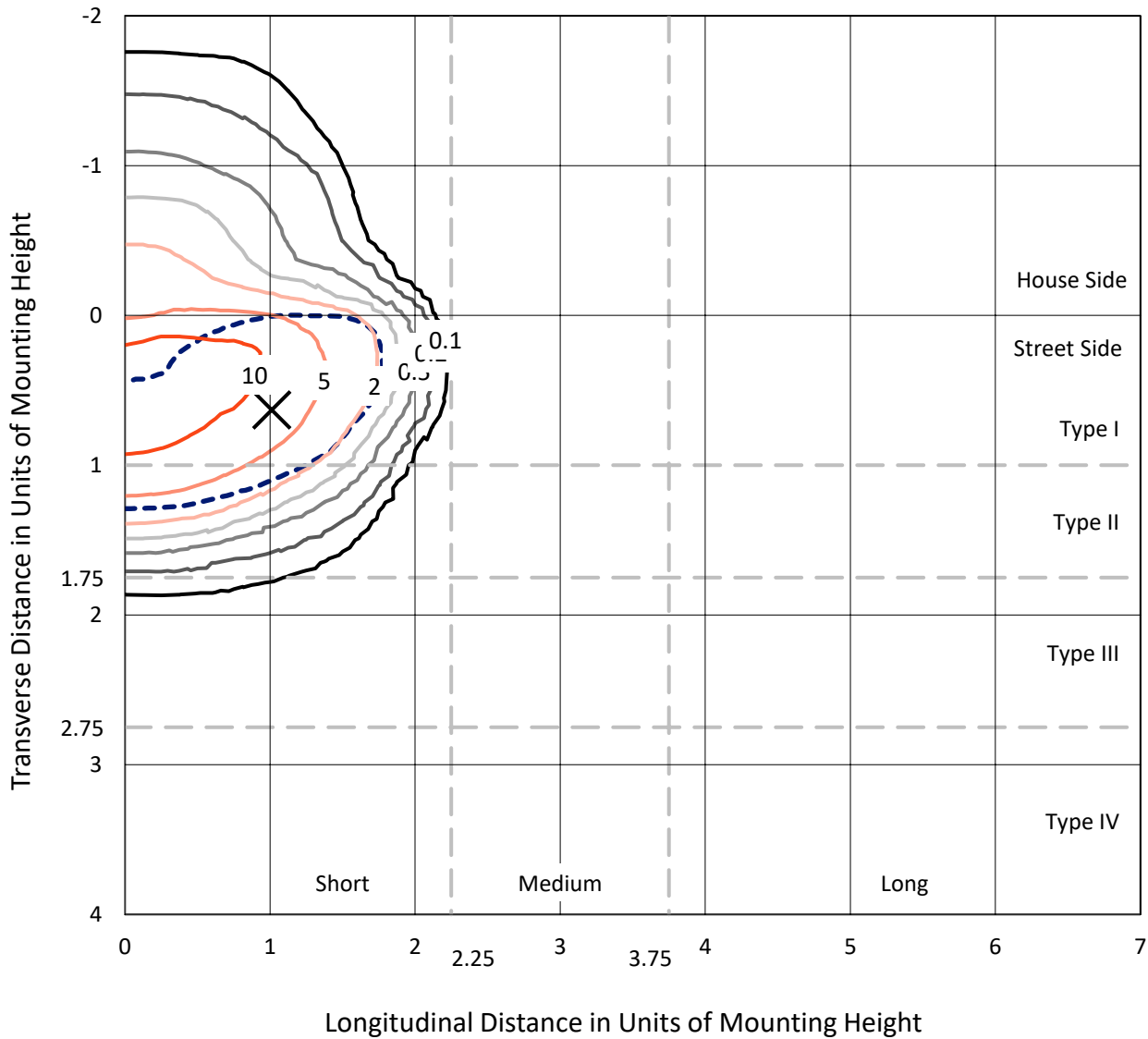
Lumens per Lamp: N/A  
Luminaire Lumens: 22226.3 lumens  
Efficiency: N/A  
Efficacy: 71.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): 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-SA5F-830-U-T2R-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

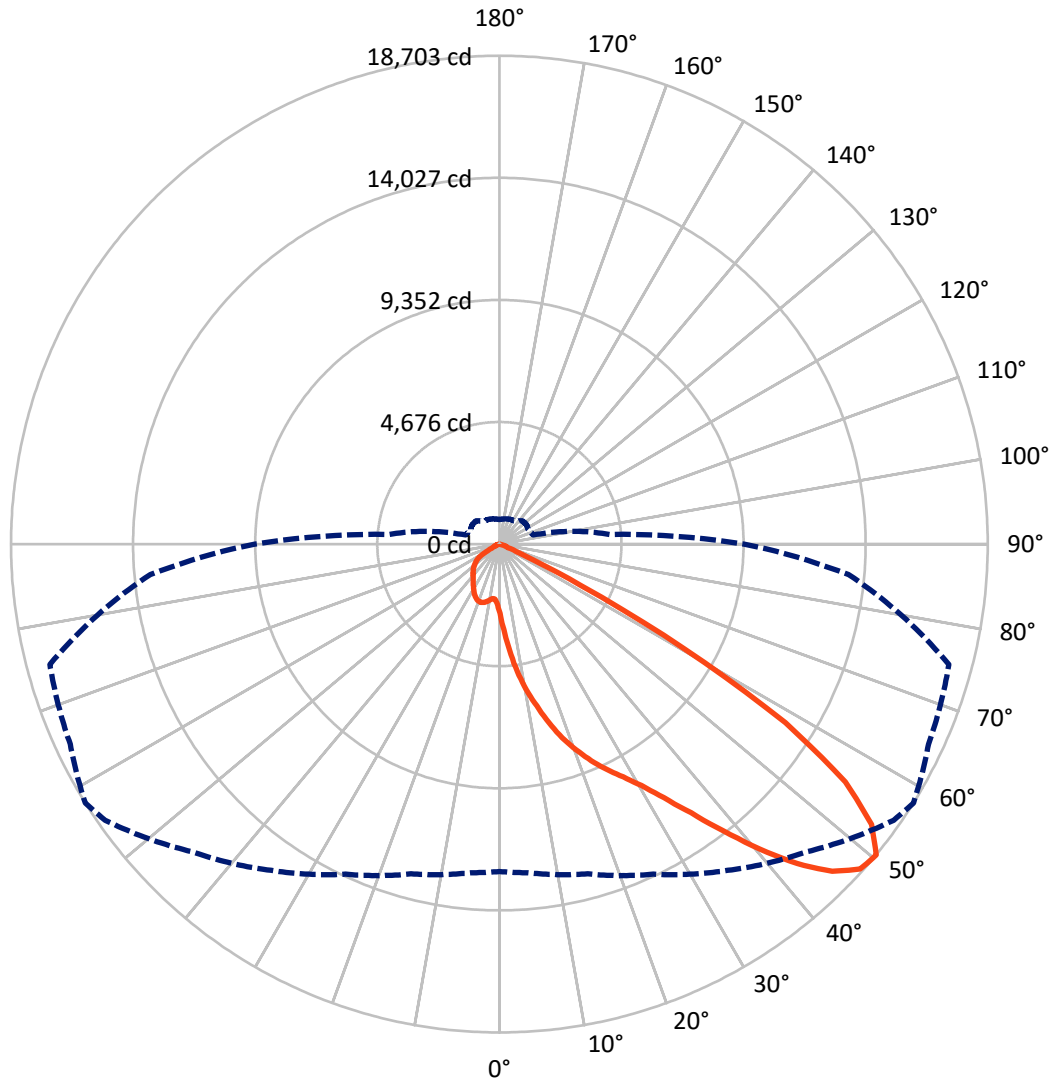
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 13 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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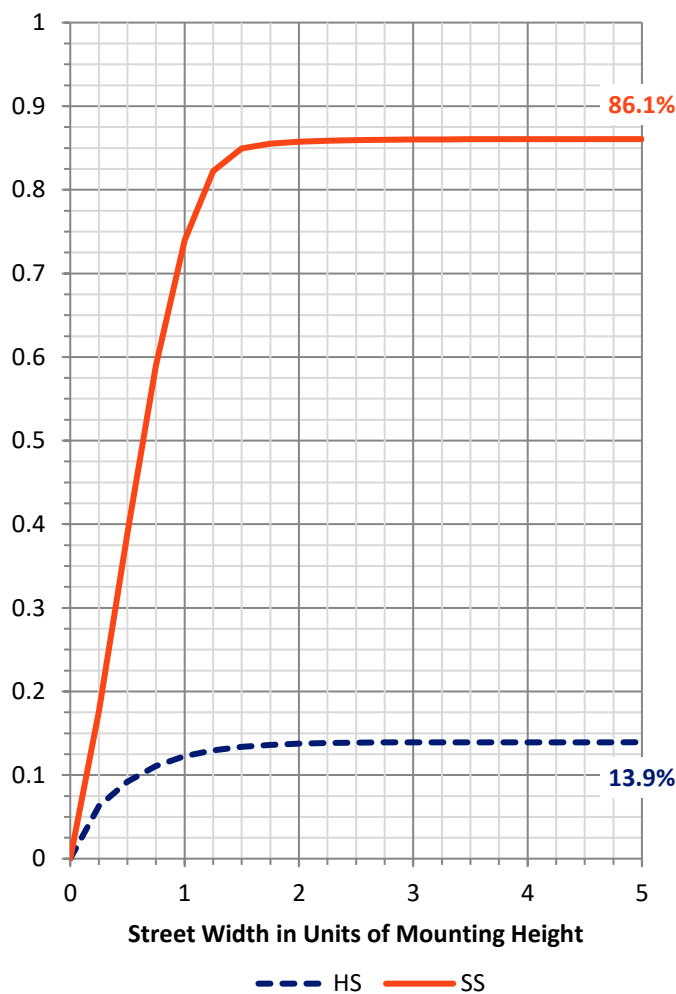
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3113.1	0.0	3113.1
	% Fixture	14.0	0.0	14.0
<b>Street Side</b>	Lumens	19113.2	0.0	19113.2
	% Fixture	86.0	0.0	86.0
<b>Total</b>	Lumens	22226.3	0.0	22226.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	328.9	1.5
10°-20°	1302.0	5.9
20°-30°	2634.7	11.9
30°-40°	4661.1	21.0
40°-50°	6794.8	30.6
50°-60°	5446.2	24.5
60°-70°	981.2	4.4
70°-80°	77.3	0.3
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°	22226.3	100.0
0°-180°	22226.3	100.0

**Coefficient of Utilization**



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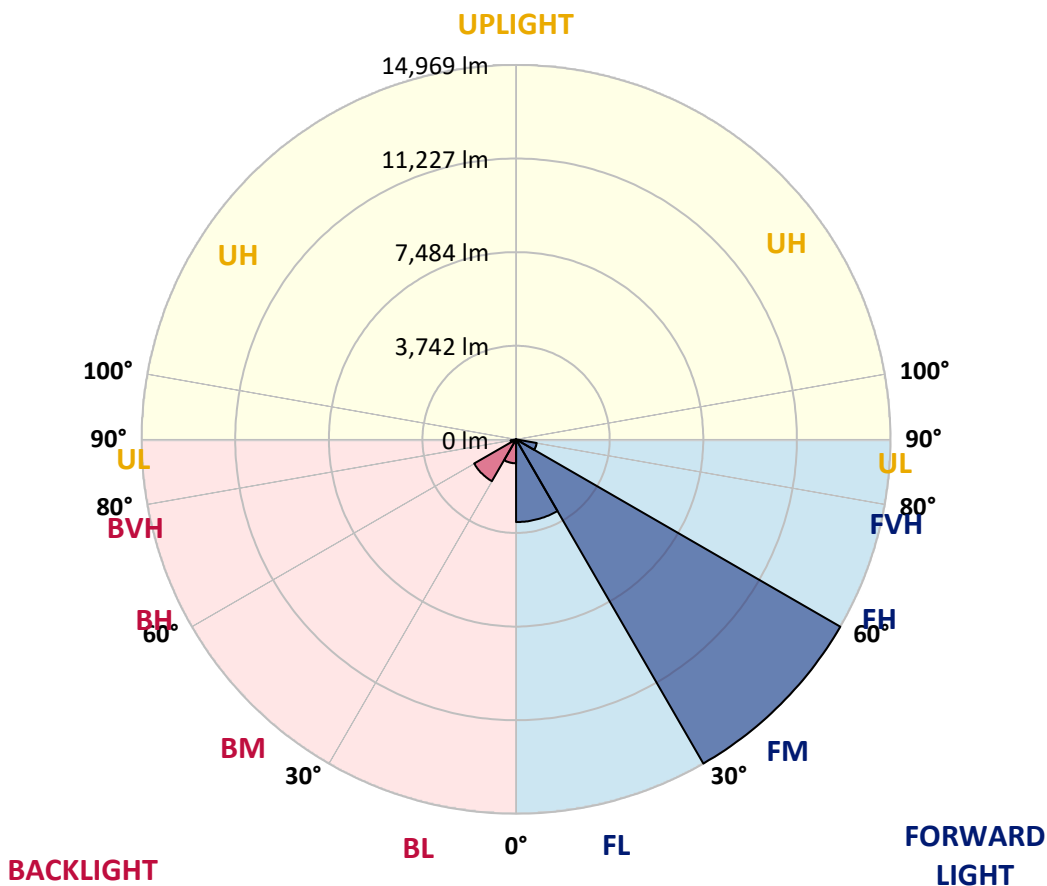
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	3307.2	14.9			
FM (30°-60°)	14968.7	67.3			
FH (60°-80°)	837.3	3.8			G1/1800
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	958.4	4.3	B2/1000		
BM (30°-60°)	1933.4	8.7	B2/2500		
BH (60°-80°)	221.3	1.0	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°	55°	58°	65°	75°	85°
0°	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9
2.5°	3928.9	3867.1	3831.4	3802.9	3676.9	3477.3	3346.5	3277.6	3163.5	2971.0	2804.6
5°	5126.8	5081.6	4998.4	4941.4	4779.8	4496.9	4204.6	4088.1	3829.0	3394.1	3004.3
7.5°	5920.6	5887.4	5856.5	5780.4	5628.3	5371.6	5048.3	4927.1	4527.8	3909.8	3270.5
10°	6531.5	6505.3	6469.7	6467.3	6348.5	6117.9	5801.8	5675.8	5243.2	4470.8	3584.2
12.5°	7068.6	7047.2	7040.1	7106.7	7030.6	6859.5	6517.2	6360.3	5901.6	5043.6	3931.2
15°	7437.0	7432.3	7463.2	7593.9	7636.7	7558.2	7270.7	7101.9	6574.2	5618.8	4313.9
17.5°	7605.8	7620.0	7679.5	7905.3	8095.4	8162.0	7940.9	7798.3	7242.1	6201.1	4722.7
20°	7893.4	7888.6	7924.3	8138.2	8371.1	8608.8	8542.2	8421.0	7917.1	6816.7	5176.7
22.5°	8703.9	8634.9	8558.9	8592.2	8675.3	8953.4	9077.0	9015.2	8613.5	7448.9	5644.9
25°	9949.3	9878.0	9633.2	9395.5	9238.6	9364.6	9533.4	9564.3	9305.2	8097.8	6134.5
27.5°	11270.8	11206.6	10930.9	10574.4	10125.2	9906.5	10032.5	10094.3	9985.0	8870.2	6655.1
30°	12509.1	12423.6	12121.7	11679.6	11159.1	10824.0	10681.4	10724.2	10788.3	9785.3	7265.9
32.5°	13583.5	13519.3	13158.0	12692.1	12190.6	11841.3	11508.5	11579.8	11736.7	10904.8	8047.9
35°	14493.8	14460.5	14077.8	13614.4	13084.3	12906.1	12620.8	12635.1	12792.0	12257.2	9001.0
37.5°	15285.2	15228.2	14881.2	14451.0	14030.3	14001.8	13923.3	13930.5	14011.3	13833.0	10096.7
40°	15784.4	15732.1	15484.9	15218.7	14919.2	14924.0	15330.4	15361.3	15268.6	15380.3	11254.2
42.5°	15972.1	15934.1	15801.0	15803.4	15772.5	15912.7	16675.7	16732.7	16400.0	16594.9	12242.9
45°	15646.5	15629.9	15639.4	15981.6	16352.4	16785.0	17776.1	17876.0	17405.4	17400.6	13015.4
47.5°	14596.0	14562.7	14840.8	15423.1	16281.1	17122.5	18441.6	18596.1	18108.9	17861.7	13500.3
50°	12537.7	12632.7	13072.4	13947.1	15252.0	16659.0	18434.5	18703.1	18135.0	17821.3	13419.5
52.5°	9081.8	9062.8	10025.4	11228.0	12815.7	15175.9	17455.3	17847.4	17500.4	17424.4	13238.8
55°	4941.4	5114.9	5763.8	7356.2	9338.5	12368.9	15218.7	16074.3	16476.0	17279.4	13564.4
57.5°	1815.9	1891.9	2298.4	3425.0	4943.8	7691.3	11625.0	12915.6	14156.3	16875.3	13509.8
60°	732.1	746.3	907.9	1259.7	2077.3	3914.6	6973.6	8119.2	9288.6	12917.9	10367.6
62.5°	532.4	551.4	615.6	736.8	1050.5	1711.3	3006.7	3496.3	3821.9	6398.4	5107.8
65°	430.2	444.5	496.8	551.4	694.0	919.8	969.7	934.1	929.3	1654.3	1171.8
67.5°	356.5	370.8	408.8	446.8	499.1	458.7	332.8	349.4	285.2	282.8	230.6
70°	261.4	278.1	316.1	356.5	299.5	123.6	192.5	285.2	216.3	180.6	175.9
72.5°	197.3	209.2	244.8	232.9	87.9	47.5	128.3	206.8	166.4	133.1	130.7
75°	147.4	154.5	123.6	38.0	9.5	11.9	47.5	85.6	92.7	76.1	76.1
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.1	9.5	11.9	14.3
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: P641462

CATALOG NUMBER: GWS-SA5F-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9	2654.9
2.5°	2709.6	2609.7	2467.1	2348.3	2258.0	2170.0	2103.5	2036.9	2034.5	2001.3	1994.1
5°	2823.6	2643.0	2381.6	2193.8	2079.7	2010.8	1963.2	1939.5	1927.6	1915.7	1911.0
7.5°	2987.6	2728.6	2367.3	2167.6	2072.6	2027.4	1994.1	1979.9	1972.7	1963.2	1960.9
10°	3189.7	2852.2	2419.6	2217.6	2134.4	2091.6	2055.9	2034.5	2022.7	2006.0	2001.3
12.5°	3432.1	3004.3	2502.8	2300.7	2212.8	2155.8	2108.2	2077.3	2060.7	2039.3	2034.5
15°	3693.6	3168.3	2595.5	2376.8	2272.2	2198.5	2139.1	2091.6	2060.7	2034.5	2027.4
17.5°	3964.5	3334.7	2678.7	2429.1	2300.7	2212.8	2127.2	2063.1	2025.0	1991.8	1982.3
20°	4268.7	3505.8	2733.3	2438.6	2291.2	2174.8	2075.0	1994.1	1956.1	1911.0	1901.4
22.5°	4587.2	3665.0	2757.1	2417.2	2239.0	2103.5	1996.5	1913.3	1858.7	1811.1	1796.9
25°	4896.2	3807.6	2745.2	2357.8	2160.5	2003.6	1894.3	1808.8	1749.3	1701.8	1689.9
27.5°	5224.2	3926.5	2702.4	2269.9	2053.6	1894.3	1789.7	1716.1	1661.4	1609.1	1597.2
30°	5592.6	4035.8	2633.5	2162.9	1927.6	1782.6	1701.8	1651.9	1592.5	1537.8	1521.2
32.5°	6037.1	4133.3	2533.7	2034.5	1815.9	1685.2	1640.0	1602.0	1533.0	1476.0	1464.1
35°	6545.7	4214.1	2407.7	1901.4	1706.5	1623.4	1613.9	1563.9	1473.6	1407.1	1392.8
37.5°	7135.2	4292.5	2258.0	1770.7	1625.7	1594.8	1597.2	1511.6	1402.3	1321.5	1312.0
40°	7769.8	4370.9	2091.6	1656.6	1552.1	1578.2	1556.8	1435.6	1257.3	1178.9	1169.4
42.5°	8430.5	4456.5	1922.8	1549.7	1490.3	1514.0	1483.1	1283.5	1155.1	1114.7	1110.0
45°	9027.1	4558.7	1739.8	1442.7	1428.5	1421.3	1369.0	1162.3	1107.6	1079.1	1076.7
47.5°	9457.3	4542.1	1544.9	1340.5	1361.9	1338.1	1178.9	1105.2	1060.1	1022.0	1012.5
50°	9378.9	4252.1	1342.9	1226.4	1276.3	1255.0	1060.1	1038.7	998.3	957.9	943.6
52.5°	9179.2	3857.6	1167.0	1105.2	1183.6	1133.7	979.2	957.9	922.2	869.9	853.3
55°	9286.2	3486.8	1029.2	1007.8	1088.6	938.8	888.9	855.7	817.6	760.6	753.4
57.5°	8941.5	2845.0	827.1	841.4	962.6	801.0	779.6	727.3	663.1	625.1	620.3
60°	6189.2	1528.3	518.1	534.8	696.4	672.6	698.8	651.2	572.8	537.2	530.0
62.5°	2842.7	613.2	282.8	271.0	366.0	456.3	599.0	594.2	496.8	439.7	435.0
65°	689.3	280.5	202.0	190.1	206.8	273.3	389.8	468.2	401.7	335.1	328.0
67.5°	223.4	228.2	185.4	173.5	183.0	204.4	232.9	259.1	256.7	235.3	230.6
70°	178.3	206.8	171.1	156.9	156.9	164.0	156.9	126.0	109.3	118.8	123.6
72.5°	133.1	156.9	135.5	121.2	116.5	114.1	97.4	71.3	49.9	45.2	42.8
75°	78.4	87.9	83.2	71.3	66.6	59.4	47.5	30.9	16.6	11.9	7.1
77.5°	14.3	16.6	19.0	14.3	11.9	9.5	7.1	2.4	0.0	0.0	0.0
80°	0.0	2.4	2.4	2.4	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



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

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

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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**

$\lambda$ (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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**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)