

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: P634038

Luminaire Tested: GWS-SA2F-830-U-T2R-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P634038  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-13)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2F-830-U-T2R-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

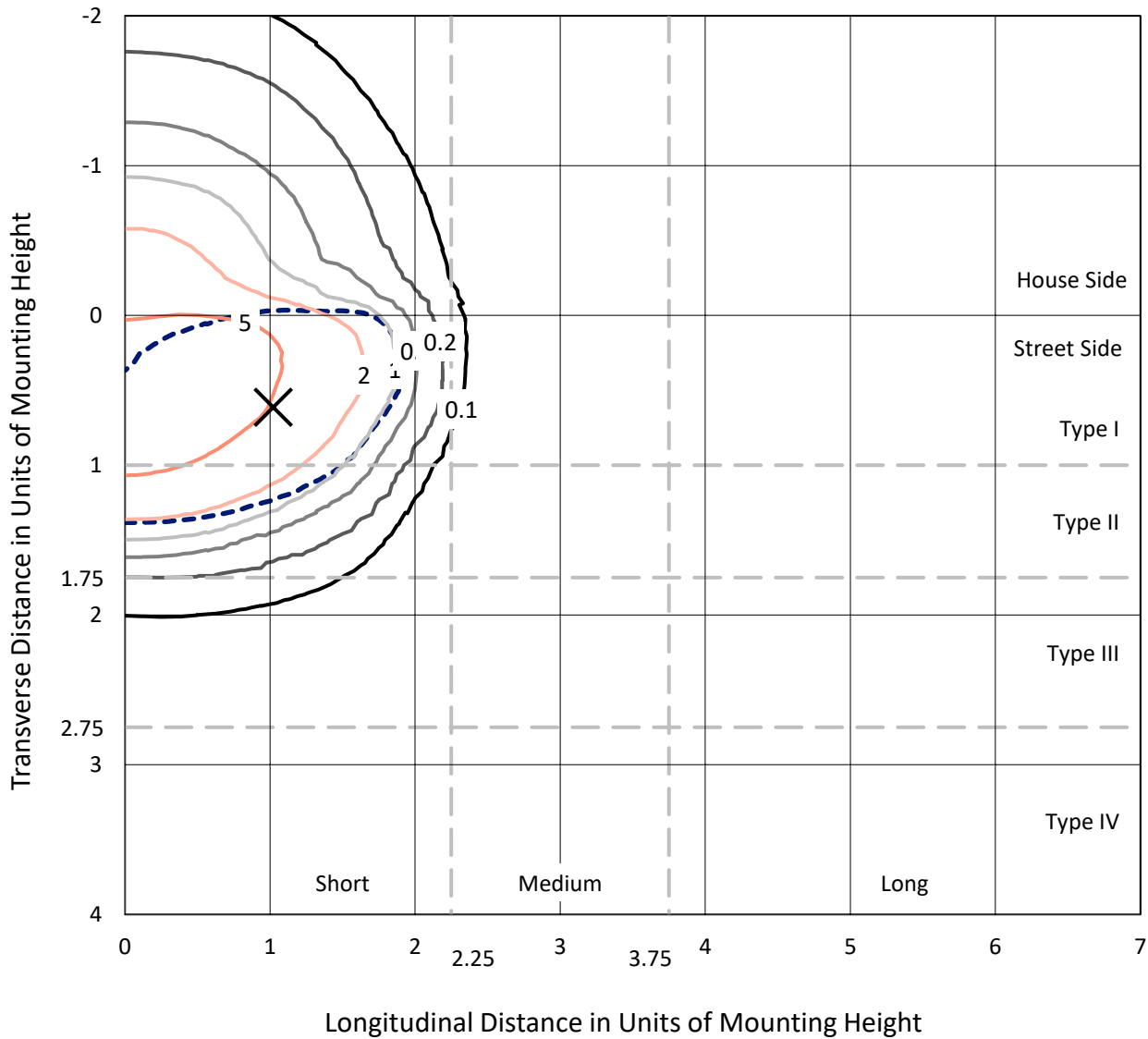
Lumens per Lamp: N/A  
Luminaire Lumens: 11341.9 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 124.5  
Input Voltage (V): 120  
Input Current (Ain): 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



REPORT NUMBER: P634038  
 CATALOG NUMBER: GWS-SA2F-830-U-T2R-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

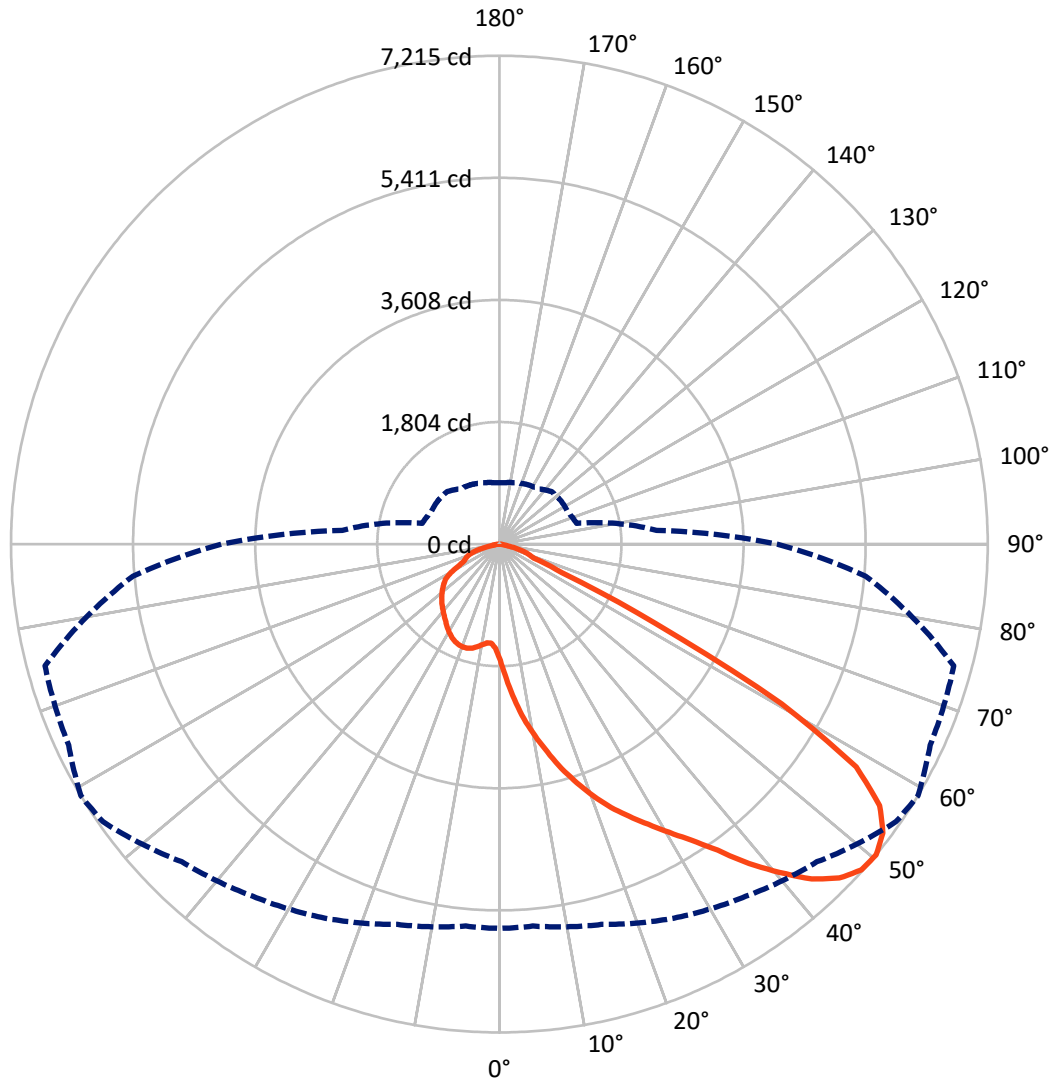
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.5 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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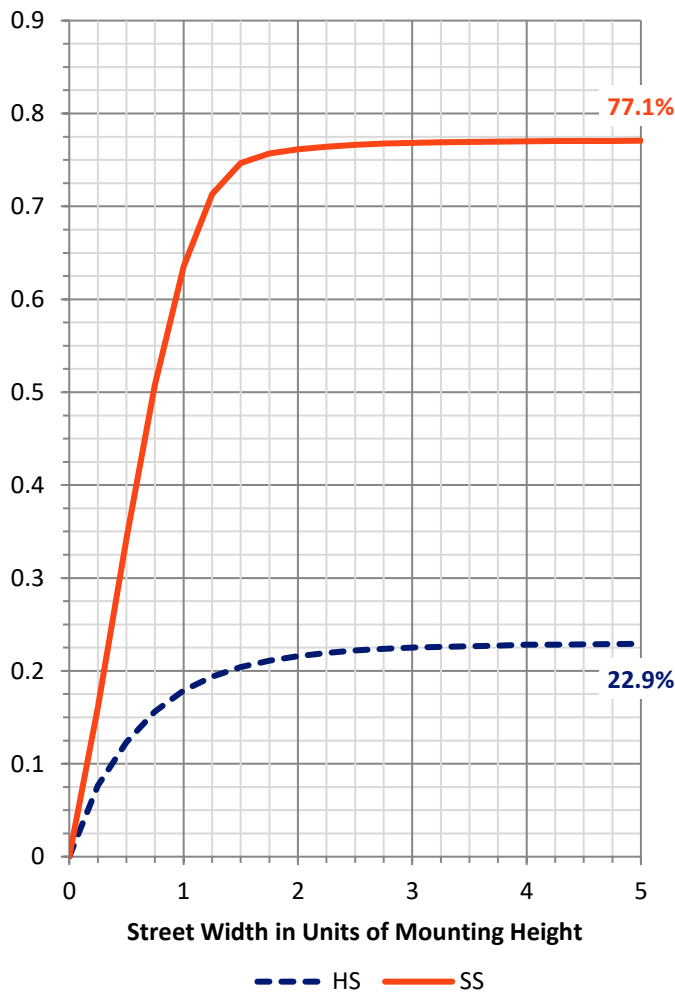
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2608.8	0.0	2608.8
	% Fixture	23.0	0.0	23.0
<b>Street Side</b>	Lumens	8733.1	0.0	8733.1
	% Fixture	77.0	0.0	77.0
<b>Total</b>	Lumens	11341.9	0.0	11341.9
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.8	1.7
10°-20°	699.8	6.2
20°-30°	1325.1	11.7
30°-40°	2197.5	19.4
40°-50°	3001.9	26.5
50°-60°	2724.9	24.0
60°-70°	907.4	8.0
70°-80°	264.7	2.3
80°-90°	27.8	0.2
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°	11341.9	100.0
0°-180°	11341.9	100.0

**Coefficient of Utilization**



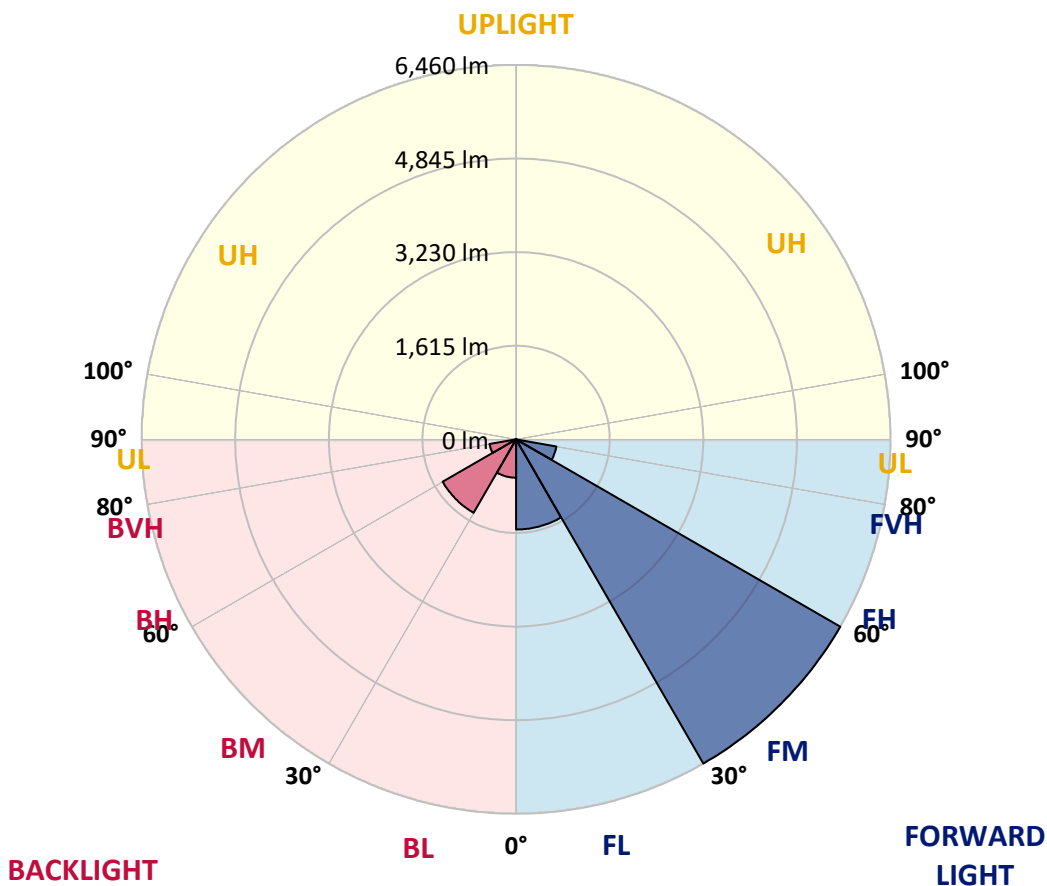
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1555.3	13.7			
FM (30°-60°)	6460.5	57.0			
FH (60°-80°)	706.4	6.2			G1/1800
FVH (80°-90°)	10.9	0.1			G1/100
BL (0°-30°)	662.4	5.8	B2/1000		
BM (30°-60°)	1463.8	12.9	B2/2500		
BH (60°-80°)	465.7	4.1	B1/500		G1/500
BVH (80°-90°)	16.9	0.1			G1/100
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: P634038

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4
2.5°	2226.5	2243.1	2217.3	2219.1	2154.4	2124.9	2041.7	1992.8	1960.4	1869.9	1787.7
5°	2675.5	2656.1	2635.8	2623.8	2567.4	2488.0	2384.5	2302.3	2226.5	2049.1	1878.2
7.5°	2950.8	2940.6	2926.8	2919.4	2864.0	2780.8	2677.3	2607.1	2497.2	2257.0	1988.1
10°	3184.5	3172.5	3164.2	3169.8	3124.5	3070.9	2958.2	2877.8	2754.0	2476.9	2121.2
12.5°	3365.6	3372.1	3374.9	3404.4	3385.0	3352.7	3236.3	3151.3	3013.6	2708.8	2277.3
15°	3508.8	3507.0	3539.3	3595.7	3627.1	3606.7	3513.4	3442.3	3274.2	2936.9	2445.5
17.5°	3542.1	3543.9	3594.7	3693.6	3796.1	3846.0	3793.4	3708.4	3542.1	3162.4	2620.1
20°	3568.9	3572.6	3625.2	3737.9	3887.6	4027.1	4035.4	3974.4	3831.2	3406.3	2797.4
22.5°	3737.9	3746.2	3760.1	3831.2	3966.1	4142.6	4239.6	4226.7	4106.6	3662.2	2988.7
25°	4182.3	4157.4	4089.9	4069.6	4121.3	4264.5	4429.9	4454.8	4395.7	3944.0	3194.7
27.5°	4731.1	4704.3	4604.5	4499.2	4387.4	4437.3	4613.8	4688.6	4689.5	4254.4	3401.6
30°	5229.0	5207.8	5126.5	4975.9	4782.8	4710.8	4841.0	4941.7	5001.8	4612.8	3637.2
32.5°	5654.9	5635.5	5525.6	5402.7	5214.3	5069.2	5116.3	5213.3	5353.8	5076.6	3930.1
35°	6013.4	5994.0	5888.7	5764.9	5590.3	5503.4	5486.8	5553.3	5735.3	5560.7	4266.4
37.5°	6304.4	6285.0	6175.1	6058.7	5925.6	5931.2	5956.1	5988.5	6092.9	6079.0	4625.8
40°	6492.9	6472.6	6394.0	6310.9	6226.8	6293.3	6417.1	6378.3	6433.8	6497.5	4956.5
42.5°	6577.0	6551.1	6505.8	6487.3	6461.5	6564.9	6803.3	6764.5	6698.0	6776.5	5202.3
45°	6492.9	6470.7	6469.8	6526.1	6586.2	6719.2	7070.3	7038.9	6870.7	6911.4	5349.1
47.5°	6235.1	6215.7	6268.4	6416.2	6564.0	6758.0	7189.5	7195.0	6993.6	6967.7	5444.3
50°	5678.0	5665.1	5817.5	6097.5	6352.5	6637.0	7151.6	7215.3	7023.2	6950.2	5432.3
52.5°	4545.4	4605.4	4937.1	5404.6	5899.8	6424.5	7011.2	7094.3	6880.9	6834.7	5367.6
55°	3111.6	3139.3	3470.9	4153.7	4939.0	5964.4	6688.7	6817.2	6712.8	6815.3	5435.1
57.5°	1611.2	1633.4	1894.8	2500.9	3349.9	4713.5	5793.5	6214.8	6373.7	6913.2	5644.8
60°	661.5	680.0	788.1	1080.9	1689.7	2744.8	4169.4	4793.9	5167.1	6313.7	5012.9
62.5°	480.4	489.6	541.4	644.9	885.1	1345.1	2359.5	2589.6	2852.0	3956.9	3182.7
65°	404.7	414.8	456.4	519.2	645.8	825.0	1007.9	1013.5	1116.9	1612.1	1179.8
67.5°	339.1	348.3	385.2	438.8	522.0	585.7	541.4	542.3	540.5	584.8	565.4
70°	264.2	271.6	308.6	365.8	409.3	376.0	423.1	468.4	449.0	466.5	493.3
72.5°	193.1	201.4	233.7	277.2	266.1	267.9	342.8	388.9	377.9	397.3	422.2
75°	139.5	145.0	161.7	138.6	146.0	176.5	241.1	266.1	277.2	293.8	316.0
77.5°	45.3	45.3	50.8	63.7	79.5	97.9	122.9	133.0	149.7	168.1	183.8
80°	23.1	24.0	28.6	35.1	44.3	56.4	72.1	76.7	85.0	95.2	101.6
82.5°	11.1	12.0	13.9	17.6	23.1	29.6	39.7	44.3	49.9	56.4	61.0
85°	2.8	2.8	3.7	5.5	7.4	11.1	14.8	17.6	22.2	26.8	29.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.9	2.8	3.7	4.6	5.5	7.4
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: P634038

CATALOG NUMBER: GWS-SA2F-830-U-T2R-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4	1718.4
2.5°	1750.7	1699.0	1632.5	1576.1	1524.4	1484.6	1450.5	1433.8	1418.1	1407.0	1410.7
5°	1798.8	1710.1	1586.3	1500.3	1447.7	1420.9	1402.4	1393.2	1391.3	1383.9	1381.2
7.5°	1869.0	1742.4	1577.0	1490.2	1455.1	1441.2	1431.1	1425.5	1428.3	1420.9	1418.1
10°	1955.8	1796.0	1600.1	1523.4	1493.0	1482.8	1471.7	1464.3	1460.6	1449.5	1447.7
12.5°	2063.9	1862.5	1641.7	1565.9	1535.5	1517.9	1503.1	1490.2	1481.9	1468.0	1464.3
15°	2180.3	1936.4	1690.7	1607.5	1571.5	1545.6	1521.6	1502.2	1487.4	1468.9	1466.2
17.5°	2306.9	2014.0	1731.3	1636.2	1590.0	1555.8	1520.7	1492.0	1471.7	1447.7	1444.9
20°	2439.0	2092.5	1761.8	1650.0	1590.9	1544.7	1497.6	1459.7	1433.8	1409.8	1408.0
22.5°	2575.7	2164.6	1780.3	1646.3	1576.1	1518.8	1462.5	1420.0	1389.5	1360.8	1359.0
25°	2713.4	2233.9	1784.9	1631.5	1546.5	1480.0	1423.7	1373.8	1339.6	1307.3	1303.6
27.5°	2852.9	2292.1	1773.8	1602.0	1506.8	1434.8	1378.4	1329.4	1294.3	1262.0	1256.4
30°	3001.6	2342.0	1749.8	1563.2	1460.6	1386.7	1331.3	1294.3	1261.1	1228.7	1223.2
32.5°	3160.5	2385.4	1715.6	1516.1	1407.0	1338.7	1298.0	1264.8	1231.5	1202.9	1197.3
35°	3349.9	2414.0	1664.8	1455.1	1357.1	1303.6	1275.8	1237.0	1196.4	1165.0	1162.2
37.5°	3545.8	2436.2	1603.8	1396.9	1313.7	1283.2	1260.1	1207.5	1156.7	1118.8	1114.2
40°	3735.2	2454.7	1528.1	1342.4	1274.0	1268.5	1237.0	1171.5	1083.7	1041.2	1037.5
42.5°	3911.6	2460.2	1448.6	1284.2	1238.0	1235.2	1200.1	1098.5	1031.0	1004.2	1000.5
45°	4032.6	2455.6	1366.4	1229.7	1201.9	1187.2	1150.2	1045.8	1004.2	980.2	975.6
47.5°	4122.3	2431.6	1274.0	1172.4	1161.3	1141.0	1061.5	1012.5	973.7	949.7	945.1
50°	4106.6	2331.8	1180.7	1116.9	1112.3	1094.8	996.8	971.0	936.8	910.9	907.2
52.5°	4025.3	2142.4	1085.5	1056.0	1065.2	1031.0	950.7	921.1	891.5	862.0	855.5
55°	4045.6	2005.7	1013.5	996.8	1013.5	935.9	898.9	867.5	839.8	811.1	805.6
57.5°	4134.3	1870.8	936.8	933.1	950.7	862.9	832.4	792.7	752.9	729.8	729.8
60°	3471.9	1363.6	801.9	811.1	850.9	803.8	777.0	736.3	692.9	672.6	672.6
62.5°	2052.8	855.5	665.2	655.0	680.0	709.5	724.3	691.0	639.3	612.5	613.4
65°	904.5	622.7	586.7	578.3	570.9	591.3	631.9	634.7	580.2	548.8	549.7
67.5°	557.1	563.6	548.8	542.3	535.8	532.1	528.4	530.3	515.5	486.9	485.9
70°	502.6	520.1	510.0	504.4	496.1	489.6	467.5	431.4	406.5	399.1	407.4
72.5°	432.4	456.4	450.8	448.1	437.9	422.2	392.6	357.5	328.0	309.5	313.2
75°	326.1	345.5	348.3	349.2	338.1	323.4	292.9	263.3	237.4	218.0	222.7
77.5°	187.5	198.6	201.4	204.2	195.9	190.3	170.0	148.7	134.9	114.6	120.1
80°	104.4	109.0	109.0	109.9	105.3	98.9	85.0	73.0	66.5	57.3	58.2
82.5°	62.8	64.7	65.6	66.5	63.7	57.3	47.1	38.8	35.1	30.5	29.6
85°	30.5	32.3	32.3	33.3	28.6	24.9	19.4	14.8	12.9	9.2	10.2
87.5°	7.4	8.3	8.3	7.4	6.5	4.6	2.8	0.9	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**



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)