

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: P631536

Luminaire Tested: GWS-SA1F-830-U-RW-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631536  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-50)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1F-830-U-RW-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

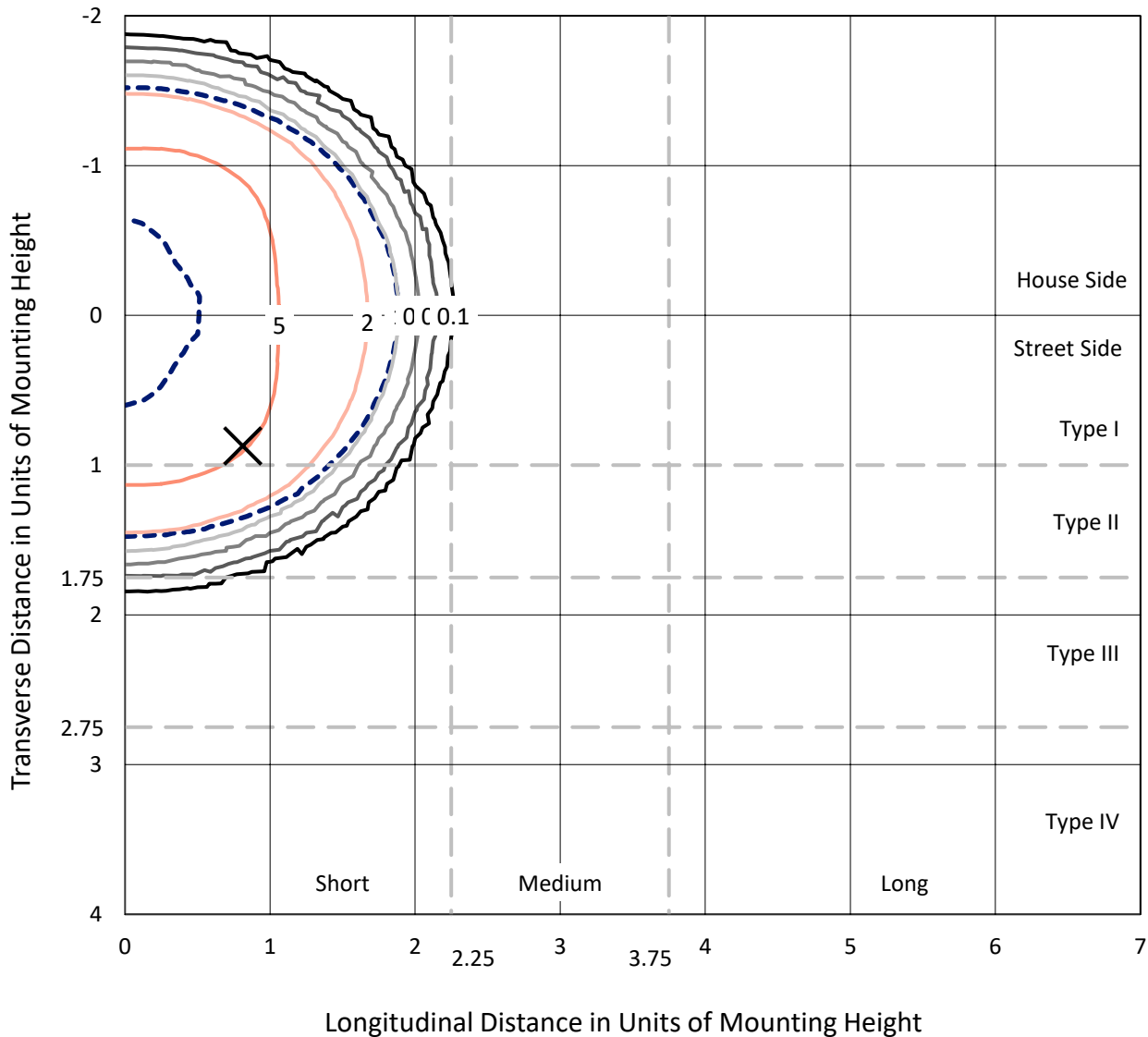
Lumens per Lamp: N/A  
Luminaire Lumens: 4337.7 lumens  
Efficiency: N/A  
Efficacy: 64.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B2 - U0 - G0  
  
Input Watts (W): 67.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
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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 CATALOG NUMBER: GWS-SA1F-830-U-RW-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

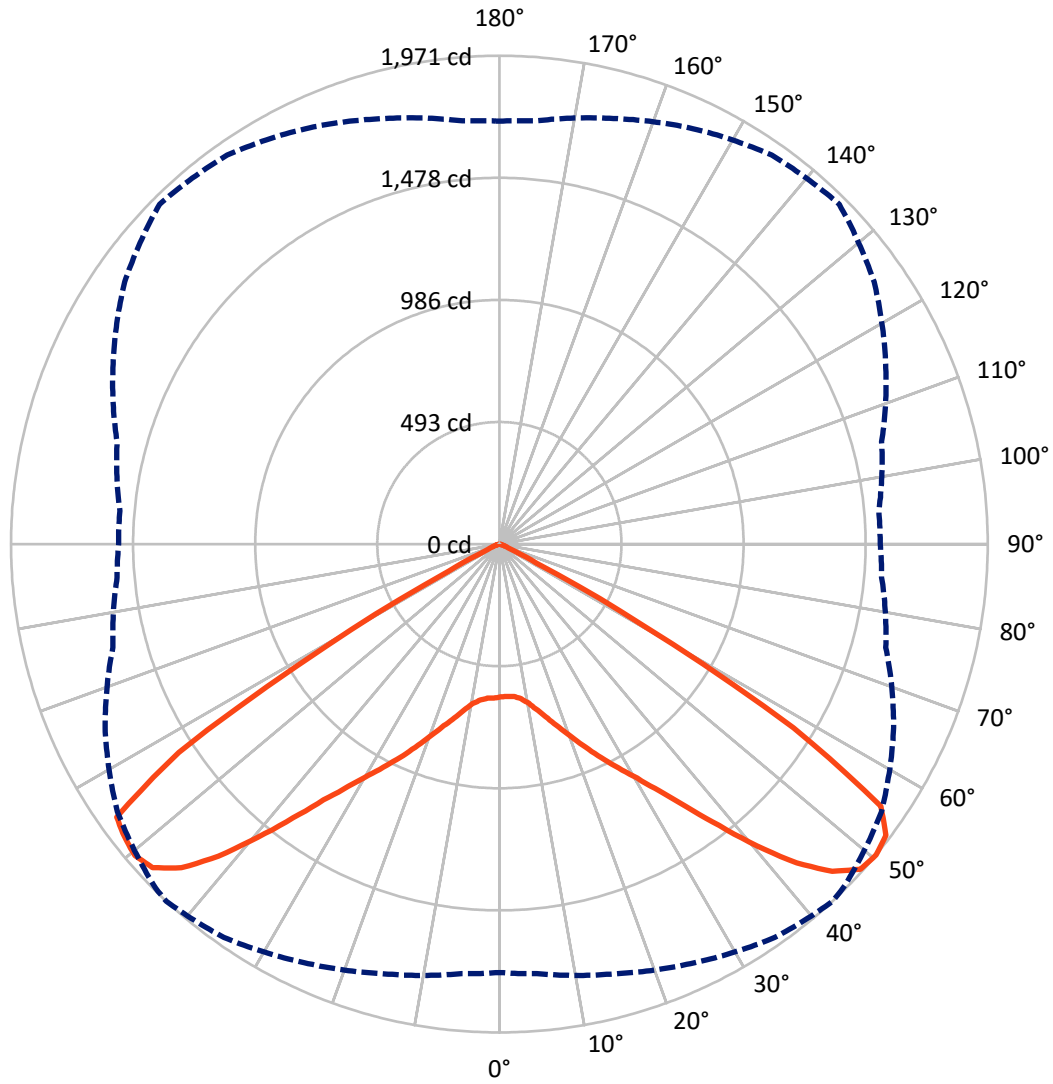
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.4 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 43-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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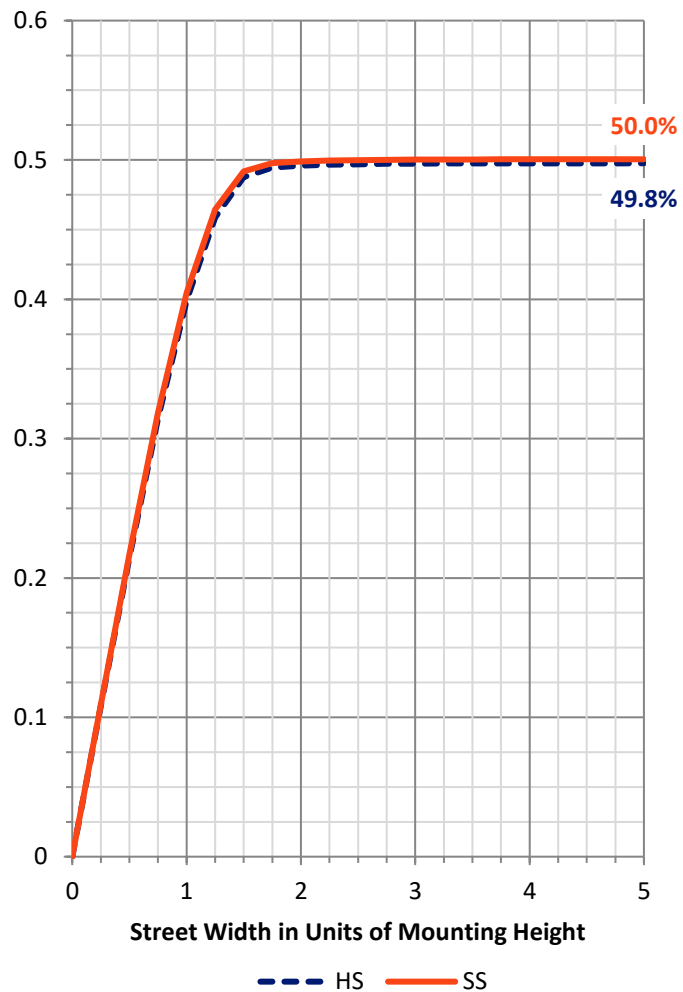
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2168.8	0.0	2168.8
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	2168.9	0.0	2168.9
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	4337.7	0.0	4337.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.8	1.4
10°-20°	209.1	4.8
20°-30°	423.0	9.8
30°-40°	784.8	18.1
40°-50°	1302.8	30.0
50°-60°	1329.5	30.7
60°-70°	218.0	5.0
70°-80°	9.6	0.2
80°-90°	0.1	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°	4337.7	100.0
0°-180°	4337.7	100.0

**Coefficient of Utilization**



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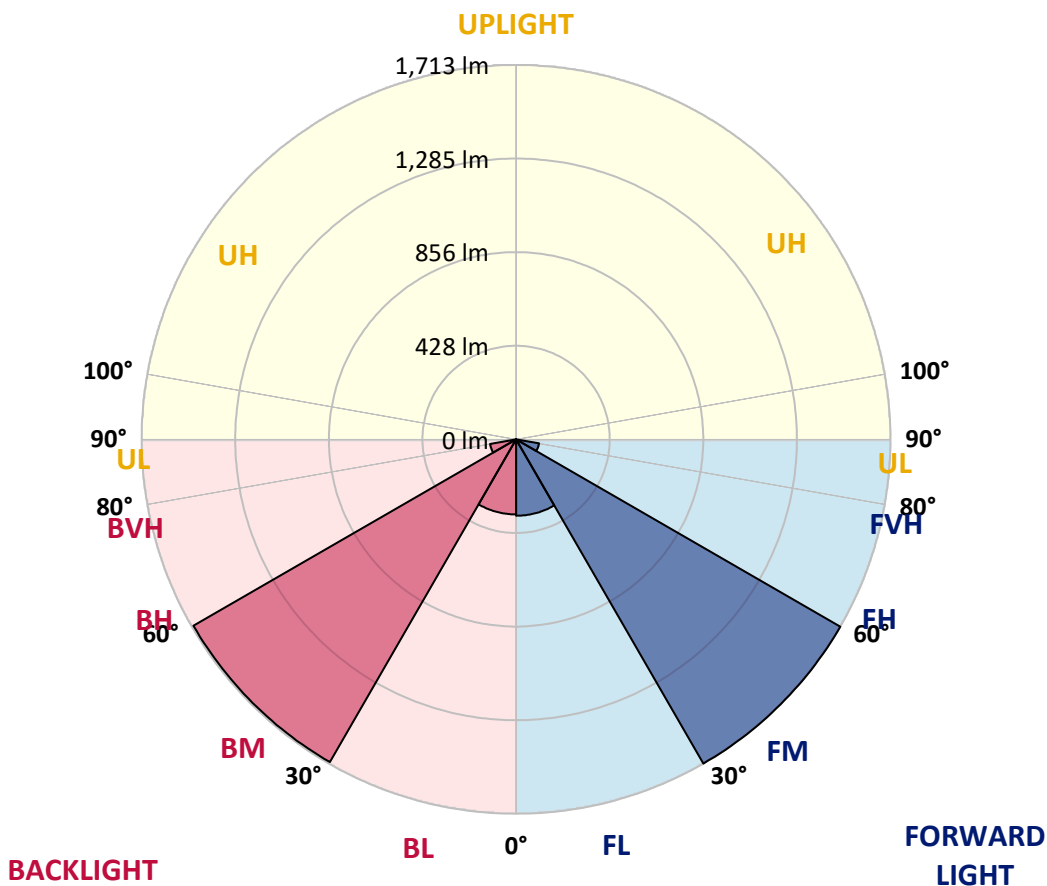
CATALOG NUMBER: GWS-SA1F-830-U-RW-W-GRSBK

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	349.5	8.1			
FM (30°-60°)	1712.7	39.5			
FH (60°-80°)	106.7	2.5			G0/660
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	343.4	7.9	B1/500		
BM (30°-60°)	1704.4	39.3	B2/2500		
BH (60°-80°)	120.9	2.8	B1/500		G0/660
BVH (80°-90°)	0.1	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-G0**

Type V Short





REPORT NUMBER: P631536  
 CATALOG NUMBER: GWS-SA1F-830-U-RW-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	43°	45°	55°	65°	75°	85°
0°	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0
2.5°	605.5	606.9	608.8	610.7	613.1	615.5	617.0	621.3	620.3	624.2	624.2
5°	598.7	600.2	602.6	606.9	612.2	617.4	621.3	629.9	634.7	642.4	645.3
7.5°	602.1	604.0	606.9	613.6	621.8	629.9	634.2	648.2	657.7	672.1	680.3
10°	613.1	615.1	619.8	631.4	641.9	653.4	658.7	676.5	691.8	711.5	723.0
12.5°	625.6	628.0	637.6	654.9	673.1	688.5	695.6	715.3	731.2	753.2	771.5
15°	638.6	642.4	657.3	682.7	708.6	729.2	736.9	758.0	773.9	797.4	818.0
17.5°	668.8	673.1	689.9	717.2	752.7	776.7	783.4	805.5	817.5	833.3	854.9
20°	706.7	714.8	735.5	768.6	807.4	830.5	835.3	856.8	855.9	862.6	881.3
22.5°	753.7	759.5	782.0	821.3	865.0	890.4	901.5	910.6	898.6	892.8	904.8
25°	802.6	809.4	833.8	877.0	925.9	955.2	964.3	971.5	952.3	930.7	932.2
27.5°	866.0	870.8	894.7	940.8	989.7	1022.8	1031.0	1043.5	1018.0	983.5	973.9
30°	941.3	946.1	971.5	1020.0	1068.4	1096.7	1109.2	1124.6	1096.7	1053.5	1042.5
32.5°	1029.6	1034.4	1067.0	1116.9	1156.7	1187.4	1199.4	1215.7	1193.6	1145.2	1132.7
35°	1135.1	1138.0	1176.4	1230.6	1272.8	1302.5	1310.7	1329.9	1305.4	1257.0	1250.3
37.5°	1257.4	1260.8	1302.5	1365.4	1408.6	1441.7	1454.6	1459.9	1430.2	1375.9	1370.7
40°	1391.8	1402.8	1443.6	1511.2	1559.7	1601.4	1612.9	1595.2	1553.5	1479.6	1470.0
42.5°	1531.9	1541.5	1587.0	1660.4	1716.6	1759.3	1759.8	1721.4	1650.4	1548.2	1533.8
45°	1648.4	1652.3	1711.3	1785.2	1854.3	1884.5	1887.4	1817.8	1710.8	1588.0	1557.3
47.5°	1728.6	1734.8	1786.1	1857.1	1933.4	1960.8	1955.0	1868.2	1739.6	1613.9	1563.1
50°	1729.5	1740.1	1795.7	1864.3	1938.2	1971.3	1963.2	1882.6	1755.9	1614.9	1549.1
52.5°	1576.5	1593.8	1684.4	1783.7	1897.0	1953.6	1955.5	1901.3	1749.7	1599.5	1536.7
55°	1189.3	1208.0	1322.2	1491.6	1710.3	1868.2	1895.5	1879.2	1742.5	1606.2	1558.7
57.5°	629.4	615.1	678.4	846.3	1121.2	1400.4	1480.5	1611.0	1662.4	1614.4	1599.5
60°	137.2	146.3	194.8	262.4	437.5	658.7	736.9	960.5	1226.3	1344.3	1429.7
62.5°	59.0	58.1	60.4	68.6	100.3	167.0	203.9	333.0	525.3	721.6	854.4
65°	48.5	48.9	50.9	50.9	47.5	48.0	50.4	76.3	122.8	172.2	231.2
67.5°	36.5	36.9	40.3	41.3	38.9	34.5	34.1	28.8	30.2	37.9	39.3
70°	23.0	23.0	24.9	25.9	25.9	24.0	23.5	20.6	20.1	23.0	25.9
72.5°	12.5	12.5	13.4	13.9	13.4	13.0	13.0	12.5	12.0	13.9	17.8
75°	5.3	5.3	5.8	5.8	5.3	5.3	5.3	5.3	5.3	6.2	9.6
77.5°	1.0	1.4	1.9	1.4	1.0	1.0	1.0	1.4	1.4	1.9	2.9
80°	0.5	0.5	1.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
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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CATALOG NUMBER: GWS-SA1F-830-U-RW-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0	617.0
2.5°	627.5	622.2	624.2	625.1	623.7	622.7	617.4	616.0	613.6	609.8	608.8
5°	648.6	644.3	643.8	641.0	634.2	626.1	616.0	611.7	606.9	602.1	601.1
7.5°	684.1	678.9	675.5	665.9	650.6	637.6	620.8	611.7	605.5	599.2	597.8
10°	729.7	723.5	713.9	696.1	675.5	656.8	637.1	625.1	615.5	606.9	606.4
12.5°	778.2	771.5	754.2	731.6	706.7	689.4	664.5	647.7	633.3	620.3	618.9
15°	829.0	820.9	797.4	770.5	747.5	729.7	702.4	675.5	653.4	634.7	632.8
17.5°	867.9	857.8	830.0	809.8	791.1	772.9	742.2	706.7	677.4	654.9	649.6
20°	892.4	882.8	856.4	845.3	836.7	823.7	787.3	750.3	717.7	689.9	685.1
22.5°	915.9	904.3	881.3	881.3	888.0	882.8	843.4	801.2	762.8	730.7	723.5
25°	942.2	933.1	916.8	930.3	947.0	946.6	906.3	853.5	809.4	773.4	766.2
27.5°	980.6	971.5	965.8	991.2	1012.3	1010.9	966.7	909.6	863.1	827.6	820.9
30°	1048.3	1039.6	1033.4	1064.1	1091.0	1080.9	1032.4	977.3	930.3	890.0	885.2
32.5°	1138.5	1129.4	1121.2	1151.9	1175.9	1162.9	1116.9	1065.1	1010.9	971.5	961.9
35°	1257.0	1237.8	1229.6	1266.1	1276.2	1261.8	1217.6	1172.0	1114.5	1069.4	1063.1
37.5°	1379.3	1356.8	1351.0	1382.7	1399.0	1393.7	1341.9	1294.4	1232.0	1182.1	1174.9
40°	1483.9	1463.3	1453.2	1502.6	1539.5	1542.9	1496.4	1438.3	1364.9	1313.1	1300.1
42.5°	1545.3	1527.6	1525.2	1601.9	1662.4	1705.5	1649.9	1589.9	1512.7	1454.1	1443.6
45°	1559.2	1547.7	1567.9	1668.6	1762.6	1841.3	1793.8	1730.5	1647.0	1585.1	1575.0
47.5°	1557.8	1553.9	1589.9	1703.1	1822.1	1919.0	1895.5	1824.0	1743.4	1678.7	1669.1
50°	1537.1	1537.6	1597.6	1720.4	1846.1	1940.1	1916.6	1850.4	1778.5	1714.7	1707.0
52.5°	1529.0	1526.1	1583.2	1715.1	1870.6	1930.5	1877.8	1803.4	1723.3	1644.6	1633.1
55°	1557.8	1550.6	1585.1	1710.8	1873.5	1925.3	1786.1	1624.9	1460.9	1367.8	1360.1
57.5°	1601.0	1593.3	1609.6	1679.2	1723.3	1601.0	1314.5	1054.5	885.6	814.1	783.0
60°	1429.7	1424.4	1411.9	1328.0	1138.9	859.2	585.3	373.3	268.2	216.9	216.9
62.5°	887.1	879.9	812.2	603.5	438.5	253.8	139.6	87.3	66.2	61.9	61.4
65°	249.0	247.6	204.9	144.9	92.1	57.1	50.4	51.3	50.4	48.9	48.5
67.5°	37.4	41.3	41.3	33.6	32.1	36.0	42.2	45.1	42.7	40.3	39.3
70°	24.0	25.9	24.9	21.6	23.0	26.9	30.2	30.7	29.3	26.9	26.4
72.5°	16.8	18.7	15.4	13.9	14.4	15.8	17.3	17.3	16.8	15.8	14.9
75°	10.1	10.1	7.2	6.7	6.7	7.2	7.2	8.2	8.2	7.7	7.2
77.5°	3.4	3.8	2.4	1.9	1.9	1.9	2.4	2.9	2.9	2.4	1.9
80°	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	0.5
82.5°	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
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

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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)