

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: P633052

Luminaire Tested: GWS-SA2D-830-U-T3-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633052  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-25)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2D-830-U-T3-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

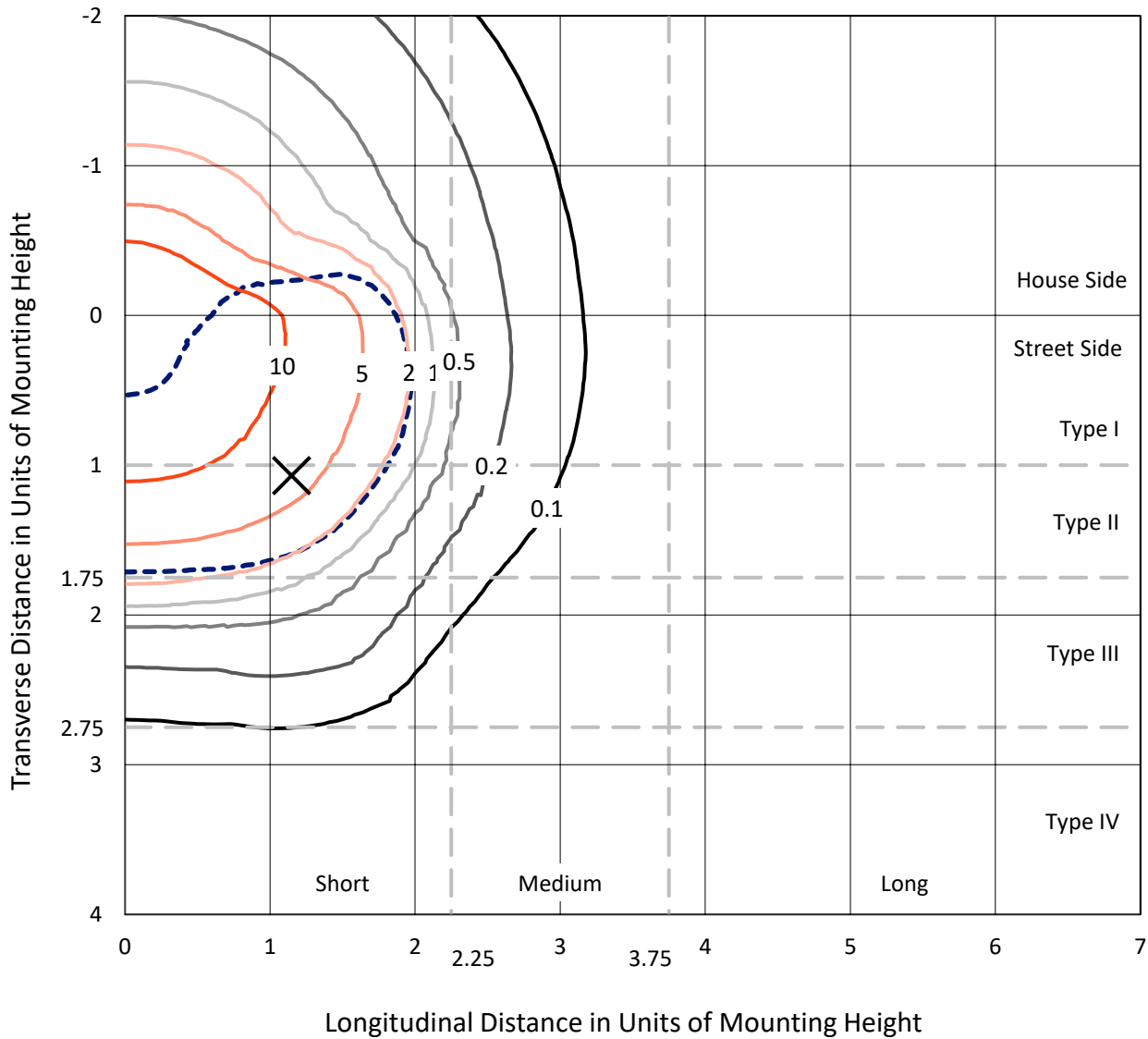
Lumens per Lamp: N/A  
Luminaire Lumens: 7916.6 lumens  
Efficiency: N/A  
Efficacy: 96.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 82.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
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-SA2D-830-U-T3-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

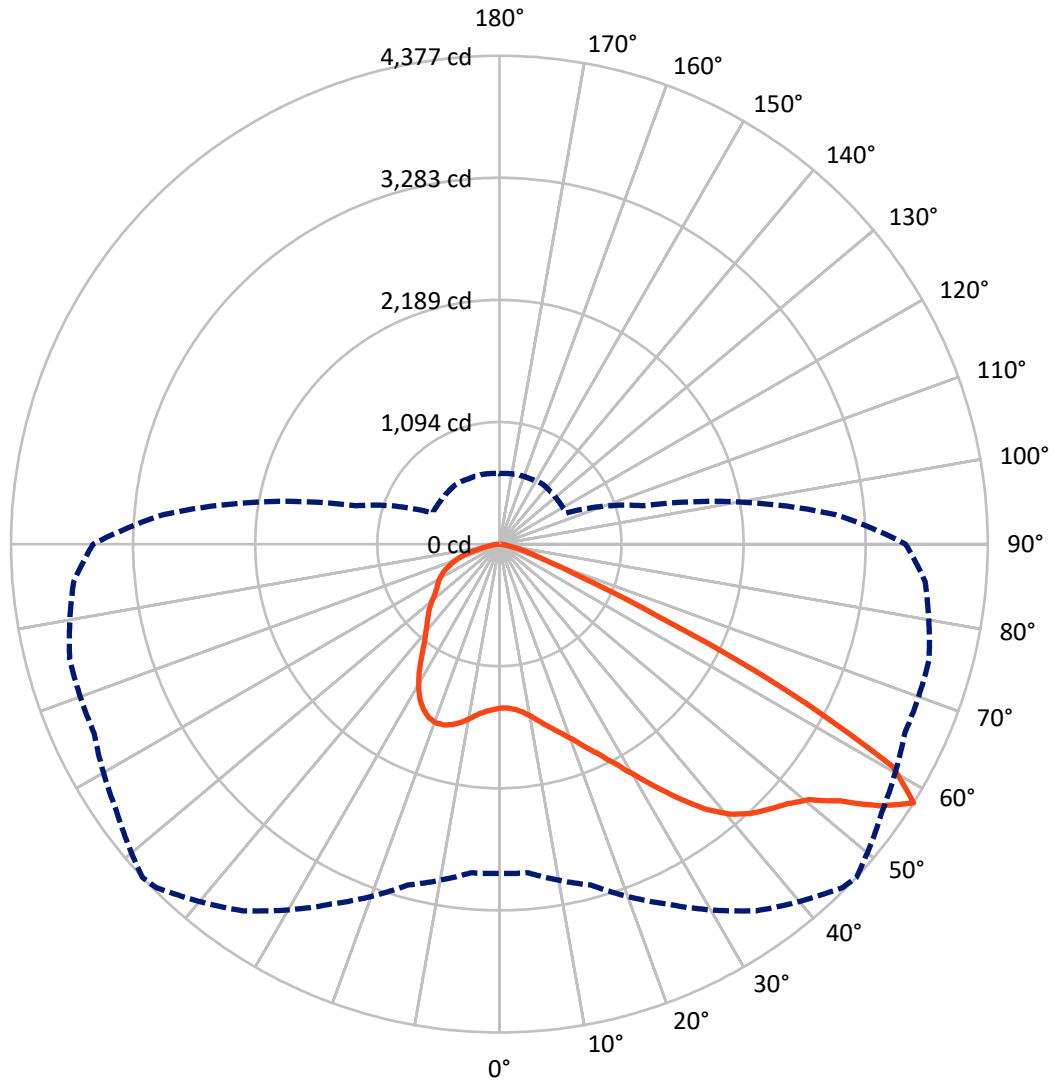
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 16.4 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	2505.6	0.0	2505.6
	% Fixture	31.6	0.0	31.6
<b>Street Side</b>	Lumens	5411.0	0.0	5411.0
	% Fixture	68.4	0.0	68.4
<b>Total</b>	Lumens	7916.6	0.0	7916.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.8	1.8
10°-20°	476.3	6.0
20°-30°	857.6	10.8
30°-40°	1295.3	16.4
40°-50°	1744.2	22.0
50°-60°	2095.9	26.5
60°-70°	1020.8	12.9
70°-80°	251.5	3.2
80°-90°	30.2	0.4
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°	7916.6	100.0
0°-180°	7916.6	100.0

**Coefficient of Utilization**



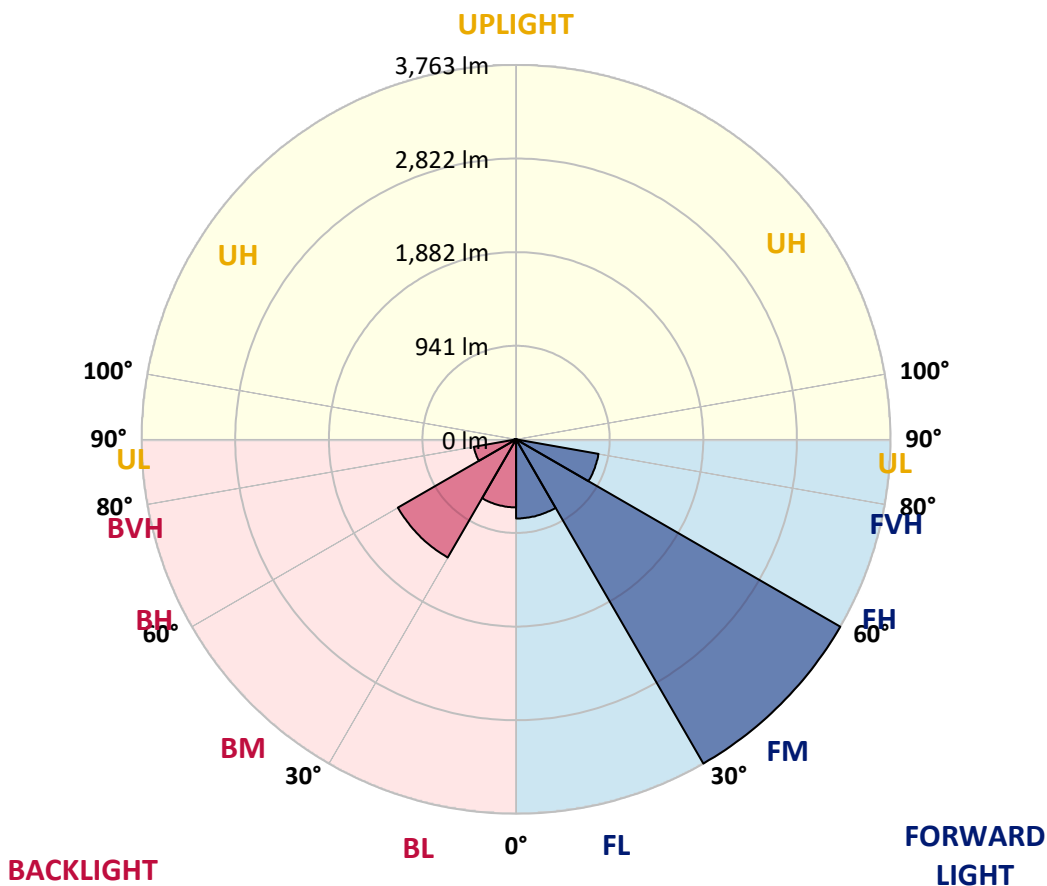
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	795.2	10.0			
FM (30°-60°)	3763.2	47.5			
FH (60°-80°)	841.3	10.6			G1/1800
FVH (80°-90°)	11.4	0.1			G1/100
BL (0°-30°)	683.5	8.6	B2/1000		
BM (30°-60°)	1372.3	17.3	B2/2500		
BH (60°-80°)	431.0	5.4	B1/500		G1/500
BVH (80°-90°)	18.9	0.2			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





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1
2.5°	1465.5	1464.8	1464.8	1468.8	1468.8	1470.1	1472.1	1474.1	1474.8	1471.5	1464.2
5°	1481.4	1481.4	1481.4	1484.8	1484.8	1486.1	1488.8	1489.4	1488.8	1483.4	1476.1
7.5°	1506.7	1506.7	1507.4	1511.4	1514.7	1516.7	1521.3	1520.7	1518.7	1510.0	1500.7
10°	1547.9	1549.9	1551.9	1556.6	1563.2	1567.9	1571.2	1571.2	1568.5	1555.2	1543.3
12.5°	1606.4	1609.1	1611.1	1615.1	1620.4	1628.4	1635.7	1635.7	1632.4	1615.8	1597.8
15°	1674.9	1677.6	1676.9	1678.3	1688.2	1699.5	1705.5	1709.5	1710.8	1687.6	1659.6
17.5°	1753.4	1756.1	1753.4	1749.4	1750.7	1768.7	1779.3	1794.0	1802.6	1771.3	1726.8
20°	1824.5	1821.9	1821.9	1824.5	1828.5	1850.5	1866.4	1890.4	1901.0	1863.1	1794.0
22.5°	1899.7	1905.7	1903.0	1903.0	1919.0	1955.5	1974.8	2006.1	2017.4	1968.2	1875.1
25°	1996.8	2002.1	2000.7	2002.1	2020.7	2072.6	2091.8	2149.7	2161.0	2090.5	1964.8
27.5°	2103.1	2111.8	2115.8	2114.4	2144.4	2212.2	2236.1	2316.6	2337.2	2227.5	2060.6
30°	2241.4	2250.8	2254.1	2252.8	2288.0	2380.4	2407.7	2499.4	2528.7	2389.7	2182.3
32.5°	2401.7	2411.0	2421.0	2425.0	2470.2	2564.6	2603.8	2698.9	2740.8	2577.2	2329.2
35°	2560.6	2568.6	2587.9	2619.1	2681.0	2777.4	2811.9	2905.7	2946.3	2772.1	2506.8
37.5°	2736.1	2741.5	2758.1	2801.3	2890.4	2982.2	3016.7	3106.5	3111.2	2960.2	2707.6
40°	2928.3	2928.3	2925.0	2967.5	3060.6	3153.1	3183.0	3234.8	3207.6	3105.2	2903.0
42.5°	3091.2	3088.6	3091.2	3131.1	3200.3	3275.4	3301.3	3291.4	3256.8	3216.2	3079.9
45°	3238.2	3240.2	3264.1	3294.7	3330.6	3375.1	3390.4	3333.9	3302.7	3305.3	3221.5
47.5°	3337.9	3339.9	3395.7	3446.9	3468.9	3482.9	3476.2	3397.7	3381.8	3411.7	3330.6
50°	3351.2	3361.8	3458.3	3563.3	3617.8	3619.8	3601.2	3505.5	3500.8	3534.7	3389.1
52.5°	3353.9	3364.5	3484.8	3674.4	3816.0	3845.9	3824.6	3724.9	3676.3	3642.4	3460.9
55°	3343.9	3355.9	3488.8	3748.8	4020.1	4139.8	4141.8	4000.8	3845.9	3823.3	3665.7
57.5°	2952.2	2956.9	3163.0	3559.3	4012.1	4351.2	4377.2	4185.7	4008.8	3987.5	3829.9
60°	2056.6	2075.2	2299.3	2822.6	3370.5	3968.2	4052.0	3996.2	3877.8	3722.9	3286.0
62.5°	1030.0	1045.9	1270.7	1765.4	2324.6	2796.7	2886.4	2945.6	2973.5	2807.3	2237.5
65°	443.5	455.5	595.1	922.2	1315.9	1543.9	1575.2	1646.3	1820.6	1624.4	1205.5
67.5°	296.6	304.5	375.7	562.5	775.3	789.9	785.3	800.6	838.5	692.2	544.6
70°	227.4	234.1	281.9	412.3	557.2	476.7	451.5	409.6	444.8	453.5	441.5
72.5°	164.9	170.2	206.1	281.3	349.1	304.5	300.5	321.8	369.7	383.0	375.7
75°	106.4	109.0	131.0	154.3	180.2	195.5	203.5	242.0	290.6	300.5	291.9
77.5°	71.1	73.1	85.8	99.1	102.4	103.1	105.7	123.0	156.3	174.9	172.9
80°	37.2	37.2	41.9	41.9	47.9	57.2	59.8	71.1	86.4	95.7	96.4
82.5°	14.6	15.3	18.0	19.9	23.9	29.3	31.3	37.2	45.2	51.9	57.8
85°	6.0	6.6	7.3	8.6	10.6	13.3	14.0	16.0	21.3	26.6	29.9
87.5°	0.0	0.0	0.7	0.7	1.3	2.0	2.0	2.7	3.3	6.0	8.0
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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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1	1468.1
2.5°	1472.8	1464.2	1472.8	1475.5	1482.8	1485.4	1480.8	1480.1	1480.1	1473.5	1471.5
5°	1482.8	1474.8	1483.4	1487.4	1498.1	1504.7	1506.0	1511.4	1514.7	1512.0	1511.4
7.5°	1507.4	1497.4	1506.7	1512.7	1526.7	1537.3	1542.0	1553.9	1562.6	1561.2	1560.6
10°	1550.6	1537.3	1547.9	1557.9	1573.2	1585.8	1586.5	1593.1	1601.8	1599.1	1597.8
12.5°	1600.5	1587.8	1599.8	1609.8	1627.7	1633.0	1624.4	1621.7	1623.1	1619.7	1617.1
15°	1661.6	1643.7	1654.3	1665.6	1675.6	1669.6	1651.0	1643.7	1643.0	1638.4	1635.7
17.5°	1722.8	1700.2	1708.2	1714.2	1709.5	1690.9	1667.6	1655.0	1649.0	1639.7	1637.0
20°	1783.3	1754.7	1753.4	1748.7	1727.5	1693.6	1662.3	1637.0	1621.7	1609.1	1604.5
22.5°	1852.5	1812.6	1792.6	1771.3	1724.8	1669.6	1622.4	1586.5	1561.9	1545.9	1540.6
25°	1926.9	1870.4	1829.2	1786.6	1698.2	1618.4	1552.6	1503.4	1474.1	1456.8	1450.9
27.5°	2000.7	1923.0	1861.1	1788.6	1645.0	1544.6	1456.2	1389.7	1360.4	1346.5	1341.8
30°	2100.5	1992.8	1899.0	1762.7	1575.2	1442.2	1331.8	1264.7	1245.4	1235.4	1231.4
32.5°	2215.5	2081.2	1949.5	1708.2	1486.1	1322.5	1206.2	1159.6	1146.3	1127.0	1126.4
35°	2367.1	2207.5	1997.4	1627.7	1373.7	1194.2	1109.8	1076.5	1052.6	1022.0	1019.3
37.5°	2544.0	2365.1	2023.4	1525.3	1242.7	1088.5	1037.9	1000.7	962.1	921.6	916.3
40°	2726.8	2549.3	2025.3	1404.3	1114.4	1018.7	976.1	927.6	879.7	834.5	828.5
42.5°	2919.0	2720.9	1990.1	1264.7	1009.3	958.2	914.9	853.8	799.9	769.3	766.0
45°	3090.6	2859.2	1910.3	1117.7	931.6	907.6	852.4	786.6	758.0	736.1	731.4
47.5°	3225.5	2950.9	1802.6	986.1	868.4	855.8	783.9	750.0	728.1	708.1	703.5
50°	3292.0	2971.5	1662.3	879.0	809.9	794.6	745.4	719.4	704.8	688.9	684.9
52.5°	3374.5	2994.8	1541.3	789.3	752.7	732.1	713.5	692.8	682.2	672.2	668.9
55°	3564.0	3082.6	1477.5	717.4	698.2	688.9	686.2	668.9	665.6	658.9	653.0
57.5°	3641.1	3026.1	1326.5	658.9	654.9	656.3	662.9	647.0	643.6	635.7	631.7
60°	2928.3	2287.3	898.3	608.4	619.0	627.7	634.3	618.4	613.7	612.4	607.1
62.5°	1876.4	1407.0	627.0	561.2	577.2	587.8	591.8	576.5	573.2	583.8	584.5
65°	976.8	766.7	508.7	510.7	524.0	539.9	547.9	542.6	541.2	552.5	553.2
67.5°	498.7	468.8	443.5	450.8	461.5	482.1	500.7	524.0	531.9	533.3	533.9
70°	424.9	411.6	399.0	403.6	414.9	426.2	444.2	455.5	442.2	438.8	437.5
72.5°	361.7	351.7	345.8	351.1	357.1	355.1	349.7	355.1	357.1	357.7	358.4
75°	281.3	273.9	269.3	270.0	270.0	262.6	252.7	246.7	240.0	234.7	234.7
77.5°	172.2	173.5	178.2	177.5	176.9	174.2	164.2	158.9	143.0	138.3	138.3
80°	98.4	100.4	105.1	106.4	106.4	103.1	93.1	87.1	79.8	76.5	75.8
82.5°	59.8	62.5	65.2	66.5	67.2	63.2	54.5	49.9	45.9	42.6	42.6
85°	31.3	32.6	35.2	35.9	33.9	29.9	25.3	23.3	19.3	18.6	18.6
87.5°	8.6	9.3	10.6	8.6	8.0	6.0	3.3	2.7	1.3	0.7	0.7
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)