

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: P633032

Luminaire Tested: GWS-SA2D-830-U-SL4-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633032  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-36)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2D-830-U-SL4-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

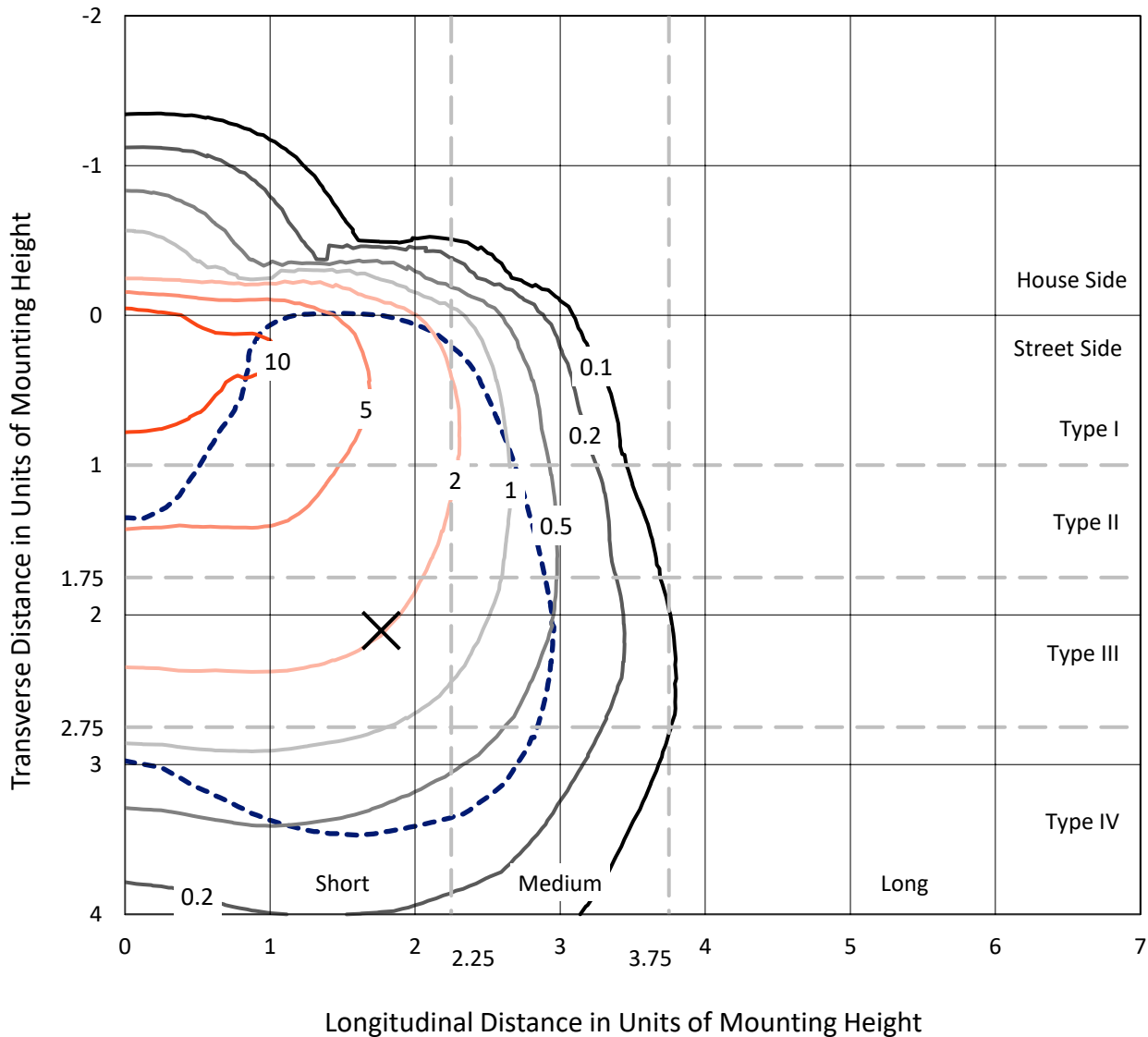
Lumens per Lamp: N/A  
Luminaire Lumens: 7308.2 lumens  
Efficiency: N/A  
Efficacy: 89.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 82.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
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



REPORT NUMBER: P633032  
 CATALOG NUMBER: GWS-SA2D-830-U-SL4-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

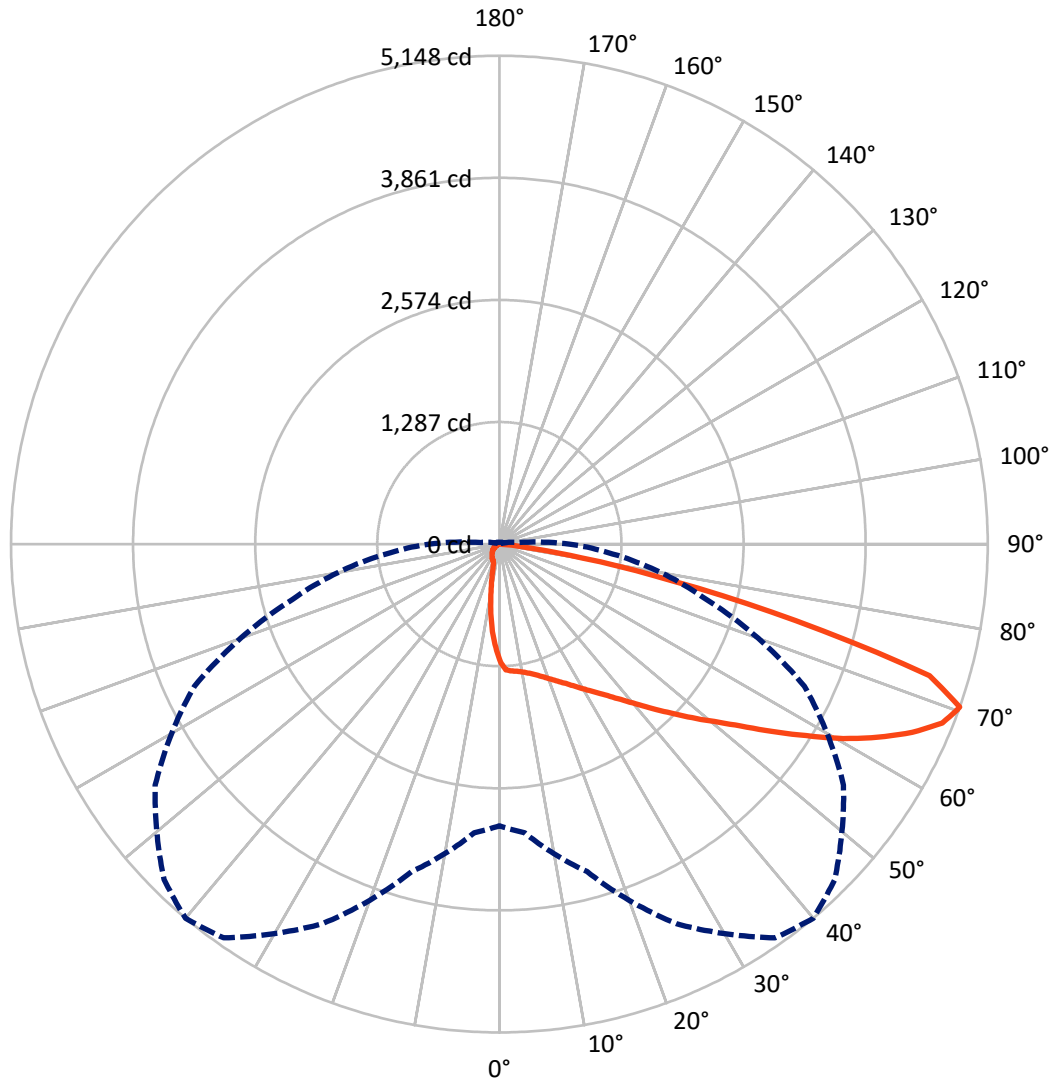
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.5 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	597.6	0.0	597.6
	% Fixture	8.2	0.0	8.2
<b>Street Side</b>	Lumens	6710.6	0.0	6710.6
	% Fixture	91.8	0.0	91.8
<b>Total</b>	Lumens	7308.2	0.0	7308.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.8	1.4
10°-20°	265.8	3.6
20°-30°	444.9	6.1
30°-40°	698.8	9.6
40°-50°	1105.3	15.1
50°-60°	1612.4	22.1
60°-70°	1998.8	27.4
70°-80°	1011.3	13.8
80°-90°	66.0	0.9
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°	7308.2	100.0
0°-180°	7308.2	100.0

**Coefficient of Utilization**



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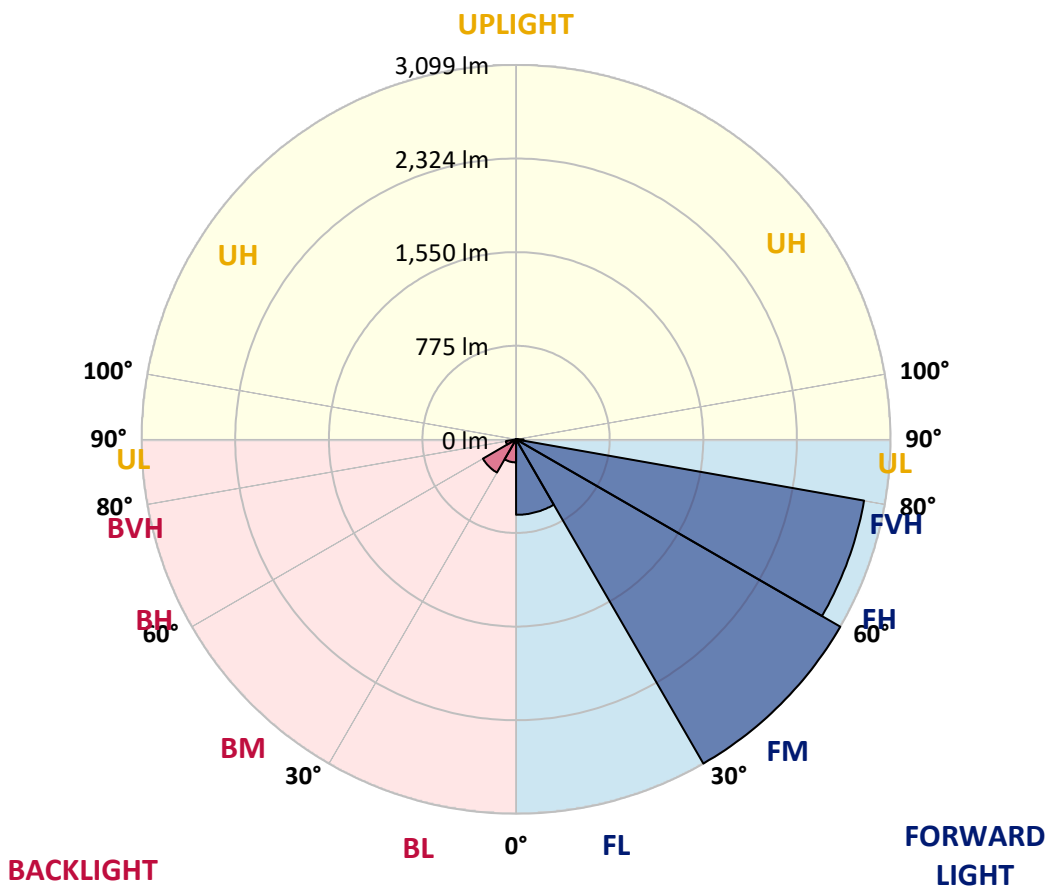
CATALOG NUMBER: GWS-SA2D-830-U-SL4-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	624.7	8.5			
FM (30°-60°)	3099.3	42.4			
FH (60°-80°)	2924.9	40.0			G2/5000
FVH (80°-90°)	61.7	0.8			G1/100
BL (0°-30°)	190.8	2.6	B1/500		
BM (30°-60°)	317.2	4.3	B1/1000		
BH (60°-80°)	85.2	1.2	B0/110		G0/110
BVH (80°-90°)	4.4	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**

Type IV Short





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CATALOG NUMBER: GWS-SA2D-830-U-SL4-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1
2.5°	1333.2	1337.9	1337.2	1339.2	1334.5	1327.2	1325.9	1315.9	1298.0	1275.4	1250.1
5°	1360.5	1365.8	1361.8	1359.8	1351.2	1343.2	1341.2	1330.5	1309.9	1279.3	1235.5
7.5°	1383.7	1385.1	1382.4	1377.8	1365.1	1354.5	1347.2	1332.5	1307.9	1277.4	1226.8
10°	1387.7	1387.1	1388.4	1389.1	1381.1	1371.8	1365.8	1345.8	1314.6	1282.0	1227.5
12.5°	1383.1	1383.1	1391.7	1401.7	1401.7	1397.0	1391.1	1373.1	1336.5	1298.0	1240.8
15°	1389.1	1391.1	1407.7	1426.3	1432.3	1427.6	1425.0	1406.3	1368.4	1325.9	1264.7
17.5°	1410.3	1412.3	1438.9	1466.9	1474.2	1468.9	1463.5	1444.9	1404.4	1357.8	1292.0
20°	1441.6	1446.9	1480.8	1516.7	1523.4	1516.7	1506.1	1480.2	1439.6	1392.4	1317.9
22.5°	1498.8	1502.1	1538.7	1576.6	1579.9	1569.3	1553.3	1517.4	1474.8	1429.0	1347.2
25°	1574.6	1579.2	1615.8	1652.4	1643.7	1627.8	1605.8	1565.3	1516.7	1472.2	1384.4
27.5°	1665.0	1670.3	1706.2	1738.2	1715.5	1696.9	1672.3	1621.8	1572.6	1532.0	1432.3
30°	1762.8	1767.4	1799.3	1827.9	1798.0	1776.1	1746.8	1694.9	1645.1	1614.5	1500.1
32.5°	1857.2	1856.5	1887.1	1910.4	1879.8	1862.5	1835.9	1783.4	1743.5	1730.2	1601.2
35°	1945.0	1945.0	1970.2	1993.5	1971.5	1962.2	1937.6	1895.7	1873.1	1889.1	1736.2
37.5°	2033.4	2028.7	2052.7	2078.6	2076.6	2077.3	2063.3	2043.4	2044.7	2101.2	1921.7
40°	2106.5	2104.5	2132.5	2166.4	2193.0	2214.3	2205.6	2212.9	2254.8	2360.5	2159.1
42.5°	2165.0	2169.7	2205.6	2259.5	2326.6	2369.8	2375.8	2405.8	2513.5	2677.1	2427.0
45°	2232.2	2232.9	2282.7	2365.2	2472.2	2540.7	2564.7	2641.8	2794.7	3005.5	2720.9
47.5°	2314.7	2306.7	2362.5	2478.2	2633.2	2734.2	2776.8	2873.2	3109.9	3326.0	2960.3
50°	2405.8	2391.1	2454.3	2611.9	2813.4	2939.7	3026.1	3167.1	3422.4	3589.3	3138.5
52.5°	2511.5	2497.5	2569.3	2765.5	3029.5	3183.1	3294.1	3436.4	3690.4	3790.2	3244.9
55°	2645.8	2631.8	2707.6	2949.7	3284.8	3484.3	3600.7	3720.3	3939.8	3938.4	3322.0
57.5°	2794.7	2775.5	2880.5	3182.4	3603.3	3810.8	3929.1	3987.6	4129.3	4053.5	3373.9
60°	2965.6	2948.3	3094.0	3459.7	3971.0	4163.2	4237.7	4213.7	4284.9	4121.3	3356.0
62.5°	3119.9	3111.9	3292.8	3753.6	4321.4	4483.7	4504.3	4399.9	4399.2	4122.6	3234.9
65°	3280.2	3295.4	3564.1	4092.0	4673.9	4782.9	4747.7	4584.8	4445.1	3959.7	2877.2
67.5°	3340.0	3384.5	3742.9	4397.9	4951.8	5036.9	4975.1	4677.2	4254.3	3411.8	2191.0
70°	2970.3	3054.1	3574.1	4415.2	5066.8	5148.0	4999.7	4428.5	3546.8	2260.1	1200.2
72.5°	2258.8	2356.5	2978.3	3615.3	4556.8	4741.7	4488.3	3608.0	2286.1	990.1	403.0
75°	1264.1	1369.8	2218.2	2722.3	3059.4	3228.3	3135.2	2314.7	1012.7	258.7	120.4
77.5°	427.6	462.8	1032.0	1684.3	2019.4	1867.8	1581.2	1149.7	372.4	98.4	63.8
80°	253.3	266.6	384.3	838.5	1062.6	881.0	695.5	424.9	189.5	52.5	44.6
82.5°	75.8	89.8	212.1	311.2	416.3	259.3	219.4	242.7	98.4	28.6	37.2
85°	0.0	0.0	45.2	96.4	109.1	42.6	42.6	137.6	18.0	12.0	27.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.3	2.0	2.7	6.0
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-SA2D-830-U-SL4-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1	1240.1
2.5°	1232.1	1208.9	1181.6	1155.7	1131.1	1099.1	1083.9	1065.2	1049.3	1040.6	1045.3
5°	1207.5	1171.0	1115.1	1058.6	1001.4	947.5	899.0	866.4	837.2	821.9	825.2
7.5°	1186.3	1137.0	1049.9	957.5	865.8	773.3	698.2	639.7	594.5	575.8	572.5
10°	1176.9	1115.1	992.1	859.1	718.1	593.8	487.4	422.9	377.0	354.4	358.4
12.5°	1181.6	1103.8	942.9	762.7	579.8	434.9	333.1	272.6	240.0	226.7	223.4
15°	1194.9	1101.1	899.0	664.3	447.5	303.9	230.1	205.5	198.8	197.5	197.5
17.5°	1210.2	1101.8	853.8	564.5	339.8	225.4	196.8	192.2	190.2	188.8	189.5
20°	1225.5	1101.8	801.9	463.5	255.3	194.8	187.5	184.2	182.2	181.5	181.5
22.5°	1244.1	1101.8	744.1	369.7	204.8	184.9	178.9	176.9	174.9	174.2	173.5
25°	1266.7	1102.5	680.2	289.2	186.2	176.2	171.6	169.6	167.6	166.2	166.2
27.5°	1299.3	1107.8	609.8	225.4	175.5	168.2	164.2	162.2	160.3	158.3	158.3
30°	1346.5	1121.1	530.6	186.2	165.6	159.6	155.6	154.3	152.3	150.3	149.6
32.5°	1417.0	1144.4	448.8	166.9	156.3	150.3	145.6	144.3	142.3	140.3	139.6
35°	1515.4	1186.9	369.0	154.9	144.3	138.3	135.6	135.0	132.3	130.3	130.3
37.5°	1659.7	1256.1	292.6	143.0	134.3	129.7	126.3	125.0	122.3	120.4	119.7
40°	1835.9	1345.8	227.4	133.7	125.0	120.4	117.0	115.0	111.7	109.1	107.7
42.5°	2060.7	1455.6	179.5	123.7	116.4	111.7	109.1	105.1	100.4	96.4	95.8
45°	2294.7	1568.6	148.3	114.4	108.4	104.4	101.1	95.8	89.1	84.4	83.1
47.5°	2474.2	1639.1	129.7	104.4	99.7	96.4	92.4	85.8	77.8	72.5	71.1
50°	2602.6	1649.7	115.7	95.1	92.4	89.1	83.1	75.1	66.5	61.2	59.8
52.5°	2665.7	1601.8	104.4	86.4	84.4	81.1	73.8	65.2	55.9	50.5	49.2
55°	2694.3	1511.4	93.8	79.1	76.5	72.5	64.5	55.2	45.9	41.2	39.9
57.5°	2683.0	1377.8	84.4	71.8	68.5	63.8	55.2	45.2	37.9	33.2	32.6
60°	2599.3	1190.2	75.1	64.5	60.5	55.2	46.5	37.2	30.6	27.3	26.6
62.5°	2418.4	957.5	65.8	55.9	53.2	47.9	39.9	30.6	25.3	23.3	22.6
65°	2048.0	676.9	56.5	47.2	45.9	40.6	33.2	25.3	21.9	20.6	19.9
67.5°	1472.2	411.6	47.9	40.6	39.2	34.6	27.9	21.9	19.9	19.3	19.3
70°	740.1	194.8	37.9	33.2	33.2	28.6	23.9	19.9	19.3	18.6	18.6
72.5°	251.3	83.1	28.6	25.9	27.3	24.6	20.6	18.6	18.6	18.6	18.6
75°	85.8	43.9	19.9	18.6	19.9	19.9	18.0	18.0	18.6	18.6	18.6
77.5°	55.9	29.3	14.0	12.6	15.3	15.3	15.3	16.6	18.0	18.0	18.0
80°	45.9	16.0	9.3	8.6	11.3	11.3	12.6	15.3	16.6	16.6	16.6
82.5°	39.2	10.0	5.3	6.0	8.0	8.6	10.6	12.6	14.6	15.3	15.3
85°	26.6	5.3	4.0	4.7	5.3	6.6	8.6	10.6	12.0	13.3	13.3
87.5°	7.3	2.0	2.7	3.3	3.3	4.7	6.6	8.0	9.3	10.0	10.0
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  
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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



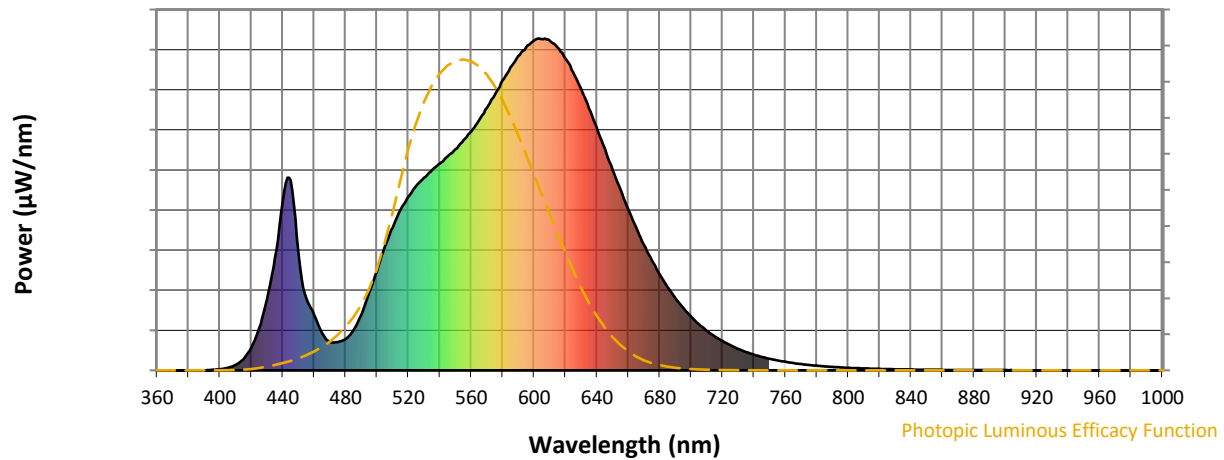
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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)