

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: P630557

Luminaire Tested: GWS-SA1D-830-U-SL4-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P630557  
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-SA1D-830-U-SL4-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

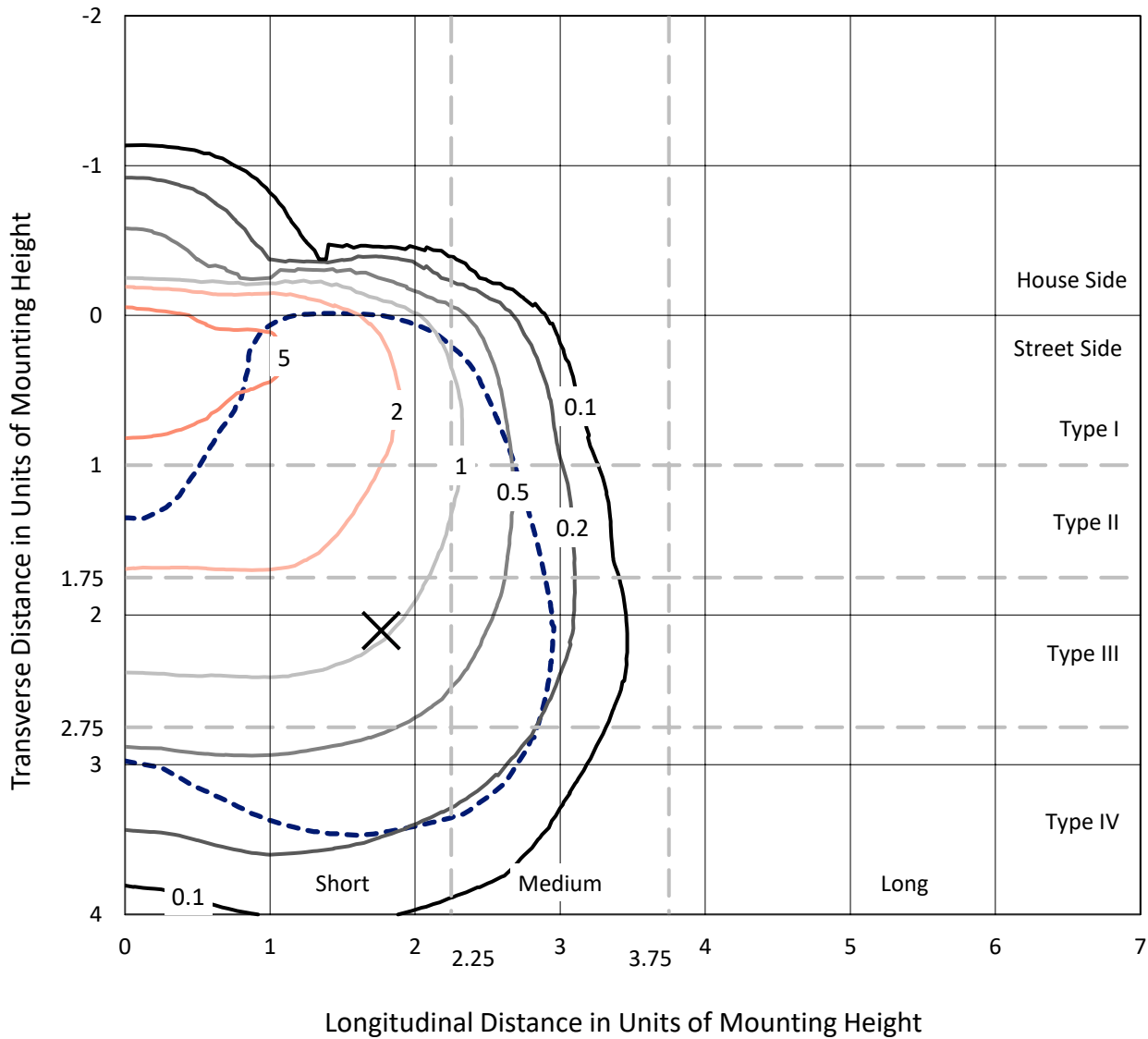
Lumens per Lamp: N/A  
Luminaire Lumens: 3795.4 lumens  
Efficiency: N/A  
Efficacy: 85.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G1  
  
Input Watts (W): 44.3  
Input Voltage (V): 120  
Input Current (Ain): 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



REPORT NUMBER: P630557  
 CATALOG NUMBER: GWS-SA1D-830-U-SL4-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

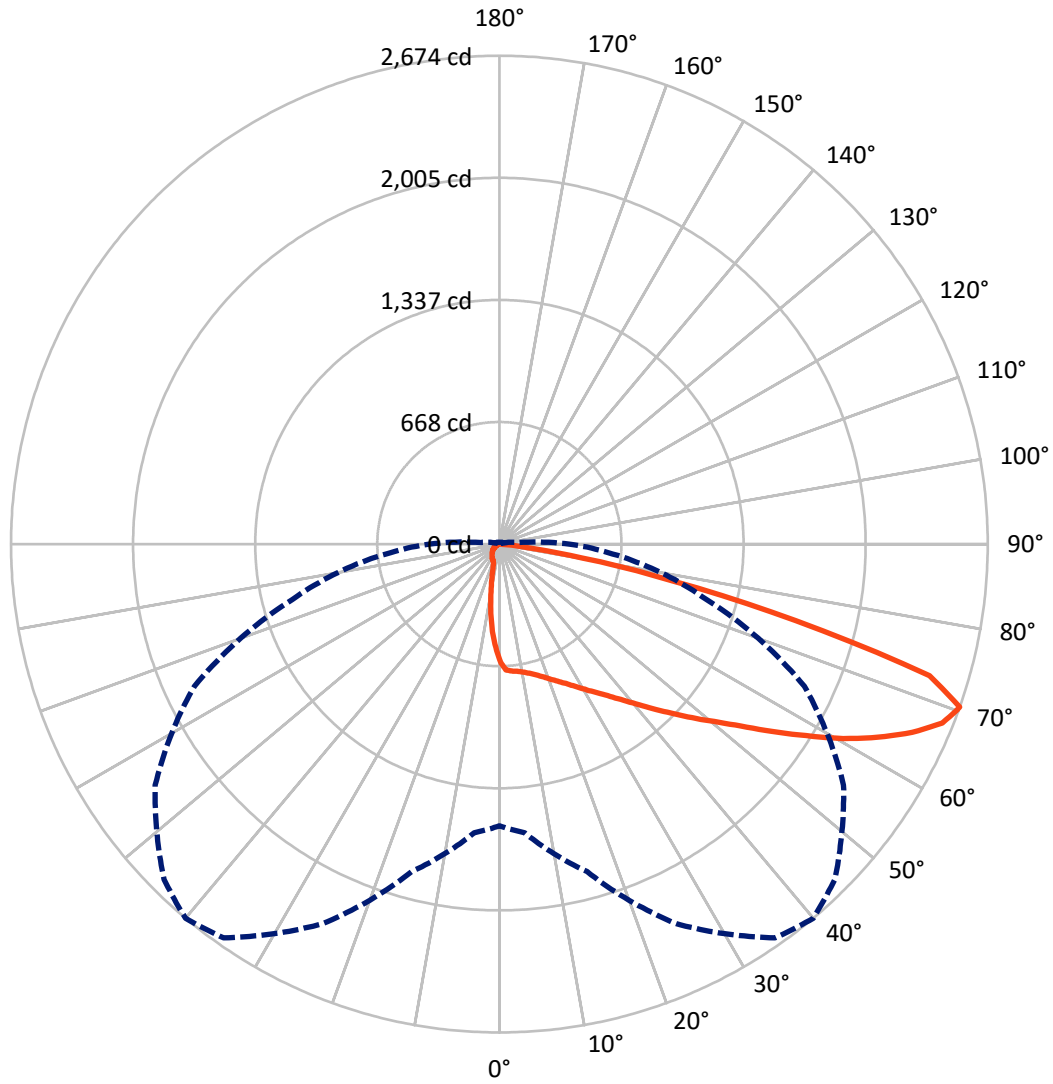
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7 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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 CATALOG NUMBER: GWS-SA1D-830-U-SL4-W-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	310.4	0.0	310.4
	% Fixture	8.2	0.0	8.2
<b>Street Side</b>	Lumens	3485.0	0.0	3485.0
	% Fixture	91.8	0.0	91.8
<b>Total</b>	Lumens	3795.4	0.0	3795.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.4	1.4
10°-20°	138.1	3.6
20°-30°	231.1	6.1
30°-40°	362.9	9.6
40°-50°	574.0	15.1
50°-60°	837.4	22.1
60°-70°	1038.0	27.4
70°-80°	525.2	13.8
80°-90°	34.3	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°	3795.4	100.0
0°-180°	3795.4	100.0

**Coefficient of Utilization**



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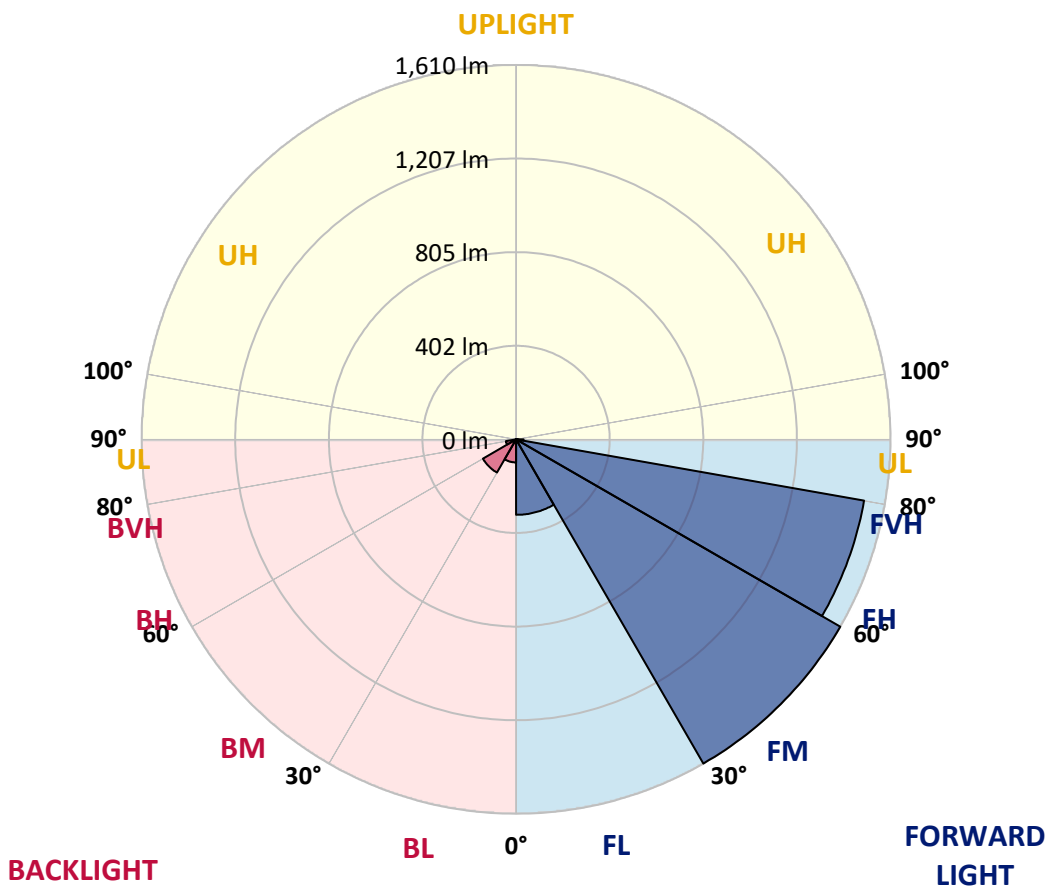
CATALOG NUMBER: GWS-SA1D-830-U-SL4-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	324.4	8.5			
FM (30°-60°)	1609.6	42.4			
FH (60°-80°)	1519.0	40.0			G1/1800
FVH (80°-90°)	32.0	0.8			G1/100
BL (0°-30°)	99.1	2.6	B0/110		
BM (30°-60°)	164.7	4.3	B0/220		
BH (60°-80°)	44.3	1.2	B0/110		G0/110
BVH (80°-90°)	2.3	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B0-U0-G1**

Type IV Short





REPORT NUMBER: P630557

CATALOG NUMBER: GWS-SA1D-830-U-SL4-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0
2.5°	692.4	694.8	694.5	695.5	693.1	689.3	688.6	683.4	674.1	662.3	649.2
5°	706.5	709.3	707.2	706.2	701.7	697.6	696.5	691.0	680.3	664.4	641.6
7.5°	718.6	719.3	717.9	715.5	709.0	703.4	699.6	692.0	679.3	663.4	637.1
10°	720.7	720.4	721.0	721.4	717.2	712.4	709.3	698.9	682.7	665.8	637.5
12.5°	718.3	718.3	722.8	727.9	727.9	725.5	722.4	713.1	694.1	674.1	644.4
15°	721.4	722.4	731.1	740.7	743.8	741.4	740.0	730.4	710.7	688.6	656.8
17.5°	732.4	733.5	747.3	761.8	765.6	762.8	760.1	750.4	729.3	705.2	671.0
20°	748.7	751.4	769.0	787.7	791.1	787.7	782.2	768.7	747.6	723.1	684.4
22.5°	778.4	780.1	799.1	818.8	820.5	815.0	806.7	788.0	765.9	742.1	699.6
25°	817.7	820.2	839.1	858.1	853.6	845.4	834.0	812.9	787.7	764.6	719.0
27.5°	864.7	867.5	886.1	902.7	890.9	881.3	868.5	842.3	816.7	795.6	743.8
30°	915.5	917.9	934.5	949.3	933.8	922.4	907.2	880.2	854.3	838.5	779.1
32.5°	964.5	964.2	980.0	992.1	976.2	967.3	953.4	926.2	905.4	898.5	831.5
35°	1010.1	1010.1	1023.2	1035.3	1023.9	1019.1	1006.3	984.5	972.8	981.1	901.6
37.5°	1056.0	1053.6	1066.0	1079.5	1078.5	1078.8	1071.5	1061.2	1061.9	1091.2	998.0
40°	1094.0	1093.0	1107.5	1125.1	1138.9	1149.9	1145.4	1149.2	1171.0	1225.9	1121.3
42.5°	1124.4	1126.8	1145.4	1173.4	1208.3	1230.7	1233.9	1249.4	1305.3	1390.3	1260.4
45°	1159.3	1159.6	1185.5	1228.3	1283.9	1319.5	1331.9	1372.0	1451.4	1560.9	1413.1
47.5°	1202.1	1197.9	1226.9	1287.0	1367.5	1420.0	1442.1	1492.2	1615.1	1727.3	1537.4
50°	1249.4	1241.8	1274.6	1356.4	1461.1	1526.7	1571.6	1644.8	1777.4	1864.1	1629.9
52.5°	1304.3	1297.0	1334.3	1436.2	1573.3	1653.1	1710.7	1784.6	1916.6	1968.4	1685.2
55°	1374.1	1366.8	1406.2	1531.9	1705.9	1809.5	1869.9	1932.1	2046.1	2045.4	1725.3
57.5°	1451.4	1441.4	1496.0	1652.7	1871.3	1979.1	2040.5	2070.9	2144.5	2105.1	1752.2
60°	1540.2	1531.2	1606.8	1796.7	2062.3	2162.1	2200.8	2188.3	2225.3	2140.3	1742.9
62.5°	1620.3	1616.1	1710.1	1949.4	2244.3	2328.5	2339.2	2285.0	2284.7	2141.0	1680.0
65°	1703.5	1711.4	1850.9	2125.1	2427.3	2483.9	2465.6	2381.0	2308.5	2056.4	1494.2
67.5°	1734.6	1757.7	1943.8	2284.0	2571.6	2615.8	2583.7	2429.0	2209.4	1771.9	1137.9
70°	1542.6	1586.1	1856.1	2293.0	2631.4	2673.5	2596.5	2299.9	1842.0	1173.8	623.3
72.5°	1173.1	1223.8	1546.7	1877.5	2366.5	2462.5	2331.0	1873.7	1187.2	514.2	209.3
75°	656.5	711.4	1152.0	1413.8	1588.8	1676.6	1628.2	1202.1	525.9	134.3	62.5
77.5°	222.0	240.3	535.9	874.7	1048.8	970.0	821.2	597.1	193.4	51.1	33.2
80°	131.6	138.5	199.6	435.5	551.8	457.6	361.2	220.7	98.4	27.3	23.1
82.5°	39.4	46.6	110.2	161.6	216.2	134.7	114.0	126.0	51.1	14.8	19.3
85°	0.0	0.0	23.5	50.1	56.6	22.1	22.1	71.5	9.3	6.2	14.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.7	1.0	1.4	3.1
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-SA1D-830-U-SL4-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0	644.0
2.5°	639.9	627.8	613.6	600.2	587.4	570.8	562.9	553.2	544.9	540.4	542.9
5°	627.1	608.1	579.1	549.8	520.1	492.1	466.9	450.0	434.8	426.8	428.6
7.5°	616.1	590.5	545.3	497.3	449.6	401.6	362.6	332.2	308.7	299.1	297.3
10°	611.2	579.1	515.2	446.2	373.0	308.4	253.1	219.6	195.8	184.1	186.1
12.5°	613.6	573.2	489.7	396.1	301.1	225.8	173.0	141.6	124.7	117.8	116.0
15°	620.6	571.9	466.9	345.0	232.4	157.8	119.5	106.7	103.3	102.6	102.6
17.5°	628.5	572.2	443.4	293.2	176.5	117.1	102.2	99.8	98.8	98.1	98.4
20°	636.4	572.2	416.5	240.7	132.6	101.2	97.4	95.7	94.6	94.3	94.3
22.5°	646.1	572.2	386.4	192.0	106.4	96.0	92.9	91.9	90.8	90.5	90.1
25°	657.8	572.6	353.3	150.2	96.7	91.5	89.1	88.1	87.0	86.3	86.3
27.5°	674.8	575.3	316.7	117.1	91.2	87.4	85.3	84.3	83.2	82.2	82.2
30°	699.3	582.2	275.6	96.7	86.0	82.9	80.8	80.1	79.1	78.0	77.7
32.5°	735.9	594.3	233.1	86.7	81.2	78.0	75.6	74.9	73.9	72.9	72.5
35°	787.0	616.4	191.7	80.5	74.9	71.8	70.4	70.1	68.7	67.7	67.7
37.5°	861.9	652.3	151.9	74.2	69.8	67.3	65.6	64.9	63.5	62.5	62.2
40°	953.4	698.9	118.1	69.4	64.9	62.5	60.8	59.7	58.0	56.6	55.9
42.5°	1070.2	755.9	93.2	64.2	60.4	58.0	56.6	54.6	52.1	50.1	49.7
45°	1191.7	814.6	77.0	59.4	56.3	54.2	52.5	49.7	46.3	43.9	43.2
47.5°	1285.0	851.2	67.3	54.2	51.8	50.1	48.0	44.5	40.4	37.6	36.9
50°	1351.6	856.8	60.1	49.4	48.0	46.3	43.2	39.0	34.5	31.8	31.1
52.5°	1384.4	831.9	54.2	44.9	43.9	42.1	38.3	33.8	29.0	26.2	25.6
55°	1399.3	784.9	48.7	41.1	39.7	37.6	33.5	28.7	23.8	21.4	20.7
57.5°	1393.4	715.5	43.9	37.3	35.6	33.2	28.7	23.5	19.7	17.3	16.9
60°	1349.9	618.1	39.0	33.5	31.4	28.7	24.2	19.3	15.9	14.2	13.8
62.5°	1256.0	497.3	34.2	29.0	27.6	24.9	20.7	15.9	13.1	12.1	11.7
65°	1063.6	351.5	29.4	24.5	23.8	21.1	17.3	13.1	11.4	10.7	10.4
67.5°	764.6	213.8	24.9	21.1	20.4	18.0	14.5	11.4	10.4	10.0	10.0
70°	384.3	101.2	19.7	17.3	17.3	14.8	12.4	10.4	10.0	9.7	9.7
72.5°	130.5	43.2	14.8	13.5	14.2	12.8	10.7	9.7	9.7	9.7	9.7
75°	44.5	22.8	10.4	9.7	10.4	10.4	9.3	9.3	9.7	9.7	9.7
77.5°	29.0	15.2	7.3	6.6	7.9	7.9	7.9	8.6	9.3	9.3	9.3
80°	23.8	8.3	4.8	4.5	5.9	5.9	6.6	7.9	8.6	8.6	8.6
82.5°	20.4	5.2	2.8	3.1	4.1	4.5	5.5	6.6	7.6	7.9	7.9
85°	13.8	2.8	2.1	2.4	2.8	3.5	4.5	5.5	6.2	6.9	6.9
87.5°	3.8	1.0	1.4	1.7	1.7	2.4	3.5	4.1	4.8	5.2	5.2
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**

$\lambda$ (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)