

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: P631067

Luminaire Tested: GWS-SA1E-830-U-T2R-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631067  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-12)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1E-830-U-T2R-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

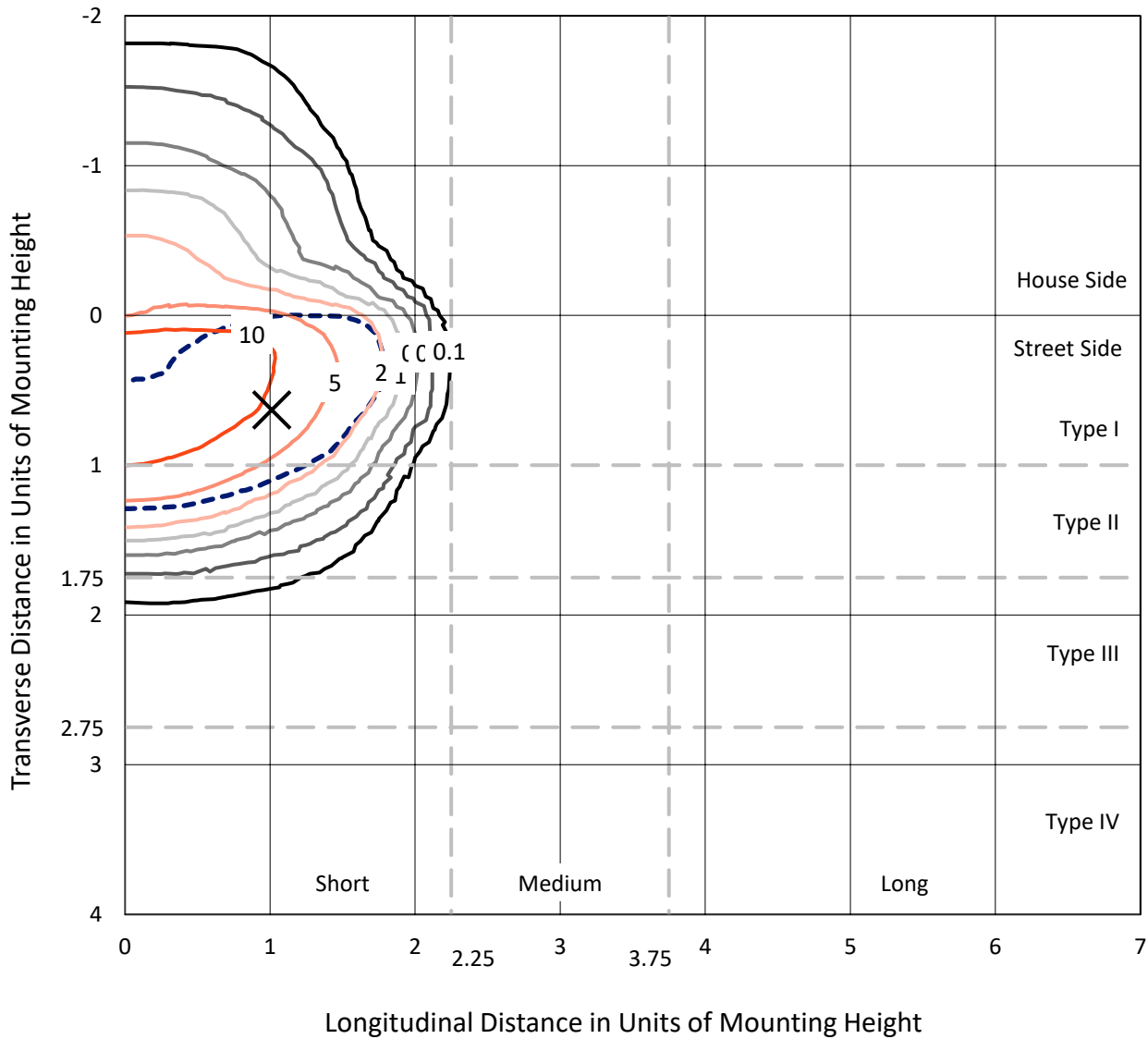
Lumens per Lamp: N/A  
Luminaire Lumens: 4035.2 lumens  
Efficiency: N/A  
Efficacy: 69.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G0  
  
Input Watts (W): 58.4  
Input Voltage (V): 120  
Input Current (Ain): 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-SA1E-830-U-T2R-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

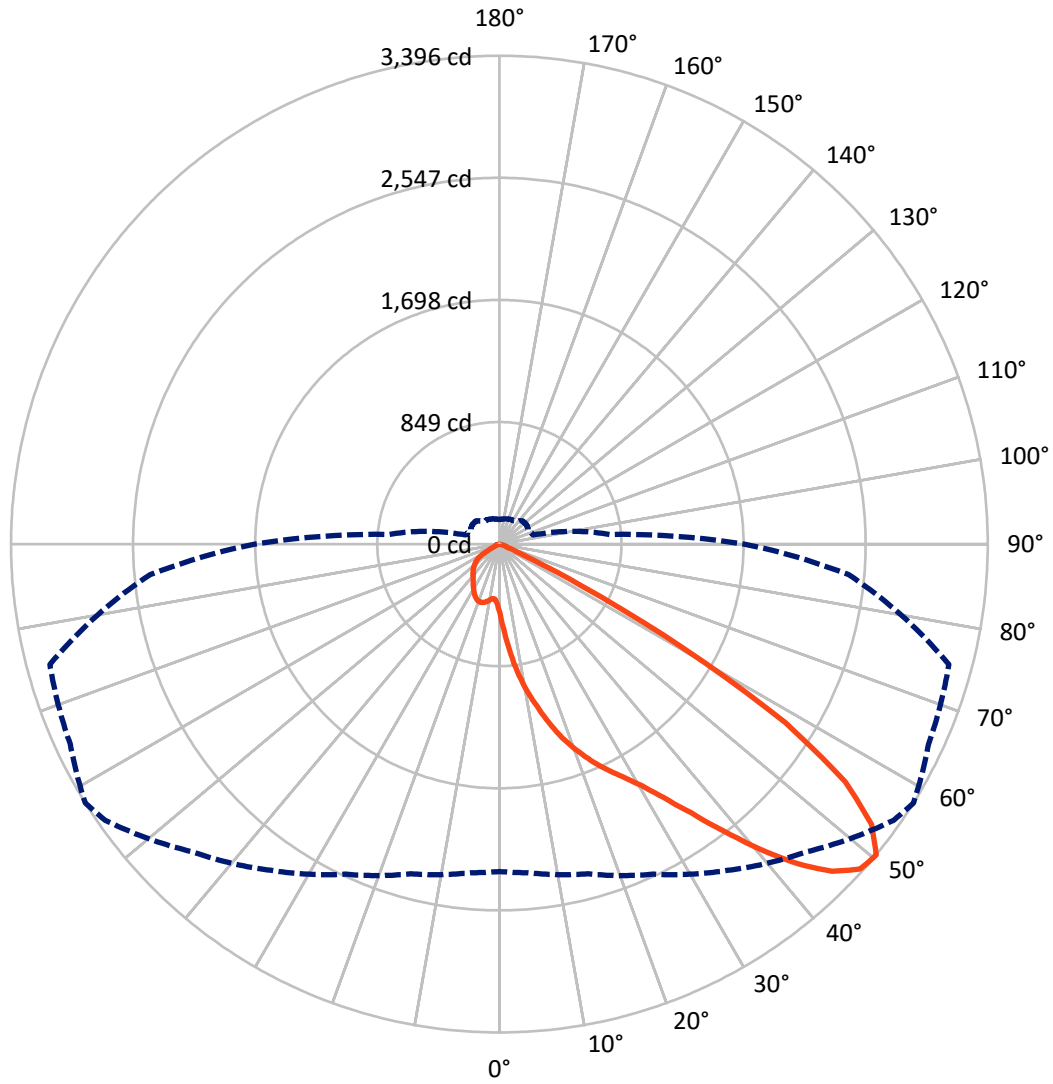
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.8 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	565.2	0.0	565.2
	% Fixture	14.0	0.0	14.0
<b>Street Side</b>	Lumens	3470.0	0.0	3470.0
	% Fixture	86.0	0.0	86.0
<b>Total</b>	Lumens	4035.2	0.0	4035.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.7	1.5
10°-20°	236.4	5.9
20°-30°	478.3	11.9
30°-40°	846.2	21.0
40°-50°	1233.6	30.6
50°-60°	988.8	24.5
60°-70°	178.1	4.4
70°-80°	14.0	0.3
80°-90°	0.0	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°	4035.2	100.0
0°-180°	4035.2	100.0

**Coefficient of Utilization**



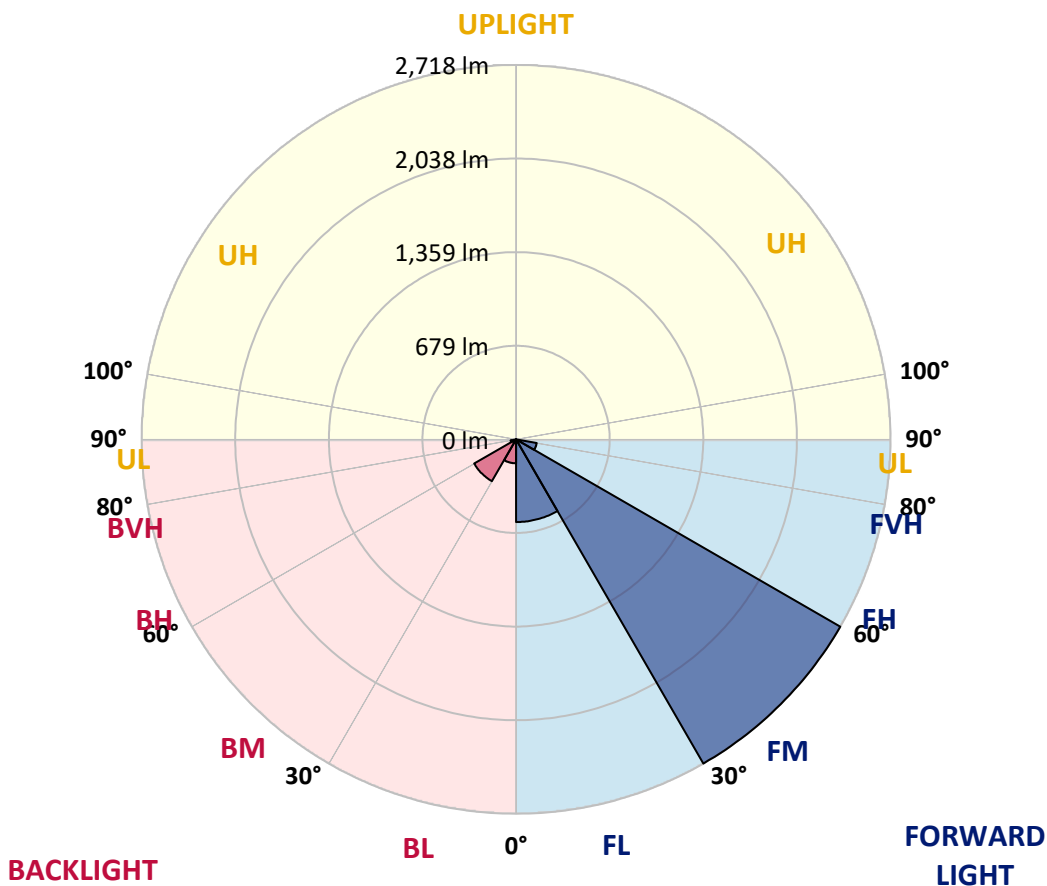
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	600.4	14.9			
FM (30°-60°)	2717.6	67.3			
FH (60°-80°)	152.0	3.8			G0/660
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	174.0	4.3	B1/500		
BM (30°-60°)	351.0	8.7	B1/1000		
BH (60°-80°)	40.2	1.0	B0/110		G0/110
BVH (80°-90°)	0.0	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G0**  
 Type II Short





REPORT NUMBER: P631067

CATALOG NUMBER: GWS-SA1E-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0
2.5°	713.3	702.1	695.6	690.4	667.5	631.3	607.6	595.1	574.3	539.4	509.2
5°	930.8	922.6	907.5	897.1	867.8	816.4	763.3	742.2	695.2	616.2	545.4
7.5°	1074.9	1068.9	1063.2	1049.4	1021.8	975.2	916.5	894.5	822.0	709.8	593.8
10°	1185.8	1181.0	1174.6	1174.1	1152.6	1110.7	1053.3	1030.4	951.9	811.7	650.7
12.5°	1283.3	1279.4	1278.1	1290.2	1276.4	1245.3	1183.2	1154.7	1071.4	915.7	713.7
15°	1350.2	1349.3	1354.9	1378.7	1386.4	1372.2	1320.0	1289.4	1193.6	1020.1	783.2
17.5°	1380.8	1383.4	1394.2	1435.2	1469.7	1481.8	1441.7	1415.8	1314.8	1125.8	857.4
20°	1433.0	1432.2	1438.7	1477.5	1519.8	1562.9	1550.9	1528.8	1437.4	1237.6	939.8
22.5°	1580.2	1567.7	1553.9	1559.9	1575.0	1625.5	1647.9	1636.7	1563.8	1352.4	1024.8
25°	1806.3	1793.4	1748.9	1705.8	1677.3	1700.2	1730.8	1736.4	1689.4	1470.2	1113.7
27.5°	2046.2	2034.6	1984.5	1919.8	1838.2	1798.5	1821.4	1832.6	1812.8	1610.4	1208.2
30°	2271.0	2255.5	2200.7	2120.4	2025.9	1965.1	1939.2	1947.0	1958.6	1776.5	1319.1
32.5°	2466.1	2454.4	2388.8	2304.3	2213.2	2149.8	2089.4	2102.3	2130.8	1979.8	1461.1
35°	2631.4	2625.3	2555.8	2471.7	2375.5	2343.1	2291.3	2293.9	2322.4	2225.3	1634.1
37.5°	2775.0	2764.7	2701.7	2623.6	2547.2	2542.0	2527.8	2529.1	2543.8	2511.4	1833.1
40°	2865.7	2856.2	2811.3	2763.0	2708.6	2709.5	2783.2	2788.9	2772.0	2792.3	2043.2
42.5°	2899.8	2892.8	2868.7	2869.1	2863.5	2889.0	3027.5	3037.8	2977.4	3012.8	2222.7
45°	2840.6	2837.6	2839.3	2901.5	2968.8	3047.3	3227.3	3245.4	3160.0	3159.1	2363.0
47.5°	2649.9	2643.9	2694.4	2800.1	2955.8	3108.6	3348.1	3376.1	3287.7	3242.8	2451.0
50°	2276.2	2293.5	2373.3	2532.1	2769.0	3024.5	3346.8	3395.6	3292.4	3235.5	2436.3
52.5°	1648.8	1645.4	1820.1	2038.5	2326.7	2755.2	3169.0	3240.2	3177.2	3163.4	2403.5
55°	897.1	928.6	1046.4	1335.5	1695.4	2245.6	2763.0	2918.3	2991.2	3137.1	2462.6
57.5°	329.7	343.5	417.3	621.8	897.5	1396.4	2110.5	2344.8	2570.1	3063.7	2452.7
60°	132.9	135.5	164.8	228.7	377.1	710.7	1266.1	1474.0	1686.3	2345.3	1882.3
62.5°	96.7	100.1	111.8	133.8	190.7	310.7	545.9	634.8	693.9	1161.6	927.3
65°	78.1	80.7	90.2	100.1	126.0	167.0	176.1	169.6	168.7	300.3	212.7
67.5°	64.7	67.3	74.2	81.1	90.6	83.3	60.4	63.4	51.8	51.3	41.9
70°	47.5	50.5	57.4	64.7	54.4	22.4	35.0	51.8	39.3	32.8	31.9
72.5°	35.8	38.0	44.4	42.3	16.0	8.6	23.3	37.5	30.2	24.2	23.7
75°	26.8	28.0	22.4	6.9	1.7	2.2	8.6	15.5	16.8	13.8	13.8
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.3	1.7	2.2	2.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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



REPORT NUMBER: P631067  
 CATALOG NUMBER: GWS-SA1E-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0	482.0
2.5°	491.9	473.8	447.9	426.3	409.9	394.0	381.9	369.8	369.4	363.3	362.0
5°	512.6	479.8	432.4	398.3	377.6	365.1	356.4	352.1	350.0	347.8	346.9
7.5°	542.4	495.4	429.8	393.5	376.3	368.1	362.0	359.4	358.2	356.4	356.0
10°	579.1	517.8	439.3	402.6	387.5	379.7	373.3	369.4	367.2	364.2	363.3
12.5°	623.1	545.4	454.4	417.7	401.7	391.4	382.8	377.1	374.1	370.2	369.4
15°	670.6	575.2	471.2	431.5	412.5	399.1	388.4	379.7	374.1	369.4	368.1
17.5°	719.8	605.4	486.3	441.0	417.7	401.7	386.2	374.6	367.6	361.6	359.9
20°	775.0	636.5	496.2	442.7	416.0	394.8	376.7	362.0	355.1	346.9	345.2
22.5°	832.8	665.4	500.6	438.8	406.5	381.9	362.5	347.4	337.4	328.8	326.2
25°	888.9	691.3	498.4	428.1	392.2	363.8	343.9	328.4	317.6	309.0	306.8
27.5°	948.5	712.9	490.6	412.1	372.8	343.9	324.9	311.6	301.6	292.1	290.0
30°	1015.3	732.7	478.1	392.7	350.0	323.6	309.0	299.9	289.1	279.2	276.2
32.5°	1096.0	750.4	460.0	369.4	329.7	305.9	297.7	290.8	278.3	268.0	265.8
35°	1188.4	765.1	437.1	345.2	309.8	294.7	293.0	283.9	267.5	255.5	252.9
37.5°	1295.4	779.3	409.9	321.5	295.2	289.5	290.0	274.4	254.6	239.9	238.2
40°	1410.6	793.5	379.7	300.8	281.8	286.5	282.6	260.6	228.3	214.0	212.3
42.5°	1530.6	809.1	349.1	281.3	270.6	274.9	269.3	233.0	209.7	202.4	201.5
45°	1638.9	827.6	315.9	261.9	259.3	258.0	248.6	211.0	201.1	195.9	195.5
47.5°	1717.0	824.6	280.5	243.4	247.3	242.9	214.0	200.7	192.5	185.5	183.8
50°	1702.7	772.0	243.8	222.7	231.7	227.8	192.5	188.6	181.2	173.9	171.3
52.5°	1666.5	700.3	211.9	200.7	214.9	205.8	177.8	173.9	167.4	157.9	154.9
55°	1685.9	633.0	186.8	183.0	197.6	170.4	161.4	155.3	148.4	138.1	136.8
57.5°	1623.3	516.5	150.2	152.8	174.8	145.4	141.5	132.0	120.4	113.5	112.6
60°	1123.7	277.5	94.1	97.1	126.4	122.1	126.9	118.2	104.0	97.5	96.2
62.5°	516.1	111.3	51.3	49.2	66.5	82.9	108.7	107.9	90.2	79.8	79.0
65°	125.1	50.9	36.7	34.5	37.5	49.6	70.8	85.0	72.9	60.8	59.5
67.5°	40.6	41.4	33.7	31.5	33.2	37.1	42.3	47.0	46.6	42.7	41.9
70°	32.4	37.5	31.1	28.5	28.5	29.8	28.5	22.9	19.8	21.6	22.4
72.5°	24.2	28.5	24.6	22.0	21.1	20.7	17.7	12.9	9.1	8.2	7.8
75°	14.2	16.0	15.1	12.9	12.1	10.8	8.6	5.6	3.0	2.2	1.3
77.5°	2.6	3.0	3.5	2.6	2.2	1.7	1.3	0.4	0.0	0.0	0.0
80°	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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



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

REPORT NUMBER: SP1-2408-195-9

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

REPORT NUMBER: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



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



CCT = 3050K  
 CIE x = 0.4383  
 CIE y = 0.4131  
 Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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)