

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: P631070

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

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631070  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-11)  
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  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

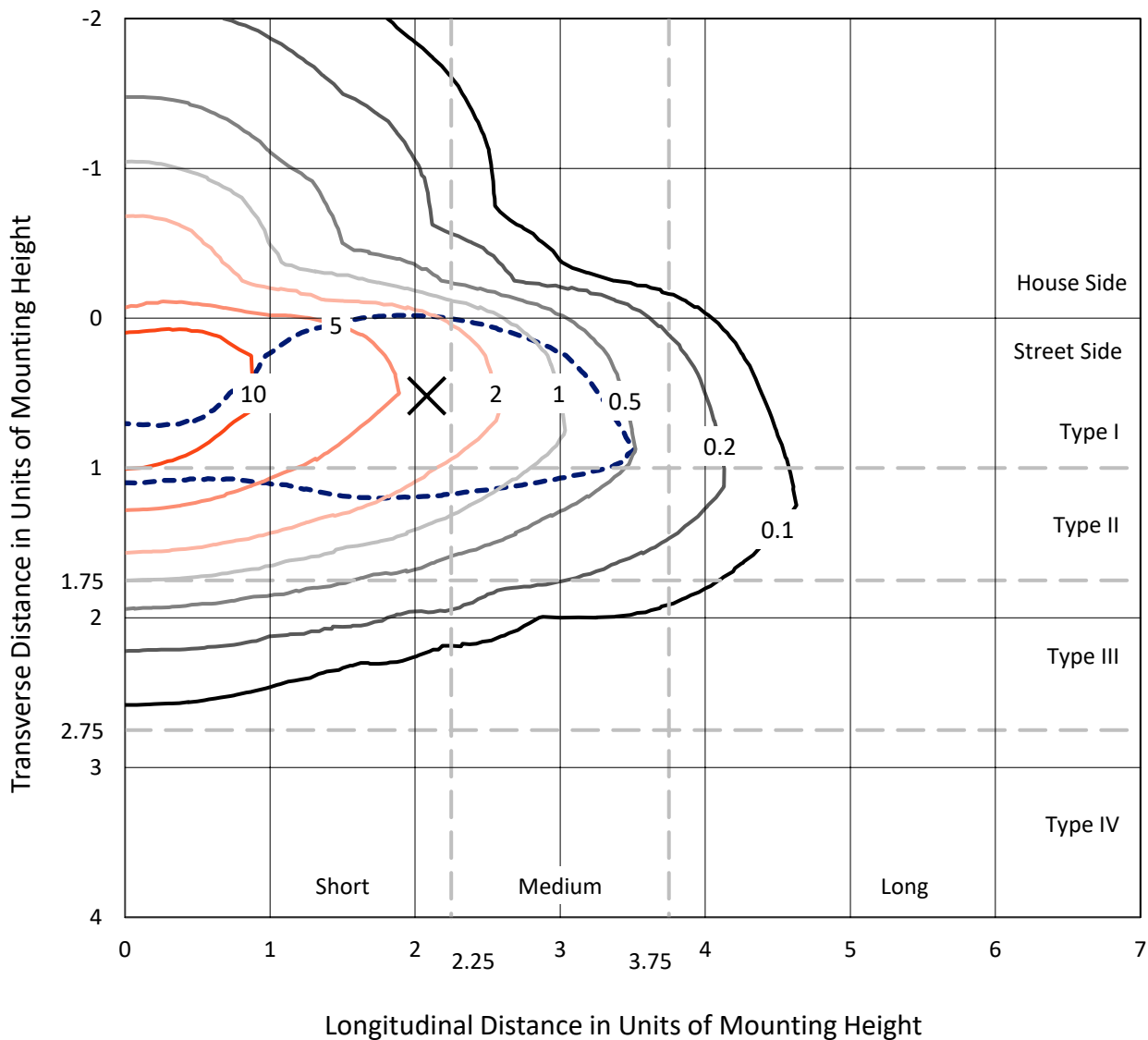
Lumens per Lamp: N/A  
Luminaire Lumens: 6138 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 58.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
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



REPORT NUMBER: P631070  
 CATALOG NUMBER: GWS-SA1E-830-U-T2R-W

### Iso-Footcandle Lines of Horizontal Illumination

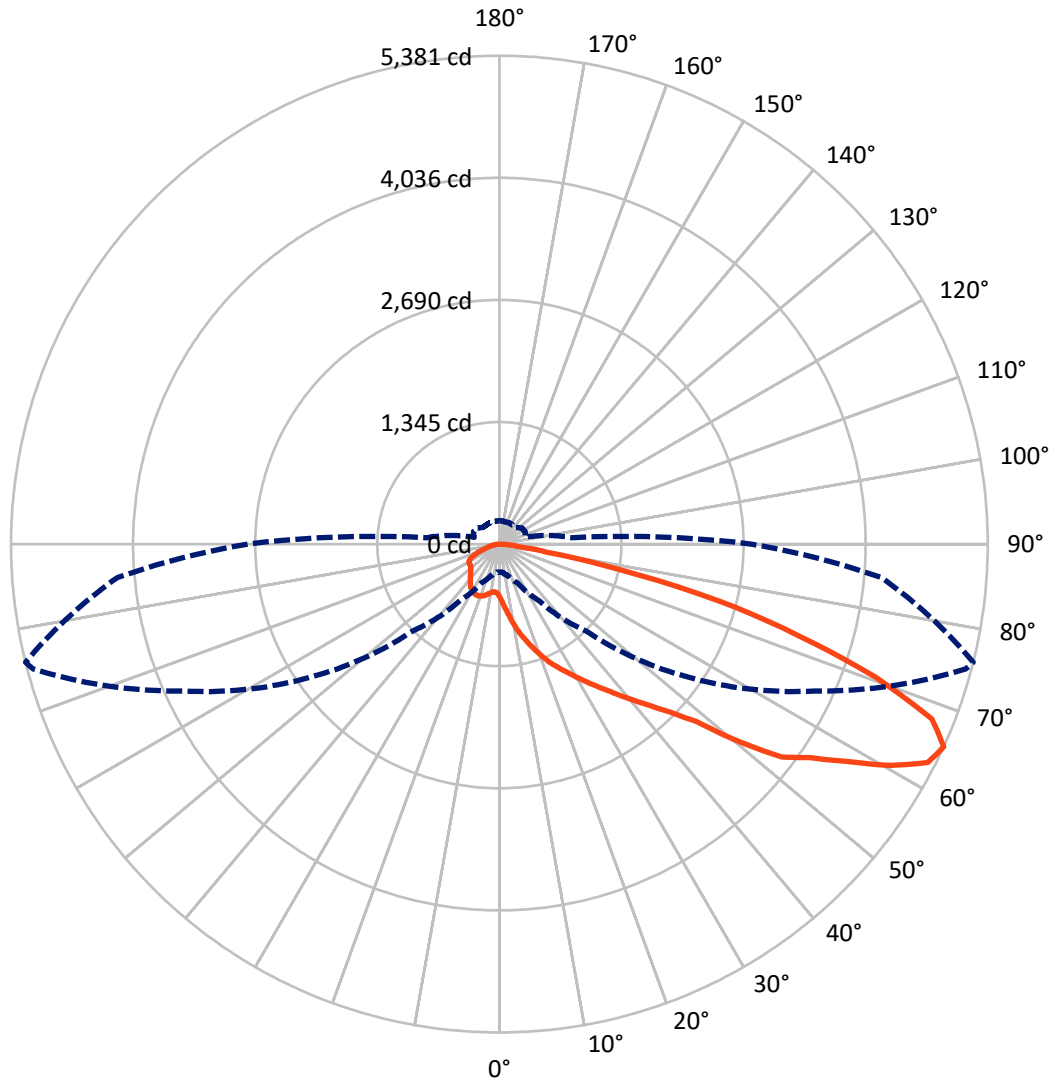
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.1 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1026.0	0.0	1026.0
	% Fixture	16.7	0.0	16.7
<b>Street Side</b>	Lumens	5112.0	0.0	5112.0
	% Fixture	83.3	0.0	83.3
<b>Total</b>	Lumens	6138.0	0.0	6138.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.1	1.1
10°-20°	263.0	4.3
20°-30°	512.6	8.4
30°-40°	857.3	14.0
40°-50°	1227.5	20.0
50°-60°	1453.2	23.7
60°-70°	1208.3	19.7
70°-80°	494.5	8.1
80°-90°	52.6	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°	6138.0	100.0
0°-180°	6138.0	100.0

**Coefficient of Utilization**



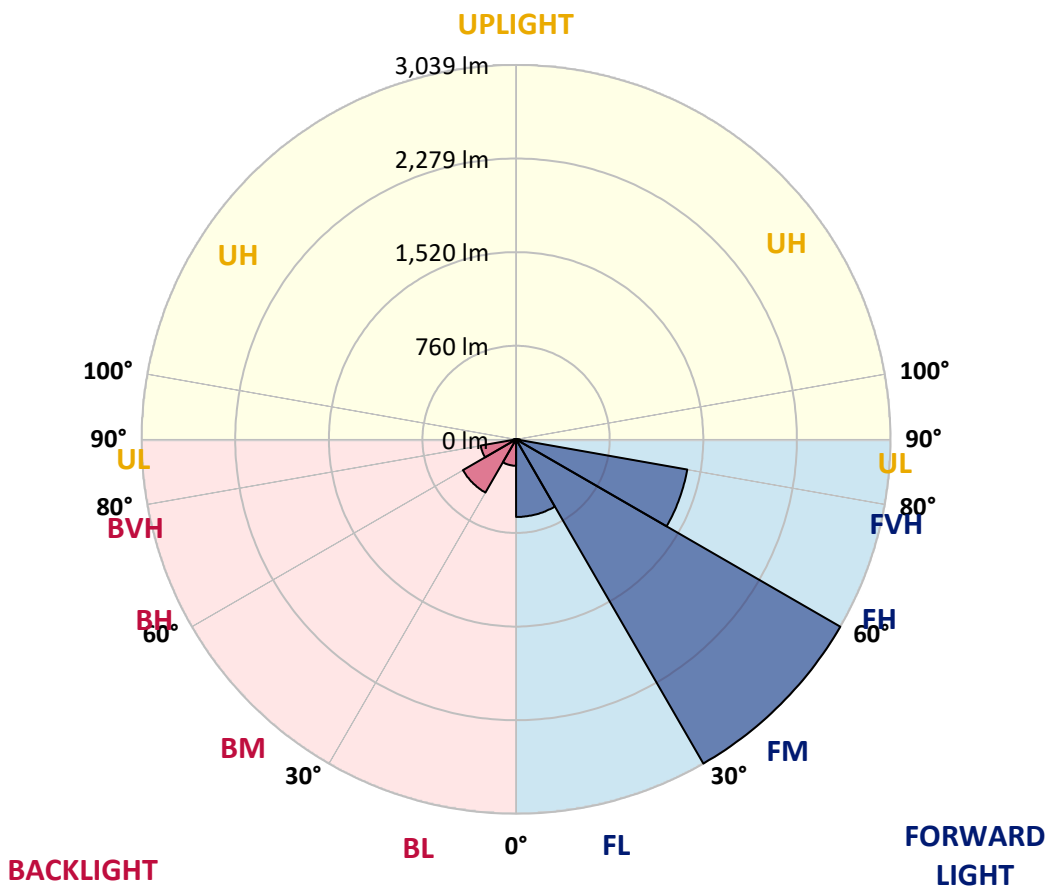
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	630.0	10.3			
FM (30°-60°)	3039.3	49.5			
FH (60°-80°)	1411.3	23.0			G1/1800
FVH (80°-90°)	31.4	0.5			G1/100
BL (0°-30°)	214.6	3.5	B1/500		
BM (30°-60°)	498.6	8.1	B1/1000		
BH (60°-80°)	291.5	4.7	B1/500		G1/500
BVH (80°-90°)	21.2	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**  
 Type II Short





REPORT NUMBER: P631070  
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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2
2.5°	814.7	817.7	807.8	804.3	781.0	749.5	723.2	683.5	646.8	641.2	608.4
5°	1034.8	1021.8	1010.6	1003.3	970.9	935.1	879.4	804.8	726.7	717.2	646.4
7.5°	1165.5	1163.4	1149.5	1145.2	1120.2	1084.4	1027.0	934.2	820.7	805.2	697.8
10°	1270.4	1269.1	1262.2	1266.1	1243.2	1208.2	1152.6	1056.8	923.9	908.3	755.1
12.5°	1361.9	1364.0	1362.7	1377.0	1365.3	1338.1	1280.3	1175.0	1027.0	1010.2	825.0
15°	1428.7	1430.5	1436.9	1468.0	1474.5	1468.9	1410.2	1291.1	1128.8	1104.7	897.1
17.5°	1447.7	1451.2	1466.7	1516.8	1551.7	1575.0	1531.4	1409.3	1228.9	1202.6	970.5
20°	1473.2	1477.1	1492.6	1544.8	1596.2	1649.2	1641.5	1529.3	1329.9	1308.3	1044.7
22.5°	1591.0	1588.0	1581.1	1606.1	1642.8	1708.8	1728.2	1644.5	1434.3	1413.6	1126.7
25°	1818.0	1812.3	1768.3	1745.5	1733.4	1773.5	1808.0	1749.3	1536.2	1505.1	1203.1
27.5°	2068.2	2065.2	2009.1	1954.7	1880.5	1863.3	1883.5	1840.8	1635.0	1603.5	1269.5
30°	2305.1	2296.1	2237.4	2169.2	2070.0	1995.7	1966.0	1930.6	1743.3	1710.5	1347.2
32.5°	2517.0	2505.4	2436.3	2360.8	2256.8	2169.2	2080.3	2025.9	1865.9	1827.9	1426.6
35°	2690.9	2679.3	2608.5	2528.2	2413.9	2349.1	2227.5	2129.5	1990.6	1952.2	1520.2
37.5°	2825.5	2814.7	2741.0	2662.0	2562.3	2511.0	2405.2	2246.0	2134.3	2094.1	1619.5
40°	2901.1	2893.3	2834.2	2771.6	2687.9	2643.4	2596.0	2393.2	2295.2	2255.1	1736.4
42.5°	2923.9	2918.7	2877.3	2845.0	2788.4	2754.8	2782.0	2566.2	2467.0	2432.0	1868.0
45°	2866.5	2866.5	2854.4	2870.8	2873.4	2873.0	2968.4	2761.7	2678.0	2639.6	2053.6
47.5°	2719.8	2729.3	2747.0	2827.7	2912.7	2983.9	3186.3	3022.3	2949.4	2917.9	2316.4
50°	2451.4	2477.3	2537.7	2695.2	2876.0	3057.3	3392.5	3407.6	3477.1	3421.5	2703.0
52.5°	2058.3	2054.4	2208.5	2432.9	2708.6	3060.3	3506.0	3747.7	3934.5	3896.1	2990.4
55°	1635.9	1629.4	1773.1	2082.5	2451.8	2944.6	3574.2	3903.5	4188.3	4153.7	3248.8
57.5°	1252.7	1244.5	1372.2	1651.4	2089.4	2699.1	3561.3	4089.0	4537.3	4519.7	3600.1
60°	862.2	852.2	971.8	1216.0	1660.5	2323.7	3418.0	4184.4	4946.0	4952.0	3975.9
62.5°	517.8	512.2	598.9	788.4	1194.4	1858.5	3082.7	4126.5	5271.3	5298.5	4217.6
65°	312.4	308.5	359.4	470.3	757.7	1356.2	2565.8	3831.0	5318.4	5380.9	4223.2
67.5°	227.4	227.8	242.5	286.5	441.9	876.0	1925.4	3301.1	5073.3	5138.0	3957.0
70°	197.6	198.5	206.3	216.2	267.1	501.4	1251.8	2605.9	4348.8	4398.8	3318.8
72.5°	175.6	175.6	180.8	186.0	208.9	305.5	670.6	1821.4	3432.2	3445.6	2533.0
75°	154.5	153.2	155.8	158.4	181.2	213.6	326.2	1269.1	2535.1	2504.1	1637.2
77.5°	123.0	121.7	122.1	124.7	145.4	152.8	165.3	792.7	1428.7	1348.5	723.2
80°	87.6	86.7	91.5	98.0	107.4	93.6	103.6	383.6	566.6	527.3	280.5
82.5°	52.2	53.9	61.3	66.5	74.2	58.7	66.9	128.2	200.7	195.5	113.9
85°	7.3	7.8	22.0	25.5	31.9	22.9	35.4	57.8	80.3	85.9	40.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	10.4	22.9	23.3	9.9
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: P631070  
 CATALOG NUMBER: GWS-SA1E-830-U-T2R-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2	581.2
2.5°	591.6	571.3	542.4	518.2	498.0	481.6	467.8	457.4	454.4	450.1	450.1
5°	613.2	576.5	524.7	488.0	466.9	454.4	445.8	441.4	439.3	436.7	435.4
7.5°	643.0	591.6	521.7	484.6	468.2	460.4	454.8	452.2	450.5	447.9	447.9
10°	683.9	614.0	531.2	496.7	483.7	476.0	469.5	465.2	461.3	457.4	456.5
12.5°	728.4	643.4	548.5	513.1	499.3	489.8	480.7	474.2	469.5	464.7	463.4
15°	777.6	673.6	567.0	529.0	511.8	498.8	488.0	478.1	471.6	464.7	463.9
17.5°	825.9	704.2	582.5	539.8	517.8	501.8	486.3	473.4	465.2	457.4	455.2
20°	883.7	734.9	593.3	542.8	516.5	495.4	476.8	460.4	451.4	442.3	441.0
22.5°	936.8	763.3	598.5	538.5	506.6	481.6	460.0	442.3	432.4	423.3	421.6
25°	988.2	788.4	596.3	528.2	491.5	462.6	440.1	422.4	413.0	403.5	400.9
27.5°	1037.8	805.2	587.7	512.2	472.5	441.4	419.9	403.9	395.7	387.5	384.0
30°	1086.5	820.7	574.3	491.5	448.3	419.4	401.7	390.5	382.3	373.7	371.1
32.5°	1135.7	832.0	554.1	467.3	423.7	400.0	389.2	381.0	372.4	363.8	361.2
35°	1185.4	836.7	529.5	439.7	403.0	387.5	383.6	374.1	362.5	352.1	348.7
37.5°	1244.5	841.0	498.8	412.5	384.9	381.5	380.6	366.4	352.5	338.3	334.4
40°	1315.7	846.6	467.3	387.9	370.2	379.3	375.8	356.4	328.8	315.0	310.7
42.5°	1402.8	857.0	434.5	365.5	359.4	371.1	367.2	332.3	313.7	305.9	303.8
45°	1531.0	895.0	401.7	347.8	351.3	359.4	353.4	318.0	310.7	305.5	302.9
47.5°	1759.3	953.2	373.3	334.4	344.8	349.1	325.8	314.1	308.5	301.6	298.6
50°	1996.6	978.7	350.4	326.2	337.4	339.6	310.7	309.0	305.1	297.7	294.7
52.5°	2157.1	975.2	336.6	323.2	331.4	323.2	303.8	303.4	300.8	292.1	288.7
55°	2338.4	981.3	330.5	324.1	328.8	295.6	295.2	296.4	295.2	285.7	283.9
57.5°	2583.0	999.8	327.5	327.1	327.1	282.2	287.0	288.7	286.1	281.8	280.5
60°	2818.2	1001.1	321.9	330.5	325.8	274.0	277.5	279.2	276.2	275.3	274.9
62.5°	2906.7	939.0	309.4	327.9	320.6	264.9	267.5	268.4	265.4	267.5	267.1
65°	2775.1	806.9	288.7	315.4	304.6	256.7	255.0	257.2	252.0	257.6	258.0
67.5°	2463.9	641.2	257.2	291.7	282.2	247.7	244.2	244.2	235.6	244.2	243.8
70°	1986.7	453.1	211.0	253.7	257.6	236.9	235.2	225.2	211.4	224.4	223.1
72.5°	1506.0	325.4	166.1	200.7	221.8	221.8	222.2	205.4	189.4	195.5	190.3
75°	954.1	229.1	132.9	153.6	173.9	194.6	204.5	173.5	159.2	156.6	154.0
77.5°	429.8	150.6	103.6	117.8	123.4	153.6	186.8	149.3	129.9	124.3	122.5
80°	179.9	93.6	73.8	83.3	75.9	129.0	164.8	116.1	95.4	87.6	82.0
82.5°	79.0	55.7	47.0	44.9	47.5	95.8	123.0	77.2	59.5	80.7	81.6
85°	33.2	29.3	24.2	22.0	19.4	36.7	57.8	30.2	37.1	21.1	17.3
87.5°	7.8	8.6	6.5	4.3	2.6	0.4	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

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**



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**

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			

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)