

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: P631077

Luminaire Tested: GWS-SA1E-830-U-T3R-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631077  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1E-830-U-T3R-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

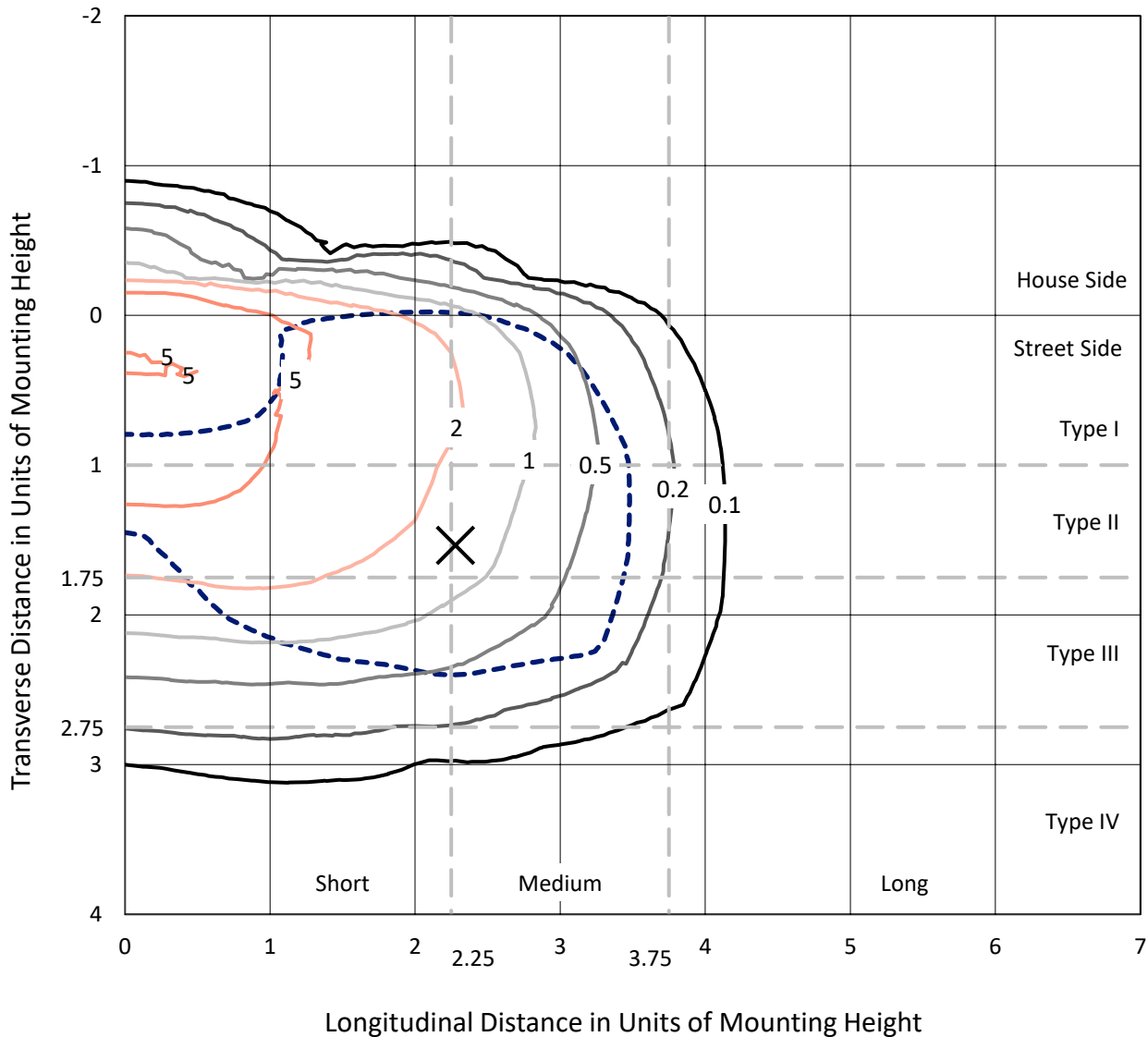
Lumens per Lamp: N/A  
Luminaire Lumens: 4712.2 lumens  
Efficiency: N/A  
Efficacy: 80.7 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 58.4  
Input Voltage (V): 120  
Input Current (Ain): 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-T3R-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

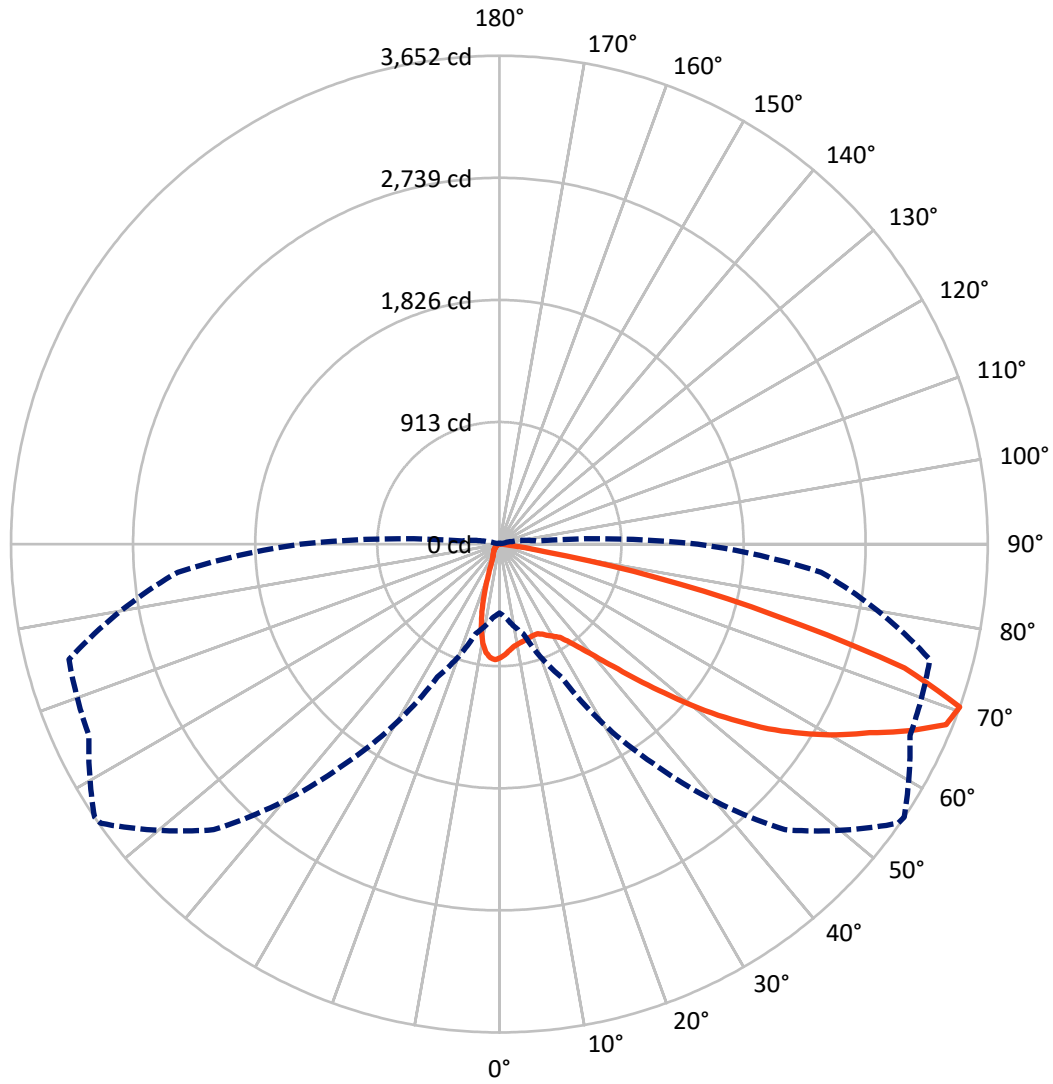
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9 fc  
 Type III - Medium - N/A

REPORT NUMBER: P631077  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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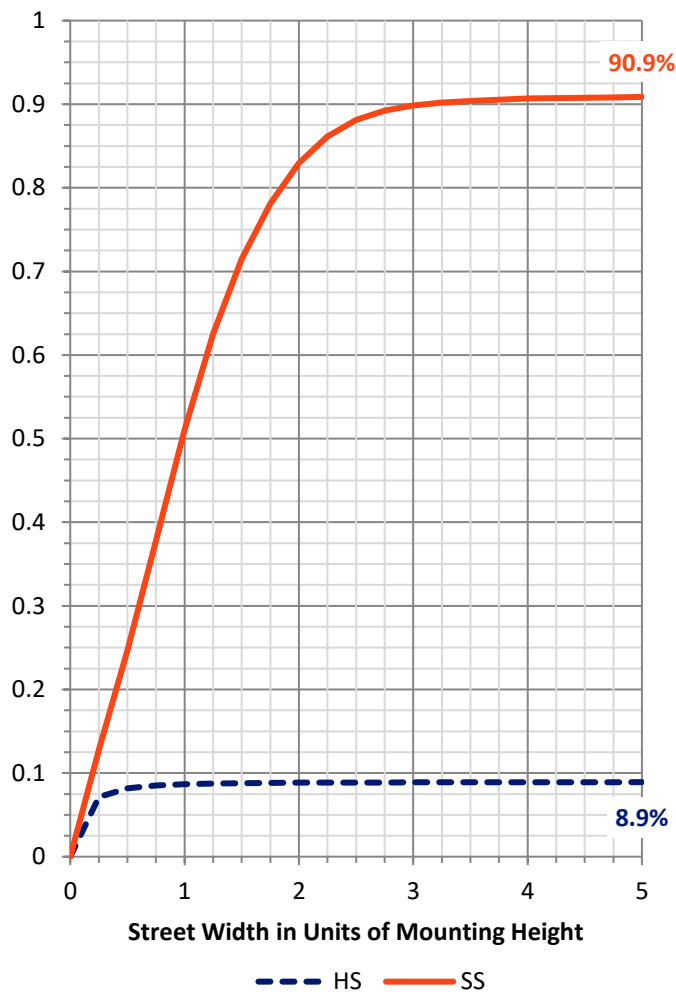
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	423.3	0.0	423.3
	% Fixture	9.0	0.0	9.0
<b>Street Side</b>	Lumens	4288.9	0.0	4288.9
	% Fixture	91.0	0.0	91.0
<b>Total</b>	Lumens	4712.2	0.0	4712.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.9	1.5
10°-20°	164.1	3.5
20°-30°	259.9	5.5
30°-40°	448.2	9.5
40°-50°	756.8	16.1
50°-60°	1112.0	23.6
60°-70°	1318.4	28.0
70°-80°	562.2	11.9
80°-90°	17.7	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°	4712.2	100.0
0°-180°	4712.2	100.0

**Coefficient of Utilization**



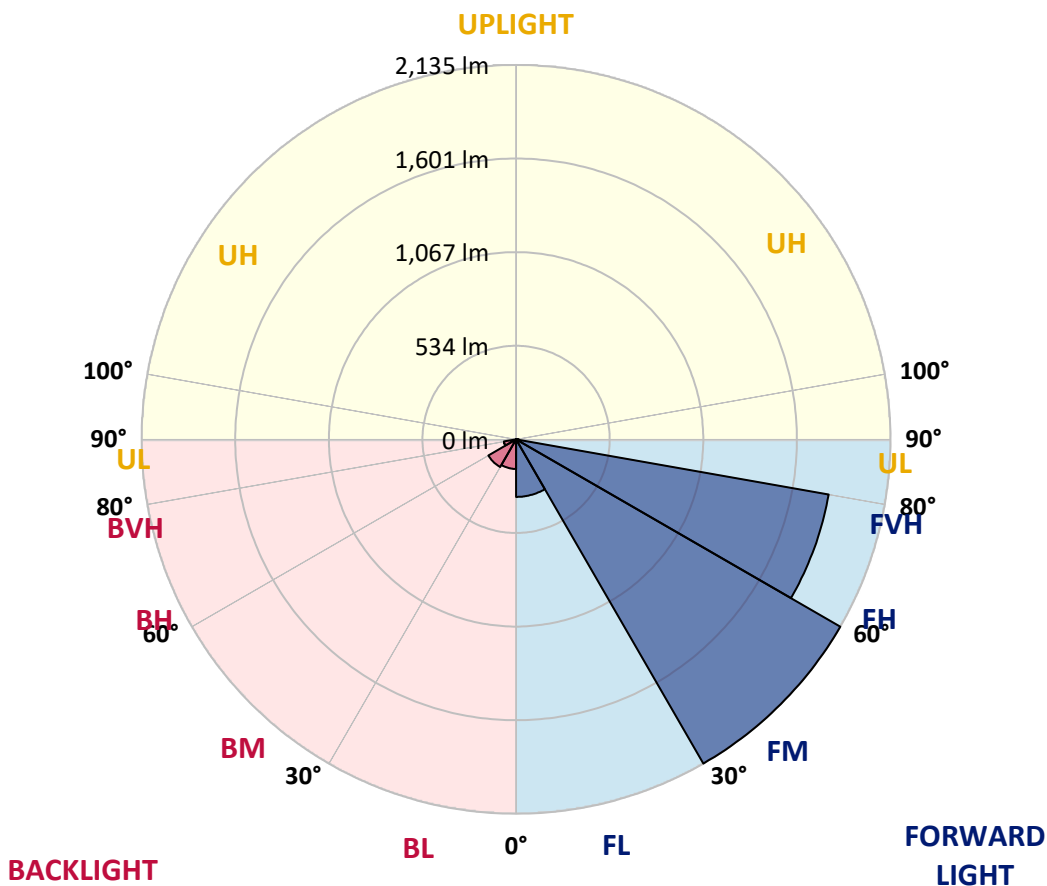
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CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	328.4	7.0			
FM (30°-60°)	2134.8	45.3			
FH (60°-80°)	1810.0	38.4			G2/5000
FVH (80°-90°)	15.9	0.3			G1/100
BL (0°-30°)	168.6	3.6	B1/500		
BM (30°-60°)	182.3	3.9	B0/220		
BH (60°-80°)	70.6	1.5	B0/110		G0/110
BVH (80°-90°)	1.8	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-G2**  
 Type III Medium





REPORT NUMBER: P631077

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7
2.5°	791.0	789.7	790.5	797.0	809.1	814.7	824.2	825.9	833.7	843.6	847.5
5°	739.6	735.3	737.5	746.5	760.3	775.9	793.6	798.3	817.7	839.7	856.1
7.5°	692.6	687.8	693.0	707.3	726.7	743.5	769.8	772.8	803.9	842.8	872.5
10°	618.8	620.1	630.4	655.5	685.2	720.2	755.6	759.9	798.3	852.7	898.9
12.5°	562.3	559.2	570.5	598.9	640.8	691.7	744.8	750.4	798.7	867.8	932.5
15°	535.9	535.1	539.8	560.5	601.1	661.1	734.9	742.2	804.3	881.6	964.4
17.5°	536.8	535.5	535.1	547.2	577.4	638.2	724.1	733.6	809.1	896.7	998.1
20°	574.3	568.3	557.5	551.9	570.0	623.5	716.7	727.5	816.0	912.7	1033.9
22.5°	652.9	655.0	626.1	595.9	587.3	625.3	715.9	728.4	831.1	937.7	1077.9
25°	810.0	806.5	753.0	685.2	638.2	645.1	731.0	746.1	860.9	973.5	1119.4
27.5°	1006.7	1009.7	936.4	828.5	730.1	686.1	758.6	773.7	895.4	995.9	1147.0
30°	1221.2	1218.2	1139.6	1020.1	860.4	754.3	786.2	799.6	912.7	1008.0	1175.5
32.5°	1424.0	1417.1	1339.4	1214.3	1026.6	861.7	824.2	832.0	935.5	1034.3	1213.9
35°	1597.0	1596.6	1528.9	1395.5	1197.5	996.4	889.4	895.8	978.2	1076.2	1270.4
37.5°	1775.7	1769.7	1693.7	1572.0	1373.1	1144.0	989.0	986.4	1045.6	1137.9	1339.9
40°	1922.4	1918.5	1860.3	1743.3	1555.6	1307.1	1109.9	1102.1	1125.4	1223.4	1436.5
42.5°	2031.2	2031.6	2013.5	1942.3	1748.9	1495.6	1261.8	1249.7	1249.2	1352.4	1564.2
45°	2113.6	2119.2	2146.4	2135.6	1977.2	1715.3	1456.4	1443.9	1422.7	1519.8	1710.5
47.5°	2152.0	2159.3	2241.3	2284.5	2177.0	1933.2	1688.1	1661.8	1620.3	1742.5	1874.1
50°	2148.1	2161.0	2275.4	2406.6	2358.2	2154.1	1940.5	1928.0	1860.3	1978.1	2035.9
52.5°	2060.1	2087.7	2277.5	2480.8	2497.6	2357.8	2201.6	2178.3	2145.5	2224.0	2187.8
55°	1821.0	1854.7	2186.5	2504.5	2606.4	2535.6	2457.1	2438.1	2383.7	2456.2	2320.3
57.5°	1691.1	1720.0	1994.9	2492.9	2698.7	2700.0	2684.5	2668.9	2624.1	2685.8	2475.6
60°	1613.0	1641.9	1892.6	2450.2	2782.4	2873.5	2898.1	2896.3	2831.6	2946.8	2657.7
62.5°	1498.7	1538.4	1786.0	2339.3	2842.0	3044.4	3118.6	3106.9	3034.9	3218.7	2838.1
65°	1267.8	1302.3	1567.7	2156.3	2807.0	3185.9	3357.6	3363.7	3280.4	3474.6	2980.5
67.5°	888.9	914.4	1178.0	1772.2	2569.7	3232.5	3602.3	3601.9	3459.9	3605.8	2917.5
70°	515.2	550.2	696.0	1095.6	1999.2	3020.6	3639.0	3651.5	3387.0	3331.7	2414.3
72.5°	199.4	228.3	394.4	582.1	1042.5	2313.8	3130.2	3166.9	2834.6	2570.1	1680.3
75°	59.5	66.5	185.6	309.8	418.6	1117.6	2119.2	2129.5	1944.4	1603.1	861.3
77.5°	44.4	49.2	81.1	156.6	146.7	338.7	1096.5	1197.5	1032.2	572.6	237.3
80°	30.2	35.8	57.8	76.4	54.4	90.2	308.1	338.3	315.0	128.6	59.5
82.5°	13.4	17.3	41.0	38.4	19.8	25.9	94.9	101.0	65.2	38.8	20.7
85°	1.3	1.7	15.5	16.8	7.3	6.0	19.8	19.8	14.2	13.4	8.6
87.5°	0.0	0.0	0.4	0.9	0.9	1.3	1.7	2.2	2.6	3.5	4.3
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: P631077  
 CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7	849.7
2.5°	857.4	852.2	858.7	863.9	865.2	855.7	850.1	841.9	840.2	840.6	838.4
5°	869.1	866.5	871.2	865.6	851.0	823.3	799.6	773.3	759.0	750.8	750.0
7.5°	890.7	889.4	884.2	858.7	813.0	751.7	692.6	634.8	598.9	586.0	583.8
10°	922.6	920.0	898.9	838.4	740.9	623.1	523.9	441.0	390.5	375.9	357.7
12.5°	959.3	954.1	907.9	794.9	632.2	469.1	345.2	252.4	208.9	195.9	195.9
15°	994.6	983.4	902.7	722.8	498.4	305.1	192.9	145.9	132.5	129.0	129.0
17.5°	1030.9	1009.3	882.5	624.4	344.4	180.4	128.6	119.5	117.8	118.2	118.7
20°	1065.0	1031.3	846.6	506.2	219.6	126.0	115.2	113.1	112.2	113.1	112.6
22.5°	1102.1	1051.6	792.3	377.1	142.8	113.5	109.6	107.9	107.0	108.3	108.3
25°	1138.8	1066.3	720.2	253.7	113.5	105.7	103.6	101.8	101.0	101.4	101.4
27.5°	1157.8	1060.7	625.7	161.8	101.8	98.0	95.8	93.6	92.3	91.9	92.3
30°	1170.7	1043.4	510.1	115.2	92.3	87.6	85.4	83.7	80.3	78.1	79.0
32.5°	1191.0	1026.1	384.5	96.7	84.6	77.2	73.8	69.5	64.7	62.6	62.6
35°	1215.2	1002.4	269.7	87.2	76.4	68.6	62.1	54.8	49.2	47.5	47.5
37.5°	1247.1	980.0	179.5	80.7	69.5	61.3	52.2	43.6	37.5	36.7	36.2
40°	1295.0	961.0	126.4	75.9	63.4	53.5	42.7	33.7	29.3	28.0	28.0
42.5°	1357.1	941.6	100.1	71.2	58.3	46.2	34.1	26.8	23.3	22.4	22.0
45°	1433.9	918.7	87.2	66.9	53.1	38.4	27.2	22.4	19.8	19.0	19.0
47.5°	1517.2	887.6	81.1	61.3	47.0	31.1	22.9	19.4	18.1	17.7	17.3
50°	1599.2	845.8	75.9	56.1	40.1	25.5	19.8	17.7	16.8	16.4	16.4
52.5°	1670.8	797.0	69.5	50.1	32.8	22.0	17.7	16.4	15.5	14.7	14.2
55°	1732.1	743.9	61.3	43.2	26.8	19.4	16.4	15.1	14.2	13.4	12.9
57.5°	1811.1	713.7	49.2	35.0	22.0	17.3	15.1	13.8	12.9	11.7	11.7
60°	1898.7	691.7	36.7	27.6	19.0	16.0	13.8	12.5	11.7	10.4	10.4
62.5°	1969.0	658.9	28.9	22.4	16.4	14.2	12.5	11.2	10.4	9.1	9.1
65°	1995.8	591.2	23.7	17.7	13.4	12.5	11.2	10.4	9.1	7.8	7.8
67.5°	1874.9	455.7	19.8	14.2	11.2	10.8	9.9	9.5	7.8	6.9	6.5
70°	1484.9	277.9	16.4	11.7	9.5	9.1	9.1	8.2	6.9	6.5	6.0
72.5°	1017.5	143.3	13.4	9.5	8.2	8.2	7.8	7.3	6.5	6.0	6.0
75°	528.6	47.9	10.4	7.3	6.5	6.9	6.9	6.5	6.0	6.0	5.6
77.5°	151.5	21.6	7.8	5.6	5.2	5.2	5.6	5.6	5.6	5.2	5.2
80°	39.3	12.5	5.6	4.3	4.3	4.3	4.3	4.7	5.2	4.7	4.7
82.5°	16.0	6.9	3.9	3.5	3.5	3.5	3.5	3.9	4.3	4.3	4.3
85°	9.9	3.5	3.0	3.0	3.0	2.6	2.6	3.0	3.0	3.5	3.5
87.5°	6.0	2.6	2.6	2.6	2.6	2.2	2.2	2.2	2.2	2.2	2.2
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  
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**



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**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	$\lambda$ (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)