

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: P639485

Luminaire Tested: GWS-SA5B-830-U-T2R-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P639485  
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-SA5B-830-U-T2R-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

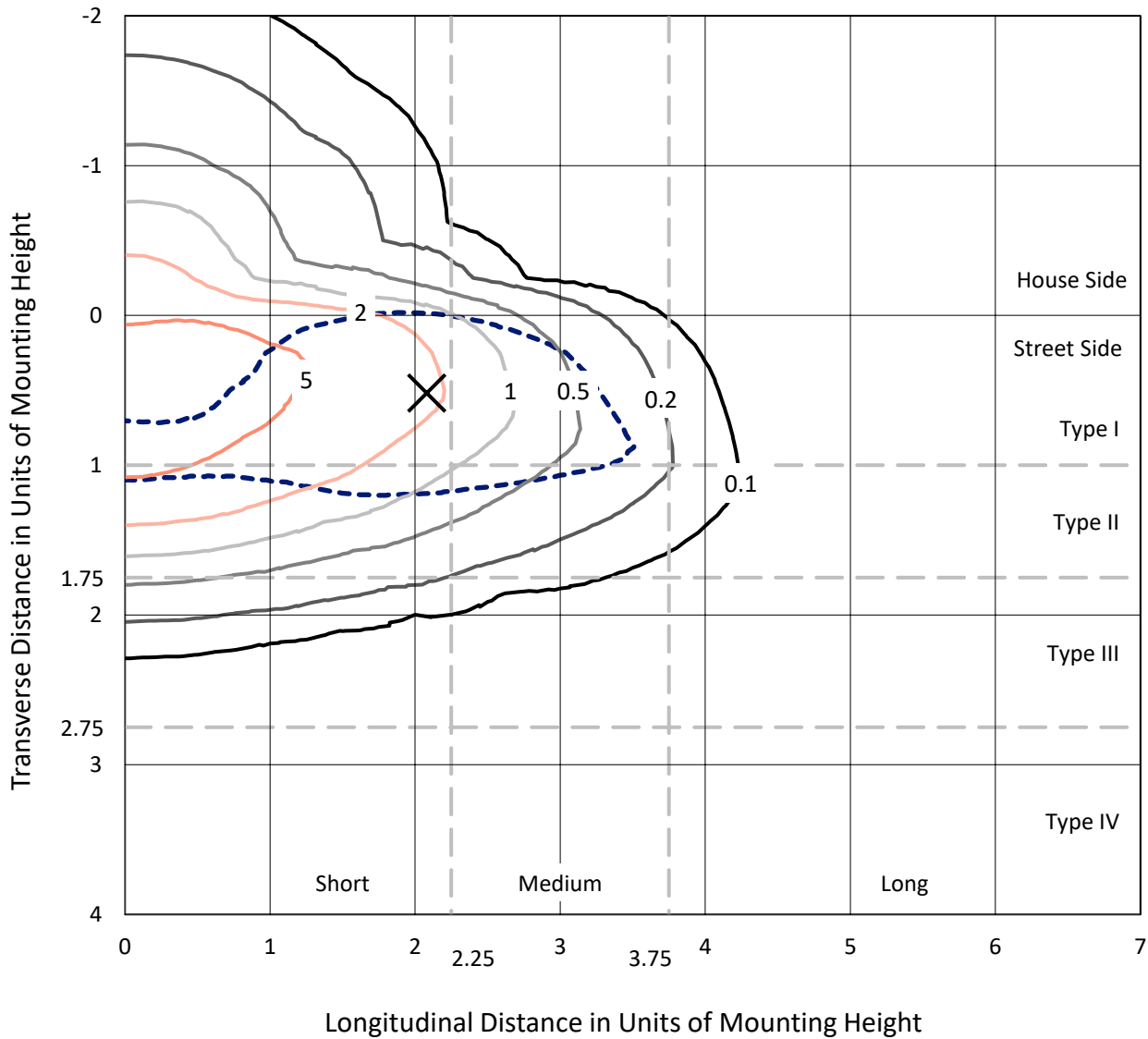
Lumens per Lamp: N/A  
Luminaire Lumens: 14382.6 lumens  
Efficiency: N/A  
Efficacy: 124.3 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 115.7  
Input Voltage (V): 120  
Input Current (Ain): 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-SA5B-830-U-T2R-W

### Iso-Footcandle Lines of Horizontal Illumination

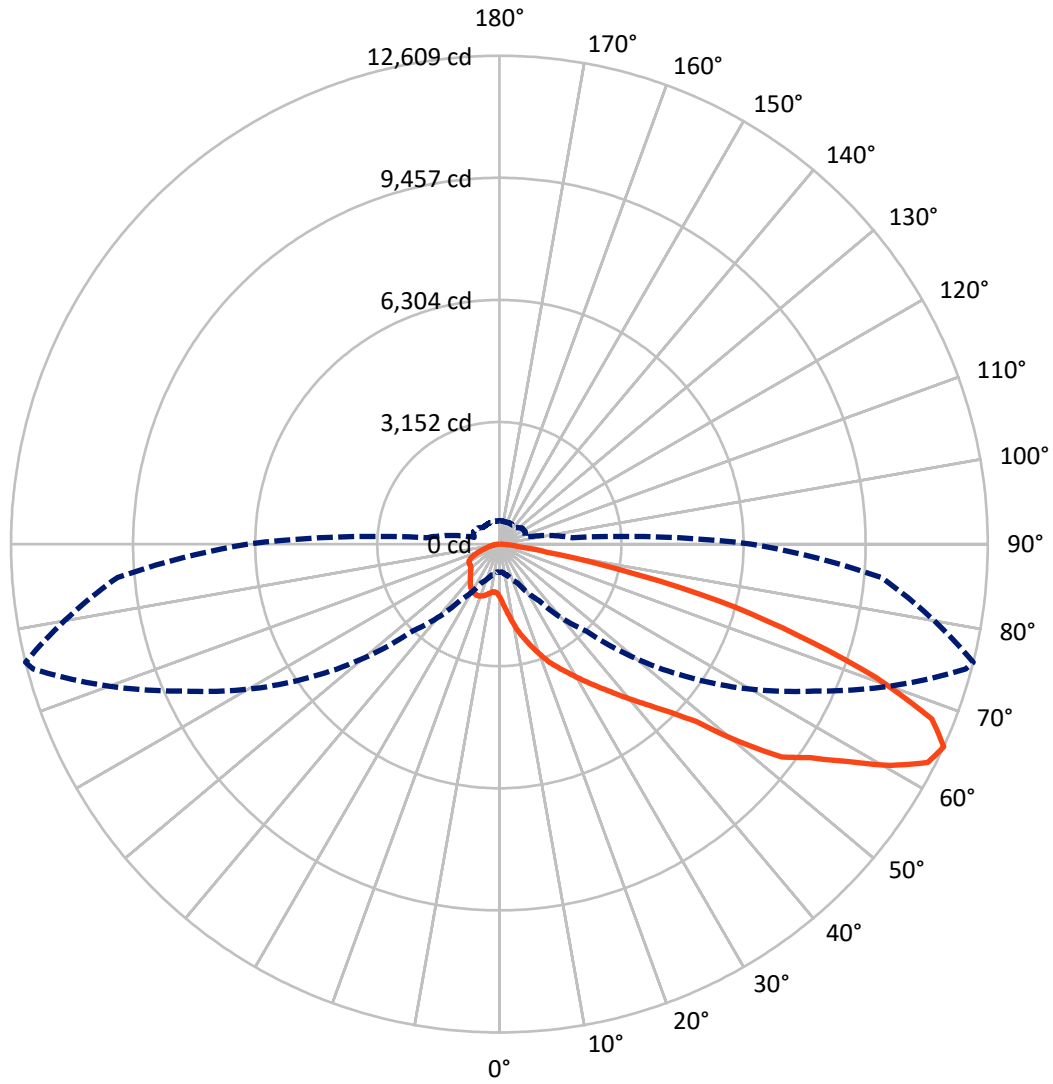
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.8 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	2404.1	0.0	2404.1
	% Fixture	16.7	0.0	16.7
<b>Street Side</b>	Lumens	11978.5	0.0	11978.5
	% Fixture	83.3	0.0	83.3
<b>Total</b>	Lumens	14382.6	0.0	14382.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.8	1.1
10°-20°	616.3	4.3
20°-30°	1201.1	8.4
30°-40°	2008.8	14.0
40°-50°	2876.2	20.0
50°-60°	3405.0	23.7
60°-70°	2831.3	19.7
70°-80°	1158.6	8.1
80°-90°	123.4	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°	14382.6	100.0
0°-180°	14382.6	100.0

**Coefficient of Utilization**



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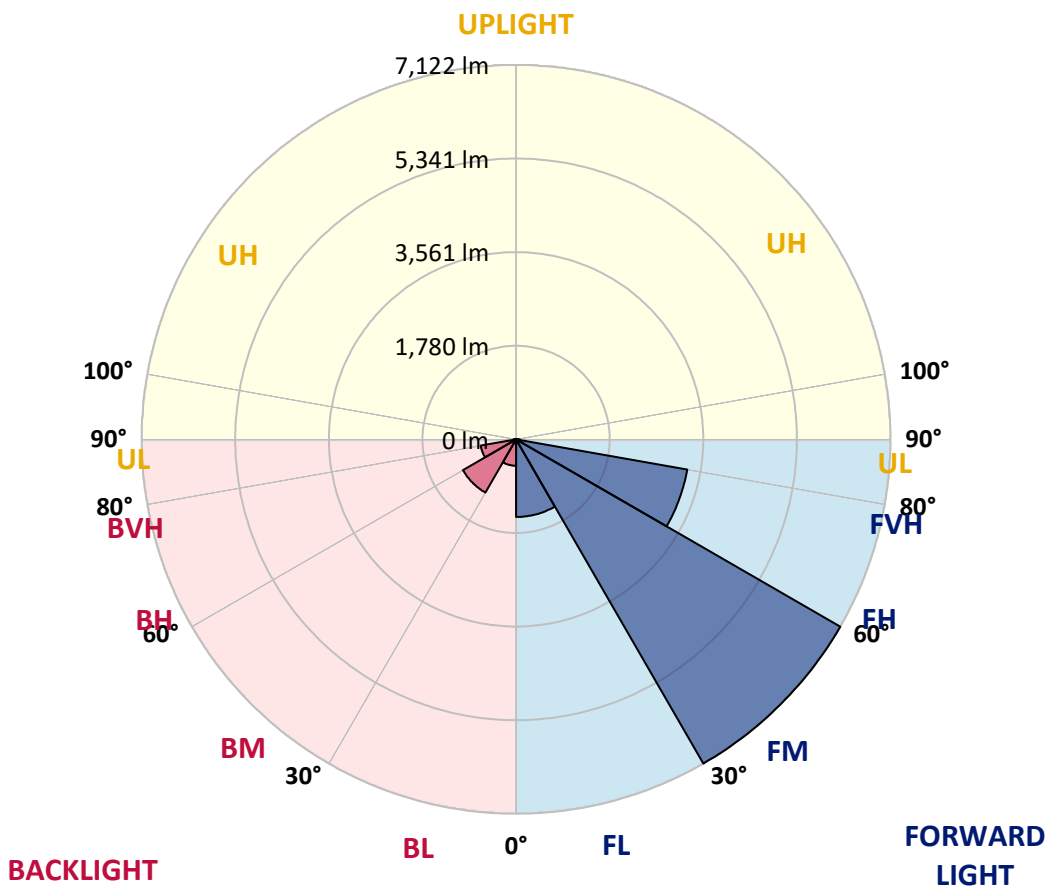
CATALOG NUMBER: GWS-SA5B-830-U-T2R-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1476.3	10.3			
FM (30°-60°)	7121.7	49.5			
FH (60°-80°)	3306.9	23.0			G2/5000
FVH (80°-90°)	73.6	0.5			G1/100
BL (0°-30°)	502.9	3.5	B2/1000		
BM (30°-60°)	1168.3	8.1	B2/2500		
BH (60°-80°)	683.0	4.7	B2/1000		G2/1000
BVH (80°-90°)	49.8	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0
2.5°	1909.0	1916.1	1892.8	1884.7	1830.1	1756.3	1694.6	1601.6	1515.7	1502.5	1425.7
5°	2424.7	2394.3	2368.0	2350.9	2275.0	2191.1	2060.7	1885.7	1702.7	1680.5	1514.7
7.5°	2731.0	2726.0	2693.6	2683.5	2624.9	2540.9	2406.5	2189.1	1923.2	1886.8	1635.0
10°	2976.7	2973.7	2957.5	2966.6	2913.0	2831.1	2700.7	2476.2	2164.8	2128.4	1769.5
12.5°	3191.1	3196.2	3193.1	3226.5	3199.2	3135.5	3000.0	2753.3	2406.5	2367.0	1933.3
15°	3347.8	3351.9	3367.0	3439.8	3455.0	3441.9	3304.3	3025.3	2645.1	2588.5	2102.1
17.5°	3392.3	3400.4	3436.8	3554.1	3636.0	3690.6	3588.5	3302.3	2879.7	2818.0	2274.0
20°	3452.0	3461.1	3497.5	3619.8	3740.1	3864.5	3846.3	3583.4	3116.3	3065.7	2447.9
22.5°	3728.0	3720.9	3704.7	3763.4	3849.3	4004.0	4049.5	3853.4	3361.0	3312.4	2640.0
25°	4259.8	4246.7	4143.6	4090.0	4061.7	4155.7	4236.6	4099.1	3599.6	3526.8	2819.0
27.5°	4846.3	4839.2	4707.8	4580.4	4406.5	4366.0	4413.5	4313.4	3831.1	3757.3	2974.7
30°	5401.4	5380.2	5242.7	5082.9	4850.3	4676.4	4606.7	4523.8	4084.9	4008.1	3156.7
32.5°	5897.9	5870.6	5708.8	5531.8	5288.2	5082.9	4874.6	4747.2	4372.1	4283.1	3342.8
35°	6305.3	6278.0	6112.2	5924.2	5656.2	5504.5	5219.4	4989.9	4664.3	4574.3	3562.2
37.5°	6620.8	6595.5	6422.6	6237.6	6004.0	5883.7	5636.0	5262.9	5001.0	4907.0	3794.7
40°	6797.8	6779.6	6641.0	6494.4	6298.3	6194.1	6082.9	5607.7	5378.1	5284.1	4068.7
42.5°	6851.4	6839.2	6742.2	6666.3	6533.9	6455.0	6518.7	6013.1	5780.6	5698.7	4377.1
45°	6716.9	6716.9	6688.6	6727.0	6733.1	6732.0	6955.5	6471.2	6275.0	6185.0	4811.9
47.5°	6373.1	6395.3	6436.8	6625.9	6825.1	6991.9	7466.1	7081.9	6911.0	6837.2	5427.7
50°	5744.2	5804.8	5946.4	6315.5	6739.1	7163.8	7949.4	7984.8	8147.6	8017.2	6333.7
52.5°	4823.0	4813.9	5174.9	5700.7	6346.8	7170.9	8215.4	8781.6	9219.4	9129.4	7007.1
55°	3833.2	3818.0	4154.7	4879.7	5745.2	6899.9	8375.1	9146.6	9813.9	9733.0	7612.7
57.5°	2935.3	2916.1	3215.4	3869.6	4895.8	6324.6	8344.8	9581.4	10631.9	10590.5	8435.8
60°	2020.2	1997.0	2277.0	2849.3	3890.8	5444.9	8009.1	9804.8	11589.5	11603.6	9316.5
62.5°	1213.3	1200.2	1403.4	1847.3	2798.8	4354.9	7223.4	9669.3	12351.8	12415.5	9882.7
65°	732.1	723.0	842.3	1102.1	1775.5	3178.0	6012.1	8976.7	12462.1	12608.7	9895.8
67.5°	532.9	533.9	568.2	671.4	1035.4	2052.6	4511.6	7735.1	11887.7	12039.4	9272.0
70°	463.1	465.1	483.3	506.6	625.9	1174.9	2933.3	6106.2	10190.1	10307.4	7776.5
72.5°	411.5	411.5	423.7	435.8	489.4	715.9	1571.3	4267.9	8042.5	8073.8	5935.3
75°	362.0	358.9	365.0	371.1	424.7	500.5	764.4	2973.7	5940.3	5867.5	3836.2
77.5°	288.2	285.1	286.1	292.2	340.7	357.9	387.3	1857.4	3347.8	3159.8	1694.6
80°	205.3	203.2	214.4	229.5	251.8	219.4	242.7	898.9	1327.6	1235.6	657.2
82.5°	122.3	126.4	143.6	155.7	173.9	137.5	156.7	300.3	470.2	458.0	266.9
85°	17.2	18.2	51.6	59.7	74.8	53.6	82.9	135.5	188.1	201.2	94.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	7.1	24.3	53.6	54.6	23.3
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-SA5B-830-U-T2R-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0	1362.0
2.5°	1386.2	1338.7	1271.0	1214.4	1166.8	1128.4	1096.1	1071.8	1064.7	1054.6	1054.6
5°	1436.8	1350.9	1229.5	1143.6	1094.0	1064.7	1044.5	1034.4	1029.3	1023.3	1020.2
7.5°	1506.6	1386.2	1222.4	1135.5	1097.1	1078.9	1065.7	1059.7	1055.6	1049.5	1049.5
10°	1602.6	1438.8	1244.7	1163.8	1133.5	1115.3	1100.1	1090.0	1080.9	1071.8	1069.8
12.5°	1706.8	1507.6	1285.1	1202.2	1169.9	1147.6	1126.4	1111.2	1100.1	1089.0	1085.9
15°	1822.0	1578.4	1328.6	1239.6	1199.2	1168.9	1143.6	1120.3	1105.2	1089.0	1087.0
17.5°	1935.3	1650.1	1365.0	1264.9	1213.3	1175.9	1139.5	1109.2	1090.0	1071.8	1066.7
20°	2070.8	1721.9	1390.3	1272.0	1210.3	1160.8	1117.3	1078.9	1057.6	1036.4	1033.4
22.5°	2195.1	1788.7	1402.4	1261.9	1187.1	1128.4	1077.9	1036.4	1013.1	991.9	987.9
25°	2315.5	1847.3	1397.4	1237.6	1151.7	1083.9	1031.3	989.9	967.6	945.4	939.3
27.5°	2431.7	1886.8	1377.1	1200.2	1107.2	1034.4	983.8	946.4	927.2	908.0	899.9
30°	2546.0	1923.2	1345.8	1151.7	1050.6	982.8	941.4	915.1	895.9	875.6	869.6
32.5°	2661.3	1949.4	1298.3	1095.0	992.9	937.3	912.0	892.8	872.6	852.4	846.3
35°	2777.5	1960.6	1240.6	1030.3	944.4	908.0	898.9	876.6	849.3	825.1	817.0
37.5°	2916.1	1970.7	1168.9	966.6	901.9	893.8	891.8	858.4	826.1	792.7	783.6
40°	3082.9	1983.8	1095.0	909.0	867.5	888.8	880.7	835.2	770.5	738.1	728.0
42.5°	3287.2	2008.1	1018.2	856.4	842.3	869.6	860.5	778.6	735.1	716.9	711.8
45°	3587.5	2097.1	941.4	815.0	823.1	842.3	828.1	745.2	728.0	715.9	709.8
47.5°	4122.3	2233.6	874.6	783.6	807.9	818.0	763.4	736.1	723.0	706.8	699.7
50°	4678.5	2293.2	821.0	764.4	790.7	795.8	728.0	724.0	714.9	697.7	690.6
52.5°	5054.6	2285.1	788.7	757.3	776.5	757.3	711.8	710.8	704.8	684.5	676.4
55°	5479.3	2299.3	774.5	759.4	770.5	692.6	691.6	694.6	691.6	669.4	665.3
57.5°	6052.6	2342.8	767.4	766.4	766.4	661.3	672.4	676.4	670.4	660.3	657.2
60°	6603.6	2345.8	754.3	774.5	763.4	642.1	650.2	654.2	647.1	645.1	644.1
62.5°	6810.9	2200.2	725.0	768.5	751.3	620.8	626.9	628.9	621.8	626.9	625.9
65°	6502.5	1890.8	676.4	739.1	713.9	601.6	597.6	602.6	590.5	603.6	604.6
67.5°	5773.5	1502.5	602.6	683.5	661.3	580.4	572.3	572.3	552.1	572.3	571.3
70°	4655.2	1061.7	494.4	594.5	603.6	555.1	551.1	527.8	495.4	525.8	522.7
72.5°	3528.8	762.4	389.3	470.2	519.7	519.7	520.7	481.3	443.9	458.0	445.9
75°	2235.6	536.9	311.4	360.0	407.5	456.0	479.3	406.5	373.1	367.0	361.0
77.5°	1007.1	352.9	242.7	276.0	289.2	360.0	437.8	349.8	304.3	291.2	287.2
80°	421.6	219.4	172.9	195.1	178.0	302.3	386.2	272.0	223.5	205.3	192.1
82.5°	185.0	130.4	110.2	105.2	111.2	224.5	288.2	181.0	139.5	189.1	191.1
85°	77.9	68.8	56.6	51.6	45.5	85.9	135.5	70.8	87.0	49.5	40.4
87.5°	18.2	20.2	15.2	10.1	6.1	1.0	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



Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
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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)