

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: P641457

Luminaire Tested: GWS-SA5F-830-U-T1-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641457  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-T1-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

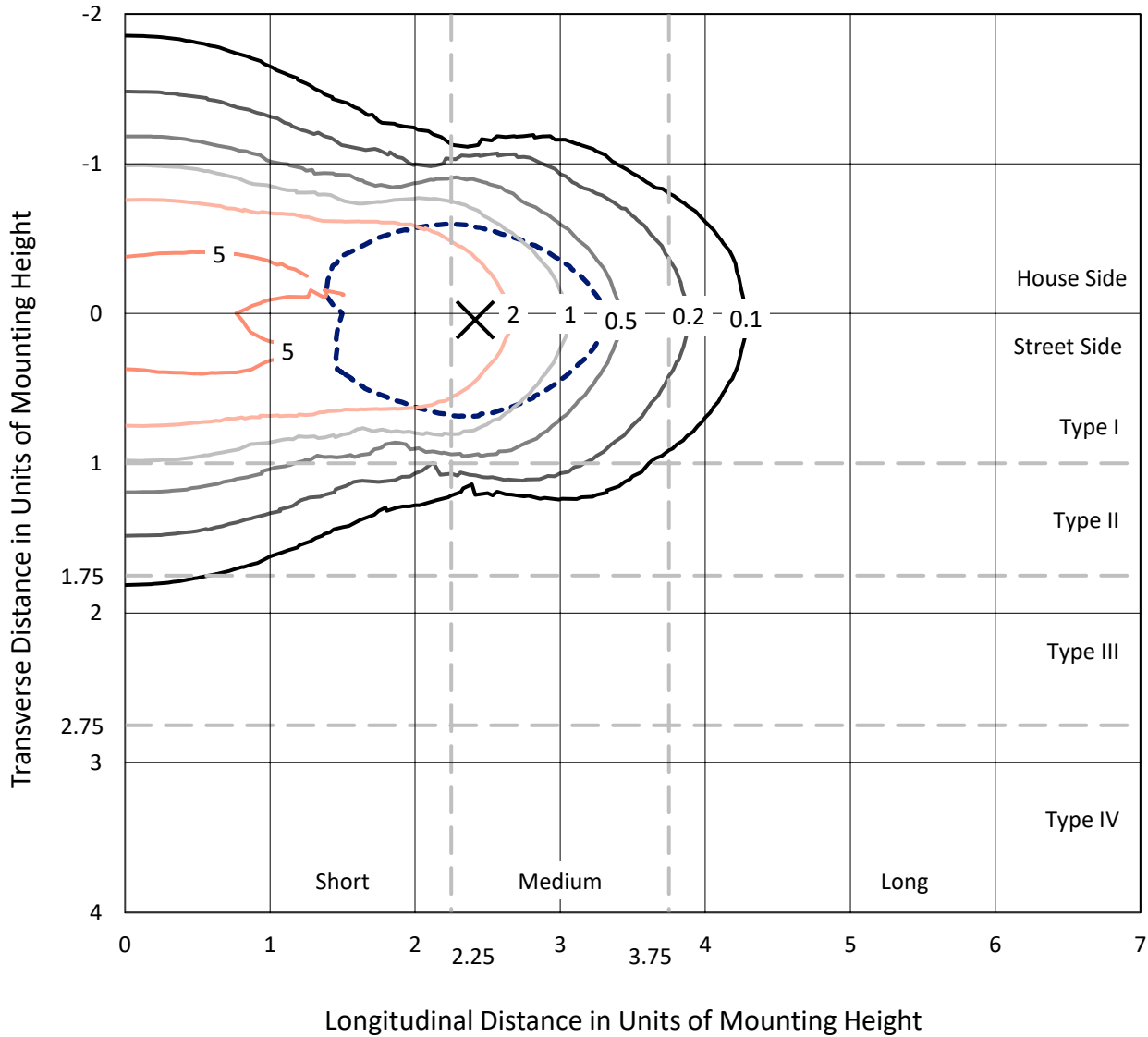
Lumens per Lamp: N/A  
Luminaire Lumens: 33095.9 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type I - Medium  
BUG Rating: B5 - U0 - G5  
  
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P641457  
 CATALOG NUMBER: GWS-SA5F-830-U-T1-W

### Iso-Footcandle Lines of Horizontal Illumination

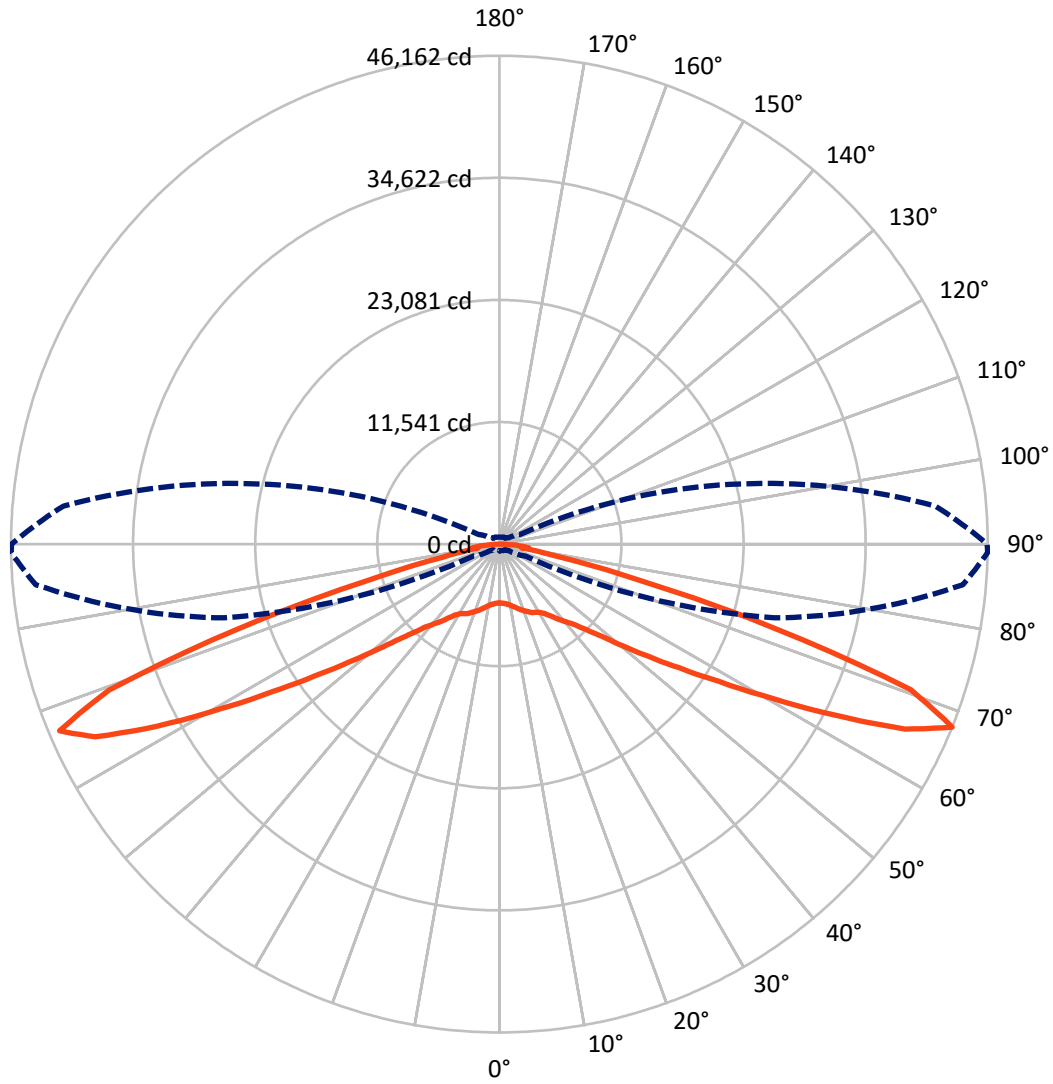
✕ Max cd  
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.7 fc  
 Type I - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	16402.9	0.0	16402.9
	% Fixture	49.6	0.0	49.6
<b>Street Side</b>	Lumens	16693.0	0.0	16693.0
	% Fixture	50.4	0.0	50.4
<b>Total</b>	Lumens	33095.9	0.0	33095.9
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	557.2	1.7
10°-20°	1814.3	5.5
20°-30°	3067.0	9.3
30°-40°	4209.1	12.7
40°-50°	5367.5	16.2
50°-60°	6734.4	20.3
60°-70°	8122.2	24.5
70°-80°	2938.4	8.9
80°-90°	285.8	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°	33095.9	100.0
0°-180°	33095.9	100.0

**Coefficient of Utilization**



REPORT NUMBER: P641457

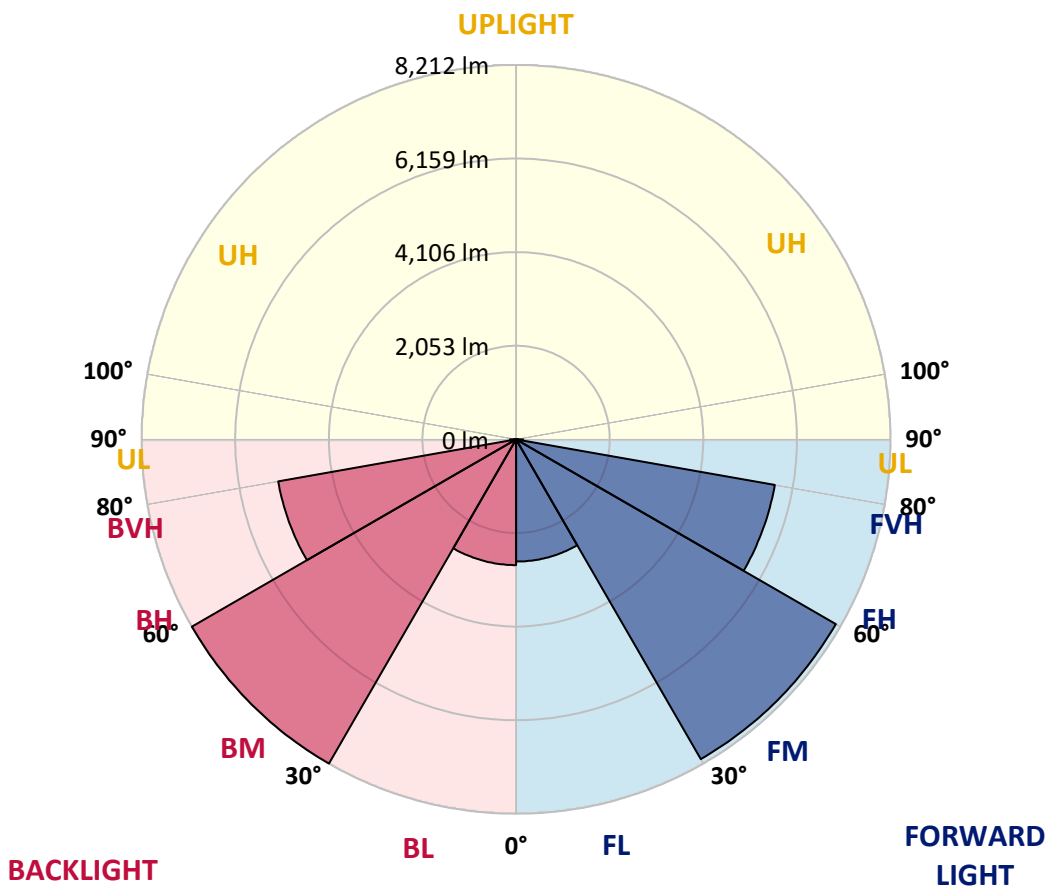
CATALOG NUMBER: GWS-SA5F-830-U-T1-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2680.5	8.1			
FM (30°-60°)	8099.2	24.5			
FH (60°-80°)	5762.5	17.4			G3/7500
FVH (80°-90°)	150.8	0.5			G2/225
BL (0°-30°)	2758.0	8.3	B4/5000		
BM (30°-60°)	8211.8	24.8	B4/8500		
BH (60°-80°)	5298.1	16.0	B5		G5
BVH (80°-90°)	135.0	0.4			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B5-U0-G5**

Type I Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°
0°	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9
2.5°	5571.5	5566.8	5554.9	5590.5	5583.4	5585.8	5600.0	5590.5	5573.9	5545.4	5585.8
5°	5728.4	5726.0	5699.9	5721.3	5697.5	5680.9	5678.5	5654.7	5635.7	5604.8	5647.6
7.5°	5880.5	5878.1	5856.8	5894.8	5875.8	5856.8	5835.4	5787.8	5742.7	5697.5	5745.0
10°	5997.0	5994.6	5989.9	6044.5	6049.3	6056.4	6046.9	5966.1	5887.7	5833.0	5880.5
12.5°	6063.5	6070.7	6082.6	6182.4	6232.3	6279.8	6291.7	6225.2	6094.4	6016.0	6073.1
15°	6018.4	6032.6	6092.1	6272.7	6410.6	6517.5	6562.7	6508.0	6339.3	6208.5	6272.7
17.5°	5802.1	5814.0	5930.4	6206.2	6510.4	6757.6	6831.3	6798.0	6610.2	6451.0	6512.8
20°	5502.6	5528.7	5654.7	6039.8	6493.8	6924.0	7121.3	7109.4	6905.0	6660.2	6733.8
22.5°	5231.6	5262.5	5395.6	5821.1	6382.1	6966.8	7413.6	7444.5	7173.6	6869.3	6928.7
25°	4927.4	4955.9	5127.0	5562.0	6189.5	6933.5	7663.2	7803.5	7477.8	7109.4	7164.1
27.5°	4616.0	4637.4	4806.1	5269.6	5937.6	6871.7	7860.5	8198.0	7777.3	7275.8	7313.8
30°	4342.6	4371.2	4525.7	4977.3	5661.8	6748.1	8022.1	8618.7	8122.0	7463.6	7494.5
32.5°	4078.8	4102.6	4271.3	4689.7	5369.5	6557.9	8167.1	9113.1	8633.0	7813.0	7813.0
35°	3746.0	3788.8	3979.0	4414.0	5093.8	6306.0	8271.7	9688.4	9331.8	8328.8	8331.1
37.5°	3439.4	3463.2	3662.8	4102.6	4803.8	6020.8	8281.2	10285.0	10216.0	8984.8	8989.5
40°	3090.0	3120.9	3334.8	3769.8	4471.0	5721.3	8190.9	10841.2	11143.0	9659.8	9633.7
42.5°	2735.8	2781.0	2985.4	3410.9	4112.1	5355.2	7950.8	11371.2	12319.6	10441.8	10377.7
45°	2393.6	2422.1	2626.5	3028.2	3700.9	4917.9	7565.8	11879.9	13717.3	11630.3	11537.6
47.5°	2008.5	2020.4	2231.9	2617.0	3275.4	4430.6	7014.3	12333.9	15252.7	13203.8	13044.6
50°	1666.2	1682.9	1849.2	2179.6	2754.9	3853.0	6327.4	12600.1	17209.0	15350.2	15074.5
52.5°	1347.7	1364.4	1497.5	1761.3	2277.1	3194.6	5476.4	12538.3	19193.7	18014.7	17613.0
55°	1088.6	1100.5	1190.8	1397.6	1792.2	2540.9	4471.0	11984.5	21397.1	21494.6	20629.4
57.5°	919.9	924.6	986.4	1112.4	1400.0	1958.6	3451.3	10677.2	23707.5	25934.7	24513.3
60°	822.4	824.8	853.3	931.8	1105.3	1495.1	2529.1	8595.0	26101.0	31489.5	29540.5
62.5°	760.6	760.6	784.4	829.5	917.5	1150.4	1858.8	6172.9	27819.6	37534.1	35596.9
65°	701.2	701.2	717.8	755.9	803.4	938.9	1395.3	3981.4	28663.4	42587.4	42157.2
67.5°	625.1	627.5	639.4	679.8	722.6	784.4	1057.7	2693.1	26911.6	43985.0	46162.3
70°	553.8	556.2	572.8	599.0	634.6	677.4	827.2	1856.4	19588.3	36633.2	41275.4
72.5°	475.4	484.9	496.8	525.3	546.7	577.6	675.0	1202.7	11397.4	23564.9	27284.8
75°	389.8	401.7	416.0	444.5	458.7	470.6	556.2	858.1	5483.6	11941.7	13598.4
77.5°	301.9	313.8	330.4	356.5	366.0	380.3	425.5	620.4	2626.5	5293.4	5707.0
80°	202.0	206.8	221.1	252.0	268.6	278.1	313.8	423.1	1140.9	2125.0	2106.0
82.5°	123.6	126.0	130.7	149.7	156.9	166.4	204.4	259.1	544.3	2415.0	2769.1
85°	45.2	42.8	40.4	52.3	61.8	71.3	95.1	130.7	237.7	1659.1	1856.4
87.5°	0.0	0.0	0.0	2.4	4.8	4.8	9.5	19.0	57.0	620.4	425.5
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: P641457  
 CATALOG NUMBER: GWS-SA5F-830-U-T1-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9	5554.9
2.5°	5573.9	5547.7	5581.0	5604.8	5657.1	5676.1	5680.9	5664.2	5664.2	5635.7	5640.4
5°	5638.1	5621.4	5676.1	5716.5	5792.6	5821.1	5840.1	5828.2	5835.4	5816.3	5821.1
7.5°	5735.5	5721.3	5816.3	5894.8	5973.2	6006.5	6023.1	6013.6	6016.0	5992.2	5999.4
10°	5871.0	5875.8	5989.9	6092.1	6196.7	6229.9	6237.1	6208.5	6184.8	6142.0	6144.4
12.5°	6056.4	6080.2	6241.8	6355.9	6462.9	6510.4	6458.1	6353.5	6256.1	6182.4	6172.9
15°	6258.5	6301.2	6534.2	6679.2	6795.6	6771.9	6617.4	6382.1	6189.5	6080.2	6058.8
17.5°	6500.9	6565.1	6857.4	7031.0	7130.8	6978.7	6655.4	6303.6	6035.0	5887.7	5859.1
20°	6729.1	6831.3	7199.7	7425.5	7437.4	7095.1	6638.8	6144.4	5806.8	5626.2	5588.2
22.5°	6938.3	7069.0	7558.6	7846.2	7691.7	7147.4	6536.6	5918.6	5531.1	5319.6	5286.3
25°	7166.4	7351.8	7977.0	8245.6	7946.1	7126.0	6322.6	5638.1	5198.3	4982.0	4958.3
27.5°	7323.3	7556.3	8397.7	8654.4	8155.2	7004.8	6046.9	5331.4	4894.1	4689.7	4656.4
30°	7504.0	7801.1	8861.2	9098.9	8283.6	6826.5	5752.2	5046.2	4611.2	4390.2	4366.4
32.5°	7832.0	8205.2	9436.4	9569.5	8324.0	6605.5	5469.3	4770.5	4316.5	4095.4	4062.2
35°	8359.7	8797.0	10244.6	10094.8	8293.1	6363.0	5200.7	4447.2	4014.6	3807.8	3774.6
37.5°	9025.2	9569.5	11145.4	10567.8	8207.5	6096.8	4882.2	4176.3	3743.7	3534.5	3515.5
40°	9645.6	10315.9	12155.6	10976.7	8034.0	5768.8	4575.6	3893.4	3451.3	3230.2	3187.5
42.5°	10422.8	11314.2	13325.1	11330.8	7748.8	5376.6	4230.9	3544.0	3085.3	2885.6	2833.3
45°	11604.2	12711.8	14684.7	11670.7	7323.3	4894.1	3798.3	3118.5	2683.6	2479.1	2438.7
47.5°	13077.9	14458.9	16158.4	11872.8	6676.8	4385.4	3308.7	2669.3	2234.3	2003.8	1984.7
50°	15148.2	16999.8	17739.0	11837.1	5954.2	3781.7	2757.2	2134.5	1770.8	1604.4	1578.3
52.5°	17670.1	20189.6	19448.0	11409.3	5186.5	3094.8	2148.7	1675.7	1404.8	1285.9	1264.5
55°	20833.8	24009.3	21247.4	10491.8	4216.7	2369.8	1687.6	1321.6	1136.2	1064.9	1055.4
57.5°	24750.9	28955.7	22980.1	8946.8	3170.8	1808.8	1300.2	1091.0	1003.1	960.3	957.9
60°	29920.8	34206.4	24484.7	6952.5	2270.0	1383.4	1074.4	974.5	905.6	877.1	874.7
62.5°	36067.5	38974.5	25421.2	4734.8	1706.6	1102.9	946.0	884.2	843.8	827.2	824.8
65°	42385.4	41988.4	24974.4	3101.9	1295.4	936.5	848.6	815.3	779.6	763.0	763.0
67.5°	46117.2	41351.4	21544.5	2153.5	1026.8	822.4	765.4	734.5	675.0	660.8	660.8
70°	40847.5	33507.6	14121.3	1575.9	831.9	720.2	665.5	622.8	599.0	584.7	582.3
72.5°	27016.2	21803.6	7508.7	1093.4	694.1	613.2	563.3	546.7	518.2	503.9	501.5
75°	13446.3	11452.0	3848.2	789.1	577.6	492.0	470.6	463.5	439.7	420.7	416.0
77.5°	5604.8	5098.5	1794.6	572.8	439.7	396.9	377.9	377.9	351.8	330.4	320.9
80°	2113.1	1882.5	848.6	392.2	325.6	294.7	282.9	273.3	252.0	225.8	211.5
82.5°	2826.2	1846.9	416.0	244.8	213.9	190.2	173.5	166.4	154.5	142.6	133.1
85°	1830.2	1312.1	187.8	126.0	107.0	80.8	71.3	66.6	59.4	52.3	47.5
87.5°	373.2	439.7	57.0	23.8	14.3	7.1	7.1	2.4	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

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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**

$\lambda$ (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			

**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)