

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: P638966

Luminaire Tested: GWS-SA4F-830-U-SL2-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P638966  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-30)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4F-830-U-SL2-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

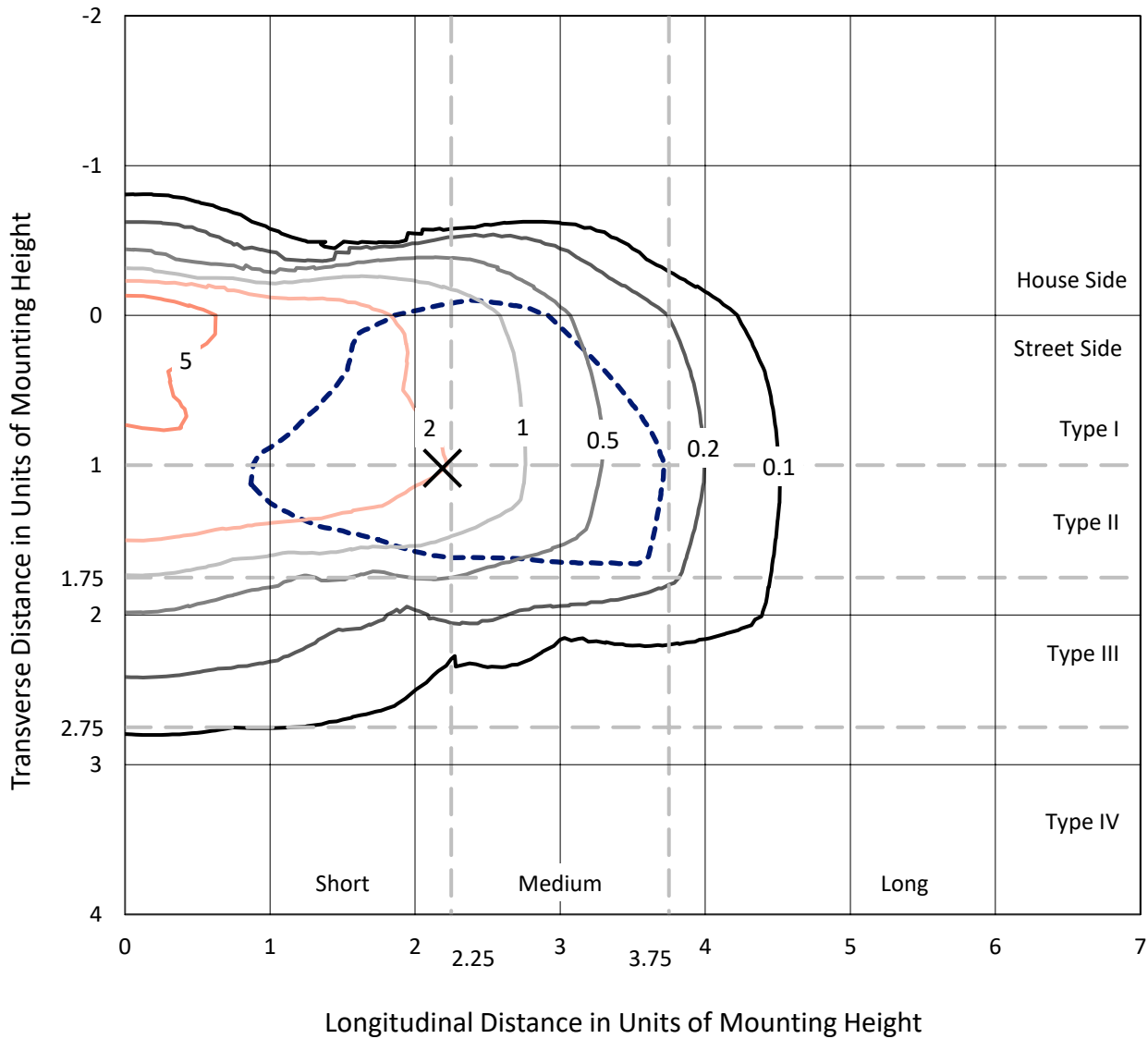
Lumens per Lamp: N/A  
Luminaire Lumens: 21426.1 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 225.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P638966  
 CATALOG NUMBER: GWS-SA4F-830-U-SL2-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

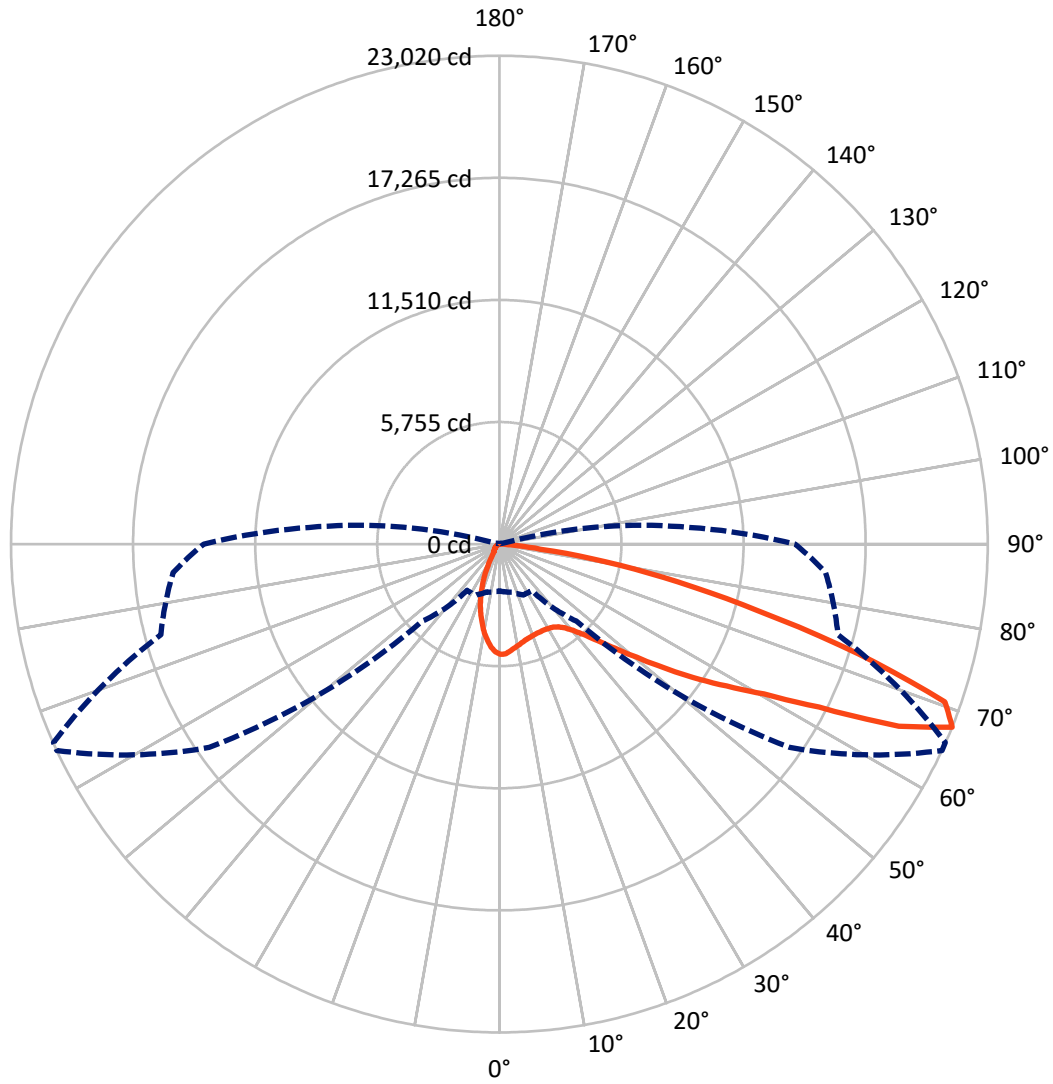
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.3 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2675.5	0.0	2675.5
	% Fixture	12.5	0.0	12.5
<b>Street Side</b>	Lumens	18750.6	0.0	18750.6
	% Fixture	87.5	0.0	87.5
<b>Total</b>	Lumens	21426.1	0.0	21426.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	431.6	2.0
10°-20°	970.2	4.5
20°-30°	1386.4	6.5
30°-40°	2017.0	9.4
40°-50°	3158.9	14.7
50°-60°	4928.1	23.0
60°-70°	5413.2	25.3
70°-80°	2880.9	13.4
80°-90°	239.9	1.1
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°	21426.1	100.0
0°-180°	21426.1	100.0

**Coefficient of Utilization**



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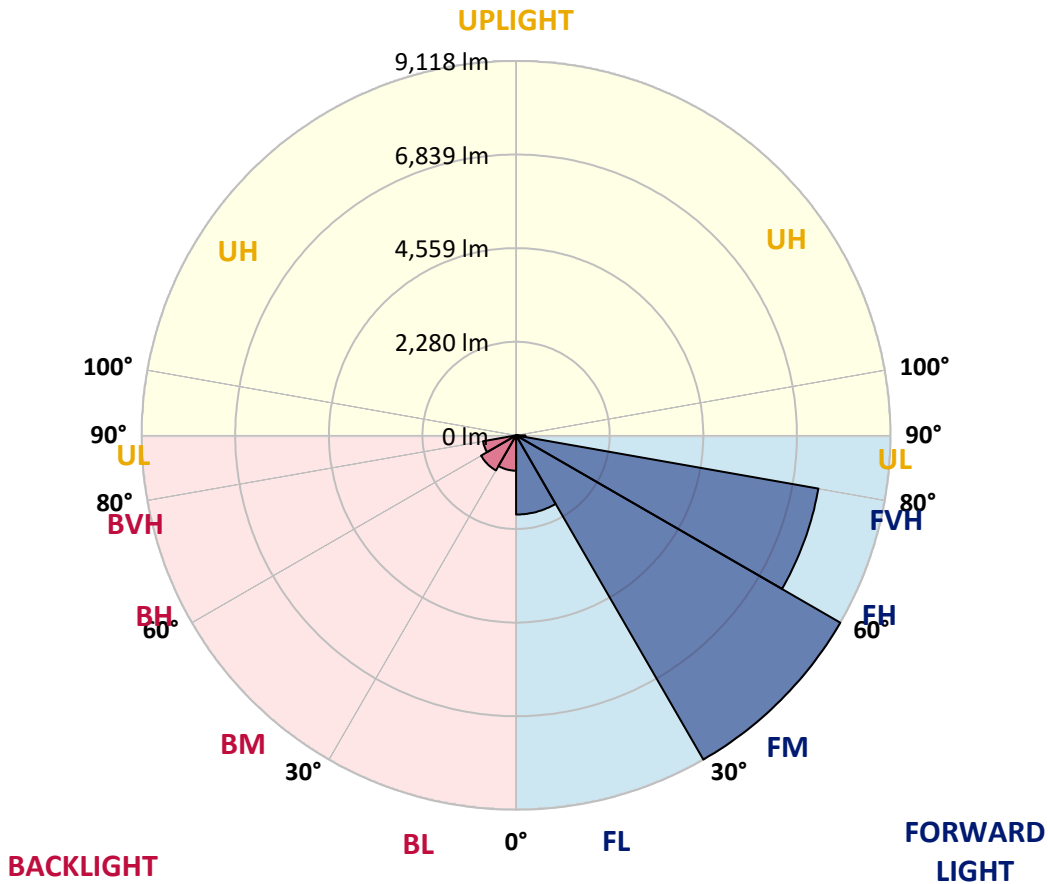
CATALOG NUMBER: GWS-SA4F-830-U-SL2-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1928.2	9.0			
FM (30°-60°)	9118.5	42.6			
FH (60°-80°)	7476.9	34.9			G3/7500
FVH (80°-90°)	227.0	1.1			G3/500
BL (0°-30°)	860.0	4.0	B2/1000		
BM (30°-60°)	985.5	4.6	B1/1000		
BH (60°-80°)	817.2	3.8	B2/1000		G2/1000
BVH (80°-90°)	12.8	0.1			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type II Short





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CATALOG NUMBER: GWS-SA4F-830-U-SL2-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5
2.5°	5016.3	5031.8	5010.5	5062.8	5072.5	5130.6	5163.6	5186.8	5184.9	5213.9	5213.9
5°	4721.8	4737.3	4725.7	4781.9	4826.4	4917.5	4993.1	5080.3	5084.1	5173.3	5206.2
7.5°	4471.9	4473.8	4473.8	4543.6	4601.7	4714.1	4826.4	4960.1	4975.6	5113.2	5200.4
10°	4266.5	4272.3	4274.2	4353.7	4417.6	4553.2	4696.6	4857.4	4874.9	5060.9	5196.5
12.5°	4125.0	4127.0	4134.7	4218.0	4287.8	4429.2	4574.6	4758.6	4781.9	5000.8	5179.1
15°	4057.2	4053.4	4057.2	4127.0	4196.7	4332.4	4481.5	4679.2	4704.4	4950.4	5181.0
17.5°	4053.4	4047.5	4043.7	4096.0	4140.5	4260.7	4411.8	4626.9	4654.0	4927.2	5202.3
20°	4109.5	4105.7	4086.3	4109.5	4119.2	4218.0	4367.2	4586.2	4613.3	4923.3	5248.8
22.5°	4256.8	4247.1	4218.0	4196.7	4144.4	4202.5	4336.2	4557.1	4588.1	4933.0	5308.9
25°	4475.7	4471.9	4435.0	4382.7	4249.0	4225.8	4338.2	4557.1	4586.2	4944.6	5372.8
27.5°	4805.1	4781.9	4735.4	4644.3	4452.5	4316.9	4376.9	4568.7	4597.8	4960.1	5425.1
30°	5140.3	5138.4	5122.9	5029.9	4745.1	4491.2	4458.3	4599.7	4626.9	4973.7	5473.6
32.5°	5487.1	5492.9	5531.7	5460.0	5148.1	4750.9	4605.6	4663.7	4683.1	5000.8	5516.2
35°	5816.5	5828.1	5930.8	5956.0	5638.3	5144.2	4845.8	4791.6	4793.5	5060.9	5572.4
37.5°	6132.3	6171.1	6335.8	6457.8	6248.6	5620.8	5192.6	5008.6	4993.1	5181.0	5657.6
40°	6490.8	6564.4	6771.7	6979.0	6913.2	6250.5	5665.4	5341.8	5308.9	5401.9	5810.7
42.5°	6888.0	6967.4	7242.6	7533.2	7564.2	7012.0	6256.3	5828.1	5772.0	5773.9	6097.5
45°	7314.2	7420.8	7740.5	8159.0	8347.0	7860.6	6984.9	6485.0	6428.8	6345.5	6558.6
47.5°	7874.2	7967.2	8275.3	8757.7	9118.1	8771.3	7940.1	7329.7	7227.1	7105.0	7275.5
50°	8356.6	8438.0	8703.5	9308.0	10057.8	9945.4	9023.2	8385.7	8286.9	8079.6	8221.0
52.5°	8463.2	8527.1	8771.3	9451.4	10776.6	11427.7	10350.4	9662.6	9592.8	9209.2	9263.4
55°	7984.6	8081.5	8300.5	9056.1	10964.6	12876.9	12072.9	11102.2	10956.8	10344.6	10441.4
57.5°	6775.6	6948.0	7153.4	8135.8	10455.0	13648.1	14479.3	12627.0	12495.2	11437.3	11439.3
60°	4965.9	5105.4	5243.0	6142.0	9246.0	13595.8	16662.9	14339.8	14099.5	12330.6	12297.6
62.5°	3611.6	3683.3	3681.3	4001.0	6349.3	12700.6	17809.9	16920.6	16360.7	13285.8	13097.8
65°	2840.4	2838.5	2921.8	3026.5	3545.7	9804.0	17951.4	20689.1	20084.6	14566.5	14175.1
67.5°	2210.7	2253.4	2336.7	2644.8	2664.1	5130.6	16707.5	23020.0	23008.4	16521.5	15436.4
70°	1705.0	1763.2	1881.4	2330.9	2460.7	2871.4	12501.1	22281.8	22469.7	17395.3	14543.2
72.5°	1094.7	1090.8	1265.2	1883.3	2363.8	2392.9	6913.2	17699.5	17912.6	15756.1	11759.0
75°	612.3	616.1	715.0	1152.8	2203.0	2251.4	3423.6	12621.2	12789.8	12284.1	9034.8
77.5°	240.3	248.0	335.2	606.5	1453.2	2011.2	2034.4	8606.6	8631.8	7612.6	5541.4
80°	96.9	102.7	170.5	375.9	885.5	1354.3	1453.2	5070.6	4967.9	2947.0	1612.0
82.5°	29.1	31.0	67.8	213.1	463.1	963.0	980.4	1945.3	1836.8	633.6	410.8
85°	1.9	1.9	15.5	65.9	164.7	242.2	653.0	633.6	561.9	158.9	182.1
87.5°	0.0	0.0	1.9	1.9	3.9	7.8	69.8	116.3	118.2	29.1	81.4
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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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5	5196.5
2.5°	5213.9	5144.2	5138.4	5084.1	5029.9	4962.1	4882.6	4824.5	4783.8	4712.1	4698.6
5°	5206.2	5113.2	5026.0	4871.0	4698.6	4512.5	4349.8	4198.7	4103.7	4039.8	4012.7
7.5°	5190.7	5072.5	4871.0	4578.4	4289.7	3964.2	3710.4	3477.9	3319.0	3226.0	3185.3
10°	5179.1	5020.2	4692.7	4249.0	3801.5	3352.0	2966.4	2621.5	2429.7	2278.6	2253.4
12.5°	5155.8	4944.6	4464.1	3863.5	3286.1	2689.3	2197.2	1774.8	1482.2	1350.5	1304.0
15°	5132.6	4865.2	4235.5	3456.6	2724.2	1987.9	1391.2	984.3	782.8	720.8	716.9
17.5°	5128.7	4793.5	3987.5	3071.0	2135.2	1302.0	792.5	637.5	594.8	579.3	579.3
20°	5140.3	4733.4	3743.3	2627.3	1555.9	792.5	591.0	552.2	527.0	513.5	513.5
22.5°	5151.9	4671.4	3508.9	2179.7	1032.7	579.3	521.2	488.3	459.2	443.7	435.9
25°	5159.7	4603.6	3249.3	1730.2	674.3	503.8	457.3	414.6	379.8	360.4	360.4
27.5°	5157.8	4522.2	2987.7	1290.4	523.1	447.6	391.4	346.8	311.9	290.6	292.6
30°	5142.3	4433.1	2716.4	901.0	457.3	391.4	335.2	288.7	253.8	236.4	234.4
32.5°	5130.6	4338.2	2402.6	633.6	410.8	342.9	284.8	240.3	211.2	197.6	195.7
35°	5117.1	4245.2	2104.2	482.4	370.1	296.4	240.3	203.4	180.2	168.6	168.6
37.5°	5120.9	4148.3	1780.6	414.6	329.4	257.7	205.4	174.4	155.0	143.4	141.4
40°	5181.0	4090.2	1462.8	375.9	292.6	222.8	178.3	151.1	131.8	120.1	118.2
42.5°	5330.2	4092.1	1158.7	346.8	259.6	189.9	155.0	129.8	112.4	98.8	96.9
45°	5628.6	4173.5	889.3	315.8	224.8	164.7	133.7	110.4	93.0	81.4	79.4
47.5°	6116.8	4415.7	674.3	288.7	195.7	143.4	114.3	93.0	77.5	67.8	65.9
50°	6893.8	4853.6	530.9	255.8	164.7	124.0	96.9	77.5	63.9	54.3	52.3
52.5°	7827.7	5510.4	455.3	226.7	141.4	108.5	83.3	63.9	52.3	44.6	42.6
55°	8901.1	6295.1	420.4	197.6	120.1	93.0	67.8	52.3	42.6	36.8	32.9
57.5°	9885.4	7002.3	418.5	168.6	102.7	79.4	56.2	44.6	36.8	29.1	27.1
60°	10844.5	7593.3	393.3	139.5	89.1	65.9	48.4	36.8	31.0	25.2	23.3
62.5°	11714.4	8073.8	329.4	112.4	75.6	54.3	40.7	32.9	27.1	21.3	21.3
65°	12807.2	8686.0	251.9	91.1	62.0	44.6	34.9	29.1	25.2	19.4	19.4
67.5°	13936.8	9009.6	180.2	75.6	50.4	38.8	31.0	27.1	21.3	17.4	17.4
70°	12623.1	7612.6	129.8	62.0	42.6	32.9	27.1	25.2	21.3	17.4	15.5
72.5°	9858.2	5489.1	96.9	48.4	36.8	31.0	25.2	23.3	19.4	15.5	15.5
75°	7310.4	3200.8	73.6	38.8	29.1	25.2	25.2	23.3	19.4	15.5	13.6
77.5°	3973.9	1116.0	56.2	31.0	23.3	19.4	21.3	21.3	17.4	13.6	11.6
80°	1052.1	306.1	38.8	23.3	19.4	15.5	15.5	19.4	15.5	11.6	11.6
82.5°	306.1	89.1	27.1	19.4	15.5	13.6	13.6	13.6	11.6	9.7	7.8
85°	149.2	32.9	19.4	15.5	13.6	11.6	9.7	9.7	7.8	5.8	5.8
87.5°	65.9	13.6	15.5	13.6	13.6	9.7	7.8	5.8	5.8	3.9	1.9
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

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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**

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			

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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)