

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: P640976

Luminaire Tested: GWS-SA5E-830-U-T3R-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P640976  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-17)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5E-830-U-T3R-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

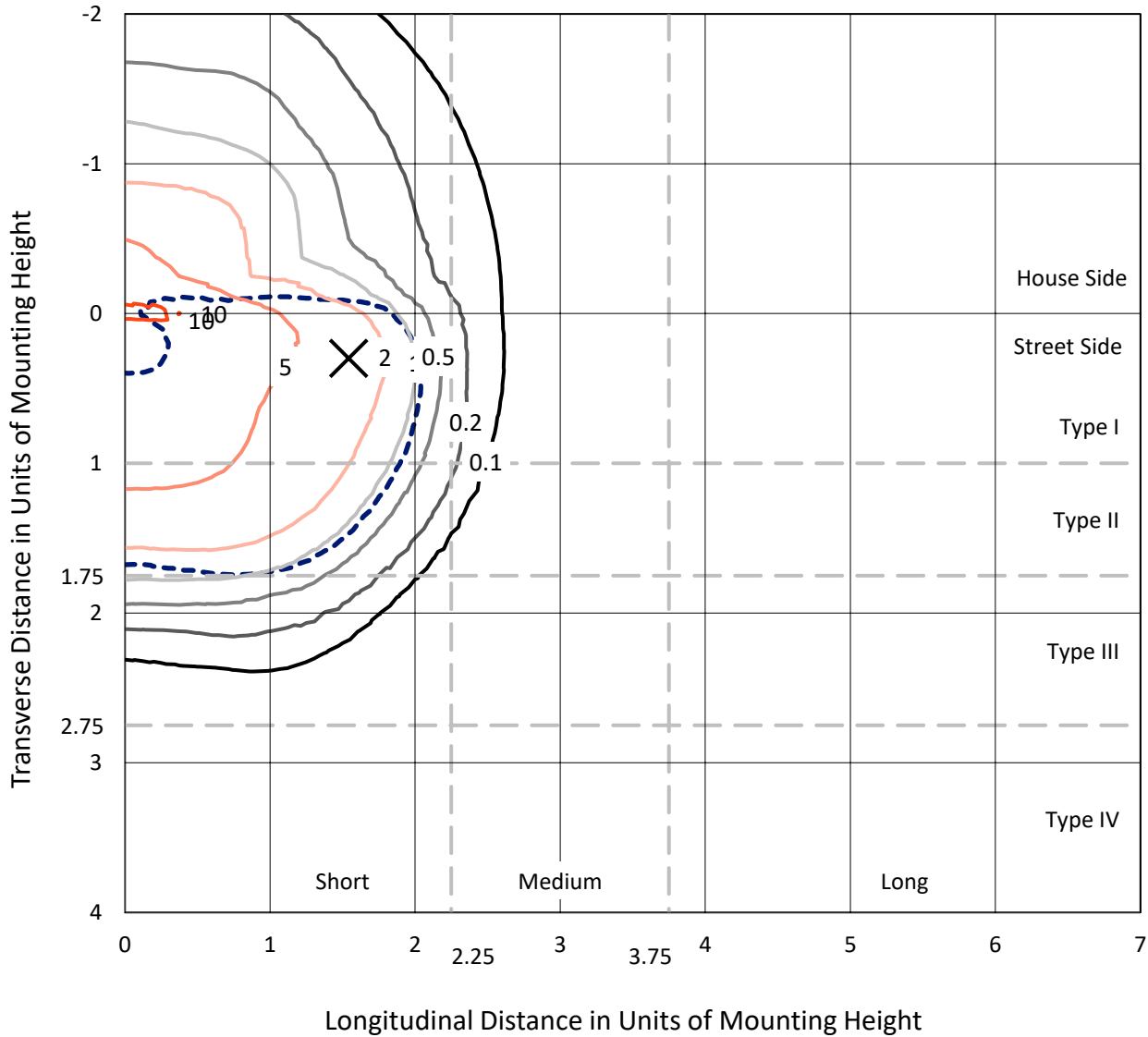
Lumens per Lamp: N/A  
Luminaire Lumens: 26145.8 lumens  
Efficiency: N/A  
Efficacy: 97.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 269.6  
Input Voltage (V): 120  
Input Current (Ain): 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-SA5E-830-U-T3R-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

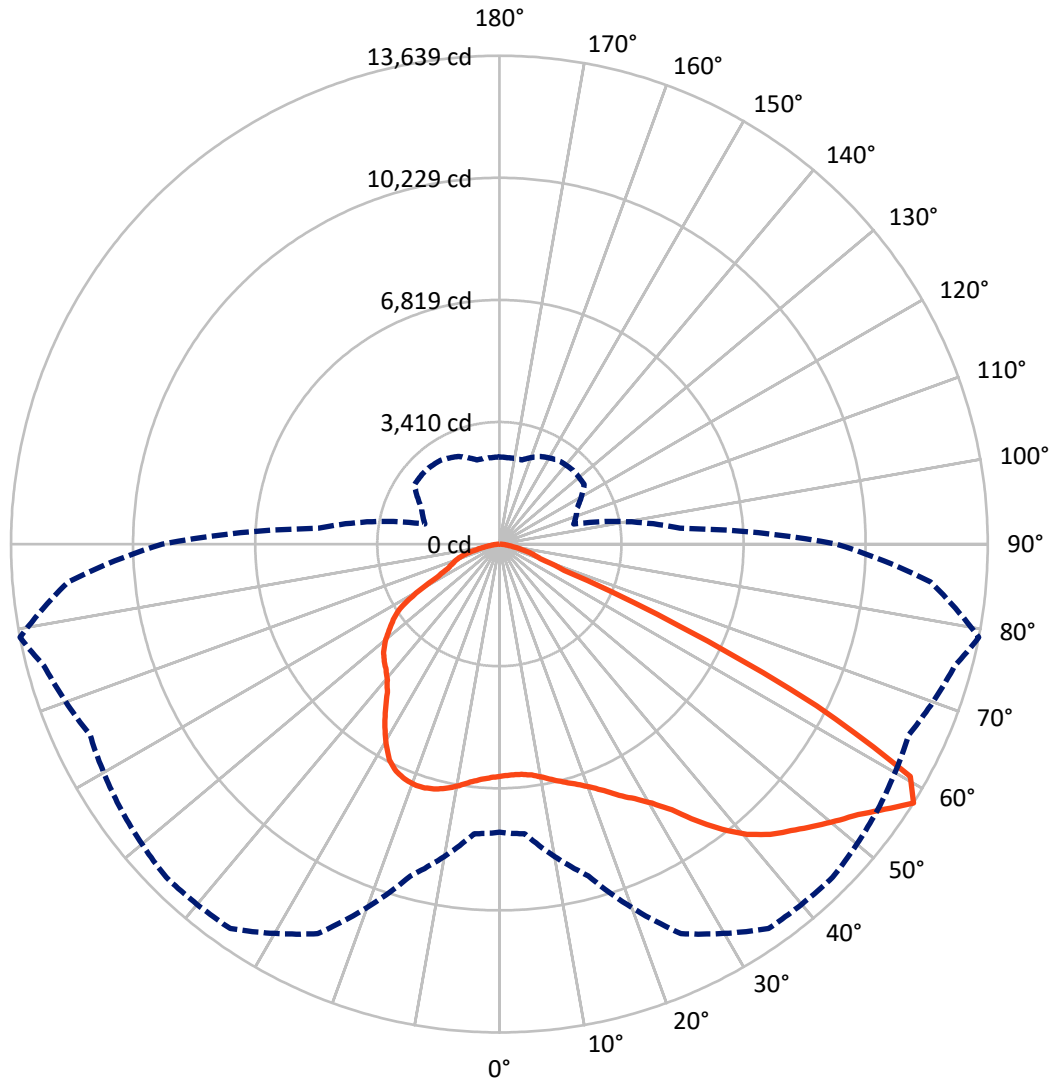
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.5 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	7771.9	0.0	7771.9
	% Fixture	29.7	0.0	29.7
<b>Street Side</b>	Lumens	18373.9	0.0	18373.9
	% Fixture	70.3	0.0	70.3
<b>Total</b>	Lumens	26145.8	0.0	26145.8
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	600.1	2.3
10°-20°	1667.6	6.4
20°-30°	2826.6	10.8
30°-40°	4326.5	16.5
40°-50°	5769.0	22.1
50°-60°	6662.7	25.5
60°-70°	3462.2	13.2
70°-80°	736.0	2.8
80°-90°	95.3	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°	26145.8	100.0
0°-180°	26145.8	100.0

**Coefficient of Utilization**



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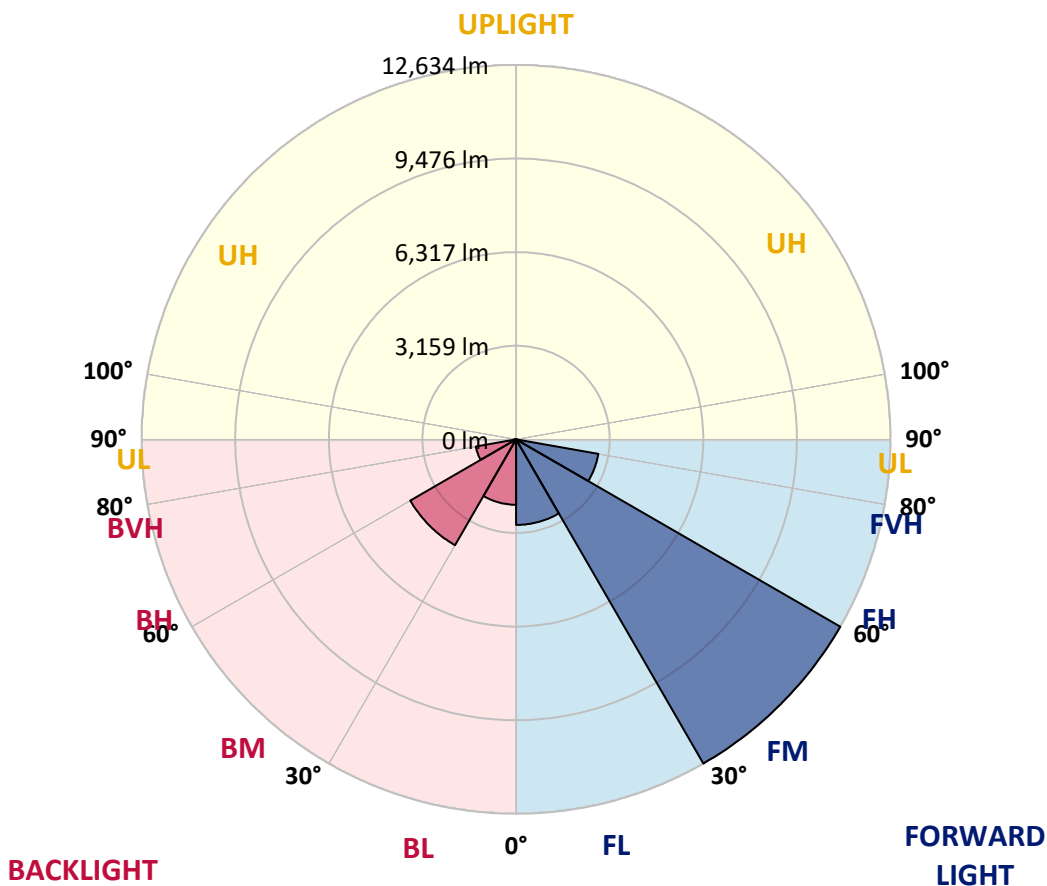
CATALOG NUMBER: GWS-SA5E-830-U-T3R-W-GRSWH

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2887.1	11.0			
FM (30°-60°)	12634.4	48.3			
FH (60°-80°)	2819.2	10.8			G2/5000
FVH (80°-90°)	33.2	0.1			G1/100
BL (0°-30°)	2207.1	8.4	B3/2500		
BM (30°-60°)	4123.7	15.8	B3/5000		
BH (60°-80°)	1379.0	5.3	B3/2500		G3/2500
BVH (80°-90°)	62.1	0.2			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5
2.5°	6184.5	6171.7	6176.0	6193.1	6257.2	6304.2	6353.4	6398.3	6441.1	6453.9	6464.6
5°	5964.3	5940.8	5947.2	5975.0	6049.8	6128.9	6216.6	6323.5	6426.1	6460.3	6505.2
7.5°	5808.3	5804.0	5814.7	5857.4	5936.5	6011.4	6124.7	6276.4	6453.9	6511.6	6590.7
10°	5600.9	5592.4	5635.1	5722.8	5853.2	5972.9	6107.6	6287.1	6535.1	6620.6	6742.5
12.5°	5436.3	5432.0	5476.9	5598.8	5765.5	5955.8	6141.8	6342.7	6644.1	6761.7	6911.4
15°	5532.5	5513.3	5515.4	5600.9	5750.6	5975.0	6227.3	6443.2	6753.2	6902.8	7095.2
17.5°	5812.6	5778.4	5752.7	5767.7	5853.2	6086.2	6357.7	6577.9	6879.3	7054.6	7289.7
20°	6199.5	6180.2	6109.7	6062.7	6081.9	6287.1	6562.9	6768.1	7043.9	7240.6	7492.8
22.5°	6719.0	6671.9	6575.7	6500.9	6443.2	6603.5	6857.9	7035.3	7272.6	7477.9	7740.8
25°	7362.4	7294.0	7142.2	7024.7	6900.7	7065.3	7291.9	7426.6	7586.9	7777.2	8027.3
27.5°	8018.7	7961.0	7792.1	7633.9	7480.0	7582.6	7852.0	7928.9	7911.8	8050.8	8264.6
30°	8717.8	8645.1	8484.7	8313.7	8114.9	8181.2	8422.8	8461.2	8279.5	8395.0	8540.3
32.5°	9455.3	9384.7	9245.8	9047.0	8822.5	8848.2	8914.4	8950.8	8777.6	8843.9	8955.1
35°	10205.6	10139.4	9998.3	9801.6	9637.0	9480.9	9314.2	9459.6	9359.1	9487.4	9478.8
37.5°	10891.9	10825.6	10737.9	10586.2	10304.0	9996.1	9611.3	9790.9	9947.0	10109.4	10081.6
40°	11355.8	11310.9	11332.2	11308.7	10945.3	10336.0	9756.7	9953.4	10378.8	10656.7	10641.7
42.5°	11755.5	11710.6	11834.6	11924.4	11496.8	10650.3	9827.3	10015.4	10654.6	11088.5	11067.2
45°	11932.9	11920.1	12125.3	12409.7	12001.4	10983.8	10009.0	10143.6	10864.1	11419.9	11338.6
47.5°	11721.3	11766.2	12170.2	12651.2	12420.4	11379.3	10380.9	10415.1	11137.7	11779.0	11550.3
50°	11300.2	11398.5	11943.6	12657.6	12726.1	11826.1	10896.1	10810.6	11505.4	12161.7	11661.5
52.5°	10686.6	10789.2	11678.6	12608.5	12901.3	12343.4	11582.4	11460.5	11969.3	12544.3	11680.7
55°	9277.9	9416.8	11071.4	12497.3	13072.4	12813.7	12356.2	12108.2	12567.9	13070.2	11871.0
57.5°	8048.6	8121.3	9592.1	12003.5	13106.6	13160.0	12907.8	12612.8	13162.2	13638.9	12084.7
60°	5906.6	5923.7	7247.0	9932.0	12056.9	12959.1	12862.9	12424.6	12880.0	13183.5	11105.6
62.5°	3337.0	3339.2	4395.2	6629.2	9006.4	10562.6	10622.5	10235.6	9852.9	9942.7	7730.1
65°	1252.7	1370.3	2007.4	3257.9	5192.6	6235.8	6483.8	6573.6	5936.5	5541.1	4145.1
67.5°	838.0	865.8	1171.5	1676.0	2310.9	2667.9	2984.3	2992.9	2189.1	1951.8	1633.2
70°	639.2	667.0	921.4	1199.3	1171.5	1081.7	1169.4	1137.3	1175.8	1207.8	1242.0
72.5°	476.7	504.5	714.0	846.6	703.3	692.6	784.6	872.2	953.4	987.6	1041.1
75°	316.4	337.8	481.0	453.2	389.1	459.6	572.9	660.6	707.6	748.2	788.8
77.5°	200.9	215.9	256.5	207.4	215.9	269.4	333.5	412.6	457.5	498.1	519.5
80°	91.9	89.8	87.6	98.3	121.9	158.2	200.9	248.0	282.2	299.3	312.1
82.5°	36.3	40.6	44.9	53.4	66.3	85.5	113.3	145.4	173.2	177.4	188.1
85°	15.0	17.1	19.2	23.5	29.9	38.5	47.0	66.3	83.4	89.8	96.2
87.5°	0.0	0.0	0.0	0.0	2.1	4.3	6.4	10.7	19.2	21.4	23.5
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: P640976

CATALOG NUMBER: GWS-SA5E-830-U-T3R-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5	6479.5
2.5°	6522.3	6494.5	6541.5	6573.6	6603.5	6571.5	6560.8	6533.0	6528.7	6528.7	6543.7
5°	6582.1	6562.9	6612.1	6631.3	6629.2	6558.6	6515.9	6460.3	6432.5	6432.5	6436.8
7.5°	6689.0	6678.3	6706.1	6676.2	6607.8	6464.6	6323.5	6205.9	6126.8	6086.2	6099.0
10°	6866.5	6853.6	6830.1	6719.0	6522.3	6225.1	5936.5	5722.8	5594.5	5521.8	5526.1
12.5°	7039.6	7018.2	6934.9	6689.0	6285.0	5812.6	5434.2	5194.7	5053.7	4968.1	4948.9
15°	7229.9	7174.3	6994.7	6535.1	5898.1	5308.0	4912.6	4653.9	4502.1	4450.8	4448.7
17.5°	7411.6	7313.3	6988.3	6261.5	5434.2	4780.0	4382.4	4222.1	4196.4	4219.9	4226.3
20°	7595.4	7437.2	6917.8	5883.1	4882.6	4254.1	4048.9	4115.2	4211.4	4275.5	4290.5
22.5°	7785.7	7539.9	6757.4	5395.7	4301.2	3899.3	3984.8	4130.1	4249.9	4335.4	4343.9
25°	7999.5	7636.1	6518.0	4799.3	3835.1	3800.9	3969.8	4123.7	4252.0	4350.3	4367.4
27.5°	8121.3	7638.2	6182.4	4185.7	3621.4	3762.4	3933.5	4078.8	4207.1	4314.0	4333.2
30°	8241.0	7580.5	5650.1	3687.6	3559.4	3717.6	3871.5	4006.2	4128.0	4232.8	4256.3
32.5°	8409.9	7527.0	5036.5	3401.2	3523.0	3674.8	3800.9	3920.6	4014.7	4061.7	4074.6
35°	8619.4	7458.6	4384.5	3277.2	3499.5	3640.6	3751.8	3815.9	3694.0	3668.4	3696.2
37.5°	8912.3	7394.5	3734.7	3223.7	3484.5	3627.8	3726.1	3561.5	3411.9	3352.0	3373.4
40°	9228.7	7358.2	3294.3	3181.0	3491.0	3640.6	3619.2	3375.5	3159.6	3033.5	3029.2
42.5°	9498.0	7302.6	3012.1	3153.2	3508.1	3689.8	3473.9	3210.9	2890.2	2815.4	2817.6
45°	9679.8	7161.5	2862.5	3123.3	3523.0	3700.5	3405.4	2984.3	2755.6	2708.5	2706.4
47.5°	9754.6	6904.9	2766.3	3076.2	3520.9	3612.8	3266.5	2890.2	2661.5	2648.7	2657.2
50°	9705.4	6483.8	2667.9	2984.3	3469.6	3520.9	3106.2	2806.9	2597.4	2667.9	2719.2
52.5°	9523.7	5938.7	2550.3	2858.2	3377.7	3416.1	3024.9	2755.6	2550.3	2644.4	2685.0
55°	9476.7	5496.2	2400.7	2693.6	3240.8	3230.1	2939.4	2729.9	2518.3	2481.9	2488.3
57.5°	9414.7	5064.3	2152.7	2398.6	2894.5	2911.6	2858.2	2700.0	2434.9	2424.2	2434.9
60°	8179.0	3882.2	1919.7	2069.3	2377.2	2469.1	2766.3	2644.4	2300.2	2255.3	2253.2
62.5°	5342.2	2351.5	1708.1	1804.3	1936.8	2043.7	2522.6	2484.1	2152.7	2124.9	2144.2
65°	2873.1	1676.0	1554.1	1611.9	1684.6	1765.8	2090.7	2212.6	1945.4	1847.0	1849.2
67.5°	1468.6	1425.9	1438.7	1479.3	1534.9	1575.5	1686.7	1793.6	1658.9	1575.5	1573.4
70°	1257.0	1291.2	1310.4	1334.0	1370.3	1363.9	1374.6	1393.8	1383.1	1342.5	1340.4
72.5°	1071.0	1124.5	1128.7	1133.0	1145.8	1115.9	1096.7	1064.6	1066.7	1073.2	1075.3
75°	814.5	865.8	878.6	872.2	885.0	846.6	820.9	788.8	750.4	743.9	748.2
77.5°	530.2	570.8	590.0	585.7	592.2	562.2	549.4	515.2	470.3	453.2	453.2
80°	320.7	344.2	359.1	363.4	369.8	348.5	327.1	297.1	277.9	258.7	258.7
82.5°	194.5	209.5	220.2	220.2	226.6	203.1	186.0	164.6	156.1	139.0	139.0
85°	98.3	109.0	113.3	111.2	106.9	87.6	81.2	70.5	66.3	57.7	57.7
87.5°	23.5	29.9	29.9	21.4	21.4	10.7	6.4	2.1	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**

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)