

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: P635531

Luminaire Tested: GWS-SA3D-830-U-T3R-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P635531  
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-SA3D-830-U-T3R-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

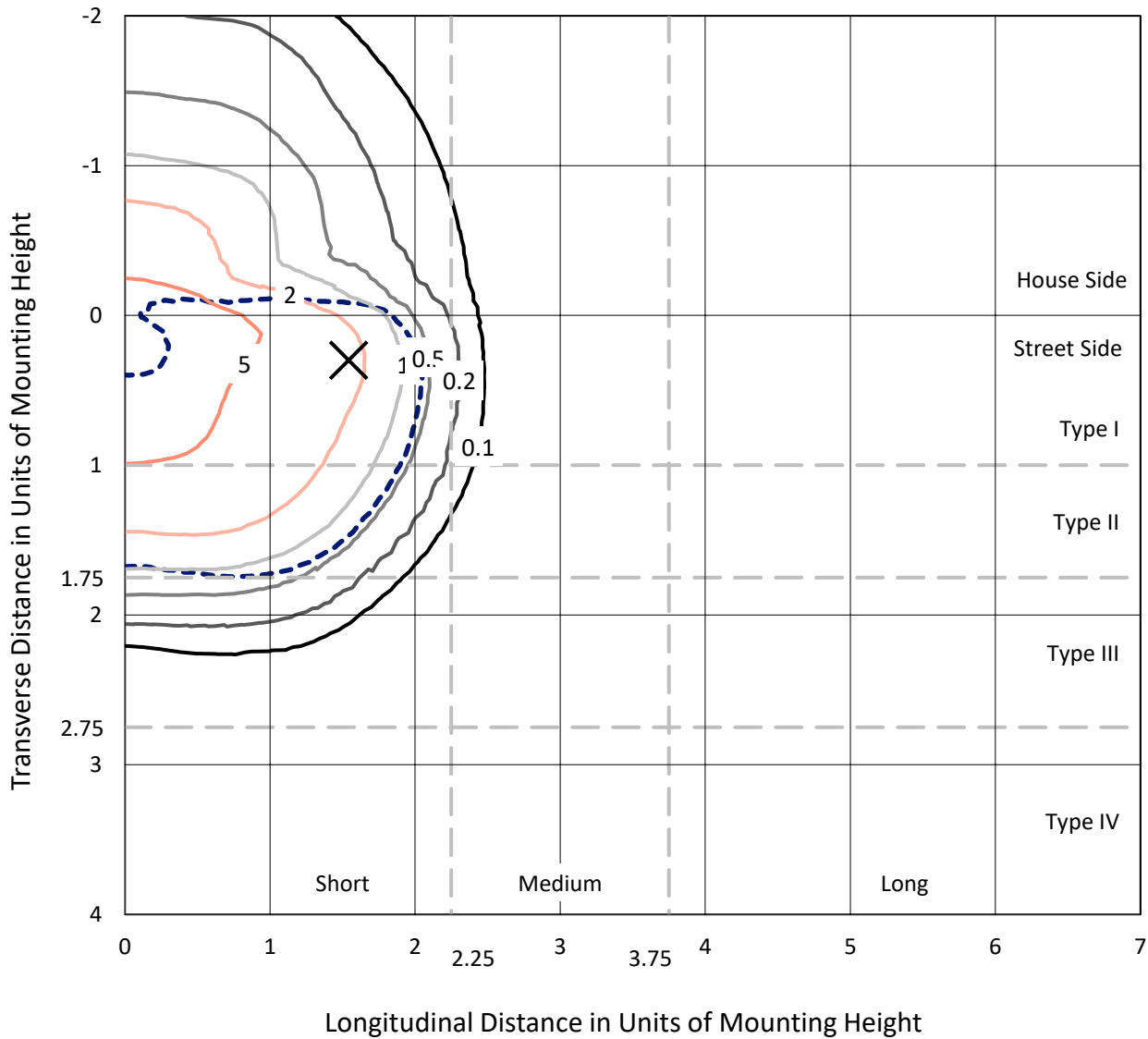
Lumens per Lamp: N/A  
Luminaire Lumens: 12256.5 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 120.8  
Input Voltage (V): 120  
Input Current (Ain): 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-SA3D-830-U-T3R-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

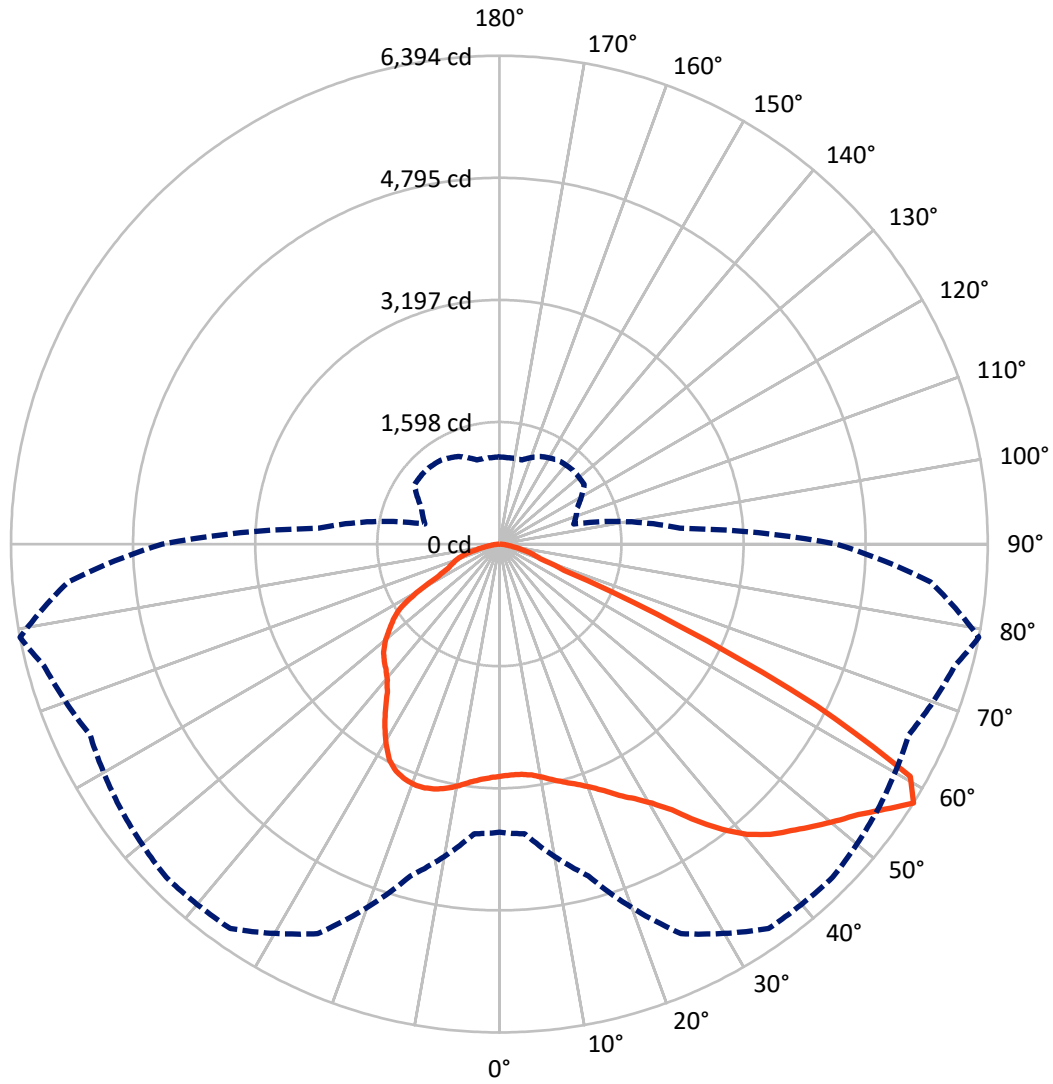
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.7 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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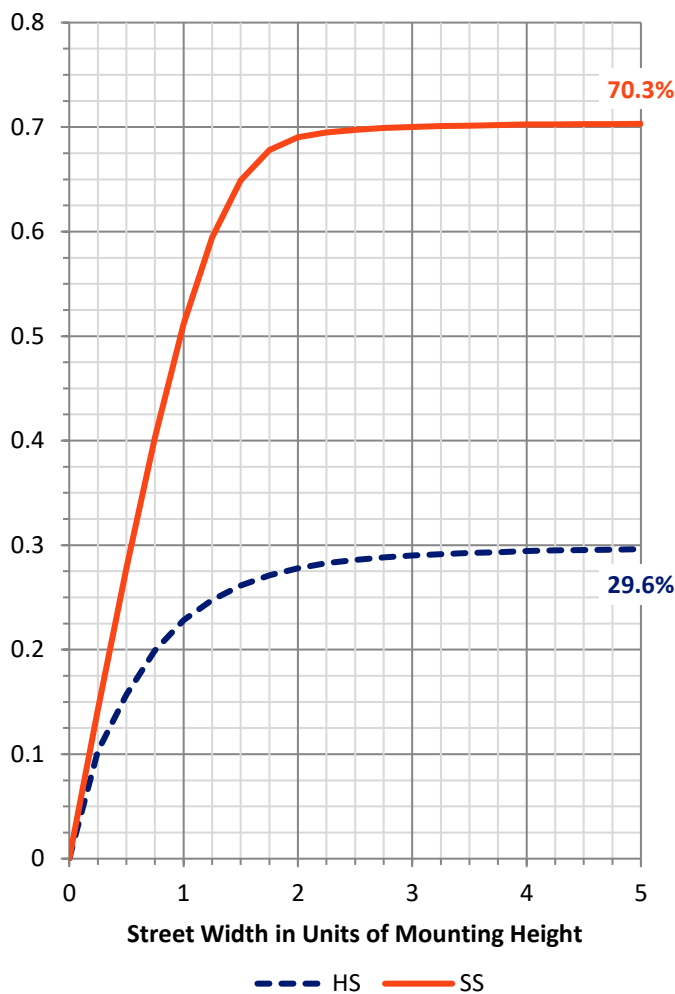
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3643.3	0.0	3643.3
	% Fixture	29.7	0.0	29.7
<b>Street Side</b>	Lumens	8613.2	0.0	8613.2
	% Fixture	70.3	0.0	70.3
<b>Total</b>	Lumens	12256.5	0.0	12256.5
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	281.3	2.3
10°-20°	781.7	6.4
20°-30°	1325.0	10.8
30°-40°	2028.1	16.5
40°-50°	2704.3	22.1
50°-60°	3123.3	25.5
60°-70°	1623.0	13.2
70°-80°	345.0	2.8
80°-90°	44.7	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°	12256.5	100.0
0°-180°	12256.5	100.0

**Coefficient of Utilization**



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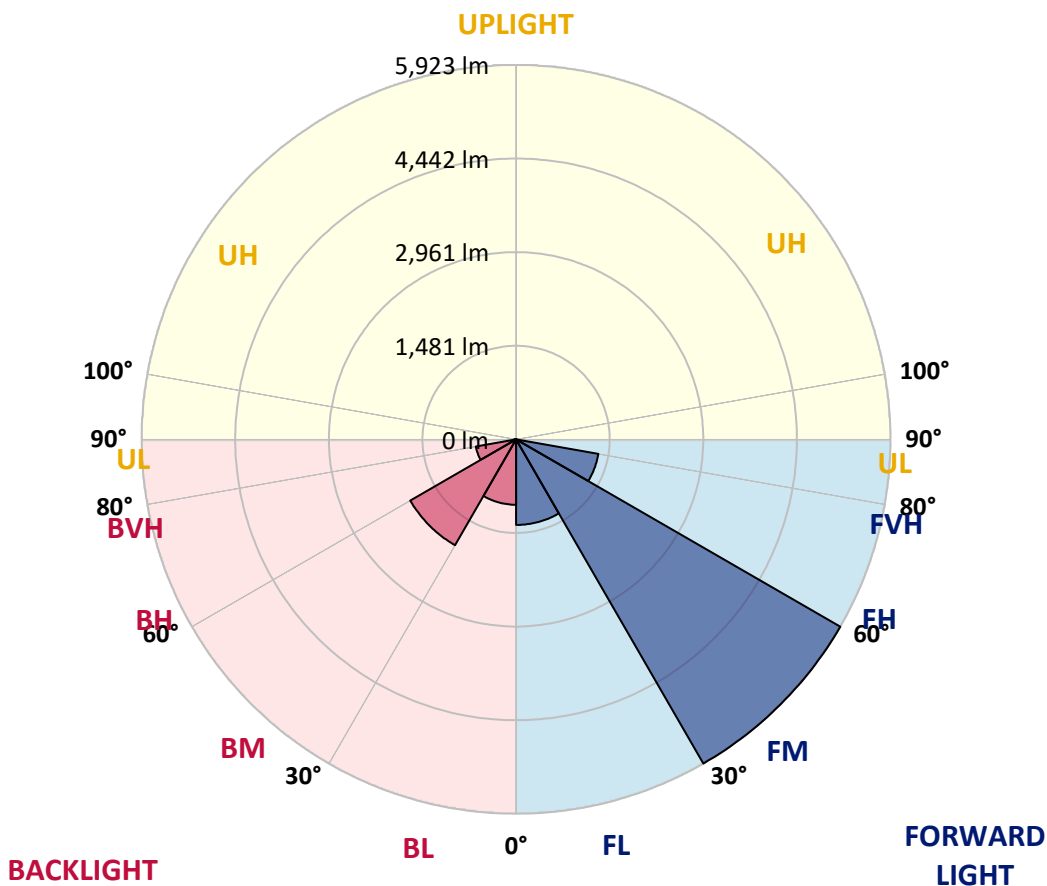
CATALOG NUMBER: GWS-SA3D-830-U-T3R-W-GRSWH

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1353.4	11.0			
FM (30°-60°)	5922.7	48.3			
FH (60°-80°)	1321.6	10.8			G1/1800
FVH (80°-90°)	15.6	0.1			G1/100
BL (0°-30°)	1034.7	8.4	B3/2500		
BM (30°-60°)	1933.1	15.8	B2/2500		
BH (60°-80°)	646.4	5.3	B2/1000		G2/1000
BVH (80°-90°)	29.1	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-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4
2.5°	2899.2	2893.1	2895.1	2903.2	2933.2	2955.3	2978.3	2999.4	3019.4	3025.4	3030.4
5°	2795.9	2784.9	2787.9	2800.9	2836.0	2873.1	2914.2	2964.3	3012.4	3028.4	3049.5
7.5°	2722.8	2720.8	2725.8	2745.8	2782.9	2818.0	2871.1	2942.2	3025.4	3052.5	3089.6
10°	2625.6	2621.6	2641.6	2682.7	2743.8	2799.9	2863.1	2947.3	3063.5	3103.6	3160.7
12.5°	2548.4	2546.4	2567.4	2624.6	2702.7	2791.9	2879.1	2973.3	3114.6	3169.7	3239.9
15°	2593.5	2584.5	2585.5	2625.6	2695.7	2800.9	2919.2	3020.4	3165.7	3235.9	3326.1
17.5°	2724.8	2708.7	2696.7	2703.7	2743.8	2853.1	2980.3	3083.5	3224.8	3307.0	3417.2
20°	2906.2	2897.1	2864.1	2842.0	2851.0	2947.3	3076.5	3172.7	3302.0	3394.2	3512.5
22.5°	3149.7	3127.6	3082.5	3047.5	3020.4	3095.6	3214.8	3298.0	3409.2	3505.4	3628.7
25°	3451.3	3419.3	3348.1	3293.0	3234.9	3312.0	3418.3	3481.4	3556.5	3645.7	3763.0
27.5°	3759.0	3731.9	3652.7	3578.6	3506.4	3554.5	3680.8	3716.9	3708.9	3774.0	3874.2
30°	4086.7	4052.6	3977.4	3897.3	3804.1	3835.1	3948.4	3966.4	3881.2	3935.3	4003.5
32.5°	4432.4	4399.3	4334.2	4241.0	4135.8	4147.8	4178.9	4195.9	4114.7	4145.8	4197.9
35°	4784.1	4753.1	4686.9	4594.7	4517.6	4444.4	4366.3	4434.4	4387.3	4447.4	4443.4
37.5°	5105.8	5074.8	5033.7	4962.5	4830.2	4685.9	4505.6	4589.7	4662.9	4739.1	4726.0
40°	5323.3	5302.2	5312.3	5301.2	5130.9	4845.3	4573.7	4665.9	4865.3	4995.6	4988.6
42.5°	5510.7	5489.6	5547.8	5589.9	5389.4	4992.6	4606.8	4695.0	4994.6	5198.0	5188.0
45°	5593.9	5587.9	5684.1	5817.3	5625.9	5148.9	4692.0	4755.1	5092.8	5353.4	5315.3
47.5°	5494.7	5515.7	5705.1	5930.6	5822.4	5334.3	4866.3	4882.4	5221.1	5521.7	5414.5
50°	5297.2	5343.3	5598.9	5933.6	5965.7	5543.8	5107.8	5067.8	5393.4	5701.1	5466.6
52.5°	5009.6	5057.7	5474.6	5910.5	6047.8	5786.3	5429.5	5372.4	5610.9	5880.5	5475.6
55°	4349.2	4414.4	5190.0	5858.4	6128.0	6006.7	5792.3	5676.0	5891.5	6127.0	5564.8
57.5°	3773.0	3807.1	4496.5	5626.9	6144.0	6169.1	6050.8	5912.5	6170.1	6393.6	5665.0
60°	2768.9	2776.9	3397.2	4655.9	5652.0	6074.9	6029.8	5824.4	6037.8	6180.1	5206.0
62.5°	1564.3	1565.3	2060.4	3107.6	4222.0	4951.5	4979.6	4798.2	4618.8	4660.9	3623.7
65°	587.2	642.4	941.0	1527.2	2434.2	2923.2	3039.4	3081.5	2782.9	2597.5	1943.1
67.5°	392.8	405.9	549.2	785.7	1083.3	1250.7	1399.0	1403.0	1026.2	914.9	765.6
70°	299.6	312.7	431.9	562.2	549.2	507.1	548.2	533.1	551.2	566.2	582.2
72.5°	223.5	236.5	334.7	396.8	329.7	324.7	367.8	408.9	446.9	463.0	488.0
75°	148.3	158.3	225.5	212.5	182.4	215.5	268.6	309.7	331.7	350.7	369.8
77.5°	94.2	101.2	120.3	97.2	101.2	126.3	156.3	193.4	214.5	233.5	243.5
80°	43.1	42.1	41.1	46.1	57.1	74.2	94.2	116.2	132.3	140.3	146.3
82.5°	17.0	19.0	21.0	25.1	31.1	40.1	53.1	68.1	81.2	83.2	88.2
85°	7.0	8.0	9.0	11.0	14.0	18.0	22.0	31.1	39.1	42.1	45.1
87.5°	0.0	0.0	0.0	0.0	1.0	2.0	3.0	5.0	9.0	10.0	11.0
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-SA3D-830-U-T3R-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4	3037.4
2.5°	3057.5	3044.5	3066.5	3081.5	3095.6	3080.5	3075.5	3062.5	3060.5	3060.5	3067.5
5°	3085.5	3076.5	3099.6	3108.6	3107.6	3074.5	3054.5	3028.4	3015.4	3015.4	3017.4
7.5°	3135.7	3130.6	3143.7	3129.6	3097.6	3030.4	2964.3	2909.2	2872.1	2853.1	2859.1
10°	3218.8	3212.8	3201.8	3149.7	3057.5	2918.2	2782.9	2682.7	2622.6	2588.5	2590.5
12.5°	3300.0	3290.0	3250.9	3135.7	2946.3	2724.8	2547.4	2435.2	2369.0	2328.9	2319.9
15°	3389.2	3363.1	3279.0	3063.5	2764.9	2488.3	2302.9	2181.6	2110.5	2086.4	2085.4
17.5°	3474.4	3428.3	3276.0	2935.2	2547.4	2240.8	2054.4	1979.2	1967.2	1978.2	1981.2
20°	3560.6	3486.4	3242.9	2757.9	2288.9	1994.2	1898.0	1929.1	1974.2	2004.3	2011.3
22.5°	3649.7	3534.5	3167.7	2529.4	2016.3	1827.9	1868.0	1936.1	1992.2	2032.3	2036.3
25°	3750.0	3579.6	3055.5	2249.8	1797.8	1781.8	1860.9	1933.1	1993.2	2039.3	2047.3
27.5°	3807.1	3580.6	2898.1	1962.2	1697.6	1763.7	1843.9	1912.1	1972.2	2022.3	2031.3
30°	3863.2	3553.5	2648.6	1728.7	1668.5	1742.7	1814.9	1878.0	1935.1	1984.2	1995.2
32.5°	3942.4	3528.5	2361.0	1594.4	1651.5	1722.7	1781.8	1837.9	1882.0	1904.0	1910.1
35°	4040.6	3496.4	2055.4	1536.3	1640.5	1706.6	1758.7	1788.8	1731.7	1719.6	1732.7
37.5°	4177.9	3466.4	1750.7	1511.2	1633.5	1700.6	1746.7	1669.5	1599.4	1571.3	1581.4
40°	4326.2	3449.3	1544.3	1491.2	1636.5	1706.6	1696.6	1582.4	1481.1	1422.0	1420.0
42.5°	4452.4	3423.3	1412.0	1478.1	1644.5	1729.7	1628.5	1505.2	1354.9	1319.8	1320.8
45°	4537.6	3357.1	1341.8	1464.1	1651.5	1734.7	1596.4	1399.0	1291.7	1269.7	1268.7
47.5°	4572.7	3236.9	1296.8	1442.1	1650.5	1693.6	1531.2	1354.9	1247.6	1241.6	1245.6
50°	4549.7	3039.4	1250.7	1399.0	1626.5	1650.5	1456.1	1315.8	1217.6	1250.7	1274.7
52.5°	4464.5	2783.9	1195.5	1339.8	1583.4	1601.4	1418.0	1291.7	1195.5	1239.6	1258.7
55°	4442.4	2576.5	1125.4	1262.7	1519.2	1514.2	1377.9	1279.7	1180.5	1163.5	1166.5
57.5°	4413.4	2374.0	1009.1	1124.4	1356.9	1364.9	1339.8	1265.7	1141.4	1136.4	1141.4
60°	3834.1	1819.9	899.9	970.1	1114.4	1157.5	1296.8	1239.6	1078.3	1057.2	1056.2
62.5°	2504.3	1102.3	800.7	845.8	907.9	958.0	1182.5	1164.5	1009.1	996.1	1005.1
65°	1346.9	785.7	728.5	755.6	789.7	827.8	980.1	1037.2	911.9	865.8	866.8
67.5°	688.5	668.4	674.4	693.5	719.5	738.6	790.7	840.8	777.6	738.6	737.6
70°	589.3	605.3	614.3	625.3	642.4	639.4	644.4	653.4	648.4	629.3	628.3
72.5°	502.1	527.1	529.1	531.1	537.1	523.1	514.1	499.1	500.1	503.1	504.1
75°	381.8	405.9	411.9	408.9	414.9	396.8	384.8	369.8	351.7	348.7	350.7
77.5°	248.5	267.6	276.6	274.6	277.6	263.6	257.5	241.5	220.5	212.5	212.5
80°	150.3	161.3	168.4	170.4	173.4	163.3	153.3	139.3	130.3	121.3	121.3
82.5°	91.2	98.2	103.2	103.2	106.2	95.2	87.2	77.2	73.2	65.1	65.1
85°	46.1	51.1	53.1	52.1	50.1	41.1	38.1	33.1	31.1	27.1	27.1
87.5°	11.0	14.0	14.0	10.0	10.0	5.0	3.0	1.0	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  
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**

$\lambda$ (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)