

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: P638493

Luminaire Tested: GWS-SA4E-830-U-T2R-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P638493  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-13)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4E-830-U-T2R-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

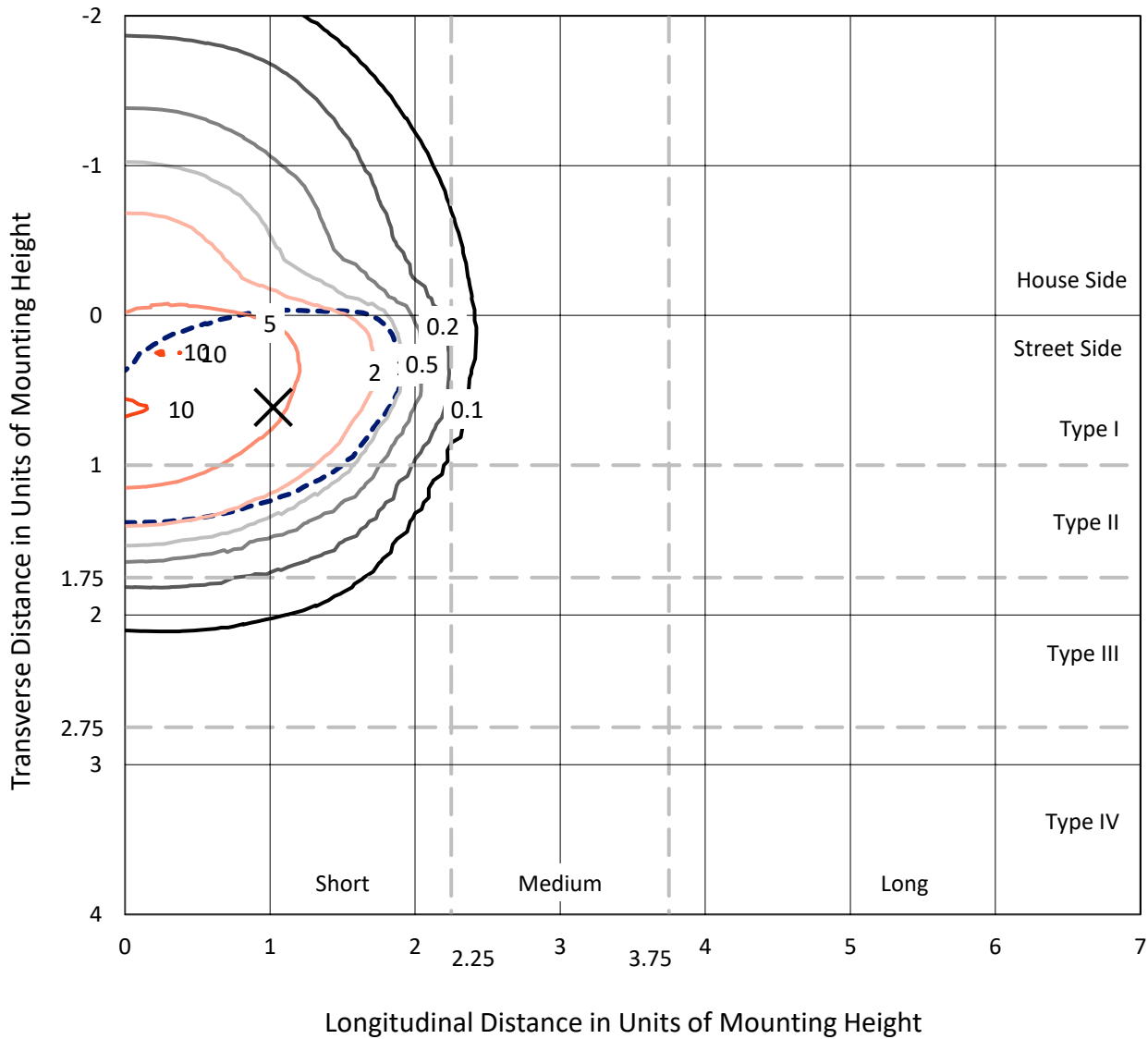
Lumens per Lamp: N/A  
Luminaire Lumens: 21395.6 lumens  
Efficiency: N/A  
Efficacy: 105.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 202.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
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



REPORT NUMBER: P638493  
 CATALOG NUMBER: GWS-SA4E-830-U-T2R-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

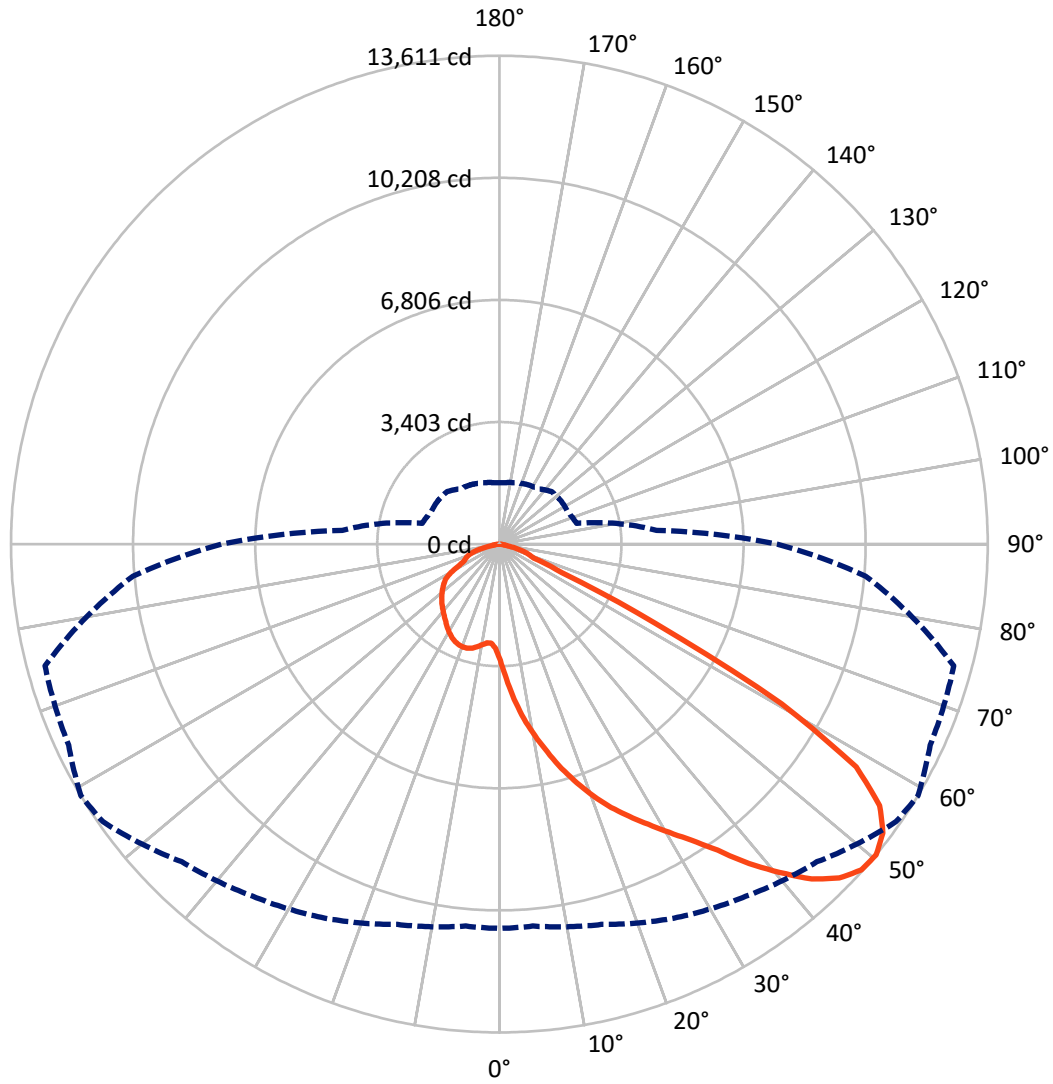
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.3 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4921.4	0.0	4921.4
	% Fixture	23.0	0.0	23.0
<b>Street Side</b>	Lumens	16474.2	0.0	16474.2
	% Fixture	77.0	0.0	77.0
<b>Total</b>	Lumens	21395.6	0.0	21395.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	363.6	1.7
10°-20°	1320.1	6.2
20°-30°	2499.7	11.7
30°-40°	4145.4	19.4
40°-50°	5662.8	26.5
50°-60°	5140.4	24.0
60°-70°	1711.8	8.0
70°-80°	499.3	2.3
80°-90°	52.4	0.2
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°	21395.6	100.0
0°-180°	21395.6	100.0

**Coefficient of Utilization**



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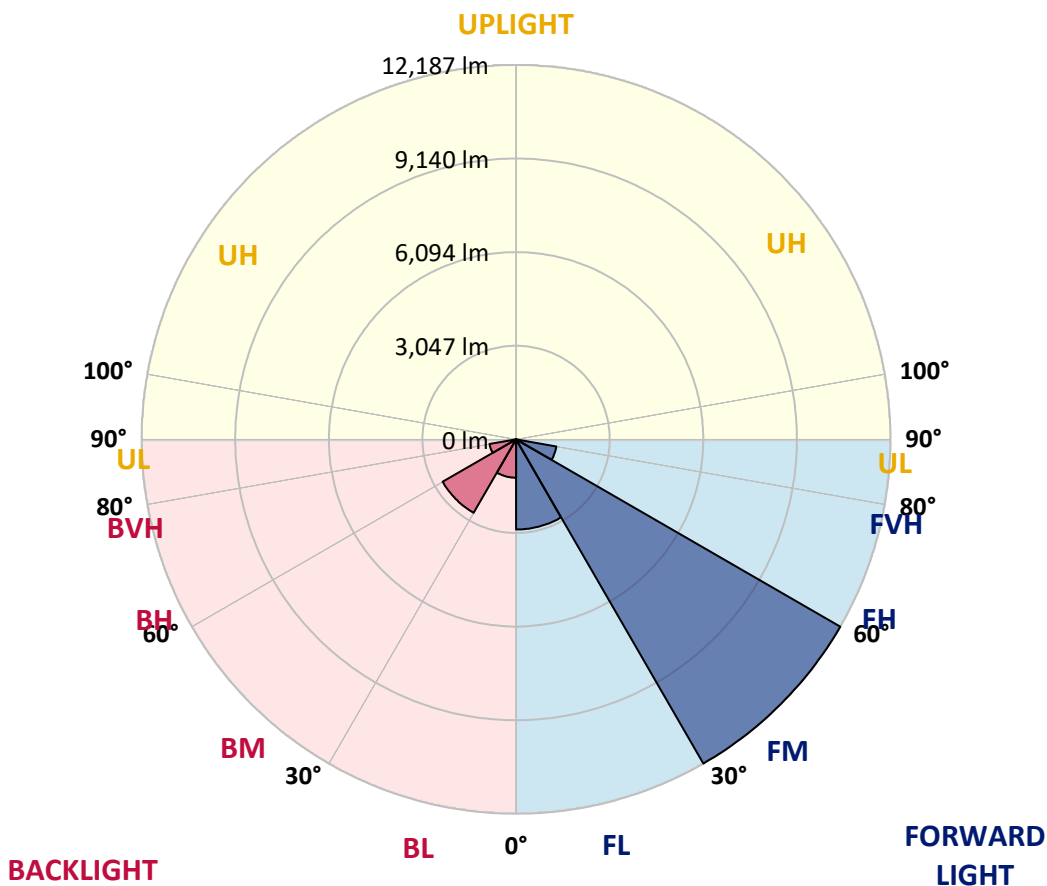
CATALOG NUMBER: GWS-SA4E-830-U-T2R-W-GRSWH

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2933.9	13.7			
FM (30°-60°)	12187.2	57.0			
FH (60°-80°)	1332.6	6.2			G1/1800
FVH (80°-90°)	20.5	0.1			G1/100
BL (0°-30°)	1249.7	5.8	B3/2500		
BM (30°-60°)	2761.4	12.9	B3/5000		
BH (60°-80°)	878.4	4.1	B2/1000		G2/1000
BVH (80°-90°)	31.9	0.1			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°	59°	65°	75°	85°
0°	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6
2.5°	4200.1	4231.5	4182.7	4186.2	4064.2	4008.4	3851.6	3759.2	3698.2	3527.4	3372.3
5°	5047.1	5010.5	4972.2	4949.5	4843.2	4693.3	4498.1	4343.0	4200.1	3865.5	3543.1
7.5°	5566.5	5547.3	5521.2	5507.2	5402.6	5245.8	5050.6	4918.1	4710.8	4257.6	3750.5
10°	6007.4	5984.7	5969.0	5979.5	5894.1	5793.0	5580.4	5428.8	5195.2	4672.4	4001.4
12.5°	6349.0	6361.2	6366.4	6422.2	6385.6	6324.6	6105.0	5944.6	5685.0	5109.9	4296.0
15°	6619.1	6615.6	6676.6	6782.9	6842.2	6803.8	6627.8	6493.6	6176.4	5540.3	4613.2
17.5°	6681.8	6685.3	6781.2	6967.7	7161.1	7255.2	7155.9	6995.5	6681.8	5965.6	4942.5
20°	6732.4	6739.4	6838.7	7051.3	7333.6	7596.8	7612.5	7497.5	7227.3	6425.7	5277.2
22.5°	7051.3	7067.0	7093.1	7227.3	7481.8	7814.7	7997.7	7973.3	7746.7	6908.4	5637.9
25°	7889.6	7842.5	7715.3	7677.0	7774.6	8044.7	8356.7	8403.7	8292.2	7440.0	6026.6
27.5°	8924.8	8874.3	8686.1	8487.4	8276.5	8370.6	8703.5	8844.6	8846.4	8025.5	6416.9
30°	9864.2	9824.1	9670.7	9386.7	9022.4	8886.5	9132.2	9322.2	9435.5	8701.7	6861.4
32.5°	10667.6	10631.0	10423.6	10191.8	9836.3	9562.7	9651.6	9834.5	10099.5	9576.6	7413.8
35°	11343.8	11307.2	11108.5	10875.0	10545.6	10381.8	10350.4	10475.9	10819.2	10489.8	8048.2
37.5°	11892.8	11856.2	11648.8	11429.2	11178.2	11188.7	11235.8	11296.7	11493.7	11467.5	8726.1
40°	12248.3	12210.0	12061.8	11905.0	11746.4	11871.9	12105.4	12032.2	12136.8	12257.0	9350.1
42.5°	12406.9	12358.1	12272.7	12237.9	12189.1	12384.2	12833.9	12760.7	12635.2	12783.3	9813.6
45°	12248.3	12206.5	12204.7	12311.1	12424.3	12675.3	13337.6	13278.3	12961.1	13037.8	10090.7
47.5°	11762.1	11725.5	11824.8	12103.7	12382.5	12748.5	13562.4	13572.8	13192.9	13144.1	10270.2
50°	10711.2	10686.8	10974.3	11502.4	11983.4	12520.2	13490.9	13611.2	13248.7	13111.0	10247.6
52.5°	8574.5	8687.8	9313.5	10195.3	11129.4	12119.3	13226.0	13382.9	12980.3	12893.1	10125.6
55°	5869.7	5922.0	6547.7	7835.6	9316.9	11251.4	12617.8	12860.0	12663.1	12856.5	10252.8
57.5°	3039.4	3081.2	3574.5	4717.7	6319.3	8891.7	10929.0	11723.7	12023.5	13041.3	10648.4
60°	1247.8	1282.7	1486.6	2039.1	3187.6	5177.8	7865.2	9043.3	9747.4	11910.2	9456.4
62.5°	906.2	923.7	1021.3	1216.5	1669.6	2537.5	4451.1	4885.0	5380.0	7464.4	6003.9
65°	763.3	782.5	860.9	979.4	1218.2	1556.3	1901.4	1911.8	2107.0	3041.2	2225.5
67.5°	639.6	657.0	726.7	827.8	984.7	1104.9	1021.3	1023.0	1019.5	1103.2	1066.6
70°	498.4	512.4	582.1	690.1	772.1	709.3	798.2	883.6	847.0	880.1	930.6
72.5°	364.2	379.9	440.9	522.8	501.9	505.4	646.6	733.7	712.8	749.4	796.5
75°	263.2	273.6	305.0	261.4	275.4	332.9	454.9	501.9	522.8	554.2	596.0
77.5°	85.4	85.4	95.9	120.3	149.9	184.7	231.8	251.0	282.3	317.2	346.8
80°	43.6	45.3	54.0	66.2	83.7	106.3	135.9	144.7	160.3	179.5	191.7
82.5°	20.9	22.7	26.1	33.1	43.6	55.8	74.9	83.7	94.1	106.3	115.0
85°	5.2	5.2	7.0	10.5	13.9	20.9	27.9	33.1	41.8	50.5	55.8
87.5°	0.0	0.0	0.0	0.0	0.0	1.7	5.2	7.0	8.7	10.5	13.9
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-SA4E-830-U-T2R-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6	3241.6
2.5°	3302.6	3205.0	3079.5	2973.2	2875.6	2800.7	2736.2	2704.8	2675.2	2654.3	2661.2
5°	3393.2	3225.9	2992.4	2830.3	2730.9	2680.4	2645.6	2628.1	2624.6	2610.7	2605.5
7.5°	3525.7	3286.9	2974.9	2811.1	2744.9	2718.7	2699.6	2689.1	2694.3	2680.4	2675.2
10°	3689.5	3388.0	3018.5	2873.9	2816.3	2797.2	2776.3	2762.3	2755.3	2734.4	2730.9
12.5°	3893.4	3513.5	3096.9	2954.0	2896.5	2863.4	2835.5	2811.1	2795.4	2769.3	2762.3
15°	4113.0	3652.9	3189.3	3032.5	2964.5	2915.7	2870.4	2833.8	2805.9	2771.0	2765.8
17.5°	4351.7	3799.3	3266.0	3086.5	2999.3	2934.9	2868.6	2814.6	2776.3	2730.9	2725.7
20°	4601.0	3947.4	3323.5	3112.6	3001.1	2913.9	2825.1	2753.6	2704.8	2659.5	2656.0
22.5°	4858.9	4083.4	3358.4	3105.6	2973.2	2865.1	2758.8	2678.7	2621.2	2567.1	2563.6
25°	5118.6	4214.1	3367.1	3077.8	2917.4	2791.9	2685.6	2591.5	2527.0	2466.0	2459.1
27.5°	5381.7	4323.9	3346.2	3022.0	2842.5	2706.5	2600.2	2507.9	2441.6	2380.6	2370.2
30°	5662.3	4418.0	3300.8	2948.8	2755.3	2615.9	2511.4	2441.6	2378.9	2317.9	2307.5
32.5°	5962.1	4499.9	3236.4	2859.9	2654.3	2525.3	2448.6	2385.9	2323.1	2269.1	2258.7
35°	6319.3	4553.9	3140.5	2744.9	2560.2	2459.1	2406.8	2333.6	2256.9	2197.7	2192.4
37.5°	6688.8	4595.7	3025.5	2635.1	2478.2	2420.7	2377.2	2277.8	2182.0	2110.5	2101.8
40°	7046.1	4630.6	2882.6	2532.3	2403.3	2392.8	2333.6	2209.9	2044.3	1964.1	1957.2
42.5°	7379.0	4641.0	2732.7	2422.5	2335.3	2330.1	2263.9	2072.2	1945.0	1894.4	1887.4
45°	7607.3	4632.3	2577.6	2319.7	2267.4	2239.5	2169.8	1972.8	1894.4	1849.1	1840.4
47.5°	7776.3	4587.0	2403.3	2211.6	2190.7	2152.3	2002.5	1910.1	1836.9	1791.6	1782.9
50°	7746.7	4398.8	2227.3	2107.0	2098.3	2065.2	1880.5	1831.7	1767.2	1718.4	1711.4
52.5°	7593.3	4041.5	2047.8	1992.0	2009.4	1945.0	1793.3	1737.6	1681.8	1626.0	1613.8
55°	7631.7	3783.6	1911.8	1880.5	1911.8	1765.4	1695.7	1636.5	1584.2	1530.2	1519.7
57.5°	7799.0	3529.1	1767.2	1760.2	1793.3	1627.8	1570.3	1495.3	1420.4	1376.8	1376.8
60°	6549.4	2572.4	1512.7	1530.2	1605.1	1516.2	1465.7	1389.0	1307.1	1268.7	1268.7
62.5°	3872.5	1613.8	1254.8	1235.6	1282.7	1338.5	1366.3	1303.6	1206.0	1155.5	1157.2
65°	1706.2	1174.6	1106.7	1091.0	1077.0	1115.4	1192.1	1197.3	1094.5	1035.2	1037.0
67.5°	1050.9	1063.1	1035.2	1023.0	1010.8	1003.8	996.9	1000.4	972.5	918.4	916.7
70°	948.1	981.2	962.0	951.6	935.9	923.7	881.9	813.9	766.8	752.9	768.6
72.5°	815.6	860.9	850.5	845.3	826.1	796.5	740.7	674.5	618.7	583.8	590.8
75°	615.2	651.8	657.0	658.8	637.9	610.0	552.5	496.7	447.9	411.3	420.0
77.5°	353.8	374.7	379.9	385.2	369.5	359.0	320.7	280.6	254.4	216.1	226.6
80°	196.9	205.6	205.6	207.4	198.7	186.5	160.3	137.7	125.5	108.1	109.8
82.5°	118.5	122.0	123.7	125.5	120.3	108.1	88.9	73.2	66.2	57.5	55.8
85°	57.5	61.0	61.0	62.7	54.0	47.1	36.6	27.9	24.4	17.4	19.2
87.5°	13.9	15.7	15.7	13.9	12.2	8.7	5.2	1.7	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)