

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: P637007

Luminaire Tested: GWS-SA4B-830-U-T2R-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P637007  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-12)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4B-830-U-T2R-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

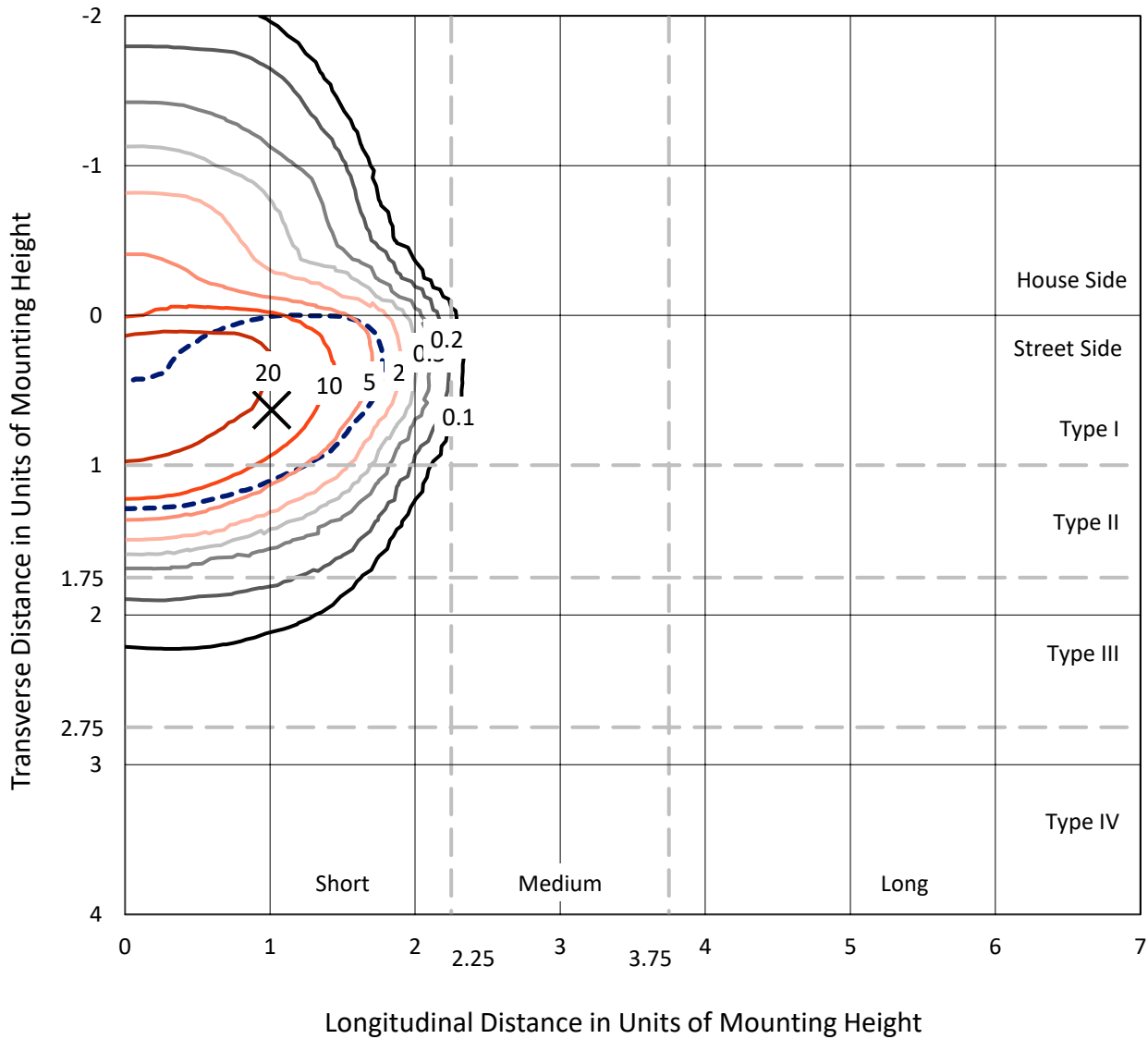
Lumens per Lamp: N/A  
Luminaire Lumens: 7707.8 lumens  
Efficiency: N/A  
Efficacy: 81.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G0  
  
Input Watts (W): 94.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
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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### Iso-Footcandle Lines of Horizontal Illumination

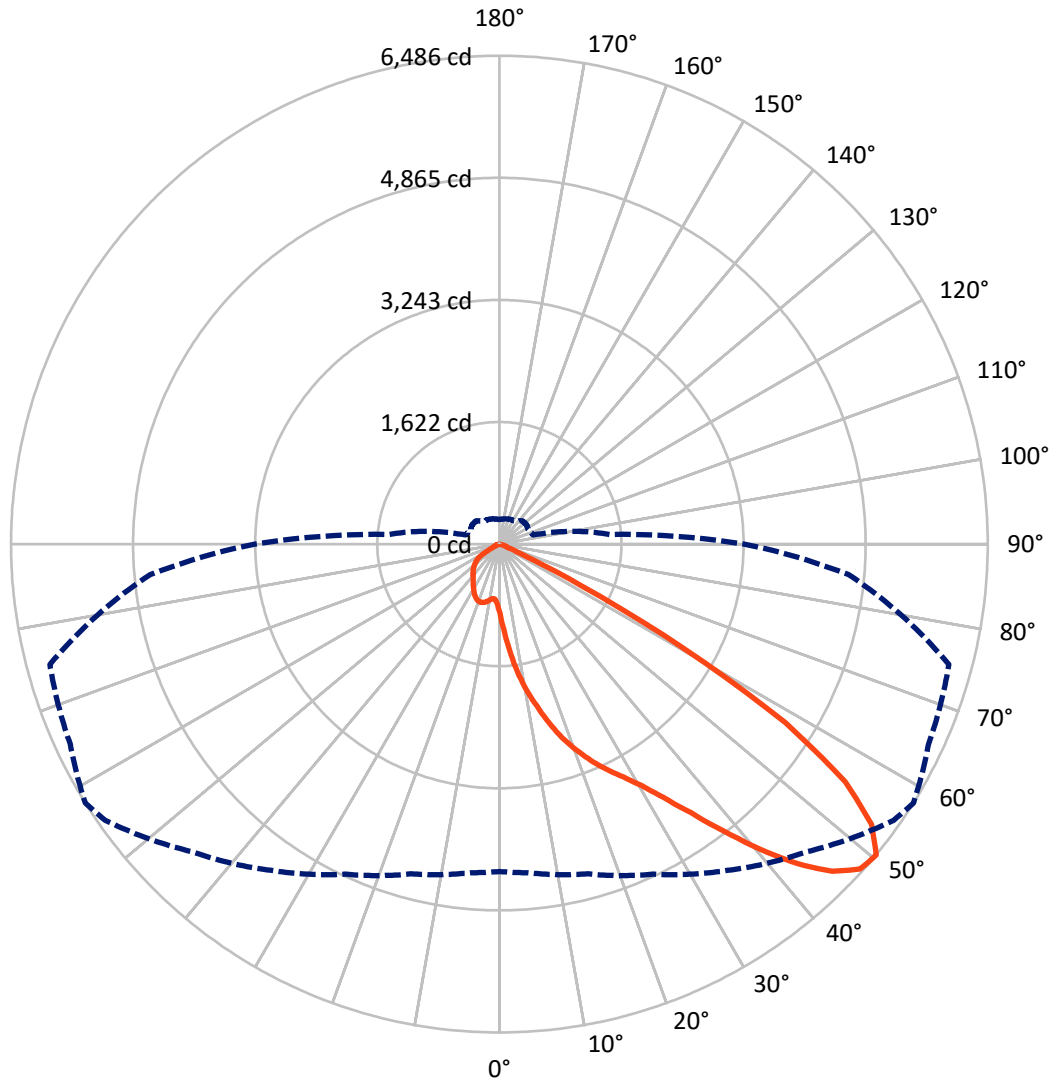
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 28.3 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral    - - - Horizontal Cone Through 50-Deg Vertical

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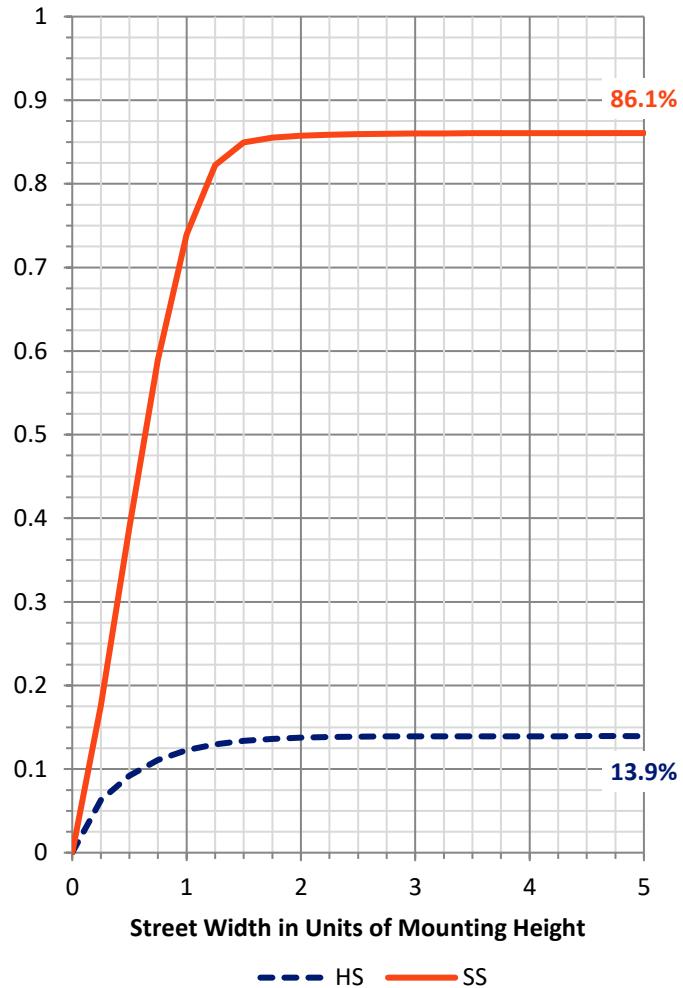
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1079.6	0.0	1079.6
	% Fixture	14.0	0.0	14.0
<b>Street Side</b>	Lumens	6628.2	0.0	6628.2
	% Fixture	86.0	0.0	86.0
<b>Total</b>	Lumens	7707.8	0.0	7707.8
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.1	1.5
10°-20°	451.5	5.9
20°-30°	913.7	11.9
30°-40°	1616.4	21.0
40°-50°	2356.4	30.6
50°-60°	1888.7	24.5
60°-70°	340.3	4.4
70°-80°	26.8	0.3
80°-90°	0.0	0.0
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°	7707.8	100.0
0°-180°	7707.8	100.0

**Coefficient of Utilization**



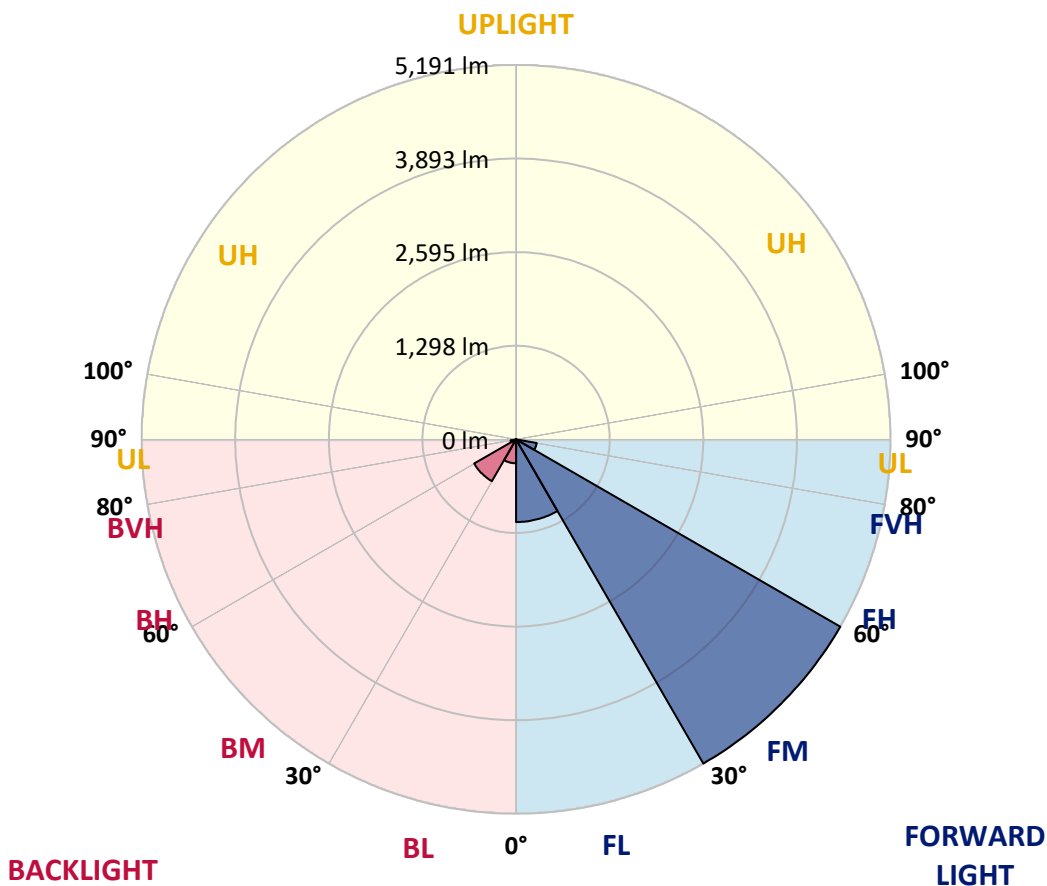
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1146.9	14.9			
FM (30°-60°)	5191.0	67.3			
FH (60°-80°)	290.4	3.8			G0/660
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	332.4	4.3	B1/500		
BM (30°-60°)	670.5	8.7	B1/1000		
BH (60°-80°)	76.7	1.0	B0/110		G0/110
BVH (80°-90°)	0.0	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G0**  
 Type II Short





REPORT NUMBER: P637007

CATALOG NUMBER: GWS-SA4B-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7
2.5°	1362.5	1341.0	1328.7	1318.8	1275.1	1205.9	1160.5	1136.6	1097.1	1030.3	972.6
5°	1777.9	1762.2	1733.4	1713.6	1657.6	1559.5	1458.1	1417.7	1327.9	1177.0	1041.8
7.5°	2053.2	2041.7	2030.9	2004.6	1951.8	1862.8	1750.7	1708.7	1570.2	1355.9	1134.2
10°	2265.0	2256.0	2243.6	2242.8	2201.6	2121.6	2012.0	1968.3	1818.3	1550.4	1243.0
12.5°	2451.3	2443.9	2441.4	2464.5	2438.1	2378.8	2260.1	2205.7	2046.6	1749.1	1363.3
15°	2579.1	2577.4	2588.1	2633.5	2648.3	2621.1	2521.4	2462.8	2279.9	1948.5	1496.0
17.5°	2637.6	2642.5	2663.1	2741.4	2807.4	2830.5	2753.8	2704.4	2511.5	2150.5	1637.8
20°	2737.3	2735.7	2748.0	2822.2	2903.0	2985.4	2962.3	2920.3	2745.6	2363.9	1795.2
22.5°	3018.4	2994.5	2968.1	2979.7	3008.5	3104.9	3147.8	3126.4	2987.1	2583.2	1957.6
25°	3450.3	3425.6	3340.7	3258.2	3203.8	3247.5	3306.1	3316.8	3226.9	2808.2	2127.4
27.5°	3908.6	3886.3	3790.7	3667.1	3511.3	3435.5	3479.1	3500.6	3462.7	3076.1	2307.9
30°	4338.0	4308.3	4203.7	4050.3	3869.8	3753.6	3704.2	3719.0	3741.3	3393.4	2519.7
32.5°	4710.6	4688.3	4563.0	4401.5	4227.6	4106.4	3991.0	4015.7	4070.1	3781.6	2790.9
35°	5026.3	5014.7	4882.0	4721.3	4537.5	4475.7	4376.7	4381.7	4436.1	4250.6	3121.4
37.5°	5300.7	5280.9	5160.6	5011.4	4865.5	4855.6	4828.4	4830.9	4858.9	4797.1	3501.4
40°	5473.8	5455.7	5370.0	5277.7	5173.8	5175.4	5316.4	5327.1	5295.0	5333.7	3902.8
42.5°	5538.9	5525.7	5479.6	5480.4	5469.7	5518.3	5782.9	5802.7	5687.3	5754.9	4245.7
45°	5426.0	5420.2	5423.5	5542.2	5670.8	5820.8	6164.5	6199.2	6036.0	6034.3	4513.6
47.5°	5061.7	5050.2	5146.6	5348.5	5646.1	5937.9	6395.3	6448.9	6279.9	6194.2	4681.7
50°	4347.9	4380.9	4533.4	4836.7	5289.2	5777.1	6392.9	6486.0	6289.0	6180.2	4653.7
52.5°	3149.4	3142.9	3476.7	3893.7	4444.3	5262.8	6053.3	6189.3	6068.9	6042.6	4591.1
55°	1713.6	1773.8	1998.8	2551.0	3238.5	4289.4	5277.7	5574.4	5713.7	5992.3	4704.0
57.5°	629.7	656.1	797.0	1187.7	1714.4	2667.3	4031.4	4479.0	4909.2	5852.2	4685.0
60°	253.9	258.8	314.9	436.9	720.4	1357.5	2418.3	2815.6	3221.2	4479.8	3595.4
62.5°	184.6	191.2	213.5	255.5	364.3	593.5	1042.7	1212.5	1325.4	2218.9	1771.3
65°	149.2	154.1	172.3	191.2	240.7	319.0	336.3	323.9	322.3	573.7	406.4
67.5°	123.6	128.6	141.8	155.0	173.1	159.1	115.4	121.2	98.9	98.1	80.0
70°	90.7	96.4	109.6	123.6	103.9	42.9	66.8	98.9	75.0	62.6	61.0
72.5°	68.4	72.5	84.9	80.8	30.5	16.5	44.5	71.7	57.7	46.2	45.3
75°	51.1	53.6	42.9	13.2	3.3	4.1	16.5	29.7	32.1	26.4	26.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.5	3.3	4.1	4.9
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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



REPORT NUMBER: P637007

CATALOG NUMBER: GWS-SA4B-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7	920.7
2.5°	939.6	905.0	855.6	814.4	783.0	752.5	729.5	706.4	705.6	694.0	691.5
5°	979.2	916.6	825.9	760.8	721.2	697.3	680.8	672.6	668.5	664.3	662.7
7.5°	1036.1	946.2	820.9	751.7	718.7	703.1	691.5	686.6	684.1	680.8	680.0
10°	1106.1	989.1	839.1	769.0	740.2	725.3	713.0	705.6	701.4	695.7	694.0
12.5°	1190.2	1041.8	867.9	797.9	767.4	747.6	731.1	720.4	714.6	707.2	705.6
15°	1280.9	1098.7	900.1	824.2	788.0	762.4	741.8	725.3	714.6	705.6	703.1
17.5°	1374.8	1156.4	928.9	842.4	797.9	767.4	737.7	715.4	702.3	690.7	687.4
20°	1480.3	1215.8	947.9	845.7	794.6	754.2	719.6	691.5	678.4	662.7	659.4
22.5°	1590.8	1271.0	956.1	838.3	776.4	729.5	692.4	663.5	644.6	628.1	623.1
25°	1697.9	1320.4	952.0	817.7	749.2	694.8	656.9	627.3	606.6	590.2	586.0
27.5°	1811.7	1361.7	937.2	787.2	712.1	656.9	620.7	595.1	576.1	558.0	553.9
30°	1939.5	1399.6	913.3	750.1	668.5	618.2	590.2	572.9	552.2	533.3	527.5
32.5°	2093.6	1433.4	878.6	705.6	629.7	584.4	568.7	555.5	531.6	511.9	507.7
35°	2270.0	1461.4	835.0	659.4	591.8	563.0	559.7	542.4	511.0	488.0	483.0
37.5°	2474.4	1488.6	783.0	614.1	563.8	553.1	553.9	524.2	486.3	458.3	455.0
40°	2694.5	1515.8	725.3	574.5	538.2	547.3	539.9	497.8	436.0	408.8	405.5
42.5°	2923.6	1545.5	666.8	537.4	516.8	525.0	514.3	445.1	400.6	386.6	384.9
45°	3130.5	1580.9	603.3	500.3	495.4	492.9	474.8	403.1	384.1	374.2	373.4
47.5°	3279.7	1575.1	535.8	464.9	472.3	464.1	408.8	383.3	367.6	354.4	351.1
50°	3252.5	1474.6	465.7	425.3	442.6	435.2	367.6	360.2	346.2	332.2	327.2
52.5°	3183.2	1337.8	404.7	383.3	410.5	393.2	339.6	332.2	319.8	301.7	295.9
55°	3220.3	1209.2	356.9	349.5	377.5	325.6	308.3	296.7	283.5	263.8	261.3
57.5°	3100.8	986.6	286.8	291.8	333.8	277.8	270.4	252.2	230.0	216.8	215.1
60°	2146.3	530.0	179.7	185.5	241.5	233.3	242.3	225.8	198.6	186.3	183.8
62.5°	985.8	212.7	98.1	94.0	126.9	158.3	207.7	206.1	172.3	152.5	150.8
65°	239.0	97.3	70.1	65.9	71.7	94.8	135.2	162.4	139.3	116.2	113.7
67.5°	77.5	79.1	64.3	60.2	63.5	70.9	80.8	89.8	89.0	81.6	80.0
70°	61.8	71.7	59.3	54.4	54.4	56.9	54.4	43.7	37.9	41.2	42.9
72.5°	46.2	54.4	47.0	42.0	40.4	39.6	33.8	24.7	17.3	15.7	14.8
75°	27.2	30.5	28.8	24.7	23.1	20.6	16.5	10.7	5.8	4.1	2.5
77.5°	4.9	5.8	6.6	4.9	4.1	3.3	2.5	0.8	0.0	0.0	0.0
80°	0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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)