

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: P635027

Luminaire Tested: GWS-SA3C-830-U-T2R-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P635027  
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-SA3C-830-U-T2R-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

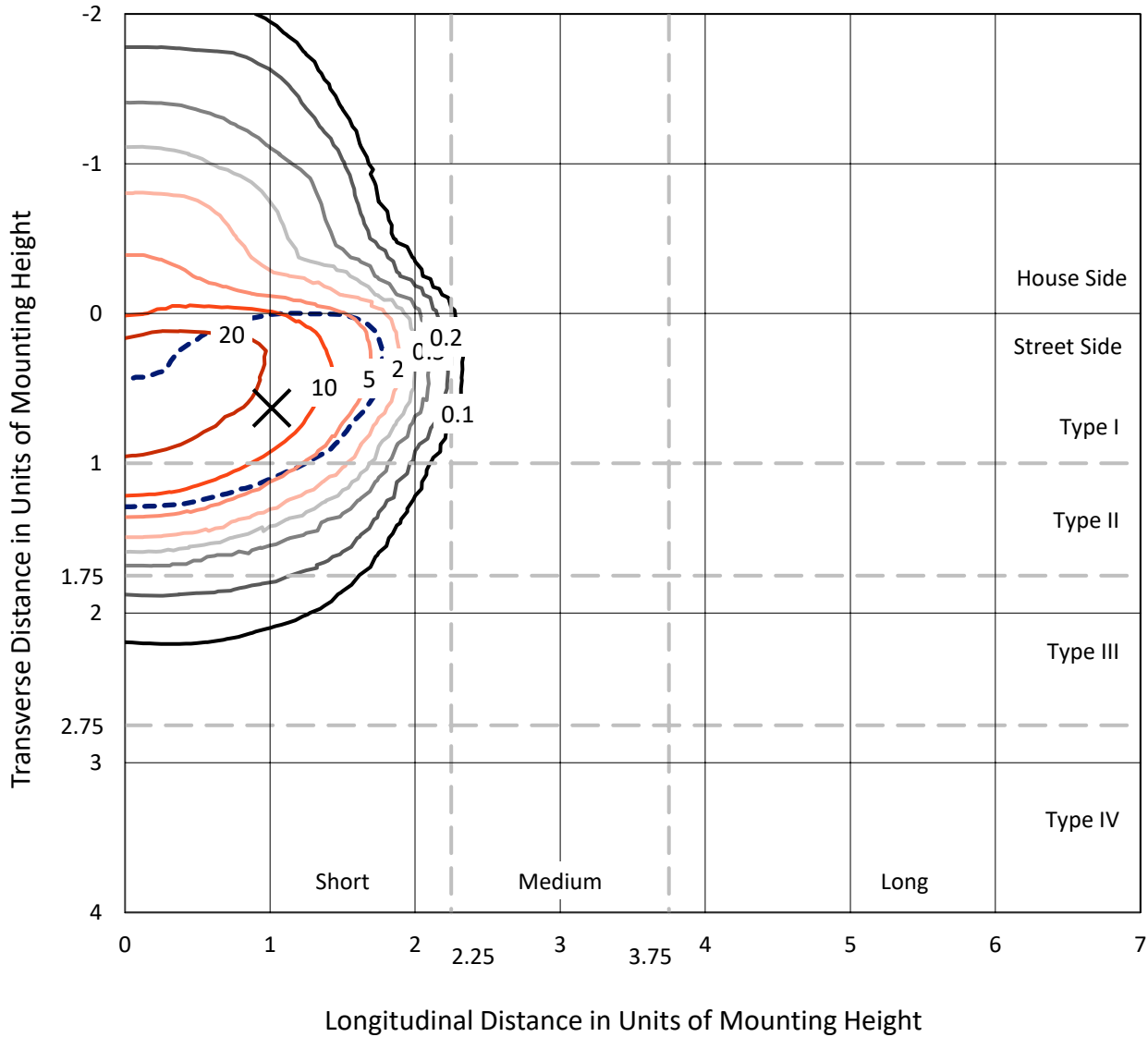
Lumens per Lamp: N/A  
Luminaire Lumens: 7428.3 lumens  
Efficiency: N/A  
Efficacy: 79.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G0  
  
Input Watts (W): 93  
Input Voltage (V): 120  
Input Current (Ain): NR  
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-SA3C-830-U-T2R-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

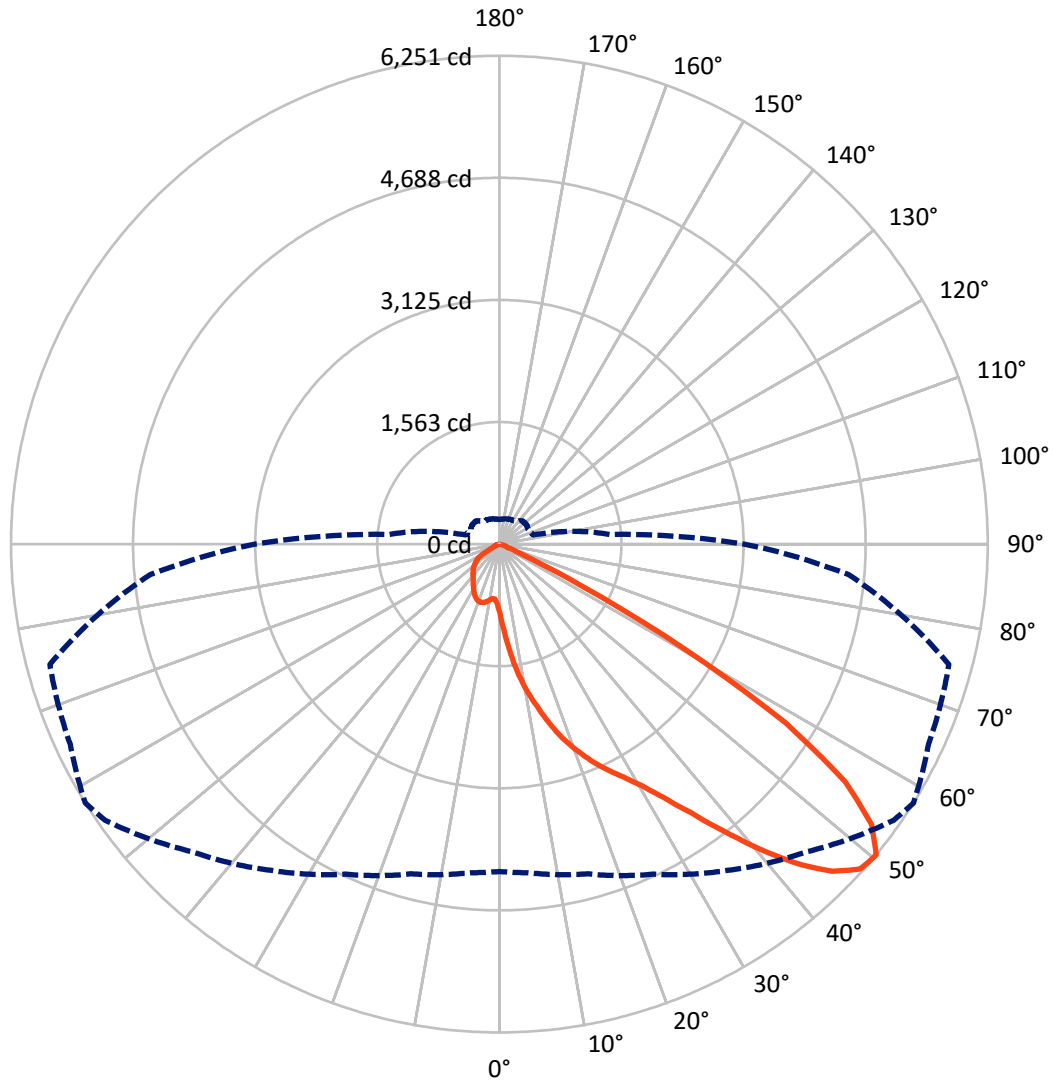
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 27.3 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	1040.4	0.0	1040.4
	% Fixture	14.0	0.0	14.0
<b>Street Side</b>	Lumens	6387.9	0.0	6387.9
	% Fixture	86.0	0.0	86.0
<b>Total</b>	Lumens	7428.3	0.0	7428.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.9	1.5
10°-20°	435.2	5.9
20°-30°	880.5	11.9
30°-40°	1557.8	21.0
40°-50°	2270.9	30.6
50°-60°	1820.2	24.5
60°-70°	327.9	4.4
70°-80°	25.8	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°	7428.3	100.0
0°-180°	7428.3	100.0

**Coefficient of Utilization**



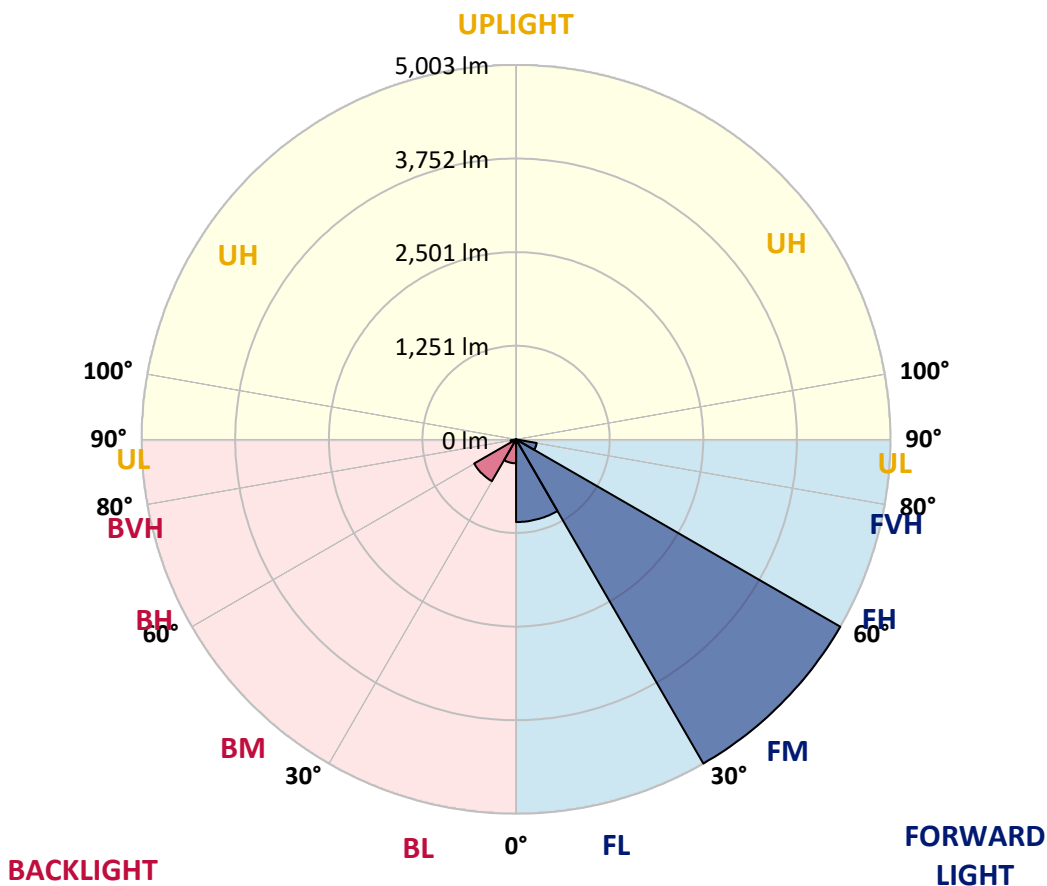
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1105.3	14.9			
FM (30°-60°)	5002.7	67.3			
FH (60°-80°)	279.8	3.8			G0/660
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	320.3	4.3	B1/500		
BM (30°-60°)	646.2	8.7	B1/1000		
BH (60°-80°)	73.9	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





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CATALOG NUMBER: GWS-SA3C-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3
2.5°	1313.1	1292.4	1280.5	1271.0	1228.9	1162.1	1118.5	1095.4	1057.3	992.9	937.3
5°	1713.4	1698.3	1670.5	1651.5	1597.5	1502.9	1405.2	1366.3	1279.7	1134.3	1004.1
7.5°	1978.7	1967.6	1957.3	1931.9	1881.0	1795.2	1687.2	1646.7	1513.3	1306.7	1093.0
10°	2182.9	2174.2	2162.2	2161.4	2121.7	2044.7	1939.0	1896.9	1752.4	1494.2	1197.9
12.5°	2362.4	2355.3	2352.9	2375.1	2349.7	2292.5	2178.1	2125.7	1972.4	1685.6	1313.9
15°	2485.5	2484.0	2494.3	2538.0	2552.3	2526.1	2429.9	2373.5	2197.2	1877.9	1441.8
17.5°	2541.9	2546.7	2566.6	2642.0	2705.6	2727.8	2653.9	2606.3	2420.4	2072.5	1578.4
20°	2638.1	2636.5	2648.4	2719.9	2797.7	2877.2	2854.9	2814.4	2646.0	2278.2	1730.1
22.5°	2908.9	2885.9	2860.5	2871.6	2899.4	2992.3	3033.7	3013.0	2878.8	2489.5	1886.6
25°	3325.2	3301.4	3219.5	3140.1	3087.7	3129.8	3186.2	3196.5	3109.9	2706.4	2050.2
27.5°	3766.8	3745.4	3653.3	3534.1	3384.0	3310.9	3353.0	3373.6	3337.1	2964.5	2224.2
30°	4180.7	4152.1	4051.2	3903.5	3729.5	3617.5	3569.8	3584.1	3605.6	3270.4	2428.4
32.5°	4539.8	4518.3	4397.6	4241.9	4074.3	3957.5	3846.3	3870.1	3922.5	3644.5	2689.7
35°	4844.0	4832.9	4705.0	4550.1	4372.9	4313.4	4218.0	4222.8	4275.2	4096.5	3008.2
37.5°	5108.5	5089.5	4973.5	4829.7	4689.1	4679.6	4653.3	4655.7	4682.7	4623.2	3374.4
40°	5275.3	5257.9	5175.2	5086.3	4986.2	4987.8	5123.6	5133.9	5103.0	5140.3	3761.3
42.5°	5338.1	5325.4	5280.9	5281.7	5271.4	5318.2	5573.2	5592.3	5481.1	5546.2	4091.7
45°	5229.3	5223.7	5226.9	5341.3	5465.2	5609.8	5941.0	5974.4	5817.1	5815.5	4349.9
47.5°	4878.2	4867.0	4960.0	5154.6	5441.4	5722.6	6163.4	6215.1	6052.2	5969.6	4512.0
50°	4190.2	4222.0	4369.0	4661.3	5097.4	5567.7	6161.0	6250.8	6061.0	5956.1	4484.9
52.5°	3035.2	3028.9	3350.6	3752.5	4283.2	5072.0	5833.8	5964.8	5848.9	5823.4	4424.6
55°	1651.5	1709.5	1926.3	2458.5	3121.0	4133.8	5086.3	5372.2	5506.5	5775.0	4533.4
57.5°	606.9	632.3	768.1	1144.7	1652.3	2570.5	3885.2	4316.5	4731.2	5639.9	4515.1
60°	244.7	249.4	303.4	421.0	694.3	1308.3	2330.6	2713.5	3104.4	4317.3	3465.0
62.5°	177.9	184.3	205.7	246.3	351.1	571.9	1004.9	1168.5	1277.3	2138.4	1707.1
65°	143.8	148.5	166.0	184.3	232.0	307.4	324.1	312.2	310.6	552.9	391.6
67.5°	119.2	123.9	136.6	149.3	166.8	153.3	111.2	116.8	95.3	94.5	77.1
70°	87.4	92.9	105.6	119.2	100.1	41.3	64.3	95.3	72.3	60.4	58.8
72.5°	65.9	69.9	81.8	77.8	29.4	15.9	42.9	69.1	55.6	44.5	43.7
75°	49.3	51.6	41.3	12.7	3.2	4.0	15.9	28.6	31.0	25.4	25.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.6	2.4	3.2	4.0	4.8
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



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CATALOG NUMBER: GWS-SA3C-830-U-T2R-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3	887.3
2.5°	905.6	872.2	824.5	784.8	754.6	725.2	703.0	680.8	680.0	668.8	666.5
5°	943.7	883.3	795.9	733.2	695.1	672.0	656.1	648.2	644.2	640.3	638.7
7.5°	998.5	911.9	791.2	724.5	692.7	677.6	666.5	661.7	659.3	656.1	655.3
10°	1066.0	953.2	808.7	741.1	713.3	699.0	687.1	680.0	676.0	670.4	668.8
12.5°	1147.1	1004.1	836.5	768.9	739.5	720.5	704.6	694.3	688.7	681.6	680.0
15°	1234.4	1058.9	867.4	794.4	759.4	734.8	714.9	699.0	688.7	680.0	677.6
17.5°	1325.0	1114.5	895.2	811.8	768.9	739.5	711.0	689.5	676.8	665.7	662.5
20°	1426.7	1171.7	913.5	815.0	765.8	726.8	693.5	666.5	653.8	638.7	635.5
22.5°	1533.1	1224.9	921.5	807.9	748.3	703.0	667.3	639.5	621.2	605.3	600.5
25°	1636.4	1272.6	917.5	788.0	722.1	669.6	633.1	604.5	584.6	568.8	564.8
27.5°	1746.0	1312.3	903.2	758.6	686.3	633.1	598.2	573.5	555.3	537.8	533.8
30°	1869.1	1348.8	880.1	722.9	644.2	595.8	568.8	552.1	532.2	513.9	508.4
32.5°	2017.7	1381.4	846.8	680.0	606.9	563.2	548.1	535.4	512.4	493.3	489.3
35°	2187.7	1408.4	804.7	635.5	570.3	542.5	539.4	522.7	492.5	470.3	465.5
37.5°	2384.7	1434.6	754.6	591.8	543.3	533.0	533.8	505.2	468.7	441.7	438.5
40°	2596.8	1460.8	699.0	553.7	518.7	527.5	520.3	479.8	420.2	394.0	390.8
42.5°	2817.6	1489.4	642.6	517.9	498.1	506.0	495.7	429.0	386.1	372.6	371.0
45°	3017.0	1523.6	581.5	482.2	477.4	475.0	457.6	388.4	370.2	360.6	359.8
47.5°	3160.7	1518.0	516.3	448.0	455.2	447.2	394.0	369.4	354.3	341.6	338.4
50°	3134.5	1421.1	448.8	409.9	426.6	419.4	354.3	347.1	333.6	320.1	315.4
52.5°	3067.8	1289.2	390.0	369.4	395.6	378.9	327.3	320.1	308.2	290.7	285.2
55°	3103.6	1165.3	344.0	336.8	363.8	313.8	297.1	286.0	273.3	254.2	251.8
57.5°	2988.4	950.8	276.4	281.2	321.7	267.7	260.5	243.1	221.6	208.9	207.3
60°	2068.5	510.8	173.2	178.7	232.7	224.8	233.5	217.7	191.4	179.5	177.1
62.5°	950.1	204.9	94.5	90.6	122.3	152.5	200.2	198.6	166.0	147.0	145.4
65°	230.4	93.7	67.5	63.5	69.1	91.4	130.3	156.5	134.2	112.0	109.6
67.5°	74.7	76.3	62.0	58.0	61.2	68.3	77.8	86.6	85.8	78.6	77.1
70°	59.6	69.1	57.2	52.4	52.4	54.8	52.4	42.1	36.5	39.7	41.3
72.5°	44.5	52.4	45.3	40.5	38.9	38.1	32.6	23.8	16.7	15.1	14.3
75°	26.2	29.4	27.8	23.8	22.2	19.9	15.9	10.3	5.6	4.0	2.4
77.5°	4.8	5.6	6.4	4.8	4.0	3.2	2.4	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**

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)