

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: P640963

Luminaire Tested: GWS-SA5E-830-U-T2-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P640963  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-20)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5E-830-U-T2-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

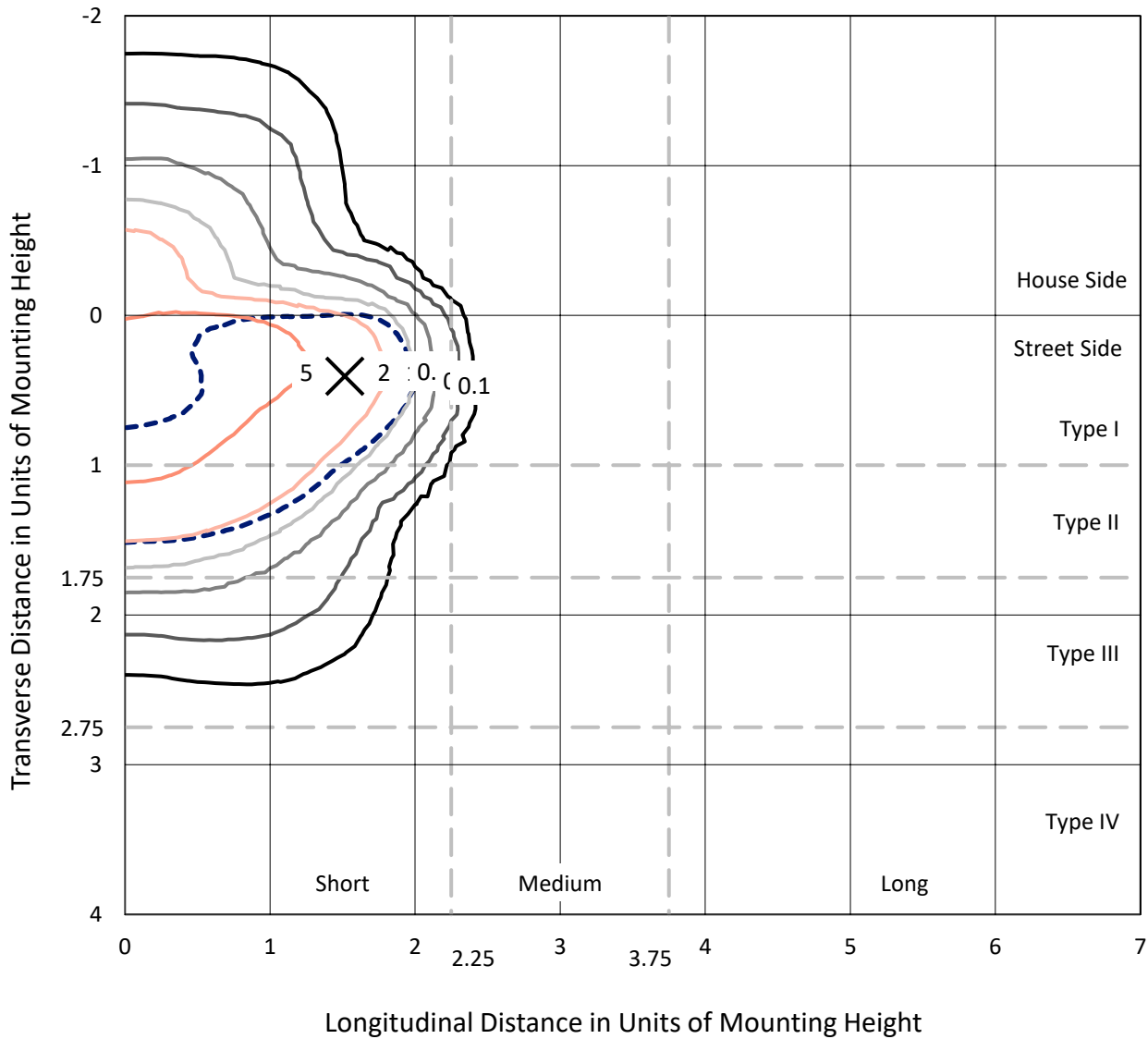
Lumens per Lamp: N/A  
Luminaire Lumens: 17714.2 lumens  
Efficiency: N/A  
Efficacy: 65.7 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 269.6  
Input Voltage (V): 120  
Input Current (Ain): 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-T2-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

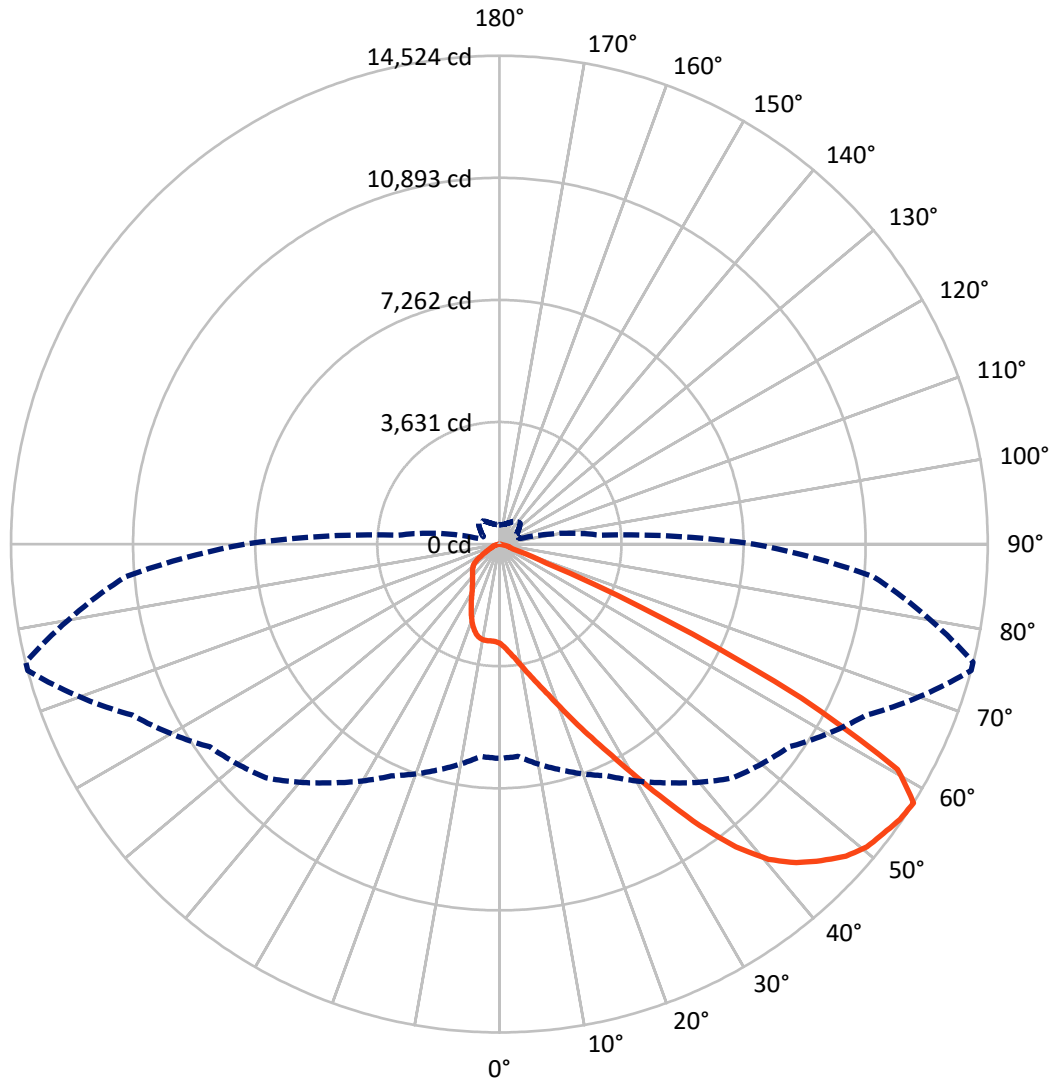
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.8 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2893.6	0.0	2893.6
	% Fixture	16.3	0.0	16.3
<b>Street Side</b>	Lumens	14820.6	0.0	14820.6
	% Fixture	83.7	0.0	83.7
<b>Total</b>	Lumens	17714.2	0.0	17714.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	300.6	1.7
10°-20°	976.6	5.5
20°-30°	1788.4	10.1
30°-40°	2967.2	16.8
40°-50°	4531.6	25.6
50°-60°	5092.0	28.7
60°-70°	1878.1	10.6
70°-80°	179.5	1.0
80°-90°	0.1	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°	17714.2	100.0
0°-180°	17714.2	100.0

**Coefficient of Utilization**



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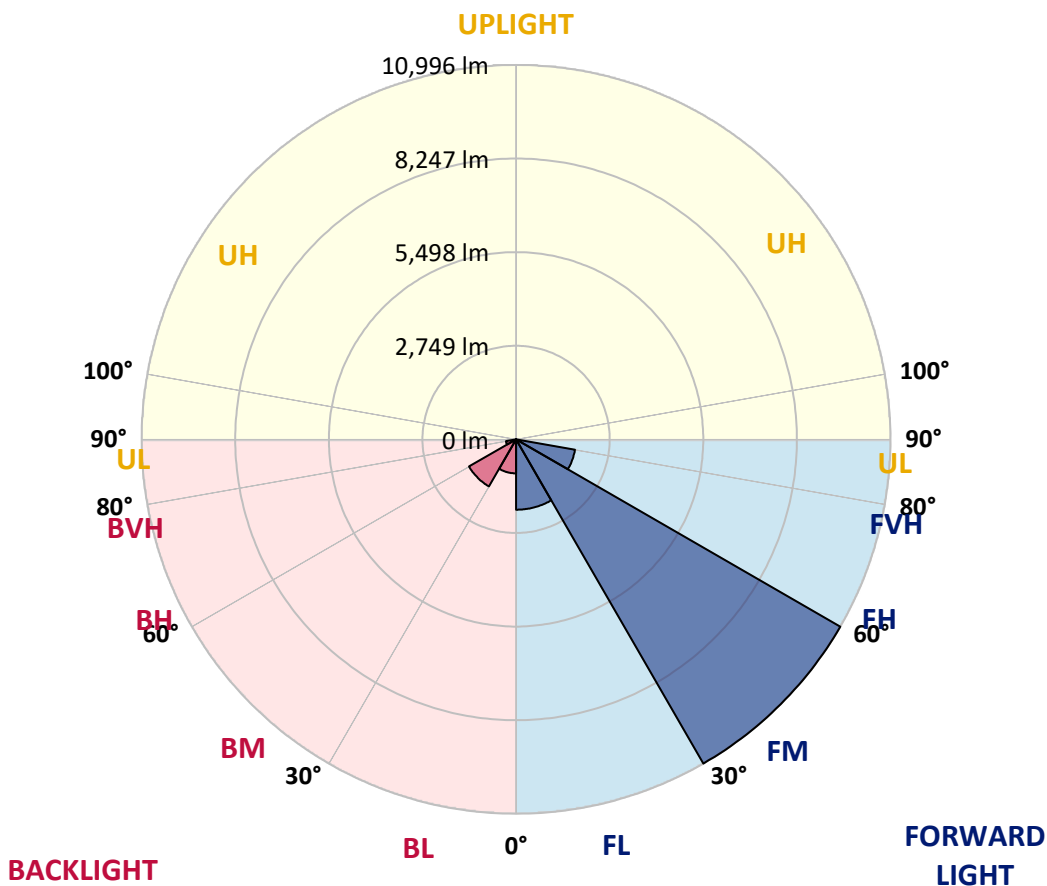
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2067.2	11.7			
FM (30°-60°)	10996.2	62.1			
FH (60°-80°)	1757.2	9.9			G1/1800
FVH (80°-90°)	0.1	0.0			G0/10
BL (0°-30°)	998.5	5.6	B2/1000		
BM (30°-60°)	1594.6	9.0	B2/2500		
BH (60°-80°)	300.5	1.7	B1/500		G1/500
BVH (80°-90°)	0.1	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G1**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5
2.5°	3300.8	3335.0	3324.3	3302.9	3290.1	3245.2	3217.4	3136.2	3078.5	3072.1	3018.6
5°	3717.7	3711.3	3702.7	3677.1	3655.7	3585.1	3501.8	3364.9	3243.1	3228.1	3114.8
7.5°	3946.4	3950.7	3955.0	3950.7	3935.7	3882.3	3790.4	3630.0	3444.0	3431.2	3251.6
10°	4040.5	4049.1	4070.4	4111.0	4147.4	4143.1	4089.7	3925.1	3696.3	3674.9	3433.4
12.5°	4085.4	4096.1	4130.3	4207.3	4305.6	4382.6	4391.1	4243.6	3991.3	3957.1	3649.3
15°	4147.4	4158.1	4200.8	4301.3	4444.5	4596.3	4694.7	4600.6	4318.4	4282.1	3886.6
17.5°	4175.2	4190.1	4252.1	4384.7	4570.7	4803.7	5026.0	5017.5	4705.4	4677.6	4162.4
20°	4228.6	4239.3	4294.9	4438.1	4662.6	4998.2	5372.4	5507.1	5177.8	5137.2	4495.9
22.5°	4397.5	4401.8	4427.4	4517.2	4726.7	5139.3	5725.1	6077.9	5735.8	5682.4	4870.0
25°	4673.3	4671.2	4681.8	4696.8	4850.7	5282.6	6065.0	6721.3	6375.0	6317.3	5293.3
27.5°	5023.9	5023.9	5049.6	5006.8	5068.8	5460.0	6400.7	7461.0	7119.0	7037.7	5757.2
30°	5436.5	5434.4	5494.2	5425.8	5445.1	5740.1	6762.0	8267.0	8016.9	7916.4	6291.6
32.5°	5996.6	5983.8	6052.2	5958.1	5894.0	6163.4	7202.4	9109.3	9092.2	8938.3	6962.9
35°	6704.2	6682.9	6704.2	6612.3	6496.9	6755.5	7779.6	9949.5	10285.1	10122.6	7762.5
37.5°	7407.6	7476.0	7499.5	7341.3	7247.2	7505.9	8474.4	10702.0	11424.6	11255.7	8594.1
40°	8237.1	8215.7	8296.9	8119.5	8059.6	8346.1	9154.2	11262.1	12326.7	12166.4	9333.8
42.5°	8848.5	8887.0	8987.4	8889.1	8842.1	9111.4	9725.0	11589.2	12953.1	12794.9	9861.8
45°	9581.8	9609.5	9648.0	9566.8	9517.6	9782.7	10137.6	11732.4	13429.9	13258.8	10216.7
47.5°	10374.9	10396.3	10396.3	10229.5	10071.3	10180.3	10413.4	11813.7	13868.1	13703.5	10479.6
50°	10943.6	10954.2	11048.3	10930.7	10586.5	10417.6	10539.5	11892.8	14158.9	14004.9	10565.2
52.5°	10439.0	10426.2	10736.2	10979.9	11071.8	10736.2	10757.6	12008.2	14299.9	14167.4	10633.6
55°	8790.8	8769.4	9205.5	9797.7	10607.9	11037.6	11020.5	12076.6	14456.0	14374.8	10881.6
57.5°	6372.9	6336.5	6943.7	7602.1	8664.6	9829.7	10513.9	12038.1	14524.4	14518.0	11170.2
60°	3831.0	3801.1	4374.0	5066.7	5887.6	7059.1	8194.3	10783.2	13609.4	13622.3	10419.8
62.5°	2358.0	2385.8	2903.2	3255.9	3561.6	3914.4	4570.7	7253.7	10082.0	10165.4	7322.1
65°	1586.3	1607.6	2086.5	2531.2	2531.2	2069.4	1776.5	3467.6	5378.8	5237.7	3463.3
67.5°	1064.6	1088.2	1466.6	1986.0	2060.9	1443.0	720.4	1034.7	1498.6	1453.7	857.3
70°	626.4	652.0	977.0	1361.8	1500.8	1004.8	481.0	438.3	425.4	412.6	333.5
72.5°	280.1	290.7	498.1	692.7	632.8	423.3	339.9	350.6	331.4	325.0	271.5
75°	85.5	89.8	128.3	149.6	151.8	151.8	205.2	275.8	260.8	263.0	209.5
77.5°	21.4	21.4	34.2	32.1	17.1	15.0	38.5	62.0	64.1	57.7	42.8
80°	0.0	0.0	0.0	0.0	0.0	2.1	2.1	2.1	2.1	2.1	2.1
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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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5	2954.5
2.5°	2995.1	2939.5	2903.2	2851.9	2815.5	2777.0	2742.8	2715.0	2700.1	2695.8	2697.9
5°	3063.5	2975.9	2890.3	2792.0	2723.6	2659.5	2608.2	2567.5	2548.3	2541.9	2541.9
7.5°	3168.3	3046.4	2894.6	2740.7	2625.3	2524.8	2464.9	2420.0	2402.9	2398.6	2385.8
10°	3305.1	3138.3	2888.2	2648.8	2486.3	2381.5	2338.8	2326.0	2332.4	2334.5	2332.4
12.5°	3469.7	3234.5	2847.6	2514.1	2338.8	2274.7	2278.9	2313.1	2351.6	2370.9	2375.1
15°	3645.0	3322.2	2755.7	2353.8	2212.7	2210.5	2272.5	2351.6	2426.4	2458.5	2467.1
17.5°	3841.7	3392.7	2614.6	2182.7	2103.6	2165.6	2276.8	2398.6	2499.1	2552.6	2563.3
20°	4057.6	3450.5	2435.0	2022.4	2007.4	2118.6	2272.5	2422.2	2546.2	2606.0	2616.7
22.5°	4282.1	3491.1	2227.6	1874.9	1919.8	2065.1	2231.9	2377.3	2494.8	2563.3	2571.8
25°	4538.6	3495.4	2016.0	1750.9	1838.5	1992.5	2133.6	2253.3	2351.6	2411.5	2417.9
27.5°	4763.1	3444.0	1827.8	1650.4	1763.7	1902.7	1996.7	2063.0	2131.4	2165.6	2167.8
30°	5021.8	3354.3	1650.4	1569.2	1686.7	1791.5	1838.5	1853.5	1859.9	1866.3	1857.8
32.5°	5329.6	3245.2	1517.9	1490.1	1599.1	1669.6	1682.5	1652.5	1616.2	1564.9	1552.1
35°	5708.0	3146.9	1408.8	1413.1	1502.9	1545.7	1535.0	1470.8	1400.3	1338.3	1327.6
37.5°	6118.5	3063.5	1325.5	1338.3	1398.1	1428.1	1396.0	1325.5	1293.4	1239.9	1242.1
40°	6481.9	2995.1	1250.6	1263.5	1291.2	1319.0	1267.7	1220.7	1280.6	1276.3	1280.6
42.5°	6740.6	2937.4	1186.5	1180.1	1199.3	1218.6	1180.1	1156.6	1257.0	1229.3	1244.2
45°	6892.4	2883.9	1133.1	1094.6	1124.5	1158.7	1133.1	1103.1	1137.3	1009.1	998.4
47.5°	6995.0	2854.0	1086.0	1011.2	1064.6	1124.5	1071.1	998.4	949.2	838.0	829.5
50°	7005.7	2839.0	1030.4	925.7	994.1	1058.2	996.2	895.8	825.2	776.0	769.6
52.5°	7061.3	2869.0	953.5	816.7	891.5	994.1	951.3	850.9	754.7	711.9	703.3
55°	7309.2	2995.1	825.2	667.0	776.0	944.9	915.0	758.9	667.0	641.3	634.9
57.5°	7565.8	3020.8	649.9	528.0	675.6	874.4	835.9	699.1	609.3	579.4	572.9
60°	6918.0	2488.4	487.4	436.1	596.5	808.1	773.9	662.7	558.0	521.6	515.2
62.5°	4545.0	1344.7	386.9	369.8	502.4	684.1	705.5	598.6	498.1	459.6	457.5
65°	2095.1	624.2	297.2	292.9	393.4	545.1	607.1	523.8	421.2	386.9	386.9
67.5°	570.8	310.0	233.0	215.9	267.2	365.6	442.5	391.2	299.3	258.7	256.5
70°	284.3	250.1	209.5	186.0	192.4	226.6	260.8	218.1	151.8	124.0	121.9
72.5°	233.0	205.2	177.4	158.2	145.4	139.0	134.7	109.0	70.5	53.4	51.3
75°	173.2	147.5	126.1	102.6	87.7	81.2	72.7	53.4	29.9	17.1	15.0
77.5°	38.5	36.3	34.2	25.7	23.5	19.2	15.0	10.7	4.3	0.0	0.0
80°	2.1	2.1	2.1	2.1	2.1	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)