

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: P633544

Luminaire Tested: GWS-SA2E-830-U-T2R-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633544  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2E-830-U-T2R-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

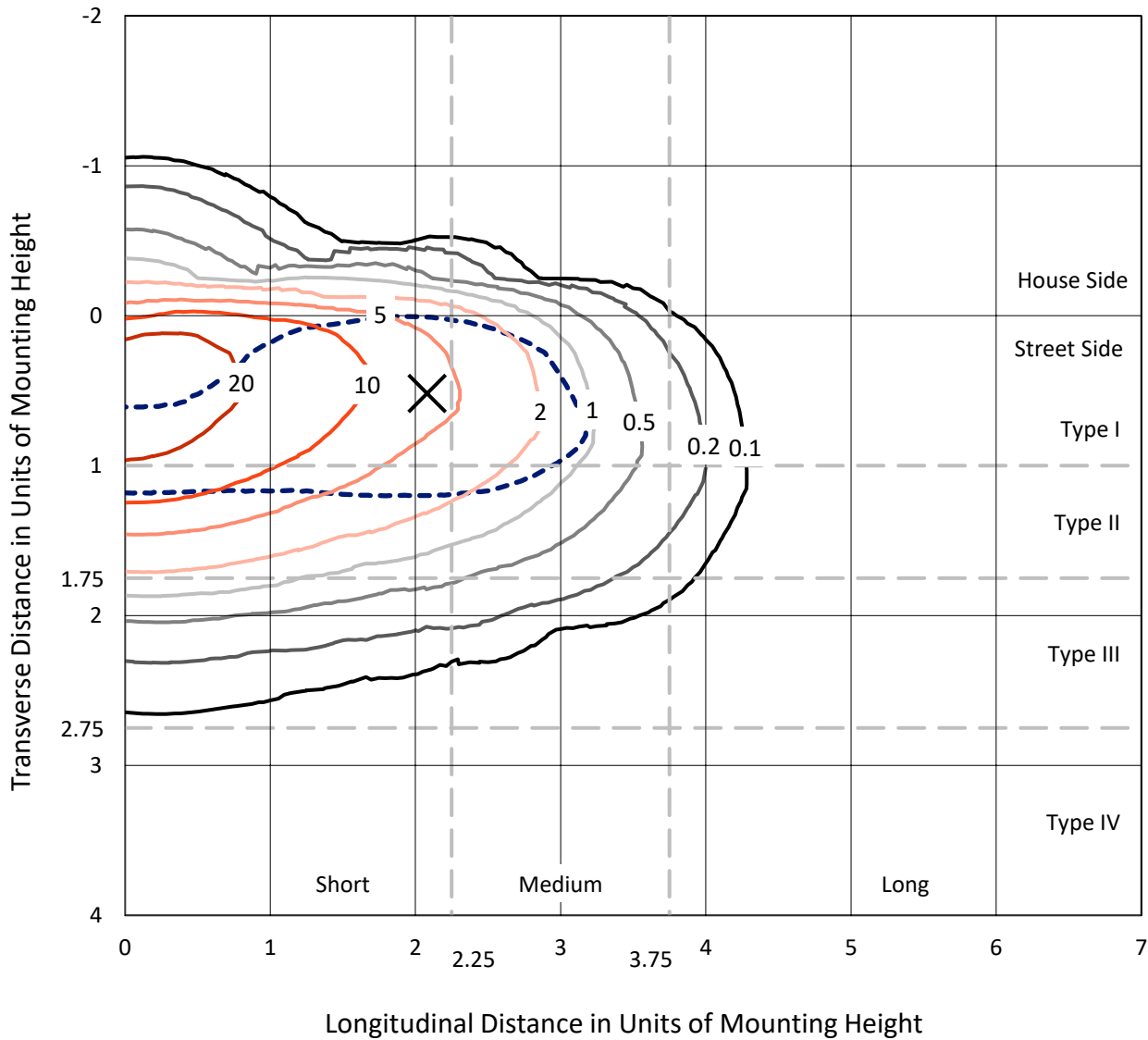
Lumens per Lamp: N/A  
Luminaire Lumens: 9347.9 lumens  
Efficiency: N/A  
Efficacy: 86.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 108.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P633544  
 CATALOG NUMBER: GWS-SA2E-830-U-T2R-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

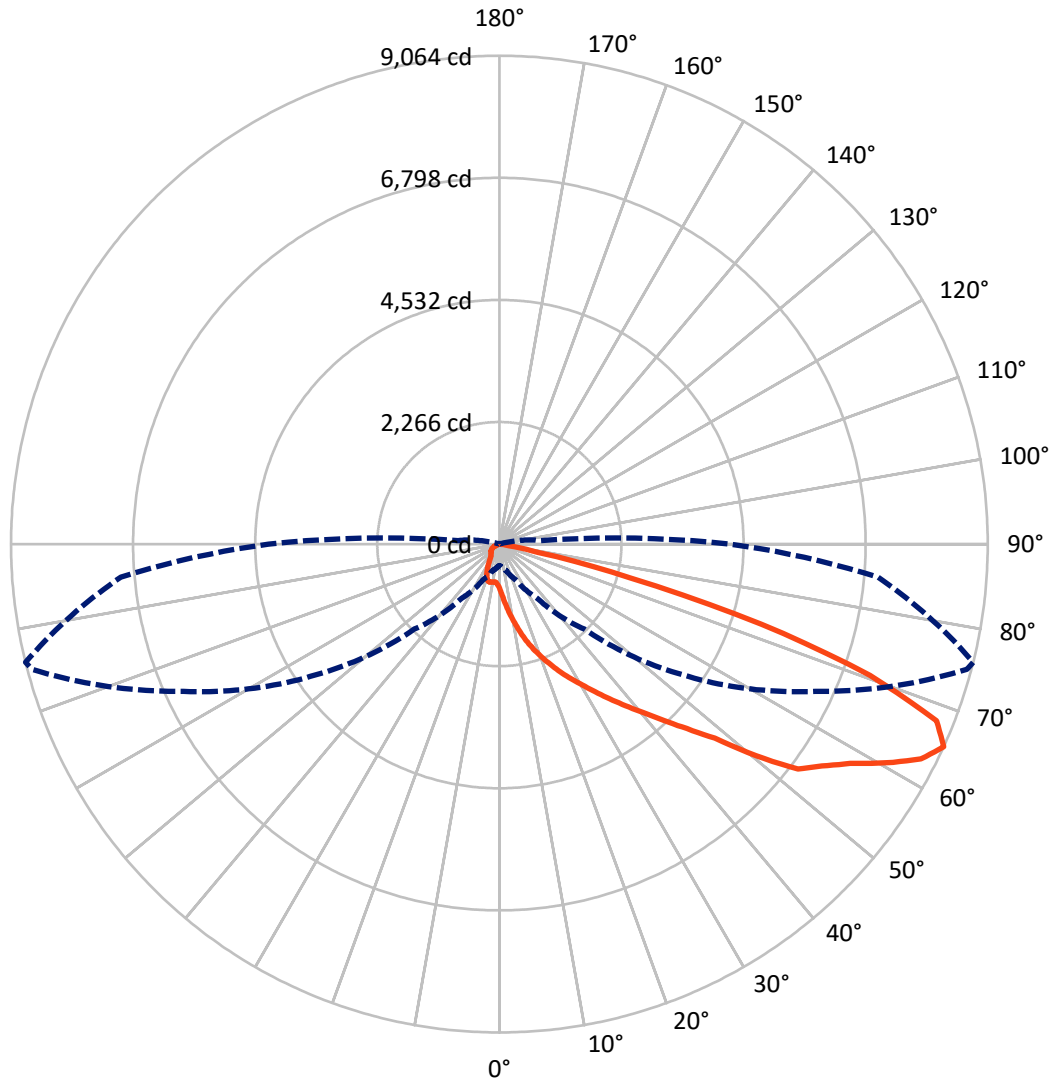
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 28 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	516.9	0.0	516.9
	% Fixture	5.5	0.0	5.5
<b>Street Side</b>	Lumens	8831.0	0.0	8831.0
	% Fixture	94.5	0.0	94.5
<b>Total</b>	Lumens	9347.9	0.0	9347.9
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.7	1.1
10°-20°	382.0	4.1
20°-30°	779.4	8.3
30°-40°	1386.3	14.8
40°-50°	2049.2	21.9
50°-60°	2346.2	25.1
60°-70°	1790.0	19.1
70°-80°	501.4	5.4
80°-90°	12.6	0.1
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°	9347.9	100.0
0°-180°	9347.9	100.0

**Coefficient of Utilization**

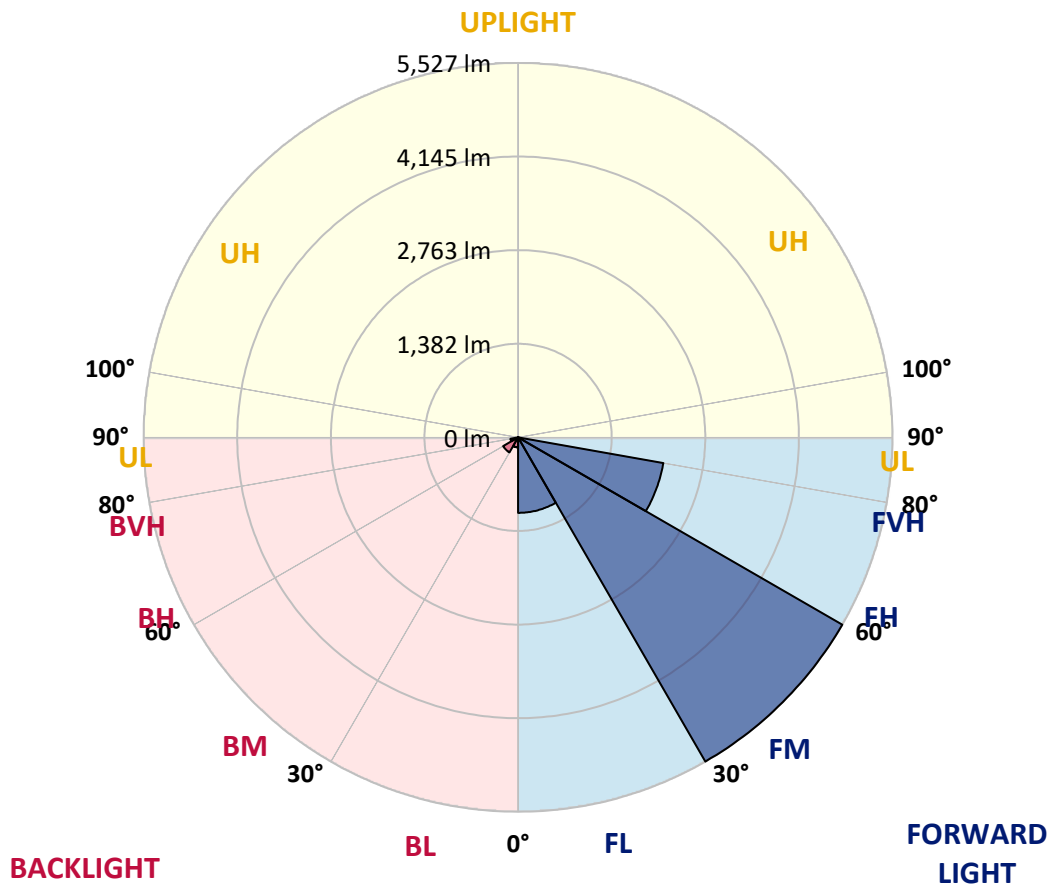


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1114.7	11.9			
FM (30°-60°)	5526.6	59.1			
FH (60°-80°)	2177.8	23.3			G2/5000
FVH (80°-90°)	11.9	0.1			G1/100
BL (0°-30°)	147.5	1.6	B1/500		
BM (30°-60°)	255.0	2.7	B1/1000		
BH (60°-80°)	113.6	1.2	B1/500		G1/500
BVH (80°-90°)	0.7	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-G2**  
 Type II Short





REPORT NUMBER: P633544

CATALOG NUMBER: GWS-SA2E-830-U-T2R-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6
2.5°	1275.5	1294.6	1279.7	1254.7	1206.5	1160.0	1100.2	1017.9	952.3	944.0	882.5
5°	1722.6	1720.9	1688.5	1656.1	1605.4	1525.6	1405.1	1252.2	1105.2	1092.7	954.8
7.5°	1988.5	1991.0	1972.7	1947.8	1897.9	1815.6	1690.2	1505.7	1290.5	1265.5	1053.6
10°	2212.0	2211.2	2197.9	2186.2	2141.4	2086.5	1951.9	1749.2	1489.9	1450.8	1164.2
12.5°	2379.9	2385.7	2392.3	2403.9	2384.8	2330.8	2203.7	1982.7	1691.8	1648.6	1290.5
15°	2512.8	2514.5	2539.4	2584.3	2600.1	2571.8	2456.3	2208.7	1891.3	1853.9	1435.9
17.5°	2552.7	2556.0	2598.4	2680.7	2763.8	2779.5	2692.3	2436.4	2087.4	2047.5	1577.2
20°	2636.6	2644.1	2675.7	2748.0	2852.7	2937.4	2903.4	2666.5	2283.5	2231.1	1721.7
22.5°	2900.9	2905.0	2894.2	2903.4	2957.4	3055.4	3076.2	2889.2	2484.6	2428.9	1878.0
25°	3355.4	3357.1	3281.4	3210.0	3169.3	3187.5	3233.2	3094.5	2684.0	2629.1	2023.4
27.5°	3827.4	3833.2	3742.6	3621.3	3475.9	3392.8	3379.5	3282.3	2885.1	2824.4	2167.1
30°	4271.9	4271.9	4176.4	4028.5	3834.0	3672.0	3576.4	3471.7	3100.3	3033.8	2314.2
32.5°	4671.6	4668.3	4546.1	4385.8	4193.8	4016.0	3814.9	3669.5	3339.6	3265.6	2483.7
35°	5001.5	4993.2	4854.4	4700.7	4495.5	4363.3	4139.0	3882.2	3598.9	3524.9	2658.2
37.5°	5250.8	5241.7	5114.5	4951.7	4761.4	4675.8	4488.0	4137.3	3872.2	3804.9	2851.8
40°	5386.2	5368.0	5279.9	5158.6	4999.0	4924.2	4846.1	4453.9	4193.8	4109.9	3080.3
42.5°	5426.1	5404.5	5346.4	5289.9	5193.5	5134.5	5218.4	4811.2	4547.0	4474.7	3341.3
45°	5308.1	5295.7	5290.7	5331.4	5348.9	5365.5	5572.4	5206.8	4936.7	4881.9	3669.5
47.5°	5023.9	5020.6	5064.7	5234.2	5418.7	5594.0	5957.1	5694.5	5441.9	5382.9	4128.2
50°	4498.8	4532.9	4655.8	4953.3	5322.3	5723.6	6316.9	6370.9	6259.6	6173.2	4726.5
52.5°	3677.8	3743.4	4019.3	4471.4	5001.5	5687.0	6483.1	6912.7	7026.5	6936.8	5155.2
55°	2885.9	2947.4	3193.4	3766.7	4473.9	5408.7	6490.6	7099.7	7348.1	7265.0	5445.2
57.5°	2149.7	2206.2	2429.7	2978.1	3755.9	4861.1	6312.8	7203.5	7729.5	7676.4	5903.1
60°	1405.1	1460.8	1662.7	2142.2	2913.3	4063.4	5874.8	7181.9	8248.9	8243.9	6465.7
62.5°	779.4	823.5	969.7	1343.7	2033.3	3146.8	5186.8	6965.1	8751.6	8783.2	6929.3
65°	398.9	427.1	516.0	738.7	1230.6	2231.1	4281.9	6468.1	8984.3	9064.0	7051.5
67.5°	260.9	270.1	291.7	383.9	658.9	1403.5	3222.4	5671.3	8656.9	8749.9	6641.8
70°	211.9	219.4	231.8	255.9	339.9	745.4	2116.4	4529.5	7233.5	7296.6	5289.0
72.5°	155.4	165.4	189.5	205.2	245.1	408.8	1101.0	2973.2	4967.4	5078.8	3323.8
75°	114.7	120.5	140.4	162.0	200.3	258.4	421.3	1563.0	2565.2	2500.3	1396.0
77.5°	69.0	73.1	89.7	103.9	142.9	161.2	147.1	577.5	780.3	733.7	337.4
80°	34.1	38.2	59.0	78.1	91.4	64.8	61.5	161.2	173.7	173.7	84.8
82.5°	11.6	15.0	31.6	51.5	44.9	24.9	29.1	41.5	46.5	49.0	24.9
85°	0.0	0.0	7.5	15.0	6.6	3.3	7.5	9.1	11.6	12.5	8.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.5	3.3	3.3
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: P633544

CATALOG NUMBER: GWS-SA2E-830-U-T2R-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6	827.6
2.5°	849.2	810.2	751.2	698.0	657.3	619.1	590.0	566.7	562.6	549.3	550.9
5°	887.5	816.8	708.0	624.0	565.0	525.2	491.9	467.0	456.2	445.4	437.1
7.5°	946.5	844.2	691.4	589.1	520.2	458.7	407.2	365.6	345.7	333.2	324.9
10°	1018.7	882.5	692.2	568.4	466.2	372.3	301.6	255.9	234.3	227.7	226.9
12.5°	1105.2	930.7	698.8	534.3	388.1	276.7	223.5	202.8	196.1	190.3	190.3
15°	1196.6	984.7	698.8	472.0	295.8	216.0	193.6	180.3	172.0	168.7	167.0
17.5°	1293.0	1035.4	682.2	386.4	226.9	190.3	172.0	159.5	152.9	147.9	146.2
20°	1396.0	1083.6	640.7	295.8	194.4	170.3	152.9	140.4	133.8	128.8	128.8
22.5°	1500.7	1128.4	573.4	227.7	172.0	151.2	134.6	123.0	116.3	111.3	111.3
25°	1597.9	1158.3	486.9	187.8	155.4	134.6	119.7	108.0	100.5	97.2	95.6
27.5°	1688.5	1177.5	391.4	165.4	139.6	120.5	104.7	93.9	88.1	85.6	83.9
30°	1782.4	1182.4	299.1	150.4	126.3	106.4	91.4	83.1	78.1	74.8	74.8
32.5°	1873.8	1176.6	228.5	137.9	114.7	93.9	81.4	74.0	69.8	67.3	66.5
35°	1966.9	1150.0	185.3	127.1	103.0	82.3	72.3	66.5	64.0	60.7	60.7
37.5°	2068.2	1114.3	161.2	116.3	91.4	74.0	64.8	60.7	57.3	54.8	54.0
40°	2194.5	1072.8	147.9	107.2	80.6	66.5	58.2	54.0	51.5	49.0	48.2
42.5°	2344.1	1032.0	141.3	97.2	72.3	59.0	52.4	47.4	44.9	41.5	40.7
45°	2556.0	1022.9	133.8	86.4	64.8	53.2	45.7	40.7	37.4	34.9	34.1
47.5°	2896.7	1048.7	121.3	74.8	57.3	46.5	39.1	34.9	30.7	28.3	26.6
50°	3234.9	1042.0	108.9	64.8	50.7	39.9	33.2	29.1	24.9	22.4	21.6
52.5°	3419.4	1010.4	97.2	57.3	44.0	34.1	28.3	23.3	20.8	18.3	17.5
55°	3586.4	998.0	85.6	49.9	37.4	29.9	23.3	19.1	17.5	15.0	14.1
57.5°	3913.8	1027.1	75.6	43.2	32.4	25.8	19.9	15.8	14.1	11.6	10.8
60°	4256.1	1030.4	64.8	37.4	28.3	21.6	15.8	12.5	10.8	8.3	7.5
62.5°	4434.8	946.5	53.2	31.6	23.3	18.3	13.3	10.0	8.3	5.0	5.0
65°	4285.2	765.3	44.9	25.8	18.3	14.1	10.0	7.5	5.0	2.5	0.8
67.5°	3792.5	544.3	37.4	20.8	13.3	10.0	7.5	5.0	0.8	0.0	0.0
70°	2777.0	310.8	29.1	15.0	10.0	6.6	5.0	2.5	0.0	0.0	0.0
72.5°	1706.8	166.2	21.6	10.0	7.5	5.0	4.2	1.7	0.0	0.0	0.0
75°	647.3	79.8	13.3	6.6	5.8	4.2	2.5	0.8	0.0	0.0	0.0
77.5°	175.3	39.1	7.5	5.0	4.2	2.5	1.7	0.0	0.0	0.0	0.0
80°	45.7	18.3	5.0	3.3	2.5	1.7	0.0	0.0	0.0	0.0	0.0
82.5°	15.8	8.3	2.5	2.5	1.7	0.8	0.0	0.0	0.0	0.0	0.0
85°	6.6	3.3	1.7	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	2.5	0.8	0.8	0.8	0.8	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**

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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**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)