

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: P633514

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

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P633514  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-48)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA2E-830-U-AFL-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND  
AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

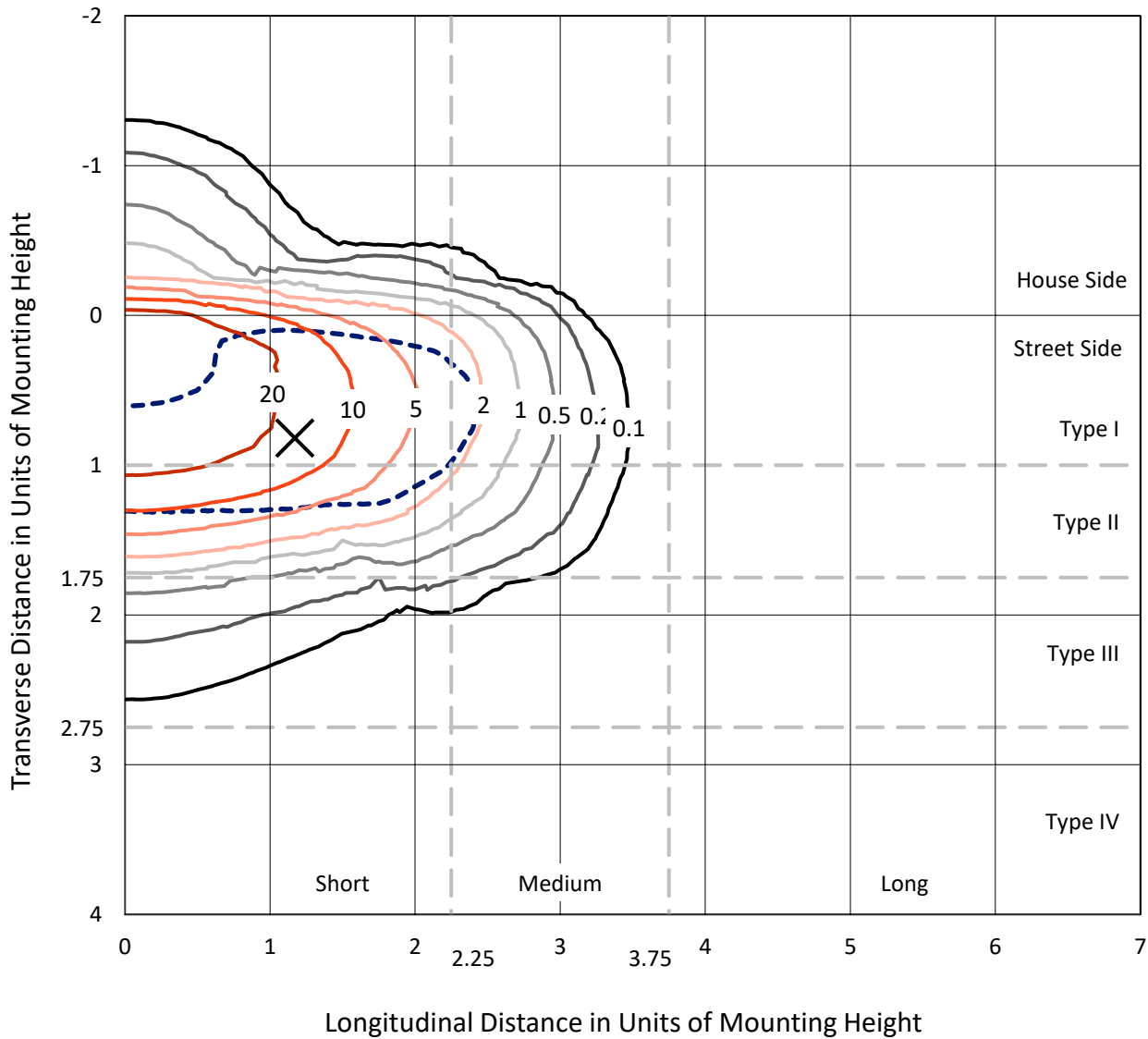
Lumens per Lamp: N/A  
Luminaire Lumens: 9720.1 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 108.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P633514  
 CATALOG NUMBER: GWS-SA2E-830-U-AFL-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

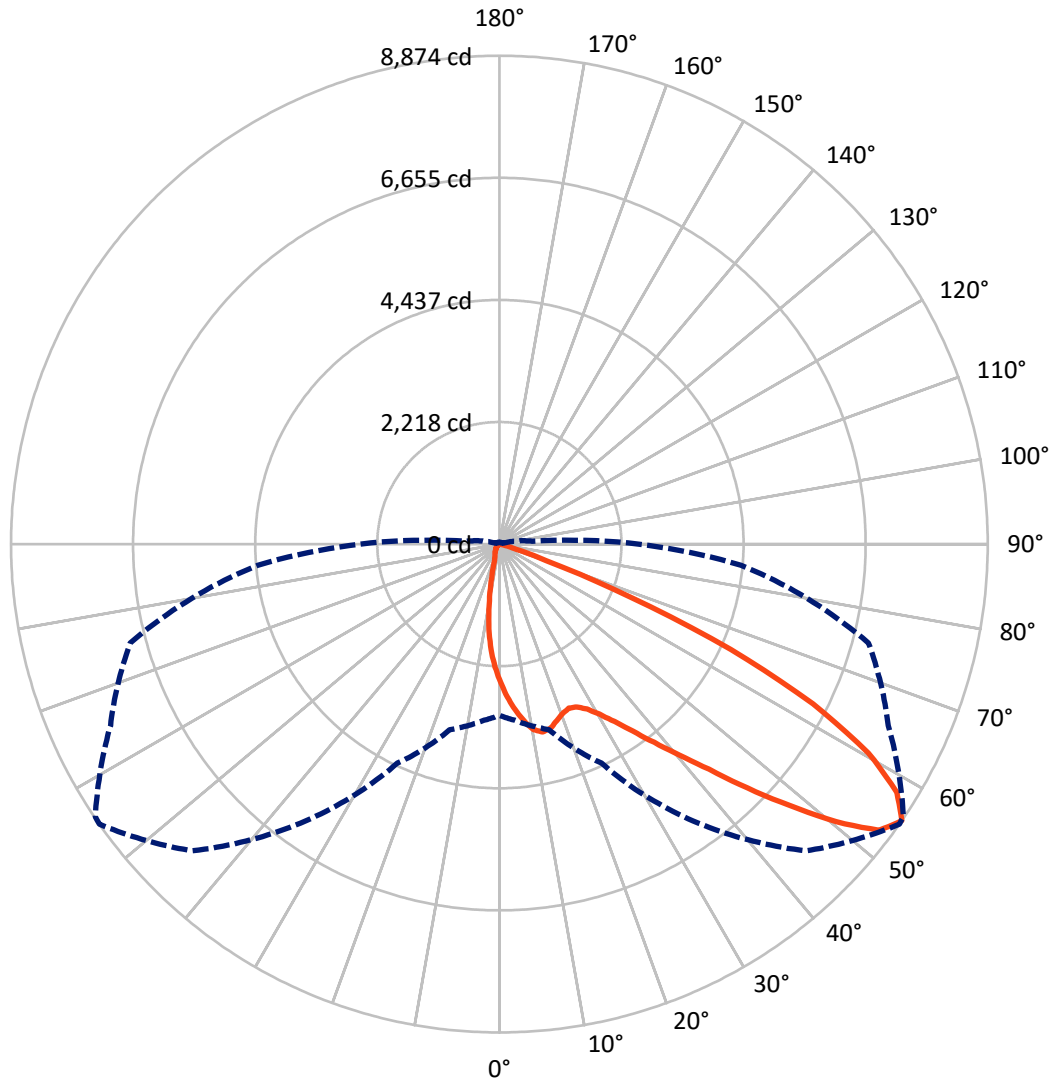
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 32.9 fc  
 Type II - Short - N/A

REPORT NUMBER: P633514  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral    - - - Horizontal Cone Through 55-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	599.8	0.0	599.8
	% Fixture	6.2	0.0	6.2
<b>Street Side</b>	Lumens	9120.3	0.0	9120.3
	% Fixture	93.8	0.0	93.8
<b>Total</b>	Lumens	9720.1	0.0	9720.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.9	2.3
10°-20°	535.0	5.5
20°-30°	891.0	9.2
30°-40°	1518.4	15.6
40°-50°	2478.5	25.5
50°-60°	2594.9	26.7
60°-70°	1308.8	13.5
70°-80°	165.3	1.7
80°-90°	6.3	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°	9720.1	100.0
0°-180°	9720.1	100.0

**Coefficient of Utilization**



REPORT NUMBER: P633514

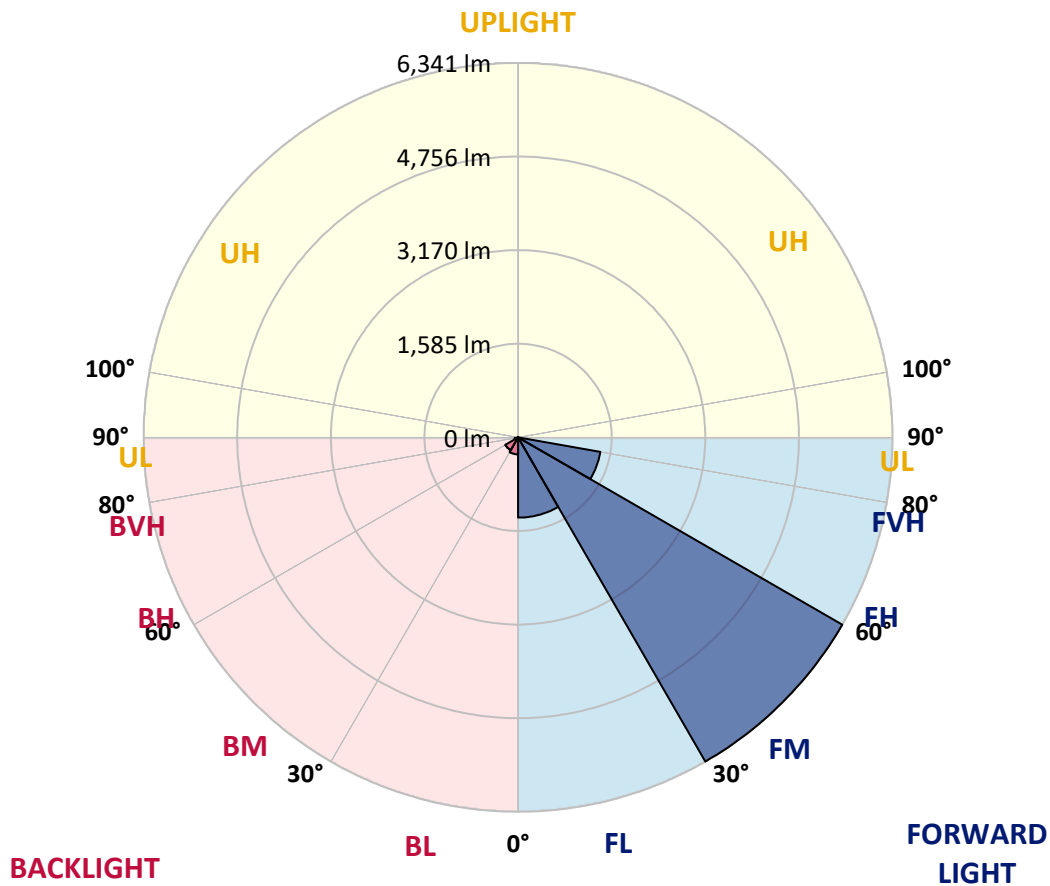
CATALOG NUMBER: GWS-SA2E-830-U-AFL-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1359.7	14.0			
FM (30°-60°)	6341.0	65.2			
FH (60°-80°)	1414.0	14.5			G1/1800
FVH (80°-90°)	5.7	0.1			G0/10
BL (0°-30°)	288.3	3.0	B1/500		
BM (30°-60°)	250.8	2.6	B1/1000		
BH (60°-80°)	60.2	0.6	B0/110		G0/110
BVH (80°-90°)	0.6	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-G1**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1
2.5°	2927.4	2913.3	2934.9	2910.0	2867.6	2831.8	2785.3	2768.7	2693.9	2623.3	2555.1
5°	3283.0	3287.2	3280.6	3245.7	3185.8	3119.4	3025.5	3004.7	2874.2	2739.6	2594.2
7.5°	3371.1	3368.6	3382.8	3396.1	3386.1	3352.8	3250.6	3229.9	3067.8	2865.9	2654.0
10°	3099.4	3101.1	3130.2	3219.9	3331.2	3446.7	3431.0	3419.3	3260.6	3008.8	2720.5
12.5°	2715.5	2730.5	2761.2	2889.2	3077.8	3340.4	3503.2	3514.9	3437.6	3165.9	2798.6
15°	2549.3	2552.7	2577.6	2654.9	2795.3	3119.4	3472.5	3504.9	3585.5	3323.8	2883.4
17.5°	2545.2	2549.3	2560.1	2594.2	2685.6	2945.7	3373.6	3430.1	3696.9	3493.3	2984.7
20°	2701.4	2698.9	2691.4	2673.1	2713.0	2888.4	3282.2	3344.5	3757.5	3658.6	3086.9
22.5°	2984.7	2981.4	2948.2	2872.6	2840.2	2940.7	3237.3	3293.9	3794.1	3805.7	3170.9
25°	3311.3	3334.6	3272.2	3157.6	3077.8	3074.5	3277.2	3317.1	3825.7	3936.2	3228.2
27.5°	3669.4	3676.9	3623.7	3494.9	3379.4	3288.9	3392.7	3422.6	3860.6	4052.5	3260.6
30°	4062.5	4060.0	3999.3	3849.8	3709.3	3578.9	3587.2	3598.8	3942.0	4185.5	3296.3
32.5°	4553.6	4564.4	4456.3	4252.8	4084.1	3903.8	3841.4	3843.1	4089.1	4356.6	3350.4
35°	5220.8	5194.2	5051.3	4761.3	4473.8	4279.3	4173.0	4163.8	4315.9	4586.8	3444.3
37.5°	5856.5	5859.0	5709.4	5390.3	5027.2	4720.6	4570.2	4545.2	4635.0	4905.9	3600.5
40°	6297.7	6306.0	6243.7	6076.7	5691.9	5258.2	5037.2	5011.4	5048.8	5309.7	3804.9
42.5°	6531.2	6554.5	6571.9	6611.0	6319.3	5929.6	5589.7	5587.2	5548.2	5770.1	4041.7
45°	6540.3	6575.2	6681.6	6948.3	6981.6	6695.7	6326.0	6270.3	6119.9	6262.8	4253.6
47.5°	6178.9	6259.5	6485.5	7014.0	7363.0	7457.7	7091.3	7057.2	6635.1	6652.5	4412.3
50°	5336.3	5420.2	5836.5	6677.4	7459.4	8062.6	7931.3	7860.7	7065.5	6910.1	4488.7
52.5°	4472.1	4548.6	4831.1	5876.4	7059.7	8252.9	8639.3	8555.4	7451.9	6999.8	4457.2
55°	3111.9	3214.1	3490.0	4392.4	6139.0	7882.3	8873.6	8856.2	7796.7	6943.3	4408.1
57.5°	1525.6	1627.0	1902.0	2708.0	4547.7	6881.9	8515.5	8607.7	8002.8	6882.7	4368.3
60°	637.3	678.9	773.6	1188.2	2544.3	5200.9	7707.0	7834.9	7876.5	6800.4	4364.1
62.5°	369.8	376.4	386.4	492.7	989.7	2981.4	6393.3	6575.2	7212.6	6691.6	4298.5
65°	279.2	281.7	277.5	302.5	408.8	1130.9	4619.2	4866.8	6020.2	6266.1	4039.2
67.5°	229.3	229.3	218.5	223.5	256.8	423.8	2550.2	2895.8	4454.7	5150.2	3335.4
70°	182.8	187.0	182.0	175.3	183.6	234.3	907.4	1125.1	2594.2	3041.2	1945.2
72.5°	138.8	138.8	147.1	142.1	136.3	147.1	316.6	355.6	1041.2	1268.0	702.1
75°	107.2	110.5	116.3	111.3	103.0	87.2	152.1	161.2	314.1	295.0	157.0
77.5°	54.8	55.7	74.0	81.4	76.4	53.2	66.5	73.1	102.2	91.4	58.2
80°	33.2	34.9	41.5	64.0	50.7	28.3	27.4	29.1	48.2	41.5	24.1
82.5°	14.1	15.0	23.3	23.3	20.8	10.8	10.8	10.8	23.3	21.6	10.0
85°	0.0	0.0	4.2	3.3	3.3	4.2	4.2	4.2	5.8	8.3	5.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	2.5	2.5
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: P633514  
 CATALOG NUMBER: GWS-SA2E-830-U-AFL-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1	2511.1
2.5°	2511.1	2457.9	2386.5	2321.6	2234.4	2185.4	2117.2	2061.6	2014.2	1999.2	1992.6
5°	2511.9	2420.5	2267.6	2114.7	1927.0	1779.0	1627.0	1506.5	1407.6	1376.0	1367.7
7.5°	2528.6	2393.9	2146.3	1868.8	1554.7	1295.4	1063.6	855.9	759.5	727.1	720.4
10°	2551.0	2371.5	2005.9	1573.8	1122.6	789.4	559.2	426.3	363.1	328.2	333.2
12.5°	2580.1	2353.2	1850.5	1254.7	742.9	433.8	307.4	257.6	244.3	237.6	234.3
15°	2619.1	2331.6	1657.7	938.1	455.4	279.2	236.8	223.5	218.5	215.2	214.4
17.5°	2659.0	2306.7	1461.6	659.8	302.5	231.8	212.7	206.1	202.7	200.3	199.4
20°	2701.4	2264.3	1231.5	454.5	238.5	208.6	196.1	188.6	184.5	180.3	179.5
22.5°	2719.7	2196.2	1011.3	318.3	211.9	191.9	176.2	167.0	162.0	158.7	158.7
25°	2702.2	2085.7	783.6	241.8	192.8	173.7	157.9	147.9	143.8	140.4	140.4
27.5°	2655.7	1943.6	571.7	200.3	172.0	154.6	139.6	130.5	127.1	125.5	125.5
30°	2604.2	1764.1	403.0	172.0	148.7	134.6	122.1	116.3	115.5	113.8	113.8
32.5°	2560.1	1596.2	277.5	151.2	131.3	117.2	108.9	106.4	107.2	105.5	106.4
35°	2536.0	1431.7	206.1	134.6	117.2	103.9	99.7	99.7	99.7	98.9	98.9
37.5°	2546.0	1269.7	167.9	123.0	104.7	94.7	90.6	92.2	93.9	93.9	93.9
40°	2595.9	1125.9	148.7	112.2	93.9	86.4	83.1	85.6	88.1	89.7	89.7
42.5°	2659.0	1009.6	134.6	103.0	86.4	78.1	76.4	78.9	81.4	83.1	83.1
45°	2698.9	892.4	120.5	91.4	78.9	69.0	69.0	72.3	71.5	72.3	72.3
47.5°	2717.2	799.4	106.4	78.9	67.3	59.8	60.7	62.3	60.7	62.3	62.3
50°	2672.3	705.5	93.9	65.6	55.7	52.3	54.0	53.2	53.2	56.5	56.5
52.5°	2590.0	635.7	83.1	55.7	47.4	46.5	48.2	44.9	45.7	45.7	44.9
55°	2529.4	595.8	74.0	48.2	40.7	41.5	40.7	34.9	31.6	28.3	27.4
57.5°	2499.5	580.0	67.3	43.2	36.6	36.6	33.2	24.1	18.3	14.1	12.5
60°	2492.8	560.9	60.7	37.4	32.4	30.7	24.1	14.1	9.1	6.6	5.8
62.5°	2429.7	514.4	54.8	29.9	28.3	24.9	15.0	8.3	5.0	3.3	2.5
65°	2222.8	422.9	49.0	23.3	21.6	18.3	9.1	5.0	2.5	0.8	0.0
67.5°	1768.2	300.0	43.2	17.4	15.0	11.6	5.8	3.3	0.8	0.0	0.0
70°	1019.6	162.0	35.7	12.5	10.0	7.5	4.2	1.7	0.0	0.0	0.0
72.5°	340.7	75.6	27.4	8.3	7.5	5.8	2.5	0.8	0.0	0.0	0.0
75°	74.8	44.9	18.3	5.8	5.0	4.2	1.7	0.0	0.0	0.0	0.0
77.5°	28.3	31.6	9.1	4.2	3.3	2.5	0.8	0.0	0.0	0.0	0.0
80°	10.8	20.8	4.2	2.5	2.5	0.8	0.0	0.0	0.0	0.0	0.0
82.5°	5.8	8.3	2.5	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0
85°	3.3	4.2	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	1.7	0.8	0.8	0.8	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  
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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

REPORT NUMBER: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



CCT = 3050K  
 CIE x = 0.4383  
 CIE y = 0.4131  
 Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

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)