

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: P635989

Luminaire Tested: GWS-SA3E-830-U-AFL-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P635989  
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-SA3E-830-U-AFL-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND  
AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

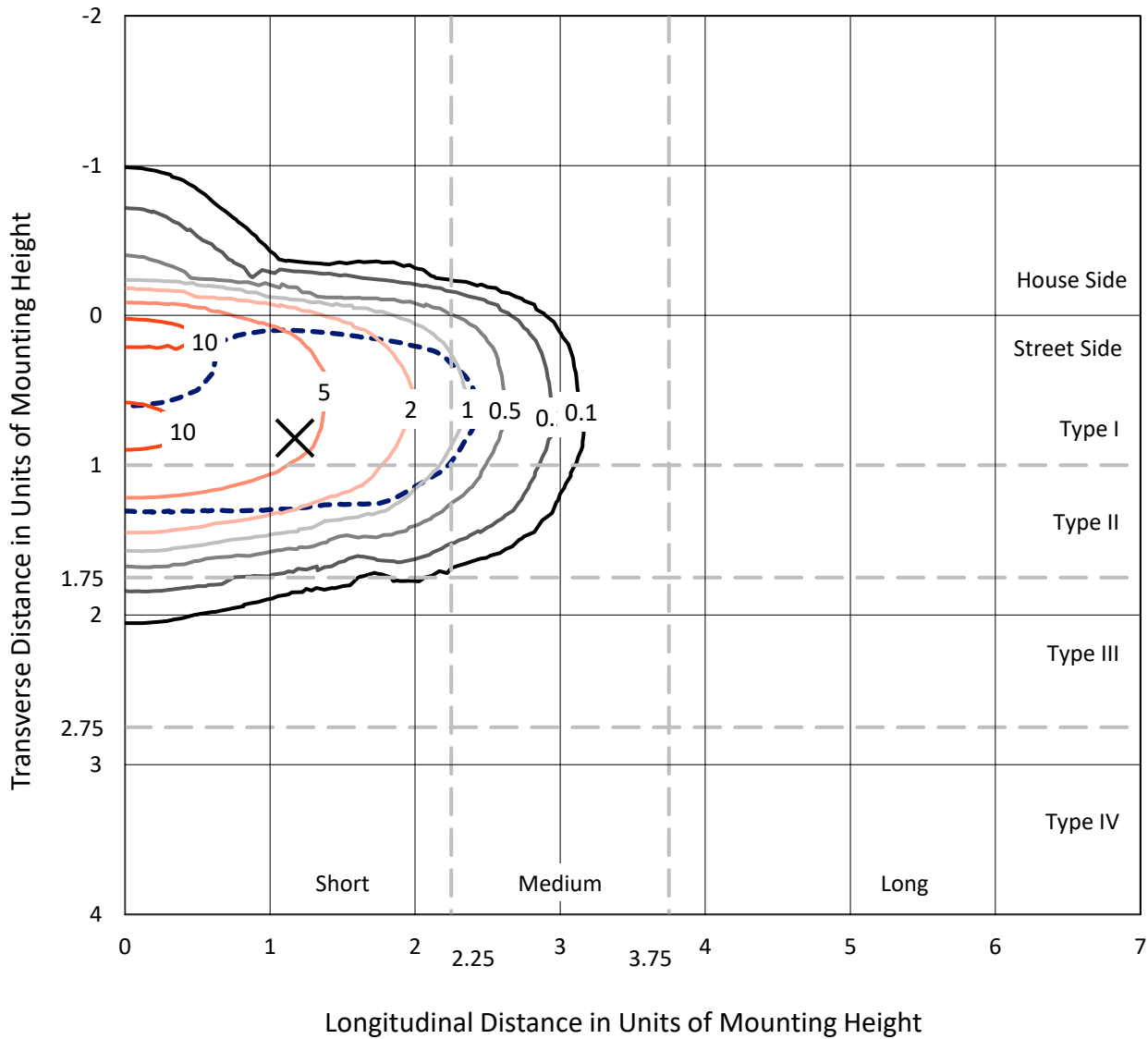
Lumens per Lamp: N/A  
Luminaire Lumens: 14650.1 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P635989  
 CATALOG NUMBER: GWS-SA3E-830-U-AFL-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

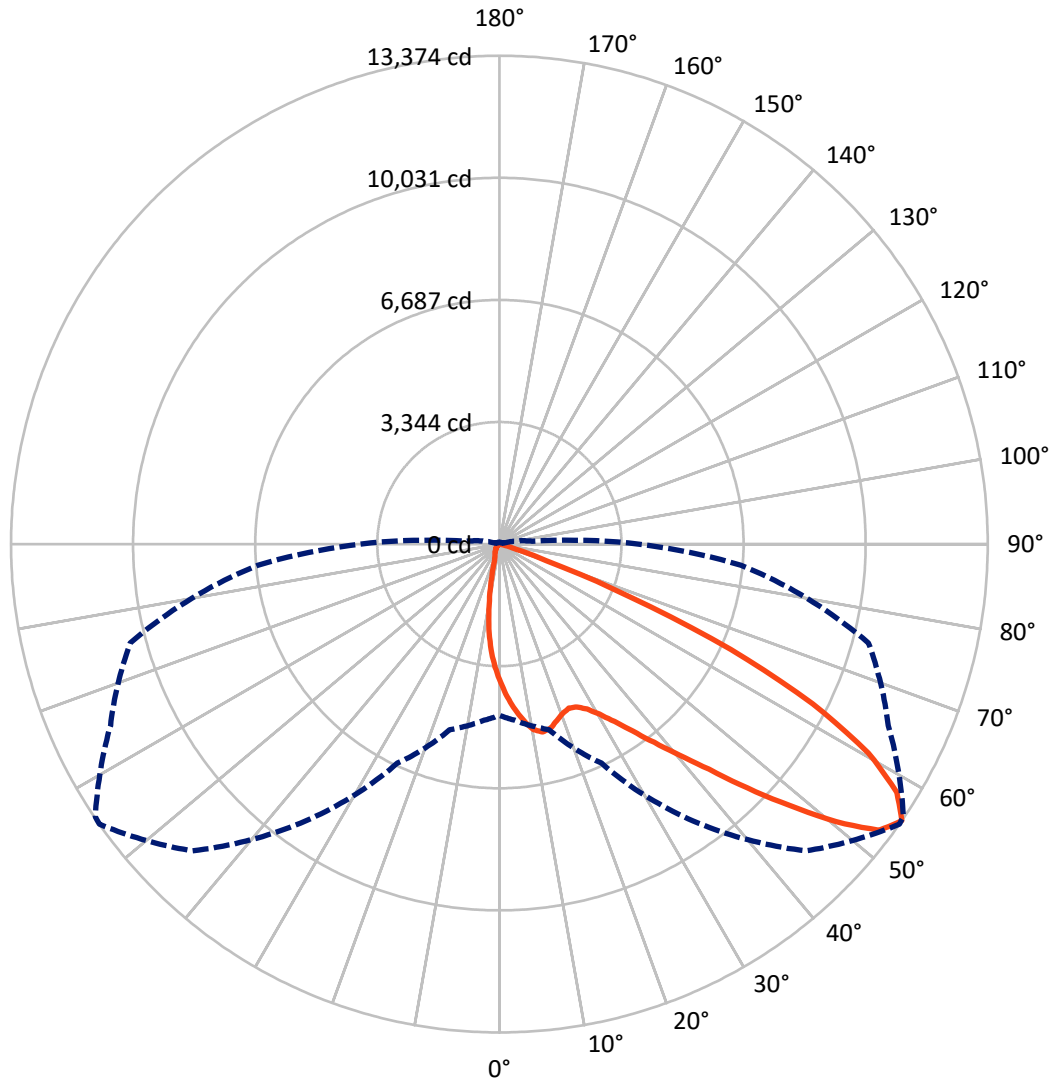
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.4 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



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

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 CATALOG NUMBER: GWS-SA3E-830-U-AFL-W-HSS

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	904.0	0.0	904.0
	% Fixture	6.2	0.0	6.2
<b>Street Side</b>	Lumens	13746.1	0.0	13746.1
	% Fixture	93.8	0.0	93.8
<b>Total</b>	Lumens	14650.1	0.0	14650.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	334.5	2.3
10°-20°	806.4	5.5
20°-30°	1343.0	9.2
30°-40°	2288.5	15.6
40°-50°	3735.6	25.5
50°-60°	3911.0	26.7
60°-70°	1972.6	13.5
70°-80°	249.2	1.7
80°-90°	9.5	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°	14650.1	100.0
0°-180°	14650.1	100.0

**Coefficient of Utilization**



REPORT NUMBER: P635989

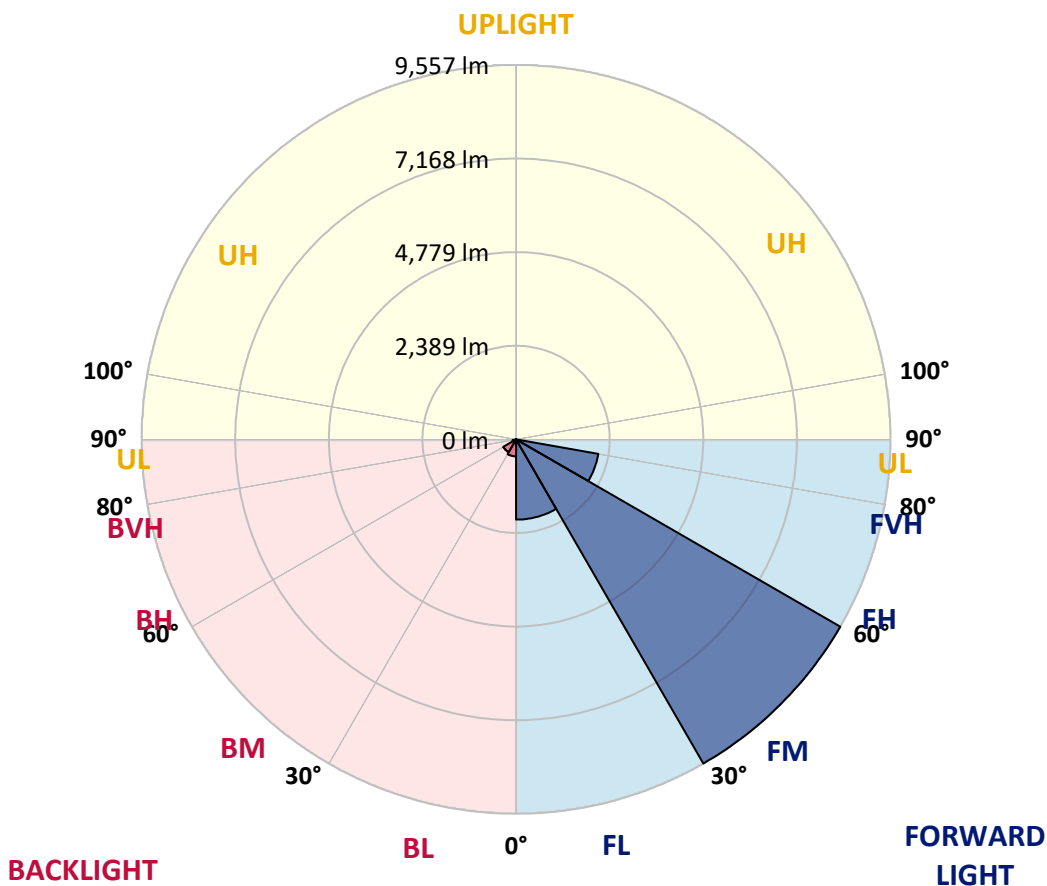
CATALOG NUMBER: GWS-SA3E-830-U-AFL-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2049.3	14.0			
FM (30°-60°)	9557.1	65.2			
FH (60°-80°)	2131.1	14.5			G2/5000
FVH (80°-90°)	8.6	0.1			G0/10
BL (0°-30°)	434.5	3.0	B1/500		
BM (30°-60°)	378.0	2.6	B1/1000		
BH (60°-80°)	90.7	0.6	B0/110		G0/110
BVH (80°-90°)	0.9	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: P635989

CATALOG NUMBER: GWS-SA3E-830-U-AFL-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7
2.5°	4412.2	4390.9	4423.4	4385.9	4322.0	4268.2	4198.0	4173.0	4060.3	3953.8	3851.1
5°	4948.2	4954.5	4944.4	4891.8	4801.7	4701.5	4560.0	4528.6	4332.0	4129.1	3910.0
7.5°	5081.0	5077.2	5098.5	5118.5	5103.5	5053.4	4899.4	4868.0	4623.8	4319.5	4000.1
10°	4671.4	4673.9	4717.8	4853.0	5020.8	5194.9	5171.1	5153.6	4914.4	4534.9	4100.3
12.5°	4092.8	4115.4	4161.7	4354.6	4638.9	5034.6	5280.1	5297.6	5181.1	4771.6	4218.1
15°	3842.3	3847.3	3884.9	4001.4	4213.0	4701.5	5233.7	5282.6	5404.1	5009.6	4345.8
17.5°	3836.1	3842.3	3858.6	3910.0	4047.7	4439.7	5084.7	5169.9	5571.9	5265.1	4498.6
20°	4071.5	4067.8	4056.5	4028.9	4089.1	4353.3	4946.9	5040.9	5663.3	5514.3	4652.6
22.5°	4498.6	4493.6	4443.5	4329.5	4280.7	4432.2	4879.3	4964.5	5718.4	5736.0	4779.1
25°	4990.8	5025.8	4931.9	4759.1	4638.9	4633.8	4939.4	4999.5	5766.0	5932.6	4865.5
27.5°	5530.6	5541.8	5461.7	5267.6	5093.5	4957.0	5113.5	5158.6	5818.6	6107.9	4914.4
30°	6122.9	6119.2	6027.8	5802.3	5590.7	5394.1	5406.6	5424.1	5941.3	6308.3	4968.2
32.5°	6863.1	6879.4	6716.6	6409.7	6155.5	5883.7	5789.8	5792.3	6163.0	6566.3	5049.6
35°	7868.8	7828.7	7613.3	7176.2	6742.9	6449.8	6289.5	6275.7	6504.9	6913.2	5191.2
37.5°	8826.9	8830.6	8605.2	8124.3	7577.0	7114.8	6888.2	6850.6	6985.8	7394.1	5426.6
40°	9491.9	9504.4	9410.5	9158.7	8578.9	7925.1	7592.0	7553.2	7609.5	8002.8	5734.7
42.5°	9843.8	9878.9	9905.2	9964.0	9524.4	8937.1	8424.8	8421.1	8362.2	8696.6	6091.6
45°	9857.6	9910.2	10070.5	10472.5	10522.6	10091.8	9534.5	9450.5	9223.9	9439.3	6411.0
47.5°	9312.8	9434.3	9774.9	10571.4	11097.4	11240.2	10687.9	10636.6	10000.3	10026.6	6650.2
50°	8042.9	8169.4	8796.8	10064.2	11242.7	12152.0	11954.1	11847.6	10649.1	10414.9	6765.4
52.5°	6740.4	6855.6	7281.4	8856.9	10640.3	12438.8	13021.1	12894.6	11231.4	10550.1	6717.8
55°	4690.2	4844.3	5260.0	6620.1	9252.7	11880.2	13374.3	13348.0	11751.2	10465.0	6643.9
57.5°	2299.4	2452.2	2866.7	4081.5	6854.3	10372.3	12834.5	12973.5	12061.8	10373.6	6583.8
60°	960.6	1023.2	1166.0	1790.9	3834.8	7838.7	11615.9	11808.8	11871.4	10249.6	6577.6
62.5°	557.3	567.3	582.4	742.7	1491.6	4493.6	9635.9	9910.2	10870.8	10085.5	6478.6
65°	420.8	424.6	418.3	455.9	616.2	1704.5	6962.0	7335.3	9073.6	9444.3	6087.9
67.5°	345.7	345.7	329.4	336.9	387.0	638.7	3843.6	4364.6	6714.1	7762.3	5027.1
70°	275.5	281.8	274.3	264.3	276.8	353.2	1367.6	1695.7	3910.0	4583.8	2931.8
72.5°	209.1	209.1	221.7	214.2	205.4	221.7	477.2	536.0	1569.2	1911.1	1058.3
75°	161.6	166.6	175.3	167.8	155.3	131.5	229.2	243.0	473.4	444.6	236.7
77.5°	82.7	83.9	111.5	122.7	115.2	80.2	100.2	110.2	154.0	137.8	87.7
80°	50.1	52.6	62.6	96.4	76.4	42.6	41.3	43.8	72.6	62.6	36.3
82.5°	21.3	22.5	35.1	35.1	31.3	16.3	16.3	16.3	35.1	32.6	15.0
85°	0.0	0.0	6.3	5.0	5.0	6.3	6.3	6.3	8.8	12.5	7.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.8	3.8
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: P635989

CATALOG NUMBER: GWS-SA3E-830-U-AFL-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7	3784.7
2.5°	3784.7	3704.6	3596.9	3499.2	3367.7	3293.8	3191.1	3107.2	3035.8	3013.3	3003.2
5°	3786.0	3648.2	3417.8	3187.3	2904.3	2681.4	2452.2	2270.6	2121.6	2074.0	2061.4
7.5°	3811.0	3608.1	3234.9	2816.6	2343.2	1952.5	1603.1	1290.0	1144.7	1095.8	1085.8
10°	3844.8	3574.3	3023.3	2372.0	1692.0	1189.8	842.9	642.5	547.3	494.7	502.2
12.5°	3888.7	3546.8	2789.1	1891.1	1119.6	653.7	463.4	388.2	368.2	358.2	353.2
15°	3947.5	3514.2	2498.5	1414.0	686.3	420.8	356.9	336.9	329.4	324.4	323.1
17.5°	4007.7	3476.6	2203.0	994.4	455.9	349.4	320.6	310.6	305.6	301.8	300.6
20°	4071.5	3412.8	1856.0	685.1	359.4	314.4	295.6	284.3	278.0	271.8	270.5
22.5°	4099.1	3310.1	1524.2	479.7	319.4	289.3	265.5	251.7	244.2	239.2	239.2
25°	4072.8	3143.5	1181.0	364.4	290.6	261.7	238.0	222.9	216.7	211.7	211.7
27.5°	4002.6	2929.3	861.6	301.8	259.2	232.9	210.4	196.6	191.6	189.1	189.1
30°	3925.0	2658.8	607.4	259.2	224.2	202.9	184.1	175.3	174.1	171.6	171.6
32.5°	3858.6	2405.8	418.3	227.9	197.9	176.6	164.1	160.3	161.6	159.1	160.3
35°	3822.3	2157.9	310.6	202.9	176.6	156.5	150.3	150.3	150.3	149.0	149.0
37.5°	3837.3	1913.7	253.0	185.4	157.8	142.8	136.5	139.0	141.5	141.5	141.5
40°	3912.5	1697.0	224.2	169.1	141.5	130.2	125.2	129.0	132.8	135.3	135.3
42.5°	4007.7	1521.7	202.9	155.3	130.2	117.7	115.2	119.0	122.7	125.2	125.2
45°	4067.8	1345.1	181.6	137.8	119.0	103.9	103.9	109.0	107.7	109.0	109.0
47.5°	4095.3	1204.8	160.3	119.0	101.4	90.2	91.4	93.9	91.4	93.9	93.9
50°	4027.7	1063.3	141.5	98.9	83.9	78.9	81.4	80.2	80.2	85.2	85.2
52.5°	3903.7	958.1	125.2	83.9	71.4	70.1	72.6	67.6	68.9	68.9	67.6
55°	3812.3	898.0	111.5	72.6	61.4	62.6	61.4	52.6	47.6	42.6	41.3
57.5°	3767.2	874.2	101.4	65.1	55.1	55.1	50.1	36.3	27.6	21.3	18.8
60°	3757.2	845.4	91.4	56.4	48.8	46.3	36.3	21.3	13.8	10.0	8.8
62.5°	3662.0	775.2	82.7	45.1	42.6	37.6	22.5	12.5	7.5	5.0	3.8
65°	3350.1	637.5	73.9	35.1	32.6	27.6	13.8	7.5	3.8	1.3	0.0
67.5°	2665.1	452.1	65.1	26.3	22.5	17.5	8.8	5.0	1.3	0.0	0.0
70°	1536.7	244.2	53.9	18.8	15.0	11.3	6.3	2.5	0.0	0.0	0.0
72.5°	513.5	114.0	41.3	12.5	11.3	8.8	3.8	1.3	0.0	0.0	0.0
75°	112.7	67.6	27.6	8.8	7.5	6.3	2.5	0.0	0.0	0.0	0.0
77.5°	42.6	47.6	13.8	6.3	5.0	3.8	1.3	0.0	0.0	0.0	0.0
80°	16.3	31.3	6.3	3.8	3.8	1.3	0.0	0.0	0.0	0.0	0.0
82.5°	8.8	12.5	3.8	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0
85°	5.0	6.3	2.5	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	2.5	1.3	1.3	1.3	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**



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)