

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: P640444

Luminaire Tested: GWS-SA5D-830-U-AFL-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P640444  
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-SA5D-830-U-AFL-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND  
AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

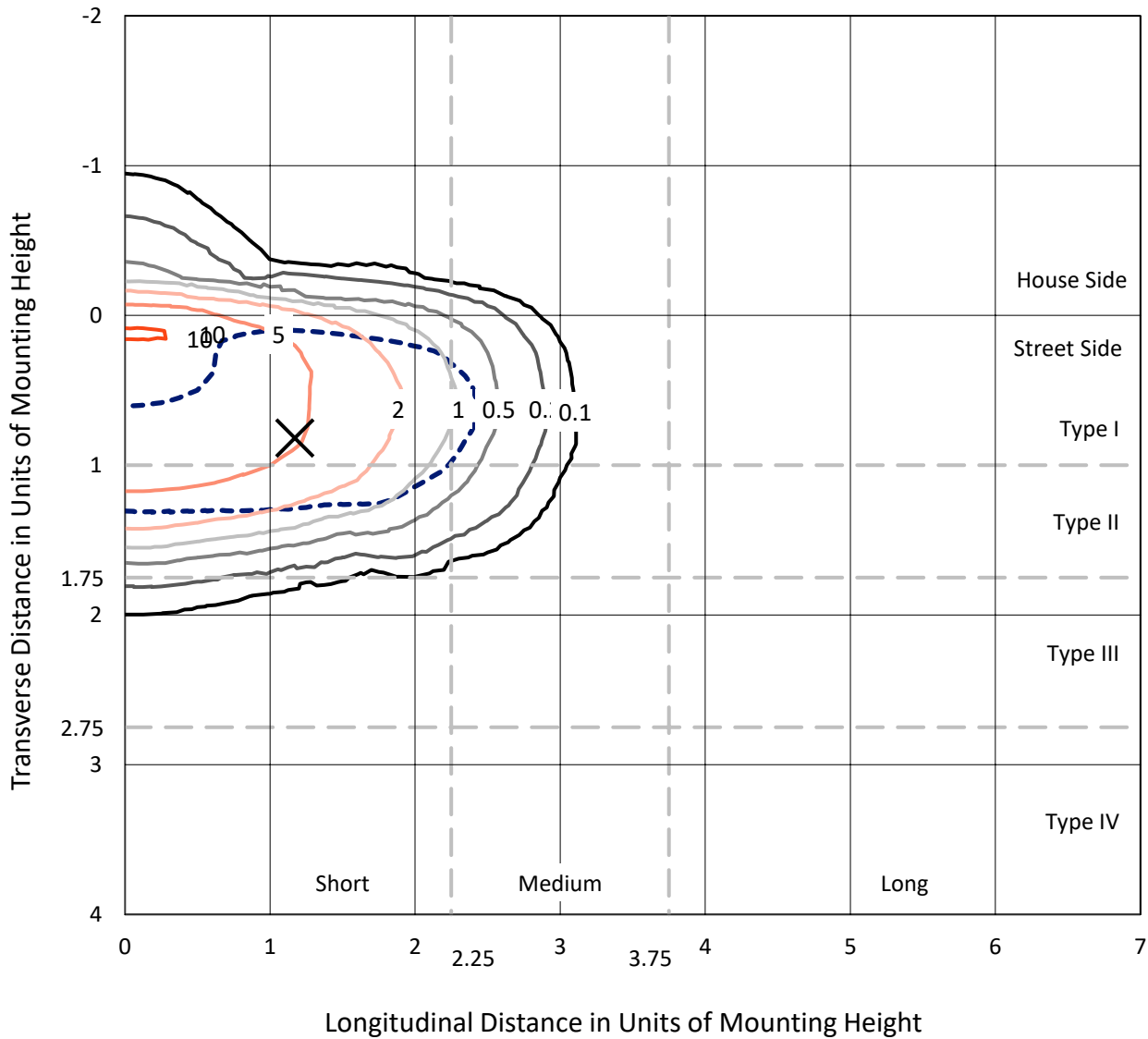
Lumens per Lamp: N/A  
Luminaire Lumens: 20012.4 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 204.6  
Input Voltage (V): 120  
Input Current (Ain): 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



REPORT NUMBER: P640444  
 CATALOG NUMBER: GWS-SA5D-830-U-AFL-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

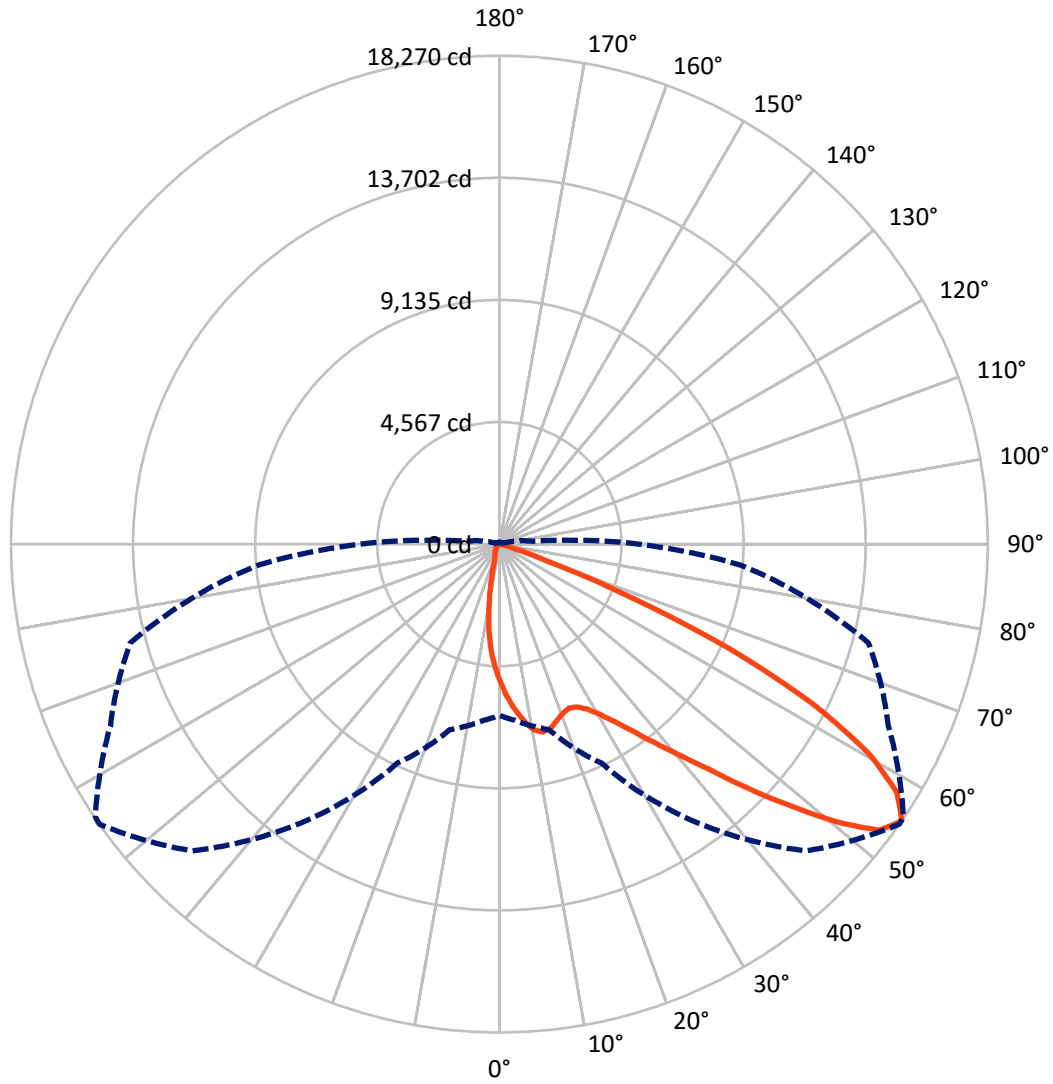
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.8 fc  
 Type II - Short - N/A

REPORT NUMBER: P640444  
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### Luminous Intensity Polar Plot



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

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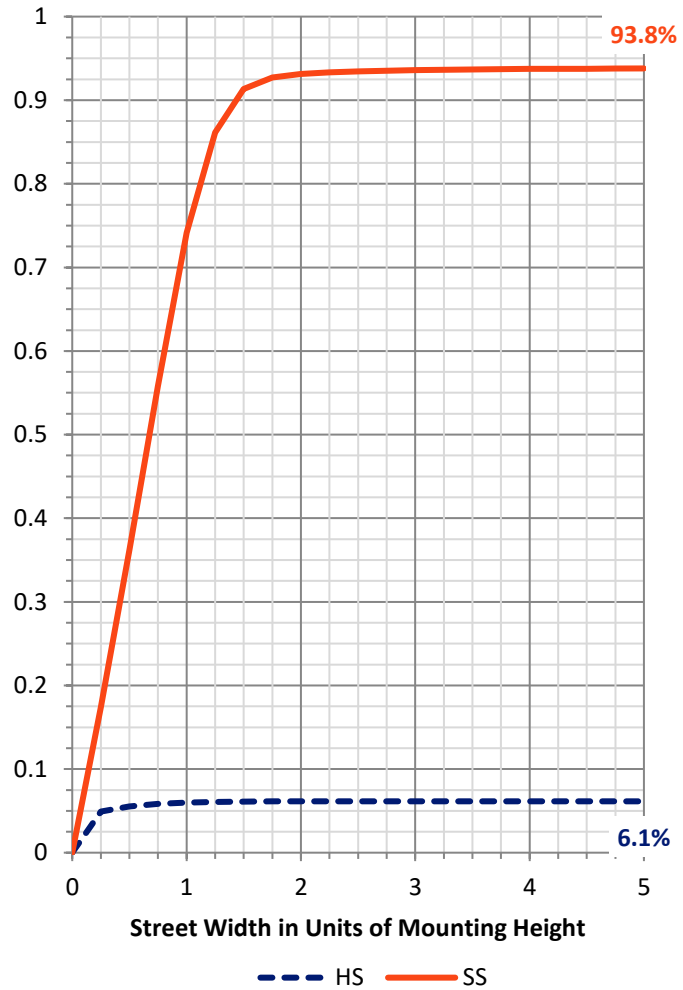
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1234.8	0.0	1234.8
	% Fixture	6.2	0.0	6.2
<b>Street Side</b>	Lumens	18777.5	0.0	18777.5
	% Fixture	93.8	0.0	93.8
<b>Total</b>	Lumens	20012.4	0.0	20012.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	456.9	2.3
10°-20°	1101.6	5.5
20°-30°	1834.5	9.2
30°-40°	3126.1	15.6
40°-50°	5102.9	25.5
50°-60°	5342.5	26.7
60°-70°	2694.6	13.5
70°-80°	340.4	1.7
80°-90°	12.9	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°	20012.4	100.0
0°-180°	20012.4	100.0

**Coefficient of Utilization**



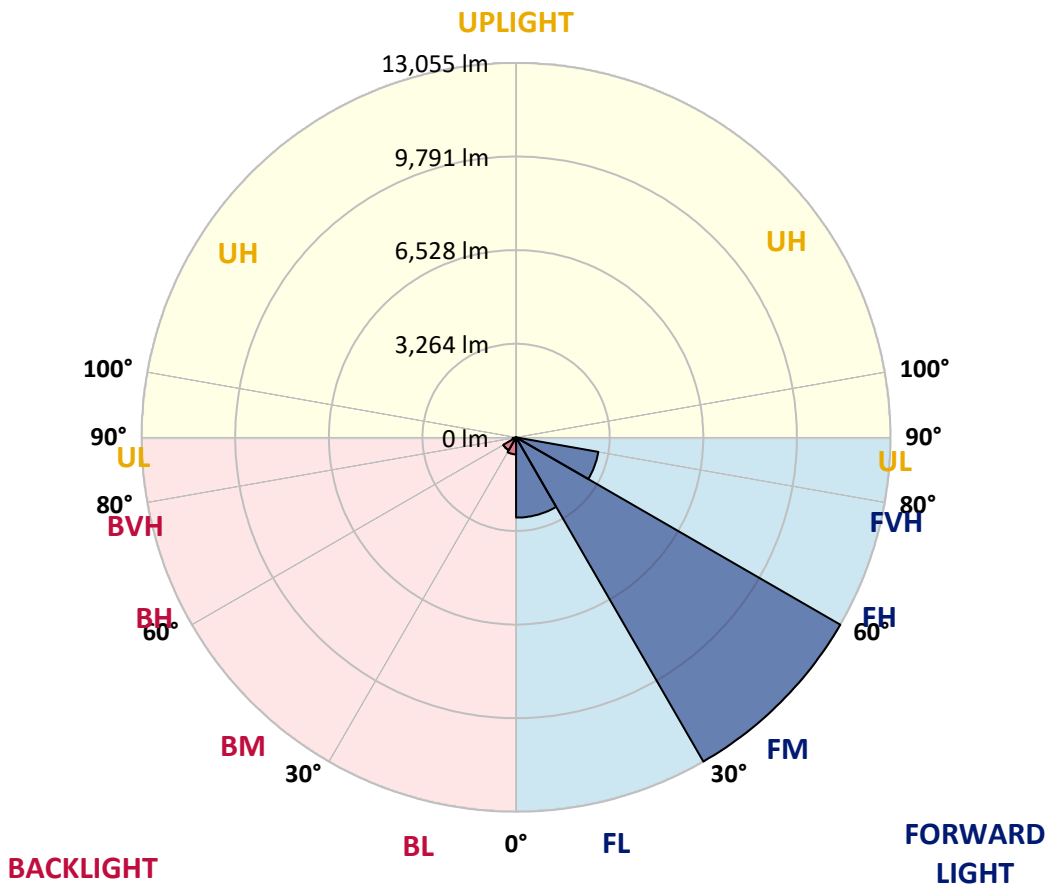
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2799.5	14.0			
FM (30°-60°)	13055.2	65.2			
FH (60°-80°)	2911.1	14.5			G2/5000
FVH (80°-90°)	11.8	0.1			G1/100
BL (0°-30°)	593.5	3.0	B2/1000		
BM (30°-60°)	516.3	2.6	B1/1000		
BH (60°-80°)	123.9	0.6	B1/500		G1/500
BVH (80°-90°)	1.2	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-G2**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0
2.5°	6027.1	5998.1	6042.5	5991.2	5904.0	5830.4	5734.6	5700.4	5546.4	5401.0	5260.7
5°	6759.4	6767.9	6754.2	6682.4	6559.2	6422.3	6229.0	6186.2	5917.7	5640.5	5341.1
7.5°	6940.7	6935.6	6964.7	6992.0	6971.5	6903.1	6692.6	6649.9	6316.3	5900.5	5464.3
10°	6381.3	6384.7	6444.6	6629.3	6858.6	7096.4	7063.9	7039.9	6713.2	6194.8	5601.2
12.5°	5590.9	5621.7	5685.0	5948.4	6336.8	6877.4	7212.7	7236.7	7077.6	6518.1	5762.0
15°	5248.7	5255.6	5306.9	5466.0	5755.1	6422.3	7149.4	7216.1	7382.1	6843.2	5936.5
17.5°	5240.2	5248.7	5271.0	5341.1	5529.3	6064.8	6945.8	7062.2	7611.3	7192.2	6145.2
20°	5561.8	5556.7	5541.3	5503.6	5585.8	5946.7	6757.7	6886.0	7736.2	7532.6	6355.6
22.5°	6145.2	6138.3	6069.9	5914.2	5847.5	6054.5	6665.3	6781.6	7811.5	7835.5	6528.4
25°	6817.5	6865.4	6737.1	6501.0	6336.8	6330.0	6747.4	6829.5	7876.5	8104.1	6646.5
27.5°	7554.9	7570.3	7460.8	7195.6	6957.8	6771.3	6985.2	7046.8	7948.4	8343.6	6713.2
30°	8364.1	8359.0	8234.1	7926.1	7637.0	7368.4	7385.5	7409.5	8116.0	8617.3	6786.7
32.5°	9375.2	9397.4	9175.0	8755.9	8408.6	8037.3	7909.0	7912.4	8418.8	8969.7	6897.9
35°	10748.9	10694.2	10399.9	9802.9	9210.9	8810.6	8591.6	8572.8	8885.9	9443.6	7091.3
37.5°	12057.7	12062.8	11754.9	11097.9	10350.3	9719.0	9409.4	9358.1	9542.8	10100.6	7412.9
40°	12966.1	12983.2	12854.9	12511.1	11719.0	10825.9	10370.9	10317.8	10394.8	10932.0	7833.7
42.5°	13446.9	13494.8	13530.7	13611.1	13010.6	12208.3	11508.5	11503.4	11423.0	11879.8	8321.3
45°	13465.7	13537.5	13756.5	14305.7	14374.1	13785.6	13024.3	12909.7	12600.0	12894.3	8757.6
47.5°	12721.5	12887.4	13352.8	14440.8	15159.4	15354.4	14600.0	14529.8	13660.7	13696.7	9084.3
50°	10986.7	11159.5	12016.6	13748.0	15357.8	16599.9	16329.6	16184.2	14546.9	14227.0	9241.7
52.5°	9207.5	9364.9	9946.6	12098.8	14534.9	16991.6	17787.2	17614.4	15342.4	14411.8	9176.7
55°	6406.9	6617.4	7185.4	9043.3	12639.4	16228.6	18269.6	18233.7	16052.4	14295.4	9075.8
57.5°	3141.0	3349.7	3916.0	5575.5	9363.2	14168.8	17532.3	17722.2	16476.7	14170.5	8993.7
60°	1312.2	1397.7	1592.8	2446.4	5238.5	10707.9	15867.7	16131.1	16216.7	14001.2	8985.1
62.5°	761.3	775.0	795.5	1014.5	2037.6	6138.3	13162.9	13537.5	14849.7	13777.1	8850.0
65°	574.8	580.0	571.4	622.7	841.7	2328.4	9510.3	10020.1	12394.7	12901.1	8316.2
67.5°	472.2	472.2	449.9	460.2	528.6	872.5	5250.4	5962.1	9171.6	10603.5	6867.1
70°	376.4	384.9	374.7	361.0	378.1	482.4	1868.2	2316.4	5341.1	6261.5	4005.0
72.5°	285.7	285.7	302.8	292.5	280.6	302.8	651.8	732.2	2143.6	2610.7	1445.6
75°	220.7	227.5	239.5	229.2	212.1	179.6	313.1	331.9	646.7	607.3	323.3
77.5°	112.9	114.6	152.3	167.7	157.4	109.5	136.9	150.6	210.4	188.2	119.8
80°	68.4	71.9	85.5	131.7	104.4	58.2	56.5	59.9	99.2	85.5	49.6
82.5°	29.1	30.8	47.9	47.9	42.8	22.2	22.2	22.2	47.9	44.5	20.5
85°	0.0	0.0	8.6	6.8	6.8	6.8	8.6	8.6	12.0	17.1	10.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	5.1	5.1
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: P640444

CATALOG NUMBER: GWS-SA5D-830-U-AFL-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0	5170.0
2.5°	5170.0	5060.5	4913.4	4780.0	4600.3	4499.4	4359.1	4244.5	4147.0	4116.2	4102.5
5°	5171.7	4983.6	4668.8	4354.0	3967.3	3662.8	3349.7	3101.7	2898.1	2833.1	2816.0
7.5°	5206.0	4928.8	4419.0	3847.6	3200.9	2667.1	2189.8	1762.1	1563.7	1496.9	1483.3
10°	5252.2	4882.6	4129.9	3240.3	2311.3	1625.3	1151.4	877.6	747.6	675.8	686.0
12.5°	5312.0	4845.0	3809.9	2583.3	1529.5	893.0	633.0	530.3	503.0	489.3	482.4
15°	5392.4	4800.5	3413.0	1931.5	937.5	574.8	487.6	460.2	449.9	443.1	441.4
17.5°	5474.6	4749.2	3009.3	1358.4	622.7	477.3	438.0	424.3	417.4	412.3	410.6
20°	5561.8	4661.9	2535.4	935.8	491.0	429.4	403.7	388.4	379.8	371.2	369.5
22.5°	5599.4	4521.6	2082.0	655.2	436.3	395.2	362.7	343.9	333.6	326.8	326.8
25°	5563.5	4294.1	1613.3	497.8	396.9	357.6	325.1	304.5	296.0	289.1	289.1
27.5°	5467.7	4001.6	1177.0	412.3	354.1	318.2	287.4	268.6	261.8	258.3	258.3
30°	5361.6	3632.0	829.7	354.1	306.2	277.1	251.5	239.5	237.8	234.4	234.4
32.5°	5271.0	3286.4	571.4	311.4	270.3	241.2	224.1	219.0	220.7	217.3	219.0
35°	5221.4	2947.7	424.3	277.1	241.2	213.8	205.3	205.3	205.3	203.6	203.6
37.5°	5241.9	2614.1	345.6	253.2	215.6	195.0	186.5	189.9	193.3	193.3	193.3
40°	5344.5	2318.1	306.2	231.0	193.3	177.9	171.1	176.2	181.3	184.8	184.8
42.5°	5474.6	2078.6	277.1	212.1	177.9	160.8	157.4	162.5	167.7	171.1	171.1
45°	5556.7	1837.4	248.1	188.2	162.5	142.0	142.0	148.8	147.1	148.8	148.8
47.5°	5594.3	1645.8	219.0	162.5	138.6	123.2	124.9	128.3	124.9	128.3	128.3
50°	5501.9	1452.5	193.3	135.2	114.6	107.8	111.2	109.5	109.5	116.3	116.3
52.5°	5332.6	1308.8	171.1	114.6	97.5	95.8	99.2	92.4	94.1	94.1	92.4
55°	5207.7	1226.6	152.3	99.2	83.8	85.5	83.8	71.9	65.0	58.2	56.5
57.5°	5146.1	1194.1	138.6	89.0	75.3	75.3	68.4	49.6	37.6	29.1	25.7
60°	5132.4	1154.8	124.9	77.0	66.7	63.3	49.6	29.1	18.8	13.7	12.0
62.5°	5002.4	1059.0	112.9	61.6	58.2	51.3	30.8	17.1	10.3	6.8	5.1
65°	4576.4	870.8	100.9	47.9	44.5	37.6	18.8	10.3	5.1	1.7	0.0
67.5°	3640.6	617.6	89.0	35.9	30.8	24.0	12.0	6.8	1.7	0.0	0.0
70°	2099.1	333.6	73.6	25.7	20.5	15.4	8.6	3.4	0.0	0.0	0.0
72.5°	701.4	155.7	56.5	17.1	15.4	12.0	5.1	1.7	0.0	0.0	0.0
75°	154.0	92.4	37.6	12.0	10.3	8.6	3.4	0.0	0.0	0.0	0.0
77.5°	58.2	65.0	18.8	8.6	6.8	5.1	1.7	0.0	0.0	0.0	0.0
80°	22.2	42.8	8.6	5.1	5.1	1.7	0.0	0.0	0.0	0.0	0.0
82.5°	12.0	17.1	5.1	3.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0
85°	6.8	8.6	3.4	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	3.4	1.7	1.7	1.7	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



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

Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	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)