

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: P641441

Luminaire Tested: GWS-SA5F-830-U-SL2-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641441  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-30)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-SL2-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

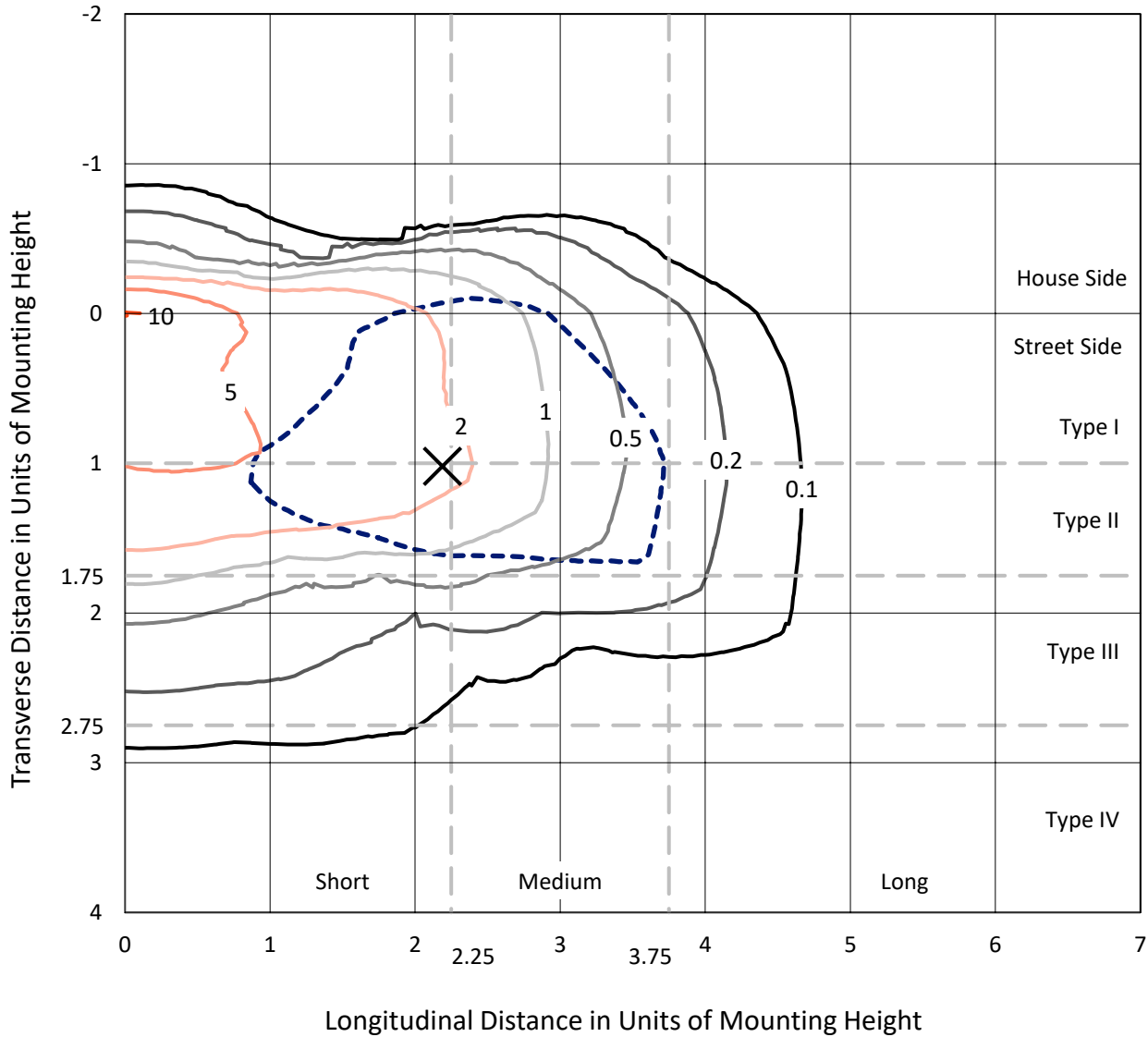
Lumens per Lamp: N/A  
Luminaire Lumens: 26283.7 lumens  
Efficiency: N/A  
Efficacy: 84.7 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B3 - U0 - G4  
  
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P641441  
 CATALOG NUMBER: GWS-SA5F-830-U-SL2-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

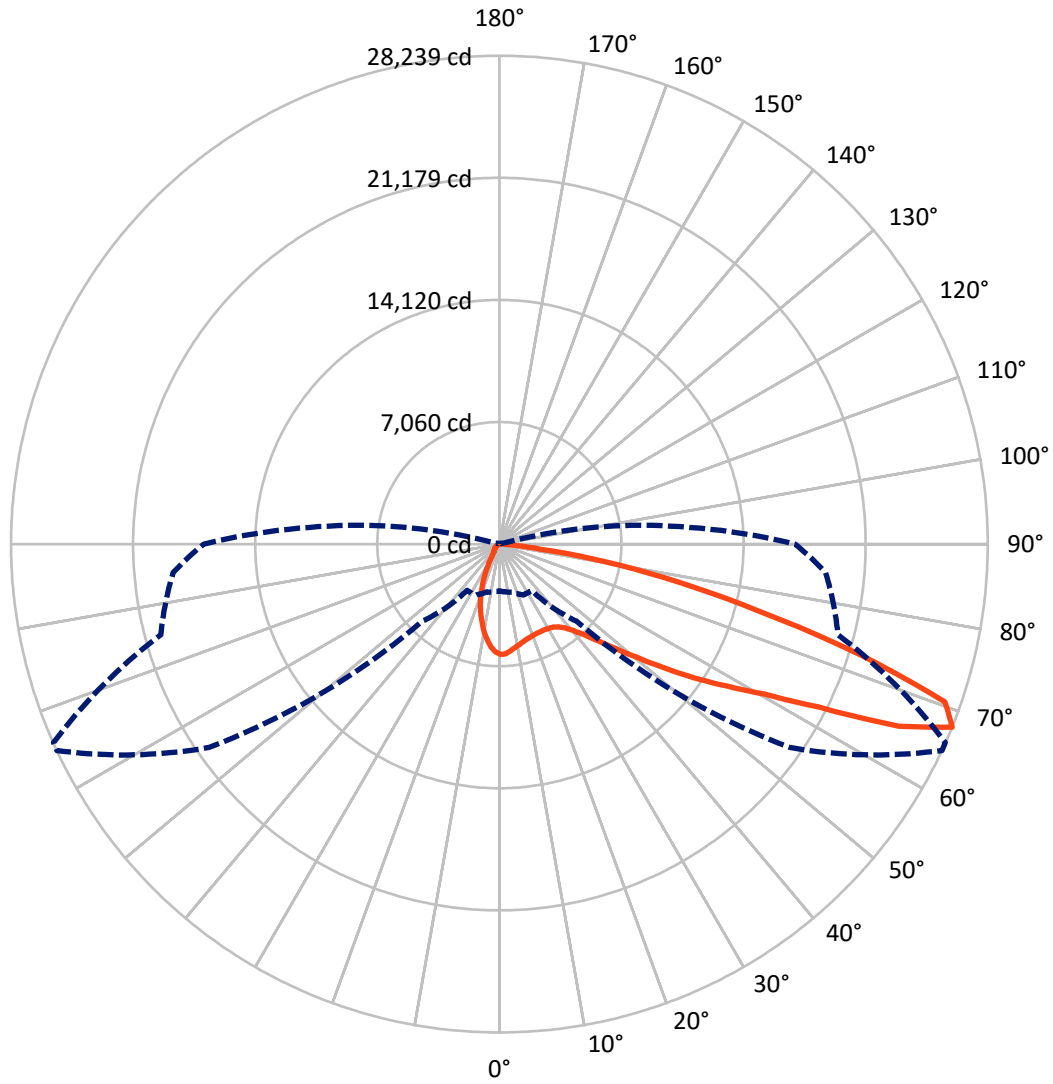
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.2 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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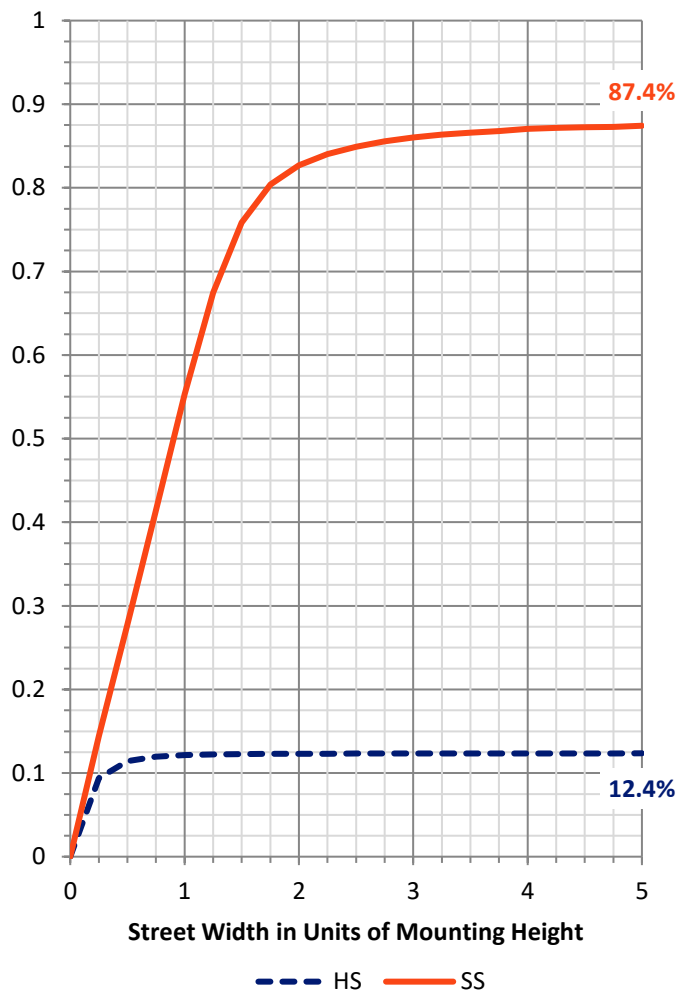
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3282.0	0.0	3282.0
	% Fixture	12.5	0.0	12.5
<b>Street Side</b>	Lumens	23001.6	0.0	23001.6
	% Fixture	87.5	0.0	87.5
<b>Total</b>	Lumens	26283.7	0.0	26283.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	529.4	2.0
10°-20°	1190.2	4.5
20°-30°	1700.7	6.5
30°-40°	2474.3	9.4
40°-50°	3875.1	14.7
50°-60°	6045.3	23.0
60°-70°	6640.5	25.3
70°-80°	3534.0	13.4
80°-90°	294.2	1.1
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°	26283.7	100.0
0°-180°	26283.7	100.0

**Coefficient of Utilization**



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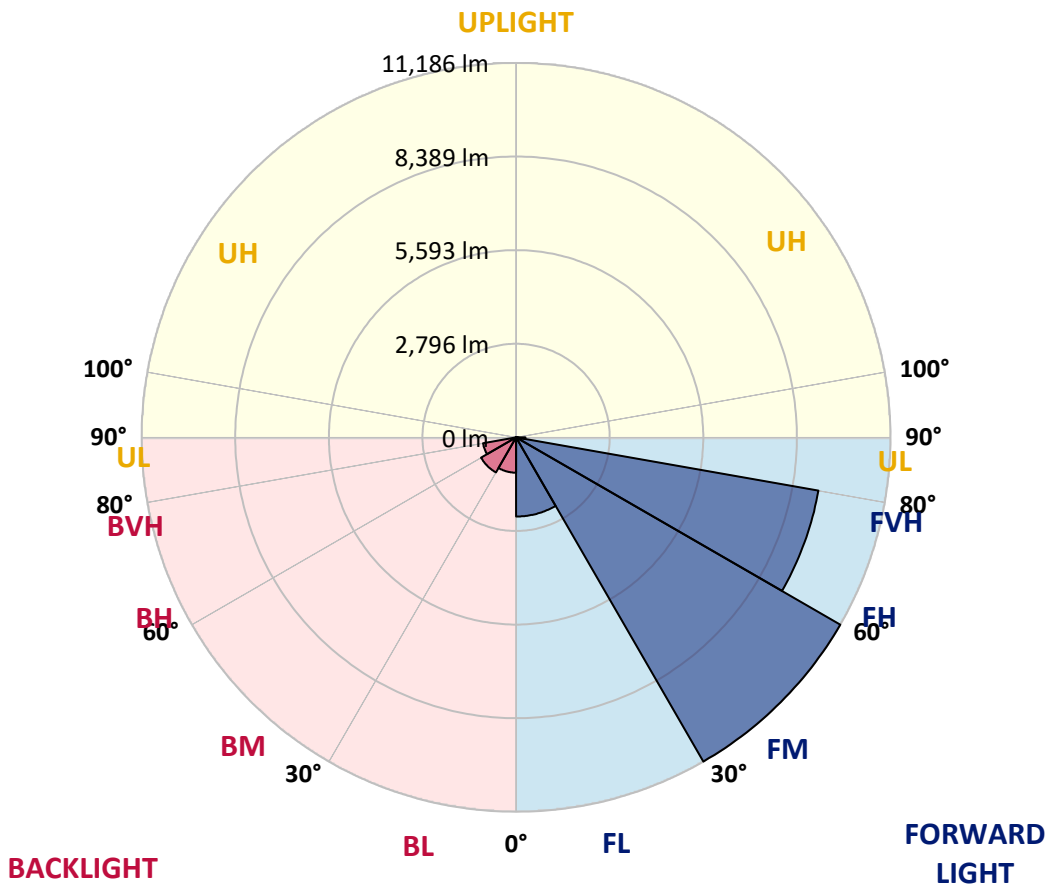
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2365.4	9.0			
FM (30°-60°)	11185.8	42.6			
FH (60°-80°)	9172.0	34.9			G4/12000
FVH (80°-90°)	278.5	1.1			G3/500
BL (0°-30°)	1054.9	4.0	B3/2500		
BM (30°-60°)	1208.9	4.6	B2/2500		
BH (60°-80°)	1002.5	3.8	B3/2500		G3/2500
BVH (80°-90°)	15.7	0.1			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6
2.5°	6153.6	6172.6	6146.5	6210.6	6222.5	6293.8	6334.2	6362.7	6360.4	6396.0	6396.0
5°	5792.3	5811.3	5797.1	5866.0	5920.7	6032.4	6125.1	6232.0	6236.8	6346.1	6386.5
7.5°	5485.7	5488.1	5488.1	5573.6	5644.9	5782.8	5920.7	6084.7	6103.7	6272.4	6379.4
10°	5233.8	5240.9	5243.3	5340.7	5419.1	5585.5	5761.4	5958.7	5980.1	6208.2	6374.6
12.5°	5060.2	5062.6	5072.1	5174.3	5259.9	5433.4	5611.7	5837.5	5866.0	6134.6	6353.2
15°	4977.1	4972.3	4977.1	5062.6	5148.2	5314.6	5497.6	5740.0	5770.9	6072.8	6355.6
17.5°	4972.3	4965.2	4960.4	5024.6	5079.3	5226.6	5412.0	5675.8	5709.1	6044.2	6381.8
20°	5041.2	5036.5	5012.7	5041.2	5053.1	5174.3	5357.3	5625.9	5659.2	6039.5	6438.8
22.5°	5221.9	5210.0	5174.3	5148.2	5084.0	5155.3	5319.3	5590.3	5628.3	6051.4	6512.5
25°	5490.4	5485.7	5440.5	5376.4	5212.4	5183.8	5321.7	5590.3	5625.9	6065.6	6590.9
27.5°	5894.5	5866.0	5808.9	5697.2	5461.9	5295.5	5369.2	5604.5	5640.2	6084.7	6655.1
30°	6305.7	6303.3	6284.3	6170.2	5820.8	5509.5	5469.1	5642.6	5675.8	6101.3	6714.5
32.5°	6731.1	6738.3	6785.8	6697.9	6315.2	5828.0	5649.7	5721.0	5744.8	6134.6	6766.8
35°	7135.2	7149.5	7275.4	7306.3	6916.5	6310.5	5944.4	5877.9	5880.2	6208.2	6835.7
37.5°	7522.6	7570.2	7772.2	7921.9	7665.2	6895.1	6369.9	6144.1	6125.1	6355.6	6940.3
40°	7962.3	8052.7	8307.0	8561.3	8480.5	7667.6	6949.8	6552.9	6512.5	6626.6	7128.1
42.5°	8449.6	8547.0	8884.5	9241.1	9279.1	8601.7	7674.7	7149.5	7080.5	7082.9	7479.8
45°	8972.5	9103.2	9495.4	10008.8	10239.3	9642.7	8568.4	7955.2	7886.3	7784.1	8045.5
47.5°	9659.4	9773.5	10151.4	10743.2	11185.3	10759.9	9740.2	8991.5	8865.5	8715.8	8925.0
50°	10251.2	10351.0	10676.7	11418.2	12338.1	12200.2	11068.8	10286.9	10165.6	9911.3	10084.8
52.5°	10381.9	10460.4	10759.9	11594.1	13219.9	14018.5	12697.0	11853.2	11767.6	11297.0	11363.6
55°	9794.9	9913.7	10182.3	11109.2	13450.4	15796.3	14810.0	13619.2	13440.9	12689.8	12808.7
57.5°	8311.7	8523.3	8775.2	9980.3	12825.3	16742.3	17762.0	15489.7	15328.1	14030.4	14032.7
60°	6091.8	6262.9	6431.7	7534.5	11342.2	16678.1	20440.6	17590.8	17296.1	15126.1	15085.7
62.5°	4430.4	4518.3	4516.0	4908.1	7788.8	15580.0	21847.7	20756.7	20069.8	16297.8	16067.3
65°	3484.4	3482.0	3584.2	3712.6	4349.6	12026.7	22021.2	25379.7	24638.1	17868.9	17388.8
67.5°	2711.9	2764.2	2866.4	3244.4	3268.1	6293.8	20495.3	28239.0	28224.7	20267.1	18936.1
70°	2091.6	2162.9	2307.9	2859.3	3018.6	3522.4	15335.2	27333.4	27564.0	21339.1	17840.4
72.5°	1342.9	1338.1	1552.1	2310.3	2899.7	2935.4	8480.5	21712.2	21973.7	19328.3	14424.9
75°	751.1	755.8	877.0	1414.2	2702.4	2761.9	4199.8	15482.6	15689.4	15069.0	11083.1
77.5°	294.7	304.2	411.2	743.9	1782.6	2467.1	2495.7	10557.8	10588.7	9338.5	6797.7
80°	118.8	126.0	209.2	461.1	1086.2	1661.4	1782.6	6220.1	6094.2	3615.1	1977.5
82.5°	35.7	38.0	83.2	261.4	568.1	1181.3	1202.7	2386.3	2253.2	777.2	503.9
85°	2.4	2.4	19.0	80.8	202.0	297.1	801.0	777.2	689.3	194.9	223.4
87.5°	0.0	0.0	2.4	2.4	4.8	9.5	85.6	142.6	145.0	35.7	99.8
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: P641441

CATALOG NUMBER: GWS-SA5F-830-U-SL2-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6	6374.6
2.5°	6396.0	6310.5	6303.3	6236.8	6170.2	6087.0	5989.6	5918.3	5868.4	5780.4	5763.8
5°	6386.5	6272.4	6165.5	5975.3	5763.8	5535.6	5336.0	5150.6	5034.1	4955.7	4922.4
7.5°	6367.5	6222.5	5975.3	5616.4	5262.3	4863.0	4551.6	4266.4	4071.5	3957.4	3907.5
10°	6353.2	6158.3	5756.7	5212.4	4663.3	4111.9	3638.9	3215.8	2980.5	2795.1	2764.2
12.5°	6324.7	6065.6	5476.2	4739.4	4031.1	3299.0	2695.3	2177.2	1818.3	1656.6	1599.6
15°	6296.2	5968.2	5195.7	4240.2	3341.8	2438.6	1706.6	1207.4	960.2	884.2	879.4
17.5°	6291.4	5880.2	4891.5	3767.3	2619.3	1597.2	972.1	782.0	729.7	710.7	710.7
20°	6305.7	5806.6	4592.0	3223.0	1908.6	972.1	724.9	677.4	646.5	629.9	629.9
22.5°	6320.0	5730.5	4304.4	2673.9	1266.8	710.7	639.4	599.0	563.3	544.3	534.8
25°	6329.5	5647.3	3985.9	2122.5	827.1	618.0	560.9	508.6	465.9	442.1	442.1
27.5°	6327.1	5547.5	3665.1	1583.0	641.7	549.0	480.1	425.5	382.7	356.5	358.9
30°	6308.1	5438.2	3332.3	1105.2	560.9	480.1	411.2	354.1	311.4	290.0	287.6
32.5°	6293.8	5321.7	2947.3	777.2	503.9	420.7	349.4	294.7	259.1	242.4	240.1
35°	6277.2	5207.6	2581.2	591.8	454.0	363.7	294.7	249.6	221.0	206.8	206.8
37.5°	6281.9	5088.8	2184.3	508.6	404.1	316.1	251.9	213.9	190.1	175.9	173.5
40°	6355.6	5017.5	1794.5	461.1	358.9	273.3	218.7	185.4	161.6	147.4	145.0
42.5°	6538.6	5019.8	1421.3	425.5	318.5	232.9	190.1	159.2	137.9	121.2	118.8
45°	6904.7	5119.7	1091.0	387.4	275.7	202.0	164.0	135.5	114.1	99.8	97.4
47.5°	7503.6	5416.8	827.1	354.1	240.1	175.9	140.2	114.1	95.1	83.2	80.8
50°	8456.7	5953.9	651.2	313.7	202.0	152.1	118.8	95.1	78.4	66.6	64.2
52.5°	9602.3	6759.7	558.6	278.1	173.5	133.1	102.2	78.4	64.2	54.7	52.3
55°	10919.1	7722.3	515.8	242.4	147.4	114.1	83.2	64.2	52.3	45.2	40.4
57.5°	12126.5	8589.8	513.4	206.8	126.0	97.4	68.9	54.7	45.2	35.7	33.3
60°	13303.0	9314.7	482.5	171.1	109.3	80.8	59.4	45.2	38.0	30.9	28.5
62.5°	14370.2	9904.2	404.1	137.9	92.7	66.6	49.9	40.4	33.3	26.1	26.1
65°	15710.8	10655.3	309.0	111.7	76.1	54.7	42.8	35.7	30.9	23.8	23.8
67.5°	17096.5	11052.2	221.0	92.7	61.8	47.5	38.0	33.3	26.1	21.4	21.4
70°	15485.0	9338.5	159.2	76.1	52.3	40.4	33.3	30.9	26.1	21.4	19.0
72.5°	12093.2	6733.5	118.8	59.4	45.2	38.0	30.9	28.5	23.8	19.0	19.0
75°	8967.7	3926.5	90.3	47.5	35.7	30.9	30.9	28.5	23.8	19.0	16.6
77.5°	4874.9	1369.0	68.9	38.0	28.5	23.8	26.1	26.1	21.4	16.6	14.3
80°	1290.6	375.5	47.5	28.5	23.8	19.0	19.0	23.8	19.0	14.3	14.3
82.5°	375.5	109.3	33.3	23.8	19.0	16.6	16.6	16.6	14.3	11.9	9.5
85°	183.0	40.4	23.8	19.0	16.6	14.3	11.9	11.9	9.5	7.1	7.1
87.5°	80.8	16.6	19.0	16.6	16.6	11.9	9.5	7.1	7.1	4.8	2.4
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 <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**

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**

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 81.0$   
 $R_9 = 7.1$



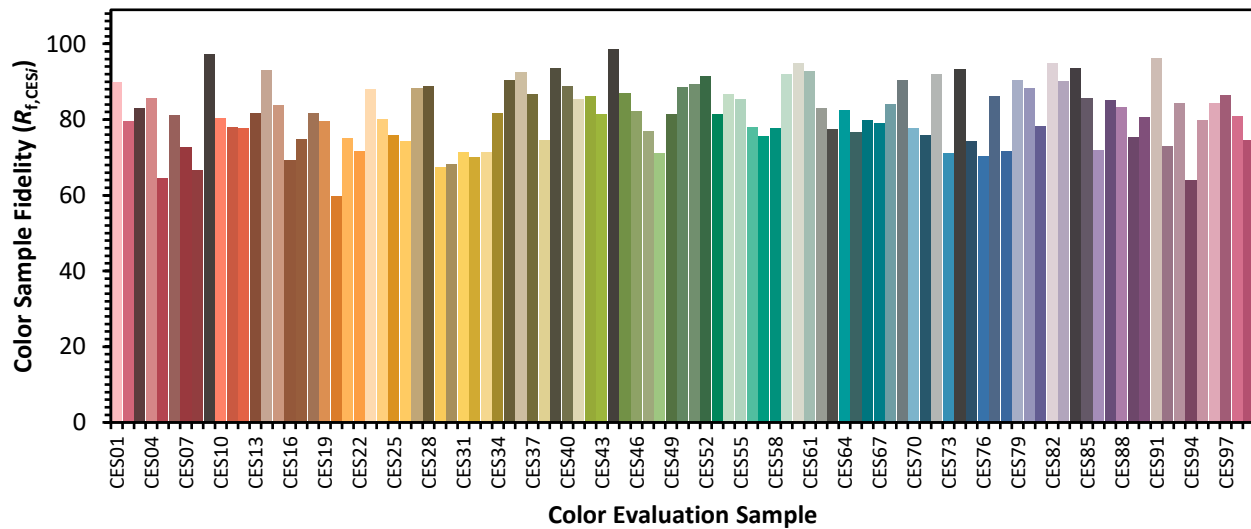
**Color Vector Graphics**





**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)