

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: P641460

Luminaire Tested: GWS-SA5F-830-U-T2-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641460  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-22)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-T2-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 24836.2 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G4

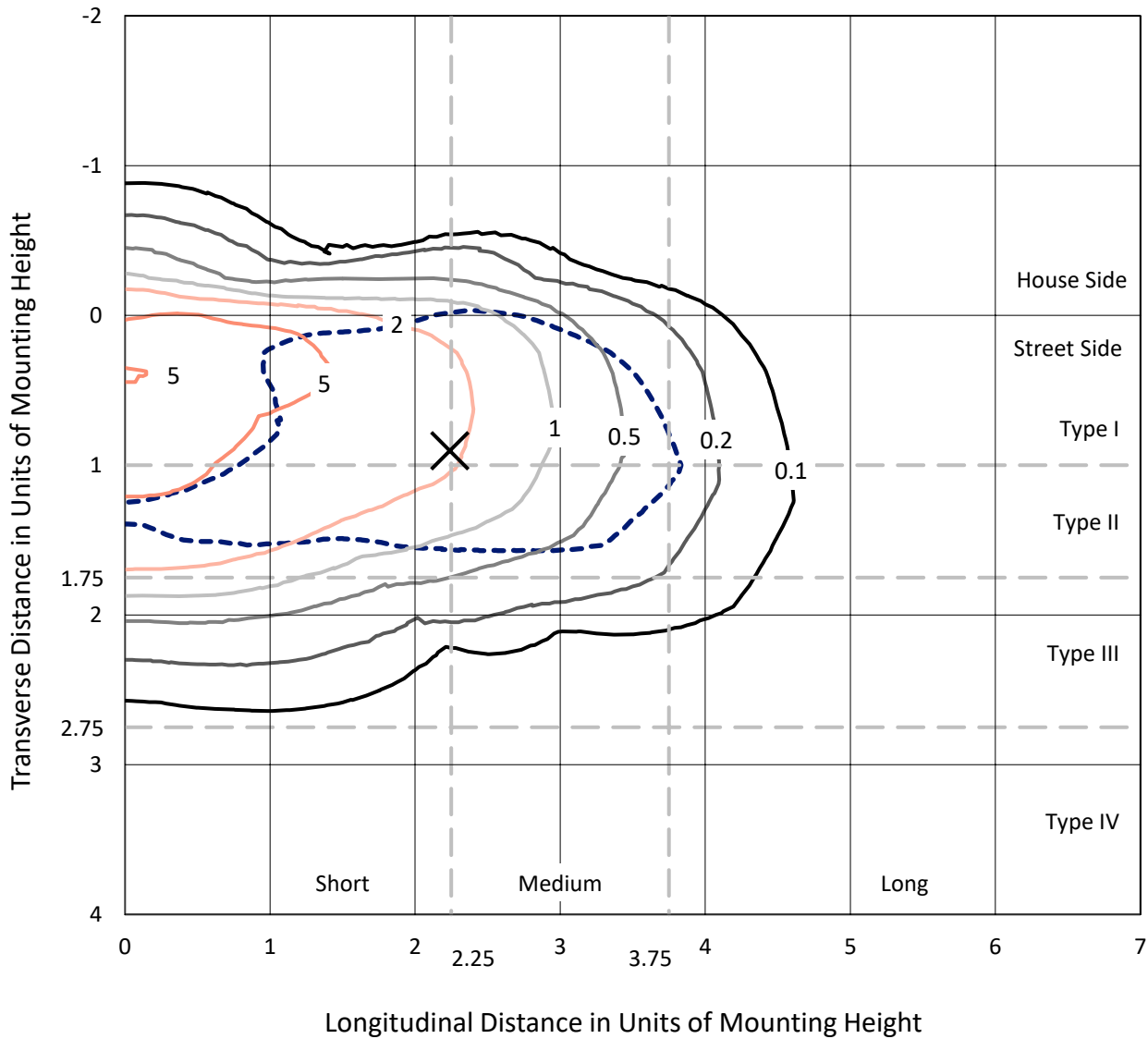
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

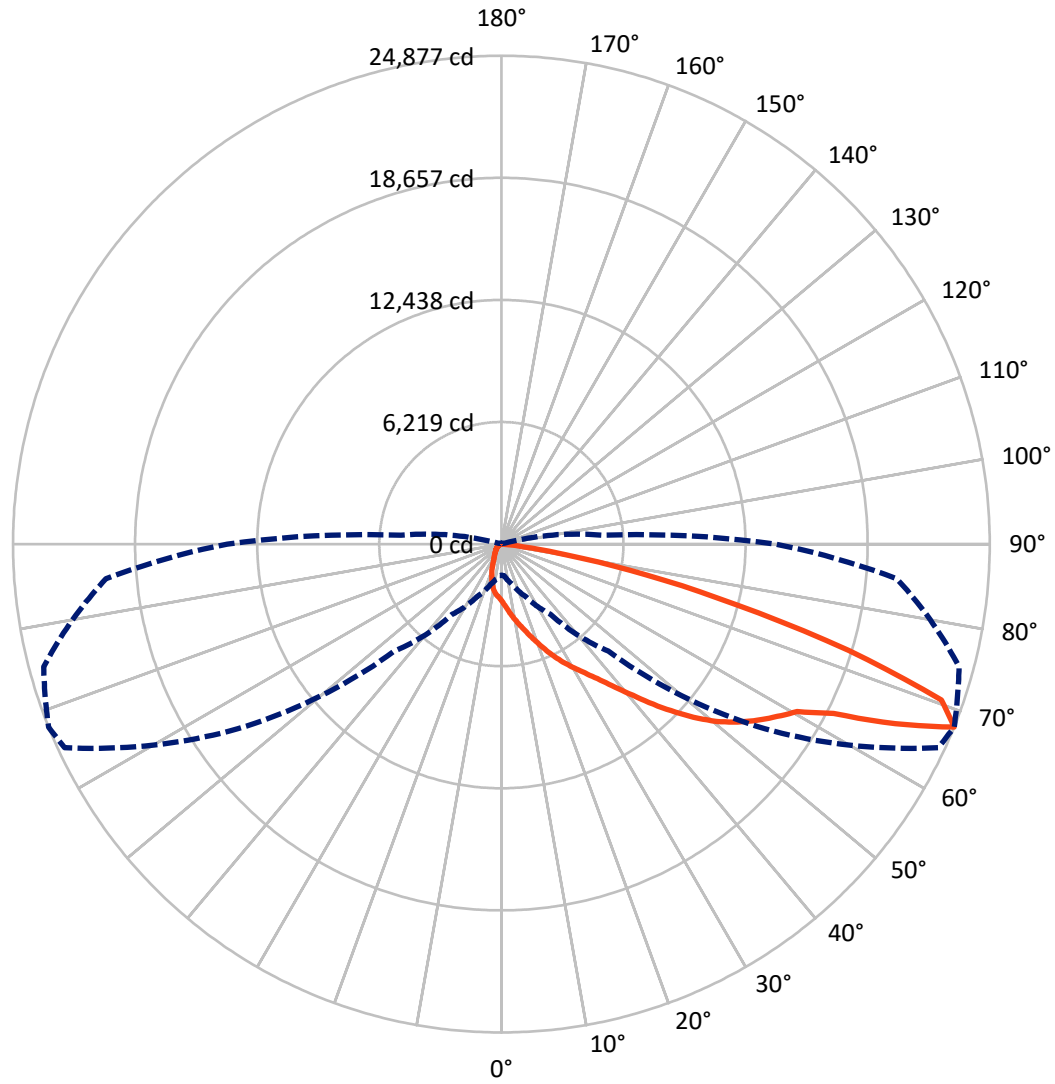
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.5 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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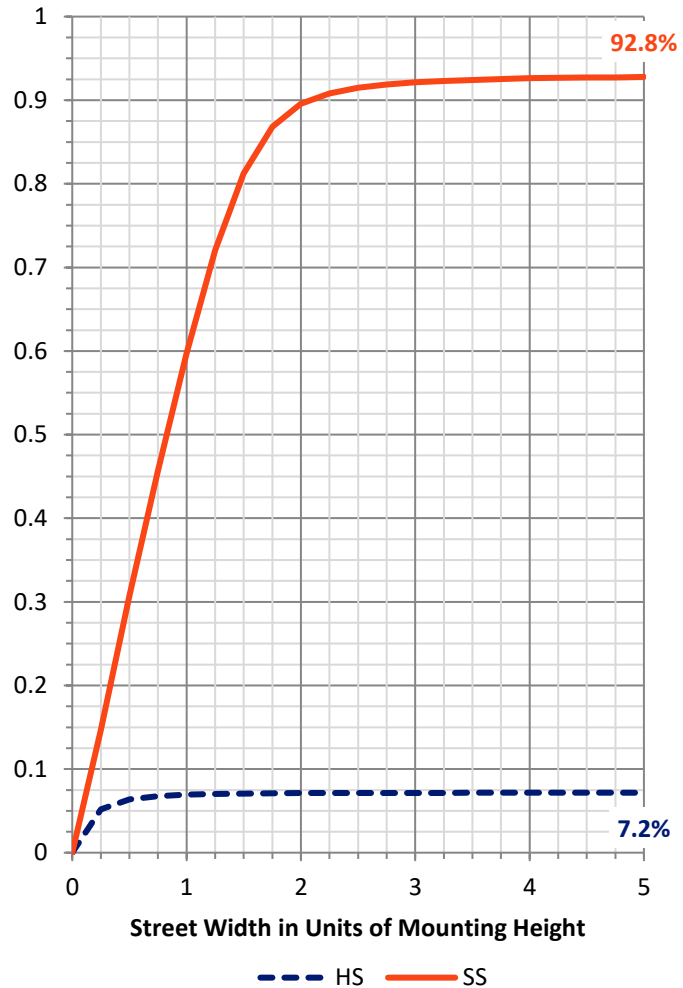
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1793.5	0.0	1793.5
	% Fixture	7.2	0.0	7.2
<b>Street Side</b>	Lumens	23042.7	0.0	23042.7
	% Fixture	92.8	0.0	92.8
<b>Total</b>	Lumens	24836.2	0.0	24836.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	281.9	1.1
10°-20°	809.5	3.3
20°-30°	1391.1	5.6
30°-40°	2418.7	9.7
40°-50°	4220.3	17.0
50°-60°	6365.3	25.6
60°-70°	6382.8	25.7
70°-80°	2816.1	11.3
80°-90°	150.4	0.6
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°	24836.2	100.0
0°-180°	24836.2	100.0

**Coefficient of Utilization**



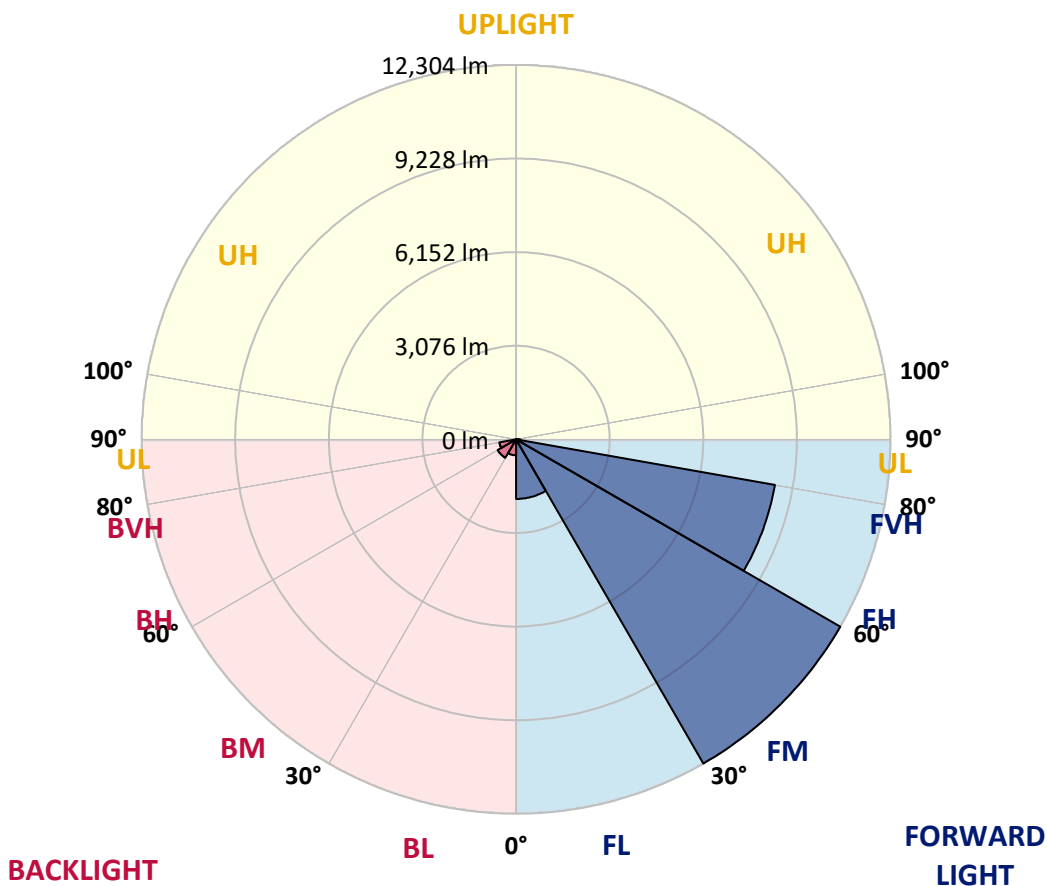
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1957.8	7.9			
FM (30°-60°)	12303.8	49.5			
FH (60°-80°)	8639.2	34.8			G4/12000
FVH (80°-90°)	141.9	0.6			G2/225
BL (0°-30°)	524.7	2.1	B2/1000		
BM (30°-60°)	700.6	2.8	B1/1000		
BH (60°-80°)	559.7	2.3	B2/1000		G2/1000
BVH (80°-90°)	8.5	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-G4**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3
2.5°	3365.7	3387.1	3365.7	3370.4	3308.6	3280.1	3218.3	3132.7	3111.4	3056.7	2973.5
5°	3776.9	3795.9	3774.5	3769.8	3698.4	3646.2	3543.9	3396.6	3353.8	3246.8	3082.8
7.5°	4000.3	4012.2	4019.3	4031.2	4005.1	3962.3	3869.6	3686.6	3641.4	3467.9	3237.3
10°	4024.1	4033.6	4069.2	4140.5	4192.8	4219.0	4166.7	3997.9	3926.6	3757.9	3427.5
12.5°	3957.5	3971.8	4028.8	4147.7	4292.7	4425.8	4459.1	4311.7	4247.5	4031.2	3650.9
15°	3869.6	3881.5	3959.9	4121.5	4340.2	4585.0	4722.9	4658.7	4587.4	4361.6	3898.1
17.5°	3734.1	3750.7	3860.1	4078.7	4361.6	4711.0	5008.1	5029.5	4979.6	4734.8	4171.4
20°	3658.0	3669.9	3767.4	3993.2	4347.3	4803.7	5274.3	5476.4	5421.7	5165.0	4485.2
22.5°	3722.2	3731.7	3795.9	3971.8	4299.8	4856.0	5521.5	5923.2	5892.3	5626.1	4815.6
25°	4059.7	4090.6	4052.6	4083.5	4321.2	4884.5	5721.2	6370.1	6377.2	6108.6	5157.9
27.5°	4744.3	4703.9	4613.5	4459.1	4487.6	4960.6	5892.3	6790.8	6852.6	6579.2	5462.1
30°	5440.7	5416.9	5362.3	5122.2	4922.5	5129.3	6037.3	7221.0	7318.5	7042.7	5733.1
32.5°	6222.7	6246.5	6149.0	5861.4	5521.5	5471.6	6187.1	7629.8	7812.8	7568.0	6051.6
35°	7156.8	7164.0	6971.4	6652.9	6267.9	6037.3	6455.6	8081.4	8419.0	8238.3	6477.0
37.5°	8067.2	8110.0	8005.4	7503.9	7161.6	6740.9	6900.1	8661.4	9136.8	9065.5	7011.8
40°	8872.9	8939.5	8906.2	8421.3	7972.1	7617.9	7589.4	9341.2	10004.3	10085.2	7717.8
42.5°	9514.7	9557.5	9583.6	9239.0	8842.0	8642.4	8440.3	10130.3	11028.8	11359.2	8583.0
45°	10192.1	10206.4	10261.0	10028.1	9681.1	9697.7	9445.8	11088.2	12107.9	12771.0	9576.5
47.5°	11054.9	11102.5	11076.3	10831.5	10517.8	10705.5	10484.5	12074.6	13172.7	14278.0	10593.8
50°	12105.5	12155.4	12131.7	11846.4	11497.0	11575.5	11437.6	13032.5	14199.6	15699.4	11440.0
52.5°	12647.4	12687.9	12982.6	13110.9	12927.9	12428.8	12250.5	14085.5	15067.1	16868.8	12217.2
55°	12386.0	12414.5	13056.3	13598.2	14268.5	13769.3	13068.2	14898.4	15832.5	17781.5	12794.8
57.5°	11302.1	11456.6	12328.9	13246.4	14655.9	15093.3	14394.5	15782.6	16569.3	18416.2	13362.9
60°	9079.7	9072.6	10322.8	11970.0	13900.1	15456.9	16267.5	16978.1	17308.5	18903.4	14123.5
62.5°	5017.6	5062.8	6726.6	8896.7	11798.9	14515.7	17672.2	19043.7	18993.8	19754.4	15314.3
65°	2498.1	2588.4	3491.7	5096.1	7850.9	11996.2	17914.6	22195.4	22052.8	21758.1	17774.4
67.5°	1585.4	1621.0	2120.2	2961.6	4364.0	7710.6	16405.3	24546.2	24876.6	24135.0	20215.5
70°	1026.8	1086.2	1473.7	2025.1	2633.6	3974.2	12017.6	23022.6	23780.8	23873.5	18694.3
72.5°	558.6	601.4	941.2	1445.2	1901.5	1987.1	6750.4	17277.6	18497.0	20251.1	14625.0
75°	318.5	349.4	515.8	981.7	1395.2	1209.8	2992.5	11566.0	12343.2	14472.9	10479.7
77.5°	192.5	218.7	290.0	477.8	874.7	808.1	1131.4	7040.4	7534.8	8635.3	5500.1
80°	87.9	104.6	183.0	263.8	477.8	382.7	432.6	3282.5	3389.4	3543.9	1820.7
82.5°	40.4	47.5	83.2	156.9	271.0	221.1	166.4	758.2	1067.2	1010.2	463.5
85°	4.8	4.8	30.9	64.2	76.1	57.0	68.9	171.1	216.3	304.2	133.1
87.5°	0.0	0.0	2.4	2.4	4.8	7.1	14.3	21.4	30.9	49.9	33.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3	2890.3
2.5°	2935.5	2868.9	2809.5	2721.5	2662.1	2595.6	2550.4	2495.7	2474.3	2457.7	2433.9
5°	3002.0	2895.1	2750.1	2588.4	2455.3	2329.4	2212.9	2136.8	2070.3	2060.8	2027.5
7.5°	3111.4	2952.1	2707.3	2443.4	2217.6	2008.5	1844.5	1711.4	1644.8	1623.4	1585.4
10°	3256.3	3037.7	2643.1	2239.0	1913.4	1663.8	1478.4	1328.7	1224.1	1186.1	1157.5
12.5°	3418.0	3116.1	2540.9	1987.1	1616.3	1331.1	1095.7	936.5	869.9	846.2	824.8
15°	3603.4	3189.8	2379.3	1735.1	1326.3	979.3	812.9	744.0	715.4	708.3	701.2
17.5°	3781.6	3237.3	2186.7	1473.7	1019.7	760.6	682.2	656.0	648.9	641.8	637.0
20°	3983.7	3270.6	1960.9	1226.5	791.5	644.1	606.1	587.1	572.8	558.6	556.2
22.5°	4190.5	3270.6	1716.1	984.0	663.2	577.6	534.8	499.1	473.0	458.7	454.0
25°	4387.7	3225.4	1473.7	786.8	584.7	513.4	458.7	418.3	382.7	366.0	361.3
27.5°	4528.0	3109.0	1262.1	665.5	530.0	456.4	389.8	344.6	316.1	299.5	297.1
30°	4615.9	2935.5	1067.2	594.2	482.5	396.9	330.4	292.4	271.0	259.1	254.3
32.5°	4682.5	2721.5	893.7	544.3	437.3	344.6	287.6	256.7	237.7	228.2	225.8
35°	4815.6	2519.5	765.4	499.1	389.8	301.9	252.0	228.2	213.9	202.0	199.7
37.5°	5001.0	2350.7	663.2	458.7	344.6	268.6	228.2	206.8	194.9	183.0	180.6
40°	5274.3	2243.8	587.1	418.3	304.2	242.4	209.2	190.2	173.5	161.6	159.3
42.5°	5695.0	2193.9	537.2	377.9	268.6	218.7	192.5	168.8	152.1	140.2	137.9
45°	6196.6	2220.0	494.4	337.5	244.8	202.0	171.1	147.4	130.7	118.8	116.5
47.5°	6733.7	2312.7	458.7	299.5	221.1	185.4	152.1	126.0	111.7	99.8	97.5
50°	7294.7	2464.8	427.8	263.8	202.0	166.4	130.7	109.3	95.1	85.6	83.2
52.5°	7781.9	2671.6	396.9	237.7	185.4	147.4	114.1	95.1	80.8	71.3	68.9
55°	8247.8	2866.5	373.2	213.9	166.4	128.4	99.8	80.8	68.9	59.4	57.0
57.5°	8754.1	3073.3	344.6	192.5	149.7	114.1	87.9	68.9	59.4	49.9	47.5
60°	9490.9	3379.9	301.9	175.9	130.7	99.8	76.1	61.8	52.3	40.4	38.0
62.5°	10553.4	3938.5	254.3	152.1	111.7	85.6	64.2	52.3	42.8	33.3	28.5
65°	12540.5	4889.3	209.2	126.0	90.3	71.3	54.7	42.8	33.3	23.8	21.4
67.5°	13971.4	5136.5	168.8	102.2	73.7	54.7	45.2	33.3	23.8	16.6	14.3
70°	12214.9	3688.9	130.7	83.2	61.8	42.8	35.7	26.1	16.6	11.9	9.5
72.5°	9203.3	2410.2	97.5	64.2	47.5	35.7	26.1	21.4	14.3	9.5	7.1
75°	6486.5	1392.9	71.3	47.5	33.3	26.1	21.4	16.6	11.9	7.1	7.1
77.5°	3325.3	575.2	49.9	33.3	23.8	16.6	14.3	9.5	9.5	7.1	4.8
80°	1010.2	190.2	28.5	21.4	16.6	11.9	7.1	7.1	7.1	4.8	2.4
82.5°	230.6	61.8	16.6	16.6	11.9	9.5	7.1	2.4	2.4	0.0	0.0
85°	59.4	19.0	14.3	11.9	11.9	9.5	4.8	2.4	0.0	0.0	0.0
87.5°	21.4	11.9	11.9	11.9	9.5	7.1	4.8	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 <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)