

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: P641448

Luminaire Tested: GWS-SA5F-830-U-SL4-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641448  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-35)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-SL4-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

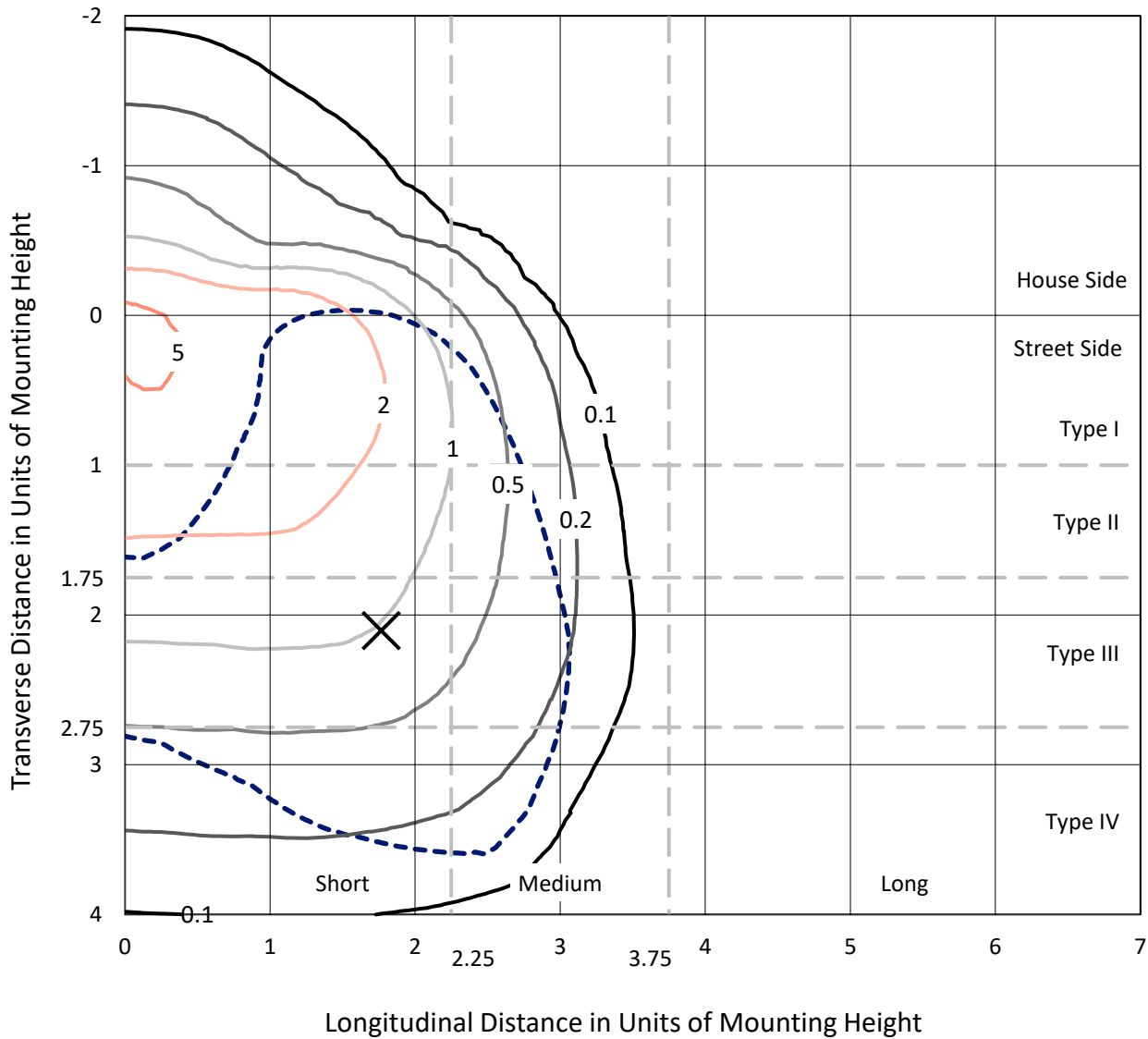
Lumens per Lamp: N/A  
Luminaire Lumens: 31843.2 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G5  
  
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P641448  
 CATALOG NUMBER: GWS-SA5F-830-U-SL4-W

### Iso-Footcandle Lines of Horizontal Illumination

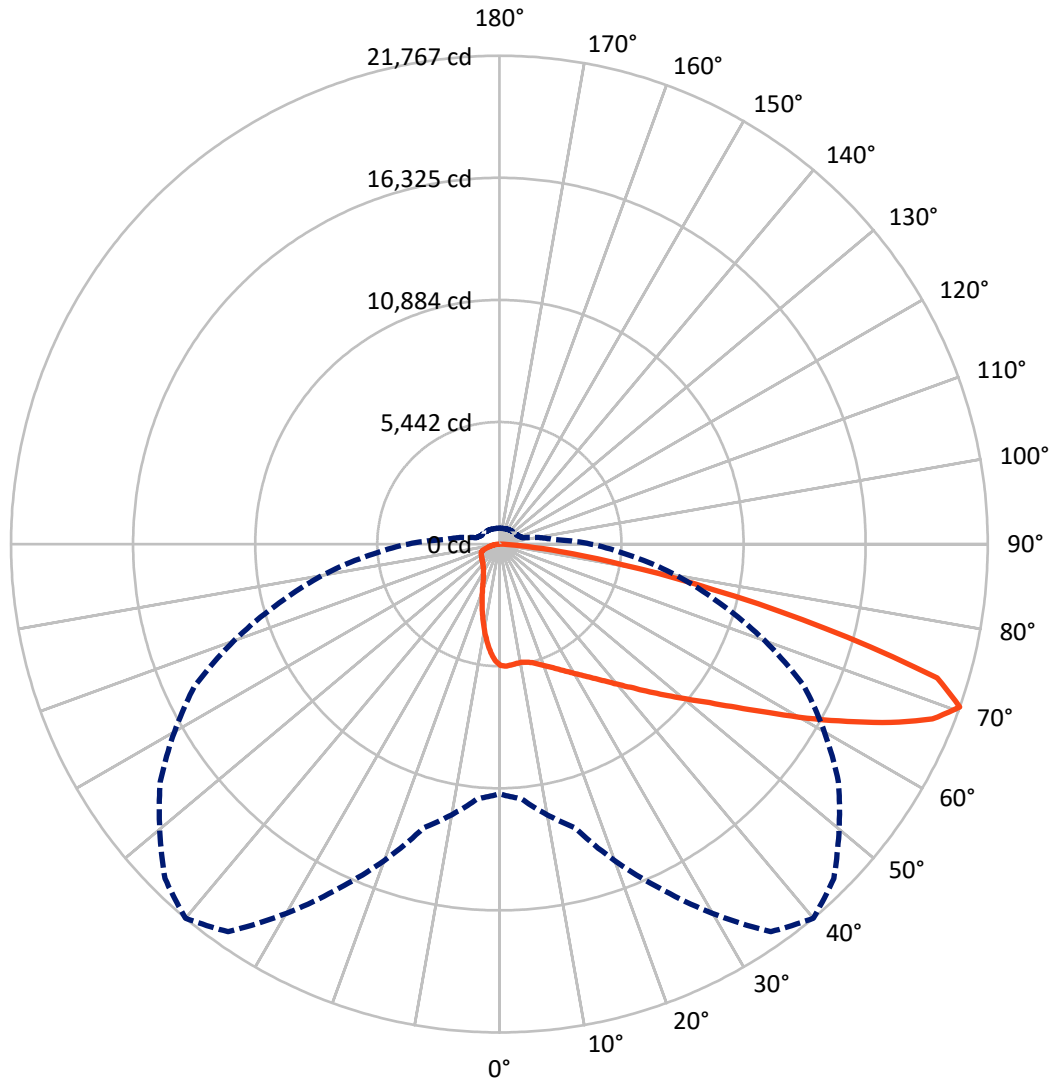
✕ Max cd  
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4904.7	0.0	4904.7
	% Fixture	15.4	0.0	15.4
<b>Street Side</b>	Lumens	26938.5	0.0	26938.5
	% Fixture	84.6	0.0	84.6
<b>Total</b>	Lumens	31843.2	0.0	31843.2
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	477.7	1.5
10°-20°	1245.1	3.9
20°-30°	1955.1	6.1
30°-40°	2939.5	9.2
40°-50°	4537.3	14.2
50°-60°	6738.2	21.2
60°-70°	8493.4	26.7
70°-80°	4911.7	15.4
80°-90°	545.1	1.7
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°	31843.2	100.0
0°-180°	31843.2	100.0

**Coefficient of Utilization**



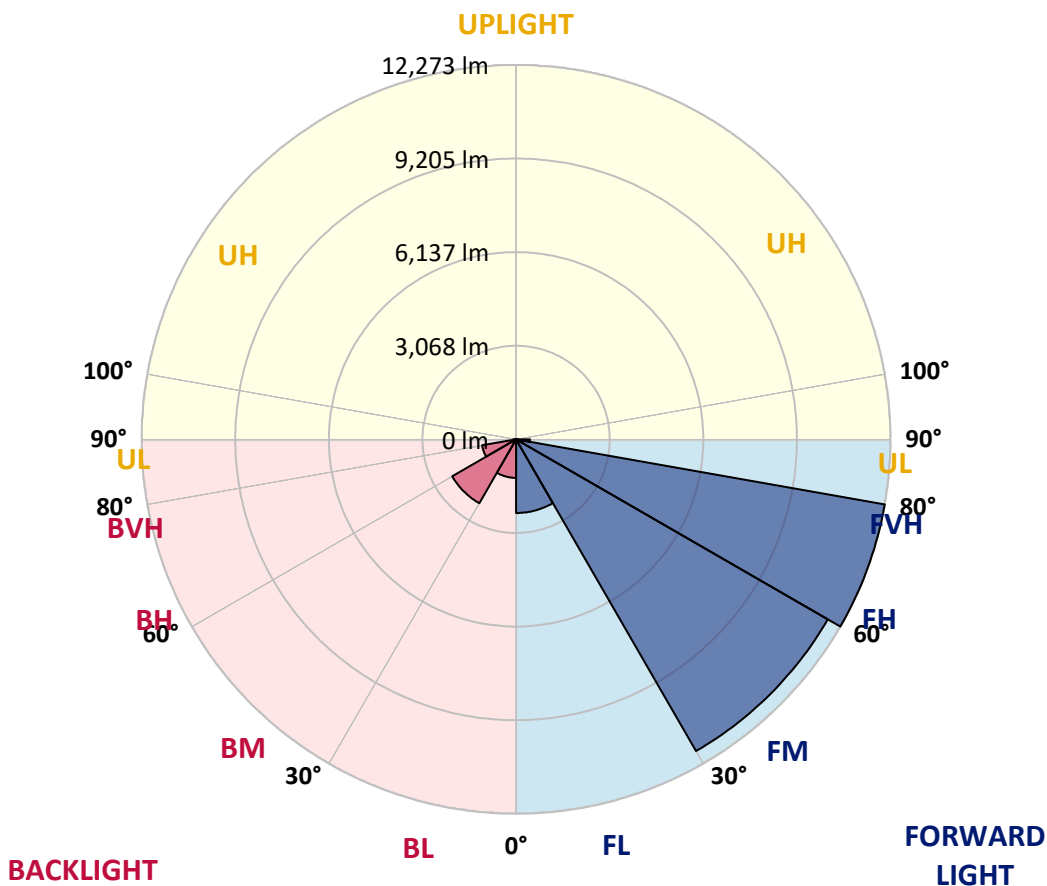
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2413.9	7.6			
FM (30°-60°)	11797.5	37.0			
FH (60°-80°)	12273.1	38.5			G5
FVH (80°-90°)	454.0	1.4			G3/500
BL (0°-30°)	1264.0	4.0	B3/2500		
BM (30°-60°)	2417.6	7.6	B2/2500		
BH (60°-80°)	1132.0	3.6	B3/2500		G3/2500
BVH (80°-90°)	91.1	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G5**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3
2.5°	5440.6	5450.1	5457.3	5466.8	5462.0	5447.7	5459.6	5459.6	5433.5	5405.0	5378.8
5°	5447.7	5459.6	5457.3	5454.9	5435.9	5412.1	5412.1	5397.8	5352.7	5307.5	5264.7
7.5°	5433.5	5431.1	5428.7	5421.6	5400.2	5374.1	5369.3	5340.8	5281.4	5219.6	5157.8
10°	5369.3	5366.9	5374.1	5390.7	5385.9	5362.2	5362.2	5336.0	5267.1	5191.0	5110.2
12.5°	5317.0	5317.0	5345.5	5390.7	5407.3	5397.8	5400.2	5381.2	5302.8	5212.4	5117.4
15°	5324.2	5326.5	5388.3	5462.0	5492.9	5485.8	5488.2	5466.8	5378.8	5288.5	5160.1
17.5°	5371.7	5383.6	5490.5	5592.7	5633.1	5623.6	5607.0	5571.3	5471.5	5369.3	5212.4
20°	5471.5	5490.5	5628.4	5756.7	5804.3	5782.9	5754.4	5683.1	5573.7	5462.0	5269.5
22.5°	5668.8	5680.7	5832.8	5958.8	5996.8	5970.7	5913.6	5811.4	5685.4	5569.0	5338.4
25°	5946.9	5961.1	6106.1	6222.6	6213.1	6182.2	6103.8	5977.8	5828.0	5704.4	5438.2
27.5°	6277.3	6301.0	6443.6	6536.3	6474.5	6429.4	6341.4	6189.3	6020.6	5908.9	5590.4
30°	6638.6	6648.1	6769.3	6862.0	6766.9	6705.1	6598.1	6434.1	6282.0	6198.8	5818.5
32.5°	6987.9	6997.5	7102.0	7154.3	7054.5	7009.3	6916.6	6743.1	6636.2	6591.0	6158.4
35°	7356.4	7354.0	7439.5	7484.7	7382.5	7363.5	7268.4	7135.3	7116.3	7175.7	6655.2
37.5°	7724.8	7703.4	7748.5	7808.0	7750.9	7769.9	7708.1	7663.0	7736.7	7891.2	7316.0
40°	8019.5	8019.5	8067.0	8140.7	8159.7	8242.9	8207.3	8266.7	8504.4	8872.8	8133.6
42.5°	8281.0	8283.3	8383.2	8497.2	8635.1	8763.5	8792.0	8946.5	9438.5	10016.1	9160.4
45°	8554.3	8556.7	8692.2	8858.5	9150.9	9395.7	9452.7	9799.8	10503.3	11206.9	10275.1
47.5°	8870.4	8844.3	9032.0	9310.1	9726.1	10077.9	10225.2	10717.2	11606.2	12471.3	11325.7
50°	9226.9	9172.3	9381.4	9861.6	10375.0	10857.5	11104.7	11668.0	12789.8	13638.4	12314.5
52.5°	9628.6	9597.7	9816.4	10401.1	11185.5	11741.7	12076.8	12816.0	13940.2	14800.7	13098.8
55°	10127.8	10054.1	10370.2	11114.2	12136.2	12844.5	13241.4	13952.1	15197.6	15856.0	13697.8
57.5°	10674.4	10593.6	11016.7	12005.5	13372.2	14149.4	14646.2	15230.9	16381.3	16664.1	14049.6
60°	11263.9	11237.8	11739.3	13051.3	14845.8	15749.0	16107.9	16638.0	17410.4	17132.4	13961.6
62.5°	11803.5	11793.9	12523.6	14185.1	16407.4	17400.9	17686.2	17826.4	18152.0	17101.5	13262.8
65°	12371.5	12452.3	13438.7	15499.5	18197.2	19171.7	19290.5	18934.0	18401.6	16291.0	11832.0
67.5°	12442.8	12599.7	14013.9	16730.7	19894.3	20814.1	20719.0	19354.7	17664.8	14035.3	9274.5
70°	11128.4	11401.8	13096.5	16918.4	21089.8	21767.2	21080.3	18449.1	14990.8	10168.2	5832.8
72.5°	9298.2	9533.6	11031.0	14427.5	19547.2	20410.0	19480.7	15615.9	10593.6	5832.8	2971.1
75°	7237.5	7510.9	8891.8	11468.3	14634.3	14978.9	14513.1	10890.7	5823.3	2405.4	1350.1
77.5°	4416.2	4613.5	5687.8	7769.9	10239.5	9723.7	8240.5	6106.1	2555.1	1152.8	834.3
80°	1953.8	2075.0	2802.3	4173.8	5916.0	5592.7	4409.1	2607.4	1397.6	732.1	582.3
82.5°	1048.2	1126.6	1381.0	1651.9	2597.9	2716.7	2203.3	1502.2	751.1	418.3	332.8
85°	461.1	506.3	627.5	599.0	853.3	839.0	846.2	1031.6	358.9	192.5	216.3
87.5°	0.0	0.0	0.0	0.0	2.4	2.4	26.1	137.9	35.7	57.0	49.9
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: P641448  
 CATALOG NUMBER: GWS-SA5F-830-U-SL4-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3	5407.3
2.5°	5350.3	5307.5	5295.6	5281.4	5255.2	5210.1	5176.8	5138.8	5122.1	5103.1	5105.5
5°	5217.2	5164.9	5115.0	5050.8	4970.0	4879.7	4817.9	4746.6	4708.5	4672.9	4682.4
7.5°	5103.1	5022.3	4920.1	4784.6	4639.6	4478.0	4347.3	4245.1	4176.1	4128.6	4152.4
10°	5031.8	4936.7	4758.5	4537.4	4292.6	4045.4	3857.6	3681.7	3572.4	3486.8	3482.1
12.5°	5017.5	4893.9	4634.9	4314.0	3959.8	3629.5	3353.7	3116.1	2971.1	2864.1	2904.5
15°	5031.8	4874.9	4527.9	4107.2	3660.4	3213.5	2871.2	2597.9	2424.4	2326.9	2319.8
17.5°	5048.4	4855.9	4406.7	3883.8	3346.6	2835.6	2438.7	2148.7	1970.4	1873.0	1875.3
20°	5062.7	4827.4	4264.1	3639.0	3028.1	2483.8	2072.6	1796.9	1637.7	1566.3	1578.2
22.5°	5086.5	4798.9	4112.0	3377.5	2702.5	2143.9	1782.6	1559.2	1464.1	1416.6	1419.0
25°	5131.6	4782.2	3955.1	3092.3	2381.6	1873.0	1583.0	1433.2	1373.8	1345.3	1342.9
27.5°	5224.3	4796.5	3791.1	2816.6	2091.6	1666.2	1454.6	1357.2	1316.8	1297.8	1295.4
30°	5378.8	4853.5	3648.5	2536.1	1842.1	1504.5	1366.7	1307.3	1283.5	1266.9	1264.5
32.5°	5614.1	4960.5	3494.0	2274.6	1640.0	1385.7	1297.8	1266.9	1250.2	1240.7	1240.7
35°	5970.7	5155.4	3341.9	2046.5	1483.2	1293.0	1243.1	1231.2	1216.9	1212.2	1216.9
37.5°	6484.1	5466.8	3204.0	1846.8	1371.4	1221.7	1183.7	1188.4	1176.5	1183.7	1190.8
40°	7135.3	5882.7	3087.5	1682.8	1288.3	1169.4	1131.4	1148.0	1140.9	1148.0	1159.9
42.5°	7960.1	6398.5	2999.6	1554.5	1228.8	1126.6	1091.0	1107.6	1102.9	1112.4	1124.3
45°	8879.9	7078.3	2959.2	1464.1	1186.0	1095.7	1057.7	1069.6	1064.8	1072.0	1083.8
47.5°	9761.7	7696.2	2994.8	1411.9	1150.4	1069.6	1029.2	1033.9	1031.6	1029.2	1036.3
50°	10522.3	8188.3	3097.0	1395.2	1126.6	1043.4	1005.4	1007.8	1000.7	986.4	991.1
52.5°	11142.7	8582.8	3158.8	1395.2	1114.7	1014.9	979.3	981.6	967.4	948.4	950.7
55°	11551.5	8742.1	3108.9	1392.8	1110.0	991.1	953.1	955.5	941.2	917.5	919.8
57.5°	11668.0	8587.6	2899.8	1366.7	1105.2	972.1	927.0	931.7	922.2	896.1	896.1
60°	11342.3	8021.9	2517.1	1307.3	1093.4	960.2	908.0	915.1	910.3	884.2	884.2
62.5°	10489.1	7016.5	2060.7	1216.9	1060.1	946.0	891.3	905.6	917.5	903.2	900.8
65°	8891.8	5621.3	1675.7	1117.1	1017.3	922.2	867.6	903.2	929.3	948.4	948.4
67.5°	6671.8	4024.0	1366.7	1012.5	953.1	874.7	836.7	869.9	888.9	900.8	908.0
70°	4066.8	2367.3	1076.7	891.3	860.4	803.4	774.9	741.6	715.4	710.7	713.1
72.5°	1989.4	1354.8	874.7	758.2	734.4	682.2	618.0	603.7	591.8	584.7	582.3
75°	1095.7	943.6	722.6	629.9	587.1	522.9	508.6	484.9	480.1	470.6	473.0
77.5°	774.9	744.0	596.6	511.0	446.8	413.6	420.7	404.1	404.1	396.9	394.6
80°	582.3	584.7	458.7	373.2	330.4	318.5	325.6	325.6	320.9	318.5	316.1
82.5°	368.4	415.9	309.0	240.1	235.3	237.7	235.3	232.9	237.7	230.6	228.2
85°	254.3	299.5	187.8	142.6	142.6	140.2	145.0	142.6	147.4	140.2	140.2
87.5°	57.0	133.1	68.9	42.8	45.2	42.8	45.2	47.5	52.3	54.7	54.7
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

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

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**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

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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**

$\lambda$ (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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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)