

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: P637006

Luminaire Tested: GWS-SA4B-830-U-T2-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P637006  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-19)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA4B-830-U-T2-W  
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS  
Light Source: (64) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

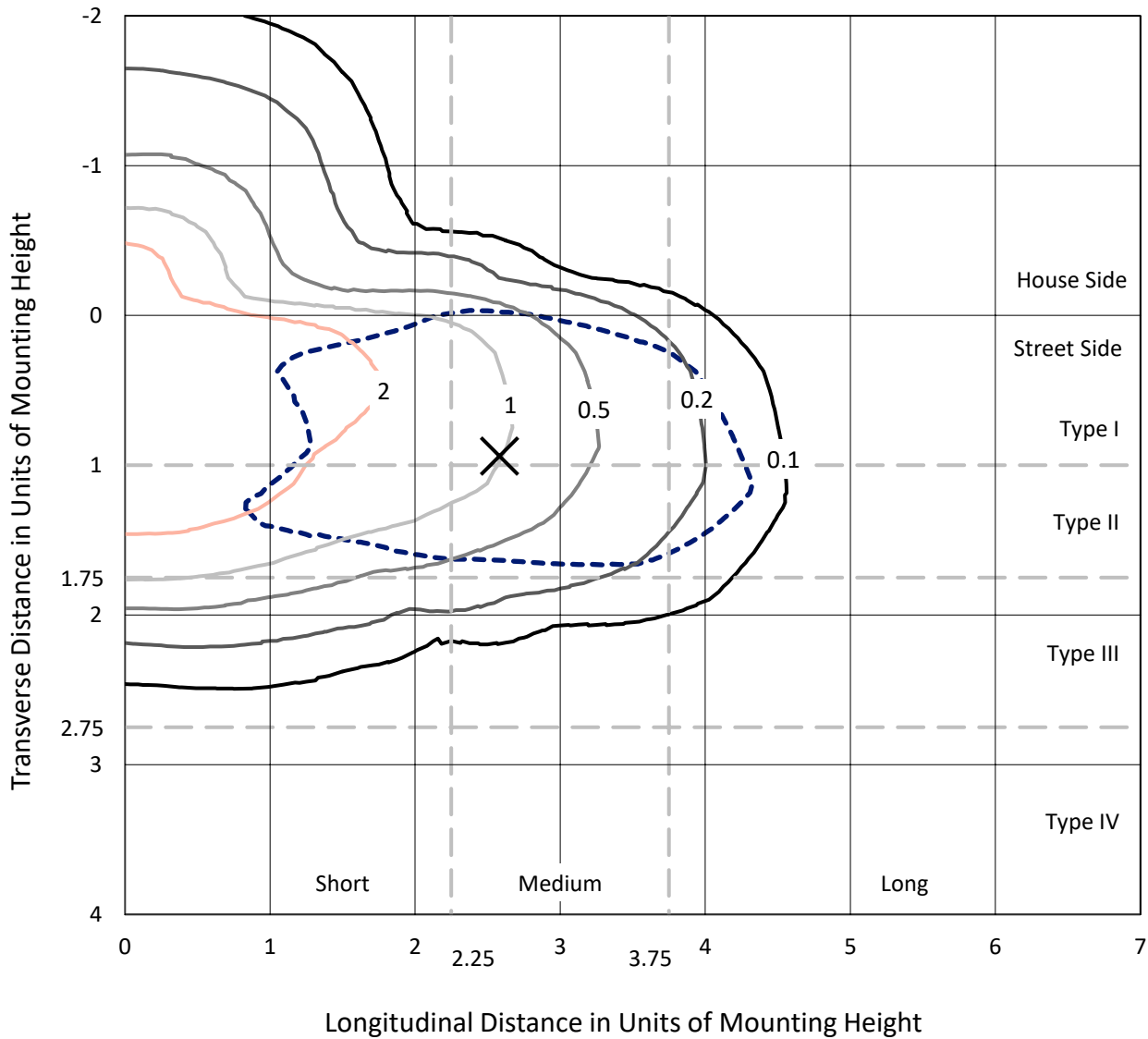
Lumens per Lamp: N/A  
Luminaire Lumens: 11408 lumens  
Efficiency: N/A  
Efficacy: 120.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 94.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
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: P637006  
 CATALOG NUMBER: GWS-SA4B-830-U-T2-W

### Iso-Footcandle Lines of Horizontal Illumination

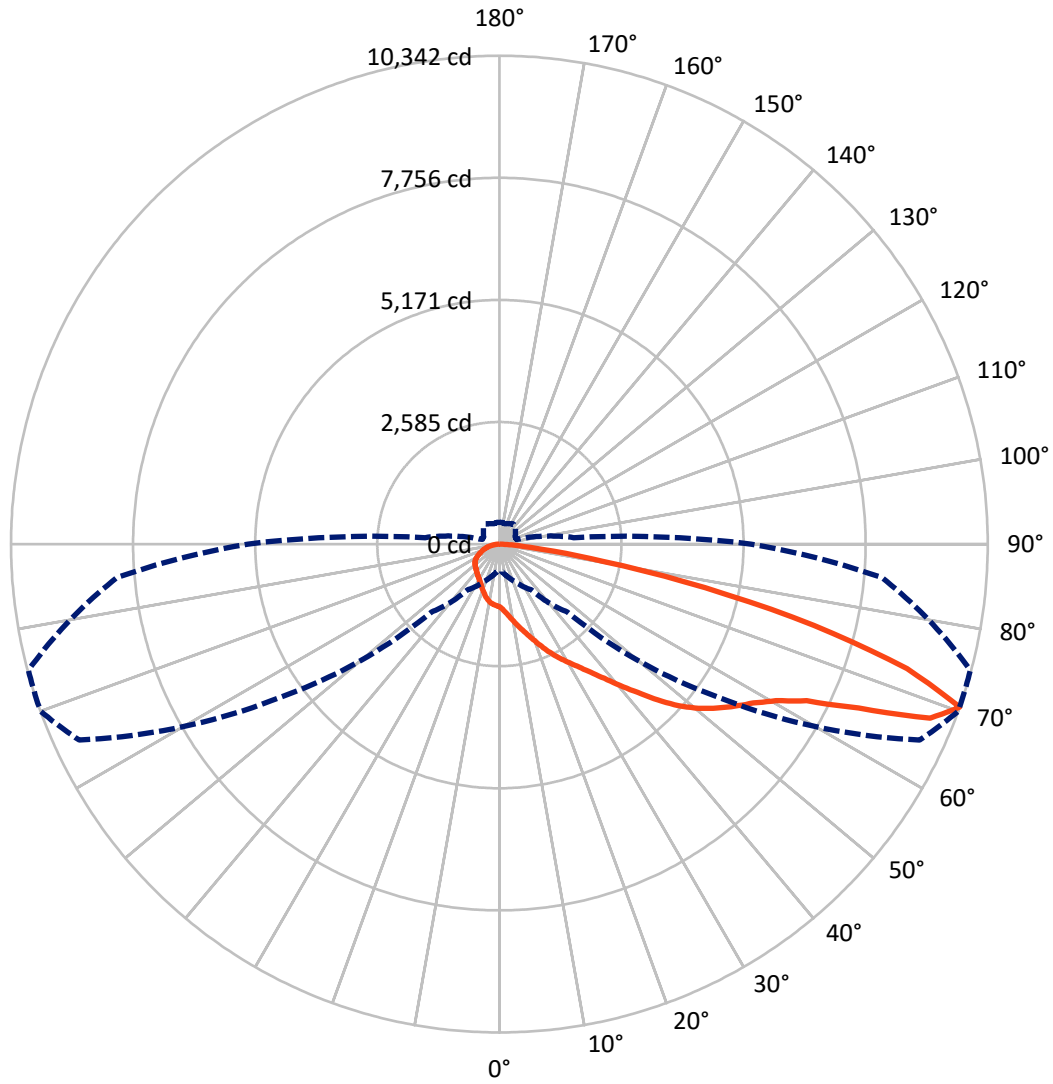
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.8 fc  
 Type II - Medium - N/A

REPORT NUMBER: P637006  
CATALOG NUMBER: GWS-SA4B-830-U-T2-W

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P637006

CATALOG NUMBER: GWS-SA4B-830-U-T2-W

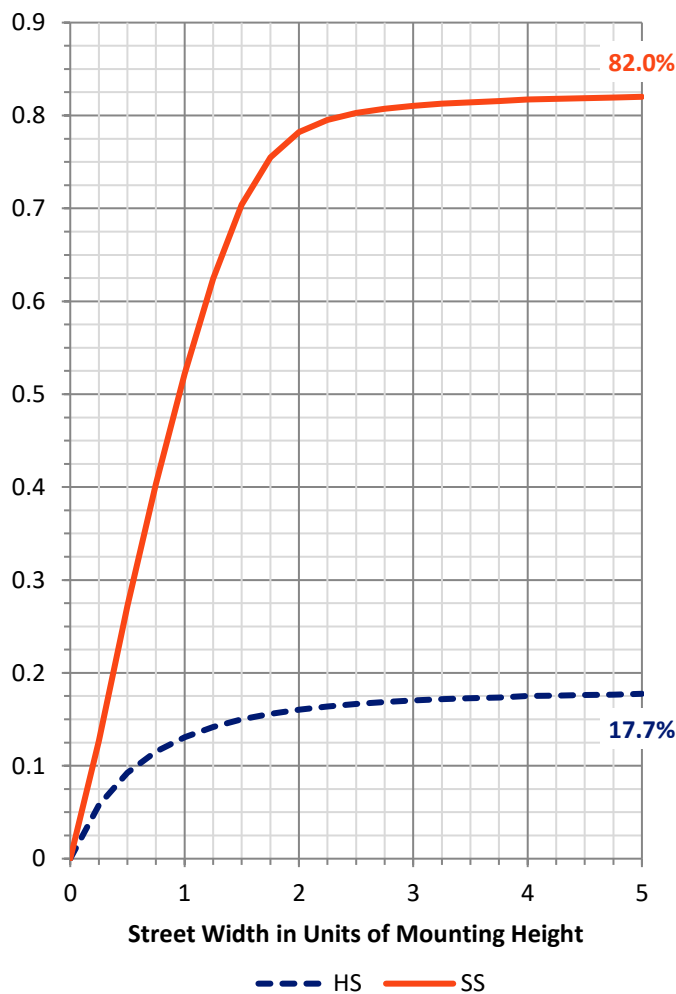
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2044.3	0.0	2044.3
	% Fixture	17.9	0.0	17.9
<b>Street Side</b>	Lumens	9363.7	0.0	9363.7
	% Fixture	82.1	0.0	82.1
<b>Total</b>	Lumens	11408.0	0.0	11408.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.2	1.2
10°-20°	439.9	3.9
20°-30°	779.3	6.8
30°-40°	1172.8	10.3
40°-50°	1774.3	15.6
50°-60°	2541.8	22.3
60°-70°	2809.6	24.6
70°-80°	1585.6	13.9
80°-90°	169.6	1.5
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°	11408.0	100.0
0°-180°	11408.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P637006

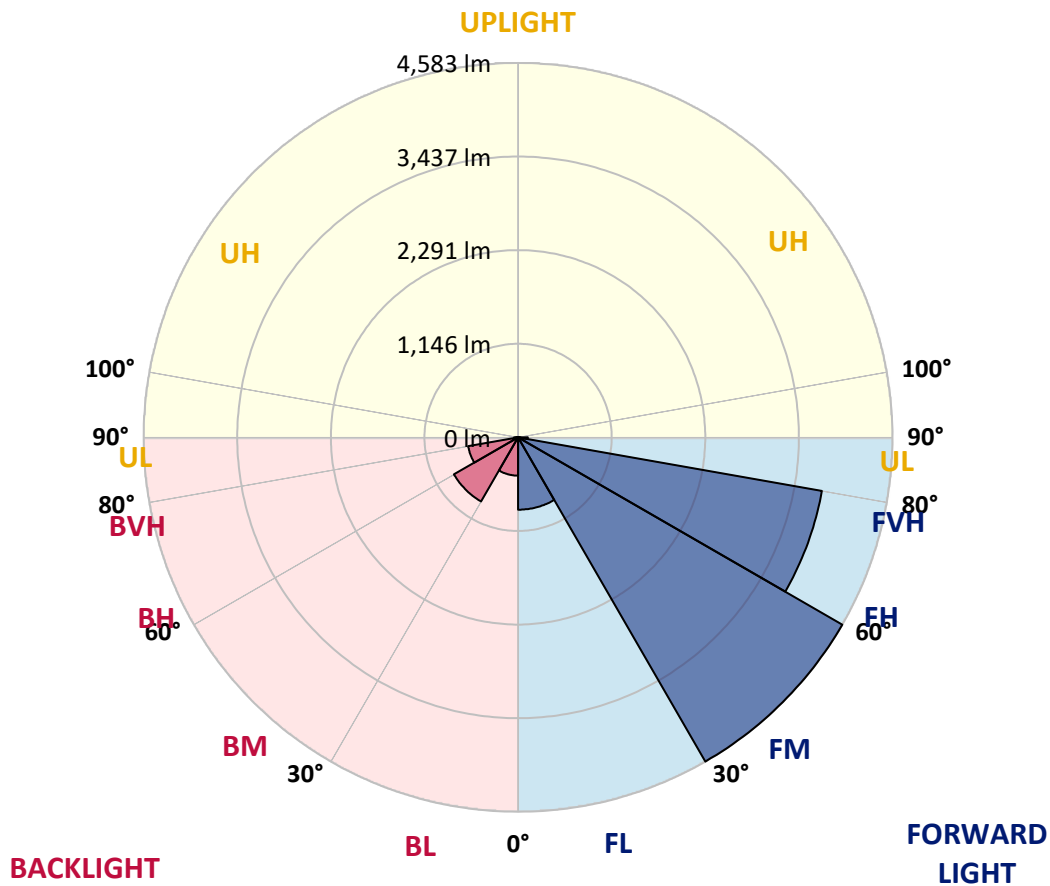
CATALOG NUMBER: GWS-SA4B-830-U-T2-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	885.6	7.8			
FM (30°-60°)	4582.6	40.2			
FH (60°-80°)	3775.6	33.1			G2/5000
FVH (80°-90°)	119.9	1.1			G2/225
BL (0°-30°)	468.7	4.1	B1/500		
BM (30°-60°)	906.3	7.9	B1/1000		
BH (60°-80°)	619.6	5.4	B2/1000		G2/1000
BVH (80°-90°)	49.7	0.4			G1/100
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 Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	70°	75°	85°
0°	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4
2.5°	1473.8	1471.4	1473.0	1471.4	1462.3	1440.0	1421.9	1398.8	1383.2	1374.1	1352.7
5°	1646.9	1644.5	1638.7	1630.5	1614.0	1583.5	1538.1	1487.8	1457.4	1434.3	1388.9
7.5°	1771.4	1771.4	1770.6	1760.7	1749.1	1717.0	1663.4	1597.5	1553.0	1513.4	1439.2
10°	1834.9	1839.0	1844.8	1858.8	1856.3	1839.0	1788.7	1717.8	1661.8	1615.6	1505.2
12.5°	1869.5	1872.0	1881.9	1910.7	1940.4	1944.5	1914.8	1840.6	1779.6	1717.8	1578.5
15°	1914.0	1914.8	1928.0	1962.6	2006.3	2050.0	2042.6	1968.4	1905.8	1837.3	1660.1
17.5°	1948.6	1954.4	1978.3	2018.7	2073.1	2133.3	2169.5	2123.4	2045.9	1967.6	1749.1
20°	1961.0	1965.1	1996.4	2058.3	2132.4	2217.3	2298.1	2285.8	2207.5	2115.1	1849.7
22.5°	2005.5	2005.5	2028.6	2080.5	2167.9	2291.5	2422.6	2454.7	2385.5	2277.5	1957.7
25°	2103.6	2100.3	2111.0	2132.4	2198.4	2350.9	2545.4	2641.9	2564.4	2443.2	2065.7
27.5°	2238.0	2236.3	2235.5	2238.8	2261.0	2402.8	2649.3	2816.6	2739.1	2602.3	2162.1
30°	2383.9	2378.9	2389.6	2379.7	2374.8	2464.6	2737.5	2973.2	2913.1	2759.7	2242.1
32.5°	2582.5	2573.4	2571.0	2538.8	2519.0	2561.1	2808.4	3151.3	3103.5	2929.5	2331.9
35°	2844.6	2836.4	2794.4	2743.2	2684.7	2704.5	2896.6	3325.2	3328.5	3142.2	2449.8
37.5°	3109.2	3110.9	3077.9	2957.6	2897.4	2885.9	3030.9	3537.0	3607.9	3396.1	2602.3
40°	3329.3	3339.2	3339.2	3212.3	3122.4	3111.7	3219.7	3788.5	3929.4	3707.7	2795.2
42.5°	3496.7	3505.7	3534.6	3443.1	3348.3	3385.4	3448.8	4040.7	4293.7	4092.6	3039.2
45°	3680.5	3687.9	3703.5	3650.8	3595.6	3694.5	3708.5	4342.4	4710.8	4524.5	3322.7
47.5°	3924.5	3917.9	3919.5	3880.8	3837.9	3997.8	3994.5	4596.3	5113.9	4997.7	3630.2
50°	4227.8	4240.2	4228.6	4152.0	4101.7	4247.6	4266.5	4877.3	5468.4	5465.9	3940.1
52.5°	4519.6	4524.5	4585.5	4588.8	4485.8	4455.3	4504.8	5160.9	5767.6	5894.5	4237.7
55°	4534.4	4553.4	4736.4	4868.3	5034.8	4790.0	4745.5	5431.3	6056.9	6314.1	4546.8
57.5°	4218.7	4249.2	4560.0	4844.4	5307.6	5364.5	5157.6	5780.8	6346.2	6727.1	4904.5
60°	3544.5	3607.9	4030.0	4465.2	5184.8	5777.5	6000.9	6255.6	6726.2	7149.1	5338.9
62.5°	2263.5	2288.2	2880.1	3608.8	4631.7	5737.1	6919.1	7092.2	7304.9	7698.9	6008.3
65°	1133.4	1212.5	1559.6	2153.9	3340.0	5055.4	7383.2	8624.6	8364.1	8640.2	7093.0
67.5°	769.1	794.6	970.2	1294.1	1958.5	3581.6	7095.5	9915.4	9838.8	9884.1	8249.5
70°	567.1	583.6	722.1	916.6	1184.5	2033.5	5648.9	9818.2	10341.6	10325.1	8128.4
72.5°	413.8	422.0	526.7	699.8	877.9	1051.8	3449.7	7931.3	9027.7	9503.3	7108.7
75°	300.9	310.8	366.0	523.4	682.5	656.1	1703.0	5728.8	6884.5	7799.5	5791.5
77.5°	224.2	236.6	262.1	328.1	478.1	469.8	736.1	3720.0	4452.8	5094.1	3518.1
80°	161.6	164.0	178.9	210.2	303.3	275.3	350.3	1939.6	2223.9	2436.6	1379.0
82.5°	98.1	100.6	119.5	129.4	187.9	173.1	182.2	628.1	900.1	955.4	515.2
85°	28.9	30.5	54.4	59.3	78.3	74.2	73.4	255.5	305.0	389.9	202.8
87.5°	0.0	0.0	0.0	0.0	0.8	4.9	9.1	45.3	68.4	94.8	49.5
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: P637006  
 CATALOG NUMBER: GWS-SA4B-830-U-T2-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4	1330.4
2.5°	1344.4	1325.5	1315.6	1298.3	1285.9	1273.5	1261.2	1249.6	1244.7	1237.3	1238.9
5°	1368.3	1338.7	1309.0	1275.2	1246.3	1222.4	1201.0	1182.0	1173.8	1166.4	1169.7
7.5°	1404.6	1360.1	1303.2	1241.4	1196.0	1163.1	1140.8	1127.6	1123.5	1117.7	1117.7
10°	1450.8	1384.0	1284.2	1196.0	1141.6	1115.3	1105.4	1104.6	1108.7	1109.5	1107.8
12.5°	1501.9	1407.1	1256.2	1142.5	1096.3	1088.1	1095.5	1109.5	1123.5	1130.9	1129.3
15°	1554.6	1421.9	1208.4	1091.4	1063.3	1074.1	1098.0	1126.0	1153.2	1167.2	1166.4
17.5°	1604.1	1425.2	1146.6	1041.9	1034.5	1061.7	1102.9	1146.6	1183.7	1203.5	1204.3
20°	1659.3	1419.4	1083.1	997.4	1005.6	1050.1	1104.6	1157.3	1201.0	1220.8	1225.7
22.5°	1709.6	1399.6	1021.3	955.4	980.9	1036.1	1091.4	1140.8	1179.6	1198.5	1205.1
25°	1754.9	1361.7	953.7	919.9	962.0	1016.4	1058.4	1093.0	1120.2	1131.8	1140.8
27.5°	1779.6	1304.9	902.6	891.9	943.8	988.3	1011.4	1022.1	1031.2	1027.9	1034.5
30°	1784.6	1234.0	858.1	869.6	916.6	949.6	954.5	943.8	928.2	902.6	908.4
32.5°	1779.6	1152.4	821.0	845.7	886.1	905.9	899.3	871.3	833.4	793.8	796.3
35°	1781.3	1069.9	790.5	819.3	850.7	861.4	844.9	806.2	765.8	729.5	727.9
37.5°	1799.4	1000.7	764.9	793.8	816.1	817.7	799.6	759.2	738.6	711.4	708.1
40°	1849.7	949.6	741.9	768.2	782.3	781.4	760.8	732.0	746.0	736.9	734.4
42.5°	1932.1	918.3	722.9	741.0	750.9	752.6	736.1	718.0	748.5	736.9	732.8
45°	2064.9	916.6	709.7	713.8	729.5	741.0	729.5	708.9	720.4	664.4	653.7
47.5°	2222.3	944.6	699.8	689.9	717.1	737.7	719.6	686.6	662.7	611.6	604.2
50°	2411.9	1001.5	690.8	664.4	699.0	725.4	707.2	661.9	625.6	598.4	594.3
52.5°	2636.9	1076.5	679.2	635.5	671.8	718.8	707.2	659.4	611.6	586.9	582.8
55°	2872.7	1163.1	666.0	600.9	641.3	720.4	713.0	642.1	600.9	587.7	584.4
57.5°	3165.3	1266.9	642.1	560.5	614.1	705.6	689.9	632.2	593.5	582.8	579.5
60°	3545.3	1421.1	596.8	519.3	582.8	679.2	669.3	615.7	573.7	564.6	562.2
62.5°	4147.0	1682.4	541.6	479.7	545.7	624.0	638.8	584.4	549.0	548.2	547.3
65°	5127.9	1996.4	476.4	444.3	506.9	578.7	598.4	552.3	523.4	532.5	531.7
67.5°	5815.4	2023.6	422.9	407.2	461.6	529.2	558.0	519.3	488.0	505.3	504.5
70°	5326.6	1578.5	376.7	368.5	413.0	475.6	514.4	478.1	446.8	463.3	460.0
72.5°	4492.4	1210.1	333.0	328.1	363.5	419.6	458.3	436.9	403.9	403.9	396.5
75°	3610.4	998.2	286.9	284.4	308.3	362.7	406.4	370.1	339.6	338.0	333.0
77.5°	2070.6	654.5	240.7	239.0	246.5	303.3	315.7	308.3	285.2	274.5	271.2
80°	825.1	340.4	189.6	178.9	186.3	222.6	248.9	236.6	216.8	203.6	196.2
82.5°	319.8	170.6	133.5	117.0	127.8	160.7	180.5	176.4	163.2	133.5	125.3
85°	130.2	83.3	80.0	67.6	74.2	86.6	103.9	89.8	74.2	52.8	50.3
87.5°	34.6	30.5	29.7	18.1	14.0	4.1	0.8	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

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)