

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: P634547

Luminaire Tested: GWS-SA3B-830-U-T4W-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P634547  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-52)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3B-830-U-T4W-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

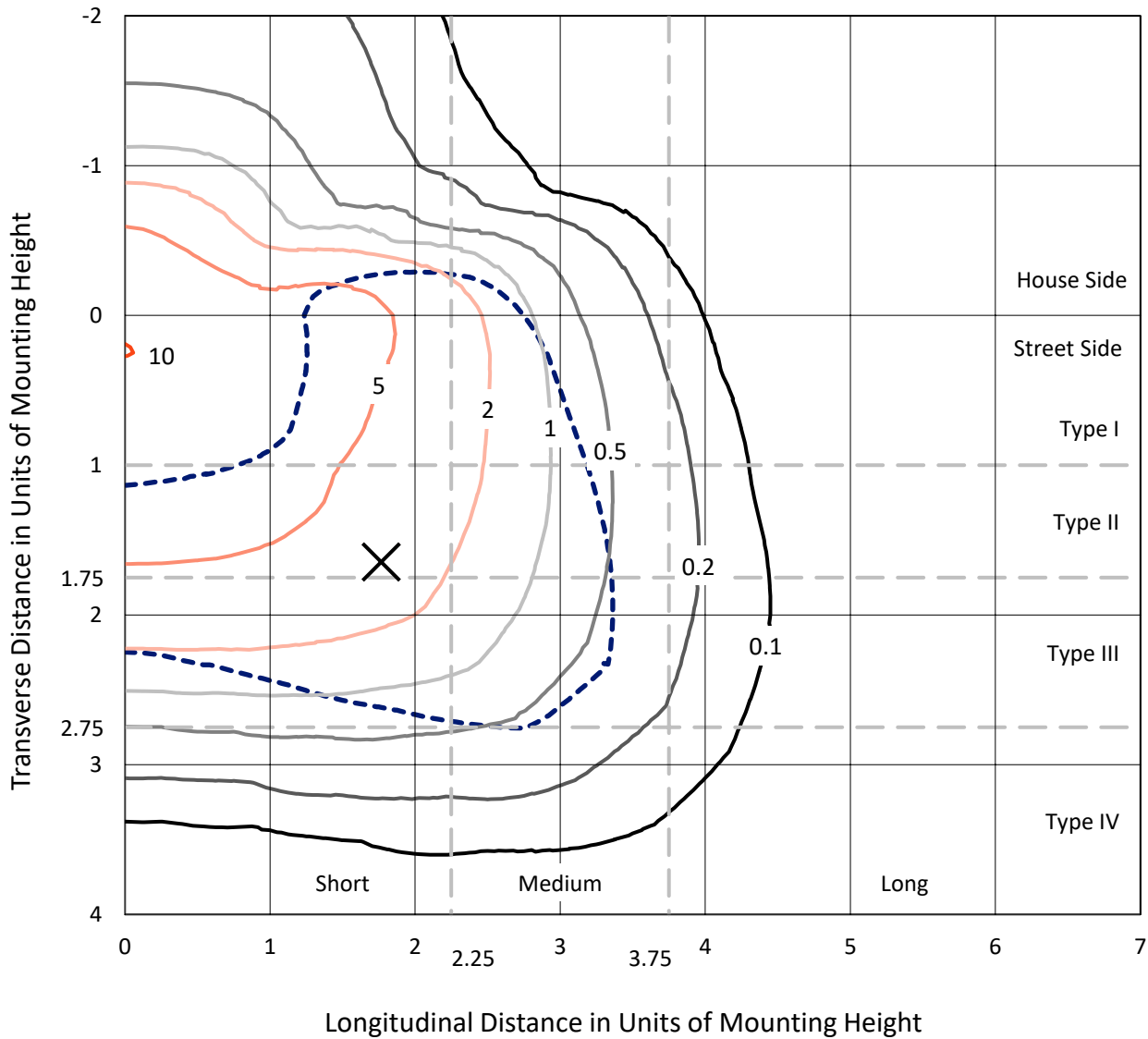
Lumens per Lamp: N/A  
Luminaire Lumens: 8192 lumens  
Efficiency: N/A  
Efficacy: 119.9 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 68.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P634547  
 CATALOG NUMBER: GWS-SA3B-830-U-T4W-W

### Iso-Footcandle Lines of Horizontal Illumination

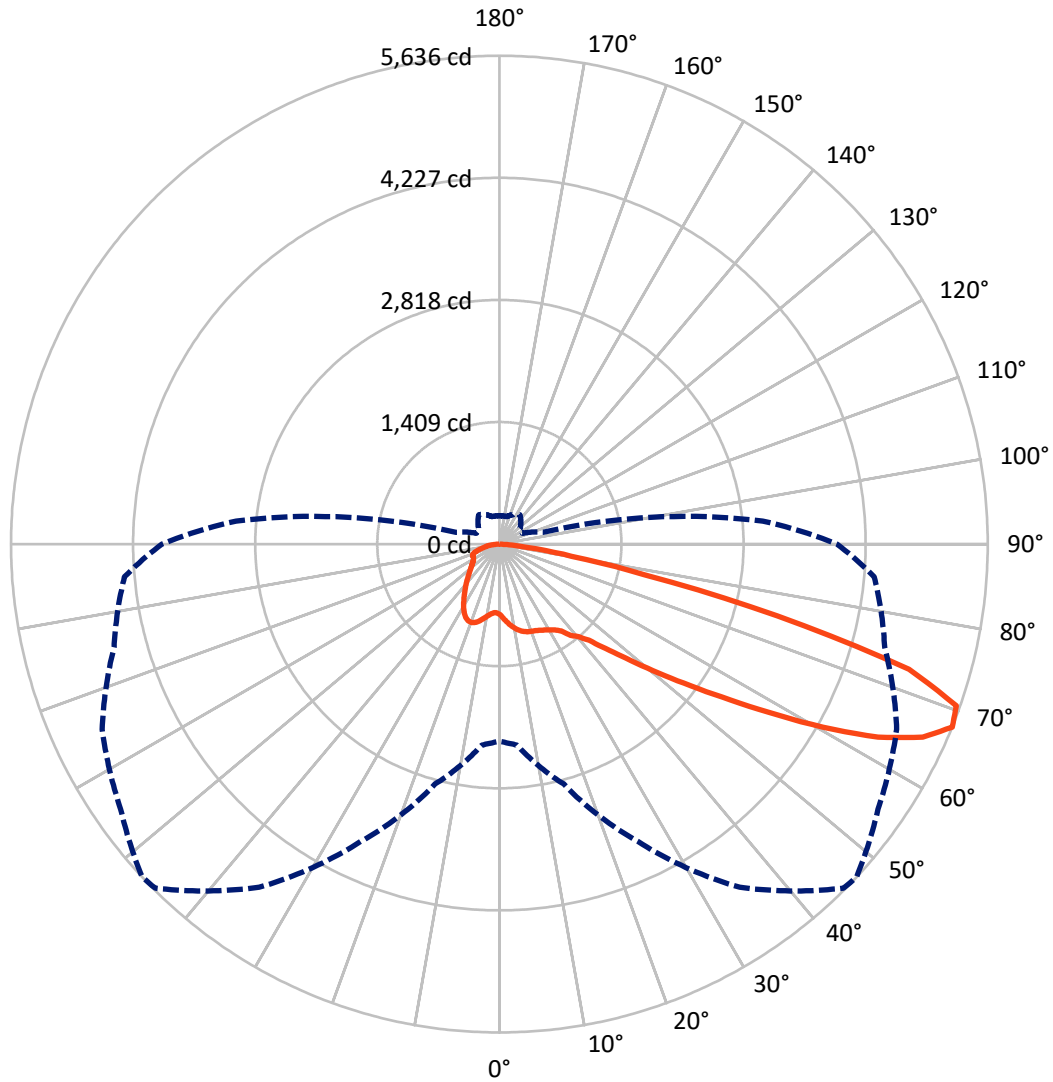
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.2 fc  
 Type III - Short - N/A

REPORT NUMBER: P634547  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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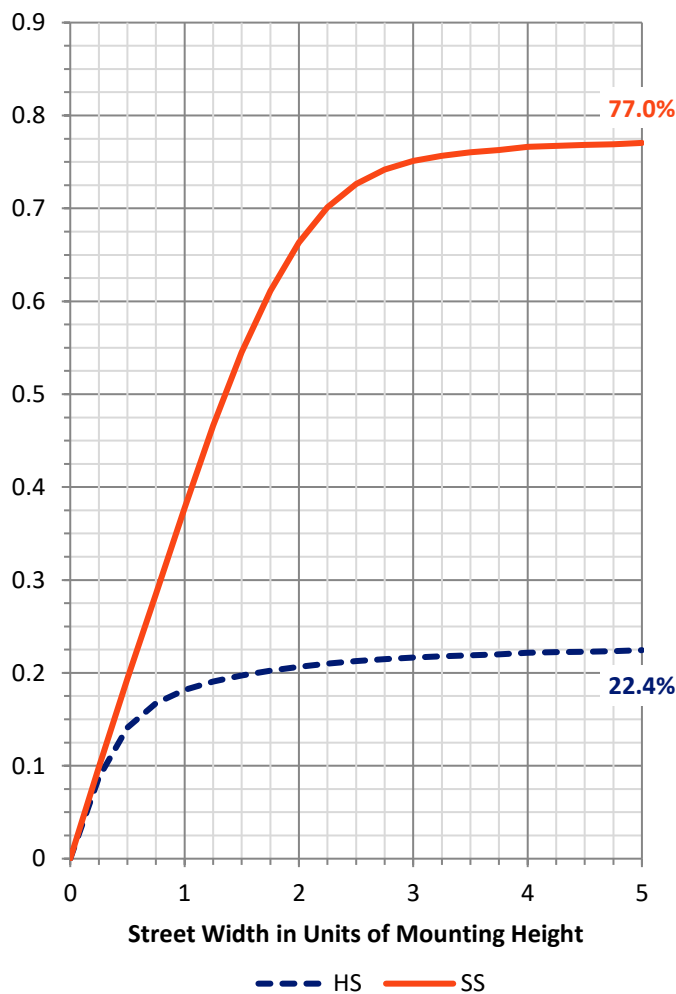
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1867.0	0.0	1867.0
	% Fixture	22.8	0.0	22.8
<b>Street Side</b>	Lumens	6325.0	0.0	6325.0
	% Fixture	77.2	0.0	77.2
<b>Total</b>	Lumens	8192.0	0.0	8192.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.0	1.0
10°-20°	276.5	3.4
20°-30°	470.0	5.7
30°-40°	688.5	8.4
40°-50°	1049.0	12.8
50°-60°	1876.9	22.9
60°-70°	2504.5	30.6
70°-80°	1132.6	13.8
80°-90°	111.0	1.4
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°	8192.0	100.0
0°-180°	8192.0	100.0

**Coefficient of Utilization**



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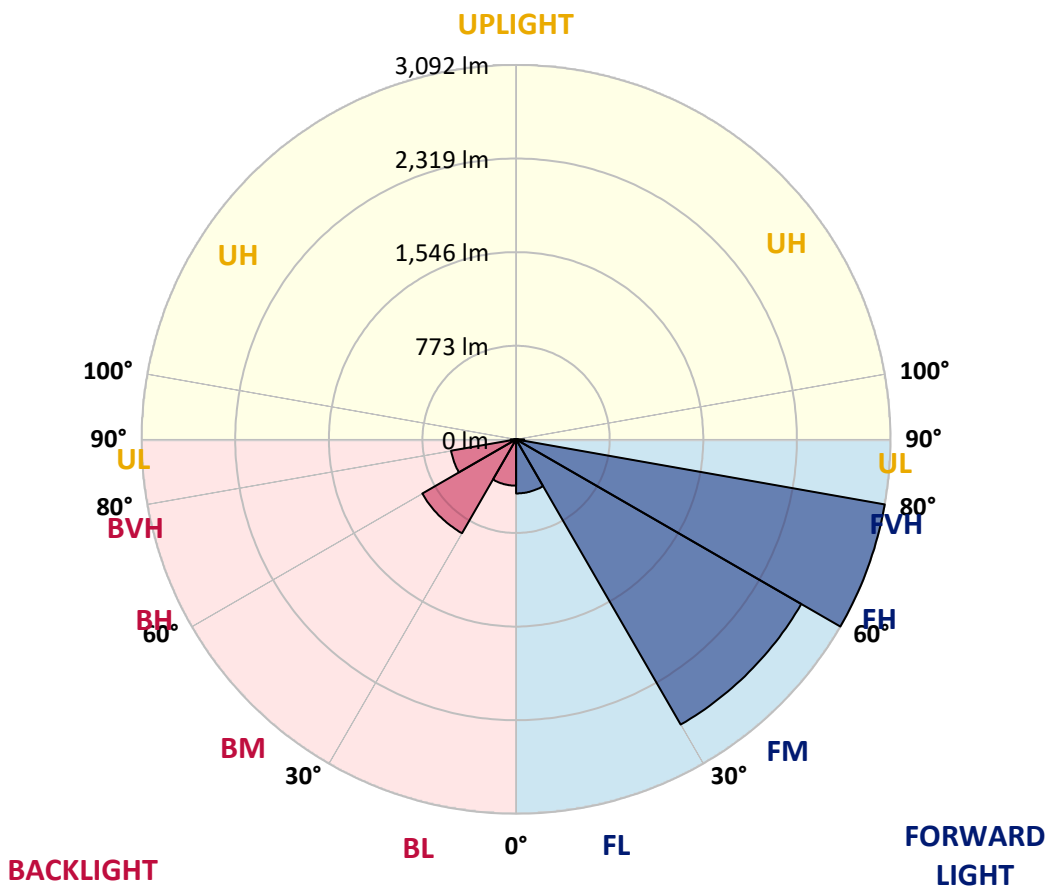
CATALOG NUMBER: GWS-SA3B-830-U-T4W-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	446.8	5.5			
FM (30°-60°)	2719.8	33.2			
FH (60°-80°)	3092.4	37.7			G2/5000
FVH (80°-90°)	66.0	0.8			G1/100
BL (0°-30°)	382.7	4.7	B1/500		
BM (30°-60°)	894.6	10.9	B1/1000		
BH (60°-80°)	544.7	6.6	B2/1000		G2/1000
BVH (80°-90°)	45.0	0.5			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 III Short





REPORT NUMBER: P634547  
 CATALOG NUMBER: GWS-SA3B-830-U-T4W-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1
2.5°	866.0	869.0	868.4	863.6	860.7	855.3	855.9	847.6	835.2	826.9	817.4
5°	942.4	947.1	941.2	933.5	921.7	904.5	902.7	883.8	860.1	843.5	826.3
7.5°	1008.7	1011.7	1004.6	991.6	974.4	951.3	947.1	924.6	895.0	869.0	844.1
10°	1060.3	1063.8	1054.4	1037.2	1014.7	991.6	988.6	965.5	934.1	903.3	871.9
12.5°	1104.1	1105.3	1095.2	1072.1	1047.8	1024.1	1021.2	999.9	970.8	939.4	905.1
15°	1129.6	1130.2	1117.7	1092.3	1069.2	1048.4	1046.6	1028.3	1001.6	972.0	935.3
17.5°	1127.8	1129.0	1120.1	1097.6	1077.5	1065.0	1063.2	1051.4	1030.7	1004.0	967.3
20°	1105.9	1107.1	1101.1	1086.3	1075.7	1072.1	1072.7	1069.2	1056.7	1034.8	997.5
22.5°	1088.7	1090.5	1085.2	1074.5	1073.3	1081.6	1083.4	1085.2	1079.2	1059.7	1023.5
25°	1097.0	1100.0	1091.7	1076.9	1079.2	1097.6	1101.1	1107.1	1102.3	1085.7	1054.4
27.5°	1154.5	1156.2	1134.9	1104.7	1097.6	1117.1	1122.5	1131.9	1128.4	1113.0	1088.7
30°	1287.7	1286.5	1240.9	1166.9	1137.3	1145.0	1149.1	1162.7	1163.9	1153.9	1130.8
32.5°	1475.5	1469.6	1399.1	1281.2	1195.3	1176.4	1181.1	1199.5	1213.1	1202.4	1171.0
35°	1673.9	1668.6	1591.0	1453.0	1302.5	1236.8	1231.5	1245.7	1266.4	1236.8	1191.8
37.5°	1862.9	1854.6	1775.2	1604.6	1434.6	1342.8	1335.1	1320.9	1308.5	1251.6	1217.2
40°	2072.6	2063.1	1993.8	1800.7	1580.3	1424.0	1404.4	1348.1	1336.9	1300.8	1283.6
42.5°	2296.5	2296.5	2239.0	2048.9	1756.3	1540.1	1514.6	1429.9	1441.7	1418.0	1397.9
45°	2520.4	2526.9	2481.3	2298.8	1991.4	1759.2	1718.4	1598.1	1626.5	1615.9	1605.8
47.5°	2711.1	2723.5	2714.7	2554.1	2279.3	2025.8	1963.6	1838.6	1899.6	1925.1	1953.5
50°	2916.6	2930.3	2921.4	2858.0	2616.3	2348.6	2292.9	2163.8	2268.6	2345.0	2438.0
52.5°	3221.7	3241.2	3167.2	3142.9	3025.6	2715.2	2665.5	2518.6	2708.7	2835.5	3042.8
55°	3479.4	3478.8	3452.7	3508.4	3465.1	3163.6	3108.6	2975.3	3218.1	3352.6	3655.9
57.5°	3599.0	3613.2	3702.7	3860.2	3946.7	3711.5	3658.8	3522.6	3764.9	3834.8	4162.3
60°	3660.6	3678.4	3851.3	4162.9	4395.7	4309.8	4289.1	4115.5	4251.8	4243.5	4589.4
62.5°	3574.1	3609.7	3887.5	4301.5	4716.1	4911.0	4904.5	4642.1	4665.8	4584.6	4854.2
65°	3177.3	3215.8	3651.7	4232.2	4899.2	5368.3	5370.1	5118.9	4983.9	4750.5	4809.7
67.5°	2272.2	2327.3	2866.3	3786.8	4834.6	5615.3	5636.0	5335.1	5058.5	4603.6	4343.0
70°	1238.6	1278.8	1701.2	2752.6	4252.9	5556.1	5594.6	5230.9	4729.2	3982.2	3343.1
72.5°	562.7	575.7	791.4	1510.4	2905.4	4782.5	4943.6	4668.2	3883.9	2941.5	2125.9
75°	257.7	263.6	344.7	722.6	1518.1	3200.4	3313.5	3477.0	2702.8	1857.6	1108.3
77.5°	161.7	163.5	196.1	330.5	757.0	1597.5	1716.6	2070.2	1582.7	919.3	463.2
80°	95.4	97.1	122.0	178.9	355.4	730.9	844.1	818.6	744.0	396.9	210.9
82.5°	48.0	49.8	70.5	101.9	193.7	290.8	342.4	344.1	277.2	215.0	119.1
85°	17.2	17.8	23.1	40.3	82.3	96.0	107.2	130.9	135.6	125.0	57.5
87.5°	0.0	0.0	0.6	1.2	2.4	9.5	10.1	19.0	39.7	44.4	23.1
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: P634547  
 CATALOG NUMBER: GWS-SA3B-830-U-T4W-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1	812.1
2.5°	814.5	805.6	802.6	799.6	794.9	793.1	789.6	786.0	786.0	782.5	780.7
5°	818.6	806.8	799.1	795.5	792.5	794.3	794.3	795.5	799.6	797.3	798.5
7.5°	833.4	819.8	809.1	806.2	806.2	813.3	818.0	823.9	831.6	832.8	832.8
10°	859.5	843.5	832.2	830.4	833.4	843.5	850.6	857.7	867.2	867.8	869.0
12.5°	887.9	871.9	860.7	863.0	866.0	879.0	886.7	892.6	902.1	902.1	901.5
15°	917.5	899.8	890.3	895.0	903.9	918.7	919.9	920.5	925.2	924.0	923.4
17.5°	948.3	929.4	922.3	929.4	938.8	946.0	940.0	931.7	930.0	927.6	926.4
20°	978.5	959.0	956.0	961.4	964.3	958.4	940.0	924.6	917.5	914.0	912.8
22.5°	1004.6	988.0	986.2	986.2	971.4	950.7	923.4	902.7	893.2	888.5	887.3
25°	1035.4	1020.0	1017.0	1001.0	963.1	925.2	888.5	869.5	861.8	859.5	860.1
27.5°	1071.5	1060.9	1051.4	1005.8	939.4	880.2	838.7	830.4	827.5	830.4	832.2
30°	1116.0	1105.3	1084.0	999.9	901.5	821.6	781.9	781.3	790.2	797.9	799.1
32.5°	1152.1	1147.3	1112.4	980.9	848.2	757.0	723.2	725.6	741.6	752.3	754.0
35°	1180.5	1188.2	1136.1	949.5	784.8	696.0	669.3	670.5	679.4	694.2	694.8
37.5°	1220.8	1246.9	1157.4	901.5	712.0	643.3	619.0	610.1	608.9	613.1	614.2
40°	1301.9	1341.0	1172.8	831.6	641.5	595.9	568.6	551.5	536.7	525.4	521.8
42.5°	1424.6	1469.6	1181.7	746.9	578.7	549.1	518.3	496.4	470.3	446.6	438.3
45°	1649.6	1664.5	1181.7	656.9	523.0	505.3	474.5	448.4	415.2	387.4	381.5
47.5°	2009.8	1962.4	1182.9	569.8	473.9	466.8	440.1	410.5	373.8	350.7	347.1
50°	2552.4	2385.9	1207.2	497.6	433.0	434.2	414.6	382.1	348.9	331.7	328.7
52.5°	3167.2	2907.8	1272.3	444.2	398.6	407.5	396.9	365.5	335.9	321.0	318.1
55°	3745.3	3387.5	1328.0	406.3	369.6	385.0	384.4	355.4	328.7	313.9	312.2
57.5°	4236.9	3716.3	1319.7	375.5	344.7	364.3	373.2	348.9	324.0	311.6	309.8
60°	4542.6	3890.4	1201.8	347.1	325.8	349.5	366.7	347.1	326.4	323.4	324.0
62.5°	4675.3	3858.4	975.6	325.8	313.3	342.4	373.8	359.5	348.3	355.4	359.5
65°	4469.1	3583.6	717.9	309.8	301.5	344.1	390.3	379.1	348.3	353.0	354.8
67.5°	3896.9	3050.5	518.9	293.8	286.7	349.5	414.0	376.1	328.2	328.2	324.6
70°	2808.2	2194.0	376.7	277.8	271.9	341.8	415.2	356.0	305.1	303.3	294.4
72.5°	1689.9	1294.2	293.8	260.0	249.4	303.3	389.2	332.3	282.5	267.7	257.1
75°	877.8	648.6	246.4	240.5	213.8	257.1	356.0	295.6	241.7	228.6	222.7
77.5°	376.1	303.3	211.5	214.4	177.7	216.2	287.3	255.9	214.4	197.8	192.5
80°	185.4	172.4	167.0	171.8	142.2	167.0	247.6	223.9	181.8	162.9	155.2
82.5°	106.0	100.7	120.2	122.0	101.3	139.8	209.1	189.5	150.5	129.7	117.3
85°	49.2	52.7	72.9	73.4	62.8	96.0	136.8	106.6	80.0	66.3	63.4
87.5°	19.5	23.1	32.0	31.4	18.4	17.8	11.8	6.5	5.3	4.7	4.1
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)