

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: P636515

Luminaire Tested: GWS-SA3F-830-U-T2R-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636515  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-11)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3F-830-U-T2R-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

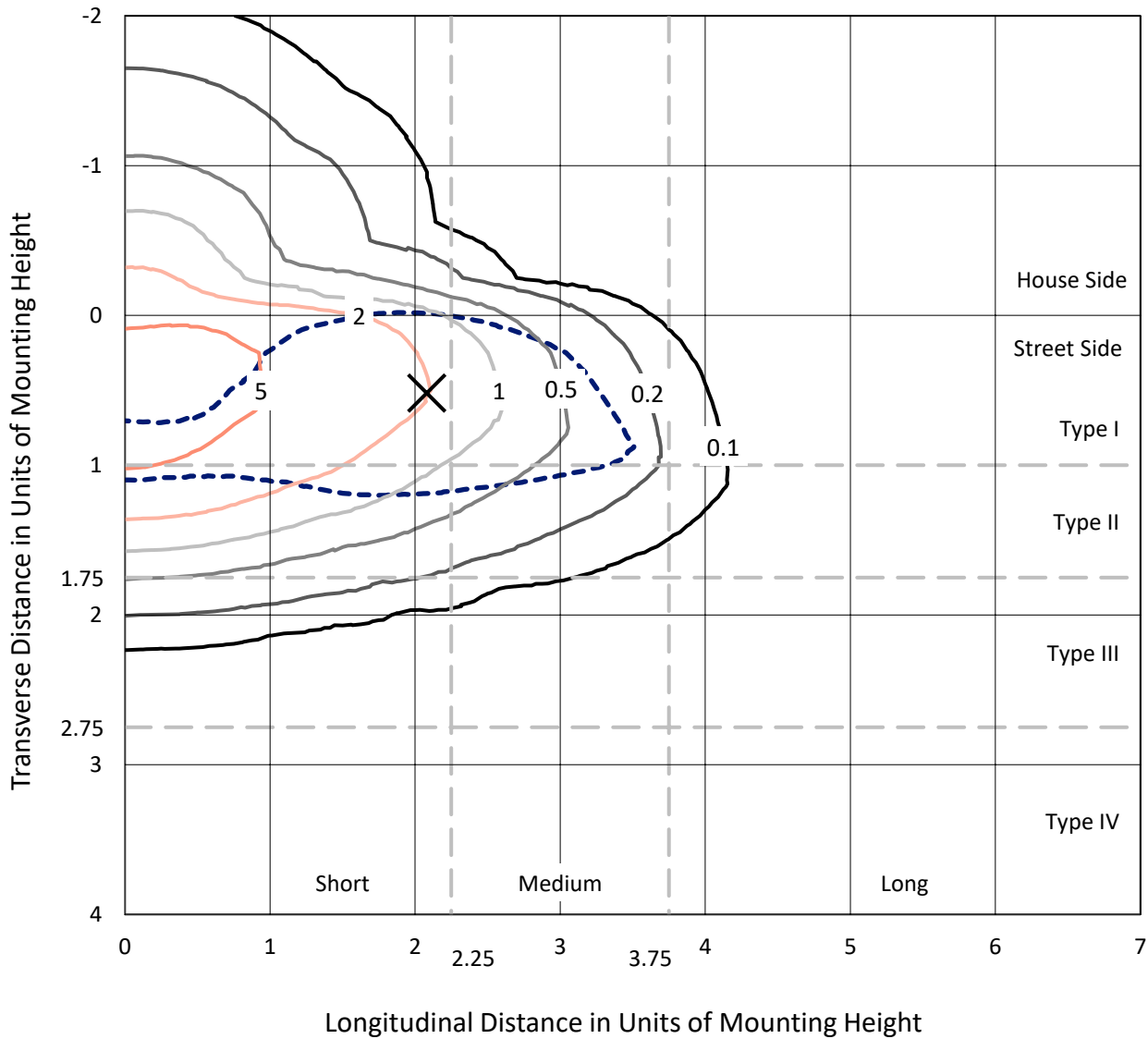
Lumens per Lamp: N/A  
Luminaire Lumens: 19805.5 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 183.2  
Input Voltage (V): 120  
Input Current (Ain): 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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 CATALOG NUMBER: GWS-SA3F-830-U-T2R-W

### Iso-Footcandle Lines of Horizontal Illumination

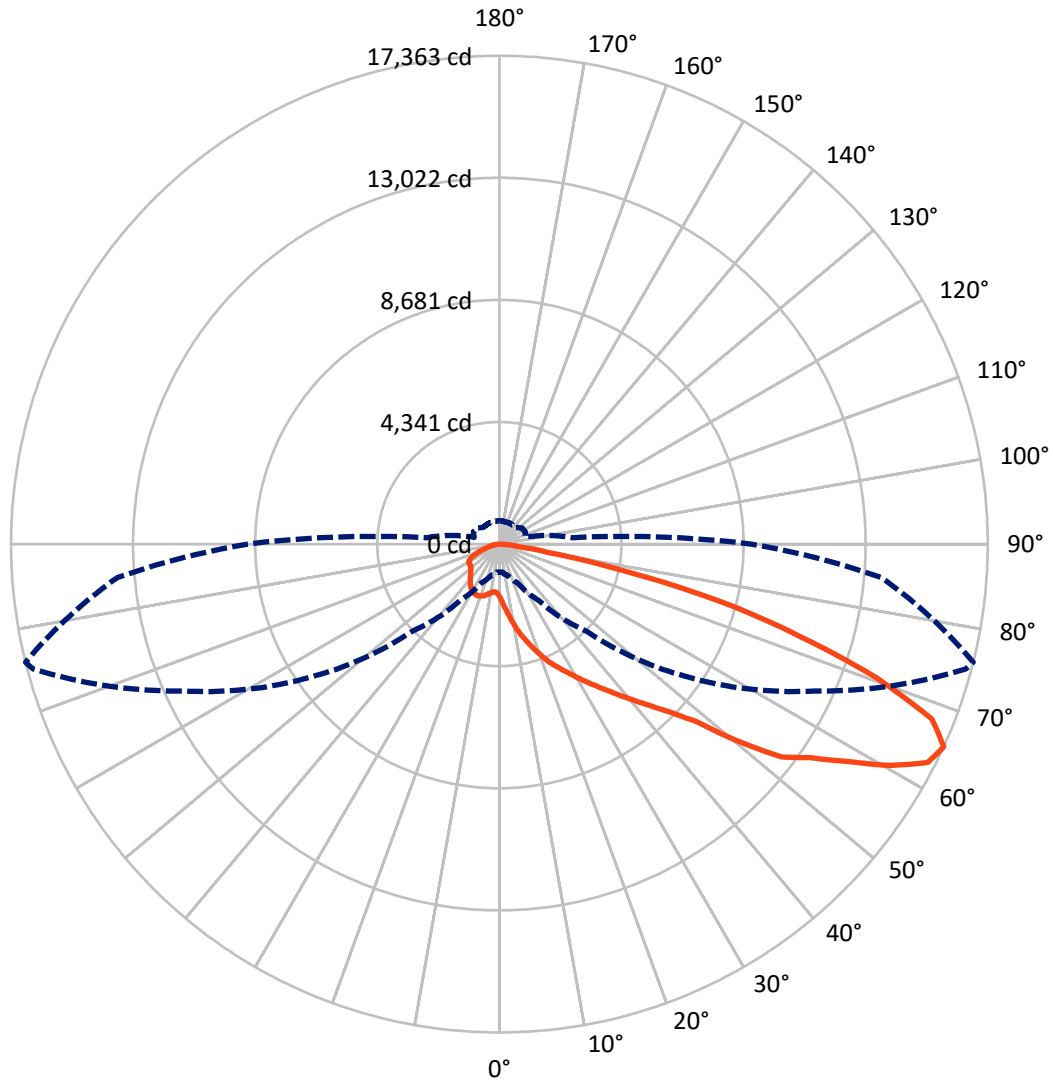
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.8 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3310.5	0.0	3310.5
	% Fixture	16.7	0.0	16.7
<b>Street Side</b>	Lumens	16495.0	0.0	16495.0
	% Fixture	83.3	0.0	83.3
<b>Total</b>	Lumens	19805.5	0.0	19805.5
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	222.8	1.1
10°-20°	848.7	4.3
20°-30°	1654.0	8.4
30°-40°	2766.2	14.0
40°-50°	3960.7	20.0
50°-60°	4688.9	23.7
60°-70°	3898.8	19.7
70°-80°	1595.5	8.1
80°-90°	169.9	0.9
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°	19805.5	100.0
0°-180°	19805.5	100.0

**Coefficient of Utilization**



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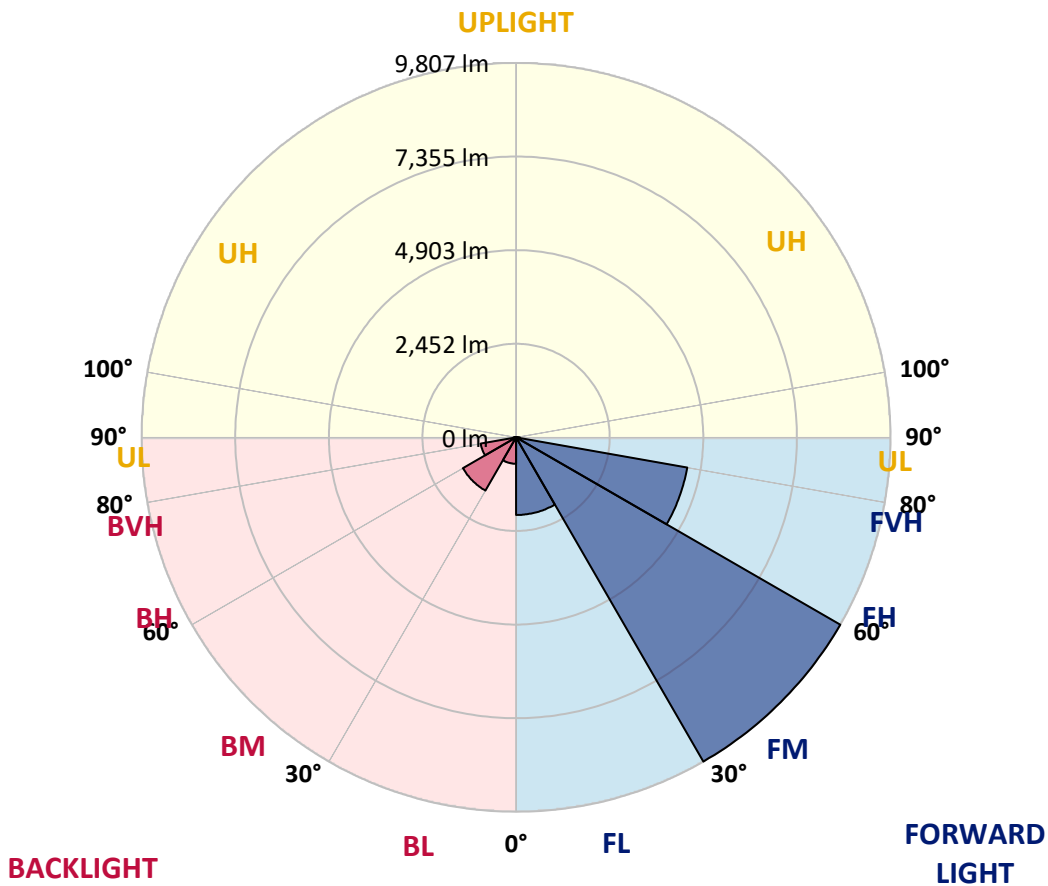
CATALOG NUMBER: GWS-SA3F-830-U-T2R-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2033.0	10.3			
FM (30°-60°)	9806.9	49.5			
FH (60°-80°)	4553.8	23.0			G2/5000
FVH (80°-90°)	101.3	0.5			G2/225
BL (0°-30°)	692.6	3.5	B2/1000		
BM (30°-60°)	1608.8	8.1	B2/2500		
BH (60°-80°)	940.6	4.7	B2/1000		G2/1000
BVH (80°-90°)	68.6	0.3			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 Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5
2.5°	2628.8	2638.5	2606.5	2595.4	2520.2	2418.5	2333.6	2205.5	2087.1	2069.0	1963.2
5°	3338.9	3297.1	3260.9	3237.2	3132.8	3017.2	2837.6	2596.7	2344.7	2314.1	2085.8
7.5°	3760.8	3753.8	3709.2	3695.3	3614.6	3499.0	3313.8	3014.5	2648.3	2598.1	2251.4
10°	4099.1	4094.9	4072.7	4085.2	4011.4	3898.6	3719.0	3409.9	2981.0	2930.9	2436.6
12.5°	4394.3	4401.2	4397.1	4443.0	4405.4	4317.7	4131.1	3791.4	3313.8	3259.5	2662.2
15°	4610.1	4615.7	4636.6	4736.8	4757.7	4739.6	4550.2	4165.9	3642.4	3564.4	2894.7
17.5°	4671.4	4682.5	4732.6	4894.1	5006.9	5082.1	4941.5	4547.4	3965.4	3880.5	3131.4
20°	4753.5	4766.0	4816.2	4984.6	5150.3	5321.6	5296.5	4934.5	4291.3	4221.6	3370.9
22.5°	5133.6	5123.9	5101.6	5182.4	5300.7	5513.7	5576.4	5306.3	4628.2	4561.4	3635.4
25°	5866.0	5847.9	5705.9	5632.1	5593.1	5722.6	5834.0	5644.6	4956.8	4856.5	3881.9
27.5°	6673.6	6663.8	6482.8	6307.4	6067.9	6012.2	6077.6	5939.8	5275.6	5174.0	4096.3
30°	7438.0	7408.7	7219.4	6999.4	6679.1	6439.7	6343.6	6229.4	5625.1	5519.3	4346.9
32.5°	8121.6	8084.0	7861.3	7617.6	7282.0	6999.4	6712.6	6537.1	6020.6	5898.0	4603.1
35°	8682.8	8645.2	8416.8	8157.8	7788.9	7580.0	7187.4	6871.3	6423.0	6299.0	4905.3
37.5°	9117.2	9082.4	8844.3	8589.5	8267.8	8102.1	7761.0	7247.2	6886.6	6757.1	5225.5
40°	9360.8	9335.8	9145.0	8943.1	8673.0	8529.6	8376.4	7722.0	7406.0	7276.5	5602.9
42.5°	9434.6	9417.9	9284.3	9179.8	8997.4	8888.8	8976.5	8280.4	7960.1	7847.3	6027.5
45°	9249.4	9249.4	9210.5	9263.4	9271.7	9270.3	9578.0	8911.1	8641.0	8517.1	6626.2
47.5°	8776.0	8806.7	8863.8	9124.1	9398.4	9628.2	10281.2	9752.1	9516.8	9415.1	7474.2
50°	7910.0	7993.5	8188.5	8696.7	9280.1	9864.9	10946.7	10995.5	11219.6	11040.0	8721.7
52.5°	6641.6	6629.0	7126.1	7850.1	8739.8	9874.6	11312.9	12092.6	12695.5	12571.6	9649.0
55°	5278.4	5257.5	5721.2	6719.5	7911.4	9501.5	11532.9	12595.3	13514.2	13402.8	10483.1
57.5°	4042.0	4015.6	4427.7	5328.6	6741.8	8709.2	11491.1	13194.0	14640.7	14583.6	11616.5
60°	2781.9	2749.9	3135.6	3923.7	5357.8	7497.9	11028.9	13501.7	15959.2	15978.7	12829.2
62.5°	1670.8	1652.7	1932.6	2543.8	3854.0	5996.9	9947.0	13315.1	17009.1	17096.8	13608.9
65°	1008.1	995.5	1159.8	1517.7	2445.0	4376.2	8279.0	12361.4	17160.8	17362.7	13627.0
67.5°	733.8	735.2	782.5	924.5	1425.8	2826.5	6212.7	10651.5	16370.0	16578.8	12767.9
70°	637.7	640.5	665.5	697.6	861.9	1617.9	4039.2	8408.5	14032.2	14193.7	10708.6
72.5°	566.7	566.7	583.4	600.1	673.9	985.8	2163.7	5877.1	11074.8	11118.0	8173.1
75°	498.5	494.3	502.6	511.0	584.8	689.2	1052.6	4094.9	8180.1	8079.9	5282.6
77.5°	396.8	392.6	394.0	402.4	469.2	492.9	533.3	2557.8	4610.1	4351.1	2333.6
80°	282.6	279.9	295.2	316.1	346.7	302.1	334.2	1237.8	1828.2	1701.5	905.0
82.5°	168.5	174.0	197.7	214.4	239.5	189.4	215.8	413.5	647.4	630.7	367.6
85°	23.7	25.1	71.0	82.1	103.0	73.8	114.2	186.6	259.0	277.1	129.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	9.7	33.4	73.8	75.2	32.0
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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CATALOG NUMBER: GWS-SA3F-830-U-T2R-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5	1875.5
2.5°	1908.9	1843.5	1750.2	1672.2	1606.8	1553.9	1509.3	1475.9	1466.2	1452.2	1452.2
5°	1978.5	1860.2	1693.1	1574.8	1506.5	1466.2	1438.3	1424.4	1417.4	1409.1	1404.9
7.5°	2074.6	1908.9	1683.4	1563.6	1510.7	1485.6	1467.5	1459.2	1453.6	1445.3	1445.3
10°	2206.9	1981.3	1714.0	1602.6	1560.8	1535.8	1514.9	1501.0	1488.4	1475.9	1473.1
12.5°	2350.3	2076.0	1769.7	1655.5	1611.0	1580.3	1551.1	1530.2	1514.9	1499.6	1495.4
15°	2509.0	2173.5	1829.6	1707.0	1651.3	1609.6	1574.8	1542.7	1521.8	1499.6	1496.8
17.5°	2665.0	2272.3	1879.7	1741.8	1670.8	1619.3	1569.2	1527.4	1501.0	1475.9	1468.9
20°	2851.6	2371.2	1914.5	1751.6	1666.7	1598.4	1538.6	1485.6	1456.4	1427.2	1423.0
22.5°	3022.8	2463.1	1931.2	1737.7	1634.6	1553.9	1484.3	1427.2	1395.1	1365.9	1360.3
25°	3188.5	2543.8	1924.2	1704.2	1585.9	1492.6	1420.2	1363.1	1332.5	1301.9	1293.5
27.5°	3348.6	2598.1	1896.4	1652.7	1524.6	1424.4	1354.8	1303.2	1276.8	1250.3	1239.2
30°	3506.0	2648.3	1853.2	1585.9	1446.7	1353.4	1296.3	1260.1	1233.6	1205.8	1197.4
32.5°	3664.7	2684.5	1787.8	1507.9	1367.3	1290.7	1255.9	1229.5	1201.6	1173.8	1165.4
35°	3824.8	2699.8	1708.4	1418.8	1300.5	1250.3	1237.8	1207.2	1169.6	1136.2	1125.0
37.5°	4015.6	2713.7	1609.6	1331.1	1242.0	1230.8	1228.1	1182.1	1137.6	1091.6	1079.1
40°	4245.3	2731.8	1507.9	1251.7	1194.6	1223.9	1212.7	1150.1	1061.0	1016.4	1002.5
42.5°	4526.6	2765.2	1402.1	1179.3	1159.8	1197.4	1184.9	1072.1	1012.2	987.2	980.2
45°	4940.1	2887.8	1296.3	1122.2	1133.4	1159.8	1140.3	1026.2	1002.5	985.8	977.4
47.5°	5676.6	3075.7	1204.4	1079.1	1112.5	1126.4	1051.2	1013.6	995.5	973.3	963.5
50°	6442.4	3157.9	1130.6	1052.6	1088.8	1095.8	1002.5	996.9	984.4	960.7	951.0
52.5°	6960.4	3146.7	1086.0	1042.9	1069.3	1042.9	980.2	978.8	970.5	942.6	931.5
55°	7545.2	3166.2	1066.5	1045.7	1061.0	953.8	952.4	956.6	952.4	921.7	916.2
57.5°	8334.7	3226.1	1056.8	1055.4	1055.4	910.6	925.9	931.5	923.1	909.2	905.0
60°	9093.5	3230.3	1038.7	1066.5	1051.2	884.1	895.3	900.9	891.1	888.3	886.9
62.5°	9378.9	3029.8	998.3	1058.2	1034.5	854.9	863.3	866.0	856.3	863.3	861.9
65°	8954.3	2603.7	931.5	1017.8	983.0	828.5	822.9	829.8	813.1	831.2	832.6
67.5°	7950.4	2069.0	829.8	941.2	910.6	799.2	788.1	788.1	760.2	788.1	786.7
70°	6410.4	1462.0	680.9	818.7	831.2	764.4	758.8	726.8	682.3	724.0	719.8
72.5°	4859.3	1049.8	536.1	647.4	715.7	715.7	717.1	662.8	611.2	630.7	614.0
75°	3078.5	739.3	428.8	495.7	561.1	628.0	660.0	559.7	513.8	505.4	497.1
77.5°	1386.8	485.9	334.2	380.1	398.2	495.7	602.9	481.8	419.1	401.0	395.4
80°	580.6	302.1	238.1	268.7	245.1	416.3	531.9	374.5	307.7	282.6	264.5
82.5°	254.8	179.6	151.8	144.8	153.2	309.1	396.8	249.2	192.1	260.4	263.2
85°	107.2	94.7	78.0	71.0	62.7	118.4	186.6	97.5	119.7	68.2	55.7
87.5°	25.1	27.8	20.9	13.9	8.4	1.4	0.0	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



Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

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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**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)