

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: P631064

Luminaire Tested: GWS-SA1E-830-U-T2-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631064  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-21)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1E-830-U-T2-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS W/ FACTORY INSALLED GLARE SHIELD, WH  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

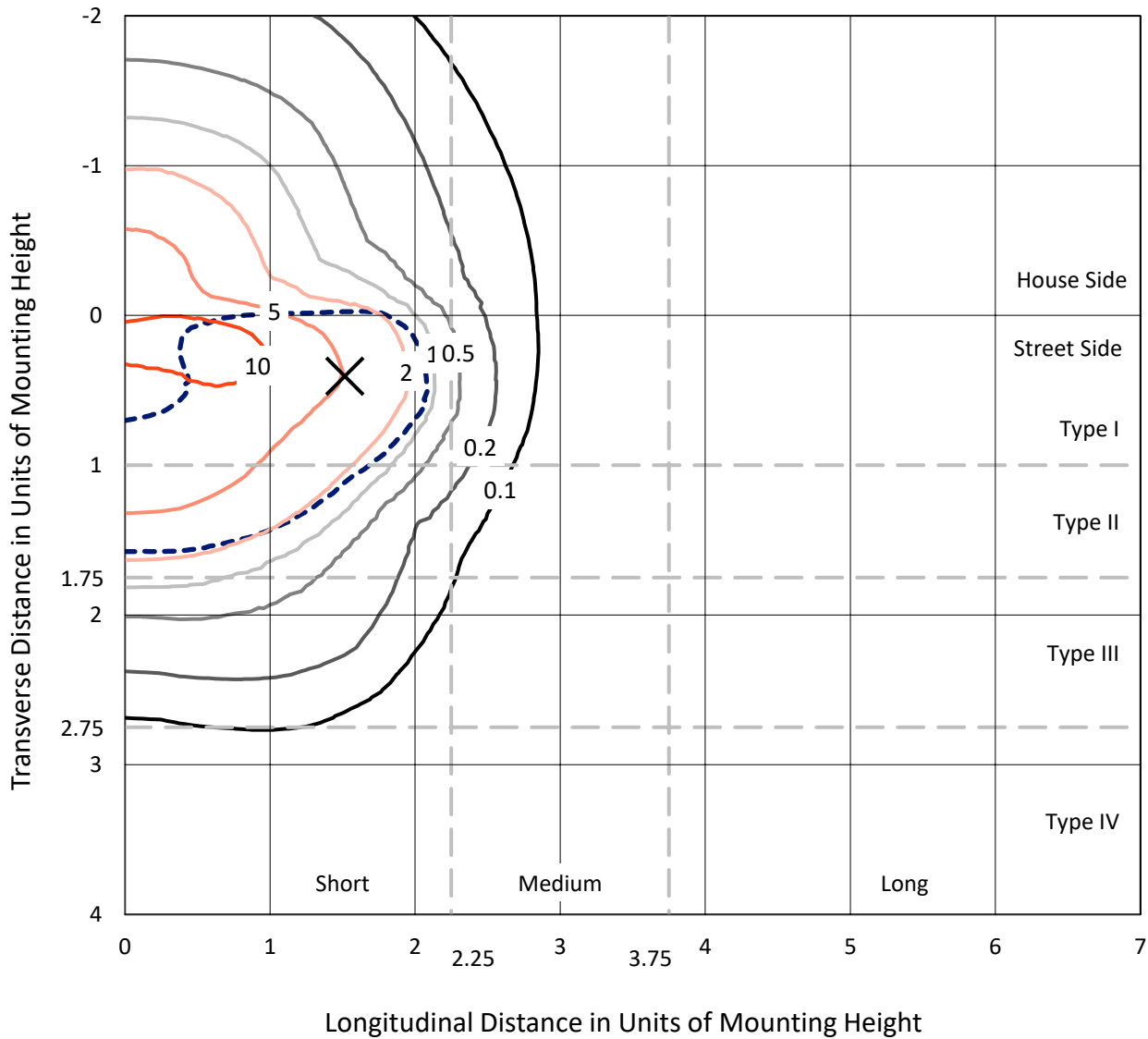
Lumens per Lamp: N/A  
Luminaire Lumens: 5018.6 lumens  
Efficiency: N/A  
Efficacy: 85.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 58.4  
Input Voltage (V): 120  
Input Current (Ain): 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



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 CATALOG NUMBER: GWS-SA1E-830-U-T2-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

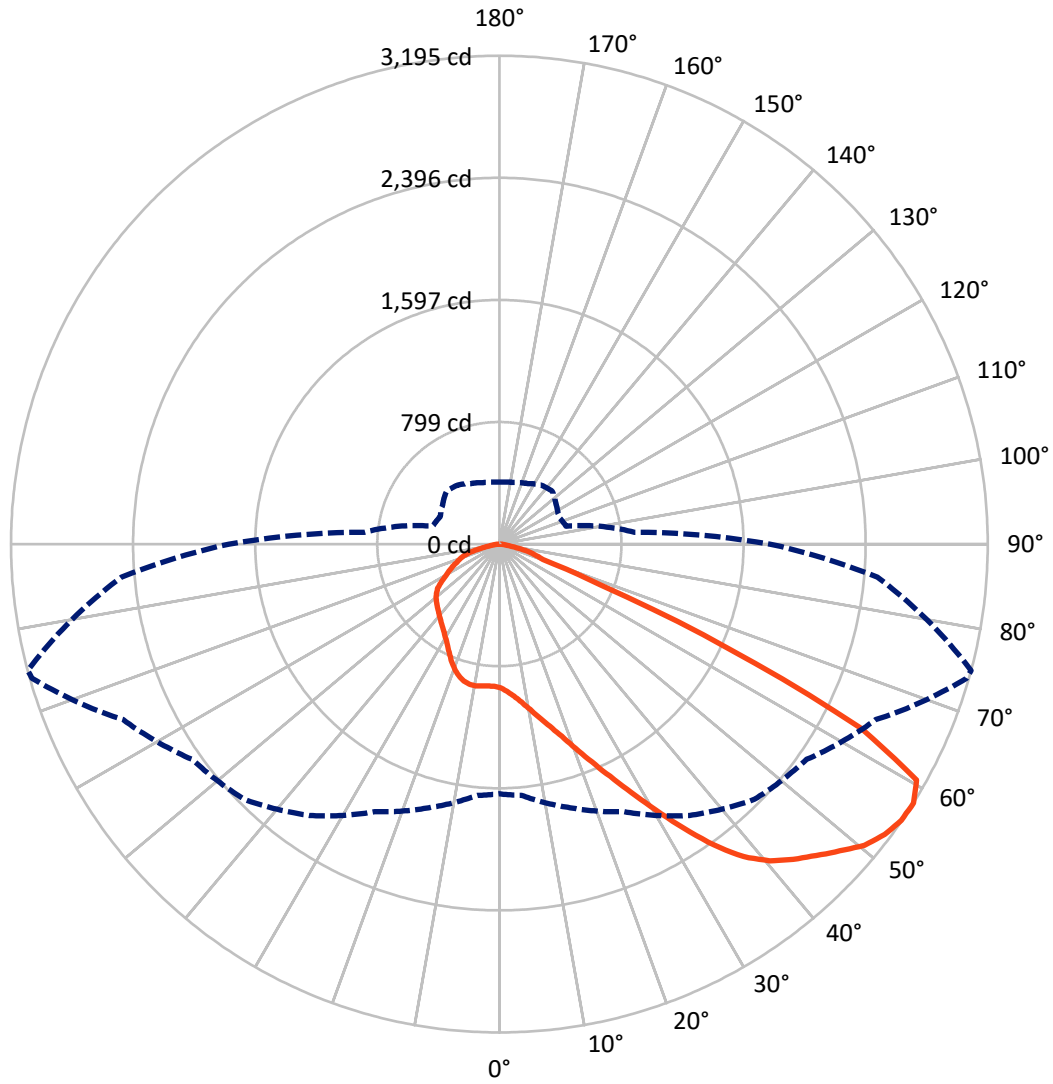
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.3 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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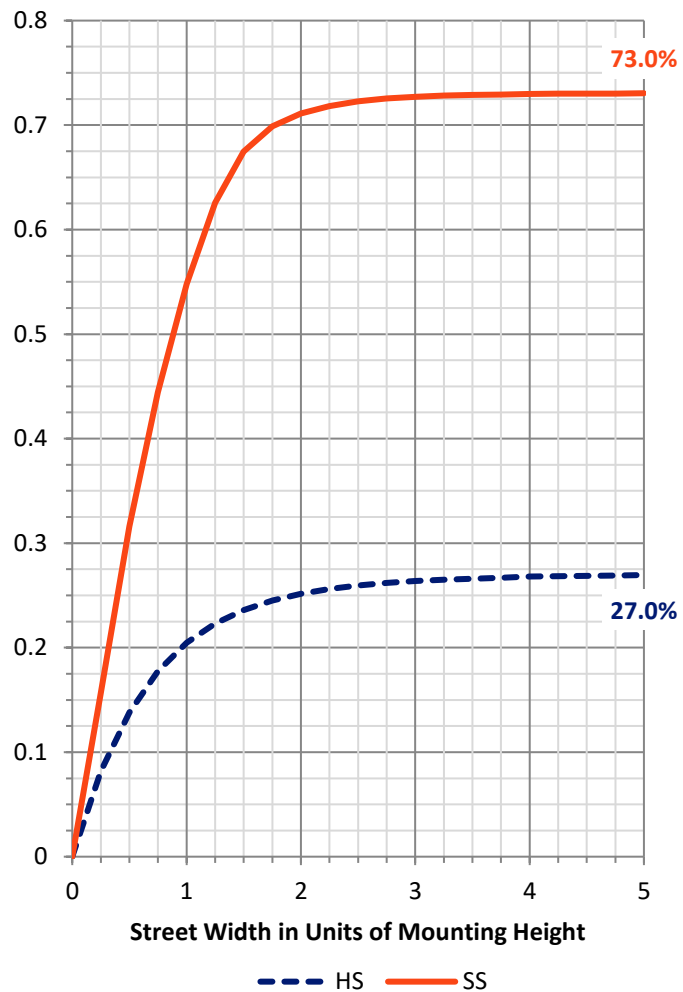
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1357.6	0.0	1357.6
	% Fixture	27.1	0.0	27.1
<b>Street Side</b>	Lumens	3661.0	0.0	3661.0
	% Fixture	72.9	0.0	72.9
<b>Total</b>	Lumens	5018.6	0.0	5018.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.1	1.9
10°-20°	299.4	6.0
20°-30°	531.0	10.6
30°-40°	812.9	16.2
40°-50°	1132.0	22.6
50°-60°	1297.0	25.8
60°-70°	666.4	13.3
70°-80°	167.8	3.3
80°-90°	17.9	0.4
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°	5018.6	100.0
0°-180°	5018.6	100.0

**Coefficient of Utilization**



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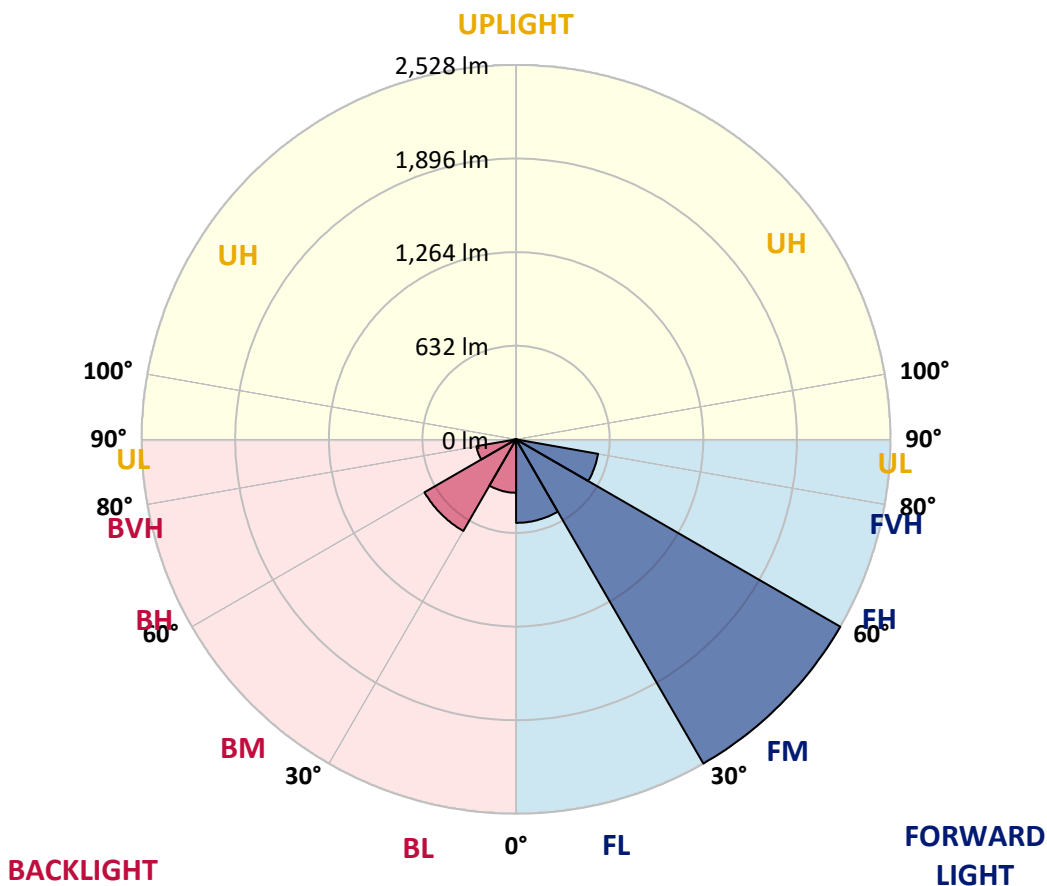
CATALOG NUMBER: GWS-SA1E-830-U-T2-W-GRSWH

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	563.9	11.2			
FM (30°-60°)	2527.9	50.4			
FH (60°-80°)	562.5	11.2			G0/660
FVH (80°-90°)	6.6	0.1			G0/10
BL (0°-30°)	360.7	7.2	B1/500		
BM (30°-60°)	714.0	14.2	B1/1000		
BH (60°-80°)	271.7	5.4	B1/500		G1/500
BVH (80°-90°)	11.3	0.2			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type II Short





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CATALOG NUMBER: GWS-SA1E-830-U-T2-W-GRSWH

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	74°	75°	85°
0°	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9
2.5°	1009.8	1012.4	1009.8	1014.1	1005.5	1001.6	992.1	977.8	966.6	964.9	952.4
5°	1088.3	1093.9	1090.5	1088.7	1077.1	1068.5	1054.2	1025.7	1002.4	999.0	974.4
7.5°	1138.8	1142.7	1142.7	1144.0	1139.7	1129.7	1114.6	1081.0	1048.2	1043.0	1005.9
10°	1155.6	1158.6	1164.3	1175.0	1183.7	1186.7	1176.8	1144.4	1104.3	1099.1	1047.3
12.5°	1159.5	1163.0	1171.6	1191.4	1215.2	1236.8	1238.5	1214.7	1169.9	1164.3	1095.2
15°	1166.8	1170.3	1181.9	1206.5	1241.5	1282.9	1308.4	1292.0	1242.4	1236.3	1149.6
17.5°	1166.0	1169.9	1187.1	1219.9	1267.0	1326.9	1376.1	1383.0	1331.7	1321.3	1211.3
20°	1163.8	1167.3	1185.8	1226.0	1284.2	1366.6	1455.5	1491.4	1436.1	1426.6	1283.4
22.5°	1181.1	1185.0	1199.2	1232.4	1293.3	1397.3	1528.9	1615.2	1560.0	1546.6	1366.2
25°	1219.9	1225.5	1234.2	1257.0	1309.7	1424.5	1604.0	1755.4	1698.9	1683.0	1456.4
27.5°	1279.9	1286.8	1298.9	1309.7	1346.4	1459.0	1678.6	1912.5	1856.0	1839.2	1551.8
30°	1353.3	1362.3	1377.9	1385.2	1410.2	1509.9	1759.8	2074.3	2041.5	2018.2	1659.2
32.5°	1454.7	1467.2	1481.9	1484.0	1499.1	1587.2	1840.0	2234.9	2234.4	2218.0	1781.3
35°	1586.7	1600.1	1603.1	1606.1	1613.5	1693.3	1937.1	2381.2	2437.7	2418.7	1914.2
37.5°	1730.9	1750.3	1755.0	1741.6	1752.0	1821.0	2046.3	2498.5	2614.6	2594.3	2042.8
40°	1884.9	1892.7	1905.6	1884.5	1897.4	1967.3	2153.3	2573.6	2746.7	2725.1	2144.3
42.5°	1995.4	2009.6	2029.0	2021.3	2028.6	2092.5	2228.4	2609.9	2840.7	2819.2	2217.2
45°	2115.3	2119.7	2132.2	2130.4	2134.8	2194.3	2282.3	2625.8	2924.9	2905.5	2279.3
47.5°	2219.8	2226.2	2234.4	2224.9	2215.5	2254.3	2326.4	2639.6	3022.0	2998.7	2344.5
50°	2320.3	2325.9	2335.8	2308.2	2272.8	2282.8	2347.9	2658.6	3113.0	3096.6	2395.8
52.5°	2338.9	2344.9	2391.5	2397.1	2351.8	2316.9	2385.9	2700.5	3166.5	3156.2	2414.4
55°	2105.4	2116.2	2209.0	2315.6	2427.3	2416.1	2446.8	2722.5	3187.7	3190.3	2447.6
57.5°	1634.2	1649.7	1785.2	1931.5	2166.7	2361.3	2454.5	2716.9	3180.3	3194.6	2481.7
60°	1071.9	1081.0	1241.5	1405.5	1649.3	1918.6	2196.9	2615.9	3115.2	3135.5	2473.1
62.5°	647.3	657.6	786.7	911.0	1054.6	1234.6	1490.1	2102.4	2611.2	2656.5	1980.7
65°	451.8	465.6	578.7	680.9	730.6	693.5	754.7	1174.2	1626.9	1645.8	1210.4
67.5°	327.5	337.0	429.8	551.5	606.3	489.8	373.3	520.0	708.6	715.5	499.3
70°	214.5	225.3	309.4	419.9	495.0	397.0	279.2	281.4	298.2	301.6	290.0
72.5°	117.8	124.3	191.2	278.8	292.6	237.3	217.9	233.9	245.5	245.5	248.6
75°	60.8	66.5	78.1	91.9	110.9	129.9	157.1	180.8	193.3	194.2	192.9
77.5°	31.1	33.2	41.9	45.3	49.6	57.8	75.1	96.2	107.4	111.8	110.9
80°	14.7	15.5	17.7	20.7	25.5	32.4	40.6	48.3	55.2	56.1	60.8
82.5°	7.8	8.6	9.5	11.2	13.8	17.3	23.7	28.5	32.8	33.7	37.5
85°	3.0	3.5	3.9	4.3	6.0	7.3	9.9	13.4	16.4	16.4	19.4
87.5°	0.0	0.0	0.0	0.0	0.4	0.9	1.7	2.2	3.0	3.0	5.2
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-SA1E-830-U-T2-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9	939.9
2.5°	949.4	936.8	931.2	922.2	914.8	906.6	900.2	895.4	892.4	890.7	888.9
5°	964.9	945.9	930.8	912.7	900.2	888.1	878.2	871.3	867.8	865.2	863.5
7.5°	989.1	963.6	935.1	907.1	885.1	865.6	853.1	845.8	841.0	839.3	838.0
10°	1022.3	986.9	939.9	895.4	862.6	841.5	832.8	829.4	829.8	829.0	828.5
12.5°	1059.8	1011.5	938.6	874.7	838.5	825.9	826.4	832.0	838.5	840.2	840.6
15°	1100.4	1035.7	926.1	847.9	819.5	820.8	832.0	845.4	857.4	862.2	863.1
17.5°	1144.4	1055.9	903.2	818.6	803.9	817.7	838.5	860.5	878.2	885.9	888.1
20°	1193.6	1073.2	870.8	789.7	789.3	812.1	842.3	871.3	893.7	904.0	905.8
22.5°	1245.8	1084.0	831.1	762.9	774.2	804.8	839.3	869.5	893.3	903.6	905.8
25°	1298.5	1087.4	787.5	738.3	758.6	793.1	824.6	848.8	871.3	880.3	882.0
27.5°	1347.7	1077.5	746.1	717.2	744.4	775.9	797.0	810.0	825.5	832.4	833.7
30°	1397.7	1057.7	711.2	700.4	728.4	752.1	761.6	762.5	768.5	768.5	769.4
32.5°	1448.2	1028.3	680.5	684.0	708.6	724.1	725.4	715.5	708.1	696.1	695.6
35°	1506.5	998.6	655.5	665.4	685.3	694.8	690.9	671.9	654.2	634.3	633.5
37.5°	1560.4	967.9	634.3	646.4	658.9	665.8	656.8	633.9	619.2	599.0	595.9
40°	1604.8	940.3	614.1	626.6	632.6	638.7	624.0	605.4	607.6	596.4	595.9
42.5°	1630.7	913.5	595.1	604.6	608.5	612.8	599.8	586.0	597.7	589.0	589.5
45°	1649.7	890.2	577.8	581.3	590.8	597.2	585.1	569.6	572.2	539.0	531.2
47.5°	1671.3	877.3	561.4	558.0	574.8	586.0	567.5	545.0	529.5	496.7	493.7
50°	1694.2	872.5	544.2	534.7	554.9	565.7	544.2	516.1	495.8	478.1	476.4
52.5°	1701.9	872.1	522.6	506.6	526.9	542.0	523.9	495.4	471.2	454.0	453.1
55°	1732.6	884.6	495.0	468.2	487.2	518.3	504.9	463.9	444.5	436.7	435.8
57.5°	1768.4	886.8	451.4	426.3	452.7	489.4	472.5	437.1	416.0	406.5	405.6
60°	1753.7	833.7	404.8	394.4	423.3	462.2	446.6	416.0	391.4	382.3	381.5
62.5°	1336.4	588.6	370.7	366.8	391.8	422.9	419.9	387.9	364.6	358.2	357.3
65°	803.9	413.4	337.9	337.5	355.1	384.9	388.8	362.9	338.3	329.3	329.3
67.5°	397.4	316.3	300.8	298.6	309.8	331.0	347.4	326.2	305.5	296.9	295.6
70°	280.9	278.8	273.6	267.5	269.7	278.3	285.2	267.5	245.5	236.9	235.2
72.5°	242.9	243.4	239.9	235.2	233.5	227.4	221.4	208.4	195.0	186.0	186.9
75°	188.6	189.4	191.6	189.9	185.1	178.7	172.2	155.8	145.0	136.4	134.6
77.5°	110.0	114.4	121.3	119.5	120.4	111.3	108.7	92.8	82.9	76.8	75.5
80°	62.1	64.7	67.7	69.9	67.3	63.4	57.8	49.2	46.2	41.9	41.0
82.5°	37.5	40.1	41.4	43.2	42.3	37.1	32.8	27.2	24.6	22.4	22.0
85°	19.0	20.7	22.0	22.9	20.3	16.8	15.1	12.1	10.4	9.1	9.1
87.5°	4.7	5.2	6.0	5.2	4.7	2.2	1.7	0.4	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**

$\lambda$ (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**

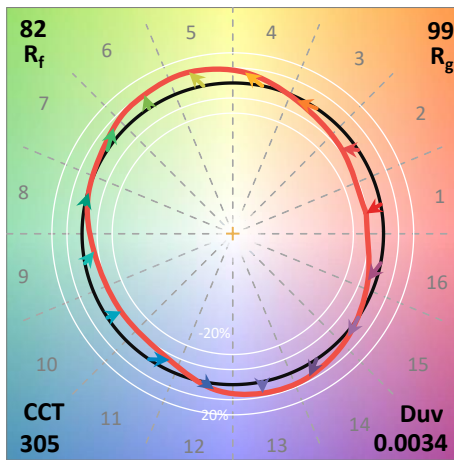
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	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)