

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: P631541

Luminaire Tested: GWS-SA1F-830-U-SL2-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631541  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-30)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1F-830-U-SL2-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

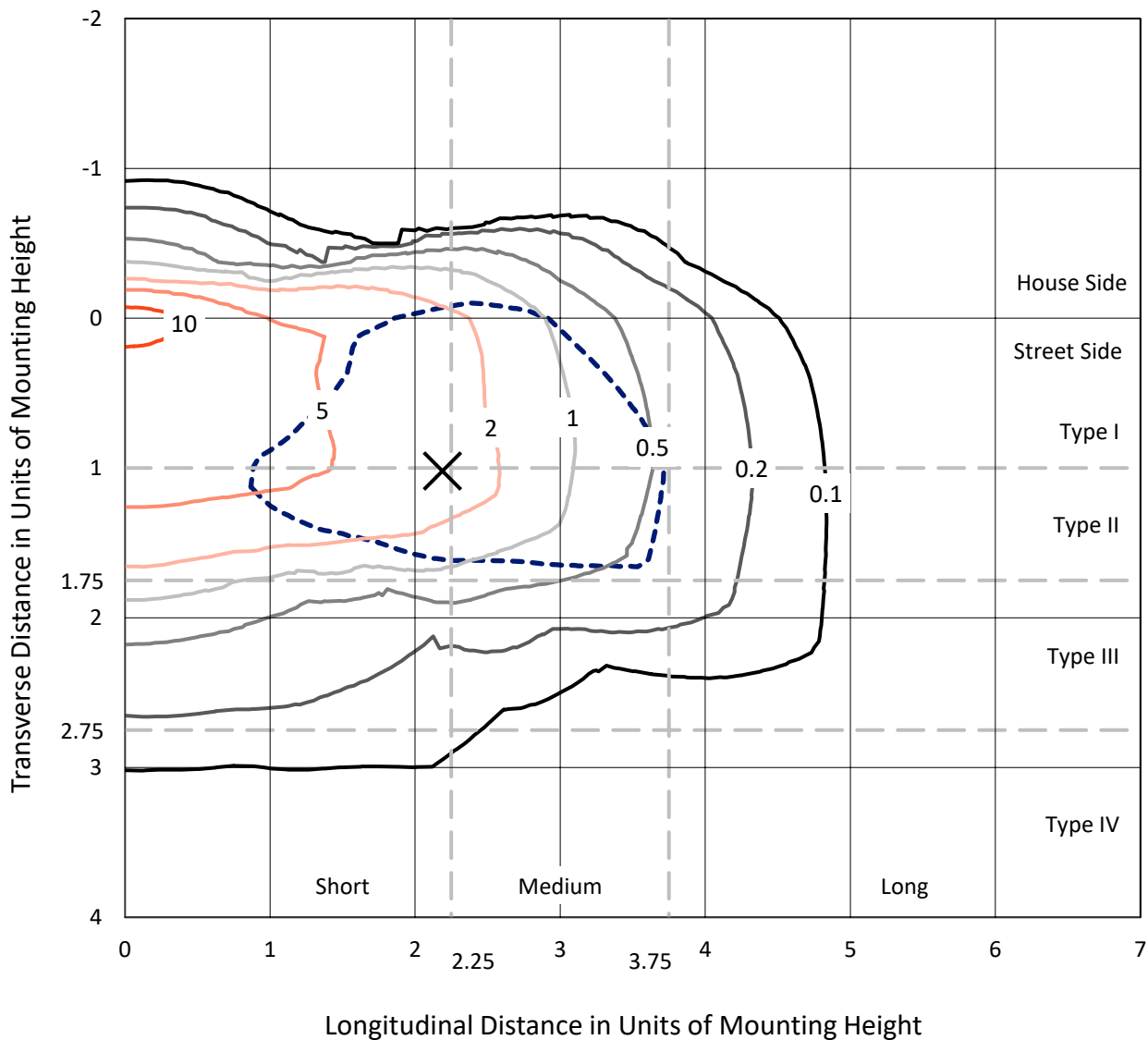
Lumens per Lamp: N/A  
Luminaire Lumens: 5305.4 lumens  
Efficiency: N/A  
Efficacy: 78.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 67.2  
Input Voltage (V): 120  
Input Current (Ain): 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



REPORT NUMBER: P631541  
 CATALOG NUMBER: GWS-SA1F-830-U-SL2-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

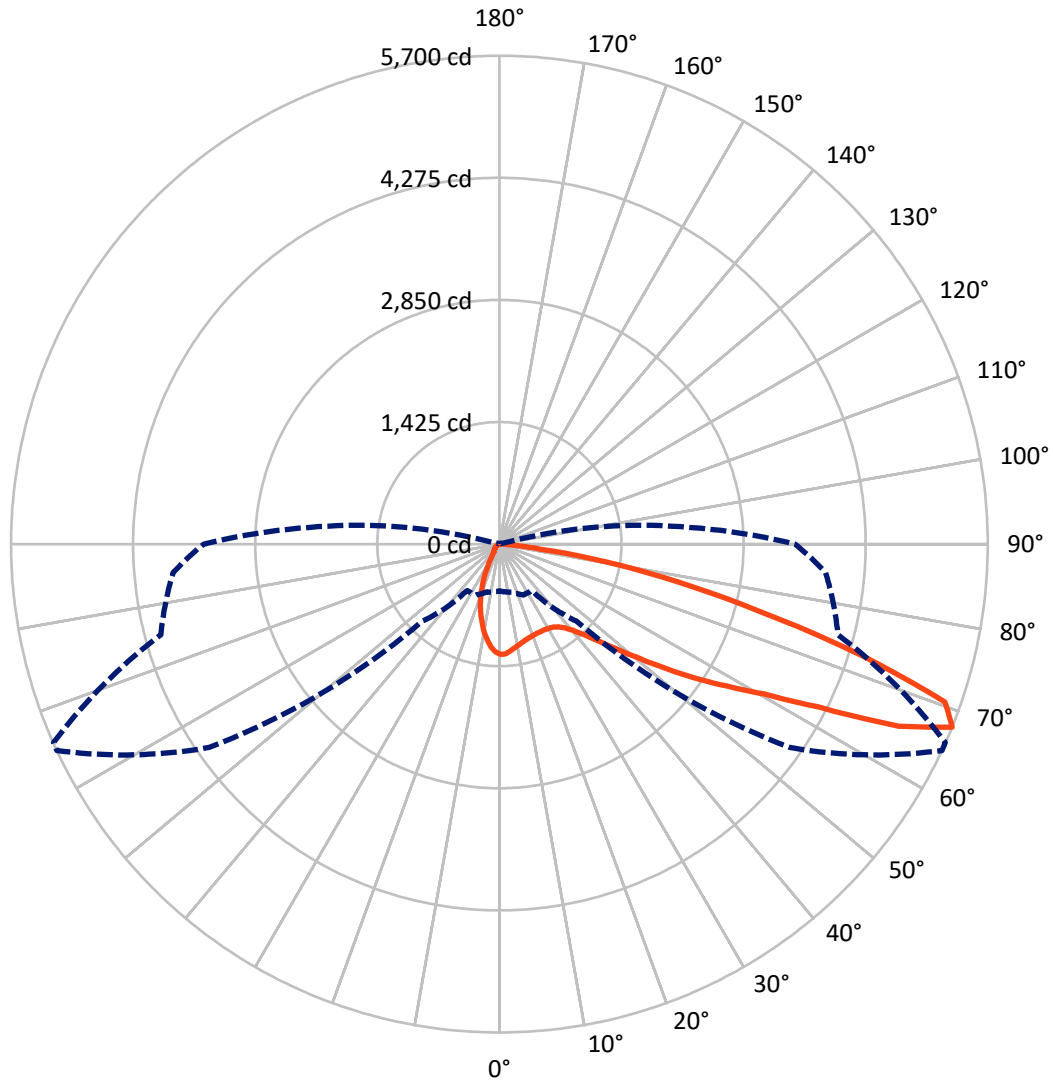
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.9 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	662.5	0.0	662.5
	% Fixture	12.5	0.0	12.5
<b>Street Side</b>	Lumens	4642.9	0.0	4642.9
	% Fixture	87.5	0.0	87.5
<b>Total</b>	Lumens	5305.4	0.0	5305.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.9	2.0
10°-20°	240.2	4.5
20°-30°	343.3	6.5
30°-40°	499.4	9.4
40°-50°	782.2	14.7
50°-60°	1220.2	23.0
60°-70°	1340.4	25.3
70°-80°	713.3	13.4
80°-90°	59.4	1.1
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°	5305.4	100.0
0°-180°	5305.4	100.0

**Coefficient of Utilization**



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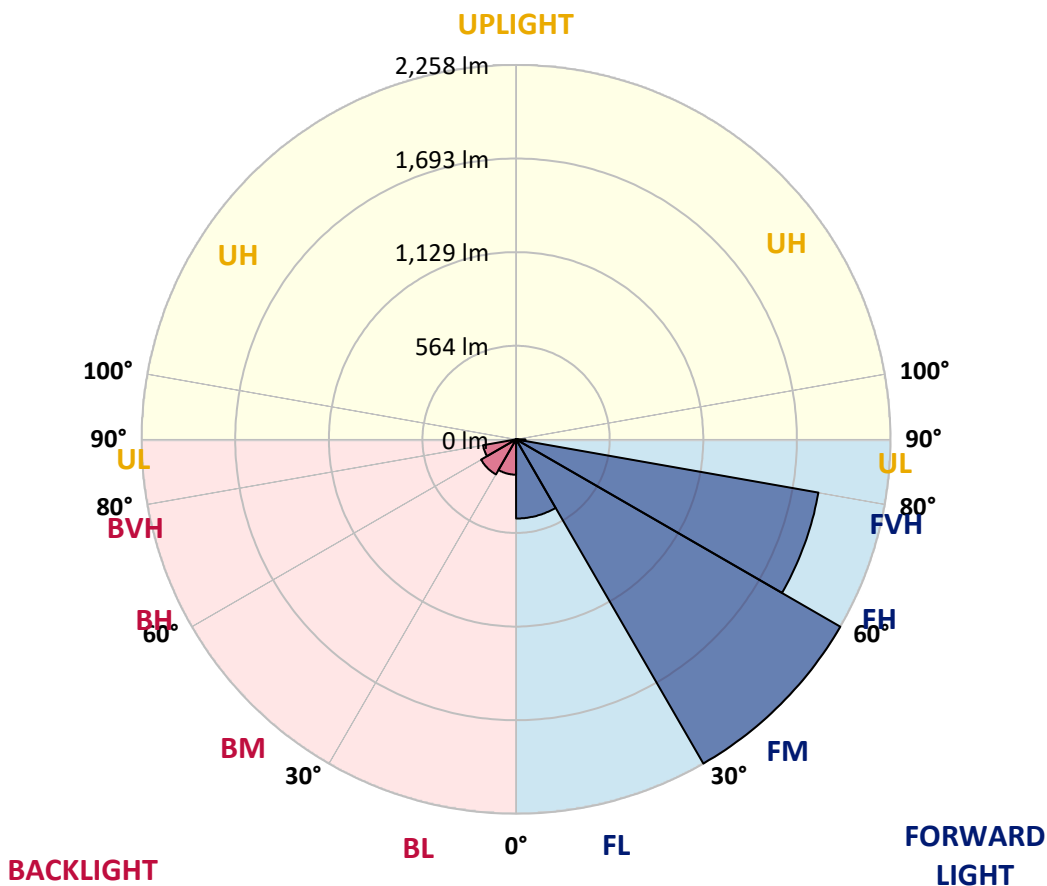
CATALOG NUMBER: GWS-SA1F-830-U-SL2-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	477.5	9.0			
FM (30°-60°)	2257.9	42.6			
FH (60°-80°)	1851.4	34.9			G2/5000
FVH (80°-90°)	56.2	1.1			G1/100
BL (0°-30°)	212.9	4.0	B1/500		
BM (30°-60°)	244.0	4.6	B1/1000		
BH (60°-80°)	202.4	3.8	B1/500		G1/500
BVH (80°-90°)	3.2	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1242.1	1245.9	1240.7	1253.6	1256.0	1270.4	1278.6	1284.3	1283.8	1291.0	1291.0
5°	1169.2	1173.0	1170.1	1184.1	1195.1	1217.6	1236.4	1257.9	1258.9	1281.0	1289.1
7.5°	1107.3	1107.8	1107.8	1125.0	1139.4	1167.3	1195.1	1228.2	1232.0	1266.1	1287.7
10°	1056.4	1057.9	1058.4	1078.0	1093.9	1127.4	1162.9	1202.8	1207.1	1253.1	1286.7
12.5°	1021.4	1021.9	1023.8	1044.4	1061.7	1096.7	1132.7	1178.3	1184.1	1238.3	1282.4
15°	1004.6	1003.7	1004.6	1021.9	1039.2	1072.8	1109.7	1158.6	1164.9	1225.8	1282.9
17.5°	1003.7	1002.2	1001.3	1014.2	1025.3	1055.0	1092.4	1145.7	1152.4	1220.0	1288.2
20°	1017.6	1016.6	1011.8	1017.6	1020.0	1044.4	1081.4	1135.6	1142.3	1219.1	1299.7
22.5°	1054.0	1051.6	1044.4	1039.2	1026.2	1040.6	1073.7	1128.4	1136.1	1221.5	1314.6
25°	1108.3	1107.3	1098.2	1085.2	1052.1	1046.4	1074.2	1128.4	1135.6	1224.4	1330.4
27.5°	1189.8	1184.1	1172.5	1150.0	1102.5	1068.9	1083.8	1131.3	1138.5	1228.2	1343.3
30°	1272.8	1272.3	1268.5	1245.5	1174.9	1112.1	1103.9	1139.0	1145.7	1231.6	1355.3
32.5°	1358.7	1360.1	1369.7	1352.0	1274.7	1176.4	1140.4	1154.8	1159.6	1238.3	1365.9
35°	1440.3	1443.1	1468.6	1474.8	1396.1	1273.8	1199.9	1186.5	1186.9	1253.1	1379.8
37.5°	1518.5	1528.0	1568.8	1599.1	1547.2	1391.8	1285.8	1240.2	1236.4	1282.9	1400.9
40°	1607.2	1625.4	1676.8	1728.1	1711.8	1547.7	1402.8	1322.7	1314.6	1337.6	1438.8
42.5°	1705.6	1725.2	1793.4	1865.3	1873.0	1736.3	1549.2	1443.1	1429.2	1429.7	1509.8
45°	1811.1	1837.5	1916.7	2020.3	2066.8	1946.4	1729.5	1605.8	1591.9	1571.2	1624.0
47.5°	1949.8	1972.8	2049.1	2168.5	2257.8	2171.9	1966.1	1814.9	1789.5	1759.3	1801.5
50°	2069.2	2089.4	2155.1	2304.8	2490.5	2462.6	2234.3	2076.4	2051.9	2000.6	2035.6
52.5°	2095.6	2111.4	2171.9	2340.3	2668.4	2829.6	2562.9	2392.6	2375.3	2280.3	2293.8
55°	1977.1	2001.1	2055.3	2242.4	2715.0	3188.5	2989.4	2749.0	2713.1	2561.5	2585.4
57.5°	1677.7	1720.4	1771.3	2014.5	2588.8	3379.5	3585.3	3126.6	3094.0	2832.0	2832.5
60°	1229.6	1264.2	1298.2	1520.9	2289.4	3366.5	4126.0	3550.7	3491.2	3053.2	3045.1
62.5°	894.3	912.0	911.6	990.7	1572.2	3144.9	4410.0	4189.8	4051.1	3289.7	3243.2
65°	703.3	702.9	723.5	749.4	878.0	2427.6	4445.0	5122.9	4973.2	3606.9	3510.0
67.5°	547.4	558.0	578.6	654.9	659.7	1270.4	4137.0	5700.1	5697.2	4090.9	3822.3
70°	422.2	436.6	465.9	577.2	609.3	711.0	3095.4	5517.3	5563.8	4307.3	3601.1
72.5°	271.1	270.1	313.3	466.3	585.3	592.5	1711.8	4382.6	4435.4	3901.4	2911.7
75°	151.6	152.6	177.0	285.5	545.5	557.5	847.7	3125.2	3166.9	3041.7	2237.1
77.5°	59.5	61.4	83.0	150.2	359.8	498.0	503.8	2131.1	2137.3	1885.0	1372.1
80°	24.0	25.4	42.2	93.1	219.3	335.4	359.8	1255.5	1230.1	729.7	399.2
82.5°	7.2	7.7	16.8	52.8	114.7	238.4	242.8	481.7	454.8	156.9	101.7
85°	0.5	0.5	3.8	16.3	40.8	60.0	161.7	156.9	139.1	39.3	45.1
87.5°	0.0	0.0	0.5	0.5	1.0	1.9	17.3	28.8	29.3	7.2	20.2
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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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1291.0	1273.8	1272.3	1258.9	1245.5	1228.7	1209.0	1194.6	1184.5	1166.8	1163.4
5°	1289.1	1266.1	1244.5	1206.1	1163.4	1117.4	1077.1	1039.6	1016.1	1000.3	993.6
7.5°	1285.3	1256.0	1206.1	1133.7	1062.2	981.6	918.7	861.2	821.8	798.8	788.7
10°	1282.4	1243.1	1162.0	1052.1	941.3	830.0	734.5	649.1	601.6	564.2	558.0
12.5°	1276.7	1224.4	1105.4	956.6	813.7	665.9	544.1	439.5	367.0	334.4	322.9
15°	1270.9	1204.7	1048.8	855.9	674.5	492.2	344.5	243.7	193.8	178.5	177.5
17.5°	1269.9	1186.9	987.4	760.4	528.7	322.4	196.2	157.8	147.3	143.4	143.4
20°	1272.8	1172.1	926.9	650.6	385.3	196.2	146.3	136.7	130.5	127.1	127.1
22.5°	1275.7	1156.7	868.9	539.7	255.7	143.4	129.1	120.9	113.7	109.9	107.9
25°	1277.6	1139.9	804.6	428.4	167.0	124.7	113.2	102.7	94.0	89.2	89.2
27.5°	1277.1	1119.8	739.8	319.5	129.5	110.8	96.9	85.9	77.2	72.0	72.4
30°	1273.3	1097.7	672.6	223.1	113.2	96.9	83.0	71.5	62.8	58.5	58.1
32.5°	1270.4	1074.2	594.9	156.9	101.7	84.9	70.5	59.5	52.3	48.9	48.5
35°	1267.1	1051.2	521.0	119.5	91.6	73.4	59.5	50.4	44.6	41.7	41.7
37.5°	1268.0	1027.2	440.9	102.7	81.6	63.8	50.9	43.2	38.4	35.5	35.0
40°	1282.9	1012.8	362.2	93.1	72.4	55.2	44.1	37.4	32.6	29.7	29.3
42.5°	1319.8	1013.3	286.9	85.9	64.3	47.0	38.4	32.1	27.8	24.5	24.0
45°	1393.7	1033.4	220.2	78.2	55.7	40.8	33.1	27.3	23.0	20.2	19.7
47.5°	1514.6	1093.4	167.0	71.5	48.5	35.5	28.3	23.0	19.2	16.8	16.3
50°	1707.0	1201.8	131.5	63.3	40.8	30.7	24.0	19.2	15.8	13.4	13.0
52.5°	1938.2	1364.4	112.7	56.1	35.0	26.9	20.6	15.8	13.0	11.0	10.6
55°	2204.0	1558.8	104.1	48.9	29.7	23.0	16.8	13.0	10.6	9.1	8.2
57.5°	2447.8	1733.9	103.6	41.7	25.4	19.7	13.9	11.0	9.1	7.2	6.7
60°	2685.2	1880.2	97.4	34.5	22.1	16.3	12.0	9.1	7.7	6.2	5.8
62.5°	2900.7	1999.2	81.6	27.8	18.7	13.4	10.1	8.2	6.7	5.3	5.3
65°	3171.2	2150.8	62.4	22.5	15.4	11.0	8.6	7.2	6.2	4.8	4.8
67.5°	3450.9	2230.9	44.6	18.7	12.5	9.6	7.7	6.7	5.3	4.3	4.3
70°	3125.7	1885.0	32.1	15.4	10.6	8.2	6.7	6.2	5.3	4.3	3.8
72.5°	2441.0	1359.2	24.0	12.0	9.1	7.7	6.2	5.8	4.8	3.8	3.8
75°	1810.1	792.6	18.2	9.6	7.2	6.2	6.2	5.8	4.8	3.8	3.4
77.5°	984.0	276.3	13.9	7.7	5.8	4.8	5.3	5.3	4.3	3.4	2.9
80°	260.5	75.8	9.6	5.8	4.8	3.8	3.8	4.8	3.8	2.9	2.9
82.5°	75.8	22.1	6.7	4.8	3.8	3.4	3.4	3.4	2.9	2.4	1.9
85°	36.9	8.2	4.8	3.8	3.4	2.9	2.4	2.4	1.9	1.4	1.4
87.5°	16.3	3.4	3.8	3.4	3.4	2.4	1.9	1.4	1.4	1.0	0.5
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  
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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)