

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: P631557

Luminaire Tested: GWS-SA1F-830-U-T1-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P631557  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1F-830-U-T1-W  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

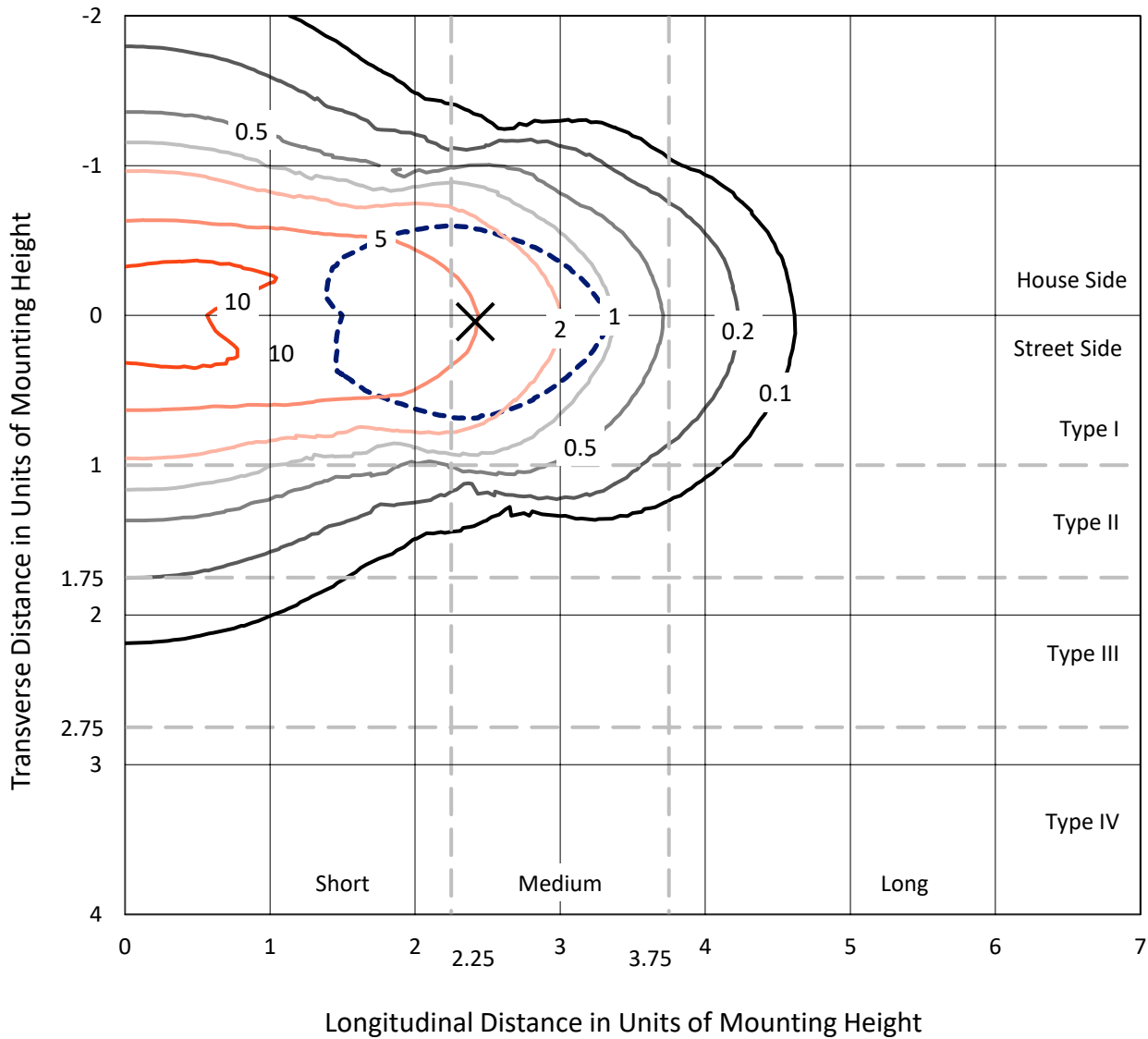
Lumens per Lamp: N/A  
Luminaire Lumens: 6680.4 lumens  
Efficiency: N/A  
Efficacy: 99.4 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type I - Medium  
BUG Rating: B3 - U0 - G3  
  
Input Watts (W): 67.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P631557  
 CATALOG NUMBER: GWS-SA1F-830-U-T1-W

### Iso-Footcandle Lines of Horizontal Illumination

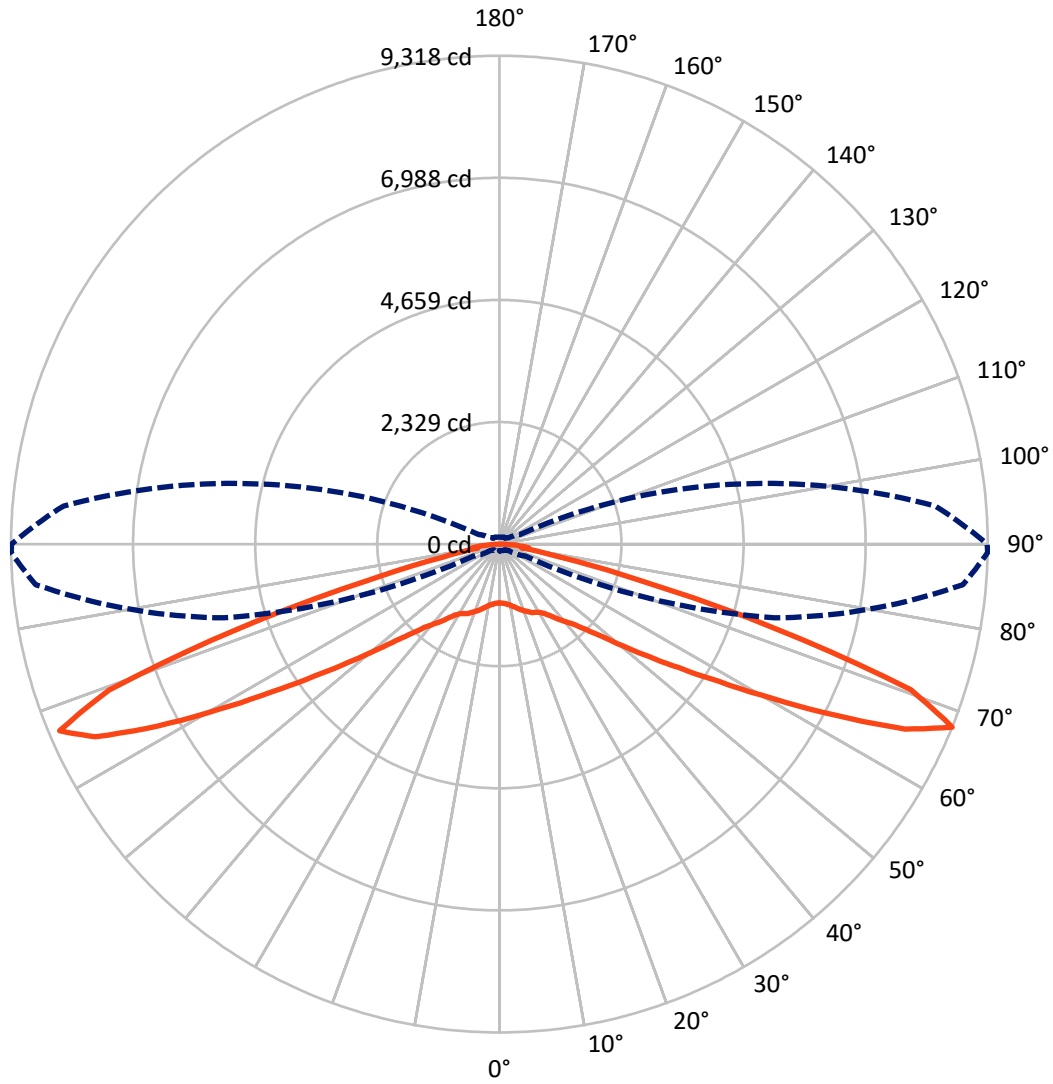
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.2 fc  
 Type I - Medium - N/A

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CATALOG NUMBER: GWS-SA1F-830-U-T1-W

### Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P631557

CATALOG NUMBER: GWS-SA1F-830-U-T1-W

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3310.9	0.0	3310.9
	% Fixture	49.6	0.0	49.6
<b>Street Side</b>	Lumens	3369.5	0.0	3369.5
	% Fixture	50.4	0.0	50.4
<b>Total</b>	Lumens	6680.4	0.0	6680.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.5	1.7
10°-20°	366.2	5.5
20°-30°	619.1	9.3
30°-40°	849.6	12.7
40°-50°	1083.4	16.2
50°-60°	1359.3	20.3
60°-70°	1639.5	24.5
70°-80°	593.1	8.9
80°-90°	57.7	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°	6680.4	100.0
0°-180°	6680.4	100.0

**Coefficient of Utilization**



REPORT NUMBER: P631557

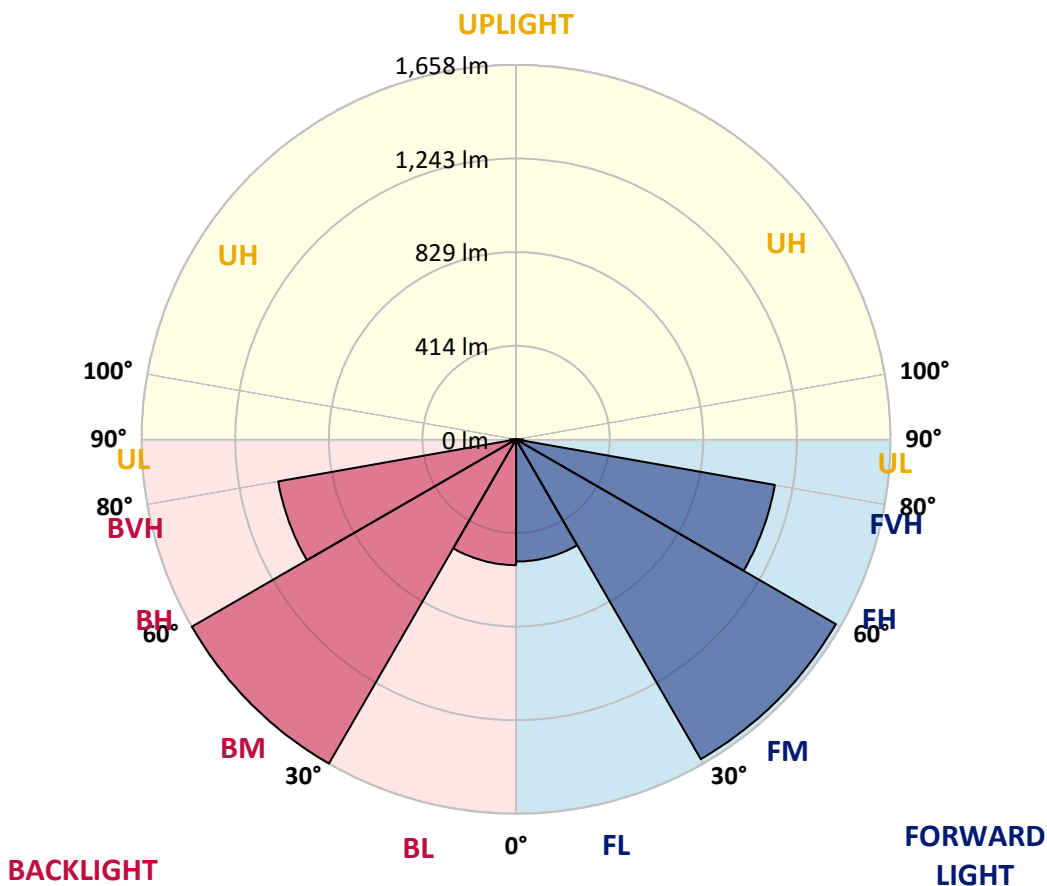
CATALOG NUMBER: GWS-SA1F-830-U-T1-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	541.1	8.1			
FM (30°-60°)	1634.8	24.5			
FH (60°-80°)	1163.2	17.4			G1/1800
FVH (80°-90°)	30.4	0.5			G1/100
BL (0°-30°)	556.7	8.3	B2/1000		
BM (30°-60°)	1657.6	24.8	B2/2500		
BH (60°-80°)	1069.4	16.0	B3/2500		G3/2500
BVH (80°-90°)	27.2	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type I Medium





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 CATALOG NUMBER: GWS-SA1F-830-U-T1-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°	
0°	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3
2.5°	1124.6	1123.7	1121.3	1128.4	1127.0	1127.5	1130.4	1128.4	1125.1	1119.3	1119.3	1127.5
5°	1156.3	1155.8	1150.5	1154.8	1150.0	1146.7	1146.2	1141.4	1137.6	1131.3	1131.3	1140.0
7.5°	1187.0	1186.5	1182.2	1189.9	1186.0	1182.2	1177.9	1168.3	1159.2	1150.0	1150.0	1159.6
10°	1210.5	1210.0	1209.1	1220.1	1221.0	1222.5	1220.6	1204.3	1188.4	1177.4	1177.4	1187.0
12.5°	1223.9	1225.4	1227.8	1247.9	1258.0	1267.6	1270.0	1256.5	1230.2	1214.3	1214.3	1225.8
15°	1214.8	1217.7	1229.7	1266.1	1294.0	1315.6	1324.7	1313.6	1279.6	1253.2	1253.2	1266.1
17.5°	1171.1	1173.5	1197.1	1252.7	1314.1	1364.0	1378.9	1372.2	1334.3	1302.1	1302.1	1314.6
20°	1110.7	1116.0	1141.4	1219.1	1310.8	1397.6	1437.4	1435.0	1393.8	1344.4	1344.4	1359.2
22.5°	1056.0	1062.2	1089.1	1175.0	1288.2	1406.2	1496.4	1502.7	1448.0	1386.6	1386.6	1398.6
25°	994.6	1000.3	1034.9	1122.7	1249.4	1399.5	1546.8	1575.1	1509.4	1435.0	1435.0	1446.1
27.5°	931.7	936.1	970.1	1063.7	1198.5	1387.1	1586.6	1654.8	1569.8	1468.6	1468.6	1476.3
30°	876.6	882.3	913.5	1004.7	1142.8	1362.1	1619.3	1739.7	1639.4	1506.5	1506.5	1512.8
32.5°	823.3	828.1	862.2	946.6	1083.8	1323.7	1648.5	1839.5	1742.6	1577.0	1577.0	1577.0
35°	756.1	764.8	803.2	891.0	1028.2	1272.9	1669.6	1955.6	1883.6	1681.2	1681.2	1681.6
37.5°	694.2	699.0	739.3	828.1	969.6	1215.3	1671.6	2076.0	2062.1	1813.6	1813.6	1814.5
40°	623.7	630.0	673.1	760.9	902.5	1154.8	1653.3	2188.3	2249.2	1949.8	1949.8	1944.6
42.5°	552.2	561.3	602.6	688.5	830.0	1080.9	1604.9	2295.3	2486.7	2107.7	2107.7	2094.7
45°	483.1	488.9	530.2	611.2	747.0	992.7	1527.1	2398.0	2768.8	2347.6	2347.6	2328.9
47.5°	405.4	407.8	450.5	528.2	661.1	894.3	1415.8	2489.6	3078.8	2665.2	2665.2	2633.0
50°	336.3	339.7	373.3	440.0	556.1	777.7	1277.2	2543.3	3473.6	3098.4	3098.4	3042.8
52.5°	272.0	275.4	302.3	355.5	459.6	644.8	1105.4	2530.9	3874.2	3636.3	3636.3	3555.2
55°	219.7	222.1	240.4	282.1	361.8	512.9	902.5	2419.1	4319.0	4338.7	4338.7	4164.0
57.5°	185.7	186.6	199.1	224.5	282.6	395.3	696.6	2155.2	4785.3	5234.9	5234.9	4948.0
60°	166.0	166.5	172.2	188.1	223.1	301.8	510.5	1734.9	5268.5	6356.2	6356.2	5962.7
62.5°	153.5	153.5	158.3	167.4	185.2	232.2	375.2	1246.0	5615.4	7576.2	7576.2	7185.2
65°	141.5	141.5	144.9	152.6	162.2	189.5	281.6	803.6	5785.7	8596.3	8596.3	8509.4
67.5°	126.2	126.7	129.1	137.2	145.9	158.3	213.5	543.6	5432.1	8878.4	8878.4	9317.9
70°	111.8	112.3	115.6	120.9	128.1	136.7	167.0	374.7	3953.9	7394.4	7394.4	8331.4
72.5°	96.0	97.9	100.3	106.0	110.3	116.6	136.3	242.8	2300.6	4756.6	4756.6	5507.4
75°	78.7	81.1	84.0	89.7	92.6	95.0	112.3	173.2	1106.9	2410.4	2410.4	2744.8
77.5°	60.9	63.3	66.7	72.0	73.9	76.8	85.9	125.2	530.2	1068.5	1068.5	1152.0
80°	40.8	41.7	44.6	50.9	54.2	56.1	63.3	85.4	230.3	428.9	428.9	425.1
82.5°	24.9	25.4	26.4	30.2	31.7	33.6	41.3	52.3	109.9	487.5	487.5	558.9
85°	9.1	8.6	8.2	10.6	12.5	14.4	19.2	26.4	48.0	334.9	334.9	374.7
87.5°	0.0	0.0	0.0	0.5	1.0	1.0	1.9	3.8	11.5	125.2	125.2	85.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P631557  
 CATALOG NUMBER: GWS-SA1F-830-U-T1-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3	1121.3
2.5°	1125.1	1119.8	1126.5	1131.3	1141.9	1145.7	1146.7	1143.3	1143.3	1137.6	1138.5
5°	1138.0	1134.7	1145.7	1153.9	1169.2	1175.0	1178.8	1176.4	1177.9	1174.0	1175.0
7.5°	1157.7	1154.8	1174.0	1189.9	1205.7	1212.4	1215.8	1213.8	1214.3	1209.5	1211.0
10°	1185.1	1186.0	1209.1	1229.7	1250.8	1257.5	1258.9	1253.2	1248.4	1239.8	1240.2
12.5°	1222.5	1227.3	1259.9	1282.9	1304.5	1314.1	1303.6	1282.5	1262.8	1247.9	1246.0
15°	1263.3	1271.9	1318.9	1348.2	1371.7	1366.9	1335.7	1288.2	1249.4	1227.3	1223.0
17.5°	1312.2	1325.2	1384.2	1419.2	1439.3	1408.6	1343.4	1272.4	1218.2	1188.4	1182.7
20°	1358.3	1378.9	1453.3	1498.8	1501.2	1432.2	1340.0	1240.2	1172.1	1135.6	1128.0
22.5°	1400.5	1426.9	1525.7	1583.8	1552.6	1442.7	1319.4	1194.7	1116.5	1073.8	1067.0
25°	1446.5	1484.0	1610.1	1664.4	1603.9	1438.4	1276.2	1138.0	1049.3	1005.6	1000.8
27.5°	1478.2	1525.2	1695.1	1746.9	1646.1	1413.9	1220.6	1076.2	987.9	946.6	939.9
30°	1514.7	1574.6	1788.6	1836.6	1672.0	1377.9	1161.1	1018.6	930.8	886.2	881.4
32.5°	1580.9	1656.2	1904.7	1931.6	1680.2	1333.3	1104.0	962.9	871.3	826.7	819.9
35°	1687.4	1775.7	2067.9	2037.6	1674.0	1284.4	1049.8	897.7	810.4	768.6	761.9
37.5°	1821.7	1931.6	2249.7	2133.1	1656.7	1230.6	985.5	843.0	755.7	713.4	709.6
40°	1947.0	2082.3	2453.6	2215.6	1621.7	1164.4	923.6	785.9	696.6	652.0	643.4
42.5°	2103.8	2283.8	2689.7	2287.1	1564.1	1085.3	854.0	715.4	622.8	582.5	571.9
45°	2342.3	2565.9	2964.1	2355.7	1478.2	987.9	766.7	629.5	541.7	500.4	492.3
47.5°	2639.8	2918.5	3261.6	2396.5	1347.7	885.2	667.9	538.8	451.0	404.5	400.6
50°	3057.7	3431.4	3580.6	2389.3	1201.9	763.3	556.5	430.8	357.4	323.9	318.6
52.5°	3566.7	4075.3	3925.6	2303.0	1046.9	624.7	433.7	338.2	283.6	259.6	255.2
55°	4205.3	4846.3	4288.8	2117.8	851.1	478.3	340.6	266.8	229.3	214.9	213.0
57.5°	4996.0	5844.7	4638.5	1805.9	640.0	365.1	262.4	220.2	202.5	193.8	193.4
60°	6039.5	6904.5	4942.2	1403.4	458.2	279.2	216.9	196.7	182.8	177.0	176.6
62.5°	7280.2	7867.0	5131.3	955.7	344.5	222.6	191.0	178.5	170.3	167.0	166.5
65°	8555.5	8475.4	5041.1	626.1	261.5	189.0	171.3	164.6	157.4	154.0	154.0
67.5°	9308.7	8346.8	4348.7	434.7	207.3	166.0	154.5	148.3	136.3	133.4	133.4
70°	8245.1	6763.5	2850.4	318.1	167.9	145.4	134.3	125.7	120.9	118.0	117.5
72.5°	5453.2	4401.0	1515.6	220.7	140.1	123.8	113.7	110.3	104.6	101.7	101.2
75°	2714.1	2311.6	776.8	159.3	116.6	99.3	95.0	93.6	88.8	84.9	84.0
77.5°	1131.3	1029.1	362.2	115.6	88.8	80.1	76.3	76.3	71.0	66.7	64.8
80°	426.5	380.0	171.3	79.2	65.7	59.5	57.1	55.2	50.9	45.6	42.7
82.5°	570.5	372.8	84.0	49.4	43.2	38.4	35.0	33.6	31.2	28.8	26.9
85°	369.4	264.8	37.9	25.4	21.6	16.3	14.4	13.4	12.0	10.6	9.6
87.5°	75.3	88.8	11.5	4.8	2.9	1.4	1.4	0.5	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**

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			

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)