

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: P630555

Luminaire Tested: GWS-SA1D-830-U-SL3-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P630555  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-34)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1D-830-U-SL3-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

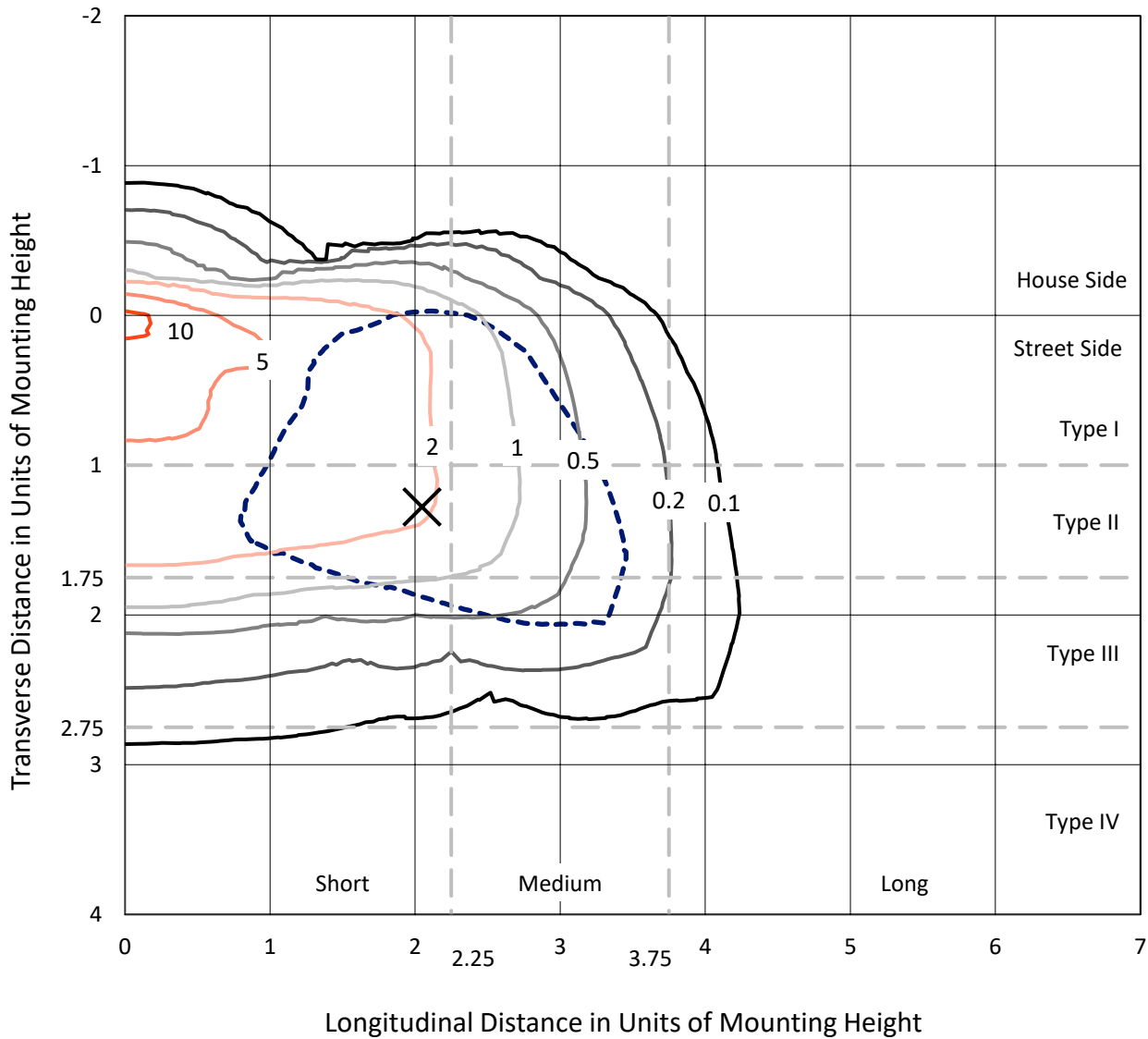
Lumens per Lamp: N/A  
Luminaire Lumens: 3901.4 lumens  
Efficiency: N/A  
Efficacy: 88.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G1  
  
Input Watts (W): 44.3  
Input Voltage (V): 120  
Input Current (Ain): 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: P630555  
 CATALOG NUMBER: GWS-SA1D-830-U-SL3-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

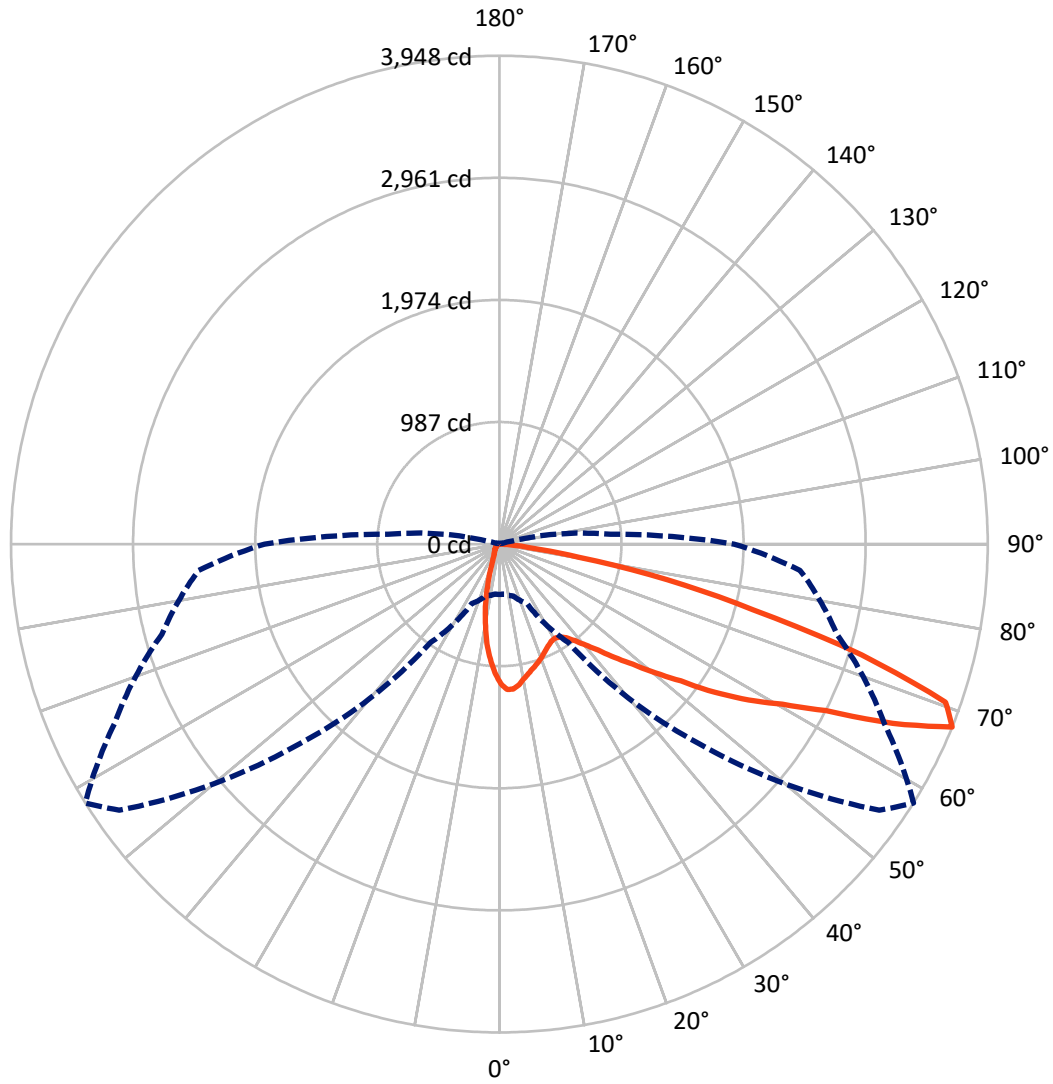
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.3 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	381.2	0.0	381.2
	% Fixture	9.8	0.0	9.8
<b>Street Side</b>	Lumens	3520.3	0.0	3520.3
	% Fixture	90.2	0.0	90.2
<b>Total</b>	Lumens	3901.4	0.0	3901.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	91.4	2.3
10°-20°	190.4	4.9
20°-30°	256.7	6.6
30°-40°	360.7	9.2
40°-50°	557.1	14.3
50°-60°	890.9	22.8
60°-70°	1054.9	27.0
70°-80°	466.7	12.0
80°-90°	32.6	0.8
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°	3901.4	100.0
0°-180°	3901.4	100.0

**Coefficient of Utilization**

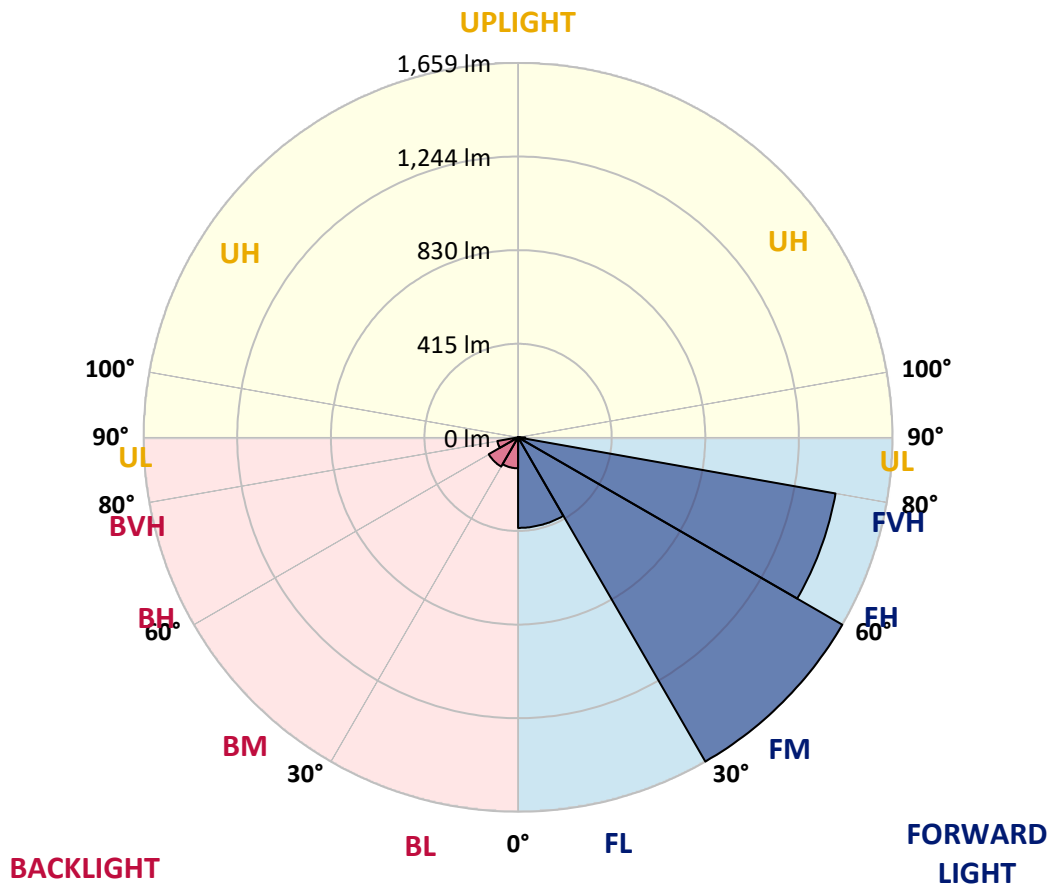


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	401.4	10.3			
FM (30°-60°)	1659.2	42.5			
FH (60°-80°)	1428.5	36.6			G1/1800
FVH (80°-90°)	31.2	0.8			G1/100
BL (0°-30°)	137.2	3.5	B1/500		
BM (30°-60°)	149.6	3.8	B0/220		
BH (60°-80°)	93.1	2.4	B0/110		G0/110
BVH (80°-90°)	1.4	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**  
 Type III Short





REPORT NUMBER: P630555

CATALOG NUMBER: GWS-SA1D-830-U-SL3-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3
2.5°	1183.7	1185.8	1188.5	1192.0	1191.3	1188.2	1184.4	1175.8	1170.2	1153.0	1131.9
5°	1145.7	1145.4	1152.3	1158.8	1170.6	1176.8	1185.4	1177.5	1174.7	1154.0	1119.8
7.5°	1071.5	1075.3	1083.2	1093.6	1110.5	1128.8	1149.5	1147.1	1155.4	1141.6	1099.1
10°	998.6	996.5	1009.0	1024.5	1050.4	1073.9	1103.9	1103.6	1125.3	1124.0	1075.6
12.5°	934.7	934.4	944.1	961.7	992.1	1024.9	1065.6	1066.6	1093.6	1104.6	1055.6
15°	880.9	881.6	890.9	909.2	940.6	980.7	1028.0	1036.6	1067.0	1089.4	1035.9
17.5°	842.5	842.9	848.4	864.3	895.0	937.8	994.8	1006.6	1045.6	1078.0	1020.0
20°	824.9	823.6	824.6	832.5	856.4	895.4	961.0	976.2	1025.9	1070.1	1005.5
22.5°	827.3	825.3	820.4	819.4	830.1	859.8	925.1	943.7	1004.5	1065.3	992.4
25°	848.8	844.3	837.4	827.0	822.9	837.7	893.6	913.0	984.5	1065.6	982.4
27.5°	881.6	876.7	868.1	854.3	838.1	831.8	872.2	890.5	970.3	1073.6	977.6
30°	923.3	919.5	911.3	894.7	872.9	847.4	867.7	882.9	963.4	1089.8	979.6
32.5°	972.7	970.0	963.1	947.9	923.0	884.0	882.9	894.7	968.9	1113.3	987.6
35°	1020.4	1021.4	1021.8	1013.5	986.9	939.6	924.7	928.9	991.7	1148.5	1005.5
37.5°	1071.8	1069.4	1081.8	1087.7	1062.2	1011.7	989.3	989.6	1035.2	1200.6	1039.4
40°	1110.8	1111.5	1138.5	1162.6	1151.9	1103.2	1071.1	1070.8	1102.2	1272.1	1093.9
42.5°	1147.4	1151.9	1191.6	1233.1	1247.9	1204.8	1181.6	1173.0	1196.1	1368.8	1175.8
45°	1186.5	1193.0	1248.6	1307.7	1346.7	1321.1	1302.8	1306.3	1309.0	1481.4	1285.9
47.5°	1232.0	1236.2	1304.9	1388.1	1461.0	1454.4	1455.5	1451.3	1449.9	1623.3	1431.6
50°	1287.3	1297.0	1376.0	1475.5	1574.9	1618.4	1632.9	1634.7	1612.2	1778.0	1582.5
52.5°	1404.7	1416.4	1484.1	1571.1	1699.2	1790.7	1849.8	1838.1	1803.5	1927.8	1747.9
55°	1543.2	1552.1	1617.4	1707.5	1851.2	1979.6	2119.8	2115.0	2030.4	2085.6	1884.0
57.5°	1556.3	1566.3	1667.5	1805.6	2046.3	2213.1	2360.5	2376.0	2252.1	2197.5	2005.5
60°	1408.8	1429.2	1567.3	1753.1	2120.9	2526.9	2624.3	2627.4	2414.7	2311.1	2154.0
62.5°	1129.1	1138.8	1278.0	1520.4	2005.9	2709.9	3027.3	2961.7	2623.6	2486.9	2389.2
65°	591.9	631.2	752.4	1020.7	1626.7	2646.1	3512.1	3494.1	2999.3	2738.6	2572.2
67.5°	406.1	405.7	434.4	532.1	970.0	2278.3	3750.0	3947.5	3433.7	2824.9	2439.6
70°	309.0	310.1	335.6	399.2	502.4	1516.6	3489.0	3826.7	3514.5	2564.9	1973.1
72.5°	205.1	207.2	249.7	322.5	401.2	743.4	2711.3	3061.8	2957.2	2060.1	1388.8
75°	122.6	124.3	154.7	234.5	356.7	416.1	1722.7	2116.7	2035.6	1419.9	744.5
77.5°	50.4	51.8	79.4	146.1	261.1	323.2	952.7	1385.0	1219.3	564.6	203.4
80°	21.1	21.8	38.3	102.2	188.2	202.7	441.3	650.9	499.7	121.5	62.2
82.5°	7.6	7.9	14.2	56.3	117.1	152.6	222.7	257.3	140.9	39.7	33.5
85°	0.3	0.3	3.5	19.0	44.5	43.2	127.4	123.3	46.6	16.6	20.0
87.5°	0.0	0.0	0.3	0.3	0.7	1.7	12.1	21.4	10.0	4.1	8.6
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: P630555  
 CATALOG NUMBER: GWS-SA1D-830-U-SL3-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3	1125.3
2.5°	1118.1	1099.8	1079.8	1061.1	1031.4	1013.8	992.1	982.4	968.6	965.1	967.2
5°	1095.3	1063.9	1015.9	972.4	916.1	870.9	825.3	805.9	781.1	764.5	757.6
7.5°	1063.2	1022.1	947.2	868.1	790.7	708.2	645.4	603.9	566.3	545.6	541.4
10°	1030.7	977.2	869.8	756.6	636.7	538.0	453.0	390.2	339.1	316.0	298.0
12.5°	997.2	930.6	791.1	643.3	504.1	369.5	264.5	203.4	166.8	152.3	154.7
15°	966.5	885.7	713.1	530.0	355.0	223.1	146.1	123.3	114.6	111.9	111.5
17.5°	937.2	843.2	635.4	419.9	234.1	136.7	111.9	106.4	103.9	102.6	102.6
20°	910.6	802.5	559.4	316.3	151.2	108.4	101.2	98.4	96.3	95.3	95.3
22.5°	885.7	763.1	485.2	223.8	111.5	97.4	92.9	90.1	87.7	86.3	86.3
25°	863.3	727.6	414.4	154.0	96.0	89.1	84.3	81.1	77.0	74.6	74.6
27.5°	847.0	695.8	346.3	112.2	86.7	80.1	74.6	70.4	66.0	63.2	62.5
30°	837.4	668.9	277.6	92.2	78.0	71.5	65.3	60.1	54.9	52.1	51.8
32.5°	831.8	644.0	214.8	80.5	70.8	63.2	56.3	50.8	45.6	42.5	42.1
35°	833.9	624.7	160.9	72.5	63.9	55.9	48.3	42.8	38.3	35.6	34.9
37.5°	851.9	616.0	120.9	66.3	58.0	49.7	41.8	36.6	32.5	30.4	30.0
40°	886.7	617.7	95.0	61.5	53.2	43.5	35.9	31.1	28.0	26.2	25.9
42.5°	941.0	632.3	78.4	57.3	48.0	38.0	31.1	27.3	24.2	22.4	22.1
45°	1021.8	662.3	68.4	52.5	42.5	32.8	26.9	23.5	20.7	18.6	18.3
47.5°	1138.8	714.4	61.8	48.0	37.6	28.3	23.1	19.7	17.3	15.5	15.2
50°	1263.5	776.9	56.3	43.5	33.5	24.5	19.7	16.2	14.2	12.4	12.1
52.5°	1396.4	844.3	52.1	39.4	29.7	21.1	16.6	13.5	11.4	9.7	9.3
55°	1524.2	911.9	47.3	36.6	25.2	18.0	13.8	11.0	9.0	7.6	7.6
57.5°	1648.5	974.1	42.1	32.1	20.7	15.2	11.4	9.0	7.3	6.2	5.9
60°	1797.0	1060.1	36.3	27.3	17.3	12.8	9.3	7.3	5.9	4.8	4.8
62.5°	2017.6	1149.5	31.1	22.8	14.5	10.7	7.6	5.9	4.8	4.1	3.8
65°	2089.8	1101.2	26.2	18.6	11.7	8.6	6.2	5.2	4.1	3.8	3.5
67.5°	1897.1	902.6	21.8	15.2	9.7	7.3	5.5	4.5	3.8	3.5	3.1
70°	1480.3	640.5	16.9	11.4	7.9	5.9	4.8	4.1	3.5	3.1	3.1
72.5°	1006.9	378.8	13.5	8.6	6.6	5.2	4.1	3.8	3.5	3.1	2.8
75°	495.9	134.7	10.4	6.6	5.2	4.5	3.8	3.5	3.1	2.8	2.8
77.5°	133.6	37.3	7.9	5.2	4.1	3.5	3.5	3.5	3.1	2.4	2.4
80°	45.2	15.5	5.9	3.8	3.5	2.8	2.4	3.1	2.8	2.4	2.1
82.5°	24.9	7.6	4.1	3.1	2.4	2.1	2.1	2.1	2.1	1.7	1.7
85°	15.9	4.1	2.8	2.4	2.4	1.7	1.4	1.4	1.0	1.0	1.0
87.5°	7.3	2.4	2.4	2.1	2.1	1.7	1.0	0.7	0.3	0.3	0.3
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)