

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: P634539

Luminaire Tested: GWS-SA3B-830-U-T3-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P634539  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-23)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3B-830-U-T3-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

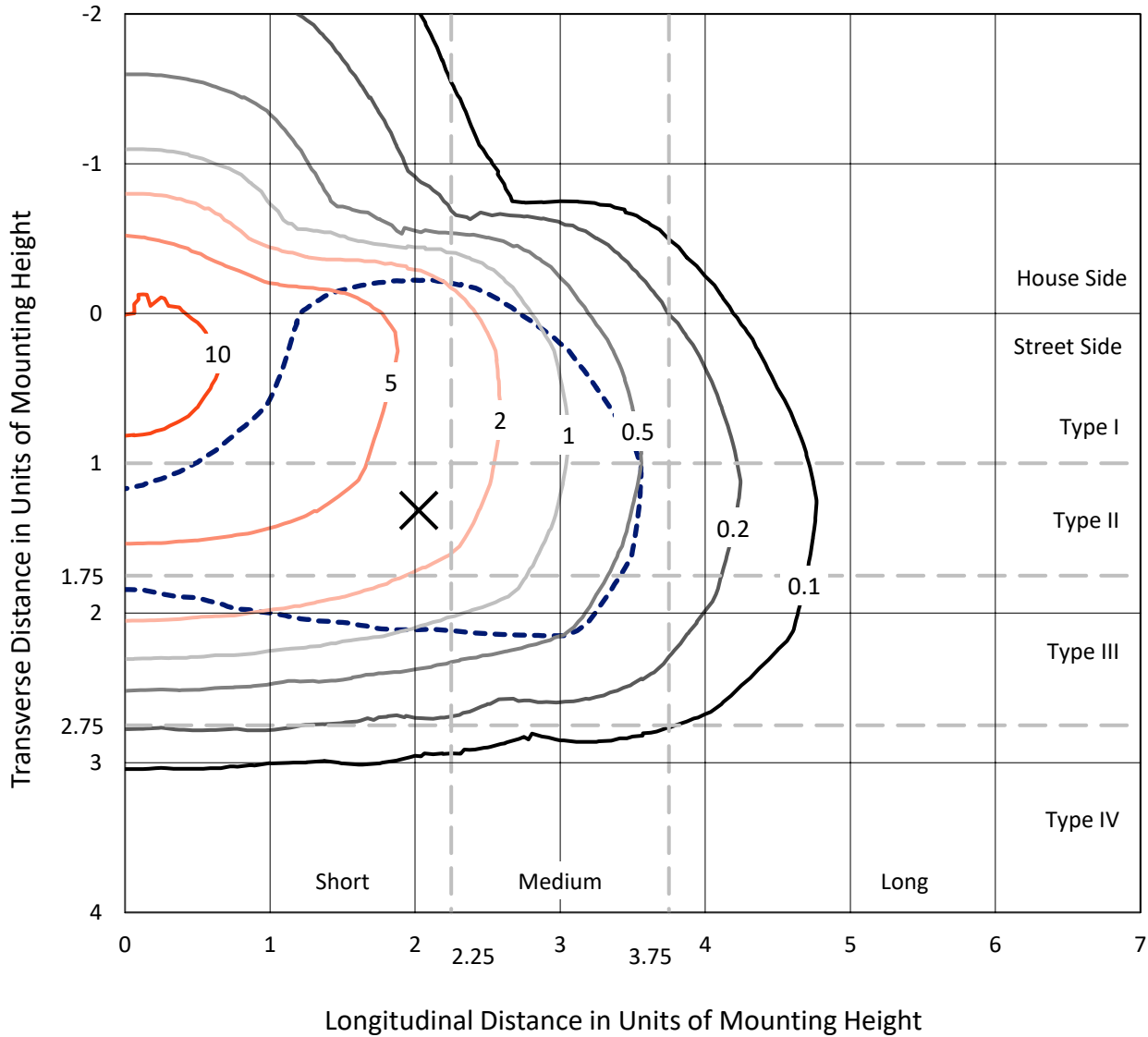
Lumens per Lamp: N/A  
Luminaire Lumens: 8268.4 lumens  
Efficiency: N/A  
Efficacy: 121.1 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 68.3  
Input Voltage (V): 120  
Input Current (Ain): 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



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### Iso-Footcandle Lines of Horizontal Illumination

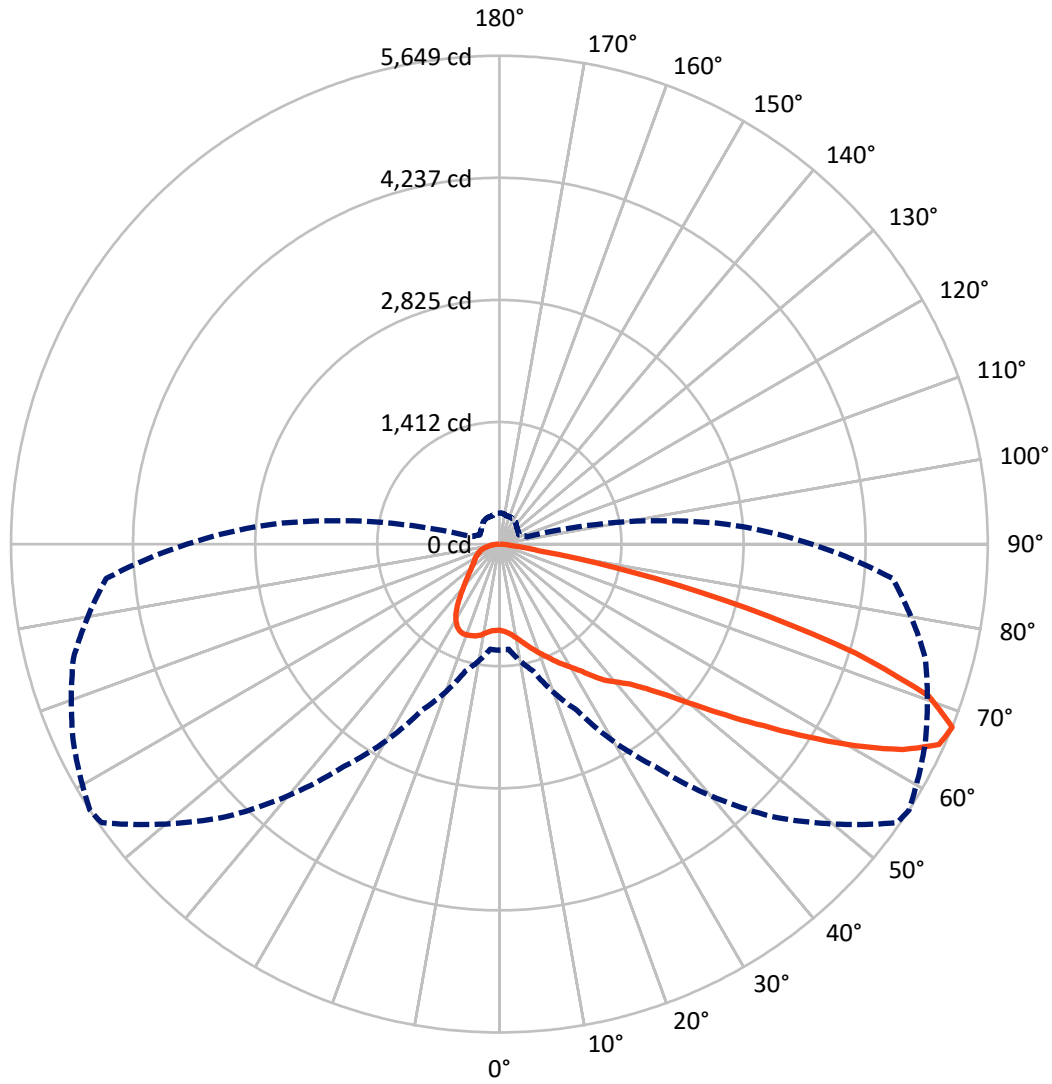
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.7 fc  
 Type III - Short - N/A

REPORT NUMBER: P634539  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1817.9	0.0	1817.9
	% Fixture	22.0	0.0	22.0
<b>Street Side</b>	Lumens	6450.5	0.0	6450.5
	% Fixture	78.0	0.0	78.0
<b>Total</b>	Lumens	8268.4	0.0	8268.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.8	1.2
10°-20°	327.1	4.0
20°-30°	583.2	7.1
30°-40°	847.9	10.3
40°-50°	1227.2	14.8
50°-60°	1920.5	23.2
60°-70°	2240.3	27.1
70°-80°	935.2	11.3
80°-90°	88.3	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°	8268.4	100.0
0°-180°	8268.4	100.0

**Coefficient of Utilization**



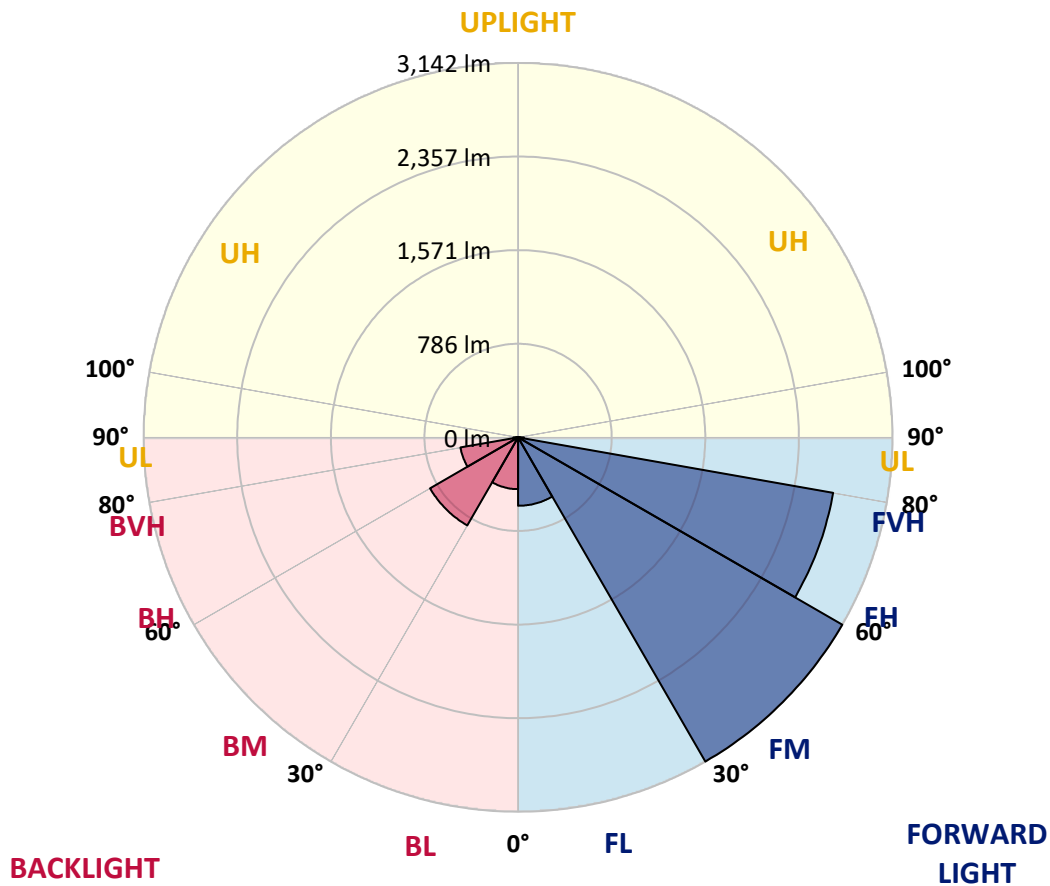
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	574.3	6.9			
FM (30°-60°)	3142.1	38.0			
FH (60°-80°)	2684.9	32.5			G2/5000
FVH (80°-90°)	49.2	0.6			G1/100
BL (0°-30°)	434.8	5.3	B1/500		
BM (30°-60°)	853.4	10.3	B1/1000		
BH (60°-80°)	490.7	5.9	B1/500		G1/500
BVH (80°-90°)	39.1	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**  
 Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3
2.5°	1010.5	1009.3	1008.7	1012.3	1011.1	1010.5	1010.5	1009.9	1008.7	1004.0	997.5
5°	1038.3	1036.0	1033.6	1036.6	1034.2	1031.8	1031.2	1030.0	1025.9	1018.8	1008.7
7.5°	1067.4	1065.0	1065.6	1067.4	1065.6	1064.4	1062.6	1061.4	1054.9	1043.7	1030.0
10°	1108.2	1108.2	1109.4	1111.2	1111.8	1110.0	1106.5	1104.7	1097.0	1082.8	1063.8
12.5°	1167.5	1166.3	1166.3	1165.1	1166.9	1165.1	1161.5	1158.6	1149.1	1130.7	1103.5
15°	1245.7	1240.9	1236.8	1229.1	1226.7	1220.2	1221.4	1219.6	1210.7	1185.8	1151.5
17.5°	1329.2	1328.6	1322.1	1306.7	1291.3	1280.6	1283.0	1282.4	1277.6	1243.9	1200.0
20°	1402.6	1405.6	1399.7	1387.8	1367.1	1346.9	1345.8	1348.7	1342.8	1309.0	1248.0
22.5°	1485.0	1482.6	1476.7	1461.3	1445.9	1424.5	1417.4	1415.1	1412.7	1374.2	1297.2
25°	1563.1	1570.2	1562.5	1548.3	1524.6	1501.5	1495.6	1498.0	1491.5	1440.5	1349.9
27.5°	1662.1	1665.0	1660.3	1640.7	1620.6	1588.0	1576.8	1576.8	1574.4	1502.7	1391.4
30°	1767.5	1775.8	1767.5	1751.5	1730.8	1684.0	1659.7	1657.3	1650.2	1566.7	1439.9
32.5°	1873.5	1879.4	1873.5	1858.1	1834.4	1793.6	1758.6	1753.3	1743.8	1636.6	1489.7
35°	1967.7	1973.0	1971.8	1975.4	1955.8	1904.3	1883.0	1880.6	1855.7	1727.8	1557.2
37.5°	2070.8	2077.3	2068.4	2075.5	2067.8	2019.2	2012.7	2000.9	1965.3	1813.7	1628.3
40°	2188.0	2194.0	2179.7	2182.7	2173.8	2146.6	2113.4	2097.4	2044.7	1906.7	1740.2
42.5°	2313.6	2327.2	2333.7	2328.4	2307.7	2292.3	2234.2	2214.1	2170.3	2074.3	1924.5
45°	2495.5	2515.6	2525.1	2511.4	2502.6	2480.6	2409.6	2385.3	2362.2	2310.6	2181.5
47.5°	2691.5	2709.9	2740.1	2746.0	2753.1	2736.5	2636.4	2612.7	2616.9	2611.0	2497.8
50°	2847.9	2863.3	2931.4	3004.3	3064.7	3069.4	2941.5	2916.0	2938.5	2957.5	2878.7
52.5°	2961.6	2975.2	3065.3	3215.7	3352.5	3453.8	3315.8	3286.8	3305.2	3347.8	3311.7
55°	3054.0	3073.0	3167.1	3398.2	3674.8	3834.7	3746.4	3709.7	3702.0	3754.7	3775.5
57.5°	3102.6	3108.5	3240.6	3540.9	3911.1	4208.4	4247.0	4205.5	4132.0	4161.1	4268.9
60°	2991.8	3001.9	3182.5	3577.6	4097.7	4579.2	4772.3	4738.0	4581.6	4597.6	4716.7
62.5°	2685.6	2699.8	2917.2	3402.9	4113.1	4826.8	5257.5	5235.5	5025.9	4939.4	4974.9
65°	2154.3	2159.0	2384.1	2970.5	3806.9	4857.6	5595.7	5590.3	5336.2	5133.7	4981.4
67.5°	1228.5	1220.2	1521.1	2118.7	3141.7	4457.2	5617.6	5649.0	5436.9	5101.7	4566.8
70°	532.5	533.7	672.3	1045.4	2033.4	3602.5	5217.8	5271.7	5145.5	4569.2	3633.3
72.5°	246.4	250.0	309.8	452.5	868.3	2234.8	4254.7	4303.2	4194.8	3657.0	2643.5
75°	174.1	177.1	206.7	259.4	399.2	870.7	2846.1	2948.0	3000.7	2735.3	1742.0
77.5°	132.1	136.2	151.0	180.1	246.4	308.6	1361.7	1604.6	1911.4	1701.7	897.4
80°	84.1	84.1	100.1	120.2	150.4	160.5	393.3	466.2	935.3	701.3	352.4
82.5°	56.9	58.6	68.1	76.4	86.5	91.2	168.8	180.1	270.1	238.7	145.1
85°	30.2	31.4	35.5	34.9	41.5	36.1	71.1	70.5	98.9	108.4	55.1
87.5°	0.0	0.0	0.6	0.6	1.2	1.8	7.7	8.3	20.7	33.2	18.4
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: P634539  
 CATALOG NUMBER: GWS-SA3B-830-U-T3-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3	996.3
2.5°	1001.0	993.9	997.5	996.3	999.8	999.8	993.3	991.5	992.1	985.0	982.7
5°	1009.9	1001.6	1003.4	1001.0	1004.6	1007.5	1004.6	1004.6	1008.1	1002.8	999.8
7.5°	1030.0	1020.6	1020.6	1017.6	1021.8	1024.1	1021.8	1025.3	1031.8	1026.5	1023.5
10°	1062.0	1050.8	1051.4	1047.8	1049.6	1048.4	1038.9	1036.0	1037.7	1033.0	1030.6
12.5°	1103.5	1088.1	1088.1	1081.0	1076.8	1064.4	1044.9	1037.7	1038.9	1034.8	1033.0
15°	1143.2	1129.0	1126.0	1111.8	1092.8	1069.7	1052.0	1047.2	1048.4	1044.3	1041.3
17.5°	1190.0	1171.6	1161.0	1134.9	1099.9	1076.2	1058.5	1047.2	1037.7	1028.3	1025.9
20°	1233.2	1210.1	1190.6	1150.3	1107.6	1075.1	1041.9	1014.1	991.0	978.5	975.6
22.5°	1277.6	1248.0	1213.7	1161.0	1107.1	1053.7	992.7	950.7	916.3	898.0	901.5
25°	1319.7	1282.4	1235.6	1171.0	1088.1	1006.4	923.4	860.6	821.6	807.3	803.2
27.5°	1354.6	1308.4	1255.7	1166.3	1049.0	938.2	828.7	758.8	720.9	704.9	700.7
30°	1393.7	1341.6	1284.7	1144.4	987.4	842.9	721.4	664.6	637.3	621.9	622.5
32.5°	1438.8	1384.3	1325.6	1102.3	908.6	739.8	633.2	594.1	572.2	556.8	554.4
35°	1499.2	1445.3	1352.9	1038.9	808.5	645.0	572.8	540.8	513.5	493.4	489.3
37.5°	1573.8	1537.1	1355.8	954.2	701.3	579.9	529.5	495.2	462.0	435.4	432.4
40°	1701.7	1659.7	1331.5	848.2	610.1	537.8	493.4	453.7	415.2	385.6	381.5
42.5°	1884.2	1797.7	1279.4	728.6	541.4	504.7	459.0	408.7	369.6	348.9	345.9
45°	2116.4	1951.7	1201.2	616.0	490.4	472.1	422.9	370.2	349.5	334.7	331.7
47.5°	2400.7	2131.2	1111.2	528.4	450.8	442.5	386.2	357.2	338.8	326.4	323.4
50°	2740.7	2359.8	1037.2	459.6	415.2	408.1	374.3	349.5	334.7	324.6	322.2
52.5°	3128.6	2613.9	1001.0	410.5	384.4	377.3	370.2	347.7	335.3	327.6	324.6
55°	3531.4	2881.6	967.3	372.6	358.4	362.5	370.8	353.6	344.1	334.1	331.1
57.5°	3920.6	3132.8	884.3	343.0	339.4	355.4	373.8	359.5	348.3	338.2	334.7
60°	4188.9	3270.2	744.0	319.3	325.2	346.5	366.1	350.7	336.4	332.3	330.5
62.5°	4261.2	3253.6	577.5	295.0	308.0	327.0	345.9	335.8	321.0	327.6	328.1
65°	4092.4	3075.9	433.6	271.3	285.5	301.5	325.2	321.0	315.7	333.5	334.1
67.5°	3614.3	2639.4	330.5	250.6	262.4	281.9	318.7	335.8	337.0	359.5	357.2
70°	2734.8	1971.8	258.8	231.0	244.6	281.9	339.4	347.1	332.9	353.6	348.9
72.5°	1890.7	1301.3	220.3	213.8	222.7	268.9	338.8	338.8	323.4	323.4	314.5
75°	1174.6	765.3	191.9	191.9	191.9	235.2	329.3	312.2	284.9	272.5	265.4
77.5°	579.9	372.0	161.1	167.0	160.5	196.7	268.9	255.3	238.7	225.7	220.9
80°	247.6	186.0	130.3	136.8	129.1	148.1	213.2	210.3	194.3	177.1	171.8
82.5°	113.7	96.0	104.2	107.2	94.2	111.4	155.8	155.8	146.9	123.2	114.3
85°	48.6	50.9	72.3	72.3	59.2	62.8	83.5	79.4	71.1	58.0	53.3
87.5°	16.6	24.9	36.7	32.0	12.4	5.3	3.0	1.2	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  
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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**

$\lambda$ (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)