

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: P635508

Luminaire Tested: GWS-SA3D-830-U-SL4-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P635508  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-35)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3D-830-U-SL4-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

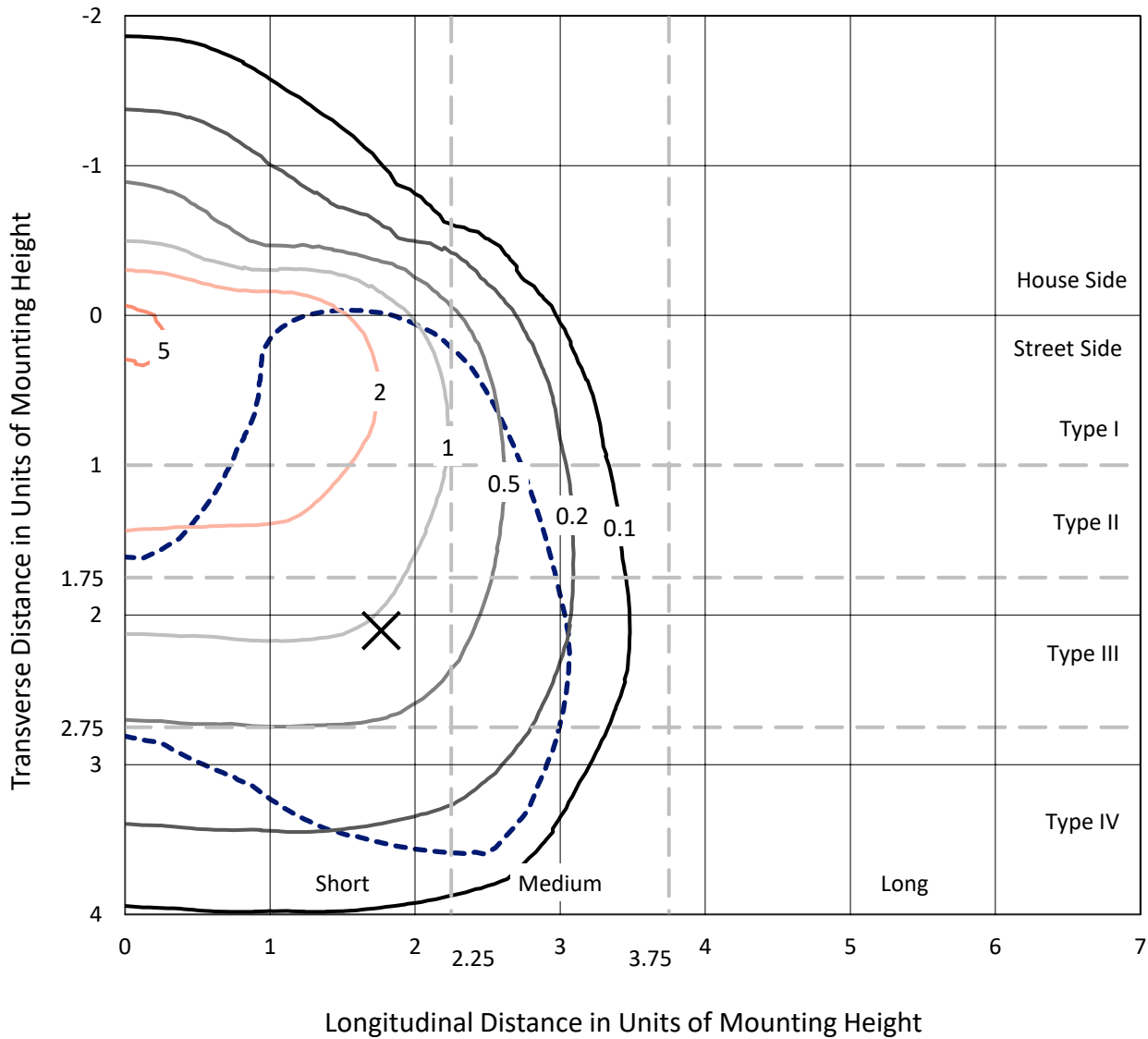
Lumens per Lamp: N/A  
Luminaire Lumens: 13426.1 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 120.8  
Input Voltage (V): 120  
Input Current (Ain): 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

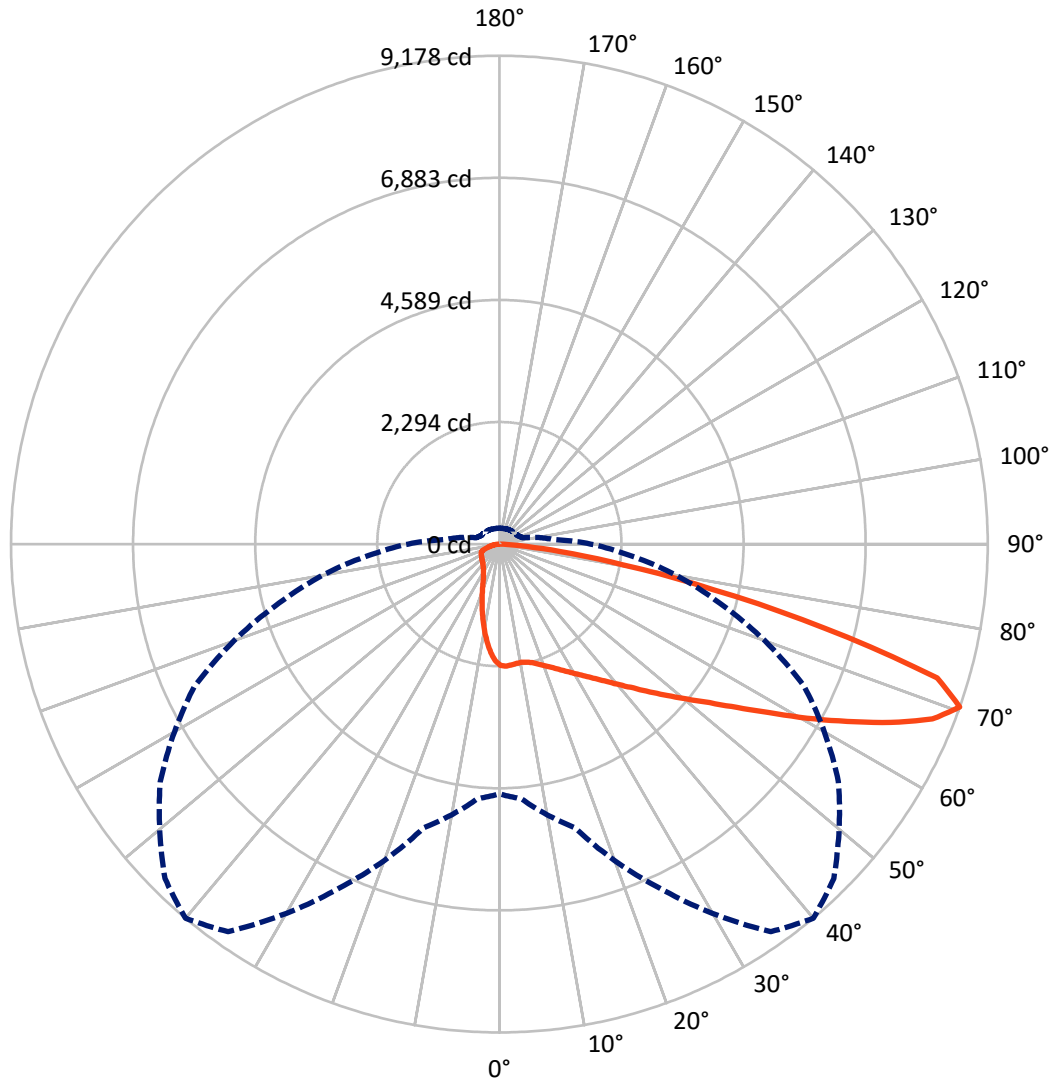
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.7 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2068.0	0.0	2068.0
	% Fixture	15.4	0.0	15.4
<b>Street Side</b>	Lumens	11358.1	0.0	11358.1
	% Fixture	84.6	0.0	84.6
<b>Total</b>	Lumens	13426.1	0.0	13426.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	201.4	1.5
10°-20°	525.0	3.9
20°-30°	824.3	6.1
30°-40°	1239.4	9.2
40°-50°	1913.1	14.2
50°-60°	2841.1	21.2
60°-70°	3581.1	26.7
70°-80°	2070.9	15.4
80°-90°	229.8	1.7
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°	13426.1	100.0
0°-180°	13426.1	100.0

**Coefficient of Utilization**



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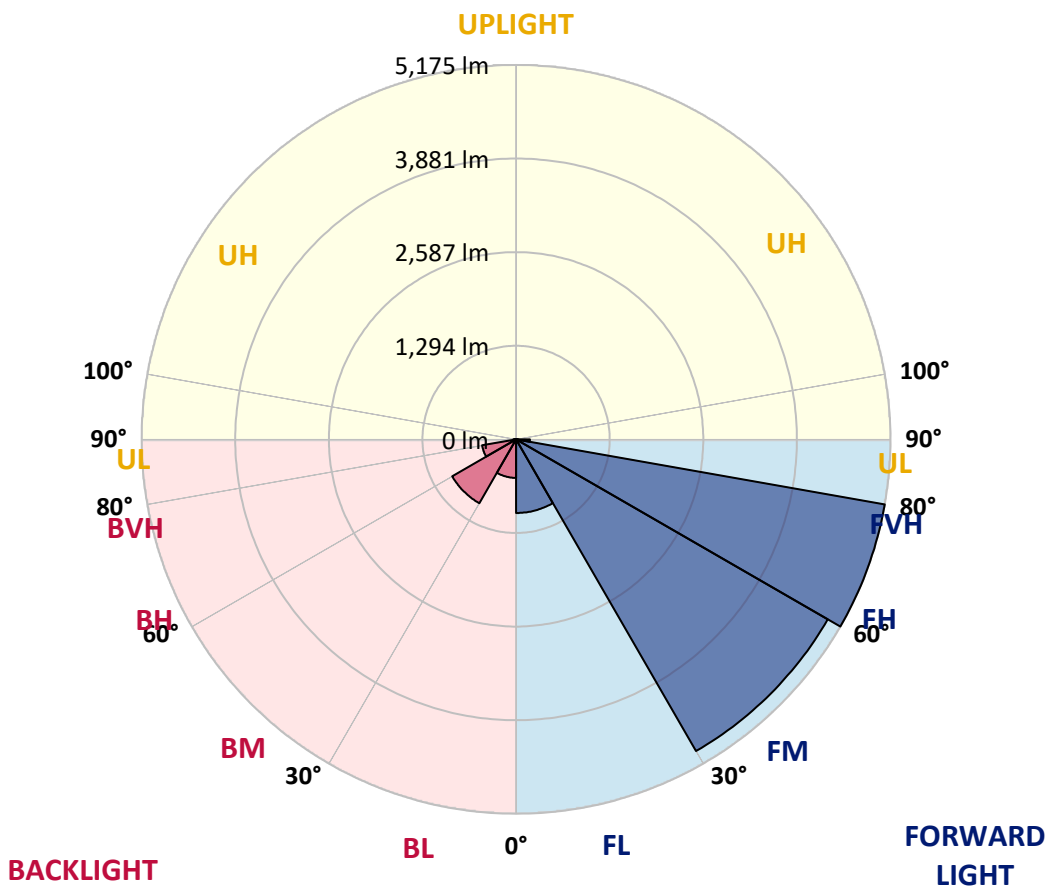
CATALOG NUMBER: GWS-SA3D-830-U-SL4-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1017.8	7.6			
FM (30°-60°)	4974.2	37.0			
FH (60°-80°)	5174.7	38.5			G3/7500
FVH (80°-90°)	191.4	1.4			G2/225
BL (0°-30°)	532.9	4.0	B2/1000		
BM (30°-60°)	1019.3	7.6	B2/2500		
BH (60°-80°)	477.3	3.6	B1/500		G1/500
BVH (80°-90°)	38.4	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	40°	45°	55°	65°	75°	85°
0°	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9
2.5°	2293.9	2297.9	2301.0	2305.0	2303.0	2296.9	2302.0	2302.0	2290.9	2278.9	2267.9
5°	2296.9	2302.0	2301.0	2299.9	2291.9	2281.9	2281.9	2275.9	2256.9	2237.8	2219.8
7.5°	2290.9	2289.9	2288.9	2285.9	2276.9	2265.9	2263.9	2251.8	2226.8	2200.7	2174.7
10°	2263.9	2262.9	2265.9	2272.9	2270.9	2260.9	2260.9	2249.8	2220.8	2188.7	2154.6
12.5°	2241.8	2241.8	2253.8	2272.9	2279.9	2275.9	2276.9	2268.9	2235.8	2197.7	2157.6
15°	2244.8	2245.8	2271.9	2303.0	2316.0	2313.0	2314.0	2305.0	2267.9	2229.8	2175.7
17.5°	2264.9	2269.9	2315.0	2358.1	2375.1	2371.1	2364.1	2349.1	2307.0	2263.9	2197.7
20°	2307.0	2315.0	2373.1	2427.2	2447.3	2438.2	2426.2	2396.2	2350.1	2303.0	2221.8
22.5°	2390.1	2395.2	2459.3	2512.4	2528.4	2517.4	2493.4	2450.3	2397.2	2348.1	2250.8
25°	2507.4	2513.4	2574.5	2623.6	2619.6	2606.6	2573.5	2520.4	2457.3	2405.2	2292.9
27.5°	2646.7	2656.7	2716.8	2755.9	2729.9	2710.8	2673.8	2609.6	2538.5	2491.4	2357.1
30°	2799.0	2803.0	2854.1	2893.2	2853.1	2827.1	2782.0	2712.8	2648.7	2613.6	2453.3
32.5°	2946.3	2950.3	2994.4	3016.5	2974.4	2955.4	2916.3	2843.1	2798.0	2779.0	2596.6
35°	3101.7	3100.7	3136.7	3155.8	3112.7	3104.7	3064.6	3008.5	3000.5	3025.5	2806.0
37.5°	3257.0	3248.0	3267.0	3292.1	3268.0	3276.0	3250.0	3231.0	3262.0	3327.2	3084.6
40°	3381.3	3381.3	3401.3	3432.4	3440.4	3475.5	3460.4	3485.5	3585.7	3741.0	3429.4
42.5°	3491.5	3492.5	3534.6	3582.7	3640.8	3695.0	3707.0	3772.1	3979.6	4223.1	3862.3
45°	3606.8	3607.8	3664.9	3735.0	3858.3	3961.5	3985.6	4131.9	4428.5	4725.2	4332.3
47.5°	3740.0	3729.0	3808.2	3925.4	4100.8	4249.1	4311.3	4518.7	4893.5	5258.3	4775.3
50°	3890.4	3867.3	3955.5	4157.9	4374.4	4577.9	4682.1	4919.6	5392.6	5750.4	5192.2
52.5°	4059.7	4046.7	4138.9	4385.4	4716.1	4950.7	5092.0	5403.6	5877.6	6240.4	5522.9
55°	4270.2	4239.1	4372.4	4686.1	5117.0	5415.7	5583.0	5882.7	6407.8	6685.4	5775.4
57.5°	4500.7	4466.6	4645.0	5061.9	5638.1	5965.8	6175.3	6421.8	6906.9	7026.1	5923.7
60°	4749.2	4738.2	4949.7	5502.8	6259.5	6640.3	6791.6	7015.1	7340.8	7223.5	5886.7
62.5°	4976.7	4972.7	5280.4	5980.9	6917.9	7336.8	7457.0	7516.2	7653.5	7210.5	5592.0
65°	5216.2	5250.3	5666.2	6535.1	7672.5	8083.4	8133.5	7983.2	7758.7	6868.8	4988.7
67.5°	5246.3	5312.4	5908.7	7054.2	8388.0	8775.9	8735.8	8160.6	7448.0	5917.7	3910.4
70°	4692.1	4807.3	5521.9	7133.3	8892.1	9177.7	8888.1	7778.7	6320.6	4287.2	2459.3
72.5°	3920.4	4019.6	4651.0	6083.1	8241.7	8605.5	8213.7	6584.2	4466.6	2459.3	1252.7
75°	3051.6	3166.8	3749.1	4835.4	6170.3	6315.6	6119.2	4591.9	2455.3	1014.2	569.2
77.5°	1862.0	1945.2	2398.2	3276.0	4317.3	4099.8	3474.5	2574.5	1077.3	486.0	351.8
80°	823.8	874.9	1181.5	1759.8	2494.4	2358.1	1859.0	1099.4	589.3	308.7	245.5
82.5°	442.0	475.0	582.3	696.5	1095.4	1145.5	929.0	633.4	316.7	176.4	140.3
85°	194.4	213.5	264.6	252.5	359.8	353.8	356.8	434.9	151.3	81.2	91.2
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	11.0	58.1	15.0	24.1	21.0
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-SA3D-830-U-SL4-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9	2279.9
2.5°	2255.9	2237.8	2232.8	2226.8	2215.8	2196.7	2182.7	2166.7	2159.6	2151.6	2152.6
5°	2199.7	2177.7	2156.6	2129.6	2095.5	2057.4	2031.4	2001.3	1985.3	1970.2	1974.2
7.5°	2151.6	2117.6	2074.5	2017.3	1956.2	1888.1	1832.9	1789.9	1760.8	1740.7	1750.8
10°	2121.6	2081.5	2006.3	1913.1	1809.9	1705.7	1626.5	1552.3	1506.2	1470.2	1468.2
12.5°	2115.6	2063.4	1954.2	1818.9	1669.6	1530.3	1414.0	1313.8	1252.7	1207.6	1224.6
15°	2121.6	2055.4	1909.1	1731.7	1543.3	1354.9	1210.6	1095.4	1022.2	981.1	978.1
17.5°	2128.6	2047.4	1858.0	1637.5	1411.0	1195.6	1028.2	905.9	830.8	789.7	790.7
20°	2134.6	2035.4	1797.9	1534.3	1276.7	1047.3	873.9	757.6	690.5	660.4	665.4
22.5°	2144.6	2023.4	1733.7	1424.1	1139.5	903.9	751.6	657.4	617.3	597.3	598.3
25°	2163.7	2016.3	1667.6	1303.8	1004.2	789.7	667.4	604.3	579.2	567.2	566.2
27.5°	2202.7	2022.4	1598.4	1187.6	881.9	702.5	613.3	572.2	555.2	547.2	546.2
30°	2267.9	2046.4	1538.3	1069.3	776.7	634.4	576.2	551.2	541.2	534.1	533.1
32.5°	2367.1	2091.5	1473.2	959.1	691.5	584.3	547.2	534.1	527.1	523.1	523.1
35°	2517.4	2173.7	1409.0	862.9	625.3	545.2	524.1	519.1	513.1	511.1	513.1
37.5°	2733.9	2305.0	1350.9	778.7	578.2	515.1	499.1	501.1	496.1	499.1	502.1
40°	3008.5	2480.3	1301.8	709.5	543.2	493.1	477.0	484.0	481.0	484.0	489.1
42.5°	3356.2	2697.8	1264.7	655.4	518.1	475.0	460.0	467.0	465.0	469.0	474.0
45°	3744.1	2984.4	1247.7	617.3	500.1	462.0	446.0	451.0	449.0	452.0	457.0
47.5°	4115.9	3245.0	1262.7	595.3	485.0	451.0	433.9	435.9	434.9	433.9	436.9
50°	4436.5	3452.4	1305.8	588.3	475.0	439.9	423.9	424.9	421.9	415.9	417.9
52.5°	4698.1	3618.8	1331.9	588.3	470.0	427.9	412.9	413.9	407.9	399.9	400.9
55°	4870.5	3685.9	1310.8	587.3	468.0	417.9	401.9	402.9	396.9	386.8	387.8
57.5°	4919.6	3620.8	1222.6	576.2	466.0	409.9	390.8	392.8	388.8	377.8	377.8
60°	4782.3	3382.3	1061.3	551.2	461.0	404.9	382.8	385.8	383.8	372.8	372.8
62.5°	4422.5	2958.4	868.9	513.1	447.0	398.9	375.8	381.8	386.8	380.8	379.8
65°	3749.1	2370.1	706.5	471.0	428.9	388.8	365.8	380.8	391.8	399.9	399.9
67.5°	2813.1	1696.7	576.2	426.9	401.9	368.8	352.8	366.8	374.8	379.8	382.8
70°	1714.7	998.1	454.0	375.8	362.8	338.7	326.7	312.7	301.6	299.6	300.6
72.5°	838.8	571.2	368.8	319.7	309.7	287.6	260.6	254.5	249.5	246.5	245.5
75°	462.0	397.9	304.7	265.6	247.5	220.5	214.5	204.4	202.4	198.4	199.4
77.5°	326.7	313.7	251.5	215.5	188.4	174.4	177.4	170.4	170.4	167.4	166.4
80°	245.5	246.5	193.4	157.3	139.3	134.3	137.3	137.3	135.3	134.3	133.3
82.5°	155.3	175.4	130.3	101.2	99.2	100.2	99.2	98.2	100.2	97.2	96.2
85°	107.2	126.3	79.2	60.1	60.1	59.1	61.1	60.1	62.1	59.1	59.1
87.5°	24.1	56.1	29.1	18.0	19.0	18.0	19.0	20.0	22.0	23.0	23.0
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**



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**

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			

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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)