

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: P636028

Luminaire Tested: GWS-SA3E-830-U-T3R-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636028  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-15)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3E-830-U-T3R-W  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

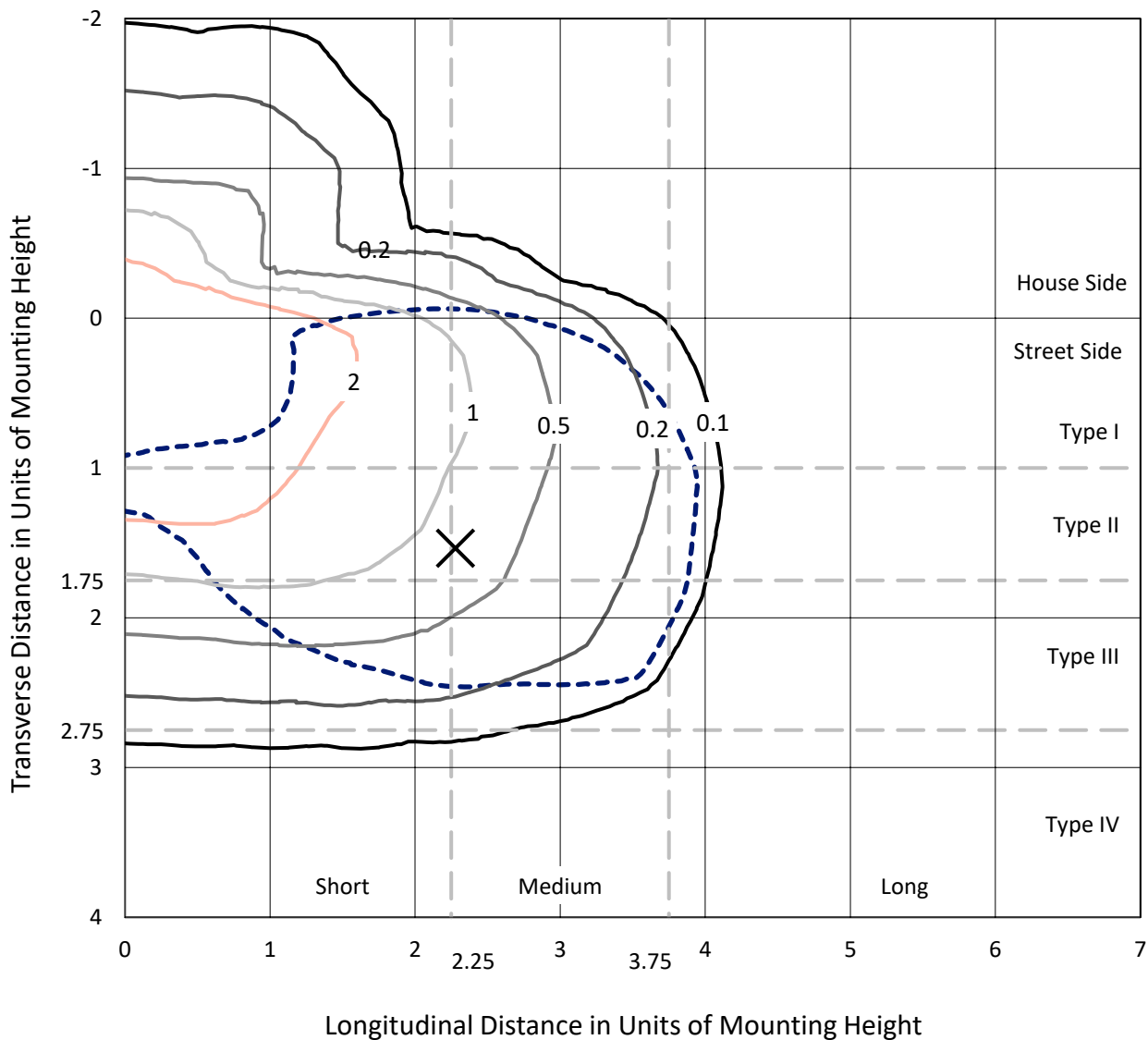
Lumens per Lamp: N/A  
Luminaire Lumens: 17759.7 lumens  
Efficiency: N/A  
Efficacy: 111.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P636028  
 CATALOG NUMBER: GWS-SA3E-830-U-T3R-W

### Iso-Footcandle Lines of Horizontal Illumination

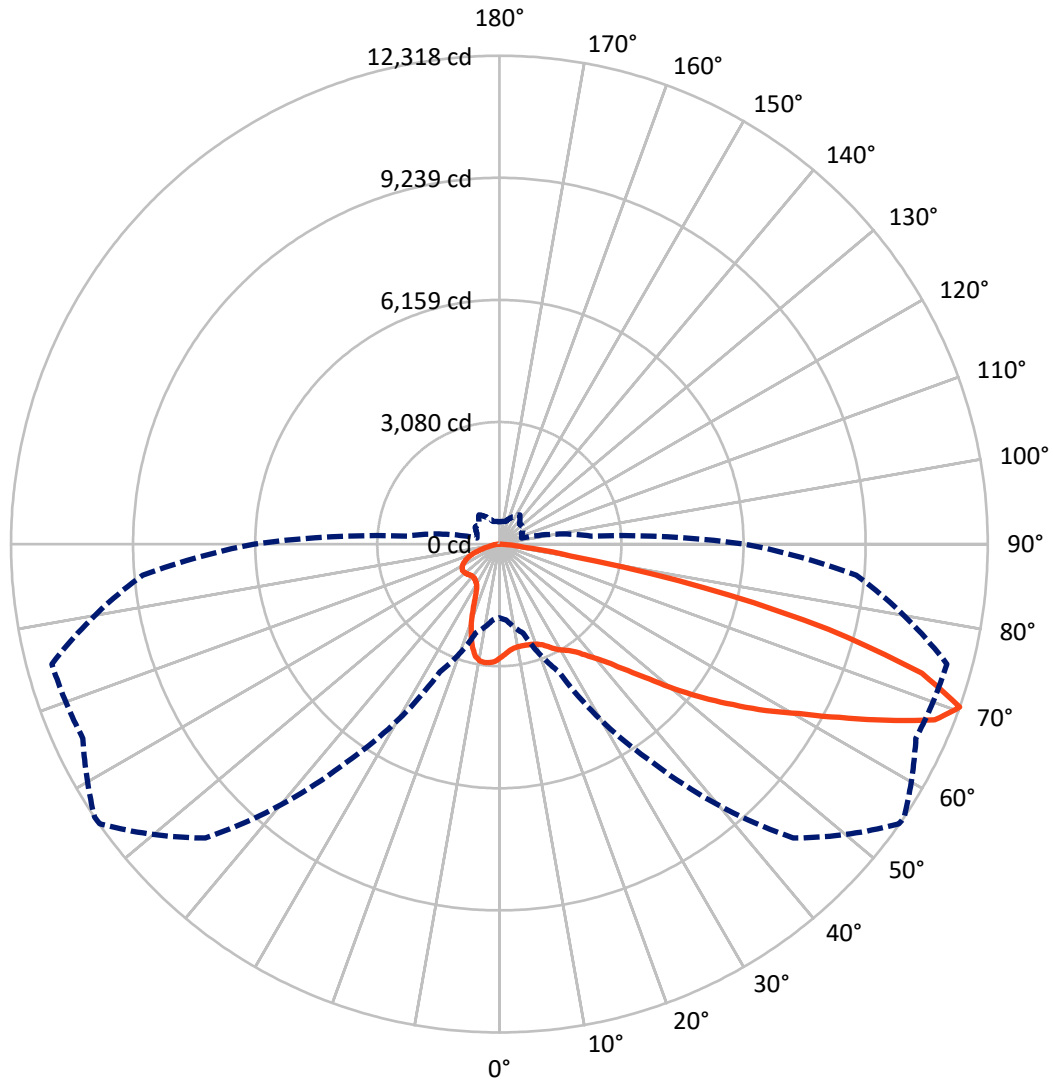
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.8 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3414.3	0.0	3414.3
	% Fixture	19.2	0.0	19.2
<b>Street Side</b>	Lumens	14345.4	0.0	14345.4
	% Fixture	80.8	0.0	80.8
<b>Total</b>	Lumens	17759.7	0.0	17759.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	265.3	1.5
10°-20°	718.8	4.0
20°-30°	1188.3	6.7
30°-40°	1776.7	10.0
40°-50°	2644.0	14.9
50°-60°	3759.0	21.2
60°-70°	4655.7	26.2
70°-80°	2570.7	14.5
80°-90°	181.0	1.0
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°	17759.7	100.0
0°-180°	17759.7	100.0

**Coefficient of Utilization**



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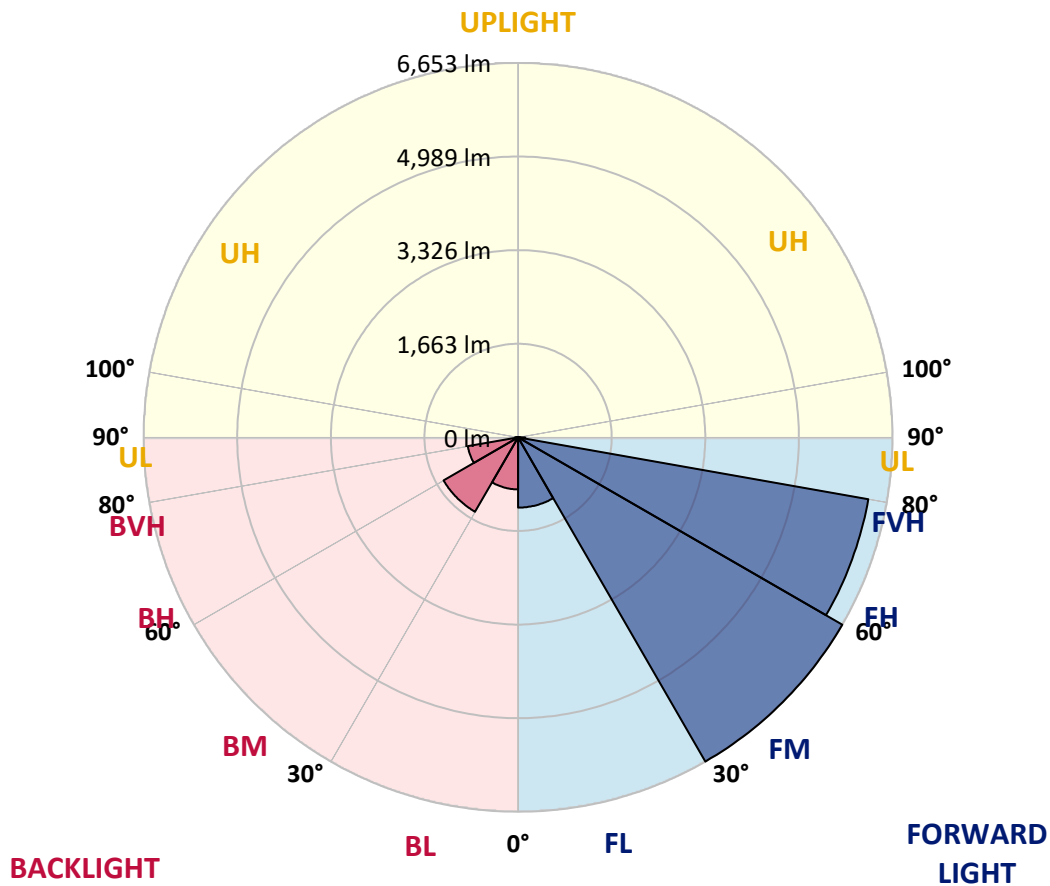
CATALOG NUMBER: GWS-SA3E-830-U-T3R-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1248.1	7.0			
FM (30°-60°)	6652.5	37.5			
FH (60°-80°)	6318.9	35.6			G3/7500
FVH (80°-90°)	125.8	0.7			G2/225
BL (0°-30°)	924.3	5.2	B2/1000		
BM (30°-60°)	1527.3	8.6	B2/2500		
BH (60°-80°)	907.5	5.1	B2/1000		G2/1000
BVH (80°-90°)	55.2	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 III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	65°	75°	85°
0°	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7
2.5°	2682.6	2667.6	2685.1	2693.9	2716.4	2749.0	2777.8	2779.0	2794.1	2830.4	2865.4
5°	2561.1	2553.6	2558.6	2584.9	2608.7	2650.0	2693.9	2697.6	2740.2	2811.6	2881.7
7.5°	2467.2	2457.2	2475.9	2509.8	2539.8	2586.2	2643.8	2648.8	2708.9	2816.6	2924.3
10°	2331.9	2324.4	2359.5	2404.6	2469.7	2546.1	2622.5	2628.7	2707.6	2849.2	2999.4
12.5°	2273.1	2273.1	2288.1	2330.7	2402.1	2503.5	2618.7	2628.7	2727.7	2899.3	3095.9
15°	2364.5	2370.7	2358.2	2355.7	2384.5	2481.0	2623.7	2638.8	2765.2	2950.6	3191.1
17.5°	2548.6	2554.8	2522.3	2470.9	2442.1	2502.2	2642.5	2658.8	2805.3	3007.0	3293.7
20°	2806.6	2814.1	2742.7	2663.8	2564.9	2563.6	2678.8	2693.9	2856.7	3068.3	3402.7
22.5°	3108.4	3113.4	3023.2	2898.0	2746.5	2677.6	2741.5	2756.5	2923.0	3153.5	3520.4
25°	3457.8	3472.8	3363.9	3182.3	2976.9	2834.1	2845.4	2862.9	3042.0	3267.4	3659.4
27.5°	3831.0	3849.8	3724.6	3524.2	3241.1	3007.0	2979.4	2994.4	3168.5	3337.6	3733.3
30°	4213.0	4226.8	4101.5	3872.3	3525.4	3202.3	3092.1	3100.9	3223.6	3371.4	3808.5
32.5°	4637.5	4626.3	4506.0	4241.8	3853.6	3436.5	3197.3	3194.8	3285.0	3439.0	3916.2
35°	5035.8	5052.1	4924.3	4632.5	4214.2	3725.8	3355.1	3345.1	3415.2	3549.2	4067.7
37.5°	5518.0	5513.0	5360.2	5044.6	4576.2	4002.6	3576.8	3559.3	3584.3	3720.8	4279.4
40°	5862.4	5897.4	5798.5	5504.2	4999.5	4343.2	3836.0	3797.2	3803.5	3932.5	4562.4
42.5°	6144.2	6176.7	6186.7	5998.9	5484.2	4764.0	4159.1	4120.3	4124.1	4306.9	4910.6
45°	6360.8	6404.7	6546.2	6491.1	6030.2	5250.0	4596.2	4556.1	4558.6	4761.5	5331.4
47.5°	6449.7	6497.3	6784.1	6915.6	6610.0	5831.1	5139.8	5080.9	5089.7	5313.8	5812.3
50°	6420.9	6484.8	6873.0	7242.5	7096.0	6422.2	5789.7	5748.4	5714.6	6040.2	6334.5
52.5°	6173.0	6243.1	6864.3	7450.4	7493.0	6980.7	6461.0	6437.2	6429.7	6811.7	6918.1
55°	5442.8	5560.5	6562.5	7505.5	7803.6	7506.7	7188.6	7148.6	7187.4	7638.2	7508.0
57.5°	5038.3	5126.0	5971.3	7444.1	8057.8	8007.7	7915.0	7918.8	7962.6	8536.2	8223.1
60°	4807.9	4910.6	5643.2	7276.3	8302.0	8616.3	8675.2	8675.2	8754.1	9504.3	8949.5
62.5°	4502.3	4606.2	5336.4	6953.2	8527.4	9332.7	9630.8	9627.0	9658.3	10542.5	9659.6
65°	3882.4	3978.8	4720.2	6443.5	8637.6	10121.7	10716.6	10705.3	10642.7	11466.8	10129.2
67.5°	2819.1	2910.5	3615.6	5474.1	8240.6	10757.9	11835.0	11840.0	11465.5	12049.1	10154.3
70°	1858.5	1921.1	2324.4	3555.5	6701.5	10483.6	12303.3	12318.4	11592.0	11685.9	9037.1
72.5°	1159.7	1203.5	1451.5	2120.3	3960.0	8298.2	11101.1	11142.4	10428.5	10269.5	7425.3
75°	770.2	800.3	965.6	1236.1	1832.2	4491.0	8438.5	8571.3	8358.4	8050.3	5173.6
77.5°	463.4	488.4	614.9	785.2	811.5	1754.6	4925.6	5268.7	5298.8	4203.0	2166.6
80°	211.7	240.5	339.4	448.4	432.1	611.2	1737.0	1817.2	2144.1	1335.0	683.8
82.5°	125.2	137.8	225.4	222.9	184.1	296.8	624.9	641.2	544.8	488.4	291.8
85°	50.1	58.9	95.2	83.9	67.6	96.4	235.4	246.7	236.7	212.9	107.7
87.5°	0.0	0.0	0.0	0.0	1.3	2.5	21.3	22.5	32.6	58.9	32.6
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: P636028  
 CATALOG NUMBER: GWS-SA3E-830-U-T3R-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7	2866.7
2.5°	2888.0	2880.5	2918.0	2946.8	2959.4	2971.9	2960.6	2956.9	2956.9	2931.8	2919.3
5°	2919.3	2923.0	2974.4	2998.2	2998.2	2988.2	2958.1	2936.8	2929.3	2896.7	2888.0
7.5°	2978.2	2994.4	3042.0	3040.8	3005.7	2950.6	2875.5	2817.8	2765.2	2742.7	2728.9
10°	3074.6	3095.9	3128.4	3075.8	2978.2	2832.9	2673.8	2548.6	2473.4	2413.3	2413.3
12.5°	3184.8	3204.8	3198.6	3077.1	2875.5	2603.7	2374.5	2230.5	2125.3	2070.2	2070.2
15°	3295.0	3311.3	3243.7	3019.5	2661.3	2299.4	2048.9	1876.1	1784.6	1733.3	1733.3
17.5°	3406.5	3405.2	3262.4	2886.7	2382.0	1962.5	1717.0	1583.0	1551.7	1542.9	1541.7
20°	3514.2	3485.4	3238.6	2665.1	2057.7	1623.1	1467.8	1476.6	1522.9	1542.9	1545.4
22.5°	3635.6	3564.3	3168.5	2382.0	1689.5	1387.6	1397.7	1470.3	1537.9	1568.0	1571.7
25°	3759.6	3631.9	3050.8	2050.1	1381.4	1301.2	1378.9	1460.3	1536.7	1575.5	1579.2
27.5°	3809.7	3631.9	2850.4	1665.7	1217.3	1264.9	1350.1	1429.0	1509.1	1554.2	1563.0
30°	3851.1	3600.6	2569.9	1318.8	1149.7	1229.8	1303.7	1376.4	1455.3	1510.4	1520.4
32.5°	3908.7	3573.0	2230.5	1108.4	1118.4	1196.0	1247.4	1308.7	1380.1	1416.4	1412.7
35°	3976.3	3530.4	1821.0	1008.2	1092.1	1167.2	1203.5	1239.9	1207.3	1206.0	1209.8
37.5°	4072.7	3492.9	1464.0	963.1	1074.5	1147.2	1177.2	1099.6	1054.5	1035.7	1028.2
40°	4211.7	3477.8	1154.7	936.8	1072.0	1145.9	1124.6	1004.4	943.0	877.9	876.7
42.5°	4387.1	3466.6	954.3	924.3	1080.8	1174.7	1052.0	941.8	815.3	786.5	784.0
45°	4612.5	3449.0	854.1	921.7	1102.1	1197.3	1044.5	855.4	769.0	756.4	756.4
47.5°	4884.3	3421.5	809.0	921.7	1125.9	1187.3	1021.9	836.6	747.7	761.4	770.2
50°	5196.1	3386.4	785.2	919.2	1149.7	1187.3	974.3	832.8	742.7	814.0	842.8
52.5°	5529.2	3346.3	769.0	909.2	1166.0	1188.5	976.9	845.4	747.7	826.6	850.4
55°	5897.4	3340.1	746.4	887.9	1171.0	1155.9	983.1	872.9	755.2	748.9	750.2
57.5°	6362.1	3415.2	730.1	856.6	1150.9	1089.6	995.6	892.9	746.4	747.7	756.4
60°	6848.0	3556.7	743.9	826.6	1109.6	1026.9	1004.4	882.9	703.8	683.8	686.3
62.5°	7261.3	3664.5	755.2	812.8	1049.5	971.8	995.6	860.4	680.0	675.0	686.3
65°	7434.1	3575.5	727.6	784.0	961.8	904.2	976.9	831.6	660.0	641.2	642.5
67.5°	7242.5	3158.5	673.8	720.1	862.9	817.8	946.8	794.0	632.4	609.9	604.9
70°	6186.7	2320.7	581.1	618.7	742.7	716.4	900.5	745.2	588.6	572.3	561.1
72.5°	4985.7	1643.1	482.2	492.2	582.4	603.6	820.3	683.8	538.5	492.2	475.9
75°	3470.3	1032.0	402.0	392.0	420.8	460.9	640.0	567.3	464.6	415.8	400.8
77.5°	1492.8	529.8	314.3	309.3	280.5	319.4	490.9	473.4	389.5	333.1	324.4
80°	499.7	306.8	226.7	217.9	186.6	224.2	345.7	378.2	305.6	246.7	231.7
82.5°	250.5	177.8	144.0	130.2	125.2	141.5	204.1	235.4	211.7	170.3	144.0
85°	122.7	101.4	78.9	77.6	65.1	61.4	85.2	100.2	95.2	70.1	66.4
87.5°	45.1	40.1	25.0	20.0	12.5	8.8	5.0	5.0	3.8	3.8	3.8
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**

$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	Lumens ( $\phi/nm$ )	$\lambda$ (nm)	Power $W^{\wedge}/nm$	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**

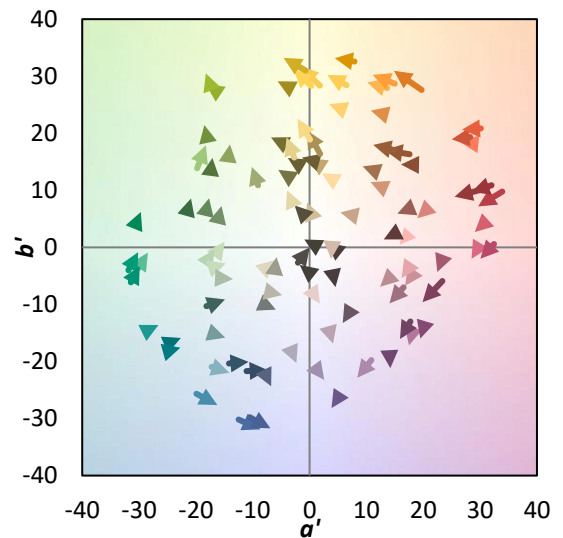
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	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)