

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: P635998

Luminaire Tested: GWS-SA3E-830-U-SL3-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P635998  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-32)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3E-830-U-SL3-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

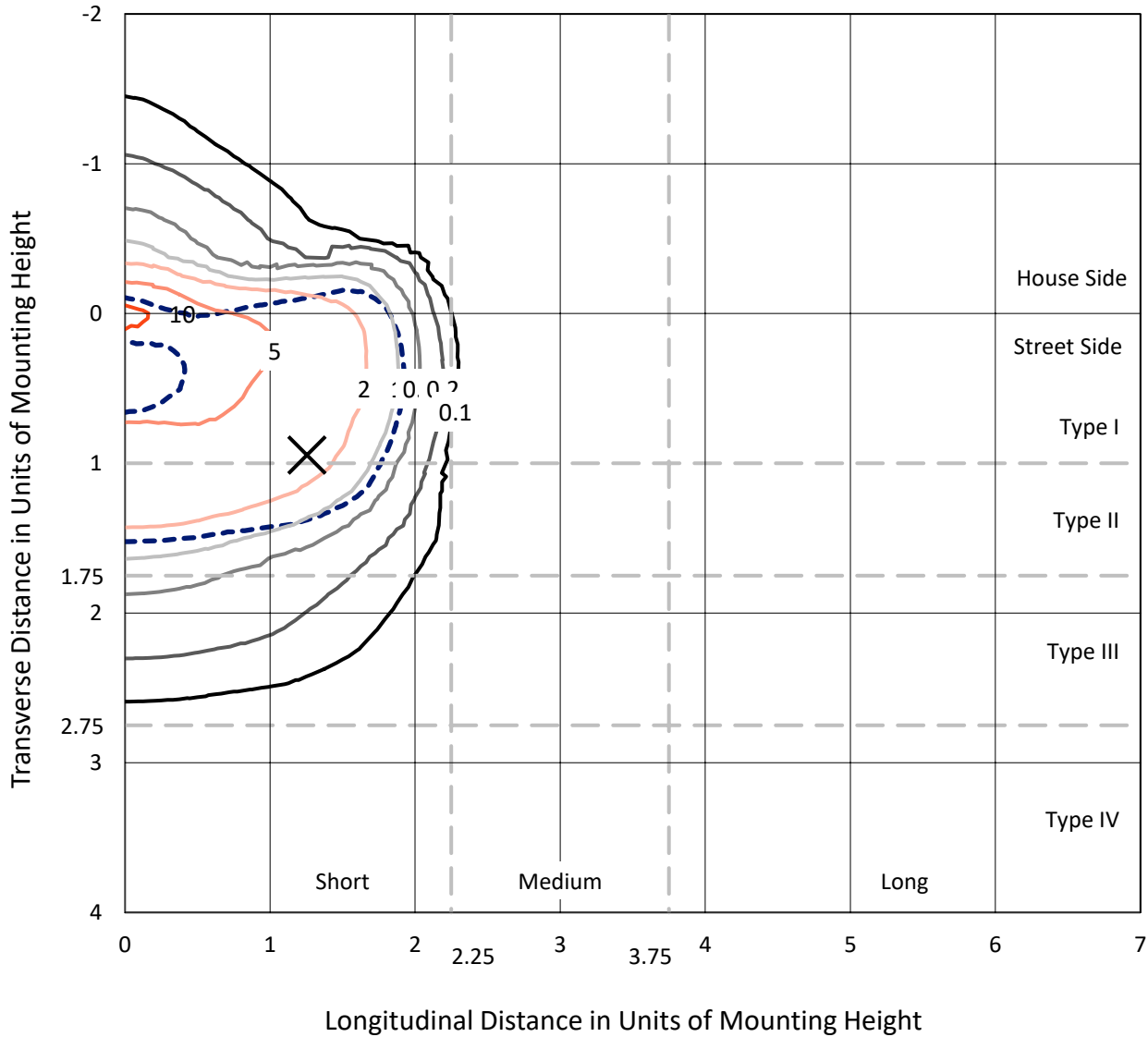
Lumens per Lamp: N/A  
Luminaire Lumens: 10218 lumens  
Efficiency: N/A  
Efficacy: 64.2 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P635998  
 CATALOG NUMBER: GWS-SA3E-830-U-SL3-W-GRSBK

### Iso-Footcandle Lines of Horizontal Illumination

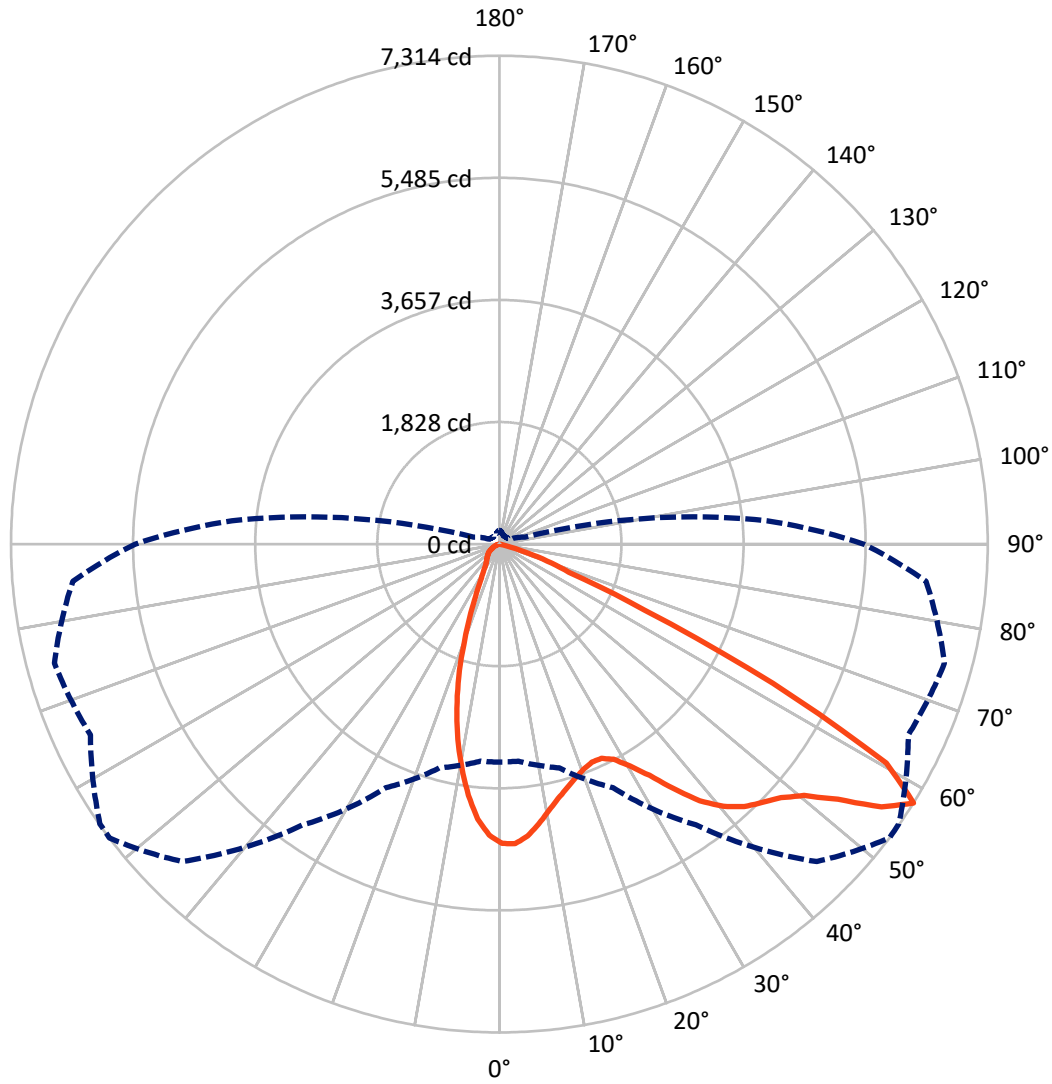
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.2 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 53-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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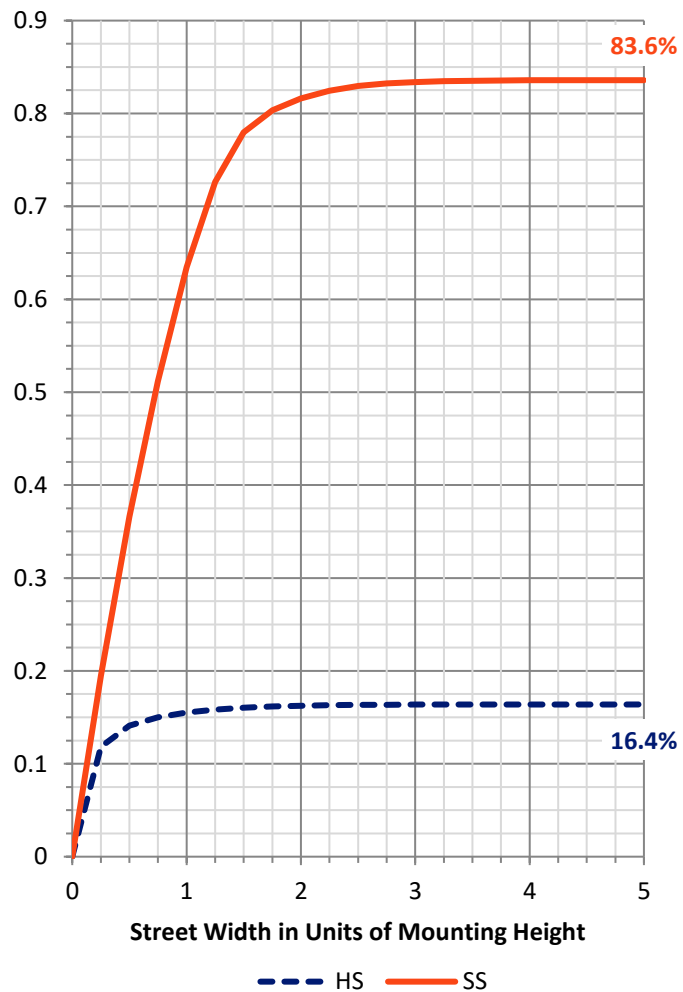
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1687.9	0.0	1687.9
	% Fixture	16.5	0.0	16.5
<b>Street Side</b>	Lumens	8530.1	0.0	8530.1
	% Fixture	83.5	0.0	83.5
<b>Total</b>	Lumens	10218.0	0.0	10218.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	383.5	3.8
10°-20°	841.9	8.2
20°-30°	1096.8	10.7
30°-40°	1590.9	15.6
40°-50°	2295.5	22.5
50°-60°	2776.2	27.2
60°-70°	1131.5	11.1
70°-80°	101.7	1.0
80°-90°	0.0	0.0
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°	10218.0	100.0
0°-180°	10218.0	100.0

**Coefficient of Utilization**

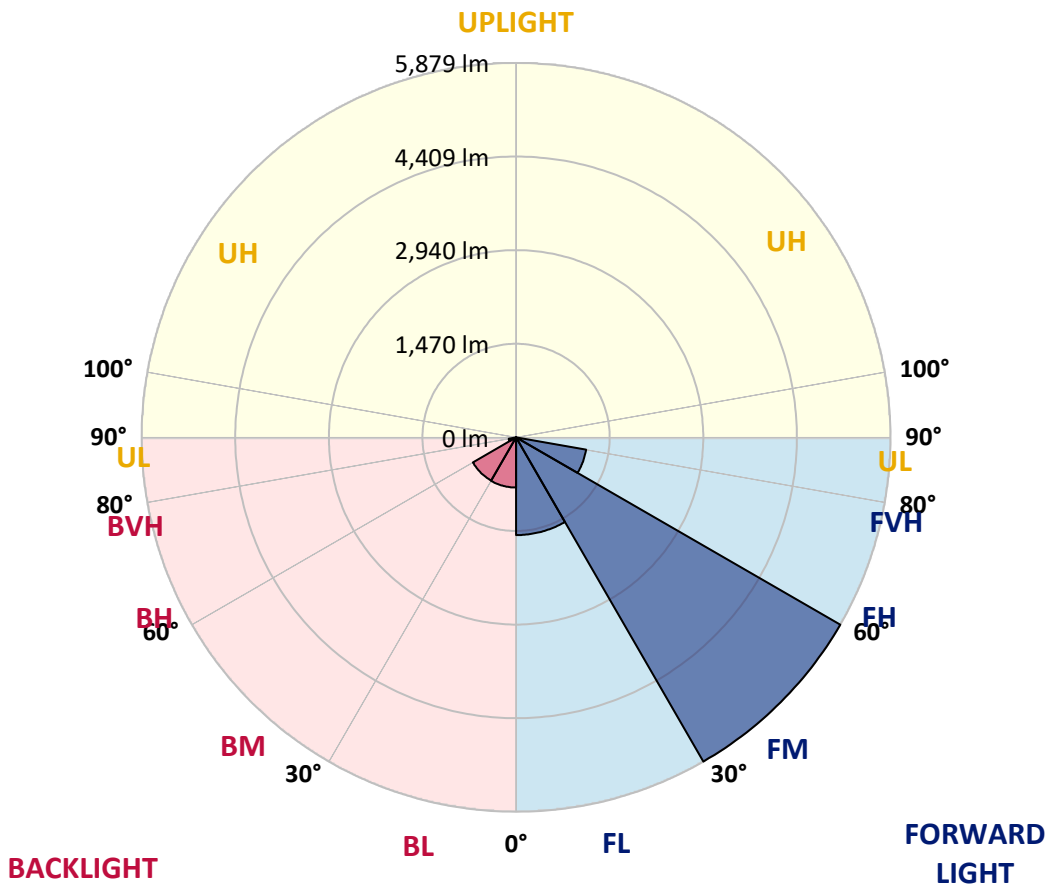


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1534.4	15.0			
FM (30°-60°)	5879.2	57.5			
FH (60°-80°)	1116.5	10.9			G1/1800
FVH (80°-90°)	0.0	0.0			G0/10
BL (0°-30°)	787.8	7.7	B2/1000		
BM (30°-60°)	783.4	7.7	B1/1000		
BH (60°-80°)	116.7	1.1	B1/500		G1/500
BVH (80°-90°)	0.0	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G1**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	53°	55°	65°	75°	85°
0°	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2
2.5°	4419.6	4429.6	4447.1	4469.7	4484.7	4492.2	4492.2	4513.5	4499.7	4488.5	4475.9
5°	4230.5	4240.5	4264.3	4300.6	4336.9	4363.2	4393.3	4415.8	4424.6	4424.6	4403.3
7.5°	3963.7	3977.5	3992.5	4042.6	4121.5	4180.4	4231.7	4264.3	4311.9	4326.9	4296.8
10°	3676.9	3690.7	3724.5	3793.4	3883.6	3971.2	4058.9	4100.2	4181.6	4224.2	4190.4
12.5°	3434.0	3440.2	3485.3	3568.0	3683.2	3803.4	3909.9	3952.4	4067.7	4131.5	4091.5
15°	3233.6	3237.4	3282.4	3373.9	3506.6	3654.4	3788.4	3832.2	3973.7	4070.2	4010.1
17.5°	3082.1	3083.3	3122.1	3221.1	3360.1	3524.1	3683.2	3737.0	3919.9	4036.4	3946.2
20°	3005.7	3001.9	3029.5	3115.9	3247.4	3411.4	3599.3	3665.7	3889.8	4031.3	3897.3
22.5°	3006.9	2998.2	3009.4	3070.8	3182.2	3336.3	3546.7	3621.8	3892.3	4052.6	3856.0
25°	3078.3	3065.8	3068.3	3100.8	3179.7	3320.0	3554.2	3634.3	3942.4	4124.0	3841.0
27.5°	3198.5	3184.8	3184.8	3201.0	3243.6	3371.4	3648.1	3739.5	4076.4	4263.0	3872.3
30°	3353.8	3340.0	3335.0	3351.3	3386.4	3504.1	3857.3	3952.4	4305.6	4491.0	3972.5
32.5°	3531.7	3515.4	3524.1	3546.7	3580.5	3743.3	4126.5	4253.0	4592.4	4797.8	4152.8
35°	3719.5	3705.7	3745.8	3794.7	3847.3	4075.2	4498.5	4608.7	4944.3	5179.8	4428.3
37.5°	3898.6	3892.3	3976.2	4078.9	4187.9	4473.4	4876.7	4961.9	5246.1	5595.5	4765.2
40°	4077.7	4076.4	4220.5	4400.8	4574.9	4870.4	5163.5	5233.6	5430.2	5918.7	5088.3
42.5°	4278.1	4278.1	4477.2	4717.6	4949.3	5206.1	5373.9	5405.2	5512.9	6105.3	5331.3
45°	4469.7	4480.9	4711.4	4990.7	5264.9	5467.8	5519.2	5521.7	5546.7	6215.5	5532.9
47.5°	4621.2	4631.2	4906.7	5228.6	5524.2	5666.9	5674.4	5663.2	5635.6	6320.7	5688.2
50°	4743.9	4759.0	5047.0	5387.7	5702.0	5858.5	5916.1	5904.9	5834.7	6433.4	5797.2
52.5°	4804.1	4825.3	5095.9	5466.6	5899.9	6186.7	6347.0	6373.3	6132.8	6496.0	5901.1
55°	4323.1	4354.5	4603.7	5110.9	6010.1	6693.9	6945.6	6940.6	6455.9	6682.6	6154.1
57.5°	3264.9	3262.4	3469.0	4023.8	5133.4	6722.7	7313.8	7303.8	6757.7	6899.3	6413.3
60°	2222.9	2207.9	2263.0	2531.0	3589.3	5476.6	6656.3	6791.5	6543.6	6373.3	5445.3
62.5°	1829.7	1815.9	1798.4	1724.5	2061.4	3411.4	4598.7	4804.1	4771.5	4429.6	3415.2
65°	1497.8	1509.1	1557.9	1526.6	1434.0	1749.5	2387.0	2508.5	2293.1	1929.9	1193.5
67.5°	1104.6	1109.6	1173.5	1338.8	1288.7	1164.7	1123.4	1143.4	670.0	308.1	199.1
70°	652.5	656.2	715.1	936.8	1045.7	894.2	758.9	747.7	265.5	82.7	90.2
72.5°	369.4	361.9	373.2	445.8	569.8	474.6	390.7	355.7	80.2	46.3	46.3
75°	175.3	170.3	146.5	137.8	125.2	80.2	50.1	42.6	20.0	18.8	18.8
77.5°	1.3	3.8	2.5	3.8	3.8	2.5	1.3	1.3	3.8	3.8	5.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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



REPORT NUMBER: P635998

CATALOG NUMBER: GWS-SA3E-830-U-SL3-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2	4482.2
2.5°	4453.4	4415.8	4407.1	4404.6	4369.5	4331.9	4293.1	4278.1	4255.5	4241.7	4253.0
5°	4369.5	4315.6	4268.0	4224.2	4146.6	4061.4	3987.5	3939.9	3894.8	3864.8	3872.3
7.5°	4250.5	4180.4	4071.4	3960.0	3817.2	3689.5	3546.7	3459.0	3377.6	3332.5	3353.8
10°	4124.0	4031.3	3857.3	3668.2	3444.0	3243.6	3039.5	2872.9	2776.5	2685.1	2695.1
12.5°	4000.0	3877.3	3616.8	3330.0	3047.0	2751.4	2443.4	2212.9	2055.1	1941.2	1923.6
15°	3884.8	3727.0	3382.6	3004.4	2618.7	2225.4	1832.2	1502.8	1320.0	1207.3	1199.8
17.5°	3782.1	3586.8	3139.7	2663.8	2180.4	1676.9	1224.8	978.1	872.9	824.1	819.0
20°	3683.2	3445.2	2891.7	2318.1	1702.0	1177.2	845.3	731.4	697.6	677.5	680.0
22.5°	3588.0	3291.2	2631.2	1934.9	1276.2	826.6	655.0	611.2	607.4	609.9	611.2
25°	3507.9	3149.7	2363.2	1565.5	910.5	629.9	547.3	534.8	546.0	562.3	564.8
27.5°	3466.5	3034.5	2101.5	1193.5	658.7	512.2	474.6	479.7	499.7	517.2	519.7
30°	3477.8	2948.1	1831.0	865.4	507.2	432.1	419.5	429.6	449.6	465.9	468.4
32.5°	3558.0	2904.2	1554.2	629.9	417.0	377.0	372.0	379.5	397.0	409.5	410.8
35°	3717.0	2914.2	1291.2	482.2	358.2	335.6	334.4	339.4	348.2	356.9	358.2
37.5°	3951.2	2995.6	1031.9	400.8	324.4	308.1	303.1	303.1	309.3	313.1	315.6
40°	4202.9	3118.4	826.6	354.4	300.6	283.0	273.0	269.3	274.3	279.3	280.5
42.5°	4410.8	3241.1	671.3	321.9	281.8	258.0	245.5	243.0	249.2	258.0	260.5
45°	4569.9	3336.3	559.8	295.6	260.5	234.2	220.4	220.4	231.7	246.7	249.2
47.5°	4715.1	3412.7	477.1	271.8	240.5	212.9	199.1	201.6	220.4	240.5	244.2
50°	4814.1	3474.0	415.8	250.5	224.2	195.4	182.8	187.9	210.4	234.2	237.9
52.5°	4920.5	3549.2	375.7	231.7	209.1	181.6	170.3	174.1	199.1	225.4	230.4
55°	5214.8	3800.9	374.5	206.6	182.8	162.8	157.8	159.0	184.1	214.2	220.4
57.5°	5455.3	4022.6	399.5	174.1	152.8	142.8	140.3	141.5	164.1	197.9	205.4
60°	4513.5	3125.9	330.6	144.0	127.7	125.2	121.5	124.0	145.3	175.3	181.6
62.5°	2671.3	1787.1	157.8	110.2	109.0	106.5	102.7	107.7	127.7	154.0	157.8
65°	913.0	529.7	100.2	90.2	92.7	88.9	85.2	90.2	107.7	122.7	124.0
67.5°	175.3	140.3	80.2	75.1	76.4	68.9	67.6	72.6	82.7	85.2	83.9
70°	91.4	81.4	61.4	61.4	58.9	48.8	48.8	53.9	53.9	50.1	48.8
72.5°	47.6	45.1	40.1	45.1	37.6	30.1	30.1	32.6	30.1	25.0	25.0
75°	18.8	18.8	17.5	22.5	16.3	13.8	12.5	15.0	11.3	8.8	8.8
77.5°	5.0	5.0	5.0	6.3	3.8	3.8	2.5	2.5	1.3	0.0	0.0
80°	0.0	1.3	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

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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**

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)