

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: P640962

Luminaire Tested: GWS-SA5E-830-U-T1-W

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P640962  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-10)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5E-830-U-T1-W  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE I OPTICS  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

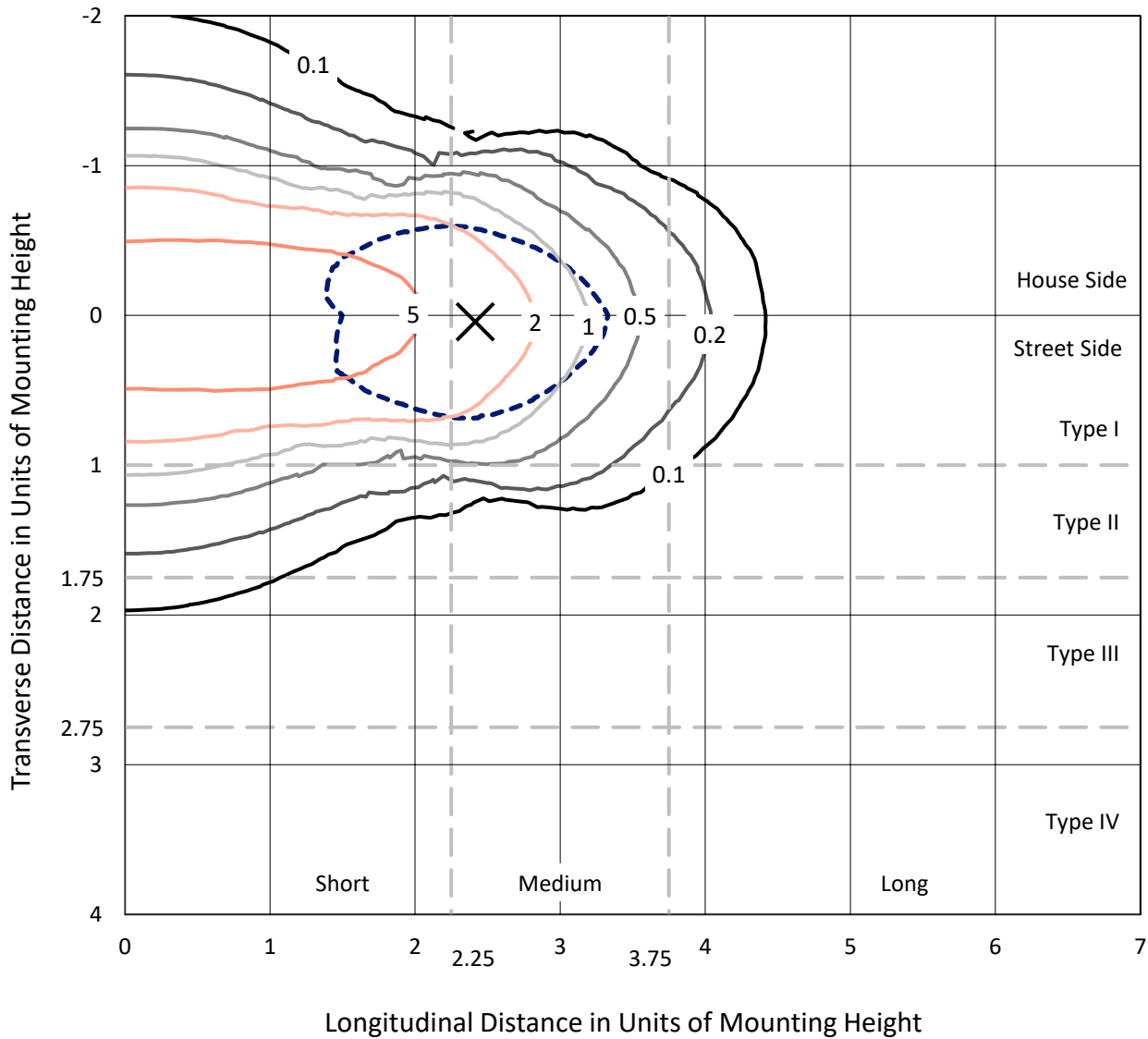
Lumens per Lamp: N/A  
Luminaire Lumens: 29767.3 lumens  
Efficiency: N/A  
Efficacy: 110.4 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type I - Medium  
BUG Rating: B4 - U0 - G4  
  
Input Watts (W): 269.6  
Input Voltage (V): 120  
Input Current (Ain): 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: P640962  
 CATALOG NUMBER: GWS-SA5E-830-U-T1-W

### Iso-Footcandle Lines of Horizontal Illumination

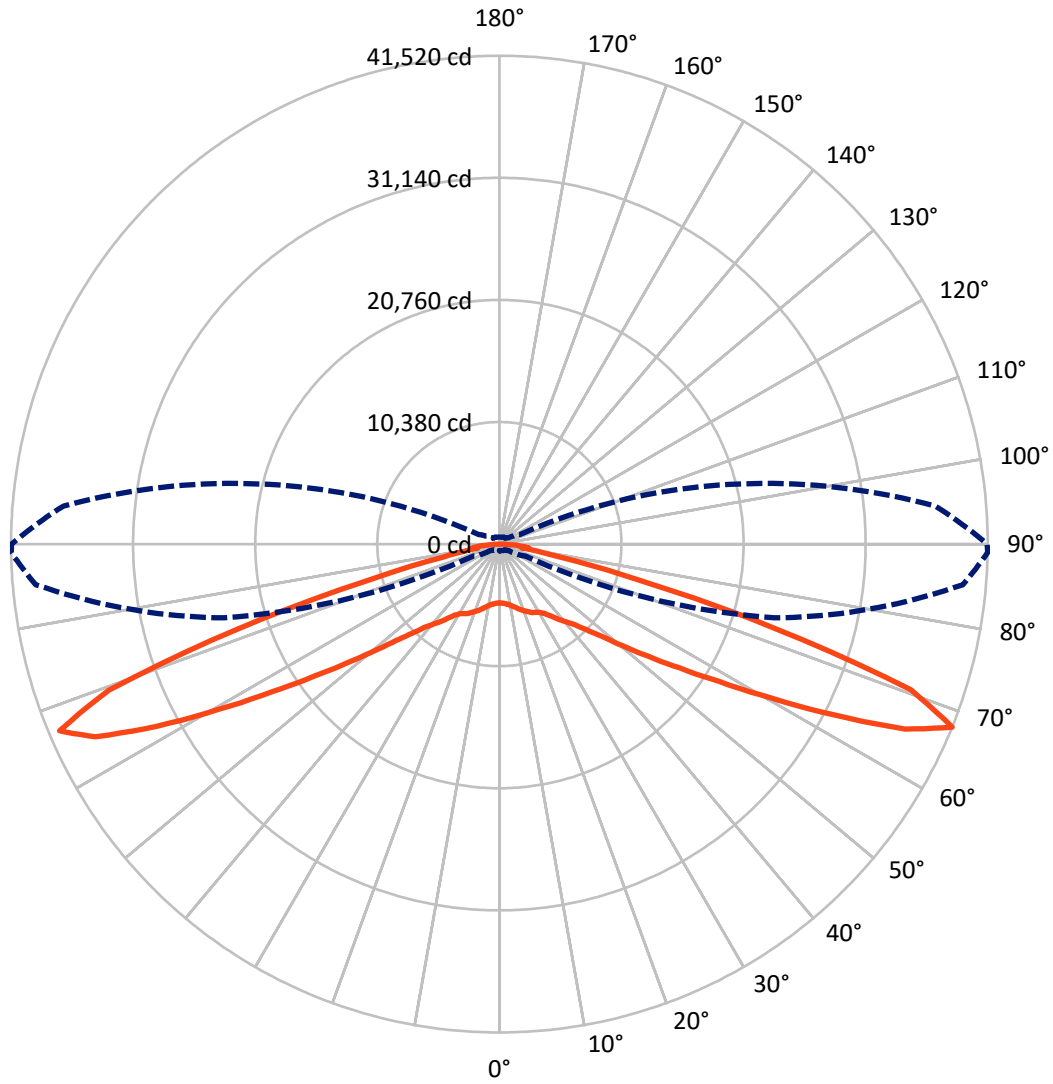
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.7 fc  
 Type I - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 89-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	14753.2	0.0	14753.2
	% Fixture	49.6	0.0	49.6
<b>Street Side</b>	Lumens	15014.1	0.0	15014.1
	% Fixture	50.4	0.0	50.4
<b>Total</b>	Lumens	29767.3	0.0	29767.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	501.2	1.7
10°-20°	1631.8	5.5
20°-30°	2758.6	9.3
30°-40°	3785.8	12.7
40°-50°	4827.7	16.2
50°-60°	6057.1	20.3
60°-70°	7305.3	24.5
70°-80°	2642.9	8.9
80°-90°	257.0	0.9
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°	29767.3	100.0
0°-180°	29767.3	100.0

**Coefficient of Utilization**



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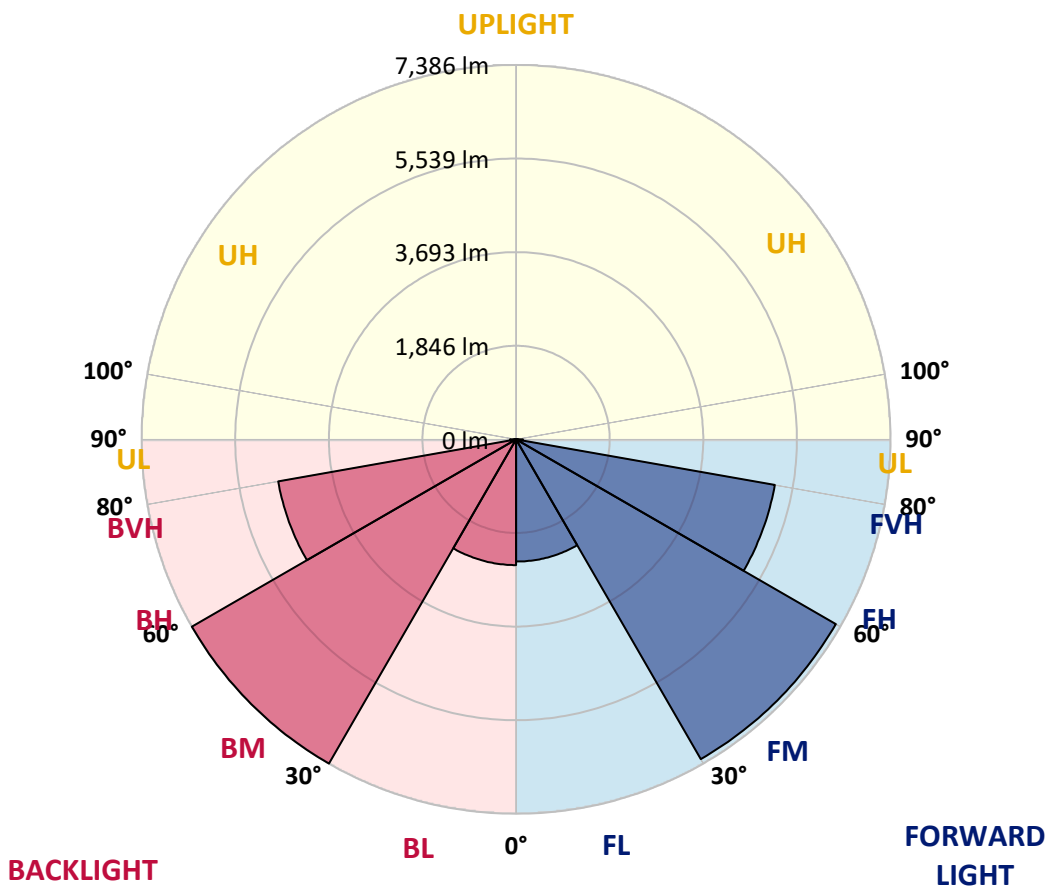
CATALOG NUMBER: GWS-SA5E-830-U-T1-W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2410.9	8.1			
FM (30°-60°)	7284.6	24.5			
FH (60°-80°)	5182.9	17.4			G3/7500
FVH (80°-90°)	135.6	0.5			G2/225
BL (0°-30°)	2480.6	8.3	B3/2500		
BM (30°-60°)	7385.9	24.8	B4/8500		
BH (60°-80°)	4765.3	16.0	B4/5000		G4/5000
BVH (80°-90°)	121.4	0.4			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B4-U0-G4**

Type I Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	89°
0°	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2
2.5°	5011.2	5006.9	4996.2	5028.3	5021.9	5024.0	5036.8	5028.3	5013.3	4987.7	5024.0
5°	5152.3	5150.1	5126.6	5145.9	5124.5	5109.5	5107.4	5086.0	5068.9	5041.1	5079.6
7.5°	5289.1	5287.0	5267.7	5301.9	5284.8	5267.7	5248.5	5205.7	5165.1	5124.5	5167.2
10°	5393.8	5391.7	5387.4	5436.6	5440.9	5447.3	5438.7	5366.1	5295.5	5246.3	5289.1
12.5°	5453.7	5460.1	5470.8	5560.6	5605.5	5648.3	5658.9	5599.1	5481.5	5410.9	5462.3
15°	5413.1	5425.9	5479.4	5641.8	5765.8	5862.0	5902.7	5853.5	5701.7	5584.1	5641.8
17.5°	5218.5	5229.2	5334.0	5582.0	5855.6	6078.0	6144.2	6114.3	5945.4	5802.2	5857.8
20°	4949.2	4972.7	5086.0	5432.3	5840.7	6227.6	6405.1	6394.4	6210.5	5990.3	6056.6
22.5°	4705.5	4733.2	4853.0	5235.6	5740.2	6266.1	6668.0	6695.8	6452.1	6178.4	6231.9
25°	4431.8	4457.5	4611.4	5002.6	5567.0	6236.2	6892.5	7018.6	6725.7	6394.4	6443.5
27.5°	4151.7	4171.0	4322.8	4739.7	5340.4	6180.6	7069.9	7373.5	6995.1	6544.0	6578.2
30°	3905.9	3931.5	4070.5	4476.7	5092.4	6069.4	7215.3	7751.9	7305.1	6712.9	6740.7
32.5°	3668.6	3690.0	3841.8	4218.0	4829.4	5898.4	7345.7	8196.6	7764.7	7027.2	7027.2
35°	3369.3	3407.8	3578.8	3970.0	4581.5	5671.8	7439.8	8714.0	8393.3	7491.1	7493.2
37.5°	3093.5	3114.9	3294.5	3690.0	4320.6	5415.2	7448.3	9250.6	9188.6	8081.1	8085.4
40°	2779.2	2807.0	2999.4	3390.7	4021.3	5145.9	7367.1	9750.8	10022.3	8688.3	8664.8
42.5°	2460.7	2501.3	2685.2	3067.8	3698.5	4816.6	7151.2	10227.6	11080.6	9391.7	9333.9
45°	2152.8	2178.5	2362.3	2723.6	3328.7	4423.3	6804.8	10685.1	12337.6	10460.6	10377.2
47.5°	1806.5	1817.2	2007.5	2353.8	2946.0	3985.0	6308.9	11093.4	13718.7	11875.9	11732.6
50°	1498.6	1513.6	1663.3	1960.4	2477.8	3465.5	5691.0	11332.8	15478.2	13806.4	13558.4
52.5°	1212.2	1227.1	1346.9	1584.2	2048.1	2873.3	4925.7	11277.3	17263.3	16202.9	15841.6
55°	979.1	989.8	1071.1	1257.1	1612.0	2285.4	4021.3	10779.1	19245.1	19332.8	18554.6
57.5°	827.4	831.6	887.2	1000.5	1259.2	1761.6	3104.2	9603.3	21323.1	23326.3	22047.9
60°	739.7	741.8	767.5	838.0	994.1	1344.7	2274.7	7730.5	23475.9	28322.5	26569.4
62.5°	684.1	684.1	705.5	746.1	825.2	1034.7	1671.8	5552.0	25021.6	33759.1	32016.7
65°	630.7	630.7	645.6	679.8	722.6	844.5	1254.9	3580.9	25780.6	38304.2	37917.3
67.5°	562.3	564.4	575.1	611.4	649.9	705.5	951.4	2422.2	24205.0	39561.3	41519.6
70°	498.1	500.3	515.2	538.7	570.8	609.3	744.0	1669.7	17618.2	32948.8	37124.1
72.5°	427.6	436.1	446.8	472.5	491.7	519.5	607.2	1081.8	10251.1	21194.8	24540.6
75°	350.6	361.3	374.1	399.8	412.6	423.3	500.3	771.8	4932.1	10740.7	12230.8
77.5°	271.5	282.2	297.2	320.7	329.2	342.1	382.7	558.0	2362.3	4761.0	5133.0
80°	181.7	186.0	198.8	226.6	241.6	250.1	282.2	380.5	1026.2	1911.3	1894.2
82.5°	111.2	113.3	117.6	134.7	141.1	149.7	183.9	233.0	489.6	2172.1	2490.6
85°	40.6	38.5	36.3	47.0	55.6	64.1	85.5	117.6	213.8	1492.2	1669.7
87.5°	0.0	0.0	0.0	2.1	4.3	4.3	8.6	17.1	51.3	558.0	382.7
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: P640962  
 CATALOG NUMBER: GWS-SA5E-830-U-T1-W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2	4996.2
2.5°	5013.3	4989.8	5019.7	5041.1	5088.1	5105.2	5109.5	5094.5	5094.5	5068.9	5073.2
5°	5071.0	5056.1	5105.2	5141.6	5210.0	5235.6	5252.7	5242.1	5248.5	5231.4	5235.6
7.5°	5158.7	5145.9	5231.4	5301.9	5372.5	5402.4	5417.4	5408.8	5410.9	5389.6	5396.0
10°	5280.5	5284.8	5387.4	5479.4	5573.4	5603.4	5609.8	5584.1	5562.7	5524.3	5526.4
12.5°	5447.3	5468.7	5614.0	5716.7	5812.9	5855.6	5808.6	5714.5	5626.9	5560.6	5552.0
15°	5629.0	5667.5	5877.0	6007.4	6112.2	6090.8	5951.8	5740.2	5567.0	5468.7	5449.4
17.5°	5847.1	5904.8	6167.8	6323.8	6413.6	6276.8	5986.0	5669.6	5428.1	5295.5	5269.8
20°	6052.3	6144.2	6475.6	6678.7	6689.4	6381.5	5971.1	5526.4	5222.8	5060.3	5026.1
22.5°	6240.4	6358.0	6798.4	7057.1	6918.1	6428.6	5879.1	5323.3	4974.8	4784.6	4754.6
25°	6445.7	6612.4	7174.7	7416.3	7146.9	6409.3	5686.7	5071.0	4675.5	4481.0	4459.6
27.5°	6586.8	6796.3	7553.1	7784.0	7335.0	6300.3	5438.7	4795.2	4401.9	4218.0	4188.1
30°	6749.3	7016.5	7970.0	8183.8	7450.5	6140.0	5173.6	4538.7	4147.5	3948.6	3927.3
32.5°	7044.3	7379.9	8487.3	8607.1	7486.8	5941.1	4919.2	4290.7	3882.4	3683.5	3653.6
35°	7518.9	7912.3	9214.2	9079.5	7459.0	5723.1	4677.7	4000.0	3610.9	3424.9	3394.9
37.5°	8117.5	8607.1	10024.5	9505.0	7382.1	5483.6	4391.2	3756.2	3367.1	3179.0	3161.9
40°	8675.5	9278.4	10933.1	9872.7	7226.0	5188.6	4115.4	3501.8	3104.2	2905.4	2866.9
42.5°	9374.6	10176.3	11984.9	10191.2	6969.5	4835.9	3805.4	3187.6	2775.0	2595.4	2548.3
45°	10437.1	11433.3	13207.8	10496.9	6586.8	4401.9	3416.3	2804.9	2413.7	2229.8	2193.5
47.5°	11762.6	13004.7	14533.2	10678.7	6005.3	3944.4	2975.9	2400.8	2009.6	1802.2	1785.1
50°	13624.6	15290.0	15954.9	10646.6	5355.4	3401.4	2479.9	1919.8	1592.7	1443.1	1419.5
52.5°	15892.9	18159.1	17492.0	10261.8	4664.8	2783.5	1932.6	1507.2	1263.5	1156.6	1137.3
55°	18738.4	21594.6	19110.4	9436.6	3792.6	2131.5	1517.9	1188.7	1021.9	957.8	949.2
57.5°	22261.6	26043.5	20668.9	8046.9	2851.9	1626.9	1169.4	981.3	902.2	863.7	861.6
60°	26911.5	30766.1	22022.2	6253.3	2041.7	1244.2	966.3	876.5	814.5	788.9	786.7
62.5°	32440.0	35054.6	22864.5	4258.6	1535.0	992.0	850.9	795.3	758.9	744.0	741.8
65°	38122.5	37765.5	22462.6	2789.9	1165.1	842.3	763.2	733.3	701.2	686.3	686.3
67.5°	41478.9	37192.5	19377.7	1936.9	923.6	739.7	688.4	660.6	607.2	594.3	594.3
70°	36739.3	30137.5	12701.1	1417.4	748.3	647.8	598.6	560.1	538.7	525.9	523.8
72.5°	24299.0	19610.7	6753.5	983.4	624.3	551.6	506.7	491.7	466.1	453.2	451.1
75°	12093.9	10300.3	3461.2	709.8	519.5	442.5	423.3	416.9	395.5	378.4	374.1
77.5°	5041.1	4585.7	1614.1	515.2	395.5	357.0	339.9	339.9	316.4	297.2	288.6
80°	1900.6	1693.2	763.2	352.7	292.9	265.1	254.4	245.9	226.6	203.1	190.3
82.5°	2541.9	1661.1	374.1	220.2	192.4	171.0	156.1	149.7	139.0	128.3	119.7
85°	1646.2	1180.1	168.9	113.3	96.2	72.7	64.1	59.9	53.4	47.0	42.8
87.5°	335.6	395.5	51.3	21.4	12.8	6.4	6.4	2.1	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**

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 81.0$   
 $R_9 = 7.1$



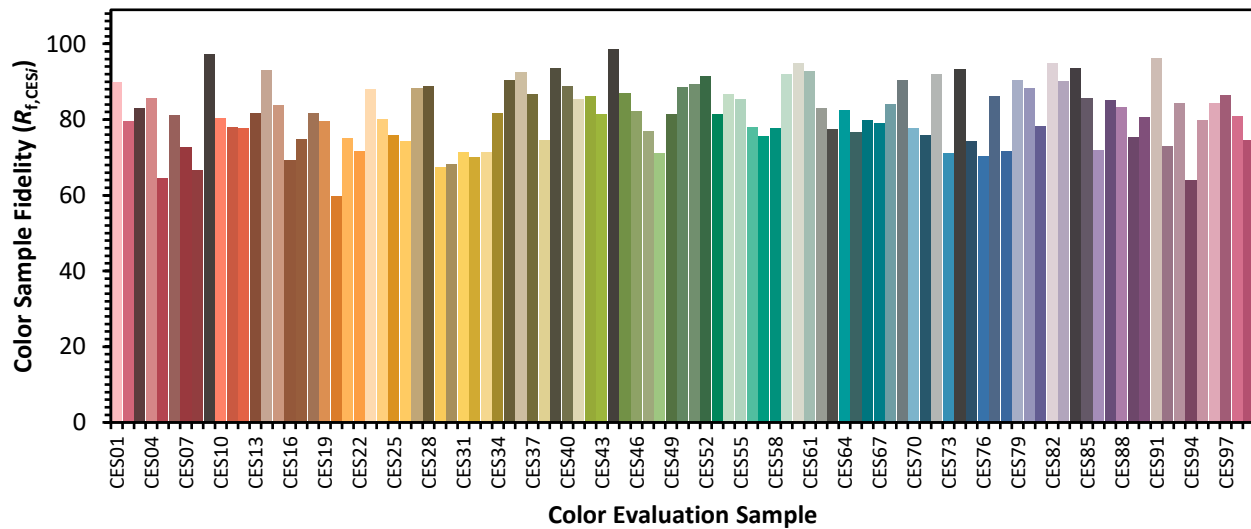
**Color Vector Graphics**





**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)