

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: P636019

Luminaire Tested: GWS-SA3E-830-U-T2R-W-HSS

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P636019  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA3E-830-U-T2R-W-HSS  
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (48) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

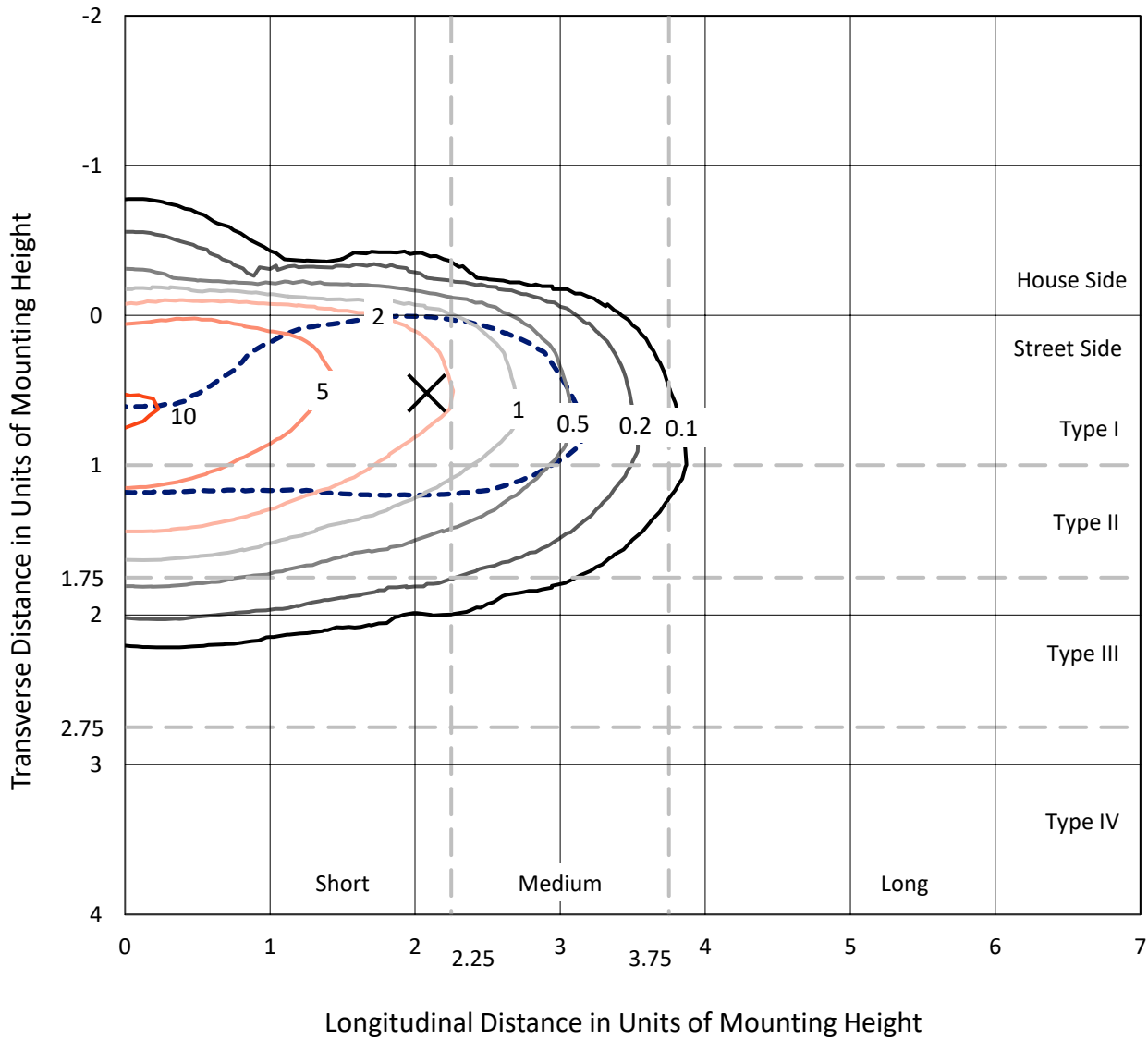
Lumens per Lamp: N/A  
Luminaire Lumens: 14089.1 lumens  
Efficiency: N/A  
Efficacy: 88.5 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 159.2  
Input Voltage (V): 120  
Input Current (Ain): 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: P636019  
 CATALOG NUMBER: GWS-SA3E-830-U-T2R-W-HSS

### Iso-Footcandle Lines of Horizontal Illumination

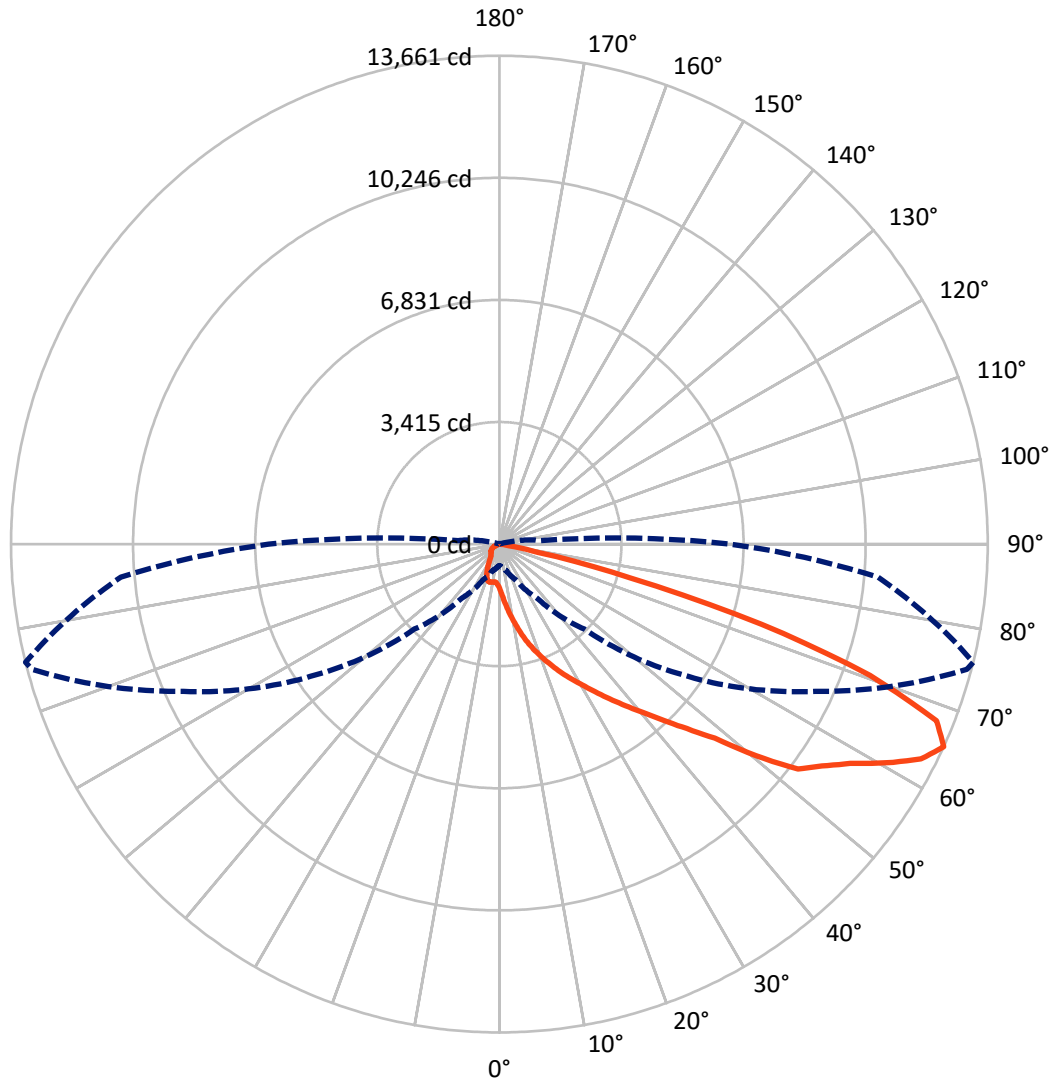
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 10.6 fc  
 Type II - Short - N/A

REPORT NUMBER: P636019  
CATALOG NUMBER: GWS-SA3E-830-U-T2R-W-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral    - - - Horizontal Cone Through 65-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	779.1	0.0	779.1
	% Fixture	5.5	0.0	5.5
<b>Street Side</b>	Lumens	13310.1	0.0	13310.1
	% Fixture	94.5	0.0	94.5
<b>Total</b>	Lumens	14089.1	0.0	14089.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.7	1.1
10°-20°	575.8	4.1
20°-30°	1174.8	8.3
30°-40°	2089.4	14.8
40°-50°	3088.6	21.9
50°-60°	3536.2	25.1
60°-70°	2697.9	19.1
70°-80°	755.7	5.4
80°-90°	19.0	0.1
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°	14089.1	100.0
0°-180°	14089.1	100.0

**Coefficient of Utilization**



REPORT NUMBER: P636019

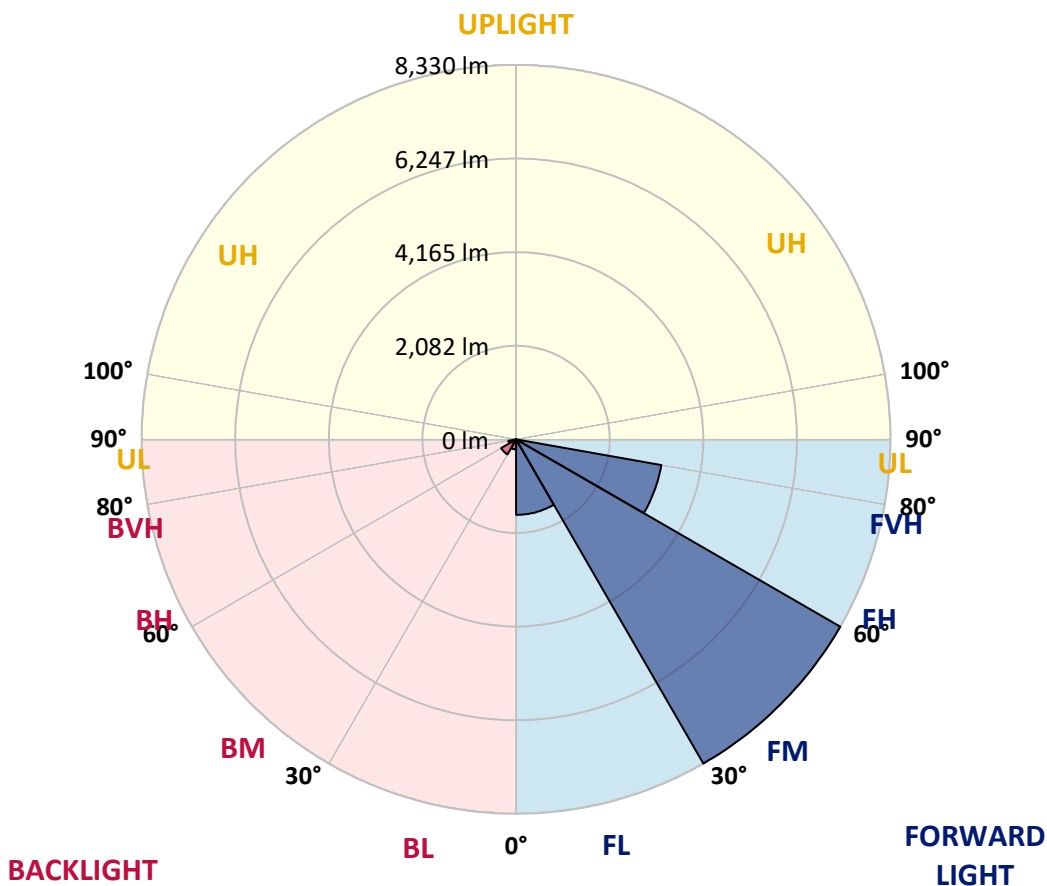
CATALOG NUMBER: GWS-SA3E-830-U-T2R-W-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1680.0	11.9			
FM (30°-60°)	8329.7	59.1			
FH (60°-80°)	3282.4	23.3			G2/5000
FVH (80°-90°)	17.9	0.1			G1/100
BL (0°-30°)	222.3	1.6	B1/500		
BM (30°-60°)	384.4	2.7	B1/1000		
BH (60°-80°)	171.3	1.2	B1/500		G1/500
BVH (80°-90°)	1.1	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**

Type II Short





REPORT NUMBER: P636019

CATALOG NUMBER: GWS-SA3E-830-U-T2R-W-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4
2.5°	1922.4	1951.3	1928.7	1891.1	1818.5	1748.4	1658.2	1534.2	1435.3	1422.7	1330.1
5°	2596.2	2593.7	2544.9	2496.1	2419.7	2299.4	2117.8	1887.4	1665.7	1646.9	1439.0
7.5°	2997.0	3000.8	2973.2	2935.6	2860.5	2736.5	2547.4	2269.4	1945.0	1907.4	1588.1
10°	3333.9	3332.7	3312.6	3295.1	3227.5	3144.8	2941.9	2636.3	2245.6	2186.7	1754.6
12.5°	3586.9	3595.7	3605.7	3623.2	3594.4	3513.0	3321.4	2988.2	2549.9	2484.8	1945.0
15°	3787.3	3789.8	3827.4	3895.0	3918.8	3876.2	3702.1	3328.9	2850.5	2794.1	2164.2
17.5°	3847.4	3852.4	3916.3	4040.3	4165.5	4189.3	4057.8	3672.1	3146.1	3085.9	2377.1
20°	3973.9	3985.2	4032.8	4141.7	4299.5	4427.3	4375.9	4019.0	3441.6	3362.7	2595.0
22.5°	4372.2	4378.4	4362.1	4375.9	4457.3	4605.1	4636.4	4354.6	3744.7	3660.8	2830.4
25°	5057.2	5059.7	4945.8	4838.1	4776.7	4804.2	4873.1	4664.0	4045.3	3962.6	3049.6
27.5°	5768.6	5777.4	5640.8	5458.0	5238.8	5113.6	5093.5	4947.0	4348.4	4256.9	3266.3
30°	6438.6	6438.6	6294.6	6071.7	5778.6	5534.4	5390.4	5232.6	4672.7	4572.5	3488.0
32.5°	7041.0	7036.0	6851.9	6610.2	6320.9	6052.9	5749.8	5530.6	5033.4	4922.0	3743.5
35°	7538.2	7525.7	7316.6	7084.9	6775.5	6576.4	6238.2	5851.3	5424.2	5312.7	4006.5
37.5°	7914.0	7900.2	7708.6	7463.1	7176.3	7047.3	6764.3	6235.7	5836.2	5734.8	4298.3
40°	8118.1	8090.6	7957.8	7775.0	7534.5	7421.8	7304.0	6712.9	6320.9	6194.4	4642.7
42.5°	8178.2	8145.7	8058.0	7972.8	7827.6	7738.6	7865.1	7251.4	6853.2	6744.2	5035.9
45°	8000.4	7981.6	7974.1	8035.5	8061.8	8086.8	8398.7	7847.6	7440.6	7357.9	5530.6
47.5°	7572.1	7567.1	7633.4	7888.9	8167.0	8431.2	8978.5	8582.8	8202.0	8113.1	6222.0
50°	6780.5	6831.9	7017.2	7465.6	8021.7	8626.6	9520.8	9602.2	9434.4	9304.1	7123.7
52.5°	5543.2	5642.1	6057.9	6739.2	7538.2	8571.5	9771.3	10418.8	10590.4	10455.1	7769.9
55°	4349.6	4442.3	4813.0	5677.2	6743.0	8151.9	9782.6	10700.6	11075.1	10949.8	8207.0
57.5°	3240.0	3325.1	3662.0	4488.6	5660.9	7326.6	9514.6	10857.1	11649.9	11569.8	8897.1
60°	2117.8	2201.7	2506.1	3228.7	4390.9	6124.3	8854.5	10824.6	12432.7	12425.1	9745.0
62.5°	1174.8	1241.1	1461.6	2025.1	3064.6	4742.9	7817.5	10497.7	13190.4	13238.0	10443.8
65°	601.2	643.7	777.7	1113.4	1854.8	3362.7	6453.7	9748.8	13541.0	13661.3	10627.9
67.5°	393.3	407.0	439.6	578.6	993.2	2115.3	4856.8	8547.7	13047.6	13187.9	10010.5
70°	319.4	330.6	349.4	385.7	512.2	1123.4	3189.9	6826.9	10902.2	10997.4	7971.6
72.5°	234.2	249.2	285.5	309.3	369.5	616.2	1659.4	4481.1	7486.9	7654.7	5009.6
75°	172.8	181.6	211.7	244.2	301.8	389.5	635.0	2355.8	3866.2	3768.5	2104.0
77.5°	103.9	110.2	135.3	156.6	215.4	243.0	221.7	870.4	1176.0	1105.9	508.5
80°	51.3	57.6	88.9	117.7	137.8	97.7	92.7	243.0	261.8	261.8	127.7
82.5°	17.5	22.5	47.6	77.6	67.6	37.6	43.8	62.6	70.1	73.9	37.6
85°	0.0	0.0	11.3	22.5	10.0	5.0	11.3	13.8	17.5	18.8	12.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.8	5.0	5.0
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: P636019

CATALOG NUMBER: GWS-SA3E-830-U-T2R-W-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4	1247.4
2.5°	1280.0	1221.1	1132.2	1052.0	990.7	933.0	889.2	854.1	847.9	827.8	830.3
5°	1337.6	1231.1	1067.1	940.6	851.6	791.5	741.4	703.9	687.6	671.3	658.8
7.5°	1426.5	1272.4	1042.0	888.0	784.0	691.3	613.7	551.1	521.0	502.2	489.7
10°	1535.5	1330.1	1043.3	856.6	702.6	561.1	454.6	385.7	353.2	343.2	341.9
12.5°	1665.7	1402.7	1053.3	805.3	584.9	417.1	336.9	305.6	295.6	286.8	286.8
15°	1803.5	1484.1	1053.3	711.4	445.9	325.6	291.8	271.8	259.2	254.2	251.7
17.5°	1948.7	1560.5	1028.2	582.4	341.9	286.8	259.2	240.5	230.4	222.9	220.4
20°	2104.0	1633.1	965.6	445.9	293.1	256.7	230.4	211.7	201.6	194.1	194.1
22.5°	2261.9	1700.8	864.2	343.2	259.2	227.9	202.9	185.4	175.3	167.8	167.8
25°	2408.4	1745.9	733.9	283.0	234.2	202.9	180.3	162.8	151.5	146.5	144.0
27.5°	2544.9	1774.7	589.9	249.2	210.4	181.6	157.8	141.5	132.8	129.0	126.5
30°	2686.4	1782.2	450.9	226.7	190.4	160.3	137.8	125.2	117.7	112.7	112.7
32.5°	2824.2	1773.4	344.4	207.9	172.8	141.5	122.7	111.5	105.2	101.4	100.2
35°	2964.5	1733.3	279.3	191.6	155.3	124.0	109.0	100.2	96.4	91.4	91.4
37.5°	3117.2	1679.5	243.0	175.3	137.8	111.5	97.7	91.4	86.4	82.7	81.4
40°	3307.6	1616.9	222.9	161.6	121.5	100.2	87.7	81.4	77.6	73.9	72.6
42.5°	3533.0	1555.5	212.9	146.5	109.0	88.9	78.9	71.4	67.6	62.6	61.4
45°	3852.4	1541.7	201.6	130.3	97.7	80.2	68.9	61.4	56.4	52.6	51.3
47.5°	4365.9	1580.5	182.9	112.7	86.4	70.1	58.9	52.6	46.3	42.6	40.1
50°	4875.6	1570.5	164.1	97.7	76.4	60.1	50.1	43.8	37.6	33.8	32.6
52.5°	5153.7	1522.9	146.5	86.4	66.4	51.3	42.6	35.1	31.3	27.6	26.3
55°	5405.4	1504.1	129.0	75.1	56.4	45.1	35.1	28.8	26.3	22.5	21.3
57.5°	5898.8	1548.0	114.0	65.1	48.8	38.8	30.1	23.8	21.3	17.5	16.3
60°	6414.8	1553.0	97.7	56.4	42.6	32.6	23.8	18.8	16.3	12.5	11.3
62.5°	6684.1	1426.5	80.2	47.6	35.1	27.6	20.0	15.0	12.5	7.5	7.5
65°	6458.7	1153.5	67.6	38.8	27.6	21.3	15.0	11.3	7.5	3.8	1.3
67.5°	5716.0	820.3	56.4	31.3	20.0	15.0	11.3	7.5	1.3	0.0	0.0
70°	4185.6	468.4	43.8	22.5	15.0	10.0	7.5	3.8	0.0	0.0	0.0
72.5°	2572.4	250.5	32.6	15.0	11.3	7.5	6.3	2.5	0.0	0.0	0.0
75°	975.6	120.2	20.0	10.0	8.8	6.3	3.8	1.3	0.0	0.0	0.0
77.5°	264.3	58.9	11.3	7.5	6.3	3.8	2.5	0.0	0.0	0.0	0.0
80°	68.9	27.6	7.5	5.0	3.8	2.5	0.0	0.0	0.0	0.0	0.0
82.5°	23.8	12.5	3.8	3.8	2.5	1.3	0.0	0.0	0.0	0.0	0.0
85°	10.0	5.0	2.5	2.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	3.8	1.3	1.3	1.3	1.3	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



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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

REPORT NUMBER: SP1-2408-195-9

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

REPORT NUMBER: SP1-2408-195-9

**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

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**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			

REPORT NUMBER: SP1-2408-195-9

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.32**

$\lambda$ (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			

**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)