

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P438804

Luminaire Tested: **IST-SA1E-830-U-T4W**

Issue Date: 12/10/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P438804  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/10/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: IST-SA1E-830-U-T4W  
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE  
(1) 80 CRI, 3000K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5633 lumens  
Efficiency: N/A  
Efficacy: 96.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2

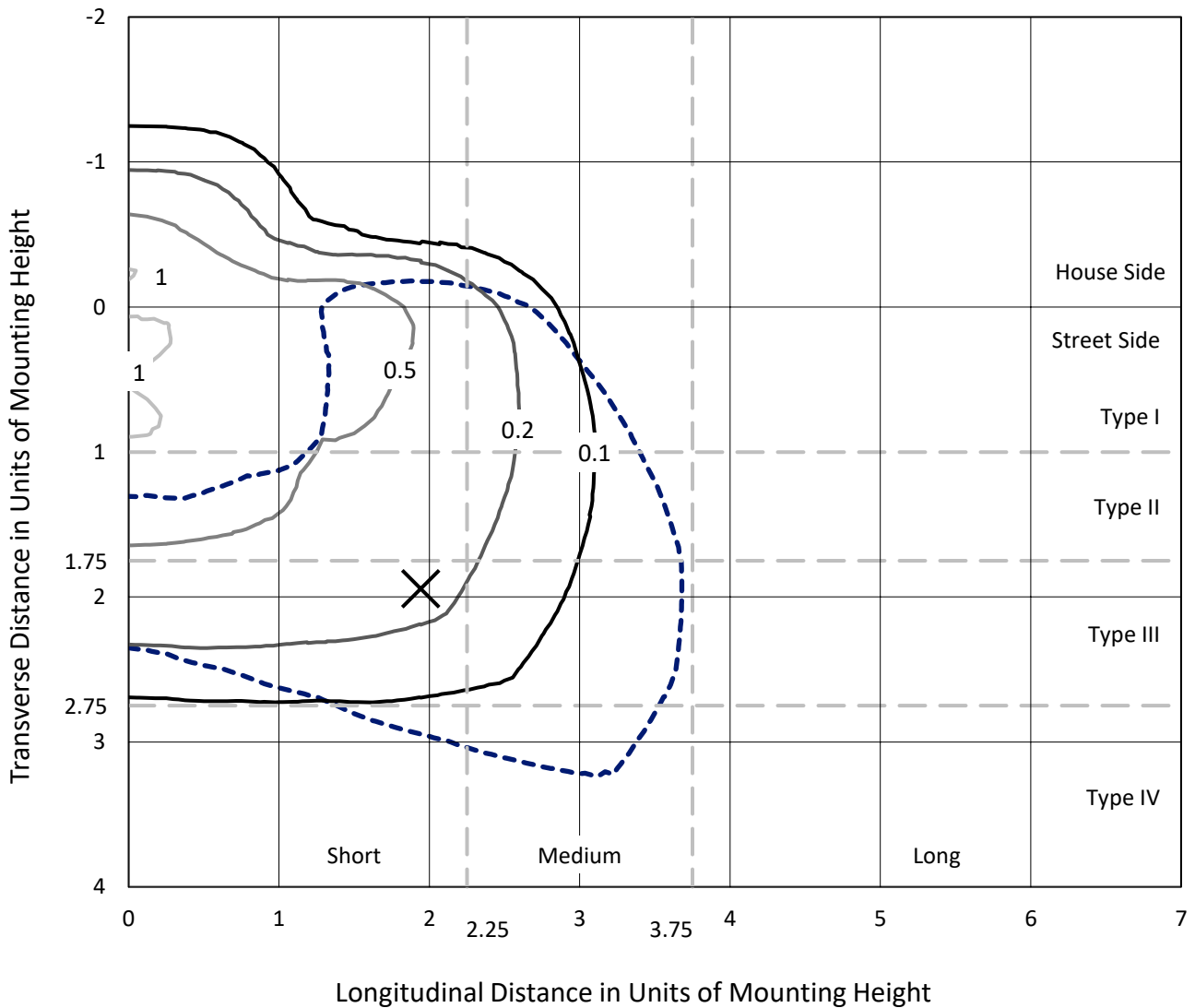
Input Watts (W): 58.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

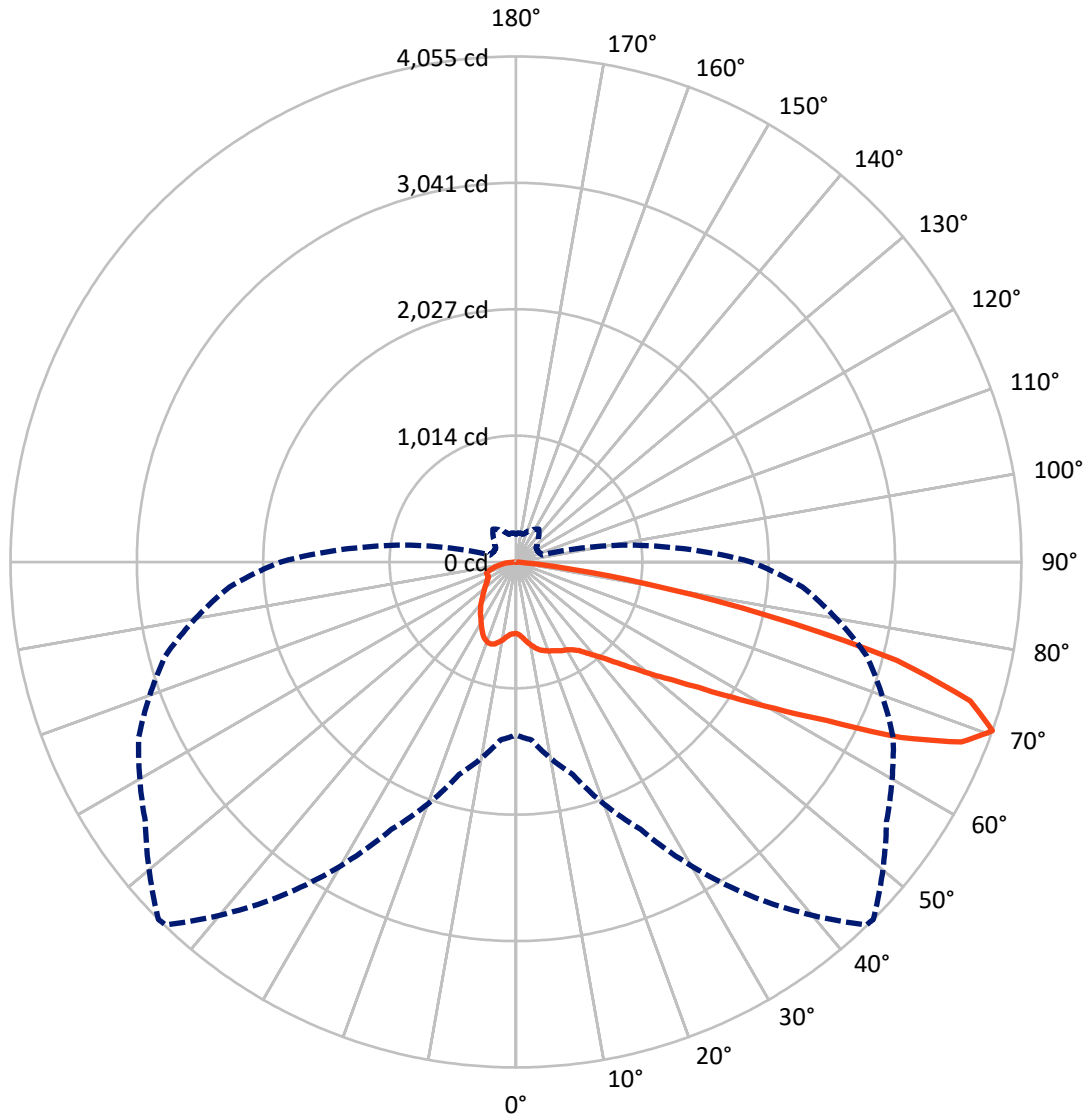
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc  
 Type IV - Short - N/A

REPORT NUMBER: P438804  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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 CATALOG NUMBER: IST-SA1E-830-U-T4W

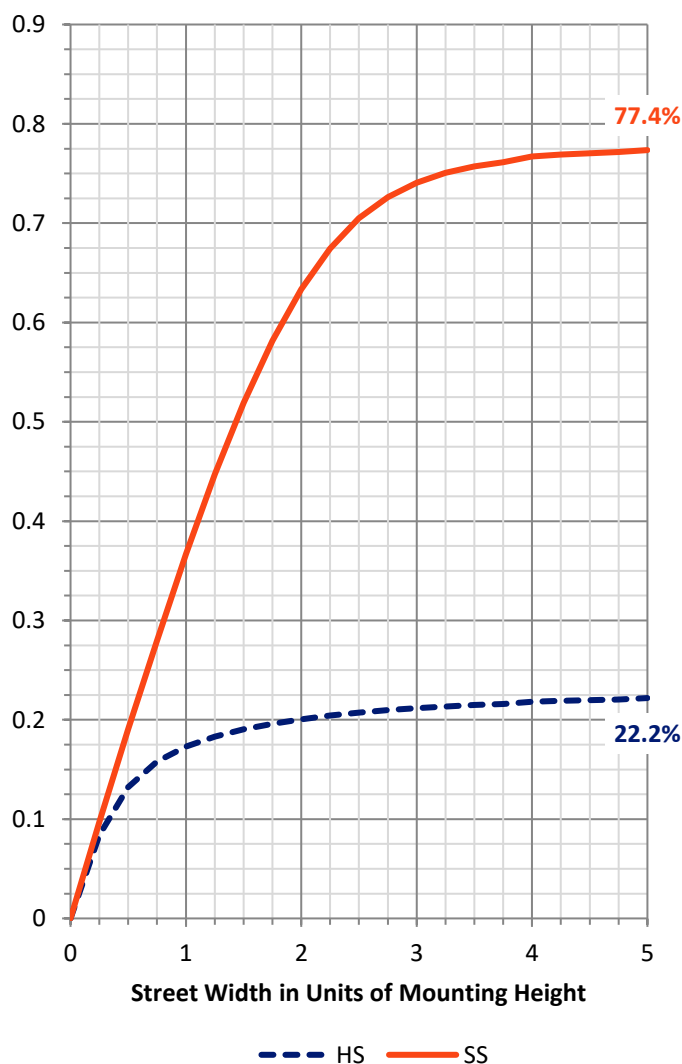
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1271.8	0.0	1271.8
	% Fixture	22.6	0.0	22.6
<b>Street Side</b>	Lumens	4361.2	0.0	4361.2
	% Fixture	77.4	0.0	77.4
<b>Total</b>	Lumens	5633.0	0.0	5633.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.1	1.0
10°-20°	197.9	3.5
20°-30°	335.0	5.9
30°-40°	484.4	8.6
40°-50°	698.5	12.4
50°-60°	1145.6	20.3
60°-70°	1641.3	29.1
70°-80°	975.6	17.3
80°-90°	95.5	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°	5633.0	100.0
0°-180°	5633.0	100.0

**Coefficient of Utilization**

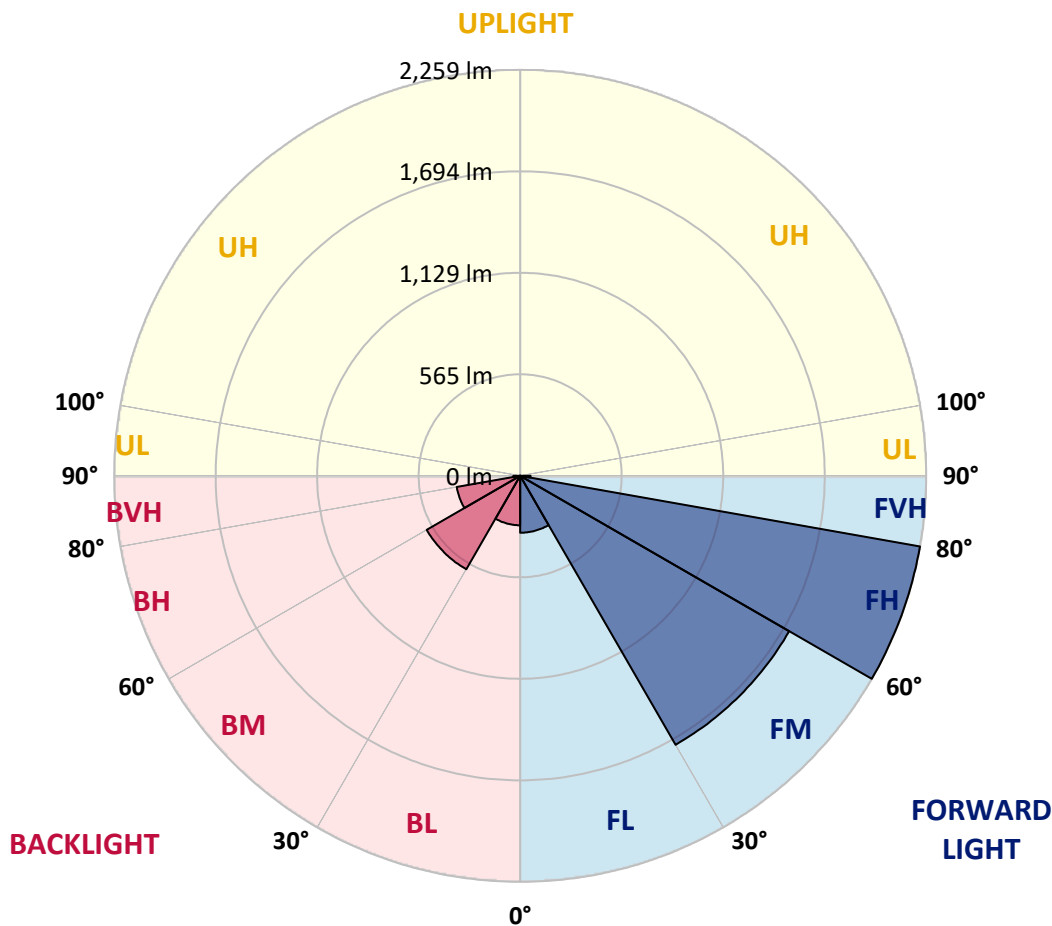


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 CATALOG NUMBER: IST-SA1E-830-U-T4W

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	316.8	5.6			
FM (30°-60°)	1728.2	30.7			
FH (60°-80°)	2258.7	40.1			G2/5000
FVH (80°-90°)	57.5	1.0			G1/100
BL (0°-30°)	275.2	4.9	B1/500		
BM (30°-60°)	600.4	10.7	B1/1000		
BH (60°-80°)	358.2	6.4	B1/500		G1/500
BVH (80°-90°)	38.0	0.7			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**  
 Type IV Short





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CATALOG NUMBER: IST-SA1E-830-U-T4W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4
2.5°	601.8	601.8	599.8	597.7	593.7	589.6	587.6	581.5	581.5	579.5	575.5
5°	646.4	642.3	640.3	632.2	626.1	616.0	614.0	599.8	591.7	585.6	581.5
7.5°	693.0	695.0	686.9	676.8	662.6	648.4	648.4	632.2	618.0	603.8	591.7
10°	737.6	737.6	727.4	715.3	701.1	682.8	678.8	660.6	644.3	626.1	611.9
12.5°	772.0	770.0	757.8	745.7	727.4	713.2	709.2	686.9	672.7	650.4	630.2
15°	796.3	796.3	784.2	765.9	747.7	733.5	733.5	717.3	697.0	674.7	650.4
17.5°	810.5	808.5	798.3	778.1	761.9	749.7	747.7	735.5	723.4	701.1	670.7
20°	810.5	806.4	798.3	782.1	767.9	759.8	761.9	751.7	743.6	717.3	693.0
22.5°	808.5	806.4	792.3	780.1	776.0	774.0	772.0	767.9	753.8	733.5	713.2
25°	826.7	824.7	808.5	792.3	784.2	784.2	788.2	780.1	772.0	751.7	733.5
27.5°	877.4	869.3	847.0	816.6	804.4	802.4	804.4	794.3	788.2	774.0	757.8
30°	962.5	958.4	924.0	867.2	834.8	818.6	816.6	814.5	806.4	796.3	782.1
32.5°	1073.9	1069.9	1017.2	944.2	875.3	838.9	840.9	830.8	830.8	816.6	804.4
35°	1211.7	1203.6	1150.9	1047.6	936.1	875.3	871.3	857.1	859.1	834.8	822.7
37.5°	1333.3	1325.2	1274.5	1152.9	1013.1	934.1	928.0	893.6	871.3	840.9	842.9
40°	1436.6	1438.6	1402.2	1280.6	1112.4	998.9	988.8	921.9	895.6	869.3	881.4
42.5°	1542.0	1548.0	1523.7	1394.1	1213.7	1069.9	1065.8	970.6	948.3	928.0	956.4
45°	1645.3	1657.5	1637.2	1515.6	1327.2	1177.2	1161.0	1049.6	1035.4	1023.3	1108.4
47.5°	1736.5	1740.5	1738.5	1643.3	1452.8	1298.8	1276.5	1152.9	1171.2	1203.6	1345.4
50°	1850.0	1856.0	1823.6	1770.9	1623.0	1436.6	1416.3	1282.6	1357.6	1462.9	1677.7
52.5°	2018.1	2026.2	1935.1	1902.6	1833.7	1602.8	1572.4	1473.1	1635.2	1793.2	2048.5
55°	2115.4	2103.2	2062.7	2066.8	2028.3	1801.3	1775.0	1706.1	1937.1	2125.5	2468.0
57.5°	2178.2	2172.1	2196.4	2251.2	2251.2	2056.6	2046.5	2016.1	2261.3	2488.2	2800.3
60°	2279.5	2291.7	2348.4	2457.8	2516.6	2391.0	2384.9	2391.0	2626.0	2741.5	3037.3
62.5°	2342.3	2368.7	2512.5	2701.0	2824.6	2838.8	2800.3	2796.2	2909.7	2952.2	3193.4
65°	2230.9	2273.4	2508.5	2814.4	3193.4	3422.3	3393.9	3148.8	3144.7	3142.7	3163.0
67.5°	1937.1	1969.5	2309.9	2763.8	3391.9	3870.1	3853.9	3462.8	3367.6	3158.9	2879.3
70°	1388.0	1432.6	1764.9	2366.6	3264.3	4048.4	4054.5	3629.0	3339.2	2911.7	2307.9
72.5°	859.1	861.2	1075.9	1685.8	2763.8	3787.0	3811.4	3464.9	3004.9	2425.4	1631.1
75°	265.4	287.7	455.9	883.4	1870.2	3079.9	3154.9	2879.3	2405.1	1677.7	893.6
77.5°	131.7	135.8	164.1	324.2	899.6	1993.8	2050.6	1922.9	1519.7	812.5	374.9
80°	75.0	79.0	101.3	143.9	344.5	990.8	1037.4	1013.1	616.0	293.8	160.1
82.5°	36.5	38.5	50.7	72.9	145.9	295.8	332.3	364.7	235.0	156.0	87.1
85°	10.1	10.1	14.2	24.3	38.5	60.8	60.8	66.9	83.1	79.0	42.6
87.5°	0.0	0.0	0.0	2.0	2.0	2.0	4.1	2.0	4.1	6.1	6.1
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: P438804  
 CATALOG NUMBER: IST-SA1E-830-U-T4W

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4	573.4
2.5°	575.5	575.5	571.4	573.4	573.4	575.5	575.5	577.5	579.5	581.5	581.5
5°	579.5	577.5	575.5	577.5	579.5	583.6	589.6	595.7	599.8	605.8	603.8
7.5°	591.7	585.6	587.6	587.6	595.7	603.8	616.0	624.1	632.2	636.2	636.2
10°	605.8	601.8	599.8	607.9	616.0	632.2	642.3	654.5	660.6	670.7	666.6
12.5°	626.1	616.0	618.0	628.1	644.3	656.5	664.6	674.7	680.8	688.9	686.9
15°	642.3	636.2	638.3	654.5	670.7	678.8	682.8	686.9	688.9	695.0	697.0
17.5°	662.6	660.6	662.6	676.8	686.9	688.9	686.9	682.8	680.8	686.9	684.9
20°	684.9	682.8	684.9	695.0	690.9	682.8	674.7	668.7	662.6	666.6	668.7
22.5°	703.1	705.1	707.2	703.1	686.9	666.6	652.4	642.3	638.3	642.3	646.4
25°	725.4	727.4	729.4	709.2	670.7	638.3	618.0	611.9	614.0	620.0	622.1
27.5°	753.8	759.8	753.8	707.2	648.4	601.8	585.6	583.6	585.6	591.7	597.7
30°	784.2	792.3	772.0	697.0	618.0	565.3	551.1	551.1	557.2	561.3	567.3
32.5°	810.5	826.7	788.2	678.8	575.5	530.9	520.7	516.7	516.7	520.7	522.8
35°	842.9	863.2	798.3	646.4	534.9	502.5	494.4	482.2	472.1	474.1	472.1
37.5°	875.3	905.7	794.3	595.7	490.3	470.1	462.0	443.7	427.5	417.4	421.5
40°	936.1	972.6	786.2	530.9	449.8	441.7	427.5	407.3	387.0	368.8	366.7
42.5°	1043.5	1045.5	767.9	472.1	411.3	407.3	395.1	376.9	352.6	328.3	328.3
45°	1187.4	1150.9	743.6	417.4	374.9	378.9	368.8	350.5	322.2	299.9	299.9
47.5°	1404.2	1276.5	697.0	368.8	344.5	352.6	346.5	328.3	297.9	277.6	277.6
50°	1708.1	1481.2	650.4	334.3	322.2	330.3	328.3	306.0	277.6	261.4	261.4
52.5°	2060.7	1748.6	618.0	308.0	295.8	310.0	310.0	289.8	263.4	251.3	249.2
55°	2423.4	1999.9	585.6	285.7	277.6	289.8	295.8	277.6	253.3	243.1	241.1
57.5°	2680.7	2125.5	541.0	267.5	257.3	273.5	281.6	269.5	247.2	237.1	235.0
60°	2810.4	2137.7	453.9	249.2	239.1	259.4	273.5	263.4	247.2	243.1	243.1
62.5°	2840.8	2087.0	362.7	233.0	226.9	251.3	275.6	271.5	259.4	263.4	265.4
65°	2711.1	1918.8	295.8	220.9	218.8	249.2	287.7	285.7	261.4	271.5	273.5
67.5°	2401.1	1627.1	251.3	208.7	206.7	253.3	310.0	285.7	247.2	257.3	253.3
70°	1886.4	1288.7	216.8	196.5	196.5	251.3	322.2	281.6	231.0	235.0	222.9
72.5°	1240.1	844.9	192.5	184.4	178.3	229.0	314.1	273.5	222.9	210.7	196.5
75°	628.1	419.4	172.2	174.3	156.0	194.5	303.9	271.5	220.9	200.6	194.5
77.5°	259.4	196.5	154.0	158.0	131.7	166.2	285.7	251.3	198.6	178.3	172.2
80°	135.8	121.6	129.7	131.7	107.4	131.7	226.9	216.8	178.3	164.1	156.0
82.5°	79.0	77.0	99.3	101.3	75.0	107.4	200.6	188.4	149.9	133.7	129.7
85°	36.5	42.6	66.9	60.8	46.6	70.9	121.6	93.2	66.9	58.8	56.7
87.5°	4.1	6.1	14.2	14.2	10.1	6.1	2.0	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

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



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**

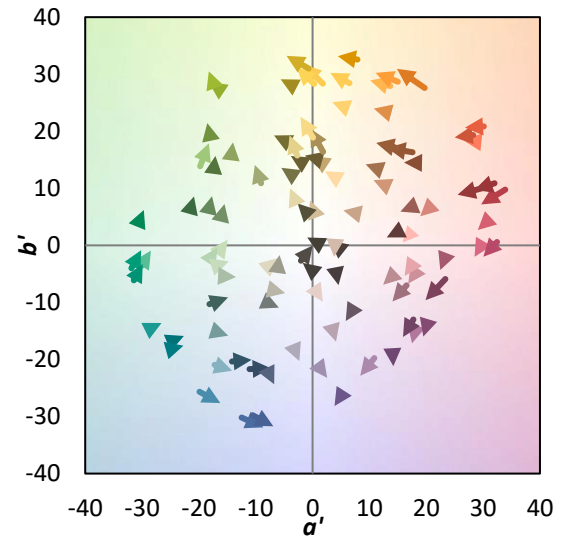
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625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



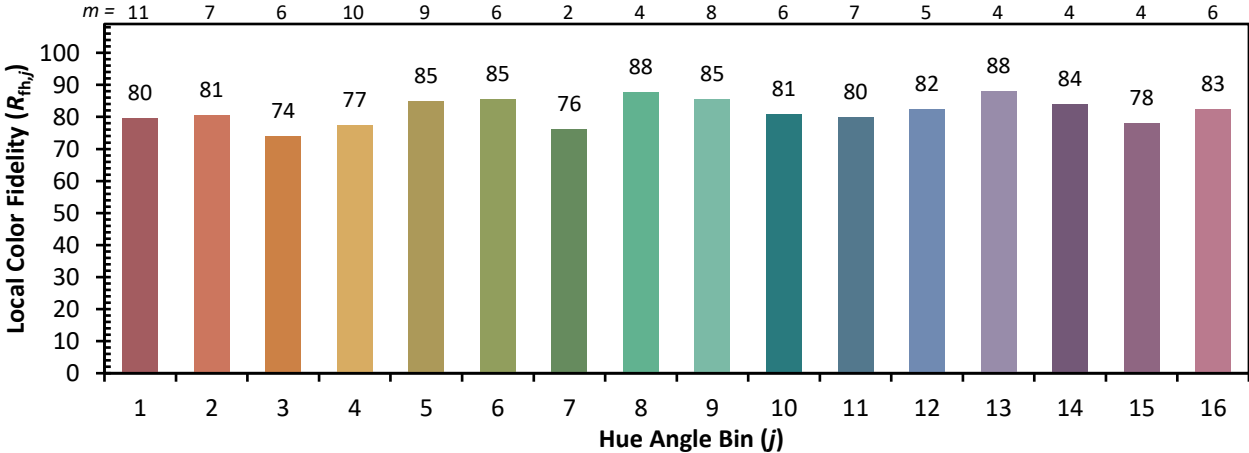


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

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)