

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: P640937

Luminaire Tested: GWS-SA5E-830-U-AFL-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P640937
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-46)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5E-830-U-AFL-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND
AUTOMOTIVE FRONTLINE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22460.2 lumens
Efficiency: N/A
Efficacy: 83.3 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G1

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



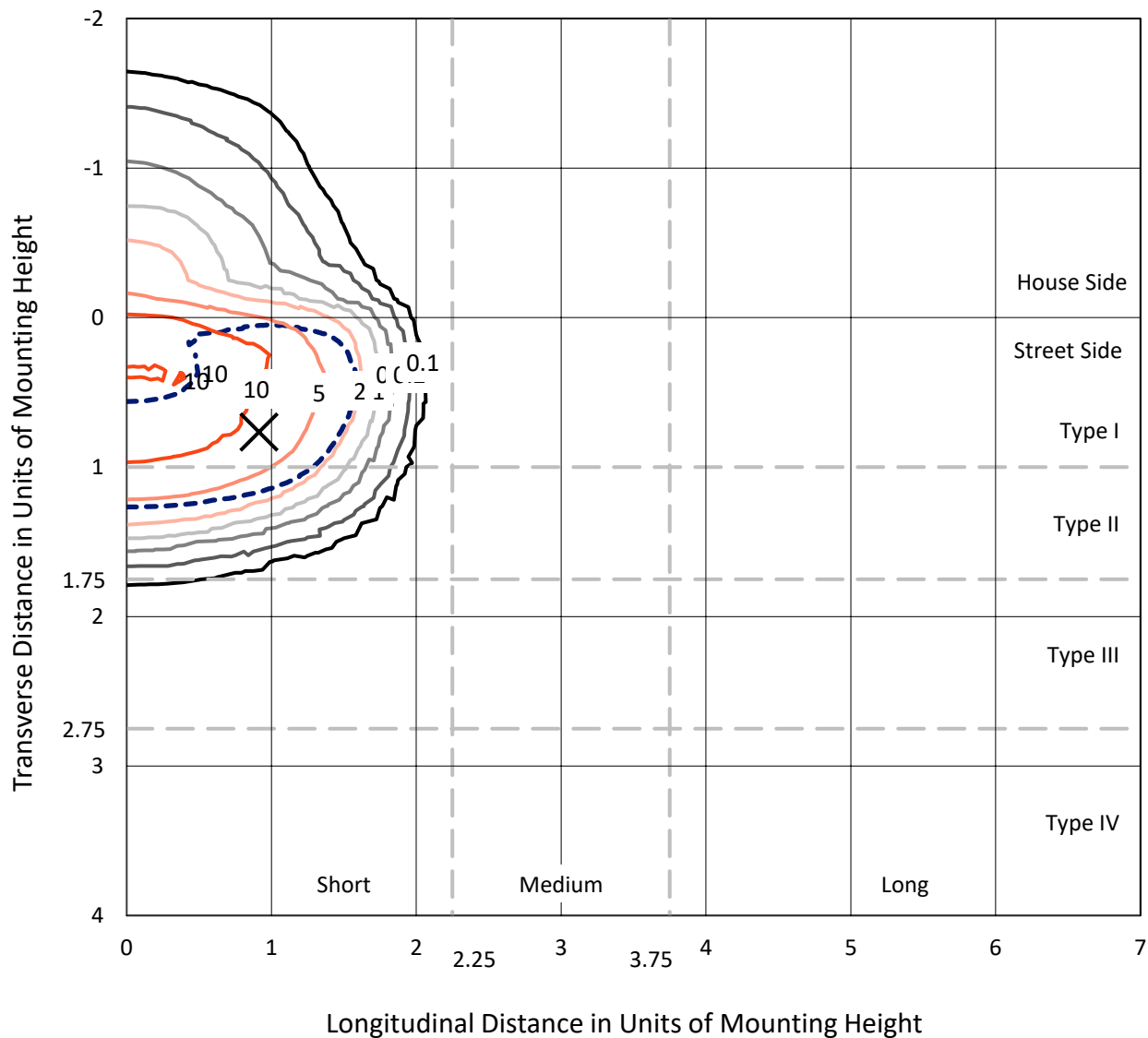
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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

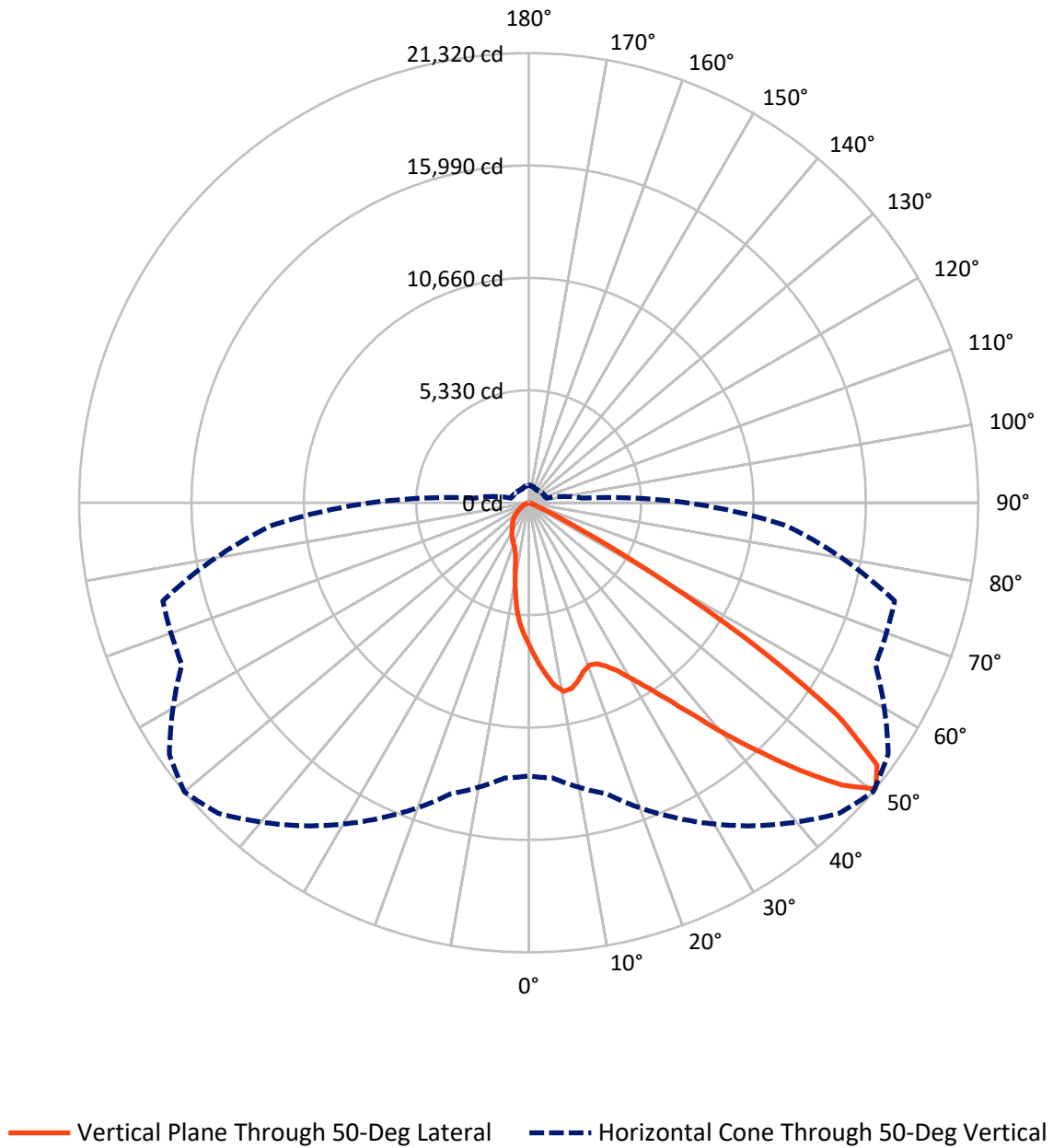


Based on 25 foot mounting height. Maximum calculated value = 14 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



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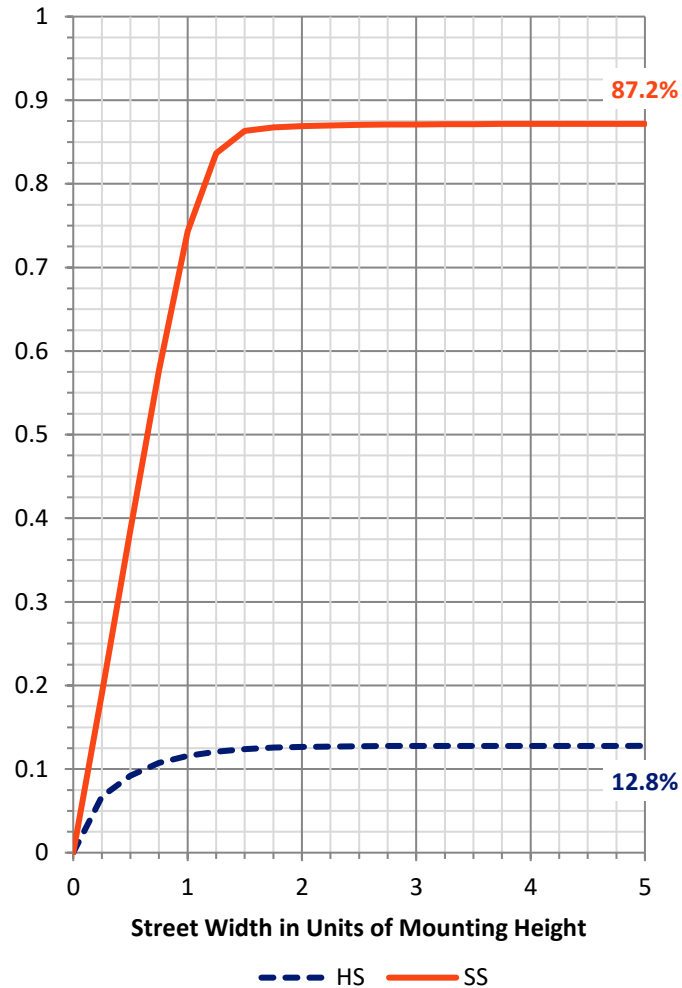
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2885.8	0.0	2885.8
	% Fixture	12.8	0.0	12.8
Street Side	Lumens	19574.4	0.0	19574.4
	% Fixture	87.2	0.0	87.2
Total	Lumens	22460.2	0.0	22460.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	631.2	2.8
10°-20°	1628.6	7.3
20°-30°	2687.8	12.0
30°-40°	4435.4	19.7
40°-50°	7017.9	31.2
50°-60°	5313.3	23.7
60°-70°	665.0	3.0
70°-80°	75.2	0.3
80°-90°	5.8	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°	22460.2	100.0
0°-180°	22460.2	100.0

Coefficient of Utilization



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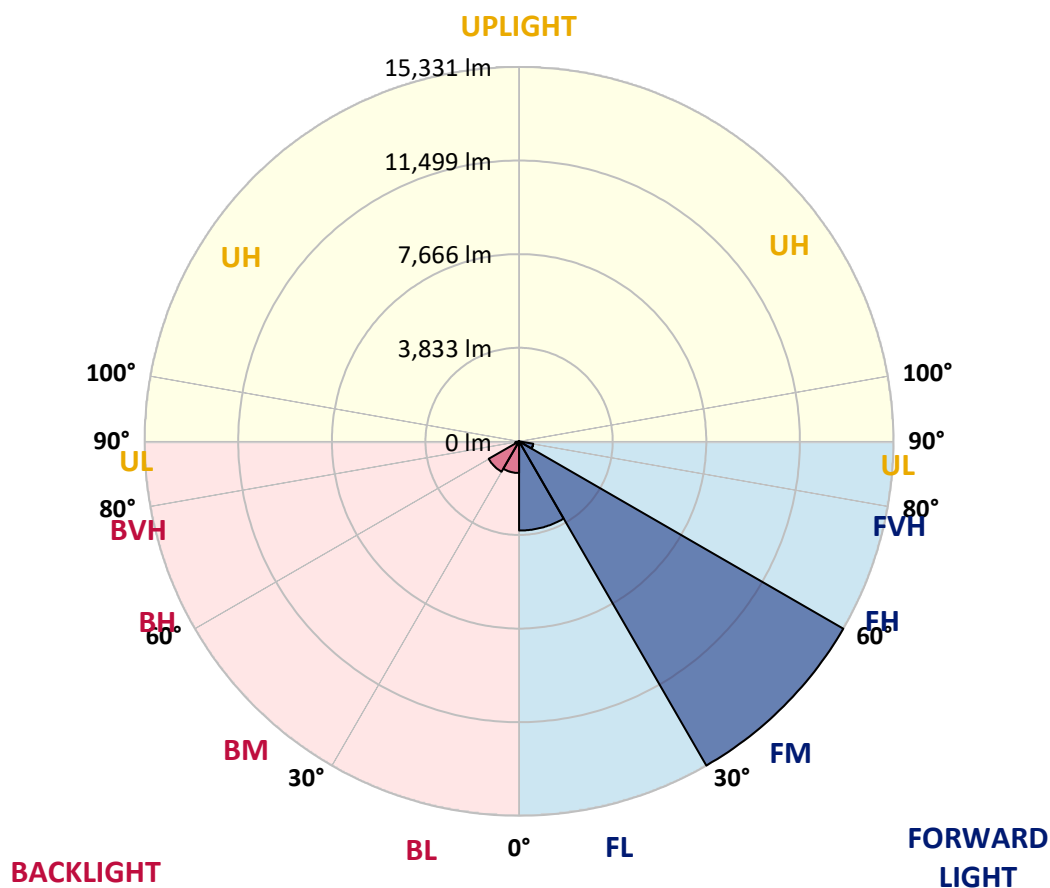
CATALOG NUMBER: GWS-SA5E-830-U-AFL-W-GRSBK

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3652.4	16.3			
FM	(30°-60°)	15331.4	68.3			
FH	(60°-80°)	587.9	2.6			G0/660
FVH	(80°-90°)	2.7	0.0			G0/10
BL	(0°-30°)	1295.3	5.8	B3/2500		
BM	(30°-60°)	1435.2	6.4	B2/2500		
BH	(60°-80°)	152.3	0.7	B1/500		G1/500
BVH	(80°-90°)	3.1	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G1

Type II Short



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CATALOG NUMBER: GWS-SA5E-830-U-AFL-W-GRSBK

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	50°	55°	65°	75°	85°
0°	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5
2.5°	7753.7	7815.7	7798.6	7717.4	7629.7	7567.7	7471.5	7441.6	7223.6	7071.8	6911.4
5°	8690.1	8709.3	8687.9	8589.6	8435.7	8288.2	8130.0	8038.0	7672.5	7343.3	7007.6
7.5°	8914.5	8891.0	8931.6	8980.8	8959.4	8895.3	8728.5	8628.1	8192.0	7655.4	7146.6
10°	8213.3	8159.9	8311.7	8566.1	8833.3	9134.7	9092.0	9100.5	8698.6	8048.7	7328.3
12.5°	7283.4	7262.0	7375.3	7670.3	8194.1	8878.2	9042.8	9318.6	9162.5	8474.2	7535.7
15°	6875.1	6885.8	6954.2	7140.2	7516.4	8367.3	8762.8	9260.9	9577.2	8886.7	7764.4
17.5°	6937.1	6975.6	6973.4	7035.4	7264.2	7946.1	8407.9	9079.1	9897.9	9361.3	8027.4
20°	7358.2	7396.7	7339.0	7292.0	7368.9	7839.2	8221.9	8895.3	10113.8	9840.2	8305.3
22.5°	7988.9	8033.8	7897.0	7762.3	7713.1	8014.5	8292.4	8820.5	10278.4	10278.4	8553.3
25°	8752.1	8814.1	8602.4	8363.0	8226.2	8384.4	8593.9	8989.4	10447.3	10671.8	8722.1
27.5°	9605.0	9607.2	9425.5	9156.1	8899.6	8918.8	9044.9	9369.9	10633.3	11095.1	8854.7
30°	10564.9	10571.3	10329.7	10006.9	9684.1	9596.5	9703.4	9949.2	11020.2	11627.4	9038.5
32.5°	11804.8	11834.7	11488.4	11013.8	10594.8	10430.2	10492.2	10750.9	11635.9	12294.4	9314.3
35°	13480.8	13512.9	13002.0	12375.6	11708.6	11460.6	11522.6	11783.4	12527.4	13241.4	9754.7
37.5°	15135.5	15178.2	14660.9	14077.3	13162.3	12751.8	12816.0	13064.0	13865.6	14549.7	10460.1
40°	16279.2	16336.9	16176.6	15783.2	14934.5	14395.8	14472.8	14562.5	15338.6	16114.6	11375.1
42.5°	16882.0	16963.3	17031.7	17232.6	16785.8	16334.8	16204.4	16210.8	16837.1	17709.4	12326.4
45°	16918.4	16997.5	17348.1	18124.1	18464.0	18369.9	18132.6	17972.3	17980.9	18771.8	12920.7
47.5°	15742.6	15890.1	16546.4	18066.4	19344.8	20125.0	20005.3	19624.8	18461.9	18842.4	12856.6
50°	12957.1	13102.4	14295.3	16482.3	18703.4	20826.2	21320.1	20809.1	18147.6	17963.7	12196.0
52.5°	9410.5	9425.5	10199.3	12754.0	16103.9	19532.9	20695.8	20646.7	17668.7	16899.1	11293.9
55°	4470.1	4416.6	5286.7	7197.9	11137.8	15798.2	17758.5	18314.3	16988.9	16129.5	10594.8
57.5°	1301.9	1327.6	1714.5	2809.0	5571.0	10096.7	12161.8	13196.5	13944.7	13260.6	8217.6
60°	583.6	585.8	652.0	855.1	1855.6	4696.7	6287.2	7567.7	8337.3	7725.9	4076.7
62.5°	423.3	425.4	451.1	483.1	630.6	1590.5	2358.0	3142.5	3200.3	2095.0	1032.5
65°	352.7	352.7	357.0	357.0	378.4	568.6	716.2	923.5	778.2	577.2	404.0
67.5°	284.3	286.5	290.7	290.7	284.3	284.3	307.8	337.8	361.3	446.8	372.0
70°	222.3	220.2	220.2	222.3	215.9	183.8	198.8	226.6	248.0	348.5	322.8
72.5°	173.2	175.3	173.2	164.6	149.6	109.0	117.6	147.5	158.2	218.1	218.1
75°	130.4	132.5	124.0	94.1	62.0	34.2	44.9	72.7	91.9	106.9	79.1
77.5°	17.1	17.1	12.8	12.8	10.7	12.8	12.8	17.1	25.7	25.7	19.2
80°	2.1	2.1	2.1	4.3	6.4	8.6	8.6	8.6	8.6	10.7	10.7
82.5°	2.1	2.1	2.1	2.1	6.4	6.4	8.6	8.6	8.6	8.6	8.6
85°	0.0	0.0	0.0	2.1	4.3	6.4	6.4	8.6	8.6	8.6	8.6
87.5°	0.0	0.0	0.0	2.1	4.3	6.4	6.4	6.4	8.6	8.6	8.6
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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CATALOG NUMBER: GWS-SA5E-830-U-AFL-W-GRSBK

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5	6804.5
2.5°	6815.2	6691.2	6541.6	6439.0	6293.6	6197.4	6060.6	5968.7	5889.6	5827.6	5861.8
5°	6817.4	6620.7	6315.0	6054.2	5769.9	5509.1	5229.0	5008.8	4810.0	4720.2	4769.4
7.5°	6860.1	6577.9	6109.8	5645.9	5100.7	4562.0	4057.5	3647.0	3444.0	3347.8	3377.7
10°	6943.5	6558.7	5881.0	5111.4	4226.4	3491.0	3001.4	2723.5	2610.2	2550.4	2561.1
12.5°	7020.5	6545.9	5583.9	4408.1	3334.9	2708.6	2454.2	2415.7	2439.2	2441.3	2439.2
15°	7125.2	6522.4	5216.2	3685.5	2667.9	2340.9	2347.3	2402.9	2458.4	2475.5	2471.3
17.5°	7236.4	6486.0	4741.6	2992.9	2263.9	2234.0	2308.8	2383.6	2439.2	2447.8	2449.9
20°	7351.8	6411.2	4200.7	2443.5	2075.8	2152.7	2236.1	2291.7	2332.3	2345.1	2349.4
22.5°	7405.3	6253.0	3576.5	2050.1	1949.7	2052.3	2114.3	2186.9	2199.8	2152.7	2161.3
25°	7377.5	5985.8	2967.2	1785.0	1823.5	1926.1	2018.1	1981.7	1928.3	1894.1	1904.8
27.5°	7289.8	5630.9	2370.8	1590.5	1688.8	1819.2	1829.9	1789.3	1780.8	1753.0	1761.5
30°	7195.8	5222.6	1906.9	1434.4	1552.0	1688.8	1656.8	1671.7	1673.9	1641.8	1652.5
32.5°	7138.0	4795.0	1517.8	1329.7	1464.4	1490.0	1554.2	1584.1	1586.2	1511.4	1524.2
35°	7157.3	4373.9	1284.8	1244.2	1383.1	1376.7	1466.5	1483.6	1359.6	1257.0	1267.7
37.5°	7313.3	3984.8	1152.3	1177.9	1242.0	1291.2	1359.6	1246.3	1218.5	1171.5	1177.9
40°	7604.1	3653.5	1073.2	1137.3	1145.8	1224.9	1120.2	1135.2	1137.3	1107.4	1113.8
42.5°	7944.0	3377.7	1026.1	1113.8	1092.4	1105.2	1000.5	1030.4	1062.5	1049.6	1051.8
45°	8115.0	3108.3	985.5	1032.5	1039.0	917.1	893.6	925.7	966.3	972.7	974.8
47.5°	7963.2	2851.8	942.8	915.0	957.7	835.9	808.1	818.8	865.8	891.5	895.7
50°	7499.3	2556.8	878.6	810.2	786.7	750.4	724.7	726.8	780.3	825.2	833.7
52.5°	6847.3	2248.9	773.9	686.2	632.8	660.6	667.0	654.2	703.3	748.2	756.8
55°	6214.5	1864.1	613.5	558.0	508.8	568.6	585.8	568.6	583.6	613.5	615.7
57.5°	4376.0	1053.9	470.3	461.8	421.1	487.4	515.2	489.6	463.9	483.1	487.4
60°	2028.8	551.5	361.3	361.3	350.6	419.0	466.0	429.7	380.5	389.1	395.5
62.5°	634.9	348.5	265.1	250.1	286.5	357.0	395.5	359.1	301.4	301.4	310.0
65°	359.1	299.3	209.5	192.4	233.0	286.5	310.0	271.5	220.2	215.9	215.9
67.5°	333.5	284.3	186.0	156.1	164.6	183.8	192.4	166.7	151.8	149.6	151.8
70°	275.8	237.3	149.6	106.9	100.5	98.3	102.6	96.2	91.9	94.1	100.5
72.5°	171.0	143.2	94.1	64.1	55.6	53.4	53.4	53.4	51.3	51.3	51.3
75°	62.0	53.4	42.8	32.1	27.8	25.7	25.7	27.8	25.7	23.5	21.4
77.5°	19.2	17.1	17.1	17.1	15.0	12.8	10.7	10.7	8.6	6.4	6.4
80°	10.7	10.7	10.7	10.7	8.6	8.6	6.4	4.3	2.1	2.1	0.0
82.5°	10.7	10.7	10.7	8.6	8.6	8.6	6.4	4.3	2.1	0.0	0.0
85°	8.6	8.6	8.6	8.6	8.6	8.6	6.4	4.3	2.1	0.0	0.0
87.5°	8.6	8.6	8.6	8.6	8.6	8.6	6.4	4.3	2.1	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

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.

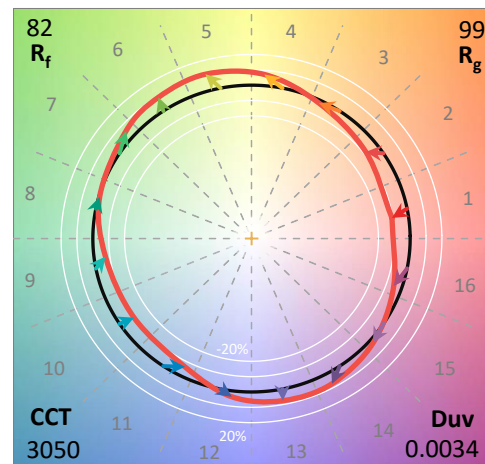
Test Information

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
 R_f: 81.5
 R_g: 99.2

CRI (Ra): 81.0
 R1: 79.6
 R2: 85.6
 R3: 92.0
 R4: 82.6
 R5: 78.9
 R6: 81.7
 R7: 85.2
 R8: 62.0
 R9: 7.1
 R10: 67.0
 R11: 82.7
 R12: 63.2
 R13: 80.3
 R14: 95.0
 R15: 71.7



Test Conditions

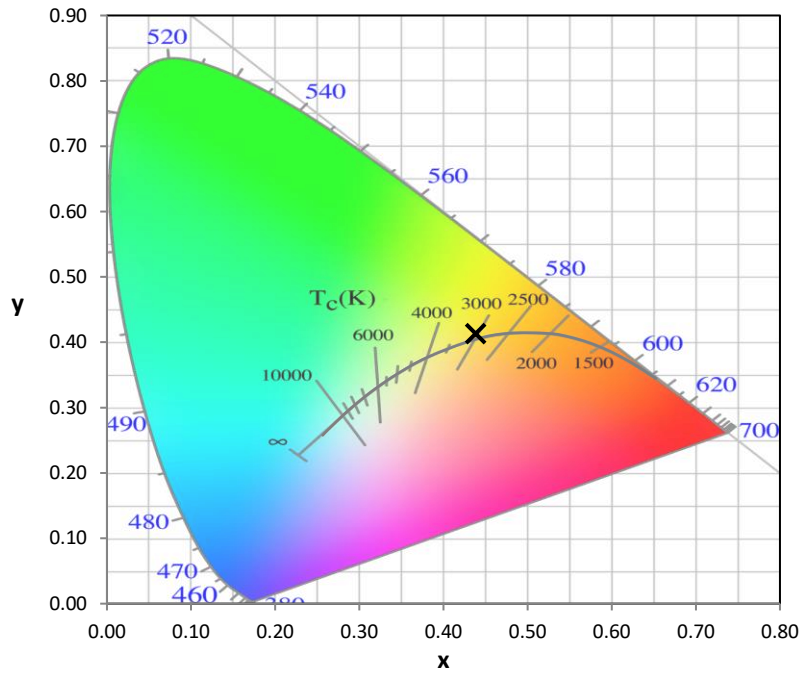
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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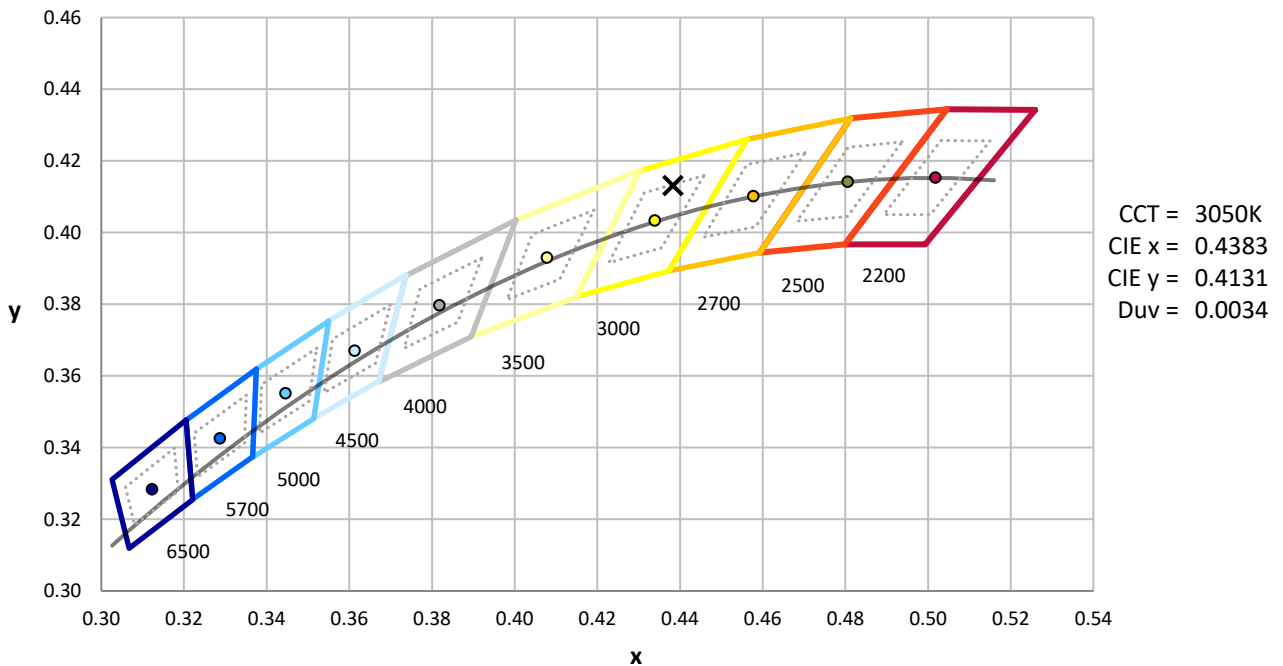
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

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CIE 1931 Chromaticity Diagram



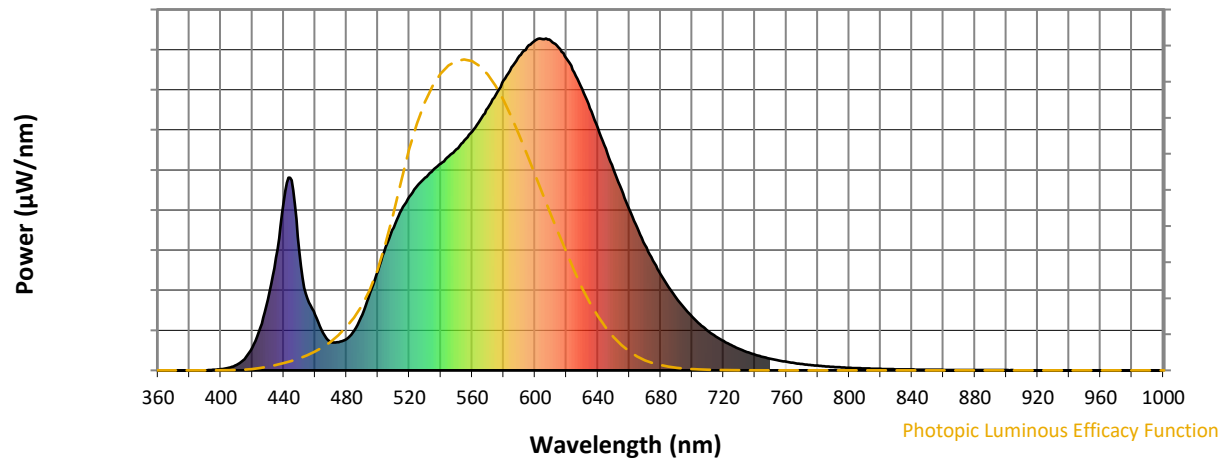
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

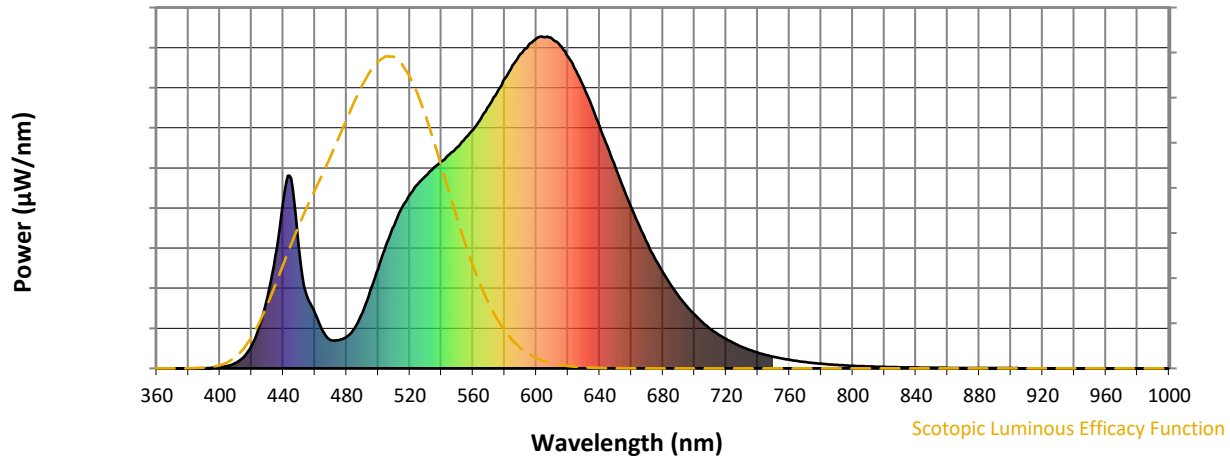


Photopic Lumens: NR

λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	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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Scotopic Flux vs. Wavelength



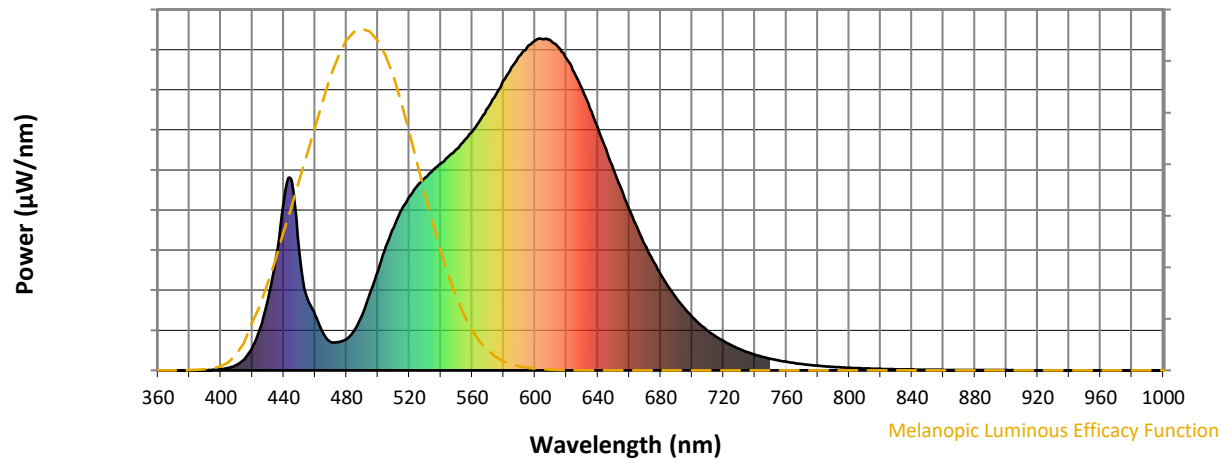
Scotopic Lumens: NR

S/P: 1.27

λ (nm)	Power W [^] /nm	Lumens (Φ/nm)	λ (nm)	Power W [^] /nm	Lumens (Φ/nm)	λ (nm)	Power W [^] /nm	Lumens (Φ/nm)	λ (nm)	Power W [^] /nm	Lumens (Φ/nm)	λ (nm)	Power W [^] /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

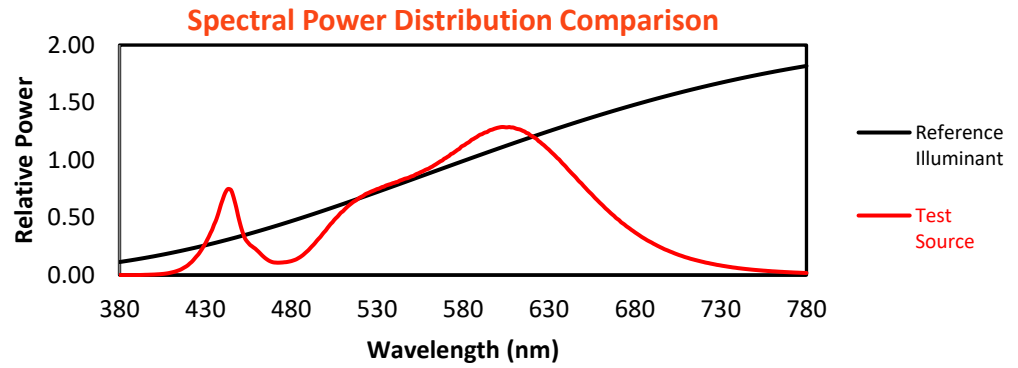
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168	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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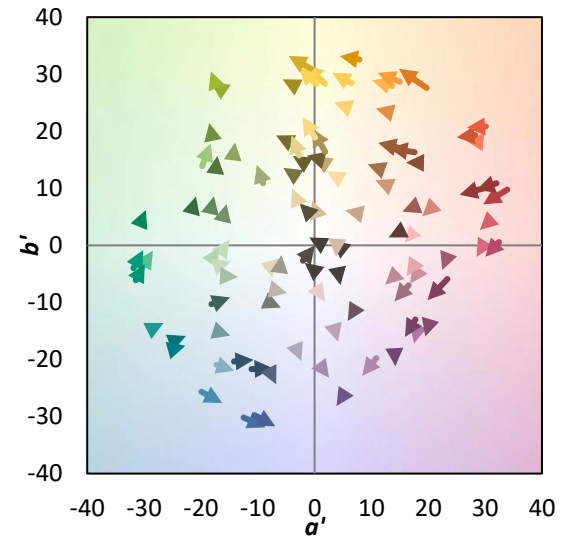
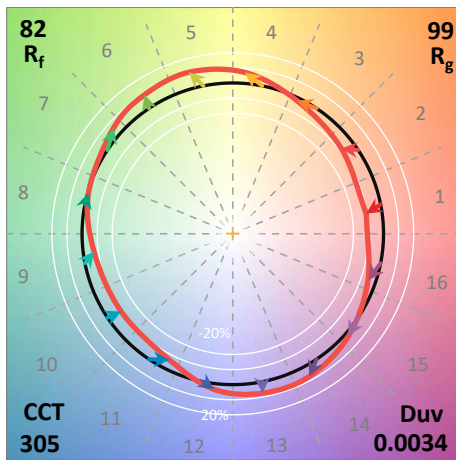
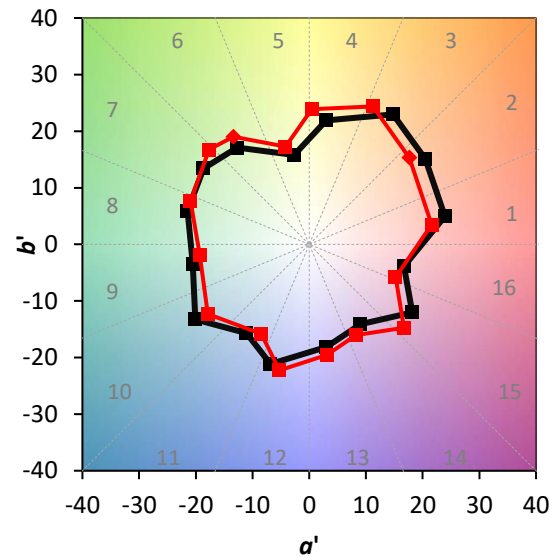
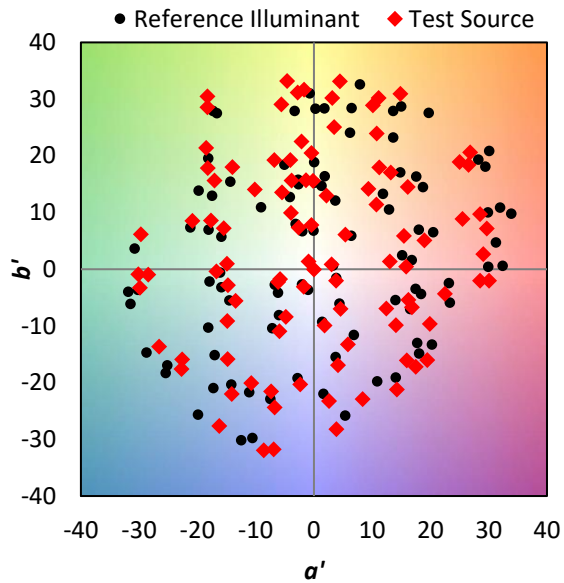
TM-30-18

Summary

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

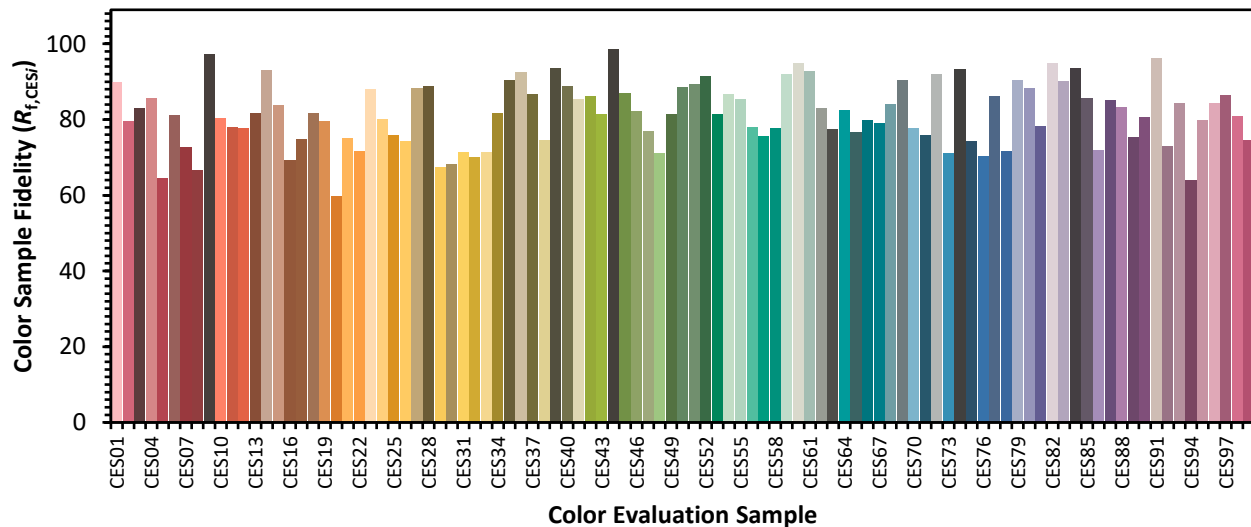


Color Vector Graphics

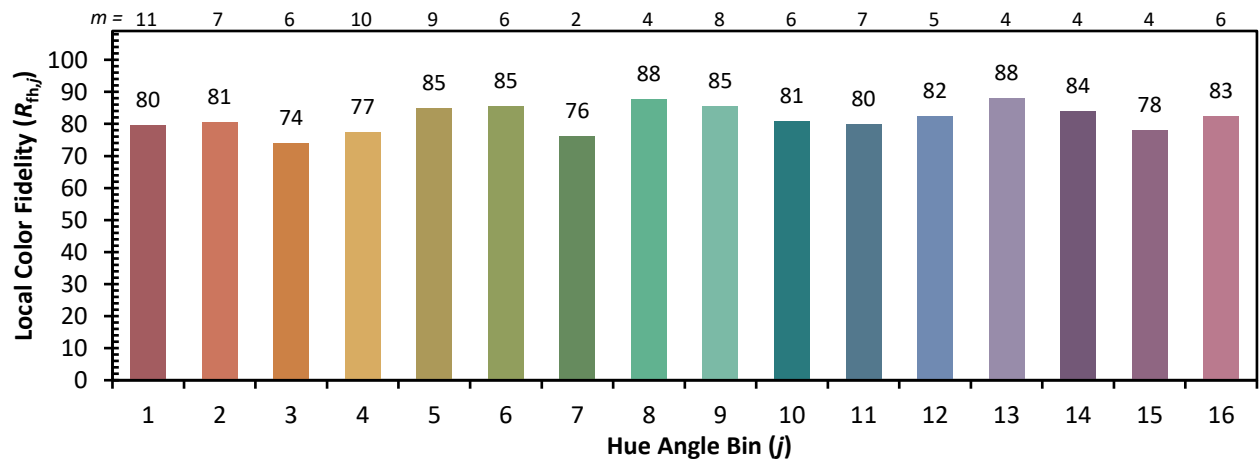
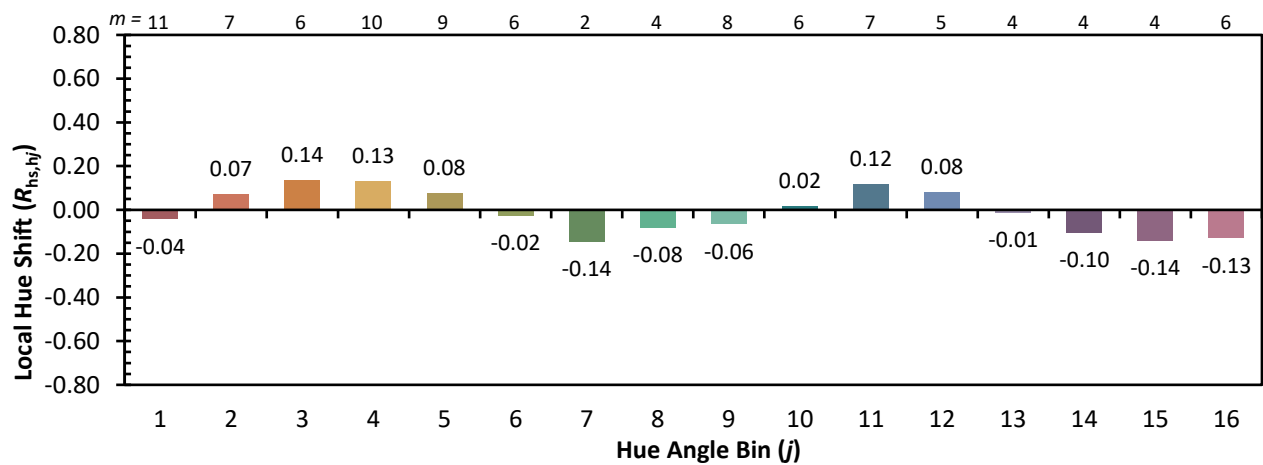
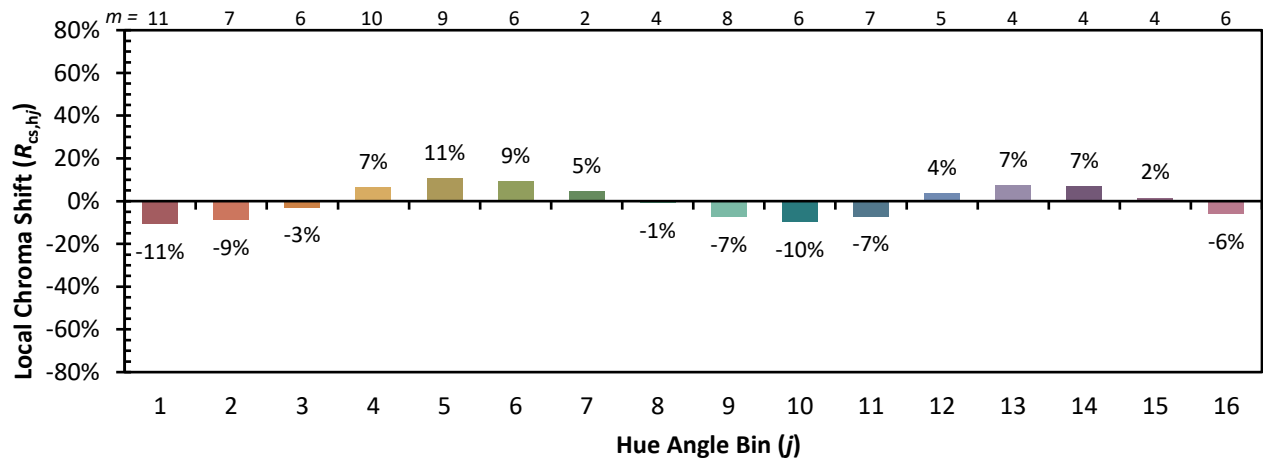


Individual Sample Fidelity Index ($R_{f,i}$)

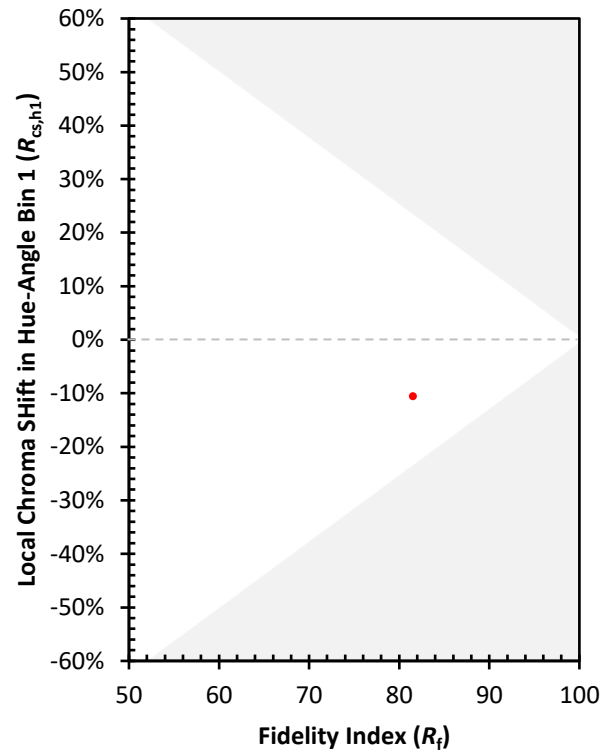
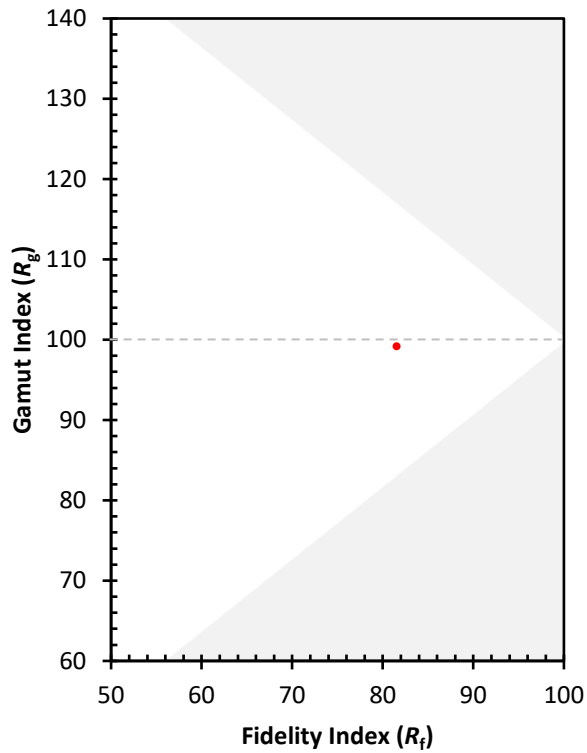
CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 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)