

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: P641461

Luminaire Tested: GWS-SA5F-830-U-T2-W

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P641461
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-19)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5F-830-U-T2-W
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: (80) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 32896.2 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B3 - U0 - G4

Input Watts (W): 310.3
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



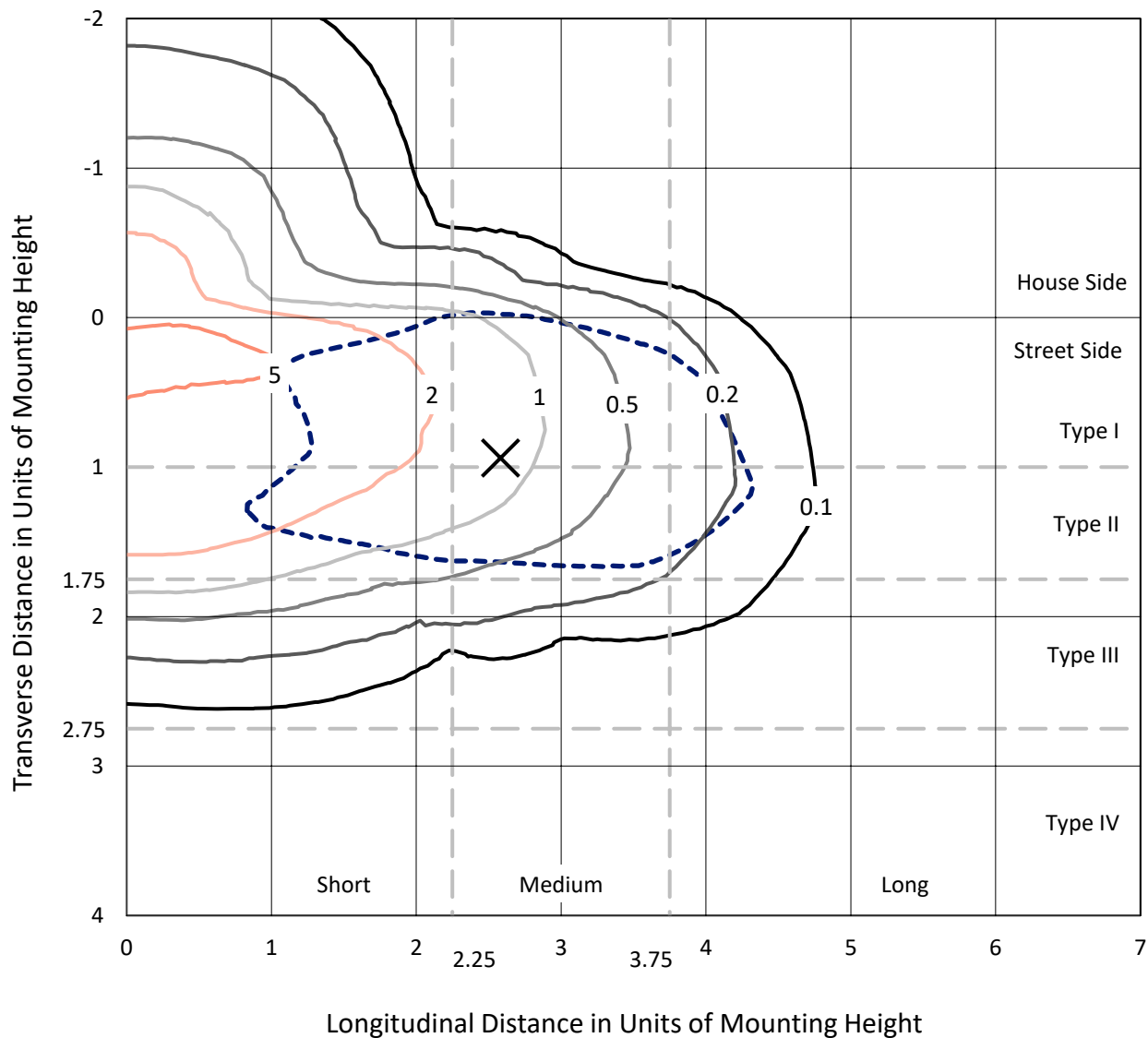
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Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

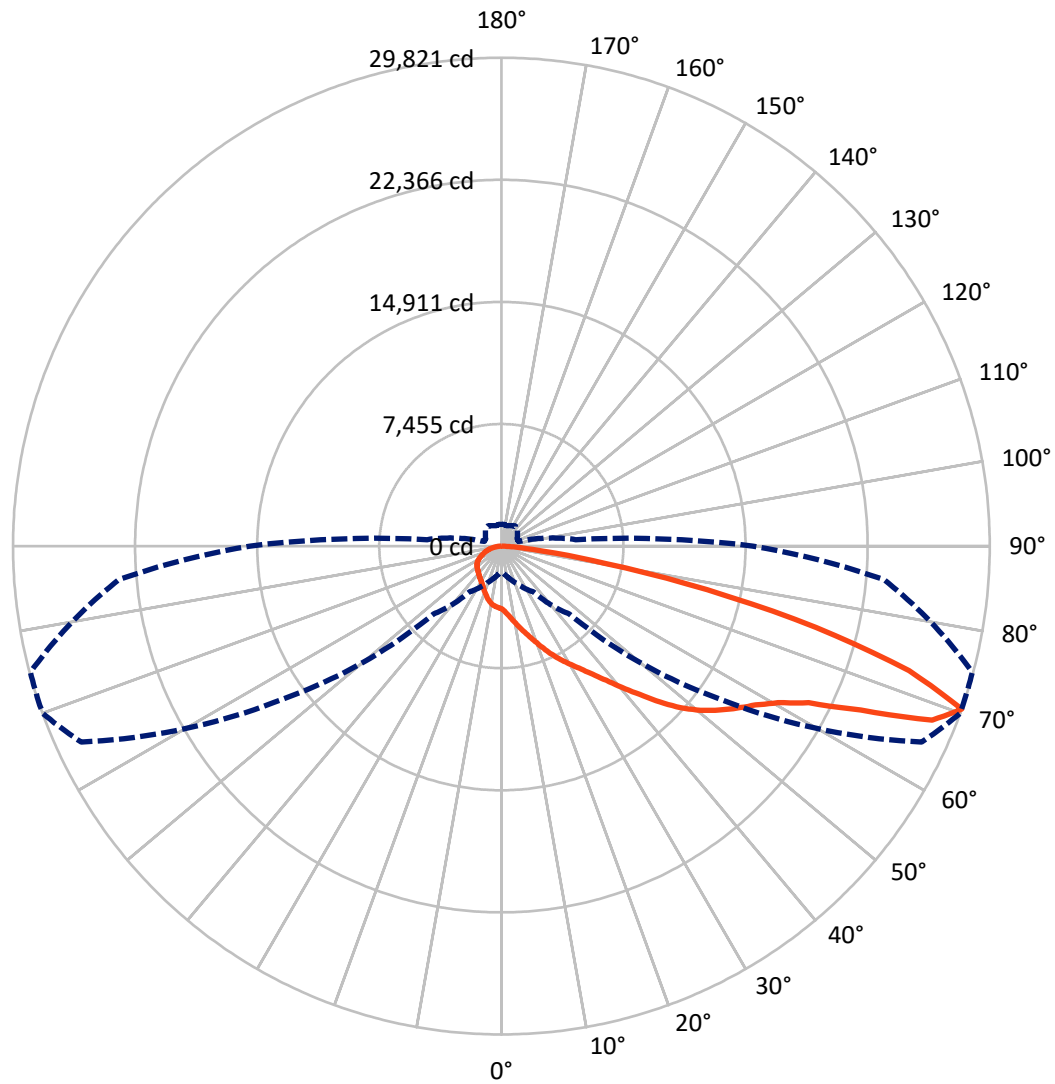


Based on 30 foot mounting height. Maximum calculated value = 6.2 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



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

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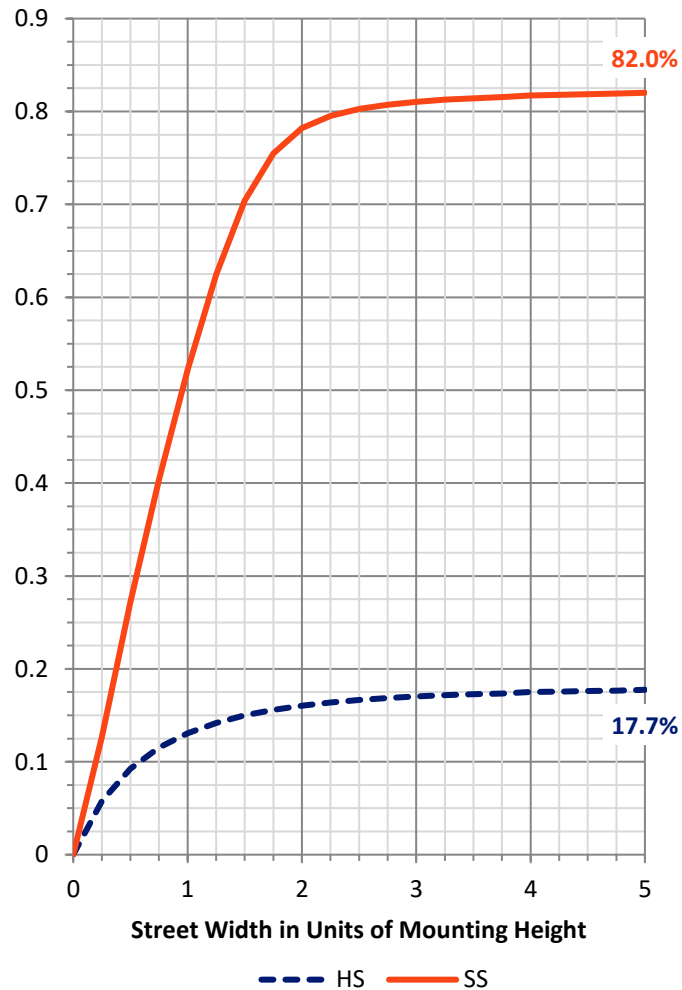
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5895.1	0.0	5895.1
	% Fixture	17.9	0.0	17.9
Street Side	Lumens	27001.1	0.0	27001.1
	% Fixture	82.1	0.0	82.1
Total	Lumens	32896.2	0.0	32896.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	389.9	1.2
10°-20°	1268.4	3.9
20°-30°	2247.1	6.8
30°-40°	3381.9	10.3
40°-50°	5116.4	15.6
50°-60°	7329.5	22.3
60°-70°	8101.9	24.6
70°-80°	4572.1	13.9
80°-90°	489.1	1.5
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°	32896.2	100.0
0°-180°	32896.2	100.0

Coefficient of Utilization



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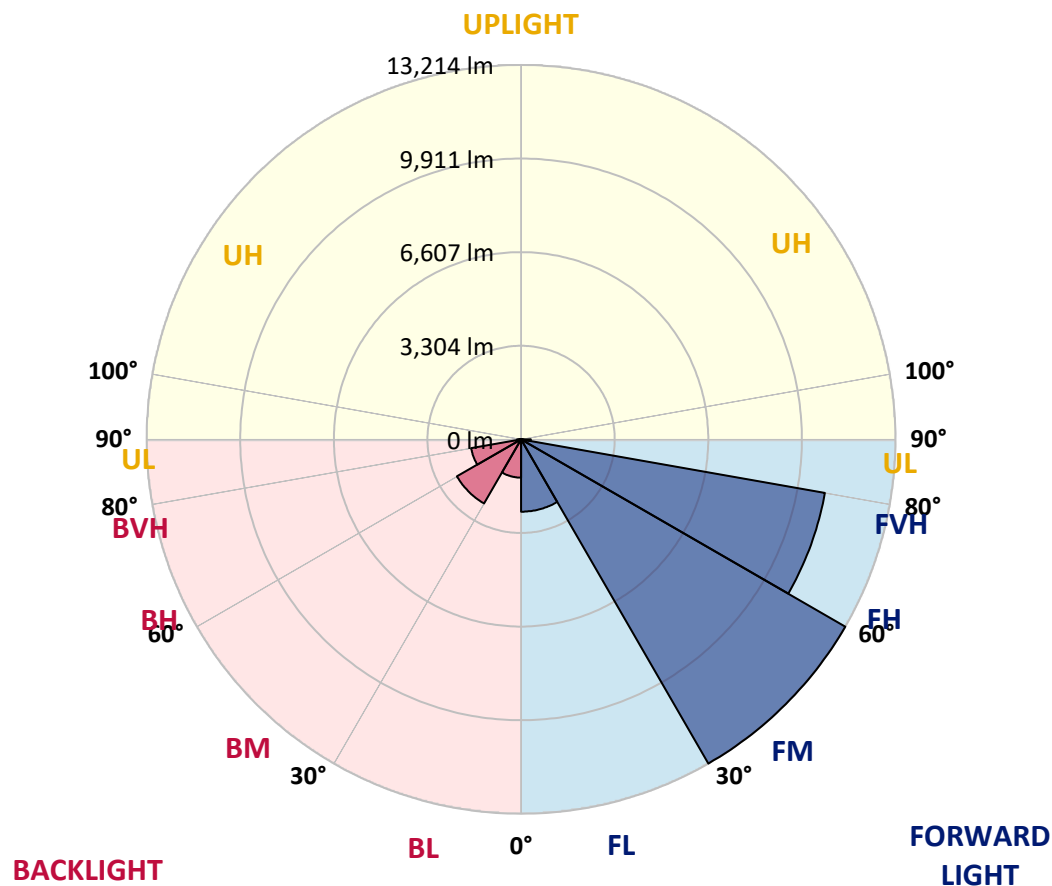
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2553.7	7.8			
FM	(30°-60°)	13214.4	40.2			
FH	(60°-80°)	10887.3	33.1			G4/12000
FVH	(80°-90°)	345.7	1.1			G3/500
BL	(0°-30°)	1351.7	4.1	B3/2500		
BM	(30°-60°)	2613.3	7.9	B3/5000		
BH	(60°-80°)	1786.7	5.4	B3/2500		G3/2500
BVH	(80°-90°)	143.3	0.4			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Medium



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	70°	75°	85°
0°	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4
2.5°	4250.0	4242.8	4247.6	4242.8	4216.7	4152.5	4100.2	4033.7	3988.5	3962.4	3900.6
5°	4749.1	4742.0	4725.4	4701.6	4654.0	4566.1	4435.4	4290.4	4202.4	4135.9	4005.1
7.5°	5108.0	5108.0	5105.7	5077.1	5043.9	4951.2	4796.7	4606.5	4478.2	4364.1	4150.1
10°	5291.1	5302.9	5319.6	5360.0	5352.9	5302.9	5158.0	4953.5	4791.9	4658.8	4340.3
12.5°	5390.9	5398.0	5426.5	5509.7	5595.3	5607.2	5521.6	5307.7	5131.8	4953.5	4551.8
15°	5519.3	5521.6	5559.7	5659.5	5785.5	5911.4	5890.1	5676.1	5495.5	5298.2	4787.2
17.5°	5619.1	5635.7	5704.7	5821.1	5978.0	6151.5	6256.1	6123.0	5899.6	5673.8	5043.9
20°	5654.7	5666.6	5756.9	5935.2	6149.1	6394.0	6626.9	6591.2	6365.4	6099.2	5333.8
22.5°	5783.1	5783.1	5849.6	5999.4	6251.3	6607.9	6985.8	7078.5	6878.9	6567.5	5645.2
25°	6065.9	6056.4	6087.3	6149.1	6339.3	6779.0	7340.0	7618.1	7394.7	7045.2	5956.6
27.5°	6453.4	6448.6	6446.3	6455.8	6519.9	6928.8	7639.5	8122.0	7898.6	7504.0	6234.7
30°	6874.1	6859.8	6890.7	6862.2	6848.0	7107.0	7893.8	8573.6	8400.1	7958.0	6465.3
32.5°	7446.9	7420.8	7413.7	7321.0	7263.9	7385.1	8098.2	9087.0	8949.2	8447.6	6724.4
35°	8202.8	8179.0	8057.8	7910.5	7741.7	7798.7	8352.6	9588.6	9598.1	9060.9	7064.3
37.5°	8965.8	8970.6	8875.5	8528.5	8354.9	8321.7	8740.0	10199.4	10403.9	9793.0	7504.0
40°	9600.5	9629.0	9629.0	9262.9	9003.8	8972.9	9284.3	10924.4	11330.9	10691.5	8060.2
42.5°	10083.0	10109.1	10192.3	9928.5	9655.1	9762.1	9945.1	11651.8	12381.5	11801.5	8763.8
45°	10613.0	10634.4	10679.6	10527.5	10368.2	10653.4	10693.8	12521.7	13584.2	13047.0	9581.4
47.5°	11316.6	11297.6	11302.3	11190.6	11067.0	11528.1	11518.6	13253.8	14746.5	14411.4	10468.0
50°	12191.3	12227.0	12193.7	11972.6	11827.6	12248.4	12303.0	14064.3	15768.6	15761.5	11361.8
52.5°	13032.8	13047.0	13222.9	13232.4	12935.3	12847.4	12990.0	14882.0	16631.4	16997.5	12219.8
55°	13075.5	13130.2	13657.9	14038.2	14518.3	13812.4	13684.0	15661.6	17465.7	18207.3	13111.2
57.5°	12165.2	12253.1	13149.2	13969.3	15305.1	15469.1	14872.5	16669.5	18300.0	19398.2	14142.8
60°	10220.8	10403.9	11620.9	12875.9	14950.9	16660.0	17304.1	18038.6	19395.8	20615.2	15395.4
62.5°	6527.1	6598.4	8305.0	10406.2	13356.0	16543.5	19952.0	20451.2	21064.4	22200.6	17325.5
65°	3268.3	3496.5	4497.2	6210.9	9631.4	14577.8	21290.2	24869.9	24118.8	24915.1	20453.6
67.5°	2217.7	2291.4	2797.7	3731.8	5647.6	10327.8	20460.7	28592.2	28371.1	28501.9	23788.4
70°	1635.3	1682.9	2082.2	2643.2	3415.7	5863.9	16289.2	28311.7	29821.1	29773.5	23439.0
72.5°	1193.2	1217.0	1518.9	2018.0	2531.4	3033.0	9947.5	22870.9	26032.2	27403.7	20498.7
75°	867.6	896.1	1055.4	1509.4	1968.1	1892.0	4910.8	16519.7	19852.2	22490.6	16700.4
77.5°	646.5	682.2	755.9	946.0	1378.6	1354.9	2122.6	10727.1	12840.2	14689.5	10144.8
80°	465.9	473.0	515.8	606.1	874.7	793.9	1010.2	5592.9	6413.0	7026.2	3976.6
82.5°	282.9	290.0	344.7	373.2	541.9	499.2	525.3	1811.2	2595.6	2754.9	1485.6
85°	83.2	87.9	156.9	171.1	225.8	213.9	211.5	736.9	879.5	1124.3	584.7
87.5°	0.0	0.0	0.0	0.0	2.4	14.3	26.1	130.7	197.3	273.3	142.6
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: P641461

CATALOG NUMBER: GWS-SA5F-830-U-T2-W

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4	3836.4
2.5°	3876.8	3822.1	3793.6	3743.7	3708.0	3672.4	3636.7	3603.4	3589.2	3567.8	3572.5
5°	3945.7	3860.1	3774.6	3677.1	3593.9	3525.0	3463.2	3408.5	3384.8	3363.4	3372.9
7.5°	4050.3	3921.9	3757.9	3579.7	3448.9	3353.9	3289.7	3251.7	3239.8	3223.1	3223.1
10°	4183.4	3990.9	3703.3	3448.9	3292.1	3216.0	3187.5	3185.1	3197.0	3199.4	3194.6
12.5°	4330.8	4057.4	3622.5	3294.4	3161.3	3137.6	3159.0	3199.4	3239.8	3261.2	3256.4
15°	4482.9	4100.2	3484.6	3147.1	3066.3	3097.2	3166.1	3246.9	3325.3	3365.7	3363.4
17.5°	4625.5	4109.7	3306.3	3004.4	2983.1	3061.5	3180.3	3306.3	3413.3	3470.3	3472.7
20°	4784.8	4093.1	3123.3	2876.1	2899.9	3028.2	3185.1	3337.2	3463.2	3520.2	3534.5
22.5°	4929.8	4036.0	2945.0	2754.9	2828.6	2987.8	3147.1	3289.7	3401.4	3456.1	3475.1
25°	5060.5	3926.7	2750.1	2652.7	2773.9	2930.8	3052.0	3151.8	3230.3	3263.5	3289.7
27.5°	5131.8	3762.7	2602.7	2571.8	2721.6	2849.9	2916.5	2947.4	2973.5	2964.0	2983.1
30°	5146.1	3558.3	2474.4	2507.7	2643.2	2738.2	2752.5	2721.6	2676.4	2602.7	2619.4
32.5°	5131.8	3323.0	2367.4	2438.7	2555.2	2612.3	2593.2	2512.4	2403.1	2289.0	2296.1
35°	5136.6	3085.3	2279.5	2362.7	2453.0	2483.9	2436.4	2324.6	2208.2	2103.6	2098.8
37.5°	5188.9	2885.6	2205.8	2289.0	2353.2	2357.9	2305.6	2189.2	2129.7	2051.3	2041.8
40°	5333.8	2738.2	2139.2	2215.3	2255.7	2253.3	2193.9	2110.7	2151.1	2125.0	2117.9
42.5°	5571.5	2647.9	2084.6	2136.9	2165.4	2170.1	2122.6	2070.3	2158.3	2125.0	2113.1
45°	5954.2	2643.2	2046.5	2058.4	2103.6	2136.9	2103.6	2044.2	2077.4	1915.8	1884.9
47.5°	6408.2	2724.0	2018.0	1989.5	2067.9	2127.4	2075.1	1980.0	1911.1	1763.7	1742.3
50°	6954.9	2888.0	1991.9	1915.8	2015.6	2091.7	2039.4	1908.7	1804.1	1725.7	1713.8
52.5°	7603.8	3104.3	1958.6	1832.6	1937.2	2072.7	2039.4	1901.6	1763.7	1692.4	1680.5
55°	8283.6	3353.9	1920.6	1732.8	1849.3	2077.4	2056.1	1851.6	1732.8	1694.8	1685.2
57.5°	9127.4	3653.4	1851.6	1616.3	1770.8	2034.7	1989.5	1823.1	1711.4	1680.5	1671.0
60°	10223.2	4097.8	1720.9	1497.5	1680.5	1958.6	1930.1	1775.6	1654.3	1628.2	1621.1
62.5°	11958.4	4851.3	1561.6	1383.4	1573.5	1799.3	1842.1	1685.2	1583.0	1580.7	1578.3
65°	14786.9	5756.9	1373.9	1281.2	1461.8	1668.6	1725.7	1592.5	1509.4	1535.5	1533.1
67.5°	16769.3	5835.4	1219.4	1174.2	1331.1	1526.0	1609.2	1497.5	1407.1	1457.1	1454.7
70°	15359.8	4551.8	1086.3	1062.5	1190.8	1371.5	1483.2	1378.6	1288.3	1335.8	1326.3
72.5°	12954.3	3489.3	960.3	946.0	1048.2	1209.9	1321.6	1259.8	1164.7	1164.7	1143.3
75°	10411.0	2878.5	827.2	820.0	889.0	1045.9	1171.8	1067.2	979.3	974.5	960.3
77.5°	5970.9	1887.3	694.1	689.3	710.7	874.7	910.4	889.0	822.4	791.5	782.0
80°	2379.3	981.7	546.7	515.8	537.2	641.8	717.8	682.2	625.1	587.1	565.7
82.5°	922.3	492.0	385.1	337.5	368.4	463.5	520.5	508.7	470.6	385.1	361.3
85°	375.6	240.1	230.6	194.9	213.9	249.6	299.5	259.1	213.9	152.1	145.0
87.5°	99.8	87.9	85.6	52.3	40.4	11.9	2.4	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

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.

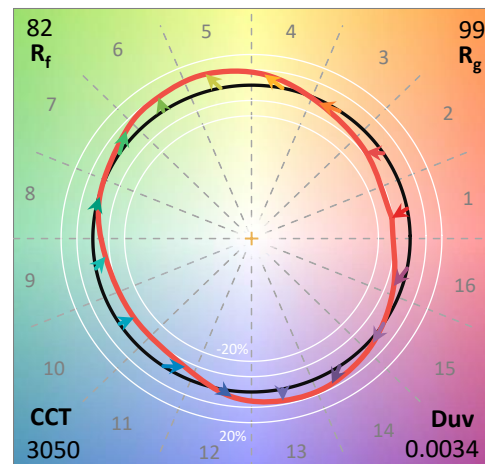
Test Information

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

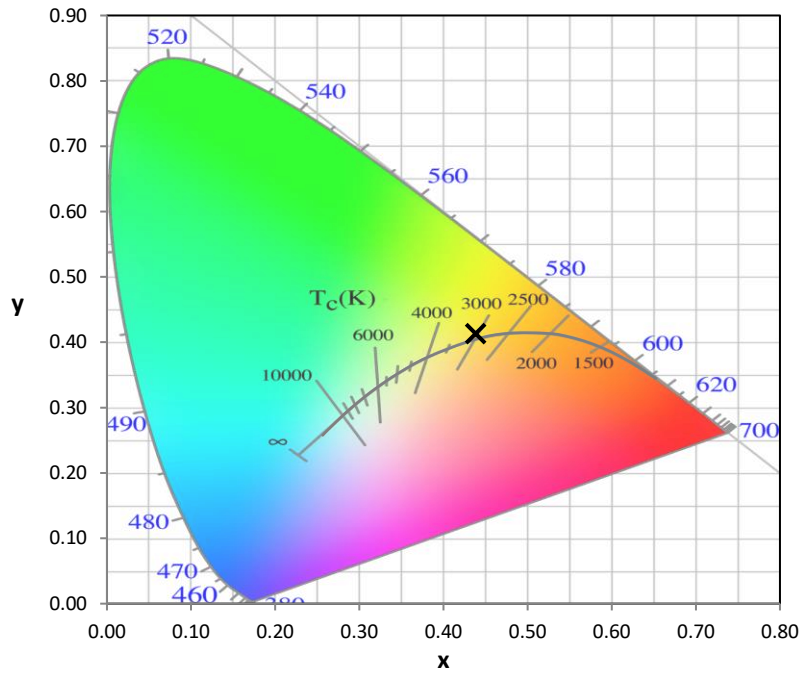
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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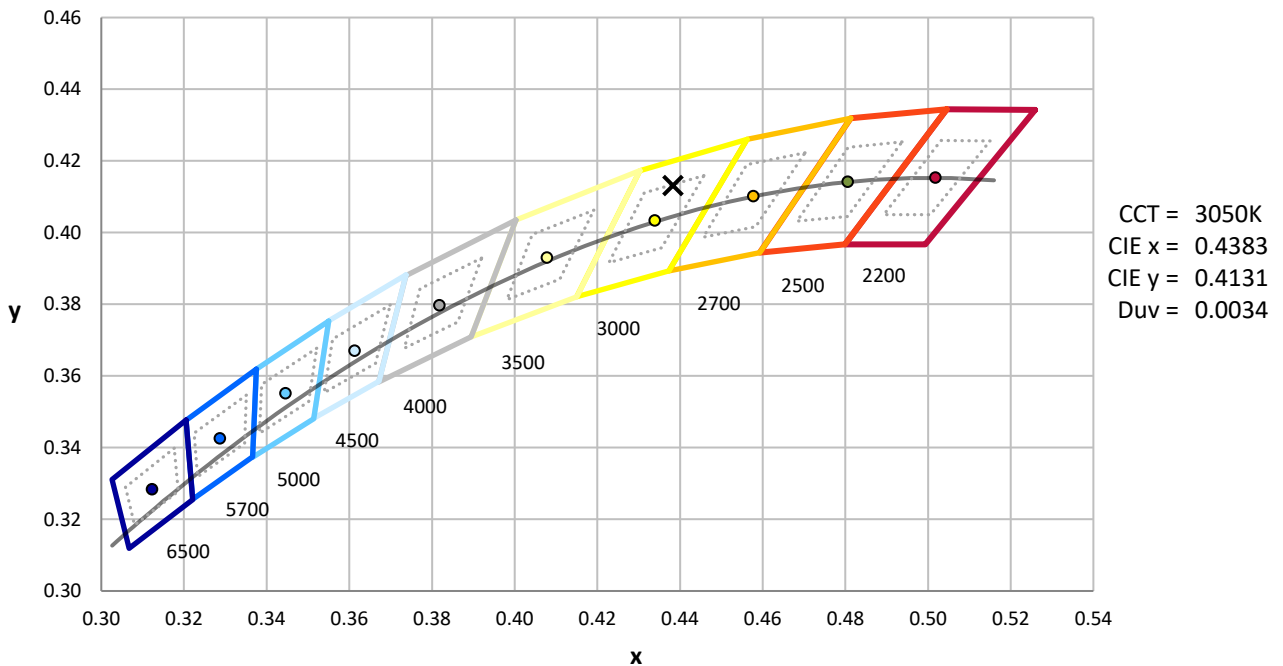
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



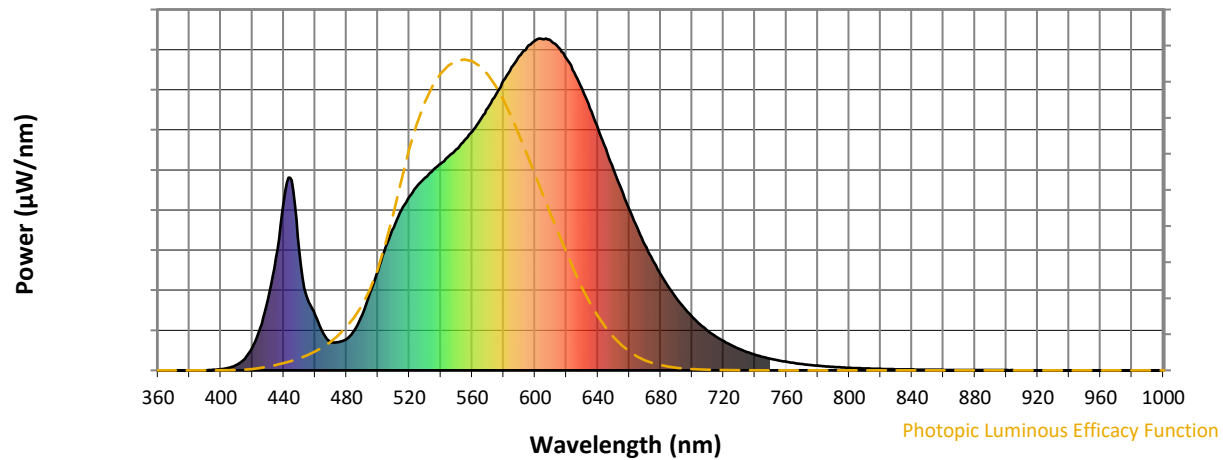
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

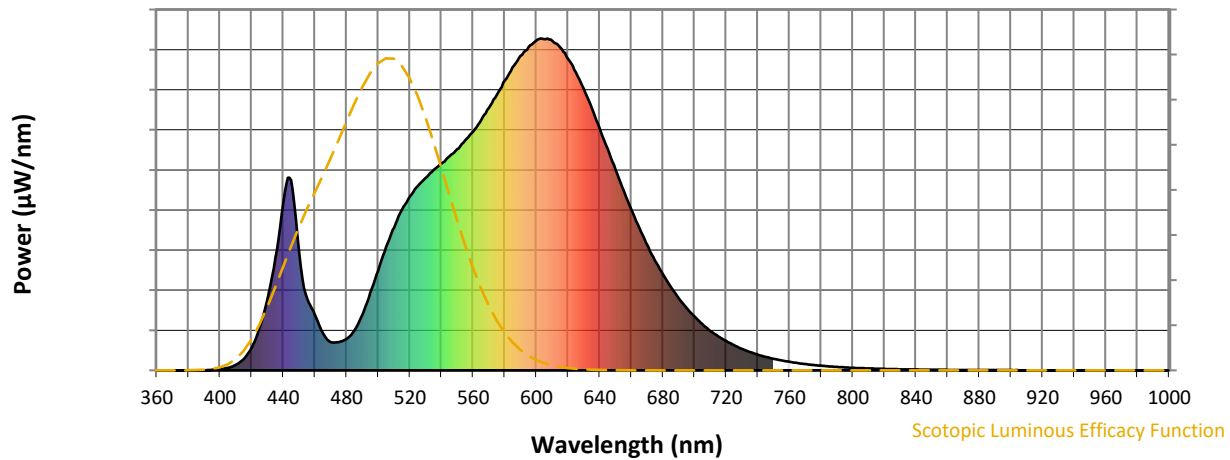


Photopic Lumens: NR

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

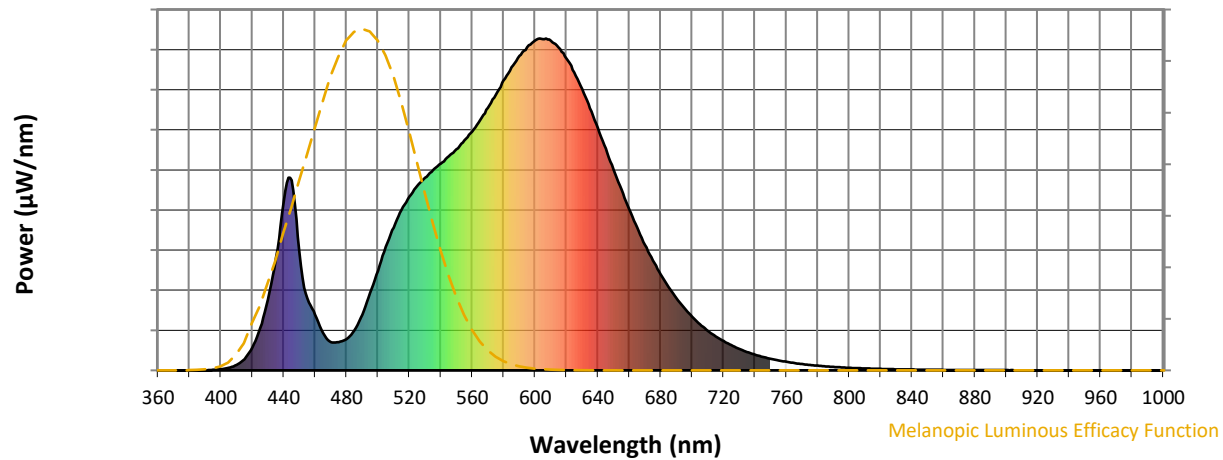


Scotopic Lumens: NR

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

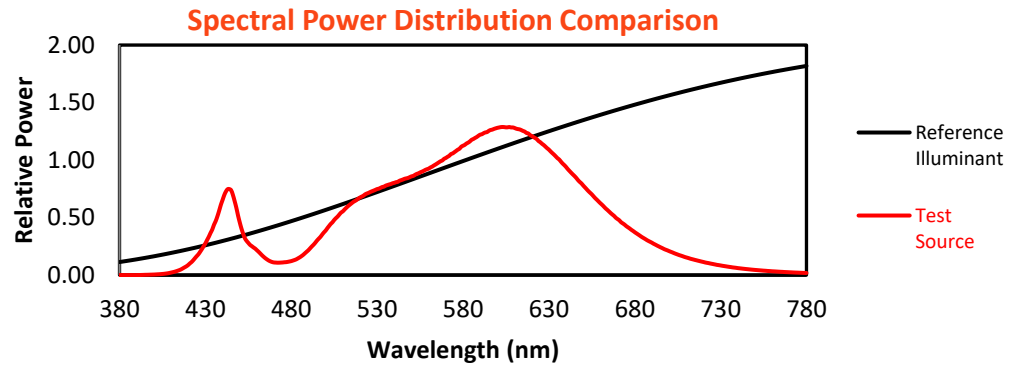
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168	NR	620	940	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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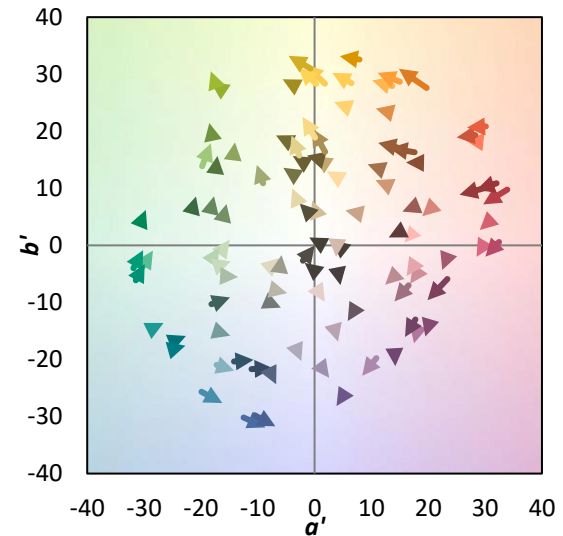
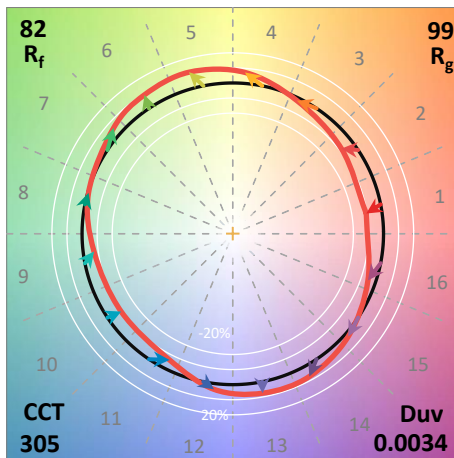
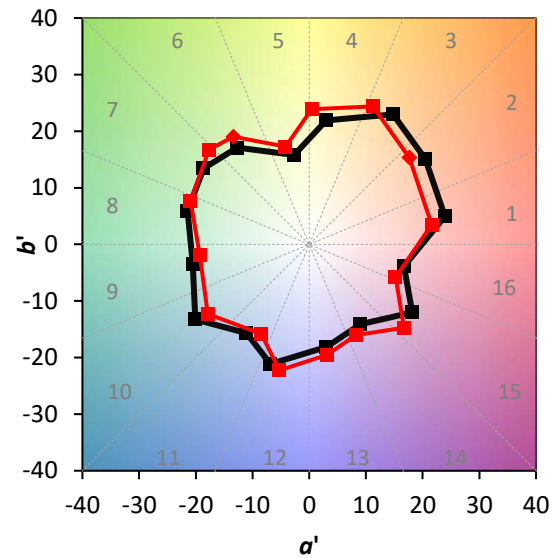
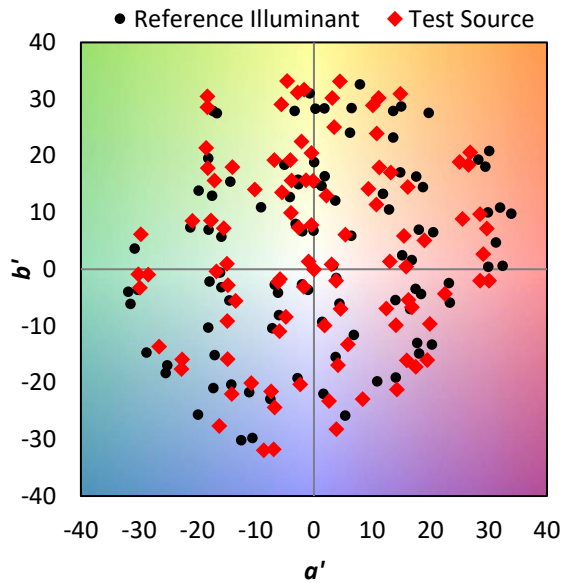
TM-30-18

Summary

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

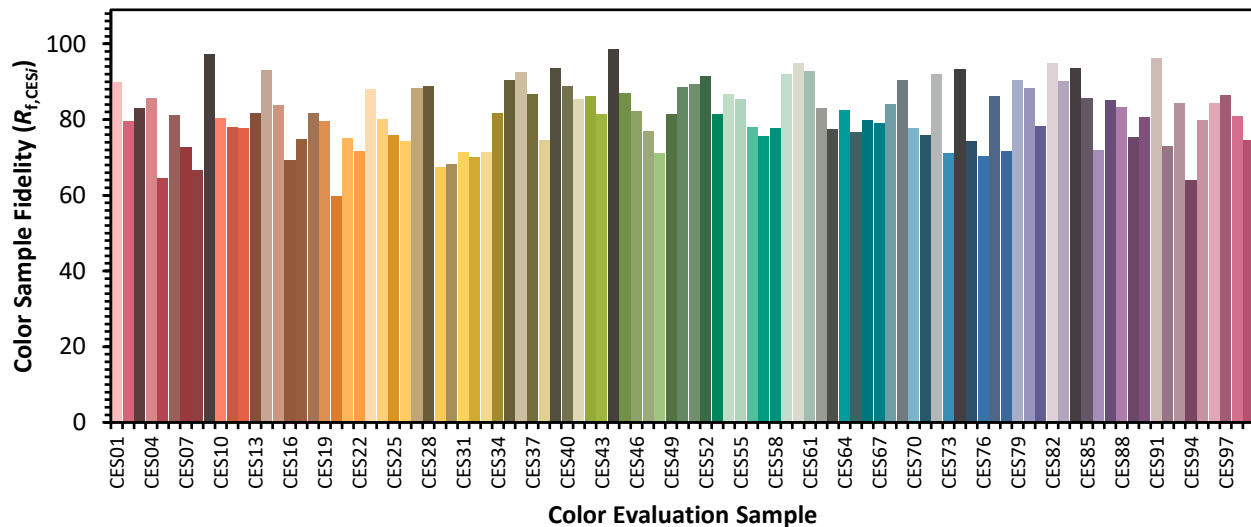


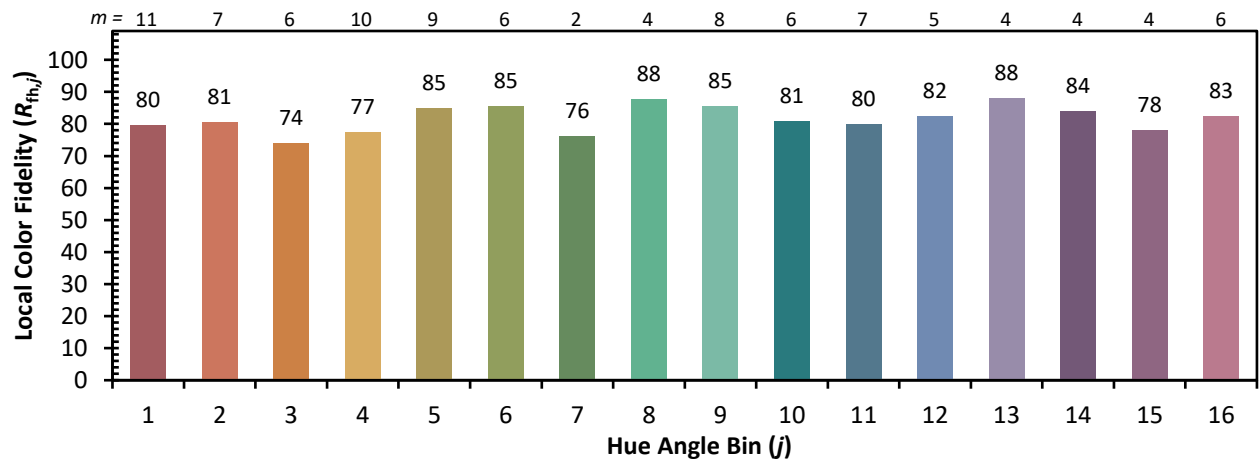
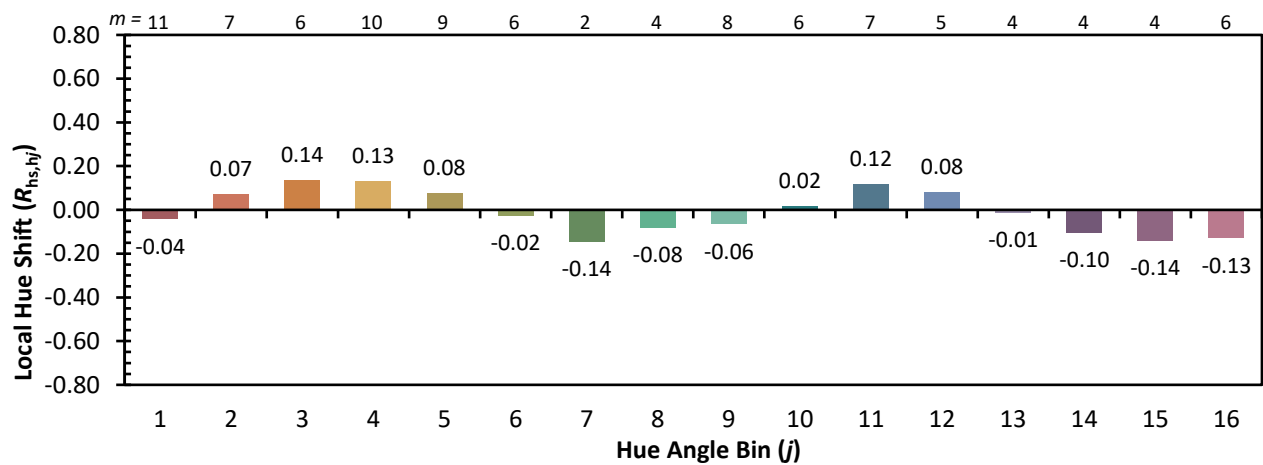
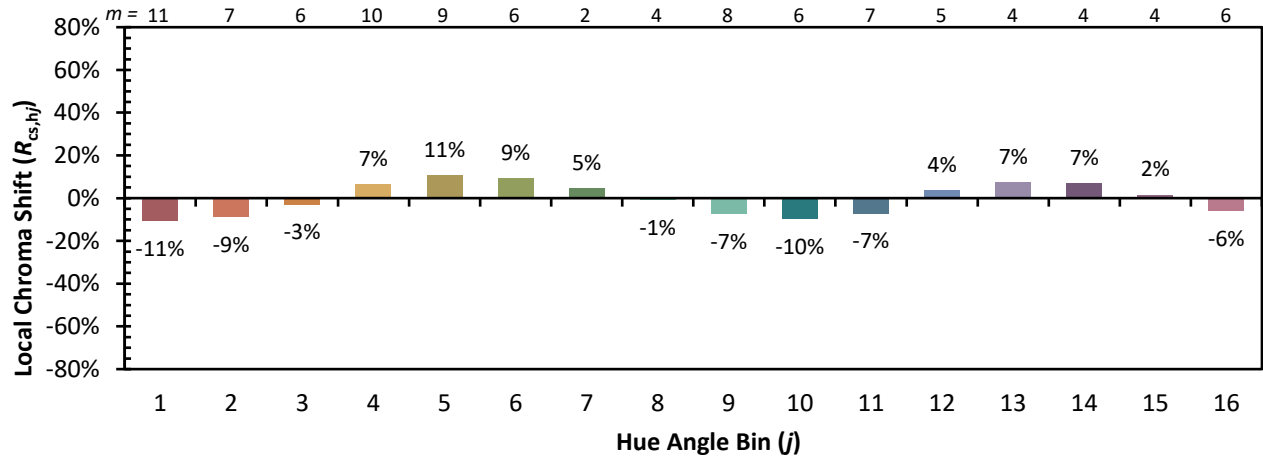
Color Vector Graphics



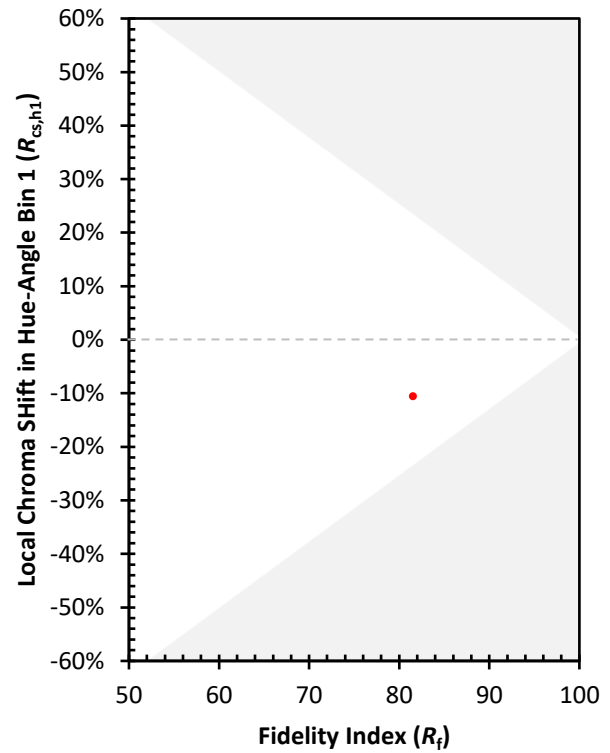
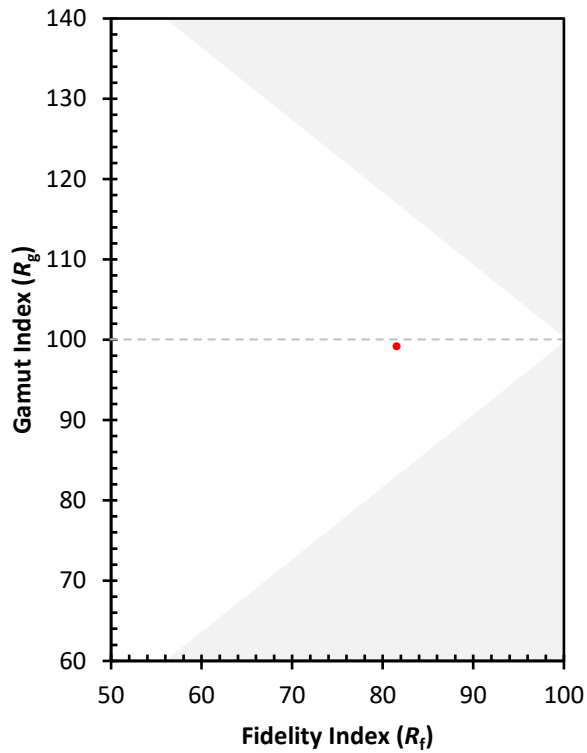
Individual Sample Fidelity Index ($R_{f,i}$)

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)