

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: P633030

Luminaire Tested: GWS-SA2D-830-U-SL3-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P633030
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-34)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA2D-830-U-SL3-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND
TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: (32) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7512.3 lumens
Efficiency: N/A
Efficacy: 91.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

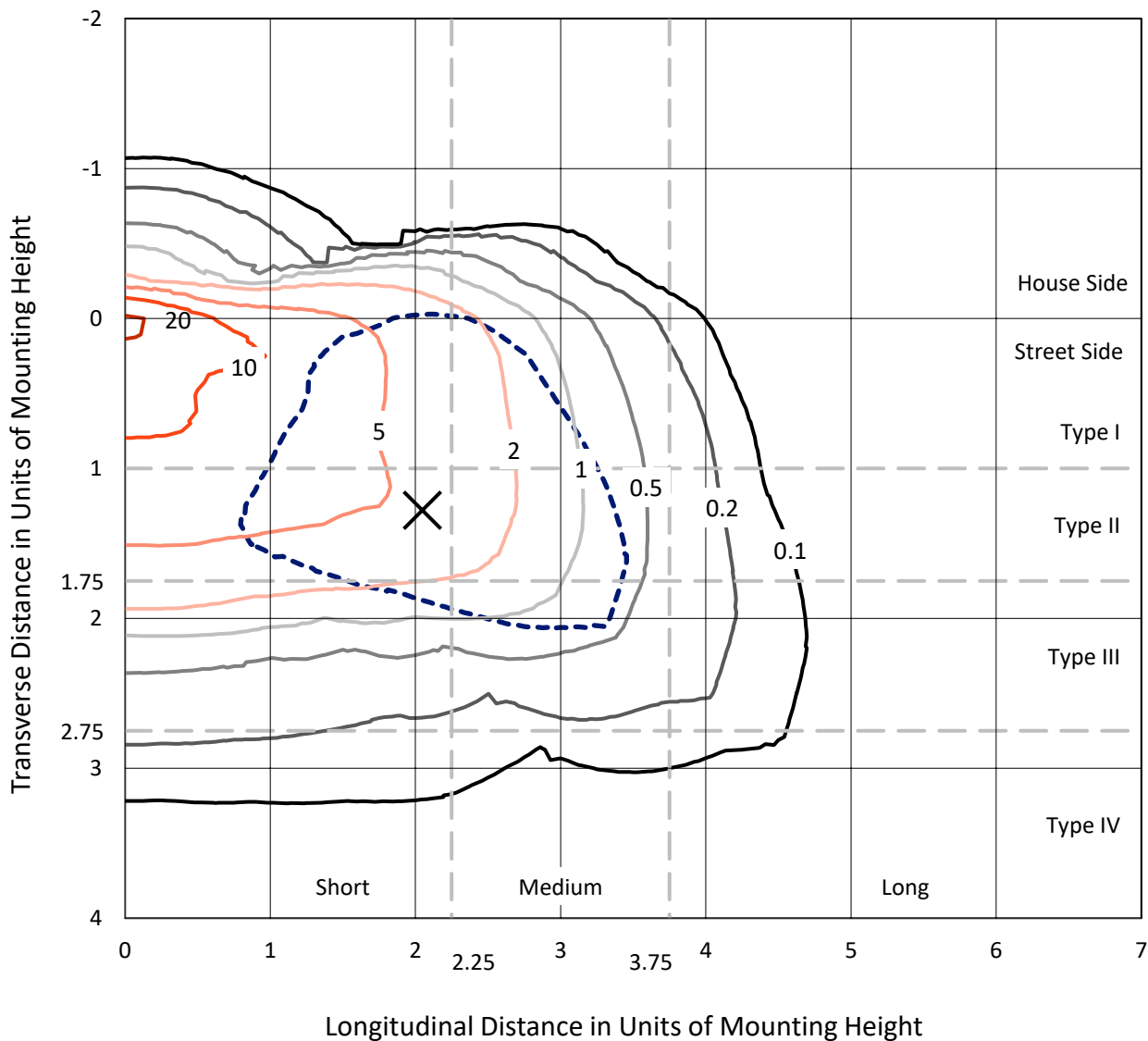
Input Watts (W): 82.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

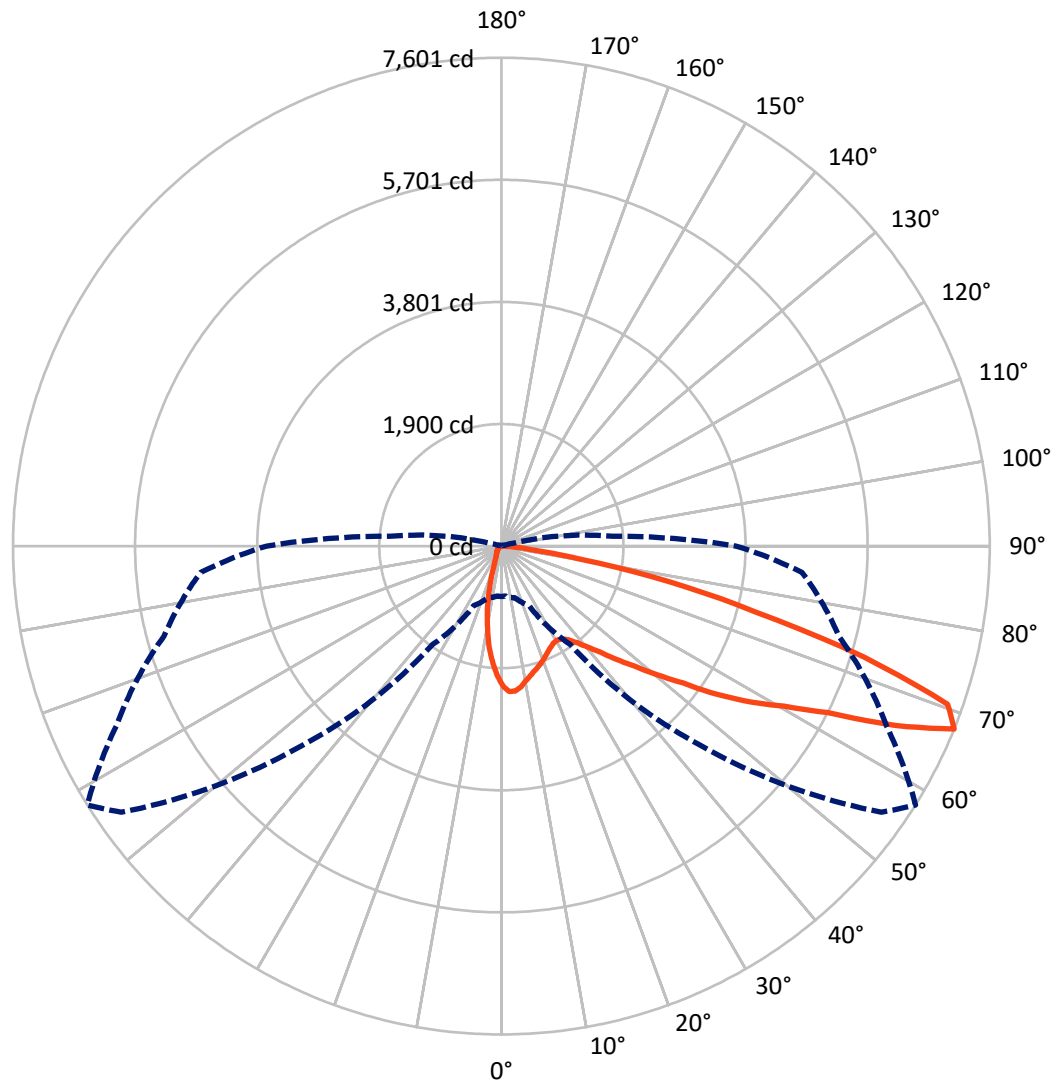
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 21.7 fc
 Type III - Short - N/A

REPORT NUMBER: P633030
CATALOG NUMBER: GWS-SA2D-830-U-SL3-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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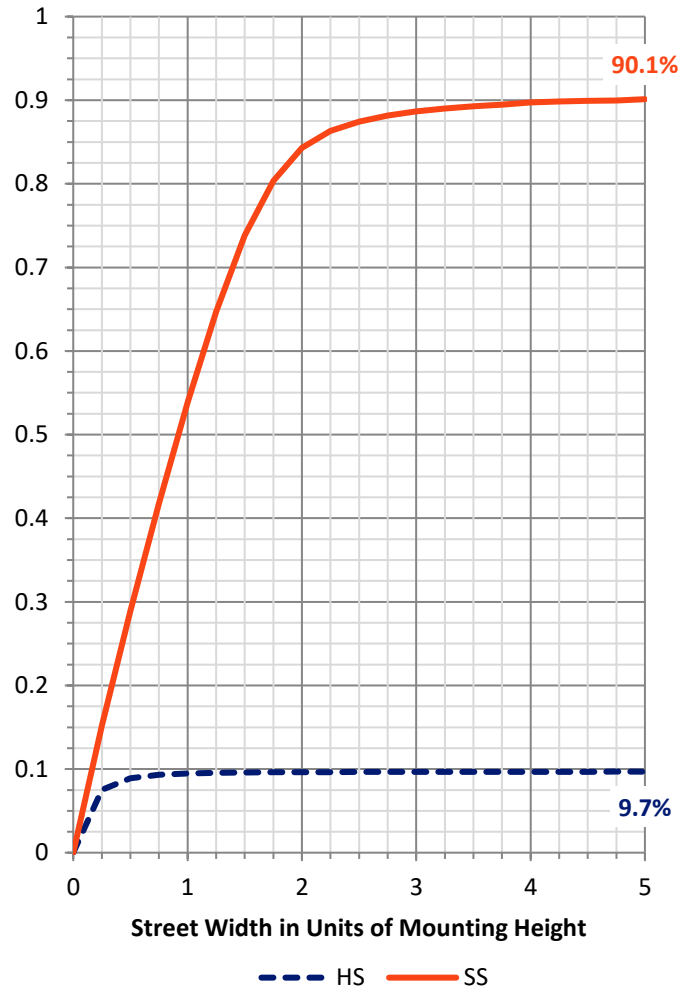
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	733.9	0.0	733.9
	% Fixture	9.8	0.0	9.8
Street Side	Lumens	6778.4	0.0	6778.4
	% Fixture	90.2	0.0	90.2
Total	Lumens	7512.3	0.0	7512.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.1	2.3
10°-20°	366.5	4.9
20°-30°	494.3	6.6
30°-40°	694.6	9.2
40°-50°	1072.7	14.3
50°-60°	1715.5	22.8
60°-70°	2031.2	27.0
70°-80°	898.6	12.0
80°-90°	62.8	0.8
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°	7512.3	100.0
0°-180°	7512.3	100.0

Coefficient of Utilization



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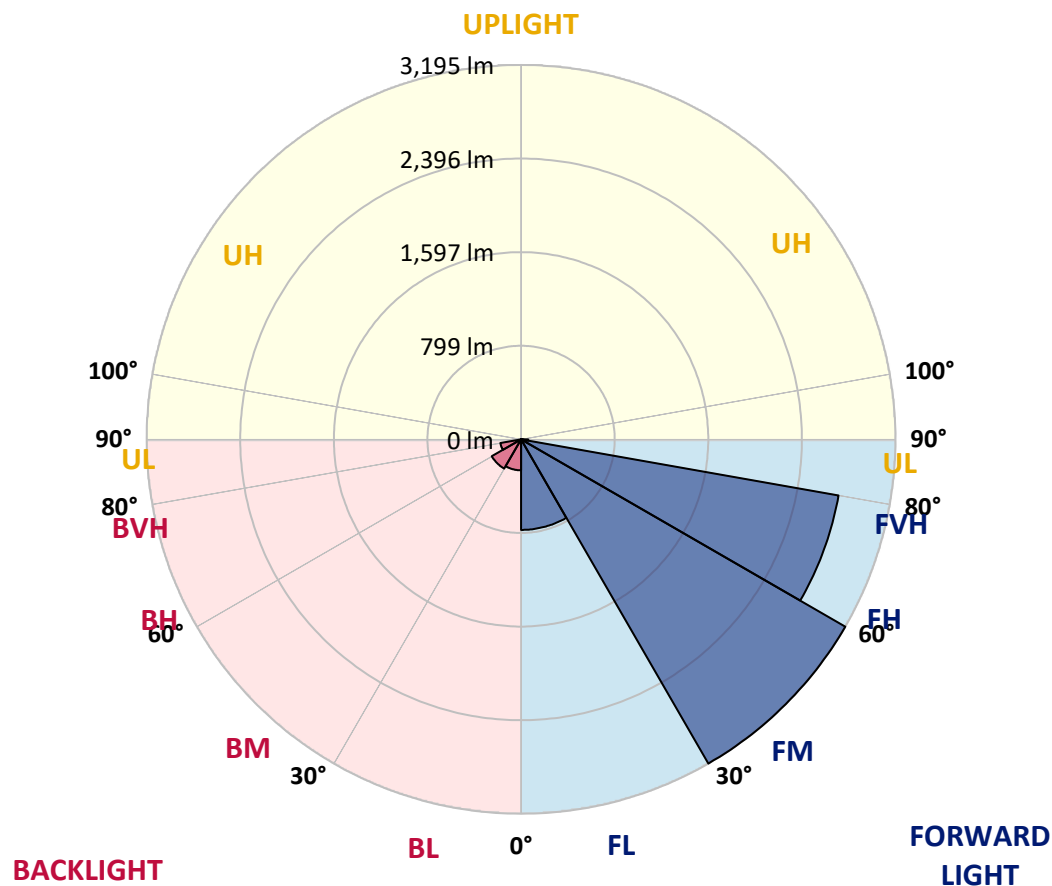
CATALOG NUMBER: GWS-SA2D-830-U-SL3-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	772.8	10.3			
FM	(30°-60°)	3194.8	42.5			
FH	(60°-80°)	2750.6	36.6			G2/5000
FVH	(80°-90°)	60.1	0.8			G1/100
BL	(0°-30°)	264.1	3.5	B1/500		
BM	(30°-60°)	288.0	3.8	B1/1000		
BH	(60°-80°)	179.2	2.4	B1/500		G1/500
BVH	(80°-90°)	2.7	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 III Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9
2.5°	2279.3	2283.3	2288.6	2295.2	2293.9	2287.9	2280.6	2264.0	2253.3	2220.1	2179.5
5°	2206.1	2205.5	2218.8	2231.4	2254.0	2266.0	2282.6	2267.3	2262.0	2222.1	2156.3
7.5°	2063.2	2070.5	2085.8	2105.7	2138.3	2173.5	2213.4	2208.8	2224.7	2198.2	2116.4
10°	1922.9	1918.9	1942.8	1972.7	2022.6	2067.8	2125.7	2125.0	2166.9	2164.2	2071.2
12.5°	1799.9	1799.2	1817.8	1851.7	1910.2	1973.4	2051.9	2053.9	2105.7	2127.0	2032.6
15°	1696.2	1697.5	1715.4	1750.7	1811.2	1888.3	1979.4	1996.0	2054.5	2097.8	1994.7
17.5°	1622.3	1623.0	1633.7	1664.2	1723.4	1805.9	1915.6	1938.2	2013.3	2075.8	1964.1
20°	1588.4	1585.8	1587.8	1603.1	1648.9	1724.1	1850.4	1879.7	1975.4	2060.5	1936.2
22.5°	1593.1	1589.1	1579.8	1577.8	1598.4	1655.6	1781.3	1817.2	1934.2	2051.2	1910.9
25°	1634.3	1625.7	1612.4	1592.4	1584.4	1613.0	1720.8	1758.0	1895.6	2051.9	1891.6
27.5°	1697.5	1688.2	1671.6	1645.0	1613.7	1601.7	1679.5	1714.8	1868.4	2067.2	1882.3
30°	1777.9	1770.6	1754.7	1722.7	1680.9	1631.7	1670.9	1700.1	1855.1	2098.4	1886.3
32.5°	1873.0	1867.7	1854.4	1825.1	1777.3	1702.1	1700.1	1722.7	1865.7	2143.6	1901.6
35°	1964.8	1966.8	1967.4	1951.5	1900.3	1809.2	1780.6	1788.6	1909.6	2211.4	1936.2
37.5°	2063.8	2059.2	2083.1	2094.4	2045.2	1948.1	1904.9	1905.6	1993.4	2311.8	2001.3
40°	2139.0	2140.3	2192.2	2238.7	2218.1	2124.3	2062.5	2061.8	2122.4	2449.5	2106.4
42.5°	2209.5	2218.1	2294.6	2374.3	2402.9	2319.8	2275.3	2258.7	2303.2	2635.7	2264.0
45°	2284.6	2297.2	2404.3	2518.0	2593.1	2543.9	2508.7	2515.3	2520.6	2852.4	2476.1
47.5°	2372.4	2380.3	2512.6	2672.9	2813.2	2800.5	2802.5	2794.6	2791.9	3125.7	2756.7
50°	2478.7	2497.4	2649.6	2841.1	3032.6	3116.4	3144.3	3147.6	3104.4	3423.6	3047.2
52.5°	2704.8	2727.4	2857.7	3025.3	3272.0	3448.2	3561.9	3539.2	3472.8	3712.1	3365.7
55°	2971.4	2988.7	3114.4	3287.9	3564.5	3811.9	4081.8	4072.5	3909.6	4016.0	3627.7
57.5°	2996.7	3016.0	3210.8	3476.7	3940.2	4261.3	4545.2	4575.2	4336.5	4231.4	3861.7
60°	2712.8	2752.0	3018.0	3375.7	4083.8	4865.7	5053.2	5059.2	4649.6	4450.2	4147.6
62.5°	2174.2	2192.8	2460.8	2927.5	3862.4	5218.1	5829.2	5702.8	5051.9	4788.6	4600.4
65°	1139.6	1215.4	1448.8	1965.4	3132.3	5095.1	6762.7	6728.1	5775.3	5273.3	4952.8
67.5°	781.9	781.3	836.4	1024.6	1867.7	4387.0	7220.8	7601.1	6611.7	5439.5	4697.5
70°	595.1	597.1	646.3	768.6	967.4	2920.2	6718.1	7368.4	6767.3	4938.9	3799.2
72.5°	394.9	398.9	480.7	621.0	772.6	1431.5	5220.8	5895.6	5694.2	3966.8	2674.2
75°	236.0	239.4	297.9	451.5	686.8	801.2	3317.2	4075.8	3919.6	2734.1	1433.5
77.5°	97.1	99.7	152.9	281.3	502.7	622.3	1834.5	2666.9	2347.8	1087.1	391.6
80°	40.6	41.9	73.8	196.8	362.4	390.3	849.7	1253.3	962.1	234.0	119.7
82.5°	14.6	15.3	27.3	108.4	225.4	293.9	428.9	495.3	271.3	76.5	64.5
85°	0.7	0.7	6.6	36.6	85.8	83.1	245.3	237.4	89.8	31.9	38.6
87.5°	0.0	0.0	0.7	0.7	1.3	3.3	23.3	41.2	19.3	8.0	16.6
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-SA2D-830-U-SL3-W-HSS

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9	2166.9
2.5°	2152.9	2117.7	2079.1	2043.2	1986.0	1952.1	1910.2	1891.6	1865.0	1858.4	1862.4
5°	2109.1	2048.5	1956.1	1872.4	1764.0	1676.9	1589.1	1551.9	1504.0	1472.1	1458.8
7.5°	2047.2	1968.1	1823.8	1671.6	1522.6	1363.7	1242.7	1162.9	1090.4	1050.5	1042.6
10°	1984.7	1881.7	1674.9	1456.8	1226.1	1035.9	872.3	751.3	652.9	608.4	573.8
12.5°	1920.2	1791.9	1523.3	1238.7	970.7	711.4	509.3	391.6	321.1	293.2	297.9
15°	1861.0	1705.5	1373.0	1020.6	683.5	429.5	281.3	237.4	220.7	215.4	214.8
17.5°	1804.5	1623.7	1223.4	808.5	450.8	263.3	215.4	204.8	200.1	197.5	197.5
20°	1753.3	1545.2	1077.1	609.0	291.2	208.8	194.8	189.5	185.5	183.5	183.5
22.5°	1705.5	1469.4	934.2	430.9	214.8	187.5	178.9	173.5	168.9	166.2	166.2
25°	1662.2	1400.9	797.9	296.5	184.8	171.5	162.2	156.3	148.3	143.6	143.6
27.5°	1631.0	1339.8	666.9	216.1	166.9	154.3	143.6	135.6	127.0	121.7	120.3
30°	1612.4	1287.9	534.6	177.5	150.3	137.6	125.7	115.7	105.7	100.4	99.7
32.5°	1601.7	1240.0	413.6	154.9	136.3	121.7	108.4	97.7	87.8	81.8	81.1
35°	1605.7	1202.8	309.8	139.6	123.0	107.7	93.1	82.4	73.8	68.5	67.2
37.5°	1640.3	1186.2	232.7	127.7	111.7	95.7	80.5	70.5	62.5	58.5	57.8
40°	1707.5	1189.5	182.8	118.4	102.4	83.8	69.1	59.8	53.9	50.5	49.9
42.5°	1811.8	1217.4	150.9	110.4	92.4	73.1	59.8	52.5	46.5	43.2	42.6
45°	1967.4	1275.3	131.6	101.1	81.8	63.2	51.9	45.2	39.9	35.9	35.2
47.5°	2192.8	1375.7	119.0	92.4	72.5	54.5	44.5	37.9	33.2	29.9	29.3
50°	2432.9	1496.0	108.4	83.8	64.5	47.2	37.9	31.3	27.3	23.9	23.3
52.5°	2688.8	1625.7	100.4	75.8	57.2	40.6	31.9	25.9	21.9	18.6	18.0
55°	2934.9	1756.0	91.1	70.5	48.5	34.6	26.6	21.3	17.3	14.6	14.6
57.5°	3174.2	1875.7	81.1	61.8	39.9	29.3	21.9	17.3	14.0	12.0	11.3
60°	3460.1	2041.2	69.8	52.5	33.2	24.6	18.0	14.0	11.3	9.3	9.3
62.5°	3885.0	2213.4	59.8	43.9	27.9	20.6	14.6	11.3	9.3	8.0	7.3
65°	4024.0	2120.4	50.5	35.9	22.6	16.6	12.0	10.0	8.0	7.3	6.6
67.5°	3652.9	1738.0	41.9	29.3	18.6	14.0	10.6	8.6	7.3	6.6	6.0
70°	2850.4	1233.4	32.6	21.9	15.3	11.3	9.3	8.0	6.6	6.0	6.0
72.5°	1938.8	729.4	25.9	16.6	12.6	10.0	8.0	7.3	6.6	6.0	5.3
75°	954.8	259.3	19.9	12.6	10.0	8.6	7.3	6.6	6.0	5.3	5.3
77.5°	257.3	71.8	15.3	10.0	8.0	6.6	6.6	6.6	6.0	4.7	4.7
80°	87.1	29.9	11.3	7.3	6.6	5.3	4.7	6.0	5.3	4.7	4.0
82.5°	47.9	14.6	8.0	6.0	4.7	4.0	4.0	4.0	4.0	3.3	3.3
85°	30.6	8.0	5.3	4.7	4.7	3.3	2.7	2.7	2.0	2.0	2.0
87.5°	14.0	4.7	4.7	4.0	4.0	3.3	2.0	1.3	0.7	0.7	0.7
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.

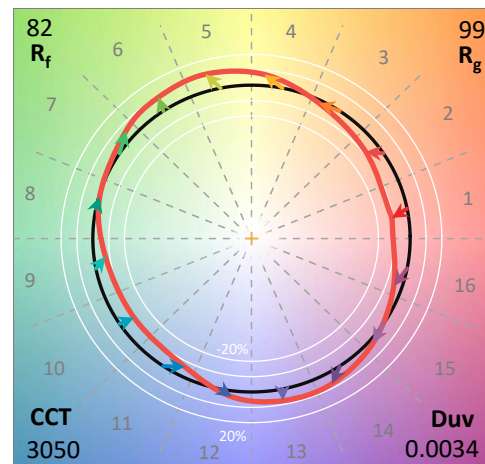
Test Information

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

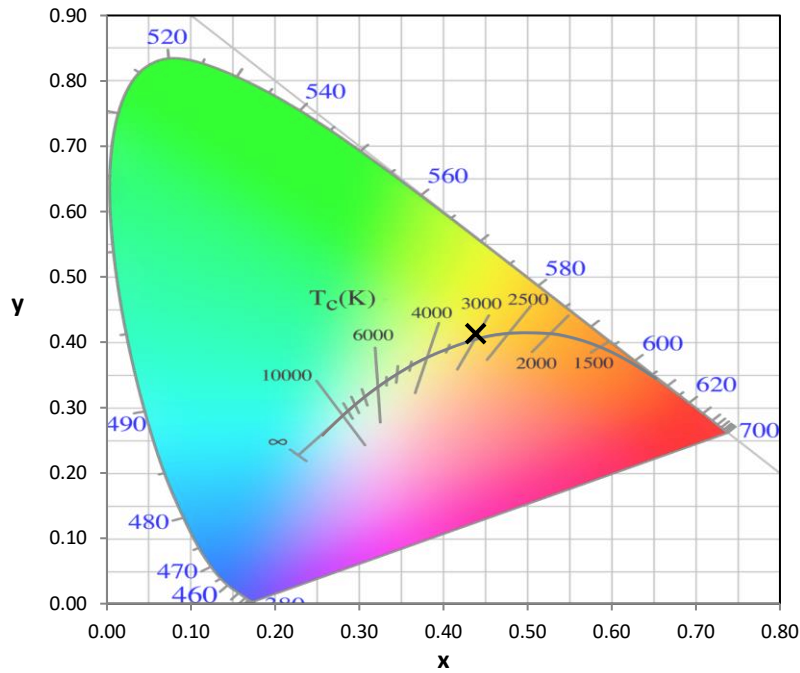
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

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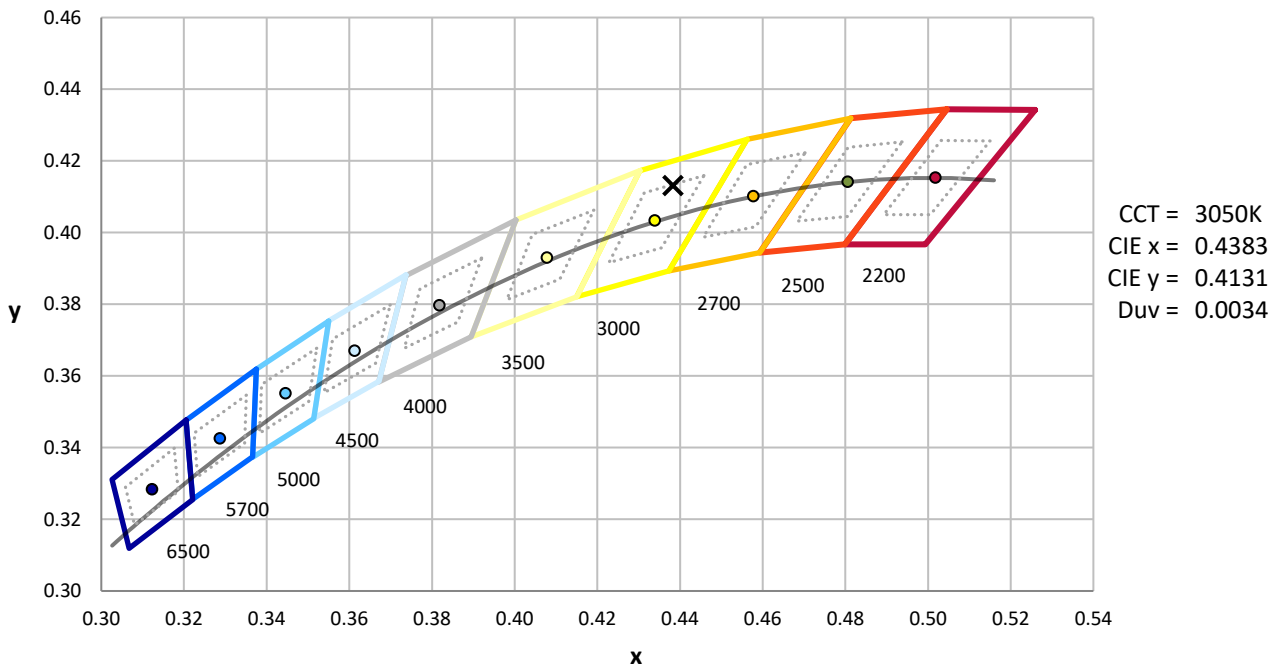
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



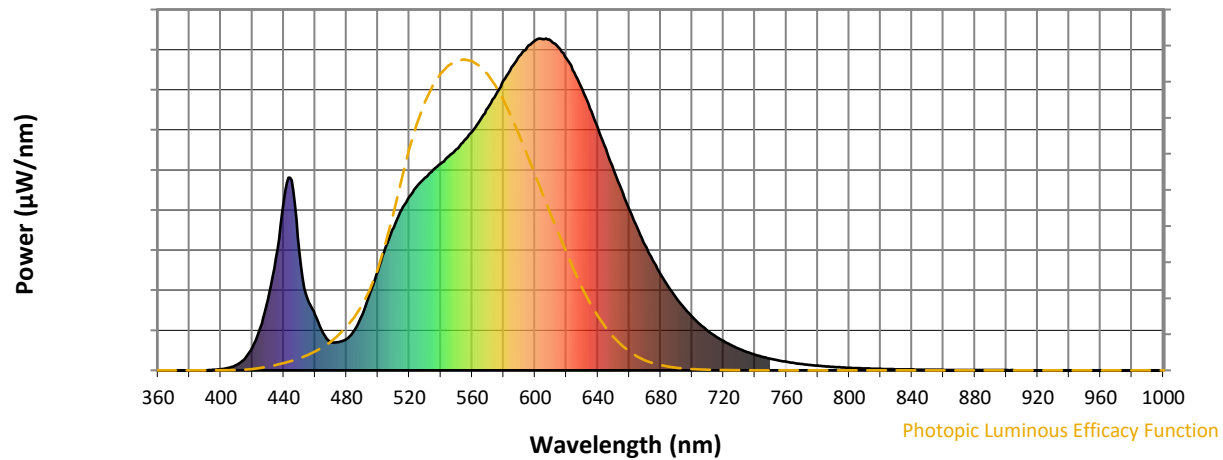
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

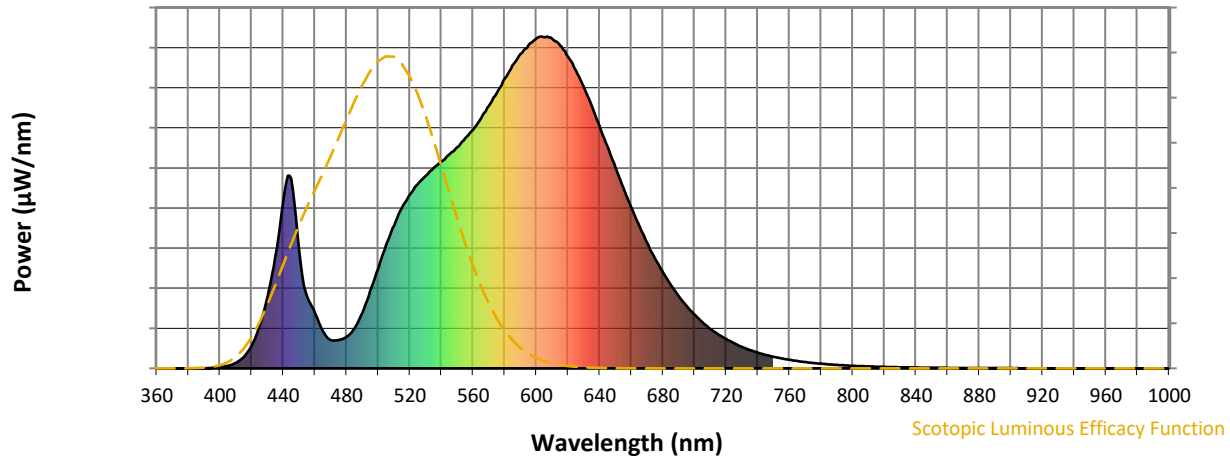


Photopic Lumens: NR

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



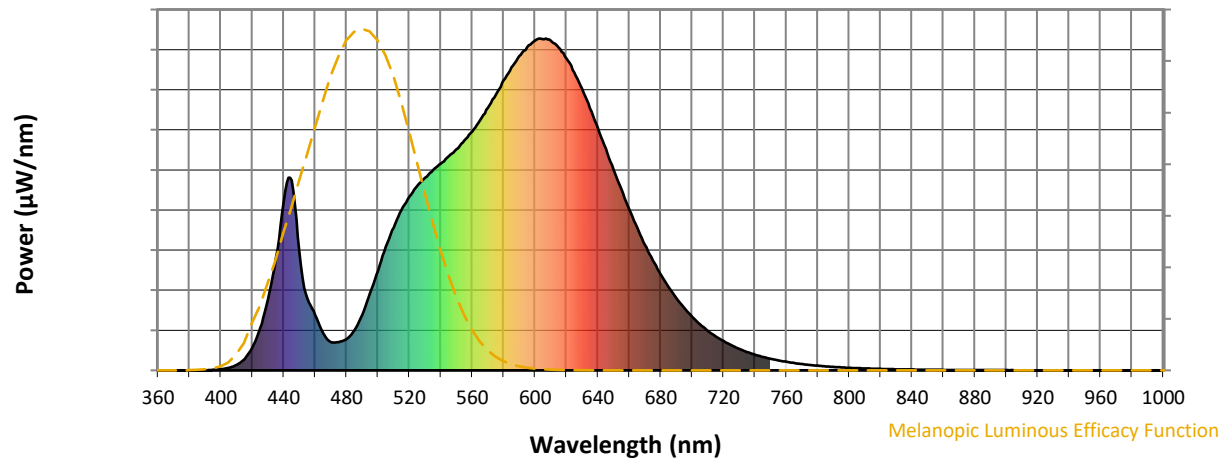
Scotopic Lumens: NR

S/P: 1.27

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



Melanopic Lumens: NR

M/P: 2.32

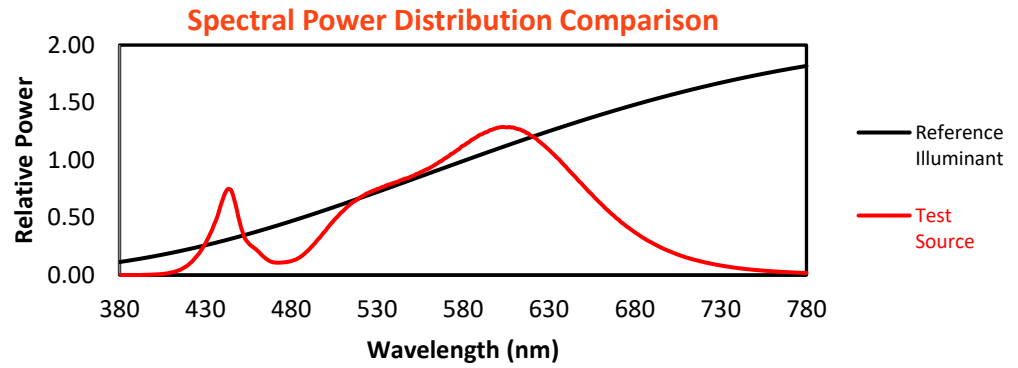
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168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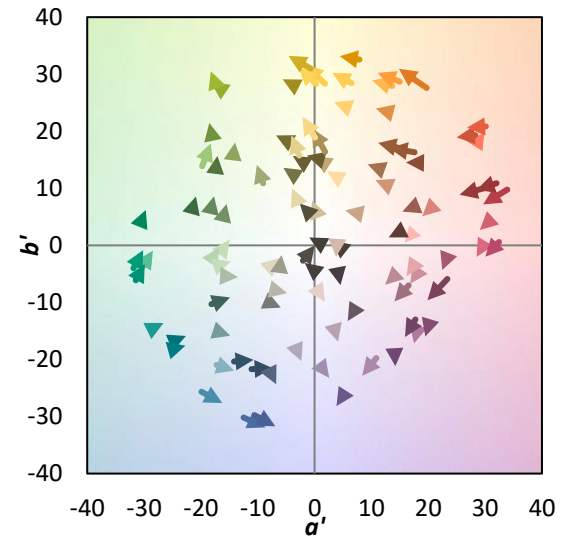
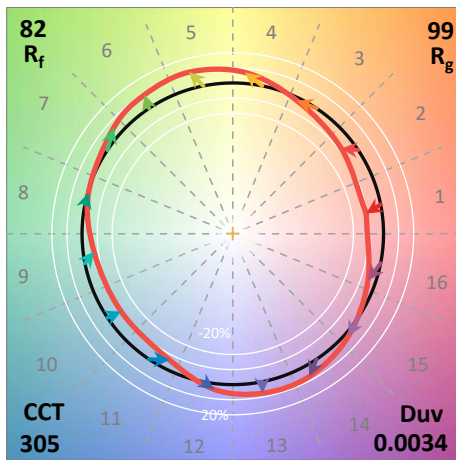
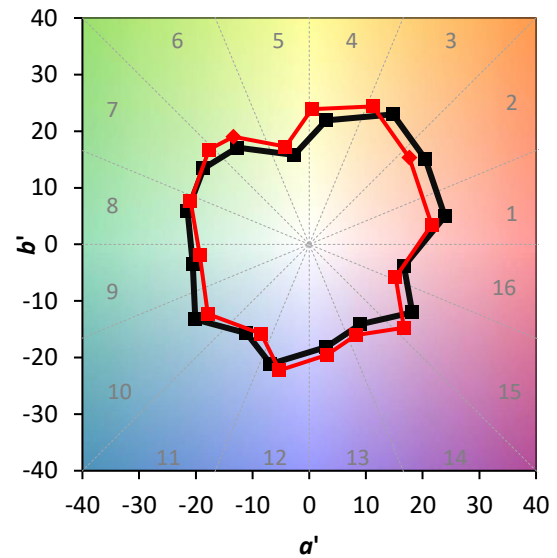
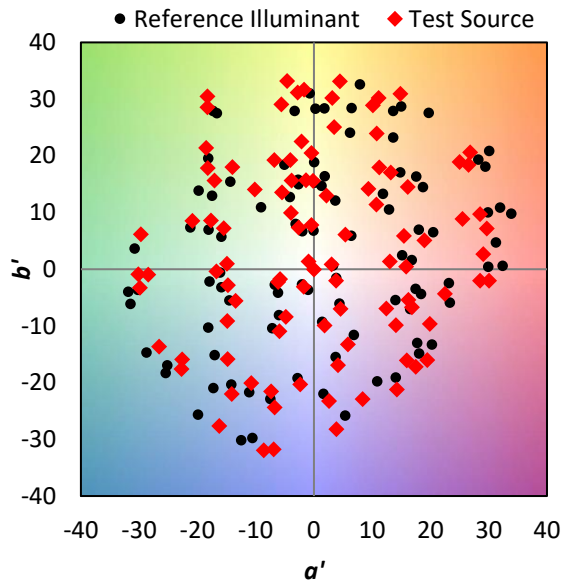
TM-30-18

Summary

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

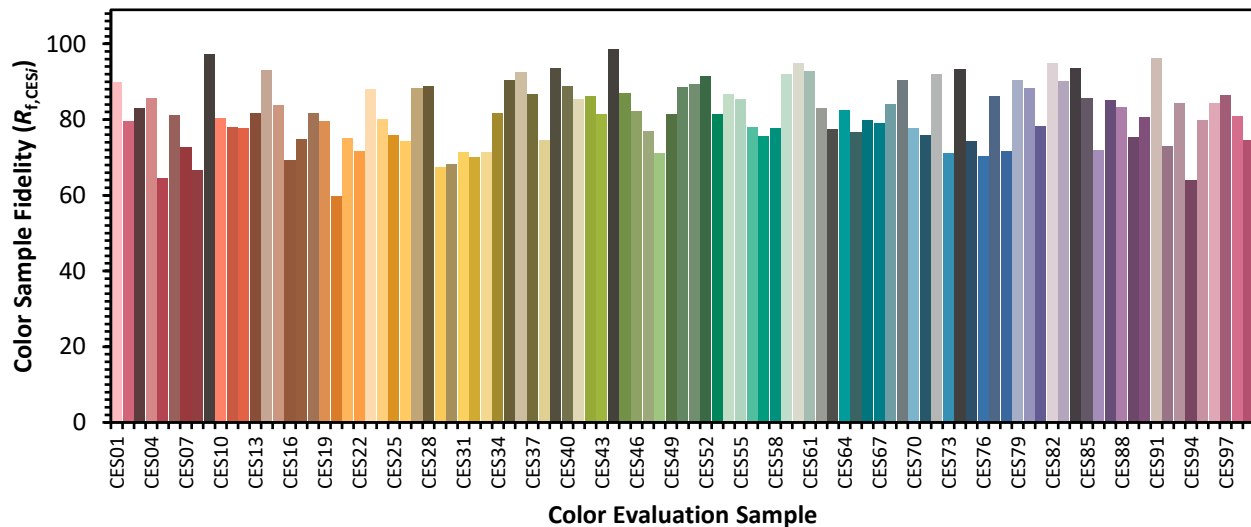


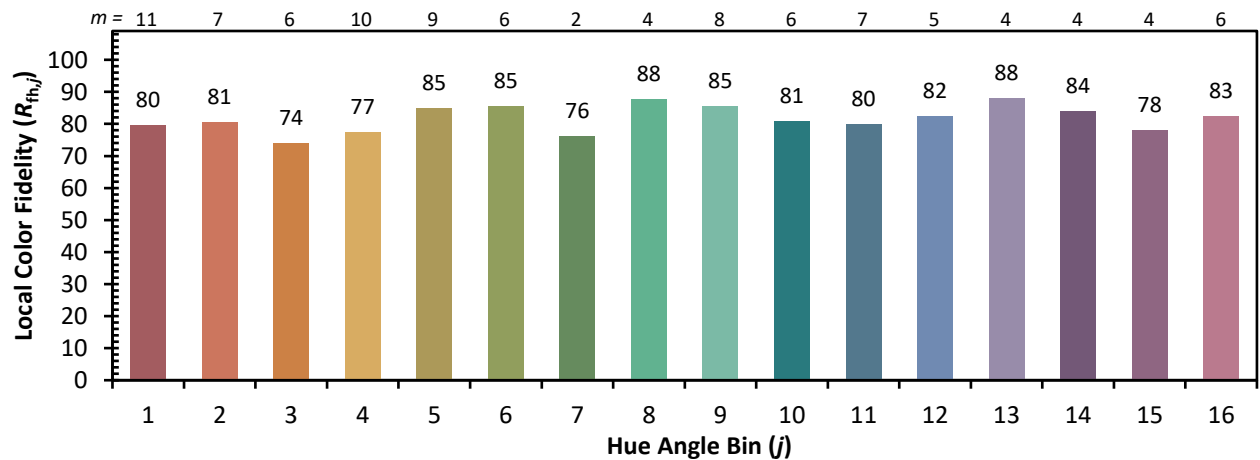
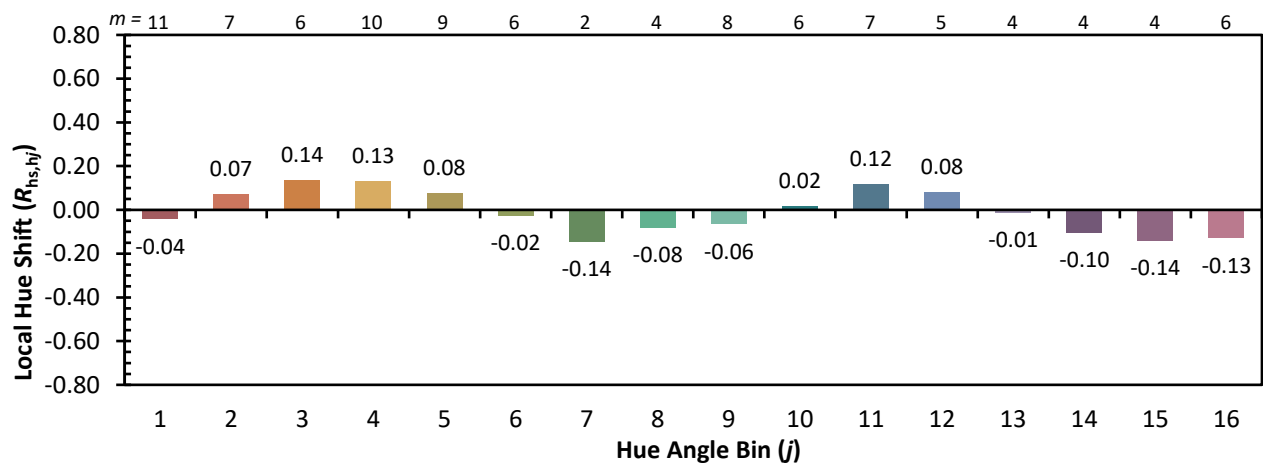
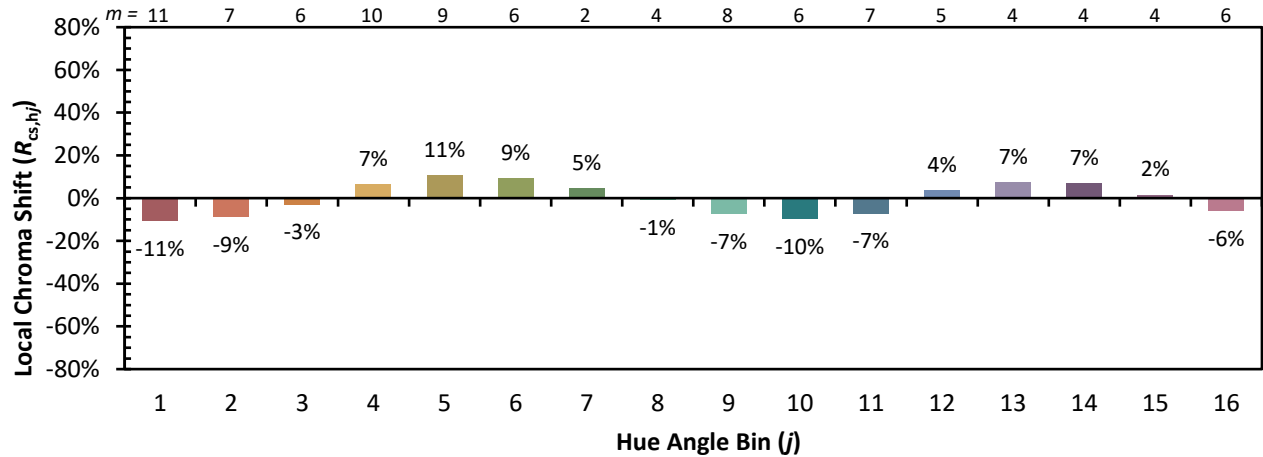
Color Vector Graphics



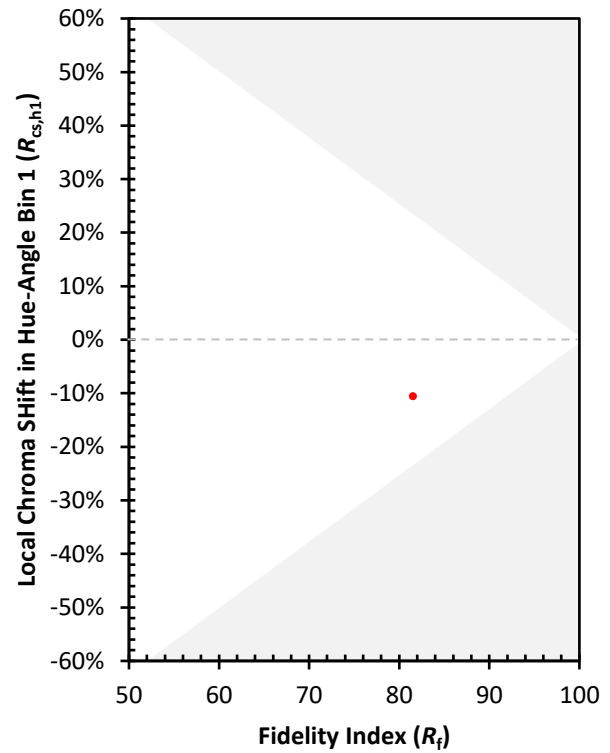
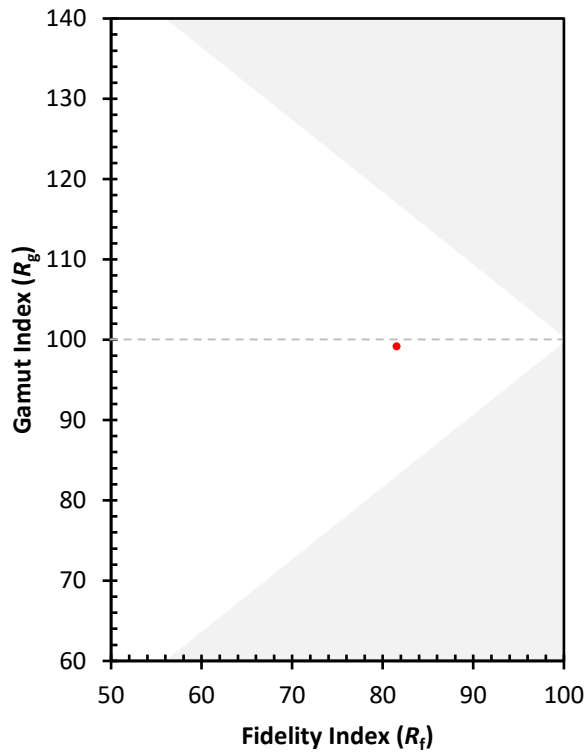
Individual Sample Fidelity Index ($R_{f,i}$)

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)