

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: P631075

Luminaire Tested: GWS-SA1E-830-U-T3R-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P631075
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1E-830-U-T3R-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND
TYPE III ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (16) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3775.4 lumens
Efficiency: N/A
Efficacy: 64.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

Input Watts (W): 58.4
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



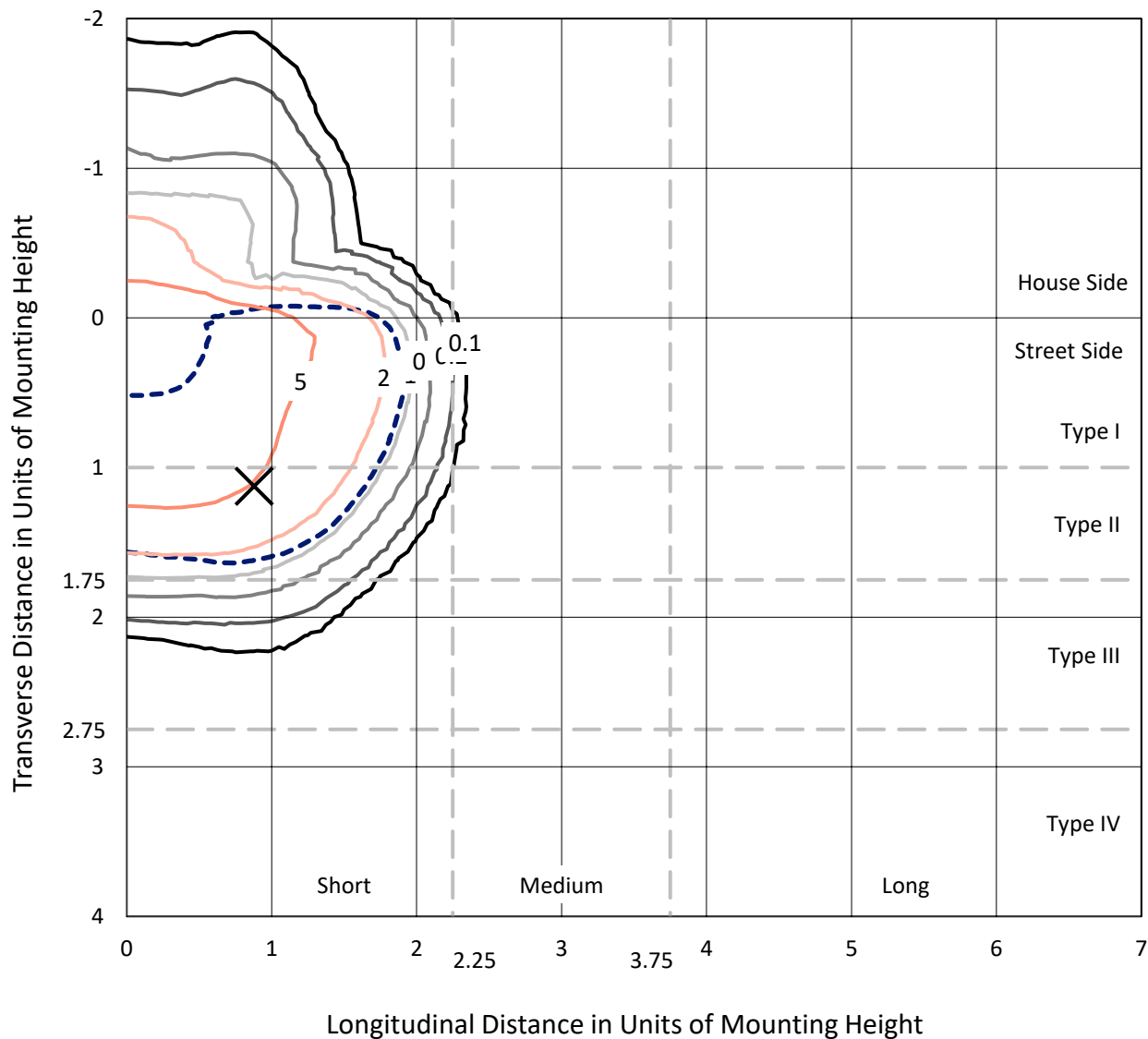
REPORT NUMBER: P631075

CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

--- 1/2 Max cd

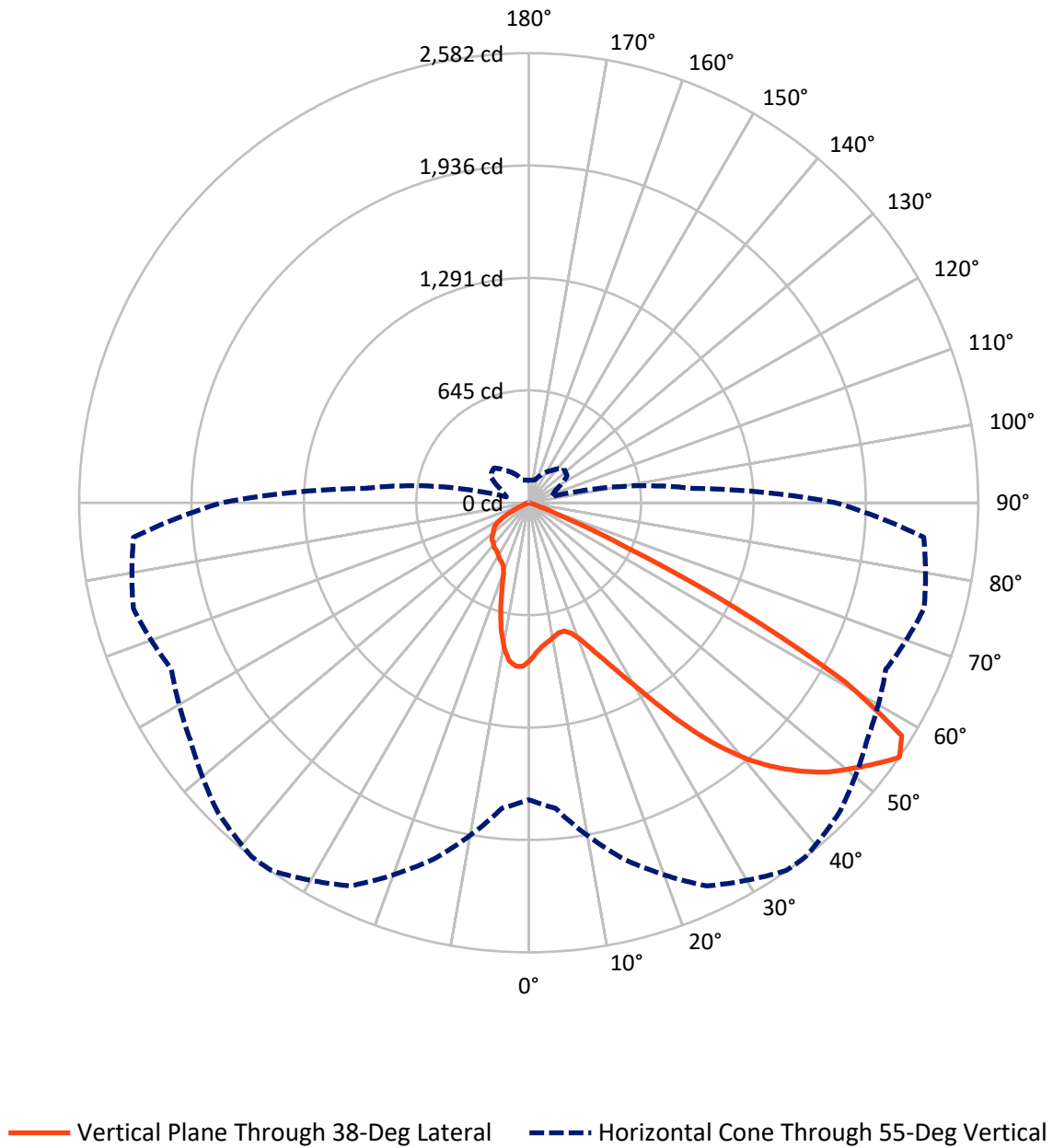


Based on 10 foot mounting height. Maximum calculated value = 9.5 fc
 Type II - Short - N/A

REPORT NUMBER: P631075

CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

Luminous Intensity Polar Plot



REPORT NUMBER: P631075

CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

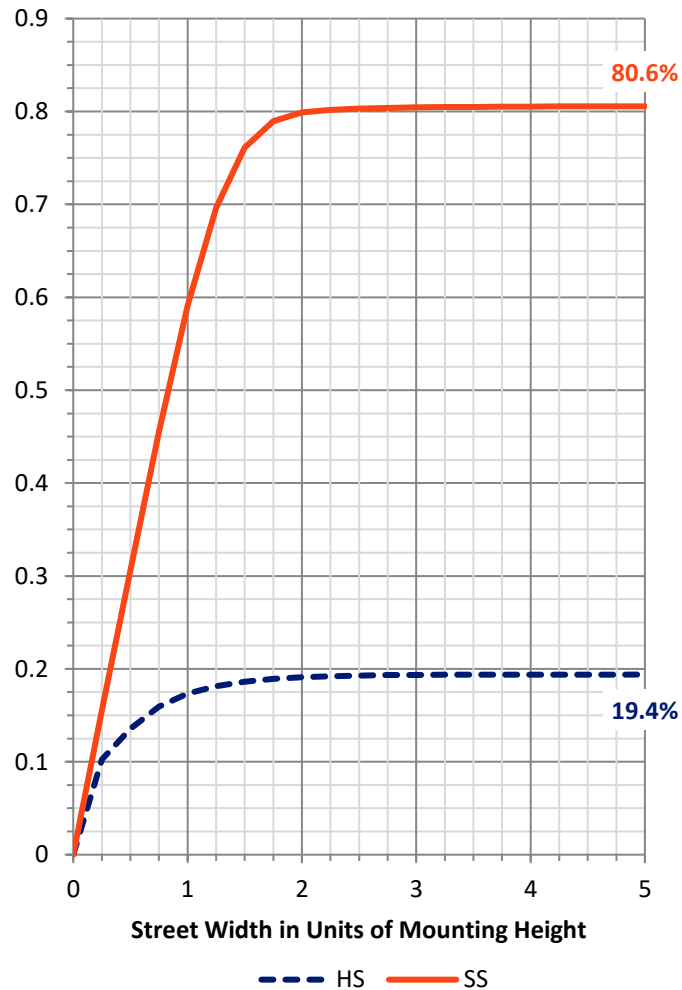
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	735.6	0.0	735.6
	% Fixture	19.5	0.0	19.5
Street Side	Lumens	3039.8	0.0	3039.8
	% Fixture	80.5	0.0	80.5
Total	Lumens	3775.4	0.0	3775.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.7	2.2
10°-20°	225.4	6.0
20°-30°	386.7	10.2
30°-40°	641.4	17.0
40°-50°	942.9	25.0
50°-60°	1101.9	29.2
60°-70°	373.5	9.9
70°-80°	19.1	0.5
80°-90°	0.8	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°	3775.4	100.0
0°-180°	3775.4	100.0

Coefficient of Utilization



REPORT NUMBER: P631075

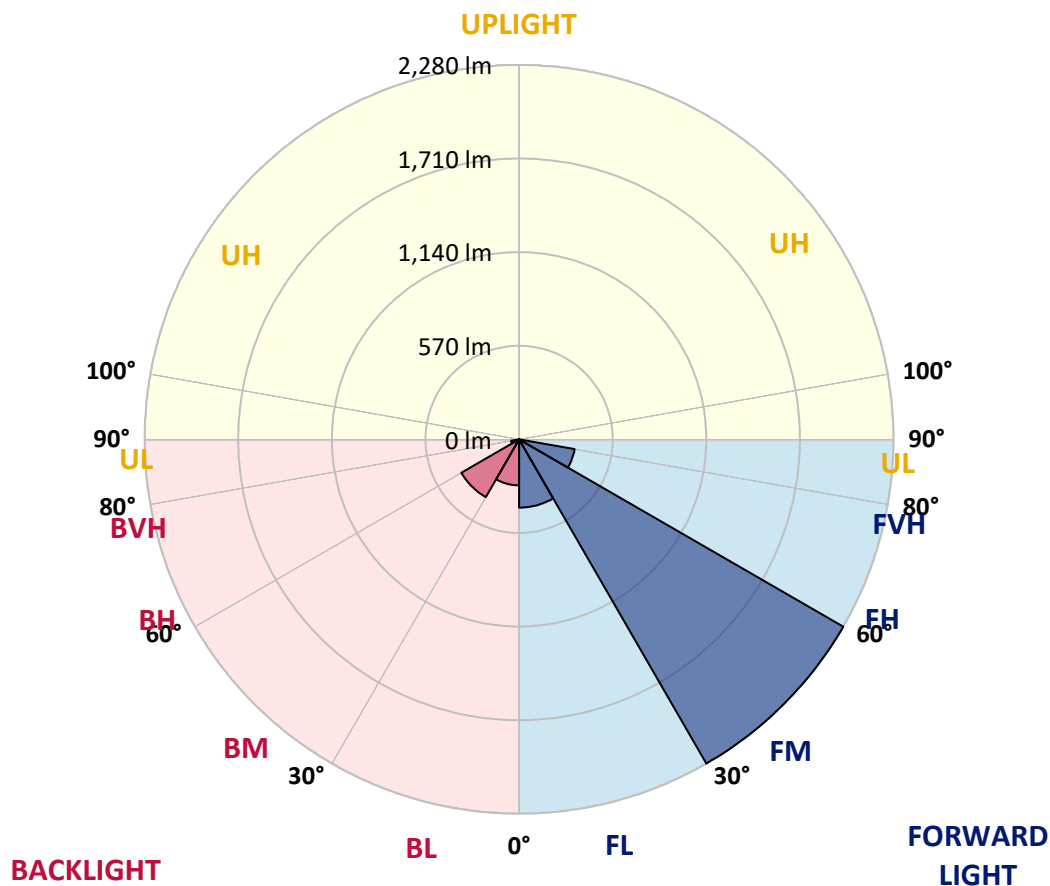
CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	415.6	11.0			
FM	(30°-60°)	2280.2	60.4			
FH	(60°-80°)	343.6	9.1			G0/660
FVH	(80°-90°)	0.4	0.0			G0/10
BL	(0°-30°)	280.2	7.4	B1/500		
BM	(30°-60°)	406.0	10.8	B1/1000		
BH	(60°-80°)	49.0	1.3	B0/110		G0/110
BVH	(80°-90°)	0.4	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-G0

Type II Short



REPORT NUMBER: P631075

CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	38°	45°	55°	65°	75°	85°
0°	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4
2.5°	843.2	841.5	845.0	851.9	858.3	860.5	867.0	876.0	881.6	895.0	905.8
5°	805.3	804.4	807.8	813.9	822.5	825.5	835.5	850.6	865.7	889.0	911.8
7.5°	770.7	770.3	775.5	788.9	801.4	805.3	817.3	835.9	856.2	892.0	925.7
10°	725.4	725.8	735.8	754.8	777.6	785.4	804.8	831.6	857.9	904.1	950.7
12.5°	710.7	711.6	716.8	731.5	756.5	766.4	793.6	834.2	867.8	921.3	983.0
15°	746.6	746.6	742.2	744.0	755.2	764.3	792.7	842.8	884.7	942.1	1015.0
17.5°	816.0	813.5	802.7	788.0	784.1	787.1	810.0	861.4	908.4	966.2	1051.2
20°	910.1	911.0	889.8	859.2	834.6	834.2	848.0	894.1	942.5	995.1	1090.5
22.5°	1024.0	1020.6	992.5	950.7	908.0	904.5	910.1	944.2	991.7	1040.9	1138.8
25°	1156.1	1154.4	1114.7	1058.6	1002.0	993.8	993.8	1027.5	1062.0	1106.0	1196.7
27.5°	1294.2	1294.2	1255.8	1191.0	1116.0	1101.3	1099.1	1138.8	1161.7	1170.3	1245.4
30°	1436.2	1434.4	1396.5	1330.0	1249.7	1234.6	1228.6	1257.9	1274.3	1248.4	1306.3
32.5°	1580.3	1583.3	1544.9	1483.2	1411.6	1401.6	1383.1	1383.1	1396.5	1360.2	1402.1
35°	1735.2	1734.4	1704.1	1662.3	1601.0	1589.8	1559.2	1511.3	1531.5	1515.6	1534.6
37.5°	1872.0	1878.5	1863.8	1832.7	1783.1	1771.9	1721.4	1634.7	1650.2	1675.2	1692.1
40°	2011.0	2016.2	2030.8	2020.9	1958.3	1937.6	1847.9	1705.4	1722.7	1808.6	1856.9
42.5°	2147.3	2149.9	2179.7	2196.1	2112.4	2076.1	1943.7	1748.6	1766.7	1913.0	1997.6
45°	2234.1	2239.7	2288.9	2338.9	2248.3	2198.7	2026.9	1803.8	1811.6	1985.5	2101.6
47.5°	2230.6	2243.6	2335.9	2427.0	2365.3	2311.8	2127.1	1892.3	1879.4	2053.7	2170.2
50°	2161.1	2176.7	2309.2	2453.7	2449.4	2399.8	2238.4	2020.5	1979.9	2114.1	2178.8
52.5°	2017.0	2061.9	2262.1	2457.2	2517.2	2492.1	2376.1	2193.1	2115.8	2200.9	2192.7
55°	1705.4	1760.7	2119.3	2427.8	2578.4	2581.5	2520.6	2373.0	2263.4	2350.2	2277.7
57.5°	1294.6	1338.6	1631.2	2161.1	2477.0	2526.7	2576.7	2468.0	2354.5	2452.0	2297.5
60°	780.2	831.1	1021.5	1585.9	2000.6	2085.2	2281.5	2260.4	2123.6	2165.5	1884.1
62.5°	316.3	343.1	471.7	873.9	1259.2	1338.2	1526.4	1558.3	1524.6	1481.9	1142.7
65°	115.7	126.4	189.0	361.2	579.1	608.0	707.3	763.8	810.4	690.0	425.1
67.5°	71.6	78.5	123.0	185.6	210.6	195.9	199.4	237.8	227.0	140.3	76.0
70°	53.1	58.7	96.2	128.6	85.0	65.6	44.4	47.5	42.7	37.5	37.1
72.5°	36.7	41.9	72.1	76.0	32.8	23.3	16.4	22.9	25.9	25.5	26.3
75°	24.2	28.1	45.3	29.8	8.2	6.5	5.6	12.1	15.5	15.5	16.0
77.5°	14.2	16.4	16.0	6.0	1.7	1.7	1.3	2.2	3.5	3.9	4.7
80°	1.7	1.3	0.9	0.9	0.9	0.9	0.9	0.9	1.3	1.3	1.3
82.5°	0.4	0.4	0.4	0.9	0.9	0.9	0.9	0.9	0.9	1.3	1.3
85°	0.0	0.0	0.4	0.4	0.9	0.9	0.9	0.9	0.9	1.3	1.3
87.5°	0.0	0.0	0.4	0.4	0.9	0.9	0.9	0.9	0.9	1.3	1.3
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: P631075

CATALOG NUMBER: GWS-SA1E-830-U-T3R-W-GRSBK

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4	905.4
2.5°	914.0	911.0	923.5	932.6	939.9	943.3	938.6	938.2	938.2	928.7	926.1
5°	924.8	926.1	943.8	951.5	952.8	948.5	937.7	930.4	926.1	916.2	910.5
7.5°	945.5	949.8	966.6	965.4	953.7	933.9	905.4	883.4	869.1	853.6	844.1
10°	975.3	983.5	993.8	975.7	938.6	888.1	829.4	787.6	762.5	744.8	734.0
12.5°	1011.5	1019.7	1016.3	973.6	896.3	806.1	730.6	670.2	641.3	625.3	614.1
15°	1048.2	1053.4	1030.9	947.7	821.7	700.4	616.2	556.3	520.9	507.9	498.4
17.5°	1085.8	1084.5	1033.5	896.7	722.0	581.3	498.4	457.4	447.5	445.3	444.5
20°	1125.0	1113.4	1023.2	823.8	602.0	463.5	416.4	419.0	437.1	445.8	447.5
22.5°	1169.9	1140.6	997.3	725.0	479.4	386.2	391.0	416.4	441.0	452.7	454.4
25°	1217.8	1165.6	954.1	598.1	378.0	355.2	383.2	412.6	438.9	453.1	454.8
27.5°	1249.3	1171.6	883.4	470.4	324.5	343.1	372.9	400.9	428.1	443.6	445.8
30°	1283.4	1169.0	787.1	362.5	306.4	332.7	358.6	384.1	409.1	426.4	428.1
32.5°	1333.5	1167.3	669.7	294.3	299.1	324.5	343.5	364.7	381.9	391.8	390.5
35°	1399.1	1165.2	533.0	265.4	294.7	318.0	333.1	343.1	324.1	318.0	319.3
37.5°	1483.2	1170.3	417.7	253.3	293.4	316.3	329.3	300.8	271.4	260.2	258.5
40°	1576.4	1183.7	318.5	248.6	297.8	320.6	314.6	267.6	231.3	209.3	204.5
42.5°	1670.1	1198.4	252.0	246.8	305.1	332.7	290.4	243.4	189.0	176.5	174.8
45°	1739.5	1195.8	217.9	243.8	311.6	339.6	284.0	208.9	168.7	163.1	163.6
47.5°	1774.5	1167.3	199.4	236.9	314.2	332.7	268.0	194.6	154.9	161.0	166.1
50°	1755.9	1093.5	182.1	223.5	308.6	323.7	242.5	183.8	148.0	173.0	184.7
52.5°	1733.5	1002.9	163.1	202.8	295.2	311.1	232.6	180.8	143.7	167.0	175.6
55°	1763.3	945.5	132.1	170.9	268.8	281.8	224.8	180.4	133.8	129.9	128.6
57.5°	1721.4	831.1	94.5	123.0	206.3	223.1	219.2	177.4	118.7	118.2	120.0
60°	1330.4	507.1	64.7	78.1	126.4	142.4	198.9	169.6	102.3	94.1	94.5
62.5°	756.1	215.8	44.4	48.3	64.7	76.8	151.9	154.1	94.5	89.8	94.5
65°	263.2	77.2	34.5	32.4	35.8	41.0	87.2	119.1	85.9	77.7	78.5
67.5°	54.4	38.4	30.6	26.8	26.8	26.8	44.4	74.2	70.8	61.7	62.6
70°	34.5	32.8	26.8	22.9	22.0	20.3	25.5	41.0	48.8	44.9	45.3
72.5°	25.5	25.0	21.1	18.6	16.4	14.7	16.0	20.3	25.0	25.9	26.3
75°	15.5	16.0	13.8	11.7	10.4	9.1	9.5	9.5	9.5	8.6	9.5
77.5°	4.7	5.2	4.3	3.5	3.0	3.0	3.0	2.6	2.2	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	0.9	0.9	0.4	0.4	0.0	0.0
82.5°	1.3	1.3	1.3	1.3	0.9	0.9	0.4	0.4	0.0	0.0	0.0
85°	1.3	1.3	1.3	1.3	0.9	0.9	0.4	0.4	0.0	0.0	0.0
87.5°	1.3	1.3	1.3	1.3	0.9	0.9	0.4	0.4	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.

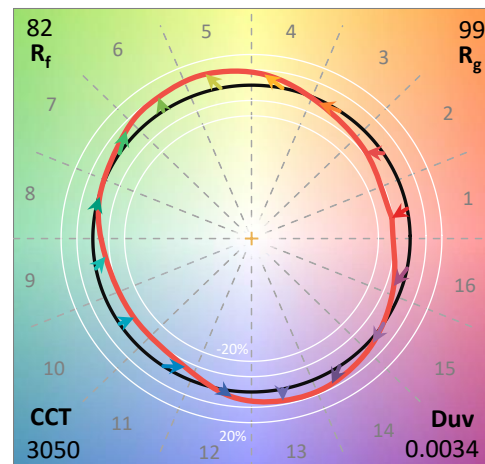
Test Information

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

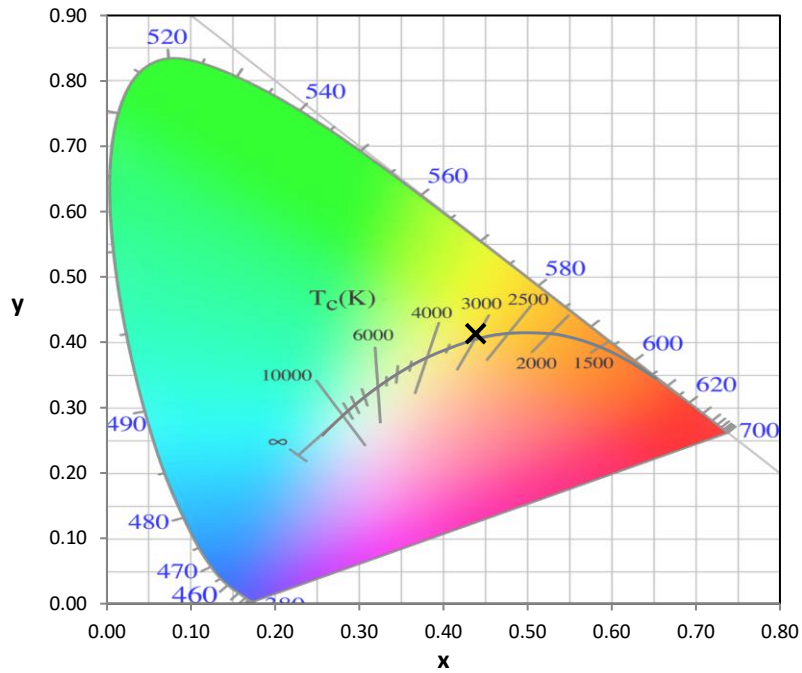
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

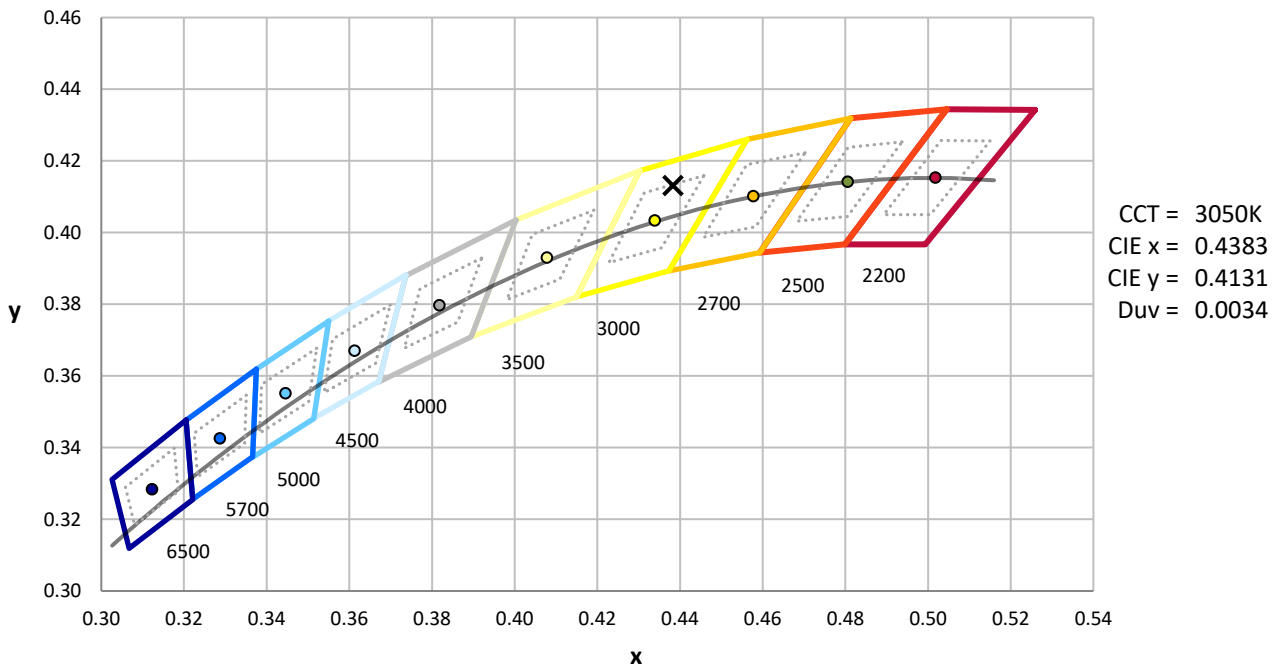
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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



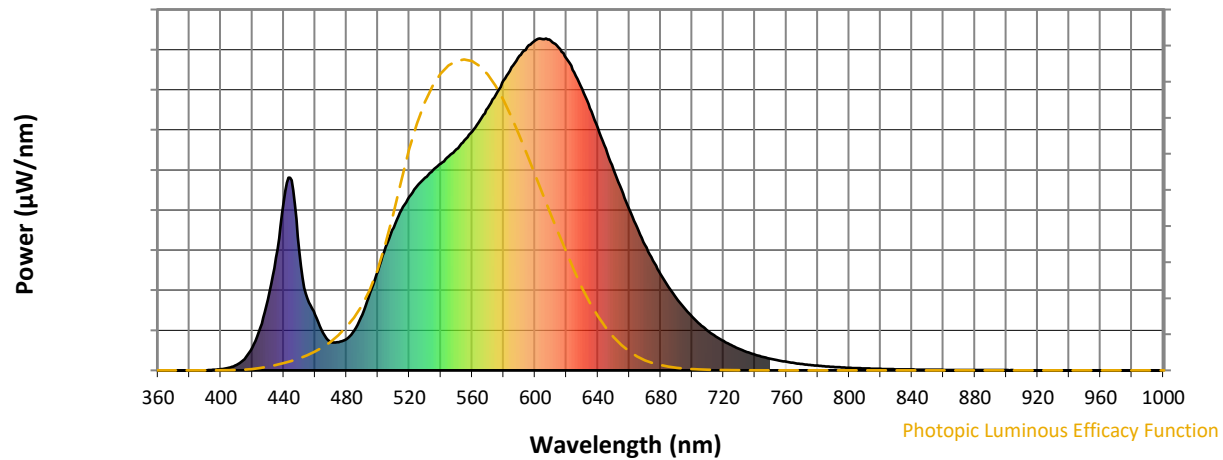
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

Photopic Flux vs. Wavelength

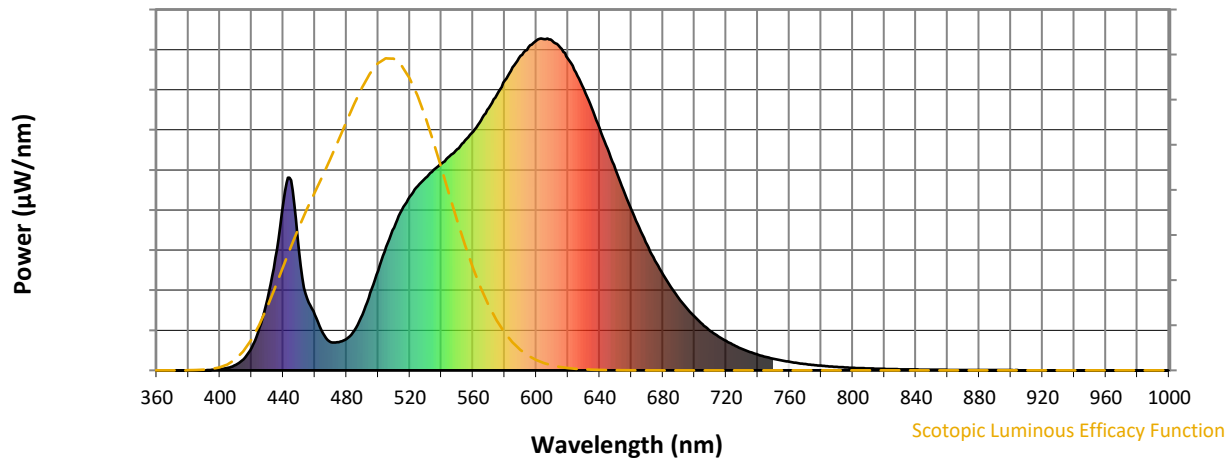


Photopic Lumens: NR

λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /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

Scotopic Flux vs. Wavelength



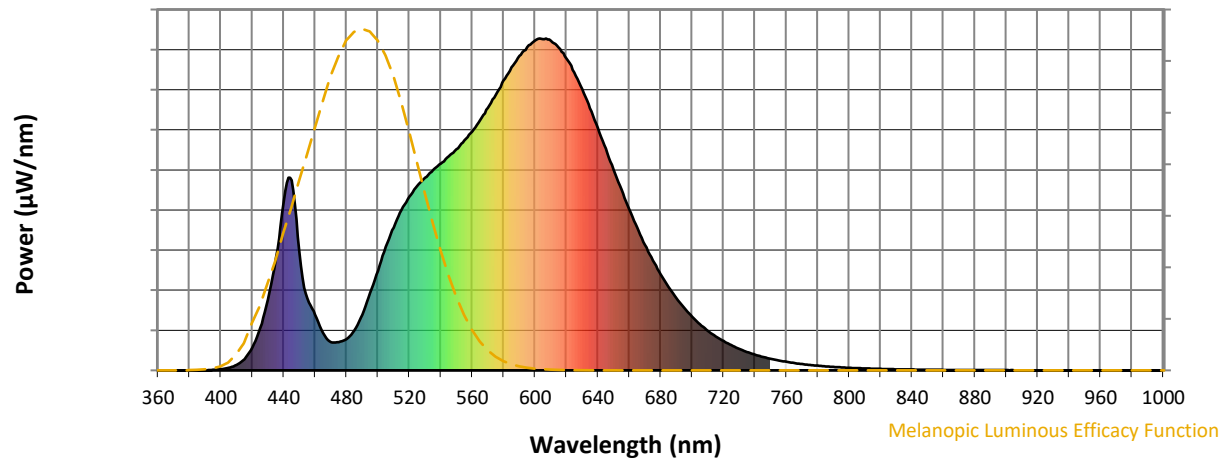
Scotopic Lumens: NR

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			

REPORT NUMBER: SP1-2408-195-9

Melanopic Flux vs. Wavelength


Melanopic Lumens: NR
M/P: 2.32

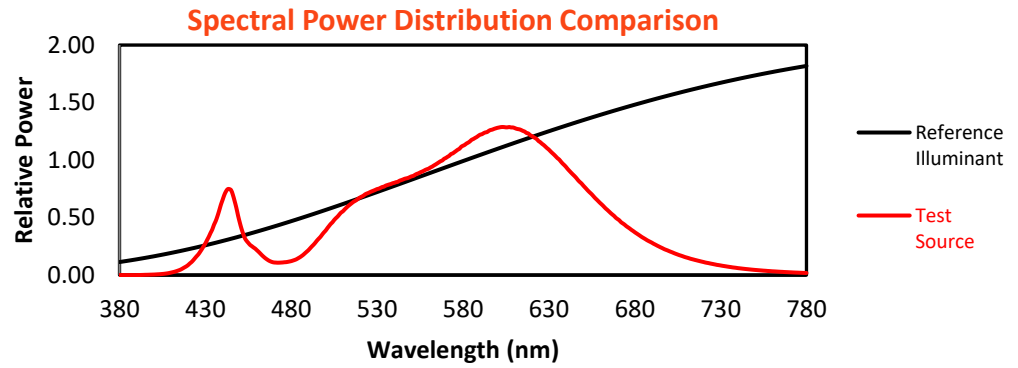
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	168	NR	620	940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

REPORT NUMBER: SP1-2408-195-9

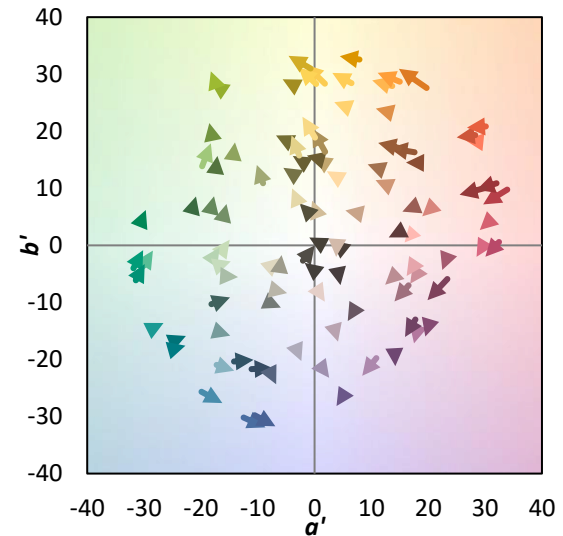
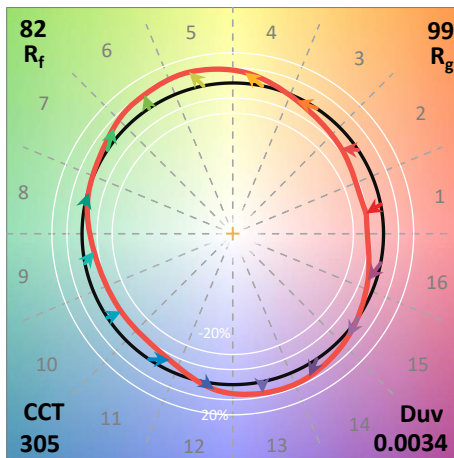
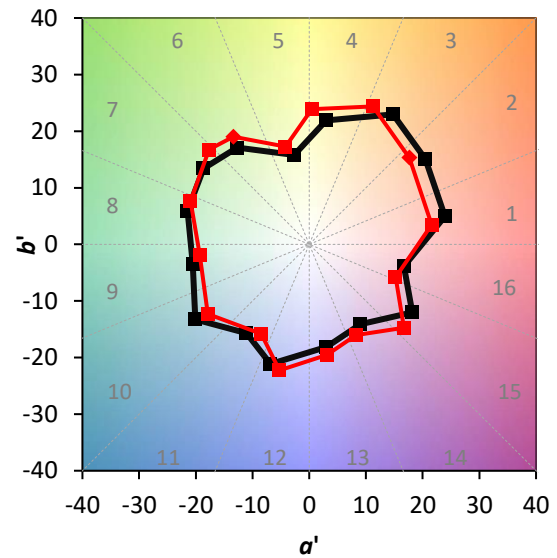
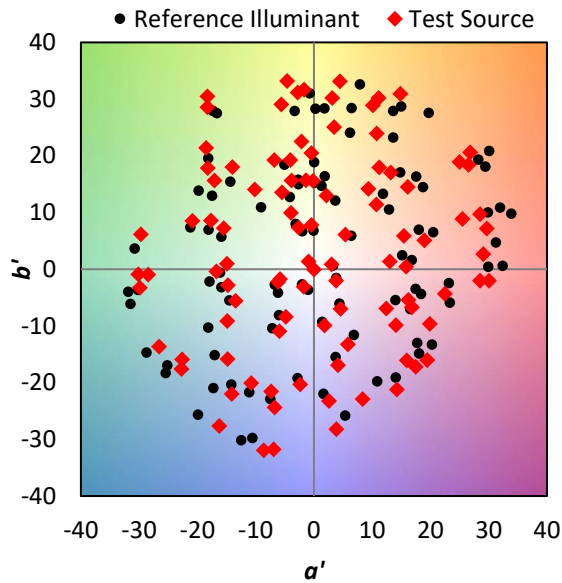
TM-30-18

Summary

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

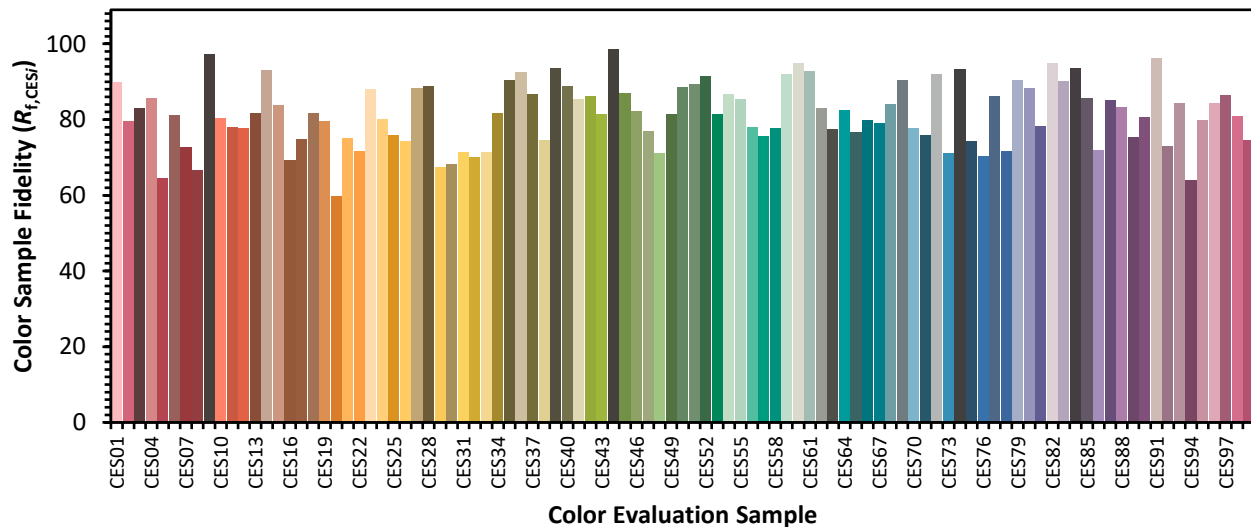


Color Vector Graphics

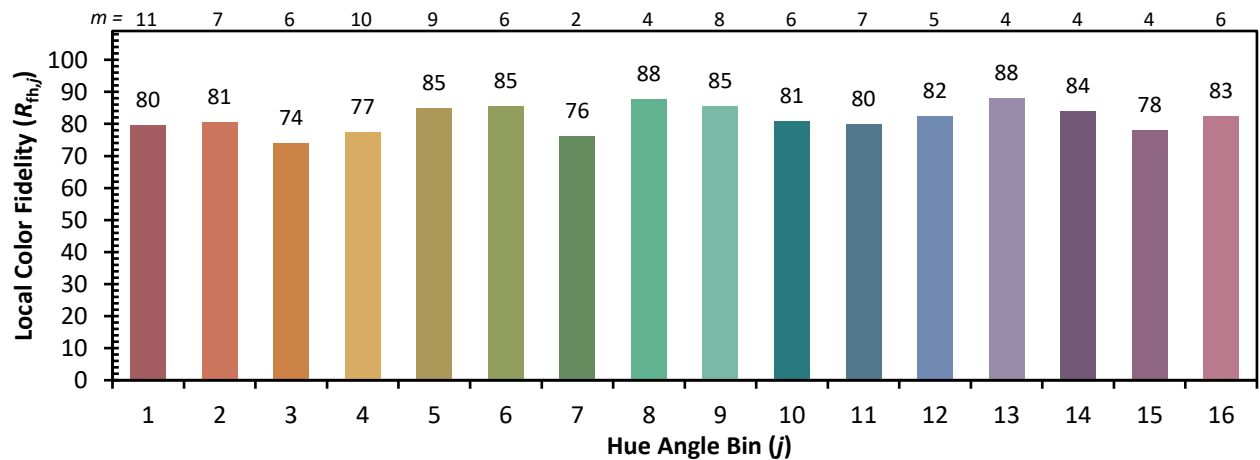
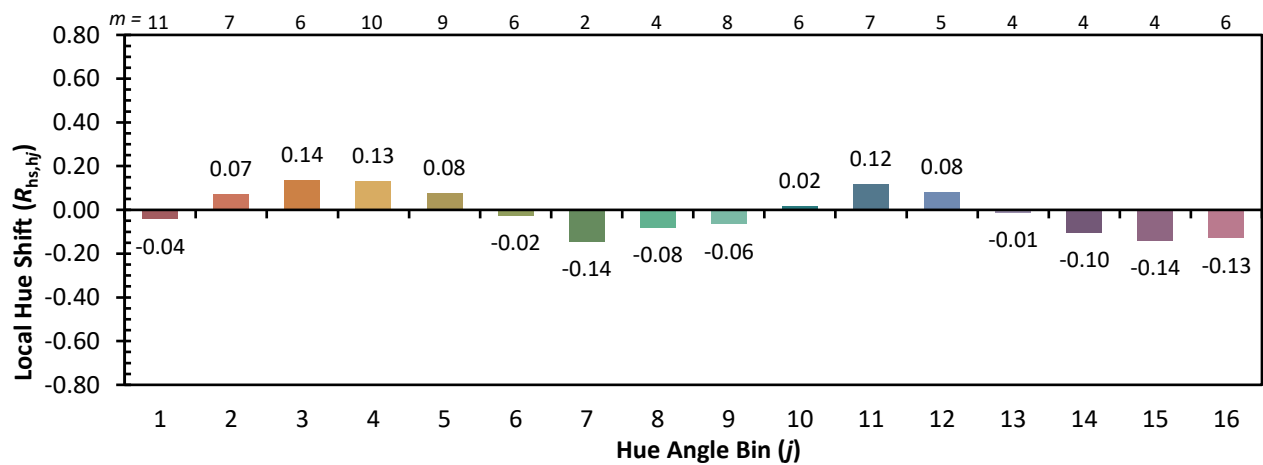
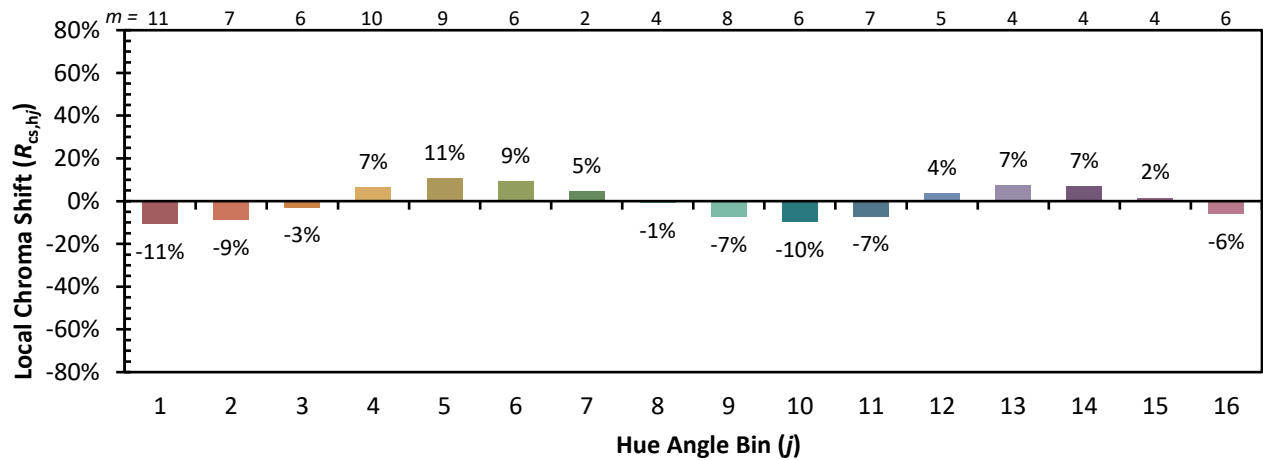


Individual Sample Fidelity Index ($R_{f,i}$)

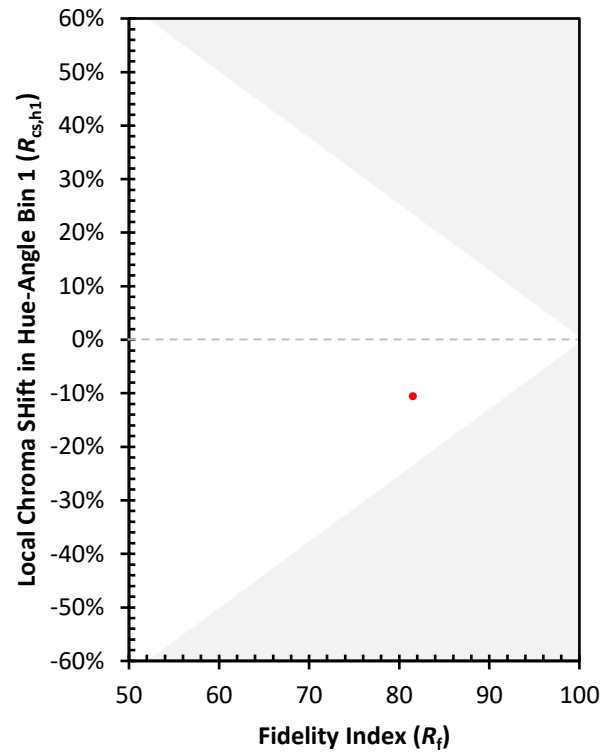
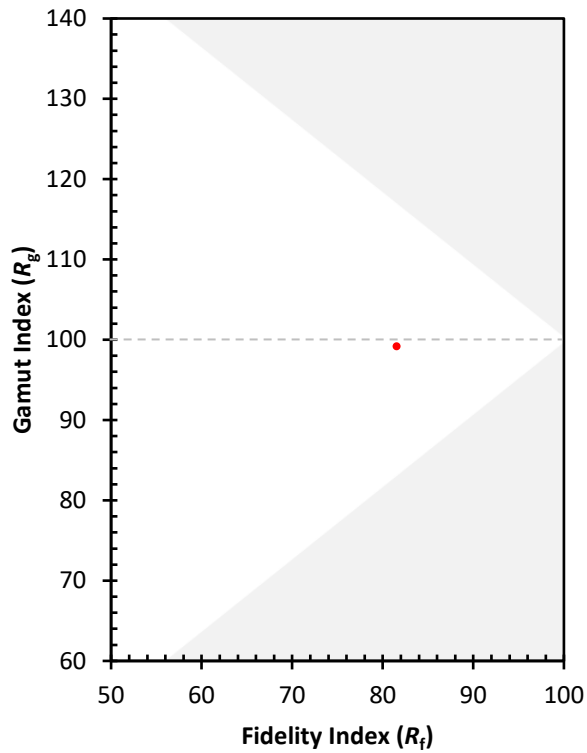
CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82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