

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: FAIL-SAFE

Report Number: P1357190

Luminaire Tested: 4ASL4-20VHE-3-50-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357190
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-12)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 4ASL4-20VHE-3-50-UNV
Description: 4FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 5000K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

Summary

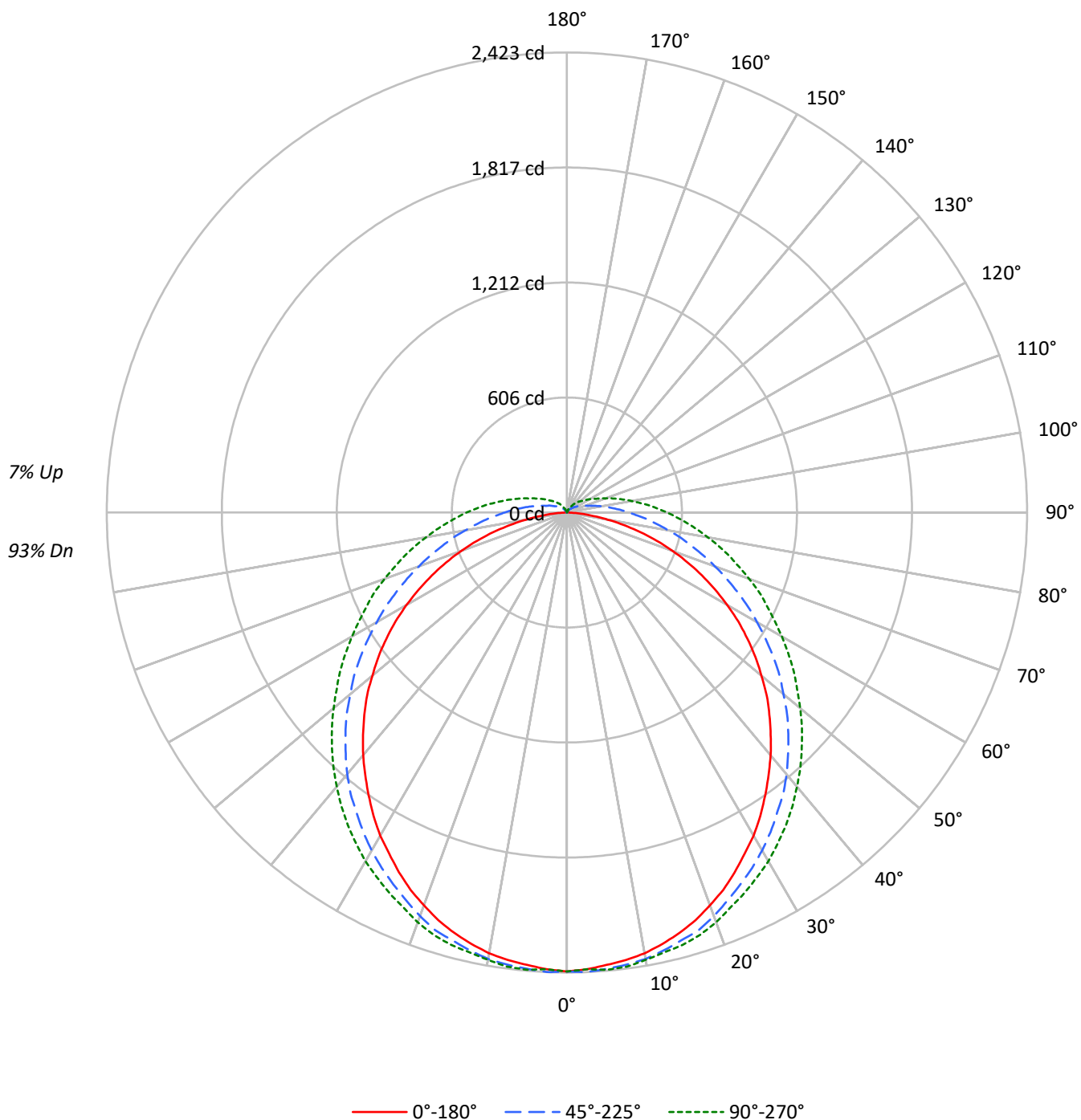
Lumens per Lamp: N/A
Luminaire Lumens: 8220.0 lumens
Efficiency: N/A
Efficacy: 122.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 67.2
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: 24 FT

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CATALOG NUMBER: 4ASL4-20VHE-3-50-UNV

Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96
1	105	100	95	91	102	97	92	88	91	88	84	86	83	80	81	79	77
2	95	86	79	72	92	84	77	71	79	73	68	75	70	66	71	67	63
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30
8	58	44	35	29	56	43	35	29	41	34	28	39	32	28	37	32	27
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	24
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19619	19619	19619
5°	19445	19250	19170
10°	19336	18877	18686
15°	19122	18413	18275
20°	18833	17967	17811
25°	18497	17409	17284
30°	18142	16923	16838
35°	17701	16375	16342
40°	17298	15873	15819
45°	16864	15265	15294
50°	16369	14613	14750
55°	15836	13989	14259
60°	15140	13262	13761
65°	14256	12562	13349
70°	13129	11868	13025
75°	11486	11234	12804
80°	9001	10757	12709
85°	5404	10643	12898

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 16864 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.3	2.8
10°-20°	658.2	8.0
20°-30°	995.2	12.1
30°-40°	1205.0	14.7
40°-50°	1265.6	15.4
50°-60°	1180.8	14.4
60°-70°	975.9	11.9
70°-80°	702.6	8.5
80°-90°	436.6	5.3
90°-100°	255.9	3.1
100°-110°	146.3	1.8
110°-120°	82.6	1.0
120°-130°	47.6	0.6
130°-140°	25.6	0.3
140°-150°	10.8	0.1
150°-160°	2.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1882.7	22.9
0°-40°	3087.7	37.6
0°-60°	5534.1	67.3
0°-90°	7649.2	93.1
90°-120°	484.8	5.9
90°-150°	568.8	6.9
90°-180°	571.0	6.9
0°-180°	8220.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2418	2418	2418	2418	2418	
5°	2392	2413	2413	2413	2418	227
15°	2292	2322	2332	2347	2357	646
25°	2091	2126	2161	2191	2212	963
35°	1820	1870	1930	1985	2010	1139
45°	1508	1563	1649	1719	1749	1163
55°	1161	1226	1327	1422	1458	1037
65°	784	860	990	1116	1161	776
75°	402	503	678	824	885	425
85°	75	226	427	578	633	92
90°	0	136	327	467	528	3
95°	0	85	246	377	432	0
105°	0	30	136	236	276	0
115°	0	15	80	146	171	0
125°	0	10	50	96	111	0
135°	0	0	30	60	75	0
145°	0	0	15	35	40	0
155°	0	0	0	10	15	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2417.6	2417.6	2417.6	2417.6	2417.6
2.5°	2407.6	2422.6	2422.6	2407.6	2407.6
5°	2392.5	2412.6	2412.6	2412.6	2417.6
7.5°	2377.4	2402.5	2402.5	2402.5	2412.6
10°	2357.3	2382.4	2387.5	2387.5	2392.5
12.5°	2327.1	2357.3	2362.3	2367.4	2372.4
15°	2292.0	2322.1	2332.2	2347.2	2357.3
17.5°	2251.7	2286.9	2307.0	2322.1	2332.2
20°	2201.5	2236.7	2261.8	2281.9	2297.0
22.5°	2151.2	2181.4	2211.5	2236.7	2251.7
25°	2090.9	2126.1	2161.3	2191.4	2211.5
27.5°	2025.6	2065.8	2111.0	2146.2	2166.3
30°	1965.3	2005.5	2055.7	2101.0	2121.1
32.5°	1894.9	1940.1	1995.4	2040.6	2065.8
35°	1819.5	1869.8	1930.1	1985.4	2010.5
37.5°	1744.1	1794.4	1869.8	1925.0	1950.2
40°	1668.7	1719.0	1799.4	1859.7	1884.8
42.5°	1588.3	1638.5	1724.0	1789.3	1819.5
45°	1507.9	1563.2	1648.6	1719.0	1749.1
47.5°	1427.4	1482.7	1573.2	1648.6	1678.8
50°	1337.0	1397.3	1487.8	1573.2	1603.4
52.5°	1251.5	1311.8	1412.4	1497.8	1528.0
55°	1161.1	1226.4	1326.9	1422.4	1457.6
57.5°	1070.6	1135.9	1241.5	1342.0	1382.2
60°	975.1	1045.5	1156.0	1261.6	1306.8
62.5°	879.6	955.0	1075.6	1186.2	1231.4
65°	784.1	859.5	990.2	1115.8	1161.1
67.5°	688.6	769.0	909.7	1040.4	1095.7
70°	593.1	678.5	829.3	965.0	1020.3
72.5°	497.6	588.1	753.9	894.7	950.0
75°	402.1	502.6	678.5	824.3	884.6
77.5°	306.6	422.2	613.2	759.0	819.3
80°	221.2	351.8	542.8	693.6	753.9
82.5°	140.7	281.5	482.5	633.3	693.6
85°	75.4	226.2	427.2	578.0	633.3
87.5°	25.1	175.9	371.9	522.7	578.0
90°	0.0	135.7	326.7	467.4	527.8
92.5°	0.0	105.6	286.5	422.2	477.5
95°	0.0	85.4	246.3	377.0	432.3
97.5°	0.0	70.4	216.1	336.8	387.0
100°	0.0	55.3	186.0	301.6	346.8
102.5°	0.0	45.2	160.8	266.4	311.6
105°	0.0	30.2	135.7	236.2	276.4
107.5°	0.0	25.1	115.6	211.1	246.3
110°	0.0	20.1	105.6	180.9	216.1



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CATALOG NUMBER: 4ASL4-20VHE-3-50-UNV

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	15.1	95.5	160.8	196.0
115°	0.0	15.1	80.4	145.8	170.9
117.5°	0.0	15.1	70.4	130.7	155.8
120°	0.0	10.1	65.3	115.6	140.7
122.5°	0.0	10.1	55.3	105.6	125.7
125°	0.0	10.1	50.3	95.5	110.6
127.5°	0.0	5.0	45.2	85.4	100.5
130°	0.0	5.0	40.2	75.4	90.5
132.5°	0.0	5.0	35.2	70.4	85.4
135°	0.0	0.0	30.2	60.3	75.4
137.5°	0.0	0.0	25.1	55.3	65.3
140°	0.0	0.0	20.1	45.2	60.3
142.5°	0.0	0.0	15.1	40.2	50.3
145°	0.0	0.0	15.1	35.2	40.2
147.5°	0.0	0.0	10.1	25.1	35.2
150°	0.0	0.0	5.0	20.1	25.1
152.5°	0.0	0.0	0.0	15.1	20.1
155°	0.0	0.0	0.0	10.1	15.1
157.5°	0.0	0.0	0.0	0.0	5.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	19.67	21.21	20.14	21.67	22.15	21.70	23.24	22.17	23.70	24.18
	3H	21.17	22.58	21.65	23.04	23.56	24.16	25.57	24.64	26.03	26.56
	4H	21.65	22.98	22.15	23.47	24.00	25.36	26.69	25.86	27.17	27.71
	6H	21.93	23.17	22.44	23.66	24.22	26.61	27.85	27.13	28.35	28.90
	8H	21.98	23.17	22.51	23.69	24.25	27.26	28.45	27.79	28.97	29.53
	12H	21.99	23.13	22.53	23.65	24.24	27.97	29.11	28.50	29.62	30.21
4H	2H	20.55	21.88	21.05	22.36	22.90	22.14	23.47	22.64	23.95	24.49
	3H	22.29	23.42	22.80	23.95	24.51	24.82	25.96	25.34	26.48	27.04
	4H	22.89	23.93	23.43	24.46	25.06	26.19	27.23	26.73	27.77	28.36
	6H	23.29	24.21	23.84	24.77	25.37	27.64	28.55	28.19	29.12	29.72
	8H	23.38	24.25	23.94	24.81	25.43	28.39	29.25	28.95	29.81	30.43
	12H	23.43	24.21	24.01	24.80	25.43	29.22	30.01	29.81	30.60	31.22
8H	4H	23.57	24.43	24.13	25.00	25.62	26.41	27.27	26.97	27.83	28.45
	6H	24.15	24.88	24.74	25.49	26.11	28.02	28.75	28.62	29.36	29.98
	8H	24.33	24.99	24.94	25.61	26.24	28.92	29.58	29.52	30.19	30.83
	12H	24.45	25.04	25.05	25.64	26.34	29.94	30.53	30.54	31.13	31.83
12H	4H	23.76	24.55	24.35	25.14	25.76	26.42	27.20	27.00	27.79	28.42
	6H	24.44	25.11	25.05	25.72	26.36	28.06	28.72	28.66	29.34	29.97
	8H	24.72	25.31	25.33	25.92	26.62	29.02	29.61	29.63	30.22	30.92

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-5

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-50-UNV-OPL-1_600mA

Data in this report applies to families of products including 4ASL

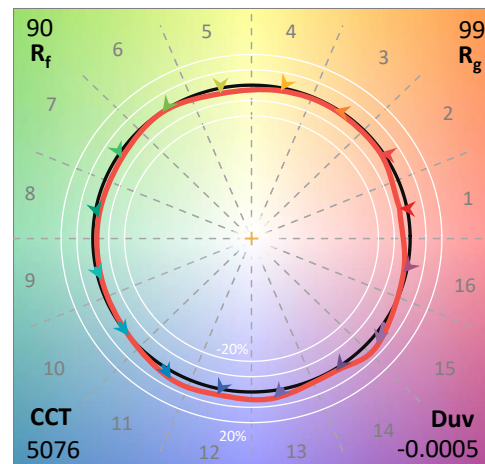
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/18/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Fail-Safe
 Catalog Number: **4ASL-2-50-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 5000K LEDS with 1 rows at 600mA

Spectral Parameters

CCT (K): 5076
 CIE u' : 0.2110
 CIE v' : 0.4830
 Duv: -0.0005
 CIE x: 0.3429
 CIE y: 0.3489
 CIE z: 0.3082
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 572
 Purity: 7.553016
 R_f: 90.4
 R_g: 99

CRI (Ra): 94.9
 R1: 96.7
 R2: 98.2
 R3: 96.6
 R4: 95.6
 R5: 95.1
 R6: 93.6
 R7: 94.0
 R8: 89.6
 R9: 74.0
 R10: 93.9
 R11: 96.2
 R12: 72.4
 R13: 98.1
 R14: 97.8
 R15: 95.6



Test Conditions

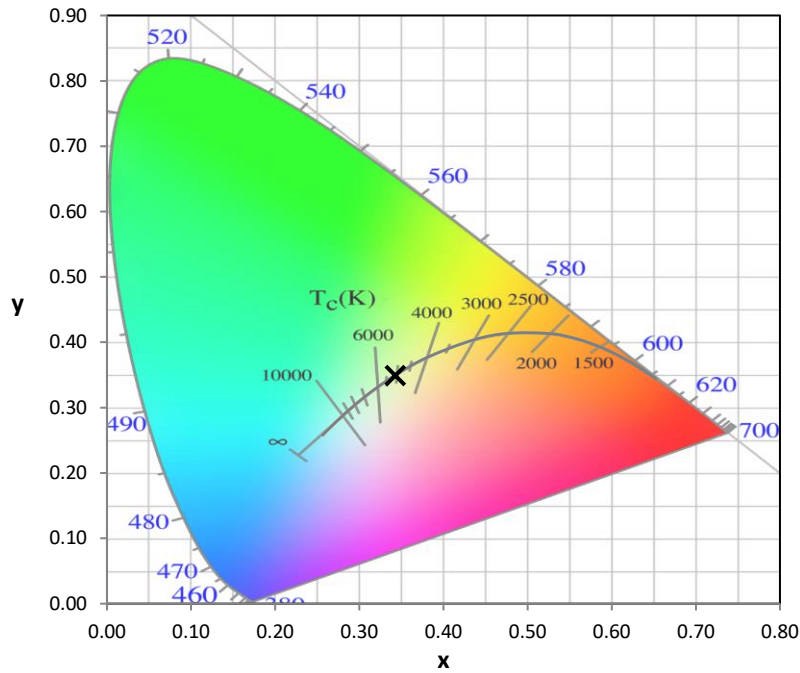
Stabilization Time: 24M
 Operation Time: 1H 24M
 Sphere Temperature (°C): 24.1

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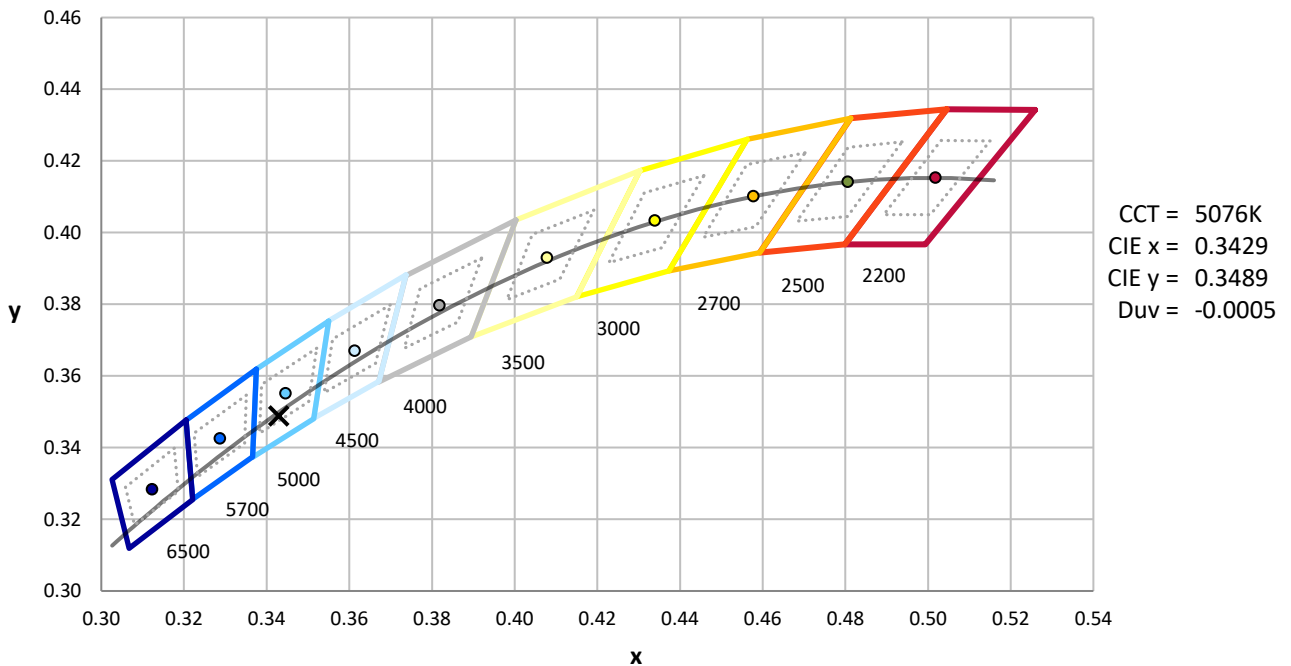
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	10/21/2025	10/21/2026
Sphere Thermometer	ONSET IN0085	10/21/2025	10/21/2026
Room Thermometer	ONSET IN0046	10/21/2025	10/21/2026

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CIE 1931 Chromaticity Diagram



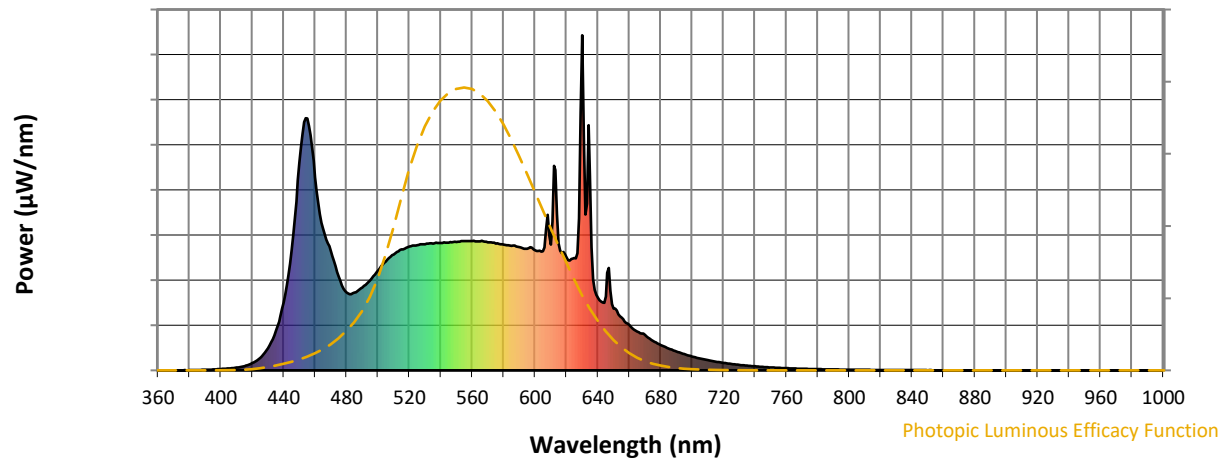
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

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Photopic Flux vs. Wavelength

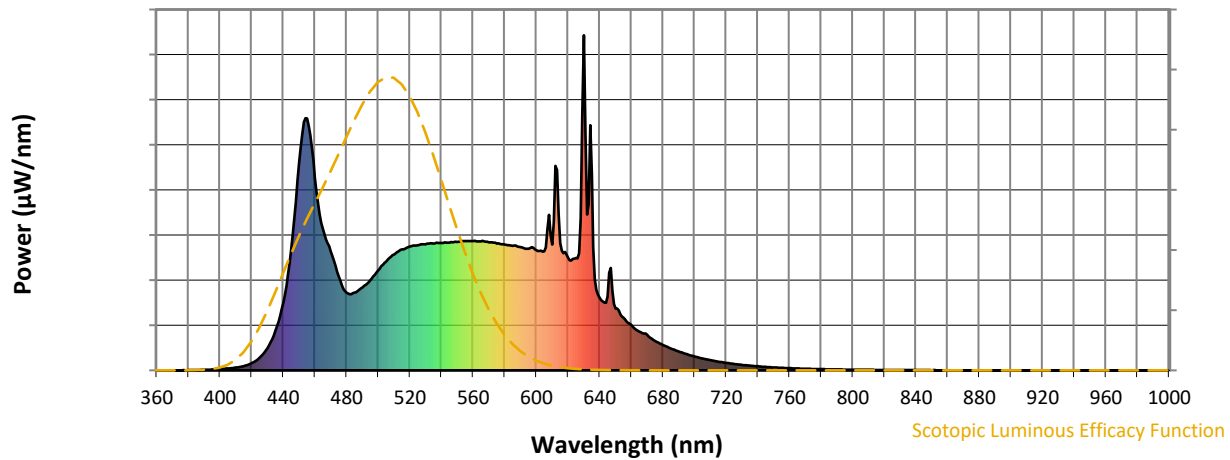


Photopic Lumens: NR

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	248	NR	620	337	NR	750	9	NR	880	0	NR
365	0	NR	495	269	NR	625	335	NR	755	8	NR	885	0	NR
370	0	NR	500	298	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	325	NR	635	580	NR	765	6	NR	895	0	NR
380	1	NR	510	346	NR	640	216	NR	770	5	NR	900	0	NR
385	1	NR	515	361	NR	645	221	NR	775	4	NR	905	0	NR
390	2	NR	520	369	NR	650	185	NR	780	4	NR	910	0	NR
395	3	NR	525	374	NR	655	158	NR	785	3	NR	915	0	NR
400	4	NR	530	376	NR	660	136	NR	790	3	NR	920	0	NR
405	6	NR	535	379	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	381	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	381	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	383	NR	680	76	NR	810	2	NR	940	0	NR
425	37	NR	555	386	NR	685	65	NR	815	1	NR	945	0	NR
430	66	NR	560	386	NR	690	56	NR	820	1	NR	950	0	NR
435	119	NR	565	385	NR	695	48	NR	825	1	NR	955	0	NR
440	203	NR	570	382	NR	700	41	NR	830	1	NR	960	0	NR
445	359	NR	575	379	NR	705	35	NR	835	1	NR	965	0	NR
450	620	NR	580	376	NR	710	30	NR	840	1	NR	970	0	NR
455	752	NR	585	372	NR	715	26	NR	845	1	NR	975	0	NR
460	576	NR	590	368	NR	720	22	NR	850	1	NR	980	0	NR
465	423	NR	595	363	NR	725	19	NR	855	0	NR	985	0	NR
470	354	NR	600	358	NR	730	16	NR	860	0	NR	990	0	NR
475	280	NR	605	355	NR	735	14	NR	865	0	NR	995	0	NR
480	232	NR	610	375	NR	740	12	NR	870	0	NR	1000	0	NR
485	232	NR	615	379	NR	745	10	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



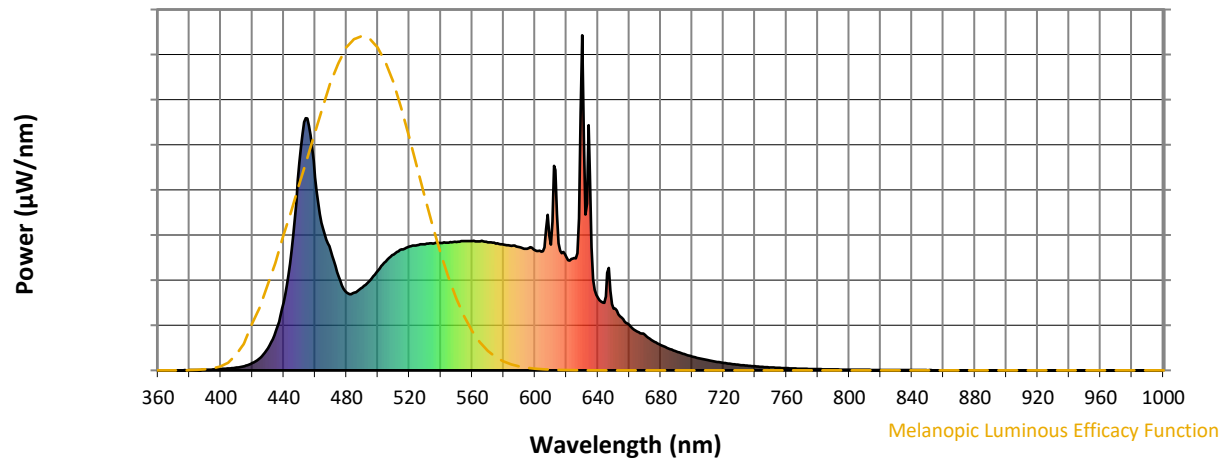
Scotopic Lumens: NR

S/P: 2.12

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	248	NR	620	337	NR	750	9	NR	880	0	NR
365	0	NR	495	269	NR	625	335	NR	755	8	NR	885	0	NR
370	0	NR	500	298	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	325	NR	635	580	NR	765	6	NR	895	0	NR
380	1	NR	510	346	NR	640	216	NR	770	5	NR	900	0	NR
385	1	NR	515	361	NR	645	221	NR	775	4	NR	905	0	NR
390	2	NR	520	369	NR	650	185	NR	780	4	NR	910	0	NR
395	3	NR	525	374	NR	655	158	NR	785	3	NR	915	0	NR
400	4	NR	530	376	NR	660	136	NR	790	3	NR	920	0	NR
405	6	NR	535	379	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	381	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	381	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	383	NR	680	76	NR	810	2	NR	940	0	NR
425	37	NR	555	386	NR	685	65	NR	815	1	NR	945	0	NR
430	66	NR	560	386	NR	690	56	NR	820	1	NR	950	0	NR
435	119	NR	565	385	NR	695	48	NR	825	1	NR	955	0	NR
440	203	NR	570	382	NR	700	41	NR	830	1	NR	960	0	NR
445	359	NR	575	379	NR	705	35	NR	835	1	NR	965	0	NR
450	620	NR	580	376	NR	710	30	NR	840	1	NR	970	0	NR
455	752	NR	585	372	NR	715	26	NR	845	1	NR	975	0	NR
460	576	NR	590	368	NR	720	22	NR	850	1	NR	980	0	NR
465	423	NR	595	363	NR	725	19	NR	855	0	NR	985	0	NR
470	354	NR	600	358	NR	730	16	NR	860	0	NR	990	0	NR
475	280	NR	605	355	NR	735	14	NR	865	0	NR	995	0	NR
480	232	NR	610	375	NR	740	12	NR	870	0	NR	1000	0	NR
485	232	NR	615	379	NR	745	10	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 4.65

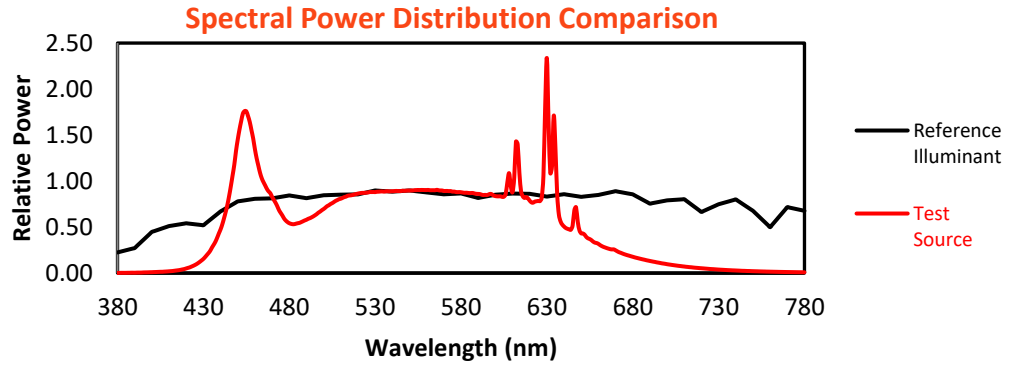
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	248	NR	620	337	NR	750	9	NR	880	0	NR
365	0	NR	495	269	NR	625	335	NR	755	8	NR	885	0	NR
370	0	NR	500	298	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	325	NR	635	580	NR	765	6	NR	895	0	NR
380	1	NR	510	346	NR	640	216	NR	770	5	NR	900	0	NR
385	1	NR	515	361	NR	645	221	NR	775	4	NR	905	0	NR
390	2	NR	520	369	NR	650	185	NR	780	4	NR	910	0	NR
395	3	NR	525	374	NR	655	158	NR	785	3	NR	915	0	NR
400	4	NR	530	376	NR	660	136	NR	790	3	NR	920	0	NR
405	6	NR	535	379	NR	665	116	NR	795	2	NR	925	0	NR
410	8	NR	540	381	NR	670	106	NR	800	2	NR	930	0	NR
415	13	NR	545	381	NR	675	88	NR	805	2	NR	935	0	NR
420	22	NR	550	383	NR	680	76	NR	810	2	NR	940	0	NR
425	37	NR	555	386	NR	685	65	NR	815	1	NR	945	0	NR
430	66	NR	560	386	NR	690	56	NR	820	1	NR	950	0	NR
435	119	NR	565	385	NR	695	48	NR	825	1	NR	955	0	NR
440	203	NR	570	382	NR	700	41	NR	830	1	NR	960	0	NR
445	359	NR	575	379	NR	705	35	NR	835	1	NR	965	0	NR
450	620	NR	580	376	NR	710	30	NR	840	1	NR	970	0	NR
455	752	NR	585	372	NR	715	26	NR	845	1	NR	975	0	NR
460	576	NR	590	368	NR	720	22	NR	850	1	NR	980	0	NR
465	423	NR	595	363	NR	725	19	NR	855	0	NR	985	0	NR
470	354	NR	600	358	NR	730	16	NR	860	0	NR	990	0	NR
475	280	NR	605	355	NR	735	14	NR	865	0	NR	995	0	NR
480	232	NR	610	375	NR	740	12	NR	870	0	NR	1000	0	NR
485	232	NR	615	379	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-5

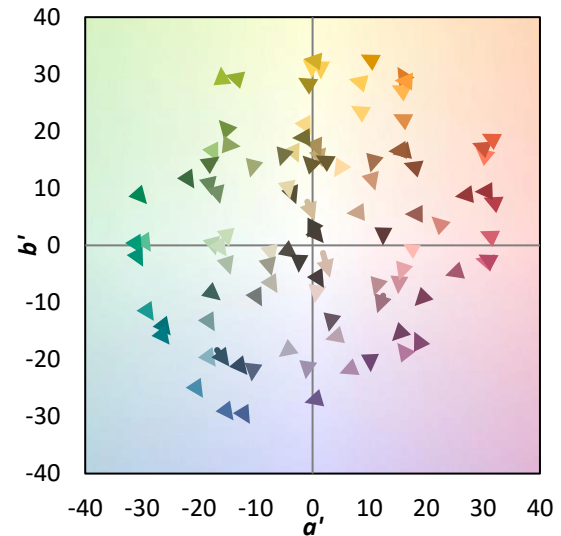
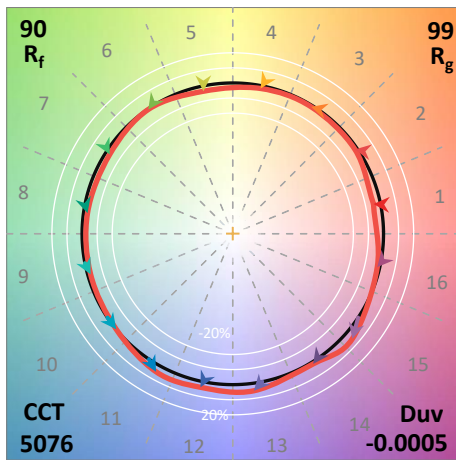
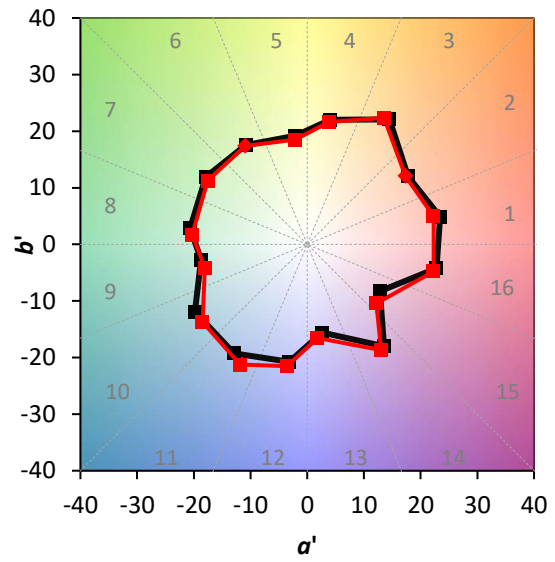
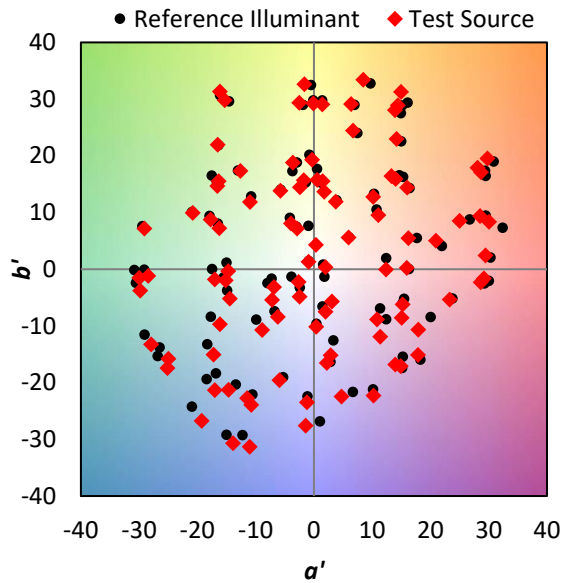
TM-30-18

Summary

$R_f = 90.4$
 $R_g = 99$
 $\text{CIE } R_a = 94.9$
 $R_9 = 74.0$

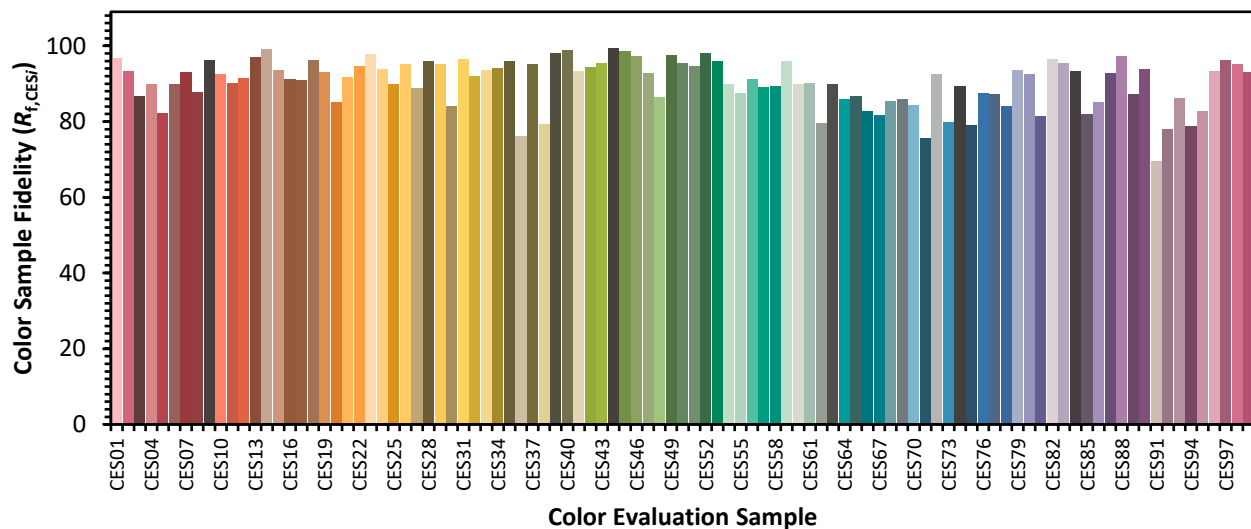


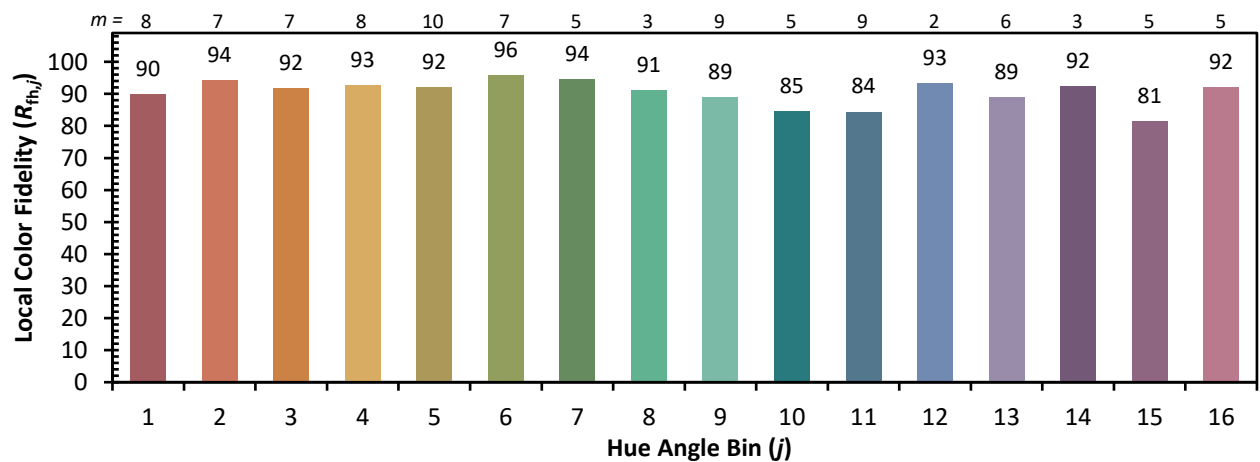
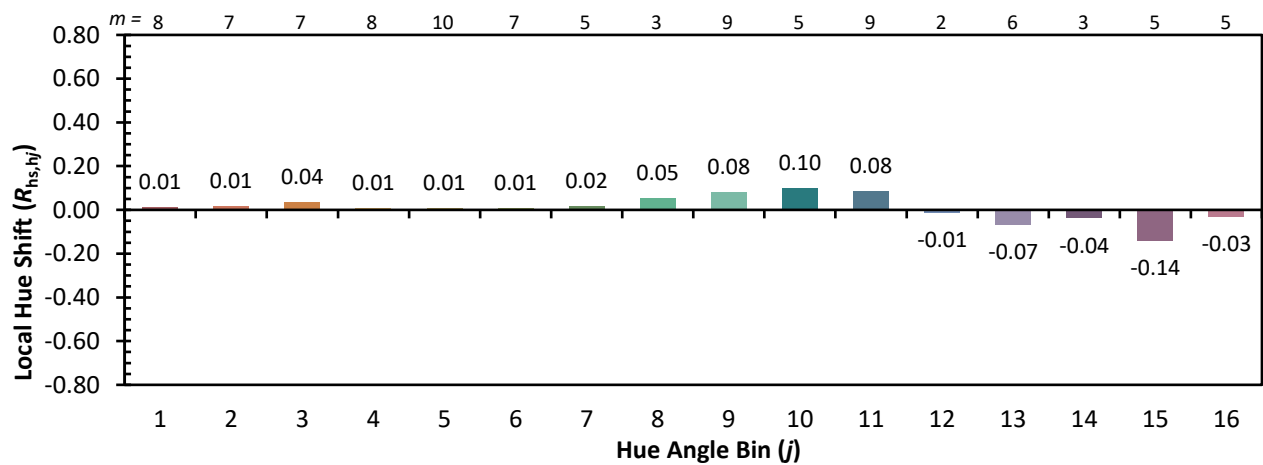
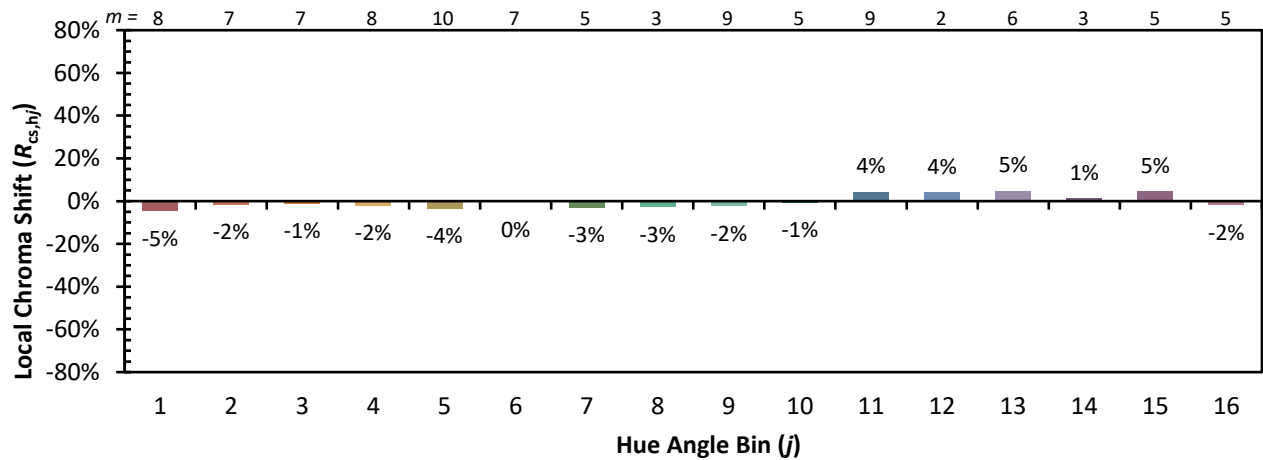
Color Vector Graphics



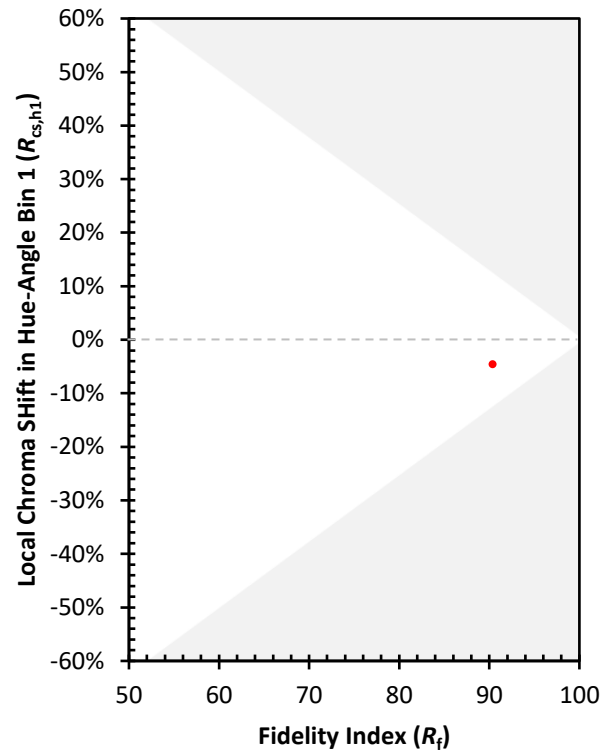
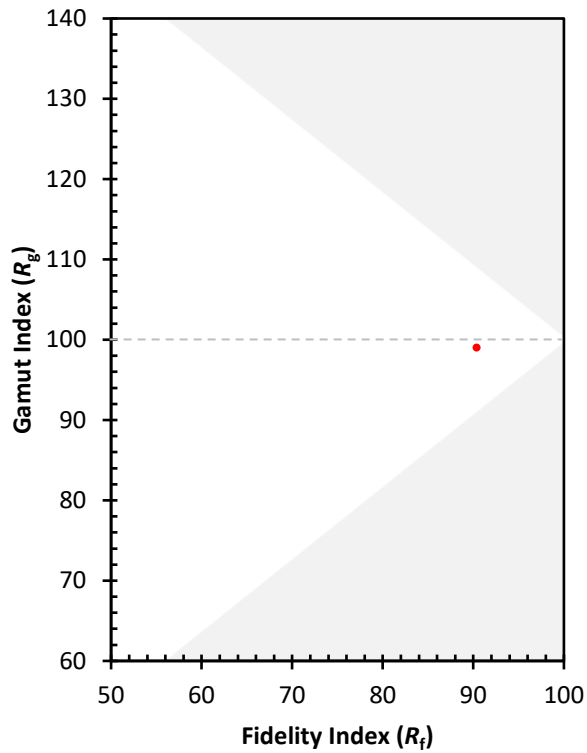
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 95	CES51 = 95	CES76 = 87
CES02 = 61	CES27 = 89	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 96	CES53 = 96	CES78 = 84
CES04 = 69	CES29 = 95	CES54 = 90	CES79 = 94
CES05 = 48	CES30 = 84	CES55 = 88	CES80 = 93
CES06 = 50	CES31 = 96	CES56 = 91	CES81 = 81
CES07 = 41	CES32 = 92	CES57 = 89	CES82 = 97
CES08 = 40	CES33 = 94	CES58 = 89	CES83 = 95
CES09 = 29	CES34 = 94	CES59 = 96	CES84 = 93
CES10 = 73	CES35 = 96	CES60 = 90	CES85 = 82
CES11 = 56	CES36 = 76	CES61 = 90	CES86 = 85
CES12 = 62	CES37 = 95	CES62 = 80	CES87 = 93
CES13 = 42	CES38 = 79	CES63 = 90	CES88 = 97
CES14 = 74	CES39 = 98	CES64 = 86	CES89 = 87
CES15 = 71	CES40 = 99	CES65 = 87	CES90 = 94
CES16 = 47	CES41 = 93	CES66 = 83	CES91 = 70
CES17 = 48	CES42 = 94	CES67 = 82	CES92 = 78
CES18 = 56	CES43 = 95	CES68 = 85	CES93 = 86
CES19 = 70	CES44 = 99	CES69 = 86	CES94 = 79
CES20 = 65	CES45 = 99	CES70 = 84	CES95 = 83
CES21 = 85	CES46 = 97	CES71 = 76	CES96 = 93
CES22 = 77	CES47 = 93	CES72 = 92	CES97 = 96
CES23 = 91	CES48 = 86	CES73 = 80	CES98 = 95
CES24 = 90	CES49 = 98	CES74 = 89	CES99 = 93
CES25 = 70	CES50 = 96	CES75 = 79	



Color Rendition by Hue-Angle Bin


Measure Comparisons



(END OF REPORT)