

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: P1357144

Luminaire Tested: 4ASL4-15HE-2-40-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357144
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-7)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 4ASL4-15HE-2-40-UNV
Description: 4FT 1500 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 4000K LEDS 2 ROW
Light Source: -
Ballast/Driver: -

Summary

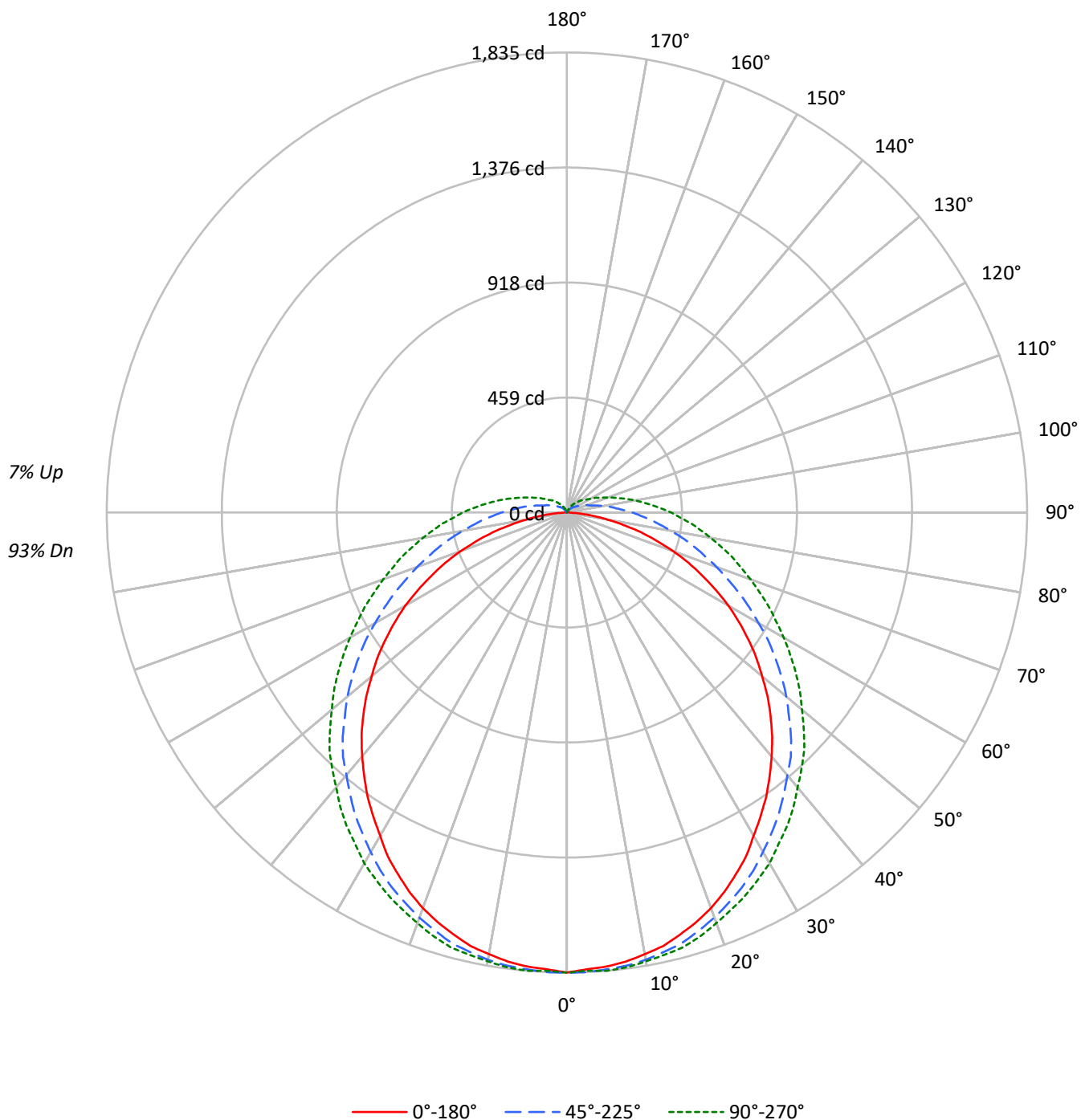
Lumens per Lamp: N/A
Luminaire Lumens: 6300.0 lumens
Efficiency: N/A
Efficacy: 121.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.4
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 52
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: 4ASL4-15HE-2-40-UNV

Luminous Intensity Polar Plot



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CATALOG NUMBER: 4ASL4-15HE-2-40-UNV

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	117	117	117	117	114	114	114	114	107	107	107		101	101	101		95	95	95	93
1	105	100	95	90	102	97	92	88	91	87	84		86	83	80		81	79	77	74
2	95	86	79	72	92	84	77	71	79	73	68		74	70	65		70	66	63	60
3	86	75	66	59	83	73	65	58	69	62	56		65	59	55		62	57	53	50
4	79	66	57	50	76	64	56	49	61	54	48		58	51	46		55	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41		52	45	40		49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36		47	40	35		44	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32		43	36	31		41	35	30	28
8	58	44	35	29	56	43	34	29	41	33	28		39	32	28		37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25		36	29	25		34	29	24	22
10	50	37	29	24	49	36	28	23	35	28	23		33	27	22		32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14892	14892	14892
5°	14774	14597	14551
10°	14674	14327	14197
15°	14540	14032	13913
20°	14366	13661	13514
25°	14089	13294	13170
30°	13744	12875	12827
35°	13474	12485	12431
40°	13161	12065	12012
45°	12844	11702	11707
50°	12435	11222	11254
55°	12042	10708	10896
60°	11558	10129	10514
65°	10807	9591	10218
70°	9963	9085	9946
75°	8738	8694	9857
80°	6812	8349	9826
85°	4135	8339	10108

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12844 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.0	2.8
10°-20°	500.3	7.9
20°-30°	758.0	12.0
30°-40°	916.8	14.6
40°-50°	966.5	15.3
50°-60°	902.1	14.3
60°-70°	744.8	11.8
70°-80°	540.3	8.6
80°-90°	341.4	5.4
90°-100°	203.8	3.2
100°-110°	116.8	1.9
110°-120°	66.3	1.1
120°-130°	37.8	0.6
130°-140°	20.5	0.3
140°-150°	9.0	0.1
150°-160°	1.6	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1432.3	22.7
0°-40°	2349.1	37.3
0°-60°	4217.7	66.9
0°-90°	5844.2	92.8
90°-120°	386.9	6.1
90°-150°	454.2	7.2
90°-180°	456.0	7.2
0°-180°	6300.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1835	1835	1835	1835	1835	
5°	1818	1835	1829	1829	1835	173
15°	1743	1766	1777	1783	1795	492
25°	1593	1616	1650	1674	1685	734
35°	1385	1420	1472	1512	1529	866
45°	1148	1195	1264	1316	1339	886
55°	883	935	1016	1085	1114	789
65°	594	658	756	848	889	590
75°	306	387	525	635	681	322
85°	58	179	335	450	496	71
90°	0	110	260	369	416	2
95°	0	69	196	300	340	0
105°	0	23	110	190	219	0
115°	0	12	64	115	138	0
125°	0	6	40	75	87	0
135°	0	0	23	46	58	0
145°	0	0	12	29	35	0
155°	0	0	0	6	12	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°	1835.1	1835.1	1835.1	1835.1	1835.1
2.5°	1823.6	1840.9	1835.1	1829.4	1829.4
5°	1817.8	1835.1	1829.4	1829.4	1835.1
7.5°	1806.3	1823.6	1823.6	1823.6	1829.4
10°	1789.0	1812.0	1812.0	1812.0	1817.8
12.5°	1771.6	1789.0	1794.7	1800.5	1806.3
15°	1742.8	1765.9	1777.4	1783.2	1794.7
17.5°	1713.9	1731.2	1748.6	1765.9	1771.6
20°	1679.3	1702.4	1719.7	1737.0	1742.8
22.5°	1638.9	1662.0	1685.1	1702.4	1713.9
25°	1592.7	1615.8	1650.5	1673.5	1685.1
27.5°	1546.6	1569.7	1610.1	1638.9	1650.5
30°	1488.9	1523.5	1563.9	1598.5	1615.8
32.5°	1436.9	1471.6	1517.7	1558.1	1569.7
35°	1385.0	1419.6	1471.6	1512.0	1529.3
37.5°	1327.3	1367.7	1419.6	1465.8	1483.1
40°	1269.6	1310.0	1367.7	1419.6	1431.2
42.5°	1211.9	1252.3	1321.5	1367.7	1385.0
45°	1148.4	1194.6	1263.8	1315.7	1338.8
47.5°	1084.9	1131.1	1200.3	1258.0	1281.1
50°	1015.7	1067.6	1142.6	1200.3	1223.4
52.5°	952.2	1004.1	1079.1	1142.6	1171.5
55°	882.9	934.9	1015.7	1084.9	1113.8
57.5°	813.7	865.6	952.2	1027.2	1056.1
60°	744.4	796.4	882.9	969.5	998.4
62.5°	669.4	727.1	819.5	906.0	940.6
65°	594.4	657.9	756.0	848.3	888.7
67.5°	525.1	588.6	692.5	796.4	831.0
70°	450.1	519.4	634.8	738.7	779.1
72.5°	375.1	450.1	577.1	686.7	727.1
75°	305.9	386.6	525.1	634.8	681.0
77.5°	230.8	328.9	473.2	588.6	629.0
80°	167.4	271.2	421.3	542.5	582.9
82.5°	109.6	219.3	375.1	496.3	536.7
85°	57.7	178.9	334.7	450.1	496.3
87.5°	17.3	138.5	294.3	409.7	450.1
90°	0.0	109.6	259.7	369.3	415.5
92.5°	0.0	86.6	225.1	334.7	375.1
95°	0.0	69.2	196.2	300.1	340.5
97.5°	0.0	57.7	173.1	271.2	305.9
100°	0.0	46.2	150.0	242.4	277.0
102.5°	0.0	34.6	127.0	213.5	248.1
105°	0.0	23.1	109.6	190.4	219.3
107.5°	0.0	17.3	92.3	167.4	196.2
110°	0.0	17.3	86.6	144.3	173.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	11.5	75.0	132.7	155.8
115°	0.0	11.5	63.5	115.4	138.5
117.5°	0.0	11.5	57.7	103.9	127.0
120°	0.0	11.5	51.9	92.3	109.6
122.5°	0.0	5.8	46.2	80.8	98.1
125°	0.0	5.8	40.4	75.0	86.6
127.5°	0.0	5.8	34.6	69.2	80.8
130°	0.0	5.8	34.6	63.5	75.0
132.5°	0.0	0.0	28.9	57.7	69.2
135°	0.0	0.0	23.1	46.2	57.7
137.5°	0.0	0.0	23.1	40.4	51.9
140°	0.0	0.0	17.3	40.4	46.2
142.5°	0.0	0.0	11.5	34.6	40.4
145°	0.0	0.0	11.5	28.9	34.6
147.5°	0.0	0.0	5.8	23.1	28.9
150°	0.0	0.0	5.8	17.3	23.1
152.5°	0.0	0.0	0.0	11.5	17.3
155°	0.0	0.0	0.0	5.8	11.5
157.5°	0.0	0.0	0.0	0.0	5.8
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	18.70	20.23	19.17	20.69	21.18	20.75	22.29	21.23	22.75	23.24
	3H	20.20	21.60	20.68	22.07	22.60	23.21	24.61	23.69	25.08	25.61
	4H	20.68	22.01	21.18	22.49	23.04	24.42	25.74	24.92	26.23	26.78
	6H	20.95	22.19	21.47	22.69	23.25	25.69	26.92	26.21	27.42	27.98
	8H	21.01	22.19	21.54	22.72	23.28	26.35	27.53	26.88	28.06	28.62
	12H	21.02	22.16	21.56	22.68	23.27	27.08	28.21	27.61	28.73	29.33
4H	2H	19.58	20.90	20.08	21.39	21.93	21.19	22.51	21.69	23.00	23.55
	3H	21.32	22.45	21.84	22.98	23.55	23.87	25.00	24.39	25.53	26.10
	4H	21.93	22.96	22.47	23.50	24.10	25.25	26.29	25.79	26.83	27.43
	6H	22.33	23.24	22.89	23.81	24.42	26.72	27.64	27.28	28.20	28.82
	8H	22.43	23.29	22.99	23.85	24.48	27.49	28.35	28.05	28.92	29.54
	12H	22.47	23.26	23.06	23.85	24.48	28.34	29.12	28.93	29.72	30.35
8H	4H	22.62	23.48	23.19	24.05	24.68	25.47	26.33	26.04	26.90	27.53
	6H	23.21	23.94	23.80	24.55	25.18	27.12	27.85	27.71	28.46	29.09
	8H	23.40	24.06	24.00	24.67	25.32	28.03	28.69	28.64	29.31	29.95
	12H	23.52	24.11	24.13	24.71	25.42	29.07	29.66	29.68	30.26	30.97
12H	4H	22.82	23.61	23.41	24.20	24.83	25.48	26.26	26.07	26.86	27.49
	6H	23.51	24.17	24.12	24.79	25.44	27.15	27.82	27.76	28.43	29.08
	8H	23.80	24.39	24.41	25.00	25.71	28.14	28.73	28.75	29.33	30.04

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-4

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-40-UNV-OPL-1_600mA

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

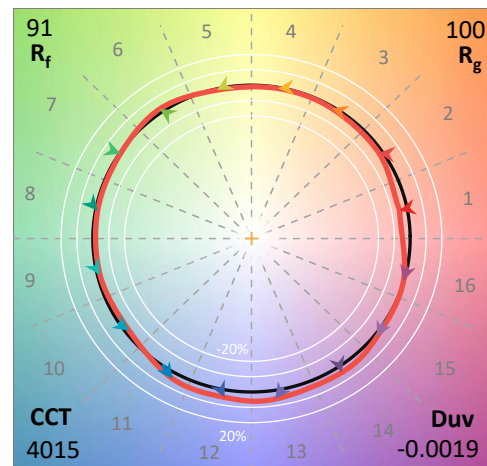
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-4
 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-2-40-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 4000K LEDS with 1 rows at 600mA

Spectral Parameters

CCT (K): 4015
 CIE u' : 0.2259
 CIE v' : 0.4990
 Duv: -0.0019
 CIE x: 0.3785
 CIE y: 0.3715
 CIE z: 0.2500
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 580
 Purity: 25.06827
 R_f: 90.7
 R_g: 100.2

CRI (Ra): 93.9
 R1: 95.7
 R2: 96.3
 R3: 94.8
 R4: 95.2
 R5: 94.6
 R6: 93.5
 R7: 94.0
 R8: 87.2
 R9: 66.3
 R10: 89.1
 R11: 95.0
 R12: 73.8
 R13: 96.0
 R14: 96.4
 R15: 93.2



Test Conditions

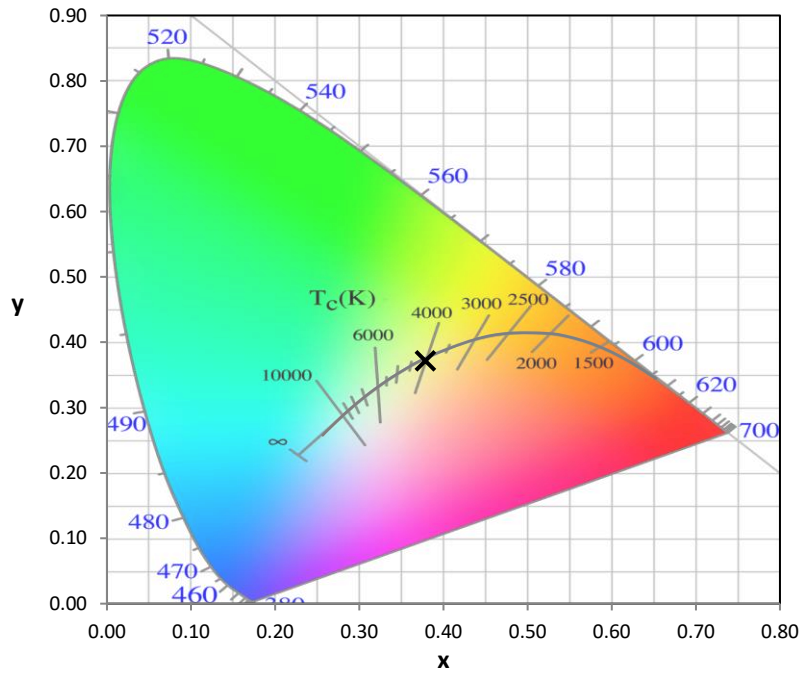
Stabilization Time: 23M
 Operation Time: 1H 23M
 Sphere Temperature (°C): 24.1

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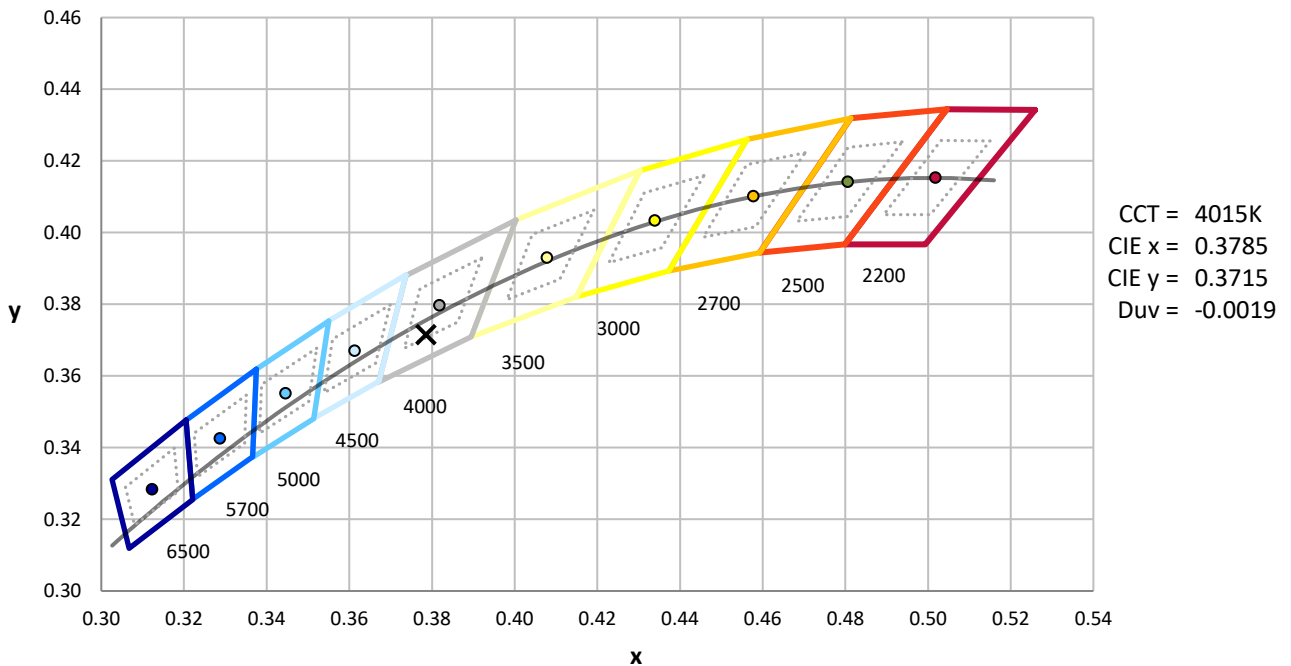
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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



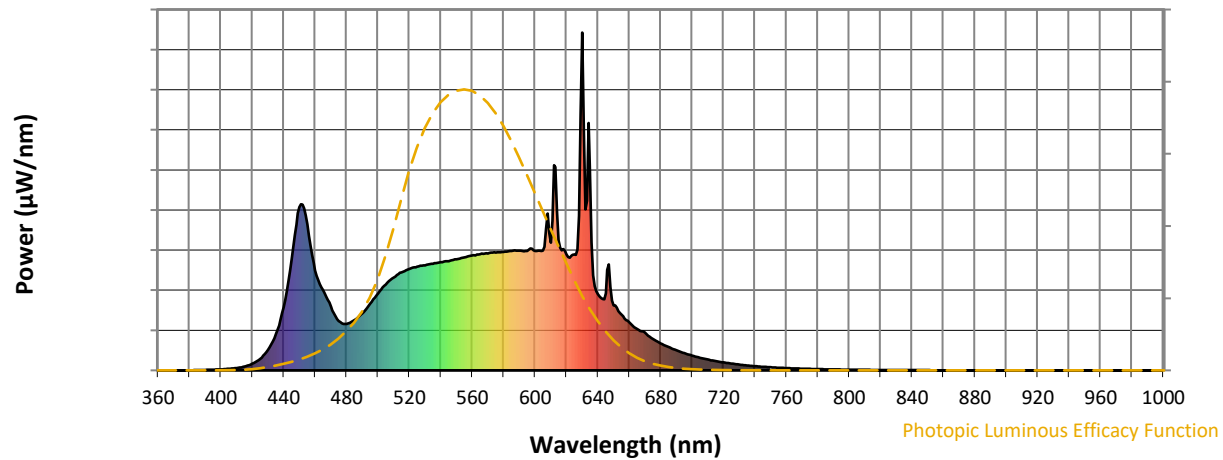
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength

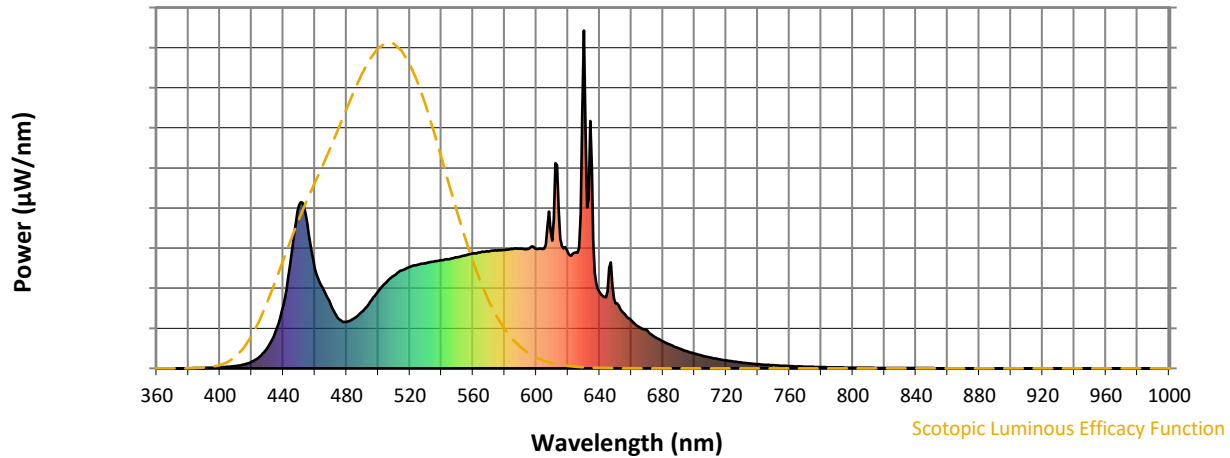


Photopic Lumens: NR

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	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



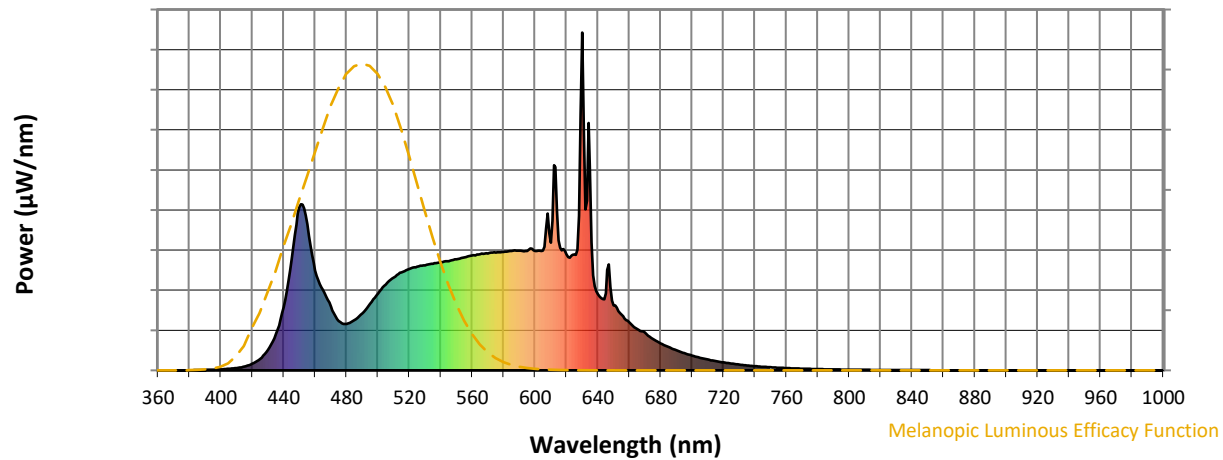
Scotopic Lumens: NR

S/P: 1.79

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	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.74

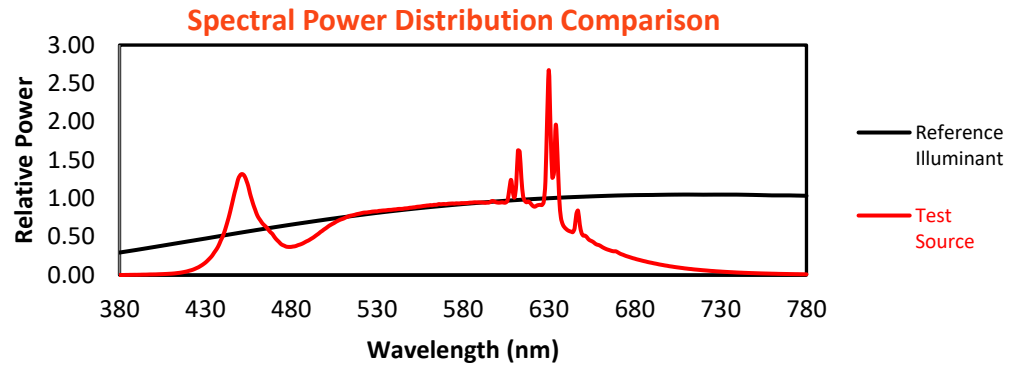
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	343	NR	750	9	NR	880	0	NR
365	0	NR	495	197	NR	625	343	NR	755	8	NR	885	0	NR
370	0	NR	500	228	NR	630	1000	NR	760	7	NR	890	0	NR
375	0	NR	505	254	NR	635	591	NR	765	6	NR	895	0	NR
380	0	NR	510	274	NR	640	225	NR	770	5	NR	900	0	NR
385	1	NR	515	290	NR	645	229	NR	775	4	NR	905	0	NR
390	1	NR	520	300	NR	650	193	NR	780	4	NR	910	0	NR
395	2	NR	525	307	NR	655	165	NR	785	3	NR	915	0	NR
400	3	NR	530	311	NR	660	142	NR	790	3	NR	920	0	NR
405	5	NR	535	316	NR	665	122	NR	795	2	NR	925	0	NR
410	7	NR	540	320	NR	670	112	NR	800	2	NR	930	0	NR
415	11	NR	545	323	NR	675	93	NR	805	2	NR	935	0	NR
420	20	NR	550	329	NR	680	80	NR	810	2	NR	940	0	NR
425	35	NR	555	334	NR	685	69	NR	815	1	NR	945	0	NR
430	61	NR	560	340	NR	690	59	NR	820	1	NR	950	0	NR
435	108	NR	565	344	NR	695	51	NR	825	1	NR	955	0	NR
440	187	NR	570	346	NR	700	43	NR	830	1	NR	960	0	NR
445	329	NR	575	349	NR	705	37	NR	835	1	NR	965	0	NR
450	484	NR	580	351	NR	710	32	NR	840	1	NR	970	0	NR
455	433	NR	585	353	NR	715	27	NR	845	1	NR	975	0	NR
460	296	NR	590	354	NR	720	23	NR	850	1	NR	980	0	NR
465	237	NR	595	353	NR	725	20	NR	855	0	NR	985	0	NR
470	188	NR	600	354	NR	730	17	NR	860	0	NR	990	0	NR
475	146	NR	605	354	NR	735	15	NR	865	0	NR	995	0	NR
480	138	NR	610	378	NR	740	12	NR	870	0	NR	1000	0	NR
485	149	NR	615	385	NR	745	11	NR	875	0	NR			

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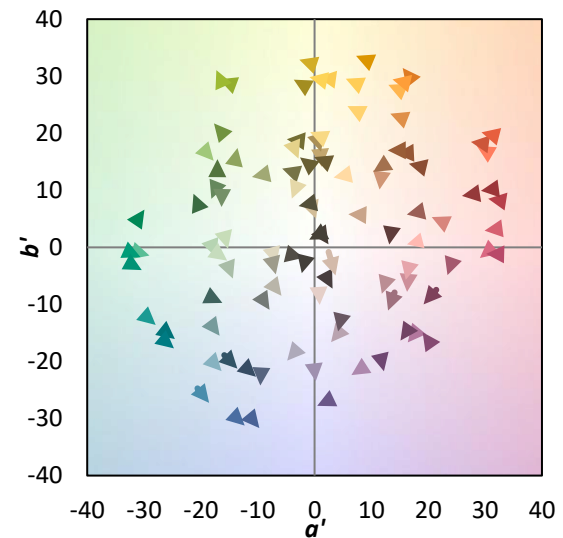
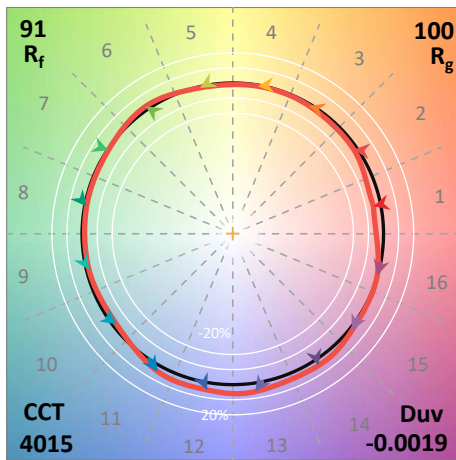
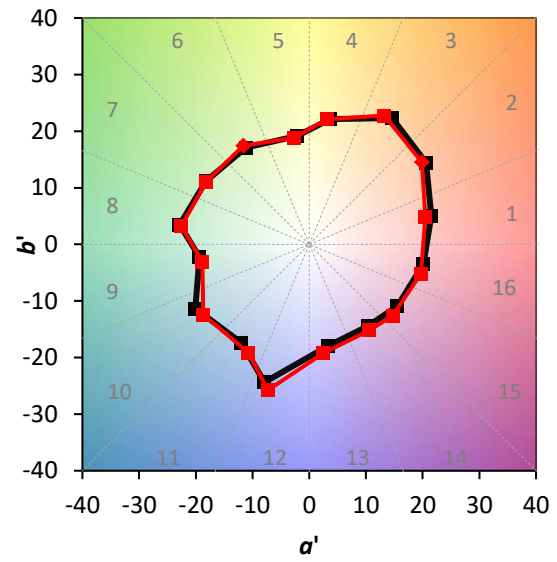
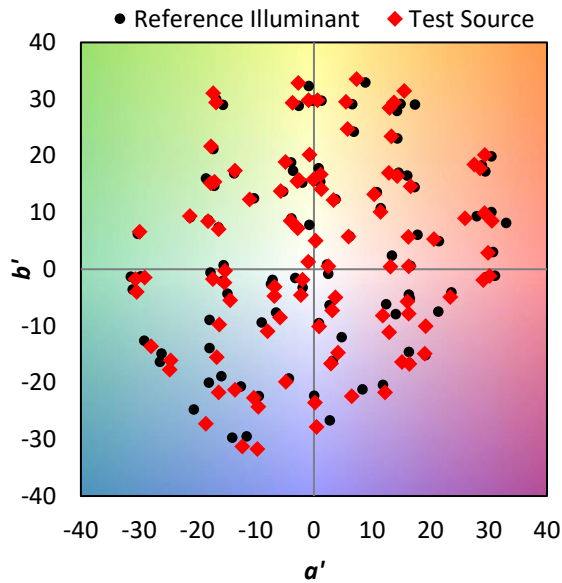
TM-30-18

Summary

$R_f = 90.7$
 $R_g = 100.2$
 CIE $R_a = 93.9$
 $R_9 = 66.3$

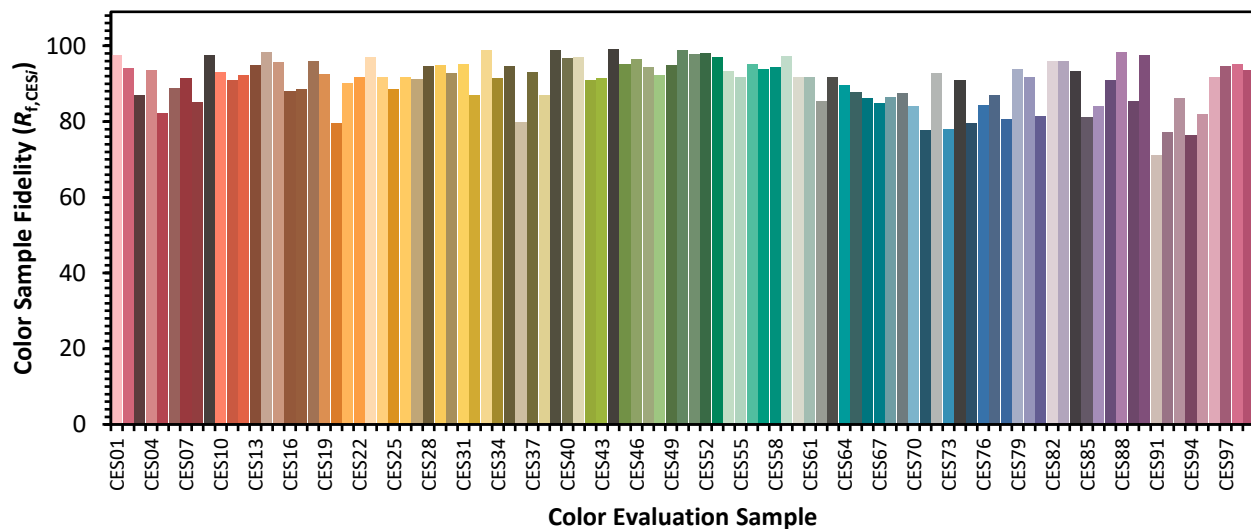


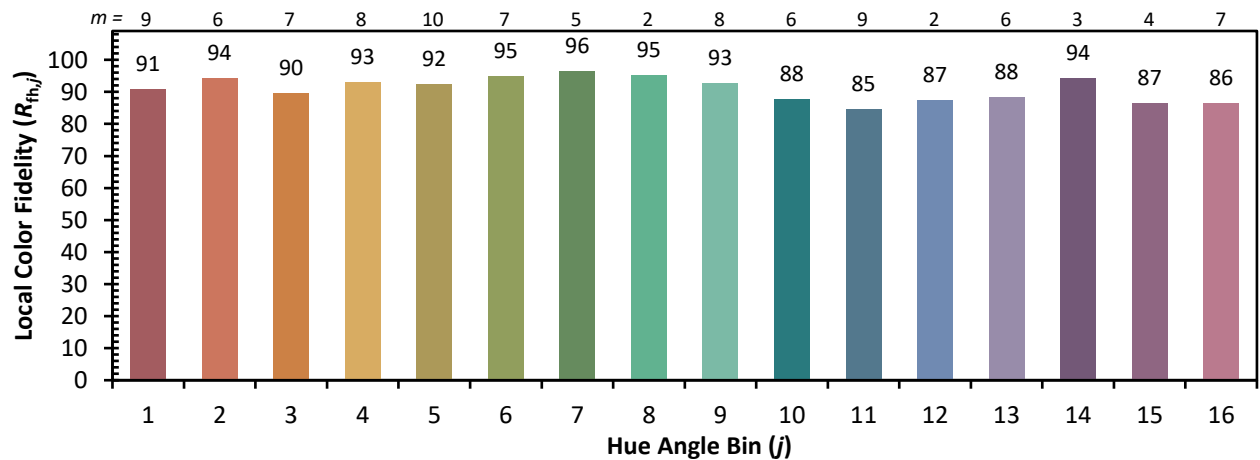
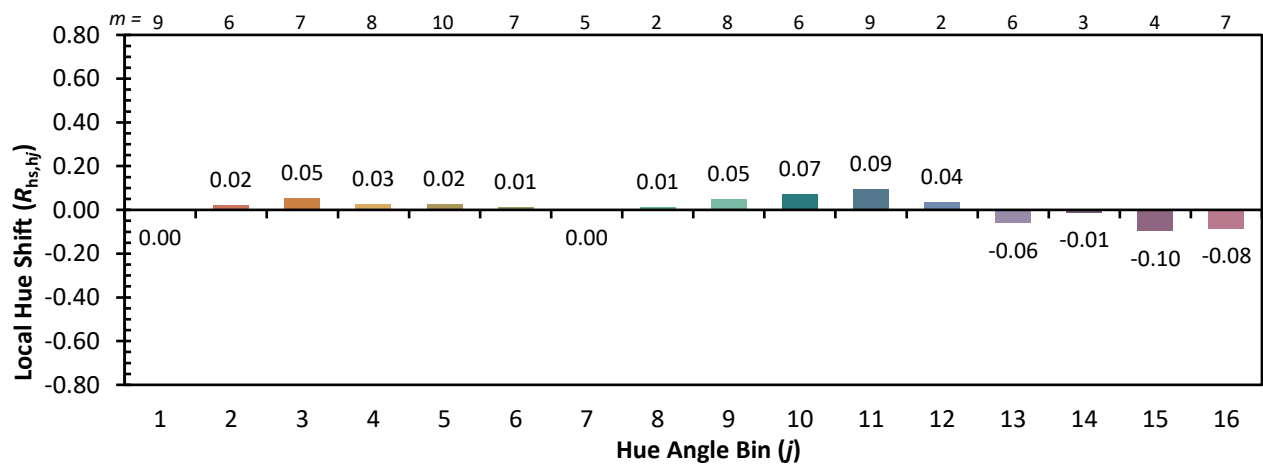
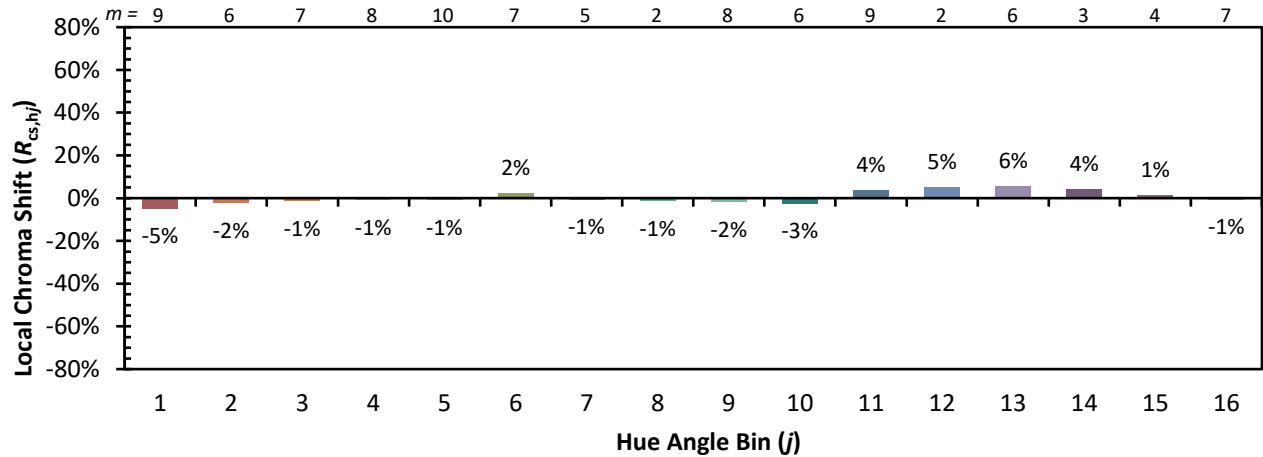
Color Vector Graphics



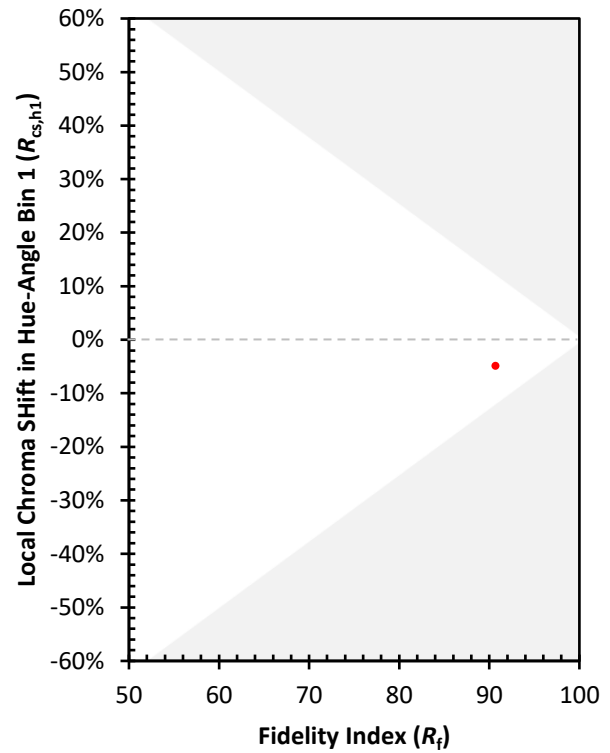
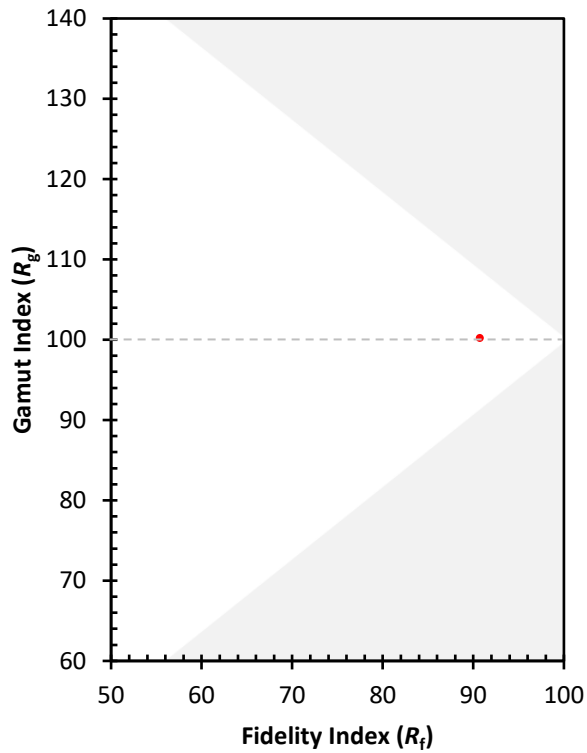
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 92	CES51 = 98	CES76 = 84
CES02 = 62	CES27 = 91	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 95	CES53 = 97	CES78 = 81
CES04 = 69	CES29 = 95	CES54 = 93	CES79 = 94
CES05 = 49	CES30 = 93	CES55 = 92	CES80 = 92
CES06 = 50	CES31 = 95	CES56 = 95	CES81 = 81
CES07 = 42	CES32 = 87	CES57 = 94	CES82 = 96
CES08 = 41	CES33 = 99	CES58 = 94	CES83 = 96
CES09 = 29	CES34 = 91	CES59 = 97	CES84 = 93
CES10 = 74	CES35 = 95	CES60 = 92	CES85 = 81
CES11 = 57	CES36 = 80	CES61 = 92	CES86 = 84
CES12 = 63	CES37 = 93	CES62 = 85	CES87 = 91
CES13 = 43	CES38 = 87	CES63 = 92	CES88 = 98
CES14 = 74	CES39 = 99	CES64 = 90	CES89 = 85
CES15 = 71	CES40 = 97	CES65 = 88	CES90 = 98
CES16 = 47	CES41 = 97	CES66 = 86	CES91 = 71
CES17 = 49	CES42 = 91	CES67 = 85	CES92 = 77
CES18 = 56	CES43 = 91	CES68 = 87	CES93 = 86
CES19 = 71	CES44 = 99	CES69 = 87	CES94 = 76
CES20 = 66	CES45 = 95	CES70 = 84	CES95 = 82
CES21 = 85	CES46 = 96	CES71 = 78	CES96 = 92
CES22 = 78	CES47 = 94	CES72 = 93	CES97 = 95
CES23 = 91	CES48 = 92	CES73 = 78	CES98 = 95
CES24 = 90	CES49 = 95	CES74 = 91	CES99 = 94
CES25 = 71	CES50 = 99	CES75 = 80	



Color Rendition by Hue-Angle Bin


Measure Comparisons



(END OF REPORT)