

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: P1357034

Luminaire Tested: 3ASL4-20VHE-3-30-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357034
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: 3ASL4-20VHE-3-30-UNV
Description: 3FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 3000K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

Summary

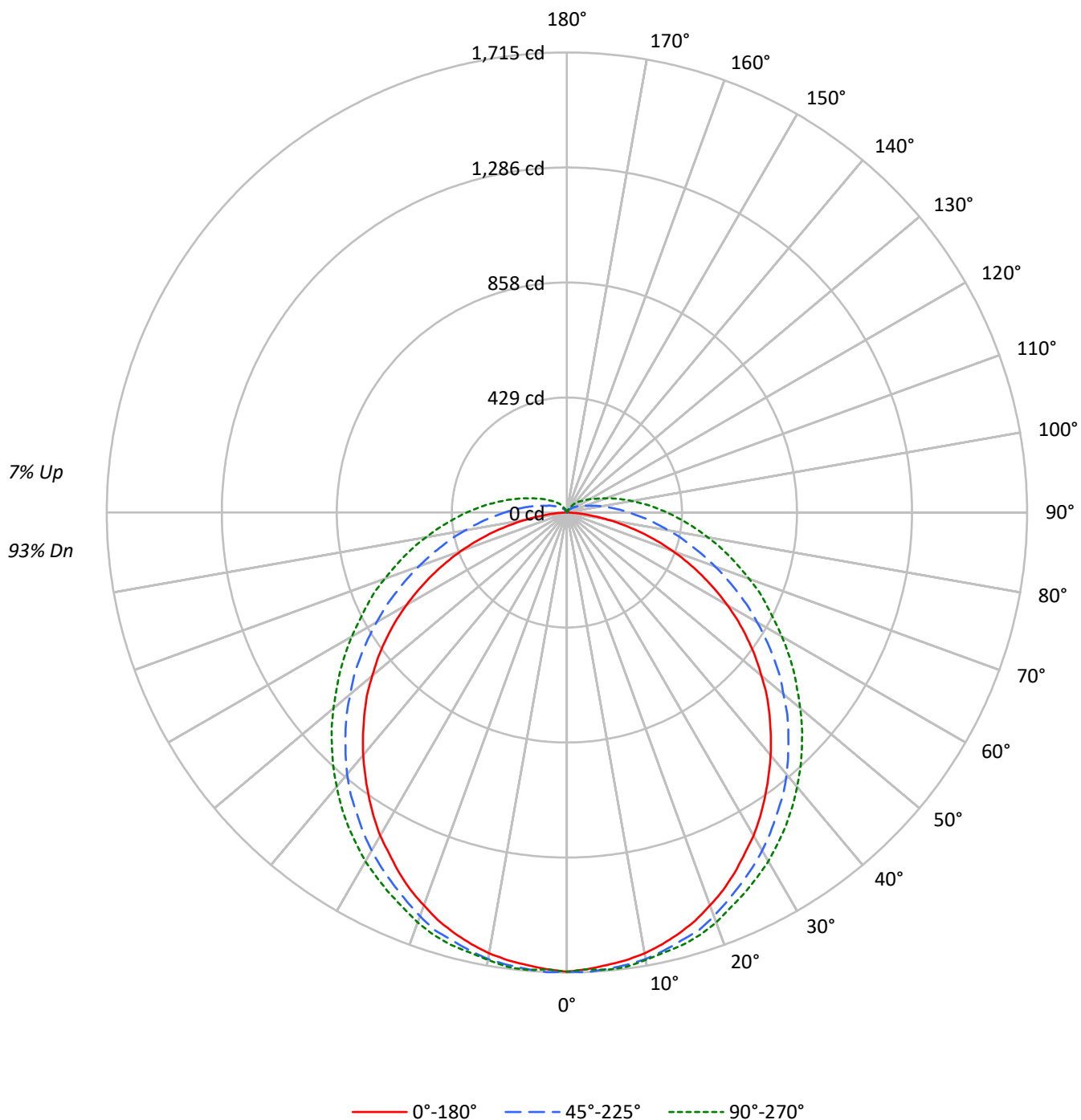
Lumens per Lamp: N/A
Luminaire Lumens: 5820.0 lumens
Efficiency: N/A
Efficacy: 115.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 50.4
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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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°	18554	18554	18554
5°	18375	18195	18129
10°	18257	17833	17670
15°	18041	17385	17282
20°	17754	16956	16843
25°	17421	16420	16345
30°	17072	15954	15924
35°	16640	15428	15454
40°	16241	14945	14960
45°	15812	14364	14464
50°	15324	13740	13948
55°	14797	13143	13484
60°	14112	12447	13015
65°	13246	11777	12625
70°	12141	11110	12318
75°	10547	10495	12108
80°	8158	10023	12019
85°	4745	9879	12197

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 15812 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.3	2.8
10°-20°	466.0	8.0
20°-30°	704.6	12.1
30°-40°	853.2	14.7
40°-50°	896.1	15.4
50°-60°	836.0	14.4
60°-70°	690.9	11.9
70°-80°	497.5	8.5
80°-90°	309.1	5.3
90°-100°	181.1	3.1
100°-110°	103.6	1.8
110°-120°	58.5	1.0
120°-130°	33.7	0.6
130°-140°	18.1	0.3
140°-150°	7.6	0.1
150°-160°	1.4	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1333.0	22.9
0°-40°	2186.2	37.6
0°-60°	3918.3	67.3
0°-90°	5415.9	93.1
90°-120°	343.3	5.9
90°-150°	402.7	6.9
90°-180°	404.0	6.9
0°-180°	5820.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1712	1712	1712	1712	1712	
5°	1694	1708	1708	1708	1712	161
15°	1623	1644	1651	1662	1669	458
25°	1480	1505	1530	1552	1566	682
35°	1288	1324	1366	1406	1424	806
45°	1068	1107	1167	1217	1238	824
55°	822	868	940	1007	1032	735
65°	555	608	701	790	822	549
75°	285	356	480	584	626	301
85°	53	160	302	409	448	65
90°	0	96	231	331	374	2
95°	0	60	174	267	306	0
105°	0	21	96	167	196	0
115°	0	11	57	103	121	0
125°	0	7	36	68	78	0
135°	0	0	21	43	53	0
145°	0	0	11	25	28	0
155°	0	0	0	7	11	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°	1711.7	1711.7	1711.7	1711.7	1711.7
2.5°	1704.6	1715.3	1715.3	1704.6	1704.6
5°	1693.9	1708.2	1708.2	1708.2	1711.7
7.5°	1683.3	1701.1	1701.1	1701.1	1708.2
10°	1669.0	1686.8	1690.4	1690.4	1693.9
12.5°	1647.7	1669.0	1672.6	1676.2	1679.7
15°	1622.8	1644.1	1651.2	1661.9	1669.0
17.5°	1594.3	1619.2	1633.4	1644.1	1651.2
20°	1558.7	1583.6	1601.4	1615.7	1626.3
22.5°	1523.1	1544.5	1565.8	1583.6	1594.3
25°	1480.4	1505.3	1530.2	1551.6	1565.8
27.5°	1434.2	1462.6	1494.7	1519.6	1533.8
30°	1391.5	1419.9	1455.5	1487.5	1501.8
32.5°	1341.6	1373.7	1412.8	1444.8	1462.6
35°	1288.3	1323.8	1366.5	1405.7	1423.5
37.5°	1234.9	1270.5	1323.8	1363.0	1380.8
40°	1181.5	1217.1	1274.0	1316.7	1334.5
42.5°	1124.6	1160.1	1220.6	1266.9	1288.3
45°	1067.6	1106.8	1167.3	1217.1	1238.4
47.5°	1010.7	1049.8	1113.9	1167.3	1188.6
50°	946.6	989.3	1053.4	1113.9	1135.2
52.5°	886.1	928.8	1000.0	1060.5	1081.8
55°	822.1	868.3	939.5	1007.1	1032.0
57.5°	758.0	804.3	879.0	950.2	978.6
60°	690.4	740.2	818.5	893.2	925.3
62.5°	622.8	676.2	761.6	839.9	871.9
65°	555.2	608.5	701.1	790.0	822.1
67.5°	487.5	544.5	644.1	736.7	775.8
70°	419.9	480.4	587.2	683.3	722.4
72.5°	352.3	416.4	533.8	633.5	672.6
75°	284.7	355.9	480.4	583.6	626.3
77.5°	217.1	298.9	434.2	537.4	580.1
80°	156.6	249.1	384.3	491.1	533.8
82.5°	99.6	199.3	341.6	448.4	491.1
85°	53.4	160.1	302.5	409.3	448.4
87.5°	17.8	124.6	263.3	370.1	409.3
90°	0.0	96.1	231.3	331.0	373.7
92.5°	0.0	74.7	202.8	298.9	338.1
95°	0.0	60.5	174.4	266.9	306.0
97.5°	0.0	49.8	153.0	238.4	274.0
100°	0.0	39.1	131.7	213.5	245.6
102.5°	0.0	32.0	113.9	188.6	220.6
105°	0.0	21.4	96.1	167.3	195.7
107.5°	0.0	17.8	81.9	149.5	174.4
110°	0.0	14.2	74.7	128.1	153.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	10.7	67.6	113.9	138.8
115°	0.0	10.7	56.9	103.2	121.0
117.5°	0.0	10.7	49.8	92.5	110.3
120°	0.0	7.1	46.3	81.9	99.6
122.5°	0.0	7.1	39.1	74.7	89.0
125°	0.0	7.1	35.6	67.6	78.3
127.5°	0.0	3.6	32.0	60.5	71.2
130°	0.0	3.6	28.5	53.4	64.1
132.5°	0.0	3.6	24.9	49.8	60.5
135°	0.0	0.0	21.4	42.7	53.4
137.5°	0.0	0.0	17.8	39.1	46.3
140°	0.0	0.0	14.2	32.0	42.7
142.5°	0.0	0.0	10.7	28.5	35.6
145°	0.0	0.0	10.7	24.9	28.5
147.5°	0.0	0.0	7.1	17.8	24.9
150°	0.0	0.0	3.6	14.2	17.8
152.5°	0.0	0.0	0.0	10.7	14.2
155°	0.0	0.0	0.0	7.1	10.7
157.5°	0.0	0.0	0.0	0.0	3.6
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	19.47	21.01	19.94	21.46	21.95	21.47	23.01	21.94	23.46	23.95
	3H	20.97	22.37	21.45	22.84	23.36	23.92	25.32	24.40	25.79	26.31
	4H	21.45	22.78	21.95	23.26	23.80	25.11	26.44	25.61	26.92	27.46
	6H	21.72	22.96	22.24	23.46	24.01	26.34	27.58	26.86	28.08	28.63
	8H	21.78	22.96	22.30	23.48	24.04	26.97	28.16	27.50	28.68	29.24
	12H	21.79	22.93	22.32	23.44	24.03	27.66	28.80	28.20	29.32	29.91
4H	2H	20.34	21.67	20.84	22.15	22.69	21.90	23.24	22.41	23.72	24.26
	3H	22.08	23.21	22.59	23.74	24.30	24.58	25.72	25.10	26.24	26.80
	4H	22.68	23.72	23.22	24.26	24.85	25.94	26.98	26.47	27.51	28.11
	6H	23.08	24.00	23.63	24.56	25.17	27.37	28.28	27.92	28.85	29.45
	8H	23.17	24.04	23.73	24.60	25.22	28.11	28.97	28.67	29.53	30.15
	12H	23.22	24.00	23.80	24.59	25.22	28.92	29.70	29.50	30.29	30.92
8H	4H	23.36	24.22	23.92	24.78	25.40	26.16	27.02	26.72	27.58	28.20
	6H	23.93	24.67	24.53	25.27	25.90	27.75	28.49	28.35	29.09	29.72
	8H	24.12	24.78	24.72	25.39	26.03	28.63	29.29	29.24	29.91	30.55
	12H	24.23	24.82	24.84	25.43	26.13	29.63	30.22	30.24	30.83	31.53
12H	4H	23.55	24.33	24.13	24.92	25.54	26.17	26.95	26.75	27.54	28.16
	6H	24.22	24.89	24.83	25.50	26.14	27.79	28.45	28.40	29.07	29.71
	8H	24.50	25.09	25.11	25.70	26.40	28.74	29.33	29.35	29.93	30.64

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-3

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-30-UNV-OPL-1_600mA

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

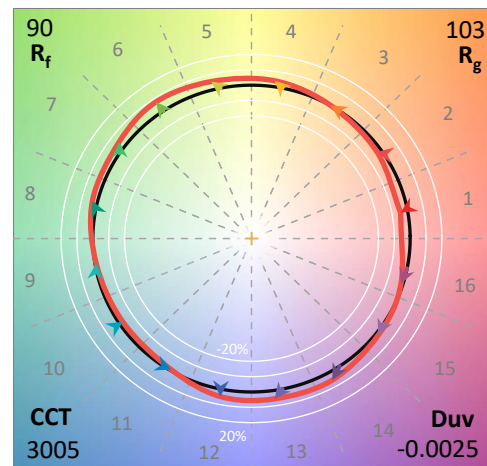
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-3
 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-2-30-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 3000K LEDS with 1 rows at 600mA

Spectral Parameters

CCT (K): 3005
 CIE u' : 0.2513
 CIE v' : 0.5178
 Duv: -0.0025
 CIE x: 0.4330
 CIE y: 0.3966
 CIE z: 0.1704
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 583
 Purity: 49.00645
 R_f: 90.1
 R_g: 103.3

CRI (Ra): 93.9
 R1: 96.5
 R2: 96.6
 R3: 95.5
 R4: 94.4
 R5: 96.0
 R6: 96.4
 R7: 91.7
 R8: 84.0
 R9: 62.0
 R10: 90.8
 R11: 94.1
 R12: 88.9
 R13: 96.4
 R14: 96.3
 R15: 91.9



Test Conditions

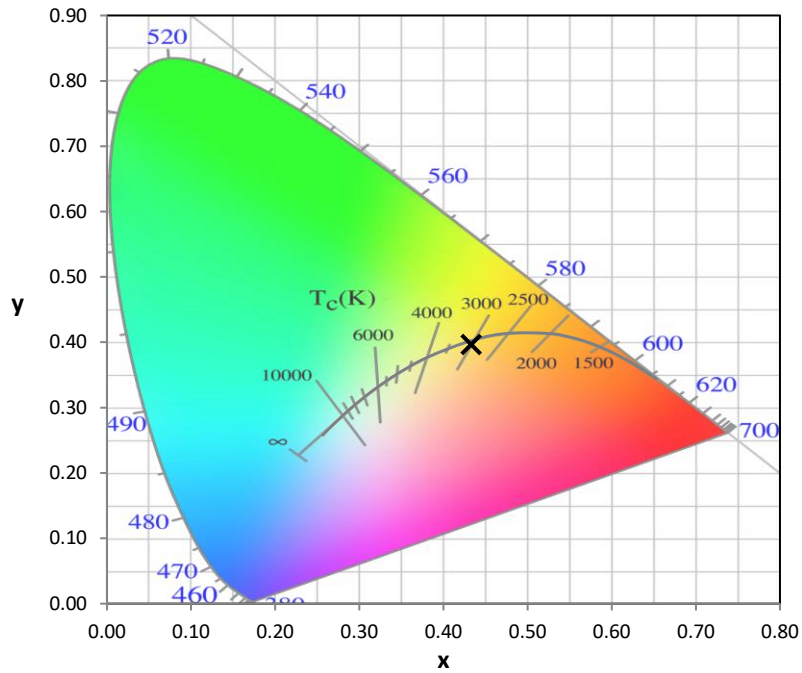
Stabilization Time: 32M
 Operation Time: 1H 32M
 Sphere Temperature (°C): 24.1

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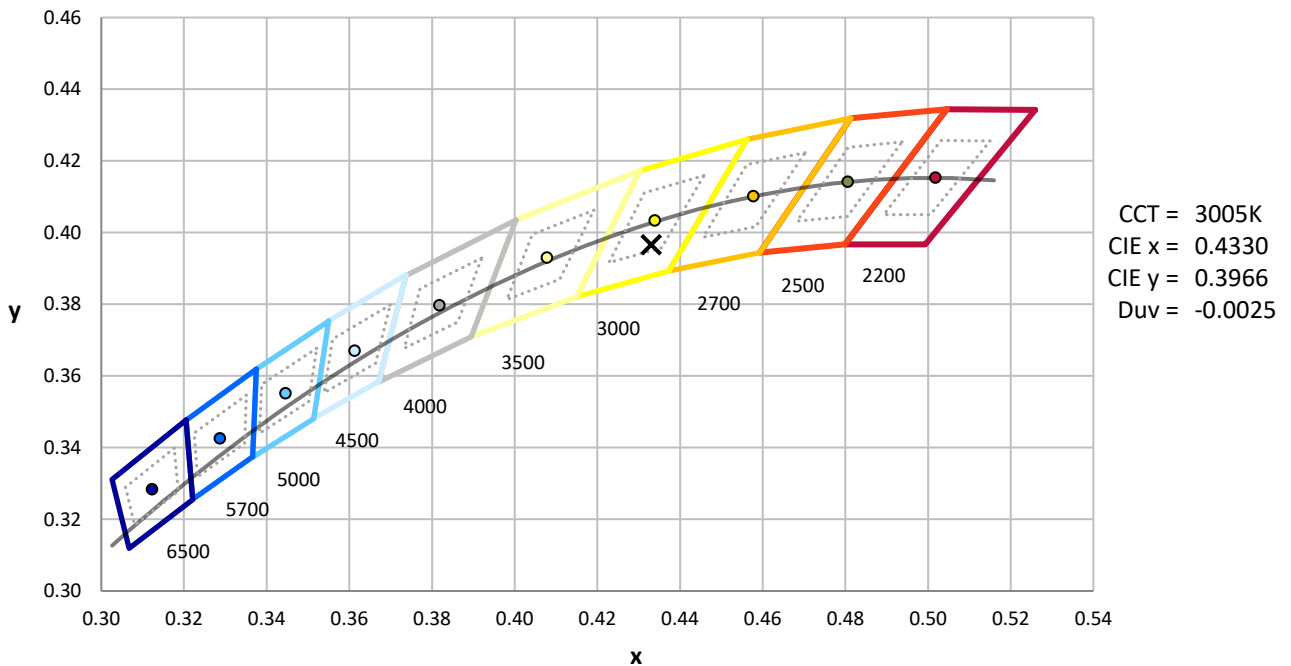
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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



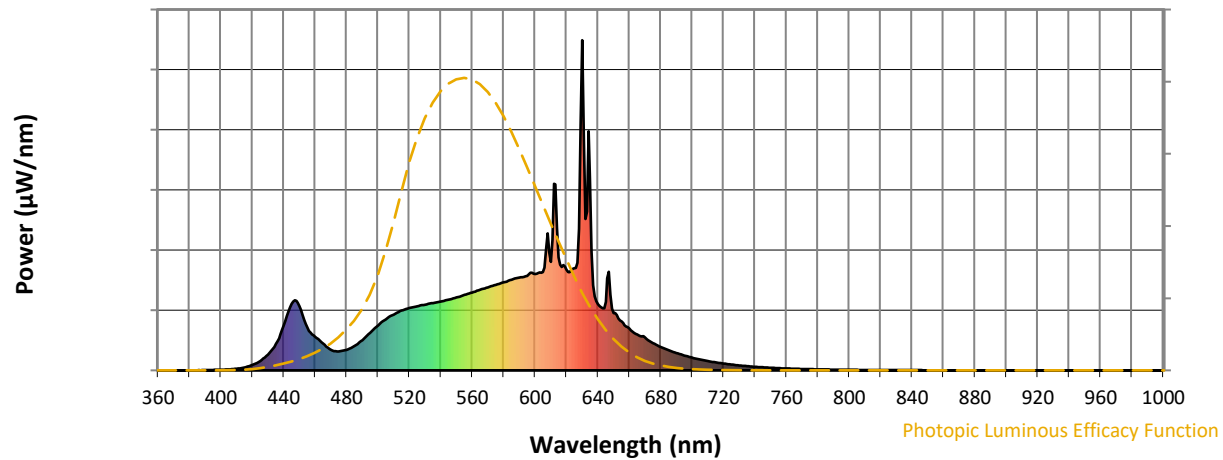
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

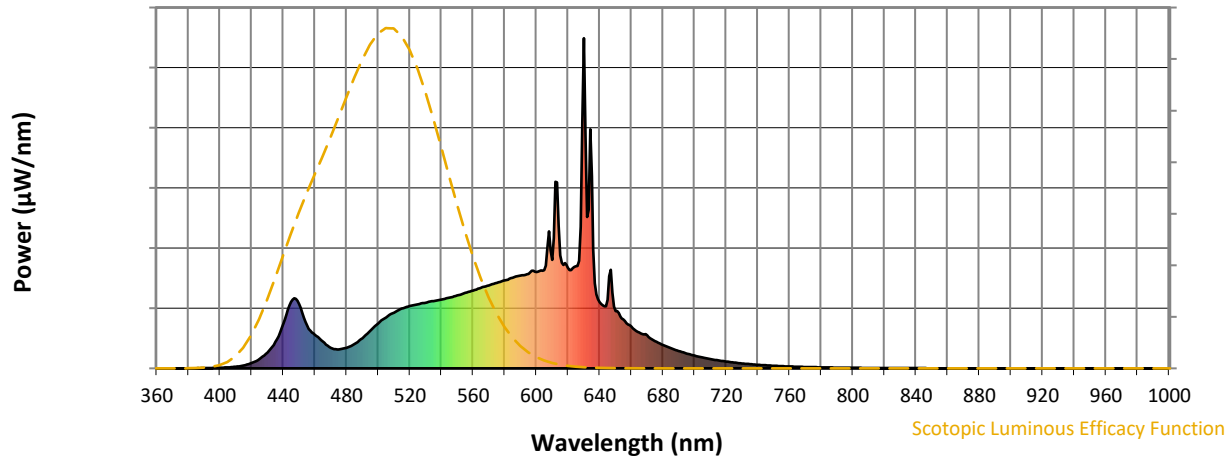


Photopic Lumens: NR

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	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



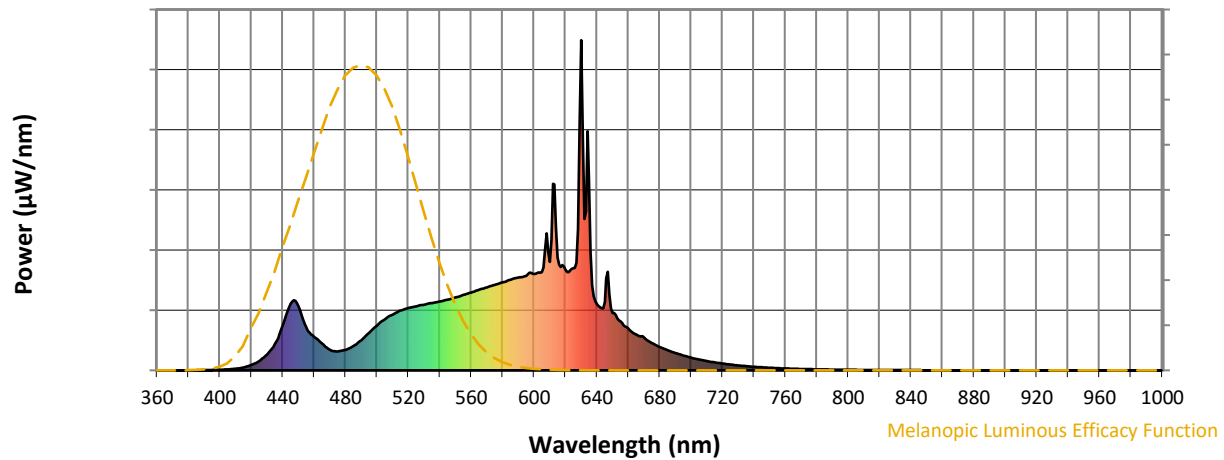
Scotopic Lumens: NR

S/P: 1.42

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	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.76

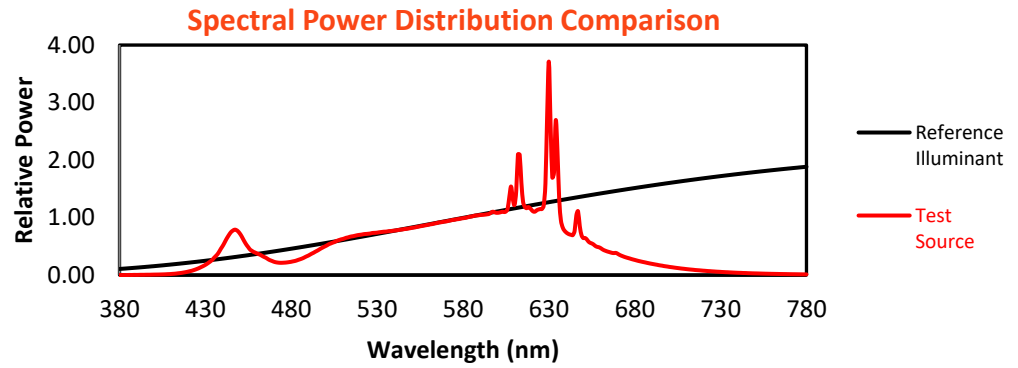
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	154	NR	635	582	NR	765	5	NR	895	0	NR
380	0	NR	510	169	NR	640	200	NR	770	4	NR	900	0	NR
385	0	NR	515	181	NR	645	207	NR	775	4	NR	905	0	NR
390	1	NR	520	189	NR	650	174	NR	780	3	NR	910	0	NR
395	1	NR	525	194	NR	655	148	NR	785	3	NR	915	0	NR
400	2	NR	530	199	NR	660	127	NR	790	2	NR	920	0	NR
405	3	NR	535	203	NR	665	108	NR	795	2	NR	925	0	NR
410	5	NR	540	208	NR	670	100	NR	800	2	NR	930	0	NR
415	9	NR	545	214	NR	675	83	NR	805	2	NR	935	0	NR
420	16	NR	550	221	NR	680	71	NR	810	1	NR	940	0	NR
425	28	NR	555	228	NR	685	61	NR	815	1	NR	945	0	NR
430	48	NR	560	236	NR	690	53	NR	820	1	NR	950	0	NR
435	80	NR	565	244	NR	695	45	NR	825	1	NR	955	0	NR
440	135	NR	570	251	NR	700	38	NR	830	1	NR	960	0	NR
445	202	NR	575	259	NR	705	33	NR	835	1	NR	965	0	NR
450	195	NR	580	266	NR	710	28	NR	840	1	NR	970	0	NR
455	130	NR	585	274	NR	715	24	NR	845	1	NR	975	0	NR
460	101	NR	590	281	NR	720	20	NR	850	0	NR	980	0	NR
465	82	NR	595	286	NR	725	17	NR	855	0	NR	985	0	NR
470	62	NR	600	292	NR	730	15	NR	860	0	NR	990	0	NR
475	58	NR	605	298	NR	735	13	NR	865	0	NR	995	0	NR
480	62	NR	610	328	NR	740	11	NR	870	0	NR	1000	0	NR
485	74	NR	615	342	NR	745	9	NR	875	0	NR			

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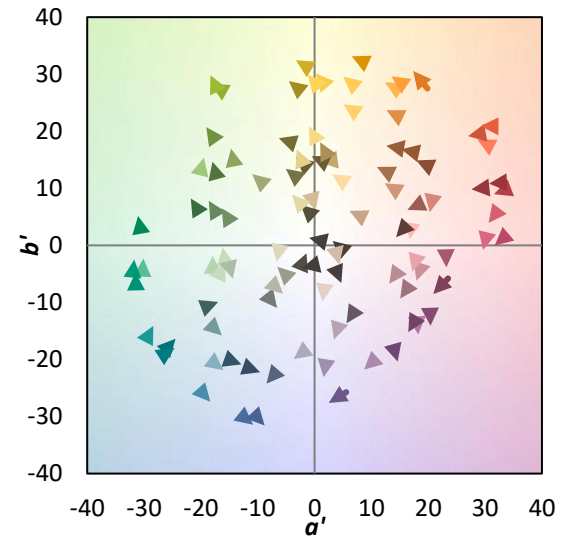
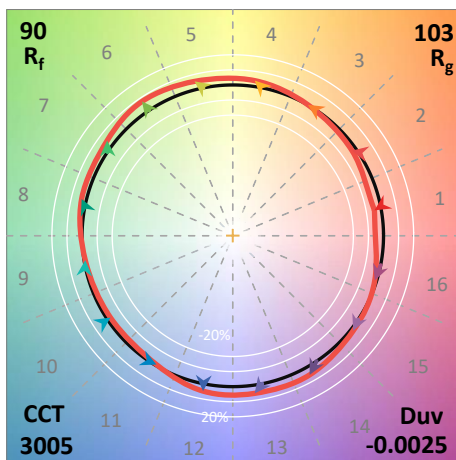
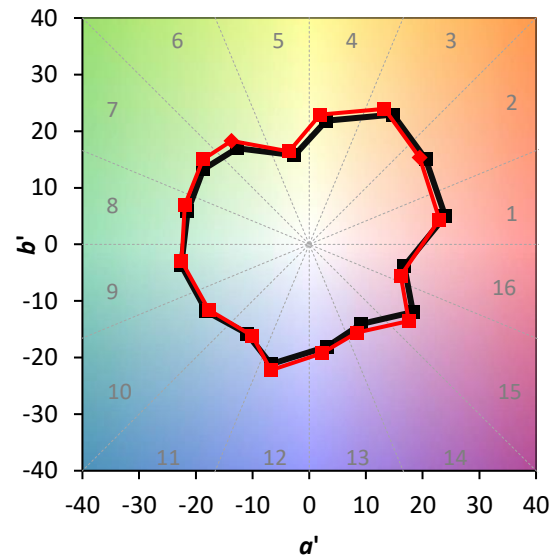
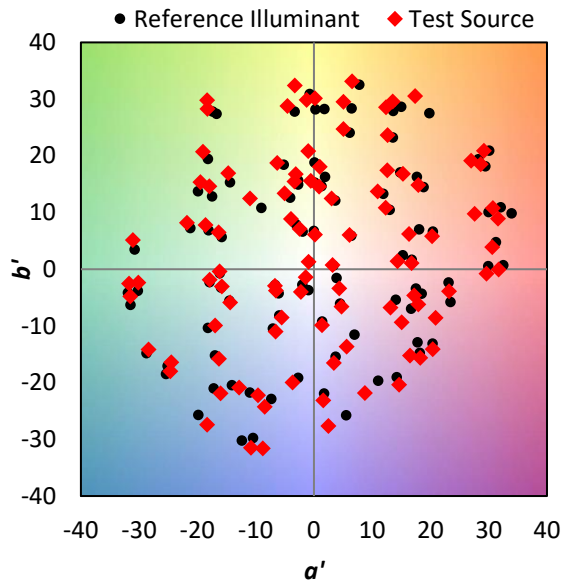
TM-30-18

Summary

$R_f = 90.1$
 $R_g = 103.3$
 $CIE R_a = 93.9$
 $R_9 = 62.0$

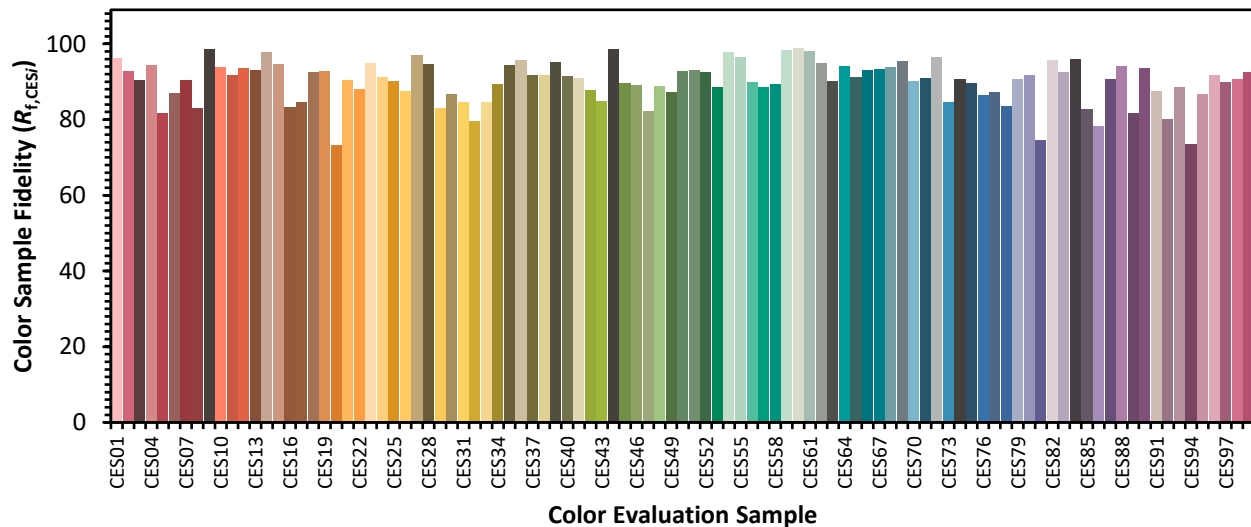


Color Vector Graphics

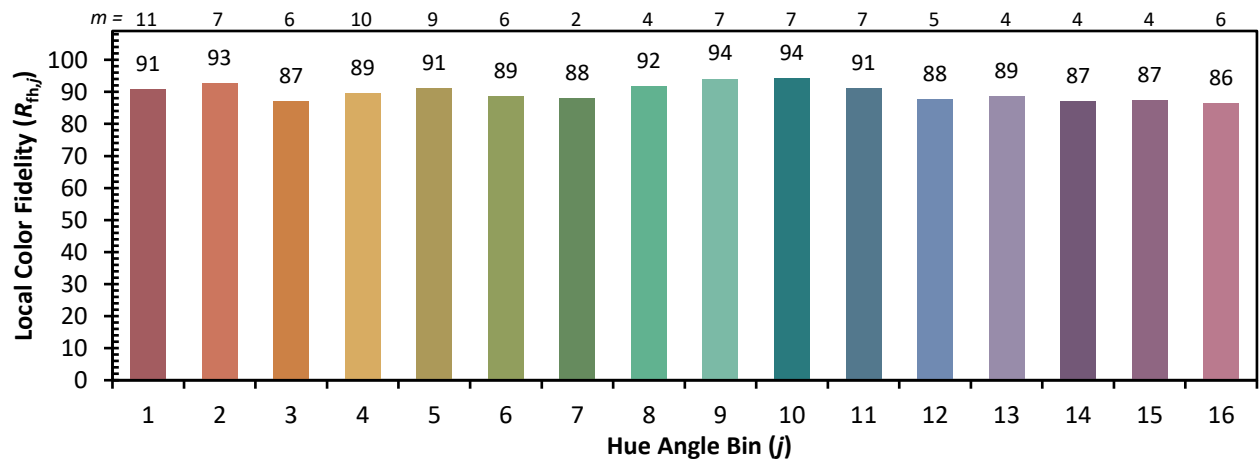
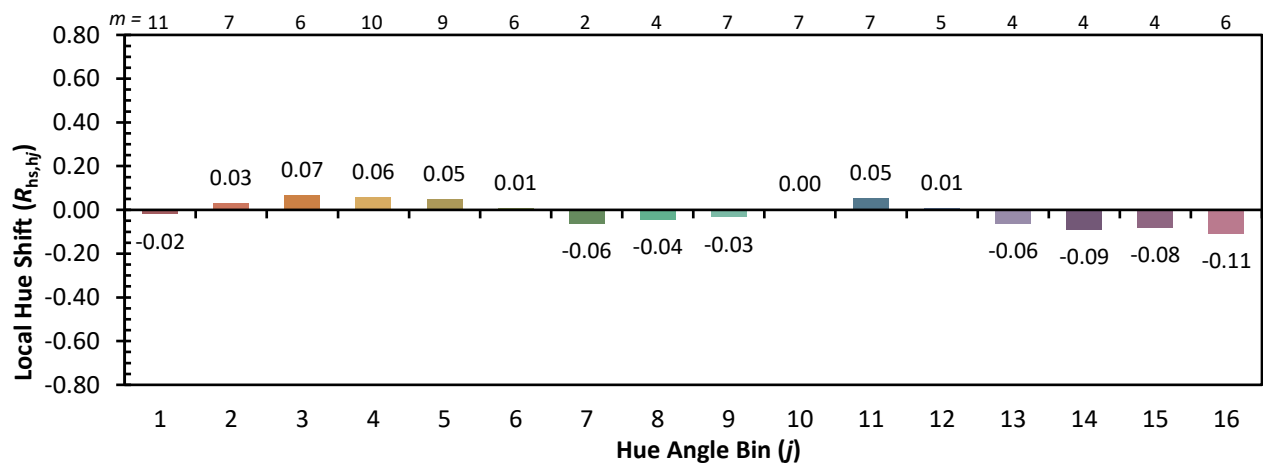
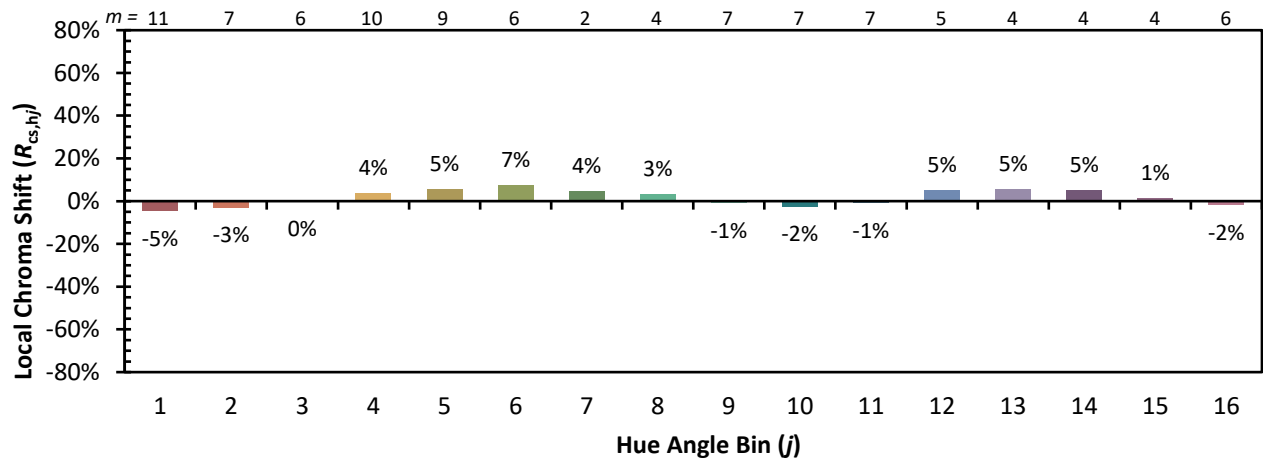


Individual Sample Fidelity Index ($R_{f,i}$)

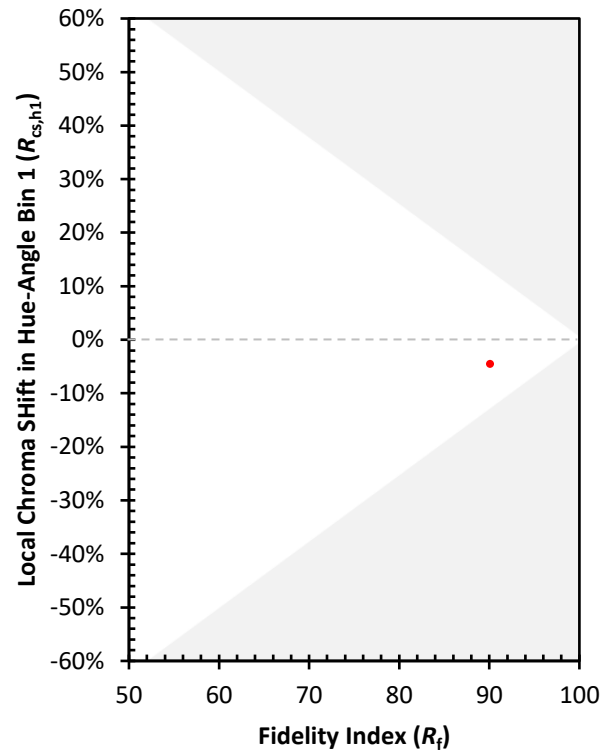
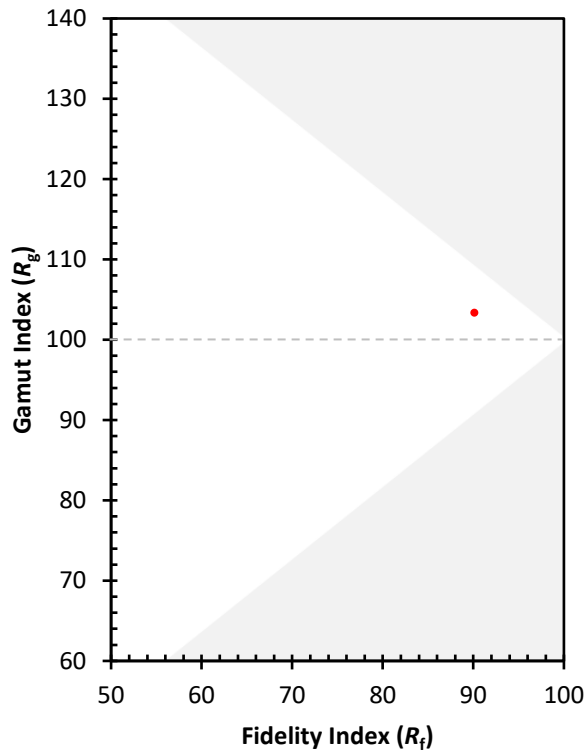
CES01 = 86	CES26 = 88	CES51 = 93	CES76 = 86
CES02 = 63	CES27 = 97	CES52 = 93	CES77 = 87
CES03 = 32	CES28 = 95	CES53 = 89	CES78 = 83
CES04 = 70	CES29 = 83	CES54 = 98	CES79 = 91
CES05 = 51	CES30 = 87	CES55 = 97	CES80 = 92
CES06 = 51	CES31 = 85	CES56 = 90	CES81 = 75
CES07 = 44	CES32 = 80	CES57 = 89	CES82 = 96
CES08 = 42	CES33 = 85	CES58 = 89	CES83 = 92
CES09 = 29	CES34 = 89	CES59 = 98	CES84 = 96
CES10 = 76	CES35 = 94	CES60 = 99	CES85 = 83
CES11 = 59	CES36 = 96	CES61 = 98	CES86 = 78
CES12 = 65	CES37 = 92	CES62 = 95	CES87 = 91
CES13 = 44	CES38 = 92	CES63 = 90	CES88 = 94
CES14 = 74	CES39 = 95	CES64 = 94	CES89 = 82
CES15 = 72	CES40 = 91	CES65 = 91	CES90 = 94
CES16 = 48	CES41 = 91	CES66 = 93	CES91 = 87
CES17 = 50	CES42 = 88	CES67 = 93	CES92 = 80
CES18 = 57	CES43 = 85	CES68 = 94	CES93 = 89
CES19 = 72	CES44 = 99	CES69 = 96	CES94 = 74
CES20 = 67	CES45 = 90	CES70 = 90	CES95 = 87
CES21 = 86	CES46 = 89	CES71 = 91	CES96 = 92
CES22 = 79	CES47 = 82	CES72 = 96	CES97 = 90
CES23 = 92	CES48 = 89	CES73 = 85	CES98 = 91
CES24 = 91	CES49 = 87	CES74 = 91	CES99 = 93
CES25 = 72	CES50 = 93	CES75 = 90	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)