

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: P1357100

Luminaire Tested: 4ASL4-10-1-50-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357100
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-6)
Test Lab: INNOVATION CENTER
Issue Date: 2/17/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: 4ASL4-10-1-50-UNV
Description: 4FT 1000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 5000K LEDS 1 ROW
Light Source: -
Ballast/Driver: -

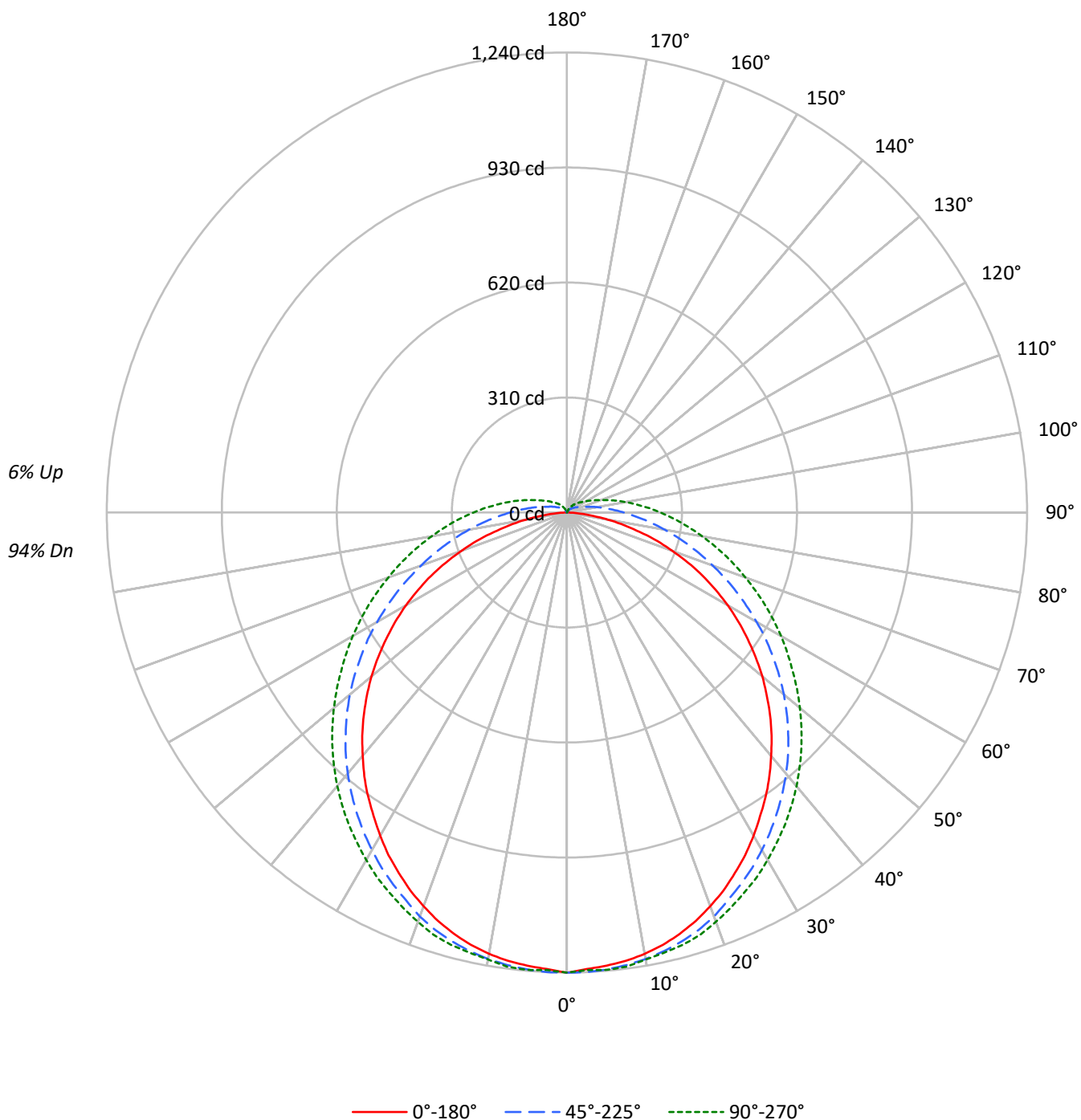
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4152.0 lumens
Efficiency: N/A
Efficacy: 118.0 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): 35.2
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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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
RCR																	
0	118	118	118	118	114	114	114	114	108	108	108		102	102	102		96
1	106	100	95	91	102	97	93	89	92	88	85		87	84	81		82
2	95	86	79	73	92	84	77	71	79	74	69		75	70	66		71
3	87	76	67	60	84	73	65	59	69	63	57		66	60	55		62
4	79	67	57	50	76	65	56	50	62	54	48		58	52	47		56
5	73	59	50	43	70	58	49	43	55	47	42		52	46	41		50
6	67	53	44	38	65	52	43	37	50	42	36		47	41	35		45
7	62	48	39	33	60	47	39	33	45	37	32		43	36	31		41
8	58	44	35	29	56	43	35	29	41	34	29		39	33	28		38
9	54	40	32	26	52	39	32	26	38	31	26		36	30	25		35
10	51	37	29	24	49	36	29	24	35	28	23		34	27	23		32

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10065	10065	10065
5°	9965	9862	9812
10°	9908	9661	9554
15°	9808	9448	9353
20°	9661	9205	9105
25°	9481	8916	8837
30°	9286	8651	8586
35°	9089	8379	8336
40°	8871	8106	8077
45°	8661	7806	7815
50°	8416	7496	7537
55°	8112	7144	7260
60°	7776	6775	7018
65°	7345	6389	6774
70°	6676	5983	6538
75°	5810	5621	6356
80°	4623	5311	6244
85°	2716	5102	6285

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8661 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	2.8
10°-20°	337.1	8.1
20°-30°	509.7	12.3
30°-40°	616.1	14.8
40°-50°	647.8	15.6
50°-60°	603.5	14.5
60°-70°	495.8	11.9
70°-80°	351.9	8.5
80°-90°	212.2	5.1
90°-100°	118.9	2.9
100°-110°	65.8	1.6
110°-120°	36.7	0.9
120°-130°	21.2	0.5
130°-140°	11.6	0.3
140°-150°	5.1	0.1
150°-160°	1.2	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	964.3	23.2
0°-40°	1580.4	38.1
0°-60°	2831.7	68.2
0°-90°	3891.5	93.7
90°-120°	221.4	5.3
90°-150°	259.2	6.2
90°-180°	260.0	6.3
0°-180°	4152.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1240	1240	1240	1240	1240	
5°	1226	1237	1236	1235	1237	117
15°	1176	1191	1197	1202	1206	331
25°	1072	1092	1107	1122	1131	494
35°	934	958	988	1013	1026	584
45°	774	802	843	878	894	597
55°	595	628	678	722	742	532
65°	404	440	504	563	589	398
75°	203	255	340	410	439	217
85°	38	109	205	281	309	47
90°	0	64	153	224	251	2
95°	0	38	112	177	202	0
105°	0	14	59	107	126	0
115°	0	7	36	64	77	0
125°	0	4	22	42	49	0
135°	0	1	14	27	34	0
145°	1	0	6	15	20	1
155°	1	1	0	4	6	1
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°	1240.2	1240.2	1240.2	1240.2	1240.2
2.5°	1231.8	1243.0	1240.2	1234.6	1234.6
5°	1226.1	1237.4	1236.0	1234.6	1237.4
7.5°	1219.1	1230.3	1230.3	1231.8	1234.6
10°	1207.9	1221.9	1221.9	1221.9	1223.3
12.5°	1193.9	1207.9	1210.7	1212.1	1214.9
15°	1175.6	1191.1	1196.7	1202.3	1206.5
17.5°	1154.6	1170.0	1179.8	1186.9	1193.9
20°	1129.3	1146.2	1158.8	1167.2	1174.2
22.5°	1102.7	1119.5	1132.1	1144.8	1153.2
25°	1071.8	1091.5	1106.9	1122.3	1130.7
27.5°	1041.0	1060.6	1080.2	1098.5	1108.3
30°	1005.9	1028.3	1050.8	1071.8	1081.6
32.5°	969.4	993.3	1019.9	1042.4	1053.6
35°	934.3	958.2	987.6	1012.9	1025.5
37.5°	896.5	920.3	954.0	982.0	994.7
40°	855.8	882.4	918.9	948.4	962.4
42.5°	816.5	843.1	882.4	914.7	928.7
45°	774.4	802.5	843.1	878.2	893.7
47.5°	730.9	760.4	803.9	840.3	857.2
50°	687.4	718.3	763.2	802.5	819.3
52.5°	641.1	673.4	721.1	763.2	781.4
55°	594.8	628.5	677.6	722.5	742.1
57.5°	548.5	582.2	635.5	683.2	704.3
60°	500.8	535.9	590.6	642.5	666.4
62.5°	451.7	488.2	545.7	601.8	627.1
65°	404.0	440.5	503.6	562.6	589.2
67.5°	353.5	392.8	460.2	521.9	549.9
70°	301.6	346.5	418.1	484.0	512.1
72.5°	255.3	301.6	378.8	446.1	475.6
75°	203.4	255.3	339.5	409.6	439.1
77.5°	158.5	214.6	303.0	374.6	404.0
80°	113.6	175.4	268.0	340.9	370.4
82.5°	73.0	140.3	235.7	310.0	338.1
85°	37.9	109.4	204.8	280.6	308.6
87.5°	11.2	84.2	176.8	251.1	279.2
90°	0.0	64.5	152.9	224.5	251.1
92.5°	0.0	49.1	131.9	200.6	227.3
95°	0.0	37.9	112.2	176.8	202.0
97.5°	0.0	29.5	96.8	155.7	181.0
100°	0.0	23.8	82.8	137.5	161.3
102.5°	0.0	19.6	71.5	122.1	143.1
105°	0.0	14.0	58.9	106.6	126.3
107.5°	0.0	9.8	51.9	94.0	110.8
110°	0.0	8.4	46.3	81.4	98.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	7.0	40.7	73.0	87.0
115°	0.0	7.0	36.5	64.5	77.2
117.5°	0.0	5.6	30.9	57.5	68.7
120°	0.0	5.6	28.1	51.9	61.7
122.5°	0.0	4.2	25.3	46.3	56.1
125°	0.0	4.2	22.4	42.1	49.1
127.5°	0.0	2.8	19.6	37.9	44.9
130°	0.0	2.8	18.2	33.7	40.7
132.5°	0.0	1.4	16.8	30.9	36.5
135°	0.0	1.4	14.0	26.7	33.7
137.5°	0.0	0.0	12.6	23.8	29.5
140°	0.0	0.0	9.8	21.0	26.7
142.5°	1.4	0.0	8.4	18.2	22.4
145°	1.4	0.0	5.6	15.4	19.6
147.5°	1.4	1.4	4.2	12.6	15.4
150°	1.4	1.4	2.8	8.4	12.6
152.5°	1.4	1.4	1.4	5.6	8.4
155°	1.4	1.4	0.0	4.2	5.6
157.5°	1.4	1.4	0.0	1.4	2.8
160°	1.4	1.4	0.0	0.0	1.4
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	17.43	18.98	17.89	19.42	19.89	19.41	20.96	19.87	21.40	21.87
	3H	18.92	20.33	19.39	20.79	21.29	21.82	23.23	22.29	23.69	24.20
	4H	19.39	20.73	19.89	21.20	21.73	22.99	24.33	23.48	24.80	25.32
	6H	19.67	20.92	20.18	21.40	21.94	24.19	25.44	24.70	25.93	26.46
	8H	19.72	20.92	20.24	21.43	21.97	24.81	26.01	25.33	26.52	27.06
	12H	19.74	20.88	20.26	21.38	21.96	25.50	26.64	26.02	27.14	27.72
4H	2H	18.29	19.63	18.78	20.10	20.62	19.84	21.18	20.34	21.65	22.18
	3H	20.02	21.16	20.53	21.68	22.22	22.48	23.62	22.98	24.13	24.68
	4H	20.62	21.66	21.14	22.19	22.77	23.81	24.85	24.34	25.38	25.96
	6H	21.02	21.94	21.56	22.49	23.08	25.21	26.13	25.75	26.68	27.27
	8H	21.11	21.97	21.66	22.53	23.13	25.93	26.80	26.48	27.35	27.96
	12H	21.15	21.94	21.72	22.52	23.13	26.74	27.53	27.31	28.11	28.72
8H	4H	21.27	22.14	21.82	22.69	23.29	24.02	24.89	24.57	25.44	26.05
	6H	21.84	22.57	22.42	23.17	23.78	25.59	26.32	26.17	26.91	27.53
	8H	22.01	22.68	22.61	23.28	23.91	26.45	27.11	27.05	27.72	28.34
	12H	22.12	22.72	22.72	23.31	24.00	27.44	28.03	28.04	28.62	29.31
12H	4H	21.45	22.24	22.02	22.82	23.43	24.03	24.82	24.60	25.40	26.01
	6H	22.11	22.78	22.71	23.38	24.00	25.62	26.29	26.22	26.89	27.51
	8H	22.38	22.97	22.98	23.57	24.26	26.55	27.14	27.15	27.74	28.43

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

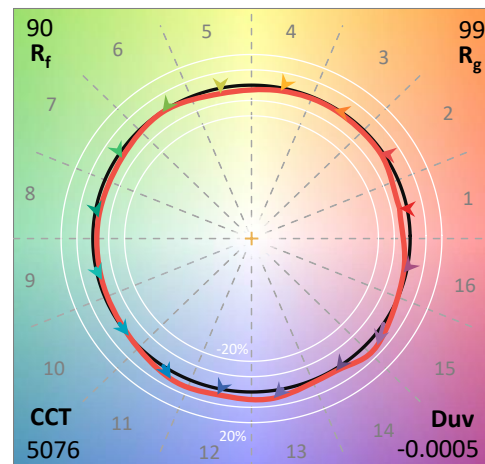
Test Information

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

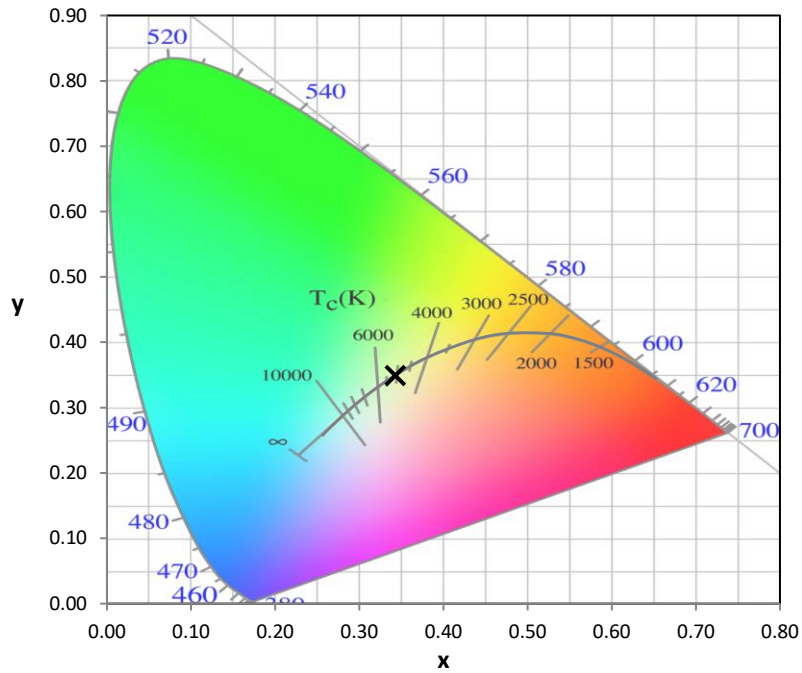
Stabilization Time: 24M
 Operation Time: 1H 24M
 Sphere Temperature (°C): 24.1

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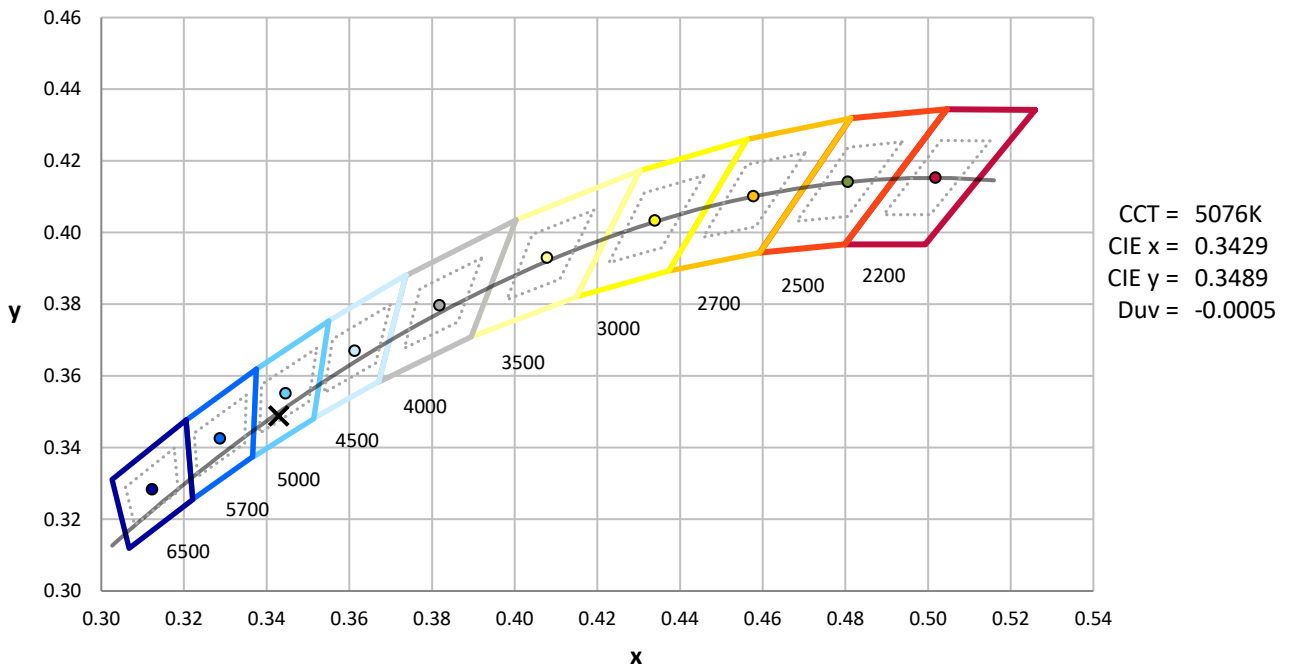
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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



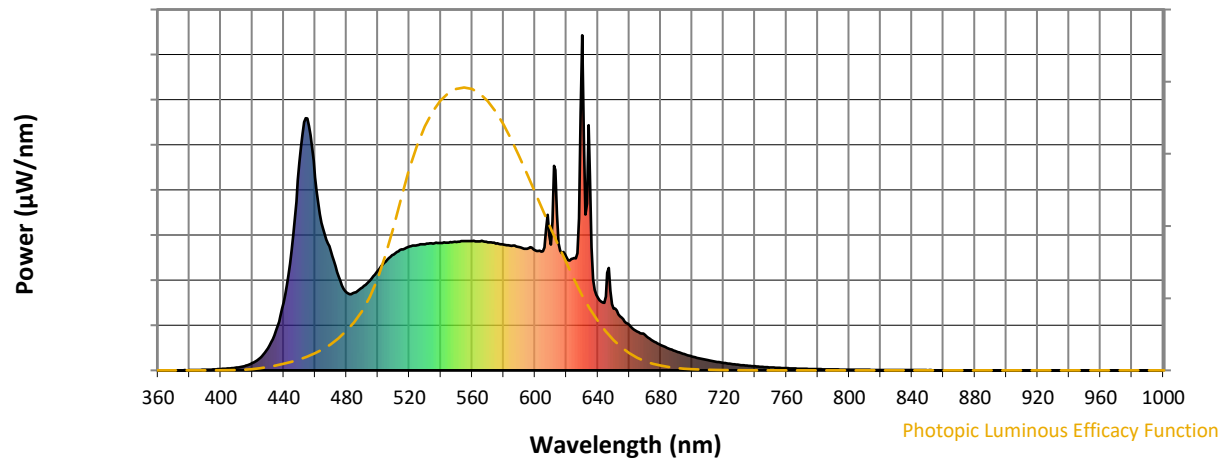
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

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Photopic Flux vs. Wavelength

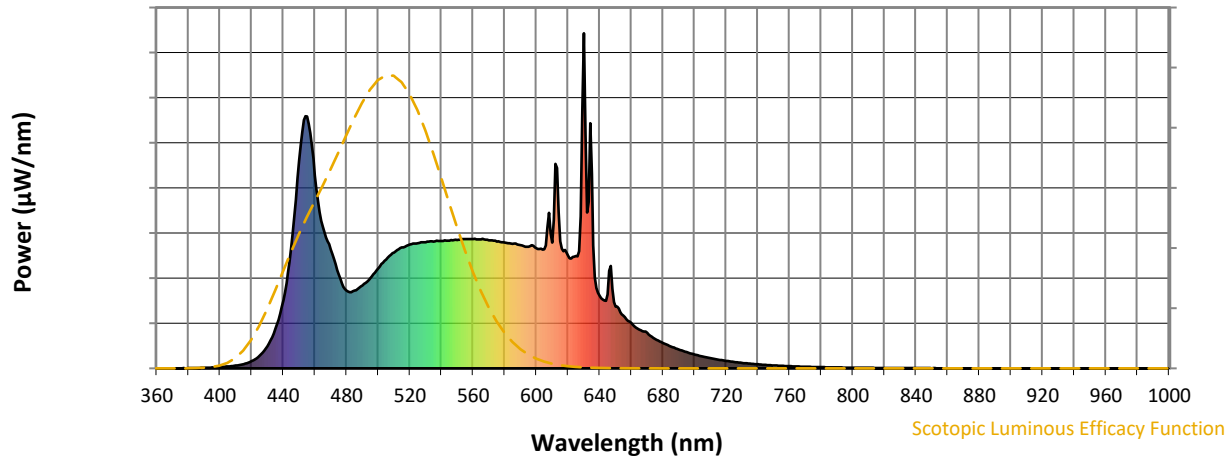


Photopic Lumens: NR

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



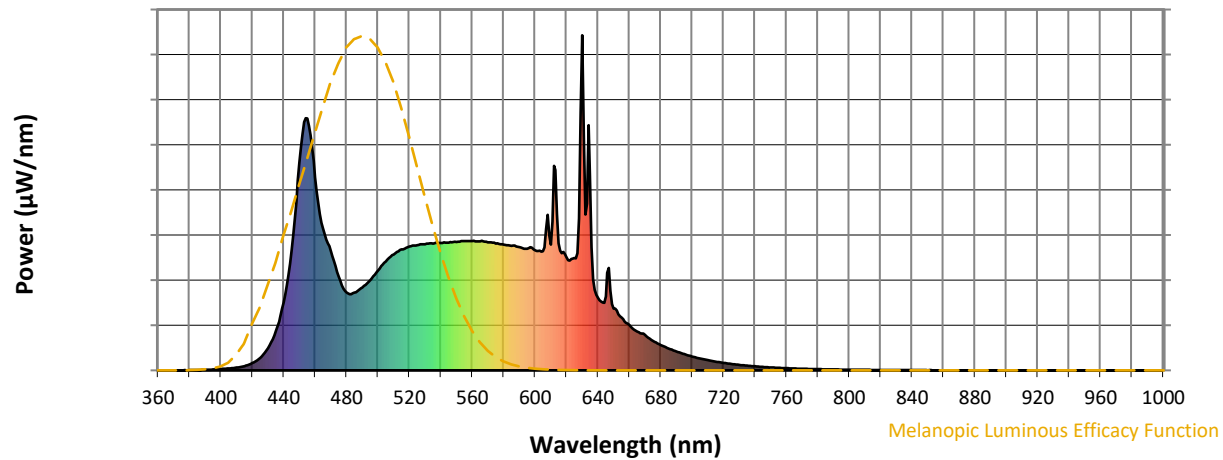
Scotopic Lumens: NR

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

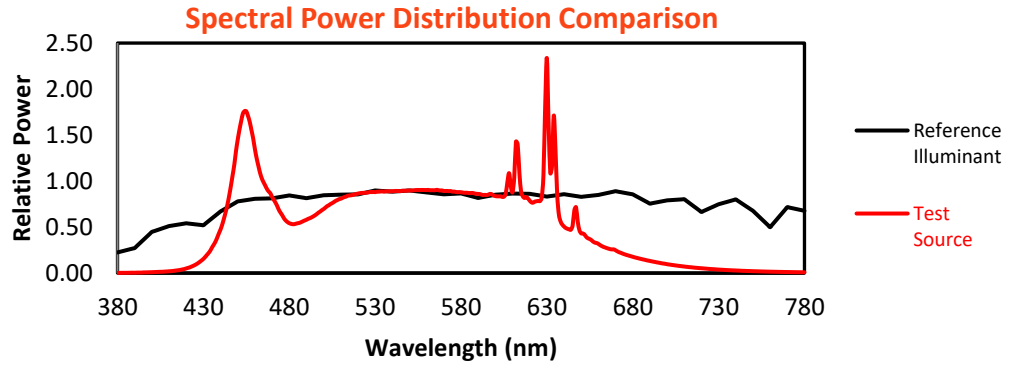
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	248	NR	620	337	NR	750	9	NR	880	0	NR
365	0	NR	495	269	NR	625	335	NR	755	8	NR	885	0	NR
370	0	NR	500	298	NR	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			

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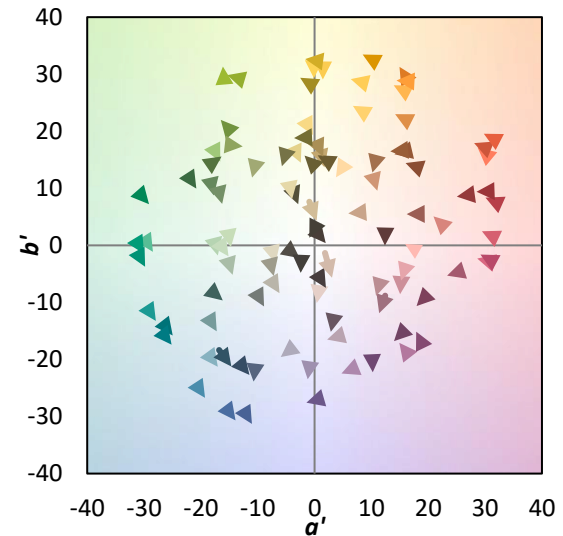
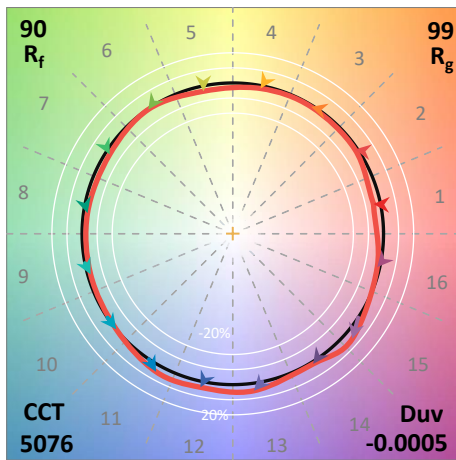
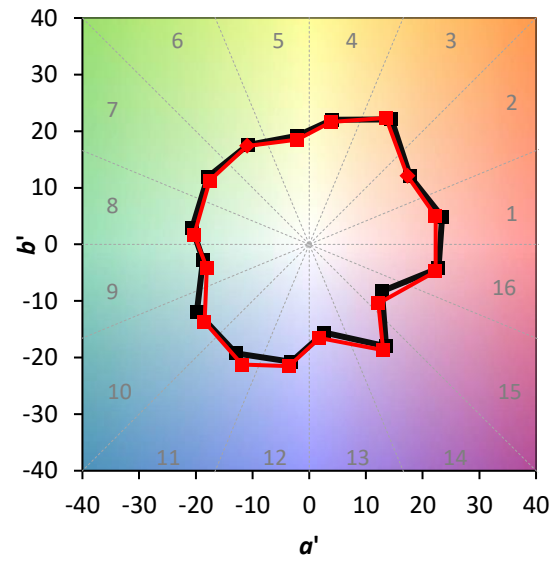
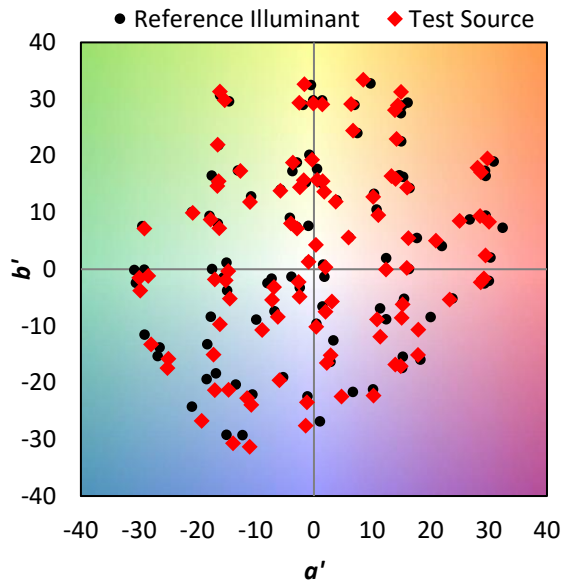
TM-30-18

Summary

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

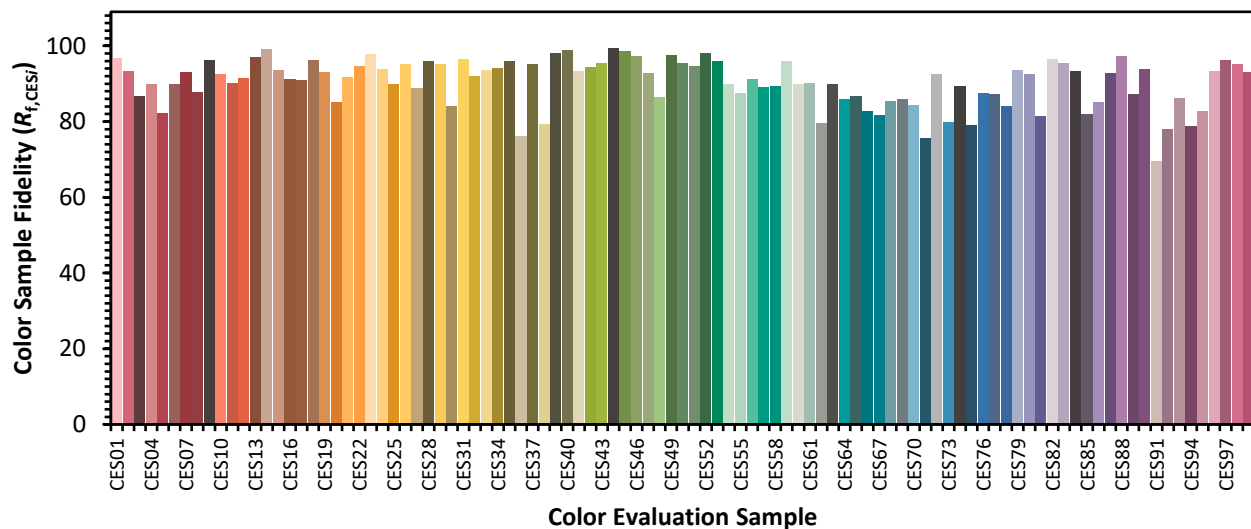


Color Vector Graphics

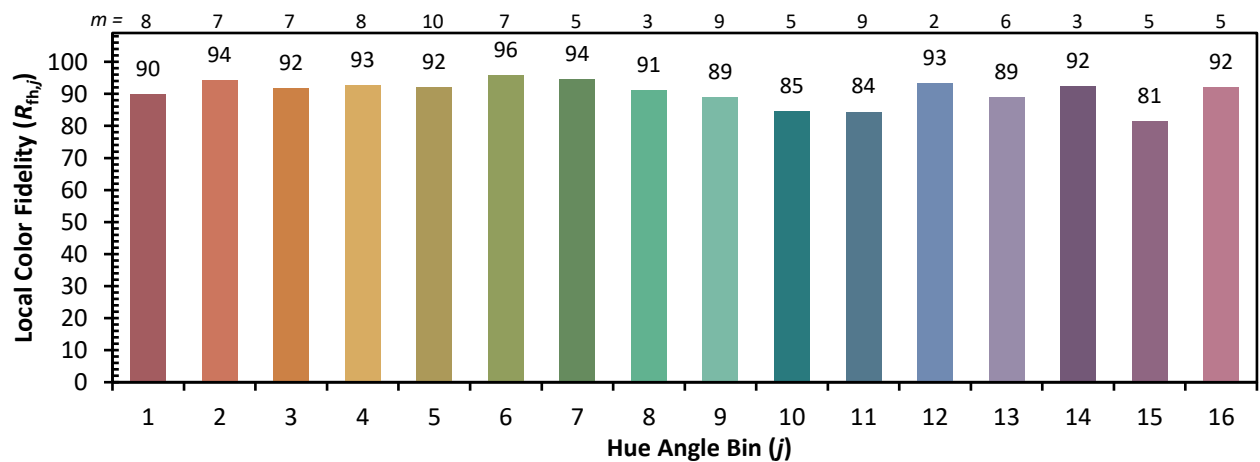
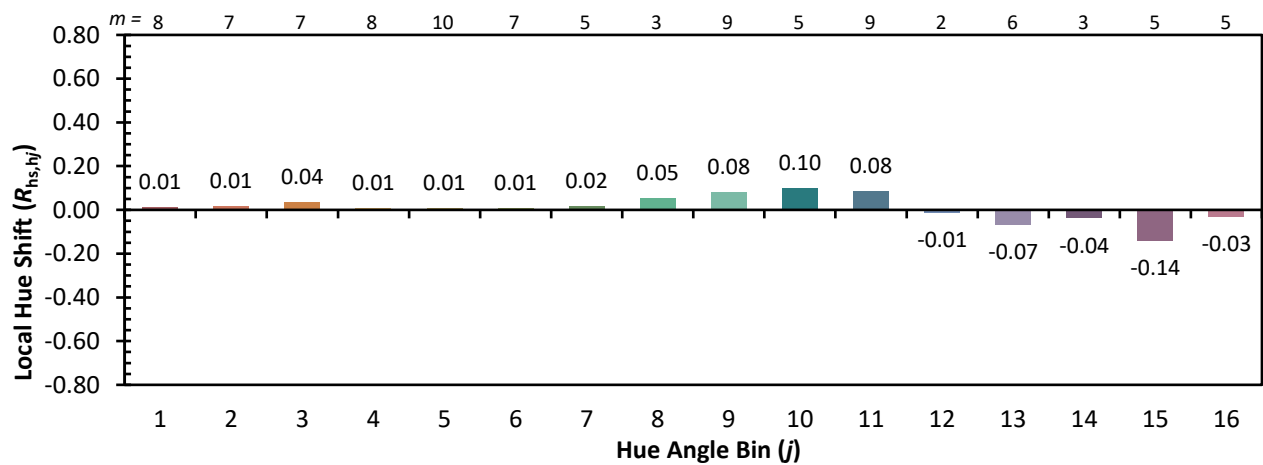
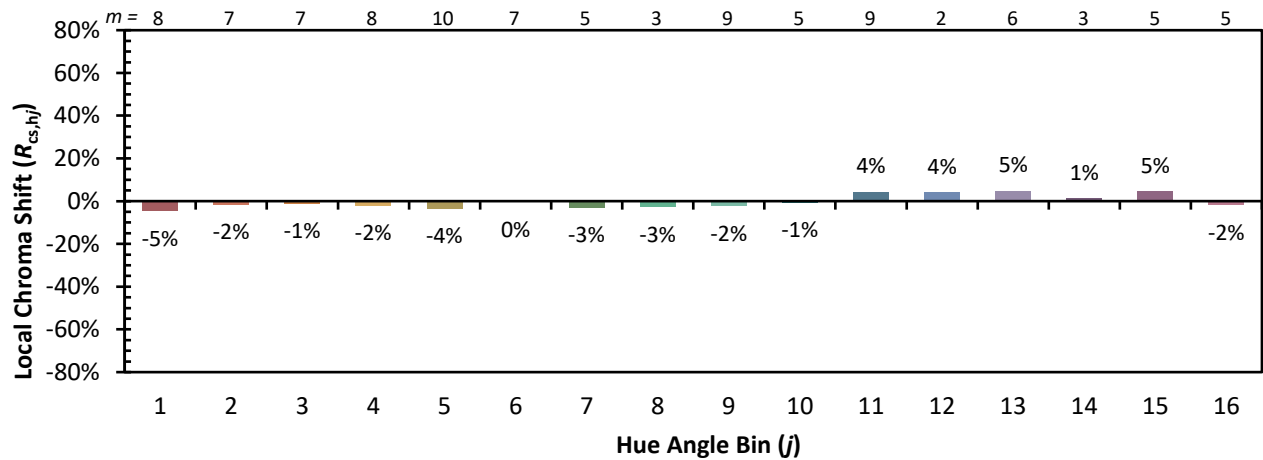


Individual Sample Fidelity Index ($R_{f,i}$)

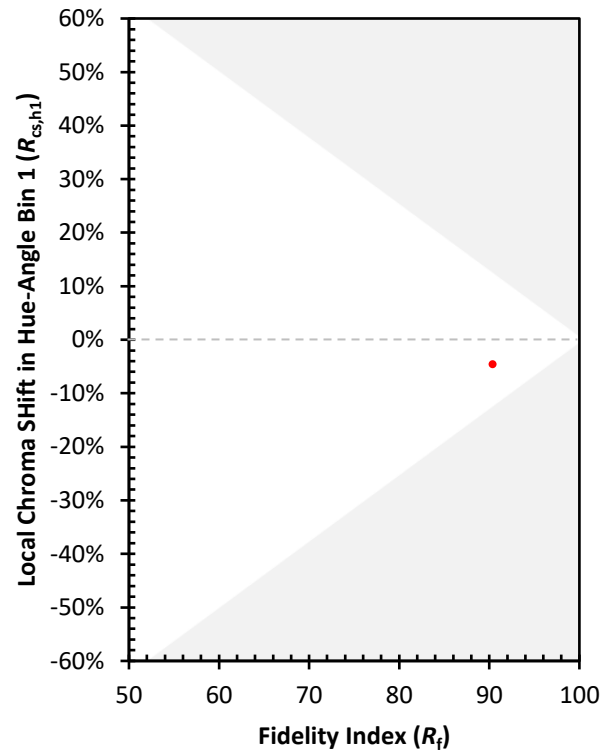
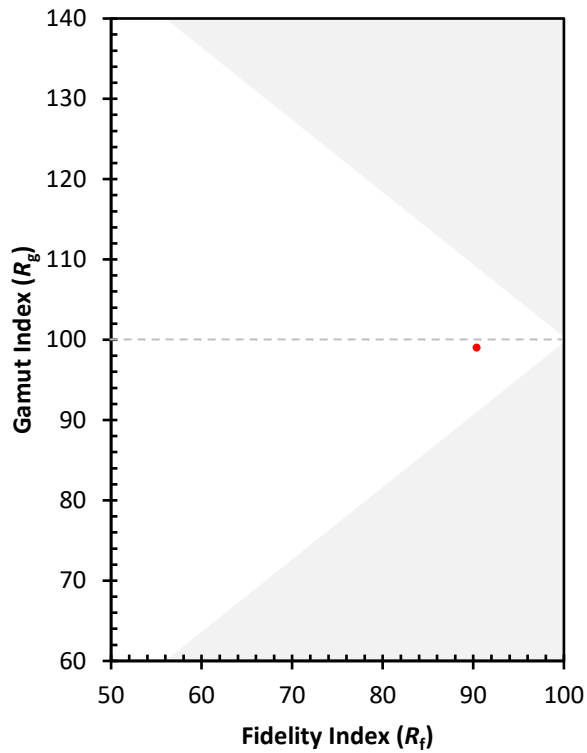
CES01 = 85	CES26 = 95	CES51 = 95	CES76 = 87
CES02 = 61	CES27 = 89	CES52 = 98	CES77 = 87
CES03 = 31	CES28 = 96	CES53 = 96	CES78 = 84
CES04 = 69	CES29 = 95	CES54 = 90	CES79 = 94
CES05 = 48	CES30 = 84	CES55 = 88	CES80 = 93
CES06 = 50	CES31 = 96	CES56 = 91	CES81 = 81
CES07 = 41	CES32 = 92	CES57 = 89	CES82 = 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)