

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: P1357519

Luminaire Tested: 8ASL4-25VHE-3-A59-UNV

Issue Date: 2/17/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1357519  
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: 8ASL4-25VHE-3-A59-UNV  
Description: 8FT 2500 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND A59 LEDS 3 ROW  
Light Source: -  
Ballast/Driver: -

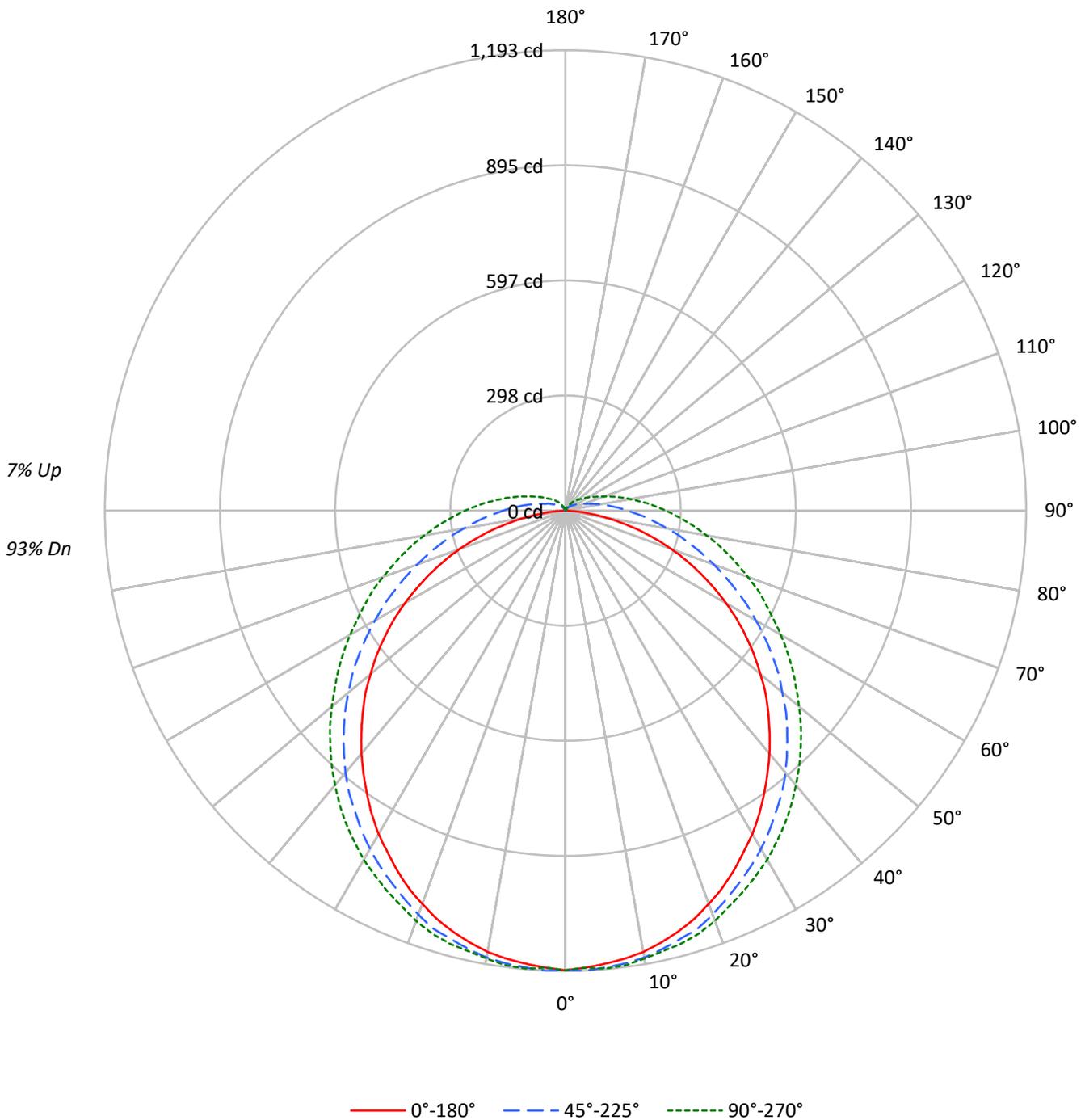
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4049.0 lumens  
Efficiency: N/A  
Efficacy: 34.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 7.98' x H: 0.1')  
CIE Type: Direct

Input Watts (W): 118.5  
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

TEST NUMBER: P1357519  
CATALOG NUMBER: 8ASL4-25VHE-3-A59-UNV

### Luminous Intensity Polar Plot





TEST NUMBER: P1357519

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**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	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	96	96	96	93
1	105	100	95	91	102	97	92	88	91	88	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	75	70	66	71	67	63	63	63	63	61
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	53	53	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	50	45	45	45	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	39	39	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	34	34	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	30	30	30	28
8	58	44	35	29	56	43	35	29	41	34	28	39	32	28	37	32	27	27	27	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	24	24	24	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	22	22	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4820	4820	4820
5°	4782	4733	4709
10°	4761	4644	4590
15°	4714	4534	4489
20°	4648	4427	4375
25°	4571	4293	4246
30°	4490	4177	4136
35°	4388	4045	4014
40°	4296	3924	3886
45°	4196	3778	3757
50°	4083	3620	3623
55°	3961	3471	3503
60°	3802	3295	3380
65°	3598	3127	3279
70°	3337	2961	3200
75°	2954	2811	3145
80°	2363	2703	3122
85°	1499	2690	3169

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4196 cd/sqm



TEST NUMBER: P1357519  
 CATALOG NUMBER: 8ASL4-25VHE-3-A59-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.9	2.8
10°-20°	324.2	8.0
20°-30°	490.2	12.1
30°-40°	593.6	14.7
40°-50°	623.4	15.4
50°-60°	581.6	14.4
60°-70°	480.7	11.9
70°-80°	346.1	8.5
80°-90°	215.1	5.3
90°-100°	126.0	3.1
100°-110°	72.1	1.8
110°-120°	40.7	1.0
120°-130°	23.4	0.6
130°-140°	12.6	0.3
140°-150°	5.3	0.1
150°-160°	1.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	927.4	22.9
0°-40°	1520.9	37.6
0°-60°	2726.0	67.3
0°-90°	3767.8	93.1
90°-120°	238.8	5.9
90°-150°	280.2	6.9
90°-180°	281.0	6.9
0°-180°	4049.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1191	1191	1191	1191	1191	
5°	1178	1188	1188	1188	1191	112
15°	1129	1144	1149	1156	1161	318
25°	1030	1047	1065	1080	1089	474
35°	896	921	951	978	990	561
45°	743	770	812	847	862	573
55°	572	604	654	701	718	511
65°	386	423	488	550	572	382
75°	198	248	334	406	436	209
85°	37	111	210	285	312	45
90°	0	67	161	230	260	2
95°	0	42	121	186	213	0
105°	0	15	67	116	136	0
115°	0	7	40	72	84	0
125°	0	5	25	47	54	0
135°	0	0	15	30	37	0
145°	0	0	7	17	20	0
155°	0	0	0	5	7	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357519  
 CATALOG NUMBER: 8ASL4-25VHE-3-A59-UNV

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1190.9	1190.9	1190.9	1190.9	1190.9
2.5°	1185.9	1193.3	1193.3	1185.9	1185.9
5°	1178.5	1188.4	1188.4	1188.4	1190.9
7.5°	1171.1	1183.4	1183.4	1183.4	1188.4
10°	1161.2	1173.5	1176.0	1176.0	1178.5
12.5°	1146.3	1161.2	1163.6	1166.1	1168.6
15°	1129.0	1143.8	1148.8	1156.2	1161.2
17.5°	1109.2	1126.5	1136.4	1143.8	1148.8
20°	1084.4	1101.7	1114.1	1124.0	1131.4
22.5°	1059.6	1074.5	1089.4	1101.7	1109.2
25°	1029.9	1047.3	1064.6	1079.5	1089.4
27.5°	997.8	1017.6	1039.8	1057.2	1067.1
30°	968.0	987.8	1012.6	1034.9	1044.8
32.5°	933.4	955.7	982.9	1005.2	1017.6
35°	896.2	921.0	950.7	977.9	990.3
37.5°	859.1	883.9	921.0	948.2	960.6
40°	822.0	846.7	886.3	916.1	928.4
42.5°	782.4	807.1	849.2	881.4	896.2
45°	742.7	770.0	812.1	846.7	861.6
47.5°	703.1	730.4	774.9	812.1	826.9
50°	658.6	688.3	732.8	774.9	789.8
52.5°	616.5	646.2	695.7	737.8	752.6
55°	571.9	604.1	653.6	700.7	718.0
57.5°	527.3	559.5	611.5	661.0	680.8
60°	480.3	515.0	569.4	621.4	643.7
62.5°	433.3	470.4	529.8	584.3	606.6
65°	386.2	423.4	487.7	549.6	571.9
67.5°	339.2	378.8	448.1	512.5	539.7
70°	292.1	334.2	408.5	475.4	502.6
72.5°	245.1	289.7	371.4	440.7	467.9
75°	198.1	247.6	334.2	406.0	435.7
77.5°	151.0	208.0	302.0	373.8	403.6
80°	108.9	173.3	267.4	341.7	371.4
82.5°	69.3	138.6	237.7	312.0	341.7
85°	37.1	111.4	210.4	284.7	312.0
87.5°	12.4	86.7	183.2	257.5	284.7
90°	0.0	66.8	160.9	230.3	260.0
92.5°	0.0	52.0	141.1	208.0	235.2
95°	0.0	42.1	121.3	185.7	212.9
97.5°	0.0	34.7	106.5	165.9	190.6
100°	0.0	27.2	91.6	148.5	170.8
102.5°	0.0	22.3	79.2	131.2	153.5
105°	0.0	14.9	66.8	116.4	136.2
107.5°	0.0	12.4	56.9	104.0	121.3
110°	0.0	9.9	52.0	89.1	106.5



TEST NUMBER: P1357519  
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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	7.4	47.0	79.2	96.6
115°	0.0	7.4	39.6	71.8	84.2
117.5°	0.0	7.4	34.7	64.4	76.8
120°	0.0	5.0	32.2	56.9	69.3
122.5°	0.0	5.0	27.2	52.0	61.9
125°	0.0	5.0	24.8	47.0	54.5
127.5°	0.0	2.5	22.3	42.1	49.5
130°	0.0	2.5	19.8	37.1	44.6
132.5°	0.0	2.5	17.3	34.7	42.1
135°	0.0	0.0	14.9	29.7	37.1
137.5°	0.0	0.0	12.4	27.2	32.2
140°	0.0	0.0	9.9	22.3	29.7
142.5°	0.0	0.0	7.4	19.8	24.8
145°	0.0	0.0	7.4	17.3	19.8
147.5°	0.0	0.0	5.0	12.4	17.3
150°	0.0	0.0	2.5	9.9	12.4
152.5°	0.0	0.0	0.0	7.4	9.9
155°	0.0	0.0	0.0	5.0	7.4
157.5°	0.0	0.0	0.0	0.0	2.5
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	14.81	16.35	15.28	16.81	17.29	16.88	18.42	17.35	18.88	19.36
	3H	16.31	17.71	16.79	18.18	18.70	19.36	20.77	19.84	21.23	21.76
	4H	16.79	18.12	17.29	18.60	19.14	20.58	21.91	21.08	22.39	22.93
	6H	17.06	18.30	17.58	18.80	19.35	21.86	23.10	22.37	23.59	24.15
	8H	17.11	18.30	17.64	18.82	19.38	22.53	23.71	23.05	24.23	24.79
	12H	17.13	18.27	17.66	18.78	19.37	23.27	24.41	23.81	24.93	25.52
4H	2H	15.70	17.03	16.20	17.51	18.05	17.31	18.64	17.82	19.13	19.66
	3H	17.43	18.57	17.95	19.09	19.65	20.02	21.16	20.54	21.68	22.24
	4H	18.04	19.07	18.57	19.61	20.20	21.40	22.44	21.94	22.98	23.57
	6H	18.43	19.35	18.99	19.91	20.52	22.88	23.79	23.43	24.36	24.96
	8H	18.53	19.39	19.09	19.95	20.57	23.65	24.51	24.21	25.08	25.70
	12H	18.57	19.36	19.15	19.95	20.57	24.52	25.31	25.11	25.90	26.52
8H	4H	18.73	19.59	19.29	20.15	20.77	21.62	22.48	22.18	23.04	23.66
	6H	19.31	20.04	19.90	20.64	21.27	23.26	23.99	23.85	24.60	25.22
	8H	19.49	20.15	20.09	20.76	21.40	24.18	24.84	24.78	25.45	26.09
	12H	19.60	20.19	20.21	20.79	21.50	25.23	25.82	25.84	26.43	27.13
12H	4H	18.92	19.71	19.51	20.30	20.92	21.63	22.41	22.21	23.00	23.63
	6H	19.61	20.27	20.21	20.88	21.52	23.30	23.96	23.90	24.57	25.21
	8H	19.89	20.48	20.49	21.08	21.78	24.28	24.87	24.89	25.47	26.18

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-9

Test Date: 01/22/2026

Luminaire Tested: 4ASL-2-A590-UNV-OPL-1\_600mA

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

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2511-597-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 01/29/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Fail-Safe  
 Catalog Number: **4ASL-2-A590-UNV-OPL-1\_600mA**  
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND AMBER 590 LEDS with 1 rows at 600mA

**Spectral Parameters**

CCT (K): 1535  
 CIE u': 0.3534  
 CIE v': 0.5468  
 Duv: 0.0117  
 CIE x: 0.5921  
 CIE y: 0.4072  
 CIE z: 0.0007  
 Peak Wavelength (nm): 598  
 Dominant Wavelength (nm): 592  
 Purity: 99.97894  
 R<sub>f</sub>: 1.3  
 R<sub>g</sub>: 0.1

CRI (Ra):	-20.0		
R1:	-32.1	R9:	-380.5
R2:	53.1	R10:	29.9
R3:	18.5	R11:	-92.0
R4:	-65.7	R12:	-8.5
R5:	-38.6	R13:	-13.5
R6:	42.8	R14:	47.1
R7:	-6.2	R15:	-65.4
R8:	-132.3		



**Test Conditions**

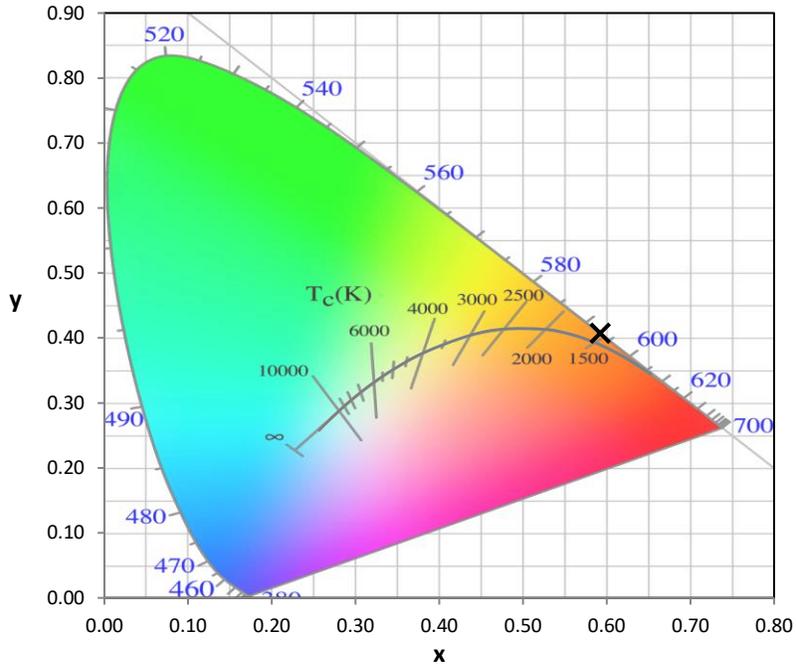
Stabilization Time: 77M  
 Operation Time: 2H 17M  
 Sphere Temperature (°C): 25.1

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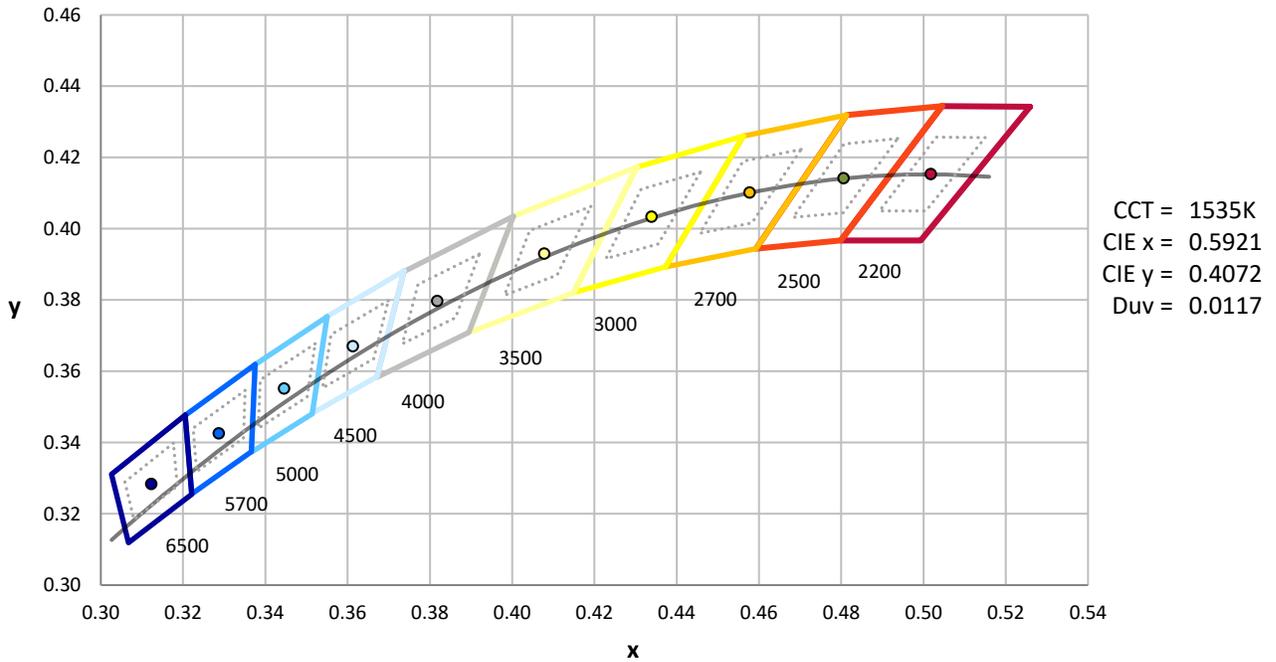
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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



CCT = 1535K  
 CIE x = 0.5921  
 CIE y = 0.4072  
 Duv = 0.0117

Point lies outside the range

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**Photopic Flux vs. Wavelength**

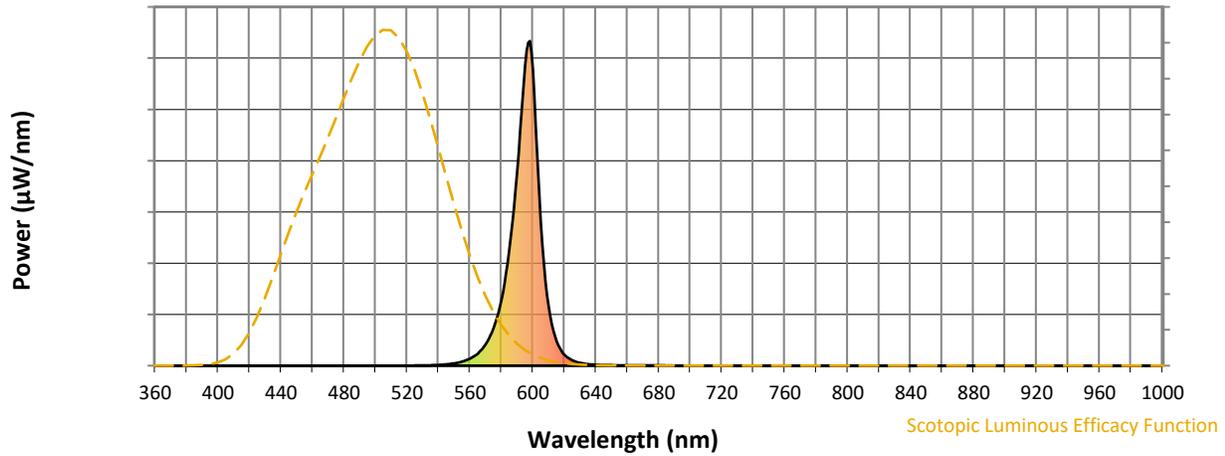


**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	0	NR	620	35	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	17	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	9	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	5	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	2	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	2	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	4	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	7	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	12	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	22	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	38	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	66	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	115	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	203	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	354	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	596	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	923	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	909	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	447	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	183	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	75	NR	745	0	NR	875	0	NR			

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**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 0.22**

$\lambda$ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens $(\phi/\text{nm})$												
360	0	NR	490	0	NR	620	35	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	17	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	9	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	5	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	2	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	2	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	4	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	7	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	12	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	22	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	38	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	66	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	115	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	203	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	354	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	596	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	923	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	909	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	447	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	183	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	75	NR	745	0	NR	875	0	NR			

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**Melanopic Flux vs. Wavelength**



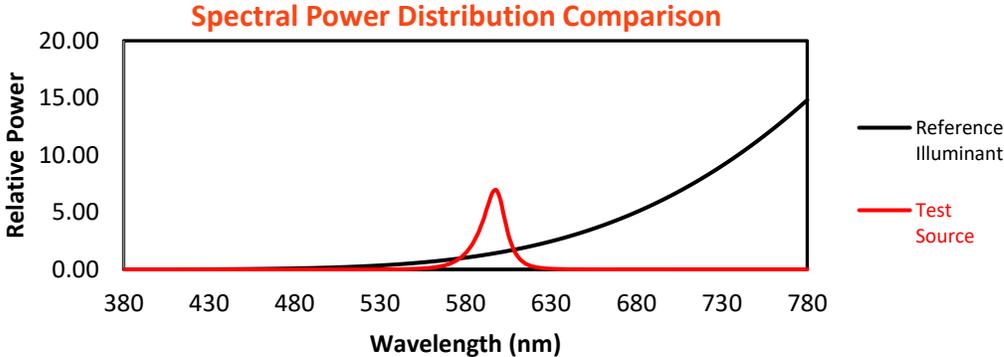
**Melanopic Lumens: NR**

**M/P: 0.12**

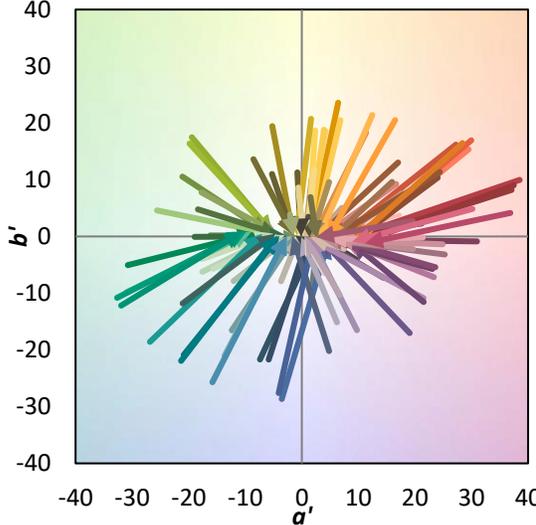
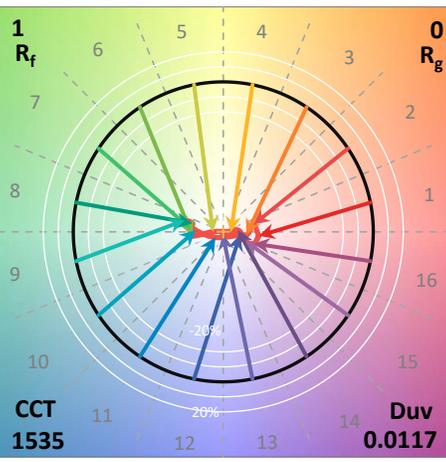
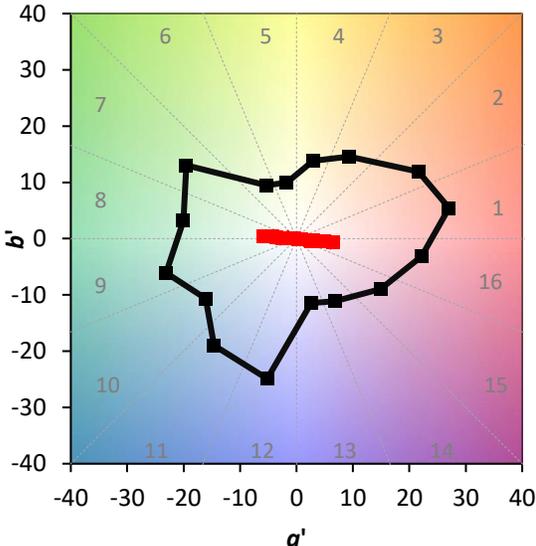
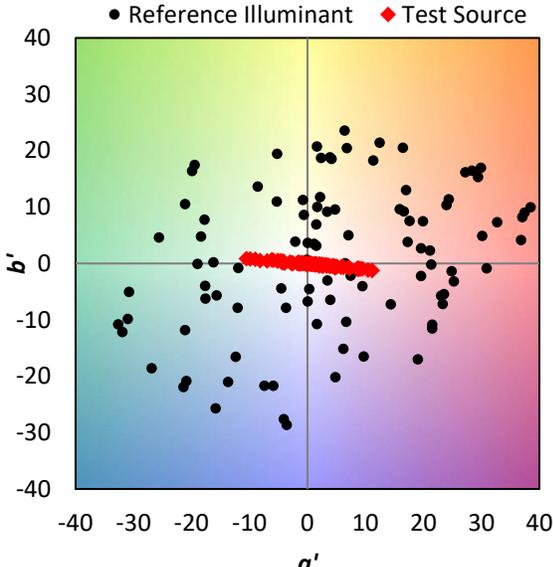
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	0	NR	620	35	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	17	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	9	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	5	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	2	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	2	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	4	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	7	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	12	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	22	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	38	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	66	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	115	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	203	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	354	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	596	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	923	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	909	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	447	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	183	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	75	NR	745	0	NR	875	0	NR			

**Summary**

$R_f = 1.3$   
 $R_g = 0.1$   
 $CIE R_a = -20.0$   
 $R_g = -380.5$

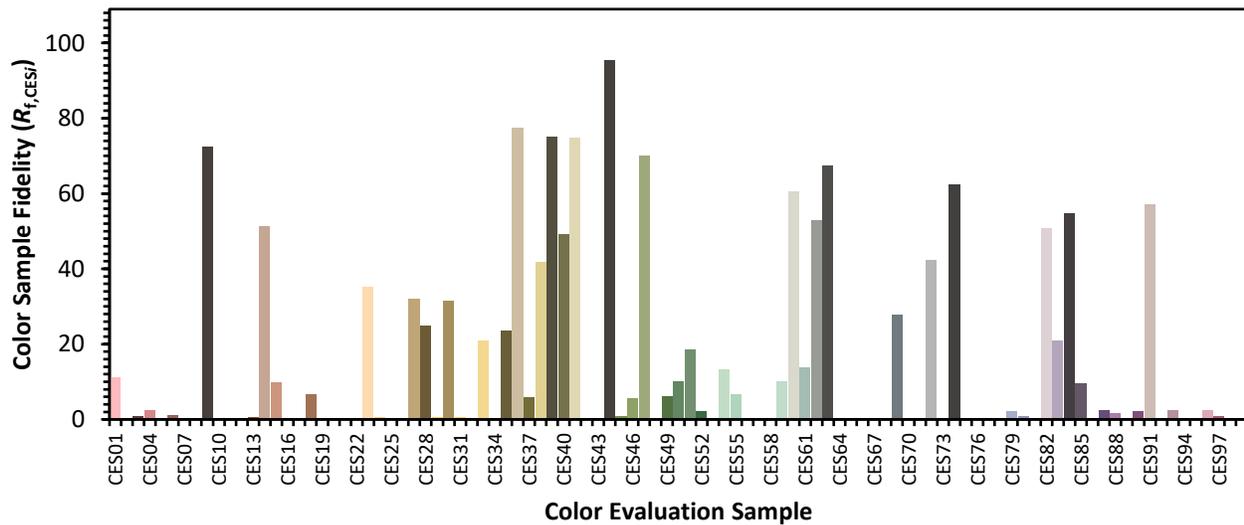


**Color Vector Graphics**

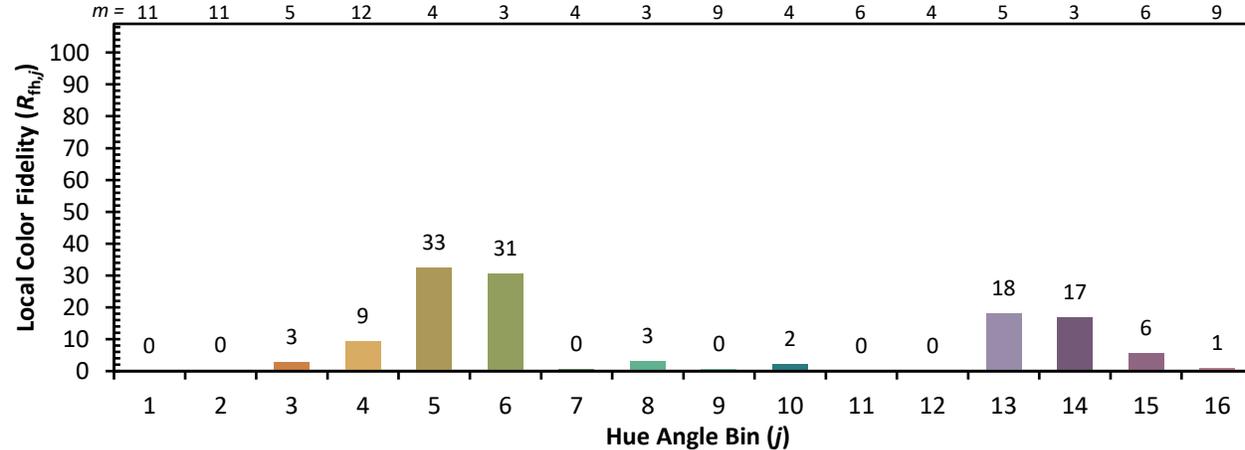
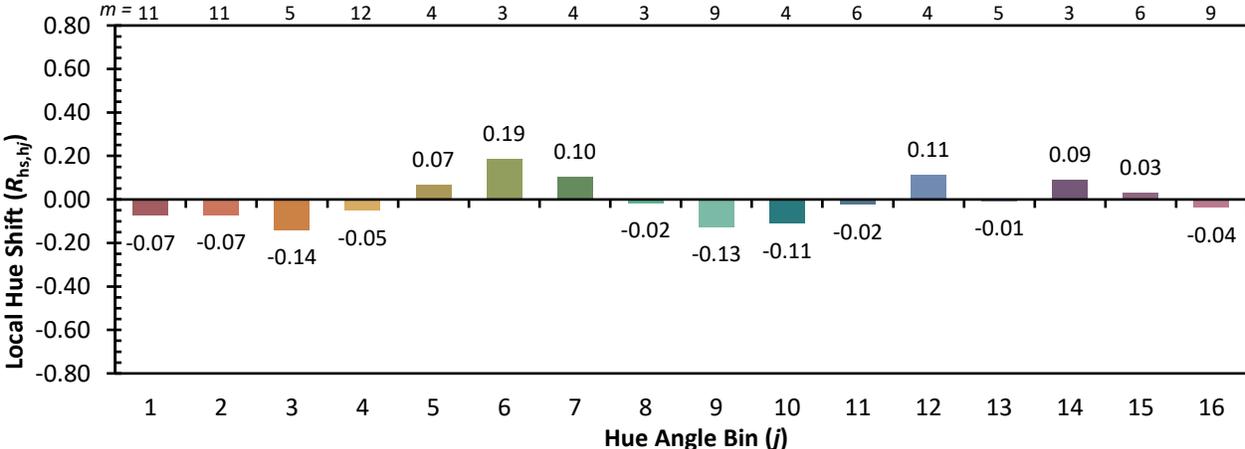
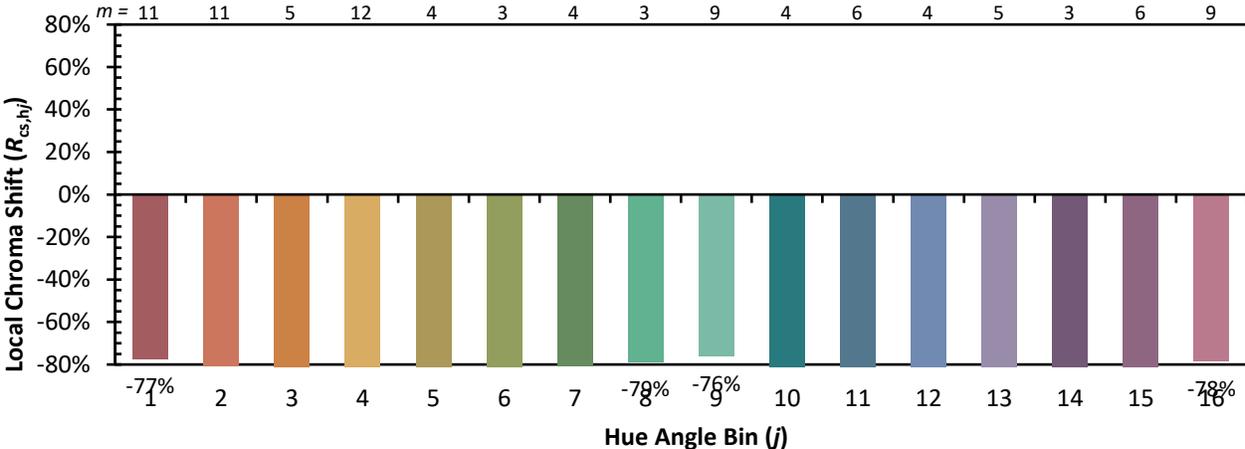


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

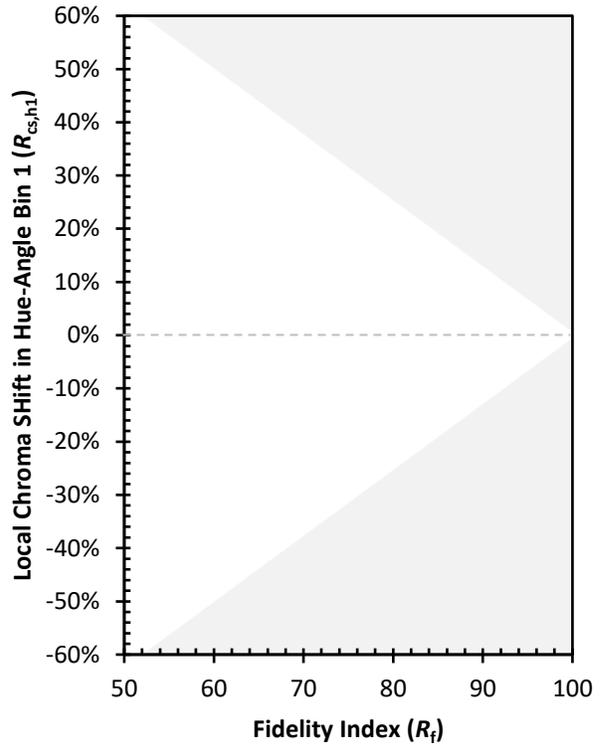
CES01 = 90	CES26 = 0	CES51 = 19	CES76 = 0
CES02 = 70	CES27 = 32	CES52 = 2	CES77 = 0
CES03 = 31	CES28 = 25	CES53 = 0	CES78 = 0
CES04 = 77	CES29 = 1	CES54 = 13	CES79 = 2
CES05 = 52	CES30 = 31	CES55 = 7	CES80 = 1
CES06 = 56	CES31 = 1	CES56 = 0	CES81 = 0
CES07 = 41	CES32 = 0	CES57 = 0	CES82 = 51
CES08 = 39	CES33 = 21	CES58 = 0	CES83 = 21
CES09 = 29	CES34 = 0	CES59 = 10	CES84 = 55
CES10 = 87	CES35 = 24	CES60 = 60	CES85 = 10
CES11 = 70	CES36 = 77	CES61 = 14	CES86 = 0
CES12 = 76	CES37 = 6	CES62 = 53	CES87 = 2
CES13 = 47	CES38 = 42	CES63 = 68	CES88 = 2
CES14 = 77	CES39 = 75	CES64 = 0	CES89 = 0
CES15 = 74	CES40 = 49	CES65 = 0	CES90 = 2
CES16 = 49	CES41 = 75	CES66 = 0	CES91 = 57
CES17 = 56	CES42 = 0	CES67 = 0	CES92 = 0
CES18 = 60	CES43 = 0	CES68 = 0	CES93 = 3
CES19 = 80	CES44 = 95	CES69 = 28	CES94 = 0
CES20 = 71	CES45 = 1	CES70 = 0	CES95 = 0
CES21 = 94	CES46 = 6	CES71 = 0	CES96 = 2
CES22 = 87	CES47 = 70	CES72 = 42	CES97 = 1
CES23 = 94	CES48 = 0	CES73 = 0	CES98 = 0
CES24 = 95	CES49 = 6	CES74 = 62	CES99 = 0
CES25 = 79	CES50 = 10	CES75 = 0	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)