

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: P1357448

Luminaire Tested: 8ASL4-15HE-2-30-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357448
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: 8ASL4-15HE-2-30-UNV
Description: 8FT 1500 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 3000K LEDS 2 ROW
Light Source: -
Ballast/Driver: -

Summary

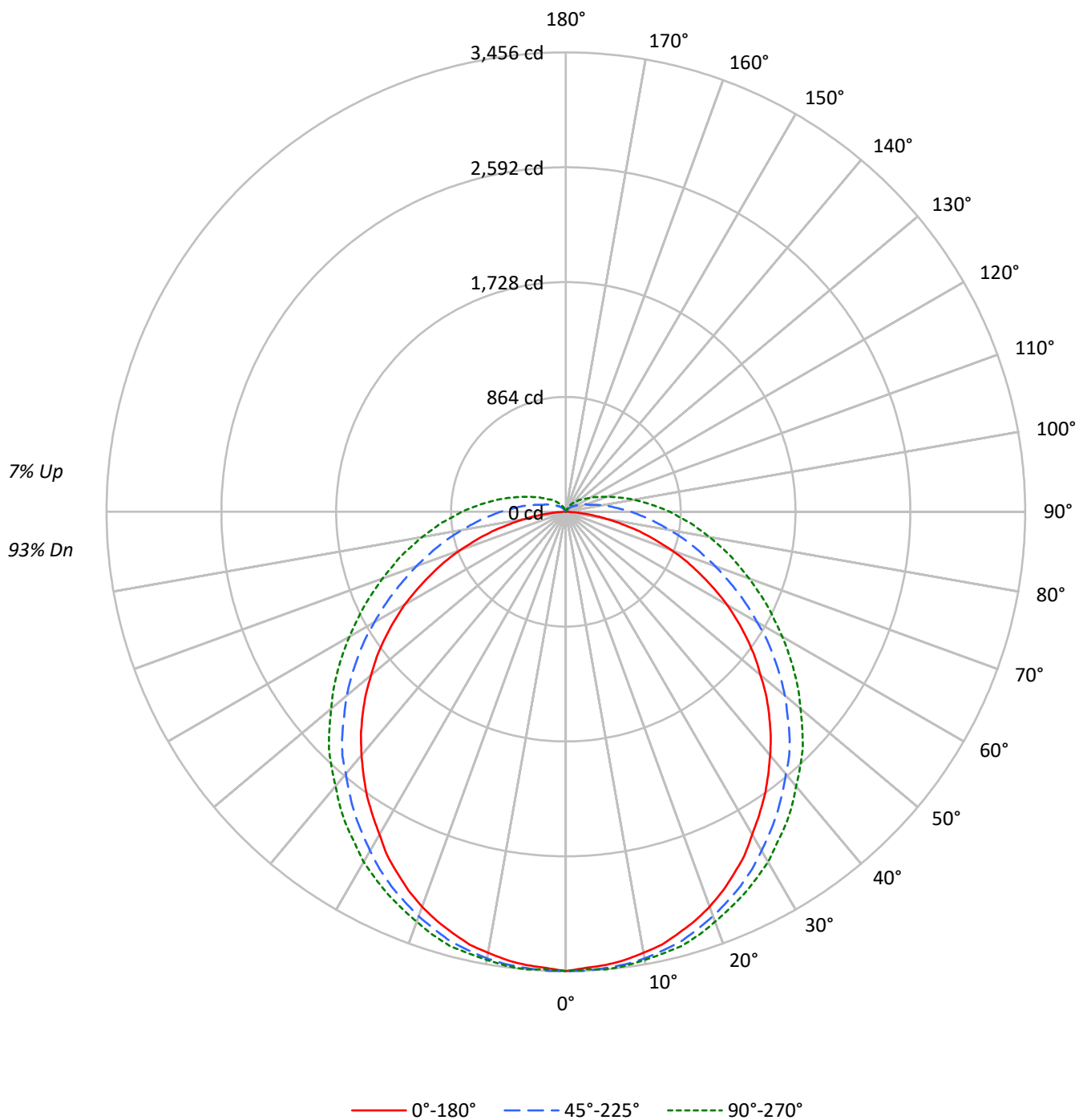
Lumens per Lamp: N/A
Luminaire Lumens: 11864.0 lumens
Efficiency: N/A
Efficacy: 114.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.4
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 7.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 104
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: 8ASL4-15HE-2-30-UNV

Luminous Intensity Polar Plot



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CATALOG NUMBER: 8ASL4-15HE-2-30-UNV

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13986	13986	13986
5°	13891	13719	13666
10°	13813	13476	13333
15°	13703	13209	13067
20°	13555	12869	12691
25°	13313	12534	12368
30°	13004	12148	12046
35°	12769	11791	11674
40°	12494	11404	11280
45°	12218	11073	10995
50°	11858	10631	10569
55°	11517	10157	10232
60°	11096	9622	9873
65°	10428	9127	9596
70°	9683	8665	9340
75°	8588	8317	9257
80°	6840	8019	9227
85°	4392	8060	9492

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12218 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	327.7	2.8
10°-20°	942.1	7.9
20°-30°	1427.5	12.0
30°-40°	1726.5	14.6
40°-50°	1820.2	15.3
50°-60°	1698.8	14.3
60°-70°	1402.5	11.8
70°-80°	1017.4	8.6
80°-90°	642.8	5.4
90°-100°	383.7	3.2
100°-110°	220.0	1.9
110°-120°	124.9	1.1
120°-130°	71.3	0.6
130°-140°	38.6	0.3
140°-150°	16.9	0.1
150°-160°	3.1	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2697.3	22.7
0°-40°	4423.8	37.3
0°-60°	7942.8	66.9
0°-90°	11005.6	92.8
90°-120°	728.6	6.1
90°-150°	855.3	7.2
90°-180°	858.0	7.2
0°-180°	11864.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3456	3456	3456	3456	3456	
5°	3423	3456	3445	3445	3456	325
15°	3282	3326	3347	3358	3380	926
25°	2999	3043	3108	3152	3173	1382
35°	2608	2673	2771	2847	2880	1630
45°	2163	2250	2380	2478	2521	1668
55°	1663	1760	1913	2043	2097	1486
65°	1119	1239	1424	1598	1674	1112
75°	576	728	989	1195	1282	606
85°	109	337	630	848	935	133
90°	0	206	489	696	782	4
95°	0	130	370	565	641	0
105°	0	44	206	359	413	0
115°	0	22	120	217	261	0
125°	0	11	76	141	163	0
135°	0	0	44	87	109	0
145°	0	0	22	54	65	0
155°	0	0	0	11	22	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°	3455.9	3455.9	3455.9	3455.9	3455.9
2.5°	3434.1	3466.7	3455.9	3445.0	3445.0
5°	3423.3	3455.9	3445.0	3445.0	3455.9
7.5°	3401.5	3434.1	3434.1	3434.1	3445.0
10°	3368.9	3412.4	3412.4	3412.4	3423.3
12.5°	3336.3	3368.9	3379.8	3390.7	3401.5
15°	3282.0	3325.5	3347.2	3358.1	3379.8
17.5°	3227.6	3260.2	3292.8	3325.5	3336.3
20°	3162.4	3205.9	3238.5	3271.1	3282.0
22.5°	3086.4	3129.8	3173.3	3205.9	3227.6
25°	2999.4	3042.9	3108.1	3151.6	3173.3
27.5°	2912.5	2956.0	3032.0	3086.4	3108.1
30°	2803.8	2869.0	2945.1	3010.3	3042.9
32.5°	2706.0	2771.2	2858.1	2934.2	2956.0
35°	2608.2	2673.4	2771.2	2847.3	2879.9
37.5°	2499.5	2575.6	2673.4	2760.3	2792.9
40°	2390.8	2466.9	2575.6	2673.4	2695.1
42.5°	2282.2	2358.2	2488.7	2575.6	2608.2
45°	2162.6	2249.6	2380.0	2477.8	2521.3
47.5°	2043.1	2130.0	2260.4	2369.1	2412.6
50°	1912.7	2010.5	2151.8	2260.4	2303.9
52.5°	1793.1	1890.9	2032.2	2151.8	2206.1
55°	1662.7	1760.5	1912.7	2043.1	2097.4
57.5°	1532.3	1630.1	1793.1	1934.4	1988.7
60°	1401.9	1499.7	1662.7	1825.7	1880.1
62.5°	1260.6	1369.3	1543.2	1706.2	1771.4
65°	1119.4	1238.9	1423.6	1597.5	1673.6
67.5°	988.9	1108.5	1304.1	1499.7	1564.9
70°	847.7	978.1	1195.4	1391.0	1467.1
72.5°	706.4	847.7	1086.7	1293.2	1369.3
75°	576.0	728.1	988.9	1195.4	1282.4
77.5°	434.7	619.4	891.1	1108.5	1184.6
80°	315.2	510.8	793.3	1021.5	1097.6
82.5°	206.5	413.0	706.4	934.6	1010.7
85°	108.7	336.9	630.3	847.7	934.6
87.5°	32.6	260.8	554.2	771.6	847.7
90°	0.0	206.5	489.0	695.5	782.5
92.5°	0.0	163.0	423.8	630.3	706.4
95°	0.0	130.4	369.5	565.1	641.2
97.5°	0.0	108.7	326.0	510.8	576.0
100°	0.0	86.9	282.6	456.4	521.6
102.5°	0.0	65.2	239.1	402.1	467.3
105°	0.0	43.5	206.5	358.6	413.0
107.5°	0.0	32.6	173.9	315.2	369.5
110°	0.0	32.6	163.0	271.7	326.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	21.7	141.3	250.0	293.4
115°	0.0	21.7	119.5	217.3	260.8
117.5°	0.0	21.7	108.7	195.6	239.1
120°	0.0	21.7	97.8	173.9	206.5
122.5°	0.0	10.9	86.9	152.1	184.7
125°	0.0	10.9	76.1	141.3	163.0
127.5°	0.0	10.9	65.2	130.4	152.1
130°	0.0	10.9	65.2	119.5	141.3
132.5°	0.0	0.0	54.3	108.7	130.4
135°	0.0	0.0	43.5	86.9	108.7
137.5°	0.0	0.0	43.5	76.1	97.8
140°	0.0	0.0	32.6	76.1	86.9
142.5°	0.0	0.0	21.7	65.2	76.1
145°	0.0	0.0	21.7	54.3	65.2
147.5°	0.0	0.0	10.9	43.5	54.3
150°	0.0	0.0	10.9	32.6	43.5
152.5°	0.0	0.0	0.0	21.7	32.6
155°	0.0	0.0	0.0	10.9	21.7
157.5°	0.0	0.0	0.0	0.0	10.9
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	18.49	20.03	18.97	20.49	20.98	20.59	22.13	21.07	22.59	23.08
	3H	19.99	21.39	20.48	21.86	22.40	23.06	24.47	23.55	24.94	25.47
	4H	20.47	21.80	20.98	22.29	22.83	24.29	25.62	24.80	26.11	26.65
	6H	20.75	21.99	21.27	22.49	23.05	25.59	26.83	26.11	27.33	27.89
	8H	20.80	21.99	21.33	22.51	23.08	26.27	27.46	26.80	27.98	28.55
	12H	20.82	21.95	21.35	22.47	23.07	27.04	28.18	27.58	28.69	29.29
4H	2H	19.38	20.71	19.89	21.20	21.74	21.02	22.35	21.53	22.84	23.38
	3H	21.12	22.26	21.64	22.79	23.35	23.72	24.86	24.24	25.39	25.95
	4H	21.73	22.77	22.27	23.31	23.91	25.12	26.16	25.66	26.70	27.30
	6H	22.13	23.05	22.69	23.61	24.23	26.62	27.54	27.18	28.10	28.72
	8H	22.23	23.09	22.79	23.66	24.28	27.41	28.27	27.97	28.84	29.46
	12H	22.28	23.06	22.86	23.65	24.28	28.30	29.08	28.89	29.68	30.31
8H	4H	22.44	23.30	23.00	23.86	24.49	25.34	26.20	25.91	26.77	27.40
	6H	23.02	23.75	23.62	24.36	24.99	27.01	27.74	27.61	28.35	28.98
	8H	23.21	23.87	23.82	24.49	25.13	27.95	28.61	28.55	29.23	29.87
	12H	23.33	23.92	23.94	24.53	25.24	29.02	29.61	29.63	30.22	30.93
12H	4H	22.64	23.42	23.23	24.02	24.65	25.35	26.13	25.94	26.73	27.36
	6H	23.33	23.99	23.94	24.61	25.26	27.05	27.71	27.66	28.33	28.97
	8H	23.62	24.21	24.23	24.82	25.53	28.05	28.64	28.66	29.25	29.96

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

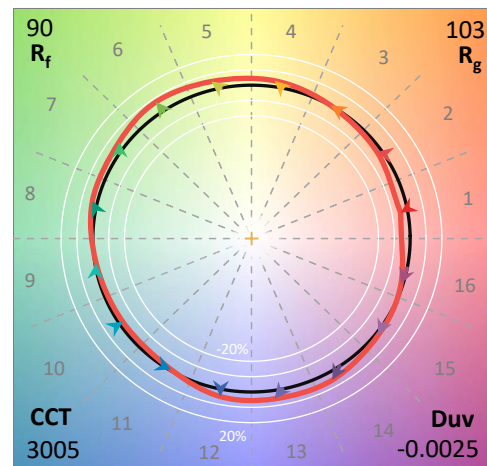
Test Information

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

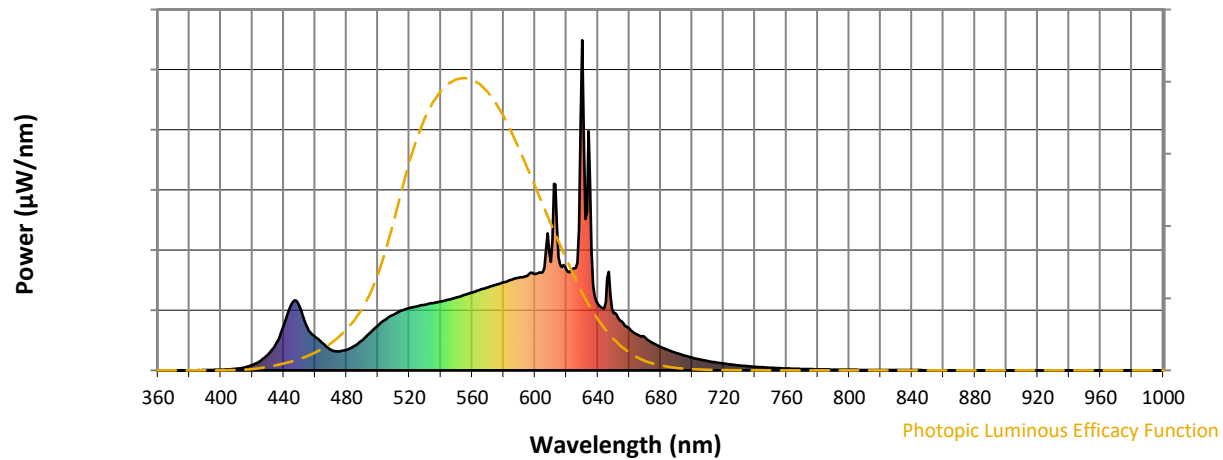
Stabilization Time: 32M
 Operation Time: 1H 32M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-3

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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Photopic Flux vs. Wavelength

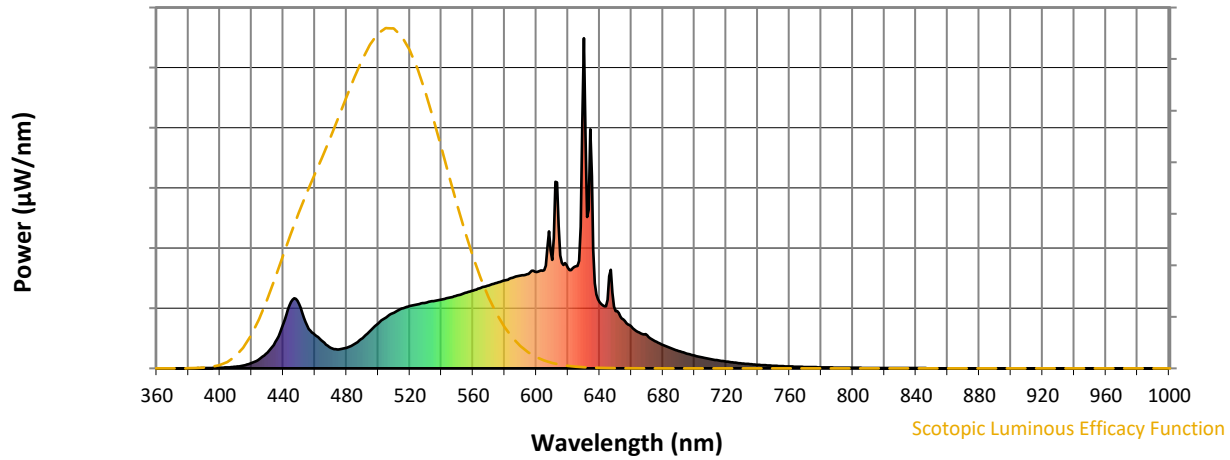


Photopic Lumens: NR

λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /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			

REPORT NUMBER: SP1-2511-597-3

Scotopic Flux vs. Wavelength



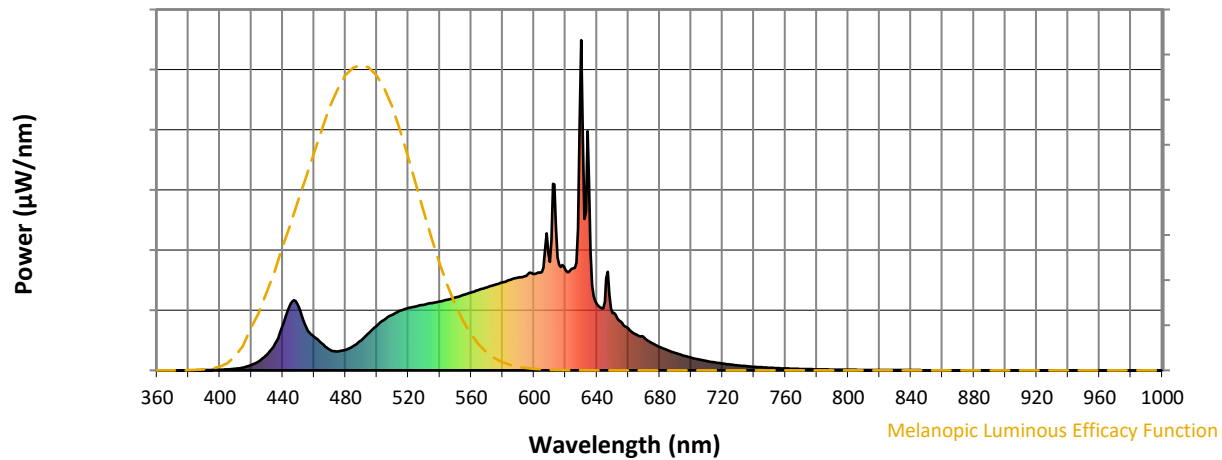
Scotopic Lumens: NR

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

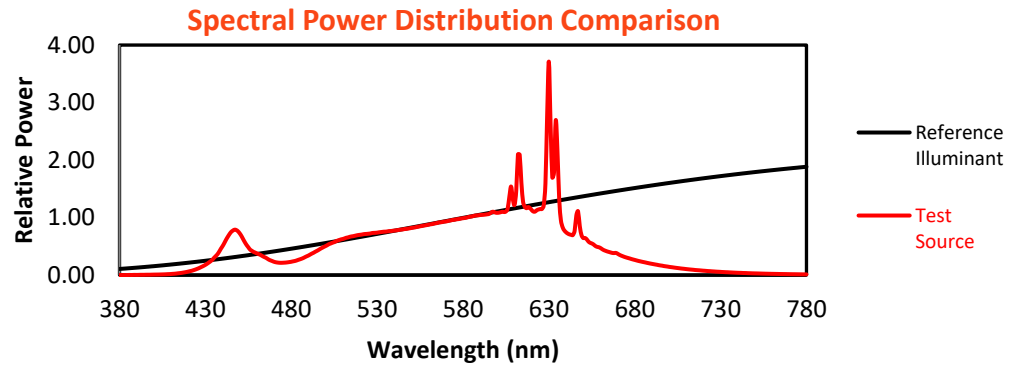
λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)
360	0	NR	490	92	NR	620	304	NR	750	8	NR	880	0	NR
365	0	NR	495	114	NR	625	309	NR	755	7	NR	885	0	NR
370	0	NR	500	136	NR	630	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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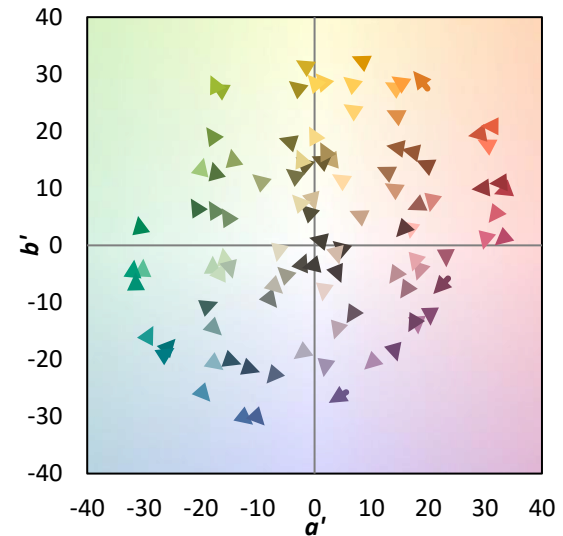
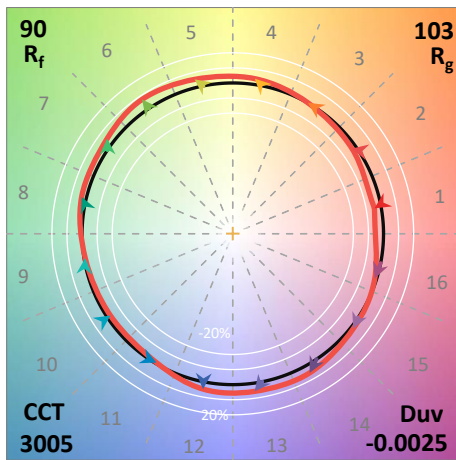
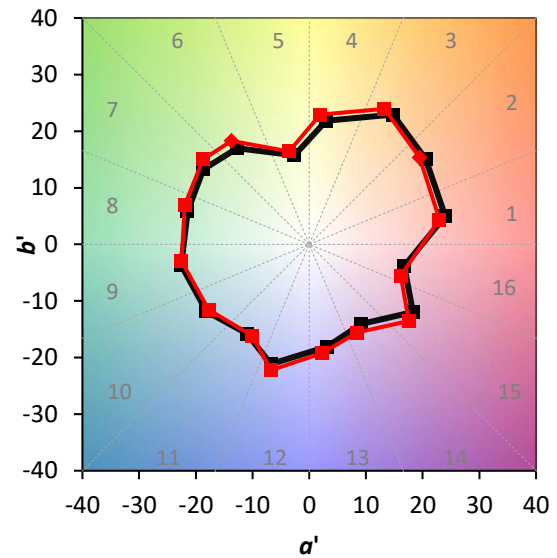
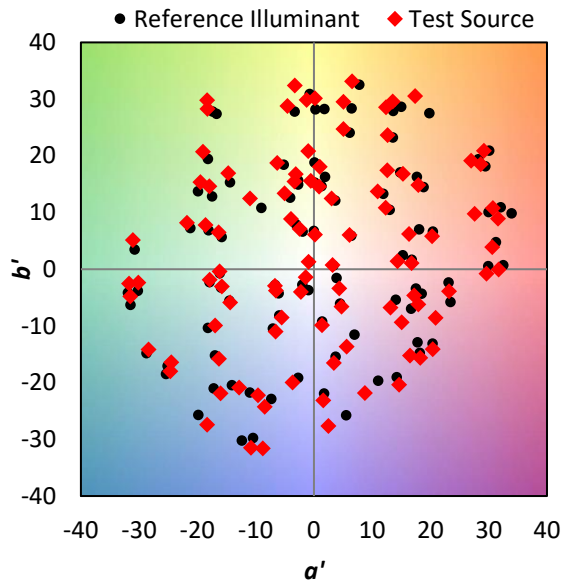
TM-30-18

Summary

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

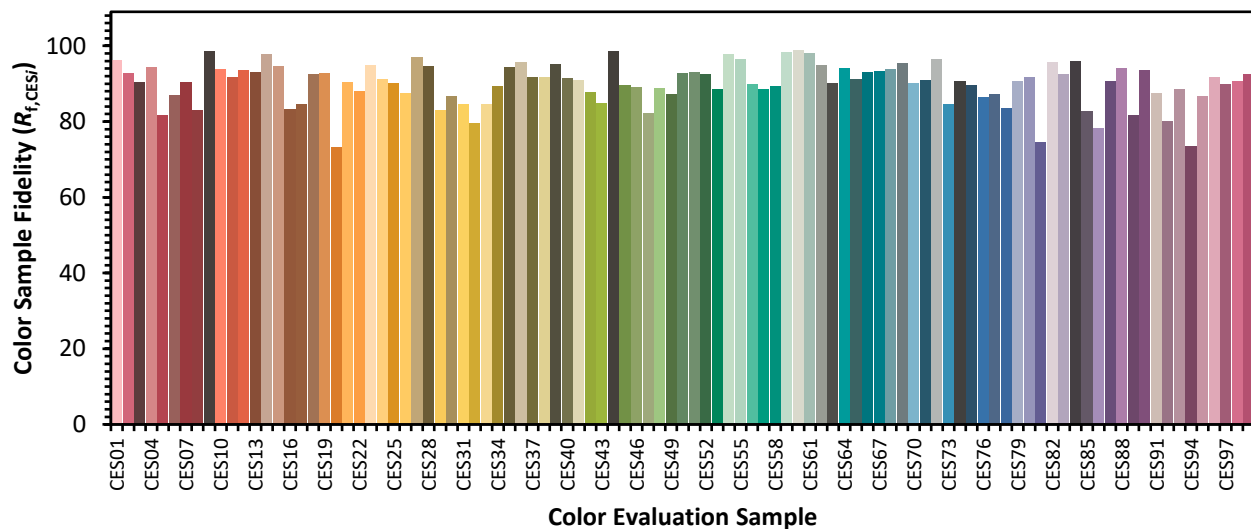


Color Vector Graphics

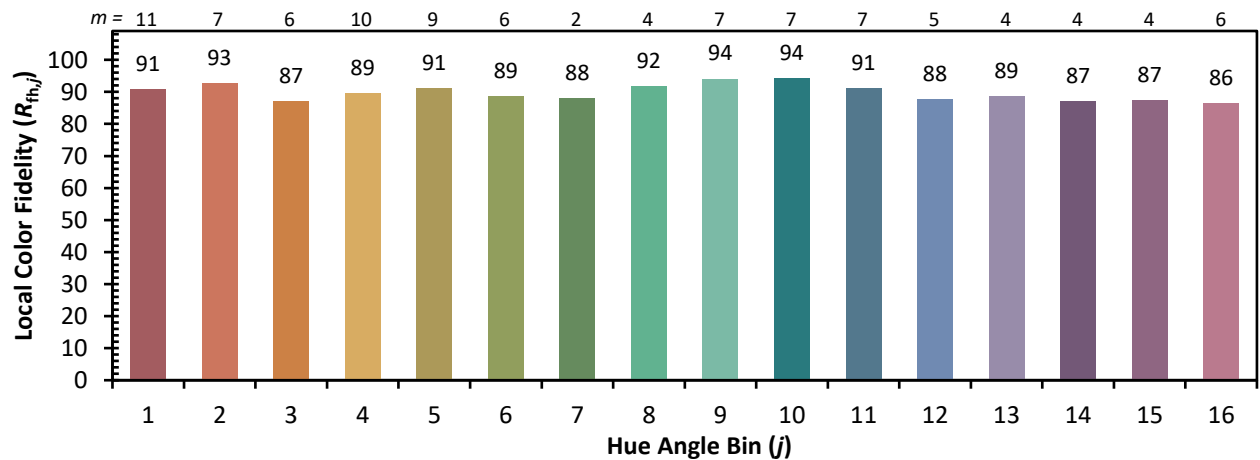
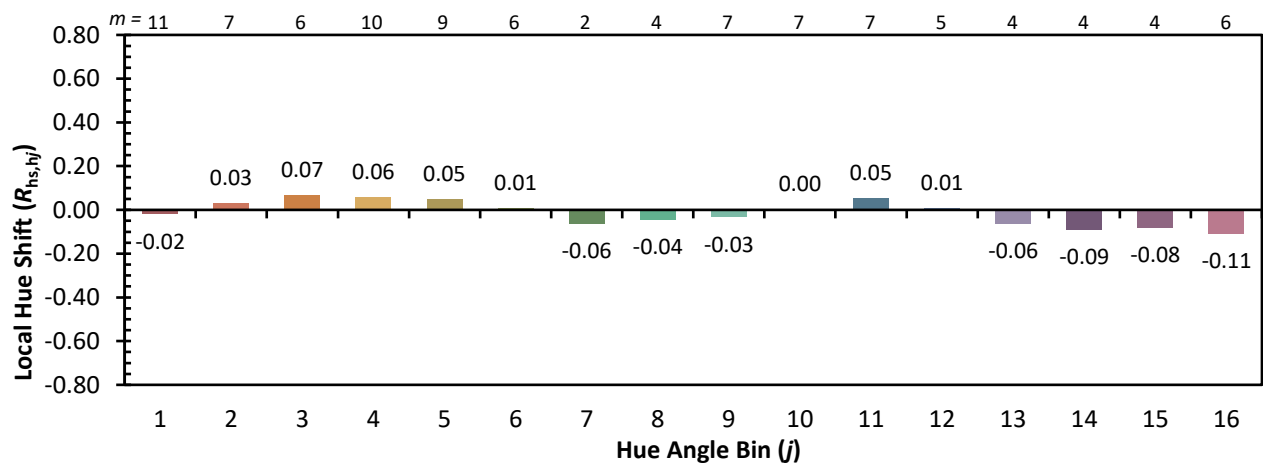
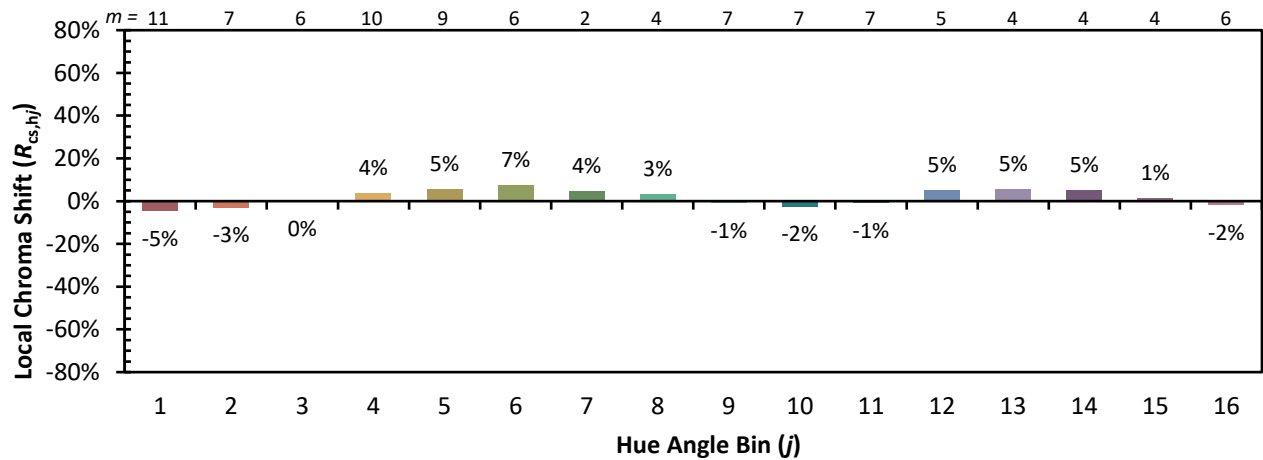


Individual Sample Fidelity Index ($R_{f,i}$)

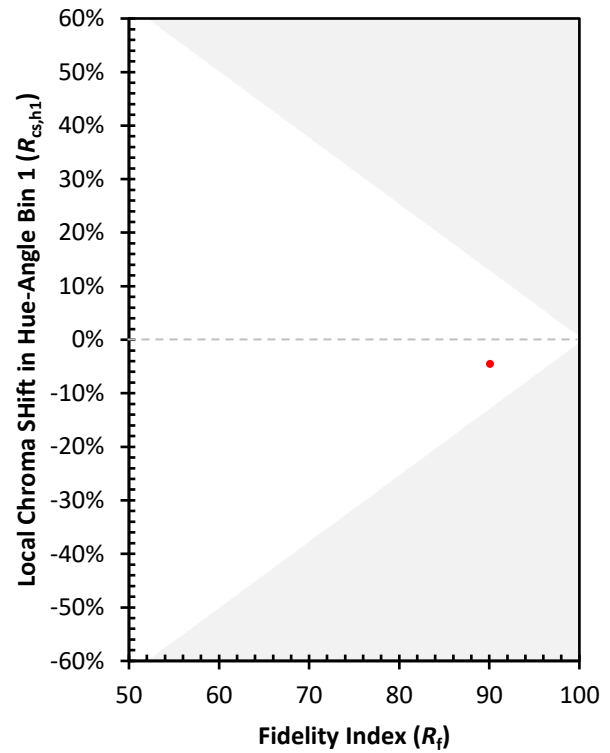
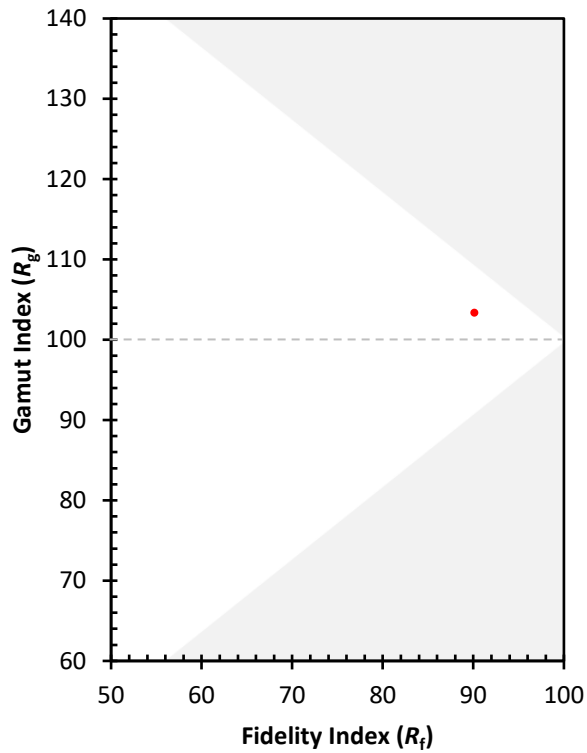
CES01 = 86	CES26 = 88	CES51 = 93	CES76 = 86
CES02 = 63	CES27 = 97	CES52 = 93	CES77 = 87
CES03 = 32	CES28 = 95	CES53 = 89	CES78 = 83
CES04 = 70	CES29 = 83	CES54 = 98	CES79 = 91
CES05 = 51	CES30 = 87	CES55 = 97	CES80 = 92
CES06 = 51	CES31 = 85	CES56 = 90	CES81 = 75
CES07 = 44	CES32 = 80	CES57 = 89	CES82 = 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)