

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: P1357191

Luminaire Tested: 4ASL4-20VHE-3-65-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357191
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: 4ASL4-20VHE-3-65-UNV
Description: 4FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 6500K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

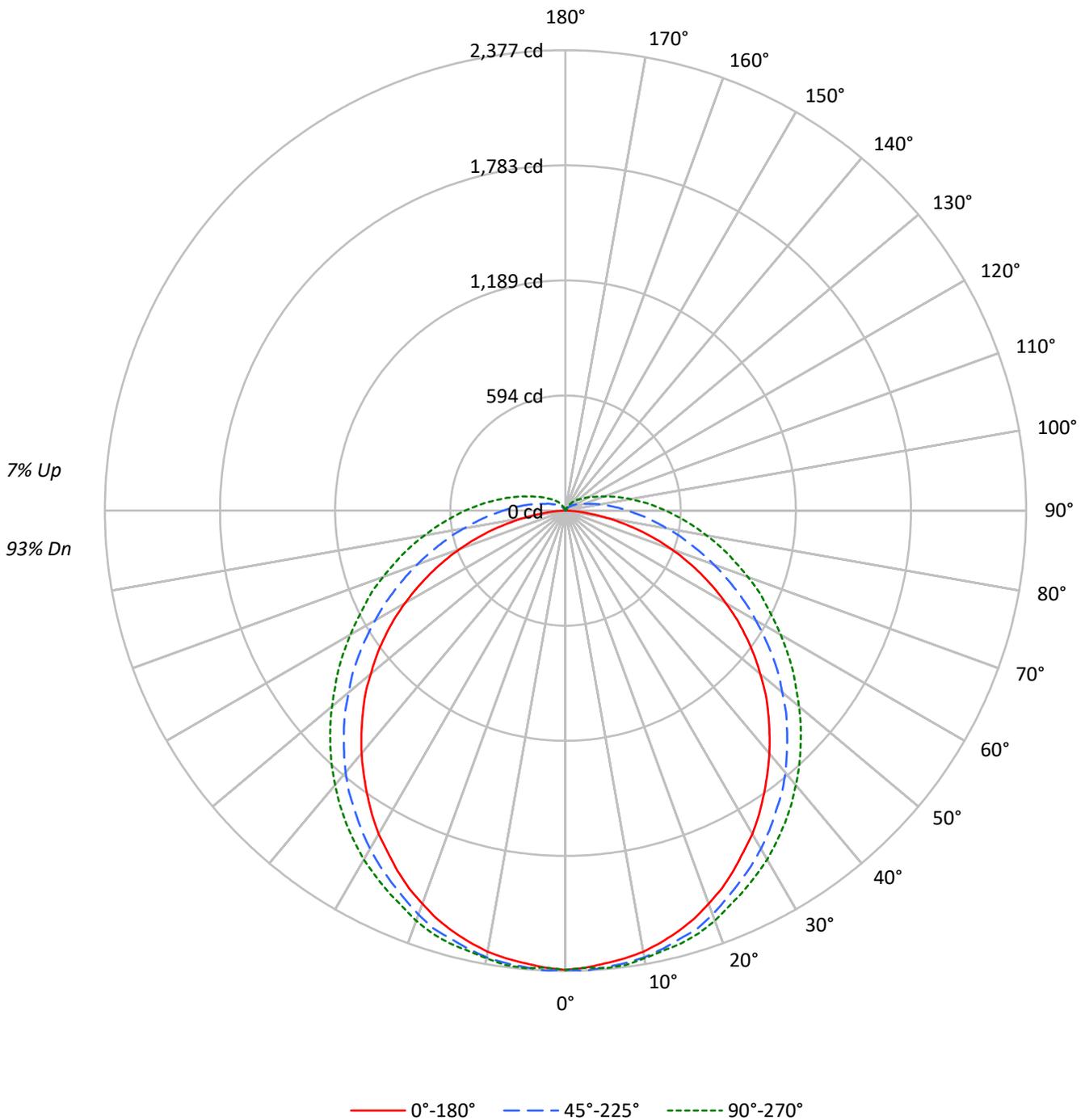
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8064.0 lumens
Efficiency: N/A
Efficacy: 120.0 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): 67.2
Input Voltage (V): NR
Input Current (A_{in}): 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				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°	19247	19247	19247
5°	19076	18885	18806
10°	18969	18518	18331
15°	18759	18063	17928
20°	18475	17626	17473
25°	18145	17078	16956
30°	17798	16602	16518
35°	17366	16064	16031
40°	16969	15571	15519
45°	16543	14975	15004
50°	16058	14335	14469
55°	15534	13723	13988
60°	14853	13010	13500
65°	13985	12324	13095
70°	12878	11644	12779
75°	11269	11022	12561
80°	8830	10553	12468
85°	5303	10442	12653

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16543 cd/sqm



TEST NUMBER: P1357191
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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	224.9	2.8
10°-20°	645.7	8.0
20°-30°	976.3	12.1
30°-40°	1182.2	14.7
40°-50°	1241.6	15.4
50°-60°	1158.4	14.4
60°-70°	957.3	11.9
70°-80°	689.3	8.5
80°-90°	428.3	5.3
90°-100°	251.0	3.1
100°-110°	143.6	1.8
110°-120°	81.1	1.0
120°-130°	46.6	0.6
130°-140°	25.1	0.3
140°-150°	10.6	0.1
150°-160°	2.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1846.9	22.9
0°-40°	3029.1	37.6
0°-60°	5429.1	67.3
0°-90°	7504.1	93.1
90°-120°	475.6	5.9
90°-150°	558.0	6.9
90°-180°	560.0	6.9
0°-180°	8064.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2372	2372	2372	2372	2372	
5°	2347	2367	2367	2367	2372	223
15°	2248	2278	2288	2303	2313	634
25°	2051	2086	2120	2150	2170	945
35°	1785	1834	1893	1948	1972	1117
45°	1479	1534	1617	1686	1716	1141
55°	1139	1203	1302	1395	1430	1018
65°	769	843	971	1095	1139	761
75°	394	493	666	809	868	417
85°	74	222	419	567	621	91
90°	0	133	320	459	518	3
95°	0	84	242	370	424	0
105°	0	30	133	232	271	0
115°	0	15	79	143	168	0
125°	0	10	49	94	108	0
135°	0	0	30	59	74	0
145°	0	0	15	34	39	0
155°	0	0	0	10	15	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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 CATALOG NUMBER: 4ASL4-20VHE-3-65-UNV

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2371.7	2371.7	2371.7	2371.7	2371.7
2.5°	2361.9	2376.7	2376.7	2361.9	2361.9
5°	2347.1	2366.8	2366.8	2366.8	2371.7
7.5°	2332.3	2356.9	2356.9	2356.9	2366.8
10°	2312.6	2337.2	2342.1	2342.1	2347.1
12.5°	2283.0	2312.6	2317.5	2322.4	2327.4
15°	2248.5	2278.0	2287.9	2302.7	2312.6
17.5°	2209.0	2243.5	2263.3	2278.0	2287.9
20°	2159.7	2194.2	2218.9	2238.6	2253.4
22.5°	2110.4	2140.0	2169.6	2194.2	2209.0
25°	2051.2	2085.7	2120.3	2149.8	2169.6
27.5°	1987.1	2026.6	2070.9	2105.5	2125.2
30°	1928.0	1967.4	2016.7	2061.1	2080.8
32.5°	1858.9	1903.3	1957.5	2001.9	2026.6
35°	1785.0	1834.3	1893.4	1947.7	1972.3
37.5°	1711.0	1760.3	1834.3	1888.5	1913.2
40°	1637.0	1686.3	1765.2	1824.4	1849.1
42.5°	1558.1	1607.5	1691.3	1755.4	1785.0
45°	1479.2	1533.5	1617.3	1686.3	1715.9
47.5°	1400.4	1454.6	1543.4	1617.3	1646.9
50°	1311.6	1370.8	1459.5	1543.4	1572.9
52.5°	1227.8	1286.9	1385.6	1469.4	1499.0
55°	1139.0	1203.1	1301.7	1395.4	1429.9
57.5°	1050.3	1114.4	1217.9	1316.5	1356.0
60°	956.6	1025.6	1134.1	1237.6	1282.0
62.5°	862.9	936.9	1055.2	1163.7	1208.1
65°	769.2	843.2	971.4	1094.6	1139.0
67.5°	675.5	754.4	892.5	1020.7	1074.9
70°	581.8	665.7	813.6	946.7	1001.0
72.5°	488.2	576.9	739.6	877.7	931.9
75°	394.5	493.1	665.7	808.7	867.8
77.5°	300.8	414.2	601.6	744.6	803.7
80°	217.0	345.2	532.5	680.5	739.6
82.5°	138.1	276.1	473.4	621.3	680.5
85°	74.0	221.9	419.1	567.0	621.3
87.5°	24.7	172.6	364.9	512.8	567.0
90°	0.0	133.1	320.5	458.6	517.7
92.5°	0.0	103.5	281.1	414.2	468.4
95°	0.0	83.8	241.6	369.8	424.1
97.5°	0.0	69.0	212.0	330.4	379.7
100°	0.0	54.2	182.4	295.8	340.2
102.5°	0.0	44.4	157.8	261.3	305.7
105°	0.0	29.6	133.1	231.7	271.2
107.5°	0.0	24.7	113.4	207.1	241.6
110°	0.0	19.7	103.5	177.5	212.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	14.8	93.7	157.8	192.3
115°	0.0	14.8	78.9	143.0	167.6
117.5°	0.0	14.8	69.0	128.2	152.9
120°	0.0	9.9	64.1	113.4	138.1
122.5°	0.0	9.9	54.2	103.5	123.3
125°	0.0	9.9	49.3	93.7	108.5
127.5°	0.0	4.9	44.4	83.8	98.6
130°	0.0	4.9	39.4	74.0	88.8
132.5°	0.0	4.9	34.5	69.0	83.8
135°	0.0	0.0	29.6	59.2	74.0
137.5°	0.0	0.0	24.7	54.2	64.1
140°	0.0	0.0	19.7	44.4	59.2
142.5°	0.0	0.0	14.8	39.4	49.3
145°	0.0	0.0	14.8	34.5	39.4
147.5°	0.0	0.0	9.9	24.7	34.5
150°	0.0	0.0	4.9	19.7	24.7
152.5°	0.0	0.0	0.0	14.8	19.7
155°	0.0	0.0	0.0	9.9	14.8
157.5°	0.0	0.0	0.0	0.0	4.9
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	19.61	21.15	20.08	21.60	22.09	21.63	23.17	22.10	23.63	24.11
	3H	21.10	22.51	21.59	22.97	23.50	24.10	25.50	24.58	25.97	26.49
	4H	21.59	22.92	22.09	23.40	23.94	25.29	26.63	25.80	27.11	27.65
	6H	21.86	23.10	22.38	23.60	24.15	26.55	27.79	27.06	28.28	28.84
	8H	21.91	23.10	22.44	23.62	24.18	27.19	28.38	27.72	28.90	29.46
	12H	21.93	23.07	22.46	23.58	24.17	27.90	29.04	28.44	29.56	30.15
4H	2H	20.48	21.82	20.99	22.30	22.84	22.07	23.40	22.57	23.88	24.42
	3H	22.22	23.35	22.73	23.88	24.44	24.76	25.89	25.27	26.42	26.98
	4H	22.82	23.86	23.36	24.40	24.99	26.13	27.16	26.66	27.70	28.29
	6H	23.22	24.14	23.78	24.70	25.31	27.57	28.49	28.12	29.05	29.66
	8H	23.32	24.18	23.88	24.74	25.36	28.32	29.19	28.88	29.75	30.37
	12H	23.36	24.14	23.94	24.74	25.36	29.16	29.94	29.74	30.53	31.16
8H	4H	23.51	24.37	24.07	24.93	25.55	26.34	27.21	26.90	27.77	28.39
	6H	24.08	24.82	24.68	25.42	26.04	27.96	28.69	28.55	29.29	29.92
	8H	24.27	24.93	24.87	25.54	26.18	28.85	29.51	29.45	30.12	30.76
	12H	24.38	24.97	24.99	25.57	26.28	29.87	30.46	30.48	31.06	31.77
12H	4H	23.70	24.48	24.28	25.07	25.70	26.35	27.13	26.93	27.72	28.35
	6H	24.38	25.04	24.98	25.65	26.29	27.99	28.65	28.60	29.27	29.91
	8H	24.66	25.25	25.26	25.85	26.55	28.96	29.55	29.56	30.15	30.85

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-6

Test Date: 11/18/2025

Luminaire Tested: 4ASL-2-65-UNV-OPL-1_600mA

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

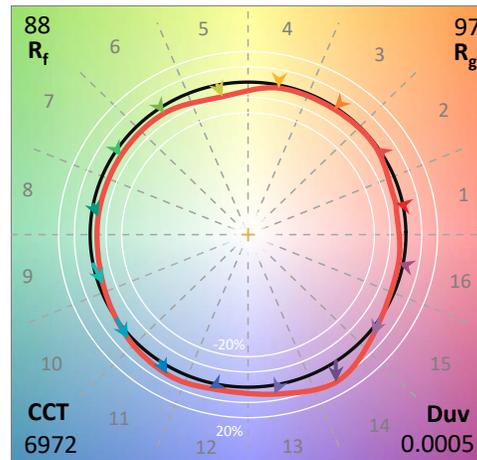
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-6
 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-2-65-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 6500K LEDs with 1 rows at 600mA

Spectral Parameters

CCT (K): 6972
 CIE u': 0.1979
 CIE v': 0.4612
 Duv: 0.0005
 CIE x: 0.3066
 CIE y: 0.3177
 CIE z: 0.3758
 Peak Wavelength (nm): 455
 Dominant Wavelength (nm): 483
 Purity: 10.33335
 Rf: 88.2
 Rg: 97.1

CRI (Ra):	94.3		
R1:	96.1	R9:	82.6
R2:	98.8	R10:	95.4
R3:	96.4	R11:	95.2
R4:	92.8	R12:	63.5
R5:	92.9	R13:	99.3
R6:	92.2	R14:	98.1
R7:	93.5	R15:	93.7
R8:	91.4		



Test Conditions

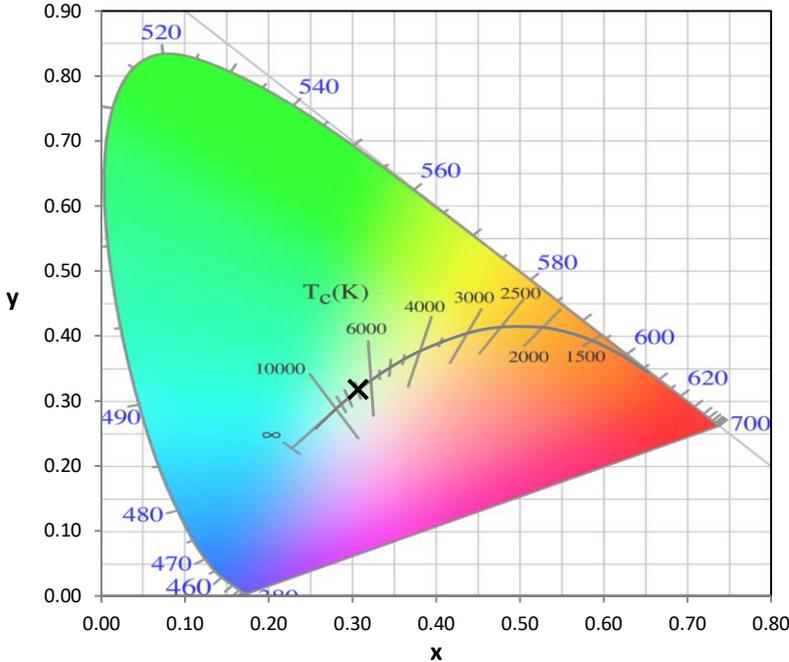
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-6

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 6500K 7-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	260	NR	620	255	NR	750	6	NR	880	0	NR
365	0	NR	495	274	NR	625	252	NR	755	6	NR	885	0	NR
370	0	NR	500	297	NR	630	778	NR	760	5	NR	890	0	NR
375	0	NR	505	320	NR	635	431	NR	765	4	NR	895	0	NR
380	1	NR	510	337	NR	640	160	NR	770	4	NR	900	0	NR
385	2	NR	515	349	NR	645	165	NR	775	3	NR	905	0	NR
390	2	NR	520	354	NR	650	135	NR	780	3	NR	910	0	NR
395	3	NR	525	356	NR	655	115	NR	785	2	NR	915	0	NR
400	5	NR	530	356	NR	660	99	NR	790	2	NR	920	0	NR
405	6	NR	535	355	NR	665	84	NR	795	2	NR	925	0	NR
410	8	NR	540	354	NR	670	77	NR	800	2	NR	930	0	NR
415	12	NR	545	351	NR	675	64	NR	805	1	NR	935	0	NR
420	19	NR	550	350	NR	680	55	NR	810	1	NR	940	0	NR
425	33	NR	555	348	NR	685	47	NR	815	1	NR	945	0	NR
430	60	NR	560	344	NR	690	41	NR	820	1	NR	950	0	NR
435	113	NR	565	339	NR	695	35	NR	825	1	NR	955	0	NR
440	206	NR	570	331	NR	700	30	NR	830	1	NR	960	0	NR
445	392	NR	575	323	NR	705	26	NR	835	1	NR	965	0	NR
450	764	NR	580	315	NR	710	22	NR	840	1	NR	970	0	NR
455	1000	NR	585	307	NR	715	19	NR	845	0	NR	975	0	NR
460	736	NR	590	299	NR	720	16	NR	850	0	NR	980	0	NR
465	513	NR	595	290	NR	725	14	NR	855	0	NR	985	0	NR
470	430	NR	600	282	NR	730	12	NR	860	0	NR	990	0	NR
475	325	NR	605	276	NR	735	10	NR	865	0	NR	995	0	NR
480	256	NR	610	287	NR	740	9	NR	870	0	NR	1000	0	NR
485	250	NR	615	284	NR	745	7	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



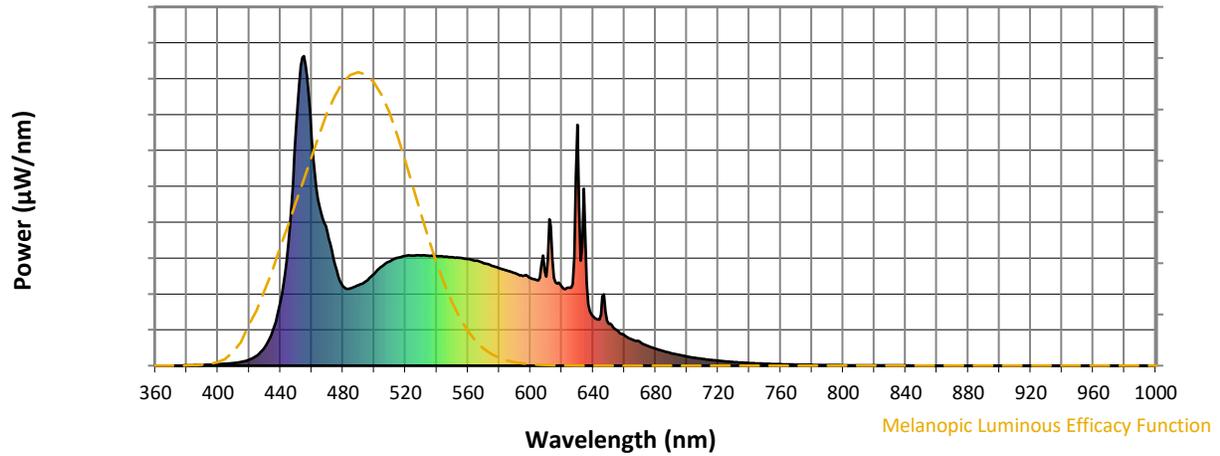
Scotopic Lumens: NR

S/P: 2.48

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	260	NR	620	255	NR	750	6	NR	880	0	NR
365	0	NR	495	274	NR	625	252	NR	755	6	NR	885	0	NR
370	0	NR	500	297	NR	630	778	NR	760	5	NR	890	0	NR
375	0	NR	505	320	NR	635	431	NR	765	4	NR	895	0	NR
380	1	NR	510	337	NR	640	160	NR	770	4	NR	900	0	NR
385	2	NR	515	349	NR	645	165	NR	775	3	NR	905	0	NR
390	2	NR	520	354	NR	650	135	NR	780	3	NR	910	0	NR
395	3	NR	525	356	NR	655	115	NR	785	2	NR	915	0	NR
400	5	NR	530	356	NR	660	99	NR	790	2	NR	920	0	NR
405	6	NR	535	355	NR	665	84	NR	795	2	NR	925	0	NR
410	8	NR	540	354	NR	670	77	NR	800	2	NR	930	0	NR
415	12	NR	545	351	NR	675	64	NR	805	1	NR	935	0	NR
420	19	NR	550	350	NR	680	55	NR	810	1	NR	940	0	NR
425	33	NR	555	348	NR	685	47	NR	815	1	NR	945	0	NR
430	60	NR	560	344	NR	690	41	NR	820	1	NR	950	0	NR
435	113	NR	565	339	NR	695	35	NR	825	1	NR	955	0	NR
440	206	NR	570	331	NR	700	30	NR	830	1	NR	960	0	NR
445	392	NR	575	323	NR	705	26	NR	835	1	NR	965	0	NR
450	764	NR	580	315	NR	710	22	NR	840	1	NR	970	0	NR
455	1000	NR	585	307	NR	715	19	NR	845	0	NR	975	0	NR
460	736	NR	590	299	NR	720	16	NR	850	0	NR	980	0	NR
465	513	NR	595	290	NR	725	14	NR	855	0	NR	985	0	NR
470	430	NR	600	282	NR	730	12	NR	860	0	NR	990	0	NR
475	325	NR	605	276	NR	735	10	NR	865	0	NR	995	0	NR
480	256	NR	610	287	NR	740	9	NR	870	0	NR	1000	0	NR
485	250	NR	615	284	NR	745	7	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



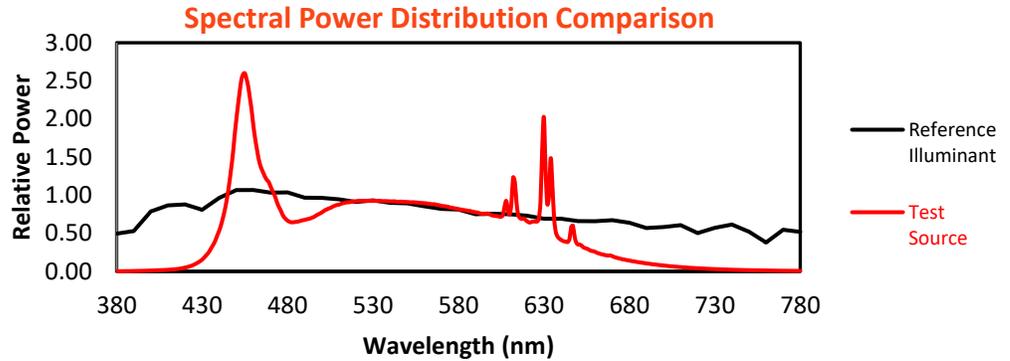
Melanopic Lumens: NR

M/P: 5.67

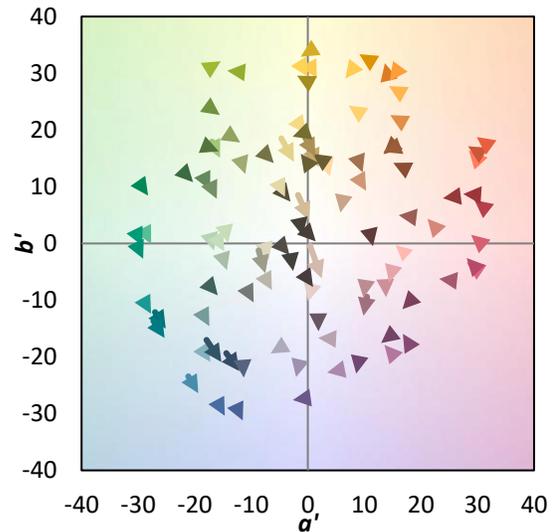
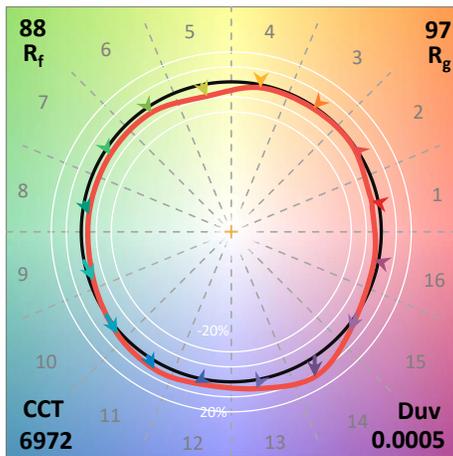
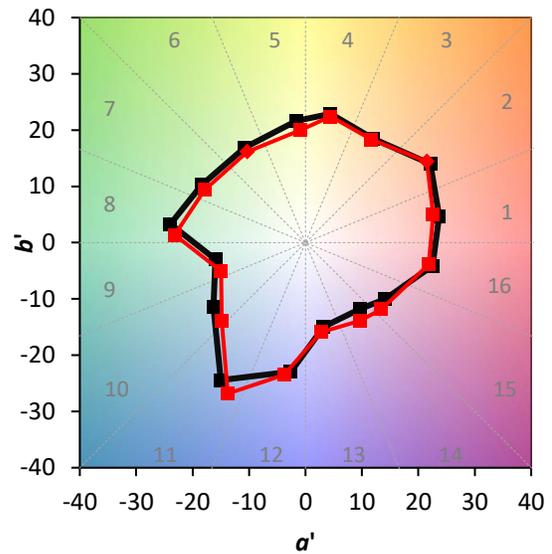
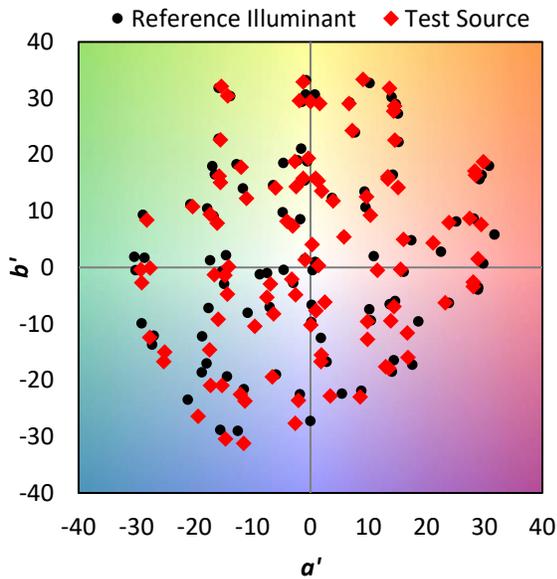
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	260	NR	620	255	NR	750	6	NR	880	0	NR
365	0	NR	495	274	NR	625	252	NR	755	6	NR	885	0	NR
370	0	NR	500	297	NR	630	778	NR	760	5	NR	890	0	NR
375	0	NR	505	320	NR	635	431	NR	765	4	NR	895	0	NR
380	1	NR	510	337	NR	640	160	NR	770	4	NR	900	0	NR
385	2	NR	515	349	NR	645	165	NR	775	3	NR	905	0	NR
390	2	NR	520	354	NR	650	135	NR	780	3	NR	910	0	NR
395	3	NR	525	356	NR	655	115	NR	785	2	NR	915	0	NR
400	5	NR	530	356	NR	660	99	NR	790	2	NR	920	0	NR
405	6	NR	535	355	NR	665	84	NR	795	2	NR	925	0	NR
410	8	NR	540	354	NR	670	77	NR	800	2	NR	930	0	NR
415	12	NR	545	351	NR	675	64	NR	805	1	NR	935	0	NR
420	19	NR	550	350	NR	680	55	NR	810	1	NR	940	0	NR
425	33	NR	555	348	NR	685	47	NR	815	1	NR	945	0	NR
430	60	NR	560	344	NR	690	41	NR	820	1	NR	950	0	NR
435	113	NR	565	339	NR	695	35	NR	825	1	NR	955	0	NR
440	206	NR	570	331	NR	700	30	NR	830	1	NR	960	0	NR
445	392	NR	575	323	NR	705	26	NR	835	1	NR	965	0	NR
450	764	NR	580	315	NR	710	22	NR	840	1	NR	970	0	NR
455	1000	NR	585	307	NR	715	19	NR	845	0	NR	975	0	NR
460	736	NR	590	299	NR	720	16	NR	850	0	NR	980	0	NR
465	513	NR	595	290	NR	725	14	NR	855	0	NR	985	0	NR
470	430	NR	600	282	NR	730	12	NR	860	0	NR	990	0	NR
475	325	NR	605	276	NR	735	10	NR	865	0	NR	995	0	NR
480	256	NR	610	287	NR	740	9	NR	870	0	NR	1000	0	NR
485	250	NR	615	284	NR	745	7	NR	875	0	NR			

Summary

$R_f = 88.2$
 $R_g = 97.1$
 CIE $R_a = 94.3$
 $R_9 = 82.6$

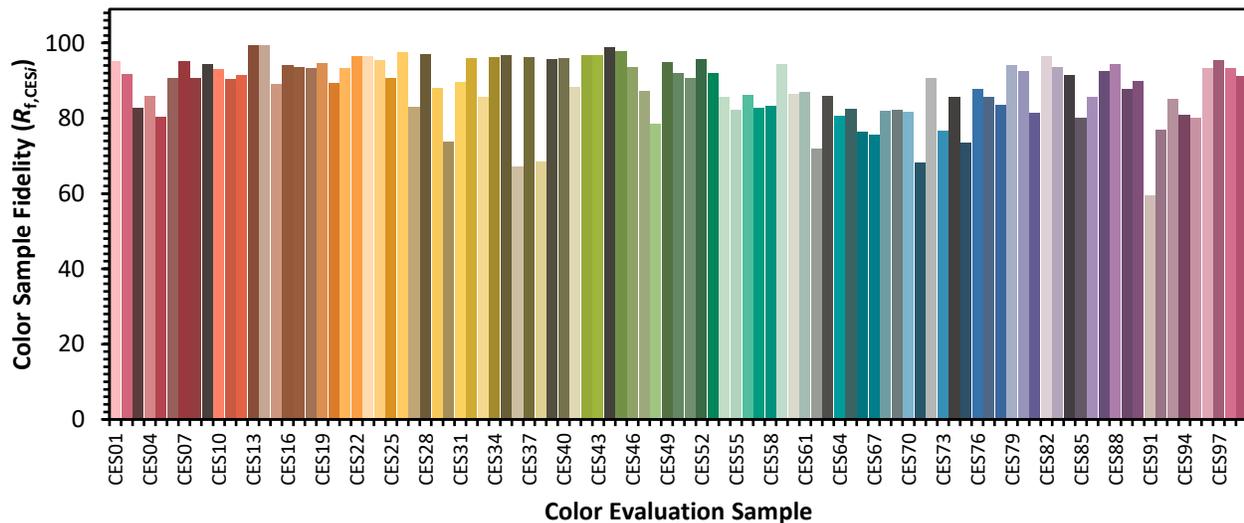


Color Vector Graphics

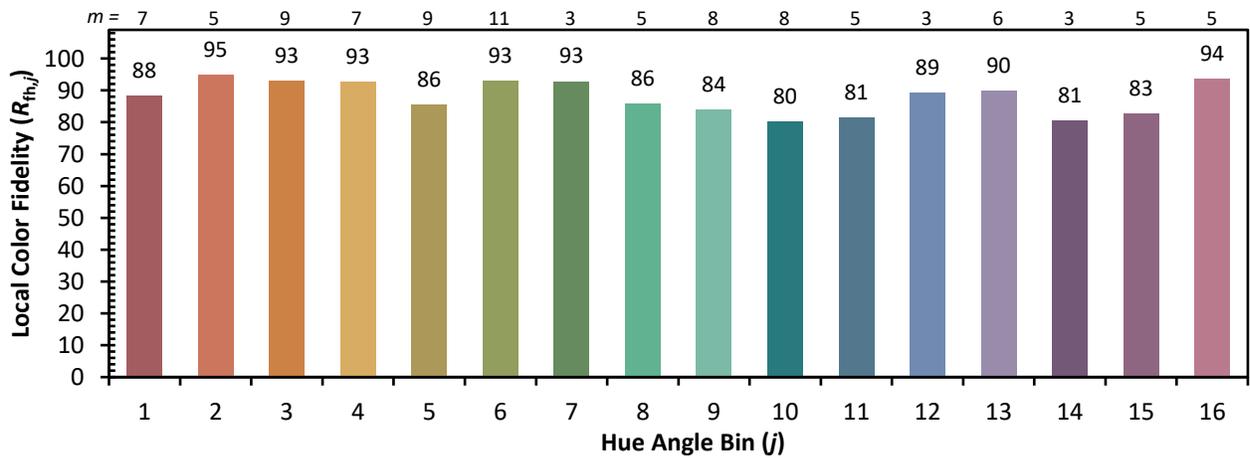
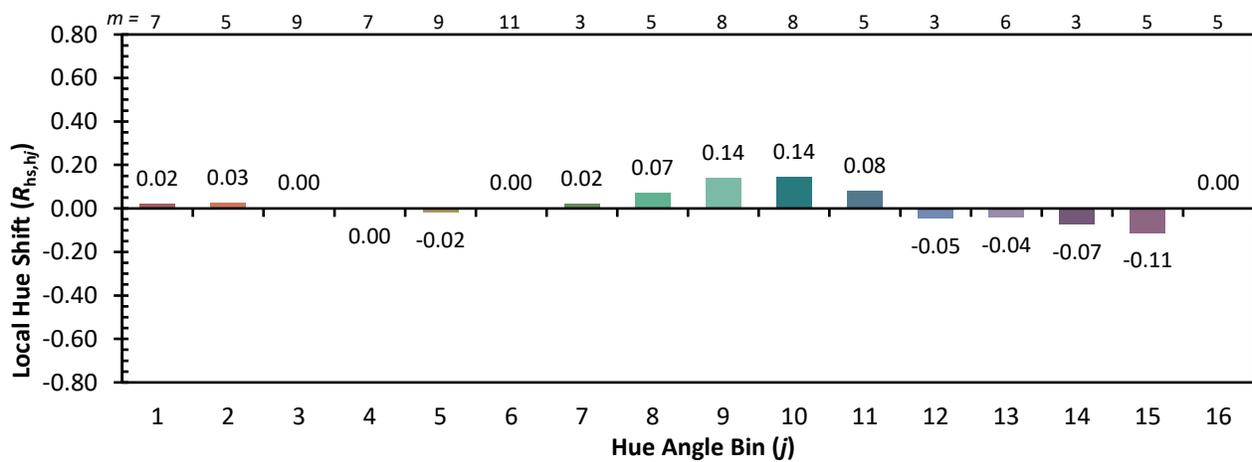
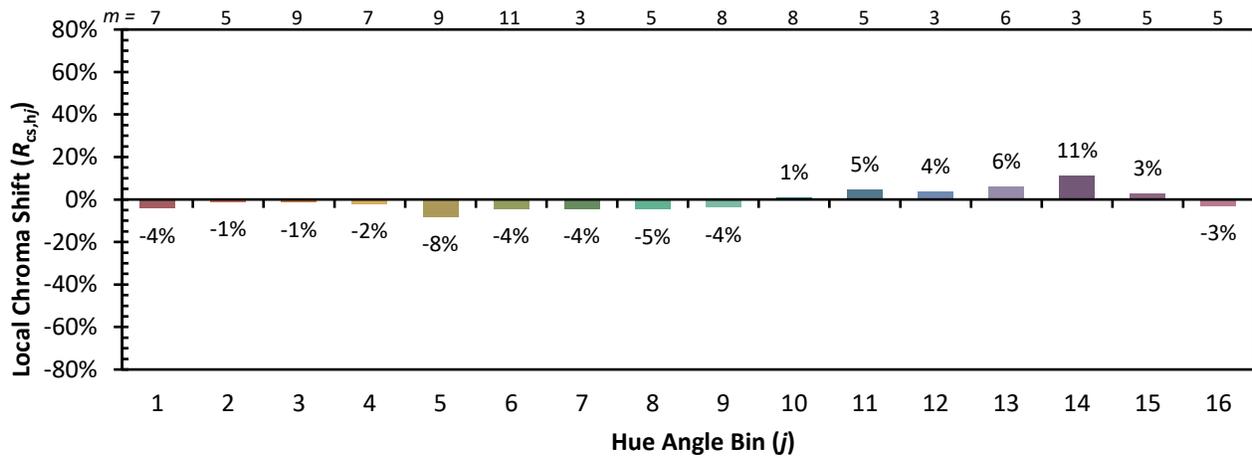


Individual Sample Fidelity Index ($R_{f,i}$)

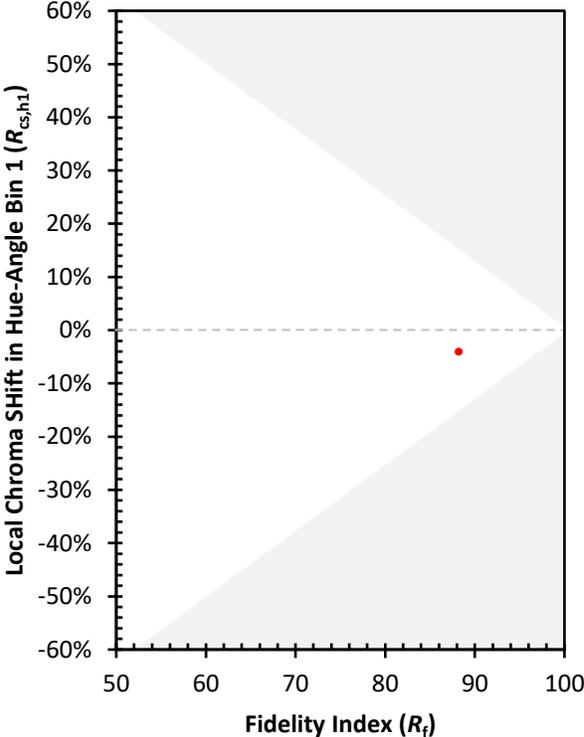
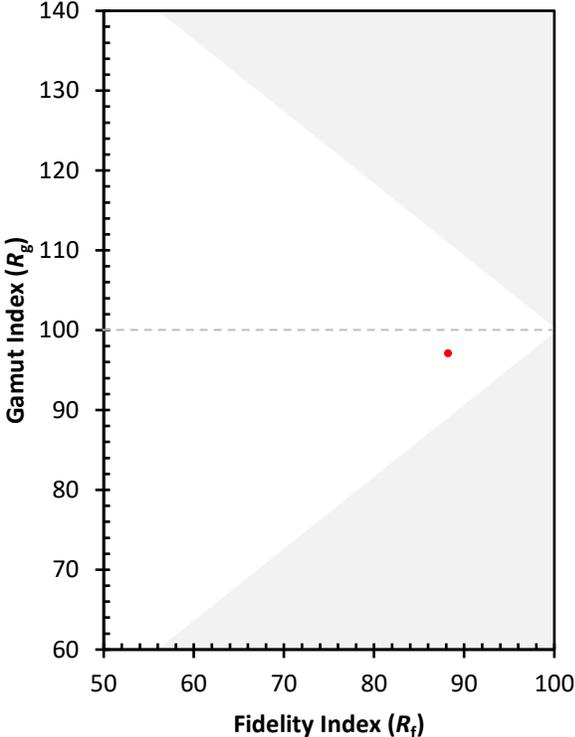
CES01 = 85	CES26 = 97	CES51 = 91	CES76 = 88
CES02 = 60	CES27 = 83	CES52 = 96	CES77 = 86
CES03 = 31	CES28 = 97	CES53 = 92	CES78 = 83
CES04 = 68	CES29 = 88	CES54 = 86	CES79 = 94
CES05 = 47	CES30 = 74	CES55 = 82	CES80 = 93
CES06 = 49	CES31 = 90	CES56 = 86	CES81 = 81
CES07 = 40	CES32 = 96	CES57 = 83	CES82 = 96
CES08 = 39	CES33 = 86	CES58 = 83	CES83 = 94
CES09 = 29	CES34 = 96	CES59 = 94	CES84 = 91
CES10 = 72	CES35 = 97	CES60 = 87	CES85 = 80
CES11 = 55	CES36 = 67	CES61 = 87	CES86 = 86
CES12 = 61	CES37 = 96	CES62 = 72	CES87 = 93
CES13 = 42	CES38 = 68	CES63 = 86	CES88 = 94
CES14 = 74	CES39 = 96	CES64 = 81	CES89 = 88
CES15 = 71	CES40 = 96	CES65 = 83	CES90 = 90
CES16 = 46	CES41 = 88	CES66 = 76	CES91 = 60
CES17 = 48	CES42 = 97	CES67 = 76	CES92 = 77
CES18 = 55	CES43 = 97	CES68 = 82	CES93 = 85
CES19 = 69	CES44 = 99	CES69 = 82	CES94 = 81
CES20 = 64	CES45 = 98	CES70 = 82	CES95 = 80
CES21 = 84	CES46 = 93	CES71 = 68	CES96 = 93
CES22 = 76	CES47 = 87	CES72 = 91	CES97 = 95
CES23 = 91	CES48 = 79	CES73 = 77	CES98 = 93
CES24 = 89	CES49 = 95	CES74 = 86	CES99 = 91
CES25 = 69	CES50 = 92	CES75 = 74	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)