

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: P1357497

Luminaire Tested: 8ASL4-20VHE-3-65-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357497
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: 8ASL4-20VHE-3-65-UNV
Description: 8FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 6500K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

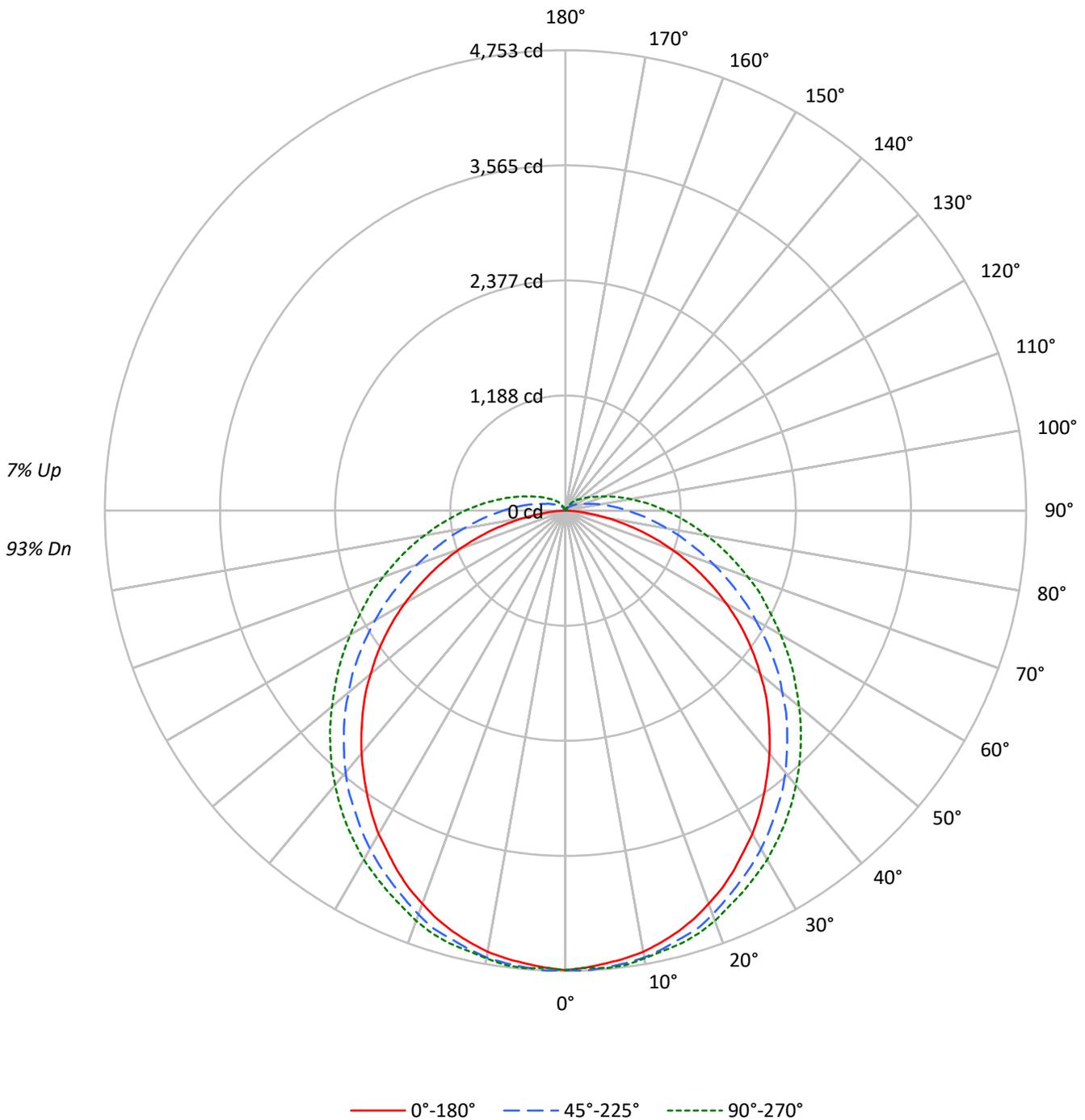
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16128.0 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: 7.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 134.4
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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CATALOG NUMBER: 8ASL4-20VHE-3-65-UNV

Luminous Intensity Polar Plot





TEST NUMBER: P1357497

CATALOG NUMBER: 8ASL4-20VHE-3-65-UNV

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°	19197	19197	19197
5°	19048	18851	18758
10°	18963	18499	18283
15°	18775	18058	17881
20°	18515	17635	17428
25°	18209	17100	16912
30°	17884	16637	16475
35°	17477	16112	15990
40°	17110	15632	15478
45°	16714	15049	14965
50°	16263	14422	14432
55°	15779	13825	13952
60°	15143	13126	13465
65°	14331	12455	13061
70°	13293	11794	12745
75°	11763	11197	12529
80°	9415	10767	12435
85°	5976	10718	12620

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16714 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	449.8	2.8
10°-20°	1291.5	8.0
20°-30°	1952.6	12.1
30°-40°	2364.3	14.7
40°-50°	2483.2	15.4
50°-60°	2316.8	14.4
60°-70°	1914.7	11.9
70°-80°	1378.6	8.5
80°-90°	856.7	5.3
90°-100°	502.0	3.1
100°-110°	287.2	1.8
110°-120°	162.1	1.0
120°-130°	93.3	0.6
130°-140°	50.3	0.3
140°-150°	21.2	0.1
150°-160°	3.9	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3693.9	22.9
0°-40°	6058.2	37.6
0°-60°	10858.2	67.3
0°-90°	15008.1	93.1
90°-120°	951.3	5.9
90°-150°	1116.0	6.9
90°-180°	1120.0	6.9
0°-180°	16128.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4744	4744	4744	4744	4744	
5°	4694	4734	4734	4734	4744	446
15°	4497	4556	4576	4605	4625	1268
25°	4102	4172	4240	4300	4339	1890
35°	3570	3668	3787	3895	3945	2235
45°	2958	3067	3235	3373	3432	2282
55°	2278	2406	2604	2791	2860	2035
65°	1538	1686	1943	2189	2278	1522
75°	789	986	1331	1617	1736	834
85°	148	444	838	1134	1243	181
90°	0	266	641	917	1036	7
95°	0	168	483	740	848	0
105°	0	59	266	464	542	0
115°	0	30	158	286	335	0
125°	0	20	99	187	217	0
135°	0	0	59	118	148	0
145°	0	0	30	69	79	0
155°	0	0	0	20	30	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°	4743.5	4743.5	4743.5	4743.5	4743.5
2.5°	4723.7	4753.3	4753.3	4723.7	4723.7
5°	4694.2	4733.6	4733.6	4733.6	4743.5
7.5°	4664.6	4713.9	4713.9	4713.9	4733.6
10°	4625.1	4674.4	4684.3	4684.3	4694.2
12.5°	4566.0	4625.1	4635.0	4644.8	4654.7
15°	4496.9	4556.1	4575.8	4605.4	4625.1
17.5°	4418.0	4487.1	4526.5	4556.1	4575.8
20°	4319.4	4388.4	4437.7	4477.2	4506.8
22.5°	4220.8	4280.0	4339.1	4388.4	4418.0
25°	4102.5	4171.5	4240.5	4299.7	4339.1
27.5°	3974.3	4053.1	4141.9	4210.9	4250.4
30°	3855.9	3934.8	4033.4	4122.2	4161.6
32.5°	3717.8	3806.6	3915.1	4003.8	4053.1
35°	3569.9	3668.5	3786.9	3895.4	3944.7
37.5°	3422.0	3520.6	3668.5	3777.0	3826.3
40°	3274.1	3372.7	3530.5	3648.8	3698.1
42.5°	3116.3	3214.9	3382.6	3510.8	3569.9
45°	2958.5	3067.0	3234.6	3372.7	3431.9
47.5°	2800.7	2909.2	3086.7	3234.6	3293.8
50°	2623.2	2741.5	2919.1	3086.7	3145.9
52.5°	2455.6	2573.9	2771.1	2938.8	2997.9
55°	2278.0	2406.2	2603.5	2790.9	2859.9
57.5°	2100.5	2228.7	2435.8	2633.1	2712.0
60°	1913.2	2051.2	2268.2	2475.3	2564.0
62.5°	1725.8	1873.7	2110.4	2327.4	2416.1
65°	1538.4	1686.3	1942.7	2189.3	2278.0
67.5°	1351.0	1508.8	1785.0	2041.4	2149.8
70°	1163.7	1331.3	1627.2	1893.4	2001.9
72.5°	976.3	1153.8	1479.2	1755.4	1863.9
75°	788.9	986.2	1331.3	1617.3	1735.7
77.5°	601.6	828.4	1203.1	1489.1	1607.5
80°	433.9	690.3	1065.1	1360.9	1479.2
82.5°	276.1	552.3	946.7	1242.6	1360.9
85°	147.9	443.8	838.2	1134.1	1242.6
87.5°	49.3	345.2	729.8	1025.6	1134.1
90°	0.0	266.3	641.0	917.1	1035.5
92.5°	0.0	207.1	562.1	828.4	936.9
95°	0.0	167.6	483.2	739.6	848.1
97.5°	0.0	138.1	424.1	660.7	759.3
100°	0.0	108.5	364.9	591.7	680.5
102.5°	0.0	88.8	315.6	522.7	611.4
105°	0.0	59.2	266.3	463.5	542.4
107.5°	0.0	49.3	226.8	414.2	483.2
110°	0.0	39.4	207.1	355.0	424.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	29.6	187.4	315.6	384.6
115°	0.0	29.6	157.8	286.0	335.3
117.5°	0.0	29.6	138.1	256.4	305.7
120°	0.0	19.7	128.2	226.8	276.1
122.5°	0.0	19.7	108.5	207.1	246.5
125°	0.0	19.7	98.6	187.4	217.0
127.5°	0.0	9.9	88.8	167.6	197.2
130°	0.0	9.9	78.9	147.9	177.5
132.5°	0.0	9.9	69.0	138.1	167.6
135°	0.0	0.0	59.2	118.3	147.9
137.5°	0.0	0.0	49.3	108.5	128.2
140°	0.0	0.0	39.4	88.8	118.3
142.5°	0.0	0.0	29.6	78.9	98.6
145°	0.0	0.0	29.6	69.0	78.9
147.5°	0.0	0.0	19.7	49.3	69.0
150°	0.0	0.0	9.9	39.4	49.3
152.5°	0.0	0.0	0.0	29.6	39.4
155°	0.0	0.0	0.0	19.7	29.6
157.5°	0.0	0.0	0.0	0.0	9.9
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	21.61	22.09	21.68	23.22	22.15	23.68	24.16
	3H	21.11	22.51	21.59	22.98	23.50	24.17	25.57	24.65	26.03	26.56
	4H	21.59	22.92	22.09	23.40	23.94	25.38	26.71	25.88	27.19	27.73
	6H	21.87	23.11	22.38	23.60	24.15	26.66	27.90	27.17	28.39	28.95
	8H	21.92	23.11	22.44	23.62	24.18	27.33	28.52	27.86	29.04	29.60
	12H	21.93	23.07	22.46	23.58	24.17	28.08	29.22	28.61	29.73	30.32
4H	2H	20.50	21.83	21.00	22.31	22.85	22.12	23.45	22.62	23.93	24.47
	3H	22.23	23.37	22.75	23.89	24.45	24.82	25.96	25.34	26.48	27.04
	4H	22.84	23.88	23.37	24.41	25.00	26.21	27.25	26.74	27.78	28.37
	6H	23.23	24.15	23.79	24.71	25.32	27.68	28.60	28.23	29.16	29.76
	8H	23.33	24.19	23.89	24.75	25.37	28.45	29.32	29.01	29.88	30.50
	12H	23.37	24.16	23.96	24.75	25.37	29.33	30.11	29.91	30.70	31.32
8H	4H	23.53	24.39	24.09	24.95	25.57	26.42	27.28	26.98	27.85	28.47
	6H	24.11	24.84	24.70	25.44	26.07	28.06	28.79	28.65	29.40	30.02
	8H	24.29	24.95	24.89	25.56	26.20	28.98	29.64	29.58	30.25	30.89
	12H	24.40	24.99	25.01	25.60	26.30	30.04	30.63	30.64	31.23	31.93
12H	4H	23.73	24.51	24.31	25.10	25.73	26.43	27.21	27.01	27.80	28.43
	6H	24.41	25.07	25.01	25.68	26.32	28.10	28.76	28.70	29.37	30.01
	8H	24.69	25.28	25.29	25.88	26.58	29.08	29.67	29.69	30.28	30.98

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

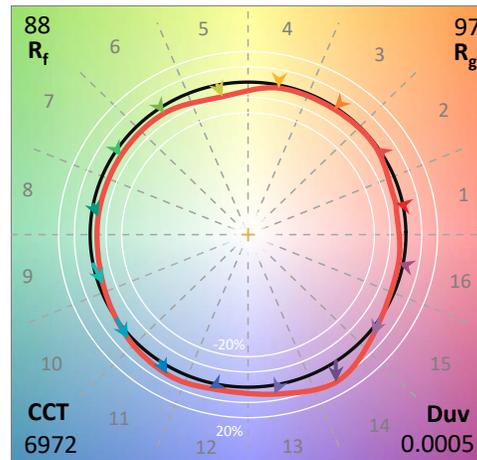
Test Information

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

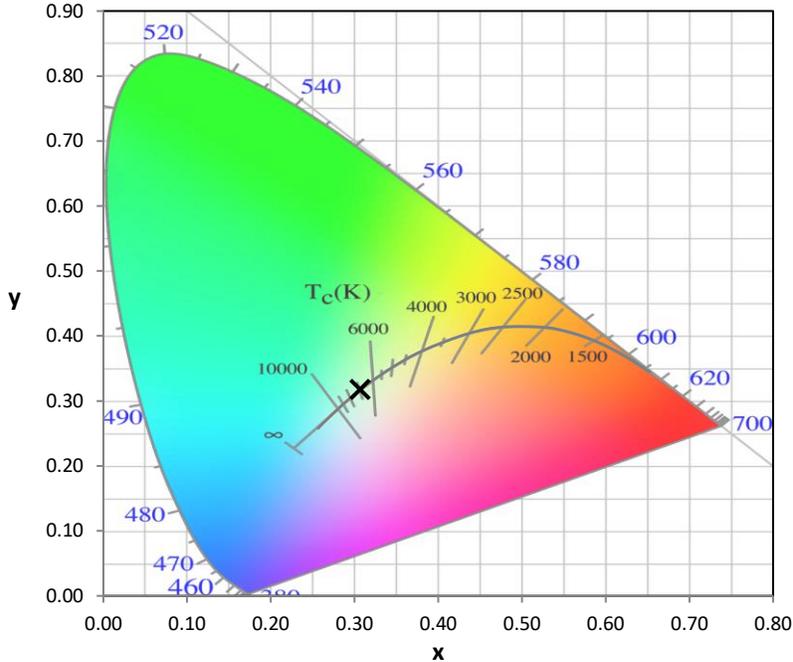
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.1

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



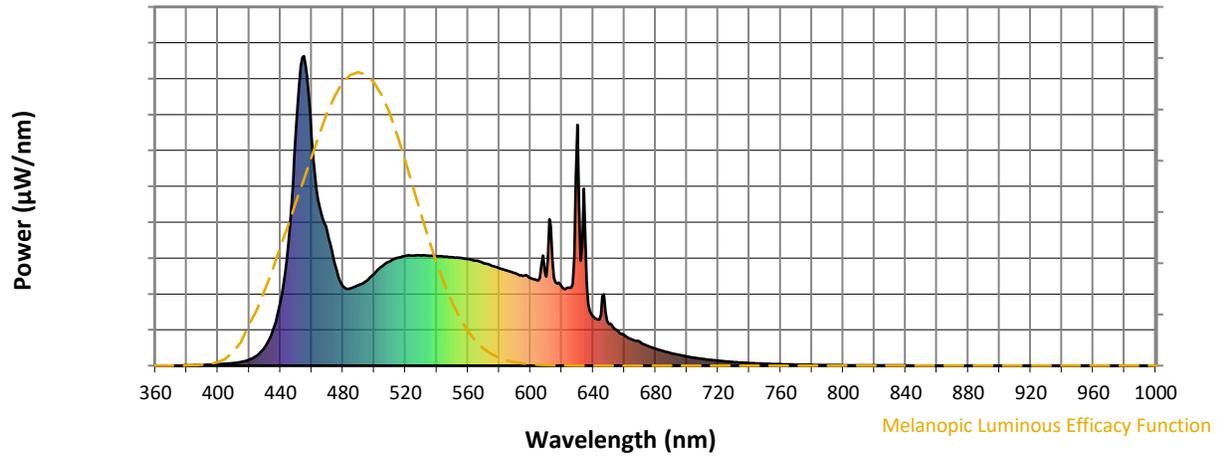
Scotopic Lumens: NR

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



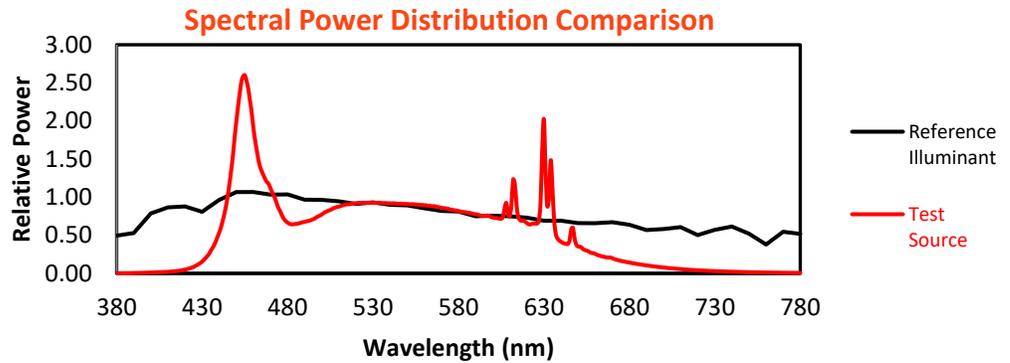
Melanopic Lumens: NR

M/P: 5.67

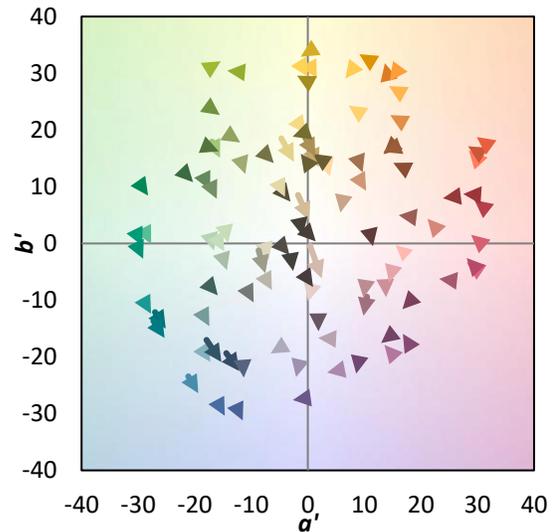
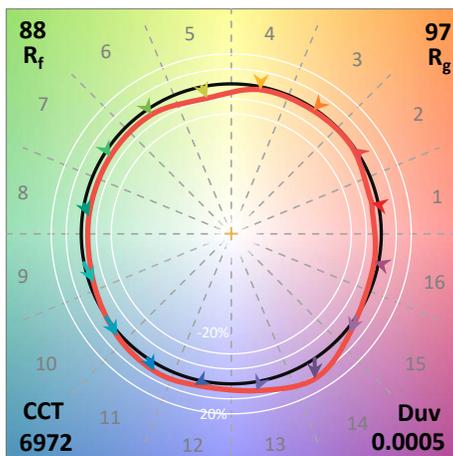
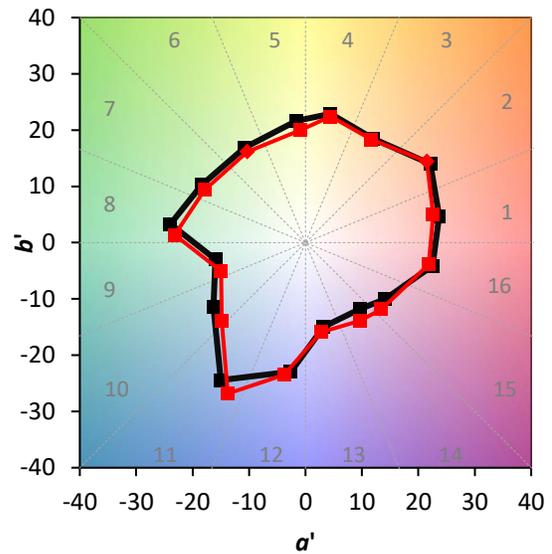
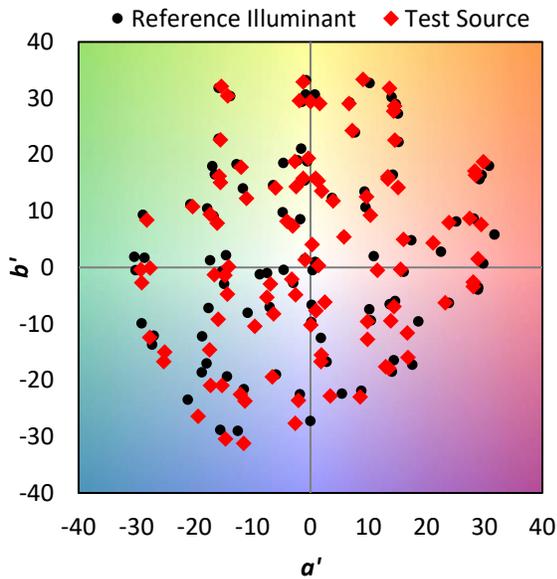
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	260	NR	620	255	NR	750	6	NR	880	0	NR
365	0	NR	495	274	NR	625	252	NR	755	6	NR	885	0	NR
370	0	NR	500	297	NR	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 $R_a = 94.3$
 $R_9 = 82.6$

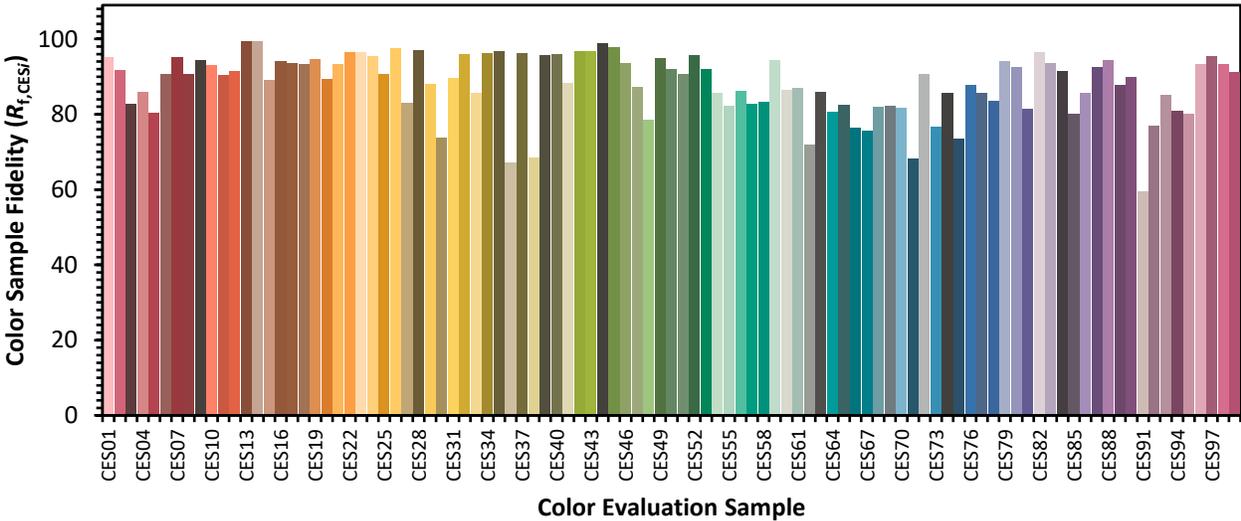


Color Vector Graphics

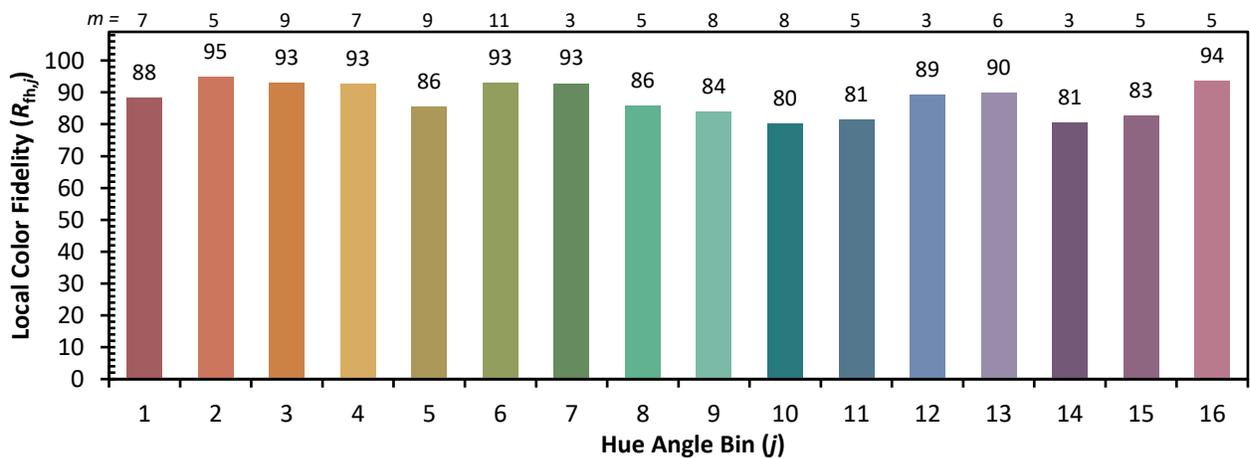
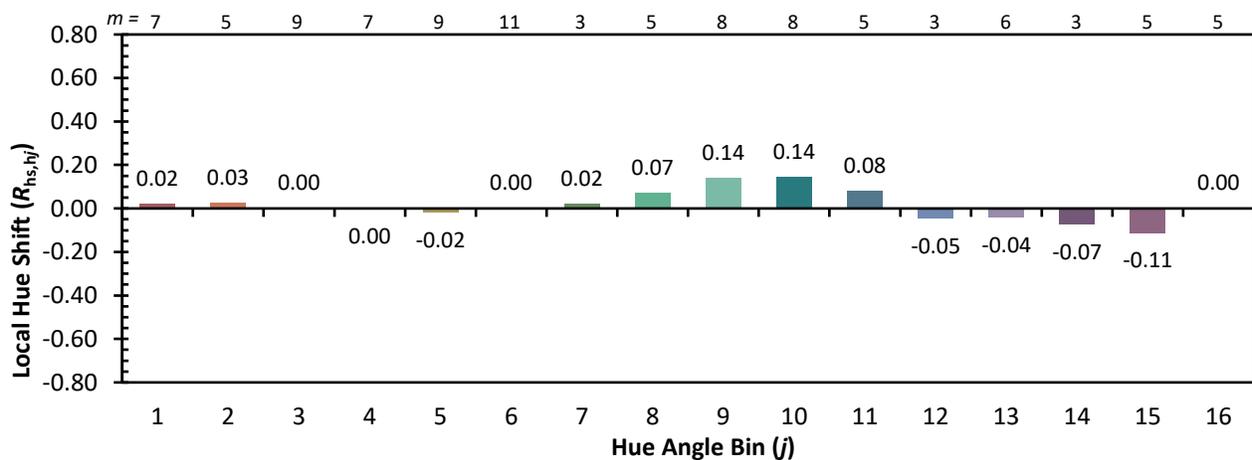
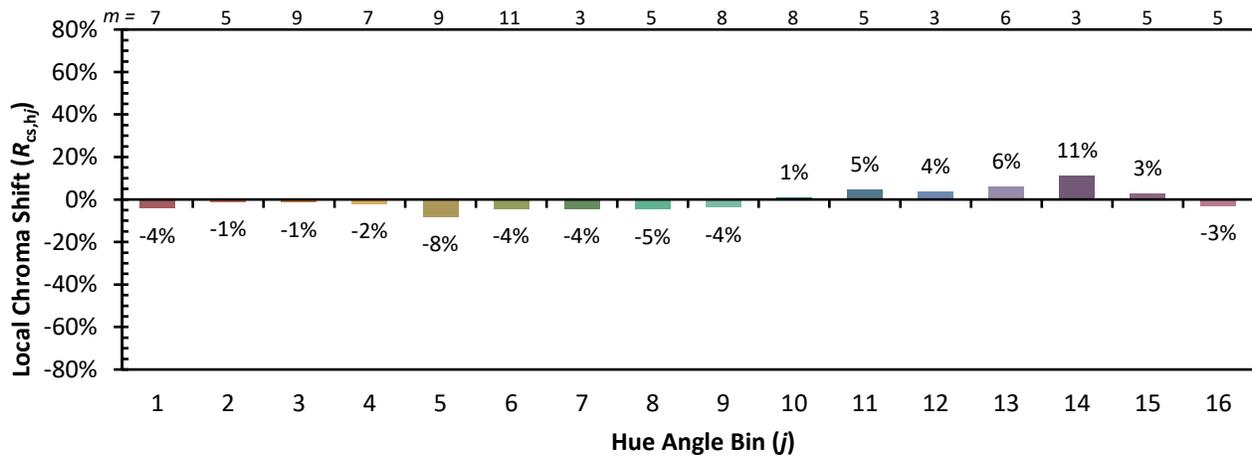


Individual Sample Fidelity Index ($R_{f,i}$)

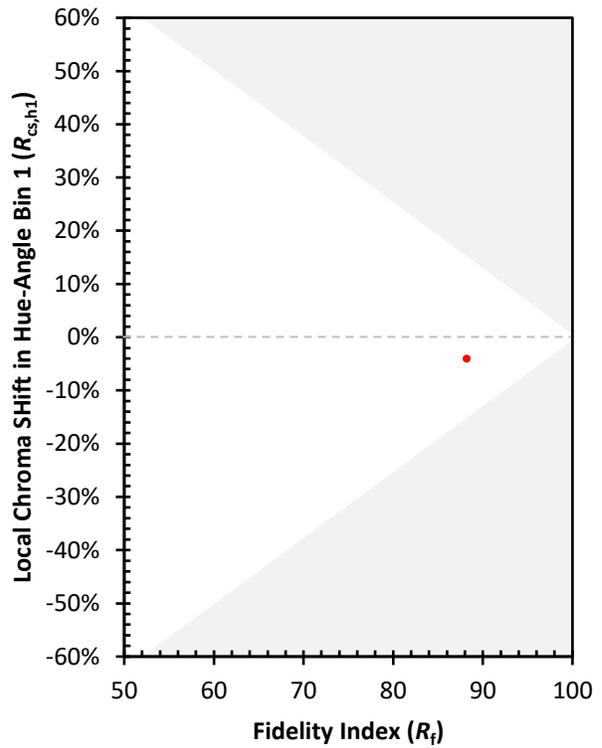
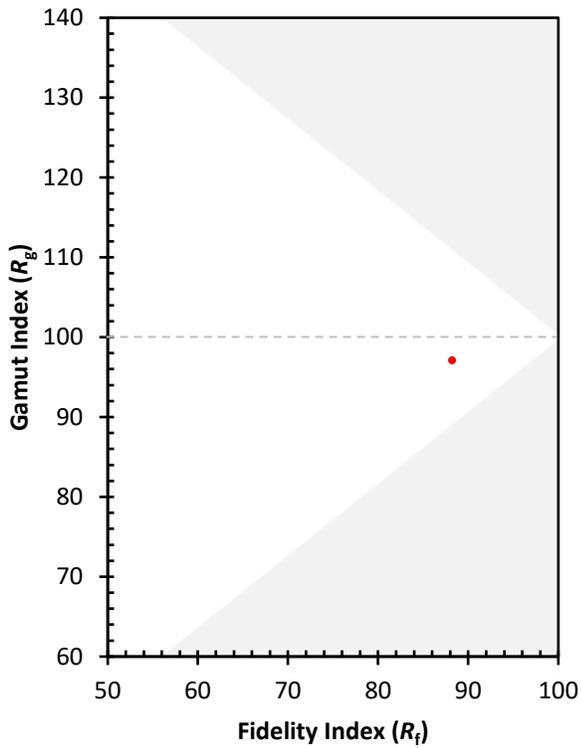
CES01 = 85	CES26 = 97	CES51 = 91	CES76 = 88
CES02 = 60	CES27 = 83	CES52 = 96	CES77 = 86
CES03 = 31	CES28 = 97	CES53 = 92	CES78 = 83
CES04 = 68	CES29 = 88	CES54 = 86	CES79 = 94
CES05 = 47	CES30 = 74	CES55 = 82	CES80 = 93
CES06 = 49	CES31 = 90	CES56 = 86	CES81 = 81
CES07 = 40	CES32 = 96	CES57 = 83	CES82 = 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)