

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: P1357035

Luminaire Tested: 3ASL4-20VHE-3-35-UNV

Issue Date: 2/17/2026

Test Information

Test Method: LM-79-2019
Report Number: P1357035
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: 3ASL4-20VHE-3-35-UNV
Description: 3FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND 3500K LEDS 3 ROW
Light Source: -
Ballast/Driver: -

Summary

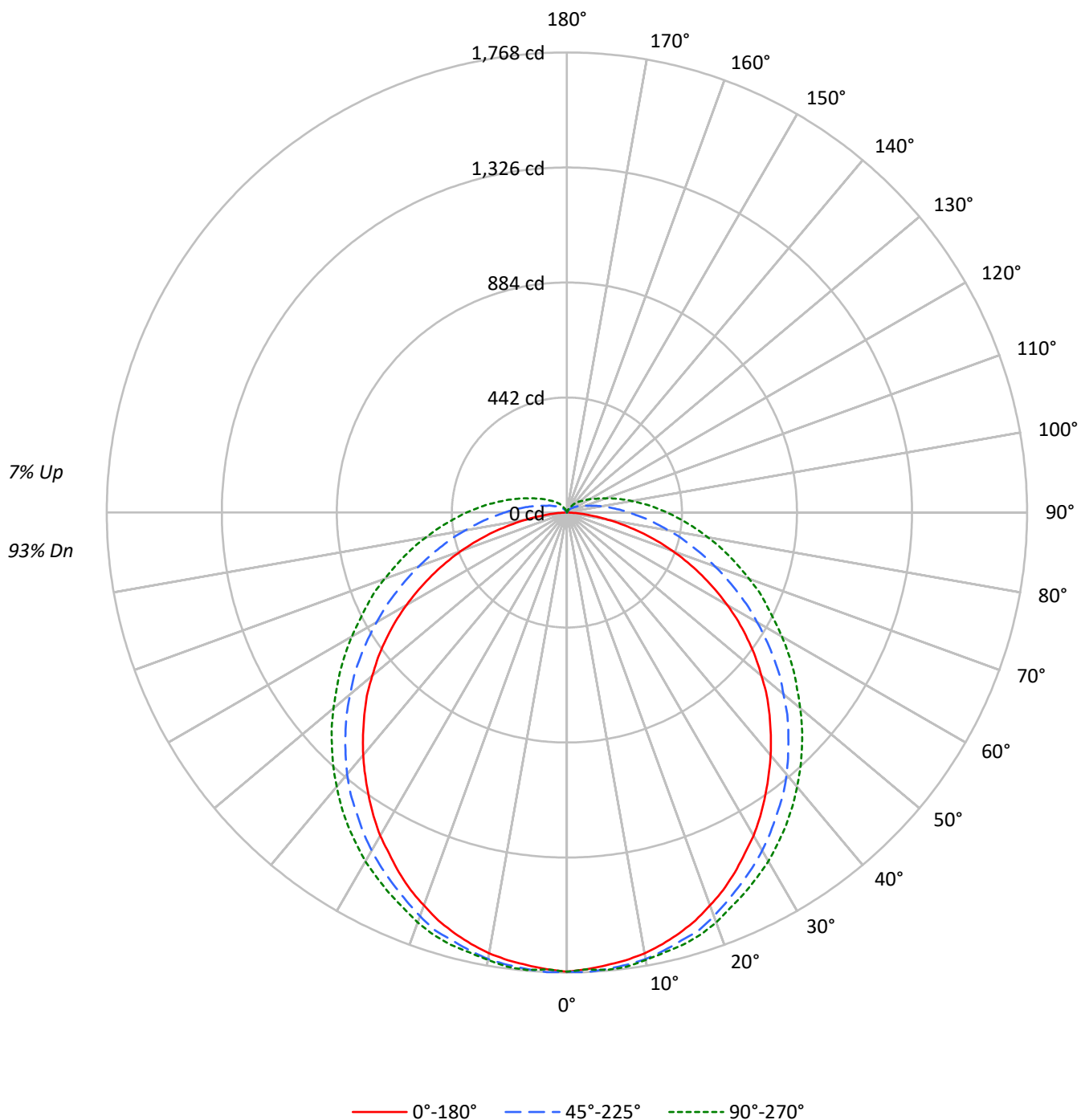
Lumens per Lamp: N/A
Luminaire Lumens: 6000.0 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2.98' x H: 0.1')
CIE Type: Direct

Input Watts (W): 50.4
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: 3ASL4-20VHE-3-35-UNV

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19128	19128	19128
5°	18943	18758	18690
10°	18823	18385	18217
15°	18600	17923	17817
20°	18303	17480	17364
25°	17960	16928	16851
30°	17599	16447	16416
35°	17154	15905	15932
40°	16743	15408	15423
45°	16301	14809	14911
50°	15798	14165	14379
55°	15254	13550	13901
60°	14548	12832	13417
65°	13654	12139	13015
70°	12517	11452	12700
75°	10873	10821	12483
80°	8408	10333	12391
85°	4887	10182	12576

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 16301 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.3	2.8
10°-20°	480.5	8.0
20°-30°	726.4	12.1
30°-40°	879.6	14.7
40°-50°	923.8	15.4
50°-60°	861.9	14.4
60°-70°	712.3	11.9
70°-80°	512.9	8.5
80°-90°	318.7	5.3
90°-100°	186.8	3.1
100°-110°	106.8	1.8
110°-120°	60.3	1.0
120°-130°	34.7	0.6
130°-140°	18.7	0.3
140°-150°	7.9	0.1
150°-160°	1.5	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1374.2	22.9
0°-40°	2253.8	37.6
0°-60°	4039.5	67.3
0°-90°	5583.4	93.1
90°-120°	353.9	5.9
90°-150°	415.2	6.9
90°-180°	417.0	7.0
0°-180°	6000.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1765	1765	1765	1765	1765	
5°	1746	1761	1761	1761	1765	166
15°	1673	1695	1702	1713	1721	472
25°	1526	1552	1578	1600	1614	703
35°	1328	1365	1409	1449	1468	831
45°	1101	1141	1203	1255	1277	849
55°	848	895	969	1038	1064	757
65°	572	627	723	814	848	566
75°	294	367	495	602	646	310
85°	55	165	312	422	462	67
90°	0	99	238	341	385	3
95°	0	62	180	275	316	0
105°	0	22	99	172	202	0
115°	0	11	59	106	125	0
125°	0	7	37	70	81	0
135°	0	0	22	44	55	0
145°	0	0	11	26	29	0
155°	0	0	0	7	11	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°	1764.7	1764.7	1764.7	1764.7	1764.7
2.5°	1757.3	1768.3	1768.3	1757.3	1757.3
5°	1746.3	1761.0	1761.0	1761.0	1764.7
7.5°	1735.3	1753.7	1753.7	1753.7	1761.0
10°	1720.7	1739.0	1742.7	1742.7	1746.3
12.5°	1698.6	1720.7	1724.3	1728.0	1731.7
15°	1673.0	1695.0	1702.3	1713.3	1720.7
17.5°	1643.6	1669.3	1684.0	1695.0	1702.3
20°	1606.9	1632.6	1650.9	1665.6	1676.6
22.5°	1570.2	1592.2	1614.3	1632.6	1643.6
25°	1526.2	1551.9	1577.6	1599.6	1614.3
27.5°	1478.5	1507.9	1540.9	1566.6	1581.2
30°	1434.5	1463.8	1500.5	1533.5	1548.2
32.5°	1383.1	1416.1	1456.5	1489.5	1507.9
35°	1328.1	1364.8	1408.8	1449.2	1467.5
37.5°	1273.1	1309.8	1364.8	1405.1	1423.5
40°	1218.0	1254.7	1313.4	1357.4	1375.8
42.5°	1159.3	1196.0	1258.4	1306.1	1328.1
45°	1100.6	1141.0	1203.4	1254.7	1276.7
47.5°	1041.9	1082.3	1148.3	1203.4	1225.4
50°	975.9	1019.9	1086.0	1148.3	1170.3
52.5°	913.5	957.6	1030.9	1093.3	1115.3
55°	847.5	895.2	968.6	1038.3	1063.9
57.5°	781.4	829.1	906.2	979.6	1008.9
60°	711.7	763.1	843.8	920.9	953.9
62.5°	642.0	697.1	785.1	865.8	898.8
65°	572.3	627.4	722.7	814.5	847.5
67.5°	502.6	561.3	664.0	759.4	799.8
70°	432.9	495.3	605.3	704.4	744.8
72.5°	363.2	429.2	550.3	653.0	693.4
75°	293.5	366.9	495.3	601.7	645.7
77.5°	223.8	308.2	447.6	554.0	598.0
80°	161.4	256.8	396.2	506.3	550.3
82.5°	102.7	205.5	352.2	462.3	506.3
85°	55.0	165.1	311.8	421.9	462.3
87.5°	18.3	128.4	271.5	381.6	421.9
90°	0.0	99.1	238.5	341.2	385.2
92.5°	0.0	77.0	209.1	308.2	348.5
95°	0.0	62.4	179.8	275.2	315.5
97.5°	0.0	51.4	157.8	245.8	282.5
100°	0.0	40.4	135.7	220.1	253.1
102.5°	0.0	33.0	117.4	194.4	227.5
105°	0.0	22.0	99.1	172.4	201.8
107.5°	0.0	18.3	84.4	154.1	179.8
110°	0.0	14.7	77.0	132.1	157.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	11.0	69.7	117.4	143.1
115°	0.0	11.0	58.7	106.4	124.7
117.5°	0.0	11.0	51.4	95.4	113.7
120°	0.0	7.3	47.7	84.4	102.7
122.5°	0.0	7.3	40.4	77.0	91.7
125°	0.0	7.3	36.7	69.7	80.7
127.5°	0.0	3.7	33.0	62.4	73.4
130°	0.0	3.7	29.4	55.0	66.0
132.5°	0.0	3.7	25.7	51.4	62.4
135°	0.0	0.0	22.0	44.0	55.0
137.5°	0.0	0.0	18.3	40.4	47.7
140°	0.0	0.0	14.7	33.0	44.0
142.5°	0.0	0.0	11.0	29.4	36.7
145°	0.0	0.0	11.0	25.7	29.4
147.5°	0.0	0.0	7.3	18.3	25.7
150°	0.0	0.0	3.7	14.7	18.3
152.5°	0.0	0.0	0.0	11.0	14.7
155°	0.0	0.0	0.0	7.3	11.0
157.5°	0.0	0.0	0.0	0.0	3.7
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	19.58	21.12	20.04	21.57	22.05	21.57	23.11	22.04	23.57	24.05
	3H	21.07	22.48	21.55	22.94	23.47	24.02	25.43	24.51	25.89	26.42
	4H	21.55	22.89	22.06	23.37	23.91	25.21	26.54	25.71	27.03	27.56
	6H	21.83	23.07	22.35	23.57	24.12	26.45	27.69	26.96	28.18	28.74
	8H	21.88	23.07	22.41	23.59	24.15	27.08	28.27	27.61	28.79	29.35
	12H	21.90	23.04	22.43	23.55	24.14	27.77	28.91	28.30	29.42	30.01
4H	2H	20.45	21.78	20.95	22.26	22.80	22.01	23.34	22.51	23.82	24.36
	3H	22.18	23.32	22.70	23.84	24.40	24.69	25.82	25.20	26.35	26.91
	4H	22.79	23.83	23.32	24.36	24.95	26.04	27.08	26.58	27.62	28.21
	6H	23.19	24.10	23.74	24.66	25.27	27.47	28.39	28.03	28.95	29.56
	8H	23.28	24.14	23.84	24.70	25.32	28.21	29.07	28.77	29.64	30.26
	12H	23.32	24.11	23.91	24.70	25.32	29.02	29.81	29.61	30.40	31.02
8H	4H	23.46	24.32	24.02	24.89	25.51	26.26	27.13	26.82	27.69	28.31
	6H	24.04	24.77	24.63	25.38	26.00	27.86	28.59	28.45	29.20	29.82
	8H	24.22	24.88	24.83	25.50	26.14	28.74	29.40	29.35	30.02	30.65
	12H	24.34	24.93	24.94	25.53	26.24	29.74	30.33	30.35	30.93	31.64
12H	4H	23.65	24.44	24.23	25.03	25.65	26.27	27.05	26.85	27.65	28.27
	6H	24.33	24.99	24.93	25.61	26.24	27.90	28.56	28.50	29.17	29.81
	8H	24.61	25.20	25.22	25.80	26.51	28.85	29.44	29.45	30.04	30.74

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

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-1

Test Date: 11/17/2025

Luminaire Tested: 4ASL-2-35-UNV-OPL-1_600mA

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

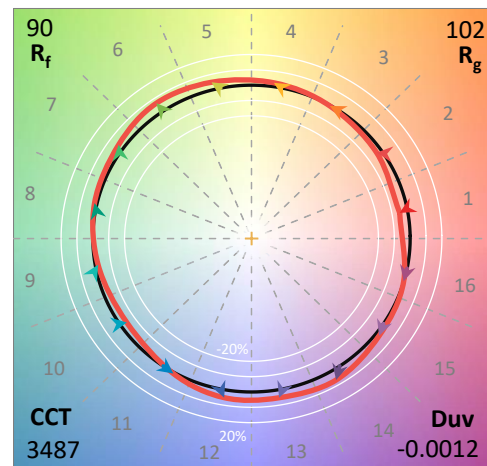
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2511-597-1
 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-2-35-UNV-OPL-1_600mA**
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND 3500K LEDS with 1 rows at 600mA

Spectral Parameters

CCT (K): 3487
 CIE u' : 0.2366
 CIE v' : 0.5099
 Duv: -0.0012
 CIE x: 0.4047
 CIE y: 0.3876
 CIE z: 0.2077
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 581
 Purity: 37.79273
 R_f: 90
 R_g: 102.4

CRI (Ra): 92.5
 R1: 94.7
 R2: 94.3
 R3: 92.9
 R4: 93.3
 R5: 93.9
 R6: 93.4
 R7: 92.5
 R8: 85.2
 R9: 61.3
 R10: 85.5
 R11: 93.7
 R12: 80.8
 R13: 94.3
 R14: 95.1
 R15: 90.9



Test Conditions

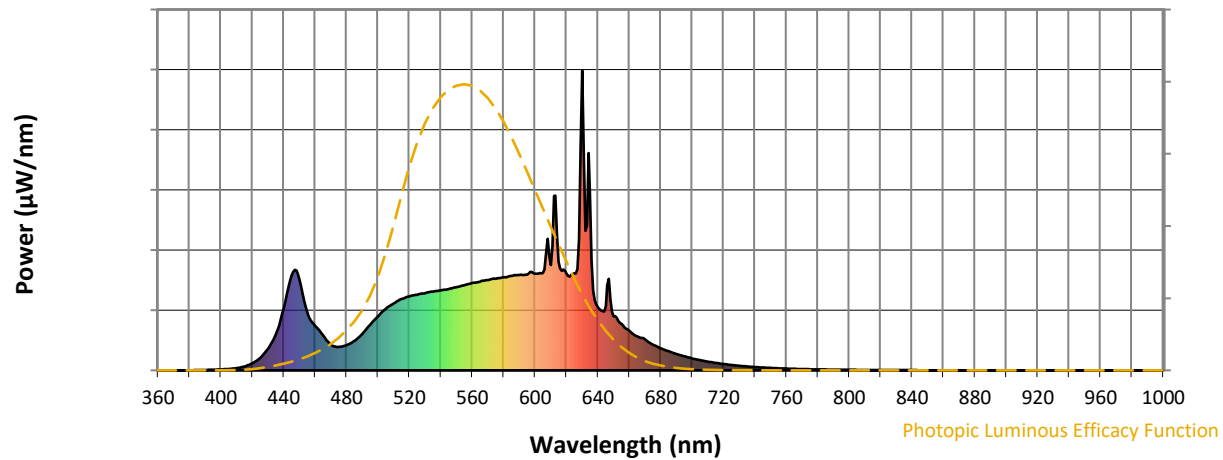
Stabilization Time: 31M
 Operation Time: 1H 31M
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2511-597-1

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

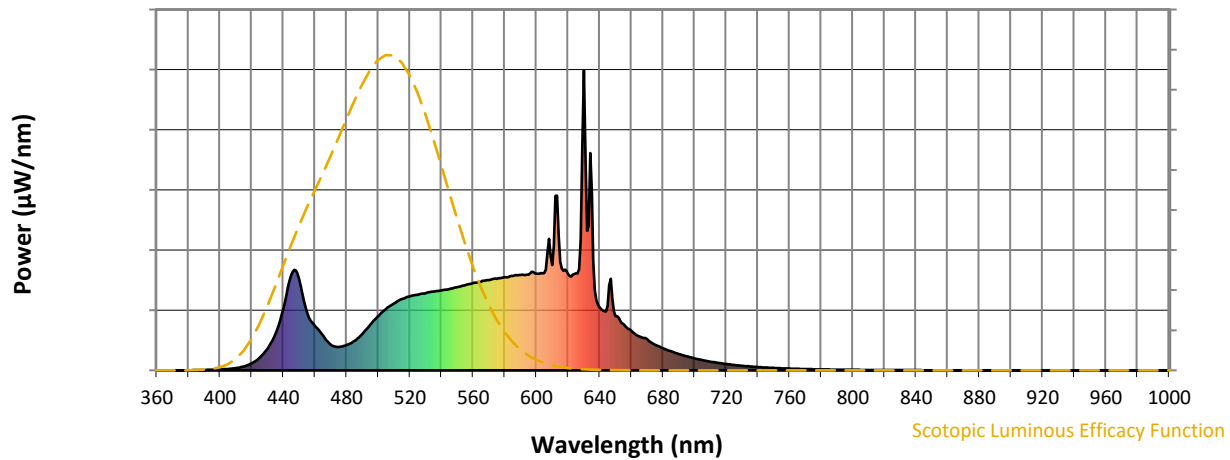


Photopic Lumens: NR

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	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-1

Scotopic Flux vs. Wavelength



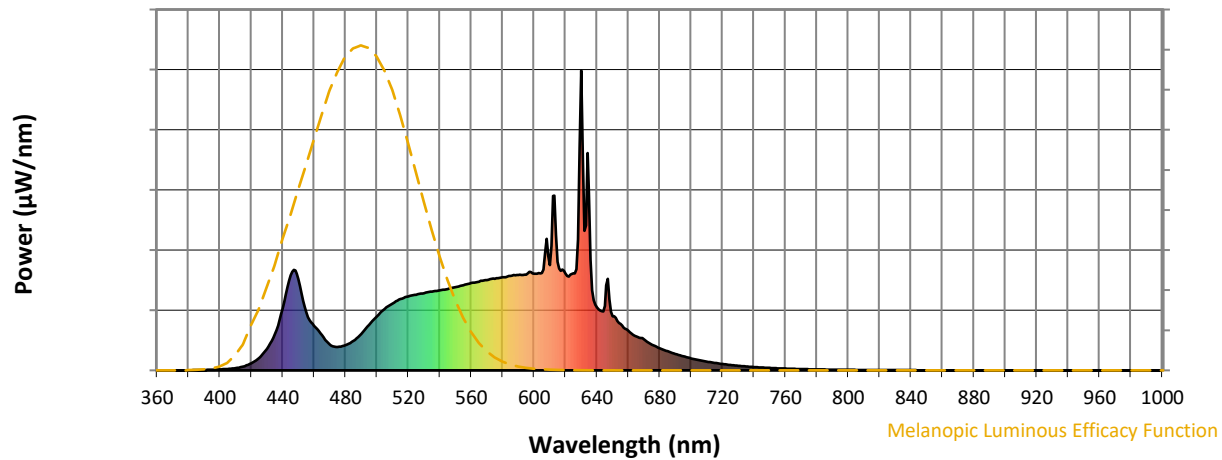
Scotopic Lumens: NR

S/P: 1.58

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	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.15

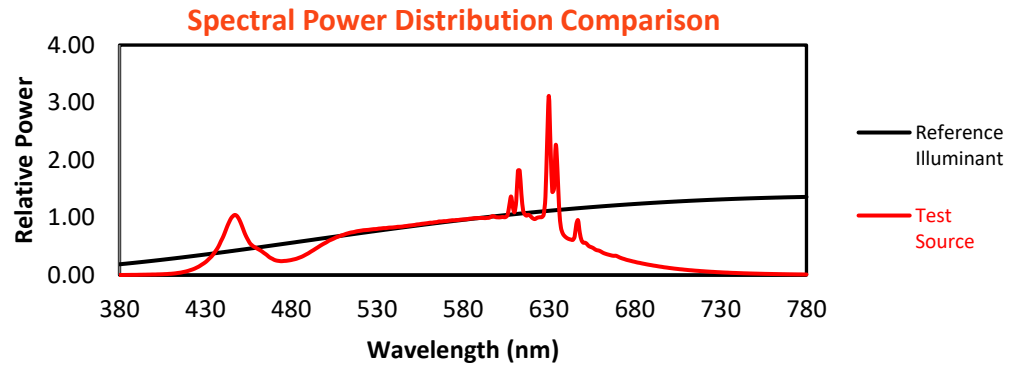
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	122	NR	620	322	NR	750	8	NR	880	0	NR
365	0	NR	495	152	NR	625	323	NR	755	7	NR	885	0	NR
370	0	NR	500	180	NR	630	1000	NR	760	6	NR	890	0	NR
375	0	NR	505	205	NR	635	589	NR	765	5	NR	895	0	NR
380	0	NR	510	223	NR	640	210	NR	770	4	NR	900	0	NR
385	1	NR	515	238	NR	645	214	NR	775	4	NR	905	0	NR
390	1	NR	520	247	NR	650	181	NR	780	3	NR	910	0	NR
395	2	NR	525	252	NR	655	155	NR	785	3	NR	915	0	NR
400	3	NR	530	258	NR	660	133	NR	790	2	NR	920	0	NR
405	5	NR	535	262	NR	665	113	NR	795	2	NR	925	0	NR
410	7	NR	540	267	NR	670	104	NR	800	2	NR	930	0	NR
415	13	NR	545	271	NR	675	86	NR	805	2	NR	935	0	NR
420	24	NR	550	277	NR	680	74	NR	810	1	NR	940	0	NR
425	42	NR	555	284	NR	685	64	NR	815	1	NR	945	0	NR
430	72	NR	560	291	NR	690	55	NR	820	1	NR	950	0	NR
435	122	NR	565	296	NR	695	47	NR	825	1	NR	955	0	NR
440	207	NR	570	301	NR	700	40	NR	830	1	NR	960	0	NR
445	317	NR	575	306	NR	705	34	NR	835	1	NR	965	0	NR
450	304	NR	580	310	NR	710	29	NR	840	1	NR	970	0	NR
455	193	NR	585	315	NR	715	25	NR	845	1	NR	975	0	NR
460	149	NR	590	318	NR	720	21	NR	850	0	NR	980	0	NR
465	117	NR	595	320	NR	725	18	NR	855	0	NR	985	0	NR
470	85	NR	600	322	NR	730	15	NR	860	0	NR	990	0	NR
475	78	NR	605	325	NR	735	13	NR	865	0	NR	995	0	NR
480	84	NR	610	351	NR	740	11	NR	870	0	NR	1000	0	NR
485	98	NR	615	362	NR	745	10	NR	875	0	NR			

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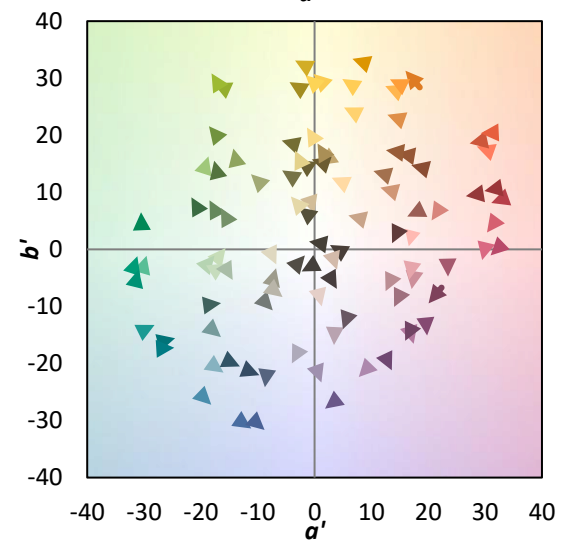
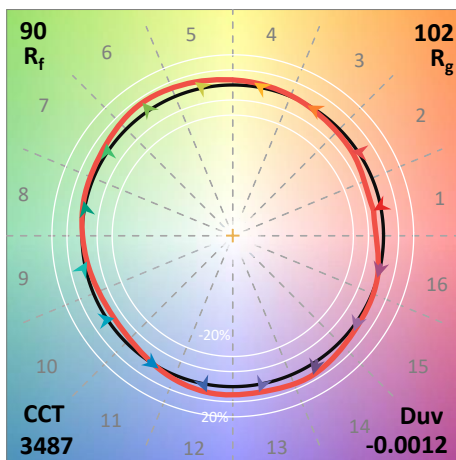
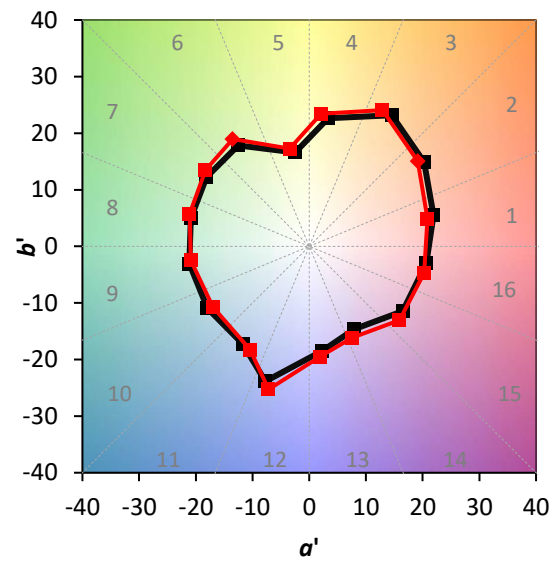
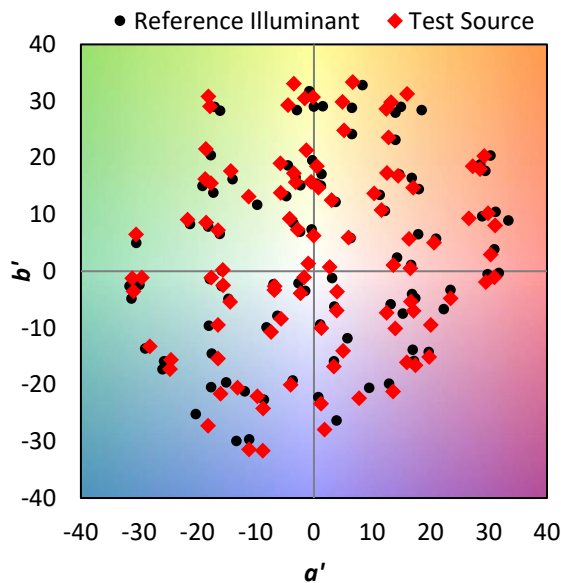
TM-30-18

Summary

$R_f = 90$
 $R_g = 102.4$
 $CIE R_a = 92.5$
 $R_9 = 61.3$

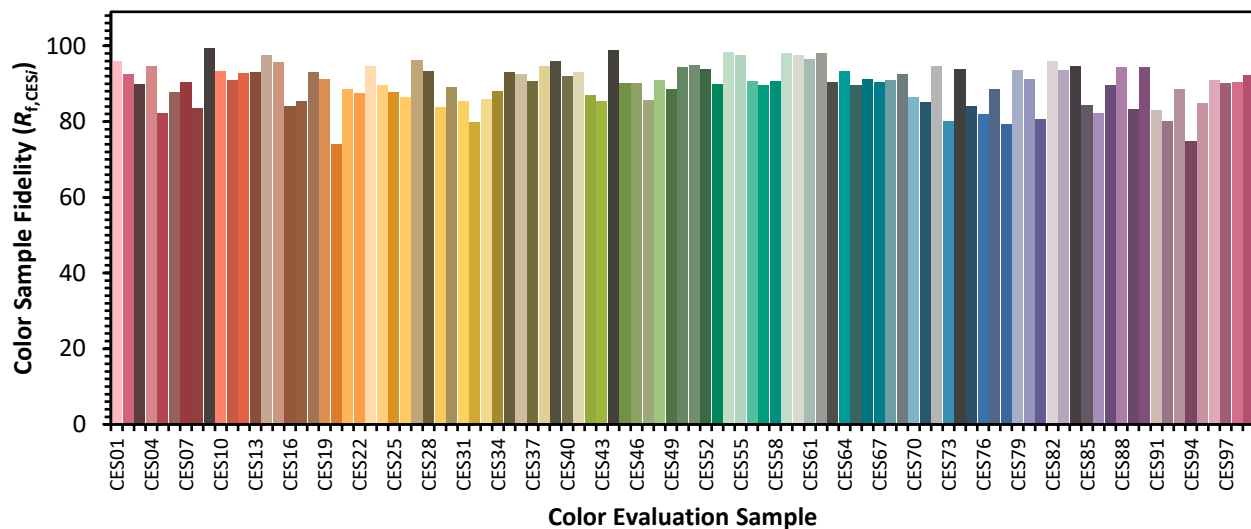


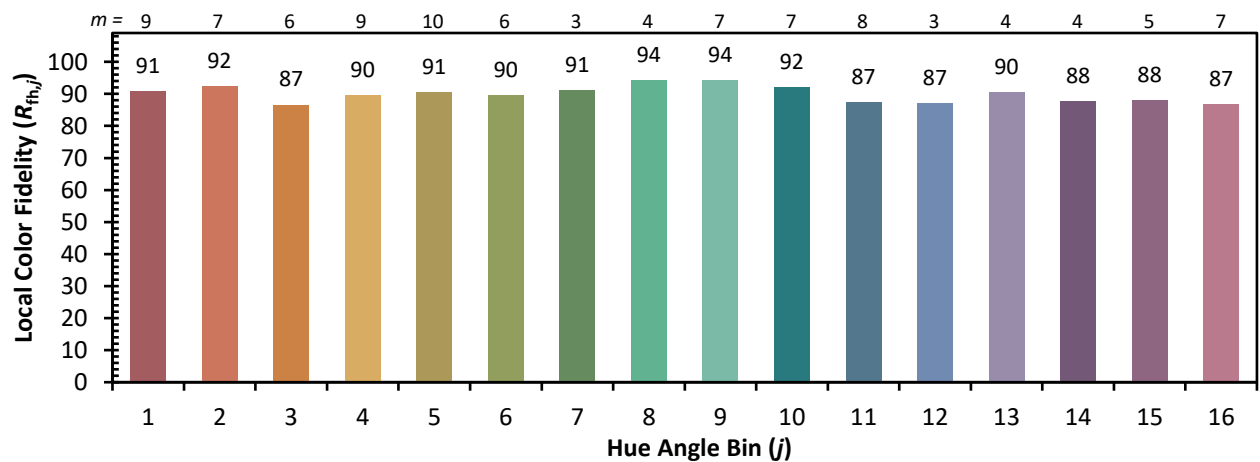
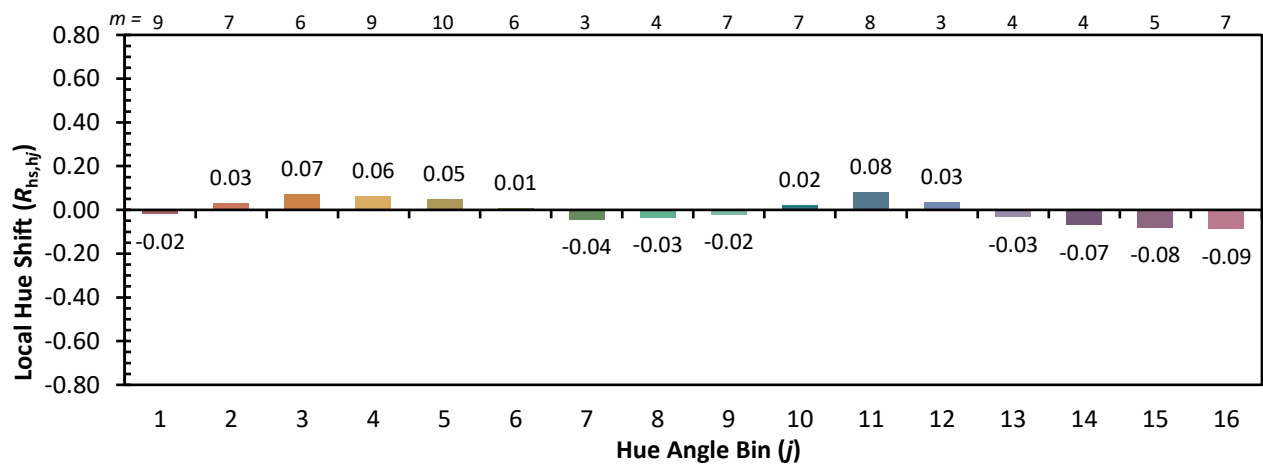
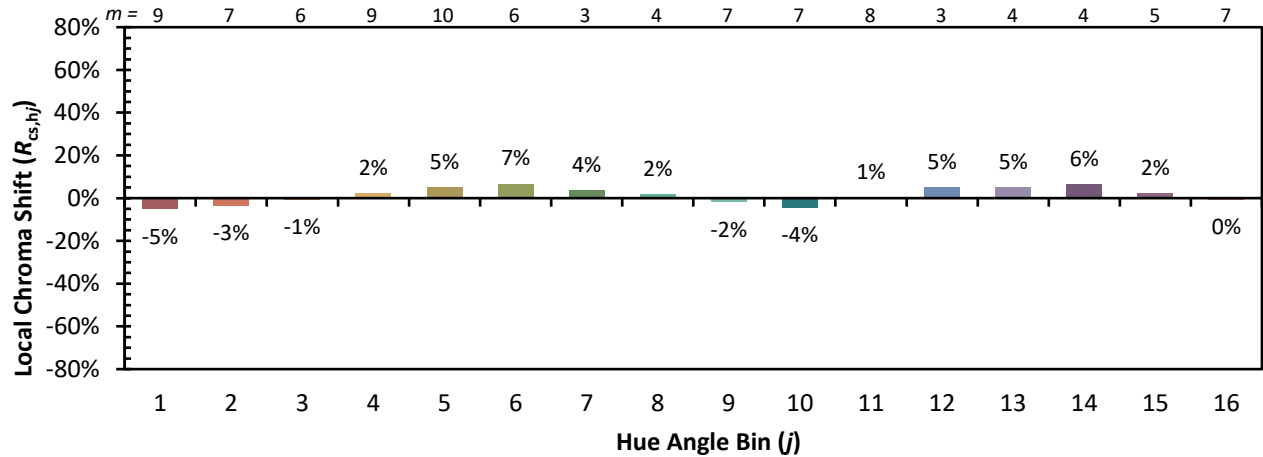
Color Vector Graphics



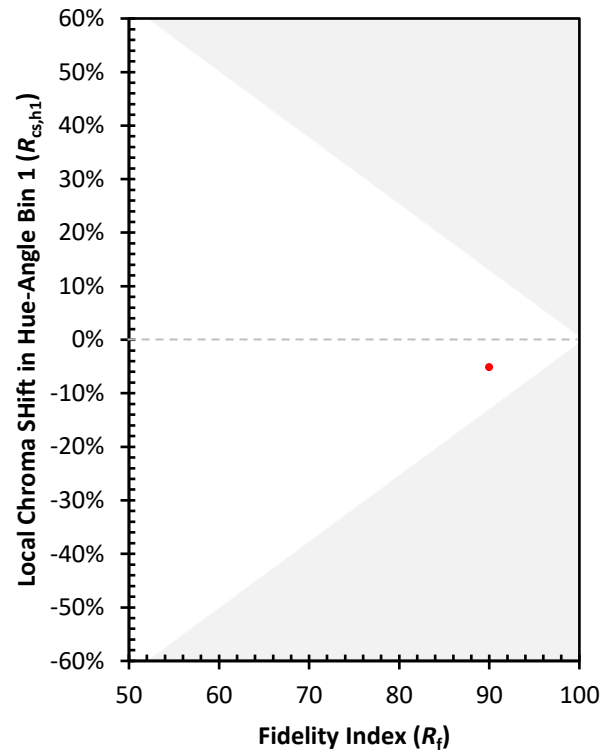
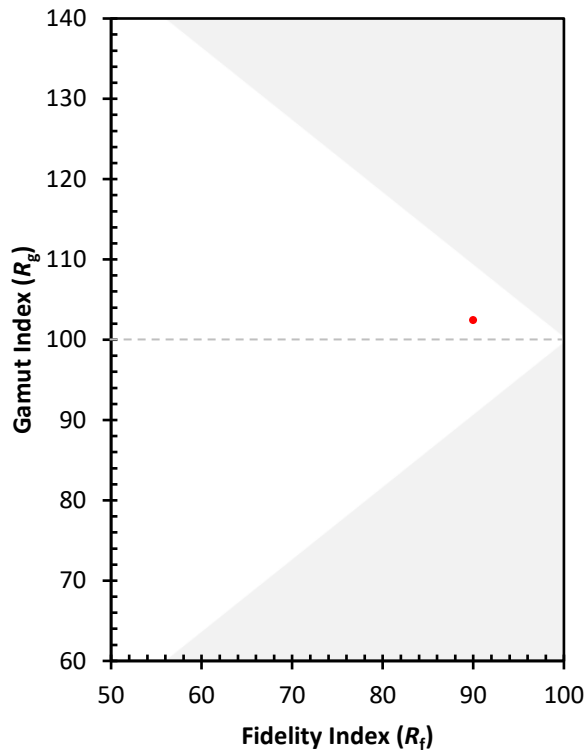
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 82
CES02 = 62	CES27 = 96	CES52 = 94	CES77 = 89
CES03 = 31	CES28 = 93	CES53 = 90	CES78 = 79
CES04 = 70	CES29 = 84	CES54 = 98	CES79 = 93
CES05 = 50	CES30 = 89	CES55 = 97	CES80 = 91
CES06 = 51	CES31 = 85	CES56 = 91	CES81 = 81
CES07 = 43	CES32 = 80	CES57 = 90	CES82 = 96
CES08 = 41	CES33 = 86	CES58 = 91	CES83 = 94
CES09 = 29	CES34 = 88	CES59 = 98	CES84 = 95
CES10 = 75	CES35 = 93	CES60 = 97	CES85 = 84
CES11 = 58	CES36 = 93	CES61 = 96	CES86 = 82
CES12 = 64	CES37 = 91	CES62 = 98	CES87 = 90
CES13 = 43	CES38 = 95	CES63 = 91	CES88 = 94
CES14 = 74	CES39 = 96	CES64 = 93	CES89 = 83
CES15 = 71	CES40 = 92	CES65 = 90	CES90 = 94
CES16 = 47	CES41 = 93	CES66 = 91	CES91 = 83
CES17 = 49	CES42 = 87	CES67 = 91	CES92 = 80
CES18 = 56	CES43 = 85	CES68 = 91	CES93 = 89
CES19 = 71	CES44 = 99	CES69 = 93	CES94 = 75
CES20 = 66	CES45 = 90	CES70 = 87	CES95 = 85
CES21 = 86	CES46 = 90	CES71 = 85	CES96 = 91
CES22 = 78	CES47 = 86	CES72 = 95	CES97 = 90
CES23 = 91	CES48 = 91	CES73 = 80	CES98 = 91
CES24 = 90	CES49 = 88	CES74 = 94	CES99 = 92
CES25 = 71	CES50 = 94	CES75 = 84	



Color Rendition by Hue-Angle Bin


Measure Comparisons



(END OF REPORT)