

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: METALUX

Report Number: P1436282

Luminaire Tested: EHBR1-18-UNV-M-L840

Issue Date: 3/25/2026

Test Information

Test Method: LM-79-2019
Report Number: P1436282
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2603-725-1)
Test Lab: INNOVATION CENTER
Issue Date: 3/25/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: EHBR1-18-UNV-M-L840
Description: Elevate Round Highbay at, 18000 lumens, 4000K 80CRI LEDs with M lens
Light Source: -
Ballast/Driver: -

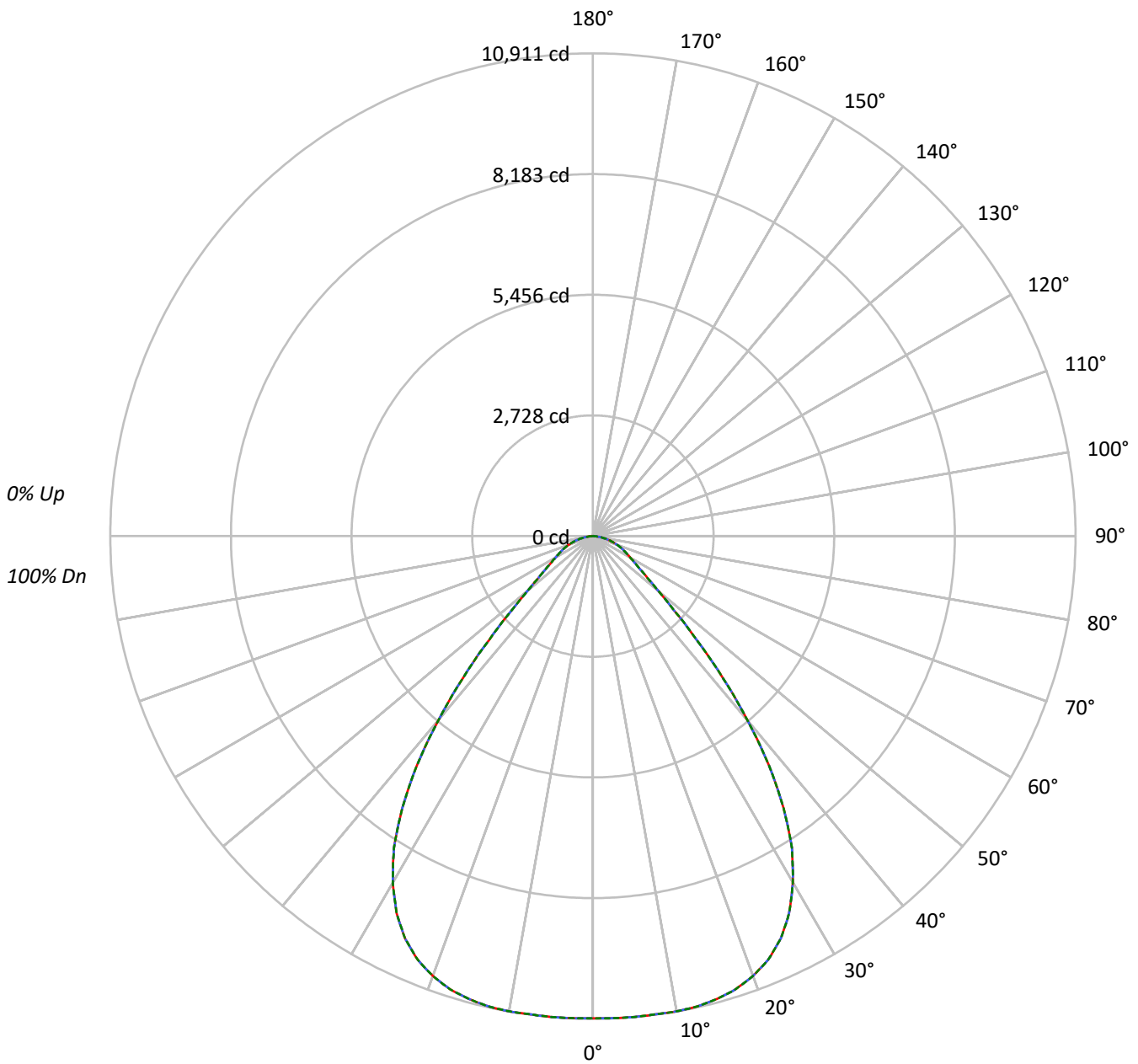
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18450.0 lumens
Efficiency: N/A
Efficacy: 194.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.15
Luminous Opening: Circular (Dia: 1.71' x H: 0')
CIE Type: Direct

Input Watts (W): 94.7
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

TEST NUMBER: P1436282
CATALOG NUMBER: EHBR1-18-UNV-M-L840

Luminous Intensity Polar Plot



— 0°-180° - - - 45°-225° - · - · - 90°-270°



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	92	90
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	80
3	97	89	83	78	95	87	82	77	85	80	76	82	78	74	80	76	73	71
4	91	81	74	69	89	80	73	68	78	72	68	75	71	67	73	69	66	64
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58
6	79	68	61	56	78	67	61	55	66	60	55	64	59	55	63	58	54	52
7	74	63	56	51	73	62	55	50	61	55	50	60	54	50	58	53	50	48
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44
9	66	54	47	42	65	54	47	42	53	47	42	52	46	42	51	46	42	40
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	51191	51191	51191
5°	51437	51437	51437
10°	52018	52018	52018
15°	52669	52669	52669
20°	52878	52878	52878
25°	52027	52027	52027
30°	49039	49039	49039
35°	43083	43083	43083
40°	33343	33343	33343
45°	22028	22028	22028
50°	14071	14071	14071
55°	10659	10659	10659
60°	9157	9157	9157
65°	8554	8554	8554
70°	8094	8094	8094
75°	7352	7352	7352
80°	6301	6301	6301
85°	4300	4300	4300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 22028 cd/sqm



TEST NUMBER: P1436282
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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1041.1	5.6
10°-20°	3057.5	16.6
20°-30°	4587.6	24.9
30°-40°	4615.6	25.0
40°-50°	2642.1	14.3
50°-60°	1208.4	6.5
60°-70°	766.7	4.2
70°-80°	430.1	2.3
80°-90°	100.9	0.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	8686.2	47.1
0°-40°	13301.8	72.1
0°-60°	17152.3	93.0
0°-90°	18450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	18450.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	10901	10901	10901	10901	10901	
5°	10911	10911	10911	10911	10911	1041
15°	10833	10833	10833	10833	10833	3057
25°	10041	10041	10041	10041	10041	4588
35°	7515	7515	7515	7515	7515	4616
45°	3317	3317	3317	3317	3317	2642
55°	1302	1302	1302	1302	1302	1208
65°	770	770	770	770	770	767
75°	405	405	405	405	405	430
85°	80	80	80	80	80	101
90°	0	0	0	0	0	



TEST NUMBER: P1436282
 CATALOG NUMBER: EHBR1-18-UNV-M-L840

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	10900.7	10900.7	10900.7	10900.7	10900.7
2.5°	10906.1	10906.1	10906.1	10906.1	10906.1
5°	10911.4	10911.4	10911.4	10911.4	10911.4
7.5°	10903.9	10903.9	10903.9	10903.9	10903.9
10°	10908.5	10908.5	10908.5	10908.5	10908.5
12.5°	10889.8	10889.8	10889.8	10889.8	10889.8
15°	10833.4	10833.4	10833.4	10833.4	10833.4
17.5°	10740.1	10740.1	10740.1	10740.1	10740.1
20°	10581.0	10581.0	10581.0	10581.0	10581.0
22.5°	10362.4	10362.4	10362.4	10362.4	10362.4
25°	10040.8	10040.8	10040.8	10040.8	10040.8
27.5°	9608.2	9608.2	9608.2	9608.2	9608.2
30°	9043.4	9043.4	9043.4	9043.4	9043.4
32.5°	8374.6	8374.6	8374.6	8374.6	8374.6
35°	7515.0	7515.0	7515.0	7515.0	7515.0
37.5°	6541.3	6541.3	6541.3	6541.3	6541.3
40°	5439.0	5439.0	5439.0	5439.0	5439.0
42.5°	4346.4	4346.4	4346.4	4346.4	4346.4
45°	3316.8	3316.8	3316.8	3316.8	3316.8
47.5°	2496.8	2496.8	2496.8	2496.8	2496.8
50°	1926.0	1926.0	1926.0	1926.0	1926.0
52.5°	1556.1	1556.1	1556.1	1556.1	1556.1
55°	1301.9	1301.9	1301.9	1301.9	1301.9
57.5°	1114.7	1114.7	1114.7	1114.7	1114.7
60°	975.0	975.0	975.0	975.0	975.0
62.5°	867.1	867.1	867.1	867.1	867.1
65°	769.8	769.8	769.8	769.8	769.8
67.5°	680.3	680.3	680.3	680.3	680.3
70°	589.5	589.5	589.5	589.5	589.5
72.5°	498.1	498.1	498.1	498.1	498.1
75°	405.2	405.2	405.2	405.2	405.2
77.5°	316.9	316.9	316.9	316.9	316.9
80°	233.0	233.0	233.0	233.0	233.0
82.5°	151.9	151.9	151.9	151.9	151.9
85°	79.8	79.8	79.8	79.8	79.8
87.5°	22.8	22.8	22.8	22.8	22.8
90°	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	17.03	18.30	17.39	18.61	18.93	17.03	18.30	17.39	18.61	18.93
	3H	18.60	19.73	18.98	20.06	20.43	18.60	19.73	18.98	20.06	20.43
	4H	19.19	20.24	19.59	20.59	20.98	19.19	20.24	19.59	20.59	20.98
	6H	19.58	20.55	20.00	20.92	21.31	19.58	20.55	20.00	20.92	21.31
	8H	19.68	20.60	20.11	20.99	21.40	19.68	20.60	20.11	20.99	21.40
	12H	19.72	20.60	20.16	20.98	21.41	19.72	20.60	20.16	20.98	21.41
4H	2H	17.52	18.57	17.92	18.92	19.31	17.52	18.57	17.92	18.92	19.31
	3H	19.32	20.19	19.73	20.59	20.99	19.32	20.19	19.73	20.59	20.99
	4H	20.02	20.80	20.46	21.22	21.66	20.02	20.80	20.46	21.22	21.66
	6H	20.53	21.20	21.00	21.65	22.11	20.53	21.20	21.00	21.65	22.11
	8H	20.67	21.29	21.14	21.74	22.21	20.67	21.29	21.14	21.74	22.21
	12H	20.73	21.28	21.22	21.77	22.24	20.73	21.28	21.22	21.77	22.24
8H	4H	20.25	20.87	20.72	21.32	21.79	20.25	20.87	20.72	21.32	21.79
	6H	20.87	21.37	21.37	21.87	22.35	20.87	21.37	21.37	21.87	22.35
	8H	21.06	21.51	21.58	22.03	22.52	21.06	21.51	21.58	22.03	22.52
	12H	21.18	21.57	21.69	22.07	22.64	21.18	21.57	21.69	22.07	22.64
12H	4H	20.25	20.80	20.74	21.29	21.76	20.25	20.80	20.74	21.29	21.76
	6H	20.89	21.34	21.41	21.86	22.35	20.89	21.34	21.41	21.86	22.35
	8H	21.12	21.52	21.64	22.02	22.59	21.12	21.52	21.64	22.02	22.59

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1121 Highway 74 South
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-1

Test Date: 07/30/2025

Luminaire Tested: EHBR-60-L840-N

Data in this report applies to families of products including EHBR-60-L840-N

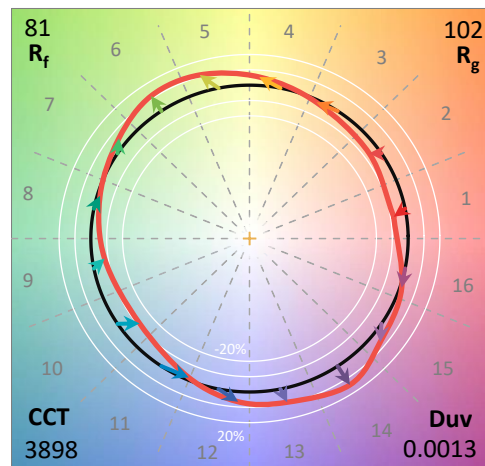
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-472-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/05/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **EHBR-60-L840-N**
 Description: Elevate Round Highbay at, 60000 lumens, 4000K 80CRI LEDs with N lens

Spectral Parameters

CCT (K): 3898
 CIE u': 0.2263
 CIE v': 0.5052
 Duv: 0.0013
 CIE x: 0.3861
 CIE y: 0.3831
 CIE z: 0.2308
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 578
 Purity: 30.85729
 Rf: 80.7
 Rg: 102.1

CRI (Ra):	82.1		
R1:	84.4	R9:	38.5
R2:	83.5	R10:	58.9
R3:	80.8	R11:	83.6
R4:	83.9	R12:	54.2
R5:	82.1	R13:	82.8
R6:	77.3	R14:	88.2
R7:	86.4	R15:	81.2
R8:	78.3		



Test Conditions

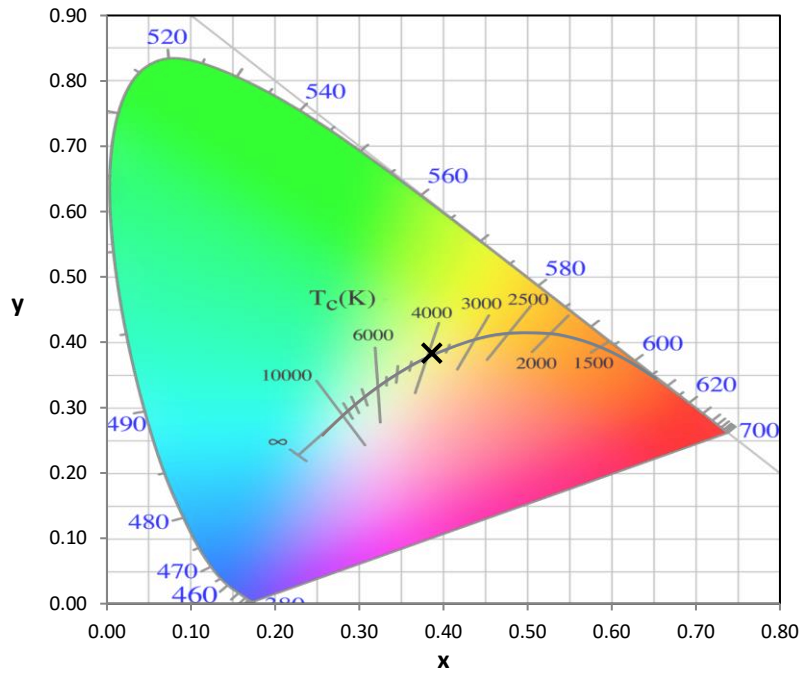
Stabilization Time: 42M
 Operation Time: 1H 42M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-1

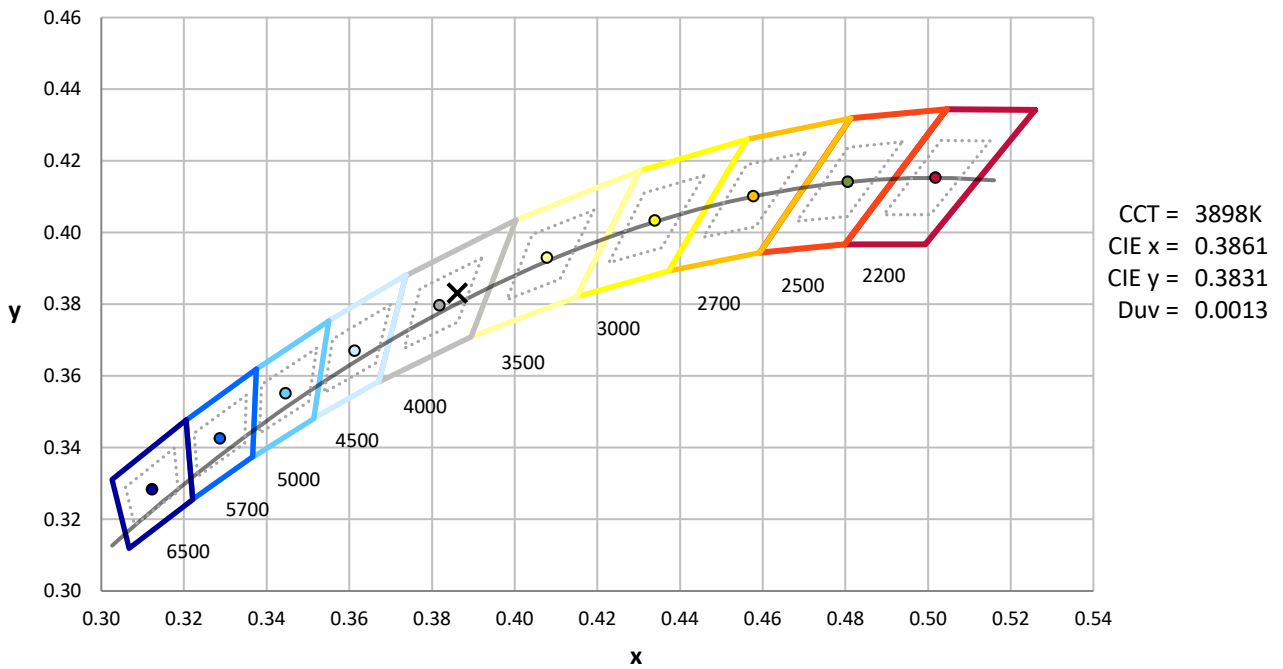
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

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CIE 1931 Chromaticity Diagram



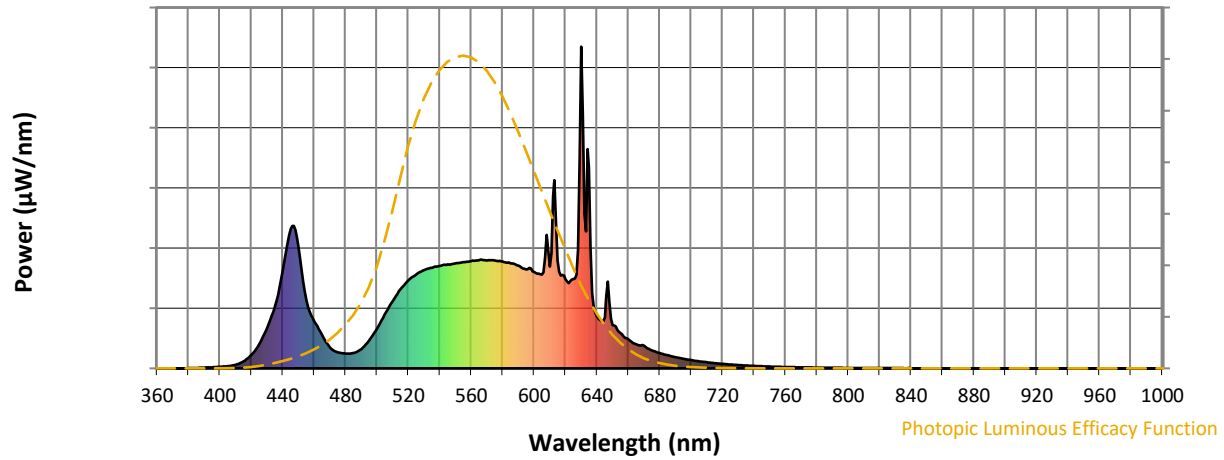
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength

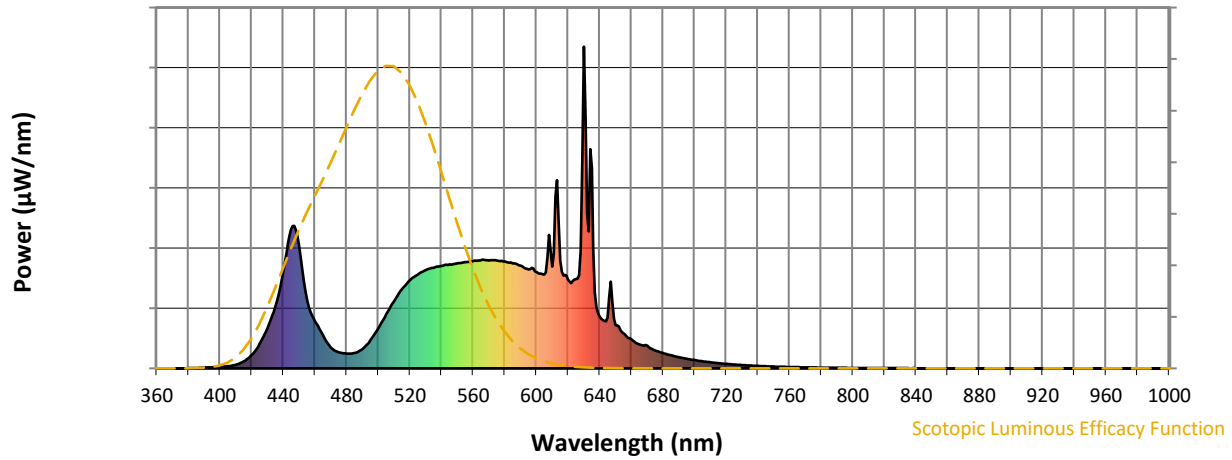


Photopic Lumens: NR

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	60	NR	620	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



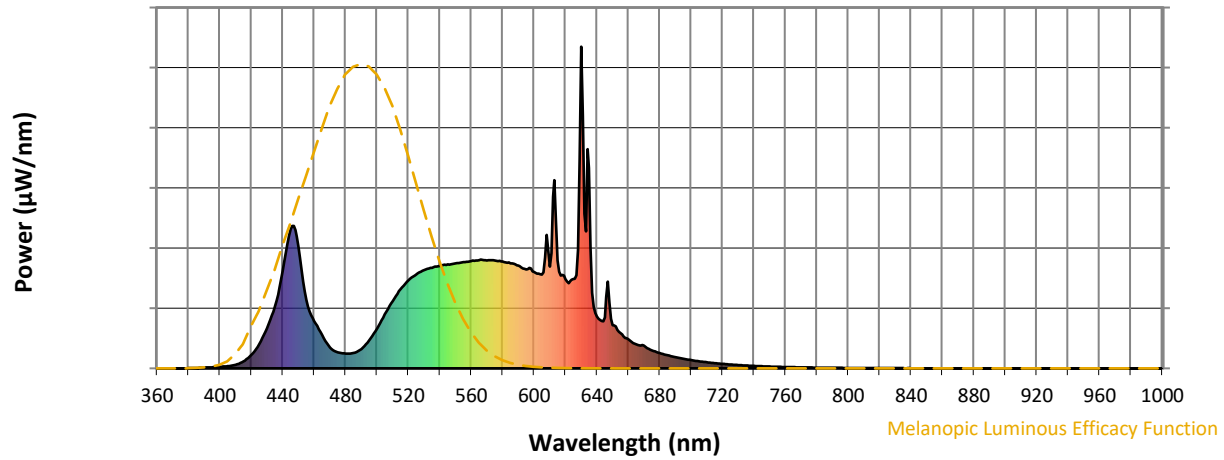
Scotopic Lumens: NR

S/P: 1.55

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	60	NR	620	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

REPORT NUMBER: SP1-2506-472-1

Melanopic Flux vs. Wavelength



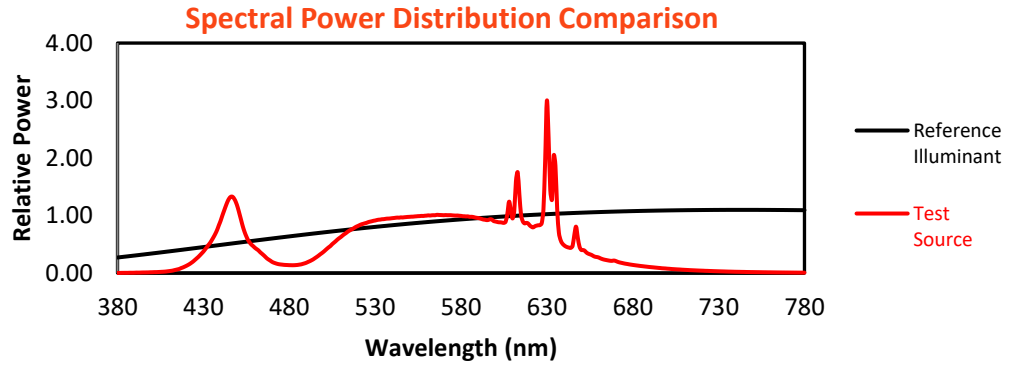
Melanopic Lumens: NR

M/P: 2.99

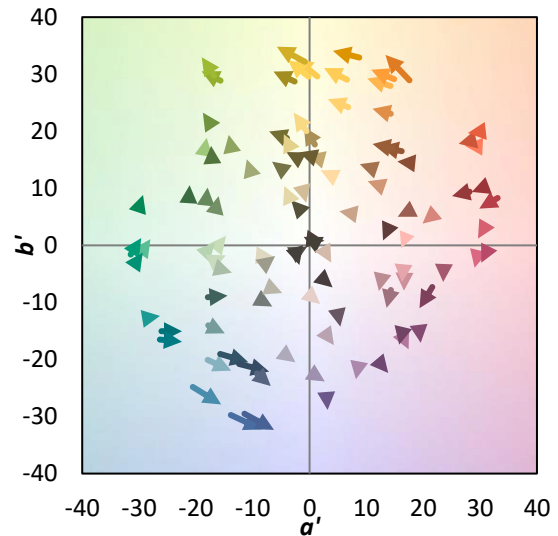
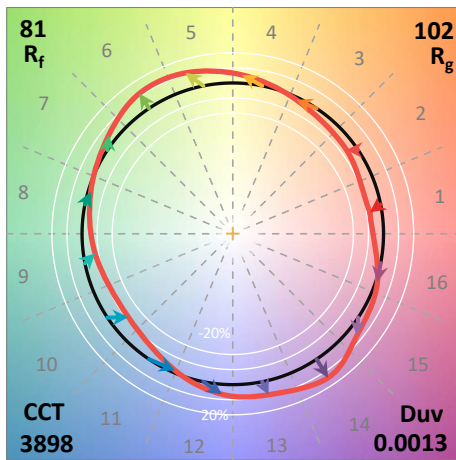
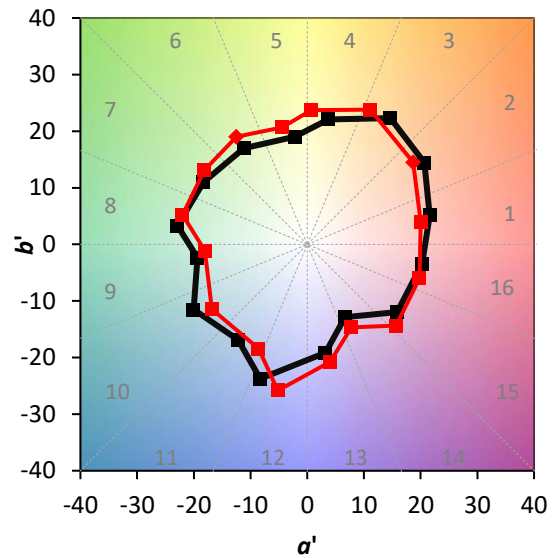
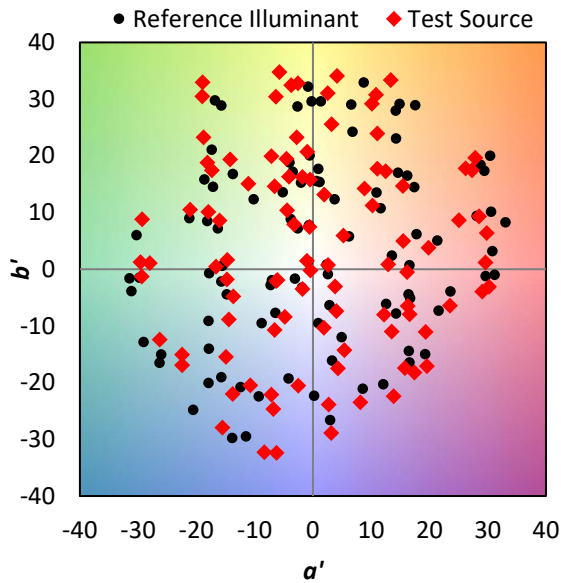
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	60	NR	620	277	NR	750	6	NR	880	0	NR
365	0	NR	495	87	NR	625	278	NR	755	5	NR	885	0	NR
370	0	NR	500	124	NR	630	1000	NR	760	4	NR	890	0	NR
375	0	NR	505	168	NR	635	623	NR	765	4	NR	895	0	NR
380	1	NR	510	209	NR	640	162	NR	770	3	NR	900	0	NR
385	1	NR	515	246	NR	645	158	NR	775	3	NR	905	0	NR
390	2	NR	520	273	NR	650	134	NR	780	2	NR	910	0	NR
395	4	NR	525	292	NR	655	109	NR	785	2	NR	915	0	NR
400	5	NR	530	305	NR	660	91	NR	790	2	NR	920	0	NR
405	7	NR	535	313	NR	665	75	NR	795	2	NR	925	0	NR
410	11	NR	540	319	NR	670	70	NR	800	1	NR	930	0	NR
415	21	NR	545	323	NR	675	56	NR	805	1	NR	935	0	NR
420	42	NR	550	326	NR	680	47	NR	810	1	NR	940	0	NR
425	76	NR	555	330	NR	685	41	NR	815	1	NR	945	0	NR
430	125	NR	560	333	NR	690	35	NR	820	1	NR	950	0	NR
435	193	NR	565	336	NR	695	30	NR	825	1	NR	955	0	NR
440	302	NR	570	336	NR	700	26	NR	830	1	NR	960	0	NR
445	432	NR	575	335	NR	705	22	NR	835	1	NR	965	0	NR
450	380	NR	580	332	NR	710	19	NR	840	0	NR	970	0	NR
455	213	NR	585	326	NR	715	16	NR	845	0	NR	975	0	NR
460	147	NR	590	319	NR	720	14	NR	850	0	NR	980	0	NR
465	104	NR	595	307	NR	725	12	NR	855	0	NR	985	0	NR
470	65	NR	600	299	NR	730	10	NR	860	0	NR	990	0	NR
475	50	NR	605	291	NR	735	9	NR	865	0	NR	995	0	NR
480	46	NR	610	317	NR	740	8	NR	870	0	NR	1000	0	NR
485	47	NR	615	336	NR	745	7	NR	875	0	NR			

Summary

$R_f = 80.7$
 $R_g = 102.1$
 CIE $R_a = 82.1$
 $R_9 = 38.5$

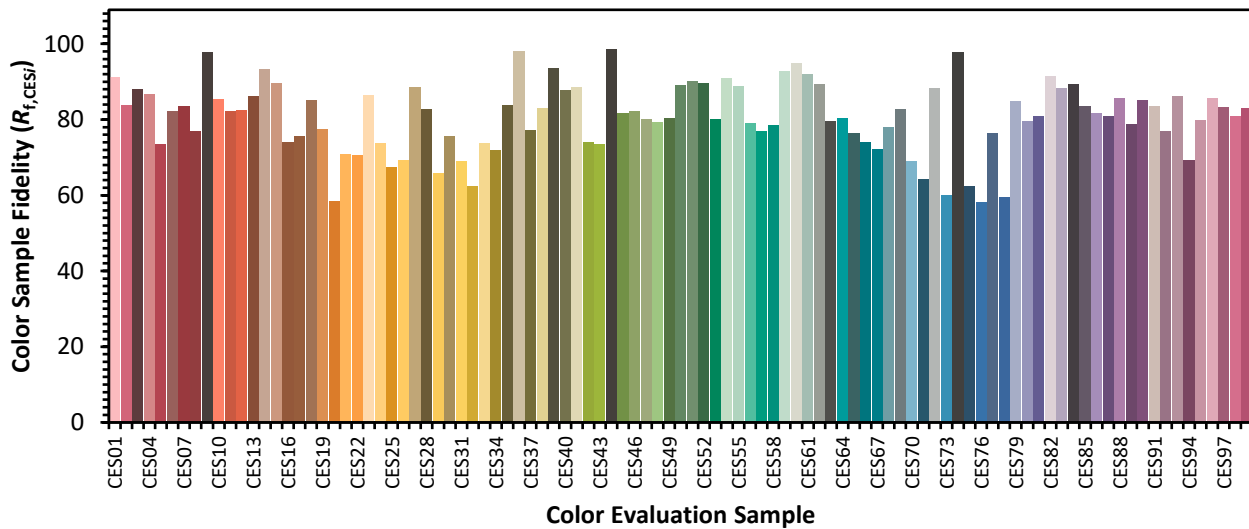


Color Vector Graphics

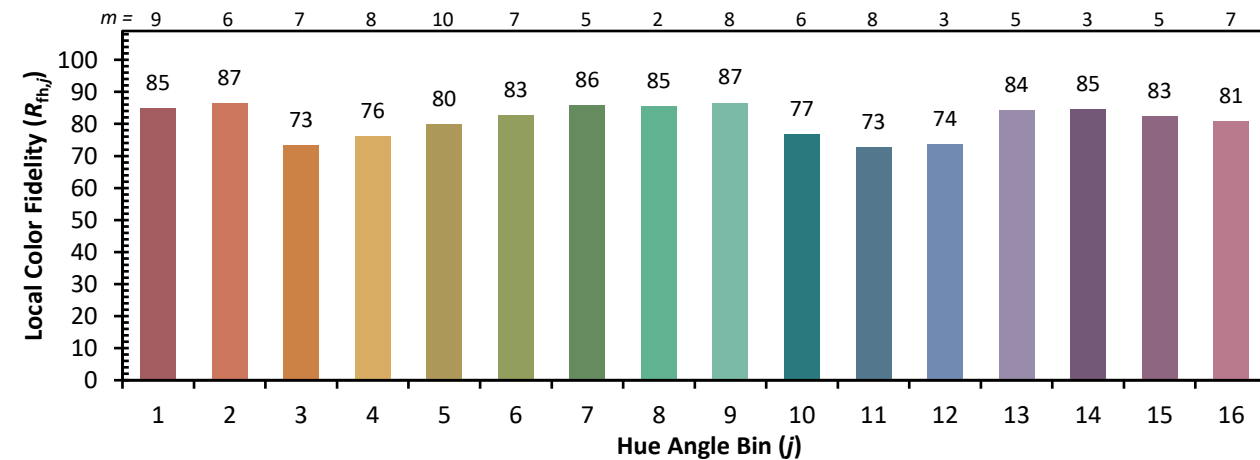
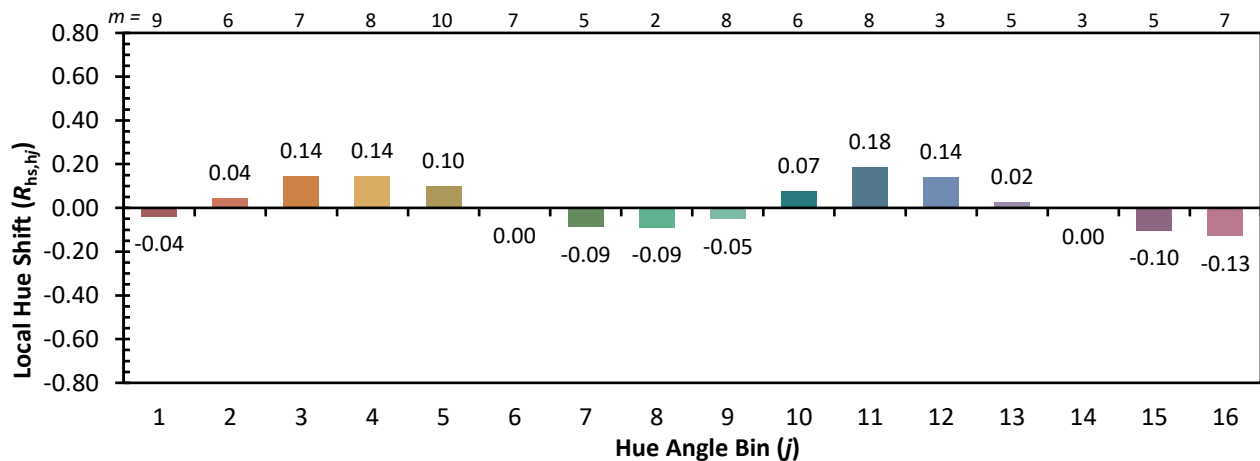
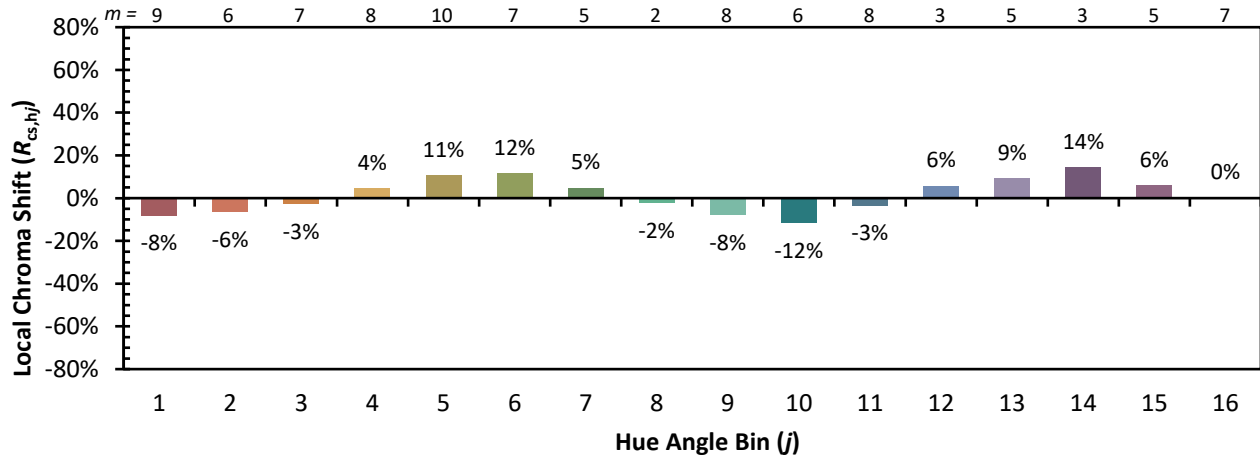


Individual Sample Fidelity Index ($R_{f,i}$)

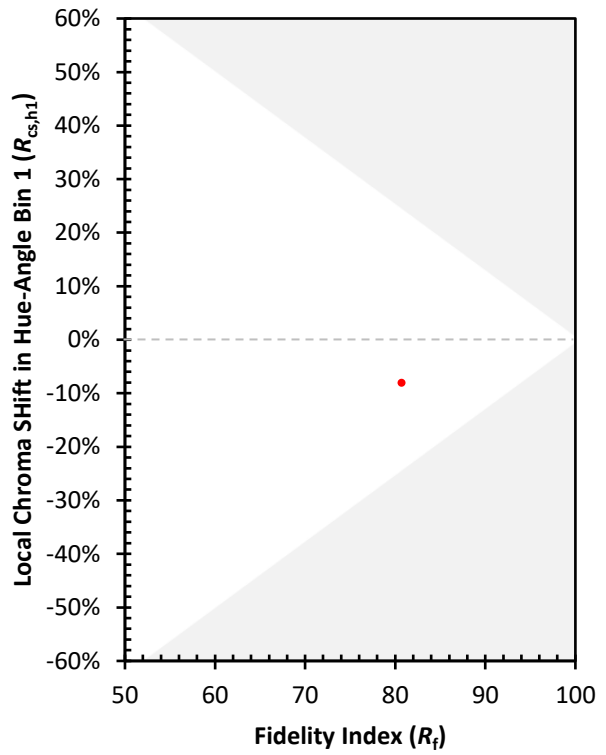
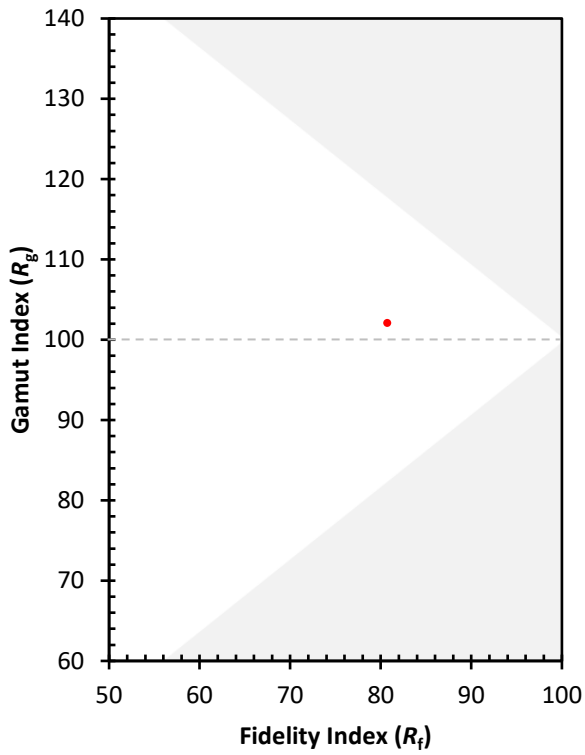
CES01 = 85	CES26 = 69	CES51 = 90	CES76 = 58
CES02 = 61	CES27 = 89	CES52 = 90	CES77 = 76
CES03 = 31	CES28 = 83	CES53 = 80	CES78 = 60
CES04 = 69	CES29 = 66	CES54 = 91	CES79 = 85
CES05 = 48	CES30 = 76	CES55 = 89	CES80 = 79
CES06 = 50	CES31 = 69	CES56 = 79	CES81 = 81
CES07 = 41	CES32 = 62	CES57 = 77	CES82 = 91
CES08 = 40	CES33 = 74	CES58 = 79	CES83 = 88
CES09 = 29	CES34 = 72	CES59 = 93	CES84 = 89
CES10 = 74	CES35 = 84	CES60 = 95	CES85 = 84
CES11 = 57	CES36 = 98	CES61 = 92	CES86 = 82
CES12 = 63	CES37 = 77	CES62 = 89	CES87 = 81
CES13 = 43	CES38 = 83	CES63 = 80	CES88 = 86
CES14 = 74	CES39 = 94	CES64 = 80	CES89 = 79
CES15 = 71	CES40 = 88	CES65 = 77	CES90 = 85
CES16 = 47	CES41 = 89	CES66 = 74	CES91 = 83
CES17 = 49	CES42 = 74	CES67 = 72	CES92 = 77
CES18 = 56	CES43 = 73	CES68 = 78	CES93 = 86
CES19 = 71	CES44 = 98	CES69 = 83	CES94 = 69
CES20 = 65	CES45 = 82	CES70 = 69	CES95 = 80
CES21 = 86	CES46 = 82	CES71 = 64	CES96 = 86
CES22 = 78	CES47 = 80	CES72 = 88	CES97 = 83
CES23 = 91	CES48 = 79	CES73 = 60	CES98 = 81
CES24 = 90	CES49 = 80	CES74 = 98	CES99 = 83
CES25 = 71	CES50 = 89	CES75 = 62	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)