

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: HALO

Report Number: P995451

Luminaire Tested: **LTT4069FSMBSS-935**

Issue Date: 06/09/2025

Test Information

Test Method: LM-79-08
Report Number: P995451
Test Lab: INNOVATION CENTER (G1)
Issue Date: 06/09/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: LTT4069FSMBSS-935
Description: HALO LT BLACK SMOOTH SPLAY TRIM DRIVER ON BOARD 4 inch 90 CRI COLOR
SELECTABLE FIXTURE
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

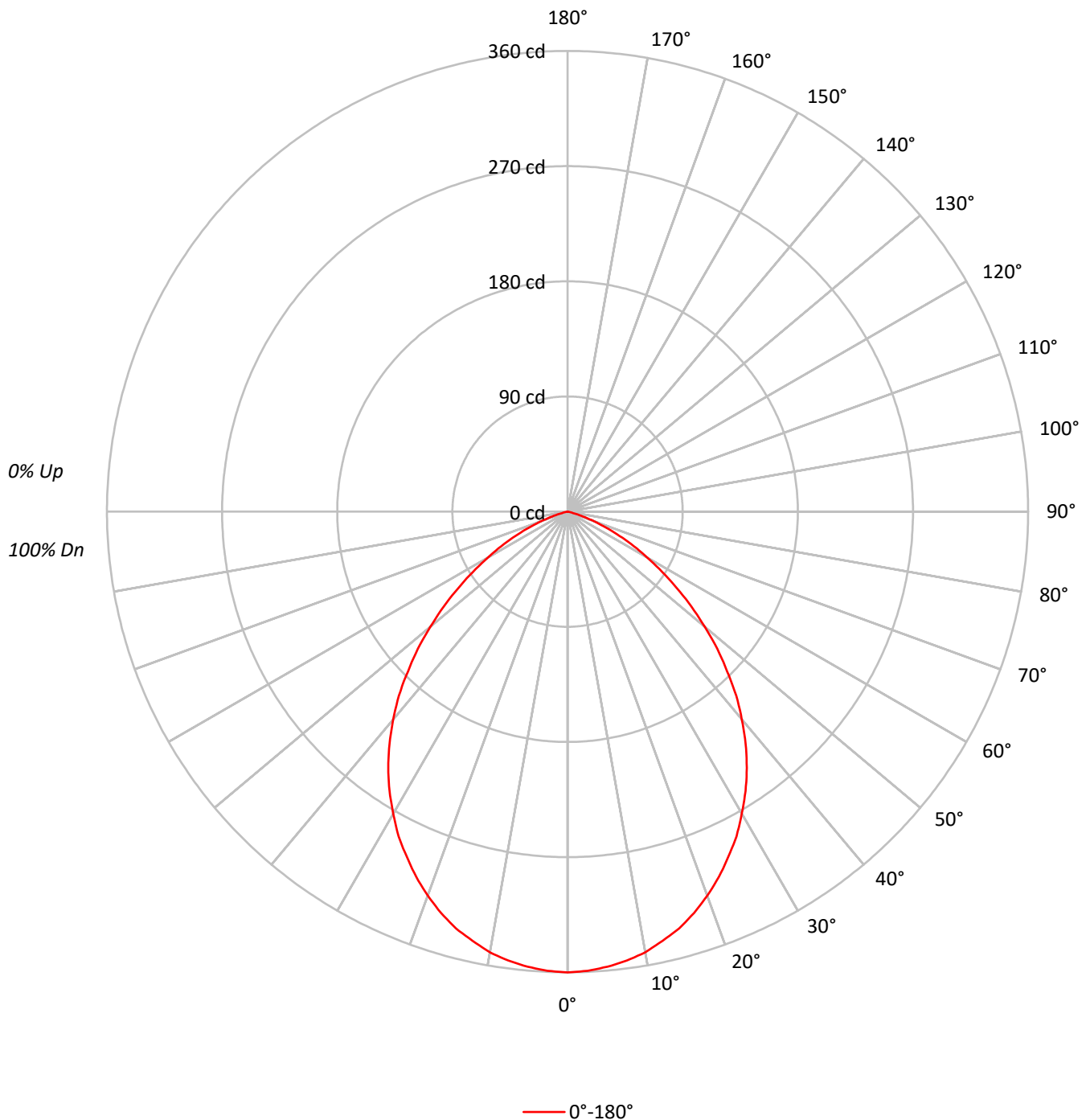
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 700.2 lumens
Efficiency: N/A
Efficacy: 93.4 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.14 / 1.22
Luminous Opening: Circular (Dia: 0.3' x H: 0')
CIE Type: Direct

Input Watts (W): 7.5
Input Voltage (V): 120
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: 25 FT

TEST NUMBER: P995451
CATALOG NUMBER: LTT4069FSMBSS-935

Luminous Intensity Polar Plot





TEST NUMBER: P995451

CATALOG NUMBER: LTT4069FSMBSS-935

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		0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102		100
1	111	108	104	101	109	105	102	100	101	99	97		97	96	94		94	92	91		89
2	103	96	91	86	101	95	90	85	91	87	83		88	85	82		85	82	80		78
3	95	87	80	74	93	85	79	74	82	77	72		80	75	71		77	73	70		68
4	88	78	70	65	86	77	70	64	74	68	63		72	67	63		70	66	62		60
5	82	71	63	57	80	70	62	57	68	61	56		66	60	56		64	59	55		53
6	76	64	56	51	74	63	56	50	62	55	50		60	54	50		59	53	49		47
7	71	59	51	45	69	58	50	45	57	50	45		55	49	45		54	48	44		42
8	66	54	46	41	65	53	46	41	52	45	41		51	45	40		50	44	40		38
9	62	50	42	37	61	49	42	37	48	42	37		47	41	37		46	41	37		35
10	58	46	39	34	57	46	39	34	45	38	34		44	38	34		43	38	34		32

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	54835
5°	54571
10°	54073
15°	53160
20°	51759
25°	49986
30°	47898
35°	45415
40°	42123
45°	37988
50°	33143
55°	27717
60°	21928
65°	16178
70°	9751
75°	3059
80°	0
85°	0

TEST NUMBER: P995451
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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.8	4.8
10°-20°	94.8	13.5
20°-30°	136.9	19.6
30°-40°	152.2	21.7
40°-50°	136.0	19.4
50°-60°	93.7	13.4
60°-70°	45.0	6.4
70°-80°	7.8	1.1
80°-90°	0.0	0.0
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°	265.5	37.9
0°-40°	417.8	59.7
0°-60°	647.4	92.5
0°-90°	700.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	700.2	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	360	
5°	357	34
15°	337	95
25°	298	137
35°	244	152
45°	176	136
55°	104	94
65°	45	45
75°	5	8
85°	0	0
90°	0	

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CANDELA DISTRIBUTION (FULL):

0°	
0°	360.1
2.5°	359.1
5°	357.0
7.5°	353.9
10°	349.7
12.5°	343.4
15°	337.2
17.5°	328.8
20°	319.4
22.5°	309.0
25°	297.5
27.5°	286.0
30°	272.4
32.5°	258.9
35°	244.3
37.5°	228.6
40°	211.9
42.5°	195.2
45°	176.4
47.5°	158.7
50°	139.9
52.5°	122.1
55°	104.4
57.5°	87.7
60°	72.0
62.5°	58.5
65°	44.9
67.5°	32.4
70°	21.9
72.5°	12.5
75°	5.2
77.5°	1.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	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	22.59	24.02	22.96	24.33	24.65	22.59	24.02	22.96	24.33	24.65
	3H	23.09	24.36	23.47	24.69	25.05	23.09	24.36	23.47	24.69	25.05
	4H	23.07	24.25	23.47	24.60	24.98	23.07	24.25	23.47	24.60	24.98
	6H	23.00	24.08	23.42	24.45	24.85	23.00	24.08	23.42	24.45	24.85
	8H	22.96	23.99	23.39	24.38	24.78	22.96	23.99	23.39	24.38	24.78
	12H	22.92	23.90	23.36	24.29	24.72	22.92	23.90	23.36	24.29	24.72
4H	2H	22.83	24.01	23.23	24.36	24.74	22.83	24.01	23.23	24.36	24.74
	3H	23.40	24.36	23.81	24.76	25.16	23.40	24.36	23.81	24.76	25.16
	4H	23.37	24.22	23.80	24.64	25.08	23.37	24.22	23.80	24.64	25.08
	6H	23.30	24.04	23.76	24.48	24.95	23.30	24.04	23.76	24.48	24.95
	8H	23.25	23.94	23.72	24.38	24.85	23.25	23.94	23.72	24.38	24.85
	12H	23.21	23.82	23.69	24.30	24.77	23.21	23.82	23.69	24.30	24.77
8H	4H	23.28	23.97	23.75	24.42	24.89	23.28	23.97	23.75	24.42	24.89
	6H	23.19	23.75	23.69	24.25	24.73	23.19	23.75	23.69	24.25	24.73
	8H	23.13	23.64	23.65	24.15	24.64	23.13	23.64	23.65	24.15	24.64
	12H	23.09	23.54	23.61	24.03	24.60	23.09	23.54	23.61	24.03	24.60
12H	4H	23.24	23.85	23.73	24.33	24.80	23.24	23.85	23.73	24.33	24.80
	6H	23.13	23.64	23.65	24.15	24.64	23.13	23.64	23.65	24.15	24.64
	8H	23.09	23.54	23.61	24.03	24.60	23.09	23.54	23.61	24.03	24.60

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

Report Prepared for

Cooper Lighting Solutions

Halo Recessed

Report Number: SP2-2504-410-3

Test Date: 05/22/2025

Luminaire Tested: LTT5607FSMBSS-3500K

Data in this report applies to families of products including LTT5607FSMBSS-3500K

The results of this test have not been influenced by sources from within Eaton or from external interests.

Report Generated By FNC07603 / LDUCLS01DT447
Version: v7.04

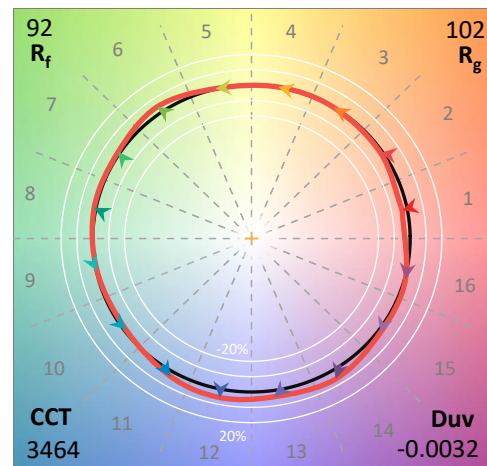
Test Information

Test Method: LM-79-2019
 Report Number: SP2-2504-410-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP2 - 165CM SPHERE
 Measurement Geometry: 4π
 Issue Date: 05/22/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Halo Recessed
 Catalog Number: **LTT5607FSMBSS-3500K**
 Description: HALO LT BLACK LED TRIM 6 INCH SMOOTH

Spectral Parameters

CCT (K): 3464
 CIE u' : 0.2381
 CIE v' : 0.5078
 Duv: -0.0032
 CIE x: 0.4040
 CIE y: 0.3830
 CIE z: 0.2130
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 582
 Purity: 36.19283
 R_f: 92
 R_g: 102.2

CRI (Ra): 96.5
 R1: 99.2
 R2: 98.1
 R3: 93.7
 R4: 96.3
 R5: 98.8
 R6: 95.5
 R7: 95.8
 R8: 94.2
 R9: 83.7
 R10: 92.7
 R11: 94.6
 R12: 81.0
 R13: 99.4
 R14: 95.0
 R15: 98.9



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.7

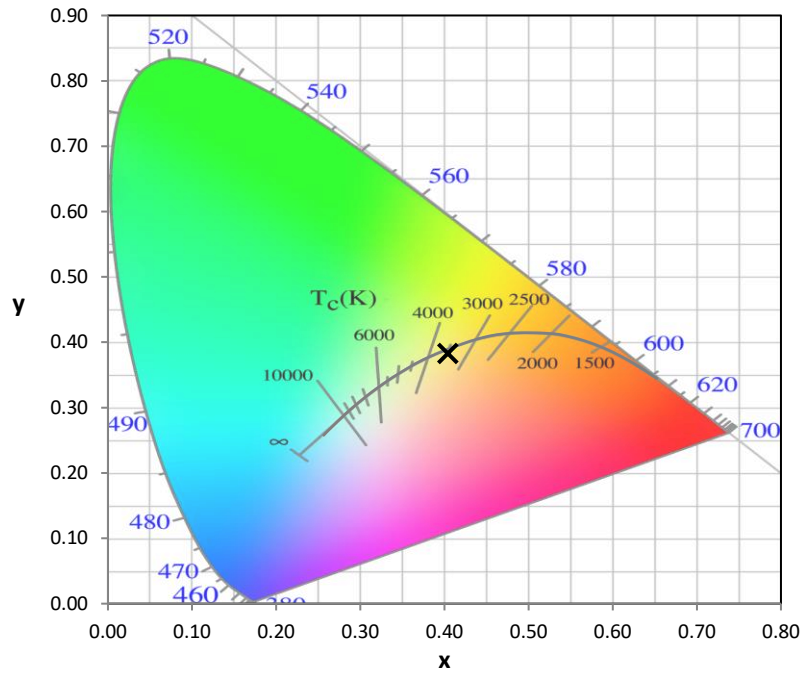
REPORT NUMBER: SP2-2504-410-3

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN2187	1/6/2025	7/6/2025
Power Meter	INXT2011002	1/21/2025	1/21/2026
AC Power Source	IN0458	10/22/2024	10/22/2025
DC Power Source	IN0212	10/22/2024	10/22/2025
Sphere Thermometer	IN4036B	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

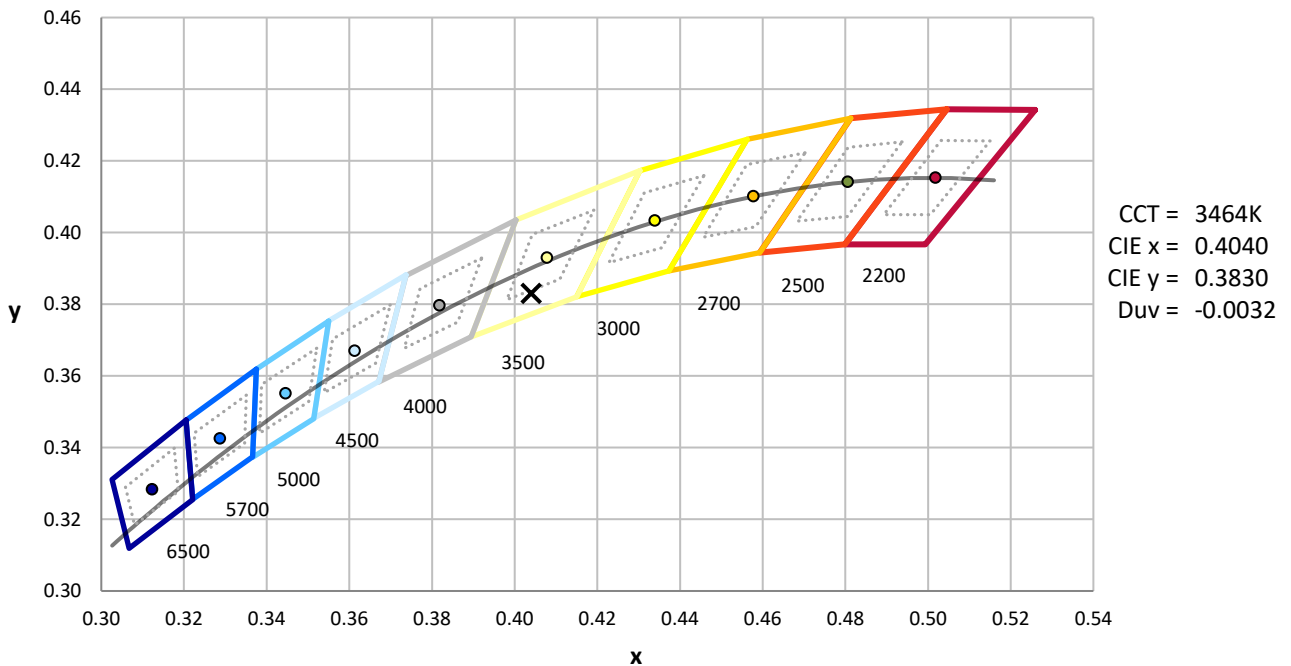
Sample Number	Condition	Description
P2504-410-LM.1	Good	HALO LT BLACK LED TRIM 6 INCH SMOOTH

REPORT NUMBER: SP2-2504-410-3

CIE 1931 Chromaticity Diagram



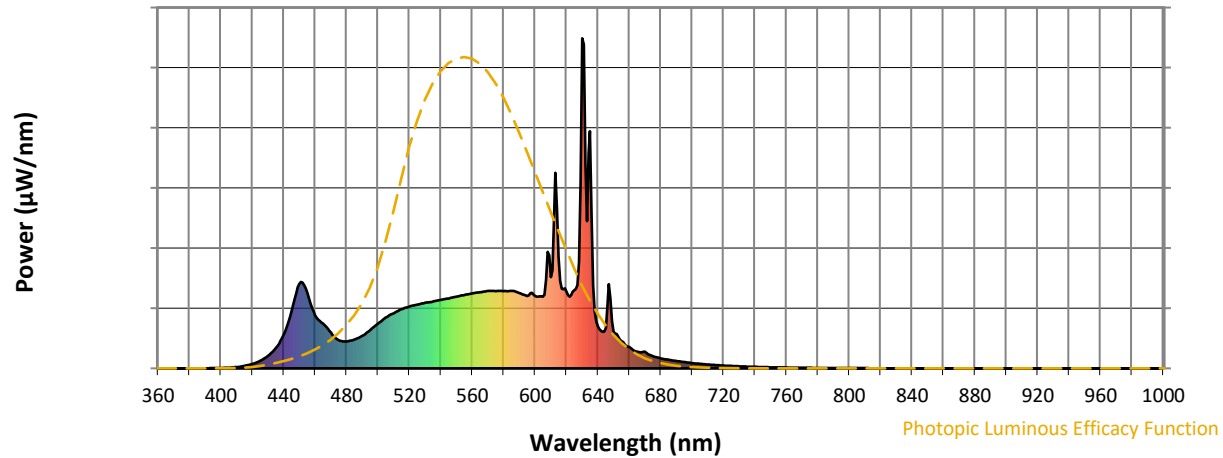
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 7-step quadrangle

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Photopic Flux vs. Wavelength

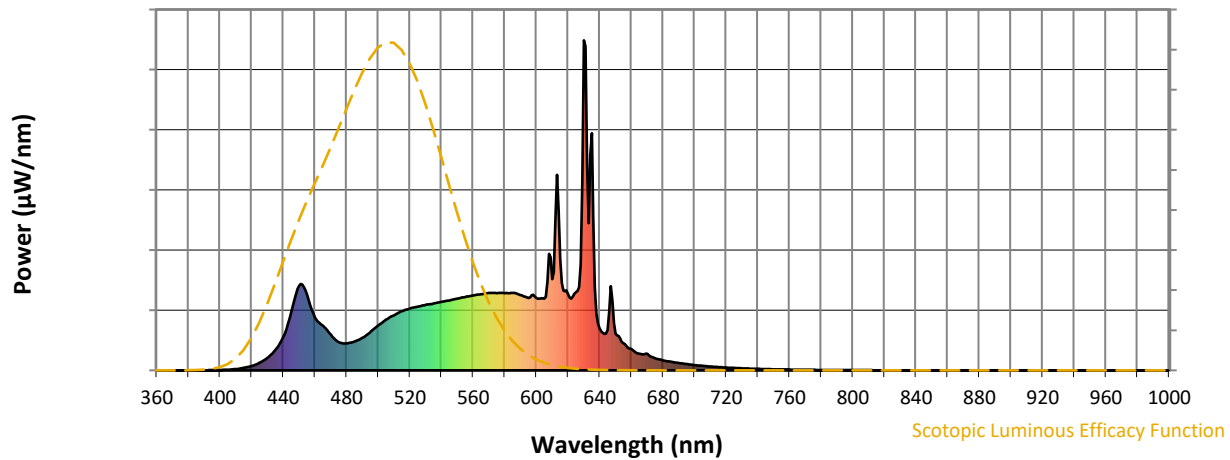


Photopic Lumens: NR

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	99	NR	620	231	NR	750	3	NR	880	0	NR
365	0	NR	495	115	NR	625	237	NR	755	3	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	154	NR	635	719	NR	765	2	NR	895	0	NR
380	0	NR	510	167	NR	640	127	NR	770	2	NR	900	0	NR
385	0	NR	515	179	NR	645	122	NR	775	2	NR	905	0	NR
390	0	NR	520	187	NR	650	111	NR	780	1	NR	910	0	NR
395	1	NR	525	193	NR	655	82	NR	785	1	NR	915	0	NR
400	1	NR	530	198	NR	660	65	NR	790	1	NR	920	0	NR
405	2	NR	535	203	NR	665	50	NR	795	1	NR	925	0	NR
410	4	NR	540	207	NR	670	50	NR	800	1	NR	930	0	NR
415	7	NR	545	212	NR	675	37	NR	805	1	NR	935	0	NR
420	13	NR	550	217	NR	680	30	NR	810	1	NR	940	0	NR
425	23	NR	555	222	NR	685	26	NR	815	0	NR	945	0	NR
430	38	NR	560	227	NR	690	22	NR	820	0	NR	950	0	NR
435	62	NR	565	231	NR	695	19	NR	825	0	NR	955	0	NR
440	102	NR	570	234	NR	700	16	NR	830	0	NR	960	0	NR
445	175	NR	575	234	NR	705	14	NR	835	0	NR	965	0	NR
450	256	NR	580	234	NR	710	12	NR	840	0	NR	970	0	NR
455	229	NR	585	234	NR	715	10	NR	845	0	NR	975	0	NR
460	161	NR	590	228	NR	720	9	NR	850	0	NR	980	0	NR
465	135	NR	595	220	NR	725	7	NR	855	0	NR	985	0	NR
470	108	NR	600	219	NR	730	6	NR	860	0	NR	990	0	NR
475	86	NR	605	217	NR	735	5	NR	865	0	NR	995	0	NR
480	82	NR	610	276	NR	740	5	NR	870	0	NR	1000	0	NR
485	88	NR	615	337	NR	745	4	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



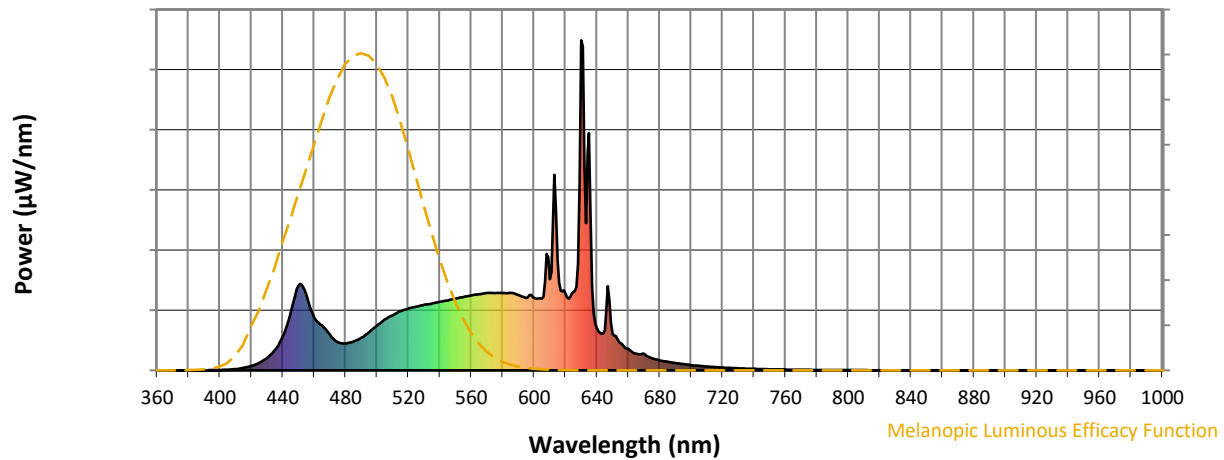
Scotopic Lumens: NR

S/P: 1.63

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	99	NR	620	231	NR	750	3	NR	880	0	NR
365	0	NR	495	115	NR	625	237	NR	755	3	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	154	NR	635	719	NR	765	2	NR	895	0	NR
380	0	NR	510	167	NR	640	127	NR	770	2	NR	900	0	NR
385	0	NR	515	179	NR	645	122	NR	775	2	NR	905	0	NR
390	0	NR	520	187	NR	650	111	NR	780	1	NR	910	0	NR
395	1	NR	525	193	NR	655	82	NR	785	1	NR	915	0	NR
400	1	NR	530	198	NR	660	65	NR	790	1	NR	920	0	NR
405	2	NR	535	203	NR	665	50	NR	795	1	NR	925	0	NR
410	4	NR	540	207	NR	670	50	NR	800	1	NR	930	0	NR
415	7	NR	545	212	NR	675	37	NR	805	1	NR	935	0	NR
420	13	NR	550	217	NR	680	30	NR	810	1	NR	940	0	NR
425	23	NR	555	222	NR	685	26	NR	815	0	NR	945	0	NR
430	38	NR	560	227	NR	690	22	NR	820	0	NR	950	0	NR
435	62	NR	565	231	NR	695	19	NR	825	0	NR	955	0	NR
440	102	NR	570	234	NR	700	16	NR	830	0	NR	960	0	NR
445	175	NR	575	234	NR	705	14	NR	835	0	NR	965	0	NR
450	256	NR	580	234	NR	710	12	NR	840	0	NR	970	0	NR
455	229	NR	585	234	NR	715	10	NR	845	0	NR	975	0	NR
460	161	NR	590	228	NR	720	9	NR	850	0	NR	980	0	NR
465	135	NR	595	220	NR	725	7	NR	855	0	NR	985	0	NR
470	108	NR	600	219	NR	730	6	NR	860	0	NR	990	0	NR
475	86	NR	605	217	NR	735	5	NR	865	0	NR	995	0	NR
480	82	NR	610	276	NR	740	5	NR	870	0	NR	1000	0	NR
485	88	NR	615	337	NR	745	4	NR	875	0	NR			

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Melanopic Flux vs. Wavelength


Melanopic Lumens: NR
M/P: 3.31

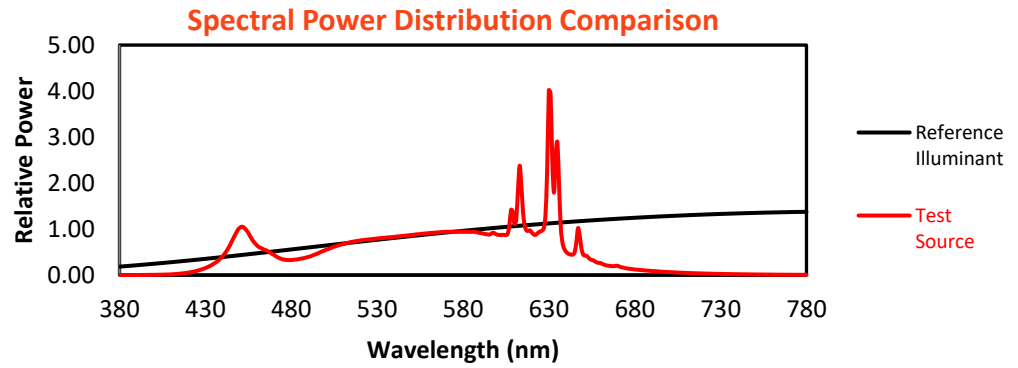
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	99	NR	620	231	NR	750	3	NR	880	0	NR
365	0	NR	495	115	NR	625	237	NR	755	3	NR	885	0	NR
370	0	NR	500	136	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	154	NR	635	719	NR	765	2	NR	895	0	NR
380	0	NR	510	167	NR	640	127	NR	770	2	NR	900	0	NR
385	0	NR	515	179	NR	645	122	NR	775	2	NR	905	0	NR
390	0	NR	520	187	NR	650	111	NR	780	1	NR	910	0	NR
395	1	NR	525	193	NR	655	82	NR	785	1	NR	915	0	NR
400	1	NR	530	198	NR	660	65	NR	790	1	NR	920	0	NR
405	2	NR	535	203	NR	665	50	NR	795	1	NR	925	0	NR
410	4	NR	540	207	NR	670	50	NR	800	1	NR	930	0	NR
415	7	NR	545	212	NR	675	37	NR	805	1	NR	935	0	NR
420	13	NR	550	217	NR	680	30	NR	810	1	NR	940	0	NR
425	23	NR	555	222	NR	685	26	NR	815	0	NR	945	0	NR
430	38	NR	560	227	NR	690	22	NR	820	0	NR	950	0	NR
435	62	NR	565	231	NR	695	19	NR	825	0	NR	955	0	NR
440	102	NR	570	234	NR	700	16	NR	830	0	NR	960	0	NR
445	175	NR	575	234	NR	705	14	NR	835	0	NR	965	0	NR
450	256	NR	580	234	NR	710	12	NR	840	0	NR	970	0	NR
455	229	NR	585	234	NR	715	10	NR	845	0	NR	975	0	NR
460	161	NR	590	228	NR	720	9	NR	850	0	NR	980	0	NR
465	135	NR	595	220	NR	725	7	NR	855	0	NR	985	0	NR
470	108	NR	600	219	NR	730	6	NR	860	0	NR	990	0	NR
475	86	NR	605	217	NR	735	5	NR	865	0	NR	995	0	NR
480	82	NR	610	276	NR	740	5	NR	870	0	NR	1000	0	NR
485	88	NR	615	337	NR	745	4	NR	875	0	NR			

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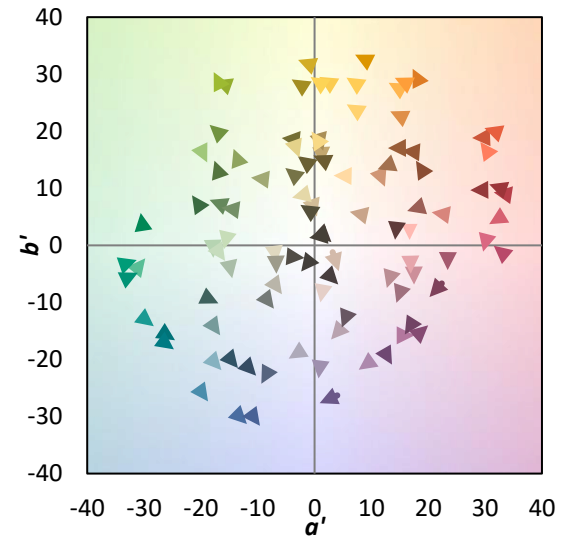
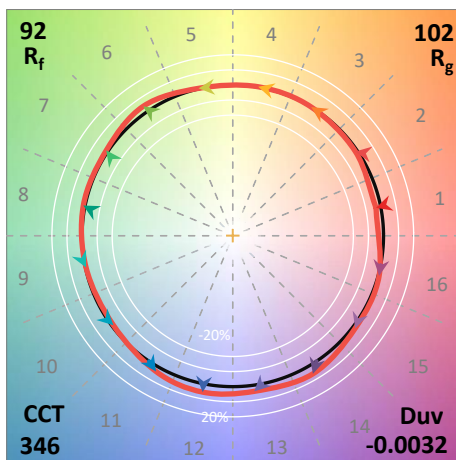
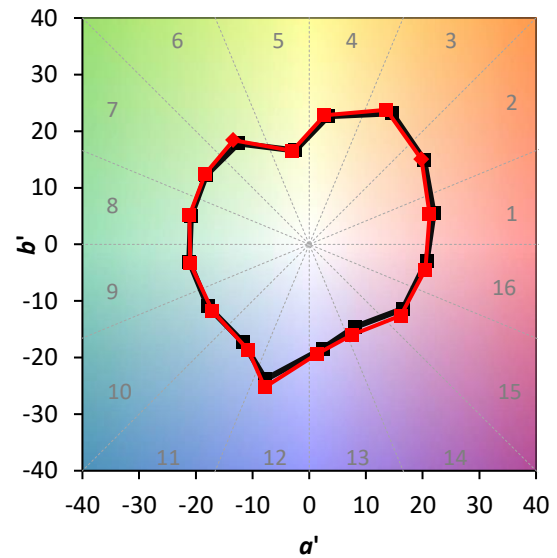
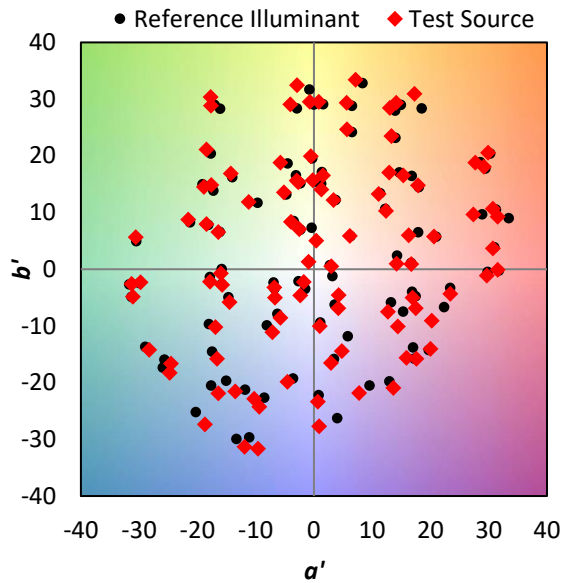
TM-30-18

Summary

$R_f = 92$
 $R_g = 102.2$
 $CIE R_a = 96.5$
 $R_9 = 83.7$

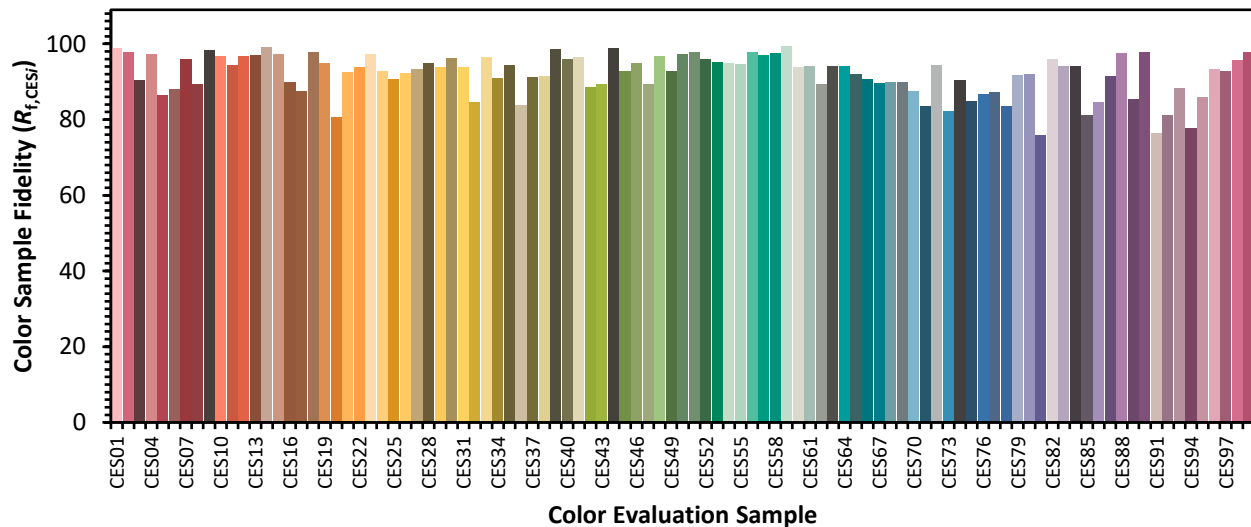


Color Vector Graphics

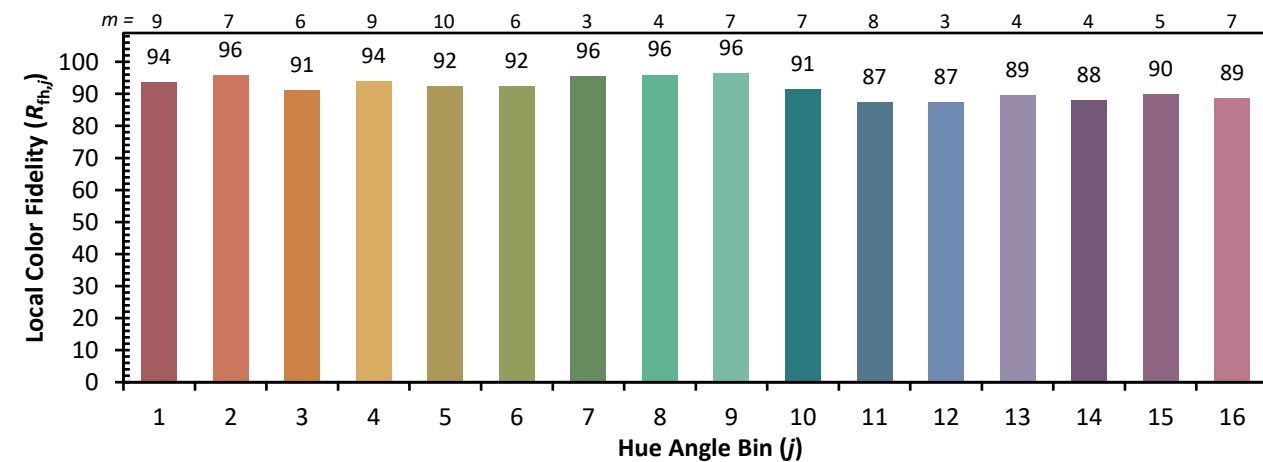
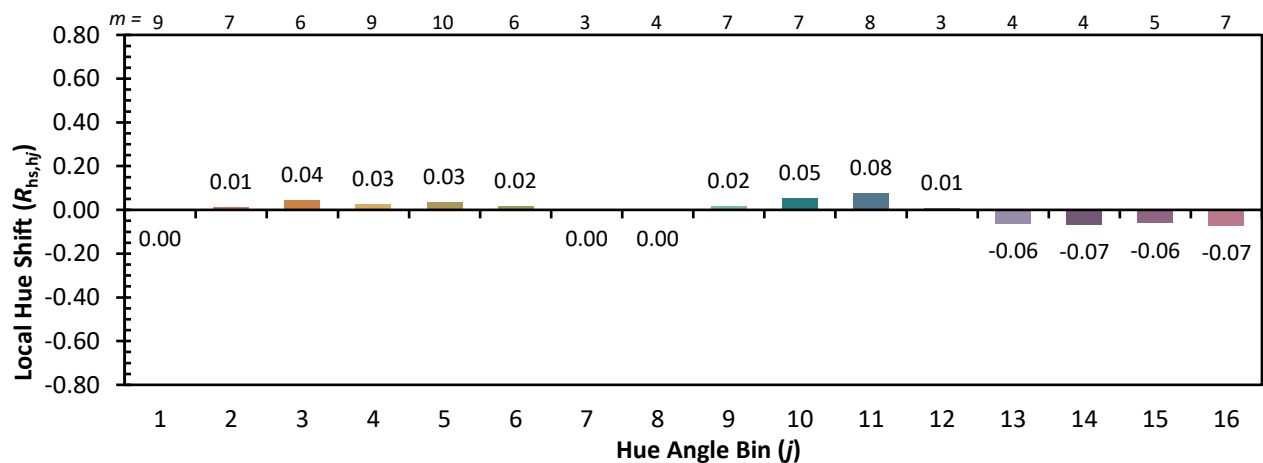
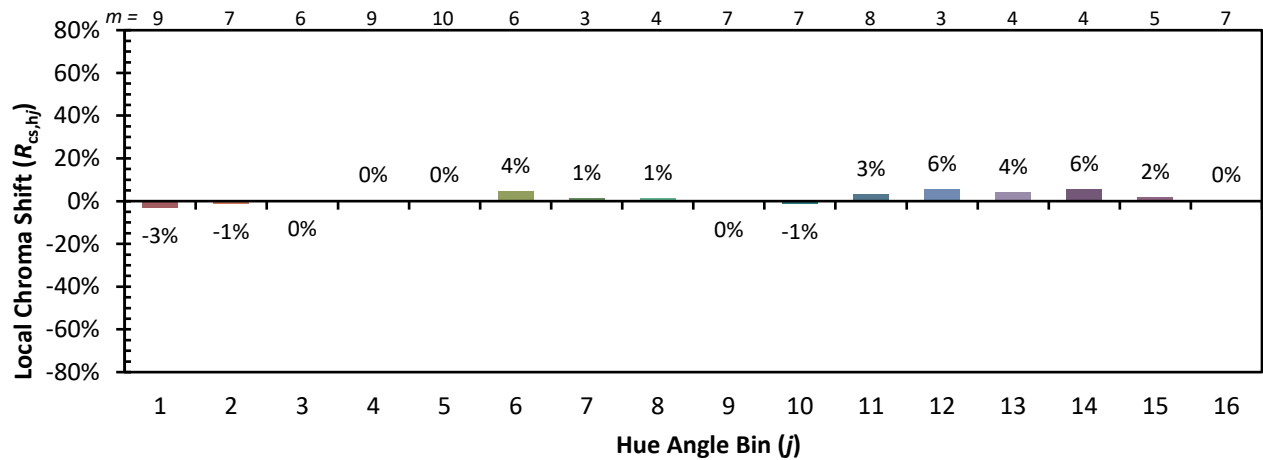


Individual Sample Fidelity Index ($R_{f,i}$)

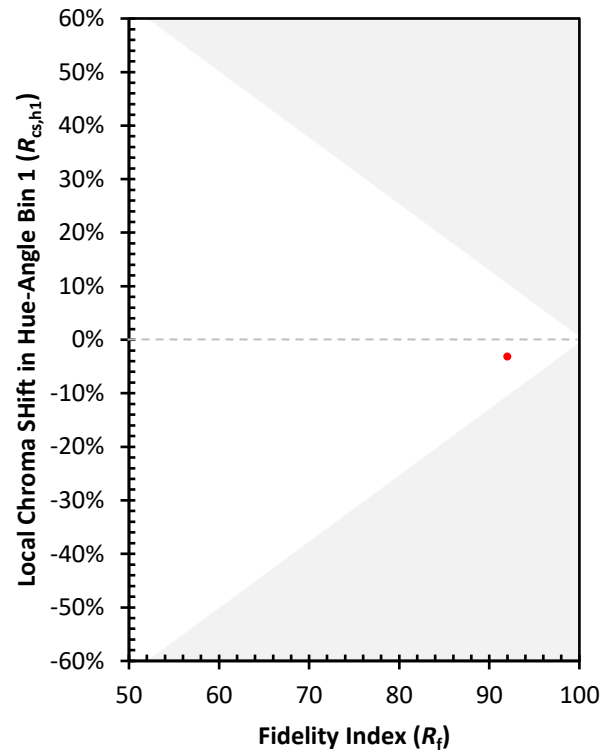
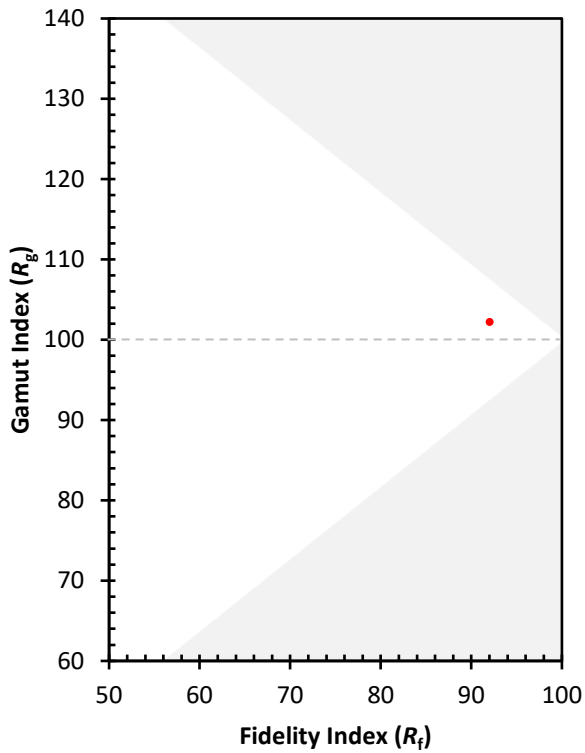
CES01 = 86	CES26 = 92	CES51 = 98	CES76 = 87
CES02 = 62	CES27 = 93	CES52 = 96	CES77 = 87
CES03 = 32	CES28 = 95	CES53 = 95	CES78 = 83
CES04 = 70	CES29 = 94	CES54 = 95	CES79 = 92
CES05 = 50	CES30 = 96	CES55 = 95	CES80 = 92
CES06 = 51	CES31 = 94	CES56 = 98	CES81 = 76
CES07 = 43	CES32 = 85	CES57 = 97	CES82 = 96
CES08 = 42	CES33 = 97	CES58 = 98	CES83 = 94
CES09 = 29	CES34 = 91	CES59 = 99	CES84 = 94
CES10 = 75	CES35 = 94	CES60 = 94	CES85 = 81
CES11 = 58	CES36 = 84	CES61 = 94	CES86 = 85
CES12 = 64	CES37 = 91	CES62 = 89	CES87 = 92
CES13 = 44	CES38 = 92	CES63 = 94	CES88 = 97
CES14 = 74	CES39 = 99	CES64 = 94	CES89 = 85
CES15 = 72	CES40 = 96	CES65 = 92	CES90 = 98
CES16 = 48	CES41 = 97	CES66 = 91	CES91 = 76
CES17 = 49	CES42 = 88	CES67 = 90	CES92 = 81
CES18 = 56	CES43 = 89	CES68 = 90	CES93 = 88
CES19 = 71	CES44 = 99	CES69 = 90	CES94 = 78
CES20 = 67	CES45 = 93	CES70 = 87	CES95 = 86
CES21 = 86	CES46 = 95	CES71 = 84	CES96 = 93
CES22 = 78	CES47 = 89	CES72 = 94	CES97 = 93
CES23 = 91	CES48 = 97	CES73 = 82	CES98 = 96
CES24 = 90	CES49 = 93	CES74 = 90	CES99 = 98
CES25 = 71	CES50 = 97	CES75 = 85	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)