

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: P995459

Luminaire Tested: **LTT409FSMB-927**

Issue Date: 06/09/2025



Test Information

Test Method: LM-79-08
Report Number: P995459
Test Lab: INNOVATION CENTER (G1)
Issue Date: 06/09/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: LTT409FSMB-927
Description: HALO LT BLACK TRIM HIGH LUMENS 4 inch 90 CRI COLOR SELECTABLE
FIXTURE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

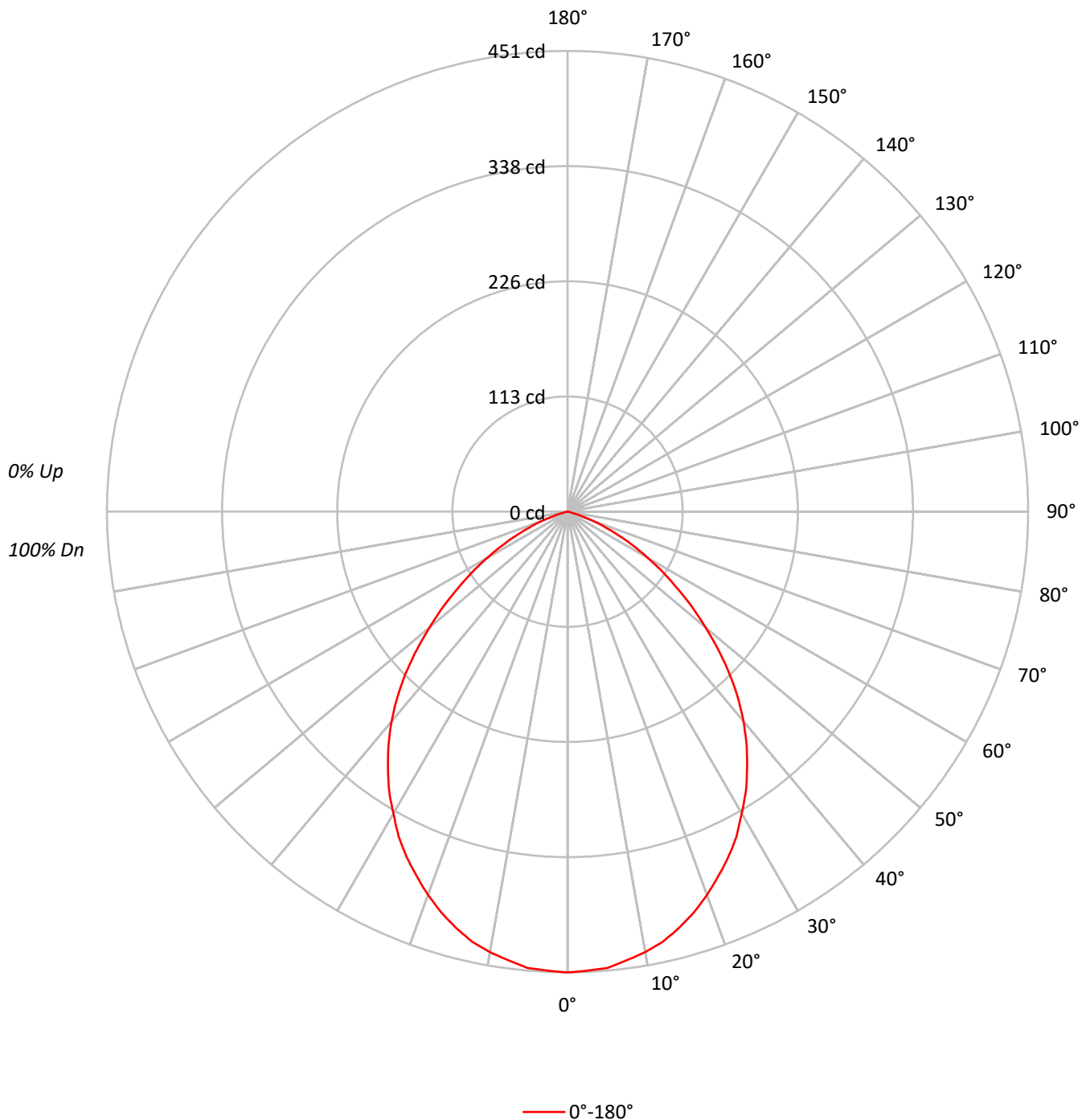
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 879.5 lumens
Efficiency: N/A
Efficacy: 90.7 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): 9.7
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: P995459
CATALOG NUMBER: LTT409FSMB-927

Luminous Intensity Polar Plot





TEST NUMBER: P995459

CATALOG NUMBER: LTT409FSMB-927

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

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	68693
5°	68542
10°	67696
15°	66513
20°	64707
25°	62638
30°	59960
35°	56978
40°	53274
45°	48282
50°	41813
55°	34859
60°	27867
65°	20070
70°	11799
75°	3883
80°	0
85°	0



TEST NUMBER: P995459
 CATALOG NUMBER: LTT409FSMB-927

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.4	4.8
10°-20°	118.7	13.5
20°-30°	171.3	19.5
30°-40°	191.3	21.8
40°-50°	172.0	19.6
50°-60°	118.3	13.4
60°-70°	56.0	6.4
70°-80°	9.4	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°	332.4	37.8
0°-40°	523.8	59.6
0°-60°	814.1	92.6
0°-90°	879.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	879.5	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	451	
5°	448	42
15°	422	119
25°	373	171
35°	306	191
45°	224	172
55°	131	118
65°	56	56
75°	7	9
85°	0	0
90°	0	



TEST NUMBER: P995459
CATALOG NUMBER: LTT409FSMB-927

CANDELA DISTRIBUTION (FULL):

0°	
0°	451.1
2.5°	449.8
5°	448.4
7.5°	443.1
10°	437.8
12.5°	431.2
15°	421.9
17.5°	411.3
20°	399.3
22.5°	386.1
25°	372.8
27.5°	358.2
30°	341.0
32.5°	325.0
35°	306.5
37.5°	287.9
40°	268.0
42.5°	246.8
45°	224.2
47.5°	200.3
50°	176.5
52.5°	153.9
55°	131.3
57.5°	111.4
60°	91.5
62.5°	73.0
65°	55.7
67.5°	39.8
70°	26.5
72.5°	14.6
75°	6.6
77.5°	1.3
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

TEST NUMBER: P995459
 CATALOG NUMBER: LTT409FSMB-927

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	23.46	24.89	23.83	25.20	25.52	23.46	24.89	23.83	25.20	25.52
	3H	23.92	25.18	24.30	25.51	25.88	23.92	25.18	24.30	25.51	25.88
	4H	23.90	25.07	24.30	25.42	25.81	23.90	25.07	24.30	25.42	25.81
	6H	23.82	24.91	24.24	25.28	25.67	23.82	24.91	24.24	25.28	25.67
	8H	23.79	24.81	24.21	25.20	25.61	23.79	24.81	24.21	25.20	25.61
	12H	23.75	24.73	24.18	25.11	25.54	23.75	24.73	24.18	25.11	25.54
4H	2H	23.68	24.86	24.08	25.21	25.59	23.68	24.86	24.08	25.21	25.59
	3H	24.20	25.16	24.61	25.56	25.96	24.20	25.16	24.61	25.56	25.96
	4H	24.17	25.02	24.61	25.44	25.88	24.17	25.02	24.61	25.44	25.88
	6H	24.10	24.84	24.56	25.28	25.75	24.10	24.84	24.56	25.28	25.75
	8H	24.05	24.74	24.52	25.18	25.65	24.05	24.74	24.52	25.18	25.65
	12H	24.01	24.62	24.49	25.10	25.57	24.01	24.62	24.49	25.10	25.57
8H	4H	24.08	24.77	24.55	25.21	25.68	24.08	24.77	24.55	25.21	25.68
	6H	23.99	24.55	24.49	25.04	25.52	23.99	24.55	24.49	25.04	25.52
	8H	23.93	24.43	24.45	24.95	25.44	23.93	24.43	24.45	24.95	25.44
	12H	23.89	24.34	24.40	24.83	25.40	23.89	24.34	24.40	24.83	25.40
12H	4H	24.04	24.65	24.53	25.13	25.60	24.04	24.65	24.53	25.13	25.60
	6H	23.93	24.43	24.45	24.95	25.44	23.93	24.43	24.45	24.95	25.44
	8H	23.89	24.34	24.40	24.83	25.40	23.89	24.34	24.40	24.83	25.40

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

Report Prepared for

Cooper Lighting Solutions

Halo Recessed

Report Number: SP2-2504-410-1

Test Date: 05/22/2025

Luminaire Tested: LTT5607FSMBSS-2700K

Data in this report applies to families of products including LTT5607FSMBSS-2700K

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

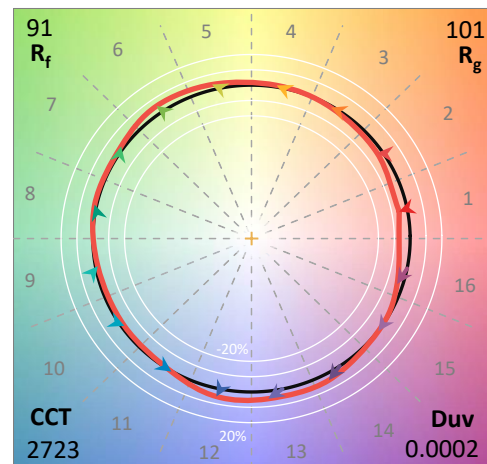
Test Information

Test Method: LM-79-2019
 Report Number: SP2-2504-410-1
 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-2700K**
 Description: HALO LT BLACK LED TRIM 6 INCH SMOOTH

Spectral Parameters

CCT (K): 2723
 CIE u' : 0.2614
 CIE v' : 0.5272
 Duv: 0.0002
 CIE x: 0.4584
 CIE y: 0.4109
 CIE z: 0.1307
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 584
 Purity: 60.93303
 R_f: 90.9
 R_g: 100.8

CRI (Ra): 93.6
 R1: 95.3
 R2: 96.1
 R3: 95.0
 R4: 95.3
 R5: 94.3
 R6: 96.6
 R7: 92.4
 R8: 83.5
 R9: 60.7
 R10: 88.3
 R11: 96.3
 R12: 85.0
 R13: 95.0
 R14: 95.5
 R15: 90.9



Test Conditions

Stabilization Time: 35M
 Operation Time: 1H 35M
 Sphere Temperature (°C): 24.7

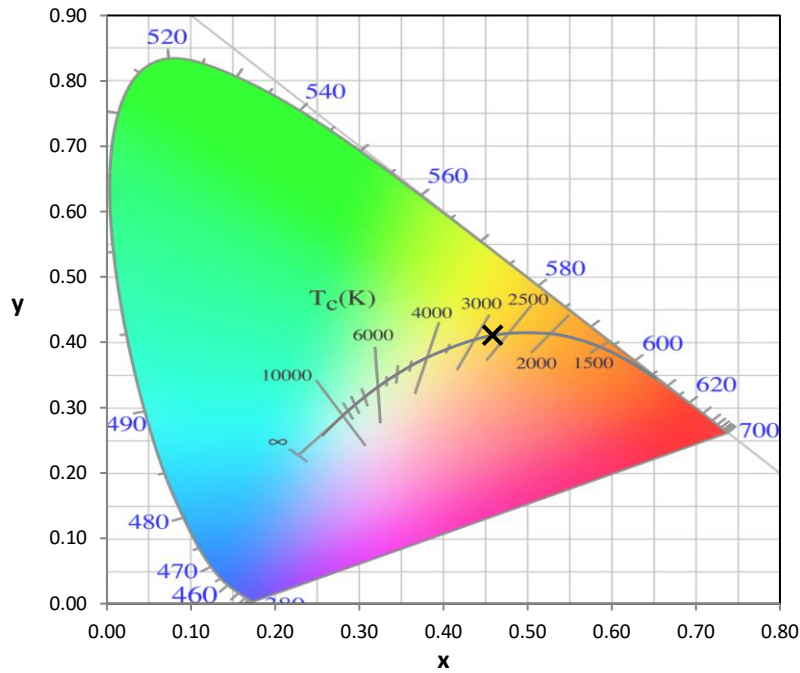
REPORT NUMBER: SP2-2504-410-1

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

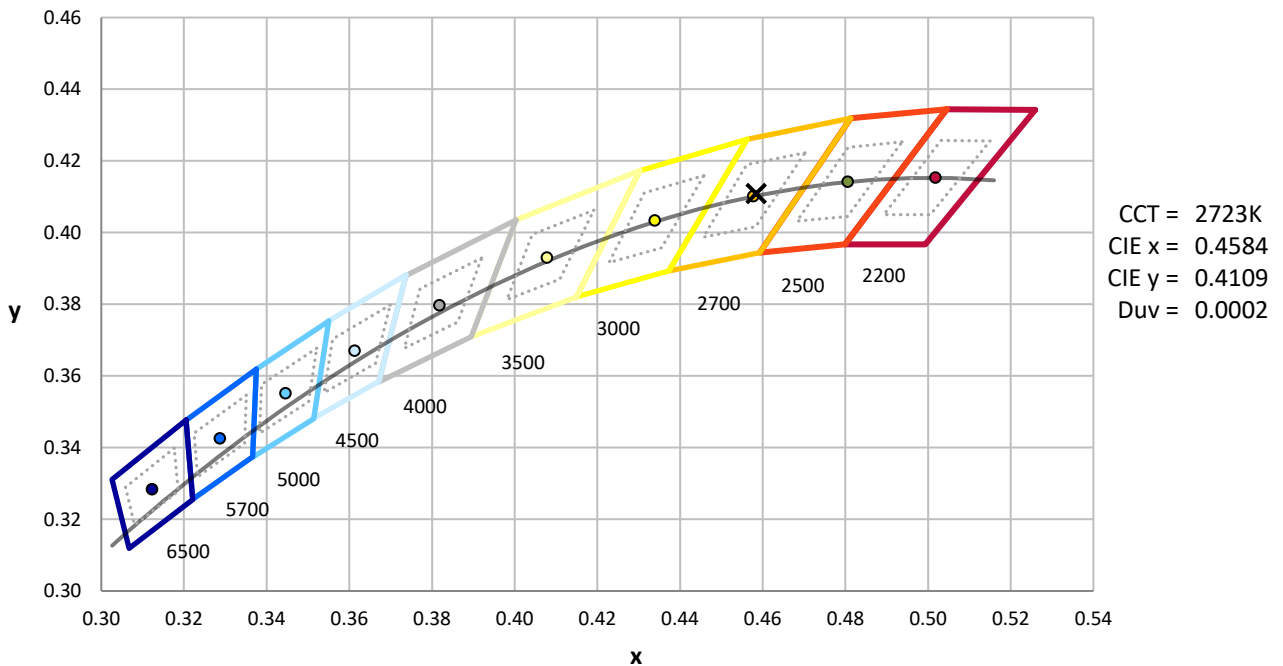
Sample Number	Condition	Description
P2504-410-LM.1	Good	HALO LT BLACK LED TRIM 6 INCH SMOOTH

REPORT NUMBER: SP2-2504-410-1

CIE 1931 Chromaticity Diagram



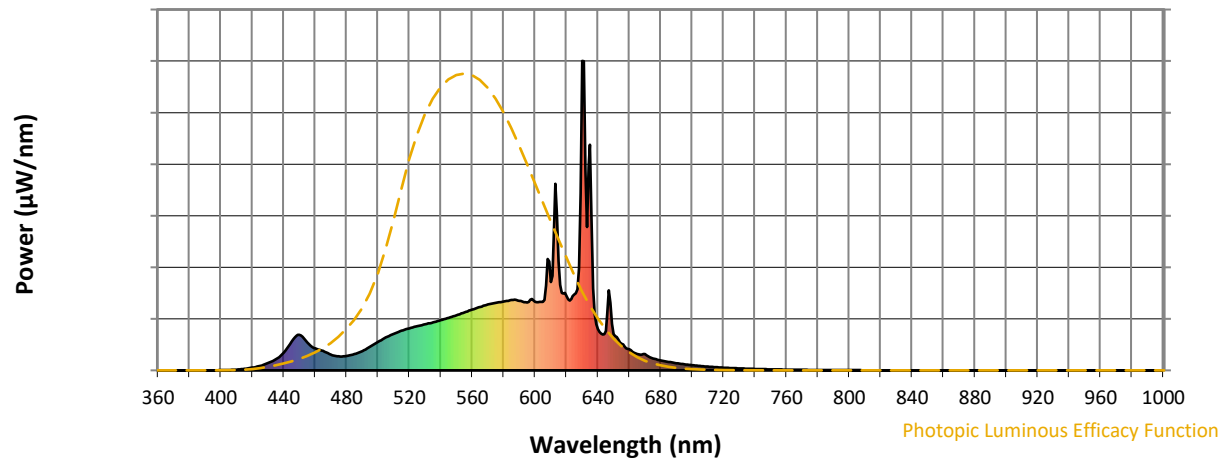
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP2-2504-410-1

Photopic Flux vs. Wavelength

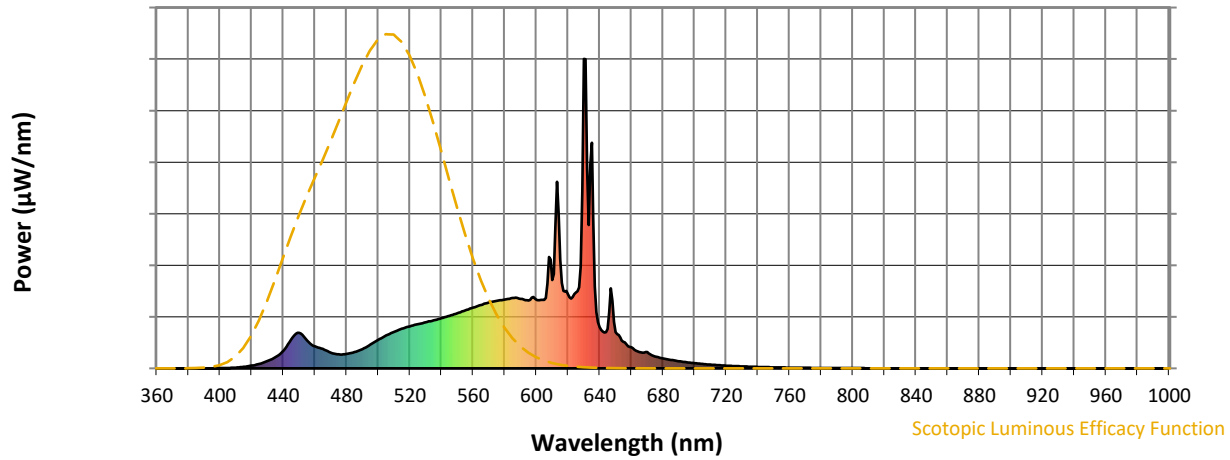


Photopic Lumens: NR

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	62	NR	620	240	NR	750	3	NR	880	0	NR
365	0	NR	495	76	NR	625	245	NR	755	3	NR	885	0	NR
370	0	NR	500	92	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	106	NR	635	729	NR	765	2	NR	895	0	NR
380	0	NR	510	118	NR	640	133	NR	770	2	NR	900	0	NR
385	0	NR	515	128	NR	645	127	NR	775	2	NR	905	0	NR
390	0	NR	520	136	NR	650	117	NR	780	1	NR	910	0	NR
395	0	NR	525	143	NR	655	86	NR	785	1	NR	915	0	NR
400	1	NR	530	149	NR	660	69	NR	790	1	NR	920	0	NR
405	1	NR	535	155	NR	665	53	NR	795	1	NR	925	0	NR
410	2	NR	540	162	NR	670	52	NR	800	1	NR	930	0	NR
415	5	NR	545	170	NR	675	39	NR	805	1	NR	935	0	NR
420	9	NR	550	178	NR	680	32	NR	810	1	NR	940	0	NR
425	15	NR	555	187	NR	685	27	NR	815	0	NR	945	0	NR
430	23	NR	560	196	NR	690	23	NR	820	0	NR	950	0	NR
435	36	NR	565	205	NR	695	20	NR	825	0	NR	955	0	NR
440	57	NR	570	213	NR	700	17	NR	830	0	NR	960	0	NR
445	93	NR	575	218	NR	705	14	NR	835	0	NR	965	0	NR
450	115	NR	580	223	NR	710	12	NR	840	0	NR	970	0	NR
455	90	NR	585	227	NR	715	10	NR	845	0	NR	975	0	NR
460	71	NR	590	225	NR	720	9	NR	850	0	NR	980	0	NR
465	63	NR	595	219	NR	725	7	NR	855	0	NR	985	0	NR
470	51	NR	600	221	NR	730	6	NR	860	0	NR	990	0	NR
475	45	NR	605	221	NR	735	5	NR	865	0	NR	995	0	NR
480	47	NR	610	286	NR	740	5	NR	870	0	NR	1000	0	NR
485	53	NR	615	352	NR	745	4	NR	875	0	NR			

REPORT NUMBER: SP2-2504-410-1

Scotopic Flux vs. Wavelength



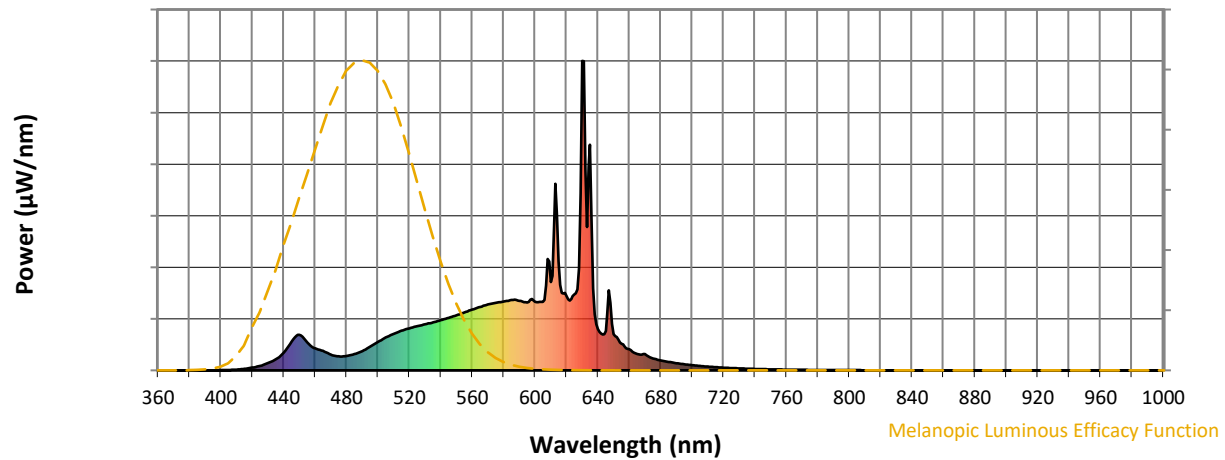
Scotopic Lumens: NR

S/P: 1.27

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	62	NR	620	240	NR	750	3	NR	880	0	NR
365	0	NR	495	76	NR	625	245	NR	755	3	NR	885	0	NR
370	0	NR	500	92	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	106	NR	635	729	NR	765	2	NR	895	0	NR
380	0	NR	510	118	NR	640	133	NR	770	2	NR	900	0	NR
385	0	NR	515	128	NR	645	127	NR	775	2	NR	905	0	NR
390	0	NR	520	136	NR	650	117	NR	780	1	NR	910	0	NR
395	0	NR	525	143	NR	655	86	NR	785	1	NR	915	0	NR
400	1	NR	530	149	NR	660	69	NR	790	1	NR	920	0	NR
405	1	NR	535	155	NR	665	53	NR	795	1	NR	925	0	NR
410	2	NR	540	162	NR	670	52	NR	800	1	NR	930	0	NR
415	5	NR	545	170	NR	675	39	NR	805	1	NR	935	0	NR
420	9	NR	550	178	NR	680	32	NR	810	1	NR	940	0	NR
425	15	NR	555	187	NR	685	27	NR	815	0	NR	945	0	NR
430	23	NR	560	196	NR	690	23	NR	820	0	NR	950	0	NR
435	36	NR	565	205	NR	695	20	NR	825	0	NR	955	0	NR
440	57	NR	570	213	NR	700	17	NR	830	0	NR	960	0	NR
445	93	NR	575	218	NR	705	14	NR	835	0	NR	965	0	NR
450	115	NR	580	223	NR	710	12	NR	840	0	NR	970	0	NR
455	90	NR	585	227	NR	715	10	NR	845	0	NR	975	0	NR
460	71	NR	590	225	NR	720	9	NR	850	0	NR	980	0	NR
465	63	NR	595	219	NR	725	7	NR	855	0	NR	985	0	NR
470	51	NR	600	221	NR	730	6	NR	860	0	NR	990	0	NR
475	45	NR	605	221	NR	735	5	NR	865	0	NR	995	0	NR
480	47	NR	610	286	NR	740	5	NR	870	0	NR	1000	0	NR
485	53	NR	615	352	NR	745	4	NR	875	0	NR			

REPORT NUMBER: SP2-2504-410-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.39

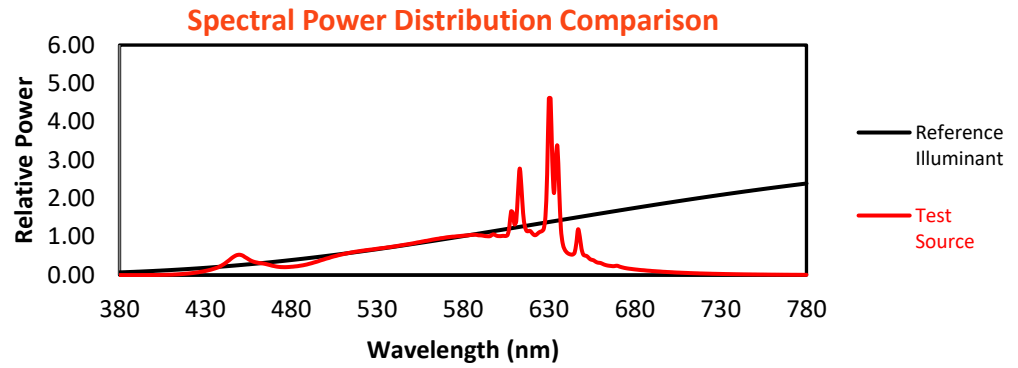
λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (φ/nm)
360	0	NR	490	62	NR	620	240	NR	750	3	NR	880	0	NR
365	0	NR	495	76	NR	625	245	NR	755	3	NR	885	0	NR
370	0	NR	500	92	NR	630	1000	NR	760	2	NR	890	0	NR
375	0	NR	505	106	NR	635	729	NR	765	2	NR	895	0	NR
380	0	NR	510	118	NR	640	133	NR	770	2	NR	900	0	NR
385	0	NR	515	128	NR	645	127	NR	775	2	NR	905	0	NR
390	0	NR	520	136	NR	650	117	NR	780	1	NR	910	0	NR
395	0	NR	525	143	NR	655	86	NR	785	1	NR	915	0	NR
400	1	NR	530	149	NR	660	69	NR	790	1	NR	920	0	NR
405	1	NR	535	155	NR	665	53	NR	795	1	NR	925	0	NR
410	2	NR	540	162	NR	670	52	NR	800	1	NR	930	0	NR
415	5	NR	545	170	NR	675	39	NR	805	1	NR	935	0	NR
420	9	NR	550	178	NR	680	32	NR	810	1	NR	940	0	NR
425	15	NR	555	187	NR	685	27	NR	815	0	NR	945	0	NR
430	23	NR	560	196	NR	690	23	NR	820	0	NR	950	0	NR
435	36	NR	565	205	NR	695	20	NR	825	0	NR	955	0	NR
440	57	NR	570	213	NR	700	17	NR	830	0	NR	960	0	NR
445	93	NR	575	218	NR	705	14	NR	835	0	NR	965	0	NR
450	115	NR	580	223	NR	710	12	NR	840	0	NR	970	0	NR
455	90	NR	585	227	NR	715	10	NR	845	0	NR	975	0	NR
460	71	NR	590	225	NR	720	9	NR	850	0	NR	980	0	NR
465	63	NR	595	219	NR	725	7	NR	855	0	NR	985	0	NR
470	51	NR	600	221	NR	730	6	NR	860	0	NR	990	0	NR
475	45	NR	605	221	NR	735	5	NR	865	0	NR	995	0	NR
480	47	NR	610	286	NR	740	5	NR	870	0	NR	1000	0	NR
485	53	NR	615	352	NR	745	4	NR	875	0	NR			

REPORT NUMBER: SP2-2504-410-1

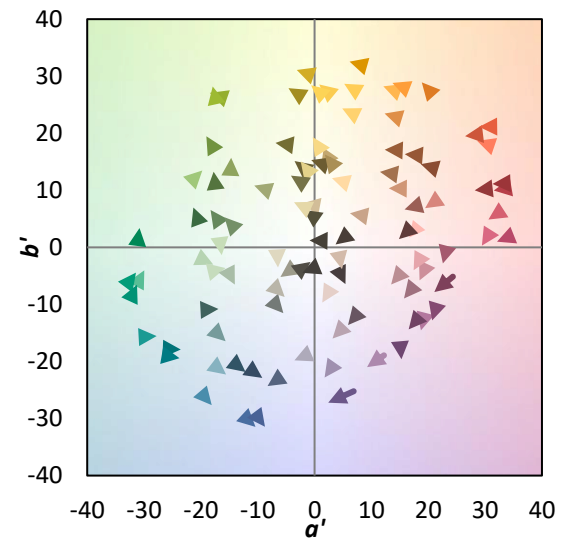
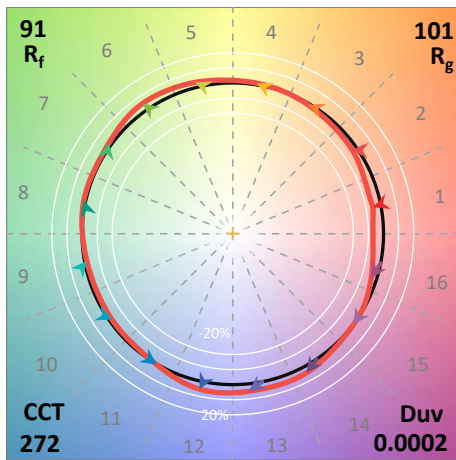
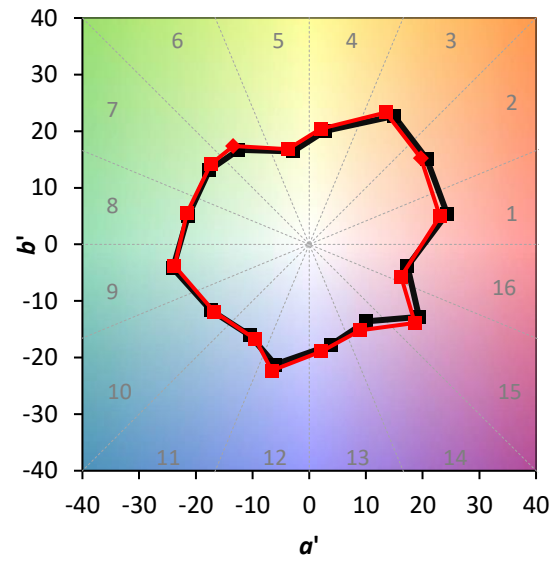
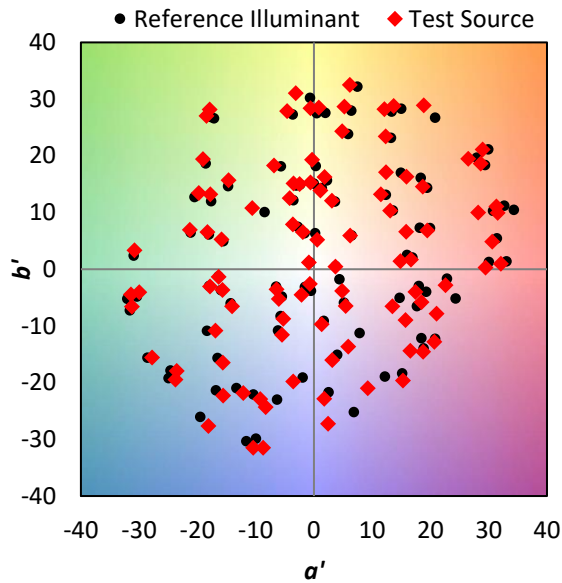
TM-30-18

Summary

$R_f = 90.9$
 $R_g = 100.8$
 $CIE R_a = 93.6$
 $R_9 = 60.7$

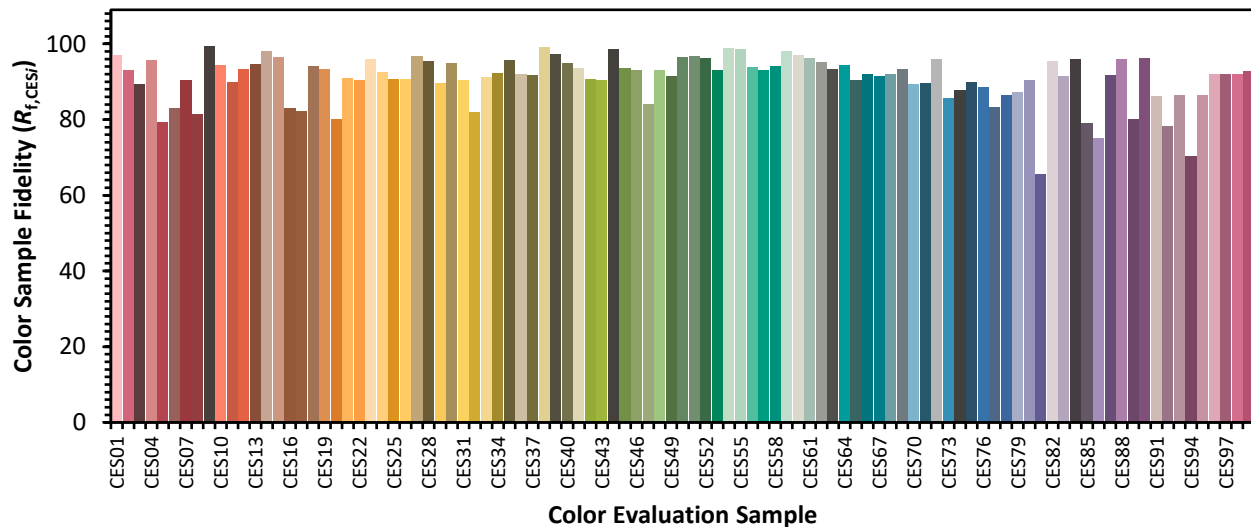


Color Vector Graphics

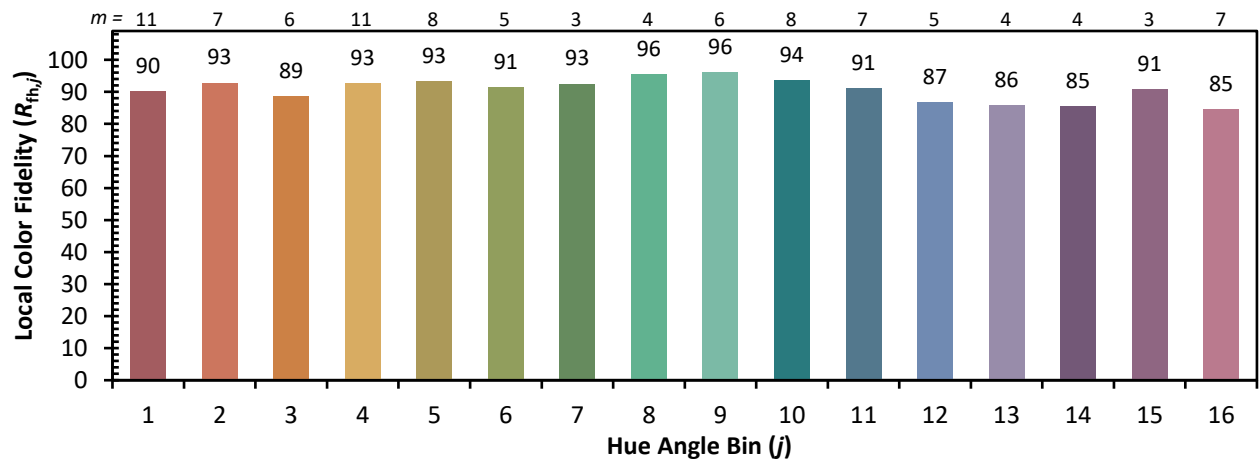
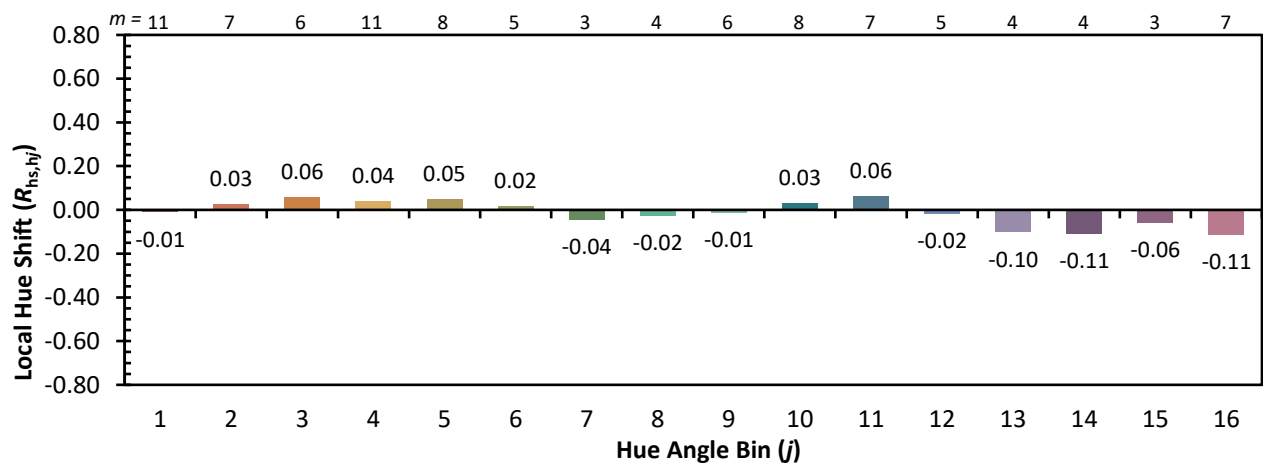
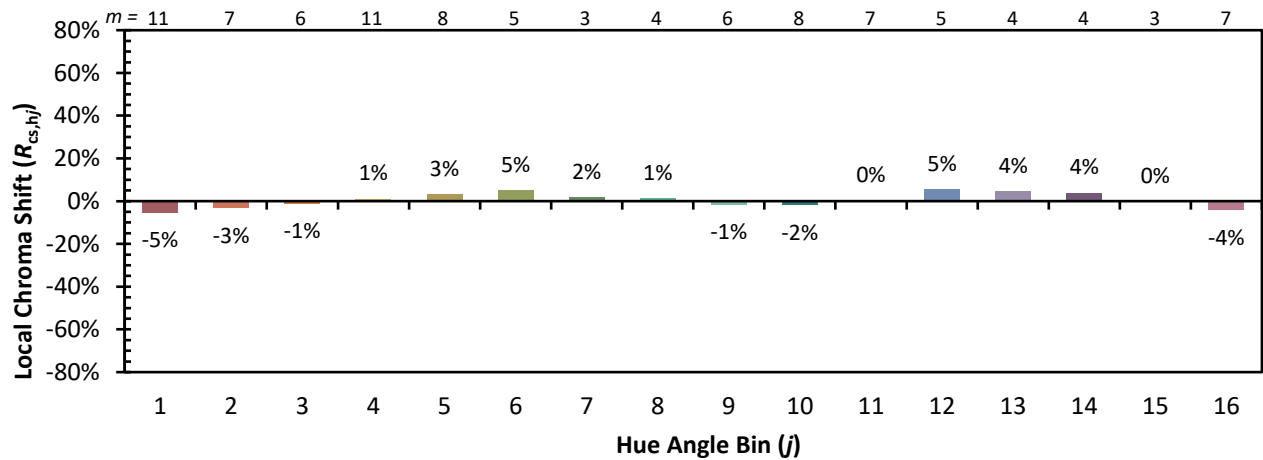


Individual Sample Fidelity Index ($R_{f,i}$)

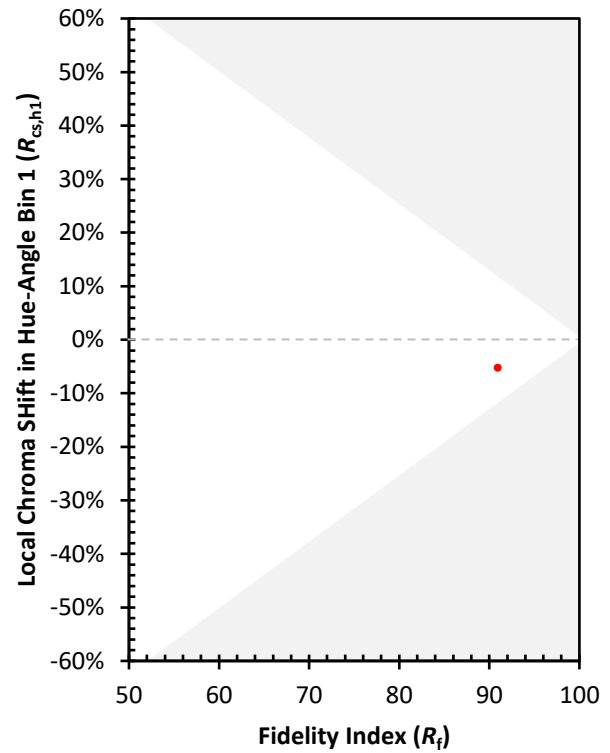
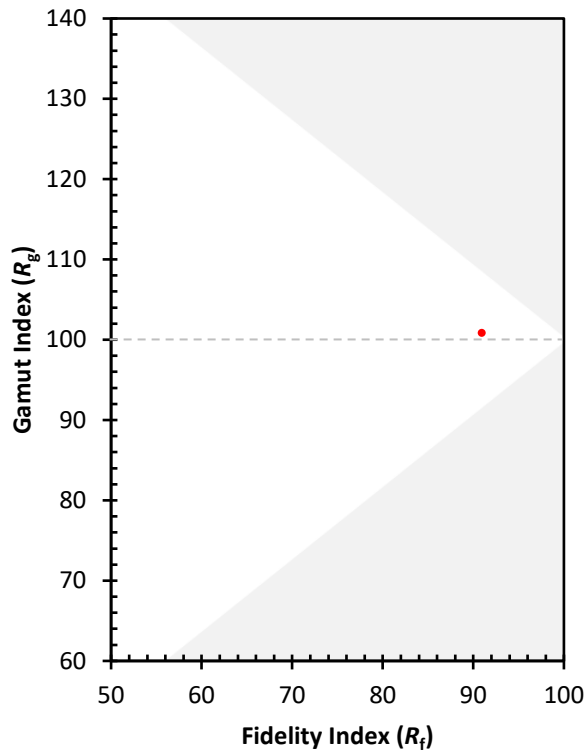
CES01 = 86	CES26 = 91	CES51 = 97	CES76 = 88
CES02 = 64	CES27 = 97	CES52 = 96	CES77 = 83
CES03 = 32	CES28 = 96	CES53 = 93	CES78 = 87
CES04 = 71	CES29 = 90	CES54 = 99	CES79 = 87
CES05 = 51	CES30 = 95	CES55 = 99	CES80 = 90
CES06 = 51	CES31 = 90	CES56 = 94	CES81 = 66
CES07 = 44	CES32 = 82	CES57 = 93	CES82 = 95
CES08 = 43	CES33 = 91	CES58 = 94	CES83 = 91
CES09 = 29	CES34 = 92	CES59 = 98	CES84 = 96
CES10 = 77	CES35 = 96	CES60 = 97	CES85 = 79
CES11 = 59	CES36 = 92	CES61 = 96	CES86 = 75
CES12 = 66	CES37 = 92	CES62 = 95	CES87 = 92
CES13 = 44	CES38 = 99	CES63 = 93	CES88 = 96
CES14 = 74	CES39 = 97	CES64 = 94	CES89 = 80
CES15 = 72	CES40 = 95	CES65 = 90	CES90 = 96
CES16 = 48	CES41 = 94	CES66 = 92	CES91 = 86
CES17 = 50	CES42 = 91	CES67 = 91	CES92 = 78
CES18 = 57	CES43 = 90	CES68 = 92	CES93 = 86
CES19 = 72	CES44 = 99	CES69 = 93	CES94 = 70
CES20 = 68	CES45 = 94	CES70 = 89	CES95 = 86
CES21 = 87	CES46 = 93	CES71 = 90	CES96 = 92
CES22 = 79	CES47 = 84	CES72 = 96	CES97 = 92
CES23 = 92	CES48 = 93	CES73 = 86	CES98 = 92
CES24 = 91	CES49 = 92	CES74 = 88	CES99 = 93
CES25 = 72	CES50 = 96	CES75 = 90	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)