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: METALUX

Report Number: P860185

Luminaire Tested: **SPHB-48SE-M-L940-CD**

Issue Date: 7/11/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Test Information

Test Method:	LM-79-08
Report Number:	P860185
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-343-1)
Test Lab:	INNOVATION CENTER
Issue Date:	7/11/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	METALUX
Catalog Number:	SPHB-48SE-M-L940-CD
Description:	48000 Lumen Standard Efficacy Select Pro High Bay with Medium Lens and, 4000K 90CRI LEDs
Light Source:	-
Ballast/Driver:	-

Luminaire Equipment:	Sample No.	Condition	Description

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	41256.0 lumens
Efficiency:	N/A
Efficacy:	135.3 lumens/watt
Spacing Criteria (0/90/45):	1.25 / 1.16 / 1.22
Luminous Opening:	Rectangular (W 1' x L: 3.38' x H: 0')
CIE Type:	Direct

Input Watts (W):	304.9
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:	25 FT

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Scaled Data Report

TEST NUMBER: P860185
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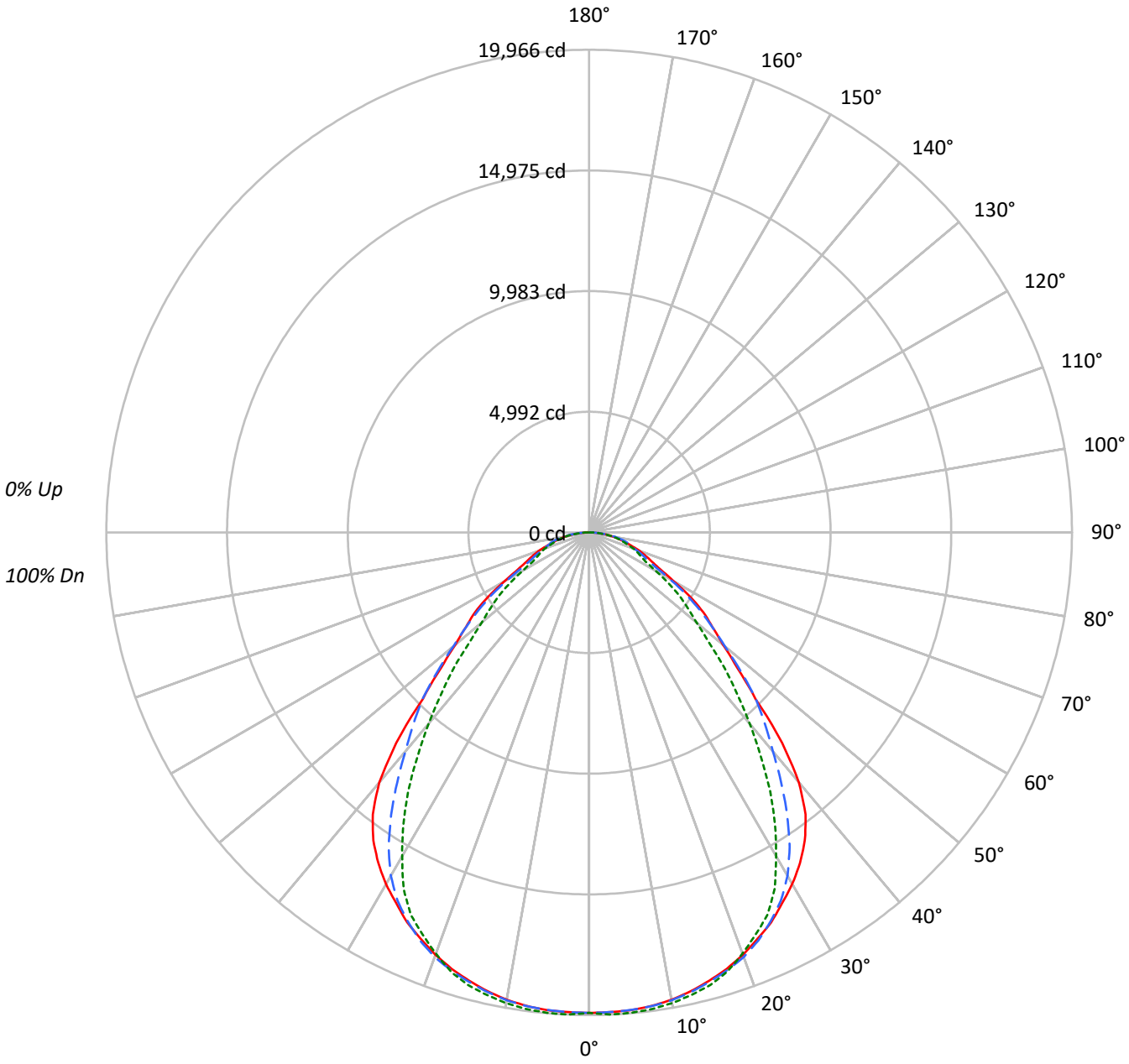
Luminous Intensity Polar Plot



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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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58
5	81	69	61	55	79	68	61	55	66	59	54	64	58	54	62	57	53	51
6	75	63	55	49	73	62	54	49	60	54	48	59	53	48	57	52	48	46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41
8	66	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	41	36	46	40	36	45	40	36	34
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	63298	63298	63298
5°	63423	63406	63766
10°	63478	63545	63935
15°	63292	63457	63897
20°	63016	63336	62829
25°	62555	62380	61321
30°	61763	60308	56866
35°	60467	55483	50683
40°	56115	49107	42928
45°	43779	43897	35526
50°	35755	36262	28690
55°	32036	30828	25210
60°	25647	24277	20170
65°	21492	19675	17838
70°	20406	18746	18160
75°	18516	19902	17515
80°	18605	20336	18462
85°	16187	18967	15423

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TEST NUMBER: P860185
CATALOG NUMBER: SPHB-48SE-M-L940-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1889.9	4.6
10°-20°	5435.3	13.2
20°-30°	8114.0	19.7
30°-40°	8853.8	21.5
40°-50°	7242.8	17.6
50°-60°	4762.1	11.5
60°-70°	2732.1	6.6
70°-80°	1655.6	4.0
80°-90°	555.9	1.3
90°-100°	14.4	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°	15439.2	37.4
0°-40°	24293.0	58.9
0°-60°	36297.9	88.0
0°-90°	41241.6	100.0
90°-120°	14.4	0.0
90°-150°	14.4	0.0
90°-180°	14.0	0.0
0°-180°	41256.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	19876	19876	19876	19876	19876	
5°	19840	19808	19834	19916	19947	###
15°	19197	19195	19247	19370	19381	5419
25°	17803	17845	17753	17538	17452	8190
35°	15554	15202	14272	13299	13037	9640
45°	9721	10447	9747	8604	7888	7716
55°	5770	5613	5552	4771	4540	5082
65°	2852	2810	2611	2540	2367	2916
75°	1505	1628	1618	1552	1424	1629
85°	443	503	519	454	422	480
90°	3	37	73	86	92	21
95°	3	5	8	8	5	1
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	

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Scaled Data Report

TEST NUMBER: P860185
CATALOG NUMBER: SPHB-48SE-M-L940-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	19876.4	19876.4	19876.4	19876.4	*19876.4*
2.5°	*19863.3*	*19834.4*	*19860.6*	*19941.9*	*19965.5*
5°	19839.7	19808.2	19834.4	19915.7	*19947.1*
7.5°	19758.4	19740.0	19766.3	19847.5	*19886.8*
10°	19629.9	19609.0	19650.9	19721.7	*19771.5*
12.5°	19438.6	19430.7	19470.0	19572.3	*19593.2*
15°	19197.4	19194.8	19247.2	19370.4	*19380.9*
17.5°	18924.7	18922.1	18987.7	19068.9	*19040.1*
20°	18594.4	18612.8	18688.8	18612.8	*18539.4*
22.5°	18198.6	18256.3	18274.6	18036.1	*17999.4*
25°	17802.7	17844.7	17752.9	17538.0	*17451.5*
27.5°	17291.5	17341.4	17171.0	16864.2	*16617.8*
30°	16796.1	16748.9	16400.2	15807.8	*15464.3*
32.5°	16227.2	16059.4	15432.9	14615.0	*14303.0*
35°	15553.5	15202.2	14271.6	13299.0	*13036.8*
37.5°	14701.5	14059.2	13042.1	12027.5	*11631.7*
40°	13498.2	12756.3	11812.6	10764.0	*10326.2*
42.5°	11812.6	11537.3	10756.1	9576.4	*9054.7*
45°	9720.6	10446.8	9746.8	8603.8	*7888.2*
47.5°	8320.7	9330.0	8488.5	7662.7	*6677.0*
50°	7217.0	7911.7	7319.3	6574.8	*5790.9*
52.5°	6420.1	6629.8	6391.3	5573.3	*5127.7*
55°	5770.0	5612.7	5552.4	4771.2	*4540.5*
57.5°	4962.5	4876.0	4721.4	4160.4	*3856.3*
60°	4026.7	4210.2	3811.7	3651.8	*3166.8*
62.5°	3308.4	3489.2	3061.9	3051.4	*2647.7*
65°	2852.2	2810.3	2611.0	2540.3	*2367.2*
67.5°	2524.5	2393.4	2325.3	2233.5	*2173.2*
70°	2191.6	2136.5	2013.3	2031.7	*1950.4*
72.5°	1827.2	1898.0	1774.8	1808.8	*1662.0*
75°	1504.8	1628.0	1617.5	1551.9	*1423.5*
77.5°	1240.0	1371.1	1394.6	1334.4	*1229.5*
80°	1014.5	1103.7	1108.9	1072.2	*1006.7*
82.5°	744.5	796.9	836.3	773.3	*731.4*
85°	443.0	503.3	519.1	453.5	*422.1*
87.5°	144.2	201.9	225.5	233.3	*235.9*
90°	2.6	36.7	73.4	86.5	*91.8*
92.5°	2.6	10.5	15.7	23.6	*26.2*
95°	2.6	5.2	7.9	7.9	*5.2*
97.5°	0.0	0.0	0.0	0.0	*0.0*
100°	0.0	0.0	0.0	0.0	*0.0*
102.5°	0.0	0.0	0.0	0.0	*0.0*
105°	0.0	0.0	0.0	0.0	*0.0*

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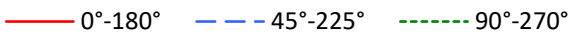
CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	0.0	0.0	0.0	*0.0*
115°	0.0	0.0	0.0	0.0	*0.0*
117.5°	0.0	0.0	0.0	0.0	*0.0*
120°	0.0	0.0	0.0	0.0	*0.0*
122.5°	0.0	0.0	0.0	0.0	*0.0*
125°	0.0	0.0	0.0	0.0	*0.0*
127.5°	0.0	0.0	0.0	0.0	*0.0*
130°	0.0	0.0	0.0	0.0	*0.0*
132.5°	0.0	0.0	0.0	0.0	*0.0*
135°	0.0	0.0	0.0	0.0	*0.0*
137.5°	0.0	0.0	0.0	0.0	*0.0*
140°	0.0	0.0	0.0	0.0	*0.0*
142.5°	0.0	0.0	0.0	0.0	*0.0*
145°	0.0	0.0	0.0	0.0	*0.0*
147.5°	0.0	0.0	0.0	0.0	*0.0*
150°	0.0	0.0	0.0	0.0	*0.0*
152.5°	0.0	0.0	0.0	0.0	*0.0*
155°	0.0	0.0	0.0	0.0	*0.0*
157.5°	0.0	0.0	0.0	0.0	*0.0*
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*

Report Generated By 670246072 / DESKTOP-50001EG


0°-180°
45°-225°
90°-270°

107.5°	0.0	0.0	0.0	0.0	*0.0*
110°	0.0	0.0	0.0	0.0	*0.0*

Cooper Lighting Solutions Photometric Lab
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: SP1-2404-343-7

Test Date: 05/20/2024

Luminaire Tested: SPHB-24SE-M-UNV-L940-CD

Data in this report applies to families of products SPHB-24SE-M-UNV-L940-CD.

Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

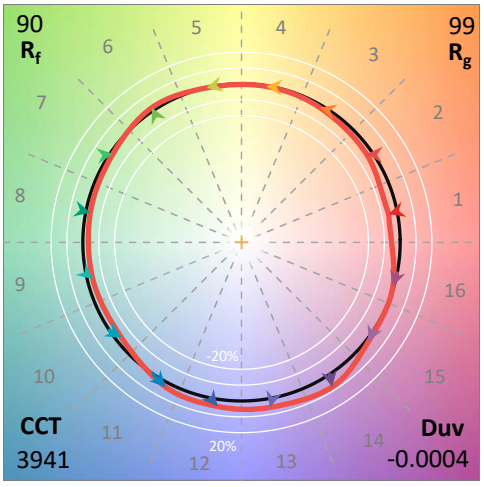
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2404-343-7
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	05/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	METALUX
Catalog Number:	**SPHB-24SE-M-UNV-L940-CD**
Description:	18IN SPHB WITH MEDIUM LENS, 4000K/90CRI, 24K LUMENS, SE

Spectral Parameters

CCT (K):	3941	CRI (Ra):	91.2		
CIE u':	0.2264	R1:	91.4	R9:	57.5
CIE v':	0.5022	R2:	93.9	R10:	84.4
Duv:	-0.0004	R3:	94.6	R11:	91.3
CIE x:	0.3827	R4:	91.6	R12:	71.8
CIE y:	0.3773	R5:	90.6	R13:	92.0
CIE z:	0.2400	R6:	90.6	R14:	96.7
Peak Wavelength (nm):	450	R7:	93.3		
Dominant Wavelength (nm):	579	R8:	83.5		
Purity:	28.3				

Rf:	90.1
Rg:	99.4



Test Conditions

Stabilization Time:	24M
Operation Time:	12H
Room Temperature (°C) / RH%:	25.0/41%
Sphere Temperature (°C):	25.2

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Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/12/2024	8/12/2024
Power Meter	XITRON 2801 IN0071	10/23/2023	10/23/2024
AC Power Source	CHROMA 61603 IN0063	10/24/2023	10/24/2024
DC Power Source	AGILENT E3634A IN0208	10/24/2023	10/24/2024
Sphere Thermometer	ONSET IN0085	10/24/2023	10/24/2024
Room Thermometer	ONSET IN0046	10/24/2023	10/24/2024

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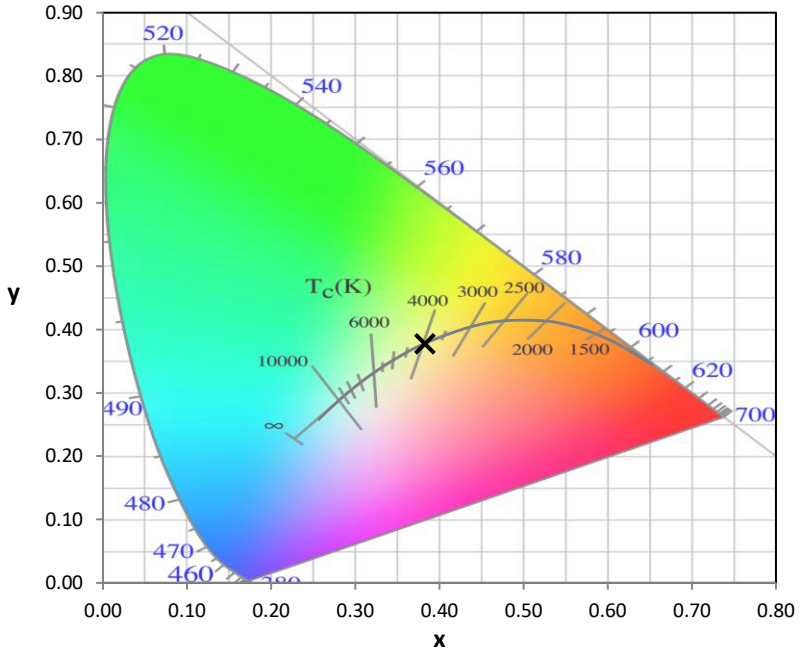
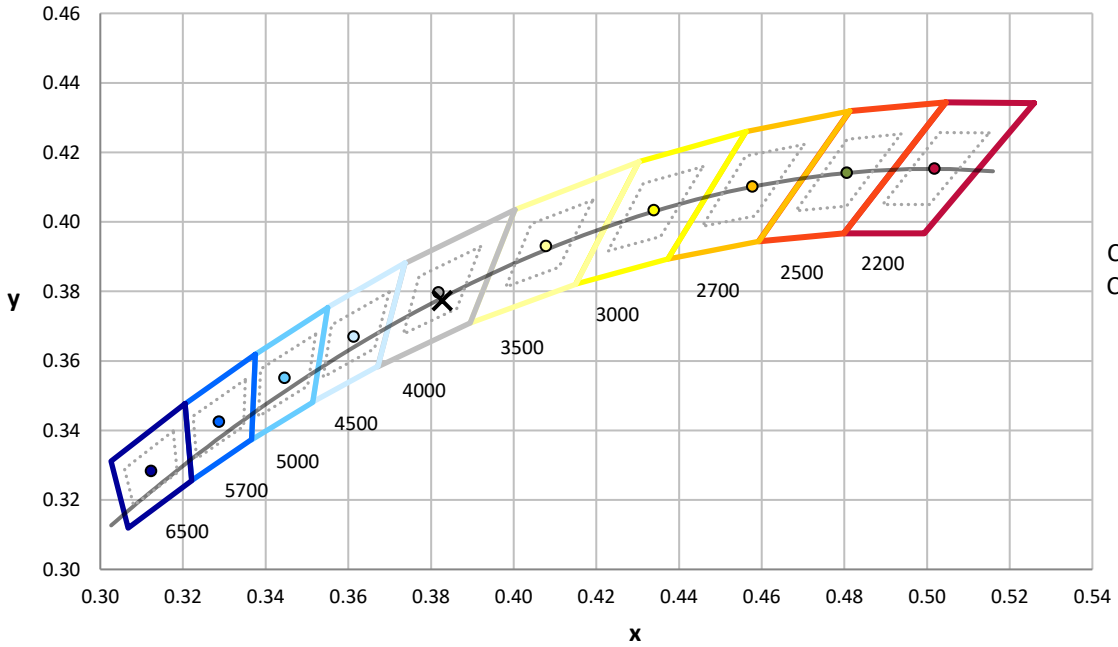
CIE 1931 Chromaticity Diagram



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



CCT = 3941K
CIE x = 0.3827
CIE y = 0.3773
Duv = -0.0004

Point lies inside the ANSI 4000K 4-step quadrangle

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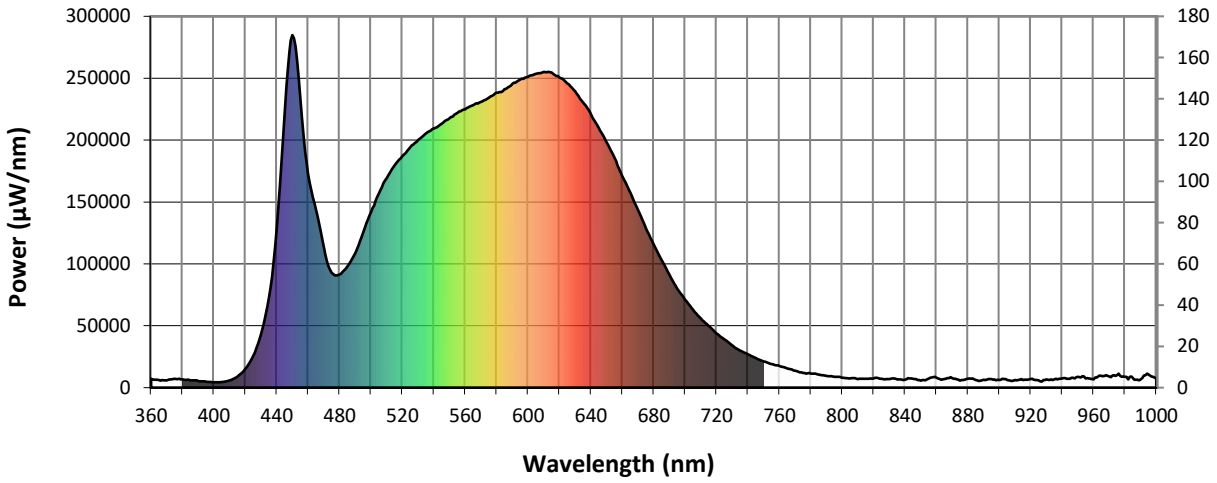
Photopic Flux vs. Wavelength



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λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	7212	NR	490	108829	NR	620	250576	NR	750	21248	NR	880	7254	NR
365	6095	NR	495	125088	NR	625	245705	NR	755	19109	NR	885	6272	NR
370	6022	NR	500	141971	NR	630	239404	NR	760	17593	NR	890	6410	NR
375	7076	NR	505	156633	NR	635	230449	NR	765	15401	NR	895	7000	NR
380	6674	NR	510	169197	NR	640	221008	NR	770	13743	NR	900	6176	NR
385	6019	NR	515	179365	NR	645	209690	NR	775	11948	NR	905	6118	NR
390	5440	NR	520	187018	NR	650	198297	NR	780	11421	NR	910	6132	NR
395	4835	NR	525	194159	NR	655	185669	NR	785	10432	NR	915	6202	NR
400	4236	NR	530	200071	NR	660	170891	NR	790	9515	NR	920	7026	NR
405	4501	NR	535	205570	NR	665	157591	NR	795	8800	NR	925	5915	NR
410	5834	NR	540	209259	NR	670	143731	NR	800	7939	NR	930	6549	NR
415	8990	NR	545	213260	NR	675	128798	NR	805	7431	NR	935	6547	NR
420	15076	NR	550	217506	NR	680	115773	NR	810	7034	NR	940	7527	NR
425	25851	NR	555	222032	NR	685	103063	NR	815	7070	NR	945	7157	NR
430	43228	NR	560	224902	NR	690	91359	NR	820	7449	NR	950	8630	NR
435	72792	NR	565	228152	NR	695	79831	NR	825	7107	NR	955	7432	NR
440	127912	NR	570	230769	NR	700	71164	NR	830	6871	NR	960	6594	NR
445	221467	NR	575	234150	NR	705	62968	NR	835	6778	NR	965	9518	NR
450	284796	NR	580	238181	NR	710	55738	NR	840	6431	NR	970	8910	NR
455	233729	NR	585	241075	NR	715	49805	NR	845	7189	NR	975	10074	NR
460	172720	NR	590	245594	NR	720	43740	NR	850	5642	NR	980	8847	NR
465	143757	NR	595	248900	NR	725	39092	NR	855	7250	NR	985	7969	NR
470	112827	NR	600	251233	NR	730	34044	NR	860	8091	NR	990	6557	NR
475	92779	NR	605	253490	NR	735	30057	NR	865	6978	NR	995	10421	NR
480	91420	NR	610	255123	NR	740	26868	NR	870	7631	NR	1000	7659	NR
485	97972	NR	615	254469	NR	745	23967	NR	875	5622	NR			

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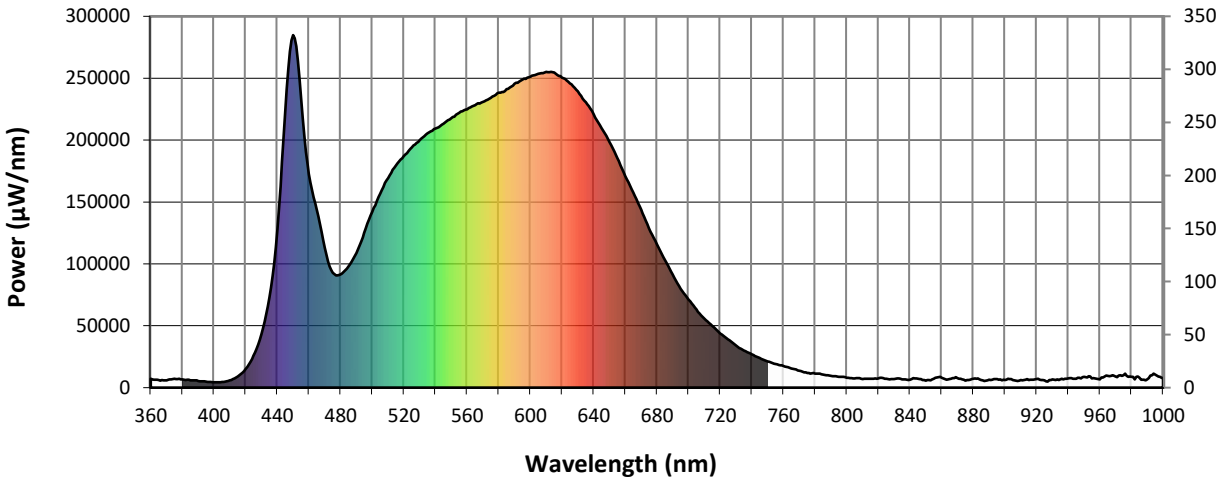
Scotopic Flux vs. Wavelength



Scotopic Lumens: 27133.5 **S/P: 1.74**

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	7212	NR	490	108829	NR	620	250576	NR	750	21248	NR	880	7254	NR
365	6095	NR	495	125088	NR	625	245705	NR	755	19109	NR	885	6272	NR
370	6022	NR	500	141971	NR	630	239404	NR	760	17593	NR	890	6410	NR
375	7076	NR	505	156633	NR	635	230449	NR	765	15401	NR	895	7000	NR
380	6674	NR	510	169197	NR	640	221008	NR	770	13743	NR	900	6176	NR
385	6019	NR	515	179365	NR	645	209690	NR	775	11948	NR	905	6118	NR
390	5440	NR	520	187018	NR	650	198297	NR	780	11421	NR	910	6132	NR
395	4835	NR	525	194159	NR	655	185669	NR	785	10432	NR	915	6202	NR
400	4236	NR	530	200071	NR	660	170891	NR	790	9515	NR	920	7026	NR
405	4501	NR	535	205570	NR	665	157591	NR	795	8800	NR	925	5915	NR
410	5834	NR	540	209259	NR	670	143731	NR	800	7939	NR	930	6549	NR
415	8990	NR	545	213260	NR	675	128798	NR	805	7431	NR	935	6547	NR
420	15076	NR	550	217506	NR	680	115773	NR	810	7034	NR	940	7527	NR
425	25851	NR	555	222032	NR	685	103063	NR	815	7070	NR	945	7157	NR
430	43228	NR	560	224902	NR	690	91359	NR	820	7449	NR	950	8630	NR
435	72792	NR	565	228152	NR	695	79831	NR	825	7107	NR	955	7432	NR
440	127912	NR	570	230769	NR	700	71164	NR	830	6871	NR	960	6594	NR
445	221467	NR	575	234150	NR	705	62968	NR	835	6778	NR	965	9518	NR
450	284796	NR	580	238181	NR	710	55738	NR	840	6431	NR	970	8910	NR
455	233729	NR	585	241075	NR	715	49805	NR	845	7189	NR	975	10074	NR
460	172720	NR	590	245594	NR	720	43740	NR	850	5642	NR	980	8847	NR
465	143757	NR	595	248900	NR	725	39092	NR	855	7250	NR	985	7969	NR
470	112827	NR	600	251233	NR	730	34044	NR	860	8091	NR	990	6557	NR
475	92779	NR	605	253490	NR	735	30057	NR	865	6978	NR	995	10421	NR
480	91420	NR	610	255123	NR	740	26868	NR	870	7631	NR	1000	7659	NR
485	97972	NR	615	254469	NR	745	23967	NR	875	5622	NR			

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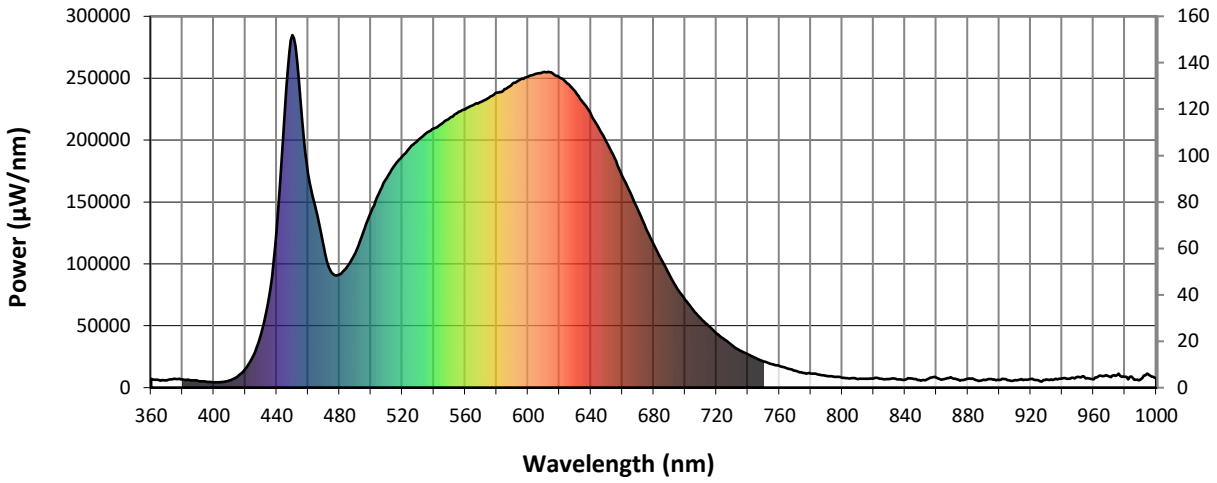
Melanopic Flux vs. Wavelength



Melanopic Lumens: 11042.9 M/P: 0.71

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	7212	NR	490	108829	NR	620	250576	NR	750	21248	NR	880	7254	NR
365	6095	NR	495	125088	NR	625	245705	NR	755	19109	NR	885	6272	NR
370	6022	NR	500	141971	NR	630	239404	NR	760	17593	NR	890	6410	NR
375	7076	NR	505	156633	NR	635	230449	NR	765	15401	NR	895	7000	NR
380	6674	NR	510	169197	NR	640	221008	NR	770	13743	NR	900	6176	NR
385	6019	NR	515	179365	NR	645	209690	NR	775	11948	NR	905	6118	NR
390	5440	NR	520	187018	NR	650	198297	NR	780	11421	NR	910	6132	NR
395	4835	NR	525	194159	NR	655	185669	NR	785	10432	NR	915	6202	NR
400	4236	NR	530	200071	NR	660	170891	NR	790	9515	NR	920	7026	NR
405	4501	NR	535	205570	NR	665	157591	NR	795	8800	NR	925	5915	NR
410	5834	NR	540	209259	NR	670	143731	NR	800	7939	NR	930	6549	NR
415	8990	NR	545	213260	NR	675	128798	NR	805	7431	NR	935	6547	NR
420	15076	NR	550	217506	NR	680	115773	NR	810	7034	NR	940	7527	NR
425	25851	NR	555	222032	NR	685	103063	NR	815	7070	NR	945	7157	NR
430	43228	NR	560	224902	NR	690	91359	NR	820	7449	NR	950	8630	NR
435	72792	NR	565	228152	NR	695	79831	NR	825	7107	NR	955	7432	NR
440	127912	NR	570	230769	NR	700	71164	NR	830	6871	NR	960	6594	NR
445	221467	NR	575	234150	NR	705	62968	NR	835	6778	NR	965	9518	NR
450	284796	NR	580	238181	NR	710	55738	NR	840	6431	NR	970	8910	NR
455	233729	NR	585	241075	NR	715	49805	NR	845	7189	NR	975	10074	NR
460	172720	NR	590	245594	NR	720	43740	NR	850	5642	NR	980	8847	NR
465	143757	NR	595	248900	NR	725	39092	NR	855	7250	NR	985	7969	NR
470	112827	NR	600	251233	NR	730	34044	NR	860	8091	NR	990	6557	NR
475	92779	NR	605	253490	NR	735	30057	NR	865	6978	NR	995	10421	NR
480	91420	NR	610	255123	NR	740	26868	NR	870	7631	NR	1000	7659	NR
485	97972	NR	615	254469	NR	745	23967	NR	875	5622	NR			

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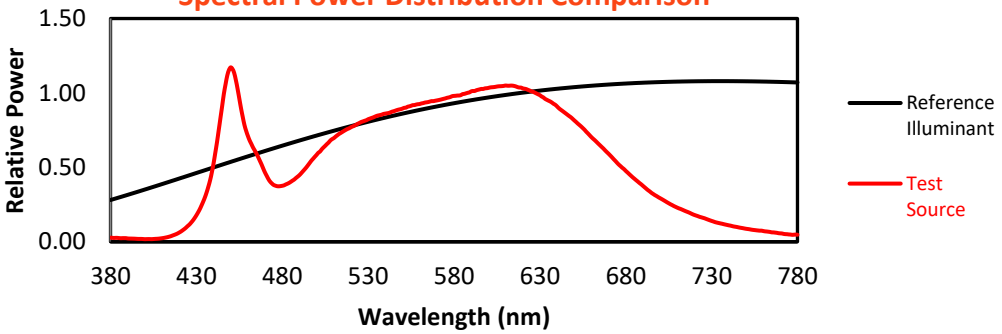
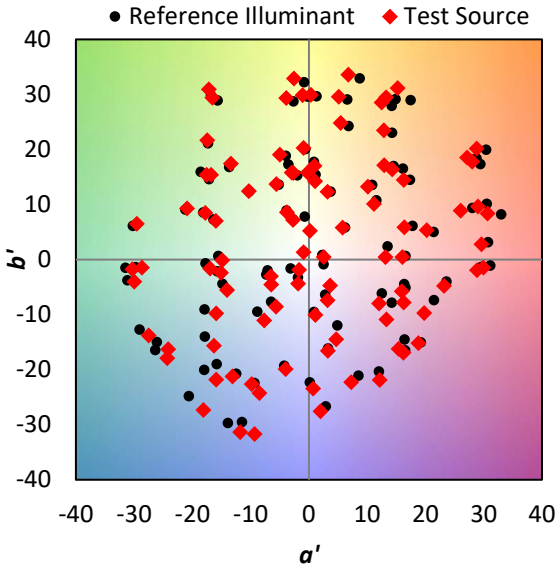
Summary

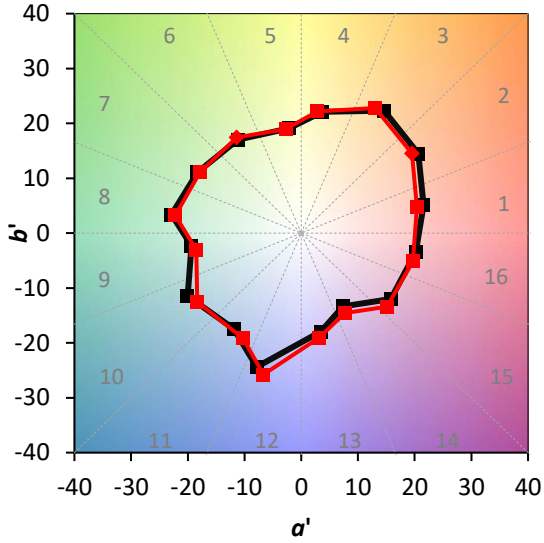
R_f = 90.1
R_g = 99.4
CIE R_a = 91.2
R_9 = 57.5

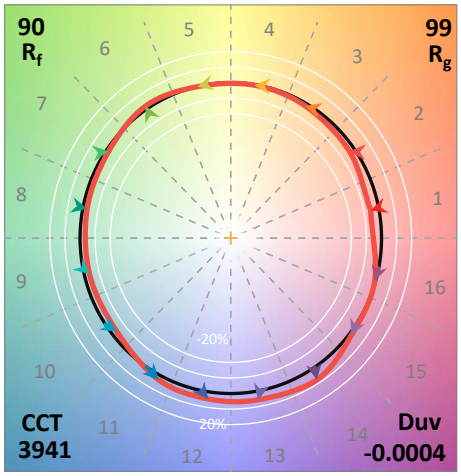
Spectral Power Distribution Comparison

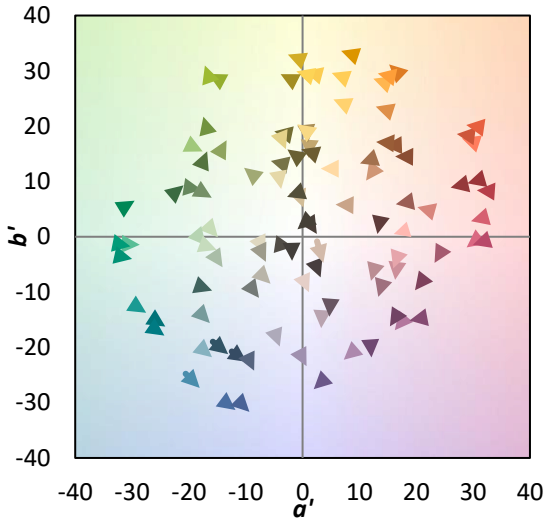


Color Vector Graphics









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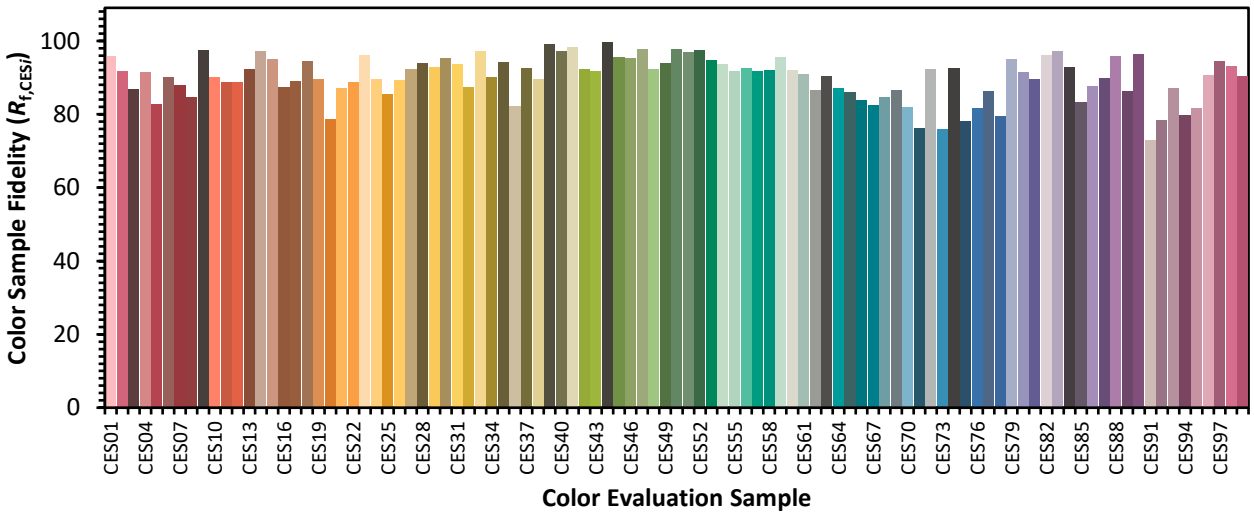
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 89	CES51 = 97	CES76 = 82
CES02 = 62	CES27 = 92	CES52 = 97	CES77 = 86
CES03 = 31	CES28 = 94	CES53 = 95	CES78 = 79
CES04 = 69	CES29 = 93	CES54 = 94	CES79 = 95
CES05 = 49	CES30 = 95	CES55 = 92	CES80 = 91
CES06 = 50	CES31 = 94	CES56 = 93	CES81 = 89
CES07 = 42	CES32 = 87	CES57 = 92	CES82 = 96
CES08 = 41	CES33 = 97	CES58 = 92	CES83 = 97
CES09 = 29	CES34 = 90	CES59 = 96	CES84 = 93
CES10 = 74	CES35 = 94	CES60 = 92	CES85 = 83
CES11 = 57	CES36 = 82	CES61 = 91	CES86 = 88
CES12 = 63	CES37 = 93	CES62 = 86	CES87 = 90
CES13 = 43	CES38 = 90	CES63 = 90	CES88 = 96
CES14 = 74	CES39 = 99	CES64 = 87	CES89 = 86
CES15 = 71	CES40 = 97	CES65 = 86	CES90 = 96
CES16 = 47	CES41 = 98	CES66 = 84	CES91 = 73
CES17 = 49	CES42 = 92	CES67 = 83	CES92 = 78
CES18 = 56	CES43 = 92	CES68 = 85	CES93 = 87
CES19 = 71	CES44 = 99	CES69 = 87	CES94 = 80
CES20 = 66	CES45 = 96	CES70 = 82	CES95 = 82
CES21 = 85	CES46 = 95	CES71 = 76	CES96 = 91
CES22 = 78	CES47 = 98	CES72 = 92	CES97 = 94
CES23 = 91	CES48 = 92	CES73 = 76	CES98 = 93
CES24 = 90	CES49 = 94	CES74 = 93	CES99 = 90
CES25 = 71	CES50 = 98	CES75 = 78	



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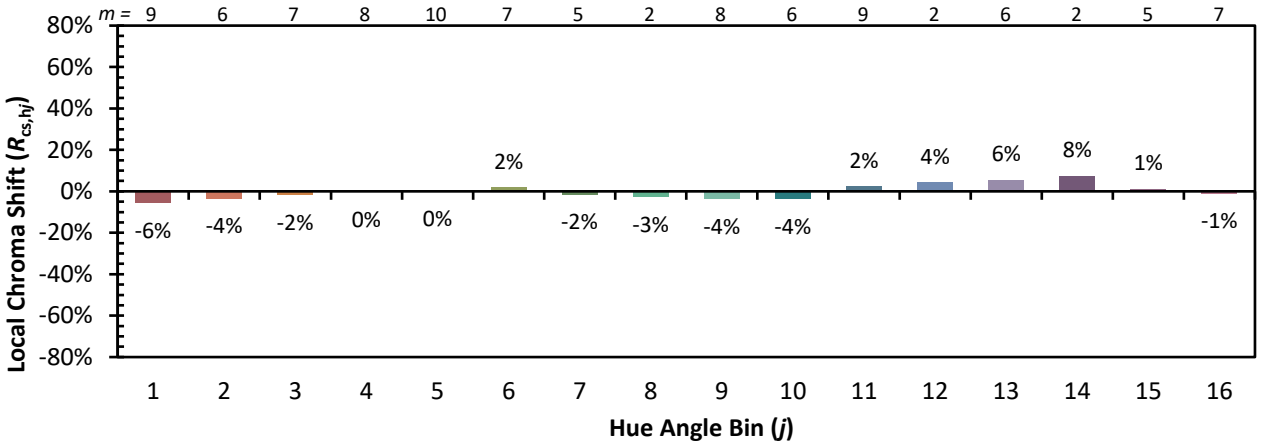
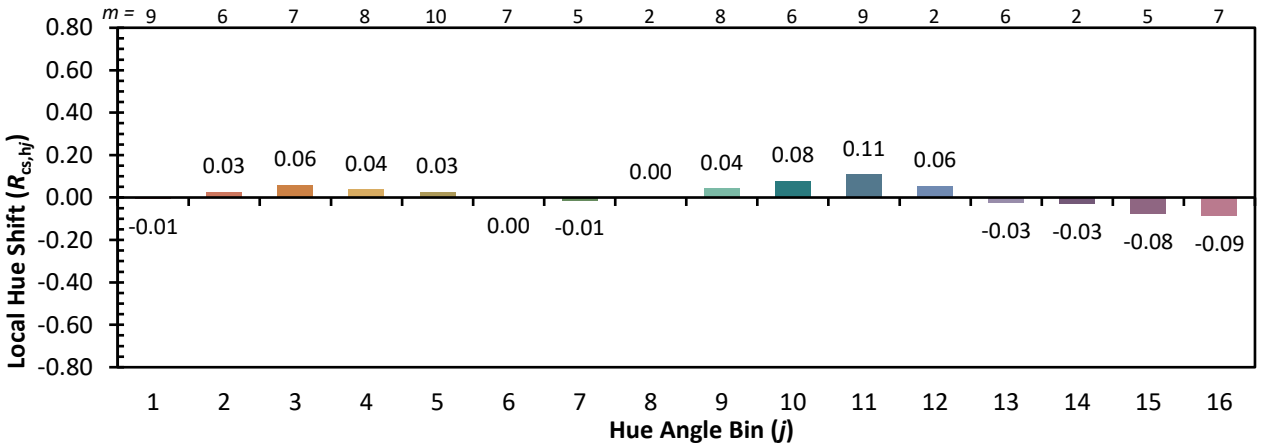
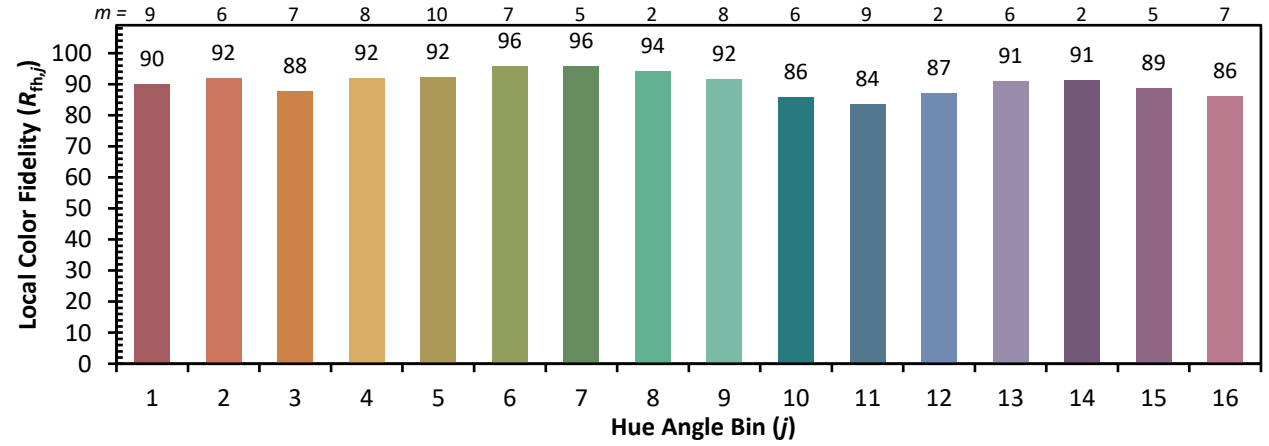
Color Rendition by Hue-Angle Bin







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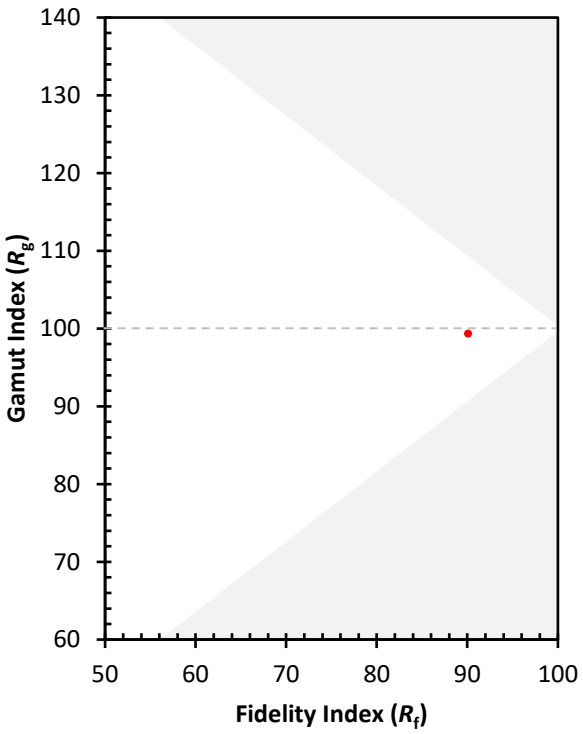
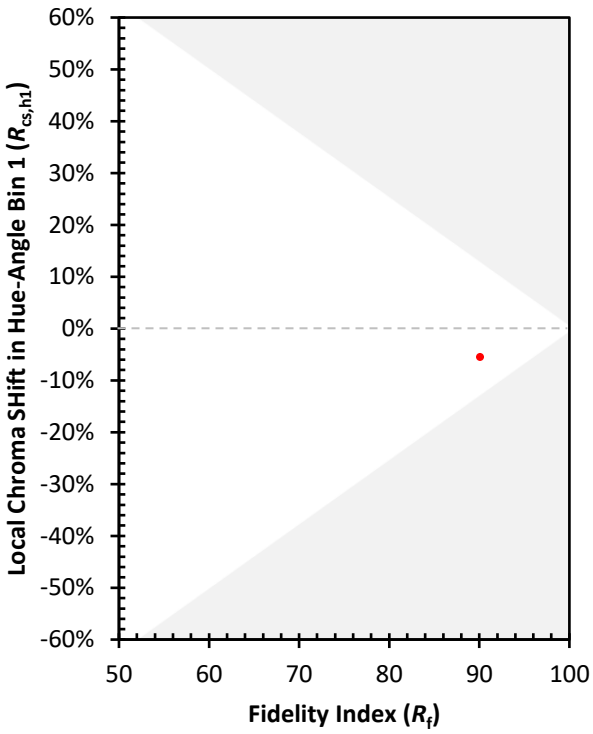
Measure Comparisons





(END OF REPORT)