

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: P830539

Luminaire Tested: **OHBL-48SE-MCL-UNV-L830-CD**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P830539
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2103-200-1)
Test Lab: INNOVATION CENTER
Issue Date: 5/3/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: OHBL-48SE-MCL-UNV-L830-CD
Description: 48000 LUMEN OHBL SE LED LUMINAIRE WITH 80CRI, 3000K LEDS AND MEDIUM CLEAR LENS
Light Source: -
Ballast/Driver: -

Summary

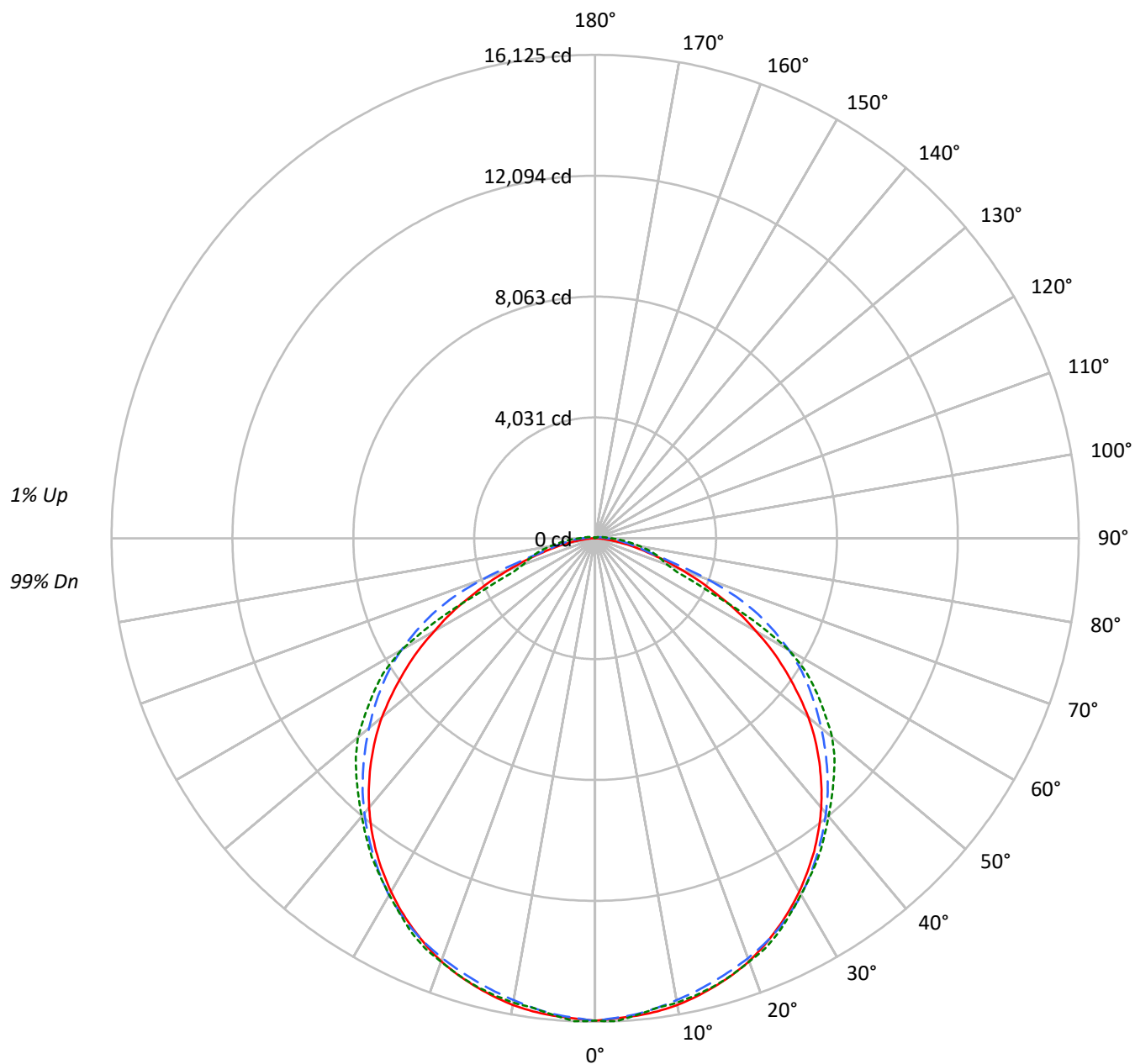
Lumens per Lamp: N/A
Luminaire Lumens: 45484.0 lumens
Efficiency: N/A
Efficacy: 157.5 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 1.67' x L: 3.78' x H: 0.17')
CIE Type: Direct

Input Watts (W): 288.8
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

TEST NUMBER: P830539

CATALOG NUMBER: OHBL-48SE-MCL-UNV-L830-CD

Luminous Intensity Polar Plot





TEST NUMBER: P830539

CATALOG NUMBER: OHBL-48SE-MCL-UNV-L830-CD

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	106	106	106	101	101	101			99
1	109	104	100	96	106	102	98	95	97	94	91	93	91	88	90	87	86			83
2	99	91	84	79	96	89	83	78	85	80	76	82	78	74	79	75	72			70
3	91	80	72	66	88	79	71	65	75	69	64	72	67	63	70	65	61			59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	62	57	53			51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	46	56	50	46			44
6	70	57	48	42	68	56	48	42	54	47	41	52	46	41	51	45	40			38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36			34
8	61	47	39	33	59	46	38	33	45	38	33	44	37	32	42	36	32			30
9	57	43	35	30	55	43	35	29	41	34	29	40	34	29	39	33	29			27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	36	30	26			24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	27485	27485	27485
5°	27306	27074	27126
10°	27206	26652	26807
15°	27033	26333	26610
20°	26860	26128	26357
25°	26536	25921	26106
30°	26184	25601	25593
35°	25762	25101	25300
40°	25214	24585	24908
45°	24455	23988	24719
50°	23426	23310	24494
55°	21791	22640	23548
60°	19650	21666	21733
65°	16856	19880	13744
70°	13577	15488	9935
75°	10179	9167	10041
80°	7086	7586	9521
85°	4033	6888	8808



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1517.4	3.3
10°-20°	4351.1	9.6
20°-30°	6645.4	14.6
30°-40°	8063.2	17.7
40°-50°	8451.0	18.6
50°-60°	7657.9	16.8
60°-70°	5134.3	11.3
70°-80°	2305.5	5.1
80°-90°	836.6	1.8
90°-100°	251.8	0.6
100°-110°	118.8	0.3
110°-120°	59.6	0.1
120°-130°	32.8	0.1
130°-140°	22.6	0.0
140°-150°	15.2	0.0
150°-160°	11.3	0.0
160°-170°	7.3	0.0
170°-180°	2.3	0.0
0°-30°	12513.8	27.5
0°-40°	20577.0	45.2
0°-60°	36685.8	80.7
0°-90°	44962.3	98.9
90°-120°	430.2	0.9
90°-150°	500.8	1.1
90°-180°	522.0	1.1
0°-180°	45484.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	16092	16092	16092	16092	16092	
5°	15988	16043	15932	15981	15960	###
15°	15469	15408	15299	15434	15452	4367
25°	14370	14308	14408	14540	14498	6624
35°	12737	12767	12898	13035	12984	7961
45°	10571	10743	10943	11222	11257	8143
55°	7779	8153	8709	9058	9037	6943
65°	4565	5280	5994	5058	4130	4549
75°	1796	2606	1917	1962	2090	1963
85°	310	593	761	919	963	378
90°	2	198	393	493	517	18
95°	2	123	270	328	337	3
105°	9	54	133	161	168	11
115°	19	28	68	86	91	17
125°	16	19	42	49	51	16
135°	21	23	26	37	40	17
145°	21	23	23	26	28	14
155°	23	26	26	26	23	11
165°	26	26	26	26	26	7
175°	26	26	23	21	21	2
180°	23	23	23	23	23	



TEST NUMBER: P830539

CATALOG NUMBER: OHBL-48SE-MCL-UNV-L830-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	16092.3	16092.3	16092.3	16092.3	16092.3
2.5°	16027.1	16094.6	16010.8	16101.6	16124.9
5°	15987.6	16043.4	15931.7	15980.6	15959.6
7.5°	15915.4	15934.1	15801.4	15841.0	15799.1
10°	15808.4	15799.1	15643.2	15720.0	15729.3
12.5°	15650.2	15622.3	15482.7	15599.0	15601.3
15°	15468.7	15408.2	15298.8	15433.8	15452.4
17.5°	15259.3	15180.2	15108.0	15282.5	15254.6
20°	15015.0	14921.9	14907.9	15098.7	15028.9
22.5°	14712.5	14640.3	14672.9	14854.4	14810.2
25°	14370.4	14307.6	14407.7	14540.3	14498.4
27.5°	14009.8	13972.5	14086.6	14188.9	14107.5
30°	13614.2	13593.3	13744.5	13828.3	13725.9
32.5°	13183.8	13190.7	13335.0	13449.0	13353.6
35°	12737.0	12767.3	12897.6	13034.8	12983.6
37.5°	12246.0	12313.5	12443.8	12599.7	12546.2
40°	11727.2	11824.9	11969.2	12157.6	12108.8
42.5°	11166.4	11289.7	11475.9	11685.3	11680.6
45°	10570.7	10742.9	10943.0	11222.2	11257.1
47.5°	9951.8	10144.9	10398.6	10770.8	10824.4
50°	9279.4	9521.3	9837.8	10284.5	10317.1
52.5°	8530.1	8860.5	9279.4	9707.5	9667.9
55°	7778.6	8153.2	8709.3	9058.3	9037.4
57.5°	7029.3	7450.5	8125.3	8374.2	8371.9
60°	6191.7	6724.5	7462.1	7650.6	7464.4
62.5°	5416.8	5989.2	6754.8	6617.5	5979.9
65°	4565.2	5279.6	5993.9	5058.5	4130.1
67.5°	3809.0	4553.6	5091.1	3464.6	2966.7
70°	3048.1	3869.5	3969.6	2571.1	2536.2
72.5°	2373.4	3248.2	2738.7	2201.2	2312.9
75°	1796.3	2606.0	1917.3	1961.5	2089.5
77.5°	1310.0	2001.1	1491.5	1719.5	1824.2
80°	900.5	1417.0	1216.9	1445.0	1517.1
82.5°	565.4	935.4	974.9	1163.4	1237.9
85°	309.5	593.3	760.9	919.1	963.3
87.5°	128.0	358.3	581.7	709.7	746.9
90°	2.3	197.8	393.2	493.3	516.6
92.5°	2.3	151.2	321.1	397.9	414.2
95°	2.3	123.3	269.9	328.1	337.4
97.5°	4.7	97.7	225.7	272.2	281.5
100°	7.0	81.4	188.5	228.0	235.0
102.5°	9.3	65.2	158.2	190.8	197.8
105°	9.3	53.5	132.6	160.6	167.5



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CATALOG NUMBER: OHBL-48SE-MCL-UNV-L830-CD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	16.3	32.6	79.1	100.1	104.7
115°	18.6	27.9	67.5	86.1	90.7
117.5°	18.6	23.3	58.2	72.1	76.8
120°	18.6	20.9	51.2	62.8	65.2
122.5°	18.6	18.6	44.2	55.8	58.2
125°	16.3	18.6	41.9	48.9	51.2
127.5°	18.6	18.6	37.2	44.2	46.5
130°	18.6	20.9	32.6	41.9	41.9
132.5°	20.9	23.3	30.2	39.6	39.6
135°	20.9	23.3	25.6	37.2	39.6
137.5°	23.3	23.3	23.3	34.9	37.2
140°	23.3	23.3	20.9	30.2	32.6
142.5°	20.9	23.3	20.9	27.9	30.2
145°	20.9	23.3	23.3	25.6	27.9
147.5°	23.3	23.3	23.3	23.3	25.6
150°	23.3	23.3	23.3	23.3	23.3
152.5°	23.3	23.3	23.3	23.3	23.3
155°	23.3	25.6	25.6	25.6	23.3
157.5°	23.3	25.6	25.6	25.6	25.6
160°	23.3	25.6	25.6	25.6	25.6
162.5°	25.6	25.6	25.6	25.6	25.6
165°	25.6	25.6	25.6	25.6	25.6
167.5°	25.6	27.9	25.6	25.6	25.6
170°	25.6	25.6	25.6	23.3	23.3
172.5°	25.6	25.6	25.6	23.3	23.3
175°	25.6	25.6	23.3	20.9	20.9
177.5°	27.9	25.6	23.3	20.9	18.6
180°	23.3	23.3	23.3	23.3	23.3



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	11.6	44.2	114.0	137.3	141.9
110°	14.0	37.2	95.4	116.3	121.0



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2307-100-4

Test Date: 07/27/2023

Luminaire Tested: OHB-15SE-N-UNV-L830-CD

Data in this report applies to families of products including OHB-15SE-N-UNV-L830-CD.

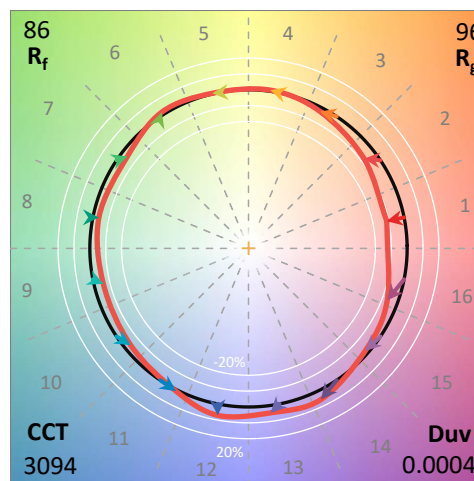
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2307-100-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/04/2023
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: METALUX
 Catalog Number: **OHB-15SE-N-UNV-L830-CD**
 Description: 15000 LUMEN OHB SE LED LUMINAIRE WITH 80CRI, 3000K LEDS AND NARROW LENS

LENS

Spectral Parameters

CCT (K):	3094	CRI (Ra):	83.1		
CIE u':	0.2471	R1:	81.4	R9:	8.0
CIE v':	0.5200	R2:	91.2	R10:	80.2
Duv:	0.0004	R3:	96.3	R11:	80.9
CIE x:	0.4308	R4:	81.2	R12:	72.3
CIE y:	0.4028	R5:	81.8	R13:	83.8
CIE z:	0.1664	R6:	89.5	R14:	98.6
Peak Wavelength (nm):	601	R7:	83.2		
Dominant Wavelength (nm):	582	R8:	59.8		
Purity:	50.4				
Rf:	85.5				
Rg:	95.7				



Test Conditions

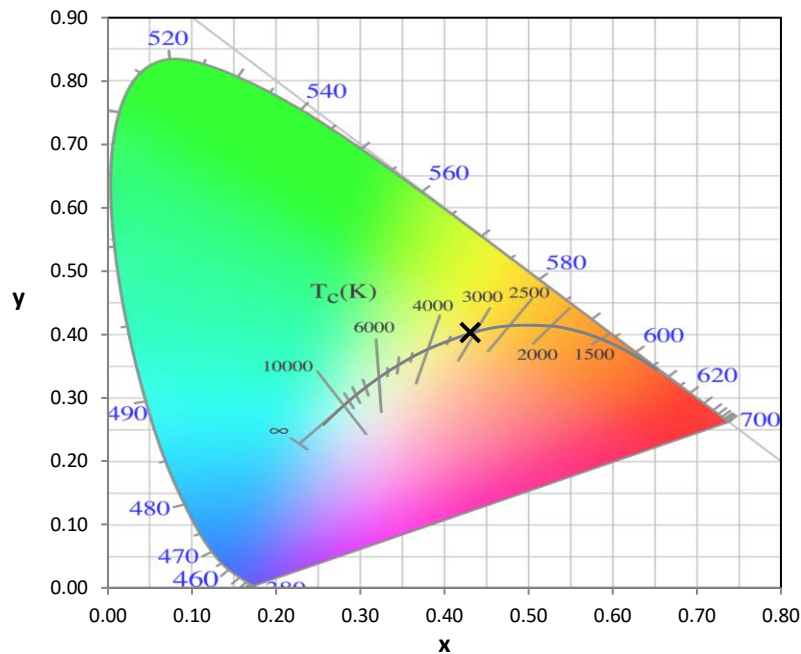
Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.7/57%
 Sphere Temperature (°C): 25.2

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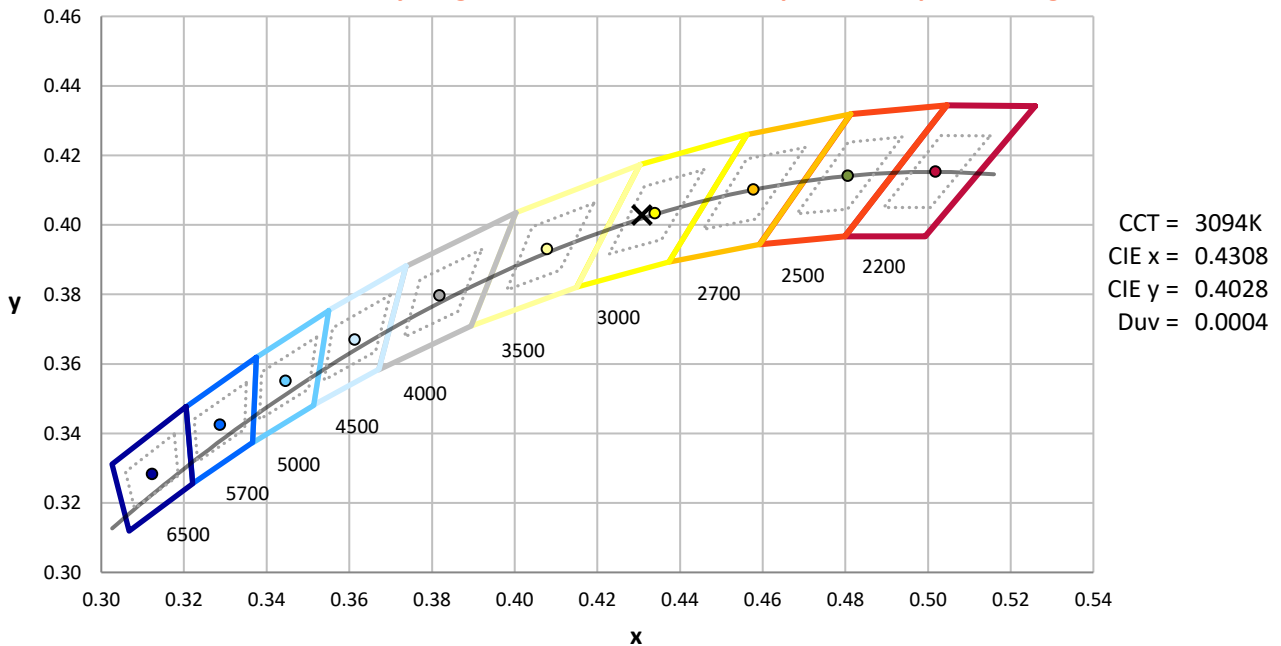
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	11/28/2022	11/28/2023
Sphere Thermometer	ONSET IN0085	11/28/2022	11/28/2023
Room Thermometer	ONSET IN0046	11/28/2022	11/28/2023

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CIE 1931 Chromaticity Diagram



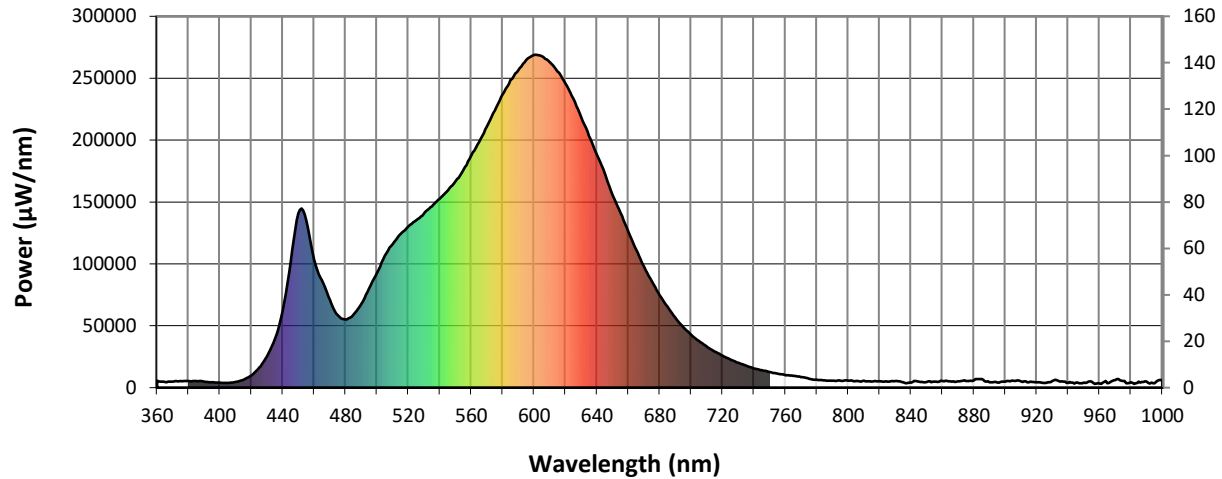
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

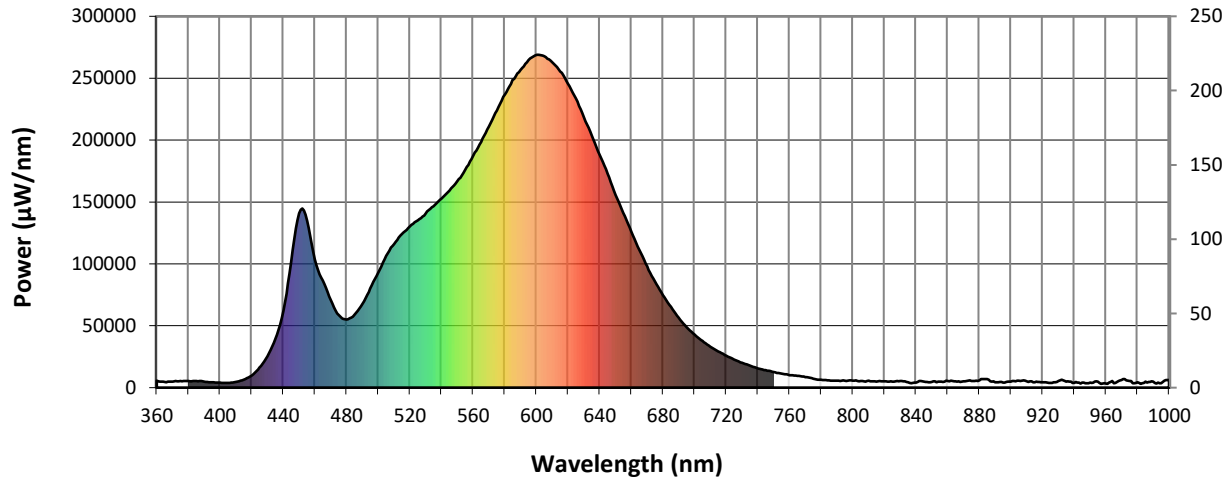


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λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5588	NR	490	67760	NR	620	245592	NR	750	12500	NR	880	5775	NR
365	4653	NR	495	80150	NR	625	233690	NR	755	11226	NR	885	6968	NR
370	4816	NR	500	92862	NR	630	218514	NR	760	10108	NR	890	4448	NR
375	5382	NR	505	106466	NR	635	203332	NR	765	9635	NR	895	3971	NR
380	5471	NR	510	115999	NR	640	188047	NR	770	8591	NR	900	4881	NR
385	5274	NR	515	124150	NR	645	172926	NR	775	7303	NR	905	5743	NR
390	4889	NR	520	130163	NR	650	155620	NR	780	6289	NR	910	5113	NR
395	4299	NR	525	135224	NR	655	141125	NR	785	5911	NR	915	4407	NR
400	4023	NR	530	140755	NR	660	126216	NR	790	5635	NR	920	4245	NR
405	3768	NR	535	146504	NR	665	111397	NR	795	5646	NR	925	3908	NR
410	4601	NR	540	152733	NR	670	97878	NR	800	5673	NR	930	5417	NR
415	6365	NR	545	159328	NR	675	85741	NR	805	5281	NR	935	4964	NR
420	9813	NR	550	166801	NR	680	74760	NR	810	5525	NR	940	3949	NR
425	16211	NR	555	175954	NR	685	65227	NR	815	4927	NR	945	4140	NR
430	25392	NR	560	187354	NR	690	56436	NR	820	5126	NR	950	3965	NR
435	39464	NR	565	198482	NR	695	48938	NR	825	4905	NR	955	4799	NR
440	61997	NR	570	210996	NR	700	42760	NR	830	5269	NR	960	3231	NR
445	101388	NR	575	223758	NR	705	37659	NR	835	4331	NR	965	3690	NR
450	140880	NR	580	236632	NR	710	33026	NR	840	4092	NR	970	6116	NR
455	134821	NR	585	248639	NR	715	29202	NR	845	4761	NR	975	5312	NR
460	103575	NR	590	256555	NR	720	25763	NR	850	4730	NR	980	4400	NR
465	86441	NR	595	264551	NR	725	22755	NR	855	4934	NR	985	4764	NR
470	70678	NR	600	268886	NR	730	20059	NR	860	5495	NR	990	4803	NR
475	58575	NR	605	267857	NR	735	17717	NR	865	5241	NR	995	3507	NR
480	55102	NR	610	262898	NR	740	15495	NR	870	5223	NR	1000	6247	NR
485	58801	NR	615	255346	NR	745	14094	NR	875	5501	NR			

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Scotopic Flux vs. Wavelength



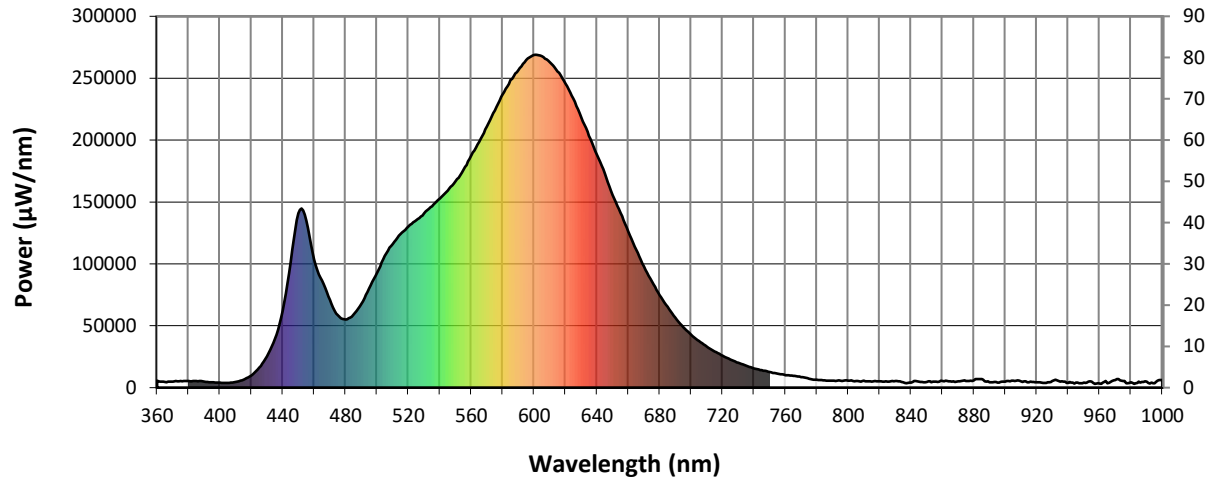
Scotopic Lumens: 18580

S/P: 1.39

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	5588	NR	490	67760	NR	620	245592	NR	750	12500	NR	880	5775	NR
365	4653	NR	495	80150	NR	625	233690	NR	755	11226	NR	885	6968	NR
370	4816	NR	500	92862	NR	630	218514	NR	760	10108	NR	890	4448	NR
375	5382	NR	505	106466	NR	635	203332	NR	765	9635	NR	895	3971	NR
380	5471	NR	510	115999	NR	640	188047	NR	770	8591	NR	900	4881	NR
385	5274	NR	515	124150	NR	645	172926	NR	775	7303	NR	905	5743	NR
390	4889	NR	520	130163	NR	650	155620	NR	780	6289	NR	910	5113	NR
395	4299	NR	525	135224	NR	655	141125	NR	785	5911	NR	915	4407	NR
400	4023	NR	530	140755	NR	660	126216	NR	790	5635	NR	920	4245	NR
405	3768	NR	535	146504	NR	665	111397	NR	795	5646	NR	925	3908	NR
410	4601	NR	540	152733	NR	670	97878	NR	800	5673	NR	930	5417	NR
415	6365	NR	545	159328	NR	675	85741	NR	805	5281	NR	935	4964	NR
420	9813	NR	550	166801	NR	680	74760	NR	810	5525	NR	940	3949	NR
425	16211	NR	555	175954	NR	685	65227	NR	815	4927	NR	945	4140	NR
430	25392	NR	560	187354	NR	690	56436	NR	820	5126	NR	950	3965	NR
435	39464	NR	565	198482	NR	695	48938	NR	825	4905	NR	955	4799	NR
440	61997	NR	570	210996	NR	700	42760	NR	830	5269	NR	960	3231	NR
445	101388	NR	575	223758	NR	705	37659	NR	835	4331	NR	965	3690	NR
450	140880	NR	580	236632	NR	710	33026	NR	840	4092	NR	970	6116	NR
455	134821	NR	585	248639	NR	715	29202	NR	845	4761	NR	975	5312	NR
460	103575	NR	590	256555	NR	720	25763	NR	850	4730	NR	980	4400	NR
465	86441	NR	595	264551	NR	725	22755	NR	855	4934	NR	985	4764	NR
470	70678	NR	600	268886	NR	730	20059	NR	860	5495	NR	990	4803	NR
475	58575	NR	605	267857	NR	735	17717	NR	865	5241	NR	995	3507	NR
480	55102	NR	610	262898	NR	740	15495	NR	870	5223	NR	1000	6247	NR
485	58801	NR	615	255346	NR	745	14094	NR	875	5501	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 7125.5

M/P: 0.53

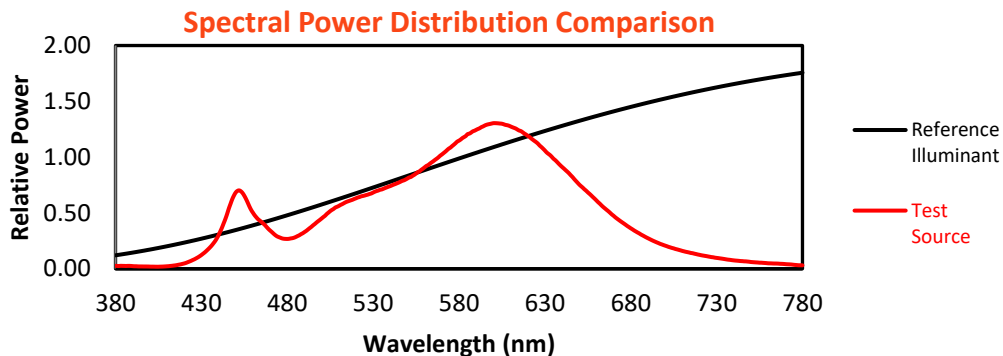
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5588	NR	490	67760	NR	620	245592	NR	750	12500	NR	880	5775	NR
365	4653	NR	495	80150	NR	625	233690	NR	755	11226	NR	885	6968	NR
370	4816	NR	500	92862	NR	630	218514	NR	760	10108	NR	890	4448	NR
375	5382	NR	505	106466	NR	635	203332	NR	765	9635	NR	895	3971	NR
380	5471	NR	510	115999	NR	640	188047	NR	770	8591	NR	900	4881	NR
385	5274	NR	515	124150	NR	645	172926	NR	775	7303	NR	905	5743	NR
390	4889	NR	520	130163	NR	650	155620	NR	780	6289	NR	910	5113	NR
395	4299	NR	525	135224	NR	655	141125	NR	785	5911	NR	915	4407	NR
400	4023	NR	530	140755	NR	660	126216	NR	790	5635	NR	920	4245	NR
405	3768	NR	535	146504	NR	665	111397	NR	795	5646	NR	925	3908	NR
410	4601	NR	540	152733	NR	670	97878	NR	800	5673	NR	930	5417	NR
415	6365	NR	545	159328	NR	675	85741	NR	805	5281	NR	935	4964	NR
420	9813	NR	550	166801	NR	680	74760	NR	810	5525	NR	940	3949	NR
425	16211	NR	555	175954	NR	685	65227	NR	815	4927	NR	945	4140	NR
430	25392	NR	560	187354	NR	690	56436	NR	820	5126	NR	950	3965	NR
435	39464	NR	565	198482	NR	695	48938	NR	825	4905	NR	955	4799	NR
440	61997	NR	570	210996	NR	700	42760	NR	830	5269	NR	960	3231	NR
445	101388	NR	575	223758	NR	705	37659	NR	835	4331	NR	965	3690	NR
450	140880	NR	580	236632	NR	710	33026	NR	840	4092	NR	970	6116	NR
455	134821	NR	585	248639	NR	715	29202	NR	845	4761	NR	975	5312	NR
460	103575	NR	590	256555	NR	720	25763	NR	850	4730	NR	980	4400	NR
465	86441	NR	595	264551	NR	725	22755	NR	855	4934	NR	985	4764	NR
470	70678	NR	600	268886	NR	730	20059	NR	860	5495	NR	990	4803	NR
475	58575	NR	605	267857	NR	735	17717	NR	865	5241	NR	995	3507	NR
480	55102	NR	610	262898	NR	740	15495	NR	870	5223	NR	1000	6247	NR
485	58801	NR	615	255346	NR	745	14094	NR	875	5501	NR			

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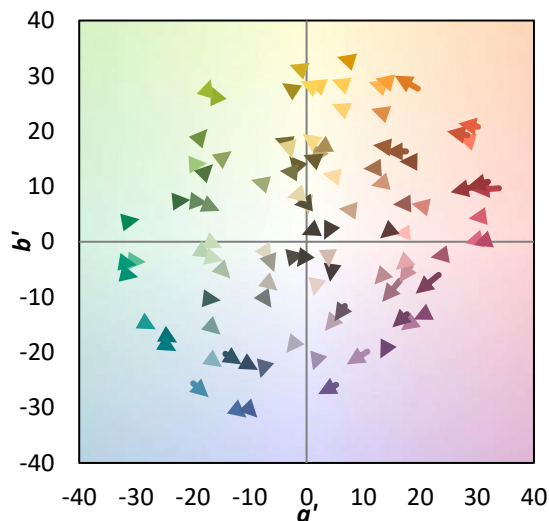
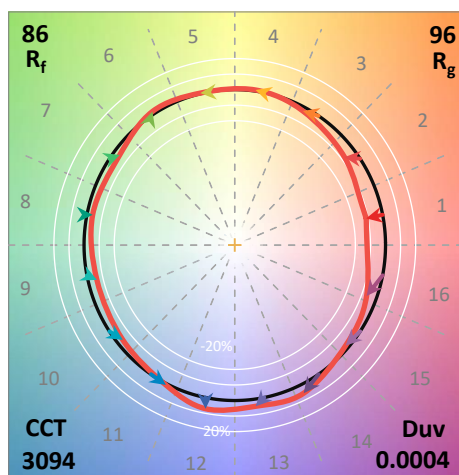
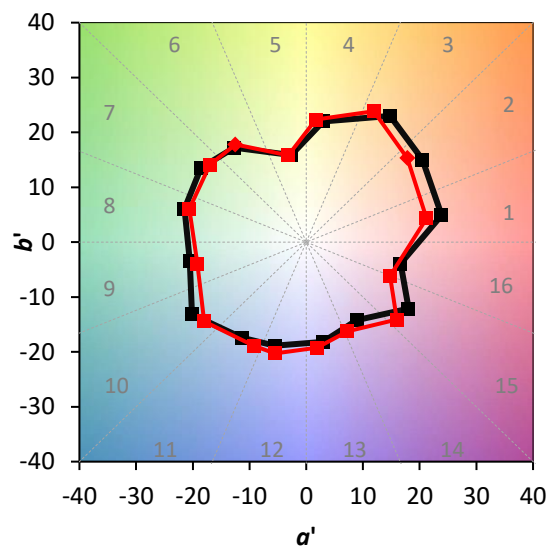
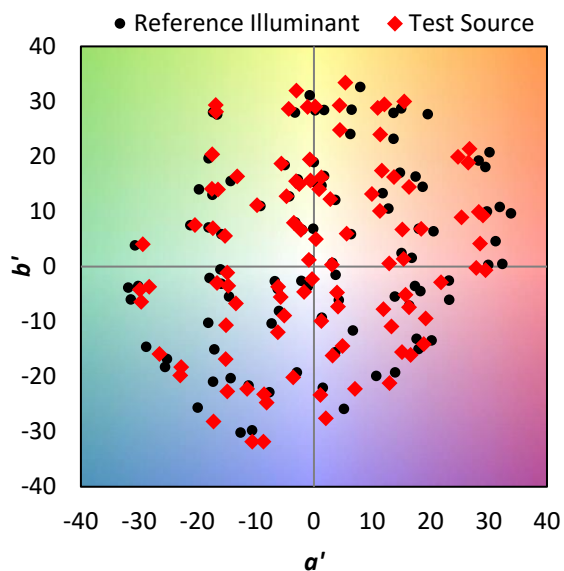
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Summary

$R_f = 85.5$
 $R_g = 95.7$
 $CIE R_a = 83.1$
 $R_9 = 8.0$



Color Vector Graphics

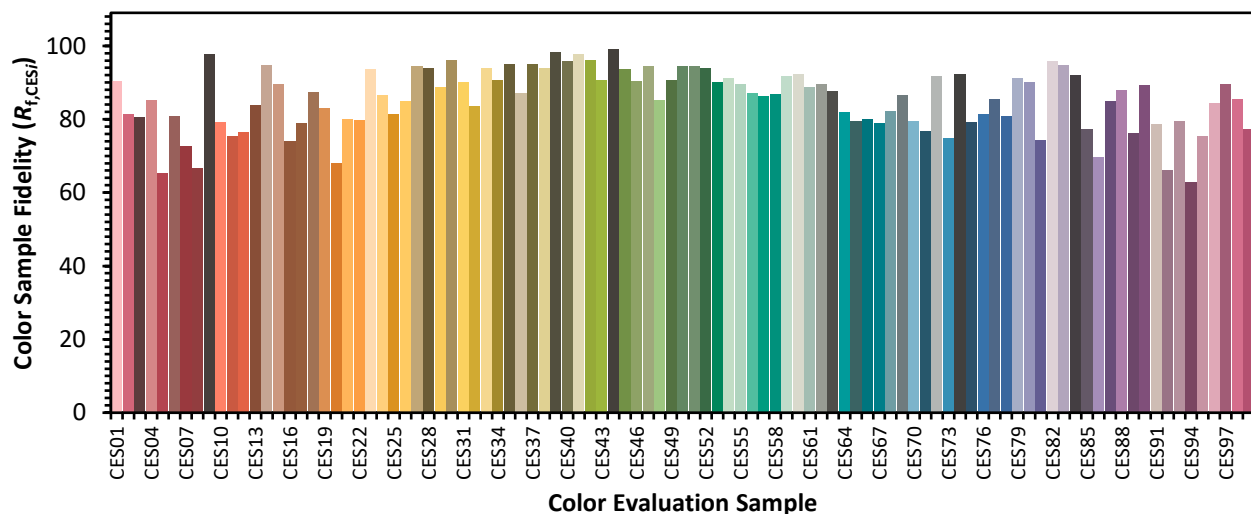


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Individual Sample Fidelity Index ($R_{f,i}$)

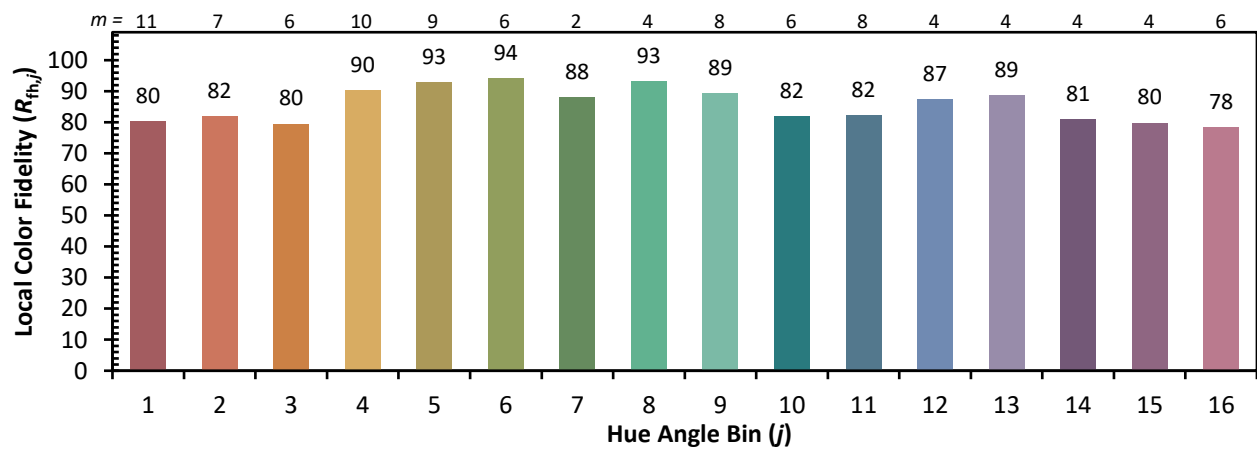
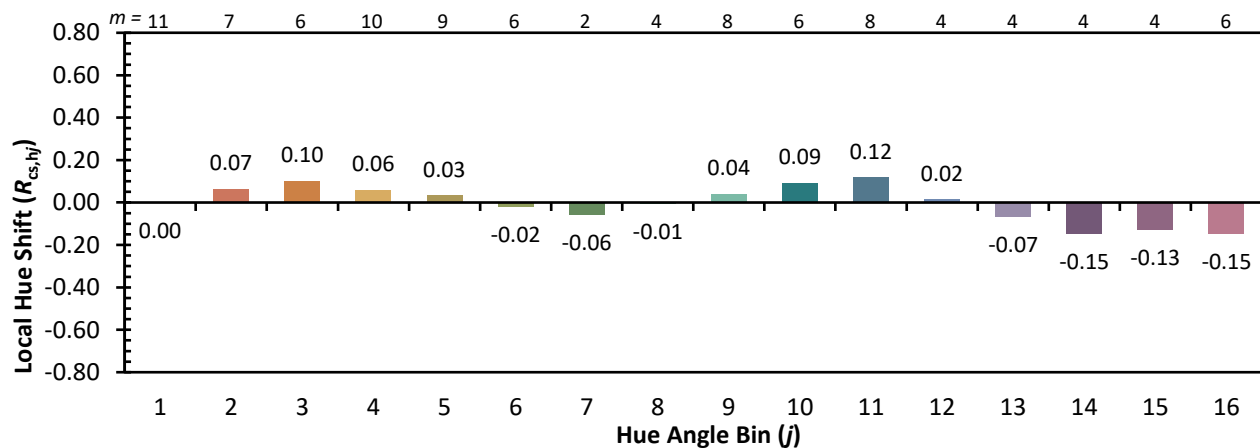
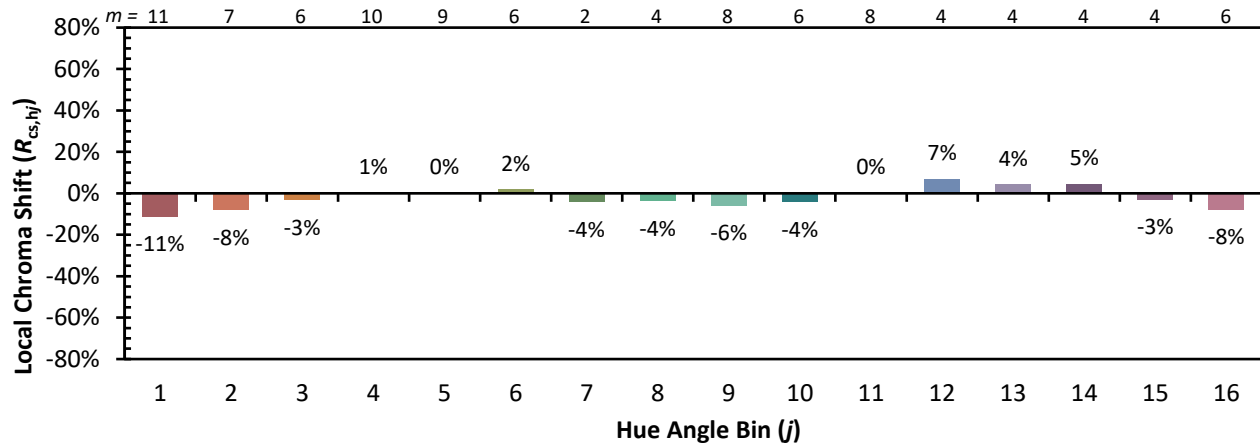
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CES02 = 63	CES27 = 94	CES52 = 94	CES77 = 85
CES03 = 31	CES28 = 94	CES53 = 90	CES78 = 81
CES04 = 70	CES29 = 89	CES54 = 91	CES79 = 91
CES05 = 49	CES30 = 96	CES55 = 90	CES80 = 90
CES06 = 51	CES31 = 90	CES56 = 87	CES81 = 74
CES07 = 42	CES32 = 83	CES57 = 86	CES82 = 96
CES08 = 41	CES33 = 94	CES58 = 87	CES83 = 95
CES09 = 29	CES34 = 91	CES59 = 92	CES84 = 92
CES10 = 76	CES35 = 95	CES60 = 92	CES85 = 77
CES11 = 59	CES36 = 87	CES61 = 89	CES86 = 70
CES12 = 65	CES37 = 95	CES62 = 90	CES87 = 85
CES13 = 43	CES38 = 94	CES63 = 88	CES88 = 88
CES14 = 74	CES39 = 98	CES64 = 82	CES89 = 76
CES15 = 71	CES40 = 96	CES65 = 80	CES90 = 89
CES16 = 47	CES41 = 98	CES66 = 80	CES91 = 79
CES17 = 50	CES42 = 96	CES67 = 79	CES92 = 66
CES18 = 56	CES43 = 91	CES68 = 82	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 87	CES94 = 63
CES20 = 66	CES45 = 94	CES70 = 79	CES95 = 75
CES21 = 87	CES46 = 91	CES71 = 77	CES96 = 84
CES22 = 79	CES47 = 94	CES72 = 92	CES97 = 90
CES23 = 92	CES48 = 85	CES73 = 75	CES98 = 86
CES24 = 91	CES49 = 91	CES74 = 92	CES99 = 77
CES25 = 72	CES50 = 95	CES75 = 79	



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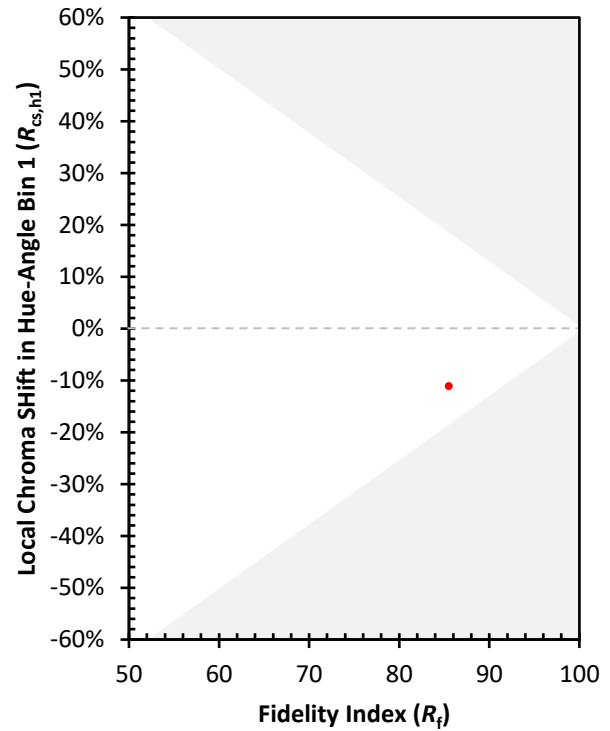
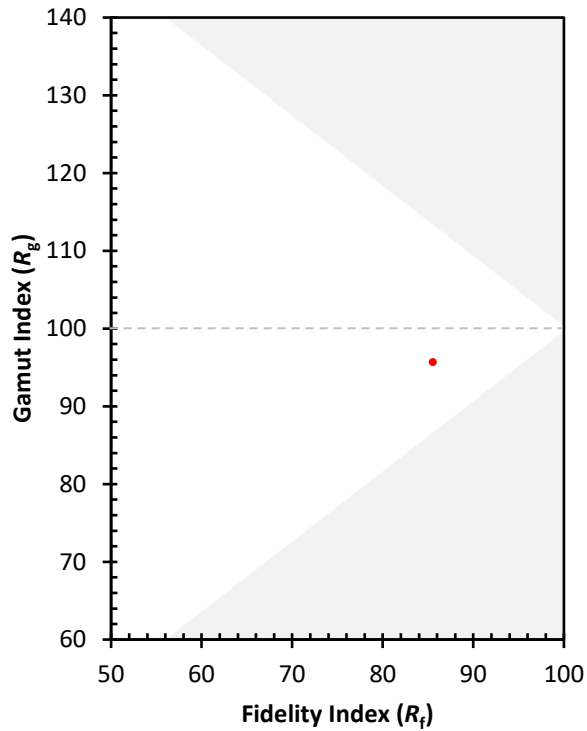
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)