

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: P829748

Luminaire Tested: **OHBL-12SE-MCL-UNV-L835-CD**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P829748
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-12SE-MCL-UNV-L835-CD
Description: 12000 LUMEN OHBL SE LED LUMINAIRE WITH 80CRI, 3500K LEDS AND MEDIUM CLEAR LENS
Light Source: -
Ballast/Driver: -

Summary

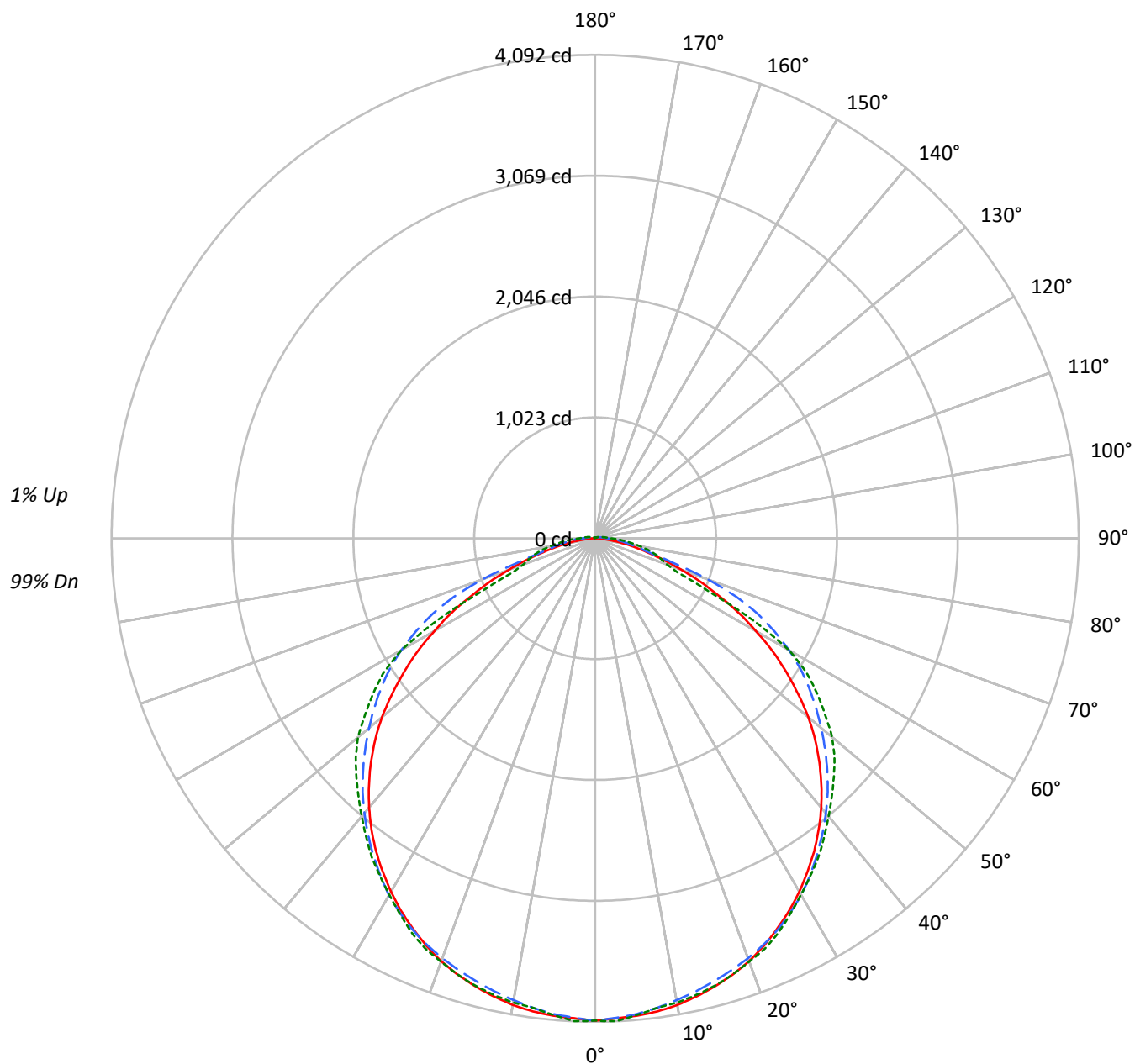
Lumens per Lamp: N/A
Luminaire Lumens: 11542.0 lumens
Efficiency: N/A
Efficacy: 164.9 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.88' x L: 3.78' x H: 0.17')
CIE Type: Direct

Input Watts (W): 70
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: P829748

CATALOG NUMBER: OHBL-12SE-MCL-UNV-L835-CD

Luminous Intensity Polar Plot





TEST NUMBER: P829748

CATALOG NUMBER: OHBL-12SE-MCL-UNV-L835-CD

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	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°	13285	13285	13285
5°	13198	13014	13009
10°	13150	12741	12757
15°	13066	12519	12565
20°	12983	12351	12347
25°	12826	12182	12129
30°	12656	11957	11788
35°	12452	11646	11545
40°	12188	11323	11251
45°	11820	10958	11040
50°	11323	10549	10799
55°	10533	10135	10225
60°	9498	9571	9267
65°	8148	8636	5728
70°	6563	6582	4019
75°	4920	3777	3895
80°	3425	2981	3467
85°	1948	2489	2871



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	385.0	3.3
10°-20°	1104.1	9.6
20°-30°	1686.3	14.6
30°-40°	2046.1	17.7
40°-50°	2144.5	18.6
50°-60°	1943.2	16.8
60°-70°	1302.9	11.3
70°-80°	585.1	5.1
80°-90°	212.3	1.8
90°-100°	63.9	0.6
100°-110°	30.2	0.3
110°-120°	15.1	0.1
120°-130°	8.3	0.1
130°-140°	5.7	0.0
140°-150°	3.9	0.0
150°-160°	2.9	0.0
160°-170°	1.8	0.0
170°-180°	0.6	0.0
0°-30°	3175.5	27.5
0°-40°	5221.6	45.2
0°-60°	9309.4	80.7
0°-90°	11409.6	98.9
90°-120°	109.2	0.9
90°-150°	127.1	1.1
90°-180°	132.0	1.1
0°-180°	11542.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4084	4084	4084	4084	4084	
5°	4057	4071	4043	4055	4050	386
15°	3925	3910	3882	3916	3921	1108
25°	3647	3631	3656	3690	3679	1681
35°	3232	3240	3273	3308	3295	2020
45°	2682	2726	2777	2848	2857	2066
55°	1974	2069	2210	2299	2293	1762
65°	1158	1340	1521	1284	1048	1154
75°	456	661	486	498	530	498
85°	78	151	193	233	244	96
90°	1	50	100	125	131	5
95°	1	31	68	83	86	1
105°	2	14	34	41	42	3
115°	5	7	17	22	23	4
125°	4	5	11	12	13	4
135°	5	6	6	9	10	4
145°	5	6	6	6	7	4
155°	6	6	6	6	6	3
165°	6	6	6	6	6	2
175°	6	6	6	5	5	1
180°	6	6	6	6	6	



TEST NUMBER: P829748

CATALOG NUMBER: OHBL-12SE-MCL-UNV-L835-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4083.6	4083.6	4083.6	4083.6	4083.6
2.5°	4067.0	4084.2	4062.9	4085.9	4091.8
5°	4057.0	4071.2	4042.8	4055.2	4049.9
7.5°	4038.7	4043.4	4009.8	4019.8	4009.2
10°	4011.5	4009.2	3969.6	3989.1	3991.5
12.5°	3971.4	3964.3	3928.9	3958.4	3959.0
15°	3925.3	3910.0	3882.2	3916.5	3921.2
17.5°	3872.2	3852.1	3833.8	3878.1	3871.0
20°	3810.2	3786.6	3783.0	3831.4	3813.7
22.5°	3733.4	3715.1	3723.4	3769.4	3758.2
25°	3646.6	3630.7	3656.1	3689.7	3679.1
27.5°	3555.1	3545.7	3574.6	3600.6	3579.9
30°	3454.7	3449.4	3487.8	3509.1	3483.1
32.5°	3345.5	3347.3	3383.9	3412.8	3388.6
35°	3232.1	3239.8	3272.9	3307.7	3294.7
37.5°	3107.6	3124.7	3157.7	3197.3	3183.7
40°	2975.9	3000.7	3037.3	3085.1	3072.7
42.5°	2833.6	2864.9	2912.1	2965.3	2964.1
45°	2682.4	2726.1	2776.9	2847.8	2856.6
47.5°	2525.4	2574.4	2638.7	2733.2	2746.8
50°	2354.7	2416.1	2496.4	2609.8	2618.1
52.5°	2164.6	2248.4	2354.7	2463.4	2453.3
55°	1973.9	2068.9	2210.1	2298.6	2293.3
57.5°	1783.8	1890.6	2061.9	2125.0	2124.4
60°	1571.2	1706.4	1893.6	1941.4	1894.2
62.5°	1374.6	1519.8	1714.1	1679.2	1517.5
65°	1158.5	1339.7	1521.0	1283.6	1048.1
67.5°	966.6	1155.5	1291.9	879.2	752.8
70°	773.5	981.9	1007.3	652.4	643.6
72.5°	602.3	824.3	695.0	558.6	586.9
75°	455.8	661.3	486.5	497.8	530.2
77.5°	332.4	507.8	378.5	436.3	462.9
80°	228.5	359.6	308.8	366.7	385.0
82.5°	143.5	237.4	247.4	295.2	314.1
85°	78.5	150.6	193.1	233.2	244.4
87.5°	32.5	90.9	147.6	180.1	189.5
90°	0.6	50.2	99.8	125.2	131.1
92.5°	0.6	38.4	81.5	101.0	105.1
95°	0.6	31.3	68.5	83.3	85.6
97.5°	1.2	24.8	57.3	69.1	71.4
100°	1.8	20.7	47.8	57.9	59.6
102.5°	2.4	16.5	40.2	48.4	50.2
105°	2.4	13.6	33.7	40.7	42.5



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CATALOG NUMBER: OHBL-12SE-MCL-UNV-L835-CD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.1	8.3	20.1	25.4	26.6
115°	4.7	7.1	17.1	21.8	23.0
117.5°	4.7	5.9	14.8	18.3	19.5
120°	4.7	5.3	13.0	15.9	16.5
122.5°	4.7	4.7	11.2	14.2	14.8
125°	4.1	4.7	10.6	12.4	13.0
127.5°	4.7	4.7	9.4	11.2	11.8
130°	4.7	5.3	8.3	10.6	10.6
132.5°	5.3	5.9	7.7	10.0	10.0
135°	5.3	5.9	6.5	9.4	10.0
137.5°	5.9	5.9	5.9	8.9	9.4
140°	5.9	5.9	5.3	7.7	8.3
142.5°	5.3	5.9	5.3	7.1	7.7
145°	5.3	5.9	5.9	6.5	7.1
147.5°	5.9	5.9	5.9	5.9	6.5
150°	5.9	5.9	5.9	5.9	5.9
152.5°	5.9	5.9	5.9	5.9	5.9
155°	5.9	6.5	6.5	6.5	5.9
157.5°	5.9	6.5	6.5	6.5	6.5
160°	5.9	6.5	6.5	6.5	6.5
162.5°	6.5	6.5	6.5	6.5	6.5
165°	6.5	6.5	6.5	6.5	6.5
167.5°	6.5	7.1	6.5	6.5	6.5
170°	6.5	6.5	6.5	5.9	5.9
172.5°	6.5	6.5	6.5	5.9	5.9
175°	6.5	6.5	5.9	5.3	5.3
177.5°	7.1	6.5	5.9	5.3	4.7
180°	5.9	5.9	5.9	5.9	5.9



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	3.0	11.2	28.9	34.8	36.0
110°	3.5	9.4	24.2	29.5	30.7



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2307-100-5

Test Date: 08/01/2023

Luminaire Tested: OHB-15SE-N-UNV-L835-CD

Data in this report applies to families of products including OHB-15SE-N-UNV-L835-CD.

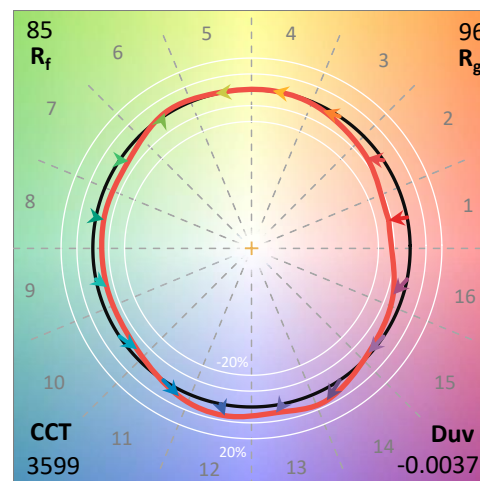
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2307-100-5
 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-L835-CD**
 Description: 15000 LUMEN OHB SE LED LUMINAIRE WITH 80CRI, 3500K LEDS AND NARROW LENS

LENS

Spectral Parameters

CCT (K):	3599	CRI (Ra):	84.0		
CIE u':	0.2351	R1:	83.2	R9:	12.7
CIE v':	0.5044	R2:	92.7	R10:	82.6
Duv:	-0.0037	R3:	95.2	R11:	80.5
CIE x:	0.3962	R4:	81.4	R12:	70.1
CIE y:	0.3778	R5:	83.6	R13:	85.9
CIE z:	0.2260	R6:	89.5	R14:	98.2
Peak Wavelength (nm):	600	R7:	83.4		
Dominant Wavelength (nm):	582	R8:	62.9		
Purity:	32.5				
Rf:	84.6				
Rg:	95.6				



Test Conditions

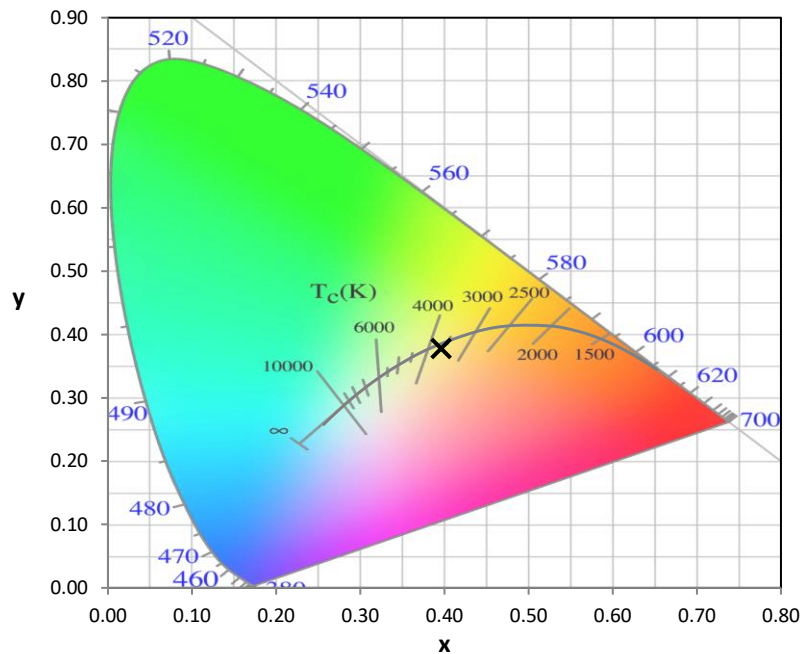
Stabilization Time: 24M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.7/57%
 Sphere Temperature (°C): 25.2

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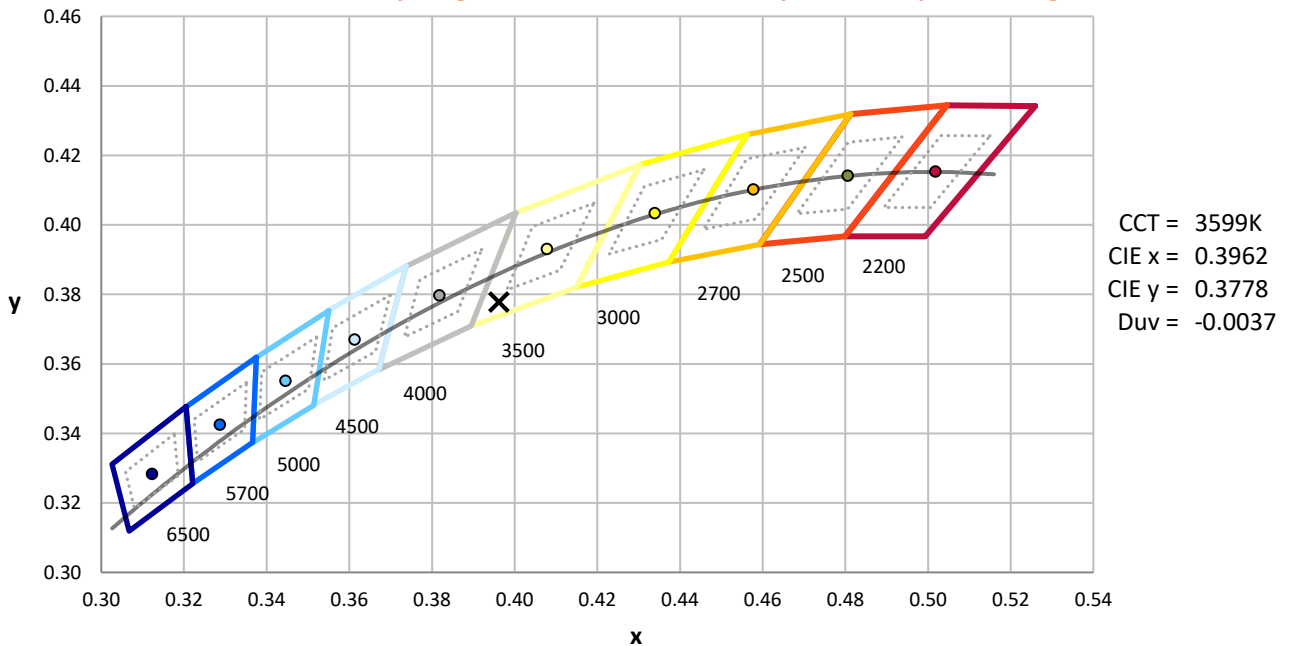
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208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



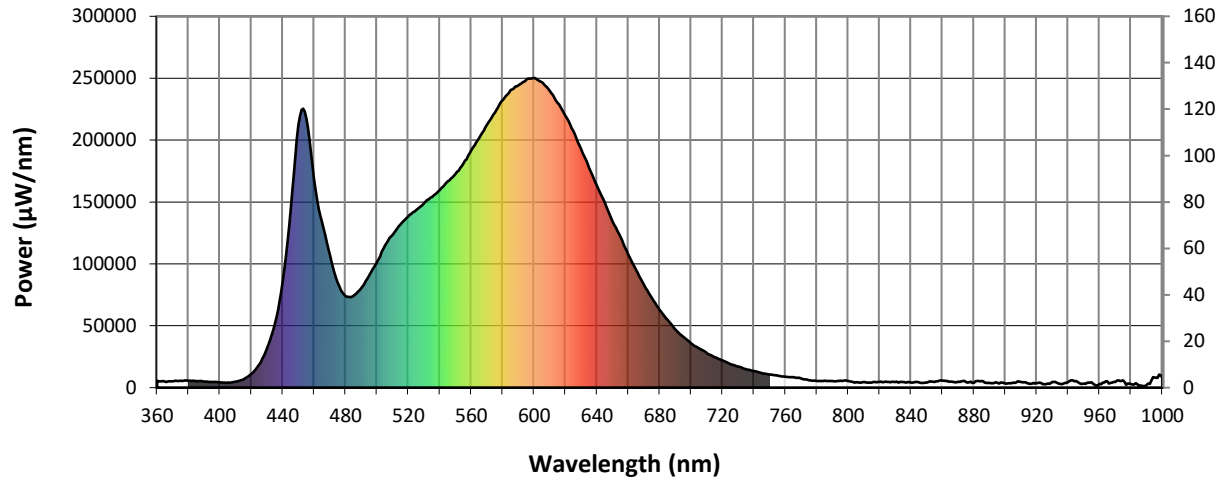
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 7-step quadrangle

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Photopic Flux vs. Wavelength

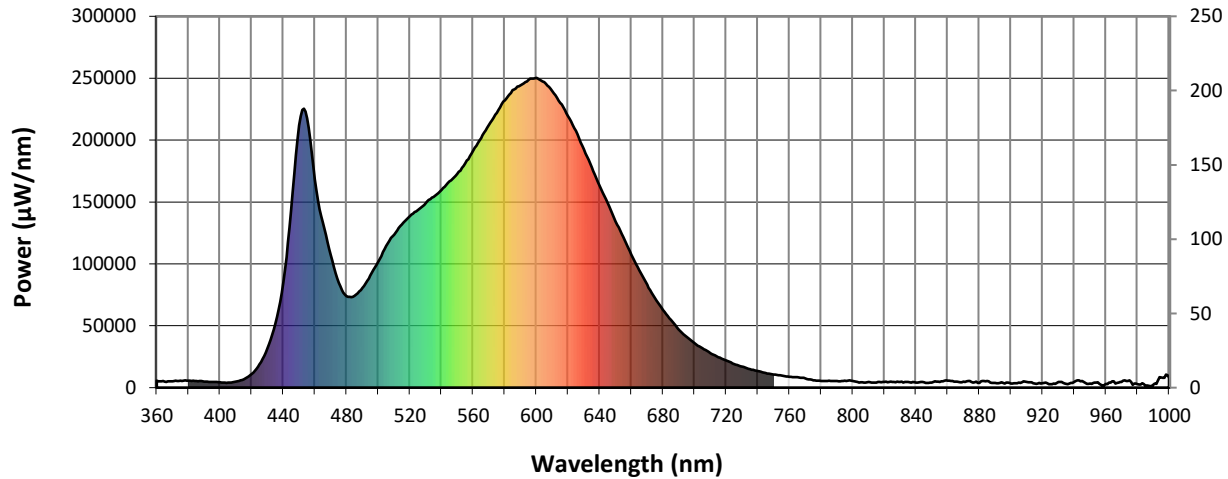


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λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5689	NR	490	80602	NR	620	219378	NR	750	10550	NR	880	3904	NR
365	4945	NR	495	90559	NR	625	207438	NR	755	9754	NR	885	5303	NR
370	5058	NR	500	101536	NR	630	192648	NR	760	8782	NR	890	3742	NR
375	5547	NR	505	114437	NR	635	177922	NR	765	8511	NR	895	3742	NR
380	5754	NR	510	123519	NR	640	162983	NR	770	7407	NR	900	3417	NR
385	5303	NR	515	131857	NR	645	149259	NR	775	5982	NR	905	4099	NR
390	4902	NR	520	138423	NR	650	134206	NR	780	5500	NR	910	4553	NR
395	4577	NR	525	143514	NR	655	121625	NR	785	5605	NR	915	3226	NR
400	4236	NR	530	149228	NR	660	107545	NR	790	5276	NR	920	3441	NR
405	4029	NR	535	153920	NR	665	94899	NR	795	5553	NR	925	2872	NR
410	4790	NR	540	159839	NR	670	83078	NR	800	5352	NR	930	4586	NR
415	6714	NR	545	166582	NR	675	72258	NR	805	4410	NR	935	3012	NR
420	10946	NR	550	172661	NR	680	62840	NR	810	4496	NR	940	4550	NR
425	18816	NR	555	181216	NR	685	54770	NR	815	4124	NR	945	5413	NR
430	31629	NR	560	191583	NR	690	47065	NR	820	4683	NR	950	3264	NR
435	51925	NR	565	201637	NR	695	41041	NR	825	4477	NR	955	4446	NR
440	85392	NR	570	212190	NR	700	35898	NR	830	4677	NR	960	3177	NR
445	143452	NR	575	222097	NR	705	31818	NR	835	4590	NR	965	5088	NR
450	211890	NR	580	232192	NR	710	27900	NR	840	4206	NR	970	4660	NR
455	217588	NR	585	240359	NR	715	24493	NR	845	4339	NR	975	5979	NR
460	168370	NR	590	244370	NR	720	21898	NR	850	4152	NR	980	2893	NR
465	133710	NR	595	248669	NR	725	19106	NR	855	4697	NR	985	1574	NR
470	107097	NR	600	250268	NR	730	16886	NR	860	5661	NR	990	2218	NR
475	84824	NR	605	246759	NR	735	14933	NR	865	4883	NR	995	8203	NR
480	73990	NR	610	239510	NR	740	13423	NR	870	4777	NR	1000	7943	NR
485	74137	NR	615	230040	NR	745	11765	NR	875	4721	NR			

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Scotopic Flux vs. Wavelength



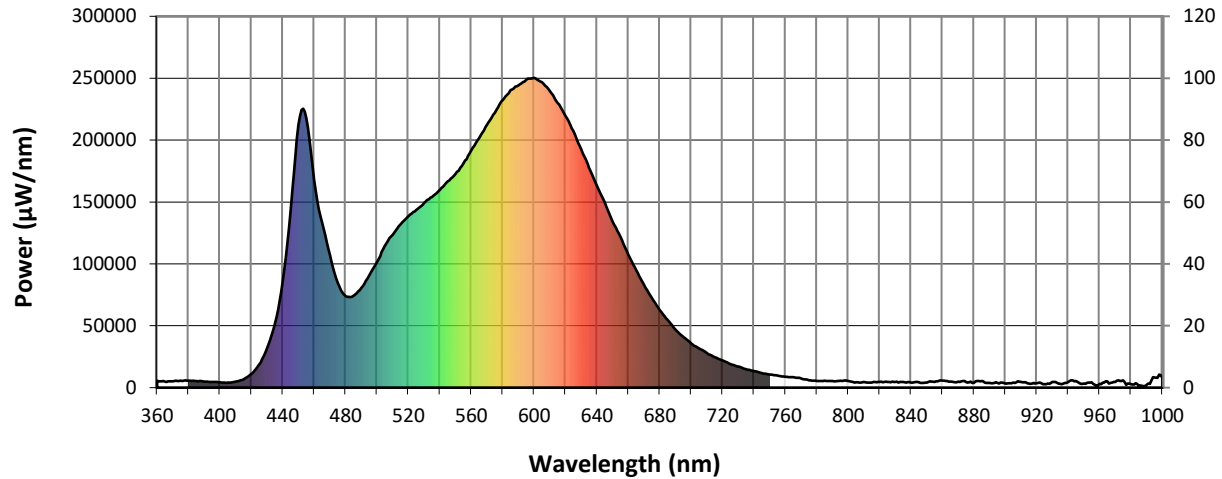
Scotopic Lumens: 21413.1

S/P: 1.61

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	5689	NR	490	80602	NR	620	219378	NR	750	10550	NR	880	3904	NR
365	4945	NR	495	90559	NR	625	207438	NR	755	9754	NR	885	5303	NR
370	5058	NR	500	101536	NR	630	192648	NR	760	8782	NR	890	3742	NR
375	5547	NR	505	114437	NR	635	177922	NR	765	8511	NR	895	3742	NR
380	5754	NR	510	123519	NR	640	162983	NR	770	7407	NR	900	3417	NR
385	5303	NR	515	131857	NR	645	149259	NR	775	5982	NR	905	4099	NR
390	4902	NR	520	138423	NR	650	134206	NR	780	5500	NR	910	4553	NR
395	4577	NR	525	143514	NR	655	121625	NR	785	5605	NR	915	3226	NR
400	4236	NR	530	149228	NR	660	107545	NR	790	5276	NR	920	3441	NR
405	4029	NR	535	153920	NR	665	94899	NR	795	5553	NR	925	2872	NR
410	4790	NR	540	159839	NR	670	83078	NR	800	5352	NR	930	4586	NR
415	6714	NR	545	166582	NR	675	72258	NR	805	4410	NR	935	3012	NR
420	10946	NR	550	172661	NR	680	62840	NR	810	4496	NR	940	4550	NR
425	18816	NR	555	181216	NR	685	54770	NR	815	4124	NR	945	5413	NR
430	31629	NR	560	191583	NR	690	47065	NR	820	4683	NR	950	3264	NR
435	51925	NR	565	201637	NR	695	41041	NR	825	4477	NR	955	4446	NR
440	85392	NR	570	212190	NR	700	35898	NR	830	4677	NR	960	3177	NR
445	143452	NR	575	222097	NR	705	31818	NR	835	4590	NR	965	5088	NR
450	211890	NR	580	232192	NR	710	27900	NR	840	4206	NR	970	4660	NR
455	217588	NR	585	240359	NR	715	24493	NR	845	4339	NR	975	5979	NR
460	168370	NR	590	244370	NR	720	21898	NR	850	4152	NR	980	2893	NR
465	133710	NR	595	248669	NR	725	19106	NR	855	4697	NR	985	1574	NR
470	107097	NR	600	250268	NR	730	16886	NR	860	5661	NR	990	2218	NR
475	84824	NR	605	246759	NR	735	14933	NR	865	4883	NR	995	8203	NR
480	73990	NR	610	239510	NR	740	13423	NR	870	4777	NR	1000	7943	NR
485	74137	NR	615	230040	NR	745	11765	NR	875	4721	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 8686

M/P: 0.65

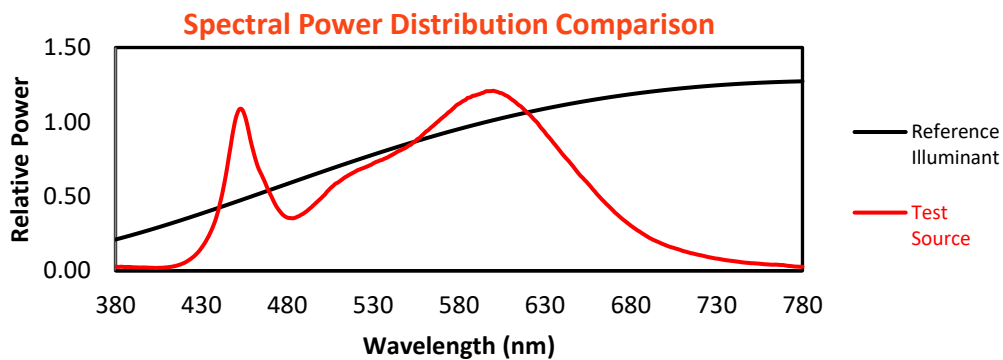
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5689	NR	490	80602	NR	620	219378	NR	750	10550	NR	880	3904	NR
365	4945	NR	495	90559	NR	625	207438	NR	755	9754	NR	885	5303	NR
370	5058	NR	500	101536	NR	630	192648	NR	760	8782	NR	890	3742	NR
375	5547	NR	505	114437	NR	635	177922	NR	765	8511	NR	895	3742	NR
380	5754	NR	510	123519	NR	640	162983	NR	770	7407	NR	900	3417	NR
385	5303	NR	515	131857	NR	645	149259	NR	775	5982	NR	905	4099	NR
390	4902	NR	520	138423	NR	650	134206	NR	780	5500	NR	910	4553	NR
395	4577	NR	525	143514	NR	655	121625	NR	785	5605	NR	915	3226	NR
400	4236	NR	530	149228	NR	660	107545	NR	790	5276	NR	920	3441	NR
405	4029	NR	535	153920	NR	665	94899	NR	795	5553	NR	925	2872	NR
410	4790	NR	540	159839	NR	670	83078	NR	800	5352	NR	930	4586	NR
415	6714	NR	545	166582	NR	675	72258	NR	805	4410	NR	935	3012	NR
420	10946	NR	550	172661	NR	680	62840	NR	810	4496	NR	940	4550	NR
425	18816	NR	555	181216	NR	685	54770	NR	815	4124	NR	945	5413	NR
430	31629	NR	560	191583	NR	690	47065	NR	820	4683	NR	950	3264	NR
435	51925	NR	565	201637	NR	695	41041	NR	825	4477	NR	955	4446	NR
440	85392	NR	570	212190	NR	700	35898	NR	830	4677	NR	960	3177	NR
445	143452	NR	575	222097	NR	705	31818	NR	835	4590	NR	965	5088	NR
450	211890	NR	580	232192	NR	710	27900	NR	840	4206	NR	970	4660	NR
455	217588	NR	585	240359	NR	715	24493	NR	845	4339	NR	975	5979	NR
460	168370	NR	590	244370	NR	720	21898	NR	850	4152	NR	980	2893	NR
465	133710	NR	595	248669	NR	725	19106	NR	855	4697	NR	985	1574	NR
470	107097	NR	600	250268	NR	730	16886	NR	860	5661	NR	990	2218	NR
475	84824	NR	605	246759	NR	735	14933	NR	865	4883	NR	995	8203	NR
480	73990	NR	610	239510	NR	740	13423	NR	870	4777	NR	1000	7943	NR
485	74137	NR	615	230040	NR	745	11765	NR	875	4721	NR			

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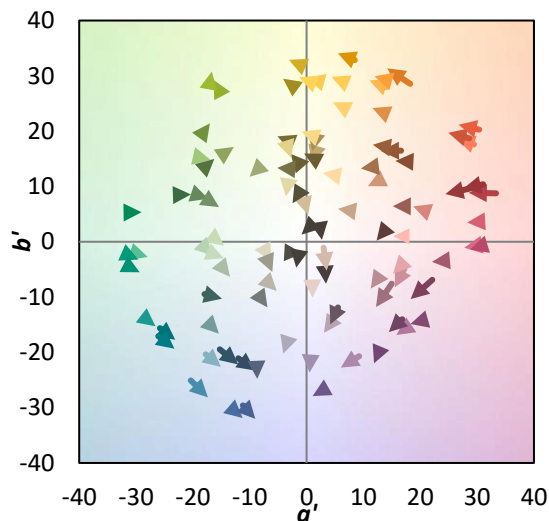
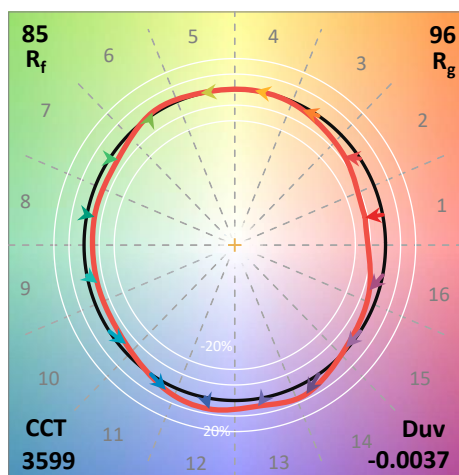
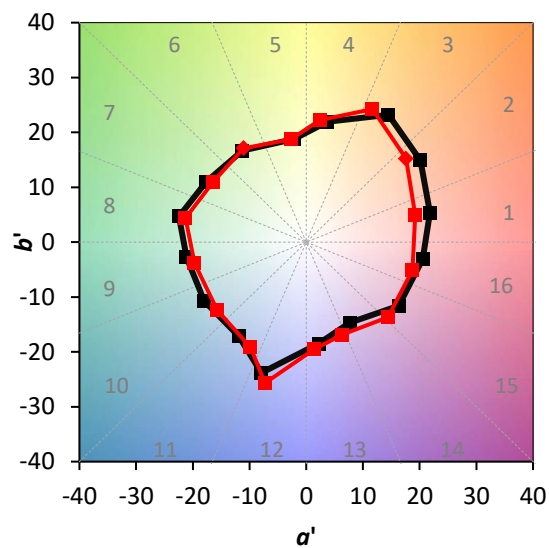
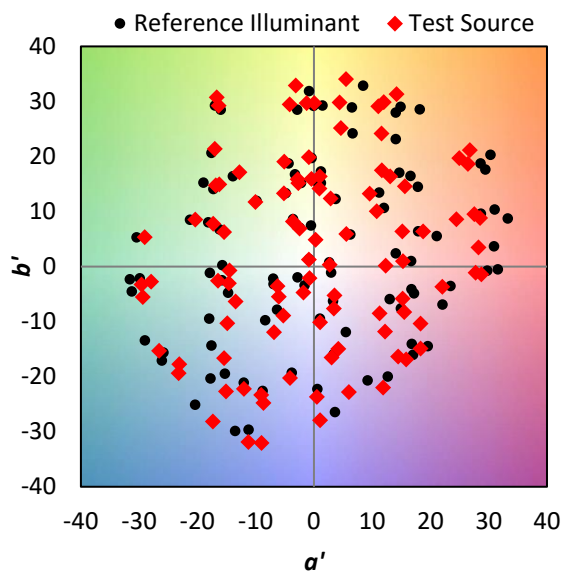
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Summary

$R_f = 84.6$
 $R_g = 95.6$
 $CIE R_a = 84.0$
 $R_9 = 12.7$



Color Vector Graphics

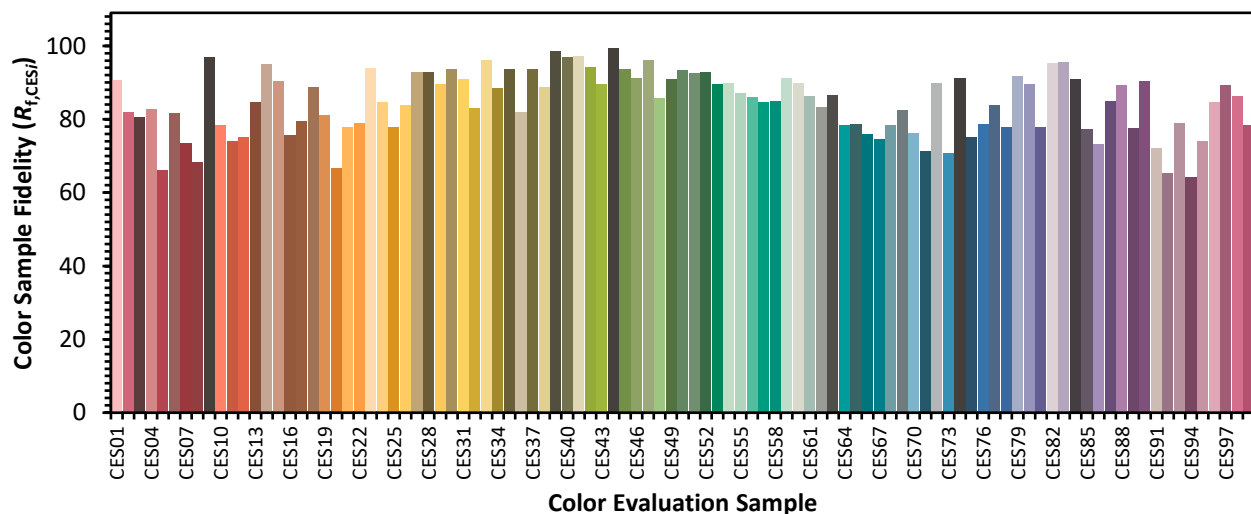


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Individual Sample Fidelity Index ($R_{f,i}$)

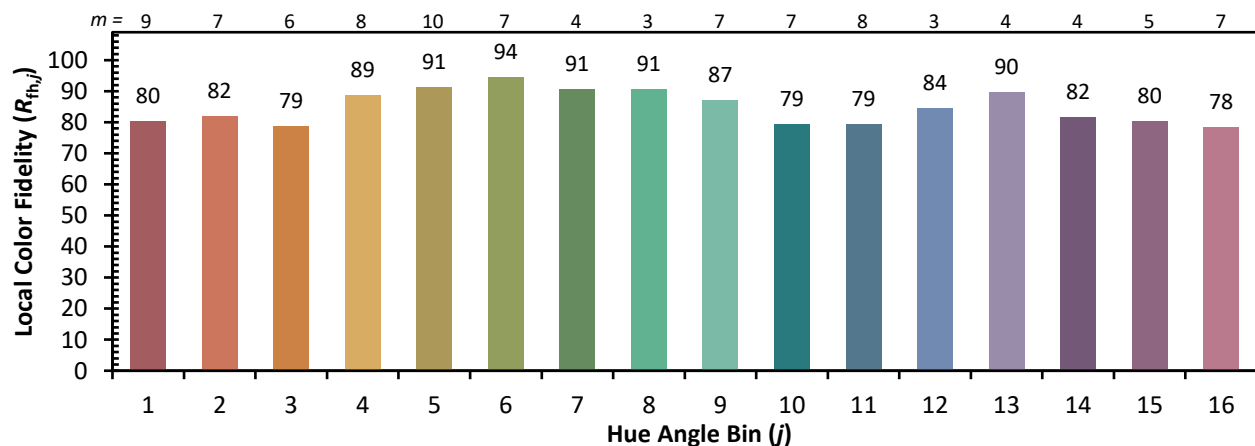
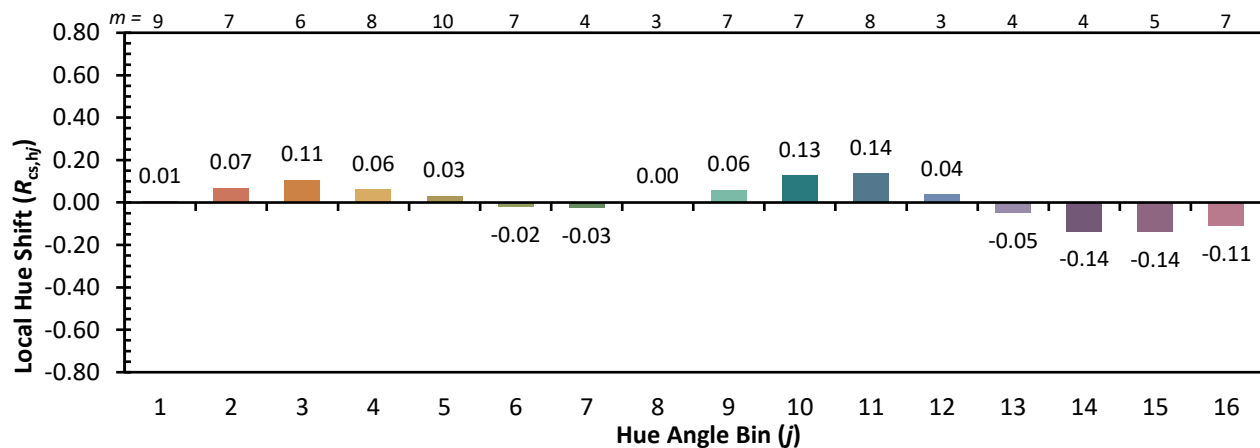
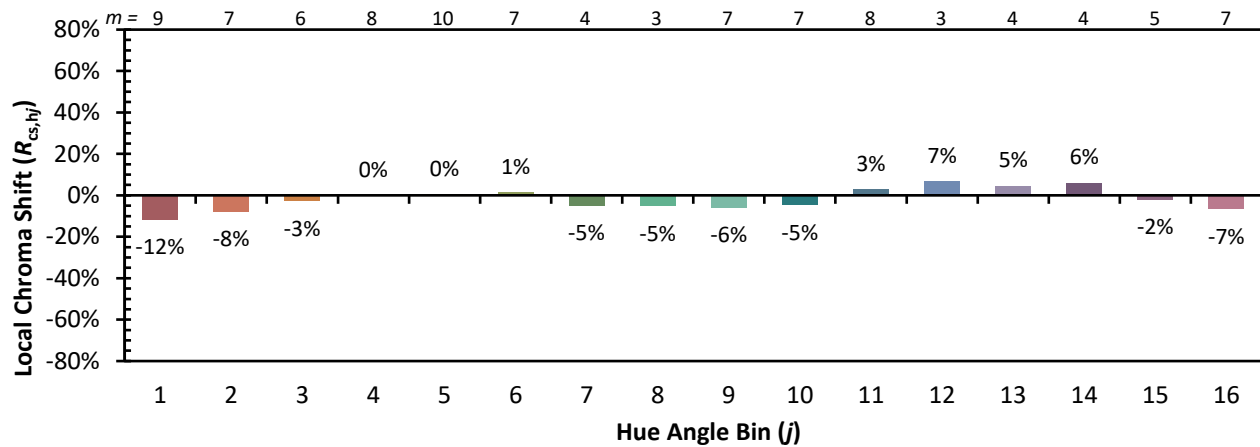
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CES02 = 62	CES27 = 93	CES52 = 93	CES77 = 84
CES03 = 31	CES28 = 93	CES53 = 89	CES78 = 78
CES04 = 70	CES29 = 90	CES54 = 90	CES79 = 92
CES05 = 49	CES30 = 94	CES55 = 87	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 86	CES81 = 78
CES07 = 41	CES32 = 83	CES57 = 85	CES82 = 95
CES08 = 40	CES33 = 96	CES58 = 85	CES83 = 96
CES09 = 29	CES34 = 88	CES59 = 91	CES84 = 91
CES10 = 75	CES35 = 94	CES60 = 90	CES85 = 77
CES11 = 58	CES36 = 82	CES61 = 86	CES86 = 73
CES12 = 64	CES37 = 94	CES62 = 83	CES87 = 85
CES13 = 43	CES38 = 89	CES63 = 86	CES88 = 89
CES14 = 74	CES39 = 99	CES64 = 78	CES89 = 77
CES15 = 71	CES40 = 97	CES65 = 79	CES90 = 90
CES16 = 47	CES41 = 97	CES66 = 76	CES91 = 72
CES17 = 50	CES42 = 94	CES67 = 75	CES92 = 65
CES18 = 56	CES43 = 90	CES68 = 78	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 82	CES94 = 64
CES20 = 66	CES45 = 94	CES70 = 76	CES95 = 74
CES21 = 86	CES46 = 91	CES71 = 71	CES96 = 85
CES22 = 78	CES47 = 96	CES72 = 90	CES97 = 89
CES23 = 92	CES48 = 86	CES73 = 71	CES98 = 86
CES24 = 90	CES49 = 91	CES74 = 91	CES99 = 78
CES25 = 72	CES50 = 93	CES75 = 75	



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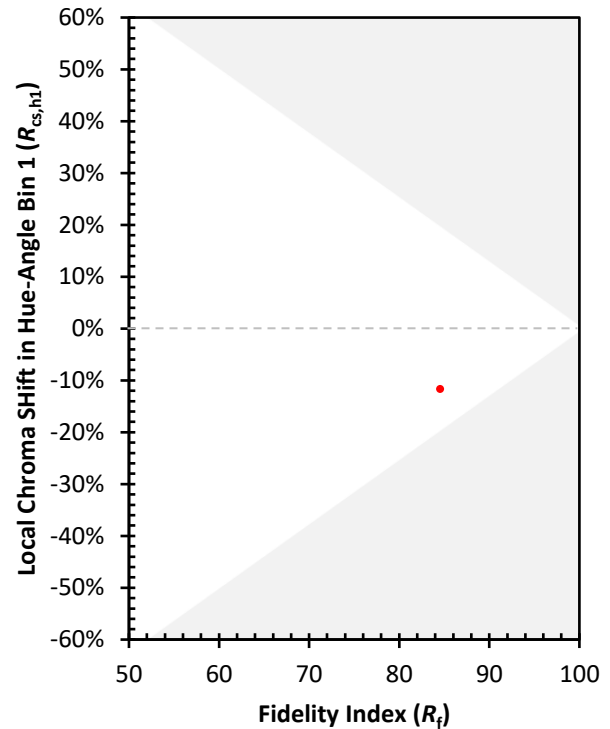
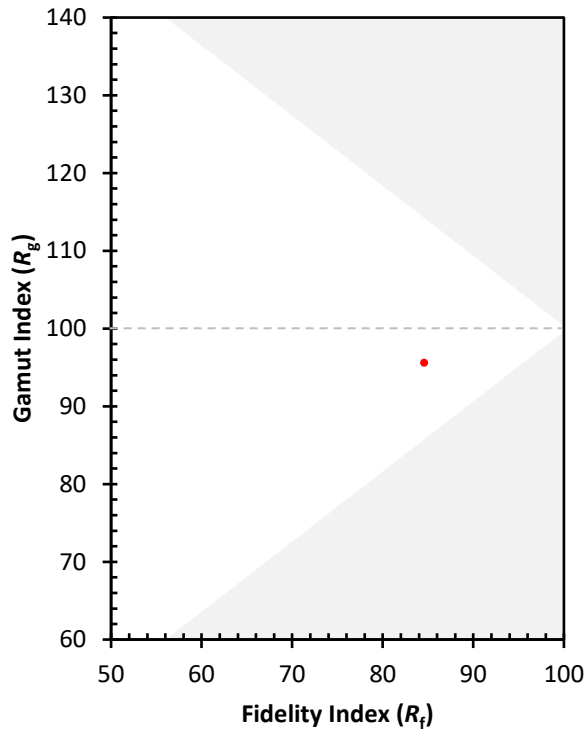
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)