

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: P827132

Luminaire Tested: **OHBL-24HE-MCL-UNV-L840-CD-UPL36**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P827132
REPORT IS A COMBINATION OF REPORTS P826300 AND G3-2310-221-2
Test Lab: INNOVATION CENTER
Issue Date: 5/3/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: OHBL-24HE-MCL-UNV-L840-CD-UPL36
Description: 24000 LUMEN OHBL HE LED LUMINAIRE WITH 80CRI, 4000K LEDS AND MEDIUM CLEAR LENS AND 3600 LUMEN UPLIGHT MODULE
Light Source: -
Ballast/Driver: -

Summary

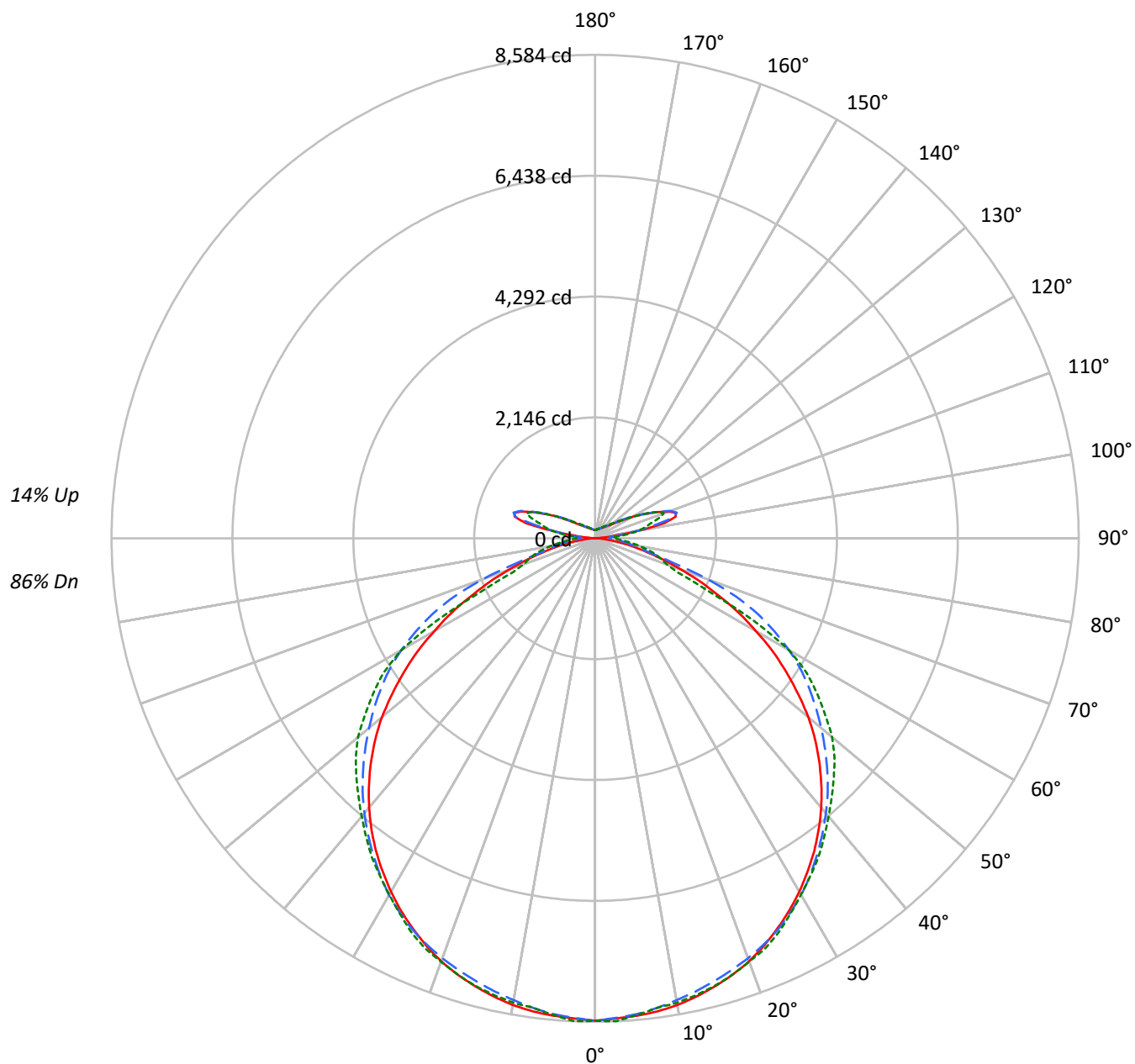
Lumens per Lamp: N/A
Luminaire Lumens: 27795.1 lumens
Efficiency: N/A
Efficacy: 171.8 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 3.78' x L: 1.8' x H: 0.17')
CIE Type: Semi-Direct

Input Watts (W): 161.8
Input Voltage (V): NR
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

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CATALOG NUMBER: OHBL-24HE-MCL-UNV-L840-CD-UPL36

Luminous Intensity Polar Plot





TEST NUMBER: P827132

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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	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86		
1	106	101	97	94	102	98	94	91	91	88	85	85	83	80	79	77	76	73		
2	97	89	82	77	93	86	80	75	80	75	71	75	71	67	70	67	64	61		
3	88	78	70	64	84	75	68	62	70	65	60	66	61	57	62	58	54	52		
4	81	69	61	54	77	67	59	53	63	56	51	59	53	49	55	50	47	44		
5	74	62	53	47	71	60	52	46	56	49	44	53	47	42	50	45	41	38		
6	68	55	47	41	66	54	46	40	51	44	38	48	42	37	45	40	36	33		
7	63	50	42	36	61	49	41	35	46	39	34	43	37	33	41	36	32	29		
8	59	46	37	32	57	44	37	31	42	35	30	40	34	29	37	32	28	26		
9	55	42	34	28	53	41	33	28	39	32	27	37	31	26	35	29	25	24		
10	51	39	31	26	49	38	30	25	36	29	25	34	28	24	32	27	23	21		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13548	13548	13548
5°	13402	13351	13436
10°	13297	13149	13343
15°	13156	12998	13311
20°	13013	12902	13252
25°	12796	12806	13197
30°	12563	12655	13012
35°	12293	12415	12944
40°	11959	12167	12833
45°	11519	11880	12837
50°	10946	11554	12838
55°	10083	11233	12479
60°	8984	10763	11677
65°	7587	9890	7517
70°	5981	7721	5568
75°	4342	4583	5836
80°	2863	3811	5884
85°	1452	3491	6187



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	807.7	2.9
10°-20°	2316.2	8.3
20°-30°	3537.6	12.7
30°-40°	4292.4	15.4
40°-50°	4498.8	16.2
50°-60°	4076.6	14.7
60°-70°	2733.2	9.8
70°-80°	1227.3	4.4
80°-90°	453.1	1.6
90°-100°	409.2	1.5
100°-110°	1309.3	4.7
110°-120°	1063.0	3.8
120°-130°	505.6	1.8
130°-140°	259.1	0.9
140°-150°	152.6	0.5
150°-160°	90.7	0.3
160°-170°	47.9	0.2
170°-180°	14.7	0.1
0°-30°	6661.6	24.0
0°-40°	10954.0	39.4
0°-60°	19529.4	70.3
0°-90°	23943.0	86.1
90°-120°	2781.5	10.0
90°-150°	3698.8	13.3
90°-180°	3852.0	13.9
0°-180°	27795.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8567	8567	8567	8567	8567	
5°	8511	8541	8481	8507	8496	809
15°	8235	8202	8144	8216	8226	2325
25°	7650	7616	7670	7740	7718	3526
35°	6780	6796	6866	6939	6912	4238
45°	5627	5719	5825	5974	5993	4335
55°	4141	4340	4636	4822	4811	3696
65°	2430	2810	3191	2693	2199	2421
75°	956	1387	1021	1044	1112	1045
85°	165	316	405	489	513	201
90°	9	154	272	335	348	15
95°	63	190	309	385	406	232
105°	1482	1502	1457	1116	1020	1410
115°	1040	1031	1060	1077	1069	1050
125°	516	535	559	554	545	486
135°	311	319	329	338	340	246
145°	229	235	240	245	247	146
155°	188	193	196	198	196	88
165°	165	167	168	169	170	47
175°	152	152	151	150	151	15
180°	148	148	148	148	148	



TEST NUMBER: P827132

CATALOG NUMBER: OHBL-24HE-MCL-UNV-L840-CD-UPL36

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8566.6	8566.6	8566.6	8566.6	8566.6
2.5°	8531.9	8567.8	8523.2	8571.5	8583.9
5°	8510.8	8540.6	8481.1	8507.1	8496.0
7.5°	8472.4	8482.4	8411.7	8432.8	8410.5
10°	8415.5	8410.5	8327.5	8368.4	8373.3
12.5°	8331.2	8316.4	8242.1	8304.0	8305.2
15°	8234.6	8202.4	8144.2	8216.0	8225.9
17.5°	8123.1	8081.0	8042.6	8135.5	8120.7
20°	7993.1	7943.5	7936.1	8037.7	8000.5
22.5°	7832.1	7793.7	7811.0	7907.6	7884.1
25°	7650.0	7616.5	7669.8	7740.4	7718.1
27.5°	7458.0	7438.2	7498.9	7553.4	7510.0
30°	7247.4	7236.3	7316.8	7361.4	7306.9
32.5°	7018.3	7022.0	7098.8	7159.5	7108.7
35°	6780.4	6796.5	6865.9	6939.0	6911.7
37.5°	6519.1	6555.0	6624.4	6707.3	6678.9
40°	6242.9	6294.9	6371.7	6472.0	6446.0
42.5°	5944.3	6010.0	6109.1	6220.6	6218.1
45°	5627.2	5718.9	5825.4	5974.1	5992.6
47.5°	5297.8	5400.6	5535.6	5733.8	5762.3
50°	4939.8	5068.6	5237.1	5474.9	5492.2
52.5°	4540.9	4716.8	4939.8	5167.7	5146.6
55°	4140.8	4340.3	4636.3	4822.1	4811.0
57.5°	3742.0	3966.2	4325.4	4457.9	4456.7
60°	3296.1	3579.7	3972.4	4072.7	3973.6
62.5°	2883.6	3188.3	3595.8	3522.8	3183.4
65°	2430.3	2810.5	3190.8	2692.8	2198.6
67.5°	2027.7	2424.1	2710.2	1844.4	1579.3
70°	1622.6	2059.9	2113.2	1368.7	1350.1
72.5°	1263.4	1729.2	1457.9	1171.8	1231.2
75°	956.2	1387.3	1020.7	1044.2	1112.3
77.5°	697.4	1065.2	794.0	915.4	971.1
80°	479.4	754.3	647.8	769.2	807.6
82.5°	301.0	497.9	519.0	619.3	659.0
85°	164.7	315.9	405.0	489.3	512.8
87.5°	68.1	190.8	309.7	377.8	397.6
90°	9.2	154.3	272.3	334.6	348.0
92.5°	26.2	140.5	247.9	307.8	322.5
95°	63.2	189.6	308.7	384.7	405.6
97.5°	376.5	454.0	469.2	561.9	590.9
100°	806.7	867.4	739.3	765.4	789.1
102.5°	1263.0	1309.7	1092.2	935.6	909.3
105°	1482.0	1502.5	1456.6	1116.5	1020.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1218.7	1230.3	1244.1	1251.3	1221.7
115°	1039.9	1030.9	1059.9	1076.8	1069.3
117.5°	890.9	883.4	910.0	913.4	904.9
120°	750.9	752.1	778.3	770.4	763.7
122.5°	623.9	637.9	658.5	654.7	643.0
125°	515.7	534.9	559.3	554.0	545.3
127.5°	444.9	450.9	474.8	473.5	474.8
130°	383.9	393.1	410.3	417.3	415.3
132.5°	343.1	352.4	366.1	374.1	377.1
135°	311.1	319.4	328.6	337.8	340.1
137.5°	286.4	292.4	298.4	309.6	311.8
140°	264.4	270.4	275.1	284.1	285.3
142.5°	245.1	252.4	256.1	262.9	264.1
145°	229.1	235.4	240.4	244.6	246.9
147.5°	218.4	222.4	227.4	228.4	230.6
150°	207.4	210.4	214.4	216.4	217.4
152.5°	197.4	200.4	204.4	205.4	206.4
155°	188.4	192.6	195.6	197.6	196.4
157.5°	180.4	184.6	187.6	188.6	188.6
160°	174.4	177.6	180.6	180.6	181.6
162.5°	169.6	171.6	173.6	174.6	175.6
165°	164.6	166.6	167.6	168.6	169.6
167.5°	160.6	162.9	162.6	163.6	163.6
170°	156.6	157.6	158.6	157.4	158.4
172.5°	153.6	154.6	155.6	154.4	154.4
175°	151.6	151.6	151.4	150.1	151.1
177.5°	150.9	150.6	149.4	148.1	147.9
180°	148.4	148.4	148.4	148.4	148.4



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	1497.2	1517.5	1518.7	1357.1	1185.6
110°	1383.4	1408.8	1416.8	1370.9	1294.4



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2304-001-1

Test Date: 05/31/2023

Luminaire Tested: OHB-15SE-N-UNV-L840

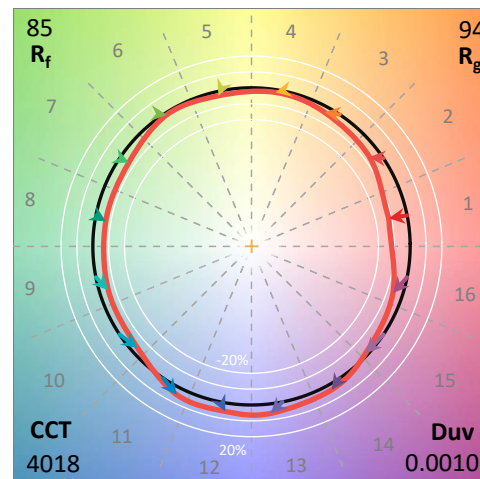
Data in this report applies to families of products including OHB-15SE-N-UNV-L840.

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2304-001-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 05/31/2023
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: METALUX
 Catalog Number: **OHB-15SE-N-UNV-L840**
 Description: 15SE OHB WITH APT LEDS, NARROW LENS, 80CRI 4000K

Spectral Parameters

CCT (K):	4018	CRI (Ra):	84.0		
CIE u':	0.2242	R1:	82.5	R9:	11.5
CIE v':	0.5025	R2:	91.6	R10:	79.8
Duv:	0.0010	R3:	96.1	R11:	80.5
CIE x:	0.3803	R4:	81.4	R12:	64.0
CIE y:	0.3788	R5:	82.4	R13:	85.1
CIE z:	0.2410	R6:	88.0	R14:	98.4
Peak Wavelength (nm):	454	R7:	85.5		
Dominant Wavelength (nm):	578	R8:	64.7		
Purity:	27.9				
Rf:	84.5				
Rg:	93.7				



Test Conditions

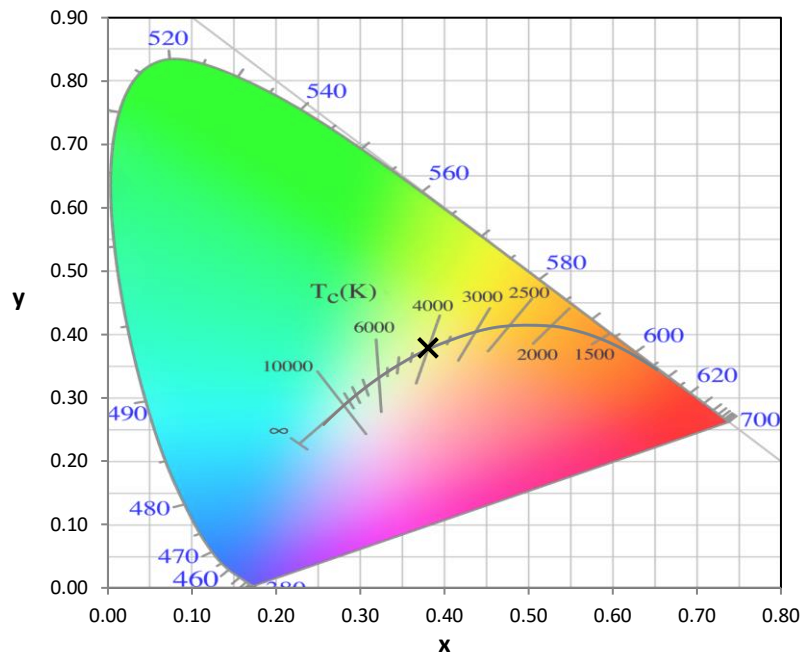
Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.7/44%
 Sphere Temperature (°C): 25.3

REPORT NUMBER: SP1-2304-001-1

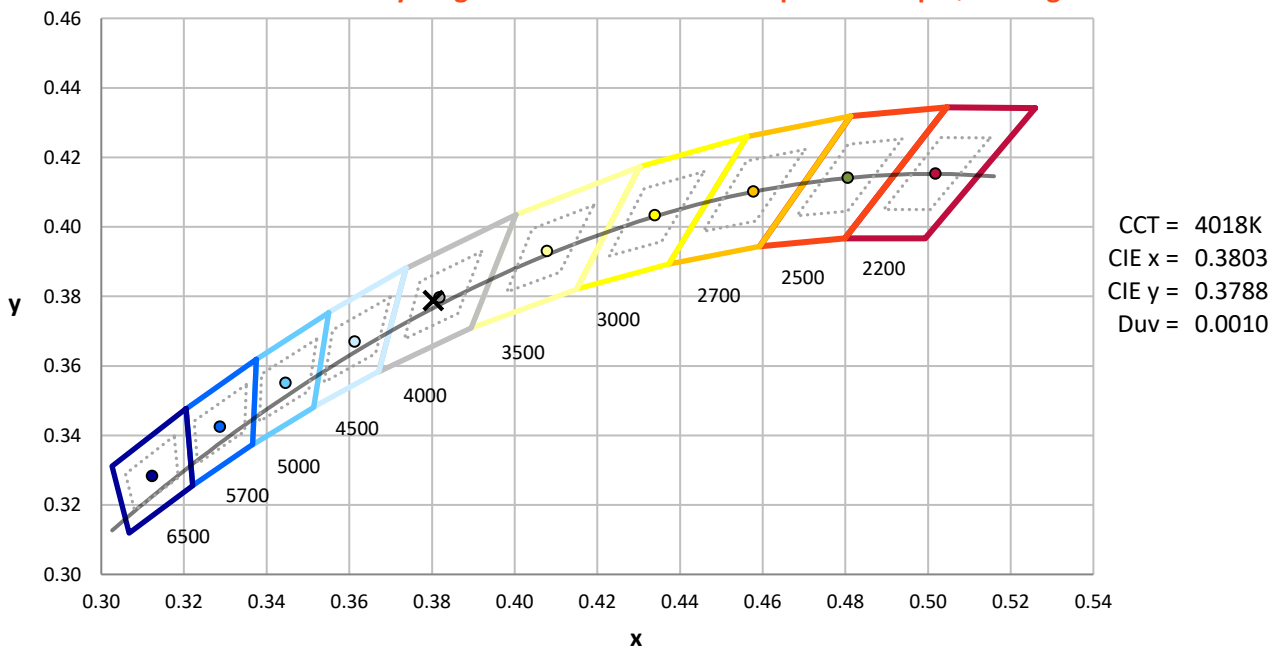
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208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

REPORT NUMBER: SP1-2304-001-1

CIE 1931 Chromaticity Diagram



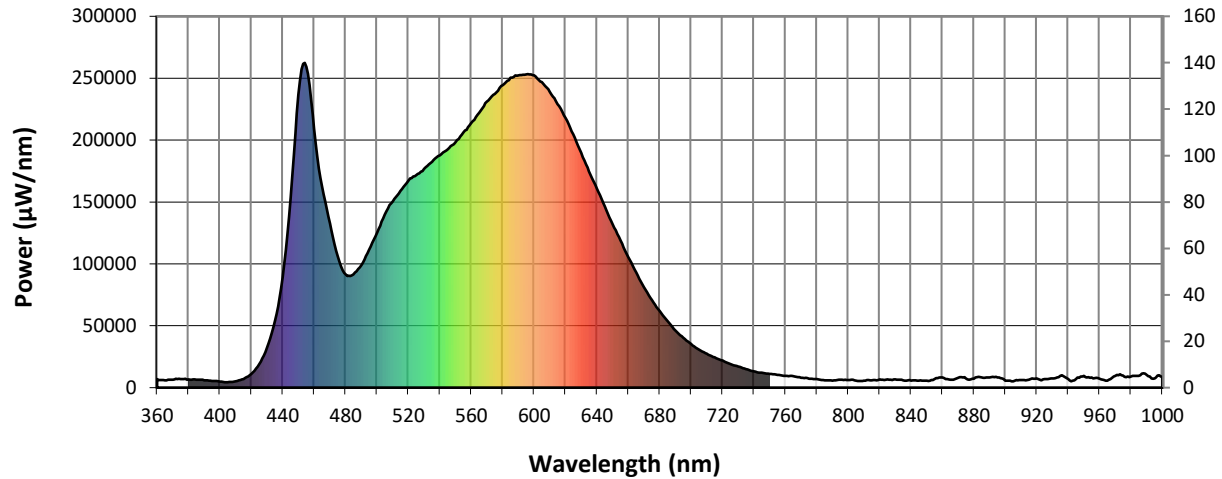
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength

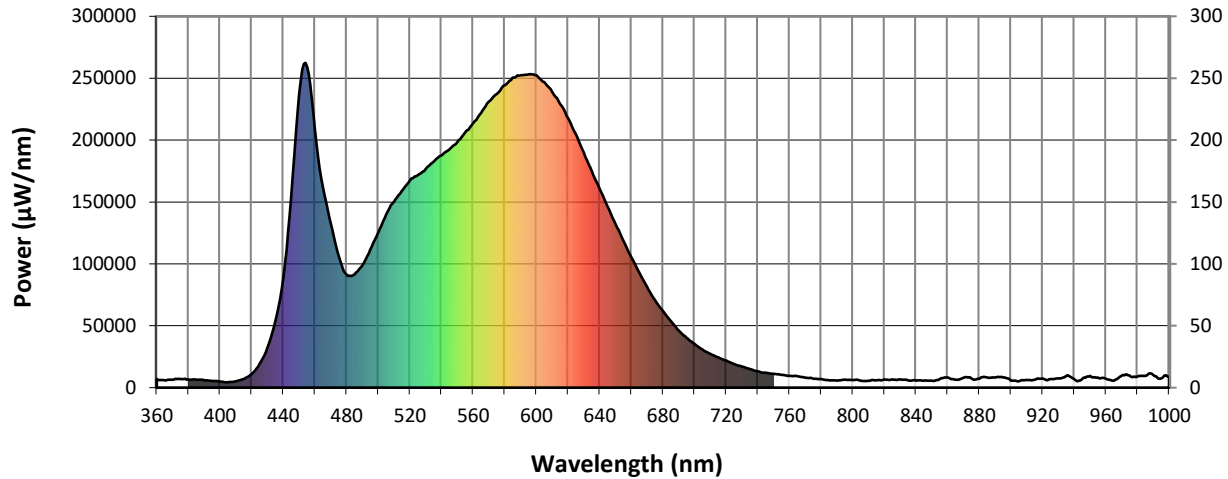


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λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

REPORT NUMBER: SP1-2304-001-1

Scotopic Flux vs. Wavelength



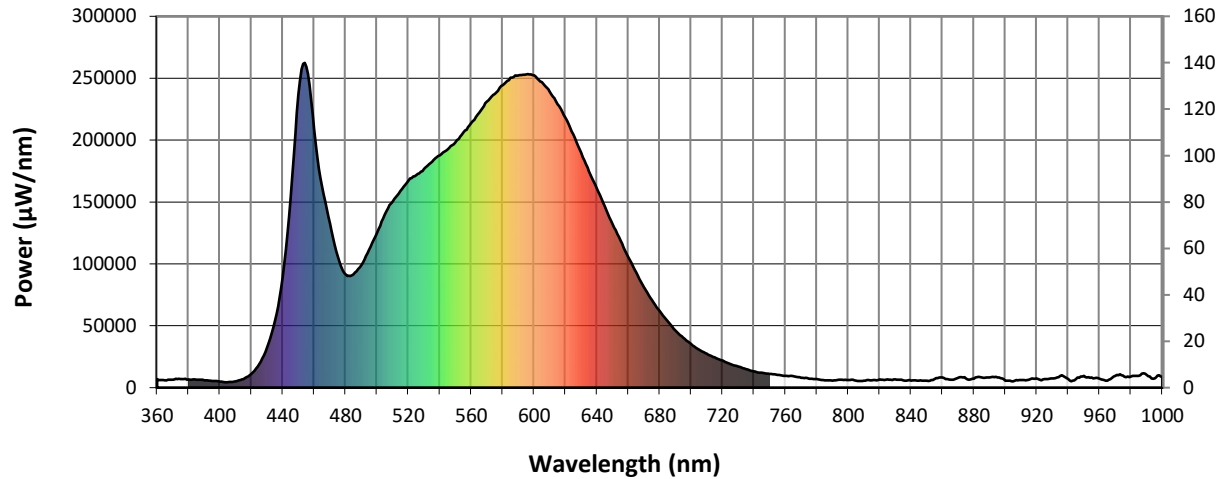
Scotopic Lumens: 25258.1

S/P: 1.73

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	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 10357.9 M/P: 0.71

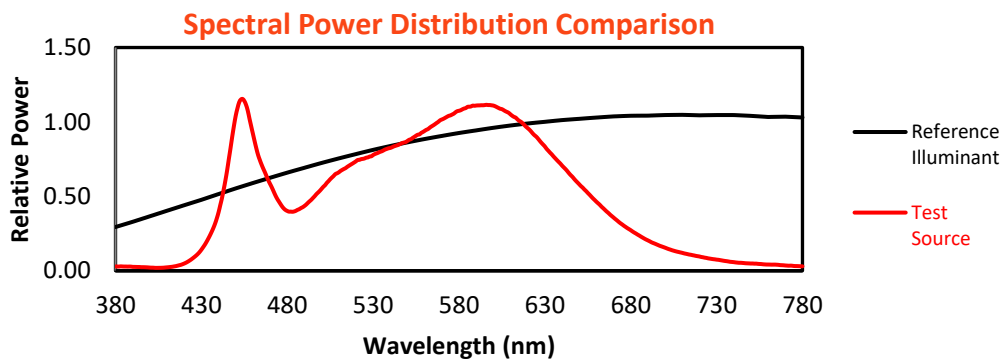
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

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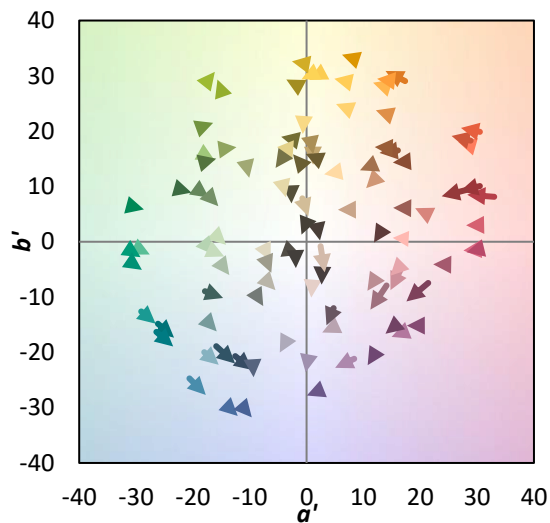
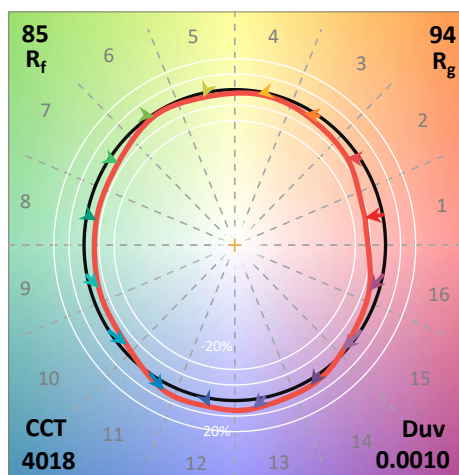
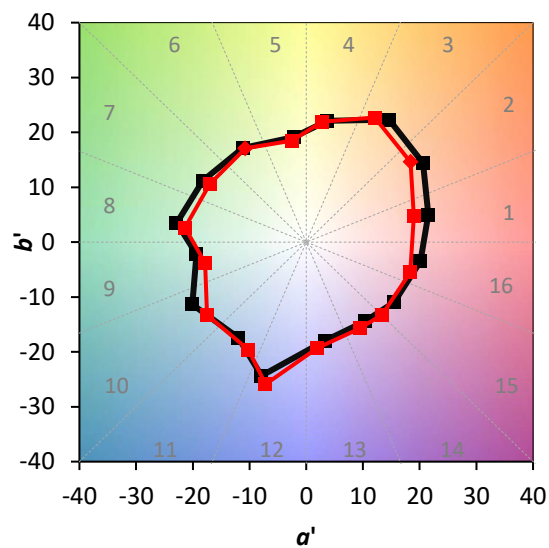
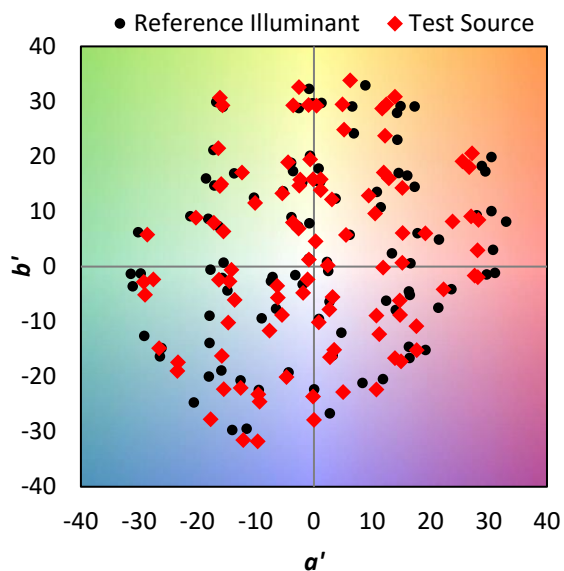
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Summary

$R_f = 84.5$
 $R_g = 93.7$
 CIE $R_a = 84.0$
 $R_9 = 11.5$



Color Vector Graphics

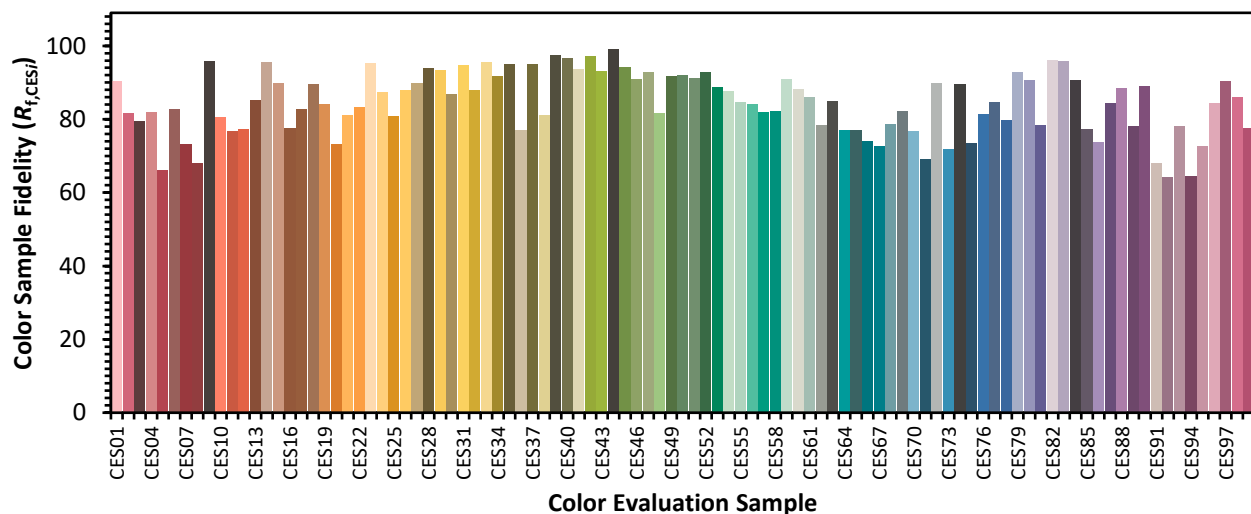


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Individual Sample Fidelity Index ($R_{f,i}$)

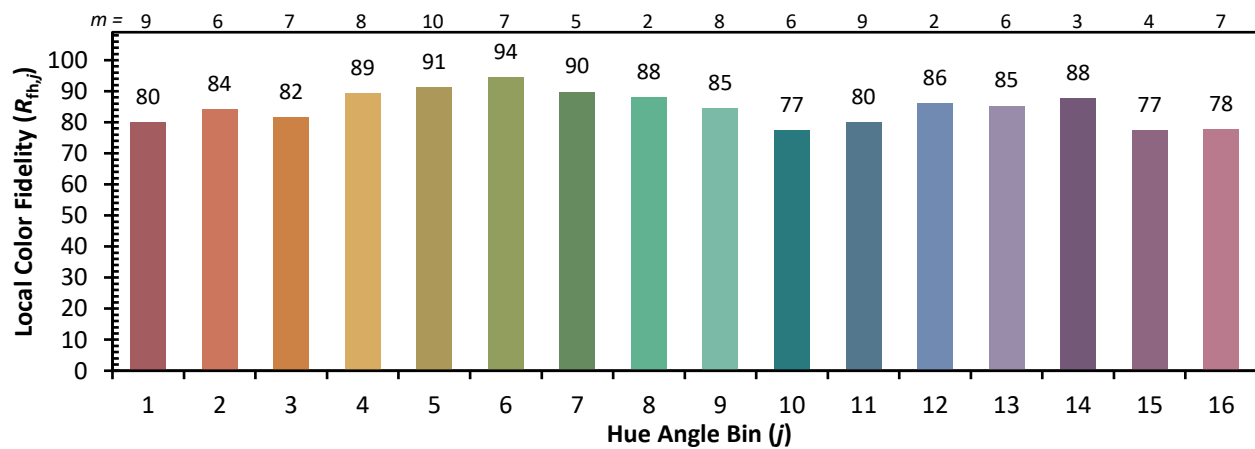
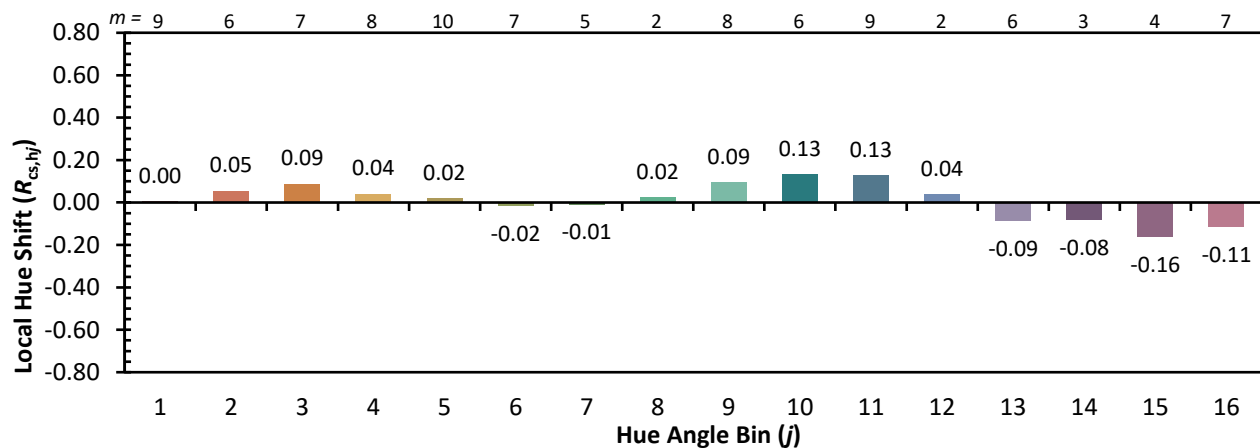
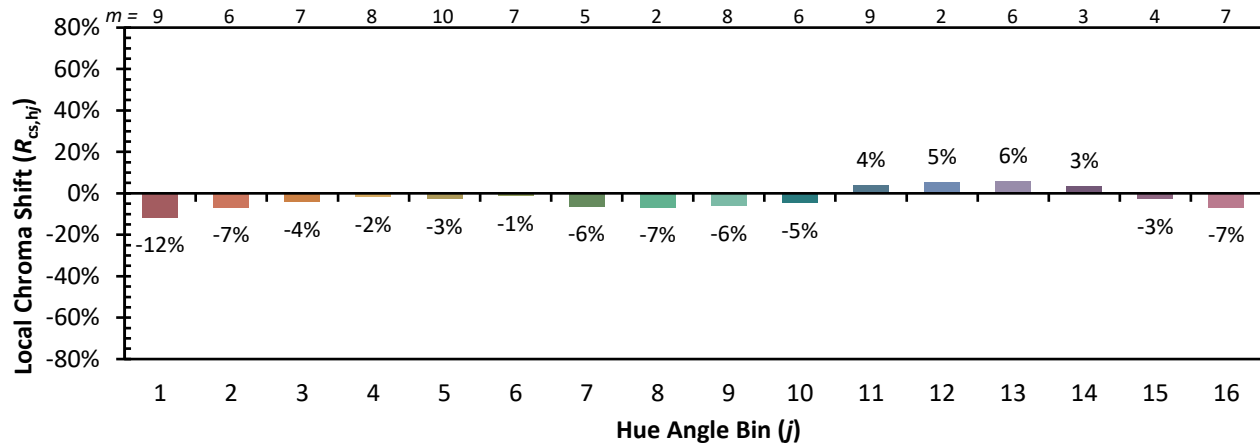
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CES02 = 61	CES27 = 90	CES52 = 93	CES77 = 85
CES03 = 31	CES28 = 94	CES53 = 89	CES78 = 80
CES04 = 69	CES29 = 93	CES54 = 88	CES79 = 93
CES05 = 48	CES30 = 87	CES55 = 85	CES80 = 91
CES06 = 50	CES31 = 95	CES56 = 84	CES81 = 78
CES07 = 41	CES32 = 88	CES57 = 82	CES82 = 96
CES08 = 40	CES33 = 96	CES58 = 82	CES83 = 96
CES09 = 29	CES34 = 92	CES59 = 91	CES84 = 91
CES10 = 74	CES35 = 95	CES60 = 88	CES85 = 77
CES11 = 57	CES36 = 77	CES61 = 86	CES86 = 74
CES12 = 63	CES37 = 95	CES62 = 78	CES87 = 84
CES13 = 42	CES38 = 81	CES63 = 85	CES88 = 88
CES14 = 74	CES39 = 98	CES64 = 77	CES89 = 78
CES15 = 71	CES40 = 97	CES65 = 77	CES90 = 89
CES16 = 47	CES41 = 94	CES66 = 74	CES91 = 68
CES17 = 49	CES42 = 97	CES67 = 73	CES92 = 64
CES18 = 56	CES43 = 93	CES68 = 79	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 82	CES94 = 65
CES20 = 65	CES45 = 94	CES70 = 77	CES95 = 73
CES21 = 86	CES46 = 91	CES71 = 69	CES96 = 84
CES22 = 78	CES47 = 93	CES72 = 90	CES97 = 90
CES23 = 91	CES48 = 82	CES73 = 72	CES98 = 86
CES24 = 90	CES49 = 92	CES74 = 90	CES99 = 77
CES25 = 71	CES50 = 92	CES75 = 74	



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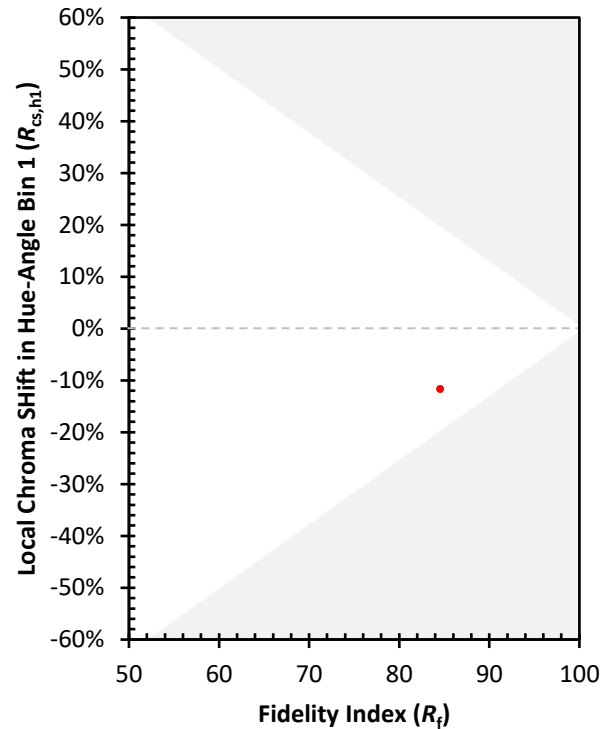
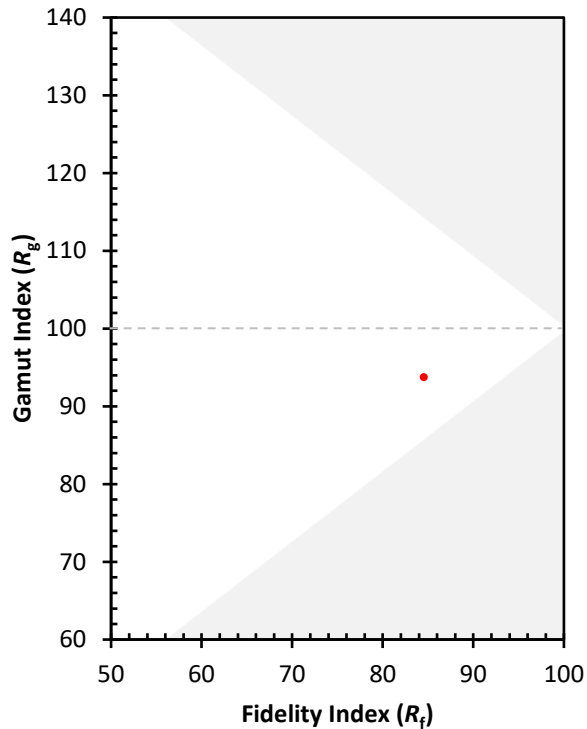
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)