

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: P859973

Luminaire Tested: **SPHB-18SE-N-L750-CD**

Issue Date: 7/11/2024

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P859973
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-343-7)
Test Lab: INNOVATION CENTER
Issue Date: 7/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: SPHB-18SE-N-L750-CD
Description: 18000 Lumen Standard Efficacy Select Pro High Bay with Narrow Lens
and, 5000K 70CRI LEDs
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

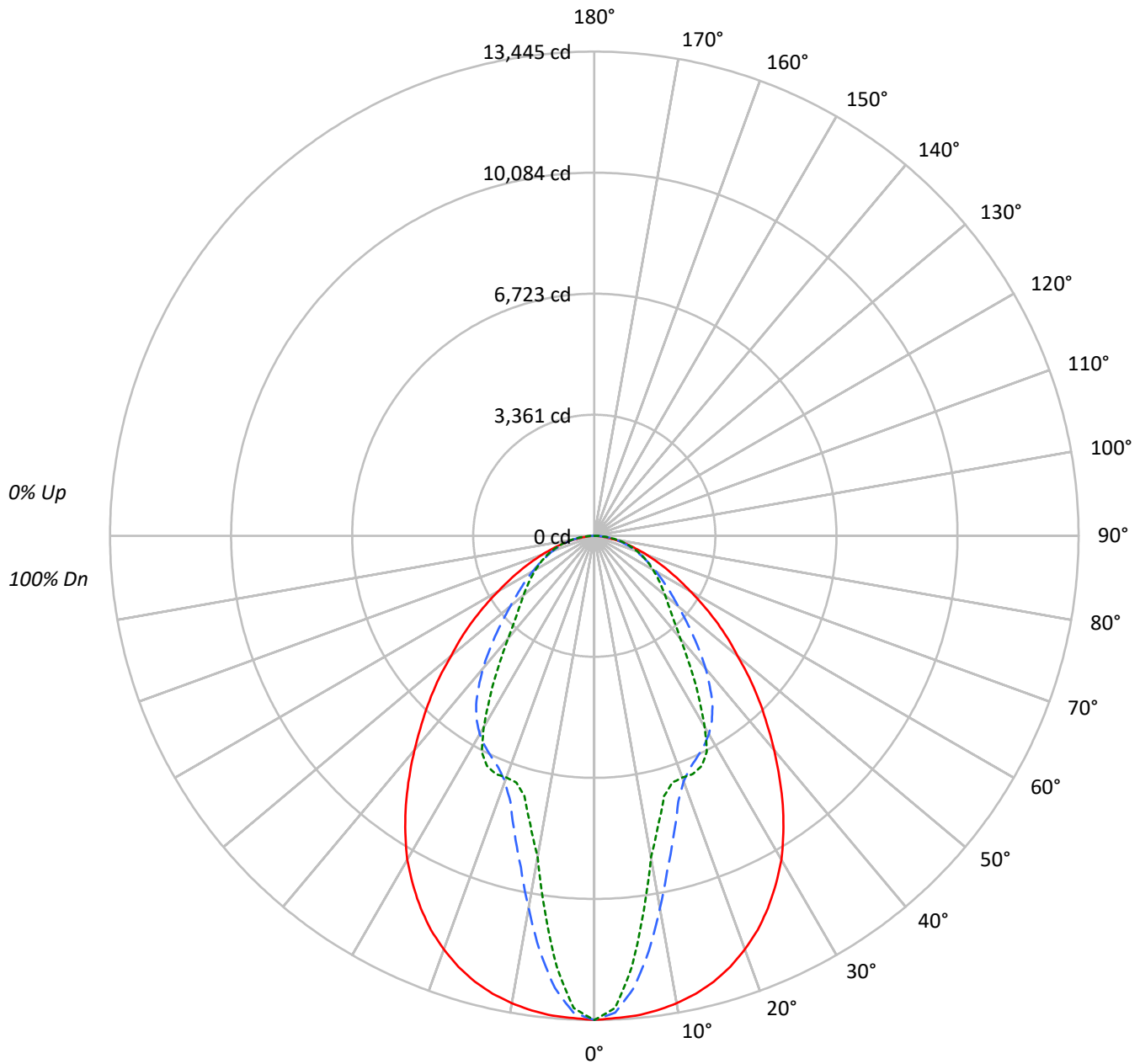
Lumens per Lamp: N/A
Luminaire Lumens: 19705.0 lumens
Efficiency: N/A
Efficacy: 167.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 0.54 / 0.94
Luminous Opening: Rectangular (W 1' x L: 1.38' x H: 0')
CIE Type: Direct

Input Watts (W): 117.4
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: P859973

CATALOG NUMBER: SPHB-18SE-N-L750-CD

Luminous Intensity Polar Plot





TEST NUMBER: P859973

CATALOG NUMBER: SPHB-18SE-N-L750-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	111	111	111	106	106	106	102	102	102	100		
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86		
2	101	94	88	83	99	92	86	82	88	84	80	85	81	78	82	79	76	74		
3	93	84	76	71	91	82	75	70	79	73	69	77	72	68	74	70	66	64		
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56		
5	80	68	60	54	78	67	59	54	65	58	53	63	57	53	61	56	52	50		
6	74	62	54	48	73	61	54	48	60	53	47	58	52	47	56	51	47	45		
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	46	42	40		
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37		
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34		
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	37	33	31		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	104871	104871	104871
5°	104749	98673	94004
10°	104391	83173	71702
15°	103523	69043	60423
20°	101437	60184	59315
25°	98177	58232	60705
30°	93536	57297	55246
35°	86848	54449	45779
40°	79083	48880	37802
45°	71387	42413	33185
50°	62998	36879	31075
55°	55902	33263	29912
60°	47907	30760	29301
65°	41467	28908	29155
70°	35488	27809	29120
75°	29787	27005	28859
80°	22729	26097	28262
85°	14883	23152	21774



TEST NUMBER: P859973

CATALOG NUMBER: SPHB-18SE-N-L750-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1146.3	5.8
10°-20°	2632.1	13.4
20°-30°	3557.1	18.1
30°-40°	3743.7	19.0
40°-50°	3176.6	16.1
50°-60°	2460.8	12.5
60°-70°	1713.8	8.7
70°-80°	981.4	5.0
80°-90°	285.6	1.4
90°-100°	7.6	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°	7335.5	37.2
0°-40°	11079.2	56.2
0°-60°	16716.6	84.8
0°-90°	19697.4	100.0
90°-120°	7.6	0.0
90°-150°	7.6	0.0
90°-180°	8.0	0.0
0°-180°	19705.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	13445	13445	13445	13445	13445	
5°	13378	13133	12602	12119	12006	###
15°	12820	10881	8550	7696	7483	3607
25°	11408	8058	6766	6962	7054	5237
35°	9121	6198	5718	5165	4808	5685
45°	6472	4654	3845	3159	3008	4984
55°	4111	3135	2446	2223	2200	3675
65°	2247	1839	1566	1566	1580	2244
75°	988	879	896	952	958	1054
85°	166	216	259	243	243	211
90°	1	20	38	48	50	9
95°	1	3	6	6	5	0
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	



TEST NUMBER: P859973

CATALOG NUMBER: SPHB-18SE-N-L750-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	13445.1	13445.1	13445.1	13445.1	13445.1
2.5°	13406.1	13361.9	13254.1	13184.4	13130.0
5°	13378.3	13133.0	12602.4	12118.9	12006.0
7.5°	13295.2	12756.3	11622.1	10728.1	10502.3
10°	13180.2	12215.4	10501.3	9381.5	9053.0
12.5°	13027.3	11637.5	9427.7	8372.5	8211.4
15°	12820.0	10881.1	8550.1	7696.1	7482.6
17.5°	12551.1	10098.9	7740.2	7246.5	7187.0
20°	12220.5	9381.5	7250.6	7082.3	7145.9
22.5°	11849.0	8684.5	6966.3	7037.1	7156.2
25°	11407.6	8058.4	6766.2	6962.2	7053.6
27.5°	10911.9	7492.9	6582.4	6762.0	6762.0
30°	10385.3	7021.7	6361.7	6345.3	6133.9
32.5°	9770.5	6621.4	6073.3	5747.9	5433.9
35°	9120.8	6197.5	5718.2	5164.9	4807.7
37.5°	8439.2	5803.4	5268.6	4538.8	4206.3
40°	7766.9	5414.4	4800.6	3976.3	3712.6
42.5°	7097.7	5018.2	4313.0	3520.6	3312.3
45°	6471.6	4653.8	3845.0	3159.3	3008.4
47.5°	5835.2	4266.8	3412.8	2868.8	2764.1
50°	5191.6	3874.7	3039.2	2637.9	2560.9
52.5°	4649.7	3509.3	2722.1	2419.3	2373.1
55°	4110.8	3134.7	2446.0	2223.2	2199.6
57.5°	3576.0	2785.7	2193.5	2043.6	2038.5
60°	3071.0	2459.3	1971.8	1889.6	1878.3
62.5°	2641.0	2135.0	1761.3	1722.3	1727.5
65°	2246.8	1839.3	1566.3	1566.3	1579.7
67.5°	1881.4	1567.3	1387.7	1411.3	1429.8
70°	1556.1	1321.0	1219.4	1260.4	1276.9
72.5°	1248.1	1092.1	1058.2	1103.4	1116.7
75°	988.4	878.6	896.1	952.5	957.6
77.5°	732.9	691.8	737.0	798.6	809.8
80°	506.0	510.1	581.0	624.1	629.2
82.5°	326.4	356.2	435.2	457.8	449.6
85°	166.3	215.5	258.7	243.3	243.3
87.5°	63.6	93.4	109.8	129.3	136.5
90°	1.0	19.5	38.0	48.2	50.3
92.5°	1.0	5.1	8.2	9.2	8.2
95°	1.0	3.1	6.2	6.2	5.1
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



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2404-343-3

Test Date: 05/20/2024

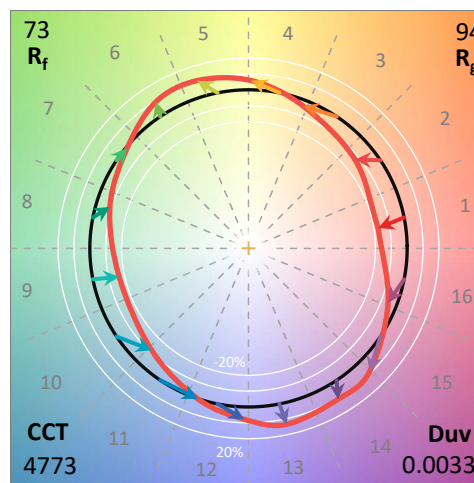
Luminaire Tested: SPHB-24SE-M-UNV-L750-CD

Data in this report applies to families of products SPHB-24SE-M-UNV-L750-CD.

Test Method: LM-79-2019
Report Number: SP1-2404-343-3
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-L750-CD**
Description: 18IN SPHB WITH MEDIUM LENS, 5000K/70CRI, 24K LUMENS, SE

CCT (K):	4773	CRI (Ra):	71.4		
CIE u':	0.2116	R1:	68.3	R9:	-30.1
CIE v':	0.4918	R2:	76.4	R10:	43.3
Duv:	0.0033	R3:	81.8	R11:	66.6
CIE x:	0.3527	R4:	71.3	R12:	37.4
CIE y:	0.3643	R5:	68.3	R13:	69.4
CIE z:	0.2831	R6:	66.6	R14:	89.7
Peak Wavelength (nm):	449	R7:	81.9		
Dominant Wavelength (nm):	572	R8:	56.2		
Purity:	15.2				
Rf:	72.8				
Rg:	94.3				

Stabilization Time:	23M
Operation Time:	12H
Room Temperature (°C) / RH%:	25.0/41%
Sphere Temperature (°C):	25.2

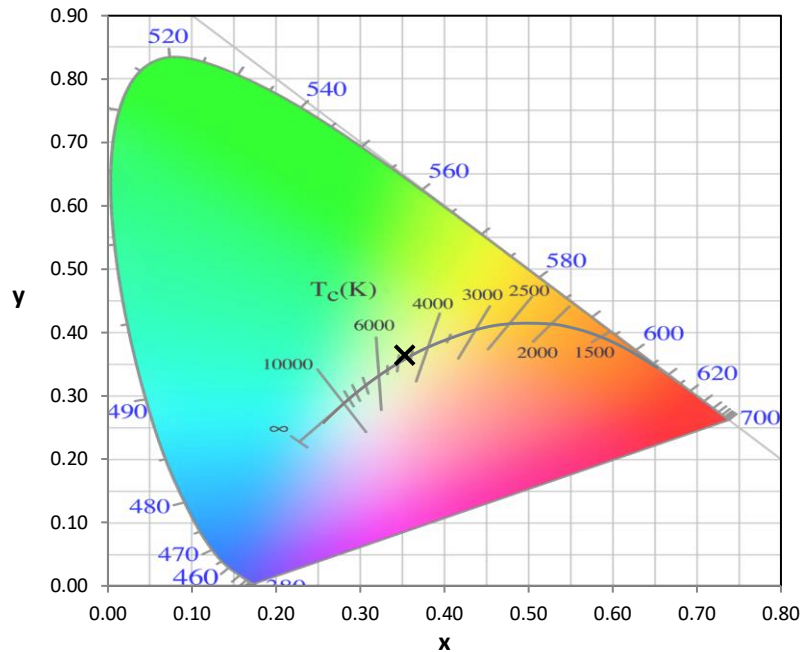


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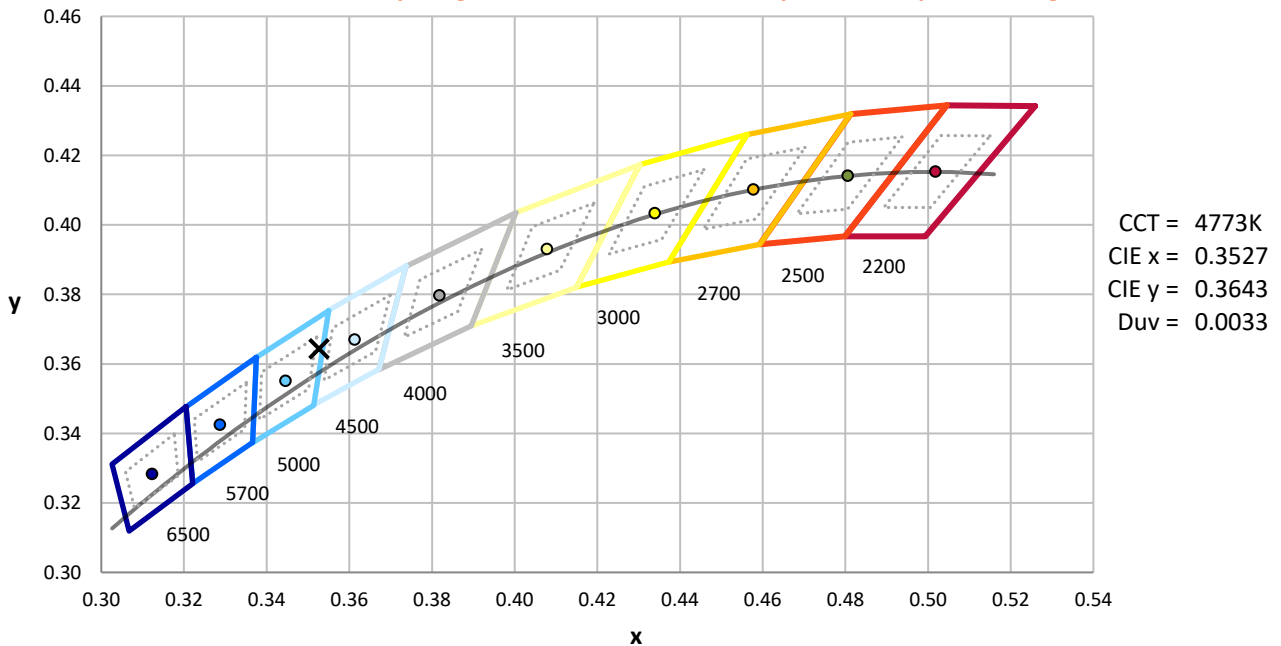
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/12/2024	8/12/2024
Power Meter	XITRON 2801 IN0071	10/23/2023	10/23/2024
AC Power Source	CHROMA 61603 IN0063	10/24/2023	10/24/2024
DC Power Source	AGILENT E3634A IN0208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



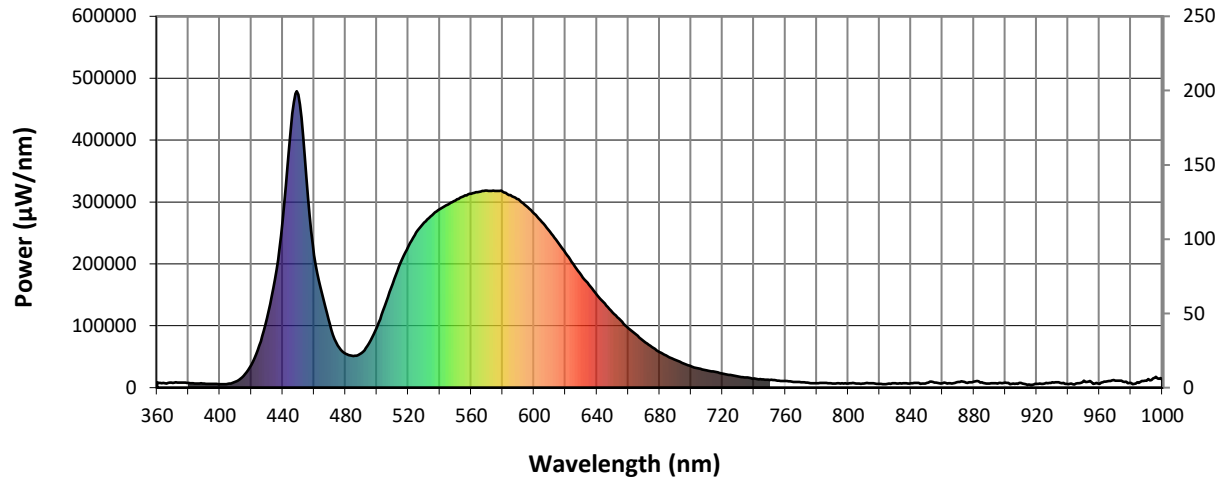
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 7-step quadrangle

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Photopic Flux vs. Wavelength

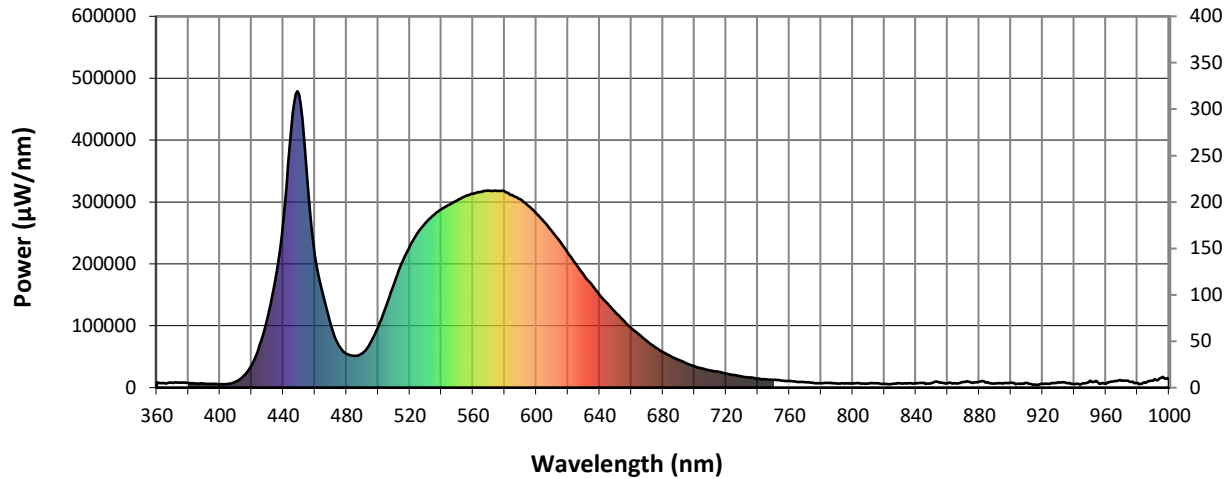


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λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	8480	NR	490	55894	NR	620	217674	NR	750	12551	NR	880	9941	NR
365	7167	NR	495	71653	NR	625	199777	NR	755	11483	NR	885	8519	NR
370	7865	NR	500	98307	NR	630	181877	NR	760	10694	NR	890	6494	NR
375	8331	NR	505	131790	NR	635	166247	NR	765	9403	NR	895	6597	NR
380	7548	NR	510	168072	NR	640	149837	NR	770	8855	NR	900	8336	NR
385	6461	NR	515	201420	NR	645	135768	NR	775	7636	NR	905	6602	NR
390	6487	NR	520	228557	NR	650	121585	NR	780	7116	NR	910	7642	NR
395	6127	NR	525	250625	NR	655	109011	NR	785	7510	NR	915	5085	NR
400	5597	NR	530	266917	NR	660	96100	NR	790	6788	NR	920	5983	NR
405	6031	NR	535	278640	NR	665	85658	NR	795	6699	NR	925	6623	NR
410	9570	NR	540	288470	NR	670	74952	NR	800	6841	NR	930	8676	NR
415	18905	NR	545	295902	NR	675	65604	NR	805	6702	NR	935	7559	NR
420	36670	NR	550	302610	NR	680	57532	NR	810	6415	NR	940	5582	NR
425	67971	NR	555	309255	NR	685	50737	NR	815	6951	NR	945	6681	NR
430	112169	NR	560	313346	NR	690	45019	NR	820	6164	NR	950	11467	NR
435	175042	NR	565	316467	NR	695	39302	NR	825	6223	NR	955	8479	NR
440	270331	NR	570	318291	NR	700	34342	NR	830	6882	NR	960	6322	NR
445	415458	NR	575	317762	NR	705	30709	NR	835	7035	NR	965	10418	NR
450	473704	NR	580	316909	NR	710	27863	NR	840	7196	NR	970	11212	NR
455	340246	NR	585	310908	NR	715	25645	NR	845	7661	NR	975	9921	NR
460	214204	NR	590	304222	NR	720	22546	NR	850	7691	NR	980	7645	NR
465	151767	NR	595	293404	NR	725	20358	NR	855	8165	NR	985	7411	NR
470	101801	NR	600	281357	NR	730	18023	NR	860	6918	NR	990	11268	NR
475	68160	NR	605	267848	NR	735	16491	NR	865	6985	NR	995	16172	NR
480	54940	NR	610	252294	NR	740	14653	NR	870	9265	NR	1000	12246	NR
485	51233	NR	615	235449	NR	745	13435	NR	875	8266	NR			

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Scotopic Flux vs. Wavelength



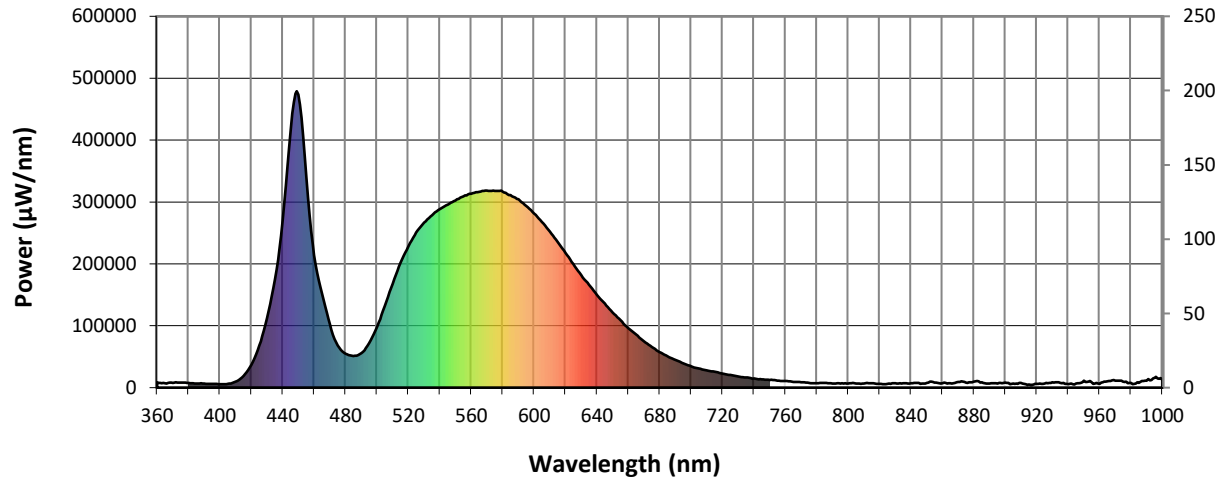
Scotopic Lumens: 32037.1

S/P: 1.7

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	8480	NR	490	55894	NR	620	217674	NR	750	12551	NR	880	9941	NR
365	7167	NR	495	71653	NR	625	199777	NR	755	11483	NR	885	8519	NR
370	7865	NR	500	98307	NR	630	181877	NR	760	10694	NR	890	6494	NR
375	8331	NR	505	131790	NR	635	166247	NR	765	9403	NR	895	6597	NR
380	7548	NR	510	168072	NR	640	149837	NR	770	8855	NR	900	8336	NR
385	6461	NR	515	201420	NR	645	135768	NR	775	7636	NR	905	6602	NR
390	6487	NR	520	228557	NR	650	121585	NR	780	7116	NR	910	7642	NR
395	6127	NR	525	250625	NR	655	109011	NR	785	7510	NR	915	5085	NR
400	5597	NR	530	266917	NR	660	96100	NR	790	6788	NR	920	5983	NR
405	6031	NR	535	278640	NR	665	85658	NR	795	6699	NR	925	6623	NR
410	9570	NR	540	288470	NR	670	74952	NR	800	6841	NR	930	8676	NR
415	18905	NR	545	295902	NR	675	65604	NR	805	6702	NR	935	7559	NR
420	36670	NR	550	302610	NR	680	57532	NR	810	6415	NR	940	5582	NR
425	67971	NR	555	309255	NR	685	50737	NR	815	6951	NR	945	6681	NR
430	112169	NR	560	313346	NR	690	45019	NR	820	6164	NR	950	11467	NR
435	175042	NR	565	316467	NR	695	39302	NR	825	6223	NR	955	8479	NR
440	270331	NR	570	318291	NR	700	34342	NR	830	6882	NR	960	6322	NR
445	415458	NR	575	317762	NR	705	30709	NR	835	7035	NR	965	10418	NR
450	473704	NR	580	316909	NR	710	27863	NR	840	7196	NR	970	11212	NR
455	340246	NR	585	310908	NR	715	25645	NR	845	7661	NR	975	9921	NR
460	214204	NR	590	304222	NR	720	22546	NR	850	7691	NR	980	7645	NR
465	151767	NR	595	293404	NR	725	20358	NR	855	8165	NR	985	7411	NR
470	101801	NR	600	281357	NR	730	18023	NR	860	6918	NR	990	11268	NR
475	68160	NR	605	267848	NR	735	16491	NR	865	6985	NR	995	16172	NR
480	54940	NR	610	252294	NR	740	14653	NR	870	9265	NR	1000	12246	NR
485	51233	NR	615	235449	NR	745	13435	NR	875	8266	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 12680.1 M/P: 0.67

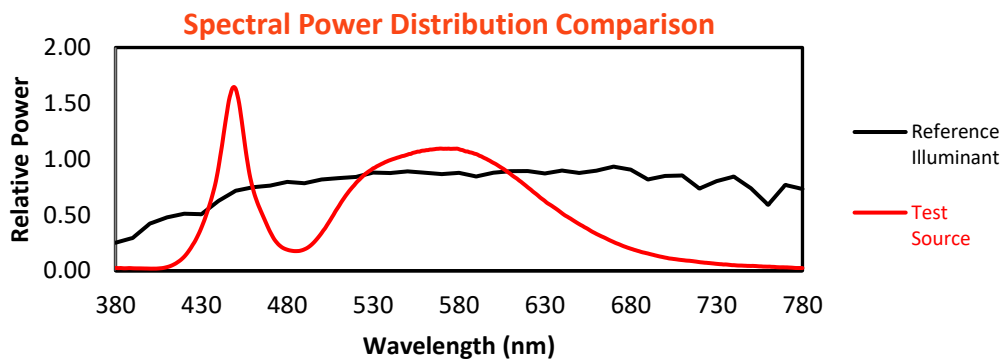
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	8480	NR	490	55894	NR	620	217674	NR	750	12551	NR	880	9941	NR
365	7167	NR	495	71653	NR	625	199777	NR	755	11483	NR	885	8519	NR
370	7865	NR	500	98307	NR	630	181877	NR	760	10694	NR	890	6494	NR
375	8331	NR	505	131790	NR	635	166247	NR	765	9403	NR	895	6597	NR
380	7548	NR	510	168072	NR	640	149837	NR	770	8855	NR	900	8336	NR
385	6461	NR	515	201420	NR	645	135768	NR	775	7636	NR	905	6602	NR
390	6487	NR	520	228557	NR	650	121585	NR	780	7116	NR	910	7642	NR
395	6127	NR	525	250625	NR	655	109011	NR	785	7510	NR	915	5085	NR
400	5597	NR	530	266917	NR	660	96100	NR	790	6788	NR	920	5983	NR
405	6031	NR	535	278640	NR	665	85658	NR	795	6699	NR	925	6623	NR
410	9570	NR	540	288470	NR	670	74952	NR	800	6841	NR	930	8676	NR
415	18905	NR	545	295902	NR	675	65604	NR	805	6702	NR	935	7559	NR
420	36670	NR	550	302610	NR	680	57532	NR	810	6415	NR	940	5582	NR
425	67971	NR	555	309255	NR	685	50737	NR	815	6951	NR	945	6681	NR
430	112169	NR	560	313346	NR	690	45019	NR	820	6164	NR	950	11467	NR
435	175042	NR	565	316467	NR	695	39302	NR	825	6223	NR	955	8479	NR
440	270331	NR	570	318291	NR	700	34342	NR	830	6882	NR	960	6322	NR
445	415458	NR	575	317762	NR	705	30709	NR	835	7035	NR	965	10418	NR
450	473704	NR	580	316909	NR	710	27863	NR	840	7196	NR	970	11212	NR
455	340246	NR	585	310908	NR	715	25645	NR	845	7661	NR	975	9921	NR
460	214204	NR	590	304222	NR	720	22546	NR	850	7691	NR	980	7645	NR
465	151767	NR	595	293404	NR	725	20358	NR	855	8165	NR	985	7411	NR
470	101801	NR	600	281357	NR	730	18023	NR	860	6918	NR	990	11268	NR
475	68160	NR	605	267848	NR	735	16491	NR	865	6985	NR	995	16172	NR
480	54940	NR	610	252294	NR	740	14653	NR	870	9265	NR	1000	12246	NR
485	51233	NR	615	235449	NR	745	13435	NR	875	8266	NR			

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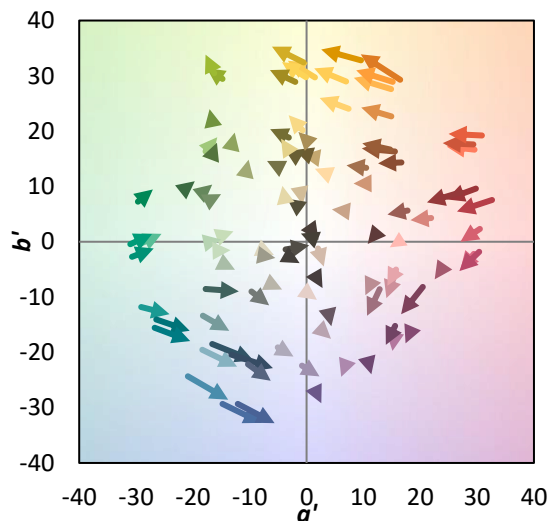
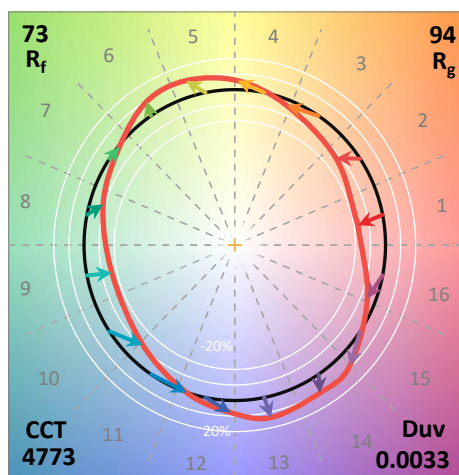
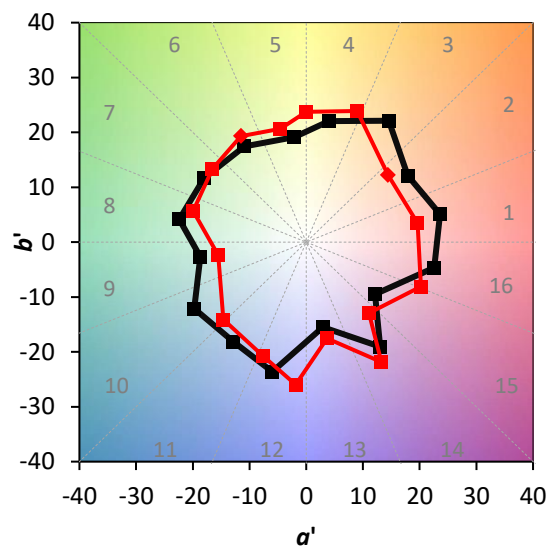
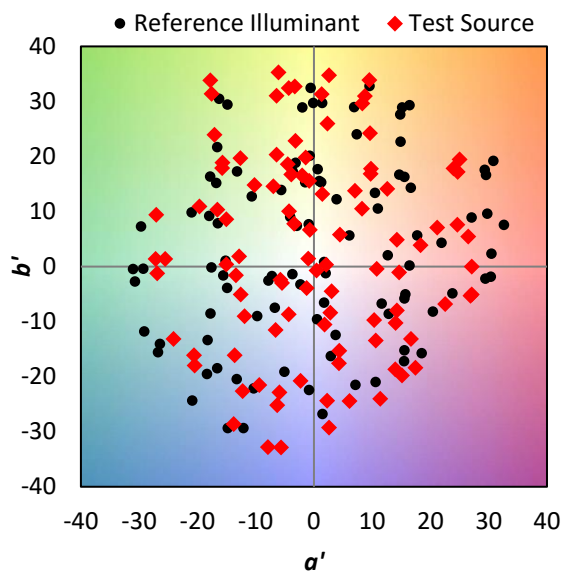
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Summary

$R_f = 72.8$
 $R_g = 94.3$
 CIE $R_a = 71.4$
 $R_g = -30.1$



Color Vector Graphics

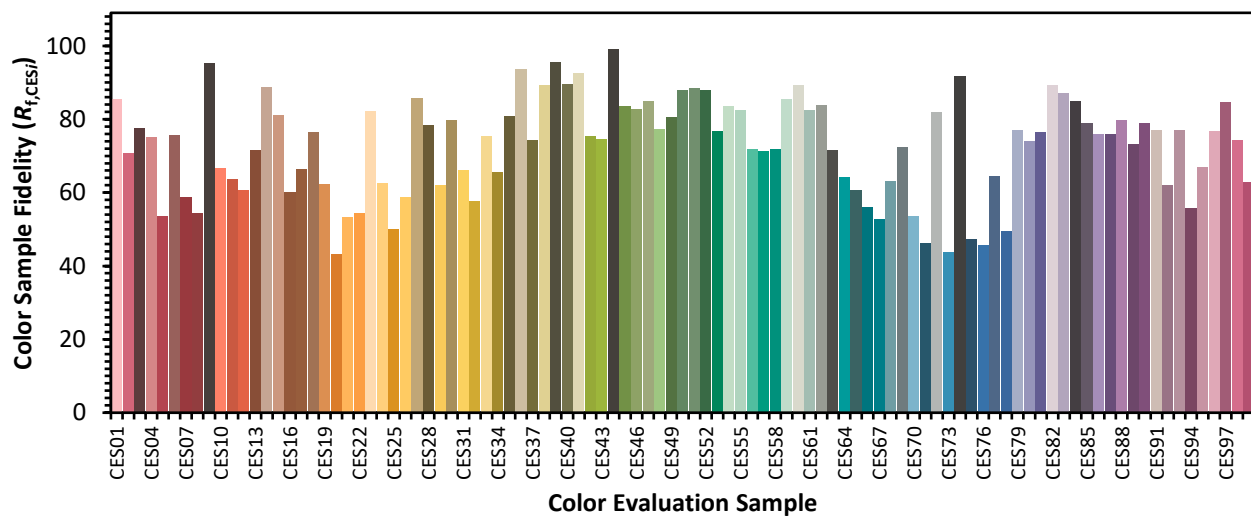


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Individual Sample Fidelity Index ($R_{f,i}$)

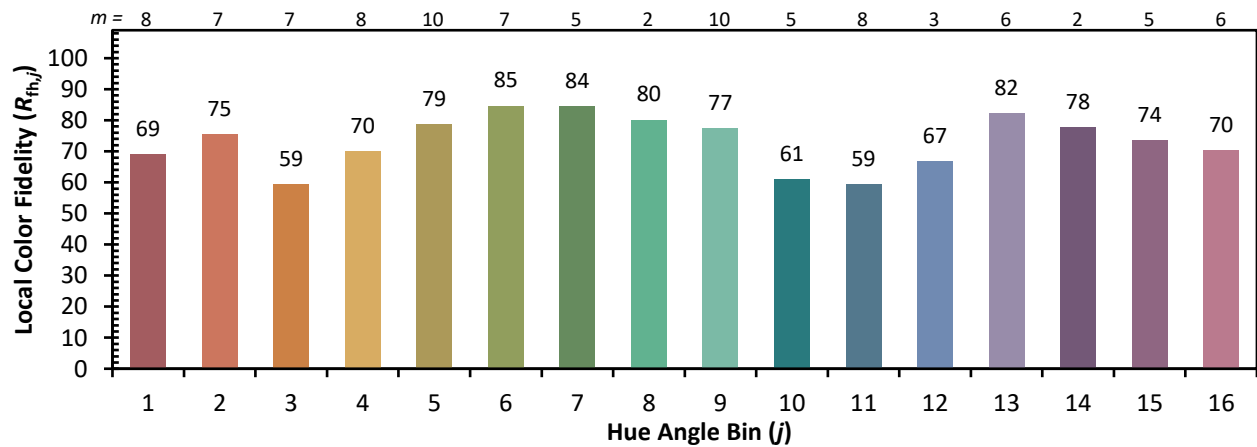
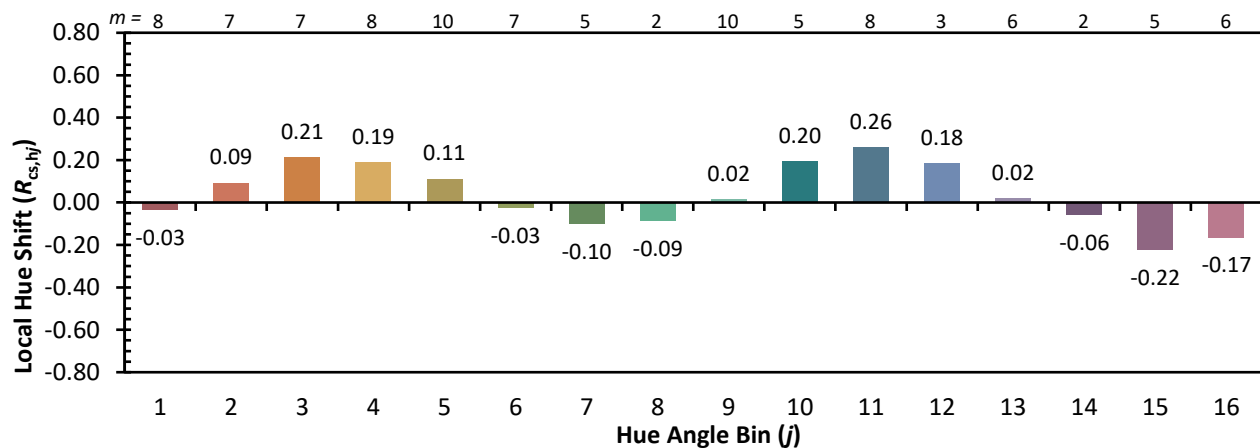
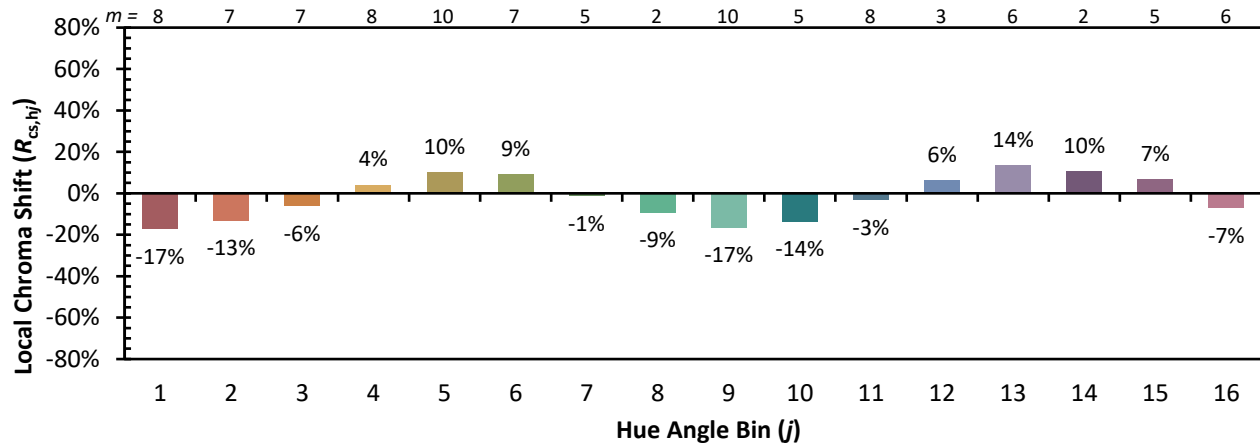
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CES02 = 60	CES27 = 86	CES52 = 88	CES77 = 65
CES03 = 30	CES28 = 78	CES53 = 77	CES78 = 49
CES04 = 69	CES29 = 62	CES54 = 84	CES79 = 77
CES05 = 46	CES30 = 80	CES55 = 82	CES80 = 74
CES06 = 50	CES31 = 66	CES56 = 72	CES81 = 77
CES07 = 39	CES32 = 58	CES57 = 71	CES82 = 89
CES08 = 38	CES33 = 75	CES58 = 72	CES83 = 87
CES09 = 29	CES34 = 66	CES59 = 85	CES84 = 85
CES10 = 73	CES35 = 81	CES60 = 89	CES85 = 79
CES11 = 56	CES36 = 94	CES61 = 83	CES86 = 76
CES12 = 62	CES37 = 74	CES62 = 84	CES87 = 76
CES13 = 41	CES38 = 89	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 95	CES64 = 64	CES89 = 73
CES15 = 70	CES40 = 89	CES65 = 61	CES90 = 79
CES16 = 46	CES41 = 92	CES66 = 56	CES91 = 77
CES17 = 49	CES42 = 75	CES67 = 53	CES92 = 62
CES18 = 55	CES43 = 75	CES68 = 63	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 72	CES94 = 56
CES20 = 64	CES45 = 84	CES70 = 53	CES95 = 67
CES21 = 85	CES46 = 83	CES71 = 46	CES96 = 77
CES22 = 77	CES47 = 85	CES72 = 82	CES97 = 85
CES23 = 91	CES48 = 77	CES73 = 44	CES98 = 74
CES24 = 90	CES49 = 81	CES74 = 92	CES99 = 63
CES25 = 71	CES50 = 88	CES75 = 47	



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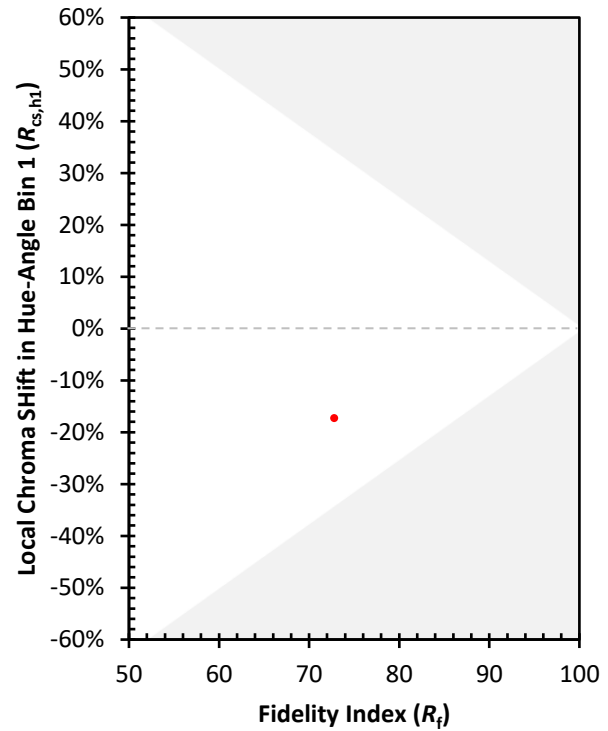
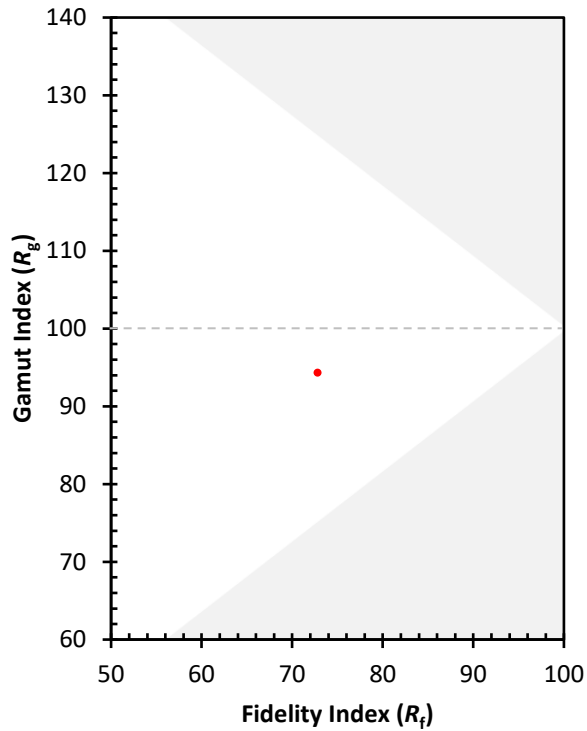
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)