

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: P859875

Luminaire Tested: **SPHB-12SE-W-L835-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: P859875
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-343-6)
Test Lab: INNOVATION CENTER
Issue Date: 7/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: SPHB-12SE-W-L835-CD
Description: 12000 Lumen Standard Efficacy Select Pro High Bay with Wide Lens
and, 3500K 80CRI LEDs
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

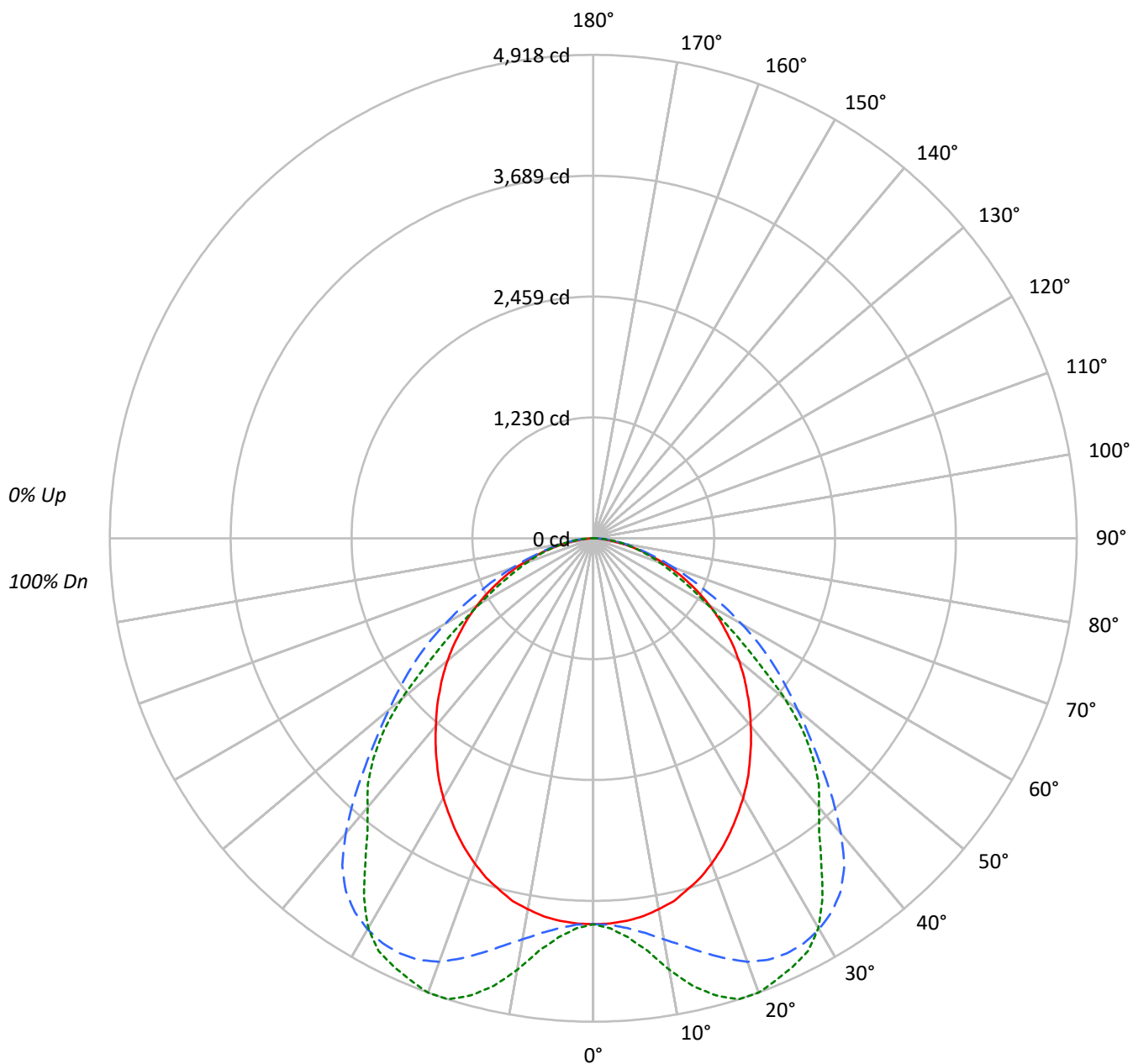
Lumens per Lamp: N/A
Luminaire Lumens: 12353.0 lumens
Efficiency: N/A
Efficacy: 161.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.5 / 1.51
Luminous Opening: Rectangular (W 1' x L: 1.38' x H: 0')
CIE Type: Direct

Input Watts (W): 76.3
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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CATALOG NUMBER: SPHB-12SE-W-L835-CD

Luminous Intensity Polar Plot





TEST NUMBER: P859875

CATALOG NUMBER: SPHB-12SE-W-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	111	111	111	106	106	106	102	102	102	100		
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62		
4	84	73	64	58	82	71	63	57	69	62	57	66	61	56	64	59	55	53		
5	77	65	56	50	75	64	56	50	62	55	49	60	54	49	58	52	48	46		
6	72	59	50	44	70	58	49	43	56	49	43	54	48	43	53	47	42	40		
7	66	53	45	39	65	52	44	38	51	43	38	49	43	38	48	42	38	36		
8	62	48	40	34	60	48	40	34	46	39	34	45	39	34	44	38	34	32		
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29		
10	54	41	33	28	53	40	33	28	39	33	28	39	32	28	38	32	28	26		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	30623	30623	30623
5°	30589	31166	31905
10°	30347	32811	35298
15°	29873	35254	38881
20°	29226	38058	40823
25°	28383	40110	41358
30°	27459	41365	41247
35°	26428	41781	38487
40°	25364	39894	36352
45°	24404	36162	34877
50°	23454	32881	30919
55°	22381	30380	25160
60°	21274	27085	20721
65°	19809	23273	17967
70°	18021	19870	16251
75°	15475	16675	14900
80°	12096	14302	13817
85°	8180	12135	11393



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CATALOG NUMBER: SPHB-12SE-W-L835-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	385.5	3.1
10°-20°	1222.3	9.9
20°-30°	2000.3	16.2
30°-40°	2440.2	19.8
40°-50°	2416.8	19.6
50°-60°	1932.6	15.6
60°-70°	1205.7	9.8
70°-80°	590.7	4.8
80°-90°	154.9	1.3
90°-100°	4.1	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°	3608.0	29.2
0°-40°	6048.2	49.0
0°-60°	10397.6	84.2
0°-90°	12348.9	100.0
90°-120°	4.1	0.0
90°-150°	4.1	0.0
90°-180°	4.0	0.0
0°-180°	12353.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3926	3926	3926	3926	3926	
5°	3907	3924	3980	4050	4075	371
15°	3699	3915	4366	4713	4815	1043
25°	3298	3856	4661	4796	4806	1518
35°	2776	3709	4388	4154	4042	1736
45°	2212	3437	3278	3168	3162	1709
55°	1646	2639	2234	2018	1850	1475
65°	1073	1481	1261	1046	974	1064
75°	514	629	553	507	494	545
85°	91	130	136	129	127	113
90°	0	13	24	30	32	5
95°	0	2	2	2	1	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: P859875

CATALOG NUMBER: SPHB-12SE-W-L835-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3926.0	3926.0	3926.0	3926.0	3926.0
2.5°	3922.0	3920.6	3934.8	3960.9	3972.7
5°	3906.8	3924.0	3980.5	4049.8	4074.9
7.5°	3879.3	3925.5	4050.3	4177.6	4231.6
10°	3831.6	3926.5	4142.7	4367.3	4456.7
12.5°	3782.5	3923.0	4245.4	4563.3	4661.1
15°	3699.4	3914.7	4365.8	4713.2	4814.9
17.5°	3622.3	3904.8	4481.8	4840.5	4917.7
20°	3521.0	3890.6	4585.0	4879.3	4918.1
22.5°	3414.9	3879.3	4642.0	4853.3	4865.1
25°	3297.9	3856.2	4660.6	4795.8	4805.6
27.5°	3173.1	3835.5	4643.0	4724.5	4732.9
30°	3048.8	3798.2	4592.8	4613.5	4579.6
32.5°	2918.6	3760.8	4511.7	4418.9	4339.7
35°	2775.5	3708.8	4387.9	4153.5	4041.9
37.5°	2634.5	3658.6	4194.8	3856.7	3772.6
40°	2491.0	3596.7	3918.1	3579.5	3570.2
42.5°	2355.4	3529.9	3605.1	3363.8	3395.2
45°	2212.4	3437.0	3278.3	3168.2	3161.8
47.5°	2076.7	3308.7	2981.0	2952.0	2886.6
50°	1932.8	3131.8	2709.7	2682.2	2548.0
52.5°	1791.7	2906.3	2467.4	2364.2	2168.6
55°	1645.8	2638.9	2234.0	2018.3	1850.2
57.5°	1510.1	2345.1	1996.6	1717.0	1566.2
60°	1363.7	2047.3	1736.2	1452.6	1328.3
62.5°	1220.2	1753.9	1500.3	1227.6	1145.0
65°	1073.3	1480.7	1261.0	1045.7	973.5
67.5°	932.7	1244.3	1054.1	881.6	833.5
70°	790.2	1009.4	871.3	740.6	712.6
72.5°	643.3	806.4	704.7	625.1	604.0
75°	513.5	629.0	553.3	506.7	494.4
77.5°	382.3	467.8	432.5	404.9	401.5
80°	269.3	337.6	318.4	313.0	307.6
82.5°	172.0	220.6	226.5	223.1	219.2
85°	91.4	129.7	135.6	128.8	127.3
87.5°	36.9	56.5	60.9	67.3	69.3
90°	0.5	13.3	24.1	30.5	31.5
92.5°	0.5	2.9	3.4	3.4	2.9
95°	0.5	2.0	2.0	1.5	1.0
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: SP1-2404-343-4

Test Date: 05/20/2024

Luminaire Tested: SPHB-24SE-M-UNV-L835-CD

Data in this report applies to families of products SPHB-24SE-M-UNV-L835-CD.

Test Information

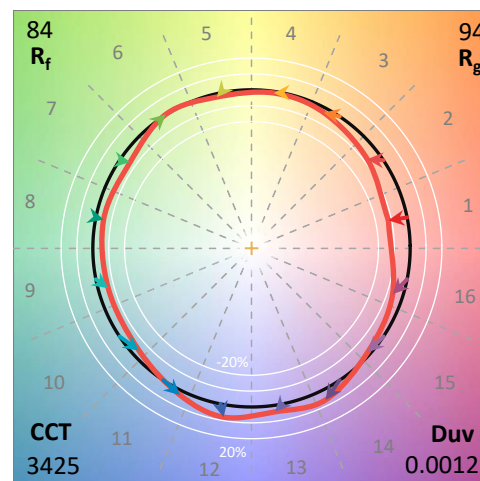
Test Method: LM-79-2019
 Report Number: SP1-2404-343-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 05/21/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: METALUX
 Catalog Number: **SPHB-24SE-M-UNV-L835-CD**
 Description: 18IN SPHB WITH MEDIUM LENS, 3500K/80CRI, 24K LUMENS, SE

Spectral Parameters

CCT (K): 3425
 CIE u': 0.2370
 CIE v': 0.5143
 Duv: 0.0012
 CIE x: 0.4108
 CIE y: 0.3961
 CIE z: 0.1931
 Peak Wavelength (nm): 598
 Dominant Wavelength (nm): 580
 Purity: 42.4
 R_f: 84.3
 R_g: 94.4

CRI (Ra): 82.9
 R1: 81.2
 R2: 90.5
 R3: 96.5
 R4: 80.4
 R5: 80.9
 R6: 87.3
 R7: 84.6
 R8: 61.9

R9: 8.8
 R10: 77.5
 R11: 79.1
 R12: 64.2
 R13: 83.5
 R14: 98.5



Test Conditions

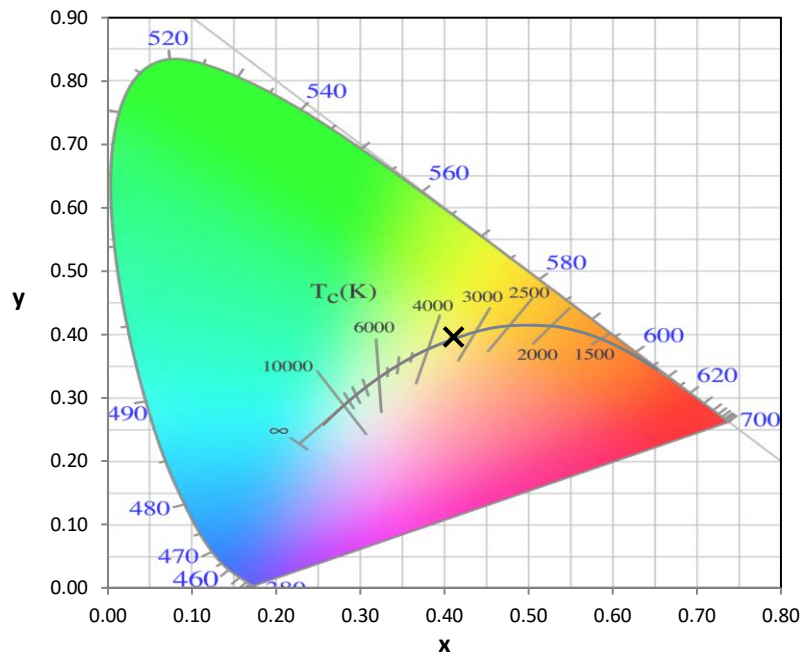
Stabilization Time: 27M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0/41%
 Sphere Temperature (°C): 25.2

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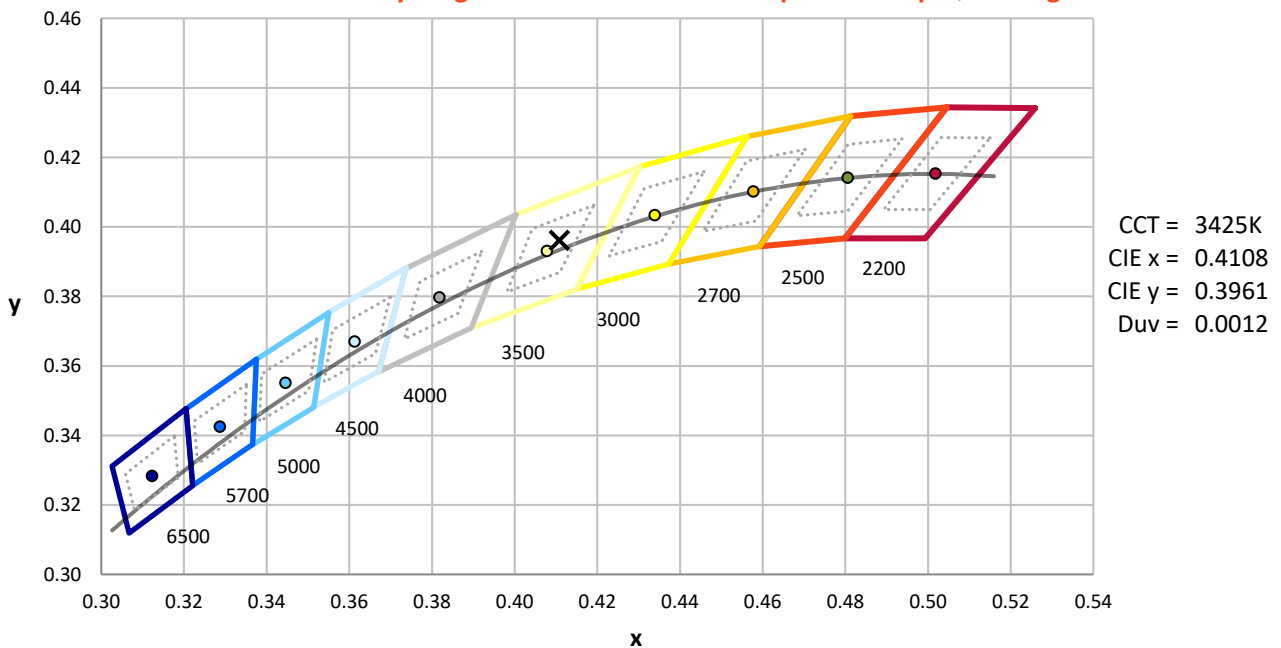
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/12/2024	8/12/2024
Power Meter	XITRON 2801 IN0071	10/23/2023	10/23/2024
AC Power Source	CHROMA 61603 IN0063	10/24/2023	10/24/2024
DC Power Source	AGILENT E3634A IN0208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



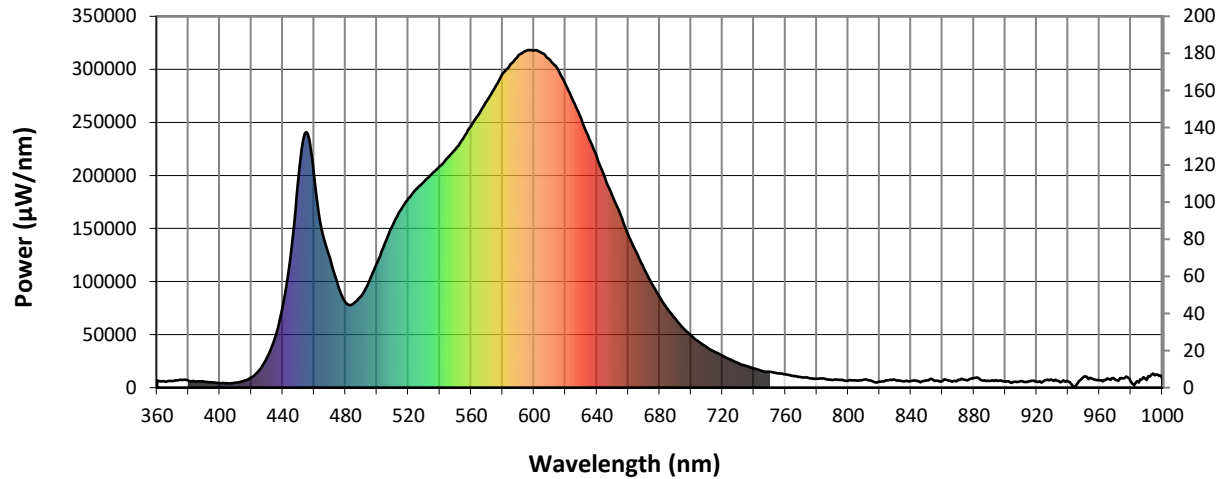
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

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Photopic Flux vs. Wavelength

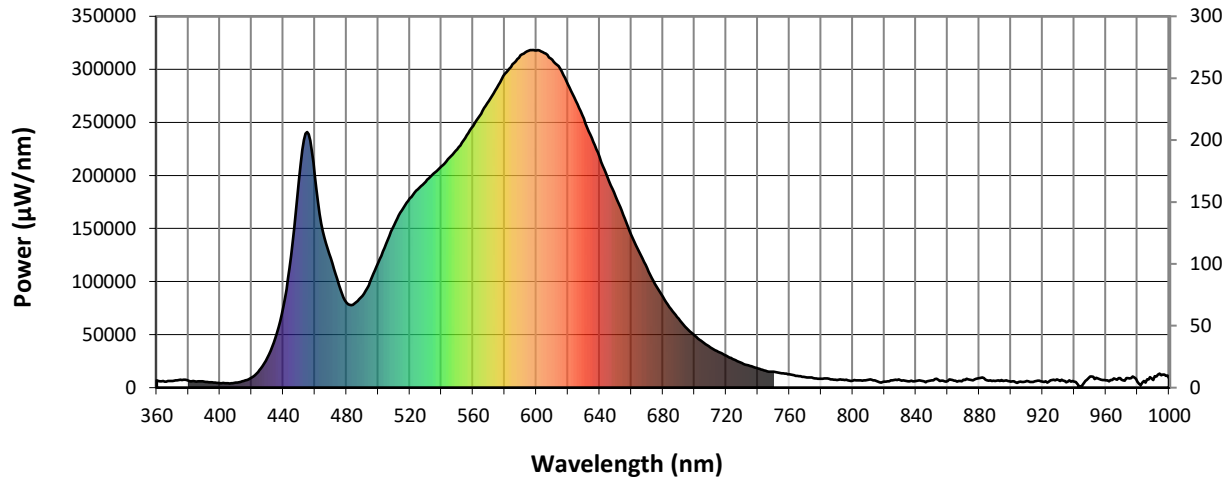


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λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6937	NR	490	86536	NR	620	285855	NR	750	14885	NR	880	8993	NR
365	5820	NR	495	100007	NR	625	270301	NR	755	13434	NR	885	6908	NR
370	6342	NR	500	117528	NR	630	253548	NR	760	12497	NR	890	6405	NR
375	7421	NR	505	135586	NR	635	235289	NR	765	11021	NR	895	6392	NR
380	6619	NR	510	153068	NR	640	217346	NR	770	9938	NR	900	5762	NR
385	5813	NR	515	167170	NR	645	198000	NR	775	9105	NR	905	5445	NR
390	5630	NR	520	178364	NR	650	180267	NR	780	8315	NR	910	6424	NR
395	4917	NR	525	186887	NR	655	162796	NR	785	8364	NR	915	5977	NR
400	4279	NR	530	194310	NR	660	143827	NR	790	7202	NR	920	5589	NR
405	4043	NR	535	201832	NR	665	127951	NR	795	7271	NR	925	6728	NR
410	4666	NR	540	208553	NR	670	112526	NR	800	6583	NR	930	7328	NR
415	6309	NR	545	216697	NR	675	97790	NR	805	6730	NR	935	5077	NR
420	9564	NR	550	224567	NR	680	85489	NR	810	7628	NR	940	5558	NR
425	16500	NR	555	235296	NR	685	74086	NR	815	6335	NR	945	2171	NR
430	28210	NR	560	246750	NR	690	65039	NR	820	5679	NR	950	10555	NR
435	47088	NR	565	258189	NR	695	56035	NR	825	6974	NR	955	8787	NR
440	76402	NR	570	270186	NR	700	49223	NR	830	7136	NR	960	6936	NR
445	124288	NR	575	282577	NR	705	43027	NR	835	5971	NR	965	8547	NR
450	197266	NR	580	295795	NR	710	38080	NR	840	6371	NR	970	7502	NR
455	240978	NR	585	304888	NR	715	33706	NR	845	6027	NR	975	8793	NR
460	199802	NR	590	313177	NR	720	29961	NR	850	6816	NR	980	5517	NR
465	147559	NR	595	317388	NR	725	26440	NR	855	6168	NR	985	4652	NR
470	121976	NR	600	317783	NR	730	23027	NR	860	6333	NR	990	7259	NR
475	97268	NR	605	315536	NR	735	20496	NR	865	6493	NR	995	11735	NR
480	80092	NR	610	309123	NR	740	18168	NR	870	7357	NR	1000	8351	NR
485	79203	NR	615	300672	NR	745	15812	NR	875	7188	NR			

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Scotopic Flux vs. Wavelength



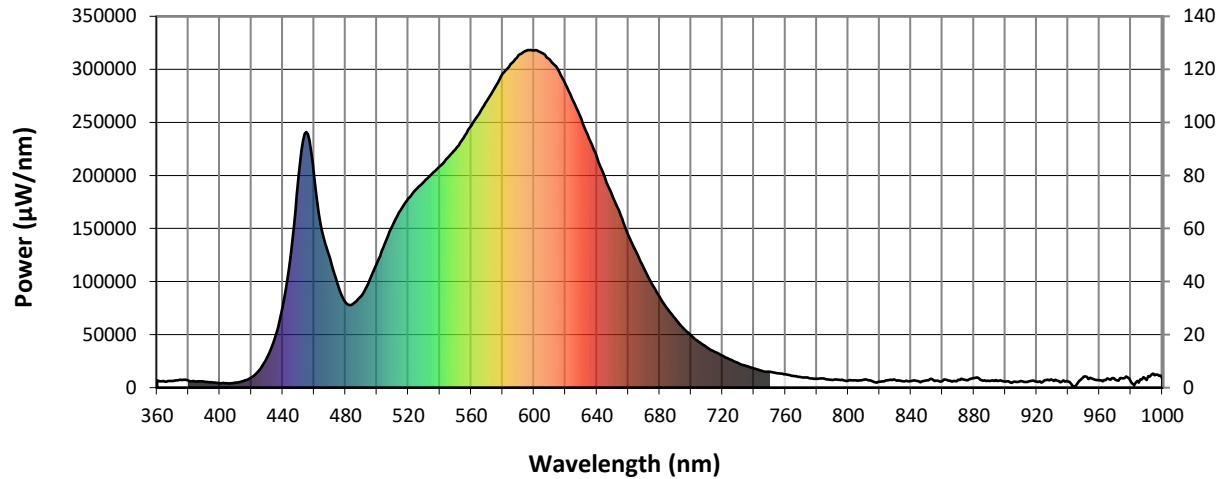
Scotopic Lumens: 25661.8

S/P: 1.51

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	6937	NR	490	86536	NR	620	285855	NR	750	14885	NR	880	8993	NR
365	5820	NR	495	100007	NR	625	270301	NR	755	13434	NR	885	6908	NR
370	6342	NR	500	117528	NR	630	253548	NR	760	12497	NR	890	6405	NR
375	7421	NR	505	135586	NR	635	235289	NR	765	11021	NR	895	6392	NR
380	6619	NR	510	153068	NR	640	217346	NR	770	9938	NR	900	5762	NR
385	5813	NR	515	167170	NR	645	198000	NR	775	9105	NR	905	5445	NR
390	5630	NR	520	178364	NR	650	180267	NR	780	8315	NR	910	6424	NR
395	4917	NR	525	186887	NR	655	162796	NR	785	8364	NR	915	5977	NR
400	4279	NR	530	194310	NR	660	143827	NR	790	7202	NR	920	5589	NR
405	4043	NR	535	201832	NR	665	127951	NR	795	7271	NR	925	6728	NR
410	4666	NR	540	208553	NR	670	112526	NR	800	6583	NR	930	7328	NR
415	6309	NR	545	216697	NR	675	97790	NR	805	6730	NR	935	5077	NR
420	9564	NR	550	224567	NR	680	85489	NR	810	7628	NR	940	5558	NR
425	16500	NR	555	235296	NR	685	74086	NR	815	6335	NR	945	2171	NR
430	28210	NR	560	246750	NR	690	65039	NR	820	5679	NR	950	10555	NR
435	47088	NR	565	258189	NR	695	56035	NR	825	6974	NR	955	8787	NR
440	76402	NR	570	270186	NR	700	49223	NR	830	7136	NR	960	6936	NR
445	124288	NR	575	282577	NR	705	43027	NR	835	5971	NR	965	8547	NR
450	197266	NR	580	295795	NR	710	38080	NR	840	6371	NR	970	7502	NR
455	240978	NR	585	304888	NR	715	33706	NR	845	6027	NR	975	8793	NR
460	199802	NR	590	313177	NR	720	29961	NR	850	6816	NR	980	5517	NR
465	147559	NR	595	317388	NR	725	26440	NR	855	6168	NR	985	4652	NR
470	121976	NR	600	317783	NR	730	23027	NR	860	6333	NR	990	7259	NR
475	97268	NR	605	315536	NR	735	20496	NR	865	6493	NR	995	11735	NR
480	80092	NR	610	309123	NR	740	18168	NR	870	7357	NR	1000	8351	NR
485	79203	NR	615	300672	NR	745	15812	NR	875	7188	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 10080.3 M/P: 0.59

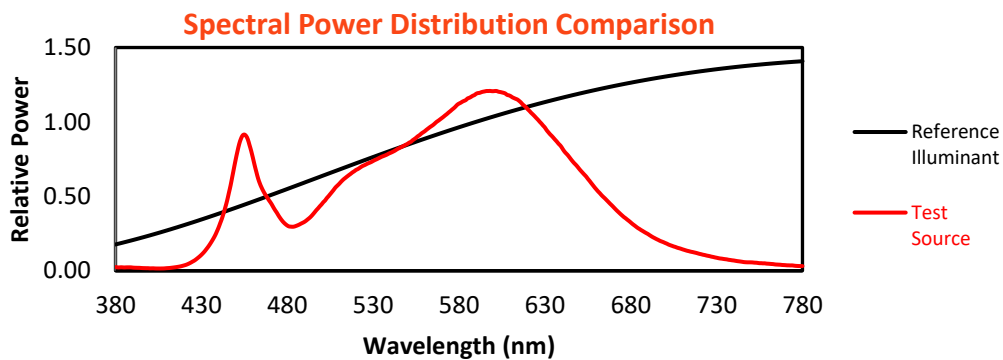
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6937	NR	490	86536	NR	620	285855	NR	750	14885	NR	880	8993	NR
365	5820	NR	495	100007	NR	625	270301	NR	755	13434	NR	885	6908	NR
370	6342	NR	500	117528	NR	630	253548	NR	760	12497	NR	890	6405	NR
375	7421	NR	505	135586	NR	635	235289	NR	765	11021	NR	895	6392	NR
380	6619	NR	510	153068	NR	640	217346	NR	770	9938	NR	900	5762	NR
385	5813	NR	515	167170	NR	645	198000	NR	775	9105	NR	905	5445	NR
390	5630	NR	520	178364	NR	650	180267	NR	780	8315	NR	910	6424	NR
395	4917	NR	525	186887	NR	655	162796	NR	785	8364	NR	915	5977	NR
400	4279	NR	530	194310	NR	660	143827	NR	790	7202	NR	920	5589	NR
405	4043	NR	535	201832	NR	665	127951	NR	795	7271	NR	925	6728	NR
410	4666	NR	540	208553	NR	670	112526	NR	800	6583	NR	930	7328	NR
415	6309	NR	545	216697	NR	675	97790	NR	805	6730	NR	935	5077	NR
420	9564	NR	550	224567	NR	680	85489	NR	810	7628	NR	940	5558	NR
425	16500	NR	555	235296	NR	685	74086	NR	815	6335	NR	945	2171	NR
430	28210	NR	560	246750	NR	690	65039	NR	820	5679	NR	950	10555	NR
435	47088	NR	565	258189	NR	695	56035	NR	825	6974	NR	955	8787	NR
440	76402	NR	570	270186	NR	700	49223	NR	830	7136	NR	960	6936	NR
445	124288	NR	575	282577	NR	705	43027	NR	835	5971	NR	965	8547	NR
450	197266	NR	580	295795	NR	710	38080	NR	840	6371	NR	970	7502	NR
455	240978	NR	585	304888	NR	715	33706	NR	845	6027	NR	975	8793	NR
460	199802	NR	590	313177	NR	720	29961	NR	850	6816	NR	980	5517	NR
465	147559	NR	595	317388	NR	725	26440	NR	855	6168	NR	985	4652	NR
470	121976	NR	600	317783	NR	730	23027	NR	860	6333	NR	990	7259	NR
475	97268	NR	605	315536	NR	735	20496	NR	865	6493	NR	995	11735	NR
480	80092	NR	610	309123	NR	740	18168	NR	870	7357	NR	1000	8351	NR
485	79203	NR	615	300672	NR	745	15812	NR	875	7188	NR			

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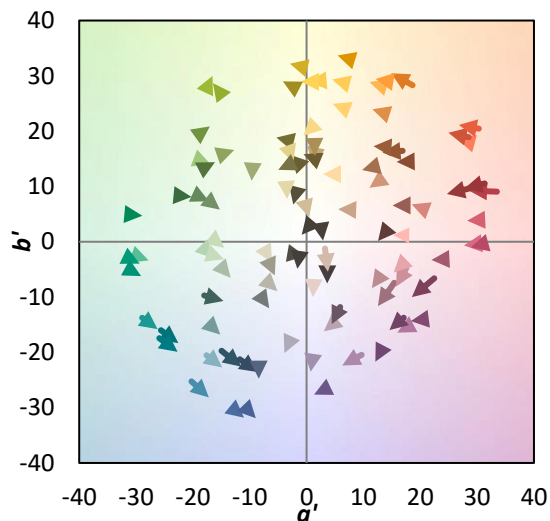
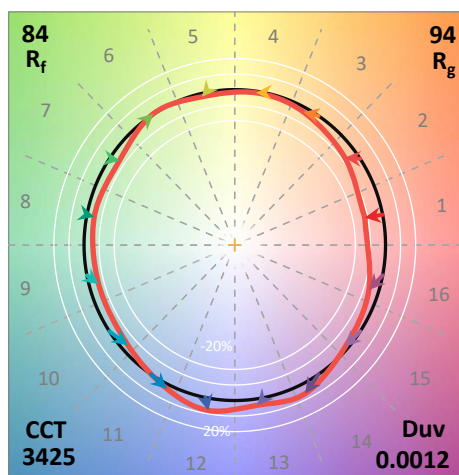
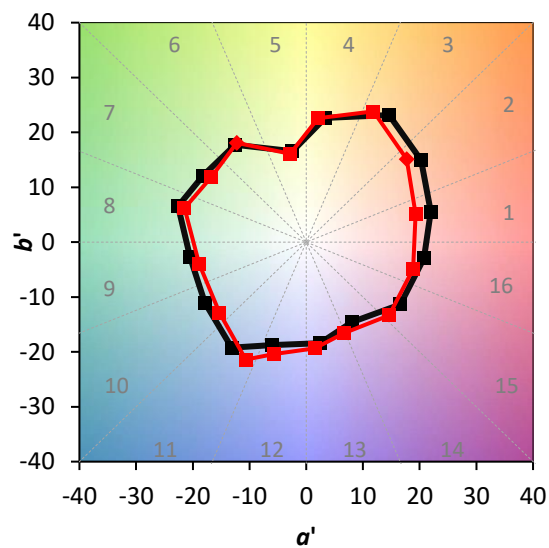
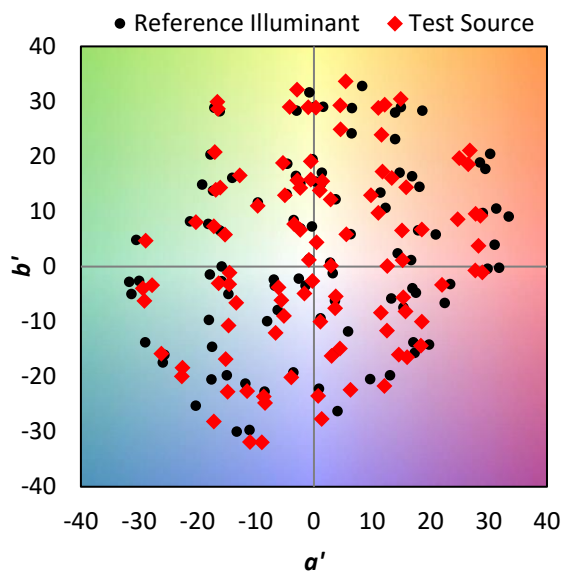
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Summary

$R_f = 84.3$
 $R_g = 94.4$
 CIE $R_a = 82.9$
 $R_9 = 8.8$



Color Vector Graphics

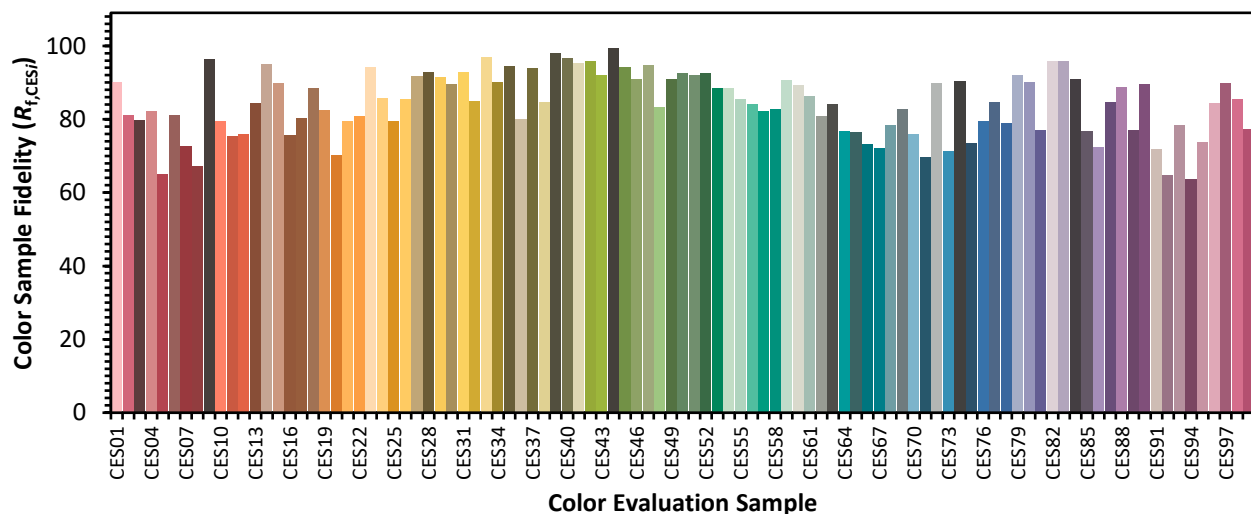


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Individual Sample Fidelity Index ($R_{f,i}$)

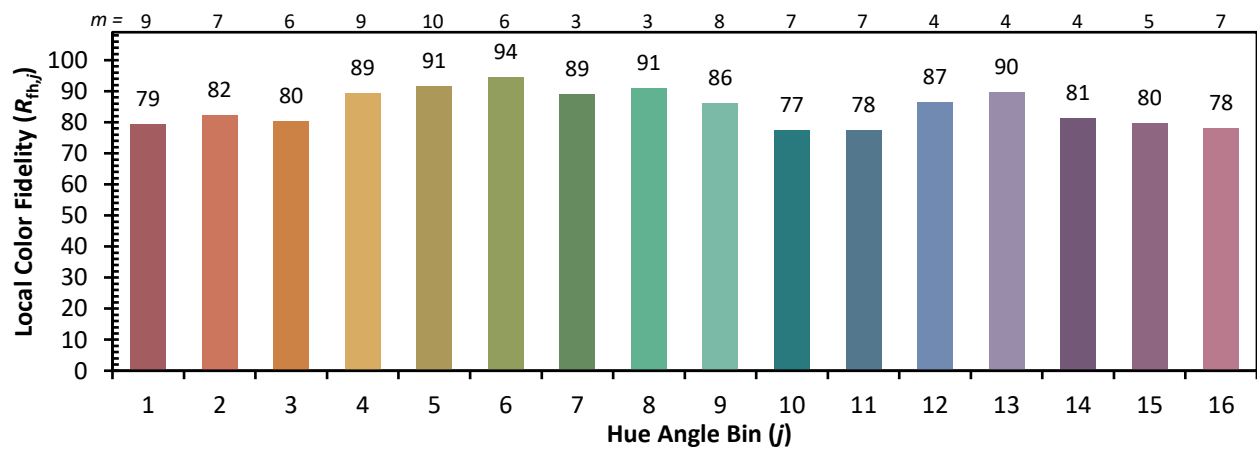
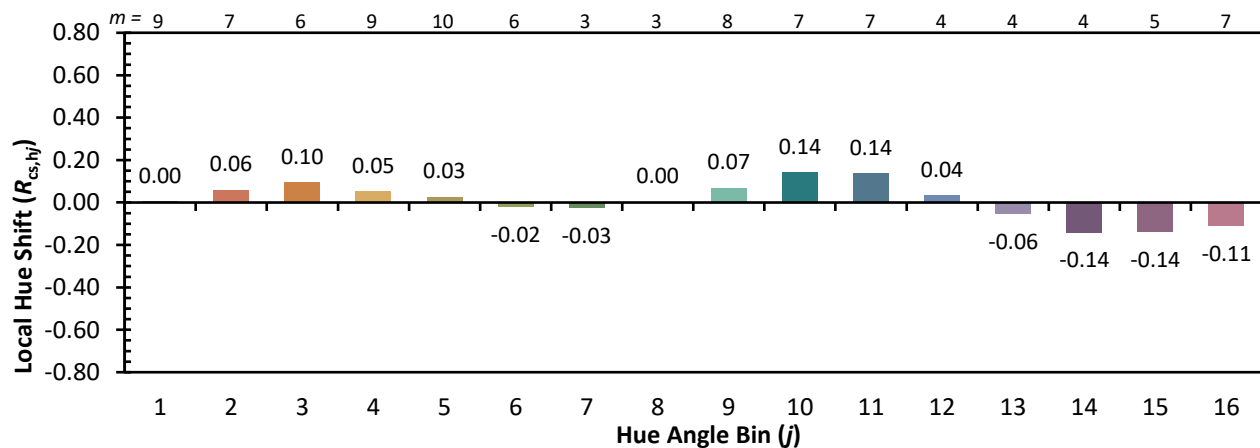
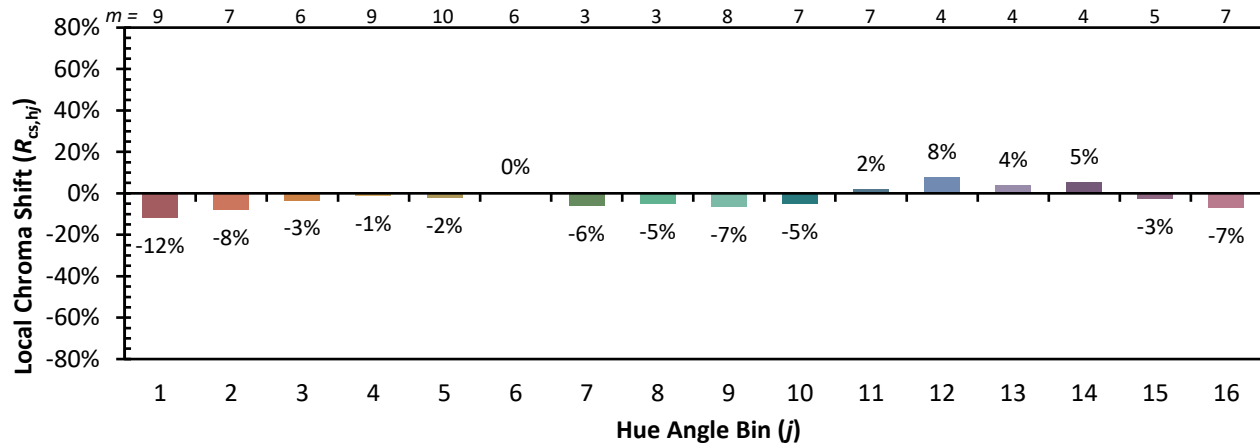
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CES02 = 62	CES27 = 92	CES52 = 93	CES77 = 85
CES03 = 31	CES28 = 93	CES53 = 88	CES78 = 79
CES04 = 70	CES29 = 91	CES54 = 88	CES79 = 92
CES05 = 49	CES30 = 90	CES55 = 86	CES80 = 90
CES06 = 51	CES31 = 93	CES56 = 84	CES81 = 77
CES07 = 41	CES32 = 85	CES57 = 82	CES82 = 96
CES08 = 40	CES33 = 97	CES58 = 83	CES83 = 96
CES09 = 29	CES34 = 90	CES59 = 91	CES84 = 91
CES10 = 75	CES35 = 94	CES60 = 89	CES85 = 77
CES11 = 58	CES36 = 80	CES61 = 86	CES86 = 72
CES12 = 64	CES37 = 94	CES62 = 81	CES87 = 85
CES13 = 43	CES38 = 85	CES63 = 84	CES88 = 89
CES14 = 74	CES39 = 98	CES64 = 77	CES89 = 77
CES15 = 71	CES40 = 97	CES65 = 76	CES90 = 90
CES16 = 47	CES41 = 95	CES66 = 73	CES91 = 72
CES17 = 50	CES42 = 96	CES67 = 72	CES92 = 65
CES18 = 56	CES43 = 92	CES68 = 78	CES93 = 78
CES19 = 72	CES44 = 99	CES69 = 83	CES94 = 64
CES20 = 66	CES45 = 94	CES70 = 76	CES95 = 74
CES21 = 86	CES46 = 91	CES71 = 70	CES96 = 84
CES22 = 78	CES47 = 95	CES72 = 90	CES97 = 90
CES23 = 92	CES48 = 83	CES73 = 71	CES98 = 86
CES24 = 91	CES49 = 91	CES74 = 90	CES99 = 77
CES25 = 72	CES50 = 93	CES75 = 74	



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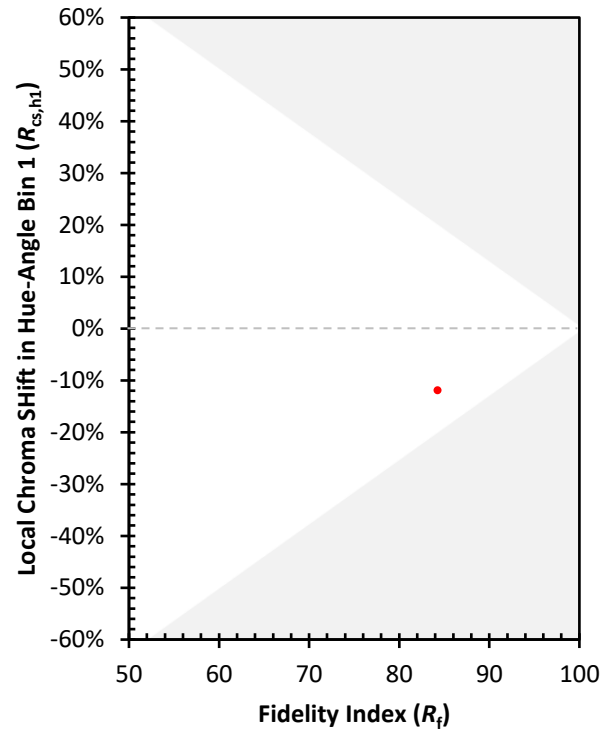
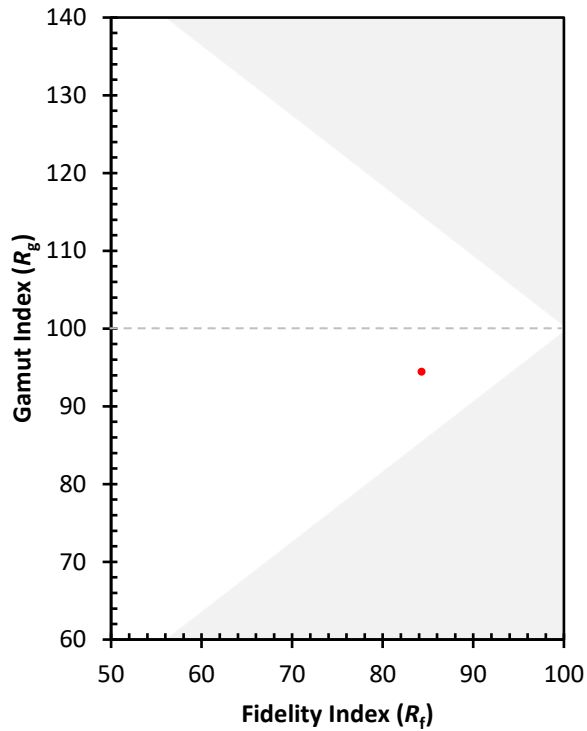
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)