

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: P830948

Luminaire Tested: **OHBL-9HE-W-UNV-L835-CD**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P830948
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-285-4)
Test Lab: INNOVATION CENTER
Issue Date: 5/3/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: OHBL-9HE-W-UNV-L835-CD
Description: 9000 LUMEN OHBL HE LED LUMINAIRE WITH 80CRI, 3500K LEDS AND WIDE LENS
Light Source: -
Ballast/Driver: -

Summary

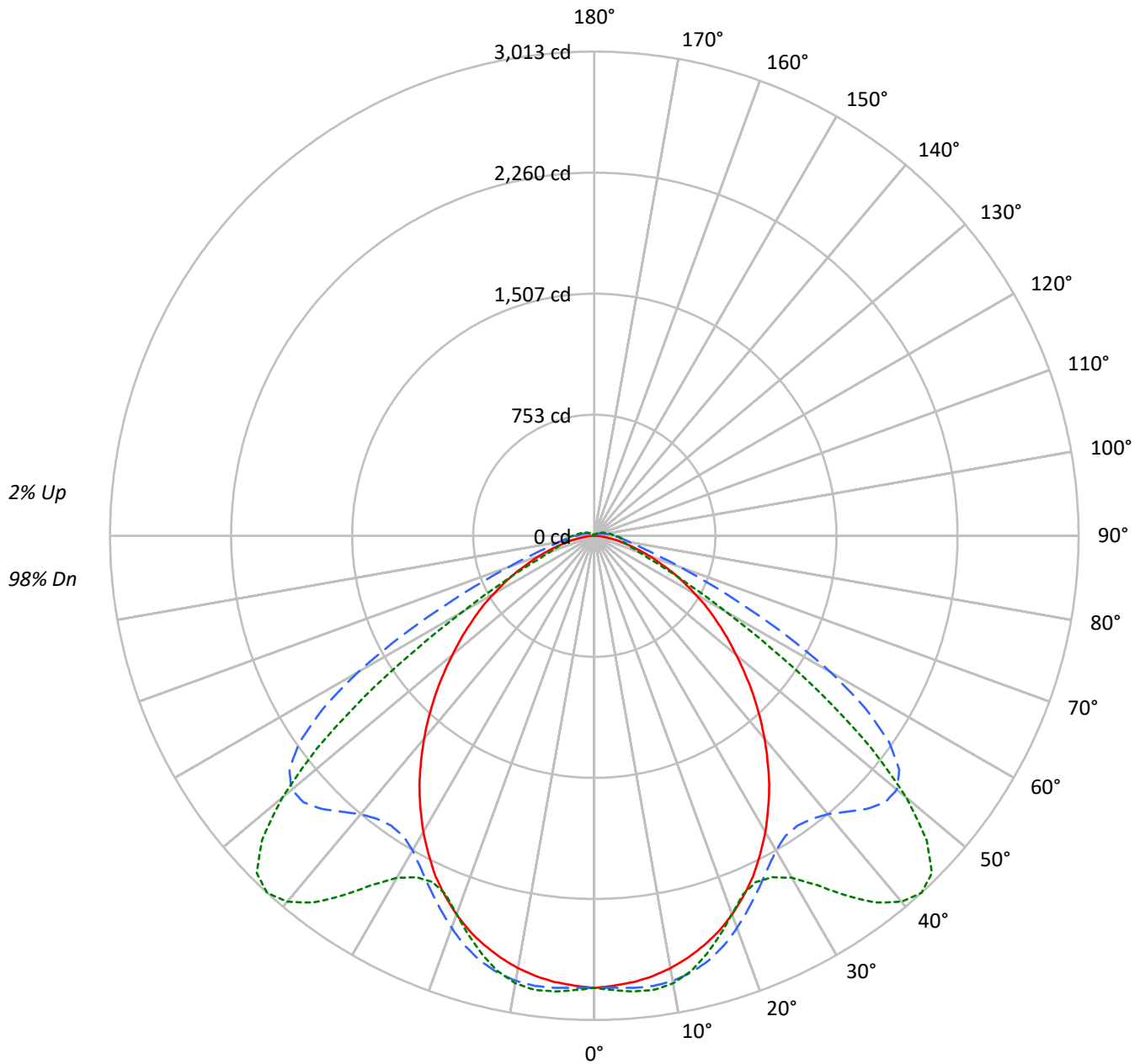
Lumens per Lamp: N/A
Luminaire Lumens: 8426.0 lumens
Efficiency: N/A
Efficacy: 162.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.58 / 1.62
Luminous Opening: Rectangular w/ Sides (W: 1.67' x L: 3.78' x H: 0.17')
CIE Type: Direct

Input Watts (W): 52
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: P830948

CATALOG NUMBER: OHBL-9HE-W-UNV-L835-CD

Luminous Intensity Polar Plot





TEST NUMBER: P830948

CATALOG NUMBER: OHBL-9HE-W-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
RCR																					
0	119	119	119	119		116	116	116	116		110	110	110		105	105	105		100	100	100
1	109	104	100	96		106	102	98	95		97	94	91		93	90	88		89	87	85
2	99	91	85	79		96	89	83	78		85	80	76		82	77	74		78	75	72
3	90	80	72	66		88	78	71	65		75	69	64		72	67	62		69	65	61
4	83	71	62	56		80	69	61	55		67	60	54		64	58	53		62	57	52
5	76	63	54	48		74	62	54	47		60	52	47		57	51	46		55	50	45
6	70	57	48	41		68	56	47	41		54	46	41		52	45	40		50	44	40
7	65	51	43	36		63	50	42	36		49	41	36		47	40	35		45	40	35
8	60	47	38	32		58	46	38	32		44	37	32		43	36	31		42	36	31
9	56	43	34	29		55	42	34	29		41	34	28		39	33	28		38	32	28
10	52	39	31	26		51	39	31	26		38	31	26		36	30	26		35	30	25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4806	4806	4806
5°	4762	4800	4838
10°	4702	4792	4820
15°	4610	4713	4642
20°	4485	4551	4392
25°	4316	4355	4281
30°	4093	4209	4580
35°	3838	4287	5326
40°	3542	4643	6115
45°	3232	5267	6521
50°	2909	5823	6012
55°	2606	5816	4543
60°	2297	4920	2740
65°	1971	3397	1631
70°	1601	2196	1149
75°	1218	1573	1027
80°	874	1381	1090
85°	593	1517	1516



TEST NUMBER: P830948

CATALOG NUMBER: OHBL-9HE-W-UNV-L835-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.9	3.2
10°-20°	761.5	9.0
20°-30°	1114.3	13.2
30°-40°	1447.2	17.2
40°-50°	1767.2	21.0
50°-60°	1556.3	18.5
60°-70°	811.0	9.6
70°-80°	347.8	4.1
80°-90°	167.0	2.0
90°-100°	78.5	0.9
100°-110°	48.8	0.6
110°-120°	28.8	0.3
120°-130°	15.7	0.2
130°-140°	7.9	0.1
140°-150°	3.8	0.0
150°-160°	1.3	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2144.8	25.5
0°-40°	3592.0	42.6
0°-60°	6915.5	82.1
0°-90°	8241.3	97.8
90°-120°	156.1	1.9
90°-150°	183.4	2.2
90°-180°	185.0	2.2
0°-180°	8426.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2814	2814	2814	2814	2814	
5°	2788	2809	2824	2849	2846	264
15°	2638	2712	2738	2718	2696	743
25°	2338	2463	2421	2375	2378	1073
35°	1897	2098	2203	2569	2733	1183
45°	1397	1758	2402	2909	2970	1077
55°	930	1540	2237	1962	1744	835
65°	534	1067	1024	570	490	528
75°	215	499	329	225	214	234
85°	46	178	168	164	166	51
90°	1	64	110	126	129	3
95°	1	38	88	103	106	1
105°	2	21	57	69	70	3
115°	4	12	35	43	44	4
125°	4	6	21	27	27	4
135°	4	4	10	16	17	3
145°	5	4	4	8	9	3
155°	5	5	4	4	4	2
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	



TEST NUMBER: P830948

CATALOG NUMBER: OHBL-9HE-W-UNV-L835-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2814.1	2814.1	2814.1	2814.1	2814.1
2.5°	2802.0	2814.1	2814.7	2831.7	2829.9
5°	2788.0	2809.3	2824.5	2849.3	2846.3
7.5°	2765.0	2798.3	2825.1	2852.4	2850.0
10°	2732.2	2777.7	2812.9	2835.4	2828.1
12.5°	2689.7	2749.8	2784.4	2789.2	2775.3
15°	2638.1	2712.1	2738.2	2717.6	2695.7
17.5°	2579.8	2666.6	2675.7	2630.8	2603.4
20°	2506.9	2605.9	2596.8	2534.8	2504.5
22.5°	2426.2	2539.1	2509.9	2445.0	2415.8
25°	2337.5	2462.6	2420.7	2375.2	2377.6
27.5°	2233.7	2375.8	2335.1	2355.7	2394.6
30°	2128.1	2284.7	2259.8	2380.0	2456.5
32.5°	2012.1	2191.2	2213.7	2451.1	2576.1
35°	1897.3	2097.7	2202.7	2568.8	2733.4
37.5°	1770.4	2003.0	2220.3	2704.8	2877.3
40°	1647.2	1910.7	2260.4	2826.9	2972.6
42.5°	1521.5	1828.1	2327.8	2899.1	3012.7
45°	1397.0	1757.7	2402.5	2908.8	2969.6
47.5°	1272.6	1698.2	2454.1	2831.7	2803.8
50°	1152.4	1645.4	2457.7	2646.6	2532.4
52.5°	1040.0	1596.8	2390.9	2351.5	2174.2
55°	930.2	1539.7	2237.3	1961.7	1743.7
57.5°	830.0	1460.8	2000.6	1542.8	1304.8
60°	723.7	1353.9	1694.5	1128.7	941.1
62.5°	626.0	1221.0	1351.5	785.6	676.4
65°	533.7	1066.8	1024.3	569.5	490.0
67.5°	435.9	907.1	755.9	415.3	364.3
70°	359.4	758.9	562.8	323.0	293.3
72.5°	281.1	618.1	420.8	262.3	245.9
75°	214.9	499.1	329.1	225.3	213.7
77.5°	158.5	394.6	264.7	199.1	188.2
80°	111.1	310.9	221.6	177.9	173.6
82.5°	74.7	240.4	188.8	169.4	170.0
85°	45.5	177.9	167.6	163.9	165.8
87.5°	21.9	126.3	143.9	149.4	151.2
90°	0.6	64.4	110.5	126.3	129.3
92.5°	0.0	49.2	97.1	112.9	116.0
95°	1.2	37.6	88.0	103.2	106.3
97.5°	1.2	31.0	78.9	94.7	96.5
100°	1.8	26.7	70.4	85.6	87.4
102.5°	1.8	23.7	63.1	76.5	77.7
105°	2.4	21.3	57.1	68.6	69.8



TEST NUMBER: P830948

CATALOG NUMBER: OHBL-9HE-W-UNV-L835-CD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.6	14.6	40.1	48.6	49.8
115°	3.6	12.1	35.2	43.1	44.3
117.5°	4.3	10.9	31.0	38.3	38.9
120°	4.3	9.1	26.7	34.0	34.6
122.5°	4.3	7.3	23.7	30.4	31.0
125°	4.3	6.1	20.6	26.7	27.3
127.5°	3.6	4.3	17.6	23.7	24.3
130°	3.6	3.6	14.6	20.6	21.9
132.5°	3.6	3.6	12.1	18.2	19.4
135°	3.6	3.6	9.7	16.4	17.0
137.5°	3.6	3.6	7.9	14.0	15.2
140°	3.6	3.6	6.1	12.1	12.8
142.5°	4.3	3.6	5.5	10.3	10.9
145°	4.9	3.6	4.3	7.9	9.1
147.5°	4.9	4.3	4.3	6.7	7.3
150°	4.9	4.9	3.6	4.9	6.1
152.5°	4.9	4.9	3.6	3.6	4.9
155°	4.9	4.9	3.6	3.6	3.6
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°	3.0	18.8	51.0	61.3	62.5
110°	3.0	16.4	44.9	54.6	55.9



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.

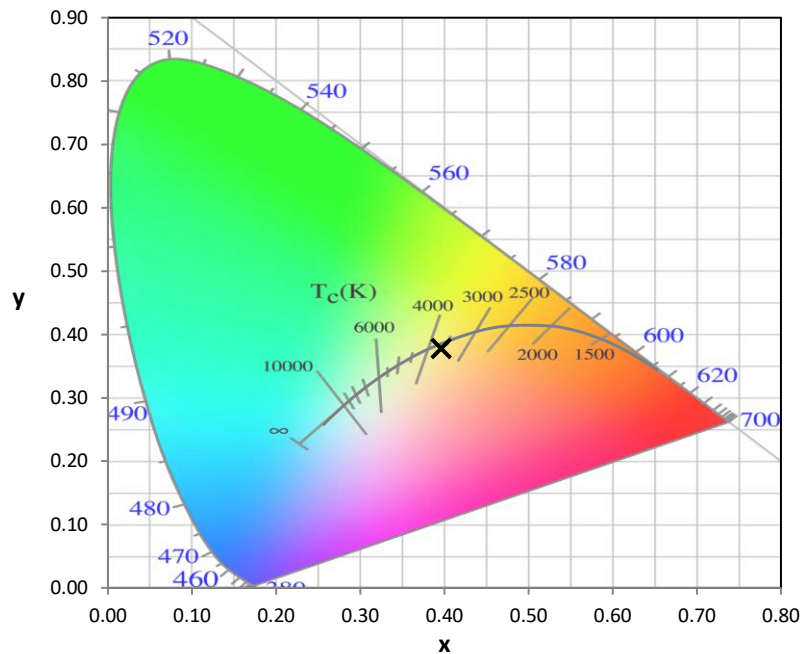
Test Method: LM-79-2019
Report Number: SP1-2307-100-5
Test Lab: COOPER LIGHTING SOLUTIONS
Photometer: SP1 - 76IN SPHERE
Measurement Geometry: 4π
Issue Date: 08/04/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: **OHB-15SE-N-UNV-L835-CD**
Description: 15000 LUMEN OHB SE LED LUMINAIRE WITH 80CRI, 3500K LEDS AND NARROW LENS

REPORT NUMBER: SP1-2307-100-5

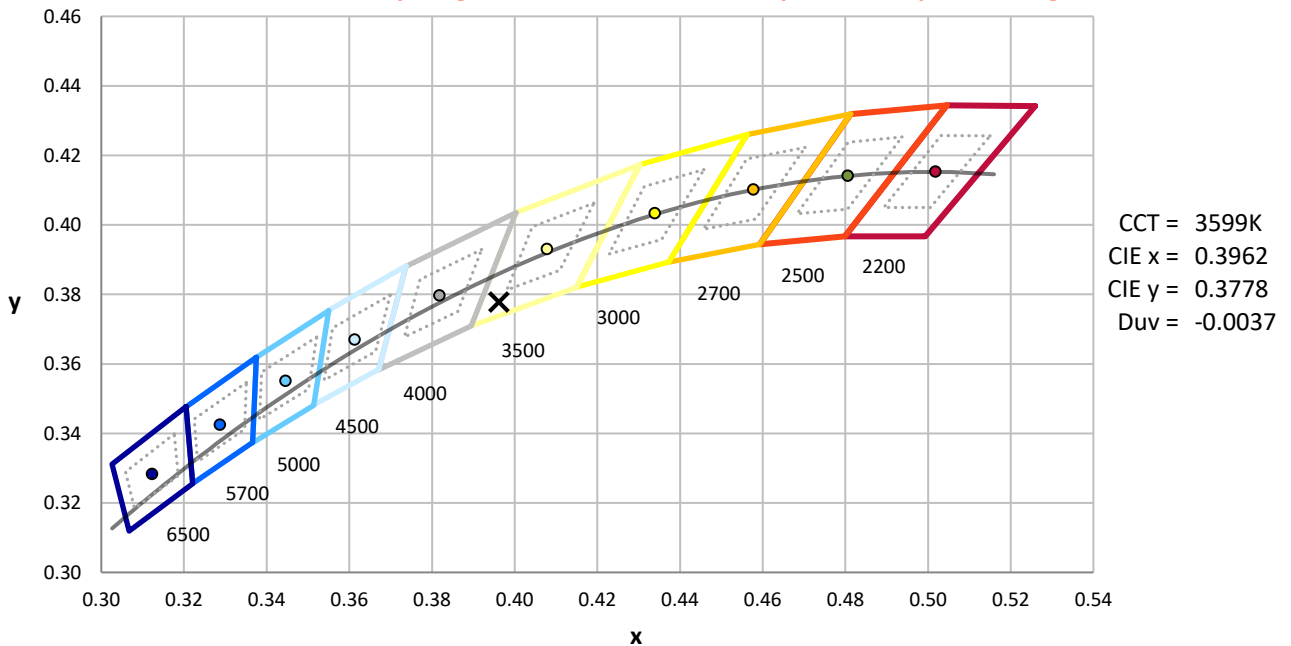
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	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: SP1-2307-100-5

CIE 1931 Chromaticity Diagram



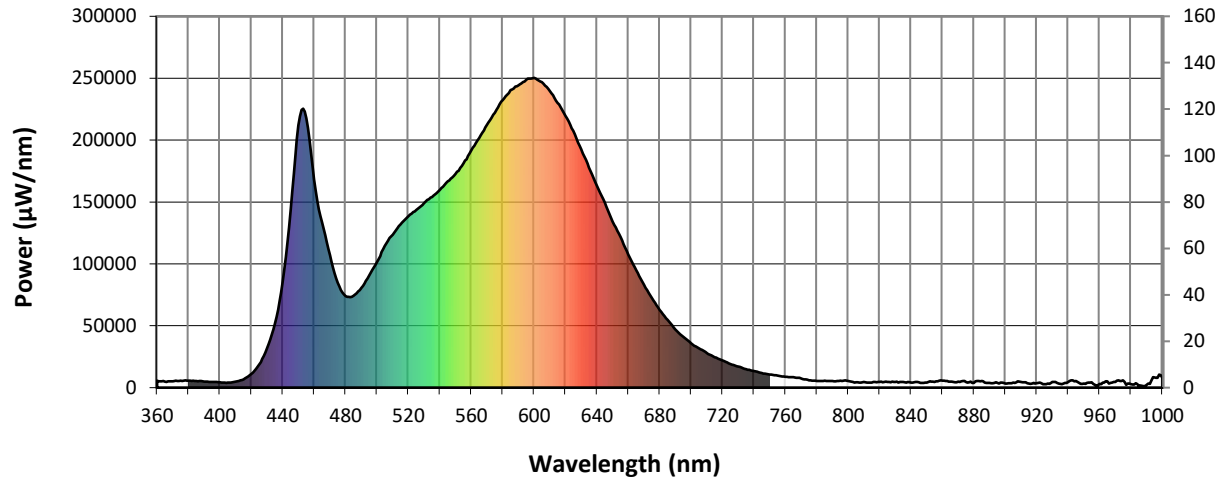
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2307-100-5

Photopic Flux vs. Wavelength

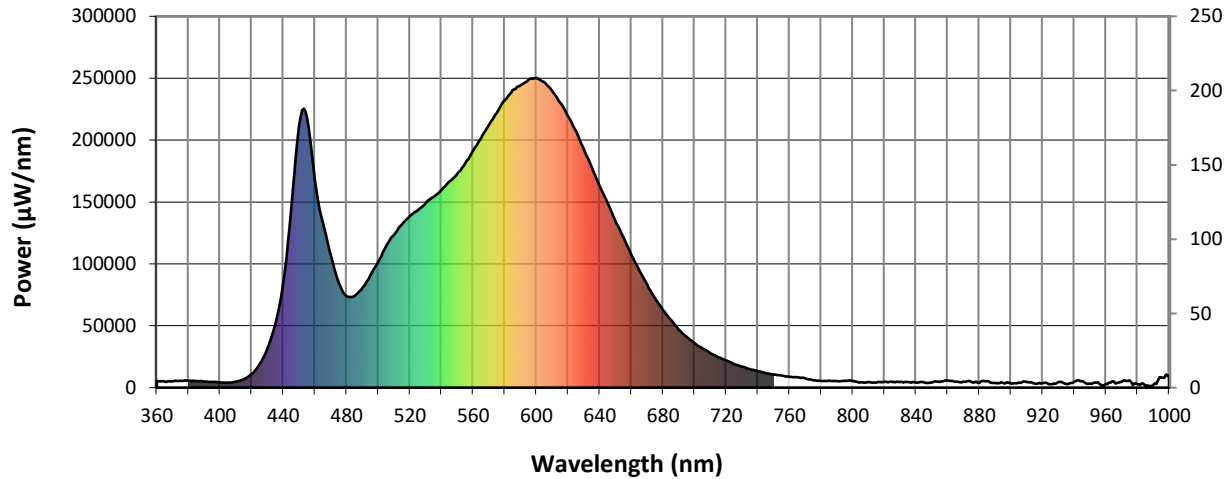


#####

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			

REPORT NUMBER: SP1-2307-100-5

Scotopic Flux vs. Wavelength



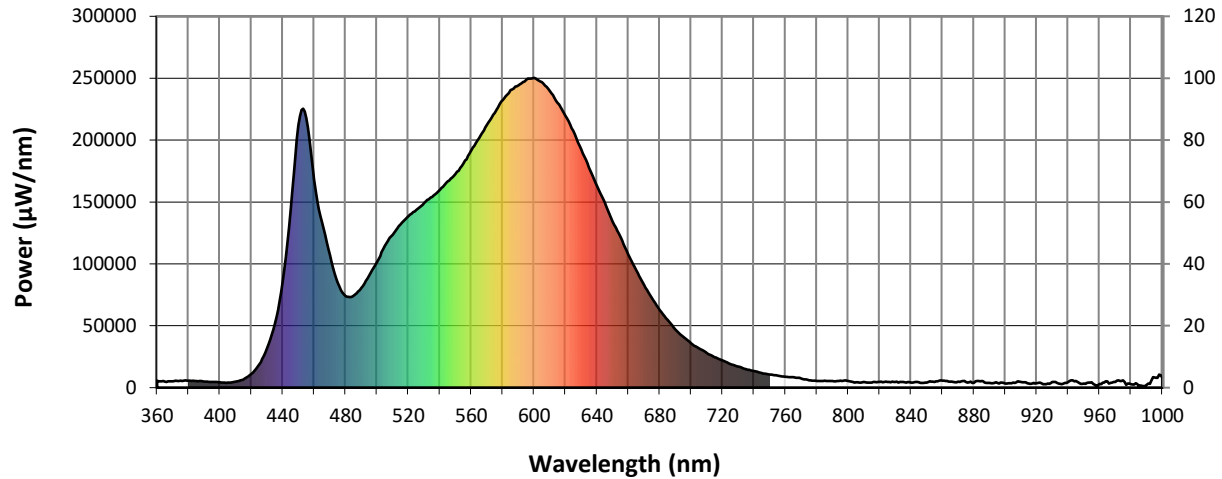
Scotopic Lumens: 21413.1

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			

REPORT NUMBER: SP1-2307-100-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: 8686

M/P: 0.65

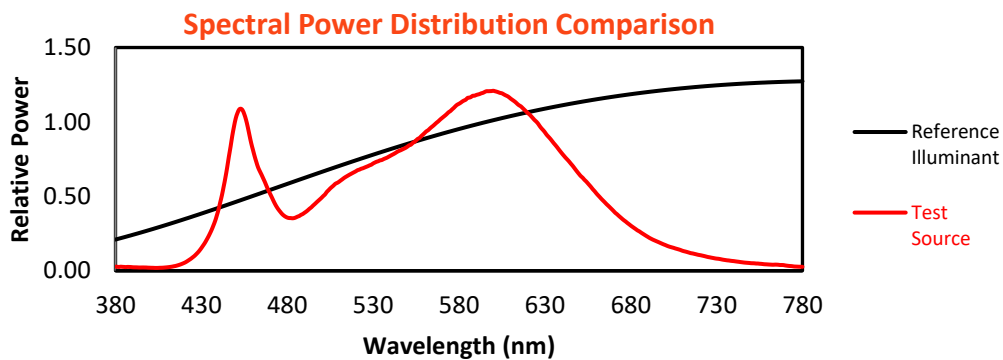
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5689	NR	490	80602	NR	620	219378	NR	750	10550	NR	880	3904	NR
365	4945	NR	495	90559	NR	625	207438	NR	755	9754	NR	885	5303	NR
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			

REPORT NUMBER: SP1-2307-100-5

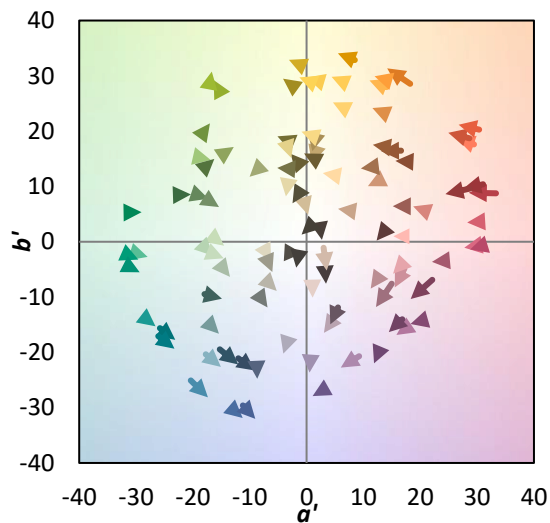
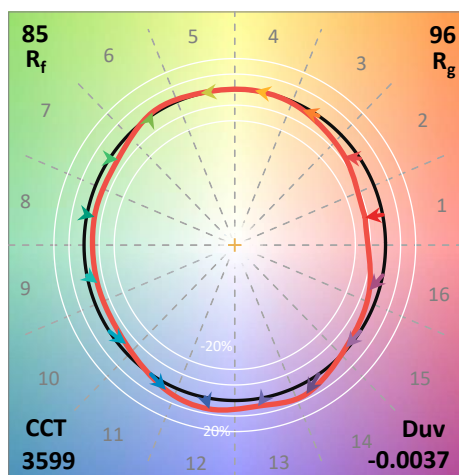
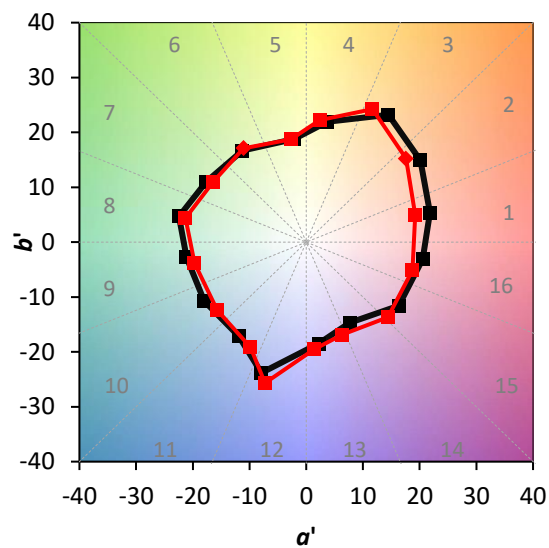
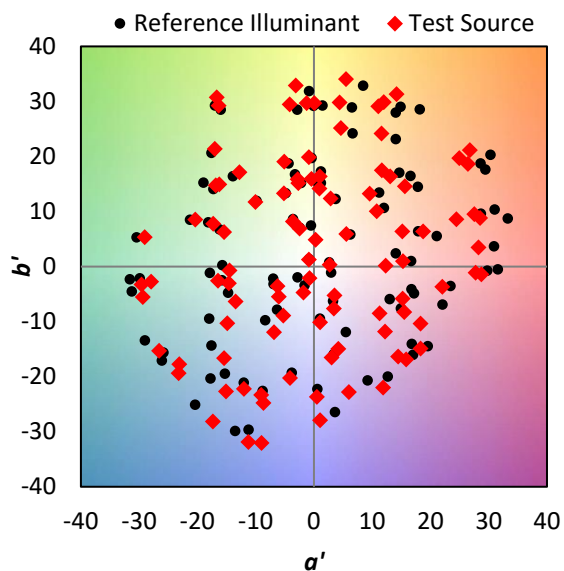
TM-30-18

Summary

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



Color Vector Graphics

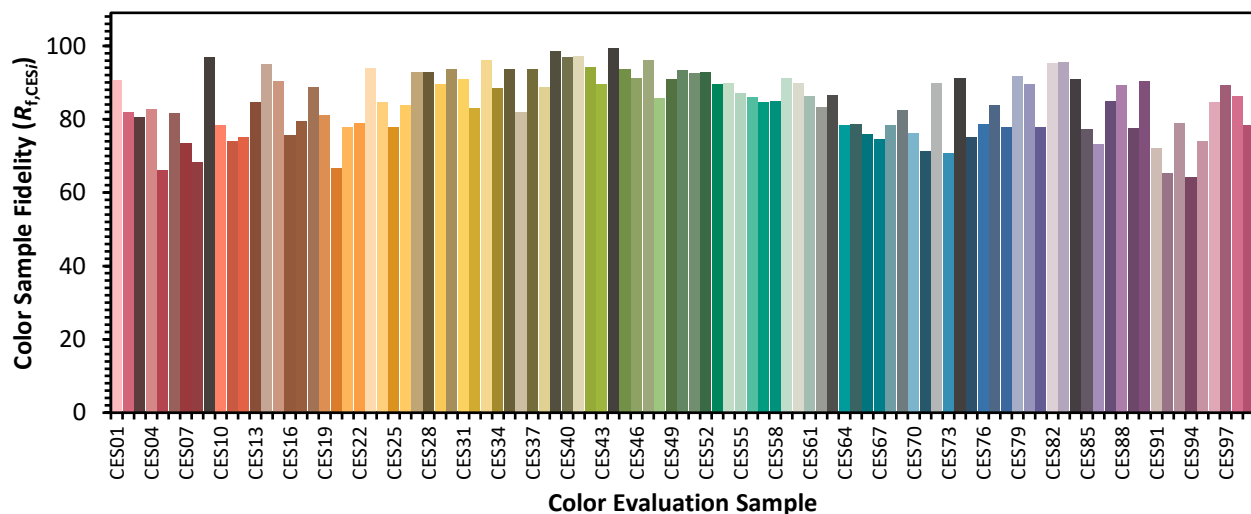


REPORT NUMBER: SP1-2307-100-5

TM-30-18

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

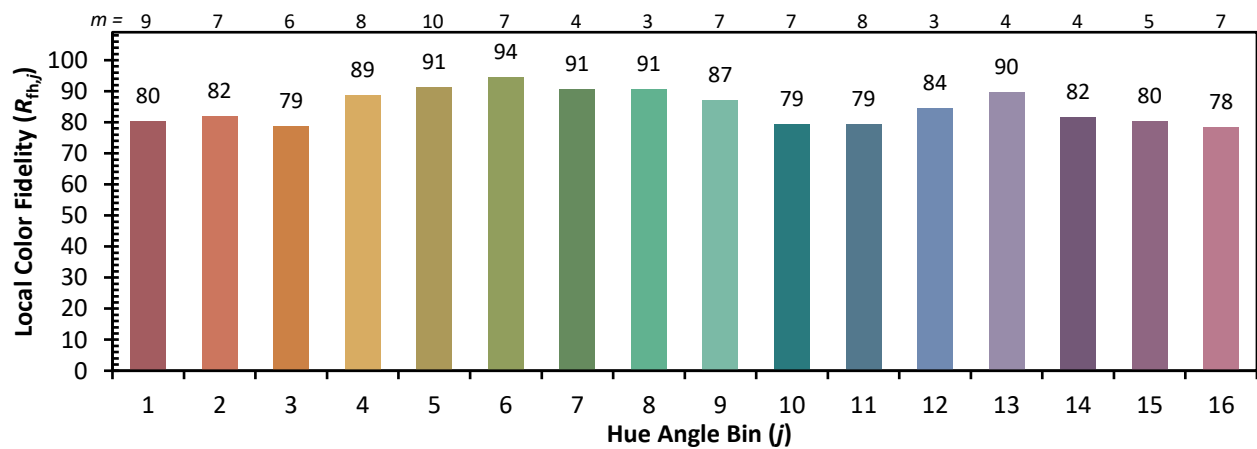
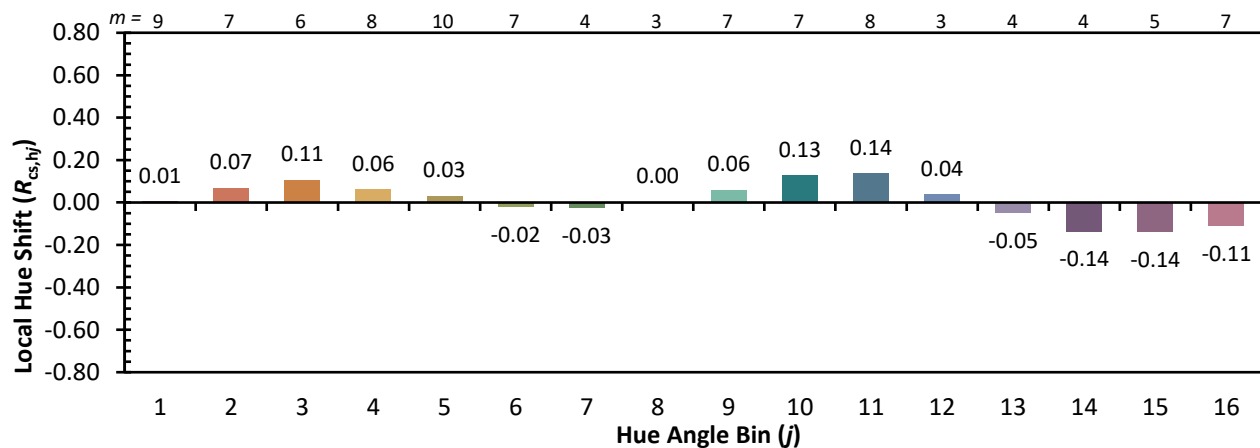
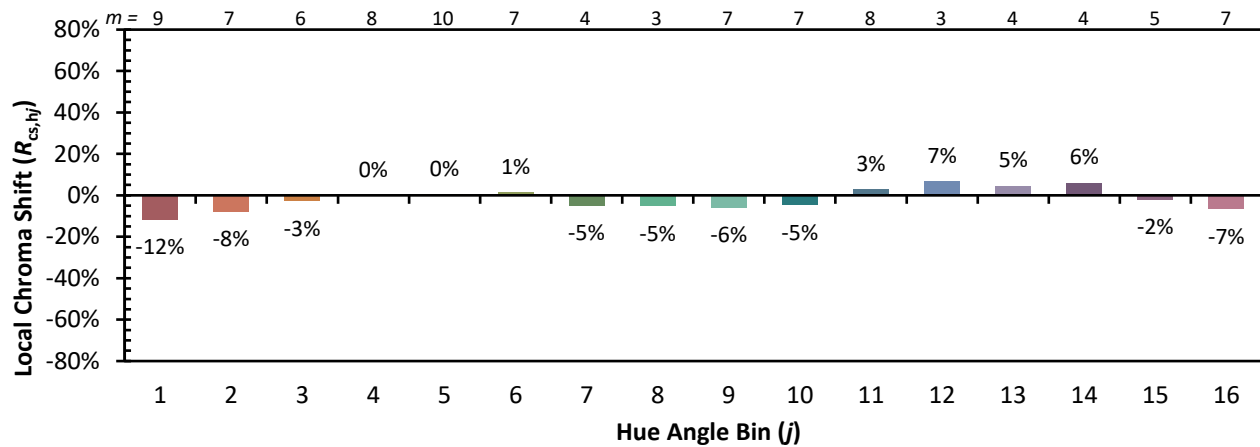
CES01 = 86	CES26 = 84	CES51 = 93	CES76 = 79
CES02 = 62	CES27 = 93	CES52 = 93	CES77 = 84
CES03 = 31	CES28 = 93	CES53 = 89	CES78 = 78
CES04 = 70	CES29 = 90	CES54 = 90	CES79 = 92
CES05 = 49	CES30 = 94	CES55 = 87	CES80 = 90
CES06 = 51	CES31 = 91	CES56 = 86	CES81 = 78
CES07 = 41	CES32 = 83	CES57 = 85	CES82 = 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	



REPORT NUMBER: SP1-2307-100-5

TM-30-18

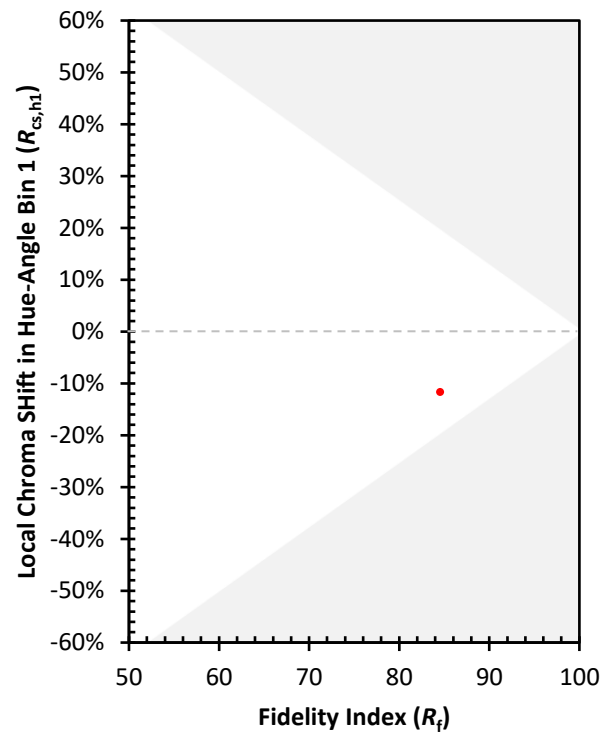
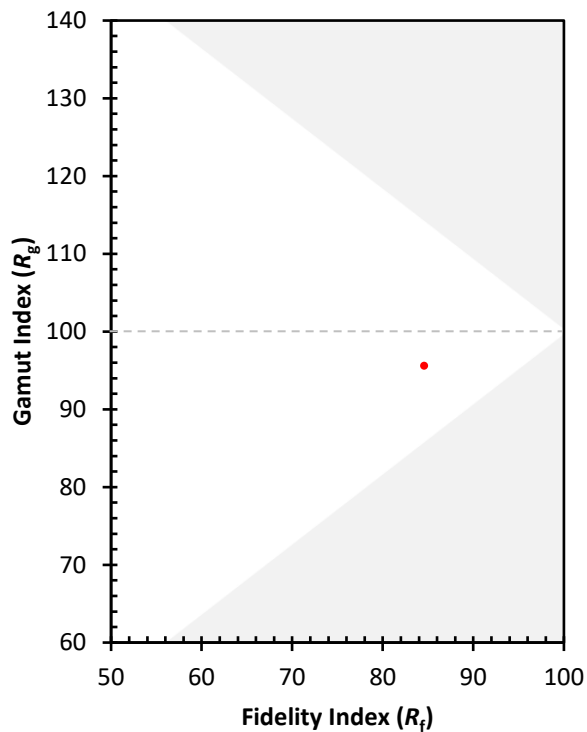
Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2307-100-5

TM-30-18

Measure Comparisons



(END OF REPORT)