

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: P830451

Luminaire Tested: **OHBL-48HE-A-UNV-L730-CD**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P830451
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-48HE-A-UNV-L730-CD
Description: 48000 LUMEN OHBL HE LED LUMINAIRE WITH 70CRI, 3000K LEDS AND AISLE LENS
Light Source: -
Ballast/Driver: -

Summary

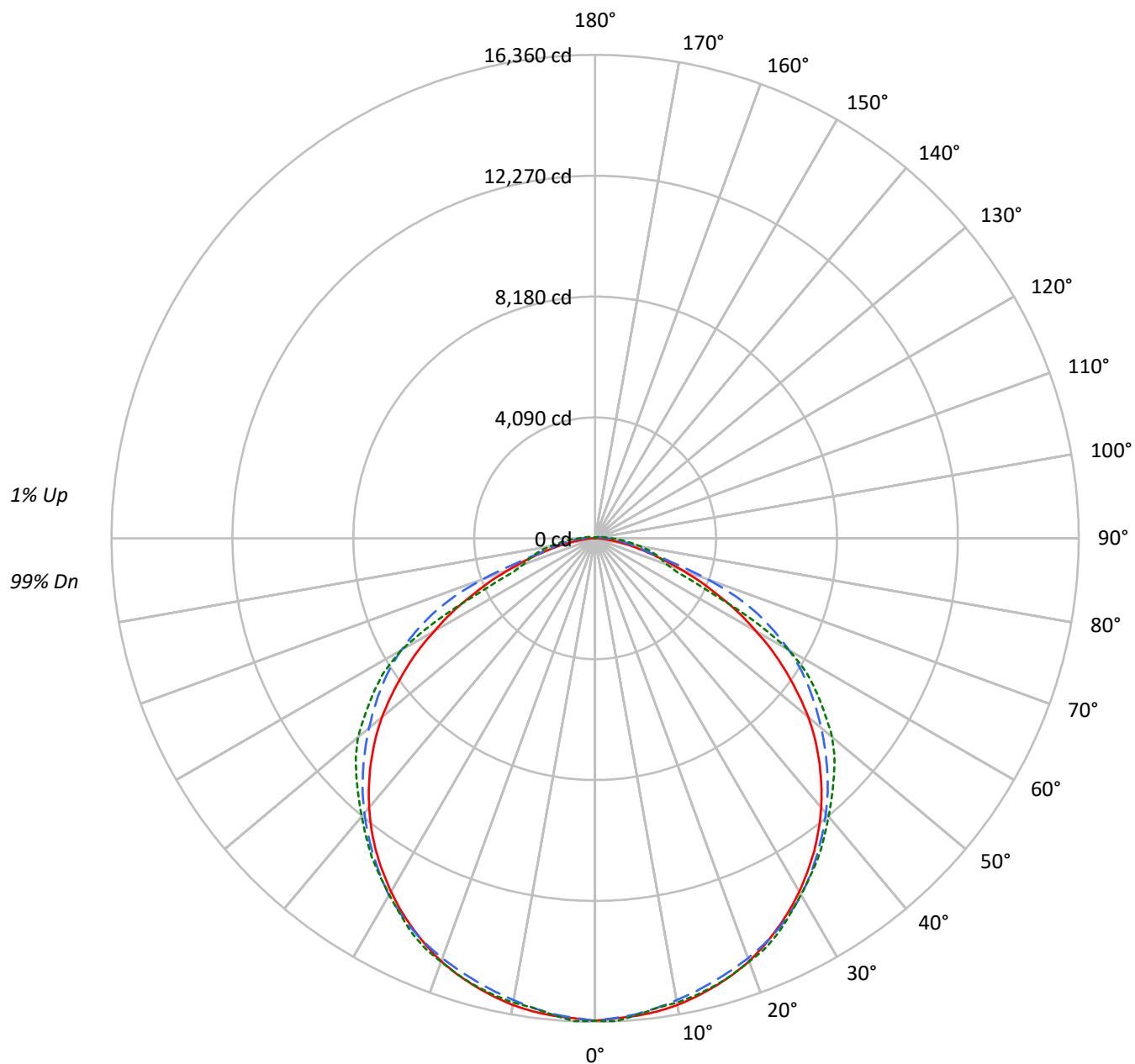
Lumens per Lamp: N/A
Luminaire Lumens: 46146.0 lumens
Efficiency: N/A
Efficacy: 173.5 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 1.8' x L: 3.78' x H: 0.17')
CIE Type: Direct

Input Watts (W): 266
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: P830451

CATALOG NUMBER: OHBL-48HE-A-UNV-L730-CD

Luminous Intensity Polar Plot





TEST NUMBER: P830451

CATALOG NUMBER: OHBL-48HE-A-UNV-L730-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°	25820	25820	25820
5°	25651	25445	25498
10°	25557	25060	25215
15°	25395	24771	25046
20°	25233	24590	24825
25°	24928	24407	24605
30°	24597	24119	24139
35°	24201	23661	23883
40°	23686	23189	23533
45°	22973	22642	23378
50°	22006	22020	23193
55°	20471	21408	22328
60°	18459	20512	20642
65°	15835	18849	13082
70°	12755	14714	9485
75°	9562	8735	9626
80°	6656	7263	9191
85°	3789	6654	8615



TEST NUMBER: P830451

CATALOG NUMBER: OHBL-48HE-A-UNV-L730-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1539.4	3.3
10°-20°	4414.4	9.6
20°-30°	6742.1	14.6
30°-40°	8180.5	17.7
40°-50°	8574.0	18.6
50°-60°	7769.3	16.8
60°-70°	5209.0	11.3
70°-80°	2339.1	5.1
80°-90°	848.8	1.8
90°-100°	255.5	0.6
100°-110°	120.6	0.3
110°-120°	60.4	0.1
120°-130°	33.3	0.1
130°-140°	22.9	0.0
140°-150°	15.4	0.0
150°-160°	11.5	0.0
160°-170°	7.4	0.0
170°-180°	2.3	0.0
0°-30°	12696.0	27.5
0°-40°	20876.5	45.2
0°-60°	37219.8	80.7
0°-90°	45616.7	98.9
90°-120°	436.5	0.9
90°-150°	508.1	1.1
90°-180°	529.0	1.1
0°-180°	46146.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	16326	16326	16326	16326	16326	
5°	16220	16277	16164	16213	16192	###
15°	15694	15632	15522	15658	15677	4431
25°	14580	14516	14617	14752	14709	6720
35°	12922	12953	13085	13225	13173	8077
45°	10725	10899	11102	11386	11421	8262
55°	7892	8272	8836	9190	9169	7044
65°	4632	5356	6081	5132	4190	4615
75°	1822	2644	1945	1990	2120	1992
85°	314	602	772	932	977	383
90°	2	201	399	500	524	19
95°	2	125	274	333	342	3
105°	9	54	135	163	170	11
115°	19	28	68	87	92	18
125°	16	19	42	50	52	16
135°	21	24	26	38	40	17
145°	21	24	24	26	28	14
155°	24	26	26	26	24	11
165°	26	26	26	26	26	7
175°	26	26	24	21	21	3
180°	24	24	24	24	24	



TEST NUMBER: P830451

CATALOG NUMBER: OHBL-48HE-A-UNV-L730-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	16326.5	16326.5	16326.5	16326.5	16326.5
2.5°	16260.4	16328.9	16243.9	16335.9	16359.5
5°	16220.3	16276.9	16163.6	16213.2	16191.9
7.5°	16147.1	16166.0	16031.4	16071.5	16029.0
10°	16038.5	16029.0	15870.9	15948.8	15958.2
12.5°	15878.0	15849.6	15708.0	15826.0	15828.4
15°	15693.8	15632.5	15521.5	15658.4	15677.3
17.5°	15481.4	15401.1	15327.9	15505.0	15476.6
20°	15233.5	15139.1	15124.9	15318.5	15247.7
22.5°	14926.6	14853.4	14886.5	15070.6	15025.8
25°	14579.6	14515.8	14617.4	14751.9	14709.4
27.5°	14213.7	14175.9	14291.6	14395.5	14312.8
30°	13812.4	13791.1	13944.6	14029.5	13925.7
32.5°	13375.6	13382.7	13529.1	13644.8	13548.0
35°	12922.4	12953.1	13085.3	13224.6	13172.6
37.5°	12424.3	12492.7	12624.9	12783.1	12728.8
40°	11897.8	11997.0	12143.4	12334.6	12285.0
42.5°	11328.9	11454.0	11642.9	11855.4	11850.6
45°	10724.6	10899.3	11102.3	11385.6	11421.0
47.5°	10096.6	10292.6	10549.9	10927.6	10981.9
50°	9414.4	9659.9	9981.0	10434.2	10467.3
52.5°	8654.3	8989.5	9414.4	9848.8	9808.6
55°	7891.8	8271.8	8836.0	9190.1	9168.9
57.5°	7131.6	7558.9	8243.5	8496.1	8493.7
60°	6281.8	6822.4	7570.7	7761.9	7573.1
62.5°	5495.7	6076.4	6853.1	6713.8	6067.0
65°	4631.7	5356.4	6081.1	5132.1	4190.2
67.5°	3864.4	4619.9	5165.2	3515.1	3009.9
70°	3092.5	3925.8	4027.3	2608.6	2573.1
72.5°	2407.9	3295.5	2778.5	2233.2	2346.5
75°	1822.4	2644.0	1945.2	1990.1	2119.9
77.5°	1329.1	2030.2	1513.2	1744.5	1850.8
80°	913.6	1437.7	1234.6	1466.0	1539.2
82.5°	573.6	949.0	989.1	1180.3	1255.9
85°	314.0	602.0	771.9	932.5	977.3
87.5°	129.8	363.5	590.2	720.0	757.8
90°	2.4	200.7	399.0	500.5	524.1
92.5°	2.4	153.4	325.8	403.7	420.2
95°	2.4	125.1	273.8	332.9	342.3
97.5°	4.7	99.1	229.0	276.2	285.6
100°	7.1	82.6	191.2	231.3	238.4
102.5°	9.4	66.1	160.5	193.6	200.7
105°	9.4	54.3	134.6	162.9	170.0



TEST NUMBER: P830451

CATALOG NUMBER: OHBL-48HE-A-UNV-L730-CD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	16.5	33.0	80.3	101.5	106.2
115°	18.9	28.3	68.5	87.3	92.1
117.5°	18.9	23.6	59.0	73.2	77.9
120°	18.9	21.2	51.9	63.7	66.1
122.5°	18.9	18.9	44.9	56.7	59.0
125°	16.5	18.9	42.5	49.6	51.9
127.5°	18.9	18.9	37.8	44.9	47.2
130°	18.9	21.2	33.0	42.5	42.5
132.5°	21.2	23.6	30.7	40.1	40.1
135°	21.2	23.6	26.0	37.8	40.1
137.5°	23.6	23.6	23.6	35.4	37.8
140°	23.6	23.6	21.2	30.7	33.0
142.5°	21.2	23.6	21.2	28.3	30.7
145°	21.2	23.6	23.6	26.0	28.3
147.5°	23.6	23.6	23.6	23.6	26.0
150°	23.6	23.6	23.6	23.6	23.6
152.5°	23.6	23.6	23.6	23.6	23.6
155°	23.6	26.0	26.0	26.0	23.6
157.5°	23.6	26.0	26.0	26.0	26.0
160°	23.6	26.0	26.0	26.0	26.0
162.5°	26.0	26.0	26.0	26.0	26.0
165°	26.0	26.0	26.0	26.0	26.0
167.5°	26.0	28.3	26.0	26.0	26.0
170°	26.0	26.0	26.0	23.6	23.6
172.5°	26.0	26.0	26.0	23.6	23.6
175°	26.0	26.0	23.6	21.2	21.2
177.5°	28.3	26.0	23.6	21.2	18.9
180°	23.6	23.6	23.6	23.6	23.6



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	11.8	44.9	115.7	139.3	144.0
110°	14.2	37.8	96.8	118.0	122.8



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2307-100-1

Test Date: 07/27/2023

Luminaire Tested: OHB-15SE-N-UNV-L730-CD

Data in this report applies to families of products including OHB-15SE-N-UNV-L730-CD.

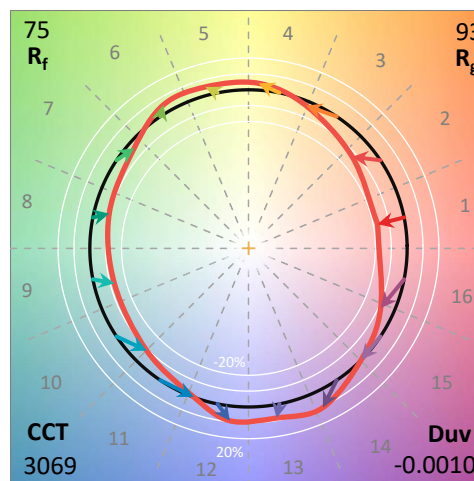
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2307-100-1
 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-L730-CD**
 Description: 15000 LUMEN OHB SE LED LUMINAIRE WITH 70CRI, 3000K LEDS AND NARROW LENS

LENS

Spectral Parameters

CCT (K):	3069	CRI (Ra):	71.3		
CIE u':	0.2485	R1:	67.4	R9:	-35.7
CIE v':	0.5185	R2:	83.0	R10:	60.6
Duv:	-0.0010	R3:	94.0	R11:	58.9
CIE x:	0.4306	R4:	65.2	R12:	49.5
CIE y:	0.3993	R5:	66.6	R13:	70.5
CIE z:	0.1702	R6:	76.0	R14:	97.0
Peak Wavelength (nm):	596	R7:	76.4		
Dominant Wavelength (nm):	582	R8:	41.9		
Purity:	49.5				
Rf:	74.9				
Rg:	92.7				



Test Conditions

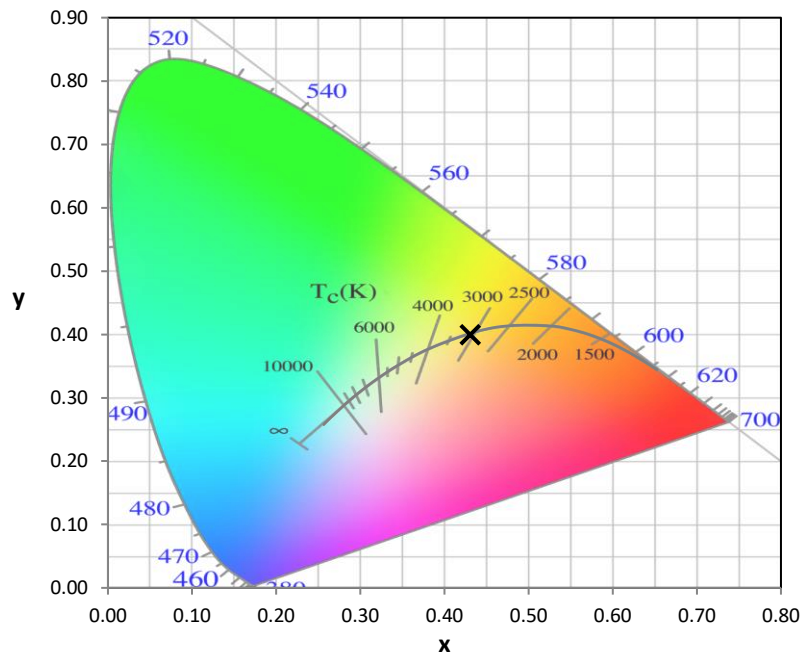
Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.7/57%
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2307-100-1

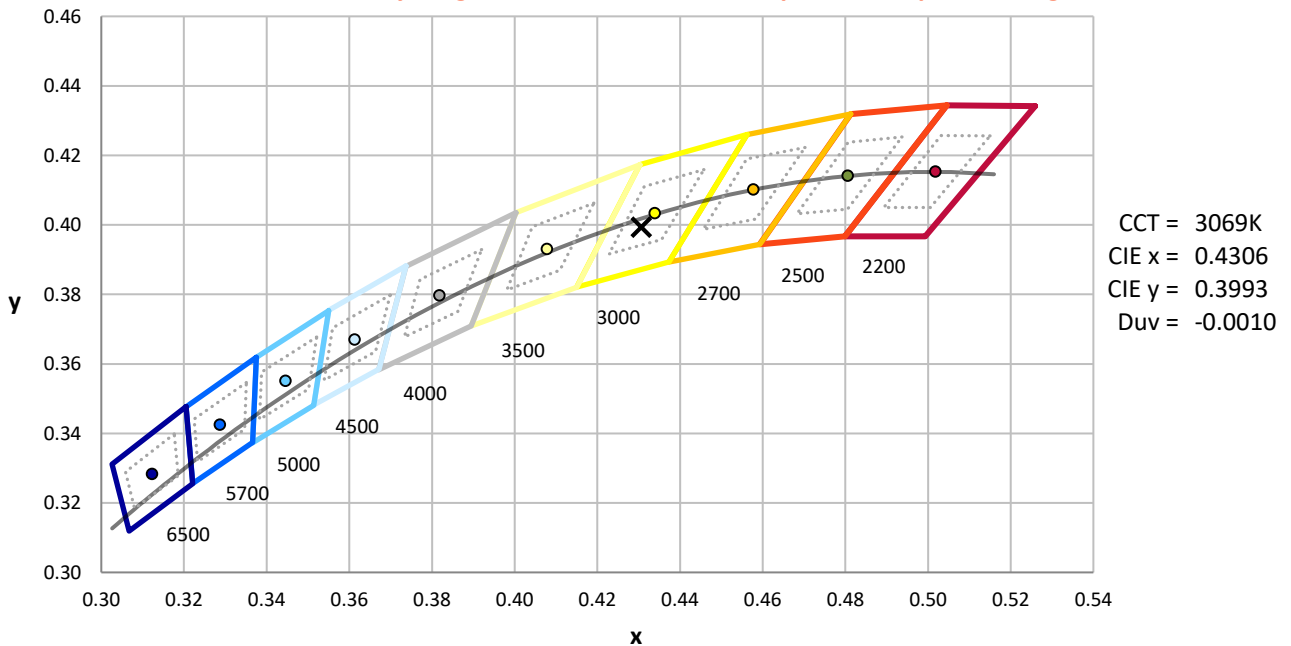
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	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: SP1-2307-100-1

CIE 1931 Chromaticity Diagram



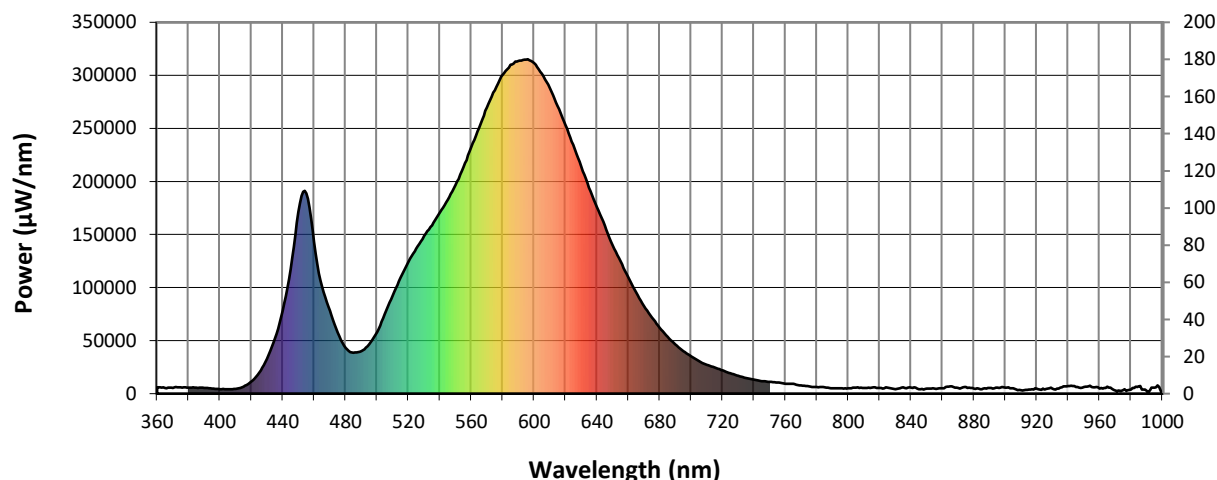
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2307-100-1

Photopic Flux vs. Wavelength

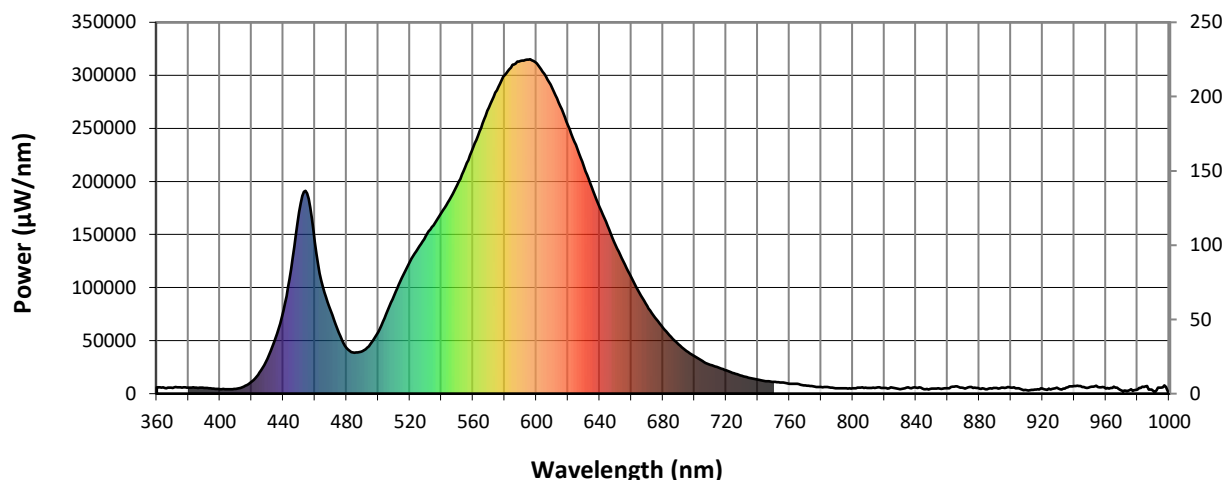


#####

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	6099	NR	490	40168	NR	620	253019	NR	750	11053	NR	880	4764	NR
365	5425	NR	495	46535	NR	625	234501	NR	755	10436	NR	885	4069	NR
370	5467	NR	500	57902	NR	630	214134	NR	760	9340	NR	890	5470	NR
375	5866	NR	505	75040	NR	635	194074	NR	765	9223	NR	895	5625	NR
380	5693	NR	510	92426	NR	640	175837	NR	770	7875	NR	900	5662	NR
385	5528	NR	515	109218	NR	645	158182	NR	775	6995	NR	905	4976	NR
390	5323	NR	520	124301	NR	650	139770	NR	780	6291	NR	910	3243	NR
395	4691	NR	525	136616	NR	655	124825	NR	785	5894	NR	915	4005	NR
400	4292	NR	530	148525	NR	660	109765	NR	790	5176	NR	920	4854	NR
405	4106	NR	535	158686	NR	665	95251	NR	795	5191	NR	925	3999	NR
410	4555	NR	540	170513	NR	670	82640	NR	800	4961	NR	930	4856	NR
415	6579	NR	545	182793	NR	675	71832	NR	805	5762	NR	935	5652	NR
420	11281	NR	550	196628	NR	680	62184	NR	810	5247	NR	940	7244	NR
425	19782	NR	555	213600	NR	685	53604	NR	815	5570	NR	945	6266	NR
430	32934	NR	560	232241	NR	690	46370	NR	820	5470	NR	950	6258	NR
435	52004	NR	565	250545	NR	695	40048	NR	825	5780	NR	955	6166	NR
440	77987	NR	570	269608	NR	700	35148	NR	830	4151	NR	960	4813	NR
445	117241	NR	575	286007	NR	705	30717	NR	835	5899	NR	965	6539	NR
450	171397	NR	580	300402	NR	710	27137	NR	840	5774	NR	970	2930	NR
455	188676	NR	585	310093	NR	715	24655	NR	845	4055	NR	975	3170	NR
460	142860	NR	590	313605	NR	720	21845	NR	850	4767	NR	980	3959	NR
465	100906	NR	595	314960	NR	725	19116	NR	855	4780	NR	985	6920	NR
470	78130	NR	600	311387	NR	730	16889	NR	860	5148	NR	990	2710	NR
475	57660	NR	605	301618	NR	735	14825	NR	865	6865	NR	995	5566	NR
480	43089	NR	610	288042	NR	740	13154	NR	870	5392	NR	1000	0	NR
485	38569	NR	615	270953	NR	745	11725	NR	875	6166	NR			

REPORT NUMBER: SP1-2307-100-1

Scotopic Flux vs. Wavelength



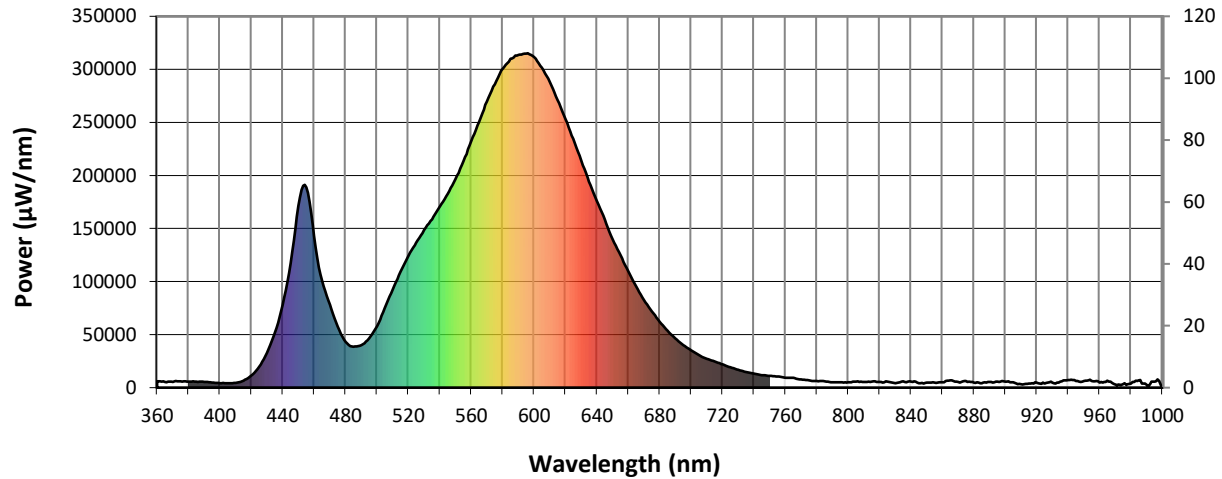
Scotopic Lumens: 18956.8

S/P: 1.25

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	6099	NR	490	40168	NR	620	253019	NR	750	11053	NR	880	4764	NR
365	5425	NR	495	46535	NR	625	234501	NR	755	10436	NR	885	4069	NR
370	5467	NR	500	57902	NR	630	214134	NR	760	9340	NR	890	5470	NR
375	5866	NR	505	75040	NR	635	194074	NR	765	9223	NR	895	5625	NR
380	5693	NR	510	92426	NR	640	175837	NR	770	7875	NR	900	5662	NR
385	5528	NR	515	109218	NR	645	158182	NR	775	6995	NR	905	4976	NR
390	5323	NR	520	124301	NR	650	139770	NR	780	6291	NR	910	3243	NR
395	4691	NR	525	136616	NR	655	124825	NR	785	5894	NR	915	4005	NR
400	4292	NR	530	148525	NR	660	109765	NR	790	5176	NR	920	4854	NR
405	4106	NR	535	158686	NR	665	95251	NR	795	5191	NR	925	3999	NR
410	4555	NR	540	170513	NR	670	82640	NR	800	4961	NR	930	4856	NR
415	6579	NR	545	182793	NR	675	71832	NR	805	5762	NR	935	5652	NR
420	11281	NR	550	196628	NR	680	62184	NR	810	5247	NR	940	7244	NR
425	19782	NR	555	213600	NR	685	53604	NR	815	5570	NR	945	6266	NR
430	32934	NR	560	232241	NR	690	46370	NR	820	5470	NR	950	6258	NR
435	52004	NR	565	250545	NR	695	40048	NR	825	5780	NR	955	6166	NR
440	77987	NR	570	269608	NR	700	35148	NR	830	4151	NR	960	4813	NR
445	117241	NR	575	286007	NR	705	30717	NR	835	5899	NR	965	6539	NR
450	171397	NR	580	300402	NR	710	27137	NR	840	5774	NR	970	2930	NR
455	188676	NR	585	310093	NR	715	24655	NR	845	4055	NR	975	3170	NR
460	142860	NR	590	313605	NR	720	21845	NR	850	4767	NR	980	3959	NR
465	100906	NR	595	314960	NR	725	19116	NR	855	4780	NR	985	6920	NR
470	78130	NR	600	311387	NR	730	16889	NR	860	5148	NR	990	2710	NR
475	57660	NR	605	301618	NR	735	14825	NR	865	6865	NR	995	5566	NR
480	43089	NR	610	288042	NR	740	13154	NR	870	5392	NR	1000	0	NR
485	38569	NR	615	270953	NR	745	11725	NR	875	6166	NR			

REPORT NUMBER: SP1-2307-100-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: 7042.8

M/P: 0.47

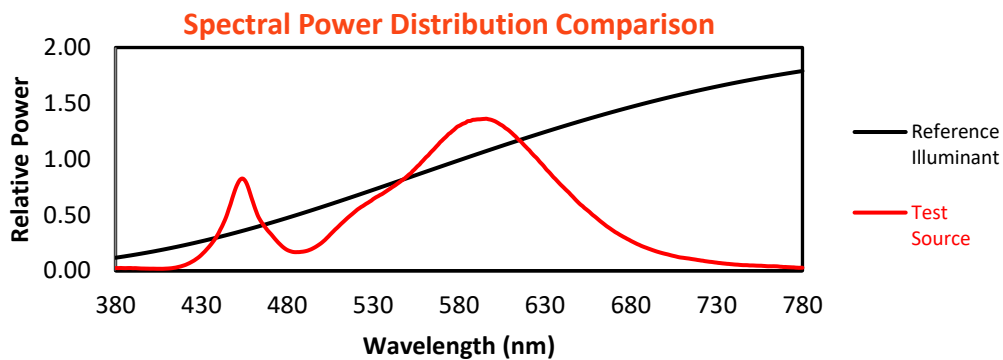
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6099	NR	490	40168	NR	620	253019	NR	750	11053	NR	880	4764	NR
365	5425	NR	495	46535	NR	625	234501	NR	755	10436	NR	885	4069	NR
370	5467	NR	500	57902	NR	630	214134	NR	760	9340	NR	890	5470	NR
375	5866	NR	505	75040	NR	635	194074	NR	765	9223	NR	895	5625	NR
380	5693	NR	510	92426	NR	640	175837	NR	770	7875	NR	900	5662	NR
385	5528	NR	515	109218	NR	645	158182	NR	775	6995	NR	905	4976	NR
390	5323	NR	520	124301	NR	650	139770	NR	780	6291	NR	910	3243	NR
395	4691	NR	525	136616	NR	655	124825	NR	785	5894	NR	915	4005	NR
400	4292	NR	530	148525	NR	660	109765	NR	790	5176	NR	920	4854	NR
405	4106	NR	535	158686	NR	665	95251	NR	795	5191	NR	925	3999	NR
410	4555	NR	540	170513	NR	670	82640	NR	800	4961	NR	930	4856	NR
415	6579	NR	545	182793	NR	675	71832	NR	805	5762	NR	935	5652	NR
420	11281	NR	550	196628	NR	680	62184	NR	810	5247	NR	940	7244	NR
425	19782	NR	555	213600	NR	685	53604	NR	815	5570	NR	945	6266	NR
430	32934	NR	560	232241	NR	690	46370	NR	820	5470	NR	950	6258	NR
435	52004	NR	565	250545	NR	695	40048	NR	825	5780	NR	955	6166	NR
440	77987	NR	570	269608	NR	700	35148	NR	830	4151	NR	960	4813	NR
445	117241	NR	575	286007	NR	705	30717	NR	835	5899	NR	965	6539	NR
450	171397	NR	580	300402	NR	710	27137	NR	840	5774	NR	970	2930	NR
455	188676	NR	585	310093	NR	715	24655	NR	845	4055	NR	975	3170	NR
460	142860	NR	590	313605	NR	720	21845	NR	850	4767	NR	980	3959	NR
465	100906	NR	595	314960	NR	725	19116	NR	855	4780	NR	985	6920	NR
470	78130	NR	600	311387	NR	730	16889	NR	860	5148	NR	990	2710	NR
475	57660	NR	605	301618	NR	735	14825	NR	865	6865	NR	995	5566	NR
480	43089	NR	610	288042	NR	740	13154	NR	870	5392	NR	1000	0	NR
485	38569	NR	615	270953	NR	745	11725	NR	875	6166	NR			

REPORT NUMBER: SP1-2307-100-1

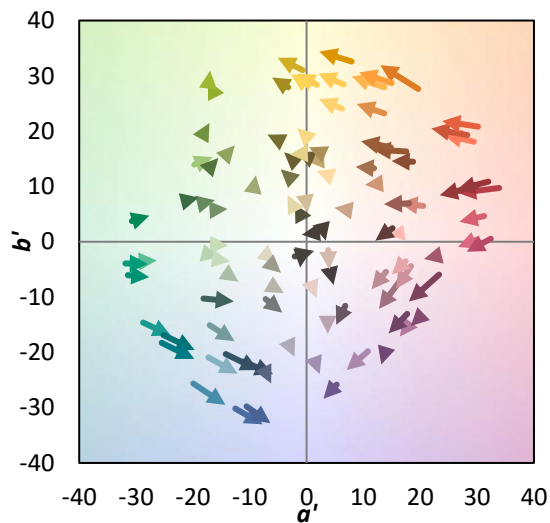
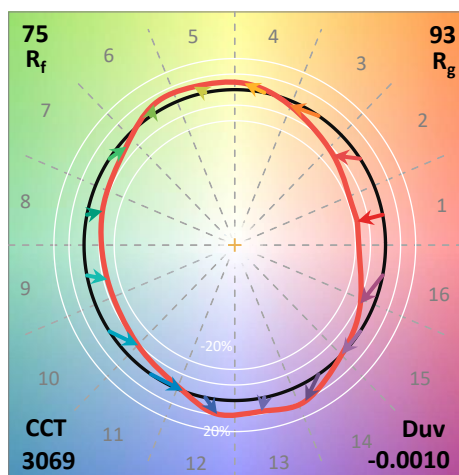
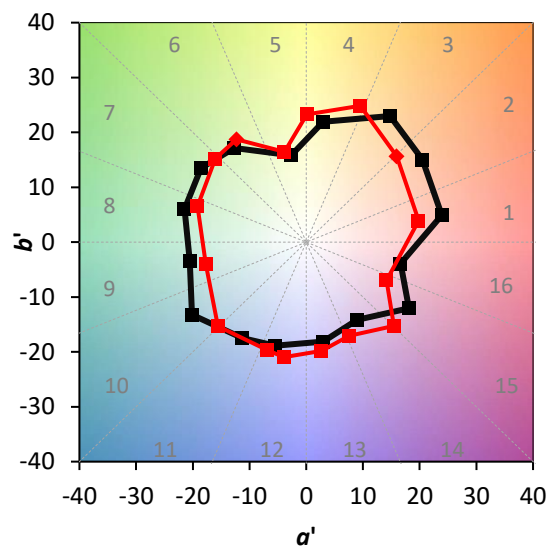
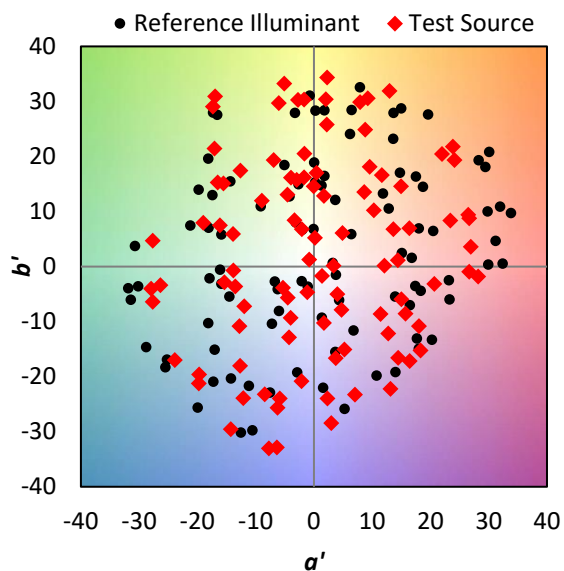
TM-30-18

Summary

$R_f = 74.9$
 $R_g = 92.7$
 $CIE R_a = 71.3$
 $R_g = -35.7$



Color Vector Graphics

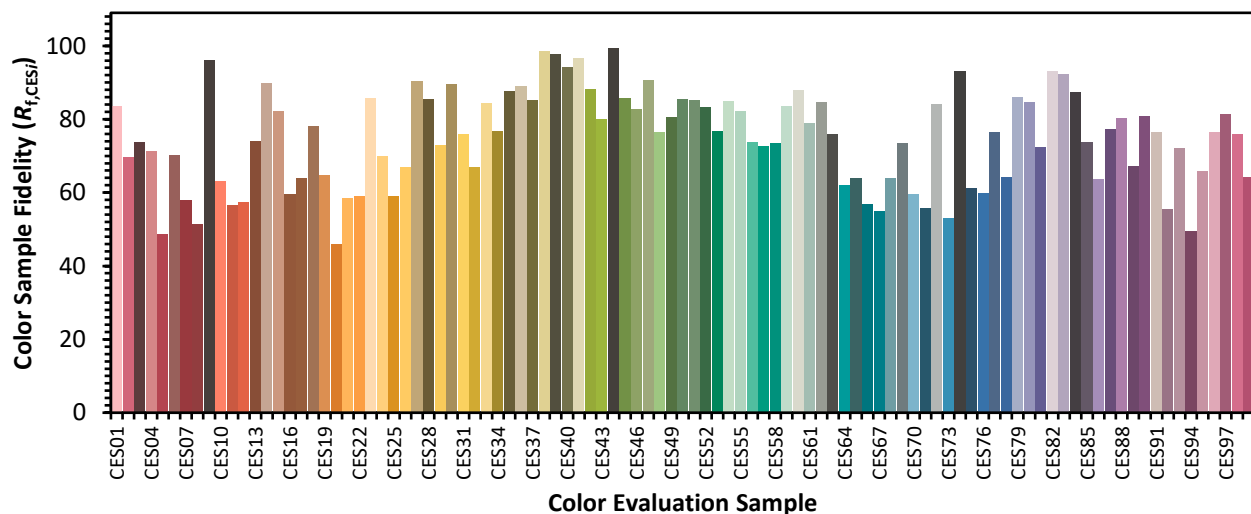


REPORT NUMBER: SP1-2307-100-1

TM-30-18

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

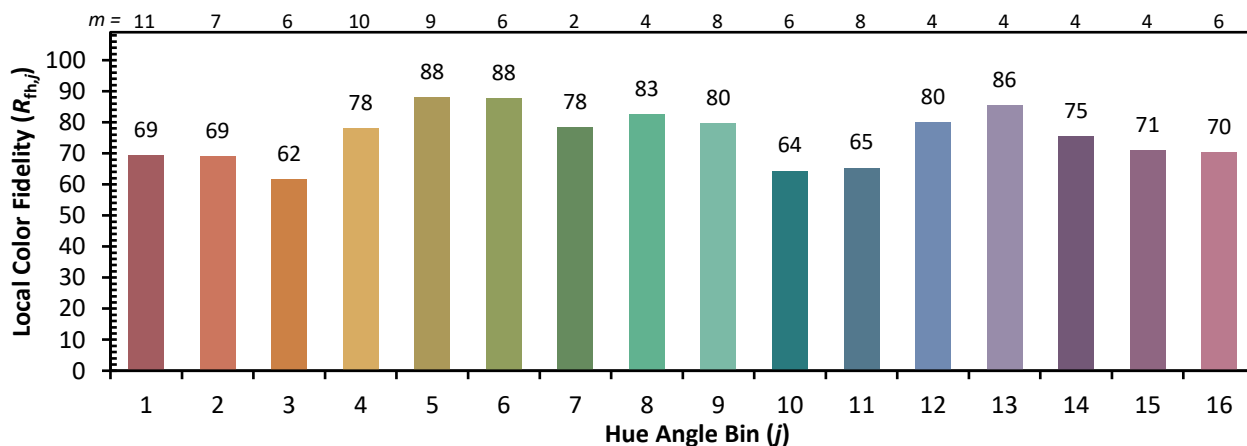
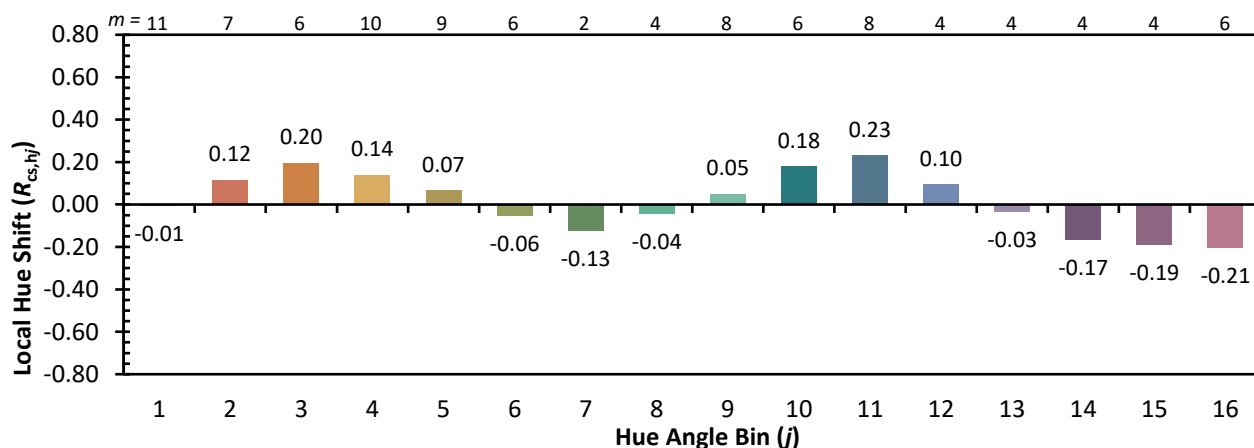
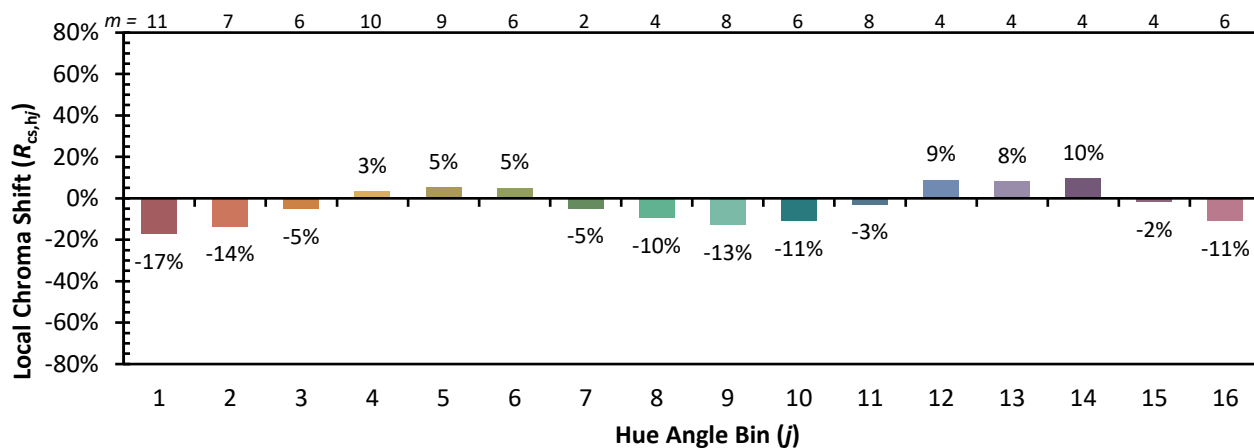
CES01 = 86	CES26 = 67	CES51 = 85	CES76 = 60
CES02 = 62	CES27 = 90	CES52 = 83	CES77 = 76
CES03 = 31	CES28 = 85	CES53 = 77	CES78 = 64
CES04 = 71	CES29 = 73	CES54 = 85	CES79 = 86
CES05 = 49	CES30 = 90	CES55 = 82	CES80 = 85
CES06 = 51	CES31 = 76	CES56 = 74	CES81 = 72
CES07 = 41	CES32 = 67	CES57 = 73	CES82 = 93
CES08 = 40	CES33 = 84	CES58 = 73	CES83 = 92
CES09 = 29	CES34 = 77	CES59 = 83	CES84 = 87
CES10 = 76	CES35 = 88	CES60 = 88	CES85 = 74
CES11 = 59	CES36 = 89	CES61 = 79	CES86 = 64
CES12 = 65	CES37 = 85	CES62 = 85	CES87 = 77
CES13 = 43	CES38 = 98	CES63 = 76	CES88 = 80
CES14 = 74	CES39 = 98	CES64 = 62	CES89 = 67
CES15 = 71	CES40 = 94	CES65 = 64	CES90 = 81
CES16 = 47	CES41 = 97	CES66 = 57	CES91 = 76
CES17 = 50	CES42 = 88	CES67 = 55	CES92 = 55
CES18 = 56	CES43 = 80	CES68 = 64	CES93 = 72
CES19 = 73	CES44 = 99	CES69 = 73	CES94 = 49
CES20 = 66	CES45 = 86	CES70 = 60	CES95 = 66
CES21 = 87	CES46 = 83	CES71 = 56	CES96 = 76
CES22 = 79	CES47 = 91	CES72 = 84	CES97 = 81
CES23 = 92	CES48 = 76	CES73 = 53	CES98 = 76
CES24 = 91	CES49 = 80	CES74 = 93	CES99 = 64
CES25 = 73	CES50 = 85	CES75 = 61	



REPORT NUMBER: SP1-2307-100-1

TM-30-18

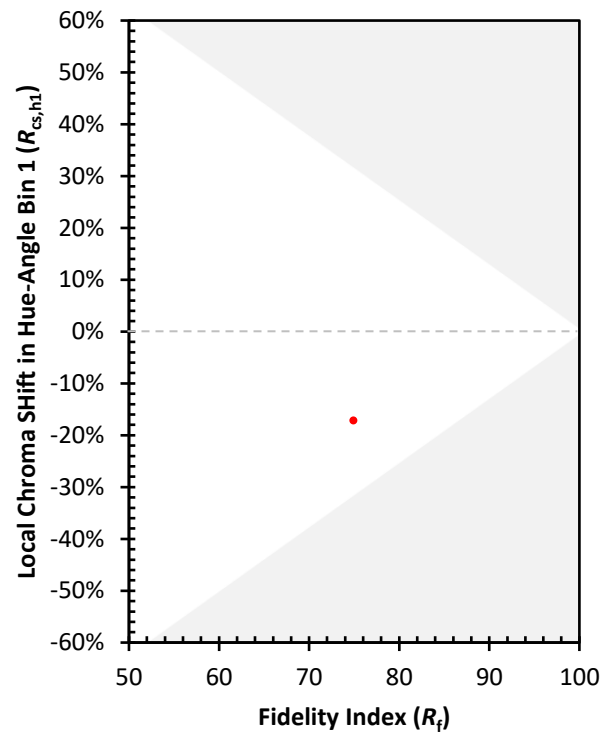
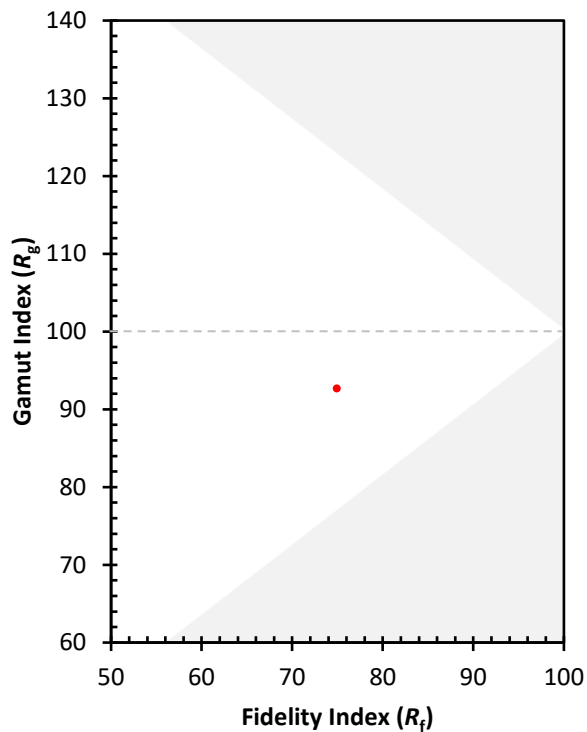
Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2307-100-1

TM-30-18

Measure Comparisons



(END OF REPORT)