

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: P774889

Luminaire Tested: **SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)**

Issue Date: 2/21/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P774889  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2309-187-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)  
Description: 24000 Lumen SPHB at 4000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

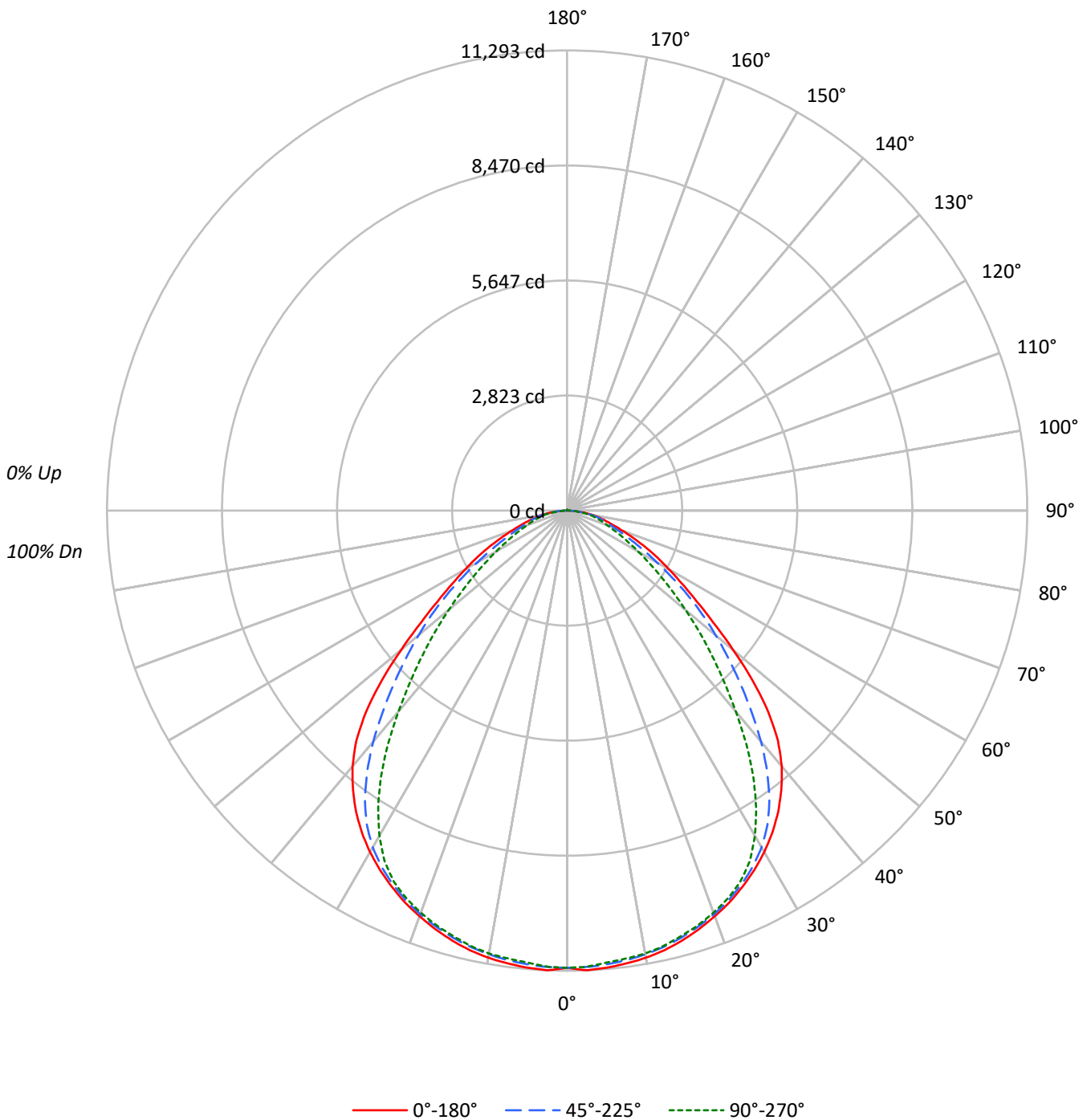
Lumens per Lamp: N/A  
Luminaire Lumens: 24912.0 lumens  
Efficiency: N/A  
Efficacy: 153.8 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.21 / 1.27  
Luminous Opening: Rectangular (W 1' x L: 2.04' x H: 0')  
CIE Type: Direct

Input Watts (W): 162  
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: P774889

CATALOG NUMBER: SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)

### Luminous Intensity Polar Plot





TEST NUMBER: P774889

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87				87
2	102	94	88	83	99	92	87	82	89	84	80	86	82	79	83	80	77	75				75
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	70	67	65				65
4	86	76	68	62	84	74	67	61	72	65	60	70	64	60	68	63	59	57				57
5	80	68	60	54	78	67	60	54	65	58	53	63	57	53	61	56	52	50				50
6	74	62	54	48	73	61	53	48	59	52	47	58	52	47	56	51	47	45				45
7	69	57	49	43	68	56	48	43	54	47	42	53	47	42	52	46	42	40				40
8	65	52	44	39	63	51	44	38	50	43	38	49	43	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	35	44	39	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	31	30				30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	59158	59158	59158
5°	59582	59170	58936
10°	59654	59206	59088
15°	59614	59200	58991
20°	59441	59150	58913
25°	59240	58888	58497
30°	58902	58096	56097
35°	58107	55696	51252
40°	56379	50952	44290
45°	52041	44803	37427
50°	43598	39077	31090
55°	35627	33084	25599
60°	30419	26835	21255
65°	26321	21829	18115
70°	22220	18963	16107
75°	19914	18408	15748
80°	19798	18456	15833
85°	17252	17077	13362



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CATALOG NUMBER: SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	1062.8	4.3
10°-20°	3060.0	12.3
20°-30°	4645.2	18.6
30°-40°	5312.2	21.3
40°-50°	4602.7	18.5
50°-60°	3123.6	12.5
60°-70°	1796.6	7.2
70°-80°	957.1	3.8
80°-90°	310.1	1.2
90°-100°	8.8	0.0
100°-110°	2.8	0.0
110°-120°	2.9	0.0
120°-130°	4.0	0.0
130°-140°	5.5	0.0
140°-150°	6.3	0.0
150°-160°	5.7	0.0
160°-170°	4.1	0.0
170°-180°	1.5	0.0
0°-30°	8768.0	35.2
0°-40°	14080.2	56.5
0°-60°	21806.5	87.5
0°-90°	24870.4	99.8
90°-120°	14.5	0.1
90°-150°	30.2	0.1
90°-180°	42.0	0.2
0°-180°	24912.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	11221	11221	11221	11221	11221	
5°	11258	11156	11180	11156	11136	###
15°	10922	10822	10846	10818	10808	3082
25°	10184	10096	10123	10085	10056	4694
35°	9028	8890	8654	8152	7963	5632
45°	6980	6601	6009	5277	5020	5306
55°	3876	3897	3599	3026	2785	3532
65°	2110	1977	1750	1614	1452	2103
75°	978	962	904	828	773	1063
85°	285	293	282	233	221	307
90°	3	20	42	52	53	15
95°	2	3	4	4	4	1
105°	2	2	3	3	4	2
115°	2	3	3	3	4	2
125°	4	4	5	5	5	4
135°	7	7	7	8	8	5
145°	10	10	10	11	11	6
155°	12	12	12	12	12	5
165°	14	14	14	15	15	4
175°	15	15	16	16	17	1
180°	16	16	16	16	16	



TEST NUMBER: P774889

CATALOG NUMBER: SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	11220.9	11220.9	11220.9	11220.9	11220.9
2.5°	11292.9	11193.0	11211.3	11197.8	11205.5
5°	11258.3	11155.6	11180.5	11155.6	11136.3
7.5°	11208.4	11104.7	11128.7	11100.8	11087.4
10°	11143.1	11037.4	11059.5	11041.3	11037.4
12.5°	11049.0	10945.2	10967.3	10945.2	10943.3
15°	10922.2	10822.3	10846.3	10818.5	10807.9
17.5°	10767.6	10673.5	10703.2	10682.1	10670.6
20°	10594.7	10507.3	10542.8	10511.2	10500.6
22.5°	10409.4	10316.2	10350.8	10320.0	10301.8
25°	10183.7	10096.3	10123.2	10084.8	10055.9
27.5°	9943.6	9842.7	9859.1	9766.9	9704.4
30°	9675.6	9564.2	9543.1	9338.6	9214.7
32.5°	9375.0	9247.3	9150.3	8788.3	8630.8
35°	9028.4	8890.1	8653.8	8152.5	7963.3
37.5°	8636.5	8458.9	8059.4	7486.0	7221.9
40°	8191.9	7940.3	7403.4	6745.6	6435.4
42.5°	7657.9	7296.8	6695.6	5996.5	5698.8
45°	6979.9	6600.6	6009.0	5277.2	5019.8
47.5°	6170.3	5882.2	5365.5	4620.3	4382.1
50°	5315.6	5216.7	4764.4	4041.2	3790.5
52.5°	4525.2	4550.2	4180.5	3495.7	3260.4
55°	3876.0	3897.1	3599.4	3026.1	2785.0
57.5°	3336.3	3285.4	3048.2	2594.9	2375.9
60°	2884.9	2768.7	2545.0	2219.4	2015.8
62.5°	2489.3	2339.4	2118.6	1891.9	1702.7
65°	2109.9	1977.4	1749.8	1614.4	1452.1
67.5°	1750.7	1668.1	1471.3	1375.2	1228.3
70°	1441.5	1403.1	1230.2	1164.9	1044.9
72.5°	1189.9	1165.9	1057.4	988.2	905.6
75°	977.6	962.3	903.7	827.8	773.1
77.5°	815.3	793.3	756.8	691.5	646.3
80°	652.1	636.7	607.9	554.1	521.5
82.5°	465.8	465.8	453.3	406.2	376.5
85°	285.2	292.9	282.3	233.4	220.9
87.5°	103.7	115.2	129.6	127.7	125.8
90°	2.9	20.2	42.3	51.9	52.8
92.5°	1.0	3.8	6.7	10.6	9.6
95°	1.9	2.9	3.8	3.8	3.8
97.5°	1.9	1.9	3.8	3.8	3.8
100°	1.9	1.9	2.9	3.8	3.8
102.5°	1.0	1.9	2.9	3.8	3.8
105°	1.9	1.9	2.9	2.9	3.8
107.5°	1.9	1.9	2.9	2.9	2.9
110°	1.9	1.9	2.9	2.9	3.8



TEST NUMBER: P774889

CATALOG NUMBER: SPHB-2436SE-M-L84050-CD-U (24K LUMEN, 4000K)

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	1.9	2.9	2.9	2.9
115°	1.9	2.9	2.9	2.9	3.8
117.5°	2.9	2.9	2.9	3.8	3.8
120°	2.9	2.9	3.8	3.8	3.8
122.5°	3.8	3.8	3.8	3.8	3.8
125°	3.8	3.8	4.8	4.8	4.8
127.5°	4.8	4.8	4.8	4.8	5.8
130°	4.8	5.8	5.8	5.8	5.8
132.5°	5.8	6.7	6.7	6.7	6.7
135°	6.7	6.7	6.7	7.7	7.7
137.5°	7.7	7.7	7.7	7.7	7.7
140°	8.6	8.6	8.6	8.6	8.6
142.5°	8.6	9.6	9.6	9.6	9.6
145°	9.6	9.6	9.6	10.6	10.6
147.5°	10.6	10.6	10.6	10.6	10.6
150°	10.6	11.5	11.5	11.5	11.5
152.5°	11.5	11.5	11.5	12.5	12.5
155°	11.5	11.5	12.5	12.5	12.5
157.5°	12.5	12.5	13.4	13.4	13.4
160°	12.5	13.4	13.4	14.4	14.4
162.5°	13.4	13.4	14.4	14.4	14.4
165°	14.4	14.4	14.4	15.4	15.4
167.5°	14.4	14.4	15.4	15.4	16.3
170°	15.4	15.4	15.4	16.3	16.3
172.5°	15.4	15.4	15.4	16.3	16.3
175°	15.4	15.4	16.3	16.3	17.3
177.5°	15.4	15.4	16.3	17.3	17.3
180°	16.3	16.3	16.3	16.3	16.3

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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2309-187-7

Test Date: 10/09/2023

Luminaire Tested: SPHB-1224SE-M-UNV-L84050-CD-U (24K LUMEN 4000K)

Data in this report applies to families of products including SPHB-1224SE-M-UNV-L84050-CD-U (24K LUMEN 4000K).

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2309-187-7  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/09/2023  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: METALUX  
 Catalog Number: **SPHB-1224SE-M-UNV-L84050-CD-U (24K LUMEN 4000K)**  
 Description: SPHB SELECT, MEDIUM LENS, 24K LUMENS, 4000K

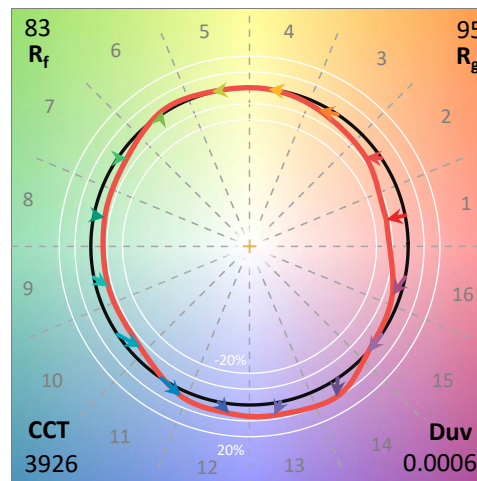
**Spectral Parameters**

CCT (K): 3926  
 CIE u': 0.2261  
 CIE v': 0.5037  
 Duv: 0.0006  
 CIE x: 0.3841  
 CIE y: 0.3802  
 CIE z: 0.2357  
 Peak Wavelength (nm): 454  
 Dominant Wavelength (nm): 579  
 Purity: 29.5

CRI (Ra): 82.0  
 R1: 80.3  
 R2: 88.4  
 R3: 93.9  
 R4: 80.2  
 R5: 79.7  
 R6: 83.3  
 R7: 86.1  
 R8: 64.3

R9: 8.2  
 R10: 71.6  
 R11: 78.1  
 R12: 57.5  
 R13: 82.3  
 R14: 96.6

Rf: 82.9  
 Rg: 95



**Test Conditions**

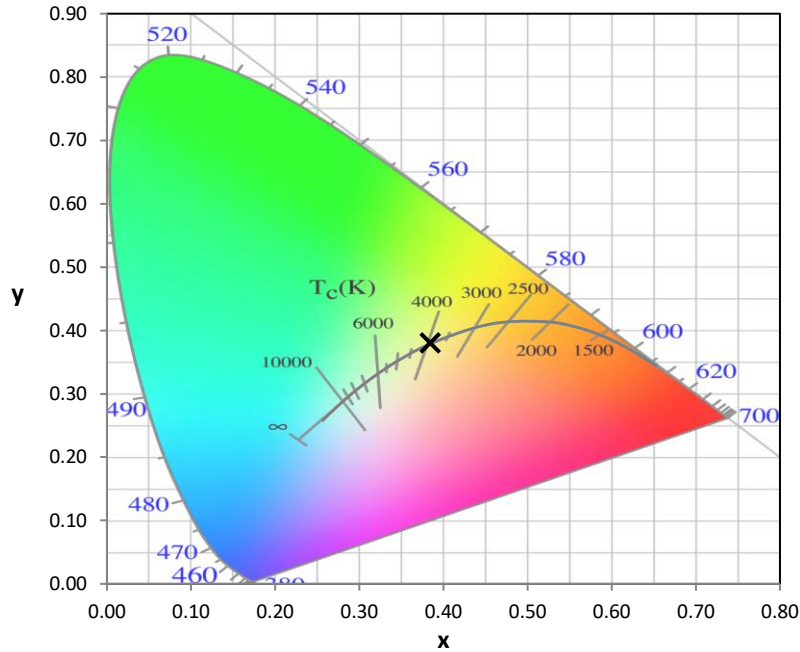
Stabilization Time: 23M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.5/33%  
 Sphere Temperature (°C): 24.2

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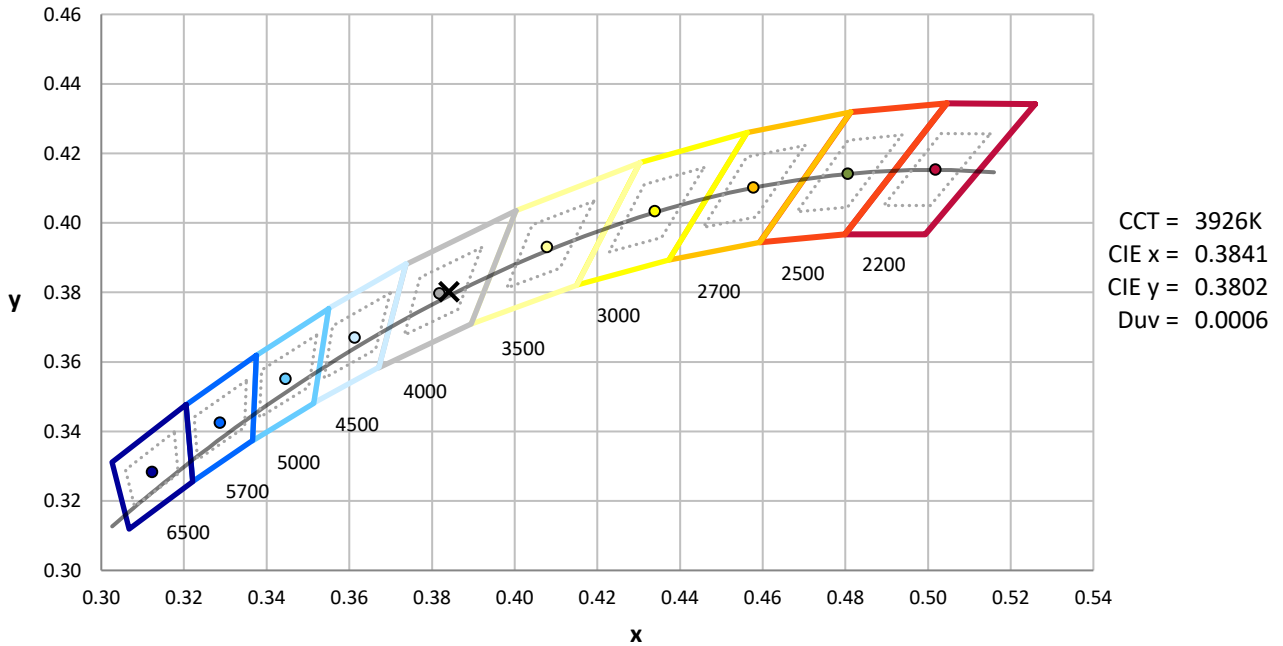
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/9/2023	2/9/2024
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	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

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**CIE 1931 Chromaticity Diagram**



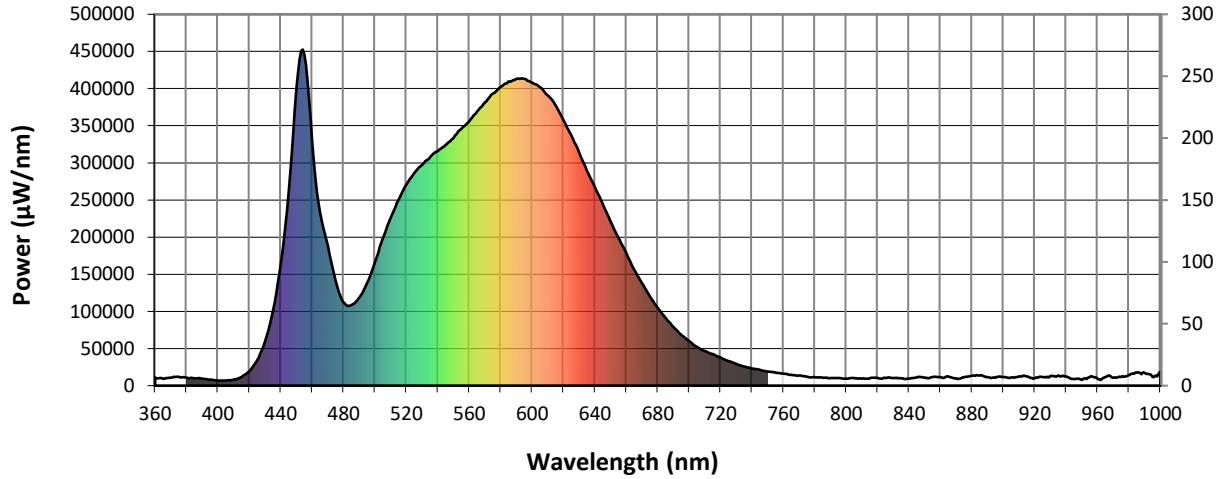
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 4000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

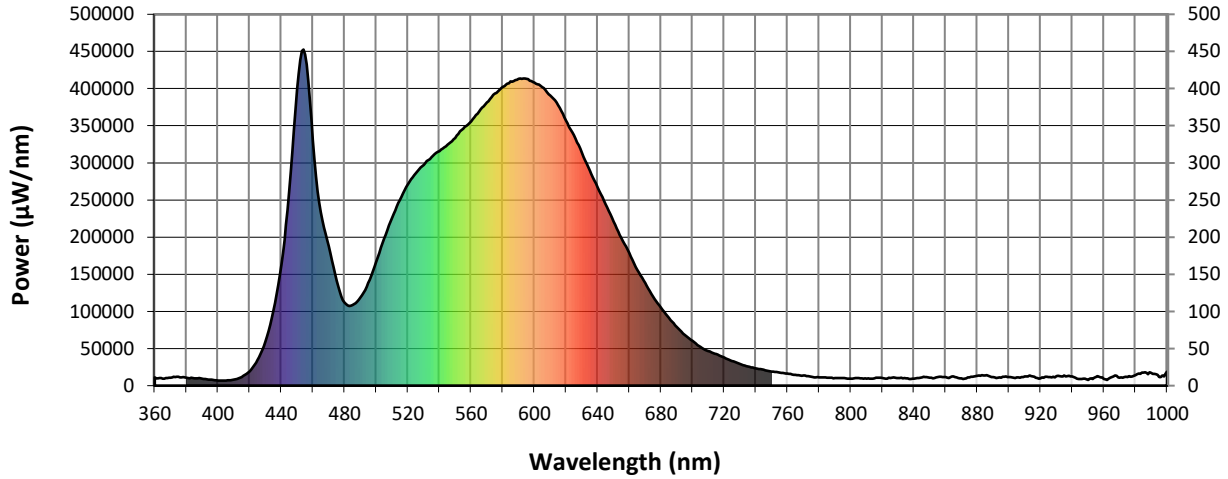


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λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)
360	10992	NR	490	118921	NR	620	356922	NR	750	19019	NR	880	13091	NR
365	9593	NR	495	138088	NR	625	337439	NR	755	17413	NR	885	13768	NR
370	10476	NR	500	166483	NR	630	313667	NR	760	16262	NR	890	11509	NR
375	11916	NR	505	198126	NR	635	289634	NR	765	14555	NR	895	10746	NR
380	10857	NR	510	225943	NR	640	267120	NR	770	13516	NR	900	11526	NR
385	9836	NR	515	249652	NR	645	244025	NR	775	12156	NR	905	11085	NR
390	9329	NR	520	270963	NR	650	221090	NR	780	11138	NR	910	12484	NR
395	8104	NR	525	285863	NR	655	198958	NR	785	10805	NR	915	12235	NR
400	6858	NR	530	297396	NR	660	178676	NR	790	10121	NR	920	9666	NR
405	6914	NR	535	307535	NR	665	155862	NR	795	10392	NR	925	11659	NR
410	8077	NR	540	315948	NR	670	138150	NR	800	9549	NR	930	12967	NR
415	11717	NR	545	324499	NR	675	120142	NR	805	10057	NR	935	13555	NR
420	19513	NR	550	333620	NR	680	105107	NR	810	9285	NR	940	12553	NR
425	34423	NR	555	345725	NR	685	91191	NR	815	9751	NR	945	9165	NR
430	59393	NR	560	355808	NR	690	79275	NR	820	10216	NR	950	7624	NR
435	101278	NR	565	369262	NR	695	68358	NR	825	10410	NR	955	11686	NR
440	162827	NR	570	381413	NR	700	60050	NR	830	10058	NR	960	9106	NR
445	260438	NR	575	393089	NR	705	51990	NR	835	9982	NR	965	11345	NR
450	399252	NR	580	402225	NR	710	46653	NR	840	9215	NR	970	10672	NR
455	445742	NR	585	409494	NR	715	42391	NR	845	11311	NR	975	11689	NR
460	330661	NR	590	413322	NR	720	37628	NR	850	10813	NR	980	14054	NR
465	233593	NR	595	413160	NR	725	33220	NR	855	11652	NR	985	17684	NR
470	187643	NR	600	408148	NR	730	29243	NR	860	11468	NR	990	17244	NR
475	140648	NR	605	401766	NR	735	25806	NR	865	12591	NR	995	11439	NR
480	111871	NR	610	390821	NR	740	23374	NR	870	9925	NR	1000	19016	NR
485	108472	NR	615	377363	NR	745	21294	NR	875	11284	NR			

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Scotopic Flux vs. Wavelength

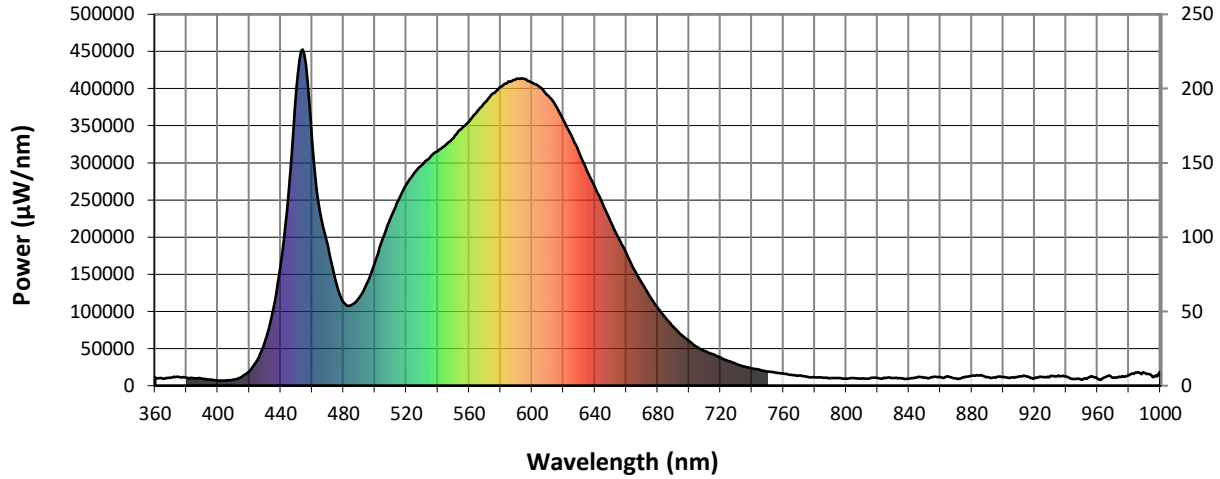


Scotopic Lumens: 39237.7 S/P: 1.65

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	10992	NR	490	118921	NR	620	356922	NR	750	19019	NR	880	13091	NR
365	9593	NR	495	138088	NR	625	337439	NR	755	17413	NR	885	13768	NR
370	10476	NR	500	166483	NR	630	313667	NR	760	16262	NR	890	11509	NR
375	11916	NR	505	198126	NR	635	289634	NR	765	14555	NR	895	10746	NR
380	10857	NR	510	225943	NR	640	267120	NR	770	13516	NR	900	11526	NR
385	9836	NR	515	249652	NR	645	244025	NR	775	12156	NR	905	11085	NR
390	9329	NR	520	270963	NR	650	221090	NR	780	11138	NR	910	12484	NR
395	8104	NR	525	285863	NR	655	198958	NR	785	10805	NR	915	12235	NR
400	6858	NR	530	297396	NR	660	178676	NR	790	10121	NR	920	9666	NR
405	6914	NR	535	307535	NR	665	155862	NR	795	10392	NR	925	11659	NR
410	8077	NR	540	315948	NR	670	138150	NR	800	9549	NR	930	12967	NR
415	11717	NR	545	324499	NR	675	120142	NR	805	10057	NR	935	13555	NR
420	19513	NR	550	333620	NR	680	105107	NR	810	9285	NR	940	12553	NR
425	34423	NR	555	345725	NR	685	91191	NR	815	9751	NR	945	9165	NR
430	59393	NR	560	355808	NR	690	79275	NR	820	10216	NR	950	7624	NR
435	101278	NR	565	369262	NR	695	68358	NR	825	10410	NR	955	11686	NR
440	162827	NR	570	381413	NR	700	60050	NR	830	10058	NR	960	9106	NR
445	260438	NR	575	393089	NR	705	51990	NR	835	9982	NR	965	11345	NR
450	399252	NR	580	402225	NR	710	46653	NR	840	9215	NR	970	10672	NR
455	445742	NR	585	409494	NR	715	42391	NR	845	11311	NR	975	11689	NR
460	330661	NR	590	413322	NR	720	37628	NR	850	10813	NR	980	14054	NR
465	233593	NR	595	413160	NR	725	33220	NR	855	11652	NR	985	17684	NR
470	187643	NR	600	408148	NR	730	29243	NR	860	11468	NR	990	17244	NR
475	140648	NR	605	401766	NR	735	25806	NR	865	12591	NR	995	11439	NR
480	111871	NR	610	390821	NR	740	23374	NR	870	9925	NR	1000	19016	NR
485	108472	NR	615	377363	NR	745	21294	NR	875	11284	NR			

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 15753**

**M/P: 0.66**

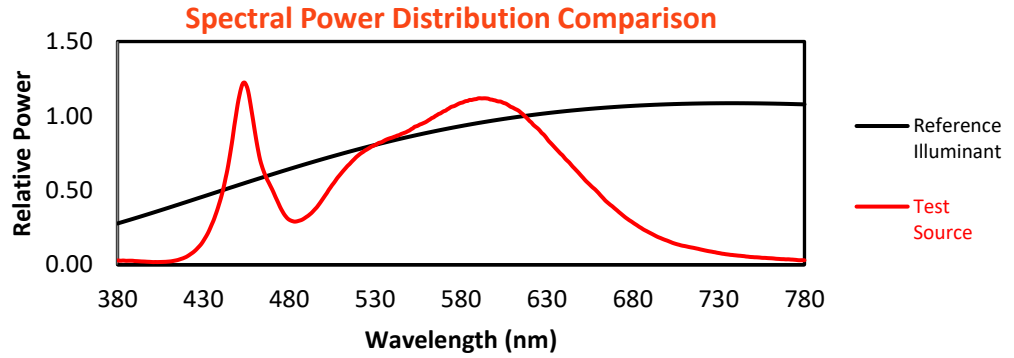
λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)
360	10992	NR	490	118921	NR	620	356922	NR	750	19019	NR	880	13091	NR
365	9593	NR	495	138088	NR	625	337439	NR	755	17413	NR	885	13768	NR
370	10476	NR	500	166483	NR	630	313667	NR	760	16262	NR	890	11509	NR
375	11916	NR	505	198126	NR	635	289634	NR	765	14555	NR	895	10746	NR
380	10857	NR	510	225943	NR	640	267120	NR	770	13516	NR	900	11526	NR
385	9836	NR	515	249652	NR	645	244025	NR	775	12156	NR	905	11085	NR
390	9329	NR	520	270963	NR	650	221090	NR	780	11138	NR	910	12484	NR
395	8104	NR	525	285863	NR	655	198958	NR	785	10805	NR	915	12235	NR
400	6858	NR	530	297396	NR	660	178676	NR	790	10121	NR	920	9666	NR
405	6914	NR	535	307535	NR	665	155862	NR	795	10392	NR	925	11659	NR
410	8077	NR	540	315948	NR	670	138150	NR	800	9549	NR	930	12967	NR
415	11717	NR	545	324499	NR	675	120142	NR	805	10057	NR	935	13555	NR
420	19513	NR	550	333620	NR	680	105107	NR	810	9285	NR	940	12553	NR
425	34423	NR	555	345725	NR	685	91191	NR	815	9751	NR	945	9165	NR
430	59393	NR	560	355808	NR	690	79275	NR	820	10216	NR	950	7624	NR
435	101278	NR	565	369262	NR	695	68358	NR	825	10410	NR	955	11686	NR
440	162827	NR	570	381413	NR	700	60050	NR	830	10058	NR	960	9106	NR
445	260438	NR	575	393089	NR	705	51990	NR	835	9982	NR	965	11345	NR
450	399252	NR	580	402225	NR	710	46653	NR	840	9215	NR	970	10672	NR
455	445742	NR	585	409494	NR	715	42391	NR	845	11311	NR	975	11689	NR
460	330661	NR	590	413322	NR	720	37628	NR	850	10813	NR	980	14054	NR
465	233593	NR	595	413160	NR	725	33220	NR	855	11652	NR	985	17684	NR
470	187643	NR	600	408148	NR	730	29243	NR	860	11468	NR	990	17244	NR
475	140648	NR	605	401766	NR	735	25806	NR	865	12591	NR	995	11439	NR
480	111871	NR	610	390821	NR	740	23374	NR	870	9925	NR	1000	19016	NR
485	108472	NR	615	377363	NR	745	21294	NR	875	11284	NR			

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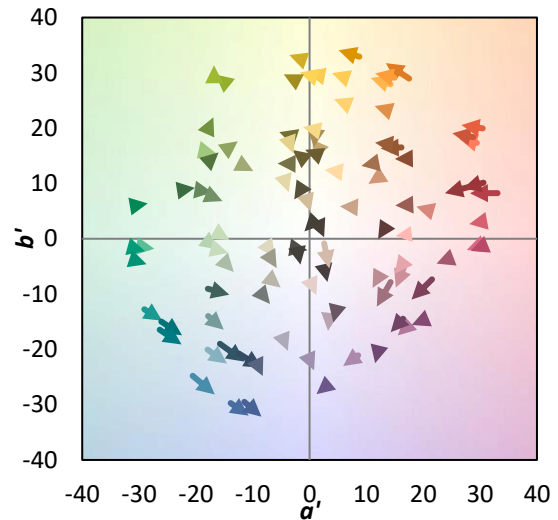
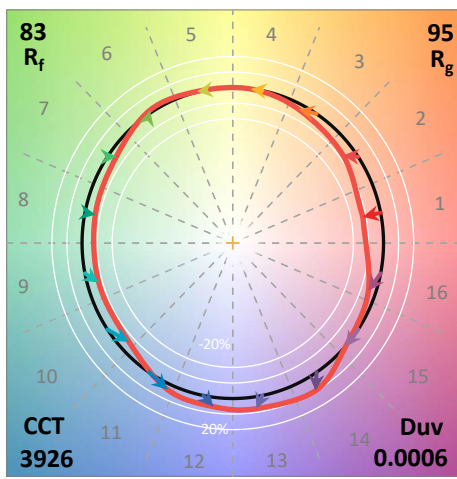
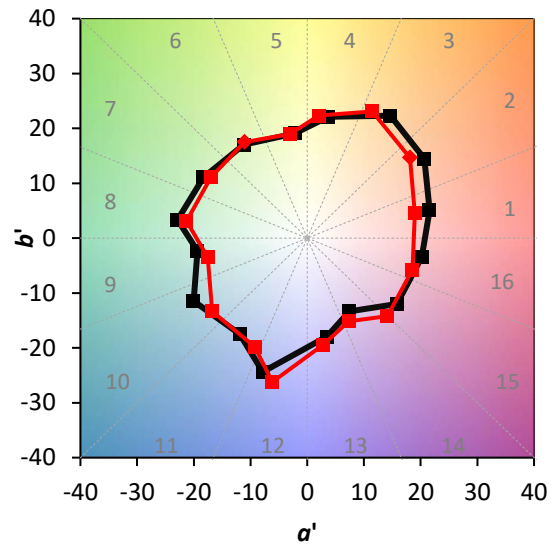
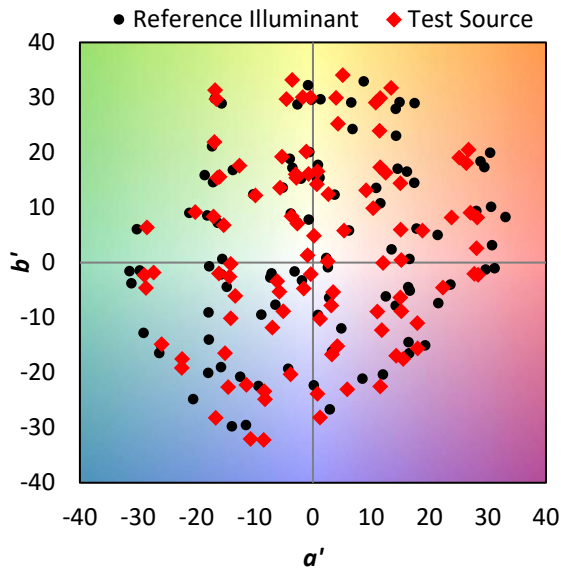
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**Summary**

$R_f = 82.9$   
 $R_g = 95$   
 CIE  $R_a = 82.0$   
 $R_9 = 8.2$



**Color Vector Graphics**

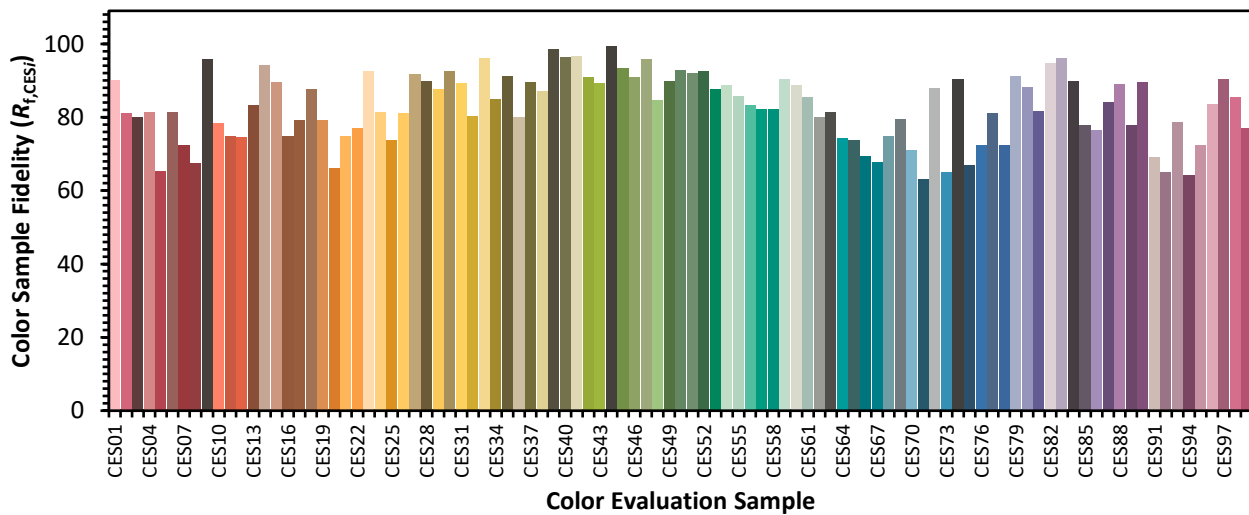


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 86	CES26 = 81	CES51 = 92	CES76 = 73
CES02 = 61	CES27 = 92	CES52 = 92	CES77 = 81
CES03 = 31	CES28 = 90	CES53 = 88	CES78 = 72
CES04 = 70	CES29 = 88	CES54 = 89	CES79 = 91
CES05 = 48	CES30 = 92	CES55 = 86	CES80 = 88
CES06 = 50	CES31 = 89	CES56 = 83	CES81 = 82
CES07 = 41	CES32 = 80	CES57 = 82	CES82 = 95
CES08 = 40	CES33 = 96	CES58 = 82	CES83 = 96
CES09 = 29	CES34 = 85	CES59 = 90	CES84 = 90
CES10 = 74	CES35 = 91	CES60 = 89	CES85 = 78
CES11 = 57	CES36 = 80	CES61 = 85	CES86 = 76
CES12 = 63	CES37 = 90	CES62 = 80	CES87 = 84
CES13 = 42	CES38 = 87	CES63 = 81	CES88 = 89
CES14 = 74	CES39 = 98	CES64 = 74	CES89 = 78
CES15 = 71	CES40 = 96	CES65 = 74	CES90 = 90
CES16 = 47	CES41 = 97	CES66 = 69	CES91 = 69
CES17 = 49	CES42 = 91	CES67 = 68	CES92 = 65
CES18 = 56	CES43 = 89	CES68 = 75	CES93 = 79
CES19 = 71	CES44 = 99	CES69 = 80	CES94 = 64
CES20 = 65	CES45 = 93	CES70 = 71	CES95 = 72
CES21 = 86	CES46 = 91	CES71 = 63	CES96 = 84
CES22 = 78	CES47 = 96	CES72 = 88	CES97 = 90
CES23 = 91	CES48 = 85	CES73 = 65	CES98 = 85
CES24 = 90	CES49 = 90	CES74 = 90	CES99 = 77
CES25 = 71	CES50 = 93	CES75 = 67	

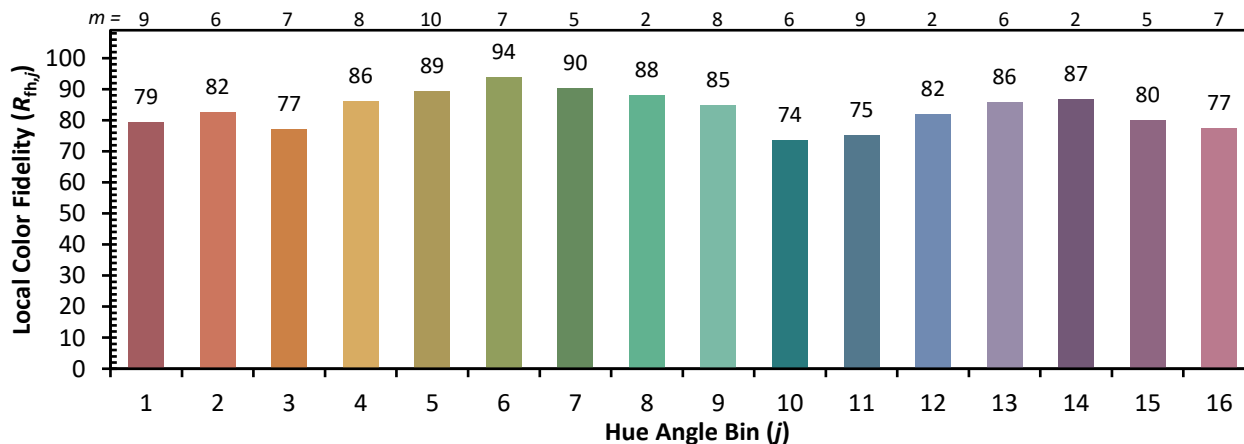
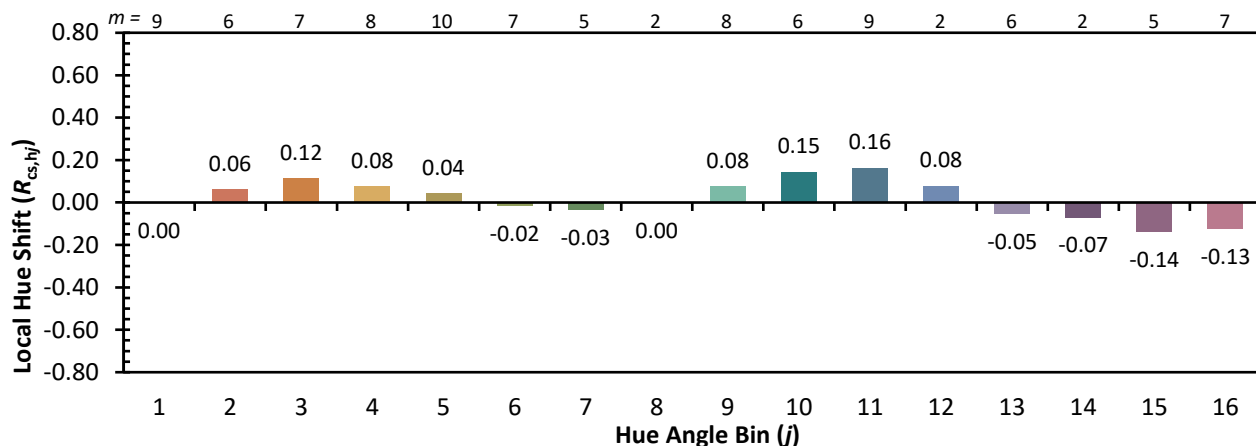
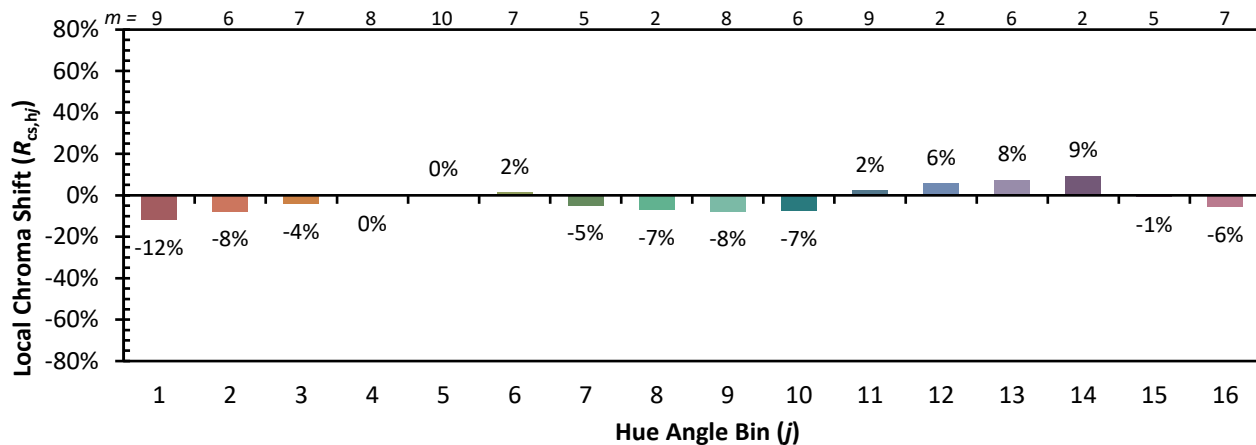




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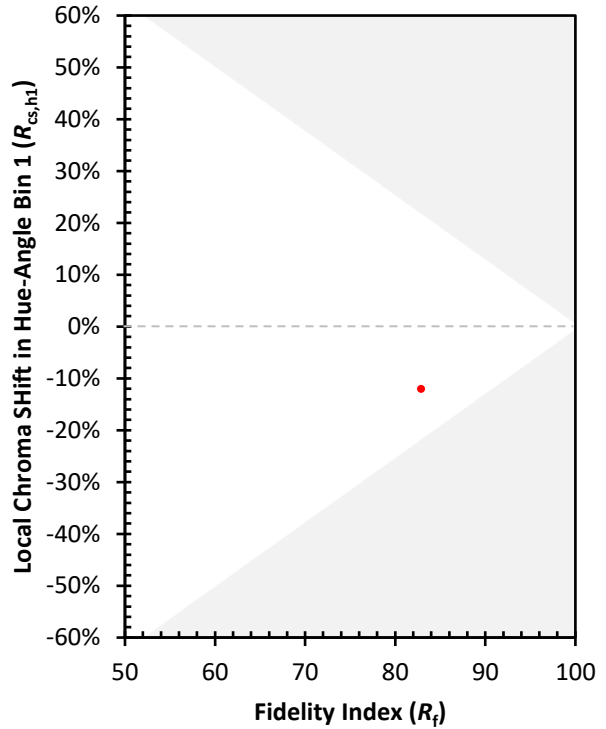
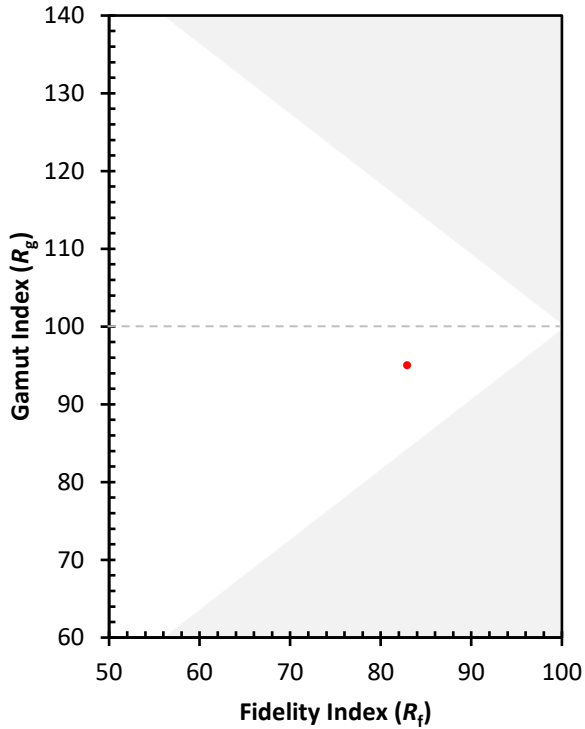
**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)