

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: P830829

Luminaire Tested: **OHBL-90SE-MCL-UNV-L840-CD**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P830829
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-90SE-MCL-UNV-L840-CD
Description: 90000 LUMEN OHBL SE LED LUMINAIRE WITH 80CRI, 4000K LEDS AND MEDIUM CLEAR LENS
Light Source: -
Ballast/Driver: -

Summary

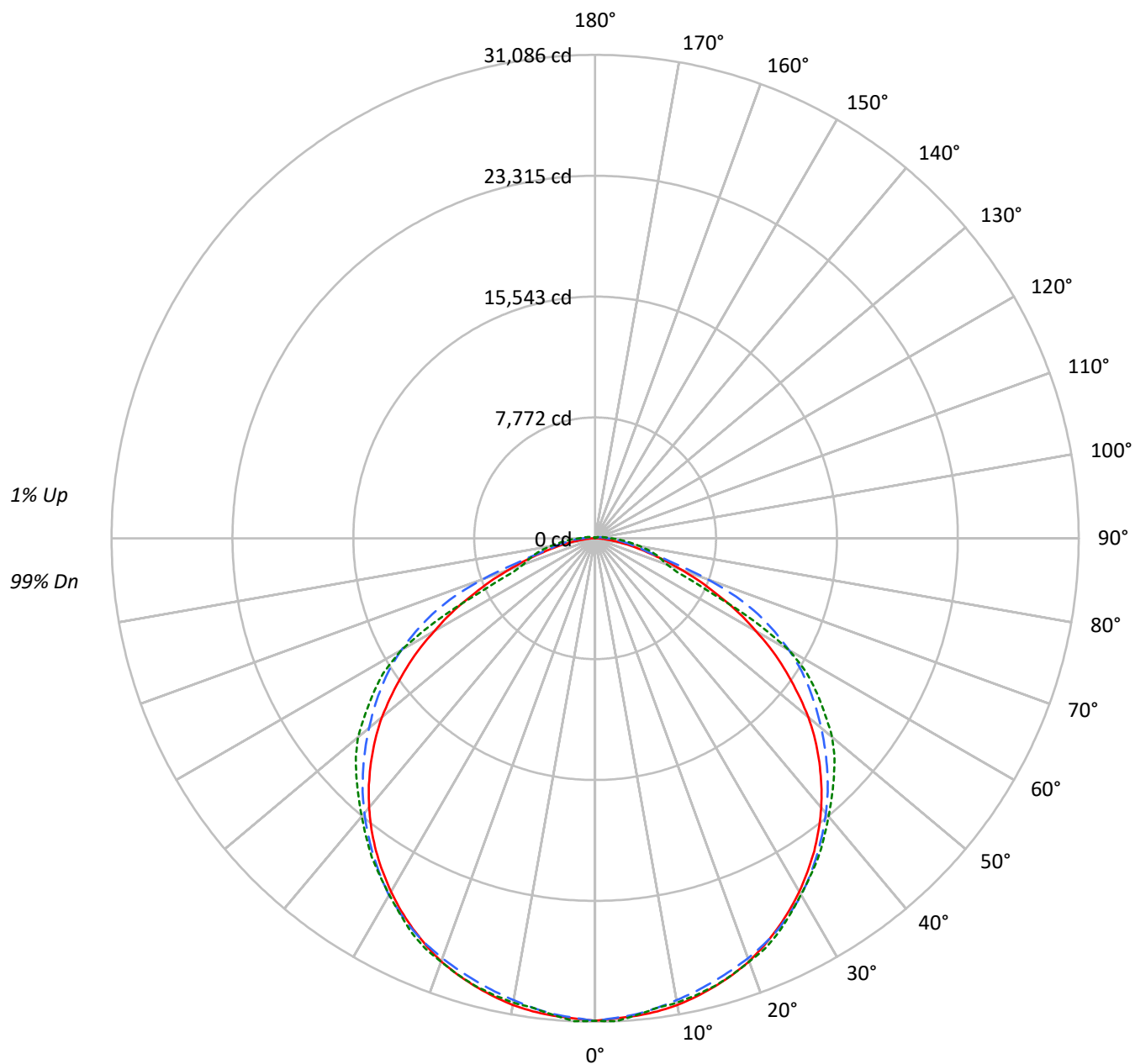
Lumens per Lamp: N/A
Luminaire Lumens: 87687.0 lumens
Efficiency: N/A
Efficacy: 165.8 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 1.8' x L: 3.78' x H: 0.17')
CIE Type: Direct

Input Watts (W): 529
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: P830829

CATALOG NUMBER: OHBL-90SE-MCL-UNV-L840-CD

Luminous Intensity Polar Plot





TEST NUMBER: P830829

CATALOG NUMBER: OHBL-90SE-MCL-UNV-L840-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	106	106	106	101	101	101
1	109	104	100	96	106	102	98	95	97	94	91	93	91	88	90	87	86
2	99	91	84	79	96	89	83	78	85	80	76	82	78	74	79	75	72
3	91	80	72	66	88	79	71	65	75	69	64	72	67	63	70	65	61
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	62	57	53
5	76	64	55	48	74	62	54	48	60	53	47	58	52	46	56	50	46
6	70	57	48	42	68	56	48	42	54	47	41	52	46	41	51	45	40
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36
8	61	47	39	33	59	46	38	33	45	38	33	44	37	32	42	36	32
9	57	43	35	30	55	43	35	29	41	34	29	40	34	29	39	33	29
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	36	30	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	49063	49063	49063
5°	48742	48350	48452
10°	48564	47618	47914
15°	48256	47070	47593
20°	47947	46726	47172
25°	47369	46378	46754
30°	46740	45830	45870
35°	45987	44961	45382
40°	45009	44064	44718
45°	43654	43025	44424
50°	41817	41843	44072
55°	38898	40679	42427
60°	35077	38976	39224
65°	30090	35817	24859
70°	24236	27961	18023
75°	18171	16598	18292
80°	12648	13801	17464
85°	7198	12646	16370



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CATALOG NUMBER: OHBL-90SE-MCL-UNV-L840-CD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2925.3	3.3
10°-20°	8388.2	9.6
20°-30°	12811.5	14.6
30°-40°	15544.7	17.7
40°-50°	16292.4	18.6
50°-60°	14763.3	16.8
60°-70°	9898.2	11.3
70°-80°	4444.7	5.1
80°-90°	1612.9	1.8
90°-100°	485.5	0.6
100°-110°	229.1	0.3
110°-120°	114.8	0.1
120°-130°	63.3	0.1
130°-140°	43.6	0.0
140°-150°	29.3	0.0
150°-160°	21.8	0.0
160°-170°	14.0	0.0
170°-180°	4.4	0.0
0°-30°	24125.0	27.5
0°-40°	39669.7	45.2
0°-60°	70725.4	80.7
0°-90°	86681.3	98.9
90°-120°	829.4	0.9
90°-150°	965.6	1.1
90°-180°	1006.0	1.1
0°-180°	87687.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	31024	31024	31024	31024	31024	
5°	30822	30930	30714	30808	30768	###
15°	29822	29705	29494	29754	29790	8420
25°	27704	27583	27776	28032	27951	12770
35°	24555	24614	24865	25129	25031	15348
45°	20379	20711	21097	21635	21702	15699
55°	14996	15718	16790	17463	17423	13386
65°	8801	10178	11555	9752	7962	8769
75°	3463	5024	3696	3782	4028	3785
85°	597	1144	1467	1772	1857	728
90°	4	381	758	951	996	36
95°	4	238	520	632	650	6
105°	18	103	256	310	323	21
115°	36	54	130	166	175	33
125°	31	36	81	94	99	31
135°	40	45	49	72	76	32
145°	40	45	45	49	54	27
155°	45	49	49	49	45	21
165°	49	49	49	49	49	14
175°	49	49	45	40	40	5
180°	45	45	45	45	45	



TEST NUMBER: P830829

CATALOG NUMBER: OHBL-90SE-MCL-UNV-L840-CD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	31023.7	31023.7	31023.7	31023.7	31023.7
2.5°	30898.1	31028.2	30866.7	31041.7	31086.5
5°	30821.9	30929.5	30714.2	30808.4	30768.0
7.5°	30682.8	30718.7	30463.0	30539.3	30458.5
10°	30476.5	30458.5	30158.0	30306.0	30324.0
12.5°	30171.4	30117.6	29848.5	30072.7	30077.2
15°	29821.5	29704.9	29494.1	29754.3	29790.1
17.5°	29417.8	29265.3	29126.2	29462.7	29408.8
20°	28946.8	28767.4	28740.5	29108.3	28973.7
22.5°	28363.7	28224.6	28287.4	28637.3	28552.1
25°	27704.2	27583.1	27776.0	28031.7	27951.0
27.5°	27009.0	26937.2	27157.0	27354.4	27197.4
30°	26246.4	26206.0	26497.6	26659.1	26461.7
32.5°	25416.5	25430.0	25708.1	25927.9	25744.0
35°	24555.2	24613.5	24864.7	25129.4	25030.7
37.5°	23608.7	23738.8	23990.0	24290.6	24187.4
40°	22608.4	22796.8	23074.9	23438.3	23344.1
42.5°	21527.3	21765.1	22123.9	22527.6	22518.7
45°	20379.0	20710.9	21096.7	21635.0	21702.3
47.5°	19185.7	19558.1	20047.0	20764.7	20867.9
50°	17889.3	18355.9	18965.9	19827.2	19890.0
52.5°	16444.9	17081.9	17889.3	18714.7	18638.5
55°	14996.0	15718.2	16790.3	17463.2	17422.8
57.5°	13551.6	14363.5	15664.4	16144.4	16139.9
60°	11936.7	12963.9	14385.9	14749.3	14390.4
62.5°	10442.9	11546.4	13022.3	12757.6	11528.5
65°	8801.1	10178.3	11555.4	9752.1	7962.3
67.5°	7343.2	8778.7	9814.9	6679.3	5719.4
70°	5876.4	7459.9	7652.8	4956.8	4889.5
72.5°	4575.5	6262.2	5279.8	4243.6	4458.9
75°	3463.0	5024.1	3696.3	3781.5	4028.2
77.5°	2525.5	3857.8	2875.4	3315.0	3516.9
80°	1736.0	2731.8	2346.1	2785.7	2924.7
82.5°	1090.0	1803.3	1879.5	2242.9	2386.4
85°	596.6	1143.9	1466.9	1771.9	1857.1
87.5°	246.7	690.8	1121.4	1368.2	1439.9
90°	4.5	381.3	758.1	951.0	995.8
92.5°	4.5	291.6	619.0	767.1	798.5
95°	4.5	237.7	520.4	632.5	650.4
97.5°	9.0	188.4	435.1	524.8	542.8
100°	13.5	157.0	363.3	439.6	453.1
102.5°	17.9	125.6	305.0	367.8	381.3
105°	17.9	103.2	255.7	309.5	323.0



TEST NUMBER: P830829

CATALOG NUMBER: OHBL-90SE-MCL-UNV-L840-CD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	31.4	62.8	152.5	192.9	201.9
115°	35.9	53.8	130.1	166.0	174.9
117.5°	35.9	44.9	112.1	139.1	148.0
120°	35.9	40.4	98.7	121.1	125.6
122.5°	35.9	35.9	85.2	107.7	112.1
125°	31.4	35.9	80.7	94.2	98.7
127.5°	35.9	35.9	71.8	85.2	89.7
130°	35.9	40.4	62.8	80.7	80.7
132.5°	40.4	44.9	58.3	76.3	76.3
135°	40.4	44.9	49.3	71.8	76.3
137.5°	44.9	44.9	44.9	67.3	71.8
140°	44.9	44.9	40.4	58.3	62.8
142.5°	40.4	44.9	40.4	53.8	58.3
145°	40.4	44.9	44.9	49.3	53.8
147.5°	44.9	44.9	44.9	44.9	49.3
150°	44.9	44.9	44.9	44.9	44.9
152.5°	44.9	44.9	44.9	44.9	44.9
155°	44.9	49.3	49.3	49.3	44.9
157.5°	44.9	49.3	49.3	49.3	49.3
160°	44.9	49.3	49.3	49.3	49.3
162.5°	49.3	49.3	49.3	49.3	49.3
165°	49.3	49.3	49.3	49.3	49.3
167.5°	49.3	53.8	49.3	49.3	49.3
170°	49.3	49.3	49.3	44.9	44.9
172.5°	49.3	49.3	49.3	44.9	44.9
175°	49.3	49.3	44.9	40.4	40.4
177.5°	53.8	49.3	44.9	40.4	35.9
180°	44.9	44.9	44.9	44.9	44.9



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	22.4	85.2	219.8	264.7	273.6
110°	26.9	71.8	183.9	224.3	233.3



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2304-001-1

Test Date: 05/31/2023

Luminaire Tested: OHB-15SE-N-UNV-L840

Data in this report applies to families of products including OHB-15SE-N-UNV-L840.

Test Information

Test Method: LM-79-2019
Report Number: SP1-2304-001-1
Test Lab: COOPER LIGHTING SOLUTIONS
Photometer: SP1 - 76IN SPHERE
Measurement Geometry: 4π
Issue Date: 05/31/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: **OHB-15SE-N-UNV-L840**
Description: 15SE OHB WITH APT LEDS, NARROW LENS, 80CRI 4000K

Spectral Parameters

CCT (K):	4018	CRI (Ra):	84.0		
CIE u':	0.2242	R1:	82.5	R9:	11.5
CIE v':	0.5025	R2:	91.6	R10:	79.8
Duv:	0.0010	R3:	96.1	R11:	80.5
CIE x:	0.3803	R4:	81.4	R12:	64.0
CIE y:	0.3788	R5:	82.4	R13:	85.1
CIE z:	0.2410	R6:	88.0	R14:	98.4
Peak Wavelength (nm):	454	R7:	85.5		
Dominant Wavelength (nm):	578	R8:	64.7		
Purity:	27.9				
Rf:	84.5				
Rg:	93.7				



Test Conditions

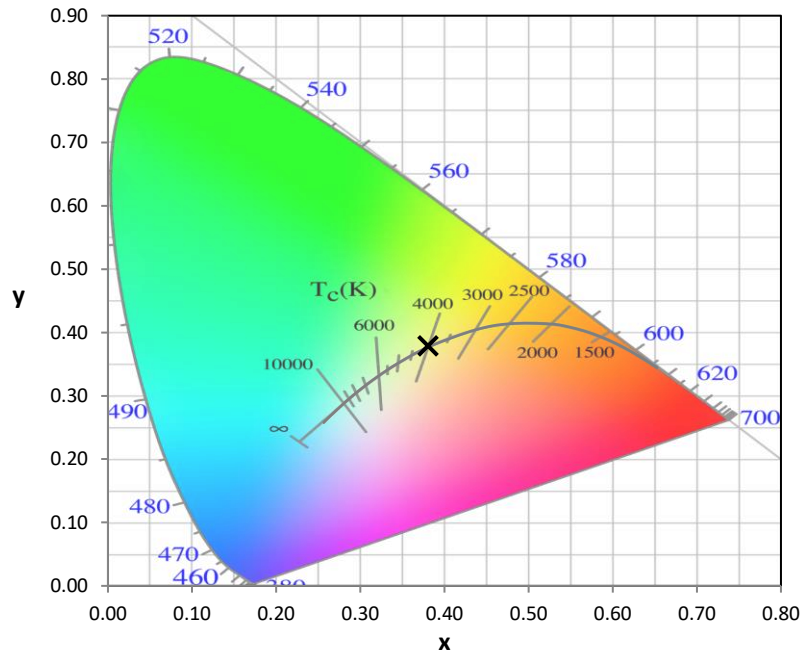
Stabilization Time: 23M
Operation Time: 12H
Room Temperature (°C) / RH%: 25.7/44%
Sphere Temperature (°C): 25.3

REPORT NUMBER: SP1-2304-001-1

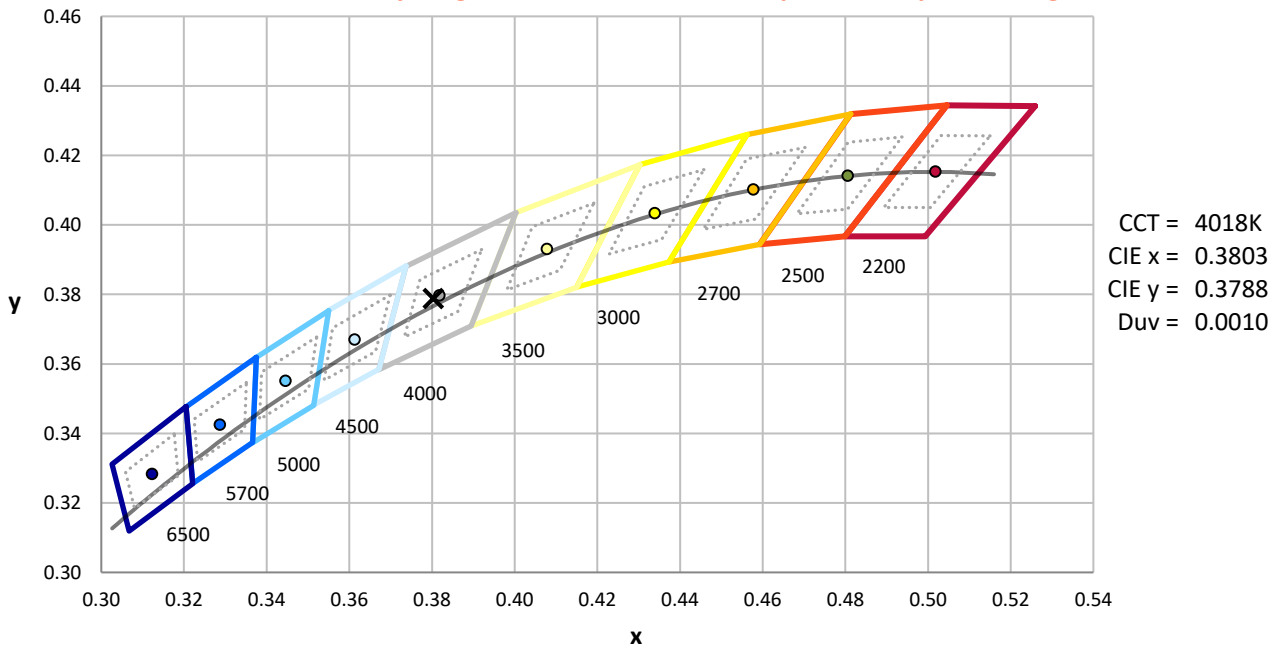
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	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: SP1-2304-001-1

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	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 25258.1

S/P: 1.73

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	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 10357.9 M/P: 0.71

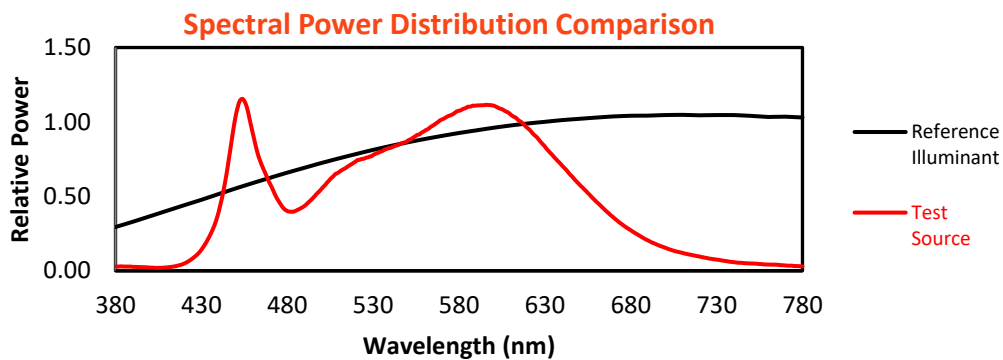
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	6853	NR	490	98921	NR	620	217813	NR	750	11077	NR	880	7212	NR
365	5941	NR	495	111249	NR	625	204757	NR	755	10374	NR	885	8336	NR
370	6345	NR	500	125186	NR	630	189812	NR	760	9527	NR	890	8299	NR
375	7044	NR	505	139782	NR	635	174714	NR	765	9227	NR	895	8295	NR
380	6587	NR	510	150374	NR	640	160641	NR	770	8071	NR	900	5725	NR
385	6443	NR	515	158837	NR	645	146146	NR	775	7303	NR	905	5085	NR
390	5977	NR	520	167163	NR	650	132087	NR	780	6839	NR	910	6133	NR
395	5473	NR	525	171514	NR	655	118817	NR	785	5988	NR	915	6429	NR
400	4874	NR	530	176783	NR	660	105411	NR	790	5761	NR	920	7354	NR
405	4470	NR	535	182412	NR	665	92911	NR	795	6396	NR	925	6889	NR
410	5232	NR	540	187578	NR	670	81240	NR	800	6049	NR	930	7465	NR
415	7030	NR	545	192635	NR	675	70762	NR	805	5748	NR	935	9430	NR
420	11074	NR	550	198282	NR	680	61913	NR	810	5571	NR	940	6867	NR
425	19121	NR	555	206255	NR	685	53742	NR	815	5977	NR	945	7026	NR
430	32148	NR	560	213621	NR	690	46348	NR	820	6580	NR	950	9476	NR
435	54073	NR	565	222021	NR	695	40313	NR	825	6610	NR	955	8237	NR
440	89242	NR	570	230974	NR	700	35240	NR	830	6652	NR	960	7127	NR
445	153497	NR	575	237268	NR	705	30635	NR	835	5919	NR	965	5614	NR
450	236793	NR	580	244317	NR	710	27359	NR	840	5707	NR	970	9396	NR
455	259282	NR	585	250340	NR	715	24401	NR	845	5548	NR	975	9700	NR
460	209272	NR	590	252316	NR	720	21810	NR	850	5560	NR	980	8916	NR
465	162456	NR	595	253019	NR	725	19005	NR	855	6972	NR	985	9548	NR
470	132627	NR	600	252244	NR	730	17009	NR	860	8311	NR	990	10271	NR
475	106283	NR	605	246798	NR	735	14940	NR	865	6330	NR	995	7323	NR
480	91347	NR	610	238764	NR	740	13159	NR	870	8019	NR	1000	8719	NR
485	91575	NR	615	229100	NR	745	12000	NR	875	7419	NR			

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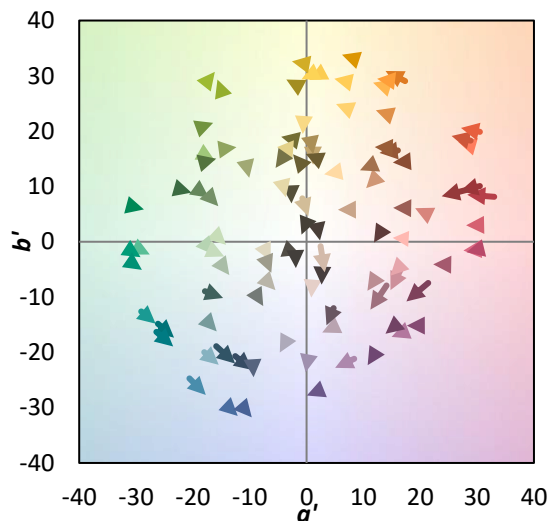
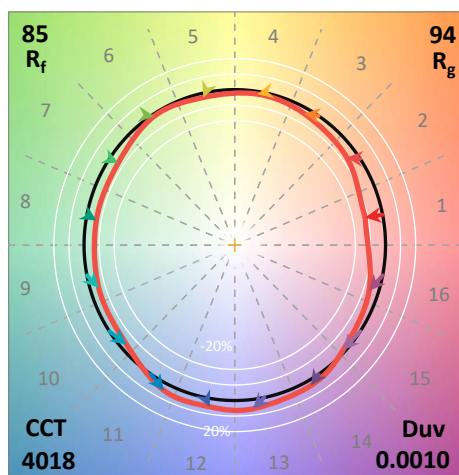
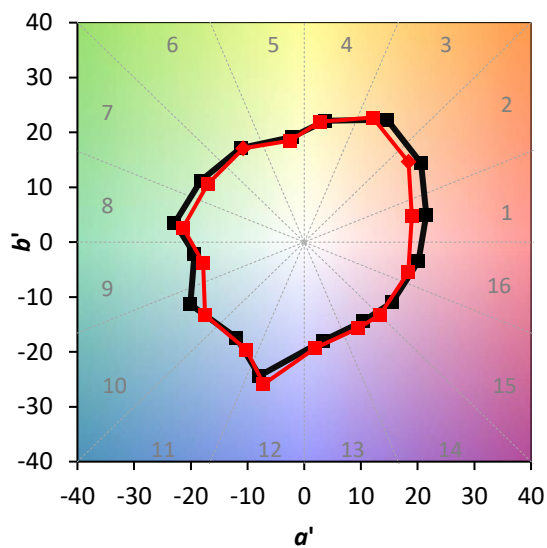
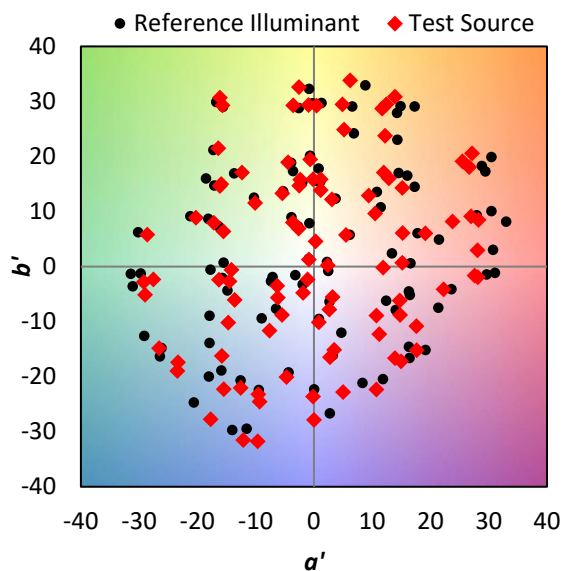
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Summary

$R_f = 84.5$
 $R_g = 93.7$
 CIE $R_a = 84.0$
 $R_9 = 11.5$



Color Vector Graphics



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

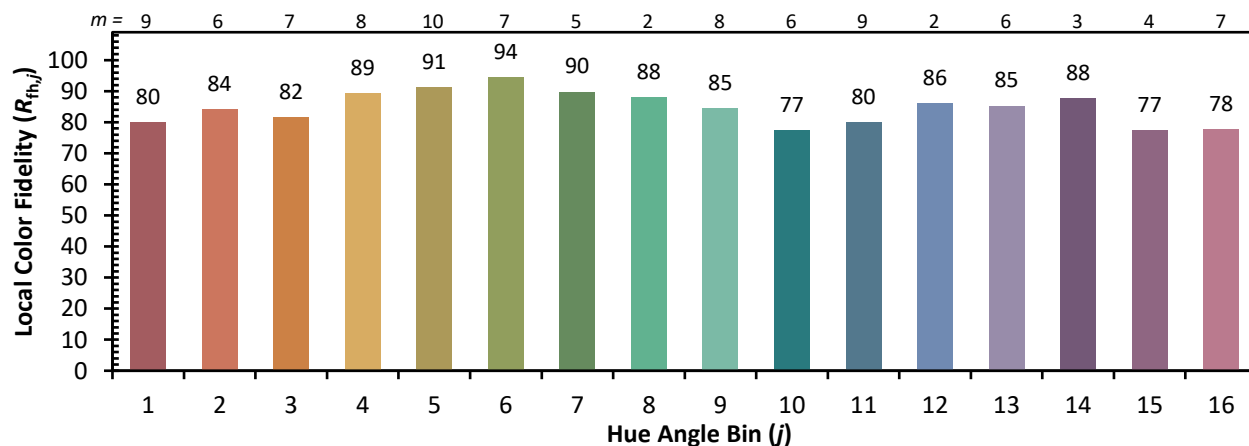
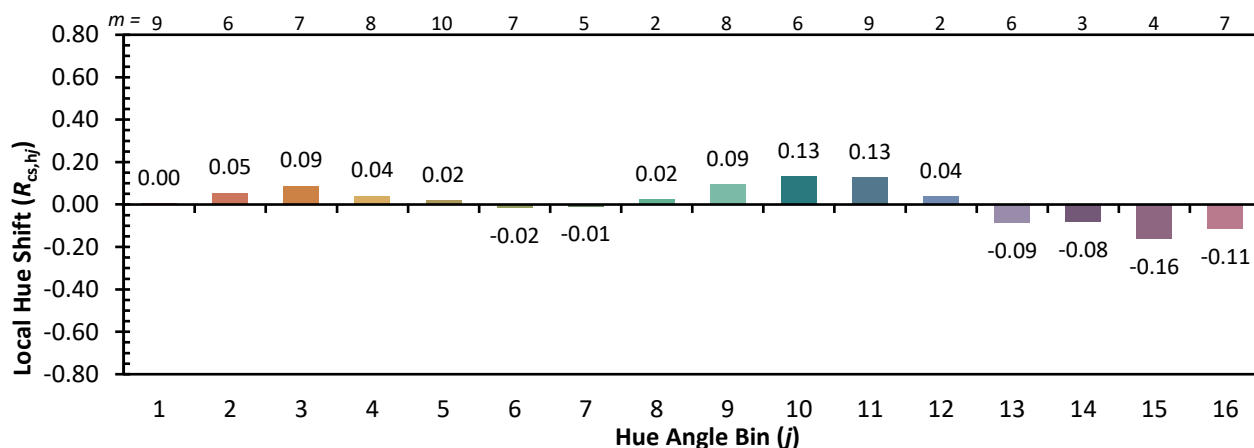
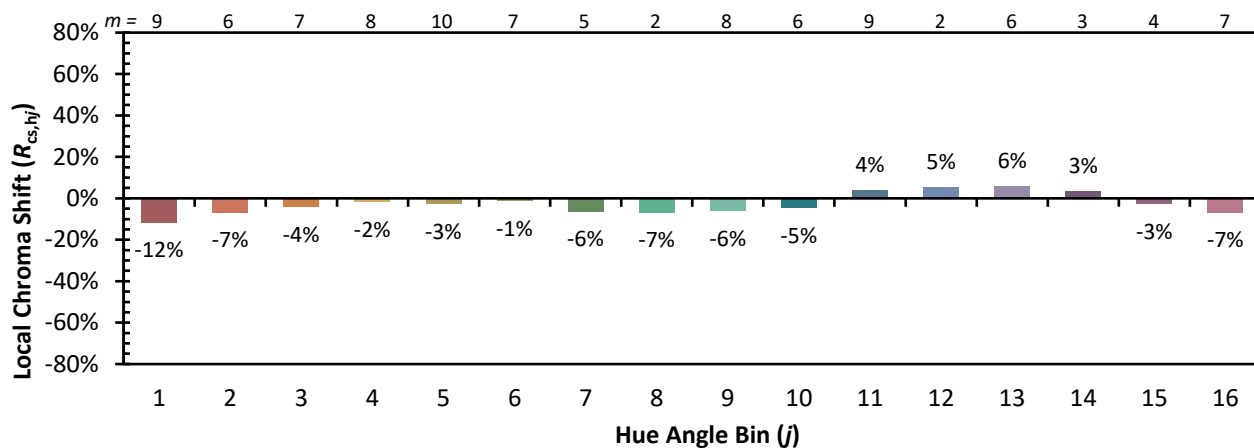
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CES02 = 61	CES27 = 90	CES52 = 93	CES77 = 85
CES03 = 31	CES28 = 94	CES53 = 89	CES78 = 80
CES04 = 69	CES29 = 93	CES54 = 88	CES79 = 93
CES05 = 48	CES30 = 87	CES55 = 85	CES80 = 91
CES06 = 50	CES31 = 95	CES56 = 84	CES81 = 78
CES07 = 41	CES32 = 88	CES57 = 82	CES82 = 96
CES08 = 40	CES33 = 96	CES58 = 82	CES83 = 96
CES09 = 29	CES34 = 92	CES59 = 91	CES84 = 91
CES10 = 74	CES35 = 95	CES60 = 88	CES85 = 77
CES11 = 57	CES36 = 77	CES61 = 86	CES86 = 74
CES12 = 63	CES37 = 95	CES62 = 78	CES87 = 84
CES13 = 42	CES38 = 81	CES63 = 85	CES88 = 88
CES14 = 74	CES39 = 98	CES64 = 77	CES89 = 78
CES15 = 71	CES40 = 97	CES65 = 77	CES90 = 89
CES16 = 47	CES41 = 94	CES66 = 74	CES91 = 68
CES17 = 49	CES42 = 97	CES67 = 73	CES92 = 64
CES18 = 56	CES43 = 93	CES68 = 79	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 82	CES94 = 65
CES20 = 65	CES45 = 94	CES70 = 77	CES95 = 73
CES21 = 86	CES46 = 91	CES71 = 69	CES96 = 84
CES22 = 78	CES47 = 93	CES72 = 90	CES97 = 90
CES23 = 91	CES48 = 82	CES73 = 72	CES98 = 86
CES24 = 90	CES49 = 92	CES74 = 90	CES99 = 77
CES25 = 71	CES50 = 92	CES75 = 74	



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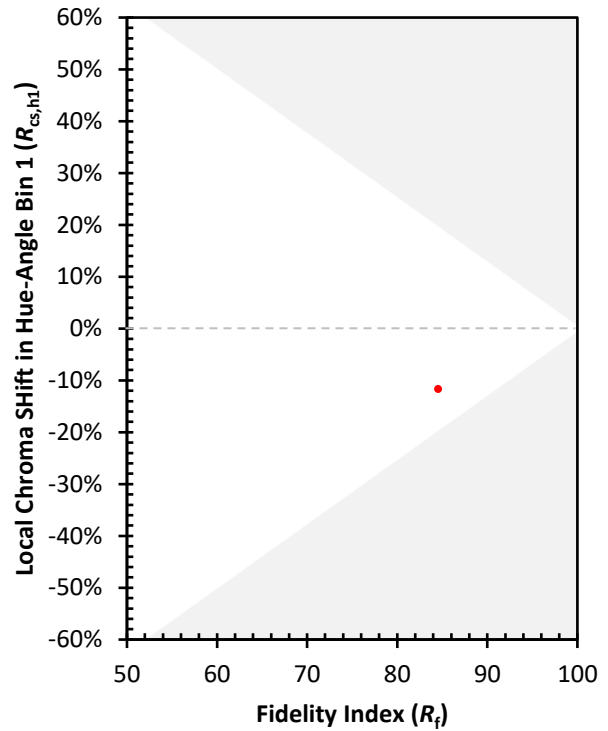
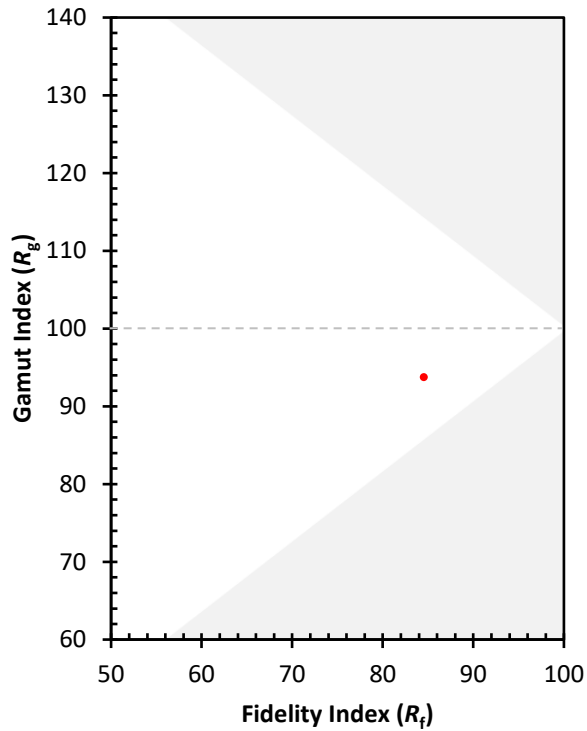
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)