

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: P828011

Luminaire Tested: **OHBL-18SE-A-UNV-L935-CD-UPL24**

Issue Date: 5/3/2024



Test Information

Test Method: LM-79-08
Report Number: P828011
REPORT IS A COMBINATION OF REPORTS P826233 AND G3-2310-221-6
Test Lab: INNOVATION CENTER
Issue Date: 5/3/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: OHBL-18SE-A-UNV-L935-CD-UPL24
Description:
Light Source: -
Ballast/Driver: -

Summary

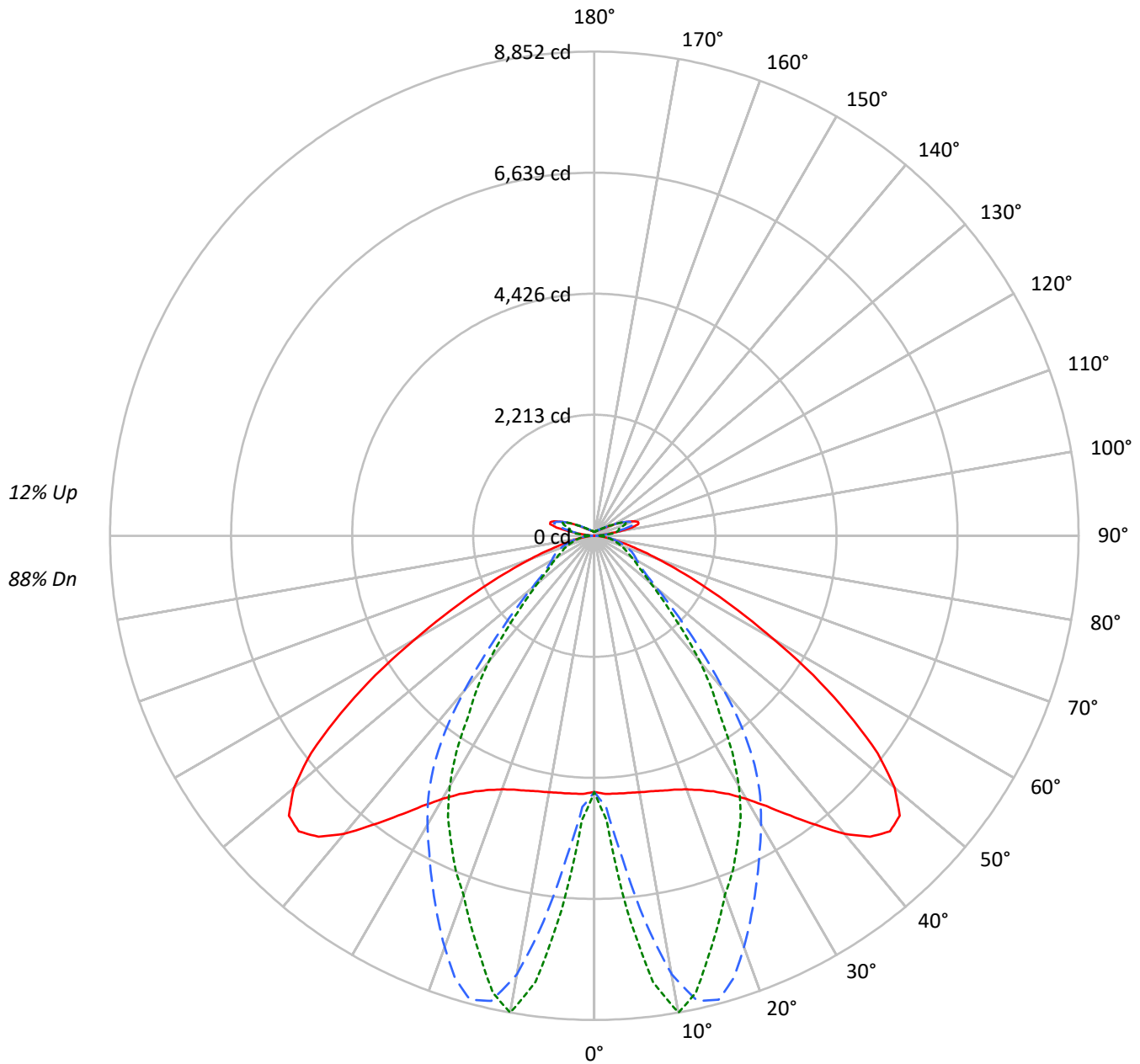
Lumens per Lamp: N/A
Luminaire Lumens: 17049.4 lumens
Efficiency: N/A
Efficacy: 139.3 lumens/watt
Spacing Criteria (0/90/45): 2.18 / 1.37 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 3.78' x L: 1.67' x H: 0.17')
CIE Type: Semi-Direct

Input Watts (W): 122.4
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: P828011

CATALOG NUMBER: OHBL-18SE-A-UNV-L935-CD-UPL24

Luminous Intensity Polar Plot





TEST NUMBER: P828011

CATALOG NUMBER: OHBL-18SE-A-UNV-L935-CD-UPL24

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	116	116	116	116	112	112	112	112	105	105	105	98	98	98	91	91	91
1	108	104	100	97	104	100	97	94	94	92	89	88	86	84	83	81	80
2	100	93	87	82	96	90	85	80	84	80	77	80	76	73	75	72	70
3	92	83	76	71	89	81	74	69	76	71	66	72	68	64	68	64	61
4	85	75	67	61	82	73	66	60	69	63	58	65	60	56	62	58	54
5	79	68	60	54	76	66	59	53	63	56	52	60	54	50	57	52	49
6	73	62	54	48	71	60	53	47	57	51	46	55	49	45	52	47	44
7	68	56	49	43	66	55	48	43	53	46	42	50	45	40	48	43	39
8	64	52	44	39	62	51	43	38	48	42	38	46	41	37	44	40	36
9	60	48	40	35	58	47	40	35	45	39	34	43	37	33	41	36	33
10	56	44	37	32	55	43	37	32	42	36	31	40	35	31	38	34	30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8001	8001	8001
5°	8042	10063	11729
10°	8114	13874	15235
15°	8307	15114	13983
20°	8650	14023	12496
25°	9281	12612	11430
30°	10349	11356	10164
35°	12167	9939	8099
40°	14629	7569	6446
45°	16781	5157	4588
50°	17012	3537	3393
55°	14726	2784	2772
60°	11000	2605	2494
65°	7540	2613	2362
70°	4821	2520	2288
75°	2899	2333	2189
80°	1706	2050	2259
85°	821	1760	2094



TEST NUMBER: P828011

CATALOG NUMBER: OHBL-18SE-A-UNV-L935-CD-UPL24

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	611.6	3.6
10°-20°	2158.5	12.7
20°-30°	3180.7	18.7
30°-40°	3342.4	19.6
40°-50°	2557.6	15.0
50°-60°	1544.4	9.1
60°-70°	942.4	5.5
70°-80°	514.4	3.0
80°-90°	185.7	1.1
90°-100°	193.2	1.1
100°-110°	670.8	3.9
110°-120°	575.4	3.4
120°-130°	276.0	1.6
130°-140°	138.1	0.8
140°-150°	80.1	0.5
150°-160°	46.7	0.3
160°-170°	24.2	0.1
170°-180°	7.4	0.0
0°-30°	5950.8	34.9
0°-40°	9293.2	54.5
0°-60°	13395.2	78.6
0°-90°	15037.7	88.2
90°-120°	1439.3	8.4
90°-150°	1933.5	11.3
90°-180°	2012.0	11.8
0°-180°	17049.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4684	4684	4684	4684	4684	
5°	4732	5076	5922	6612	6867	452
15°	4824	7513	8781	8194	8001	1372
25°	5155	8720	7010	6347	6190	2409
35°	6244	6983	5107	4253	4004	3961
45°	7642	3984	2352	2070	1983	5774
55°	5652	1351	1071	993	990	4994
65°	2266	855	788	674	640	2322
75°	603	532	488	403	386	694
85°	90	165	194	177	161	111
90°	4	28	39	52	58	8
95°	44	92	143	190	215	137
105°	836	827	703	501	460	793
115°	577	582	582	581	576	582
125°	282	297	302	302	299	264
135°	167	170	176	178	179	132
145°	121	124	127	128	128	77
155°	97	98	100	101	101	45
165°	83	84	85	85	85	24
175°	75	76	76	77	77	7
180°	75	75	75	75	75	



TEST NUMBER: P828011

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4684.5	4684.5	4684.5	4684.5	4684.5
2.5°	4722.9	4771.1	4961.2	5158.4	5206.4
5°	4731.5	5076.2	5921.8	6612.2	6867.3
7.5°	4741.6	5570.6	7112.0	7957.3	8227.8
10°	4760.7	6195.8	8143.3	8750.2	8852.4
12.5°	4784.3	6858.1	8710.8	8688.7	8559.8
15°	4823.8	7513.2	8780.7	8193.8	8001.1
17.5°	4865.2	8067.3	8475.8	7654.9	7487.3
20°	4932.4	8478.8	8001.5	7176.1	6985.4
22.5°	5029.4	8705.0	7504.1	6743.0	6618.6
25°	5154.6	8719.6	7010.2	6346.6	6189.9
27.5°	5322.3	8517.3	6536.7	5958.3	5792.8
30°	5550.5	8130.0	6096.8	5490.1	5284.8
32.5°	5860.5	7572.6	5643.2	4924.8	4694.6
35°	6243.8	6982.8	5107.0	4253.1	4004.3
37.5°	6662.0	6327.9	4456.3	3658.2	3513.4
40°	7112.0	5653.2	3685.2	3101.6	2997.9
42.5°	7463.1	4919.6	2968.8	2577.5	2467.2
45°	7642.1	3984.5	2352.5	2070.1	1983.1
47.5°	7572.4	3093.0	1865.0	1644.8	1618.7
50°	7165.6	2283.8	1492.9	1354.9	1344.1
52.5°	6529.6	1702.2	1233.2	1147.8	1129.2
55°	5651.6	1351.1	1070.9	992.6	989.5
57.5°	4745.0	1147.8	972.1	911.4	890.3
60°	3778.0	1023.5	897.2	828.7	785.8
62.5°	2961.4	936.5	842.1	749.1	709.1
65°	2265.8	855.3	787.8	674.2	639.8
67.5°	1689.0	778.0	721.6	595.4	575.3
70°	1230.6	698.7	646.0	529.5	513.7
72.5°	877.1	619.5	570.5	467.7	450.2
75°	603.2	531.9	487.9	402.6	386.3
77.5°	407.0	442.5	406.6	343.7	336.9
80°	271.8	350.9	328.8	291.2	287.1
82.5°	164.9	254.8	259.5	236.8	225.4
85°	89.8	164.9	194.4	177.2	160.7
87.5°	35.2	91.4	134.0	120.3	113.3
90°	4.2	28.3	39.2	51.7	57.5
92.5°	14.2	37.5	60.0	85.0	95.8
95°	44.2	92.5	143.3	190.0	215.0
97.5°	224.2	242.5	260.8	315.8	343.3
100°	460.0	488.3	394.2	416.7	424.2
102.5°	710.8	706.7	515.0	461.7	455.0
105°	835.8	826.7	703.3	500.8	460.0



TEST NUMBER: P828011

CATALOG NUMBER: OHBL-18SE-A-UNV-L935-CD-UPL24

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	673.3	683.3	670.0	650.8	624.2
115°	576.7	582.5	582.5	580.8	575.8
117.5°	493.3	494.2	497.5	496.7	497.5
120°	408.3	417.5	425.0	420.8	415.8
122.5°	342.5	352.5	357.5	355.8	350.8
125°	281.7	296.7	302.5	301.7	299.2
127.5°	238.3	249.2	257.5	258.3	257.5
130°	207.5	214.2	222.5	223.3	224.2
132.5°	184.2	190.0	195.8	199.2	198.3
135°	166.7	170.0	175.8	177.5	179.2
137.5°	152.5	155.0	160.0	162.5	162.5
140°	140.0	143.3	147.5	149.2	150.0
142.5°	129.2	132.5	135.8	137.5	137.5
145°	120.8	124.2	126.7	127.5	128.3
147.5°	113.3	116.7	118.3	120.0	120.0
150°	107.5	109.2	111.7	112.5	113.3
152.5°	101.7	103.3	105.8	106.7	106.7
155°	96.7	98.3	100.0	100.8	100.8
157.5°	92.5	94.2	95.8	96.7	96.7
160°	89.2	90.0	91.7	92.5	92.5
162.5°	85.8	86.7	87.5	88.3	88.3
165°	83.3	84.2	85.0	85.0	85.0
167.5°	80.8	80.8	81.7	82.5	82.5
170°	78.3	79.2	79.2	80.0	80.0
172.5°	76.7	77.5	77.5	77.5	78.3
175°	75.0	75.8	75.8	76.7	76.7
177.5°	75.0	75.0	75.0	75.0	75.0
180°	75.0	75.0	75.0	75.0	75.0



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270°







107.5°	839.2	842.5	777.5	607.5	505.8
110°	774.2	781.7	744.2	680.0	598.3



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

Report Prepared for

Cooper Lighting Solutions

METALUX

Report Number: SP1-2307-100-7

Test Date: 07/28/2023

Luminaire Tested: OHB-15SE-N-UNV-L935-CD

Data in this report applies to families of products including OHB-15SE-N-UNV-L935-CD.

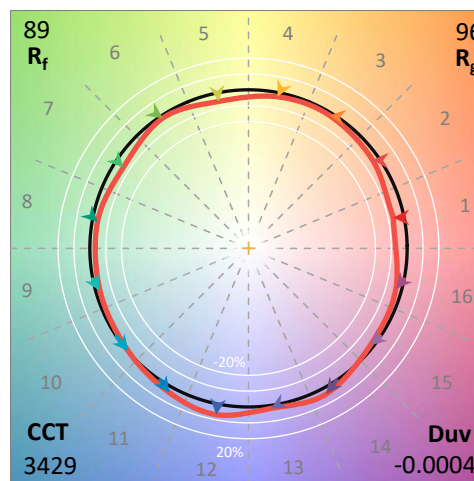
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2307-100-7
 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-L935-CD**
 Description: 15000 LUMEN OHB SE LED LUMINAIRE WITH 90CRI, 3500K LEDS AND NARROW LENS

LENS

Spectral Parameters

CCT (K):	3429	CRI (Ra):	90.9		
CIE u':	0.2376	R1:	91.1	R9:	50.7
CIE v':	0.5121	R2:	96.7	R10:	90.8
Duv:	-0.0004	R3:	97.7	R11:	88.9
CIE x:	0.4088	R4:	88.8	R12:	74.6
CIE y:	0.3916	R5:	90.3	R13:	92.9
CIE z:	0.1997	R6:	94.5	R14:	99.5
Peak Wavelength (nm):	609	R7:	89.8		
Dominant Wavelength (nm):	581	R8:	78.2		
Purity:	40.4				
Rf:	88.9				
Rg:	96.3				



Test Conditions

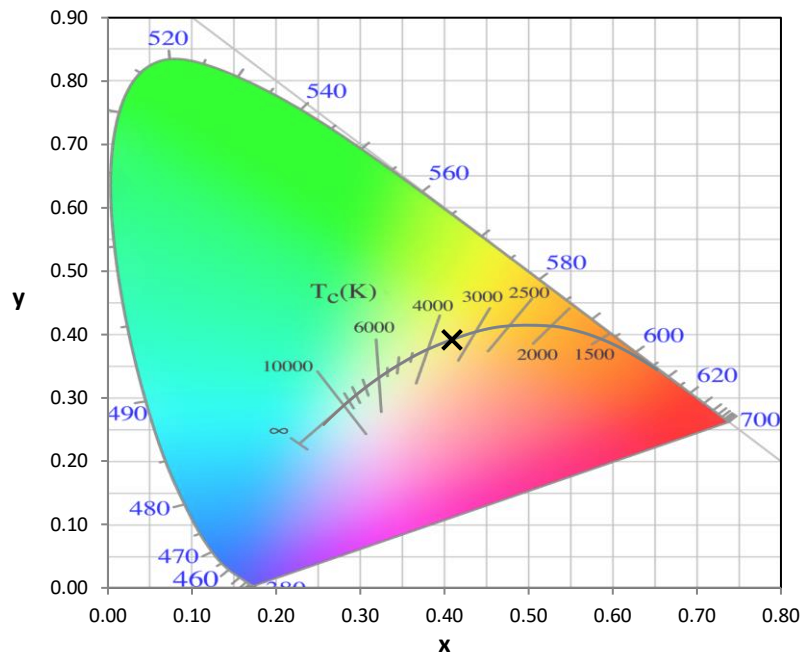
Stabilization Time: 23M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.7/55%
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2307-100-7

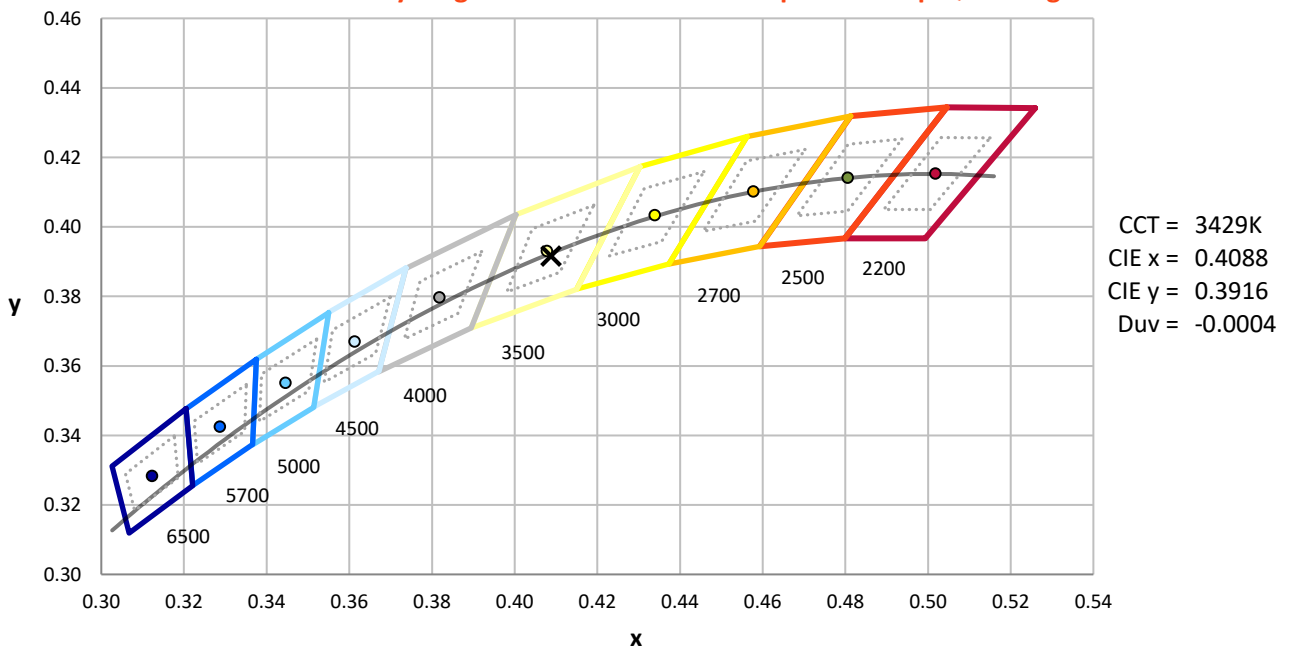
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/9/2023	8/9/2023
Power Meter	XITRON 2801 IN0071	11/29/2022	11/29/2023
AC Power Source	CHROMA 61603 IN0063	11/28/2022	11/28/2023
DC Power Source	AGILENT E3634A IN0208	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: SP1-2307-100-7

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

REPORT NUMBER: SP1-2307-100-7

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	5498	NR	490	81900	NR	620	217907	NR	750	17550	NR	880	6189	NR
365	4903	NR	495	90120	NR	625	213734	NR	755	15662	NR	885	6187	NR
370	4767	NR	500	98453	NR	630	206250	NR	760	13792	NR	890	3830	NR
375	5225	NR	505	109244	NR	635	198796	NR	765	12765	NR	895	4688	NR
380	5499	NR	510	117784	NR	640	189406	NR	770	11372	NR	900	4680	NR
385	5081	NR	515	125000	NR	645	180677	NR	775	9965	NR	905	4599	NR
390	4739	NR	520	131786	NR	650	168402	NR	780	9154	NR	910	4495	NR
395	4255	NR	525	136796	NR	655	157693	NR	785	8847	NR	915	3983	NR
400	3864	NR	530	142357	NR	660	145357	NR	790	7937	NR	920	4675	NR
405	3583	NR	535	147243	NR	665	132743	NR	795	6956	NR	925	4952	NR
410	3994	NR	540	152273	NR	670	120757	NR	800	6970	NR	930	6097	NR
415	5055	NR	545	157222	NR	675	108421	NR	805	6299	NR	935	5657	NR
420	7131	NR	550	161271	NR	680	97325	NR	810	6023	NR	940	4574	NR
425	11311	NR	555	167038	NR	685	86839	NR	815	6343	NR	945	5252	NR
430	17754	NR	560	173115	NR	690	76248	NR	820	6462	NR	950	5635	NR
435	28634	NR	565	178502	NR	695	67406	NR	825	5476	NR	955	4501	NR
440	46392	NR	570	184331	NR	700	60039	NR	830	5786	NR	960	2938	NR
445	78344	NR	575	189666	NR	705	53650	NR	835	5884	NR	965	5544	NR
450	131219	NR	580	196488	NR	710	47273	NR	840	4862	NR	970	5050	NR
455	170311	NR	585	202769	NR	715	41664	NR	845	5651	NR	975	5575	NR
460	154269	NR	590	207213	NR	720	37083	NR	850	5178	NR	980	2973	NR
465	126622	NR	595	213472	NR	725	32494	NR	855	5510	NR	985	4912	NR
470	109065	NR	600	218473	NR	730	28665	NR	860	5438	NR	990	5454	NR
475	91762	NR	605	220737	NR	735	25540	NR	865	5848	NR	995	6068	NR
480	78213	NR	610	221090	NR	740	22878	NR	870	4969	NR	1000	9406	NR
485	77035	NR	615	220059	NR	745	20304	NR	875	5438	NR			

REPORT NUMBER: SP1-2307-100-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: 19629.6

S/P: 1.6

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	5498	NR	490	81900	NR	620	217907	NR	750	17550	NR	880	6189	NR
365	4903	NR	495	90120	NR	625	213734	NR	755	15662	NR	885	6187	NR
370	4767	NR	500	98453	NR	630	206250	NR	760	13792	NR	890	3830	NR
375	5225	NR	505	109244	NR	635	198796	NR	765	12765	NR	895	4688	NR
380	5499	NR	510	117784	NR	640	189406	NR	770	11372	NR	900	4680	NR
385	5081	NR	515	125000	NR	645	180677	NR	775	9965	NR	905	4599	NR
390	4739	NR	520	131786	NR	650	168402	NR	780	9154	NR	910	4495	NR
395	4255	NR	525	136796	NR	655	157693	NR	785	8847	NR	915	3983	NR
400	3864	NR	530	142357	NR	660	145357	NR	790	7937	NR	920	4675	NR
405	3583	NR	535	147243	NR	665	132743	NR	795	6956	NR	925	4952	NR
410	3994	NR	540	152273	NR	670	120757	NR	800	6970	NR	930	6097	NR
415	5055	NR	545	157222	NR	675	108421	NR	805	6299	NR	935	5657	NR
420	7131	NR	550	161271	NR	680	97325	NR	810	6023	NR	940	4574	NR
425	11311	NR	555	167038	NR	685	86839	NR	815	6343	NR	945	5252	NR
430	17754	NR	560	173115	NR	690	76248	NR	820	6462	NR	950	5635	NR
435	28634	NR	565	178502	NR	695	67406	NR	825	5476	NR	955	4501	NR
440	46392	NR	570	184331	NR	700	60039	NR	830	5786	NR	960	2938	NR
445	78344	NR	575	189666	NR	705	53650	NR	835	5884	NR	965	5544	NR
450	131219	NR	580	196488	NR	710	47273	NR	840	4862	NR	970	5050	NR
455	170311	NR	585	202769	NR	715	41664	NR	845	5651	NR	975	5575	NR
460	154269	NR	590	207213	NR	720	37083	NR	850	5178	NR	980	2973	NR
465	126622	NR	595	213472	NR	725	32494	NR	855	5510	NR	985	4912	NR
470	109065	NR	600	218473	NR	730	28665	NR	860	5438	NR	990	5454	NR
475	91762	NR	605	220737	NR	735	25540	NR	865	5848	NR	995	6068	NR
480	78213	NR	610	221090	NR	740	22878	NR	870	4969	NR	1000	9406	NR
485	77035	NR	615	220059	NR	745	20304	NR	875	5438	NR			

REPORT NUMBER: SP1-2307-100-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: 7912.5

M/P: 0.65

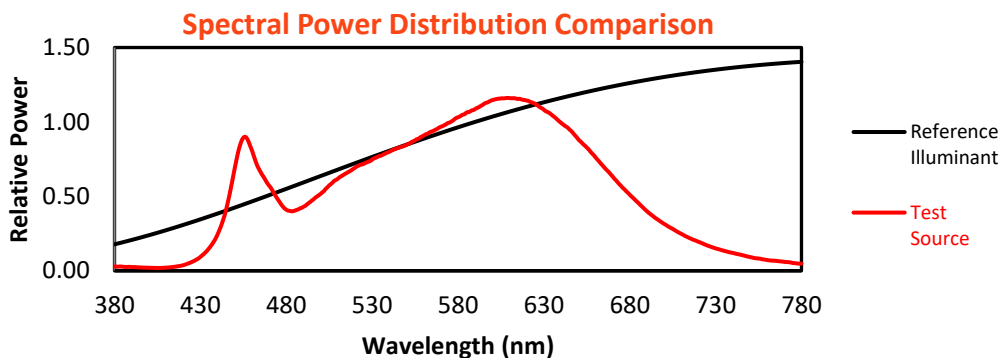
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	5498	NR	490	81900	NR	620	217907	NR	750	17550	NR	880	6189	NR
365	4903	NR	495	90120	NR	625	213734	NR	755	15662	NR	885	6187	NR
370	4767	NR	500	98453	NR	630	206250	NR	760	13792	NR	890	3830	NR
375	5225	NR	505	109244	NR	635	198796	NR	765	12765	NR	895	4688	NR
380	5499	NR	510	117784	NR	640	189406	NR	770	11372	NR	900	4680	NR
385	5081	NR	515	125000	NR	645	180677	NR	775	9965	NR	905	4599	NR
390	4739	NR	520	131786	NR	650	168402	NR	780	9154	NR	910	4495	NR
395	4255	NR	525	136796	NR	655	157693	NR	785	8847	NR	915	3983	NR
400	3864	NR	530	142357	NR	660	145357	NR	790	7937	NR	920	4675	NR
405	3583	NR	535	147243	NR	665	132743	NR	795	6956	NR	925	4952	NR
410	3994	NR	540	152273	NR	670	120757	NR	800	6970	NR	930	6097	NR
415	5055	NR	545	157222	NR	675	108421	NR	805	6299	NR	935	5657	NR
420	7131	NR	550	161271	NR	680	97325	NR	810	6023	NR	940	4574	NR
425	11311	NR	555	167038	NR	685	86839	NR	815	6343	NR	945	5252	NR
430	17754	NR	560	173115	NR	690	76248	NR	820	6462	NR	950	5635	NR
435	28634	NR	565	178502	NR	695	67406	NR	825	5476	NR	955	4501	NR
440	46392	NR	570	184331	NR	700	60039	NR	830	5786	NR	960	2938	NR
445	78344	NR	575	189666	NR	705	53650	NR	835	5884	NR	965	5544	NR
450	131219	NR	580	196488	NR	710	47273	NR	840	4862	NR	970	5050	NR
455	170311	NR	585	202769	NR	715	41664	NR	845	5651	NR	975	5575	NR
460	154269	NR	590	207213	NR	720	37083	NR	850	5178	NR	980	2973	NR
465	126622	NR	595	213472	NR	725	32494	NR	855	5510	NR	985	4912	NR
470	109065	NR	600	218473	NR	730	28665	NR	860	5438	NR	990	5454	NR
475	91762	NR	605	220737	NR	735	25540	NR	865	5848	NR	995	6068	NR
480	78213	NR	610	221090	NR	740	22878	NR	870	4969	NR	1000	9406	NR
485	77035	NR	615	220059	NR	745	20304	NR	875	5438	NR			

REPORT NUMBER: SP1-2307-100-7

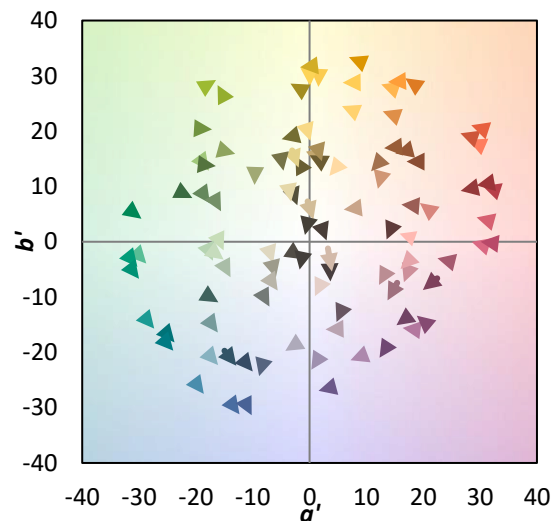
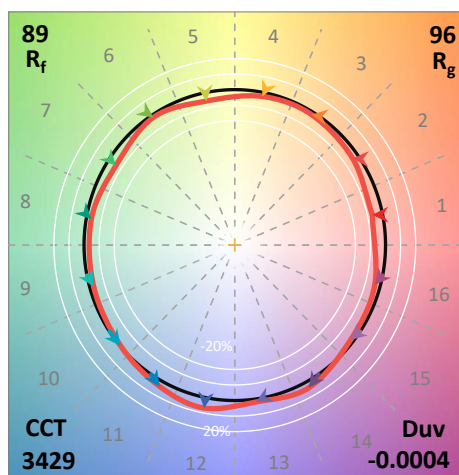
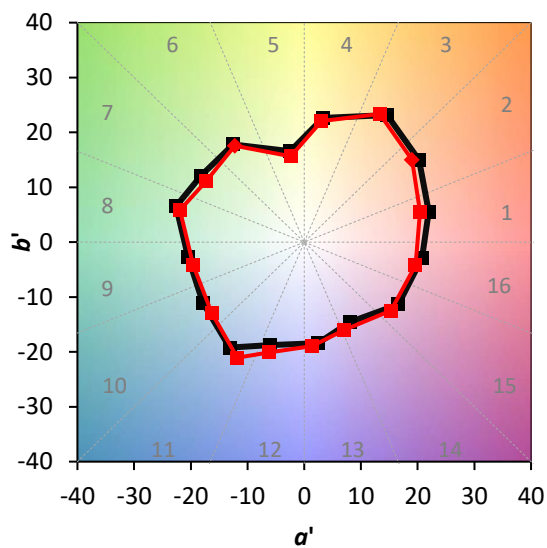
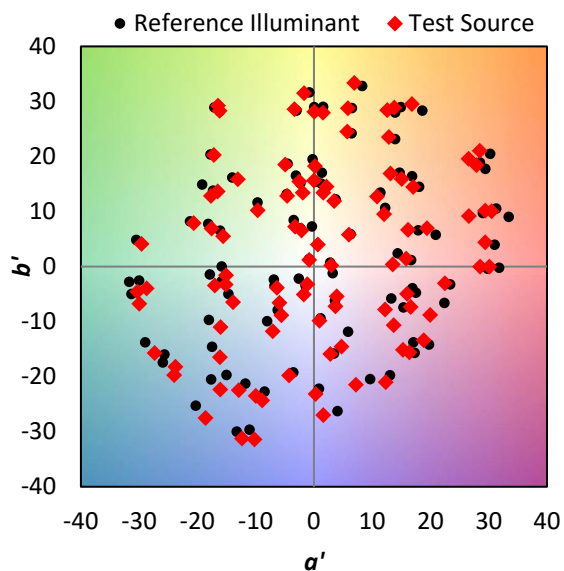
TM-30-18

Summary

$R_f = 88.9$
 $R_g = 96.3$
 CIE $R_a = 90.9$
 $R_9 = 50.7$



Color Vector Graphics

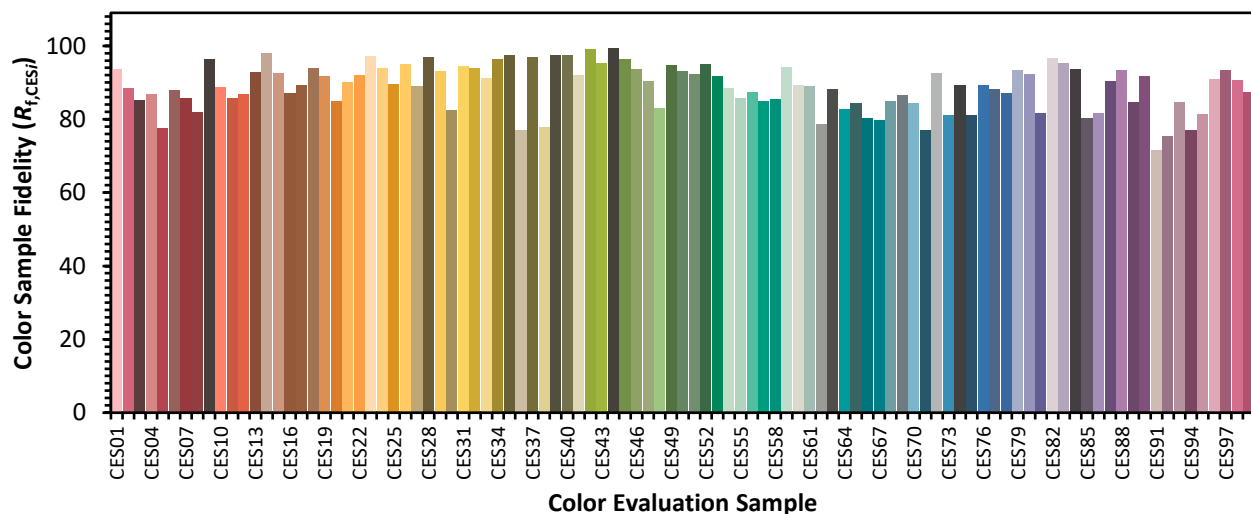


REPORT NUMBER: SP1-2307-100-7

TM-30-18

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

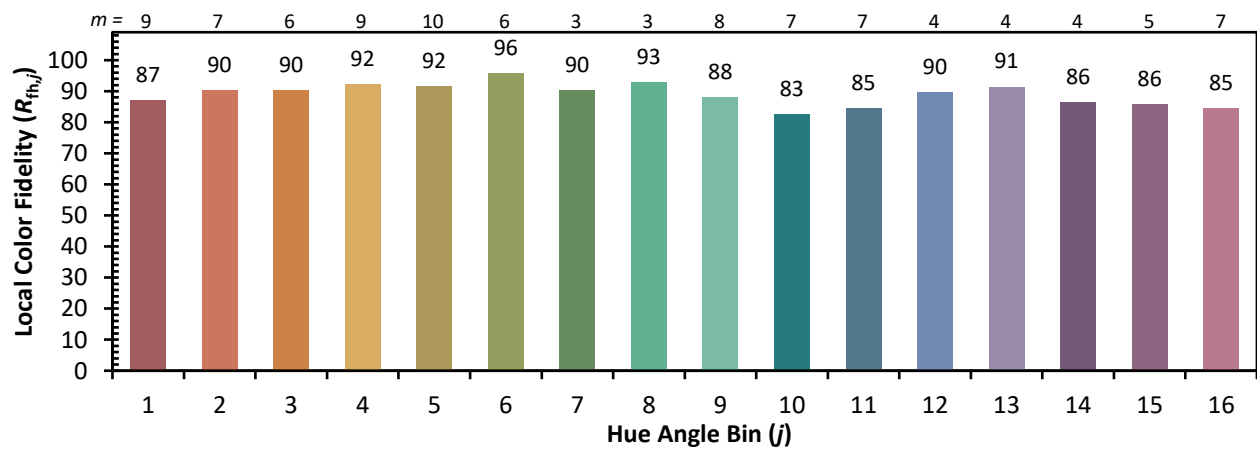
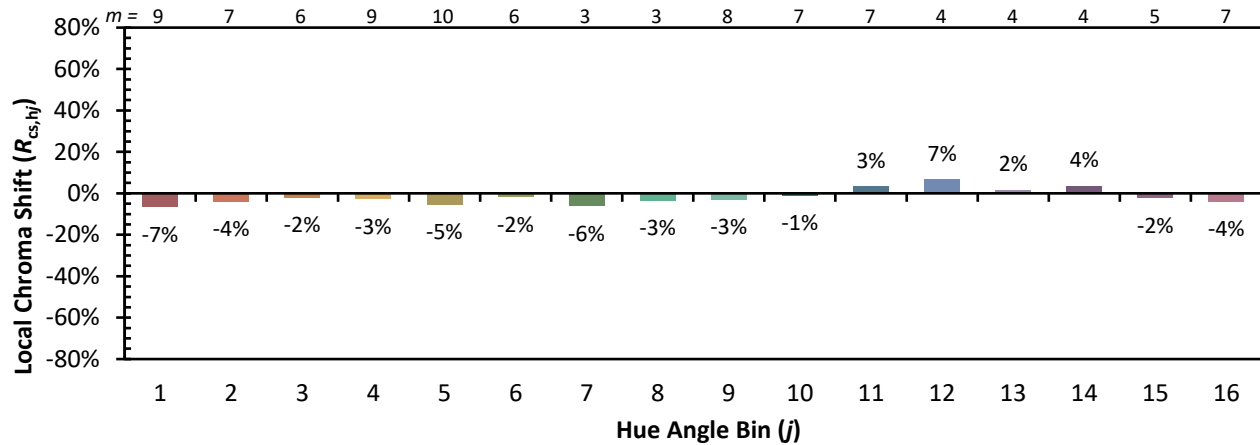
CES01 = 86	CES26 = 95	CES51 = 92	CES76 = 89
CES02 = 62	CES27 = 89	CES52 = 95	CES77 = 88
CES03 = 31	CES28 = 97	CES53 = 92	CES78 = 87
CES04 = 70	CES29 = 93	CES54 = 89	CES79 = 93
CES05 = 49	CES30 = 82	CES55 = 86	CES80 = 92
CES06 = 51	CES31 = 95	CES56 = 87	CES81 = 82
CES07 = 42	CES32 = 94	CES57 = 85	CES82 = 97
CES08 = 41	CES33 = 91	CES58 = 85	CES83 = 95
CES09 = 29	CES34 = 96	CES59 = 94	CES84 = 94
CES10 = 75	CES35 = 97	CES60 = 89	CES85 = 80
CES11 = 58	CES36 = 77	CES61 = 89	CES86 = 82
CES12 = 64	CES37 = 97	CES62 = 79	CES87 = 90
CES13 = 43	CES38 = 78	CES63 = 88	CES88 = 93
CES14 = 74	CES39 = 97	CES64 = 83	CES89 = 85
CES15 = 71	CES40 = 98	CES65 = 84	CES90 = 92
CES16 = 47	CES41 = 92	CES66 = 80	CES91 = 72
CES17 = 50	CES42 = 99	CES67 = 80	CES92 = 75
CES18 = 56	CES43 = 95	CES68 = 85	CES93 = 85
CES19 = 71	CES44 = 99	CES69 = 86	CES94 = 77
CES20 = 66	CES45 = 96	CES70 = 84	CES95 = 81
CES21 = 86	CES46 = 94	CES71 = 77	CES96 = 91
CES22 = 78	CES47 = 91	CES72 = 93	CES97 = 93
CES23 = 91	CES48 = 83	CES73 = 81	CES98 = 91
CES24 = 90	CES49 = 95	CES74 = 89	CES99 = 87
CES25 = 71	CES50 = 93	CES75 = 81	



REPORT NUMBER: SP1-2307-100-7

TM-30-18

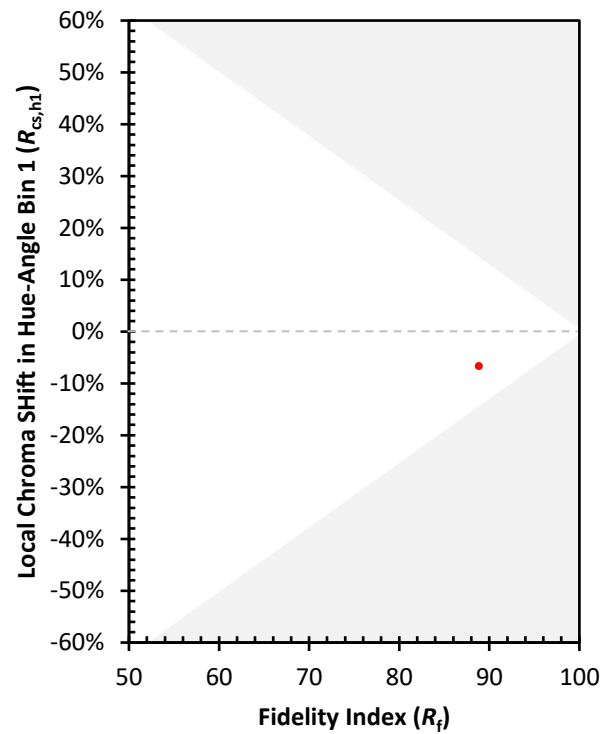
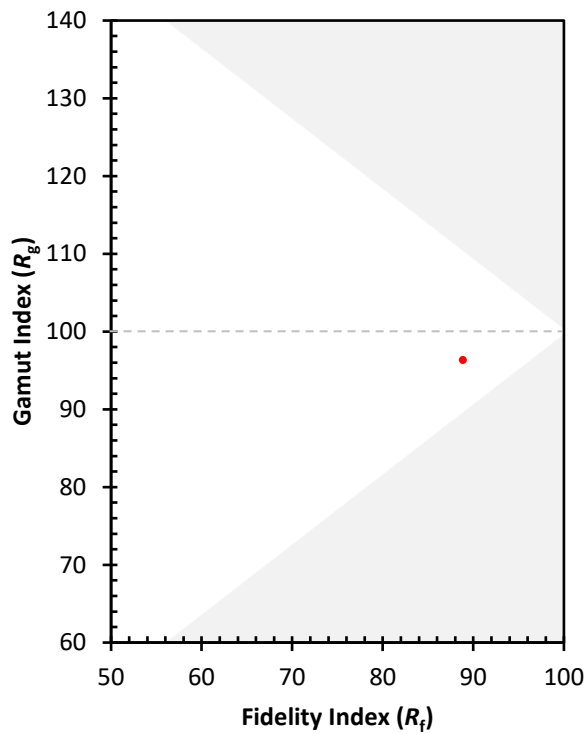
Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2307-100-7

TM-30-18

Measure Comparisons



(END OF REPORT)