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: INVUE

Report Number: P672620

Luminaire Tested: **CCP-SA-1B-850-U-5MQ**

Issue Date: 04/16/2023

Report Generated By 670245763

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P672620
Test Lab:	INNOVATION CENTER(G2)
Issue Date:	04/16/2023
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	CCP-SA-1B-850-U-5MQ
Description:	INVUE CLEAR CURVE POLE MOUNT LIGHT SQUARE LUMINAIRE @450mA w/ 5MQ distribution lens
Light Source:	(16) 5000K CCT, 80 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3110.8 lumens
Efficiency:	N/A
Efficacy:	129.6 lumens/watt
Luminous Opening:	Rectangular (W 1' x L: 0.5' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B2 - U0 - G1

Input Watts (W):	24
Input Voltage (V):	120
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

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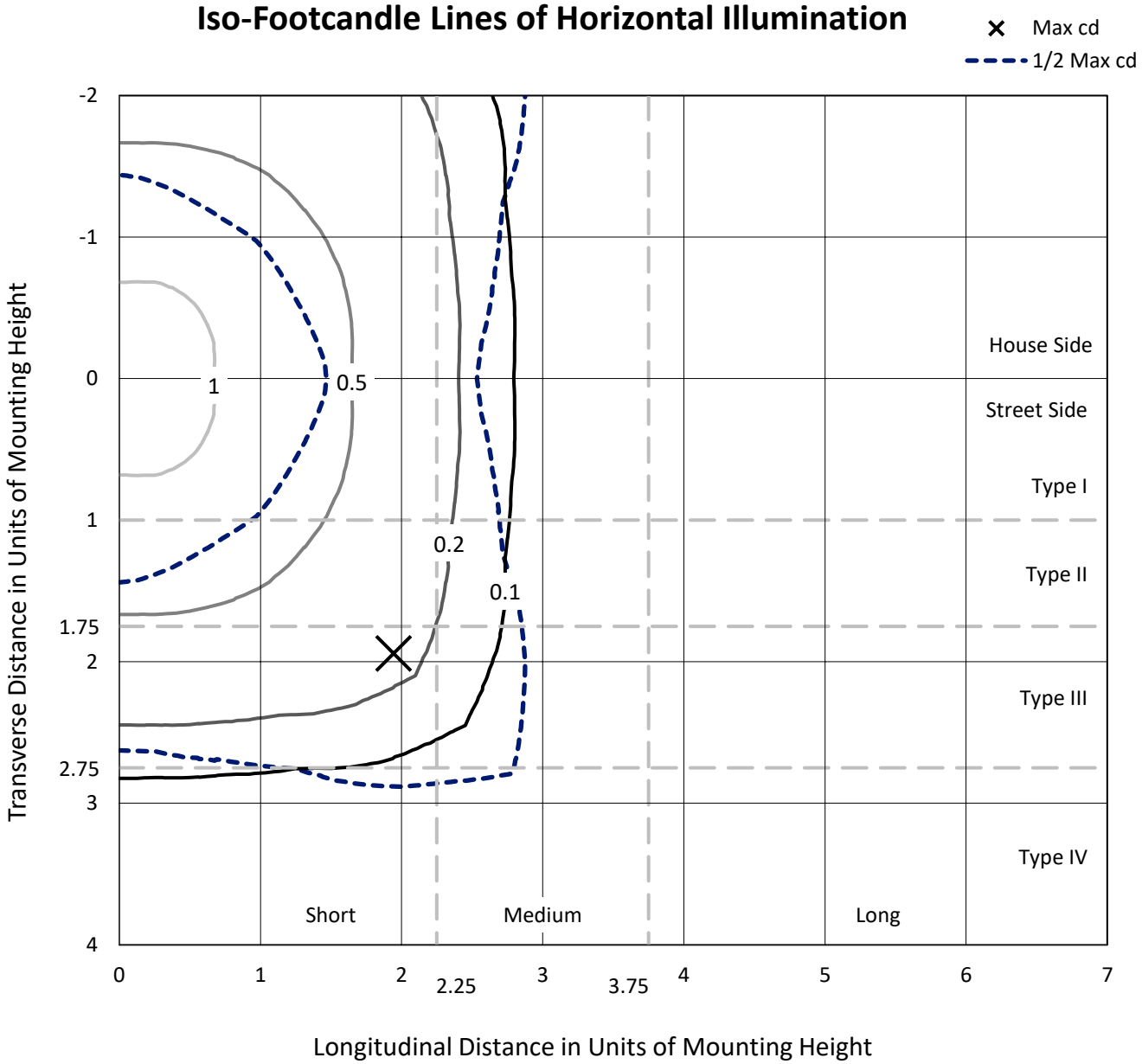
Scaled Data Report

REPORT NUMBER: P672620
CATALOG NUMBER: CCP-SA-1B-850-U-5MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 1.5 fc
Type V - Short - N/A

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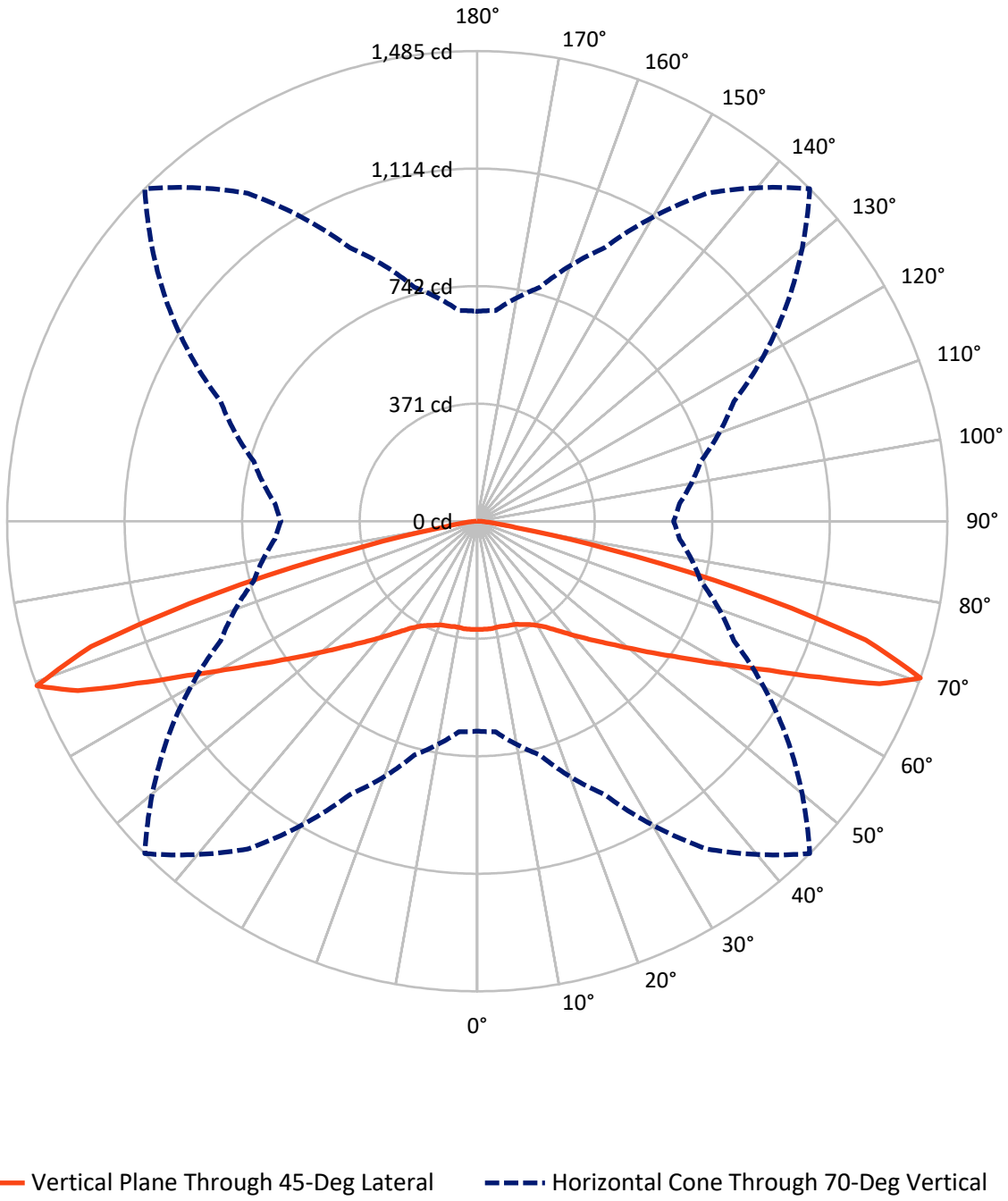
REPORT NUMBER: P672620
CATALOG NUMBER: CCP-SA-1B-850-U-5MQ

Luminous Intensity Polar Plot



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Scaled Data Report

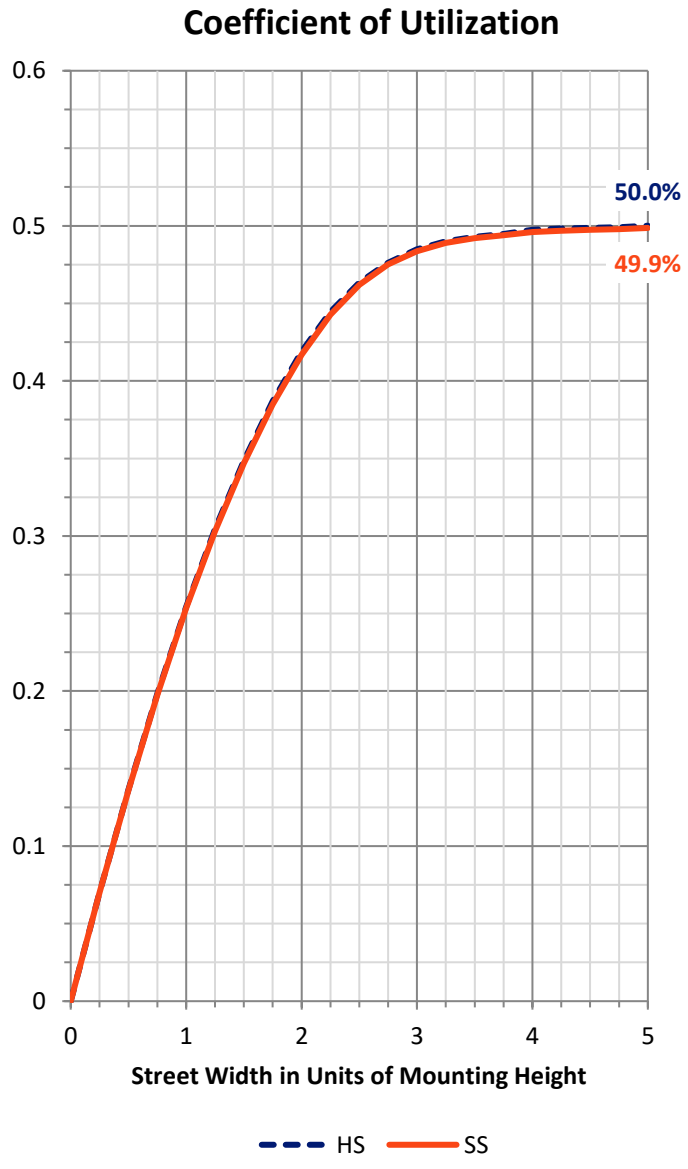
REPORT NUMBER: P672620
CATALOG NUMBER: CCP-SA-1B-850-U-5MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1555.4	0.0	1555.4
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	1555.4	0.0	1555.4
	% Fixture	50.0	0.0	50.0
Total	Lumens	3110.8	0.0	3110.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.5	1.0
10°-20°	96.3	3.1
20°-30°	164.5	5.3
30°-40°	262.5	8.4
40°-50°	423.5	13.6
50°-60°	678.2	21.8
60°-70°	992.8	31.9
70°-80°	436.6	14.0
80°-90°	23.9	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	3110.8	100.0
0°-180°	3110.8	100.0



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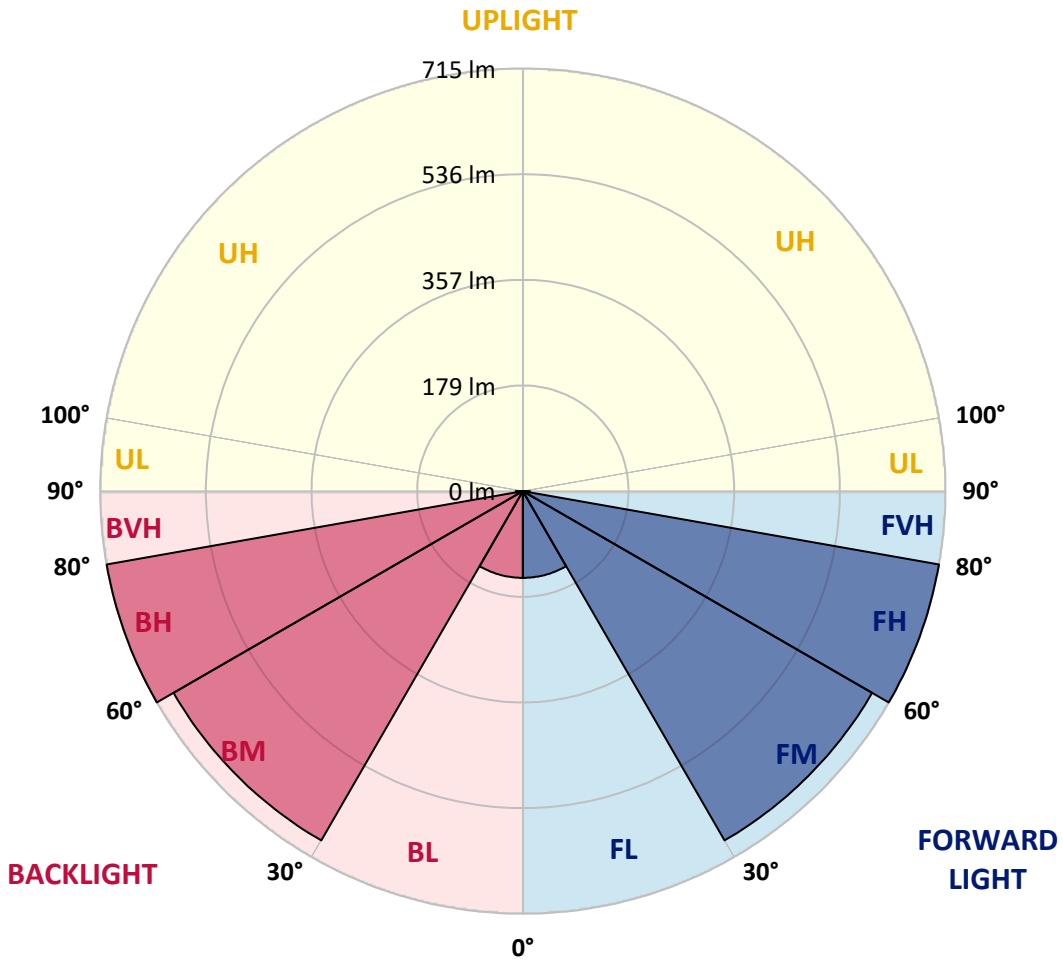
Scaled Data Report

REPORT NUMBER: P672620
CATALOG NUMBER: CCP-SA-1B-850-U-5MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	146.7	4.7			
FM	(30°-60°)	682.1	21.9			
FH	(60°-80°)	714.7	23.0			G1/1800
FVH	(80°-90°)	12.0	0.4			G1/100
BL	(0°-30°)	146.7	4.7	B1/500		
BM	(30°-60°)	682.1	21.9	B1/1000		
BH	(60°-80°)	714.7	23.0	B2/1000		G1/1800
BVH	(80°-90°)	12.0	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G1
Type V Short



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CATALOG NUMBER: CCP-SA-1B-850-U-5MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	342.1	342.1	342.1	342.1	342.1	342.1	342.1	342.1	342.1	342.1	342.1
2.5°	341.6	341.4	341.9	342.1	341.6	341.9	340.5	340.5	341.2	340.5	341.4
5°	343.2	342.7	343.2	343.2	342.1	342.1	340.5	340.1	340.5	339.4	340.3
7.5°	343.4	342.5	343.2	343.0	342.1	342.1	339.9	339.0	339.2	338.1	338.8
10°	341.2	340.8	341.6	341.2	340.5	340.5	338.8	337.5	337.5	336.4	337.0
12.5°	339.9	339.4	340.5	340.8	340.3	340.5	338.3	336.6	335.9	334.6	335.0
15°	339.9	339.0	340.8	341.2	341.6	343.2	339.9	336.8	335.5	333.7	334.1
17.5°	339.7	339.2	341.2	342.7	343.2	344.9	341.2	337.9	336.4	333.7	334.1
20°	339.7	339.4	341.9	344.7	346.1	347.6	343.6	340.5	337.9	335.0	335.0
22.5°	340.8	340.5	343.8	348.0	351.8	354.4	349.8	344.7	341.2	337.5	337.0
25°	345.4	344.9	348.9	354.0	359.1	361.7	357.1	352.0	346.9	342.7	342.3
27.5°	354.9	354.6	358.6	364.8	368.3	370.3	366.3	361.9	356.9	352.0	351.8
30°	367.7	367.7	372.7	379.1	381.1	382.6	378.7	375.6	370.3	365.0	364.6
32.5°	383.1	384.0	389.9	397.0	398.3	399.2	395.0	393.0	387.3	381.5	380.7
35°	403.4	403.6	410.9	417.9	419.7	420.6	415.7	413.9	408.6	402.5	401.2
37.5°	429.1	428.5	435.3	443.3	445.0	446.1	442.2	440.8	434.2	428.0	426.1
40°	458.0	458.5	466.2	473.7	474.8	475.2	473.2	471.2	465.1	458.0	455.6
42.5°	491.5	491.5	500.6	509.4	509.4	507.2	506.3	505.9	499.9	492.0	489.3
45°	529.9	530.3	541.6	548.2	548.6	542.7	543.5	546.2	540.5	530.3	526.8
47.5°	572.0	572.6	585.9	593.1	591.8	584.1	588.9	590.3	583.7	570.7	566.0
50°	616.3	618.3	633.0	645.8	644.1	632.8	639.2	639.6	628.8	613.9	607.5
52.5°	664.1	668.7	688.4	702.0	703.8	689.7	695.2	694.7	680.9	660.4	656.2
55°	723.4	726.0	745.4	764.8	771.5	754.0	760.2	757.1	738.4	715.0	708.0
57.5°	782.7	786.7	811.6	833.4	846.6	831.8	833.2	825.2	801.7	773.4	769.9
60°	853.0	854.8	882.3	910.8	933.7	924.9	918.7	902.2	874.4	846.2	841.1
62.5°	910.5	914.1	955.1	996.9	1035.7	1037.3	1018.5	993.9	949.5	902.4	892.2
65°	926.4	932.1	989.7	1072.3	1153.0	1188.9	1137.6	1062.2	963.2	892.0	876.8
67.5°	852.6	863.6	945.8	1083.1	1262.1	1369.9	1232.3	1029.8	891.6	808.5	793.9
70°	663.0	667.9	764.4	952.9	1263.9	1484.9	1194.2	894.2	730.9	641.6	620.2
72.5°	352.2	354.6	441.7	641.6	1028.5	1282.8	986.8	625.8	430.3	349.1	324.7
75°	113.7	116.8	152.1	262.7	567.3	862.0	581.9	260.3	148.3	119.7	113.3
77.5°	58.0	57.7	64.1	84.6	190.9	422.5	201.9	91.3	64.1	57.5	55.8
80°	36.1	35.5	40.3	46.3	66.8	123.4	72.5	51.1	40.6	34.8	34.6
82.5°	20.5	20.5	27.1	29.8	37.7	50.9	42.3	35.0	27.8	20.7	20.1
85°	11.5	10.1	17.0	18.7	21.6	25.1	25.8	22.7	18.7	11.5	11.9
87.5°	4.2	4.6	7.9	7.5	8.6	6.0	10.6	11.9	10.6	5.5	4.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

INVUE

Report Number: SP1-2104-224-9

Luminaire Tested: CCW-SA-2A-850-U-SL4

Test Date: 04/27/2021

Report Generated By controller / USPTCWHP6086842

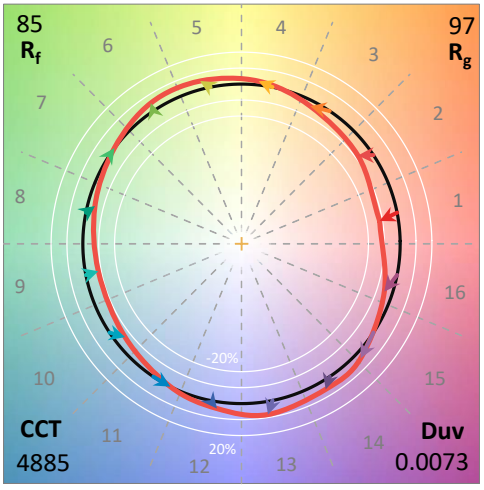
Test Information

Test Method:	LM-79-08
Report Number:	SP1-2104-224-9
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1
Measurement Geometry:	4π
Issue Date:	04/27/2021
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	**CCW-SA-2A-850-U-SL4**
Description:	INVUE WALL PACK ClearCurve Light Square

Spectral Parameters

CCT (K):	4885	CRI (Ra):	82.2		
CIE u':	0.2076	R1:	79.1	R9:	4.0
CIE v':	0.4943	R2:	85.5	R10:	67.5
Duv:	0.0073	R3:	92.5	R11:	82.5
CIE x:	0.3501	R4:	82.9	R12:	63.4
CIE y:	0.3704	R5:	80.2	R13:	80.2
CIE z:	0.2795	R6:	81.6	R14:	96.0
Peak Wavelength (nm):	446	R7:	88.2		
Dominant Wavelength (nm):	569	R8:	67.2		
Purity:	16.4				

Rf:	84.6
Rg:	96.9



Test Conditions

Stabilization Time:	76M
Operation Time:	12H
Room Temperature (°C) / RH%:	24.9/41%
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP1-2104-224-9

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	1/31/2021	7/31/2021
Power Meter	IN0071	12/1/2020	12/1/2021
AC Power Source	IN0063	12/1/2020	12/1/2021
DC Power Source	IN0208	12/1/2020	12/1/2021
Sphere Thermometer	IN0085	12/1/2020	12/1/2021
Room Thermometer	IN0046	12/1/2020	12/1/2021

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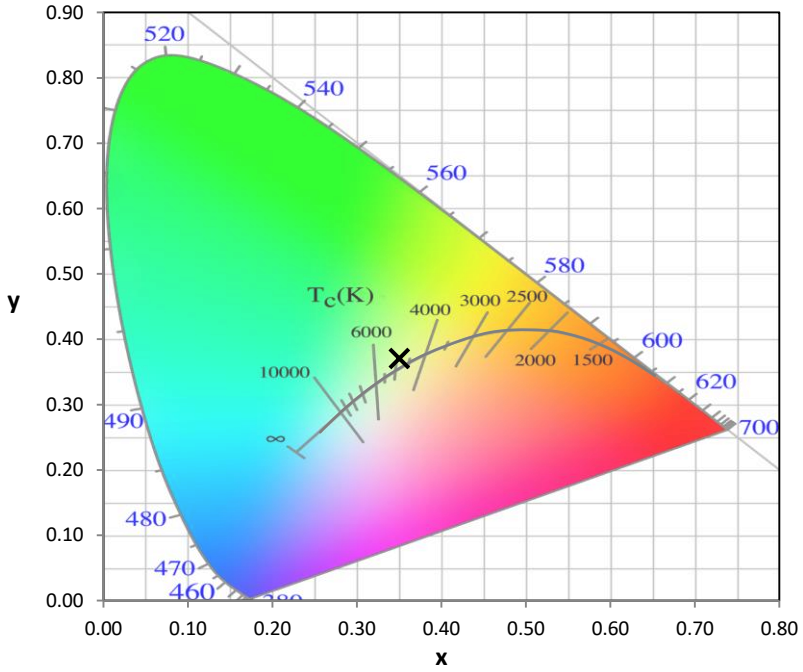
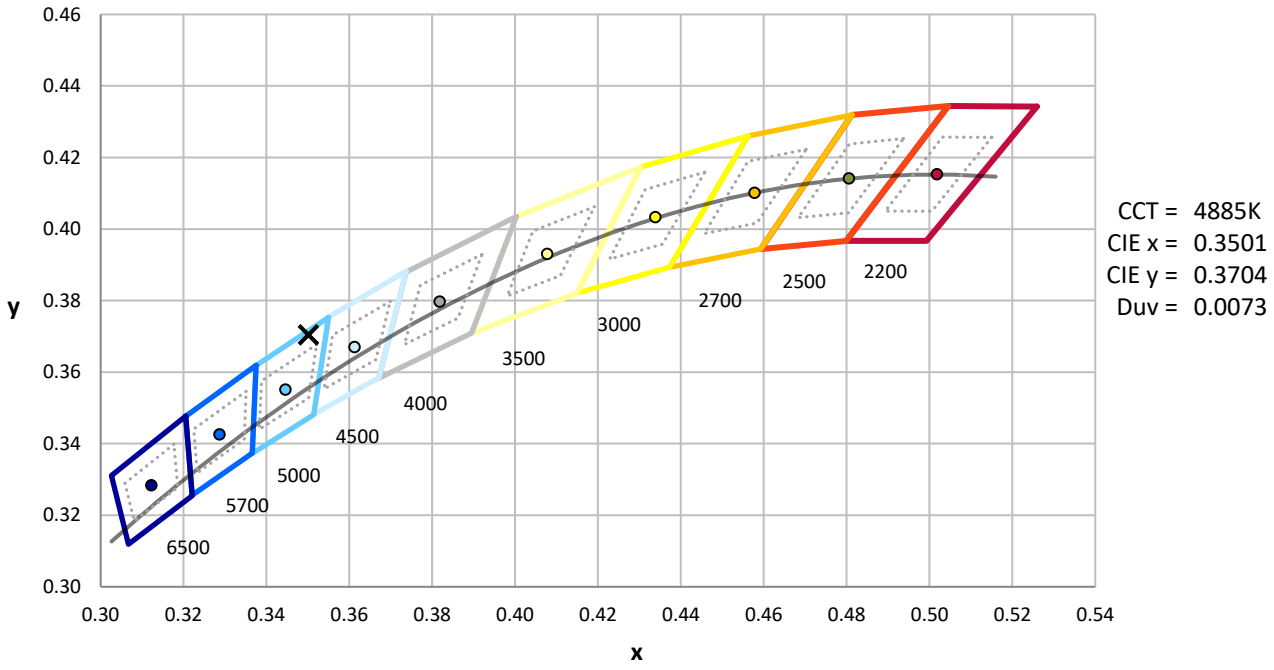
CIE 1931 Chromaticity Diagram



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



CCT = 4885K
CIE x = 0.3501
CIE y = 0.3704
Duv = 0.0073

Point lies inside the ANSI 5000K 7-step quadrangle

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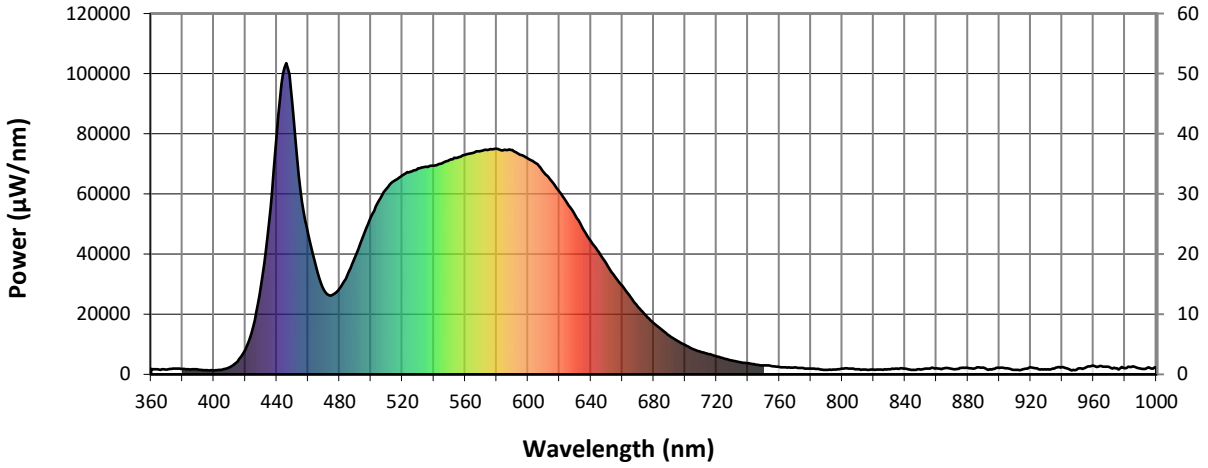
Photopic Flux vs. Wavelength

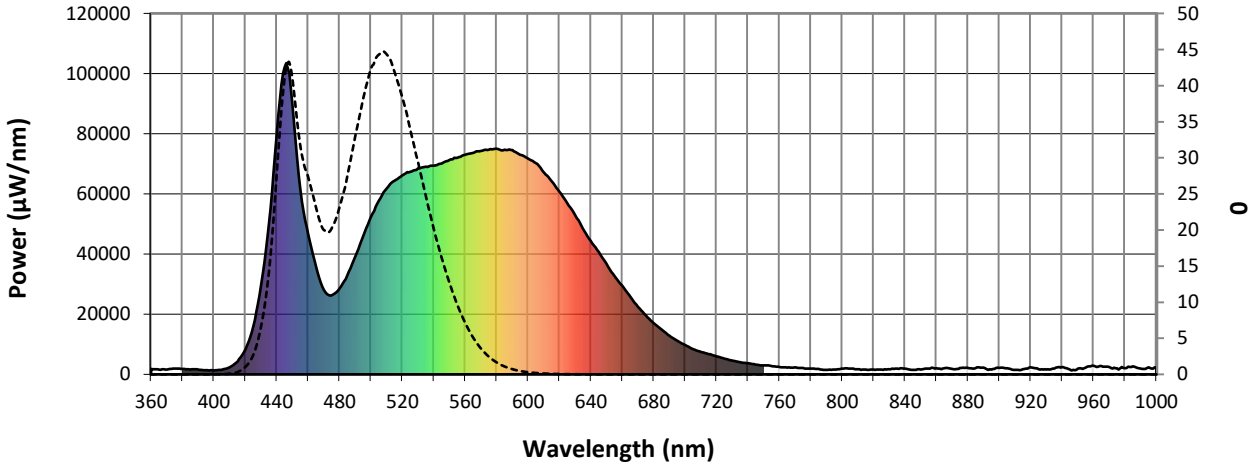


######

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	1830	0.0	490	39290	5.6	620	60661	15.8	750	3022	0.0	880	2170	0.0
365	1565	0.0	495	45895	8.3	625	56965	12.6	755	2799	0.0	885	2095	0.0
370	1615	0.0	500	52484	11.6	630	52840	9.6	760	2426	0.0	890	2221	0.0
375	1925	0.0	505	57658	16.1	635	48454	7.3	765	2265	0.0	895	1631	0.0
380	1770	0.0	510	61833	21.2	640	44251	5.3	770	2313	0.0	900	2168	0.0
385	1631	0.0	515	64361	26.7	645	40632	3.9	775	2117	0.0	905	1986	0.0
390	1587	0.0	520	66173	32.1	650	36678	2.7	780	1949	0.0	910	1497	0.0
395	1387	0.0	525	67346	36.2	655	32622	1.9	785	1850	0.0	915	1688	0.0
400	1314	0.0	530	68548	40.4	660	29433	1.2	790	1537	0.0	920	2309	0.0
405	1545	0.0	535	69083	42.8	665	25904	0.8	795	1606	0.0	925	1676	0.0
410	2352	0.0	540	69434	45.2	670	22450	0.5	800	1879	0.0	930	1643	0.0
415	4302	0.0	545	70161	46.7	675	19540	0.3	805	1874	0.0	935	1938	0.0
420	8202	0.0	550	71259	48.4	680	17063	0.2	810	1689	0.0	940	2503	0.0
425	15931	0.1	555	72093	49.2	685	14938	0.1	815	1603	0.0	945	1604	0.0
430	29451	0.2	560	73055	49.6	690	12839	0.1	820	1615	0.0	950	1939	0.0
435	50263	0.6	565	73632	49.0	695	11135	0.0	825	1580	0.0	955	2280	0.0
440	79646	1.3	570	74262	48.3	700	9751	0.0	830	1691	0.0	960	2909	0.0
445	102126	2.1	575	74754	46.5	705	8425	0.0	835	1874	0.0	965	2727	0.0
450	89946	2.3	580	74999	44.6	710	7445	0.0	840	1897	0.0	970	2407	0.0
455	61475	2.1	585	74696	41.5	715	6743	0.0	845	1518	0.0	975	2033	0.0
460	46830	1.9	590	74627	38.6	720	5983	0.0	850	1637	0.0	980	1993	0.0
465	35832	1.8	595	73026	34.6	725	5259	0.0	855	1867	0.0	985	2615	0.0
470	28041	1.7	600	71687	30.9	730	4564	0.0	860	2075	0.0	990	1918	0.0
475	26334	2.1	605	70271	27.2	735	4065	0.0	865	2074	0.0	995	2319	0.0
480	28580	2.7	610	67123	23.1	740	3702	0.0	870	1793	0.0	1000	2272	0.0
485	33016	3.9	615	64247	19.4	745	3231	0.0	875	2156	0.0			

REPORT NUMBER: SP1-2104-224-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: 9262.6 **S/P: 1.91**

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	1830	0.0	490	39290	60.5	620	60661	0.8	750	3022	0.0	880	2170	0.0
365	1565	0.0	495	45895	74.2	625	56965	0.5	755	2799	0.0	885	2095	0.0
370	1615	0.0	500	52484	87.8	630	52840	0.3	760	2426	0.0	890	2221	0.0
375	1925	0.0	505	57658	98.0	635	48454	0.2	765	2265	0.0	895	1631	0.0
380	1770	0.0	510	61833	104.8	640	44251	0.1	770	2313	0.0	900	2168	0.0
385	1631	0.0	515	64361	106.7	645	40632	0.1	775	2117	0.0	905	1986	0.0
390	1587	0.0	520	66173	105.2	650	36678	0.0	780	1949	0.0	910	1497	0.0
395	1387	0.0	525	67346	100.7	655	32622	0.0	785	1850	0.0	915	1688	0.0
400	1314	0.0	530	68548	94.5	660	29433	0.0	790	1537	0.0	920	2309	0.0
405	1545	0.0	535	69083	86.1	665	25904	0.0	795	1606	0.0	925	1676	0.0
410	2352	0.1	540	69434	76.7	670	22450	0.0	800	1879	0.0	930	1643	0.0
415	4302	0.4	545	70161	67.3	675	19540	0.0	805	1874	0.0	935	1938	0.0
420	8202	1.3	550	71259	58.3	680	17063	0.0	810	1689	0.0	940	2503	0.0
425	15931	3.9	555	72093	49.3	685	14938	0.0	815	1603	0.0	945	1604	0.0
430	29451	10.0	560	73055	40.8	690	12839	0.0	820	1615	0.0	950	1939	0.0
435	50263	22.5	565	73632	33.0	695	11135	0.0	825	1580	0.0	955	2280	0.0
440	79646	44.5	570	74262	26.2	700	9751	0.0	830	1691	0.0	960	2909	0.0
445	102126	68.4	575	74754	20.4	705	8425	0.0	835	1874	0.0	965	2727	0.0
450	89946	69.7	580	74999	15.5	710	7445	0.0	840	1897	0.0	970	2407	0.0
455	61475	53.7	585	74696	11.4	715	6743	0.0	845	1518	0.0	975	2033	0.0
460	46830	45.2	590	74627	8.3	720	5983	0.0	850	1637	0.0	980	1993	0.0
465	35832	37.8	595	73026	5.8	725	5259	0.0	855	1867	0.0	985	2615	0.0
470	28041	32.3	600	71687	4.0	730	4564	0.0	860	2075	0.0	990	1918	0.0
475	26334	32.9	605	70271	2.8	735	4065	0.0	865	2074	0.0	995	2319	0.0
480	28580	38.6	610	67123	1.8	740	3702	0.0	870	1793	0.0	1000	2272	0.0
485	33016	47.9	615	64247	1.2	745	3231	0.0	875	2156	0.0			

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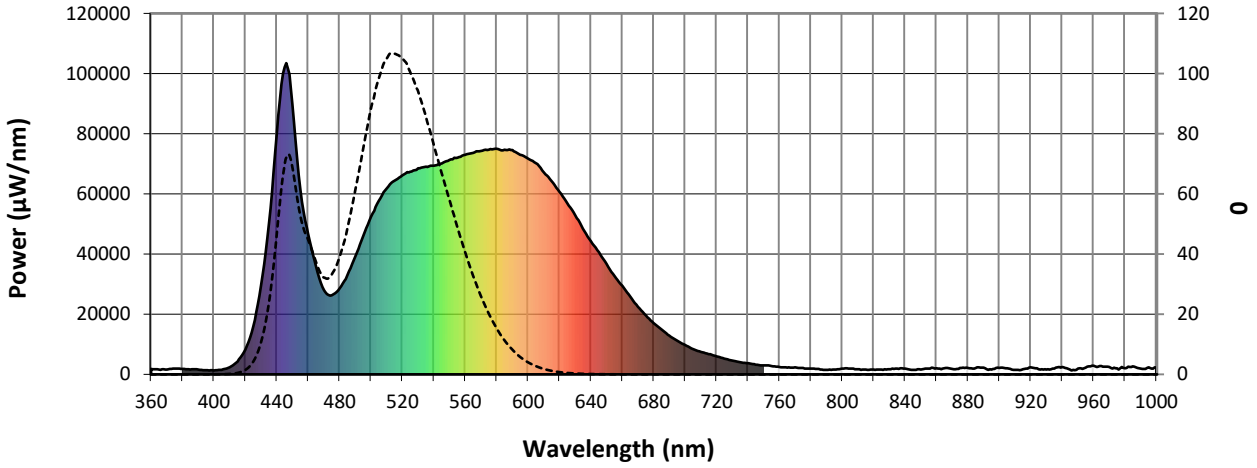
Melanopic Flux vs. Wavelength



Melanopic Lumens: 3791.6 **M/P: 0.78**

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	1830	0.0	490	39290	32.7	620	60661	0.0	750	3022	0.0	880	2170	0.0
365	1565	0.0	495	45895	37.9	625	56965	0.0	755	2799	0.0	885	2095	0.0
370	1615	0.0	500	52484	42.2	630	52840	0.0	760	2426	0.0	890	2221	0.0
375	1925	0.0	505	57658	44.3	635	48454	0.0	765	2265	0.0	895	1631	0.0
380	1770	0.0	510	61833	44.4	640	44251	0.0	770	2313	0.0	900	2168	0.0
385	1631	0.0	515	64361	42.1	645	40632	0.0	775	2117	0.0	905	1986	0.0
390	1587	0.0	520	66173	38.5	650	36678	0.0	780	1949	0.0	910	1497	0.0
395	1387	0.0	525	67346	34.2	655	32622	0.0	785	1850	0.0	915	1688	0.0
400	1314	0.0	530	68548	29.6	660	29433	0.0	790	1537	0.0	920	2309	0.0
405	1545	0.0	535	69083	24.9	665	25904	0.0	795	1606	0.0	925	1676	0.0
410	2352	0.1	540	69434	20.3	670	22450	0.0	800	1879	0.0	930	1643	0.0
415	4302	0.3	545	70161	16.3	675	19540	0.0	805	1874	0.0	935	1938	0.0
420	8202	0.9	550	71259	12.8	680	17063	0.0	810	1689	0.0	940	2503	0.0
425	15931	2.5	555	72093	9.7	685	14938	0.0	815	1603	0.0	945	1604	0.0
430	29451	6.2	560	73055	7.2	690	12839	0.0	820	1615	0.0	950	1939	0.0
435	50263	13.4	565	73632	5.2	695	11135	0.0	825	1580	0.0	955	2280	0.0
440	79646	26.6	570	74262	3.6	700	9751	0.0	830	1691	0.0	960	2909	0.0
445	102126	40.3	575	74754	2.5	705	8425	0.0	835	1874	0.0	965	2727	0.0
450	89946	41.4	580	74999	1.7	710	7445	0.0	840	1897	0.0	970	2407	0.0
455	61475	32.2	585	74696	1.1	715	6743	0.0	845	1518	0.0	975	2033	0.0
460	46830	27.6	590	74627	0.7	720	5983	0.0	850	1637	0.0	980	1993	0.0
465	35832	23.4	595	73026	0.5	725	5259	0.0	855	1867	0.0	985	2615	0.0
470	28041	20.1	600	71687	0.3	730	4564	0.0	860	2075	0.0	990	1918	0.0
475	26334	20.1	605	70271	0.2	735	4065	0.0	865	2074	0.0	995	2319	0.0
480	28580	23.0	610	67123	0.1	740	3702	0.0	870	1793	0.0	1000	2272	0.0
485	33016	27.2	615	64247	0.1	745	3231	0.0	875	2156	0.0			

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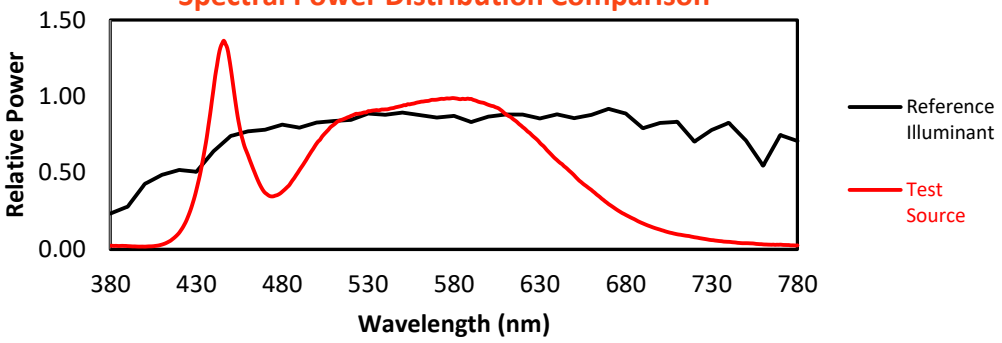
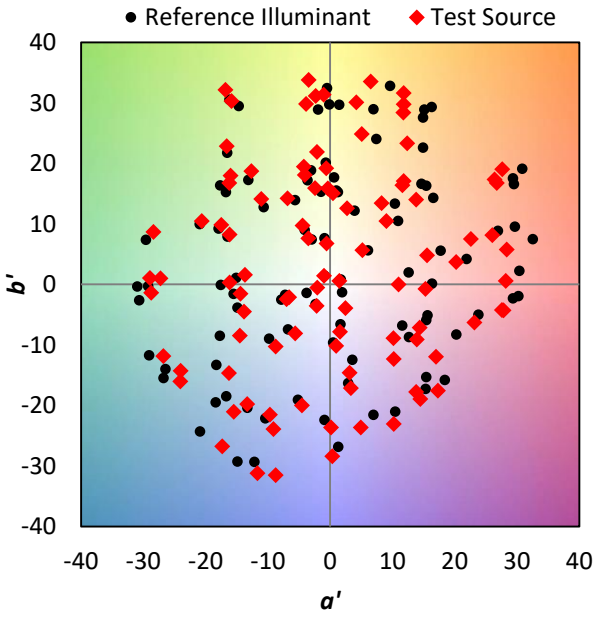
Summary

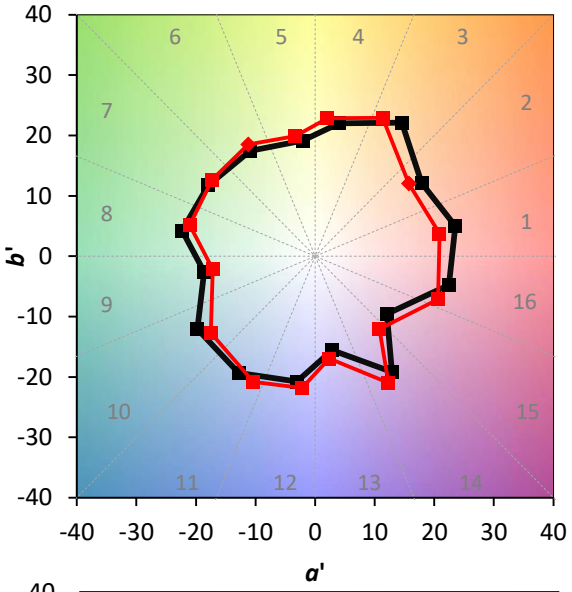
R_f = 84.6
R_g = 96.9
CIE R_a = 82.2
R_9 = 4.0

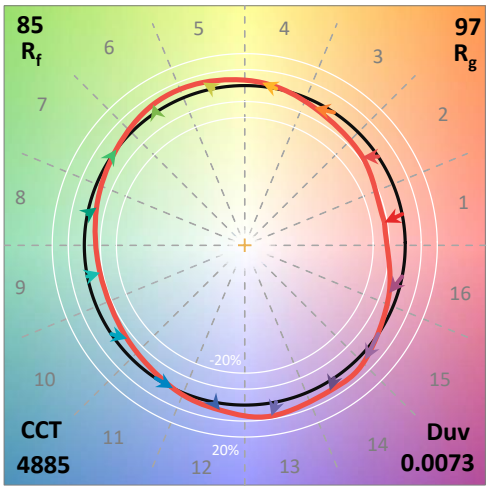
Spectral Power Distribution Comparison

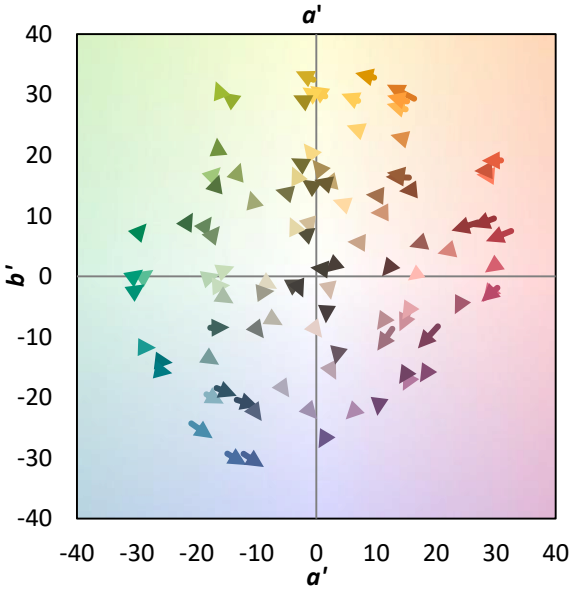


Color Vector Graphics









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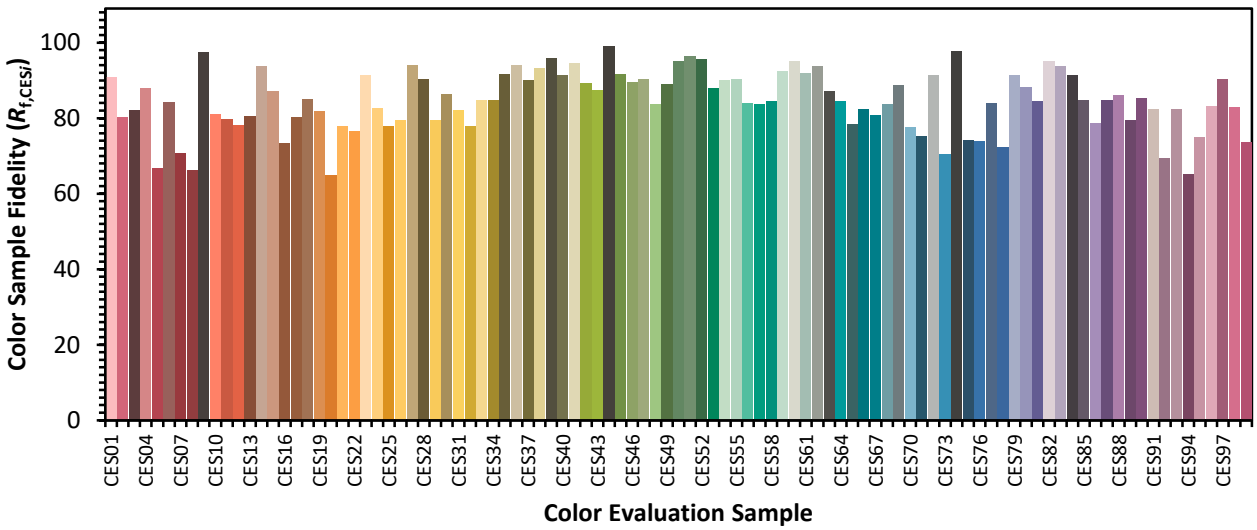
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 79	CES51 = 96	CES76 = 74
CES02 = 60	CES27 = 94	CES52 = 96	CES77 = 84
CES03 = 30	CES28 = 90	CES53 = 88	CES78 = 72
CES04 = 69	CES29 = 80	CES54 = 90	CES79 = 91
CES05 = 47	CES30 = 86	CES55 = 90	CES80 = 88
CES06 = 50	CES31 = 82	CES56 = 84	CES81 = 85
CES07 = 39	CES32 = 78	CES57 = 84	CES82 = 95
CES08 = 39	CES33 = 85	CES58 = 84	CES83 = 94
CES09 = 29	CES34 = 85	CES59 = 92	CES84 = 91
CES10 = 73	CES35 = 92	CES60 = 95	CES85 = 85
CES11 = 56	CES36 = 94	CES61 = 92	CES86 = 79
CES12 = 61	CES37 = 90	CES62 = 94	CES87 = 85
CES13 = 42	CES38 = 93	CES63 = 87	CES88 = 86
CES14 = 74	CES39 = 96	CES64 = 84	CES89 = 79
CES15 = 70	CES40 = 91	CES65 = 78	CES90 = 85
CES16 = 46	CES41 = 94	CES66 = 82	CES91 = 82
CES17 = 48	CES42 = 89	CES67 = 81	CES92 = 69
CES18 = 55	CES43 = 87	CES68 = 84	CES93 = 82
CES19 = 70	CES44 = 99	CES69 = 89	CES94 = 65
CES20 = 64	CES45 = 92	CES70 = 78	CES95 = 75
CES21 = 85	CES46 = 89	CES71 = 75	CES96 = 83
CES22 = 77	CES47 = 90	CES72 = 91	CES97 = 90
CES23 = 91	CES48 = 84	CES73 = 71	CES98 = 83
CES24 = 90	CES49 = 89	CES74 = 98	CES99 = 74
CES25 = 70	CES50 = 95	CES75 = 74	



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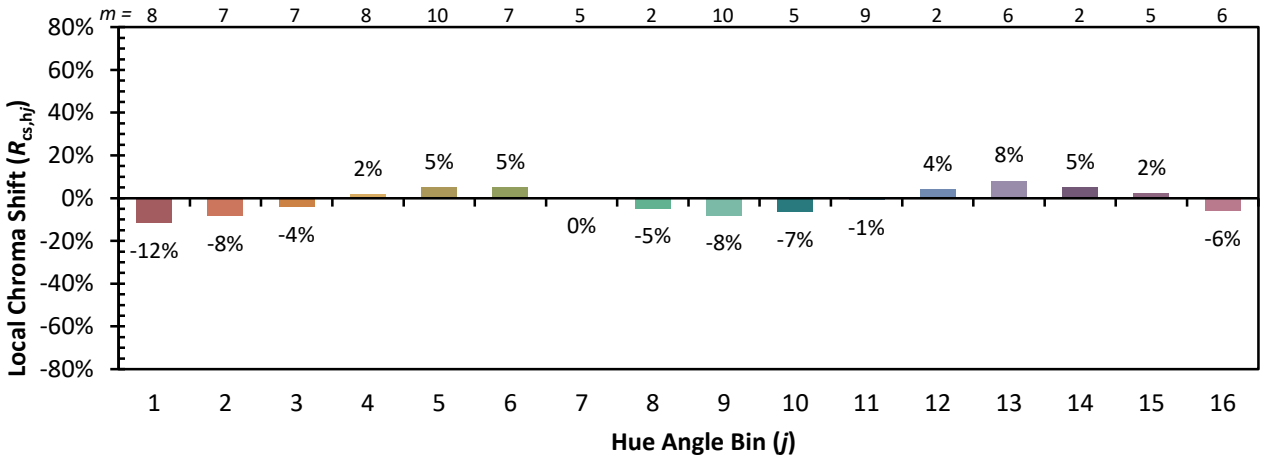
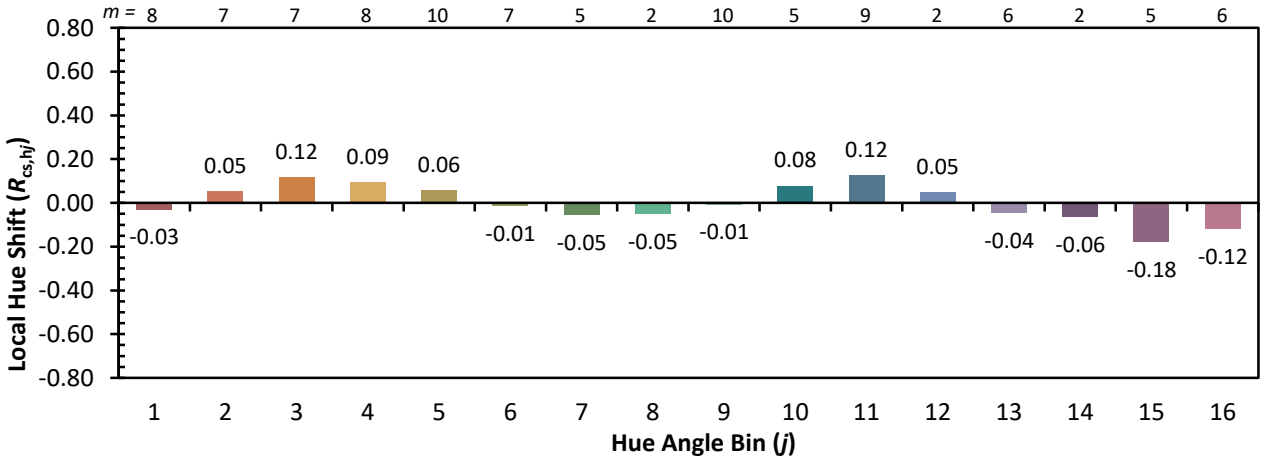
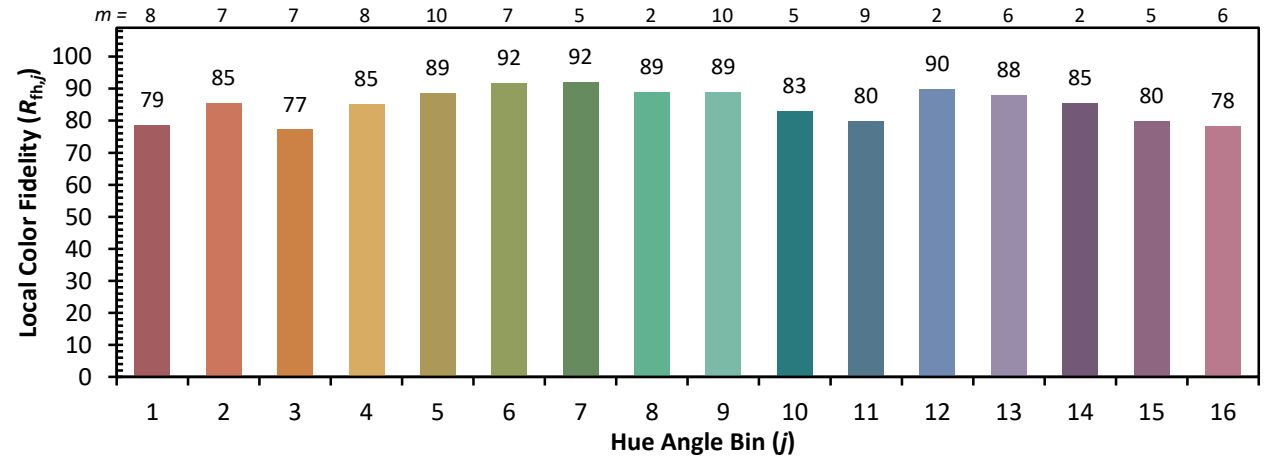
Color Rendition by Hue-Angle Bin







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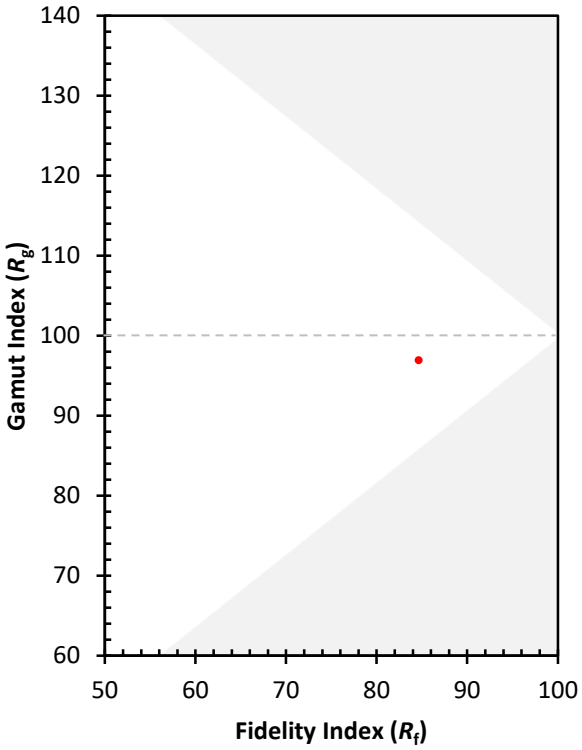
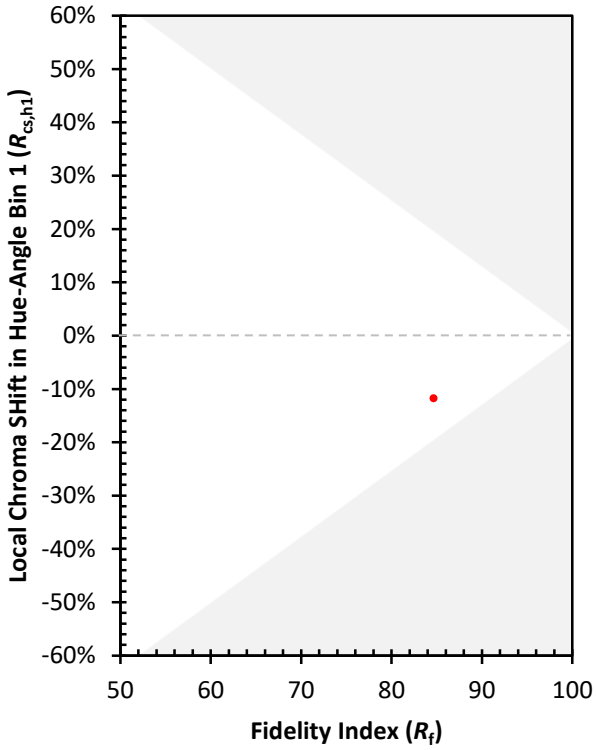
Measure Comparisons





(END OF REPORT)