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: P868755

Luminaire Tested: **EMM2-HTN-SA2A-750-U-T5W**

Issue Date: 08/22/2024

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:	P868755
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	08/22/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-SA2A-750-U-T5W
Description:	EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 70W 70CRI 5000K FIXTURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source:	(20) 5000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	9522.6 lumens
Efficiency:	N/A
Efficacy:	156.1 lumens/watt
Luminous Opening:	Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G2

Input Watts (W):	61
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	9.89%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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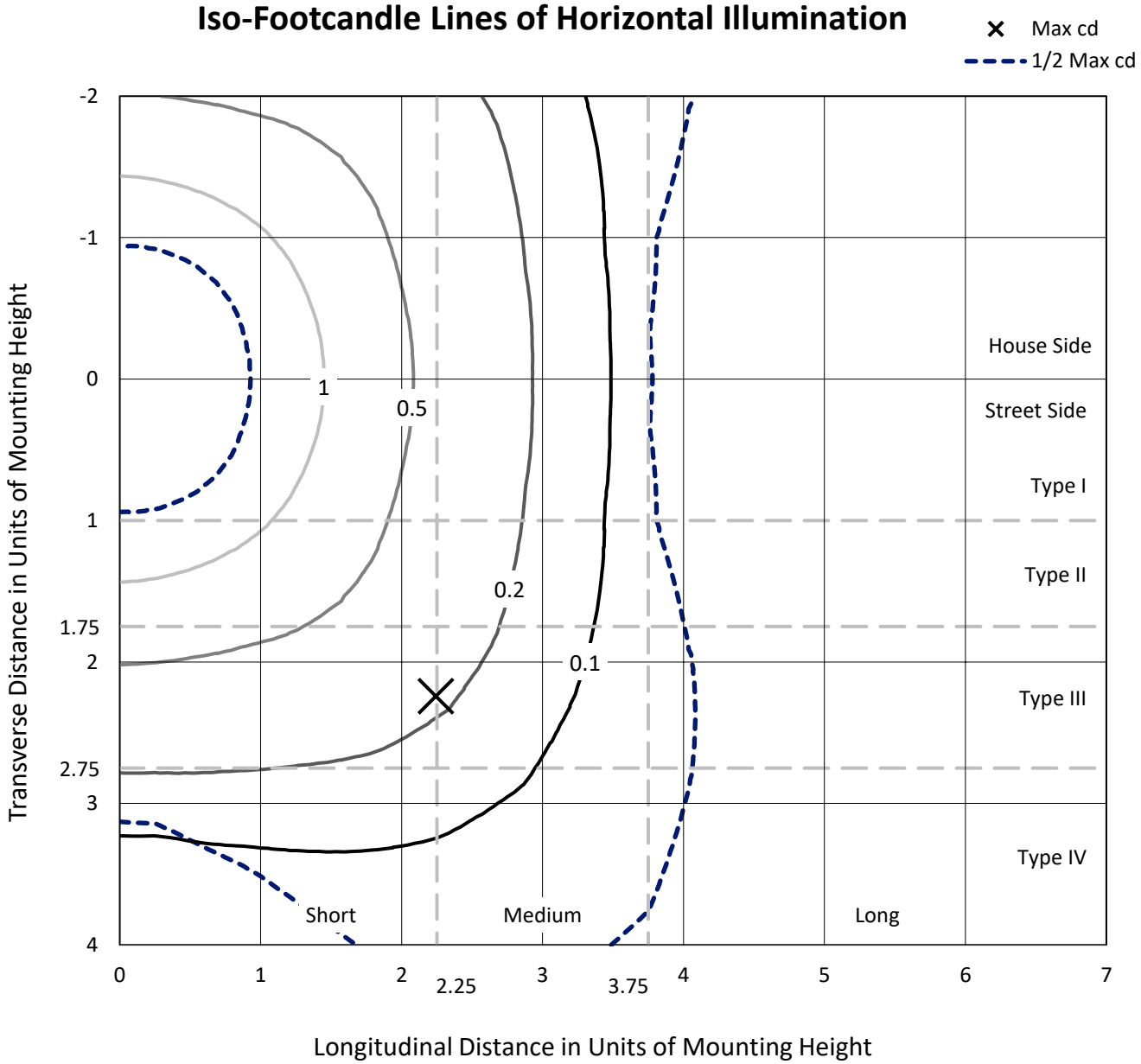
Scaled Data Report

REPORT NUMBER: P868755
CATALOG NUMBER: EMM2-HTN-SA2A-750-U-T5W

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 1.7 fc
Type V - Short - N/A

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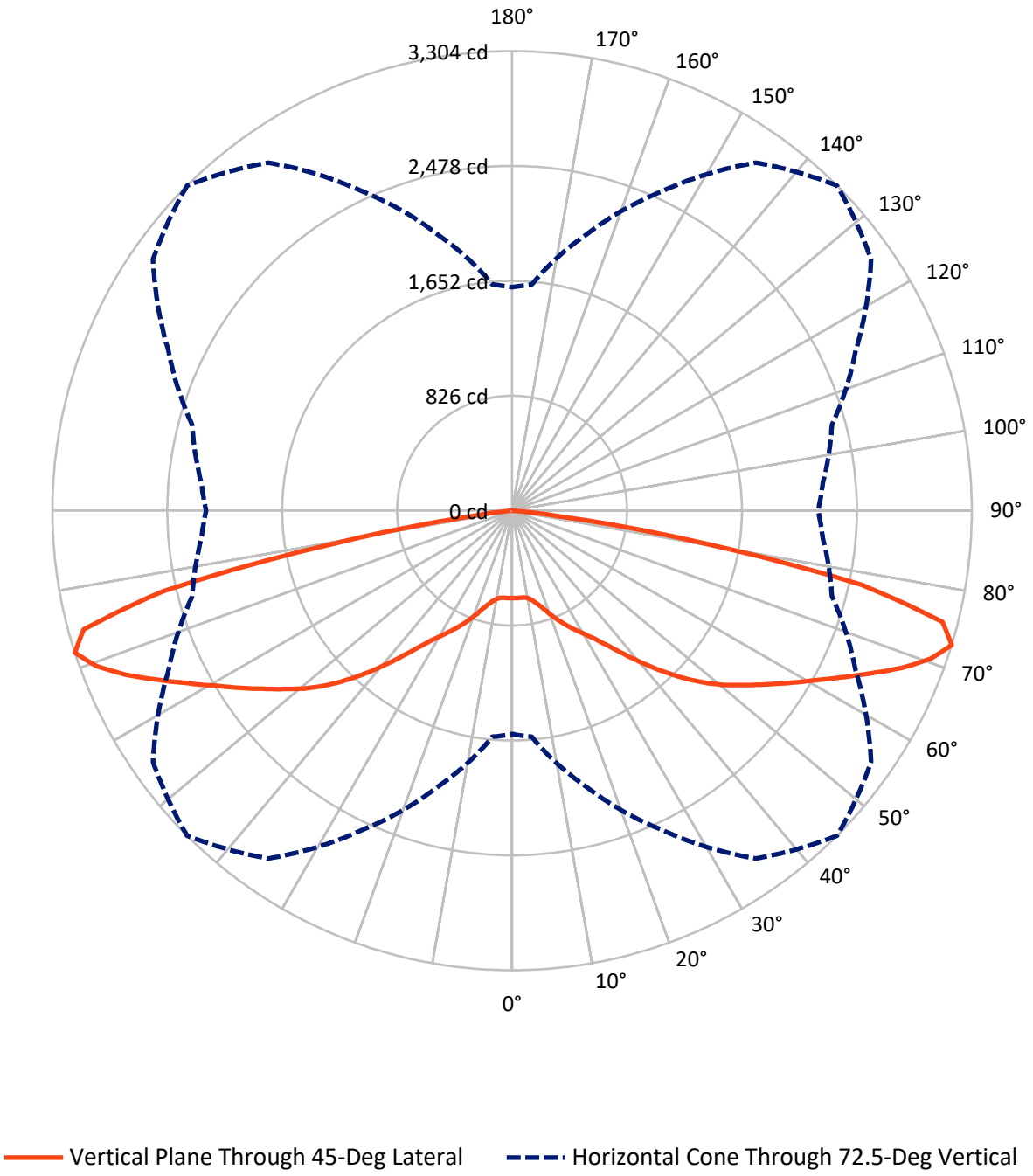
Luminous Intensity Polar Plot



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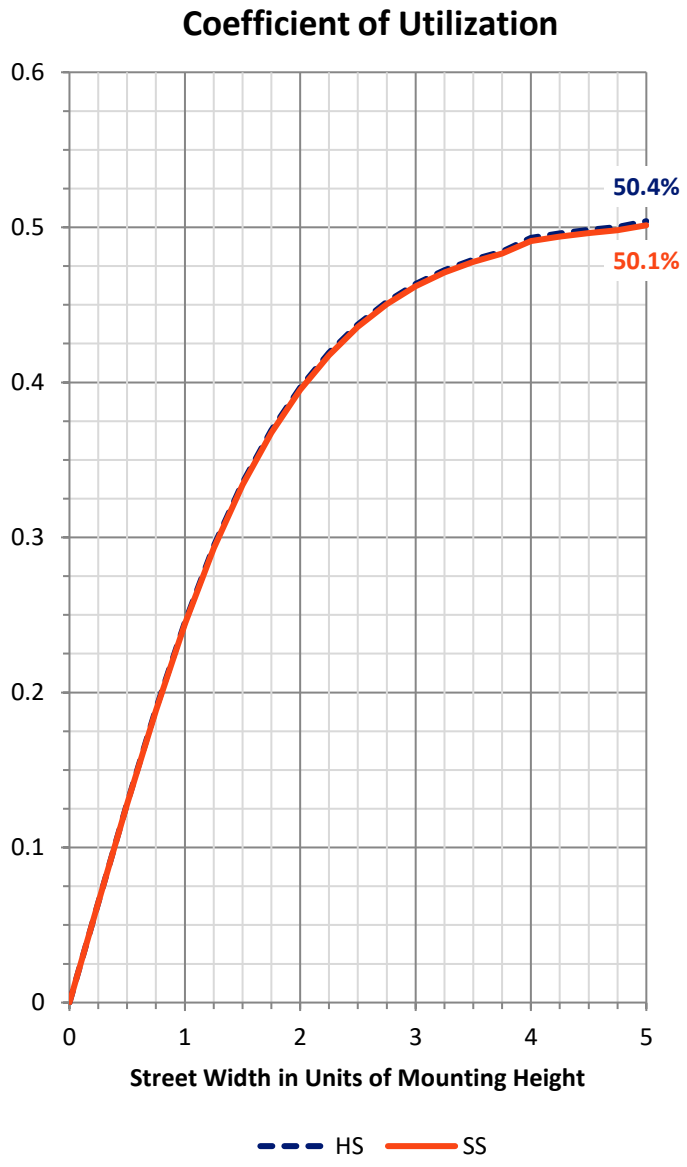
REPORT NUMBER: P868755
CATALOG NUMBER: EMM2-HTN-SA2A-750-U-T5W

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4761.3	0.0	4761.3
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4761.3	0.0	4761.3
	% Fixture	50.0	0.0	50.0
Total	Lumens	9522.6	0.0	9522.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.2	0.6
10°-20°	201.1	2.1
20°-30°	414.9	4.4
30°-40°	763.8	8.0
40°-50°	1343.0	14.1
50°-60°	1947.8	20.5
60°-70°	2539.2	26.7
70°-80°	2110.7	22.2
80°-90°	141.7	1.5
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°	9522.6	100.0
0°-180°	9522.6	100.0



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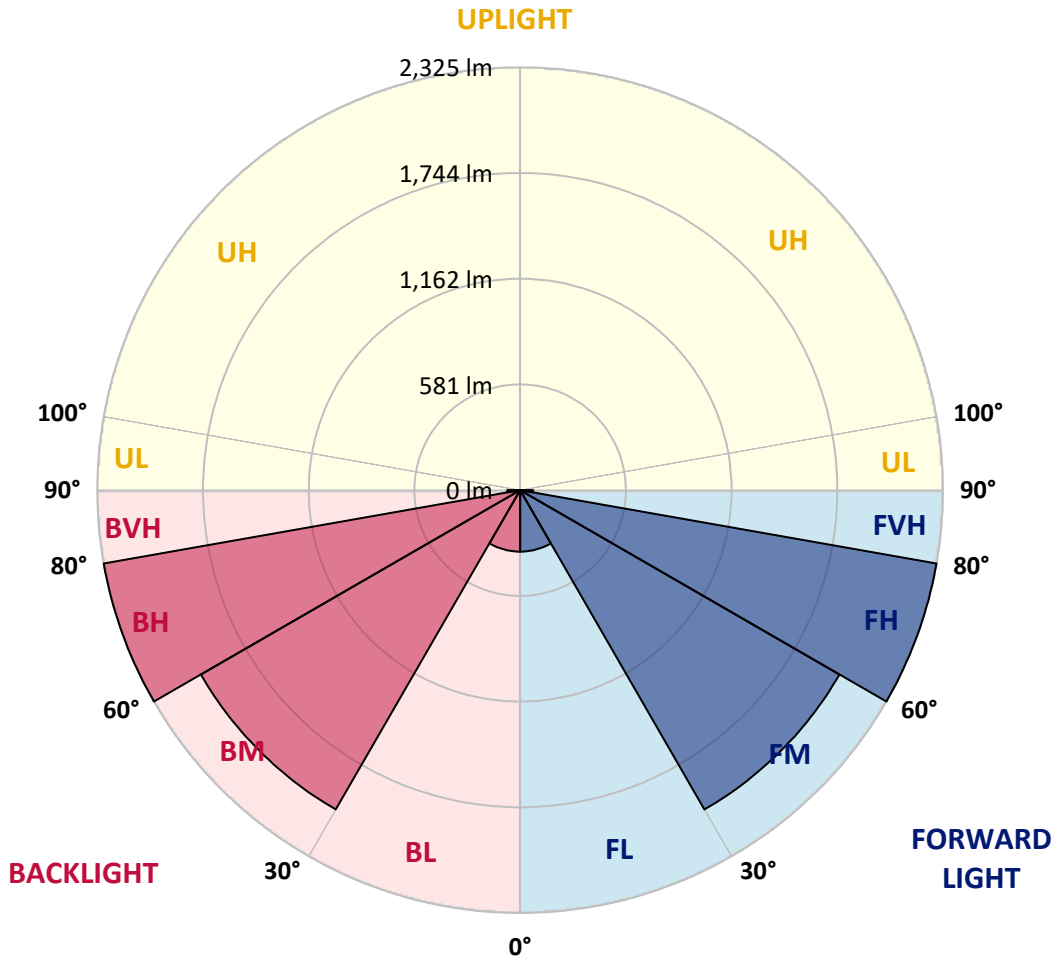
REPORT NUMBER: P868755
CATALOG NUMBER: EMM2-HTN-SA2A-750-U-T5W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	338.1	3.6			
FM	(30°-60°)	2027.3	21.3			
FH	(60°-80°)	2325.0	24.4			G2/5000
FVH	(80°-90°)	70.9	0.7			G1/100
BL	(0°-30°)	338.1	3.6	B1/500		
BM	(30°-60°)	2027.3	21.3	B2/2500		
BH	(60°-80°)	2325.0	24.4	B3/2500		G2/5000
BVH	(80°-90°)	70.9	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G2
Type V Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	628.7	628.7	628.7	628.7	628.7	*628.7*	628.7	628.7	628.7	628.7	628.7
2.5°	626.7	627.7	627.7	627.7	628.7	*629.6*	630.6	631.6	633.6	634.6	634.6
5°	629.6	628.7	627.7	629.6	629.6	*629.6*	630.6	631.6	631.6	631.6	632.6
7.5°	626.7	627.7	626.7	626.7	629.6	*630.6*	629.6	628.7	628.7	629.6	629.6
10°	637.5	636.6	635.6	635.6	638.5	*639.5*	638.5	637.5	637.5	639.5	639.5
12.5°	662.2	664.2	658.3	658.3	662.2	*664.2*	661.2	660.2	661.2	663.2	663.2
15°	700.7	699.7	695.8	691.8	695.8	*698.7*	694.8	692.8	693.8	698.7	694.8
17.5°	743.1	744.1	740.2	736.2	739.2	*743.1*	737.2	732.3	733.3	735.2	733.3
20°	790.5	789.5	788.5	788.5	794.5	*799.4*	790.5	778.7	775.7	773.7	773.7
22.5°	825.0	828.0	829.0	837.9	851.7	*856.6*	844.8	829.0	817.2	811.2	807.3
25°	879.3	876.4	874.4	884.3	905.0	*913.9*	899.1	877.4	865.5	864.5	867.5
27.5°	928.7	928.7	932.6	942.5	962.2	*971.1*	958.3	936.6	930.6	930.6	927.7
30°	992.8	989.9	993.8	1010.6	1025.4	*1031.3*	1020.5	1005.7	1000.7	1000.7	995.8
32.5°	1067.8	1068.8	1074.7	1085.6	1100.4	*1101.4*	1097.4	1090.5	1087.6	1084.6	1089.5
35°	1182.3	1182.3	1180.3	1188.2	1192.2	*1194.1*	1196.1	1193.2	1193.2	1193.2	1189.2
37.5°	1324.4	1316.5	1315.5	1308.6	1303.7	*1308.6*	1317.5	1327.4	1335.3	1330.3	1328.4
40°	1465.5	1461.6	1449.8	1438.9	1435.0	*1436.9*	1447.8	1468.5	1477.4	1477.4	1485.3
42.5°	1617.5	1609.6	1594.8	1582.0	1571.1	*1574.1*	1584.0	1609.6	1629.4	1638.3	1634.3
45°	1753.7	1746.8	1732.0	1720.2	1712.3	*1711.3*	1724.1	1740.9	1767.5	1775.4	1781.4
47.5°	1870.2	1865.2	1852.4	1840.6	1843.5	*1844.5*	1848.5	1863.3	1885.0	1895.8	1894.8
50°	1964.9	1961.0	1949.1	1954.1	1962.0	*1969.9*	1964.9	1974.8	1988.6	1993.5	1997.5
52.5°	2051.8	2045.8	2037.9	2046.8	2067.6	*2083.3*	2086.3	2079.4	2083.3	2086.3	2083.3
55°	2137.6	2130.7	2128.7	2144.5	2176.1	*2205.7*	2202.8	2183.0	2178.1	2172.2	2169.2
57.5°	2207.7	2202.8	2210.7	2237.3	2298.5	*2338.0*	2325.1	2279.7	2260.0	2246.2	2242.2
60°	2252.1	2251.1	2268.9	2331.1	2423.8	*2479.1*	2458.4	2380.4	2336.0	2323.2	2317.2
62.5°	2275.8	2276.8	2308.4	2418.9	2566.9	*2641.9*	2605.4	2486.0	2416.9	2404.1	2406.1
65°	2297.5	2294.5	2336.0	2492.9	2721.9	*2823.5*	2774.2	2613.3	2512.6	2487.0	2487.0
67.5°	2313.3	2316.3	2378.4	2566.9	2872.9	*3017.9*	2945.9	2748.5	2615.3	2576.8	2571.9
70°	2113.9	2142.6	2337.0	2616.3	2992.3	*3189.7*	3094.9	2831.4	2619.2	2509.7	2498.8
72.5°	*1605.7*	*1632.3*	*2052.8*	*2528.4*	*3053.5*	*3304.1*	*3150.2*	*2725.8*	*2380.4*	*2241.2*	*2199.8*
75°	1058.9	1077.7	1529.7	2208.7	2883.7	*3195.6*	2868.9	2347.8	1874.1	1693.5	1704.4
77.5°	471.7	531.9	975.1	1723.1	2375.5	*2571.9*	2188.0	1601.7	1144.8	969.1	950.4
80°	197.4	216.1	368.1	918.8	1376.7	*1317.5*	931.6	536.9	341.5	265.5	256.6
82.5°	57.2	59.2	73.0	158.9	280.3	*329.6*	198.4	100.7	95.7	76.0	70.1
85°	3.9	3.9	5.9	9.9	13.8	*22.7*	25.7	29.6	33.6	28.6	28.6
87.5°	2.0	2.0	2.0	3.0	3.0	*3.9*	3.0	3.0	3.0	3.0	3.0
90°	0.0	0.0	0.0	0.0	0.0	*0.0*	0.0	0.0	0.0	0.0	0.0

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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-157-6

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-750-U-5WQ-2

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

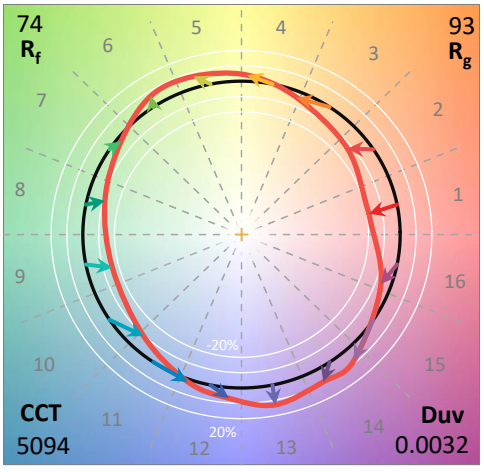
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-157-6
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	08/20/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-SA-40-750-U-5WQ-2**
Description:	Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K):	5094
CIE u':	0.2082
CIE v':	0.4867
Duv:	0.0032
CIE x:	0.3430
CIE y:	0.3564
CIE z:	0.3006
Peak Wavelength (nm):	451
Dominant Wavelength (nm):	568
Purity:	9.86439
Rf:	73.7
Rg:	93

CRI (Ra):	72.0
R1:	68.6
R2:	78.1
R3:	84.6
R4:	71.6
R5:	69.6
R6:	69.4
R7:	80.9
R8:	53.1
R9:	-39.6
R10:	47.6
R11:	68.2
R12:	41.4
R13:	70.4
R14:	91.4
R15:	61.4



Test Conditions

Stabilization Time:	20M
Operation Time:	1H 20M
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP1-2407-157-6

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

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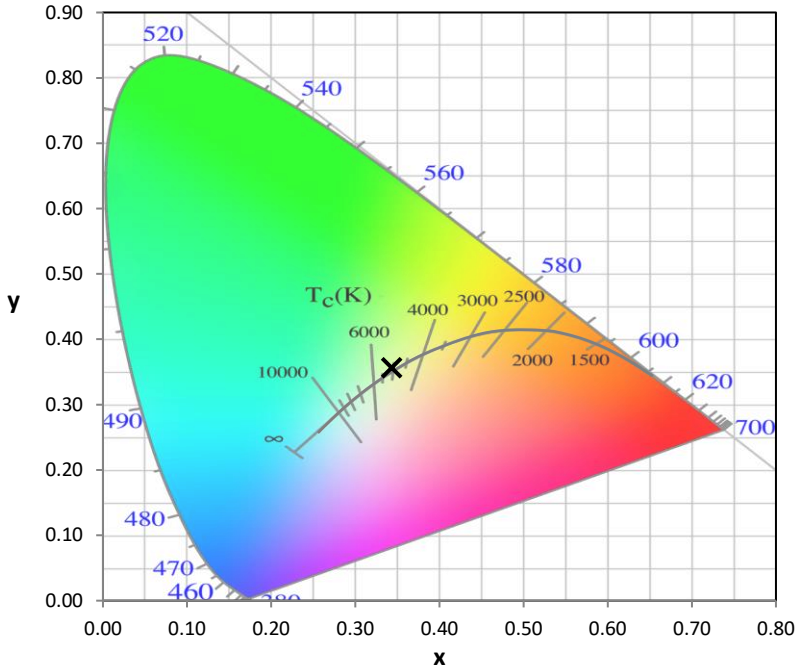
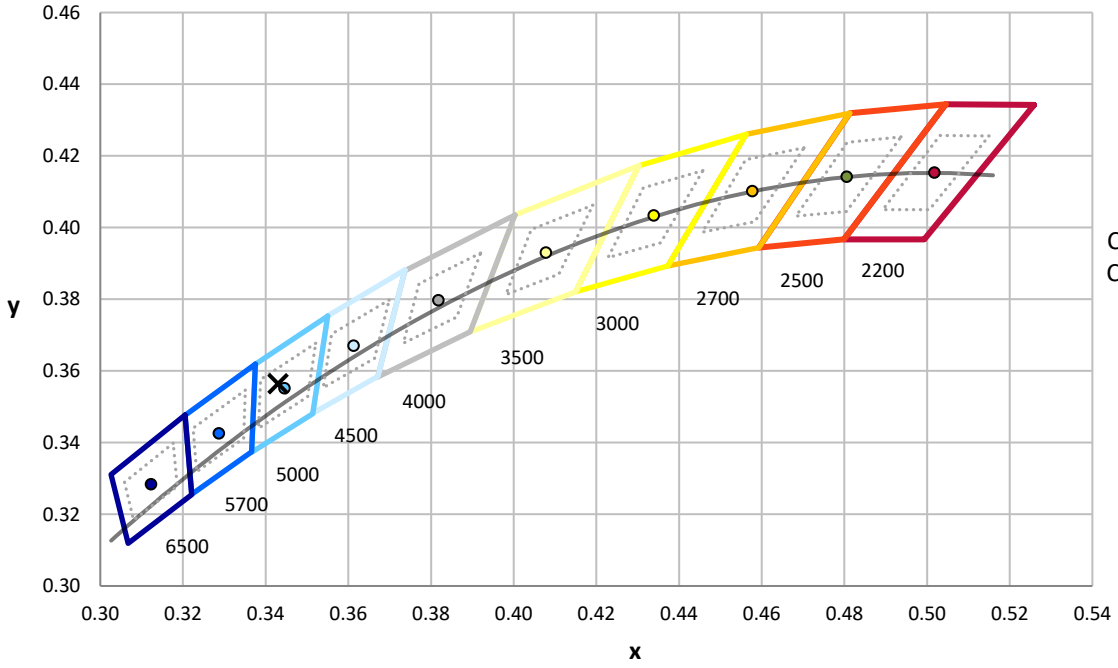
CIE 1931 Chromaticity Diagram



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



CCT = 5094K
CIE x = 0.3430
CIE y = 0.3564
Duv = 0.0032

Point lies inside the ANSI 5000K 4-step quadrangle

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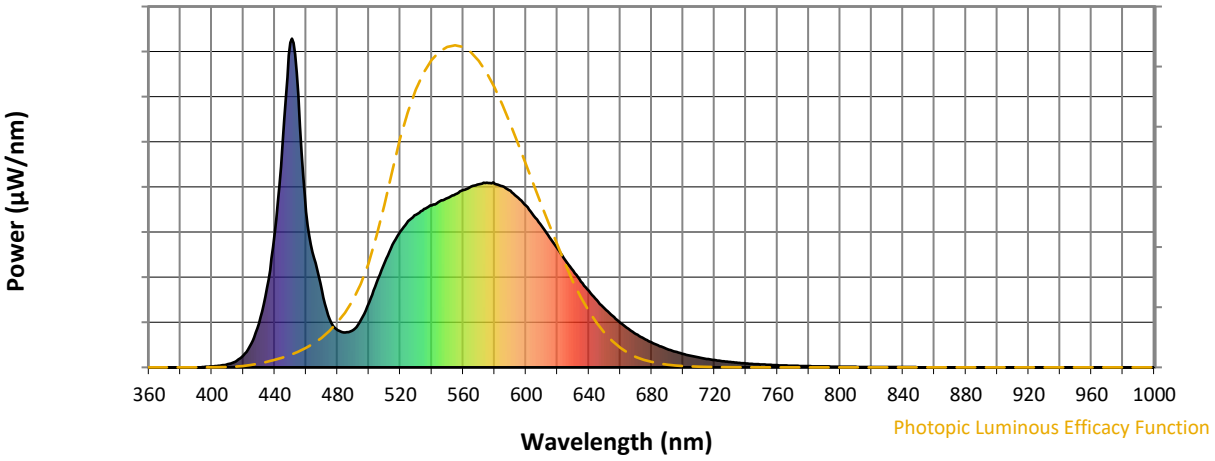
Photopic Flux vs. Wavelength

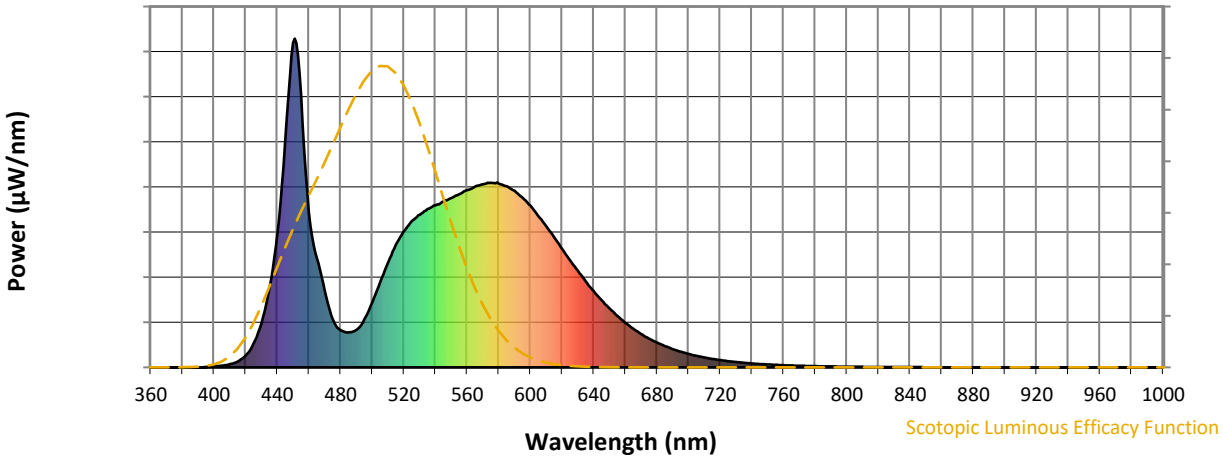


Photopic Lumens: NR

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-6

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/P: 1.81**

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

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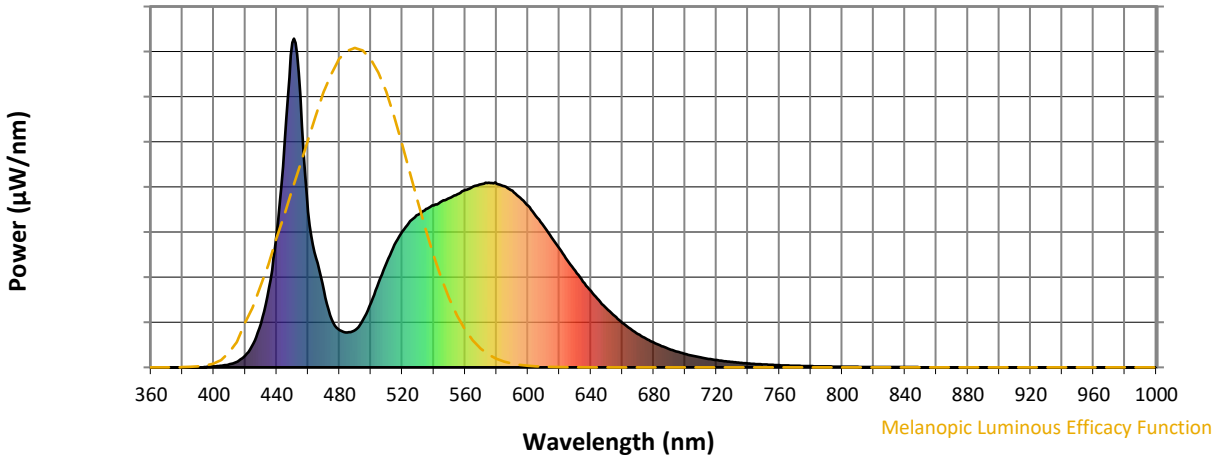
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.73**

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

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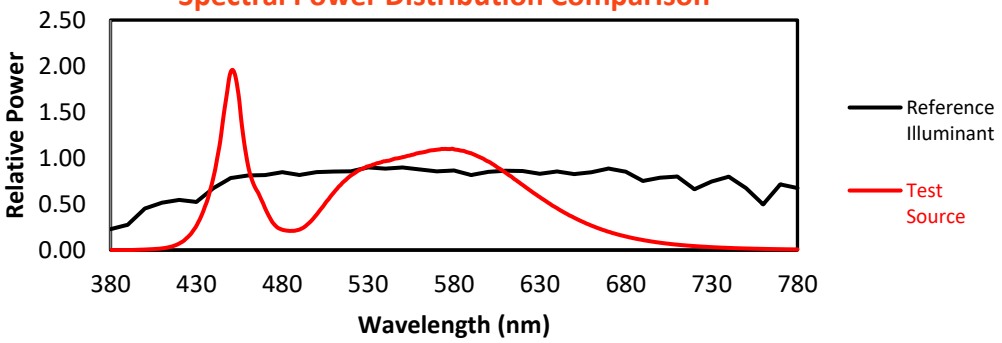
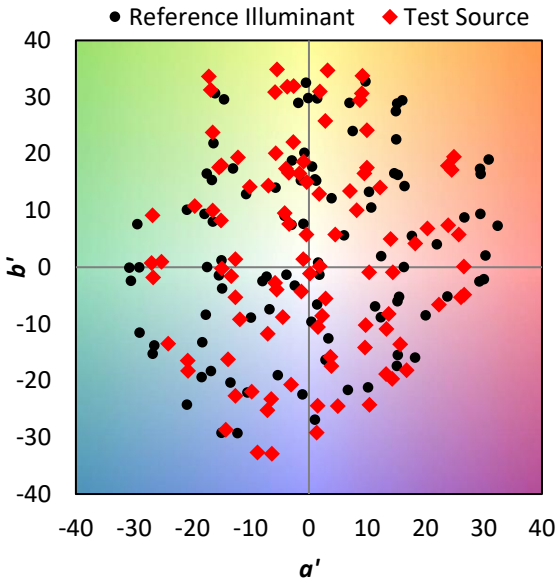
Summary

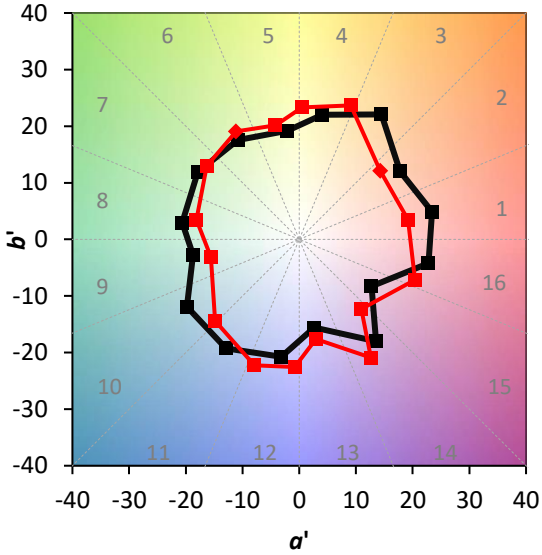
R_f = 73.7
R_g = 93
CIE R_a = 72.0
R_9 = -39.6

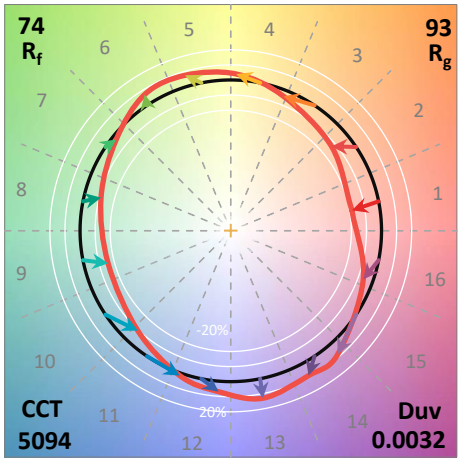
Spectral Power Distribution Comparison

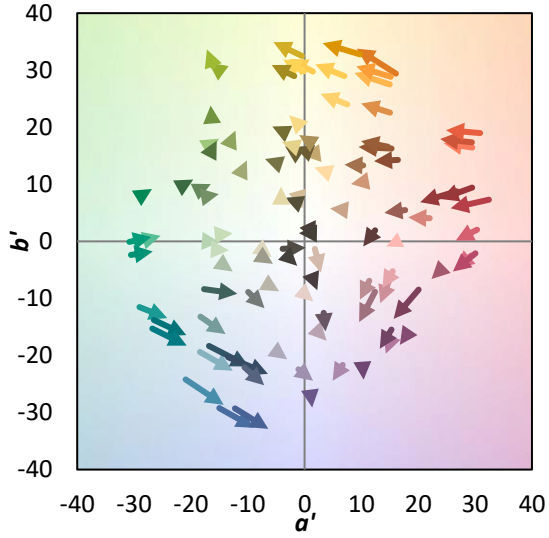


Color Vector Graphics









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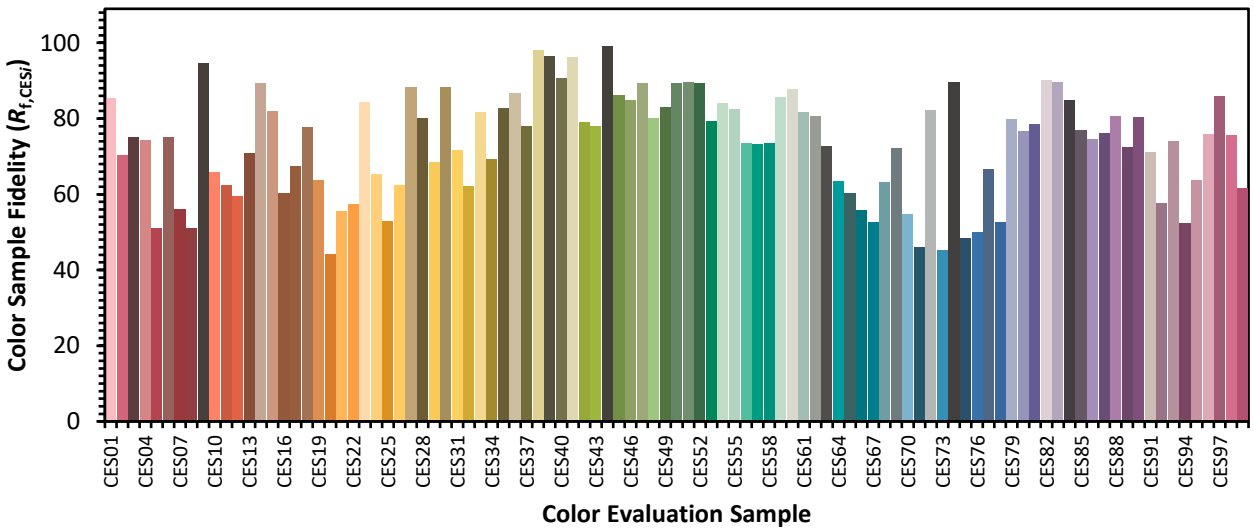
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 62	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 79	CES78 = 53
CES04 = 69	CES29 = 69	CES54 = 84	CES79 = 80
CES05 = 46	CES30 = 88	CES55 = 83	CES80 = 77
CES06 = 50	CES31 = 72	CES56 = 74	CES81 = 78
CES07 = 38	CES32 = 62	CES57 = 73	CES82 = 90
CES08 = 38	CES33 = 82	CES58 = 73	CES83 = 90
CES09 = 29	CES34 = 69	CES59 = 86	CES84 = 85
CES10 = 72	CES35 = 83	CES60 = 88	CES85 = 77
CES11 = 56	CES36 = 87	CES61 = 82	CES86 = 75
CES12 = 61	CES37 = 78	CES62 = 81	CES87 = 76
CES13 = 41	CES38 = 98	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 63	CES89 = 72
CES15 = 70	CES40 = 91	CES65 = 60	CES90 = 80
CES16 = 46	CES41 = 96	CES66 = 56	CES91 = 71
CES17 = 49	CES42 = 79	CES67 = 53	CES92 = 58
CES18 = 55	CES43 = 78	CES68 = 63	CES93 = 74
CES19 = 71	CES44 = 99	CES69 = 72	CES94 = 52
CES20 = 63	CES45 = 86	CES70 = 55	CES95 = 64
CES21 = 85	CES46 = 85	CES71 = 46	CES96 = 76
CES22 = 77	CES47 = 89	CES72 = 82	CES97 = 86
CES23 = 91	CES48 = 80	CES73 = 45	CES98 = 76
CES24 = 90	CES49 = 83	CES74 = 90	CES99 = 62
CES25 = 71	CES50 = 89	CES75 = 48	



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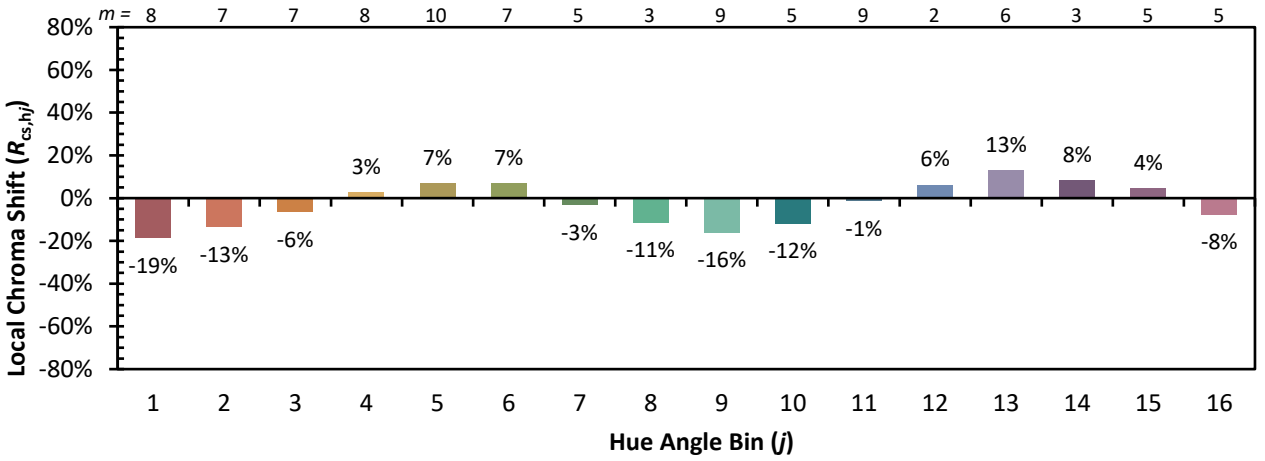
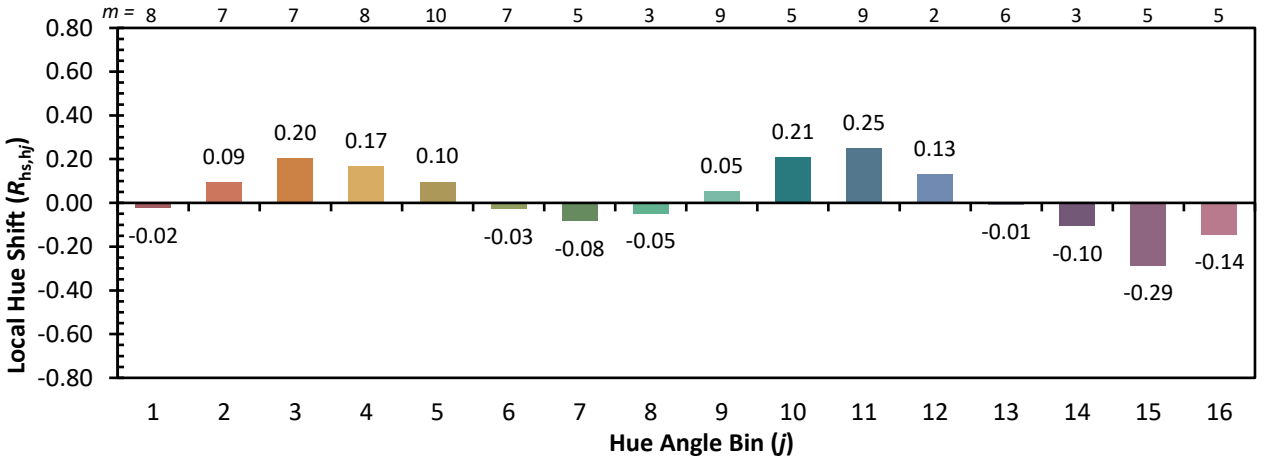
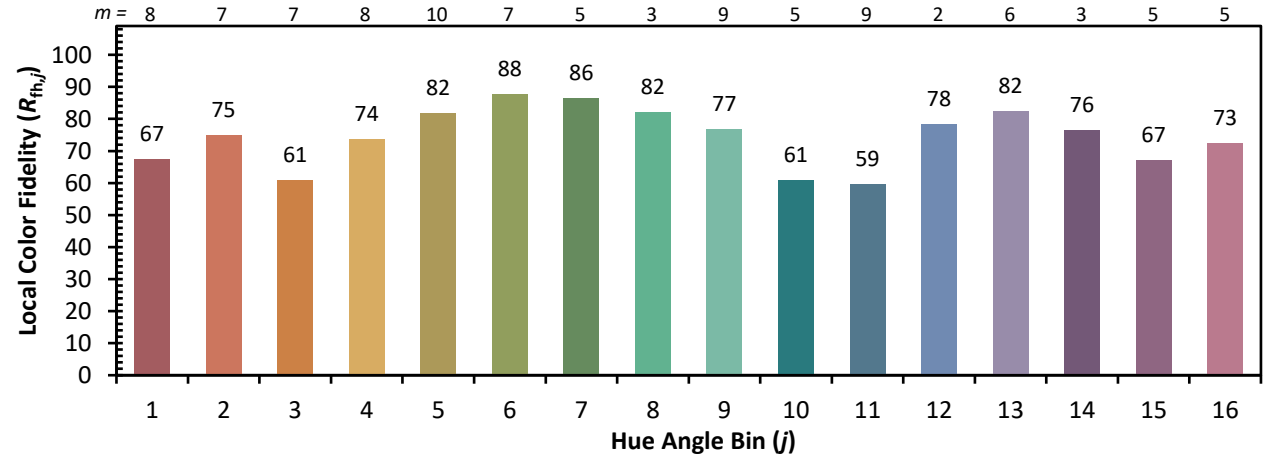
Color Rendition by Hue-Angle Bin







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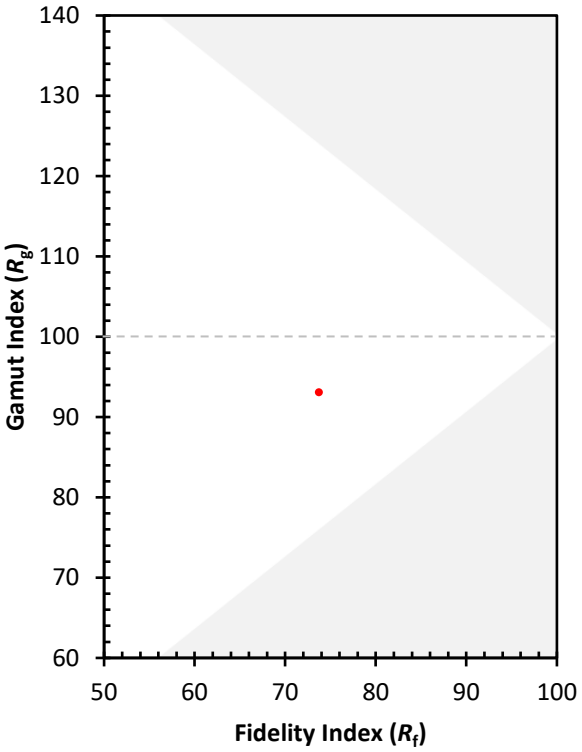
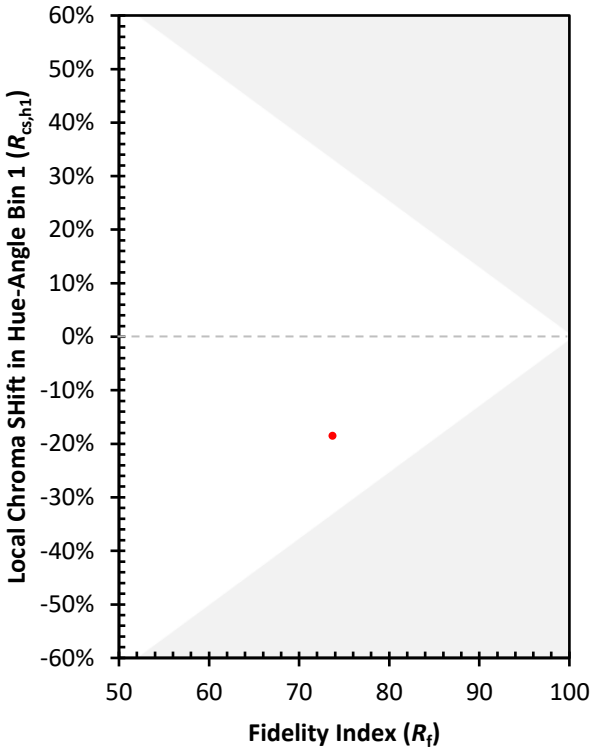
Measure Comparisons





(END OF REPORT)