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: P868754

Luminaire Tested: **EMM2-HTN-SA1B-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:	P868754
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	08/22/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-SA1B-750-U-T5W
Description:	EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 60W 70CRI 5000K FIXTURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source:	(10) 5000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	6376.3 lumens
Efficiency:	N/A
Efficacy:	144.9 lumens/watt
Luminous Opening:	Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G1

Input Watts (W):	44
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	6.91%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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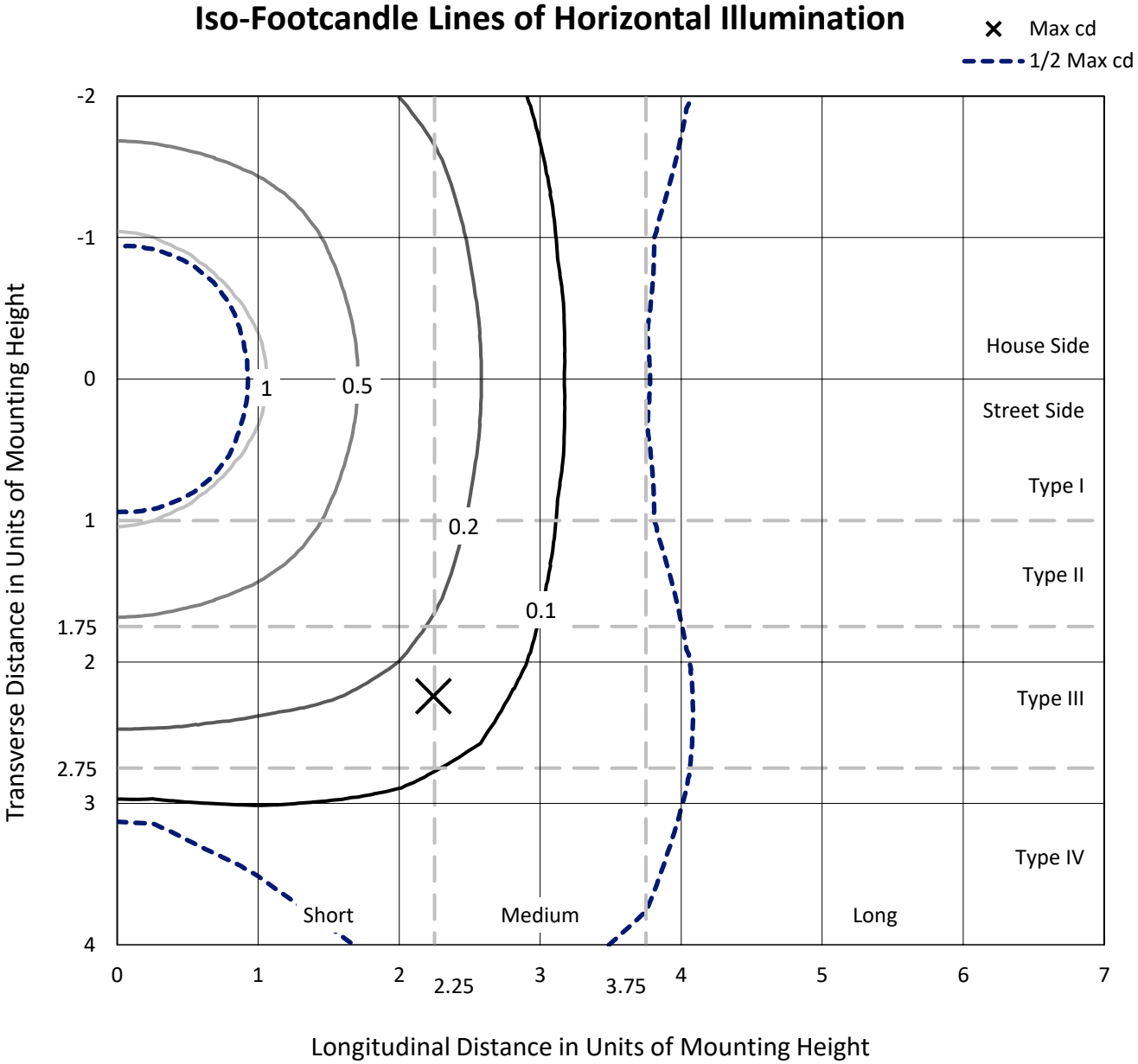
Scaled Data Report

REPORT NUMBER: P868754
CATALOG NUMBER: EMM2-HTN-SA1B-750-U-T5W

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 1.1 fc
Type V - Short - N/A

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REPORT NUMBER: P868754
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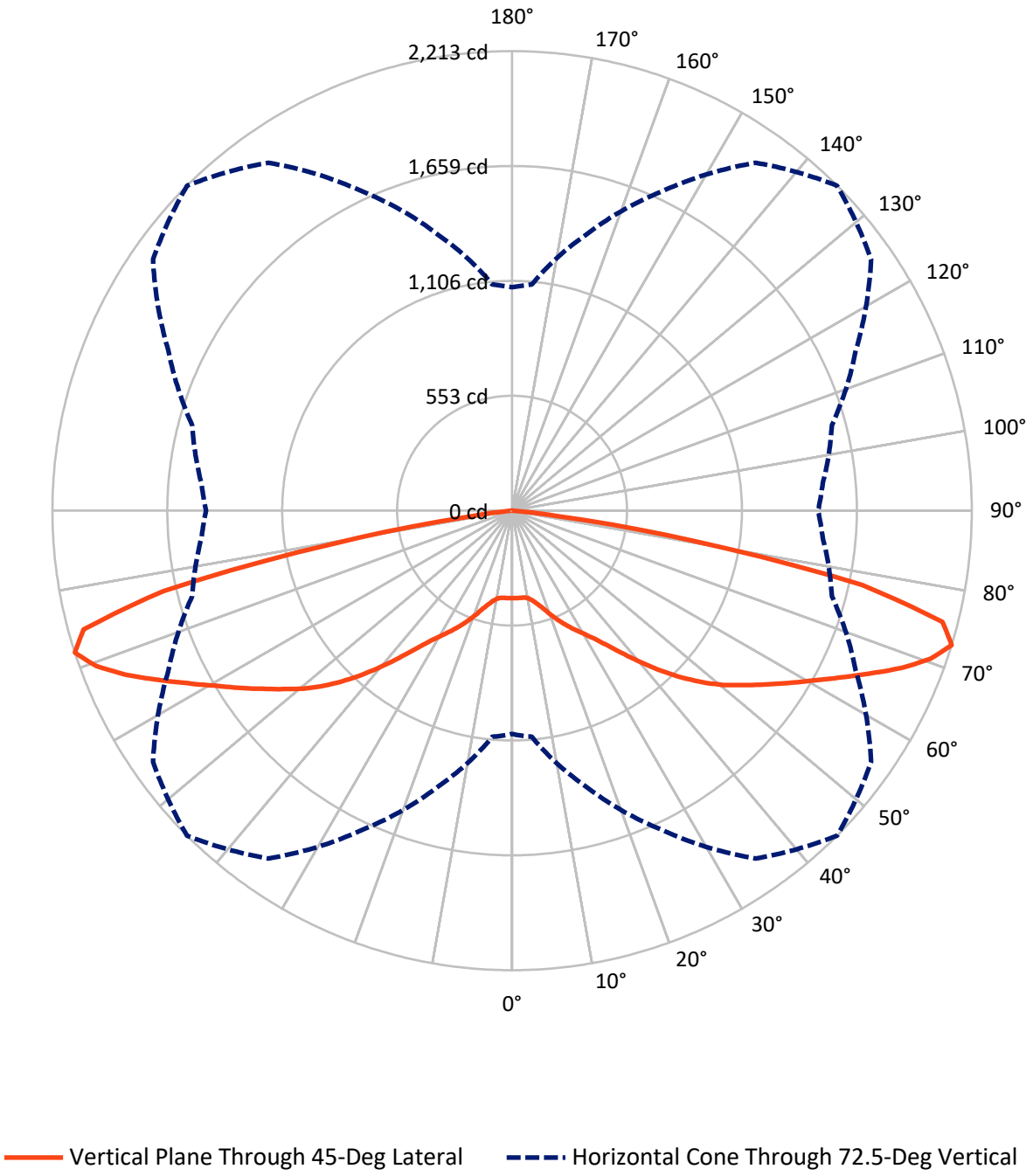
Luminous Intensity Polar Plot



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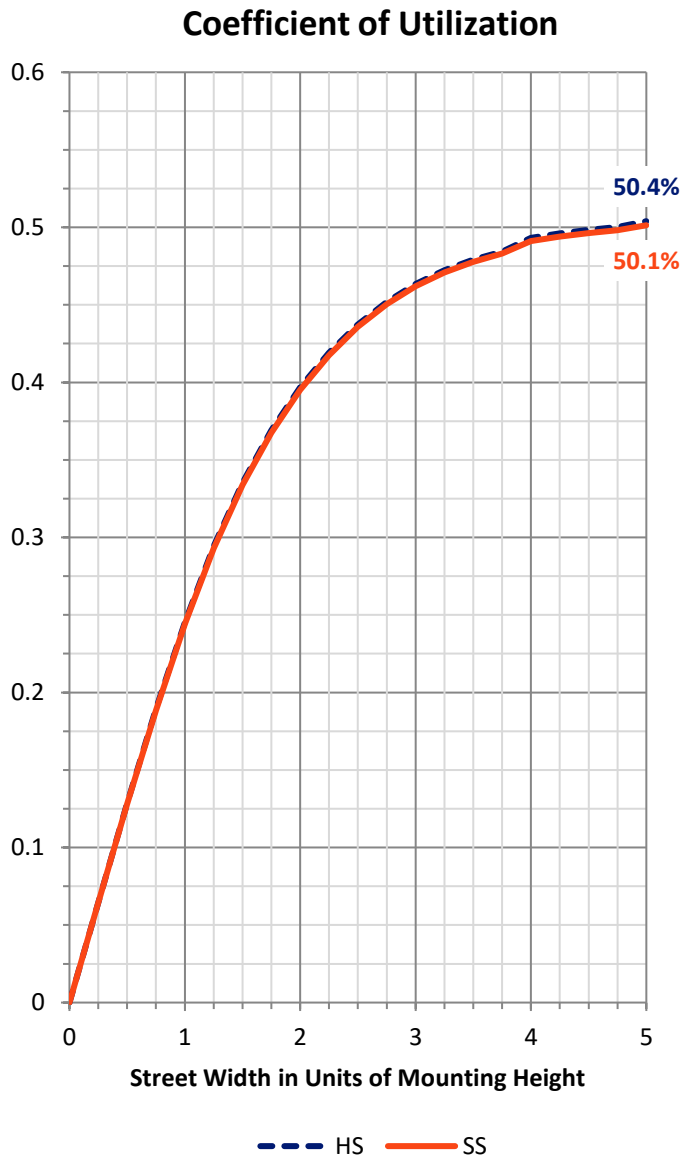
REPORT NUMBER: P868754
CATALOG NUMBER: EMM2-HTN-SA1B-750-U-T5W

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3188.2	0.0	3188.2
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3188.2	0.0	3188.2
	% Fixture	50.0	0.0	50.0
Total	Lumens	6376.3	0.0	6376.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.3	0.6
10°-20°	134.7	2.1
20°-30°	277.8	4.4
30°-40°	511.5	8.0
40°-50°	899.3	14.1
50°-60°	1304.3	20.5
60°-70°	1700.3	26.7
70°-80°	1413.3	22.2
80°-90°	94.9	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°	6376.3	100.0
0°-180°	6376.3	100.0



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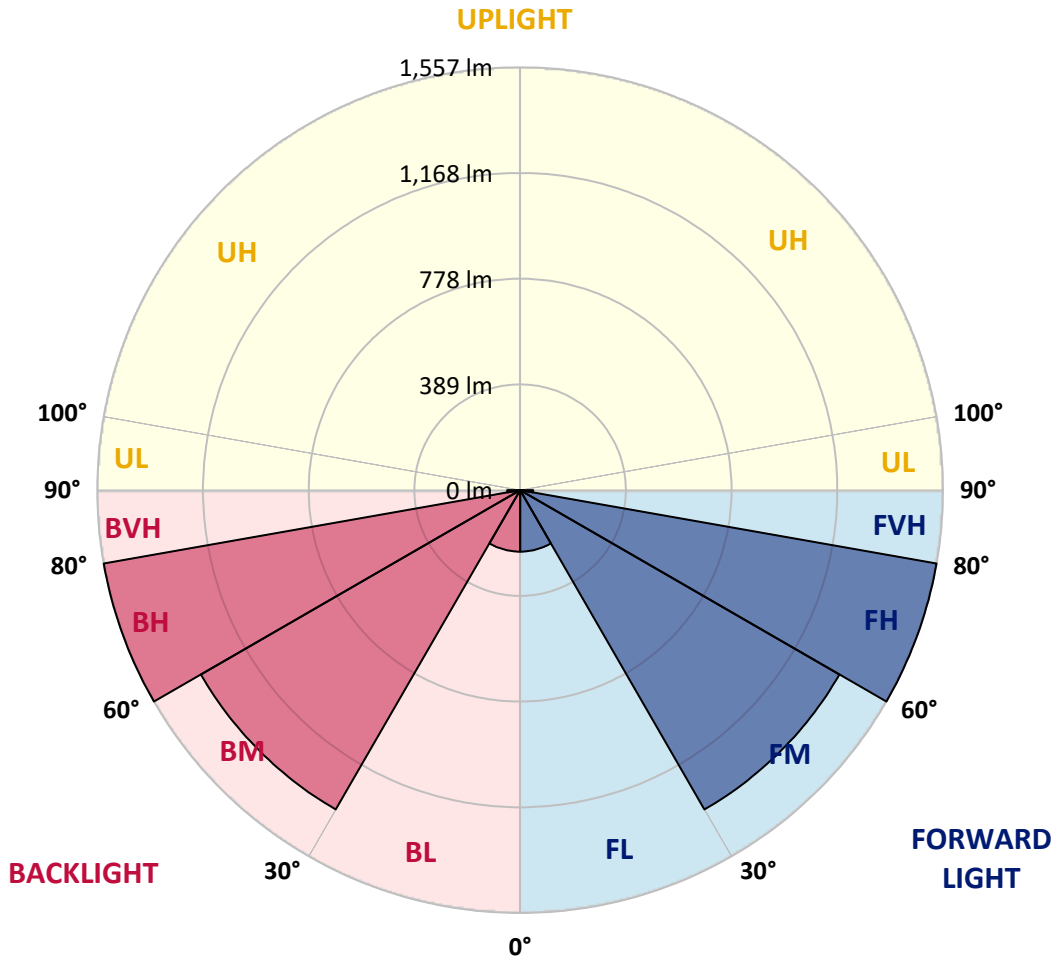
Scaled Data Report

REPORT NUMBER: P868754
CATALOG NUMBER: EMM2-HTN-SA1B-750-U-T5W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	226.4	3.6			
FM	(30°-60°)	1357.5	21.3			
FH	(60°-80°)	1556.8	24.4			G1/1800
FVH	(80°-90°)	47.4	0.7			G1/100
BL	(0°-30°)	226.4	3.6	B1/500		
BM	(30°-60°)	1357.5	21.3	B2/2500		
BH	(60°-80°)	1556.8	24.4	B3/2500		G1/1800
BVH	(80°-90°)	47.4	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-G1
Type V Short



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REPORT NUMBER: P868754
CATALOG NUMBER: EMM2-HTN-SA1B-750-U-T5W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	420.9	420.9	420.9	420.9	420.9	*420.9*	420.9	420.9	420.9	420.9	420.9
2.5°	419.6	420.3	420.3	420.3	420.9	*421.6*	422.3	422.9	424.3	424.9	424.9
5°	421.6	420.9	420.3	421.6	421.6	*421.6*	422.3	422.9	422.9	422.9	423.6
7.5°	419.6	420.3	419.6	419.6	421.6	*422.3*	421.6	420.9	420.9	421.6	421.6
10°	426.9	426.2	425.6	425.6	427.6	*428.2*	427.6	426.9	426.9	428.2	428.2
12.5°	443.4	444.7	440.8	440.8	443.4	*444.7*	442.8	442.1	442.8	444.1	444.1
15°	469.2	468.5	465.9	463.2	465.9	*467.9*	465.2	463.9	464.6	467.9	465.2
17.5°	497.6	498.3	495.6	493.0	495.0	*497.6*	493.6	490.3	491.0	492.3	491.0
20°	529.3	528.7	528.0	528.0	532.0	*535.3*	529.3	521.4	519.4	518.1	518.1
22.5°	552.5	554.4	555.1	561.0	570.3	*573.6*	565.7	555.1	547.2	543.2	540.6
25°	588.8	586.8	585.5	592.1	606.0	*611.9*	602.0	587.5	579.5	578.9	580.9
27.5°	621.8	621.8	624.5	631.1	644.3	*650.3*	641.7	627.1	623.2	623.2	621.2
30°	664.8	662.8	665.5	676.7	686.6	*690.6*	683.3	673.4	670.1	670.1	666.8
32.5°	715.0	715.7	719.6	726.9	736.8	*737.5*	734.8	730.2	728.2	726.3	729.6
35°	791.7	791.7	790.4	795.6	798.3	*799.6*	800.9	798.9	798.9	798.9	796.3
37.5°	886.8	881.5	880.9	876.3	873.0	*876.3*	882.2	888.8	894.1	890.8	889.5
40°	981.3	978.7	970.8	963.5	960.8	*962.2*	969.4	983.3	989.3	989.3	994.6
42.5°	1083.1	1077.8	1067.9	1059.3	1052.0	*1054.0*	1060.6	1077.8	1091.0	1097.0	1094.3
45°	1174.3	1169.7	1159.8	1151.8	1146.5	*1145.9*	1154.5	1165.7	1183.5	1188.8	1192.8
47.5°	1252.3	1249.0	1240.4	1232.5	1234.4	*1235.1*	1237.7	1247.6	1262.2	1269.5	1268.8
50°	1315.7	1313.1	1305.1	1308.4	1313.7	*1319.0*	1315.7	1322.3	1331.6	1334.9	1337.5
52.5°	1373.9	1369.9	1364.6	1370.6	1384.4	*1395.0*	1397.0	1392.4	1395.0	1397.0	1395.0
55°	1431.4	1426.7	1425.4	1436.0	1457.1	*1477.0*	1475.0	1461.8	1458.5	1454.5	1452.5
57.5°	1478.3	1475.0	1480.3	1498.1	1539.1	*1565.5*	1556.9	1526.5	1513.3	1504.1	1501.4
60°	1508.0	1507.4	1519.3	1560.9	1623.0	*1660.0*	1646.1	1593.9	1564.2	1555.6	1551.6
62.5°	1523.9	1524.5	1545.7	1619.7	1718.8	*1769.0*	1744.6	1664.6	1618.4	1609.8	1611.1
65°	1538.4	1536.4	1564.2	1669.3	1822.6	*1890.6*	1857.6	1749.9	1682.5	1665.3	1665.3
67.5°	1549.0	1551.0	1592.6	1718.8	1923.7	*2020.8*	1972.6	1840.4	1751.2	1725.4	1722.1
70°	1415.5	1434.7	1564.8	1751.9	2003.6	*2135.8*	2072.4	1895.9	1753.8	1680.5	1673.2
72.5°	*1075.2*	*1093.0*	*1374.5*	*1693.0*	*2044.6*	*2212.5*	*2109.4*	*1825.2*	*1593.9*	*1500.7*	*1473.0*
75°	709.1	721.6	1024.3	1478.9	1930.9	*2139.8*	1921.0	1572.1	1254.9	1134.0	1141.3
77.5°	315.9	356.2	652.9	1153.8	1590.6	*1722.1*	1465.1	1072.5	766.6	648.9	636.4
80°	132.2	144.7	246.5	615.2	921.9	*882.2*	623.8	359.5	228.6	177.8	171.8
82.5°	38.3	39.6	48.9	106.4	187.7	*220.7*	132.8	67.4	64.1	50.9	46.9
85°	2.6	2.6	4.0	6.6	9.3	*15.2*	17.2	19.8	22.5	19.2	19.2
87.5°	1.3	1.3	1.3	2.0	2.0	*2.6*	2.0	2.0	2.0	2.0	2.0
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

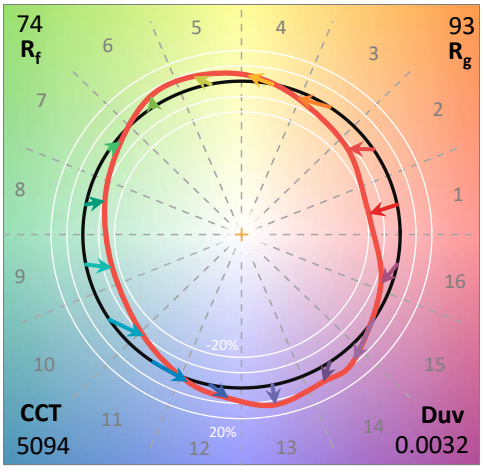
Test Information

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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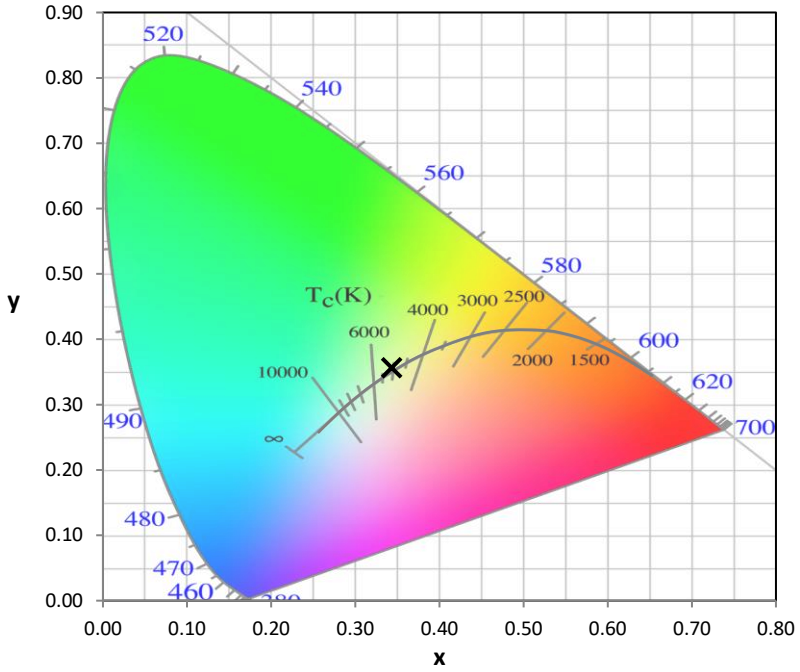
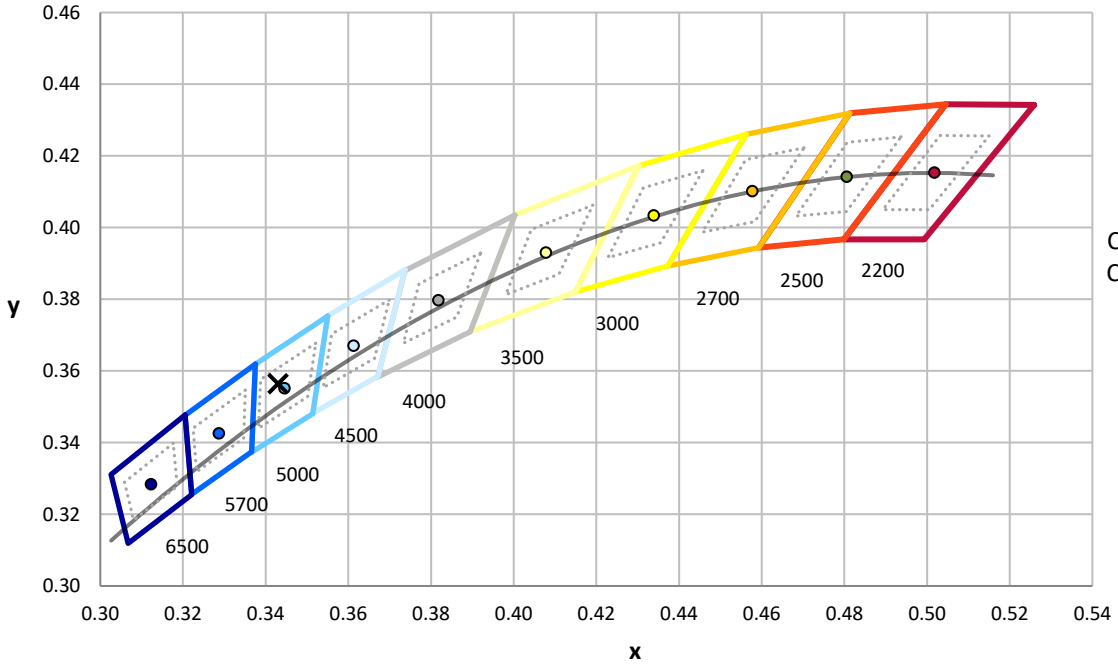
CIE 1931 Chromaticity Diagram



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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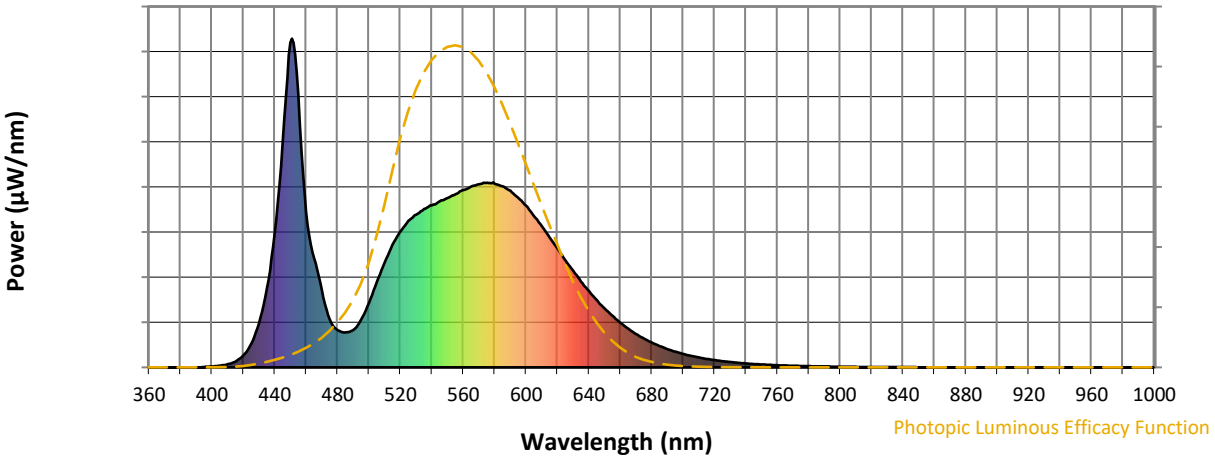
Photopic Flux vs. Wavelength

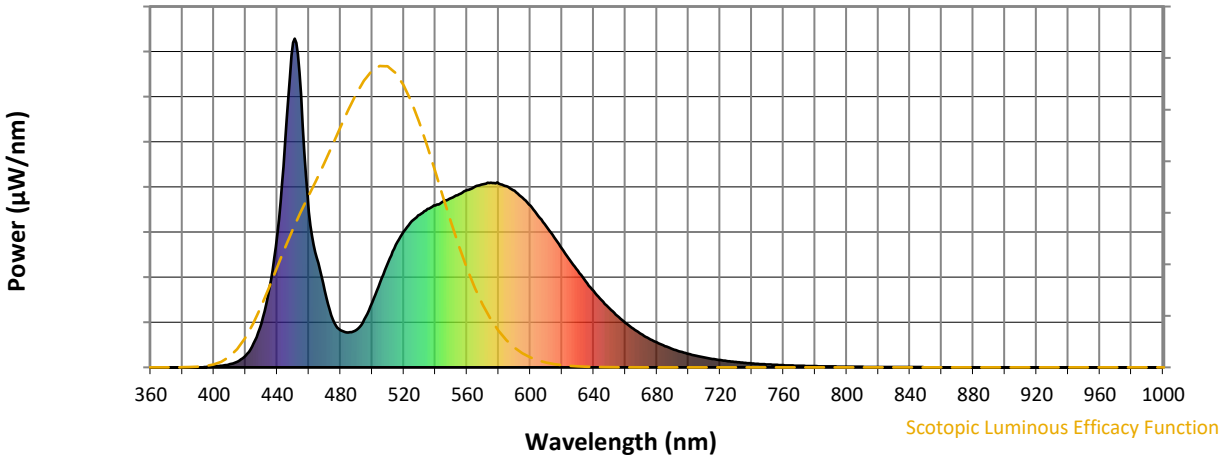


Photopic Lumens: NR

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

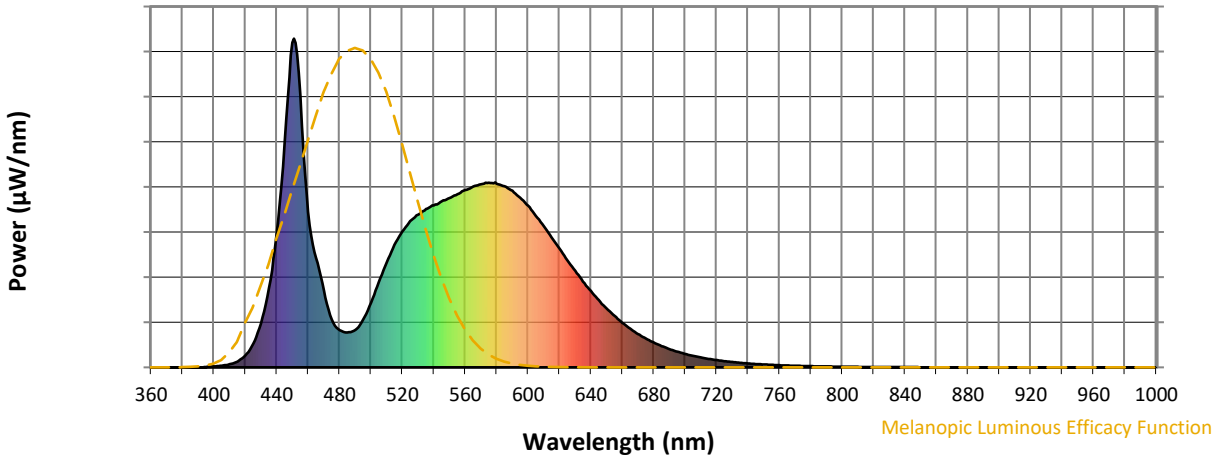


Scotopic Lumens: NR **S/P: 1.81**

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			

REPORT NUMBER: SP1-2407-157-6

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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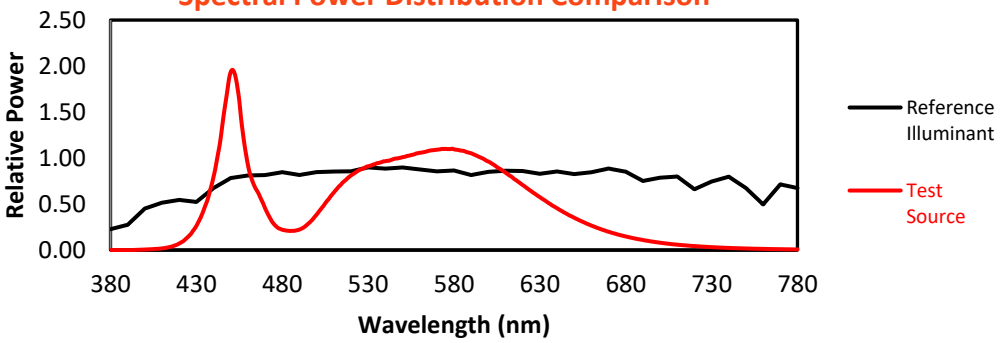
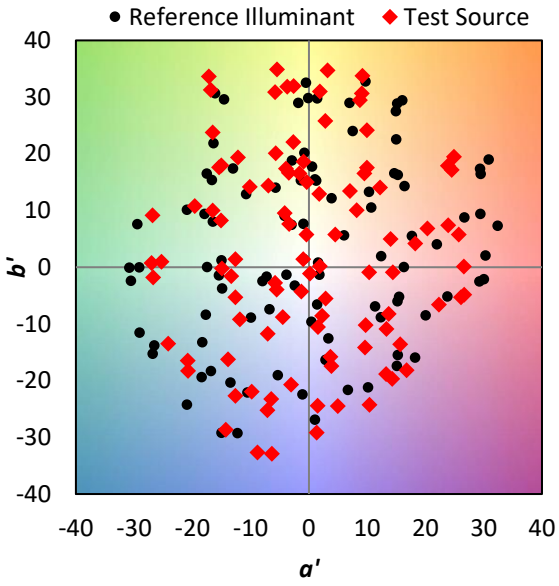
Summary

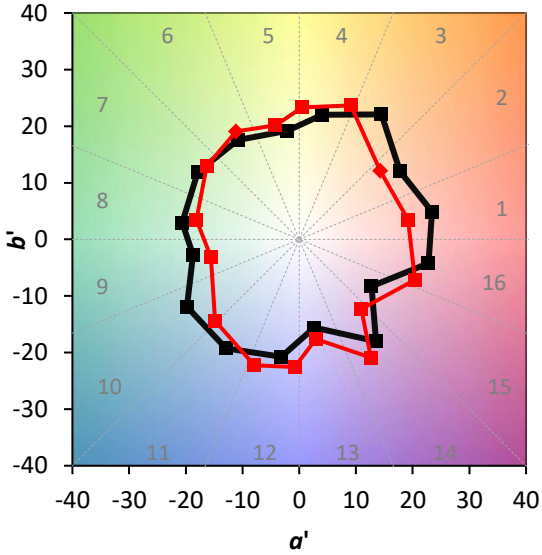
R_f = 73.7
R_g = 93
CIE R_a = 72.0
R_9 = -39.6

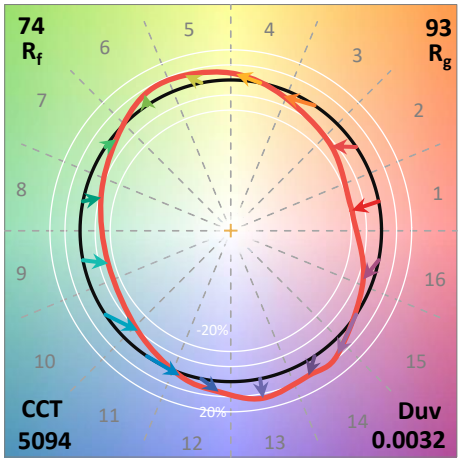
Spectral Power Distribution Comparison

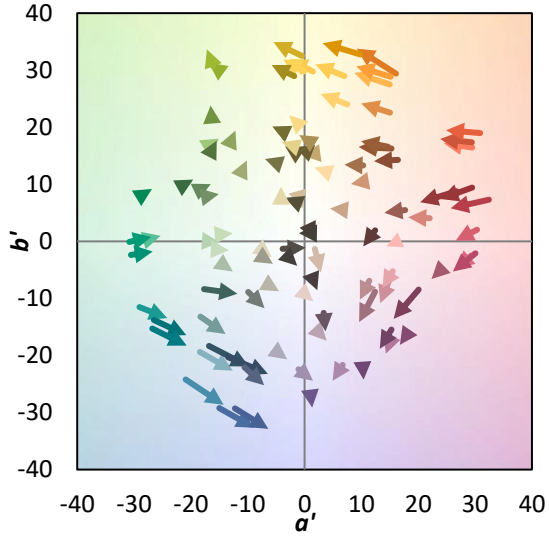


Color Vector Graphics









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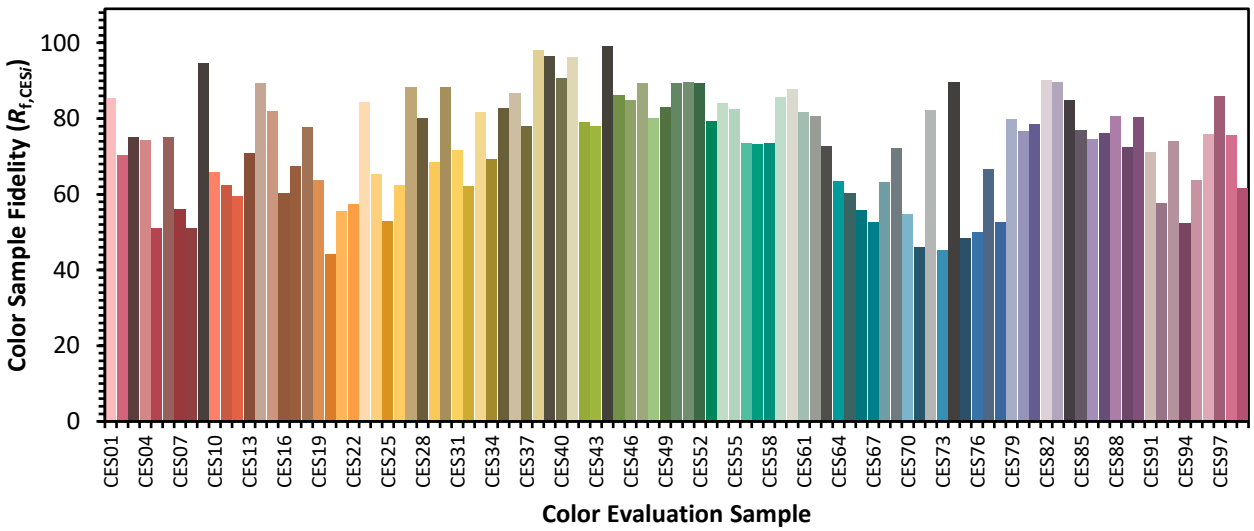
Individual Sample Fidelity Index ($R_{f,i}$)

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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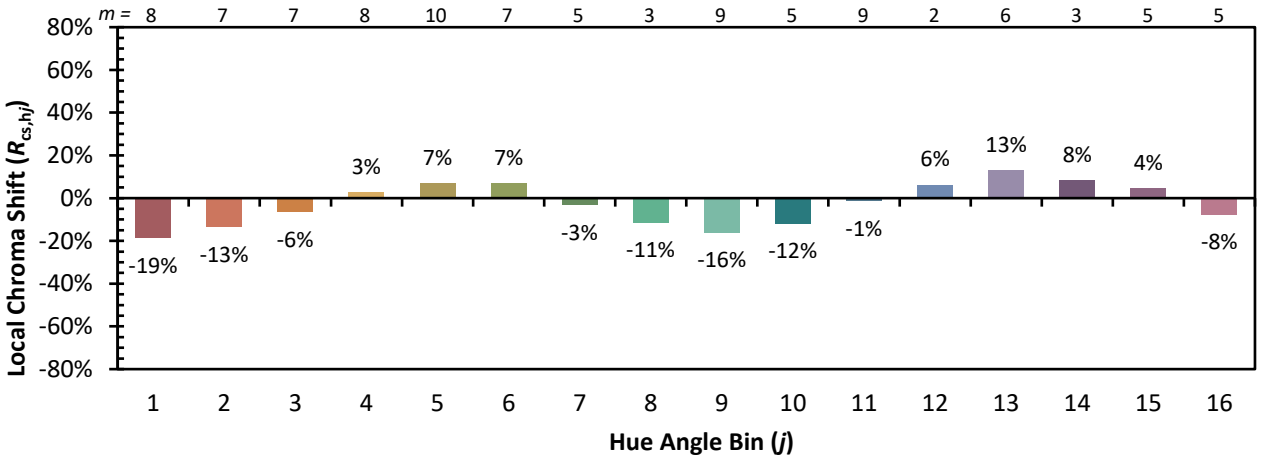
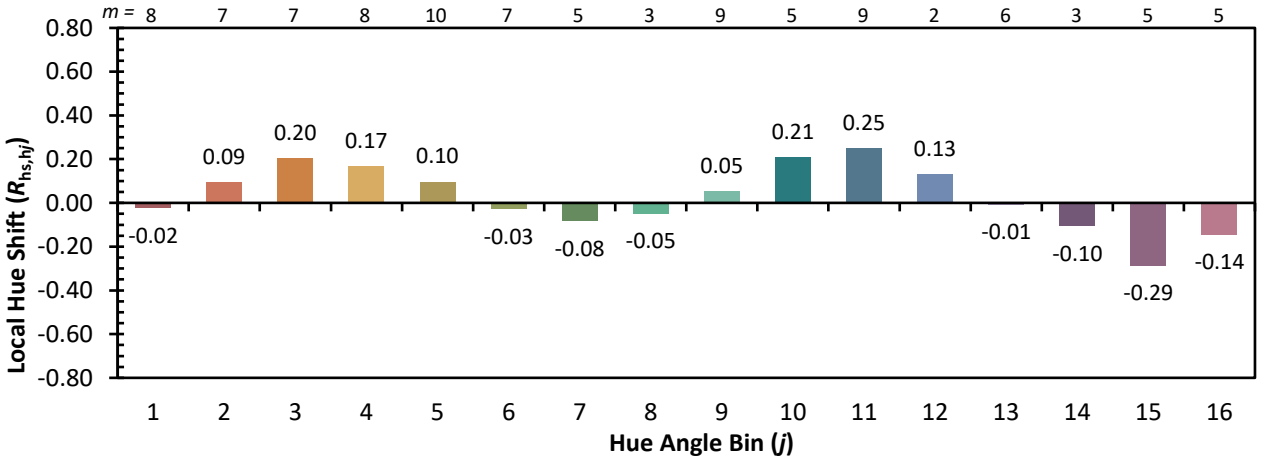
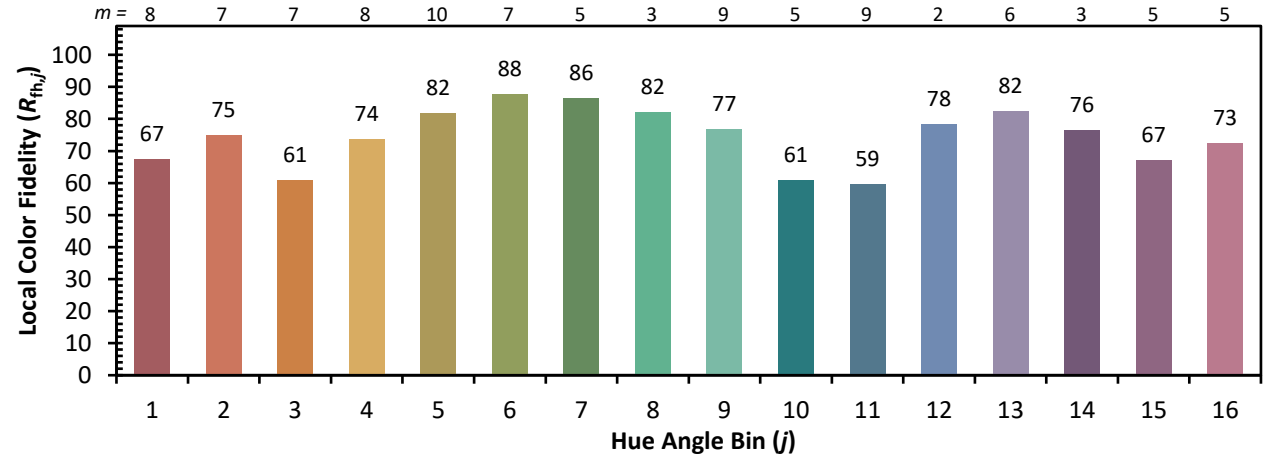
Color Rendition by Hue-Angle Bin







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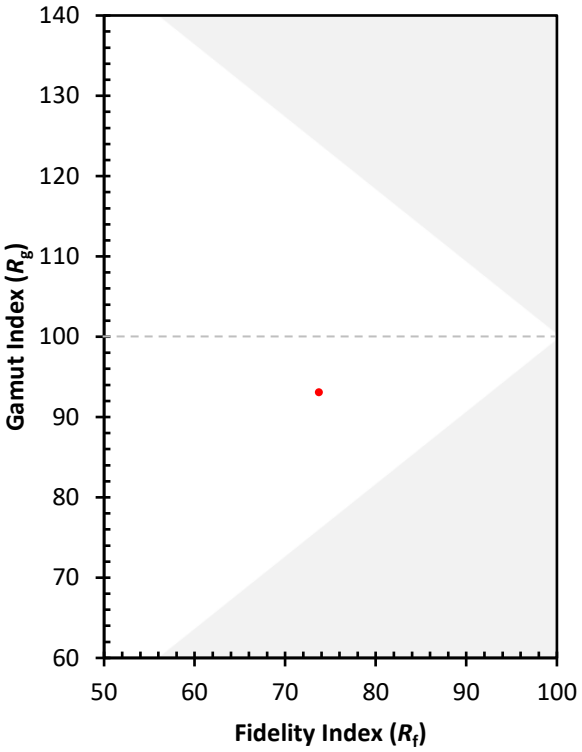
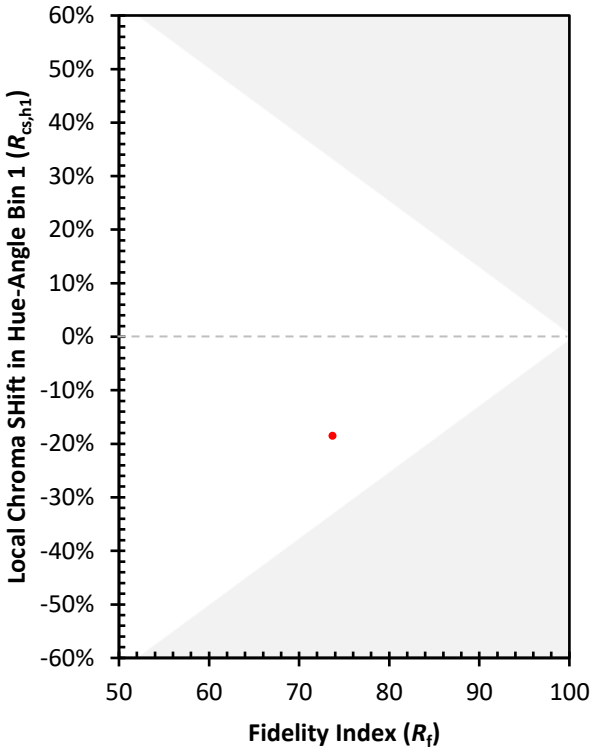
Measure Comparisons





(END OF REPORT)