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: STREETWORKS

Report Number: P868260

Luminaire Tested: **MEM2-HSN-SA-130-740-U-5WQ**

Issue Date: 08/21/2024

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:	P868260
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	08/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HSN-SA-130-740-U-5WQ
Description:	EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 130W 70CRI 4000K FIXTURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source:	(30) 4000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	19702.9 lumens
Efficiency:	N/A
Efficacy:	147.0 lumens/watt
Luminous Opening:	Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B4 - U0 - G2

Input Watts (W):	134
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	6.70%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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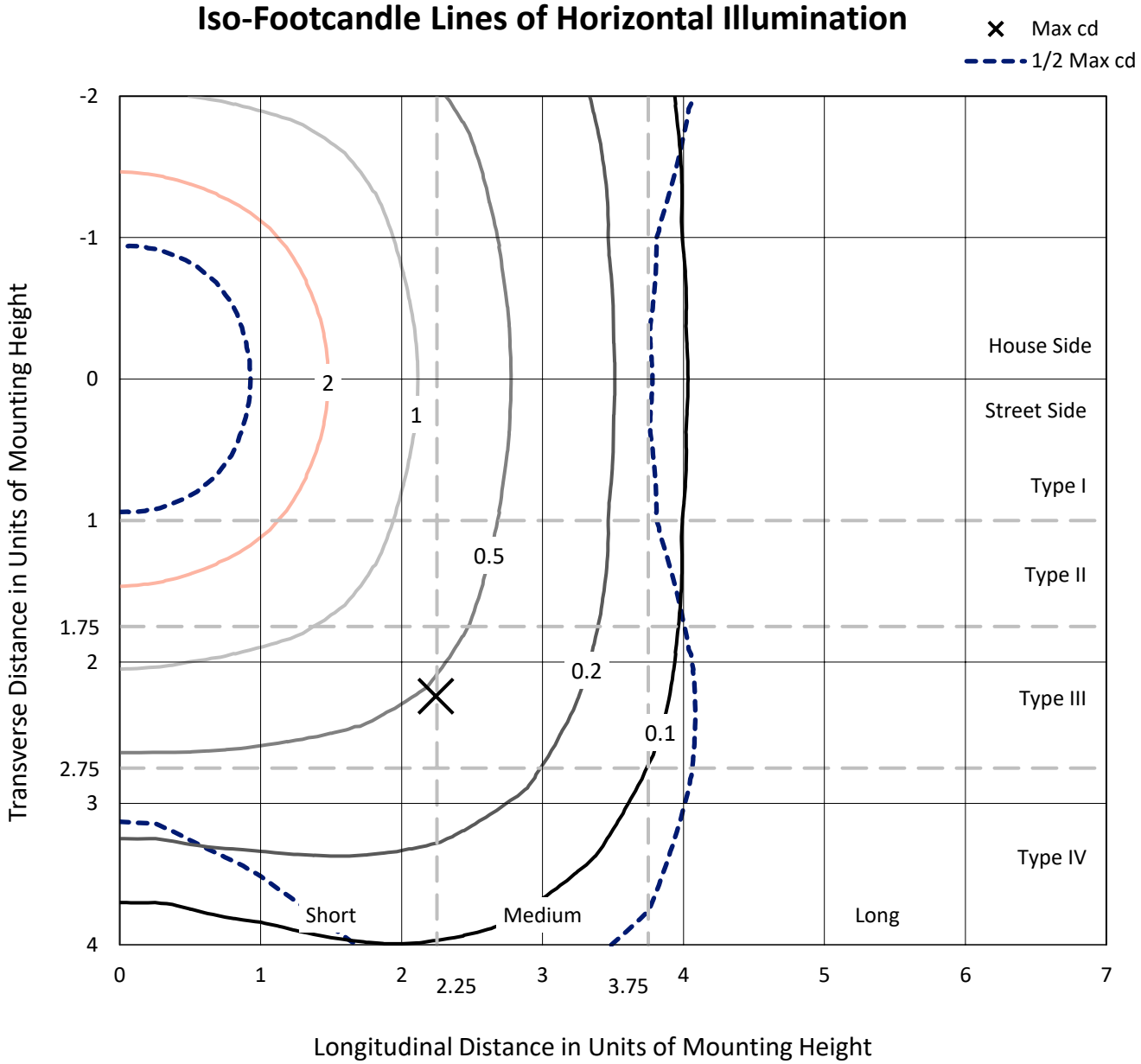
Scaled Data Report

REPORT NUMBER: P868260
CATALOG NUMBER: MEM2-HSN-SA-130-740-U-5WQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 3.5 fc
Type V - Short - N/A

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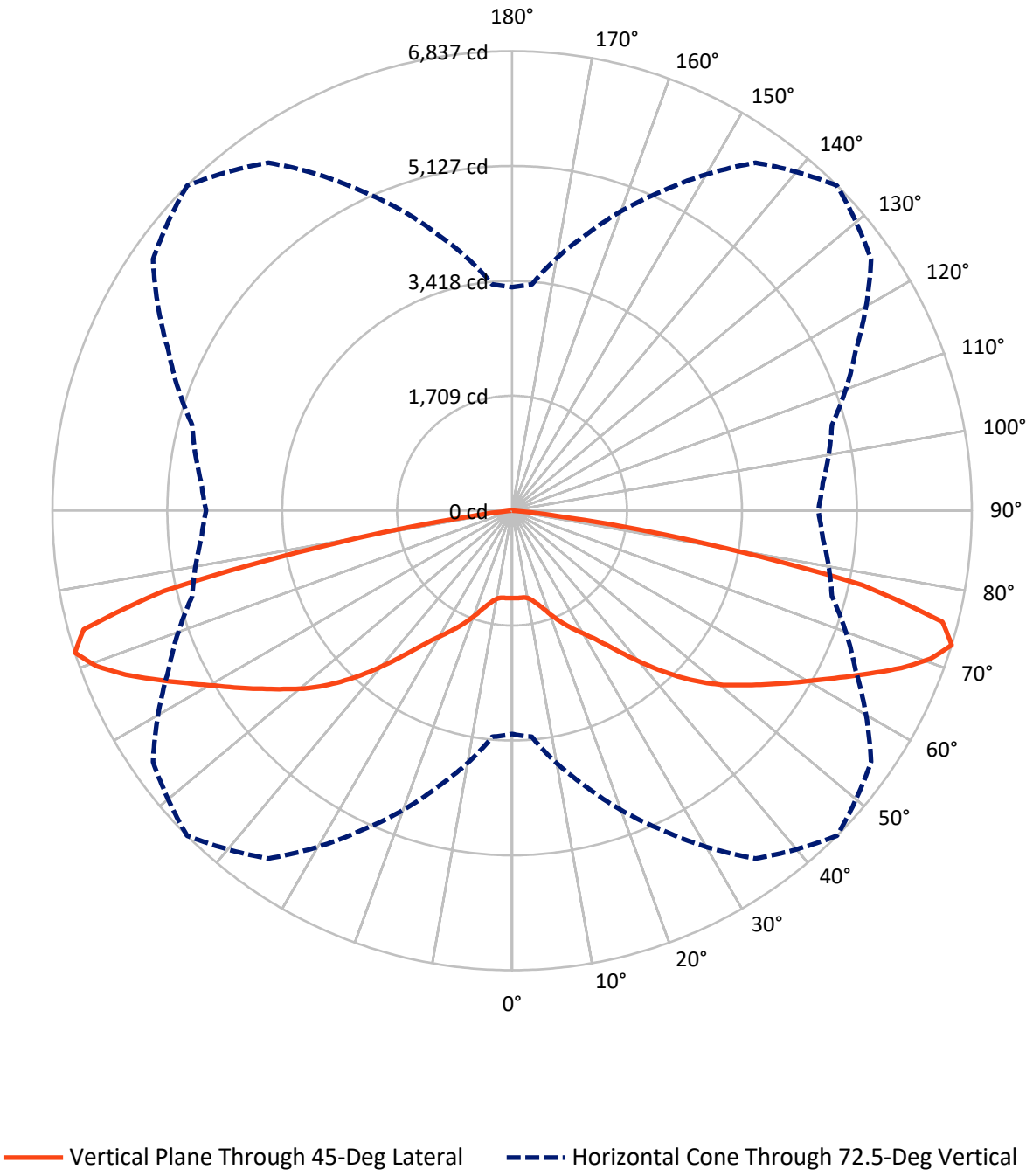
Luminous Intensity Polar Plot



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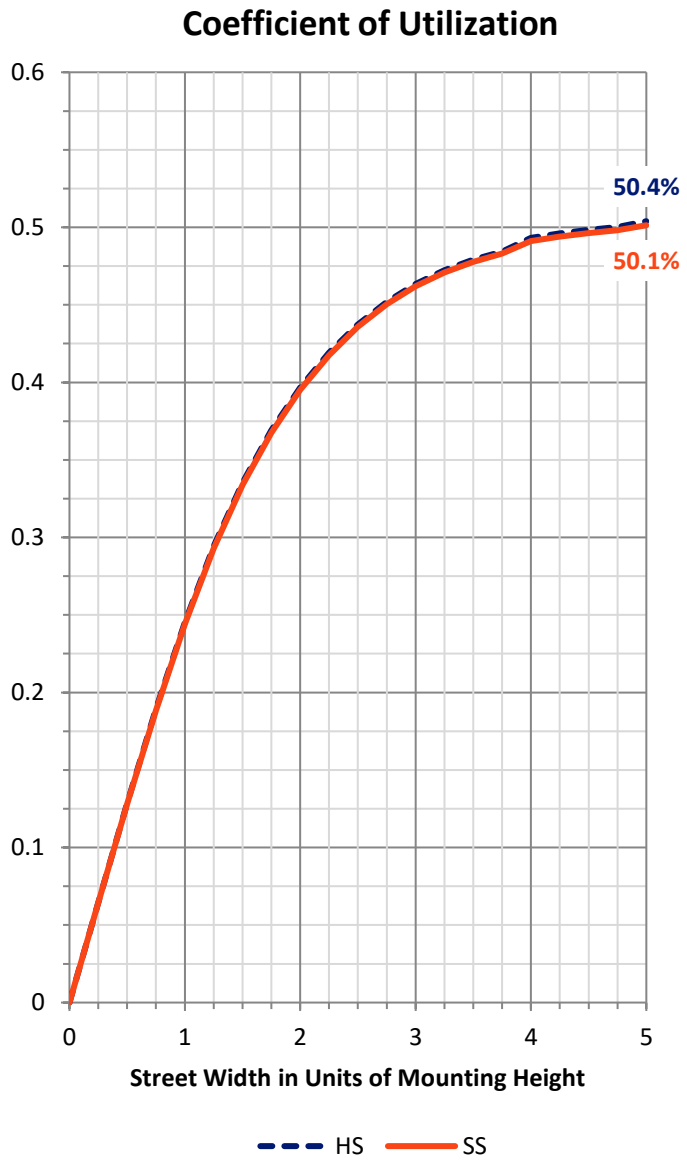
REPORT NUMBER: P868260
CATALOG NUMBER: MEM2-HSN-SA-130-740-U-5WQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	9851.5	0.0	9851.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	9851.5	0.0	9851.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	19702.9	0.0	19702.9
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	124.7	0.6
10°-20°	416.1	2.1
20°-30°	858.5	4.4
30°-40°	1580.4	8.0
40°-50°	2778.8	14.1
50°-60°	4030.2	20.5
60°-70°	5253.9	26.7
70°-80°	4367.2	22.2
80°-90°	293.2	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°	19702.9	100.0
0°-180°	19702.9	100.0



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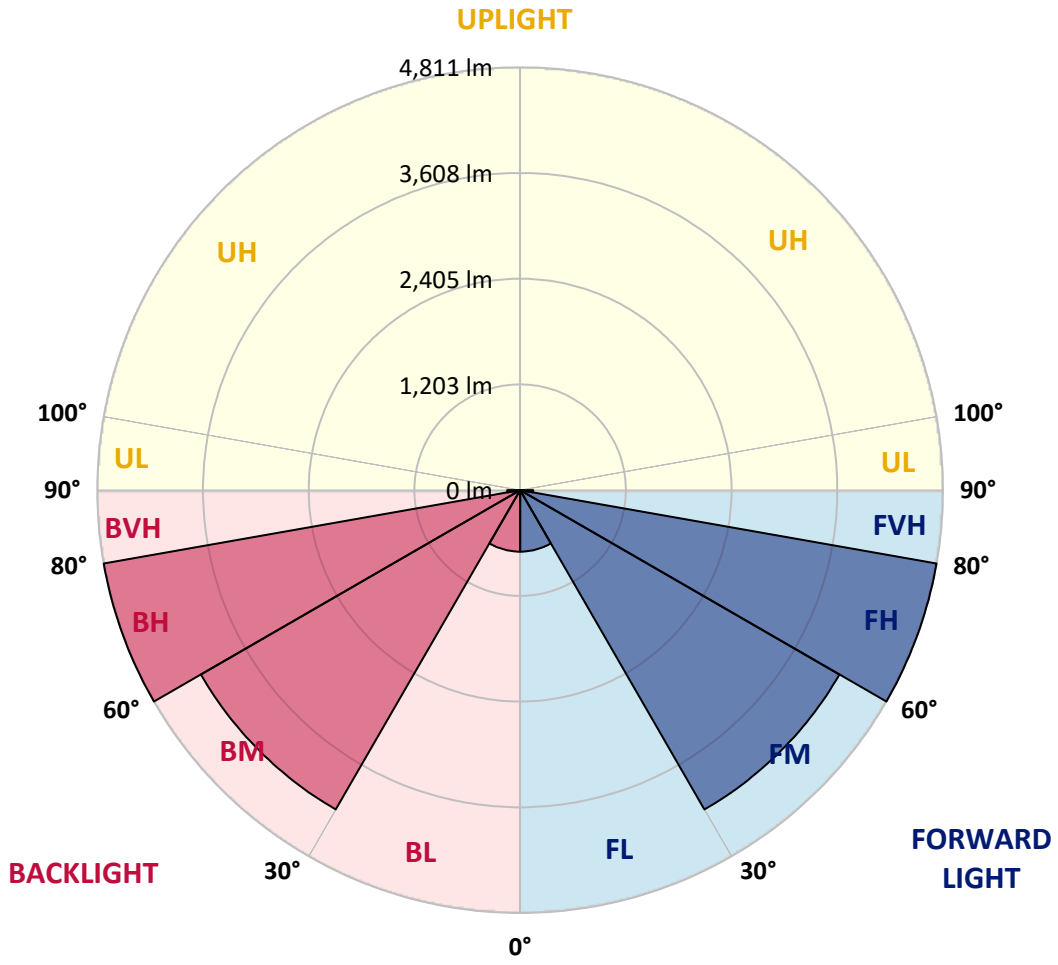
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	699.6	3.6			
FM	(30°-60°)	4194.7	21.3			
FH	(60°-80°)	4810.5	24.4			G2/5000
FVH	(80°-90°)	146.6	0.7			G2/225
BL	(0°-30°)	699.6	3.6	B2/1000		
BM	(30°-60°)	4194.7	21.3	B3/5000		
BH	(60°-80°)	4810.5	24.4	B4/5000		G2/5000
BVH	(80°-90°)	146.6	0.7			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G2
Type V Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	*1300.7*	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1296.7	1298.7	1298.7	1298.7	1300.7	*1302.8*	1304.8	1306.9	1310.9	1313.0	1313.0
5°	1302.8	1300.7	1298.7	1302.8	1302.8	*1302.8*	1304.8	1306.9	1306.9	1306.9	1308.9
7.5°	1296.7	1298.7	1296.7	1296.7	1302.8	*1304.8*	1302.8	1300.7	1300.7	1302.8	1302.8
10°	1319.1	1317.1	1315.0	1315.0	1321.2	*1323.2*	1321.2	1319.1	1319.1	1323.2	1323.2
12.5°	1370.2	1374.2	1362.0	1362.0	1370.2	*1374.2*	1368.1	1366.1	1368.1	1372.2	1372.2
15°	1449.8	1447.8	1439.6	1431.4	1439.6	*1445.7*	1437.5	1433.5	1435.5	1445.7	1437.5
17.5°	1537.6	1539.6	1531.5	1523.3	1529.4	*1537.6*	1525.4	1515.1	1517.2	1521.3	1517.2
20°	1635.6	1633.6	1631.5	1631.5	1643.8	*1654.0*	1635.6	1611.1	1605.0	1600.9	1600.9
22.5°	1707.1	1713.2	1715.3	1733.6	1762.2	*1772.4*	1747.9	1715.3	1690.8	1678.5	1670.3
25°	1819.4	1813.3	1809.2	1829.6	1872.5	*1890.9*	1860.2	1815.3	1790.8	1788.8	1794.9
27.5°	1921.5	1921.5	1929.7	1950.1	1990.9	*2009.3*	1982.8	1937.8	1925.6	1925.6	1919.5
30°	2054.2	2048.1	2056.3	2091.0	2121.6	*2133.9*	2111.4	2080.8	2070.6	2070.6	2060.4
32.5°	2209.4	2211.5	2223.7	2246.2	2276.8	*2278.8*	2270.7	2256.4	2250.3	2244.1	2254.3
35°	2446.3	2446.3	2442.2	2458.5	2466.7	*2470.8*	2474.9	2468.7	2468.7	2468.7	2460.6
37.5°	2740.3	2724.0	2722.0	2707.7	2697.4	*2707.7*	2726.0	2746.5	2762.8	2752.6	2748.5
40°	3032.3	3024.2	2999.7	2977.2	2969.0	*2973.1*	2995.6	3038.5	3056.8	3056.8	3073.2
42.5°	3346.8	3330.5	3299.8	3273.3	3250.8	*3256.9*	3277.4	3330.5	3371.3	3389.7	3381.5
45°	3628.6	3614.3	3583.7	3559.2	3542.8	*3540.8*	3567.3	3602.0	3657.2	3673.5	3685.8
47.5°	3869.5	3859.3	3832.8	3808.3	3814.4	*3816.4*	3824.6	3855.2	3900.2	3922.6	3920.6
50°	4065.6	4057.4	4032.9	4043.1	4059.4	*4075.8*	4065.6	4086.0	4114.6	4124.8	4133.0
52.5°	4245.3	4233.0	4216.7	4235.1	4277.9	*4310.6*	4316.7	4302.4	4310.6	4316.7	4310.6
55°	4422.9	4408.6	4404.5	4437.2	4502.6	*4563.8*	4557.7	4516.8	4506.6	4494.4	4488.3
57.5°	4567.9	4557.7	4574.0	4629.2	4755.8	*4837.4*	4810.9	4717.0	4676.1	4647.5	4639.4
60°	4659.8	4657.7	4694.5	4823.1	5015.1	*5129.4*	5086.6	4925.2	4833.4	4806.8	4794.6
62.5°	4708.8	4710.8	4776.2	5004.9	5311.2	*5466.4*	5390.8	5143.7	5000.8	4974.2	4978.3
65°	4753.7	4747.6	4833.4	5158.0	5631.8	*5842.1*	5740.0	5407.1	5198.9	5145.8	5145.8
67.5°	4786.4	4792.5	4921.2	5311.2	5944.2	*6244.4*	6095.3	5686.9	5411.2	5331.6	5321.4
70°	4373.9	4433.1	4835.4	5413.3	6191.3	*6599.7*	6403.6	5858.4	5419.4	5192.7	5170.3
72.5°	*3322.3*	*3377.4*	*4247.3*	*5231.5*	*6317.9*	*6836.5*	*6518.0*	*5639.9*	*4925.2*	*4637.3*	*4551.6*
75°	2191.0	2229.8	3165.1	4569.9	5966.6	*6611.9*	5936.0	4857.9	3877.7	3504.0	3526.5
77.5°	976.1	1100.6	2017.5	3565.3	4915.0	*5321.4*	4527.1	3314.1	2368.7	2005.2	1966.4
80°	408.4	447.2	761.7	1901.1	2848.6	*2726.0*	1927.6	1110.8	706.5	549.3	530.9
82.5°	118.4	122.5	151.1	328.8	579.9	*682.0*	410.4	208.3	198.1	157.2	145.0
85°	8.2	8.2	12.3	20.4	28.6	*47.0*	53.1	61.3	69.4	59.2	59.2
87.5°	4.1	4.1	4.1	6.1	6.1	*8.2*	6.1	6.1	6.1	6.1	6.1
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: SP1-2407-157-5

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-30-740-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-30-740-U-5WQ-2

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

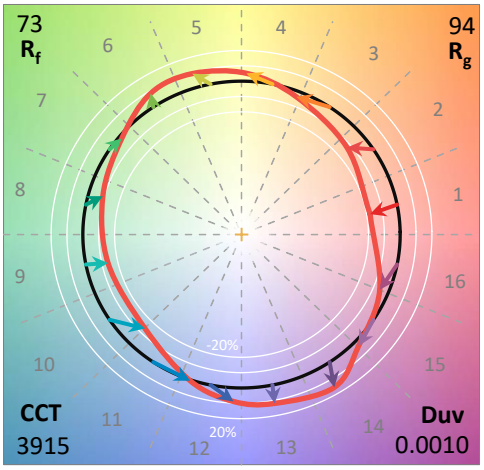
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-157-5
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-30-740-U-5WQ-2**
Description:	Epic Modern Light Square 30W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K):	3915
CIE u':	0.2262
CIE v':	0.5044
Duv:	0.0010
CIE x:	0.3850
CIE y:	0.3816
CIE z:	0.2334
Peak Wavelength (nm):	449
Dominant Wavelength (nm):	578
Purity:	30.05482
Rf:	73.2
Rg:	93.9

CRI (Ra):	71.0
R1:	67.6
R2:	78.3
R3:	87.1
R4:	69.7
R5:	67.4
R6:	69.3
R7:	79.7
R8:	48.7
R9:	-38.4
R10:	48.9
R11:	65.3
R12:	40.4
R13:	69.3
R14:	92.6
R15:	59.9



Test Conditions

Stabilization Time:	21M
Operation Time:	1H 21M
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP1-2407-157-5

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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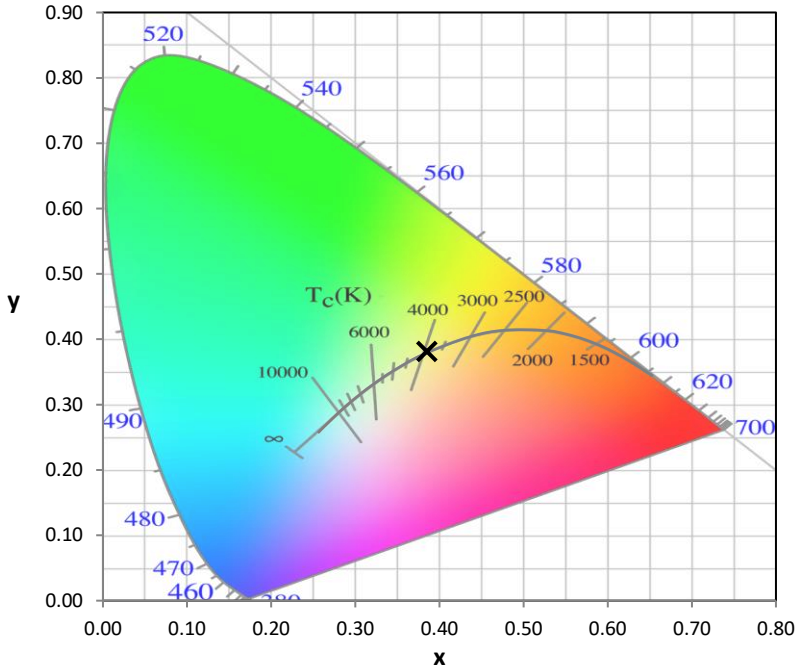
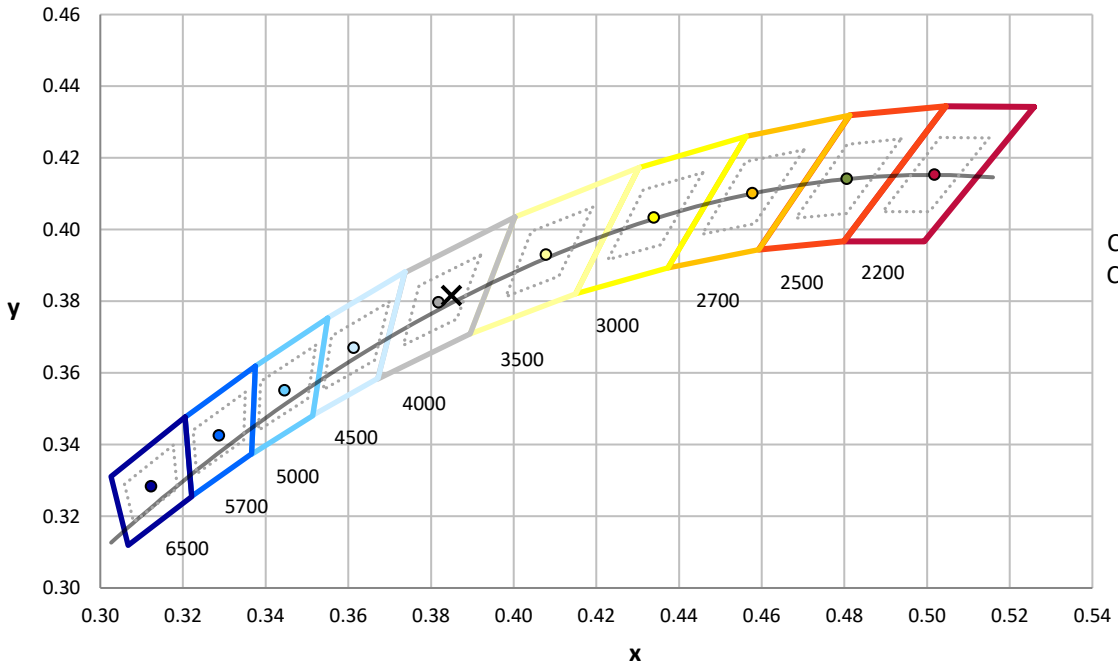
CIE 1931 Chromaticity Diagram



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



CCT = 3915K
CIE x = 0.3850
CIE y = 0.3816
Duv = 0.0010

Point lies inside the ANSI 4000K 4-step quadrangle

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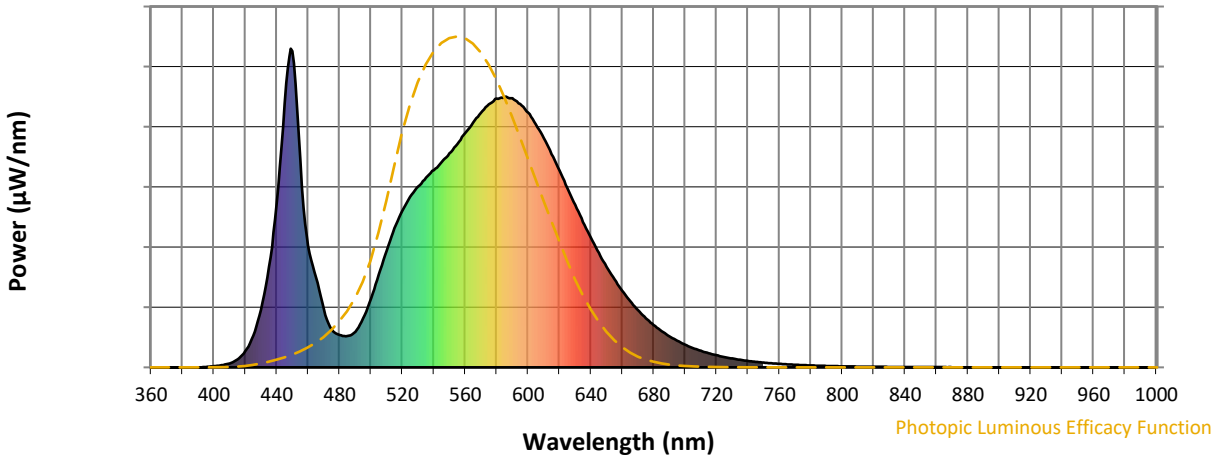
Photopic Flux vs. Wavelength

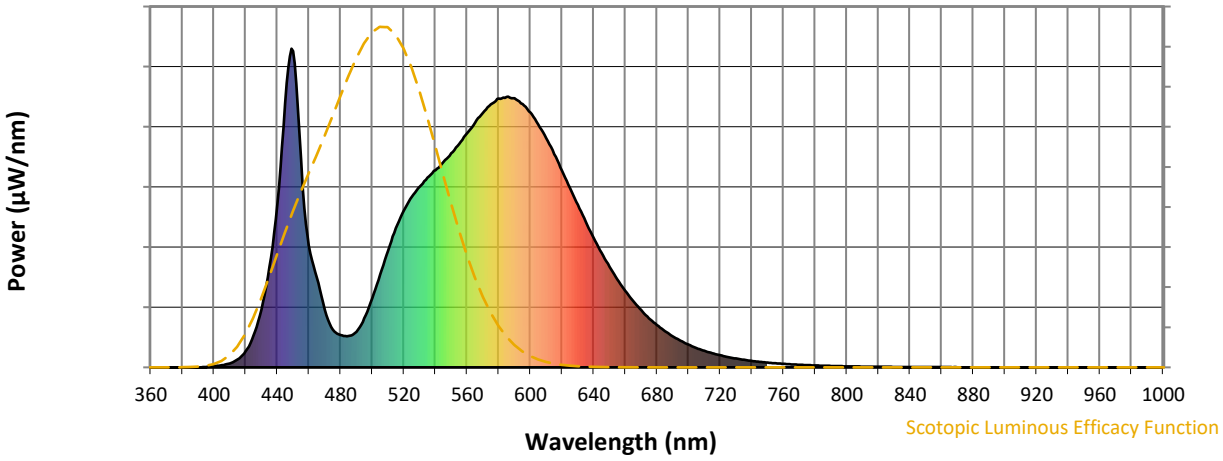


Photopic Lumens: NR

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	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/P: 1.49**

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	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

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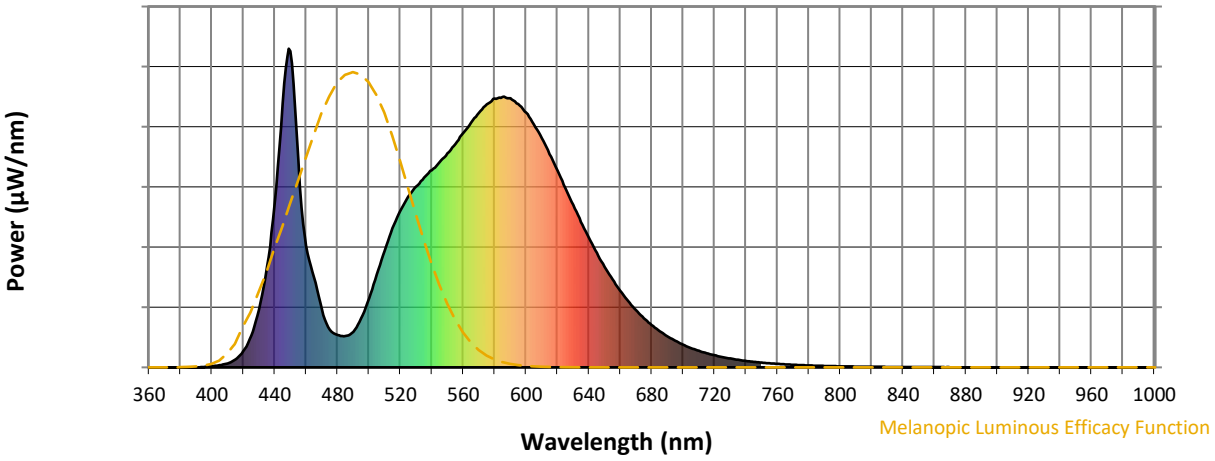
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.88**

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	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

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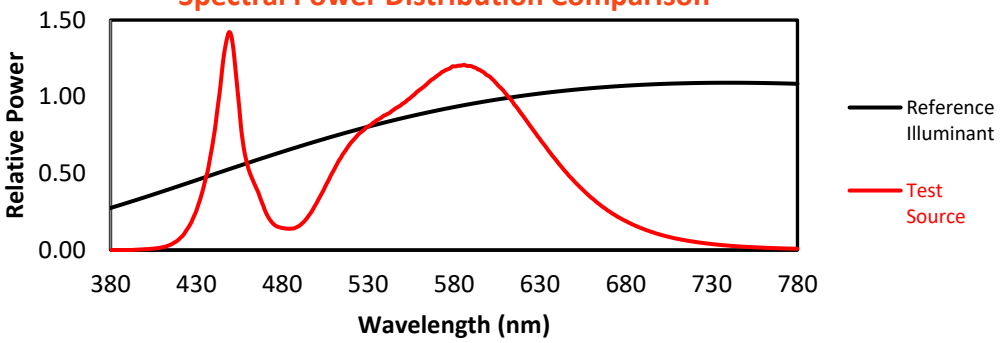
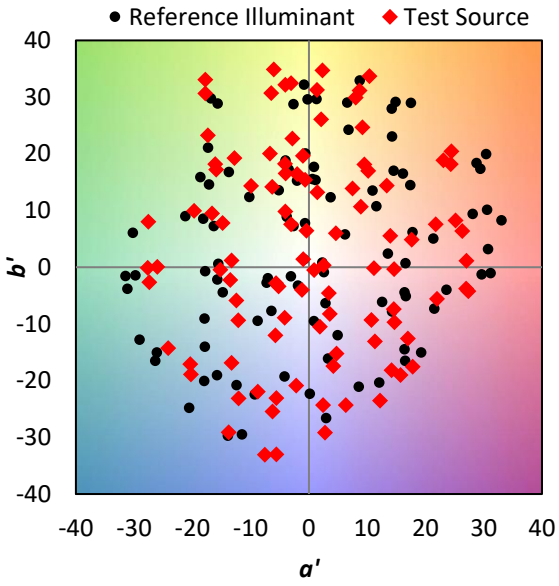
Summary

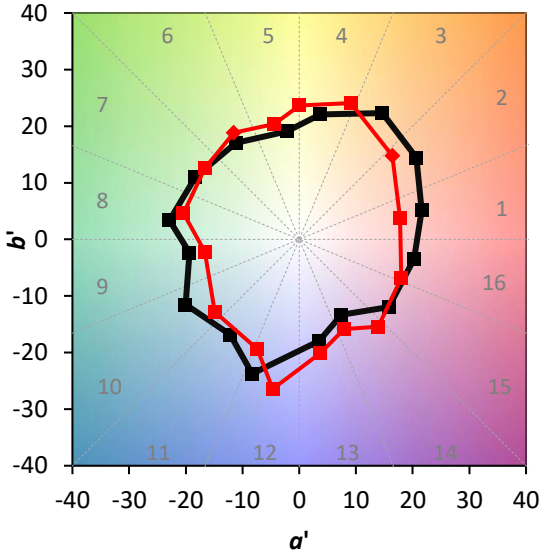
R_f = 73.2
R_g = 93.9
CIE R_a = 71.0
R_9 = -38.4

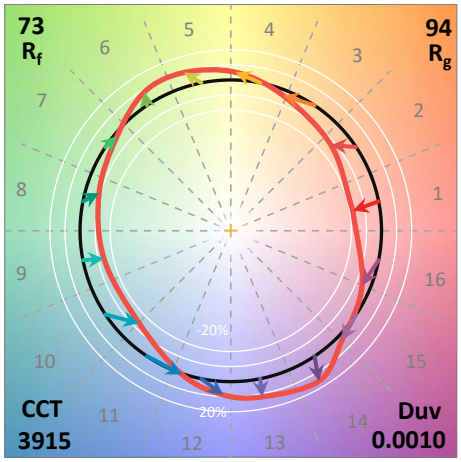
Spectral Power Distribution Comparison

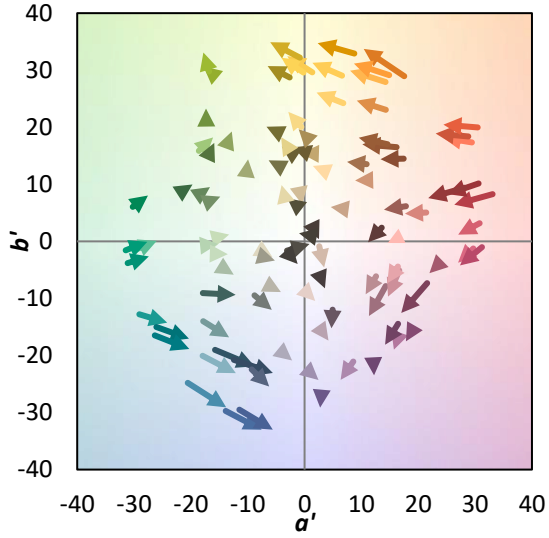


Color Vector Graphics









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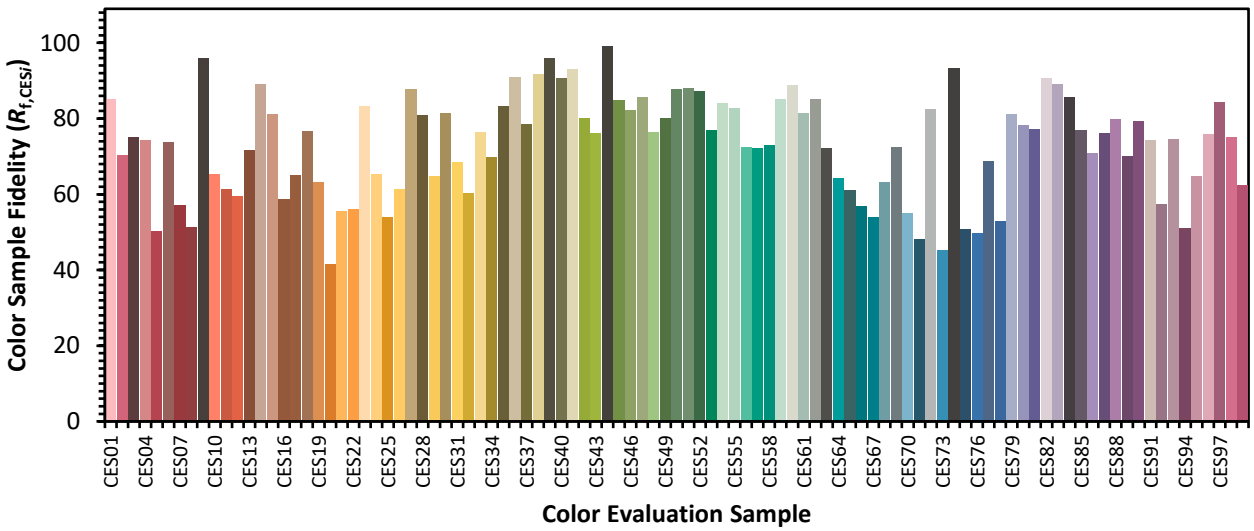
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 61	CES51 = 88	CES76 = 50
CES02 = 61	CES27 = 88	CES52 = 87	CES77 = 69
CES03 = 30	CES28 = 81	CES53 = 77	CES78 = 53
CES04 = 70	CES29 = 65	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 81	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 69	CES56 = 73	CES81 = 77
CES07 = 40	CES32 = 60	CES57 = 72	CES82 = 91
CES08 = 39	CES33 = 76	CES58 = 73	CES83 = 89
CES09 = 29	CES34 = 70	CES59 = 85	CES84 = 86
CES10 = 74	CES35 = 83	CES60 = 89	CES85 = 77
CES11 = 57	CES36 = 91	CES61 = 81	CES86 = 71
CES12 = 63	CES37 = 79	CES62 = 85	CES87 = 76
CES13 = 42	CES38 = 92	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 96	CES64 = 64	CES89 = 70
CES15 = 71	CES40 = 91	CES65 = 61	CES90 = 79
CES16 = 46	CES41 = 93	CES66 = 57	CES91 = 74
CES17 = 49	CES42 = 80	CES67 = 54	CES92 = 57
CES18 = 56	CES43 = 76	CES68 = 63	CES93 = 74
CES19 = 72	CES44 = 99	CES69 = 73	CES94 = 51
CES20 = 65	CES45 = 85	CES70 = 55	CES95 = 65
CES21 = 86	CES46 = 82	CES71 = 48	CES96 = 76
CES22 = 78	CES47 = 86	CES72 = 83	CES97 = 84
CES23 = 92	CES48 = 77	CES73 = 45	CES98 = 75
CES24 = 91	CES49 = 80	CES74 = 93	CES99 = 62
CES25 = 72	CES50 = 88	CES75 = 51	



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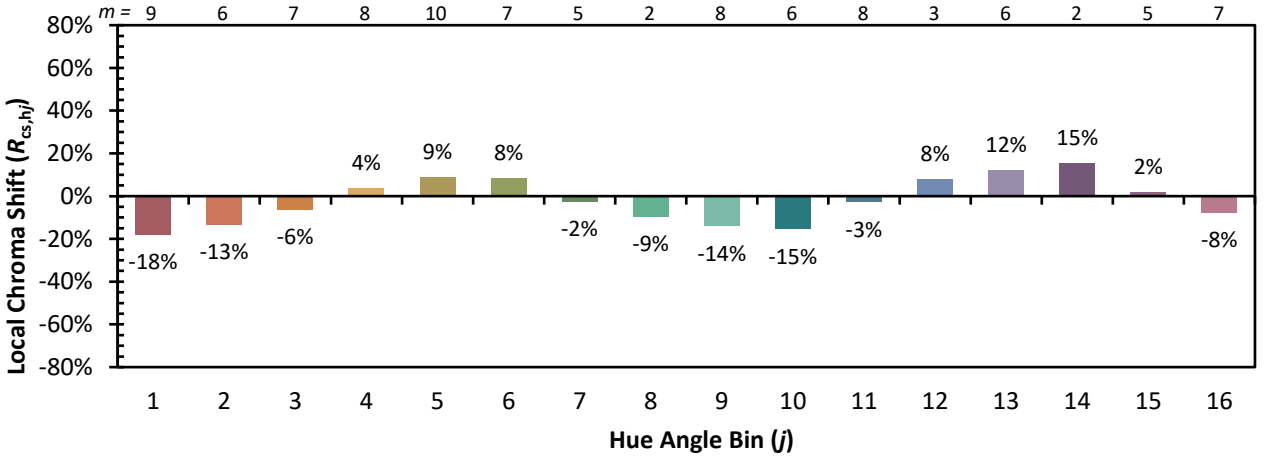
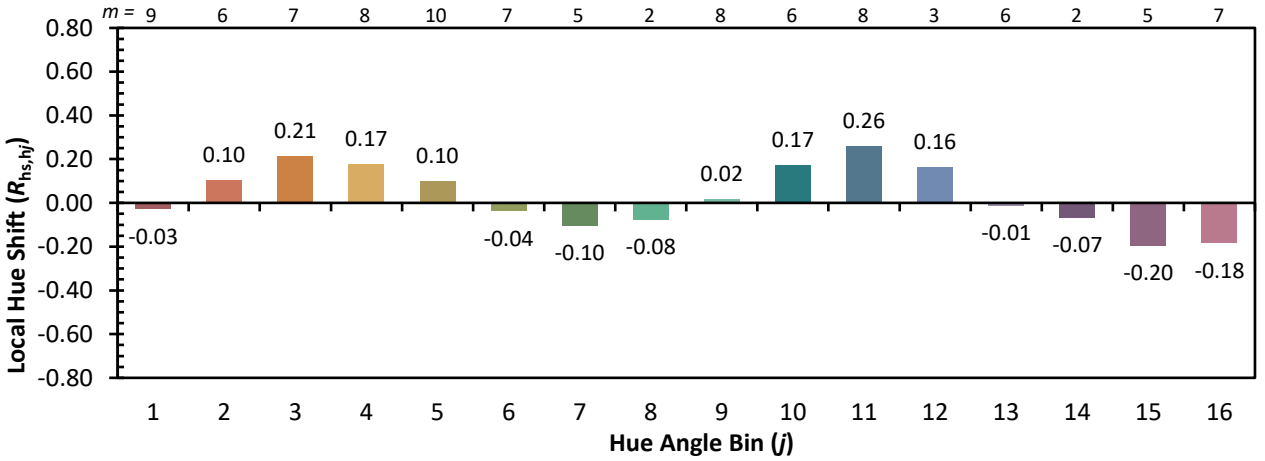
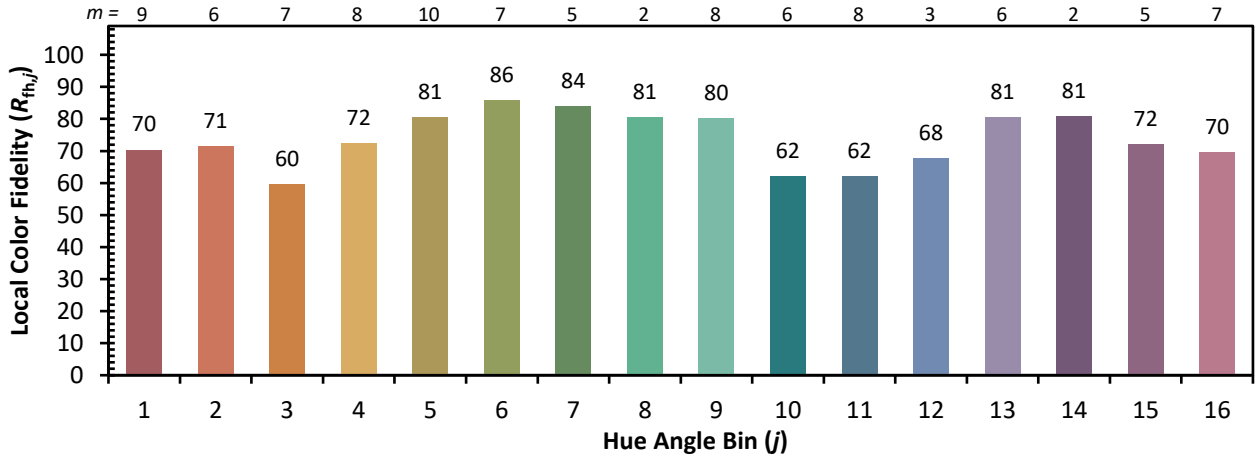
Color Rendition by Hue-Angle Bin







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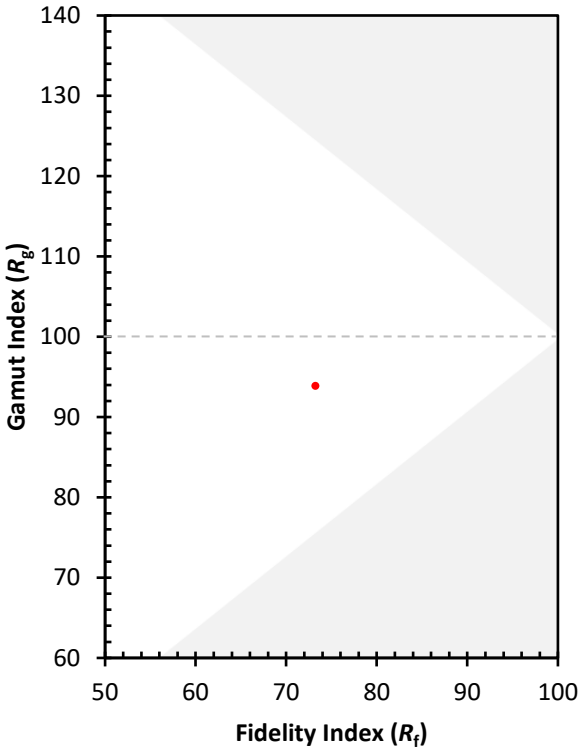
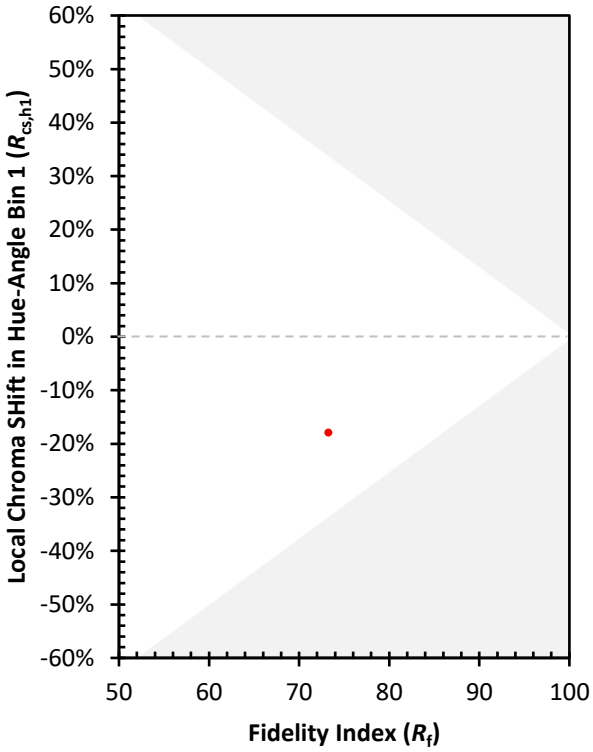
Measure Comparisons





(END OF REPORT)