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: P870527

Luminaire Tested: **MEM2-HSN-SA-100-840-U-T5R**

Issue Date: 09/05/2024

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:	P870527
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	09/05/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HSN-SA-100-840-U-T5R
Description:	EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 100W 80CRI 4000K FIXTURE w/ TYPE V ROUND DISTRIBUTION OPTIC
Light Source:	(20) 4000K CCT, 80 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	13377.5 lumens
Efficiency:	N/A
Efficacy:	132.5 lumens/watt
Luminous Opening:	Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B4 - U0 - G2

Input Watts (W):	101
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	9.45%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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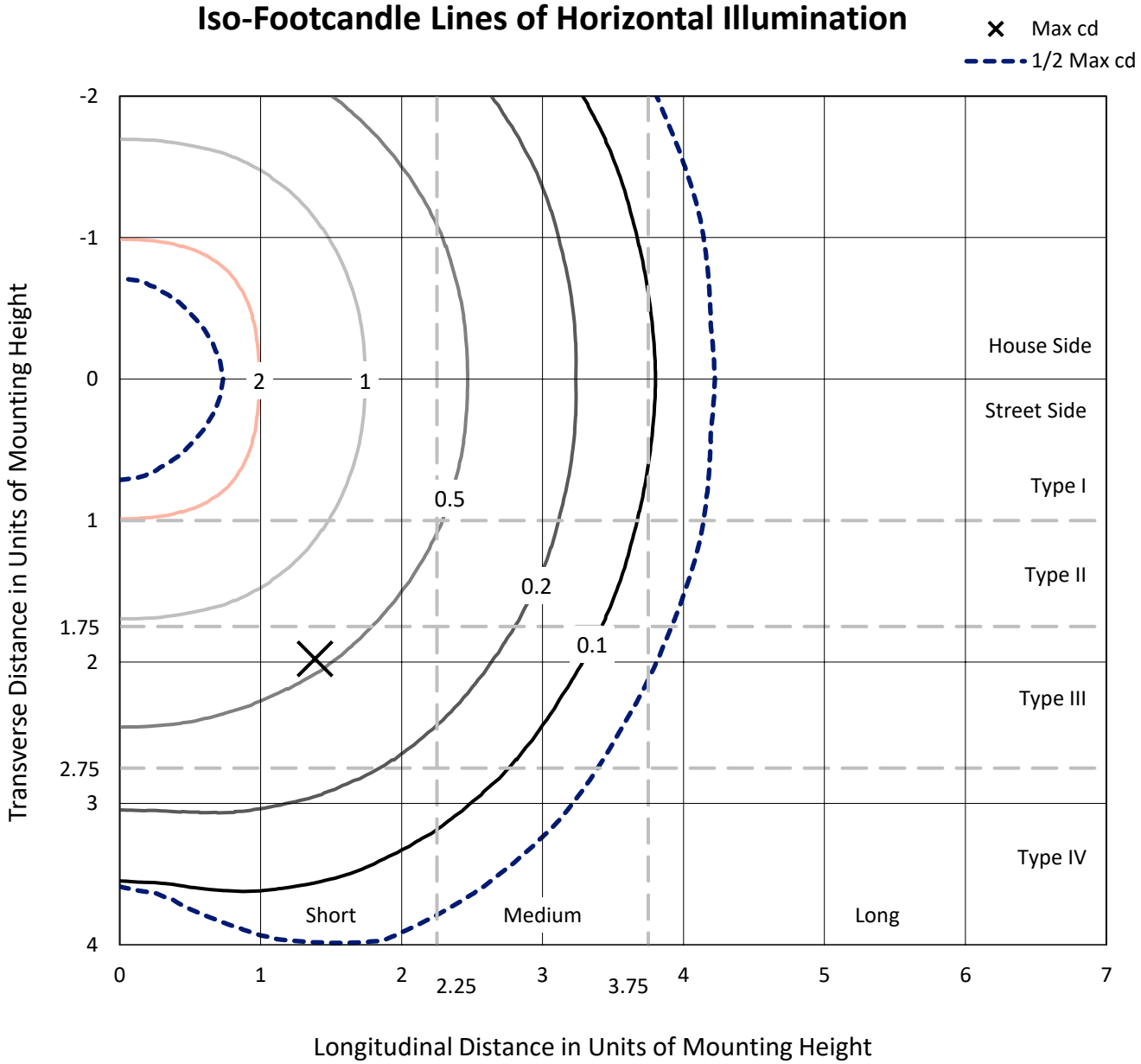
REPORT NUMBER: P870527
CATALOG NUMBER: MEM2-HSN-SA-100-840-U-T5R

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 3.2 fc
Type V - Short - N/A

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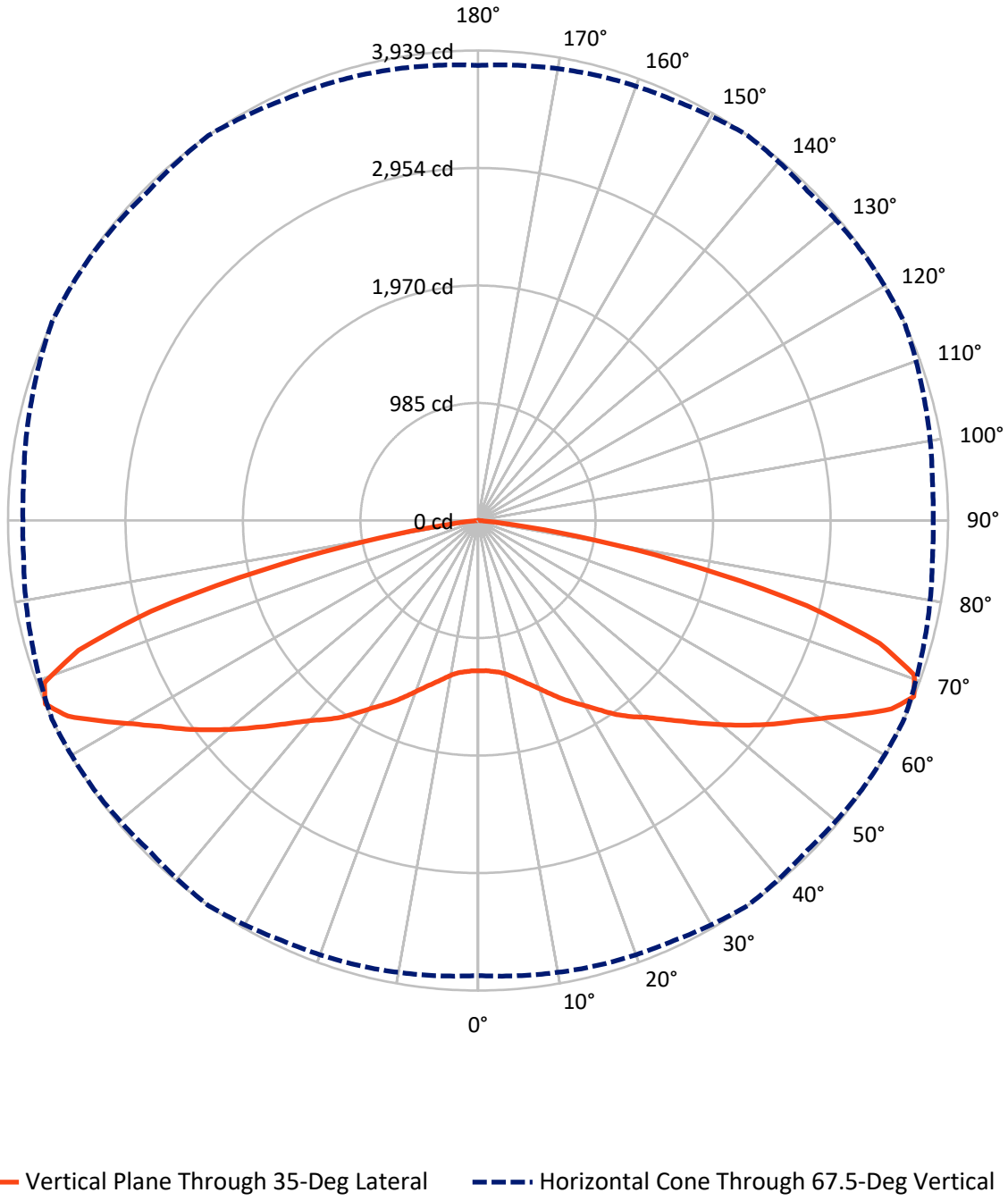
Luminous Intensity Polar Plot



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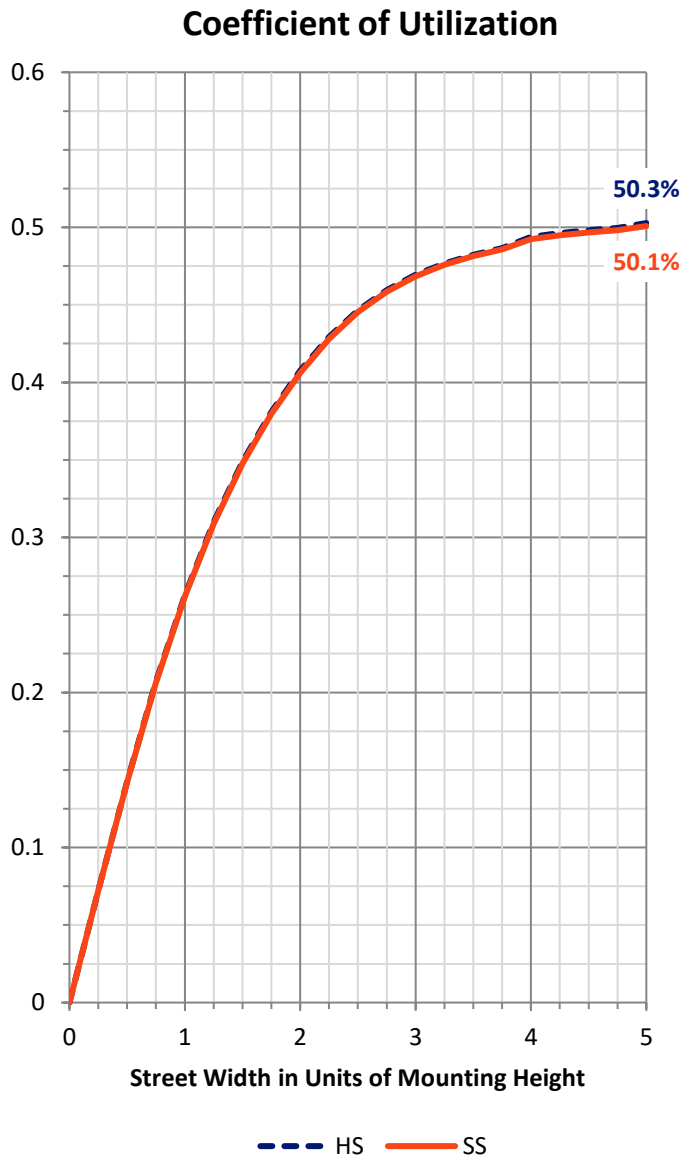
REPORT NUMBER: P870527
CATALOG NUMBER: MEM2-HSN-SA-100-840-U-T5R

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	6688.7	0.0	6688.7
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	6688.7	0.0	6688.7
	% Fixture	50.0	0.0	50.0
Total	Lumens	13377.5	0.0	13377.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.5	0.9
10°-20°	401.6	3.0
20°-30°	767.6	5.7
30°-40°	1240.4	9.3
40°-50°	1815.6	13.6
50°-60°	2603.5	19.5
60°-70°	3648.9	27.3
70°-80°	2574.7	19.2
80°-90°	202.7	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°	13377.5	100.0
0°-180°	13377.5	100.0



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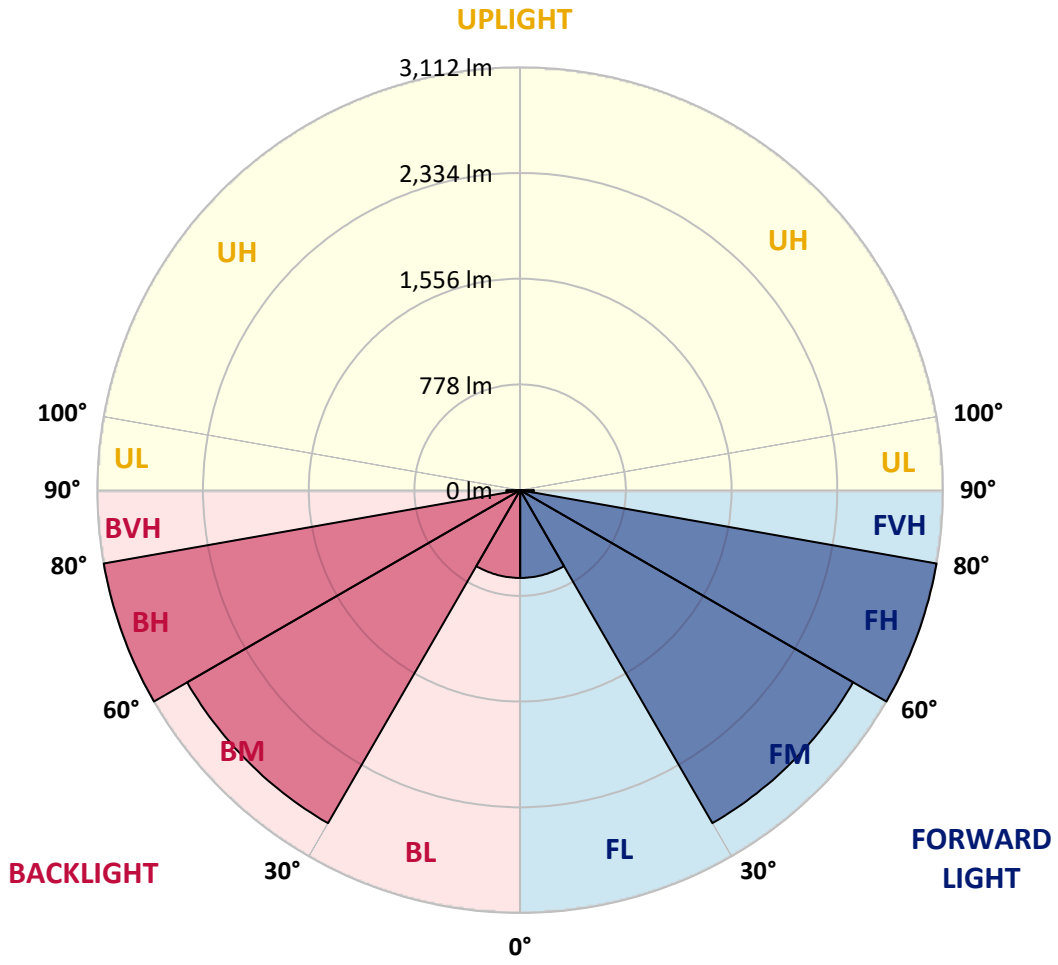
REPORT NUMBER: P870527
CATALOG NUMBER: MEM2-HSN-SA-100-840-U-T5R

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	645.9	4.8			
FM	(30°-60°)	2829.7	21.2			
FH	(60°-80°)	3111.8	23.3			G2/5000
FVH	(80°-90°)	101.3	0.8			G2/225
BL	(0°-30°)	645.9	4.8	B2/1000		
BM	(30°-60°)	2829.7	21.2	B3/5000		
BH	(60°-80°)	3111.8	23.3	B4/5000		G2/5000
BVH	(80°-90°)	101.3	0.8			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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REPORT NUMBER: P870527
CATALOG NUMBER: MEM2-HSN-SA-100-840-U-T5R

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1260.1	1260.1	1260.1	1260.1	*1260.1*	1260.1	1260.1	1260.1	1260.1	1260.1	1260.1
2.5°	1267.9	1265.3	1262.7	1262.7	*1260.1*	1262.7	1260.1	1262.7	1260.1	1260.1	1260.1
5°	1275.7	1273.1	1273.1	1273.1	*1270.5*	1270.5	1270.5	1270.5	1267.9	1265.3	1267.9
7.5°	1283.6	1283.6	1281.0	1286.2	*1283.6*	1286.2	1286.2	1288.8	1283.6	1281.0	1283.6
10°	1304.4	1304.4	1304.4	1309.6	*1309.6*	1317.4	1317.4	1320.0	1317.4	1312.2	1312.2
12.5°	1348.6	1346.0	1346.0	1346.0	*1351.3*	1356.5	1361.7	1361.7	1359.1	1351.3	1351.3
15°	1398.1	1403.3	1398.1	1395.5	*1398.1*	1403.3	1408.5	1408.5	1405.9	1403.3	1403.3
17.5°	1458.0	1460.6	1455.4	1450.2	*1450.2*	1458.0	1460.6	1460.6	1458.0	1452.8	1452.8
20°	1510.1	1512.7	1512.7	1510.1	*1512.7*	1517.9	1520.5	1523.1	1515.3	1507.5	1507.5
22.5°	1554.3	1556.9	1562.1	1572.6	*1583.0*	1588.2	1585.6	1585.6	1572.6	1564.7	1562.1
25°	1609.0	1616.8	1627.2	1640.2	*1658.5*	1671.5	1666.3	1655.9	1645.5	1629.8	1627.2
27.5°	1715.7	1715.7	1705.3	1710.5	*1731.4*	1744.4	1739.2	1731.4	1710.5	1700.1	1697.5
30°	1799.1	1799.1	1799.1	1793.9	*1806.9*	1822.5	1817.3	1804.3	1793.9	1788.6	1788.6
32.5°	1879.8	1874.6	1882.4	1892.8	*1898.0*	1903.2	1903.2	1892.8	1874.6	1866.8	1866.8
35°	1955.3	1960.5	1968.3	1983.9	*1996.9*	1989.1	1976.1	1968.3	1950.1	1934.4	1934.4
37.5°	2028.2	2033.4	2041.2	2064.6	*2085.5*	2082.9	2067.2	2046.4	2023.0	2010.0	2002.1
40°	2080.2	2082.9	2103.7	2140.1	*2168.8*	2179.2	2166.2	2137.5	2101.1	2075.0	2077.6
42.5°	2142.7	2147.9	2181.8	2233.9	*2275.5*	2291.1	2272.9	2233.9	2181.8	2147.9	2147.9
45°	2233.9	2236.5	2280.7	2345.8	*2400.5*	2426.5	2400.5	2345.8	2278.1	2244.3	2241.7
47.5°	2325.0	2332.8	2382.3	2460.4	*2541.1*	2572.3	2543.7	2473.4	2392.7	2351.0	2345.8
50°	2429.1	2434.3	2494.2	2601.0	*2692.1*	2733.7	2697.3	2608.8	2520.3	2468.2	2470.8
52.5°	2530.7	2546.3	2627.0	2739.0	*2848.3*	2895.2	2843.1	2746.8	2653.0	2603.6	2601.0
55°	2681.7	2699.9	2770.2	2895.2	*3009.7*	3061.8	3012.3	2905.6	2804.0	2749.4	2739.0
57.5°	2871.7	2882.1	2944.6	3072.2	*3168.5*	3218.0	3189.4	3090.4	2994.1	2926.4	2913.4
60°	3087.8	3098.2	3147.7	3277.9	*3356.0*	3392.4	3382.0	3324.8	3259.7	3228.4	3220.6
62.5°	3395.0	3397.7	3423.7	3499.2	*3577.3*	3592.9	3566.9	3553.9	3574.7	3540.8	3548.7
65°	3746.5	3746.5	3738.7	3749.1	*3809.0*	3790.8	3772.6	3829.8	3819.4	3762.2	3751.7
67.5°	*3814.2*	*3829.8*	*3861.1*	*3884.5*	*3939.2*	*3905.3*	*3928.8*	*3939.2*	*3874.1*	*3822.0*	*3814.2*
70°	3413.3	3431.5	3605.9	3712.7	*3879.3*	3910.6	3835.1	3796.0	3723.1	3626.8	3600.7
72.5°	2327.6	2418.7	2921.2	3264.9	*3520.0*	3559.1	3517.4	3467.9	3322.1	3246.6	3194.6
75°	1858.9	1908.4	2356.2	2694.7	*2845.7*	2843.1	2676.5	2621.8	2507.2	2496.8	2507.2
77.5°	1135.2	1145.6	1585.6	1851.1	*1869.4*	1858.9	1791.3	1749.6	1765.2	1687.1	1700.1
80°	346.3	377.5	598.8	903.4	*971.1*	939.9	926.9	942.5	958.1	981.5	1018.0
82.5°	70.3	88.5	119.8	260.4	*296.8*	294.2	291.6	322.8	351.5	364.5	442.6
85°	7.8	7.8	10.4	20.8	*44.3*	70.3	72.9	65.1	98.9	96.3	67.7
87.5°	2.6	2.6	2.6	2.6	*2.6*	5.2	5.2	5.2	5.2	5.2	5.2
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: SP1-2407-157-8

Test Date: 09/05/2024

Luminaire Tested: MEM2-HTN-SA-30-840-U-5WQ

Data in this report applies to families of products including MEM2-HTN-SA-30-840-U-5WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

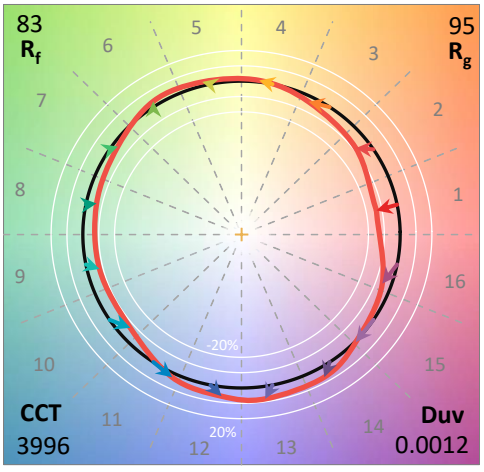
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-157-8
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	09/05/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-SA-30-840-U-5WQ**
Description:	Epic Modern Light Square 30W 5WQ Optic

Spectral Parameters

CCT (K):	3996
CIE u':	0.2245
CIE v':	0.5031
Duv:	0.0012
CIE x:	0.3815
CIE y:	0.3799
CIE z:	0.2386
Peak Wavelength (nm):	449
Dominant Wavelength (nm):	578
Purity:	28.49233
Rf:	82.6
Rg:	95.1

CRI (Ra):	80.6				
R1:	78.1	R9:	-5.8		
R2:	87.1	R10:	70.3		
R3:	94.5	R11:	78.7		
R4:	79.7	R12:	60.5		
R5:	78.7	R13:	80.2		
R6:	82.7	R14:	97.2		
R7:	84.3	R15:	70.6		
R8:	59.5				



Test Conditions

Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	24.3

REPORT NUMBER: SP1-2407-157-8

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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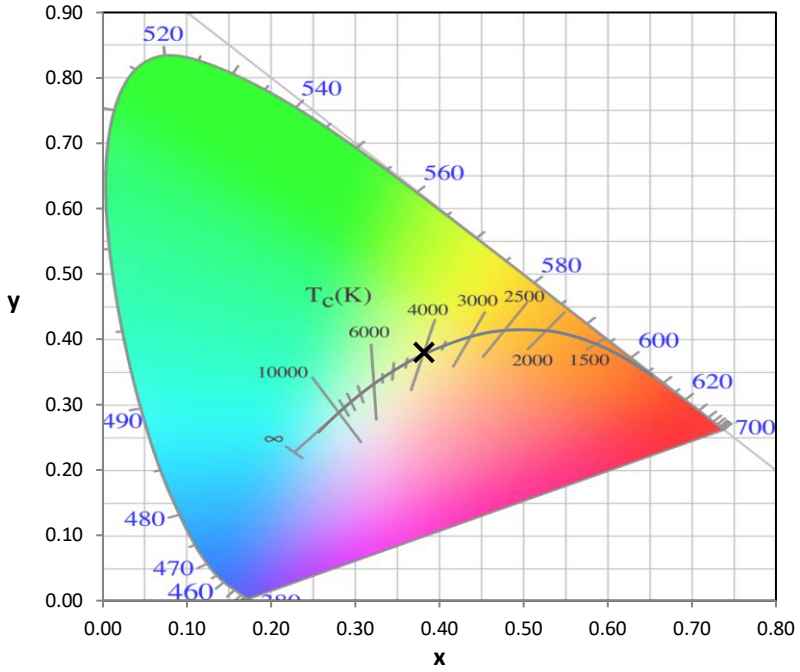
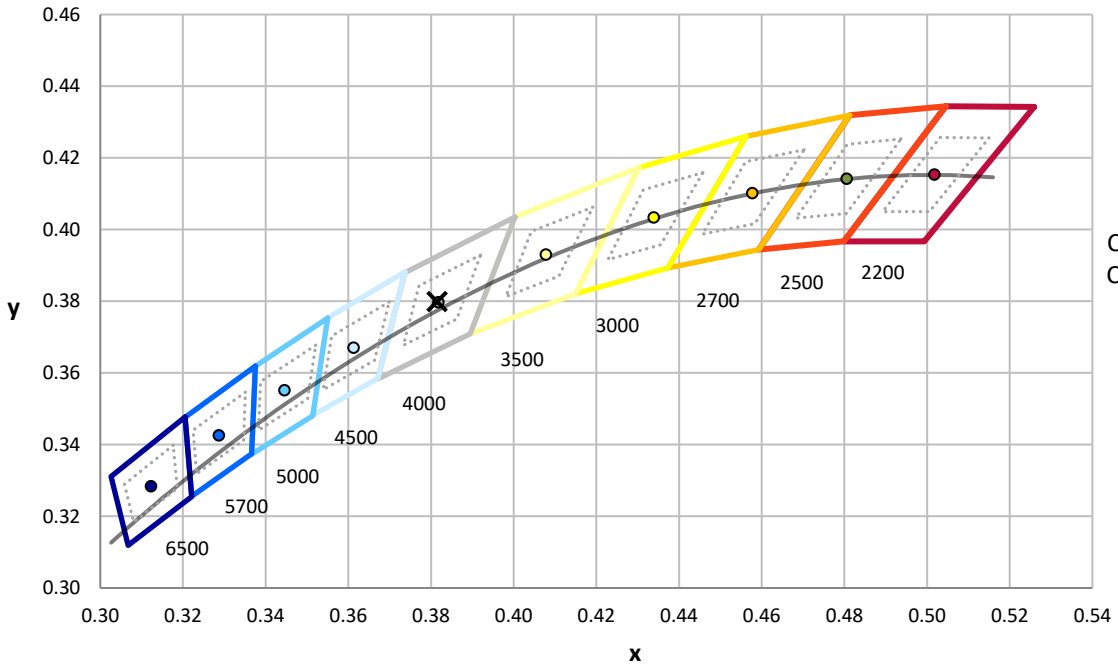
CIE 1931 Chromaticity Diagram



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



CCT = 3996K
CIE x = 0.3815
CIE y = 0.3799
Duv = 0.0012

Point lies inside the ANSI 4000K 4-step quadrangle

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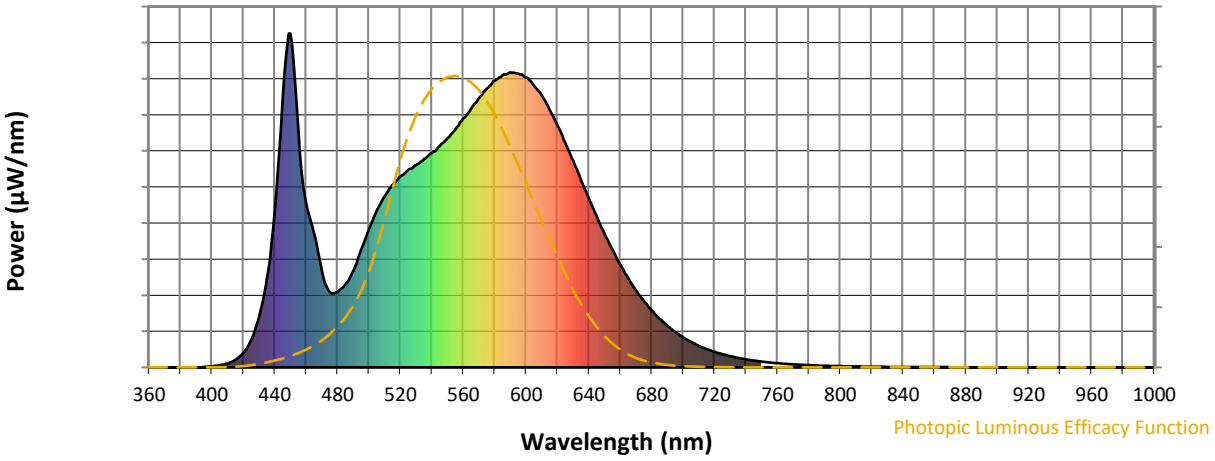
Photopic Flux vs. Wavelength

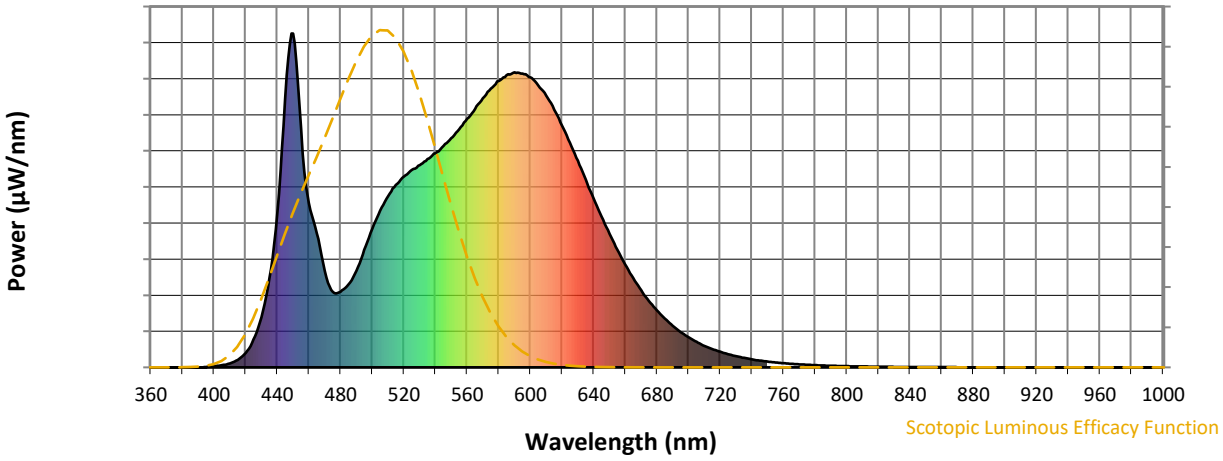


Photopic Lumens: NR

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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-8

Scotopic Flux vs. Wavelength

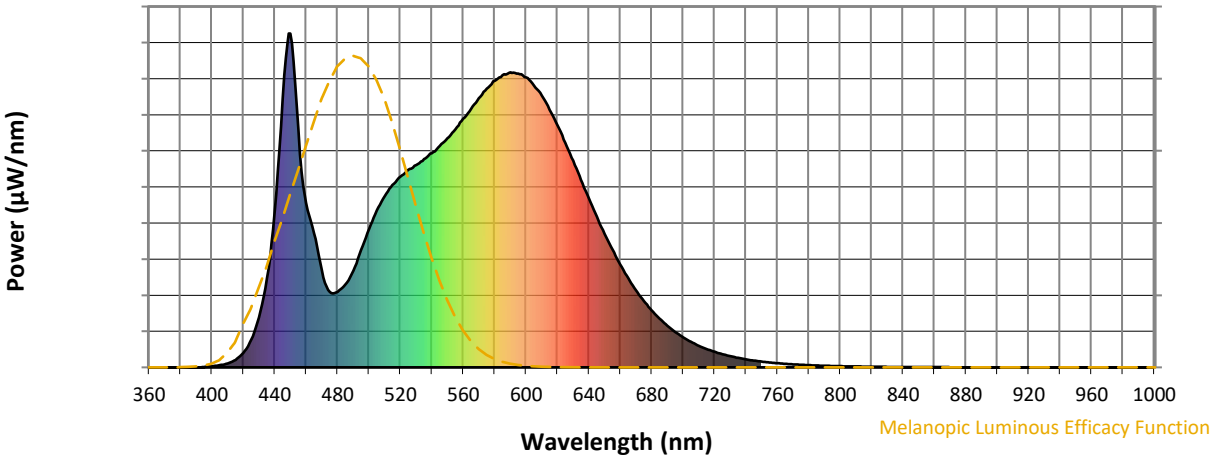


Scotopic Lumens: NR **S/P: 1.66**

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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-8

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.37**

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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

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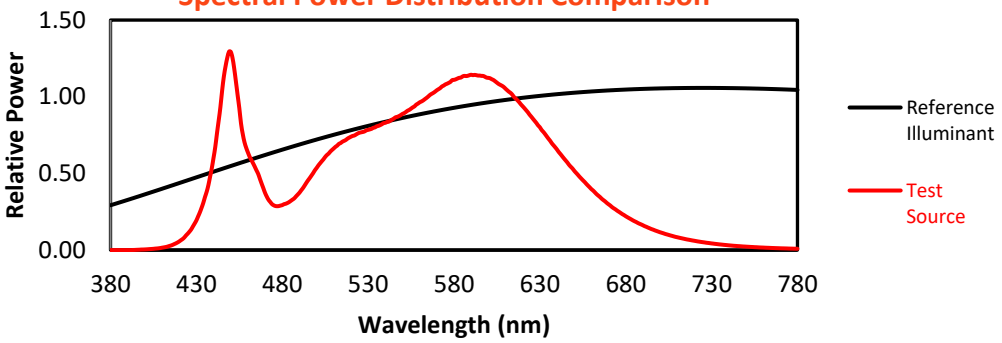
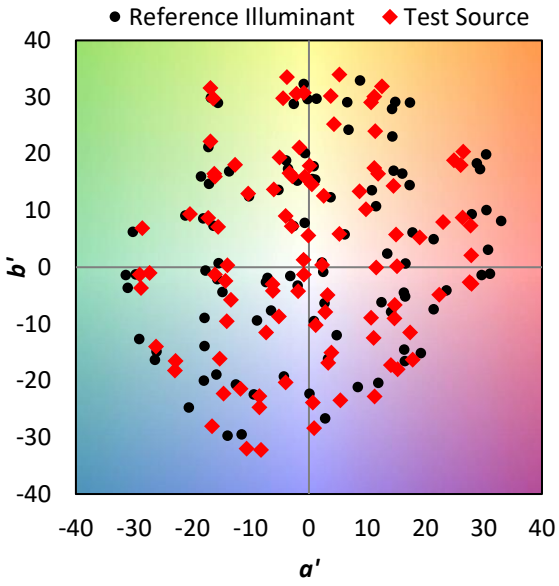
Summary

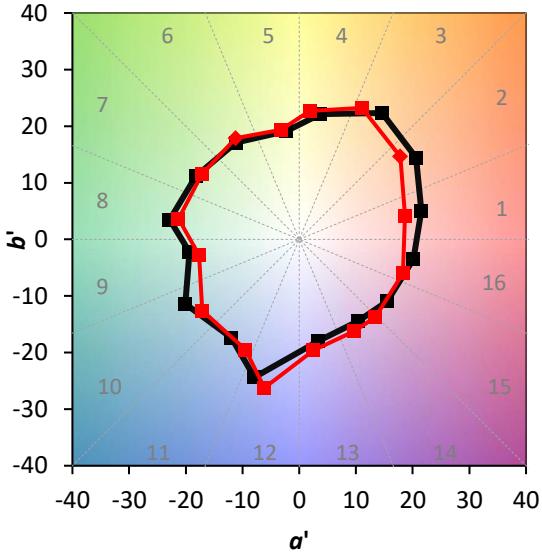
R_f = 82.6
R_g = 95.1
CIE R_a = 80.6
R_9 = -5.8

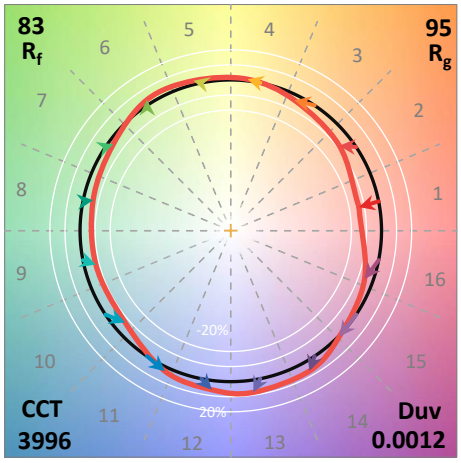
Spectral Power Distribution Comparison

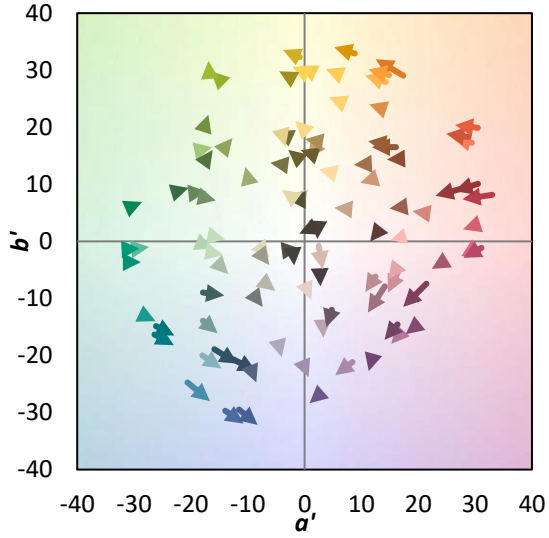


Color Vector Graphics









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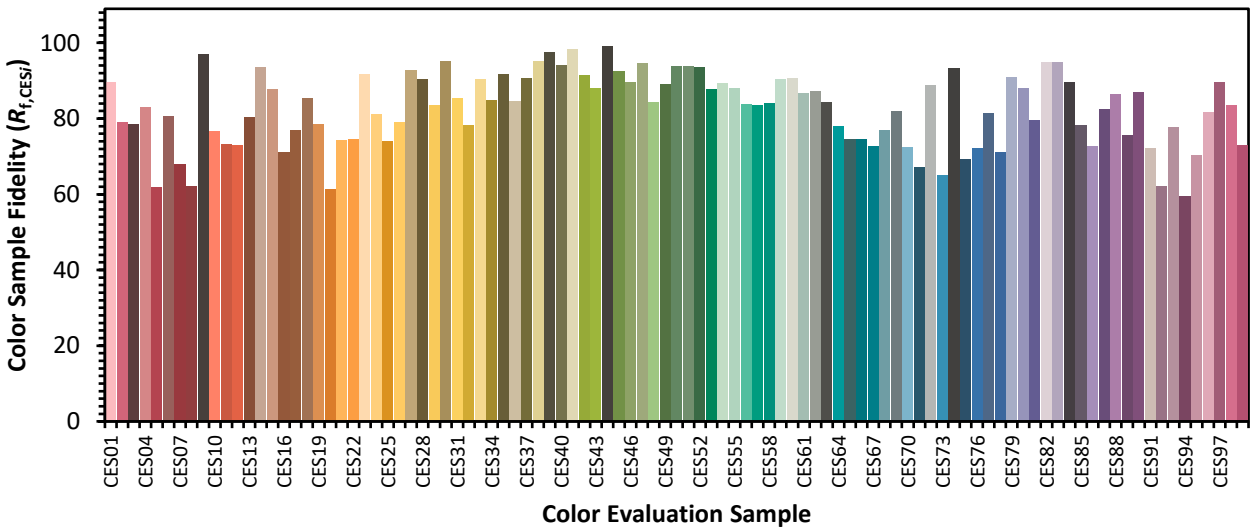
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 79	CES51 = 94	CES76 = 72
CES02 = 61	CES27 = 93	CES52 = 94	CES77 = 82
CES03 = 31	CES28 = 90	CES53 = 88	CES78 = 71
CES04 = 69	CES29 = 83	CES54 = 89	CES79 = 91
CES05 = 48	CES30 = 95	CES55 = 88	CES80 = 88
CES06 = 50	CES31 = 86	CES56 = 84	CES81 = 80
CES07 = 40	CES32 = 78	CES57 = 84	CES82 = 95
CES08 = 39	CES33 = 90	CES58 = 84	CES83 = 95
CES09 = 29	CES34 = 85	CES59 = 90	CES84 = 90
CES10 = 74	CES35 = 92	CES60 = 91	CES85 = 78
CES11 = 57	CES36 = 85	CES61 = 87	CES86 = 73
CES12 = 63	CES37 = 91	CES62 = 87	CES87 = 83
CES13 = 42	CES38 = 95	CES63 = 84	CES88 = 86
CES14 = 74	CES39 = 98	CES64 = 78	CES89 = 76
CES15 = 71	CES40 = 94	CES65 = 75	CES90 = 87
CES16 = 46	CES41 = 98	CES66 = 75	CES91 = 72
CES17 = 49	CES42 = 92	CES67 = 73	CES92 = 62
CES18 = 56	CES43 = 88	CES68 = 77	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 82	CES94 = 60
CES20 = 65	CES45 = 93	CES70 = 72	CES95 = 70
CES21 = 86	CES46 = 90	CES71 = 67	CES96 = 82
CES22 = 78	CES47 = 95	CES72 = 89	CES97 = 90
CES23 = 91	CES48 = 84	CES73 = 65	CES98 = 84
CES24 = 90	CES49 = 89	CES74 = 93	CES99 = 73
CES25 = 71	CES50 = 94	CES75 = 69	



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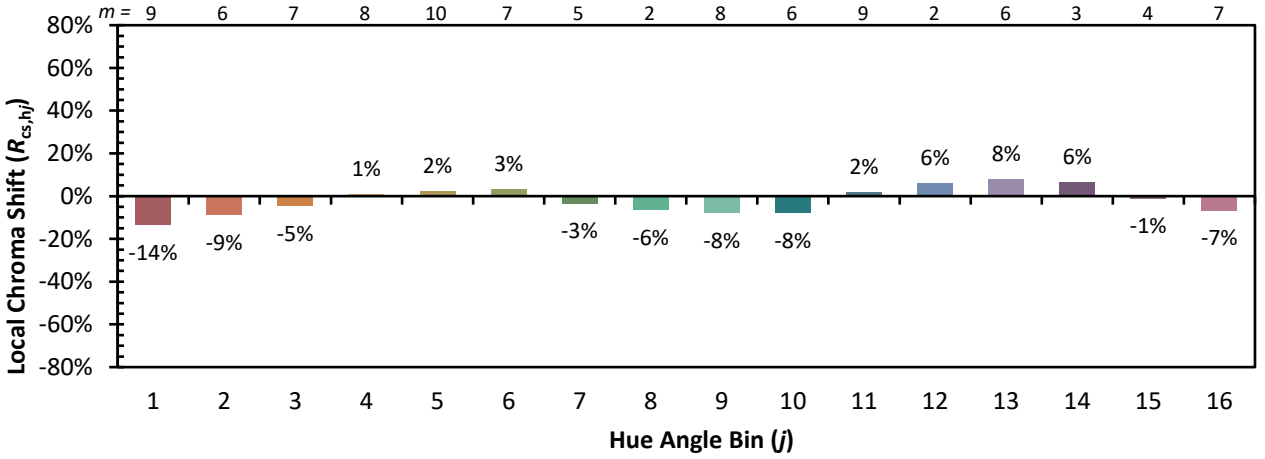
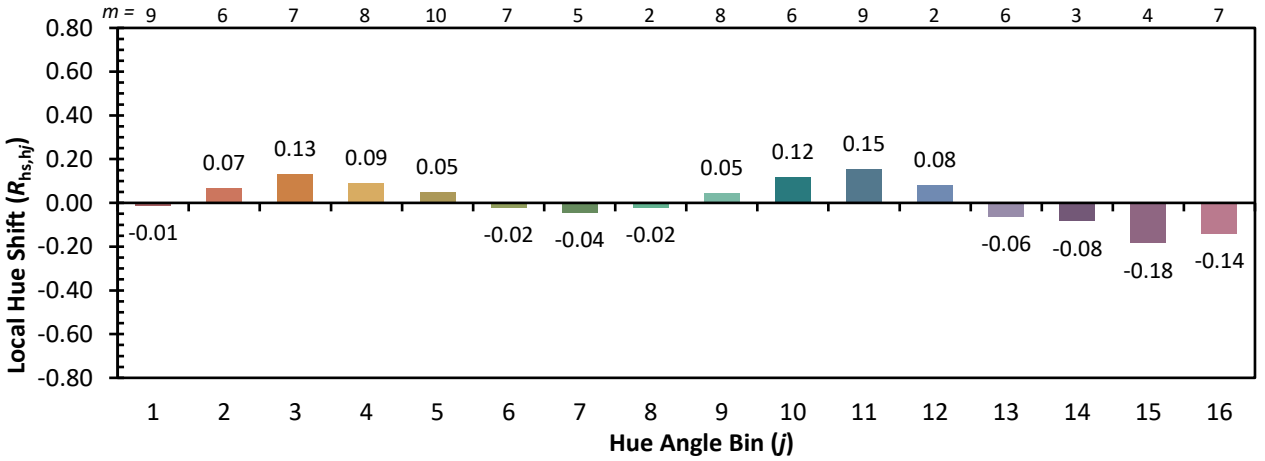
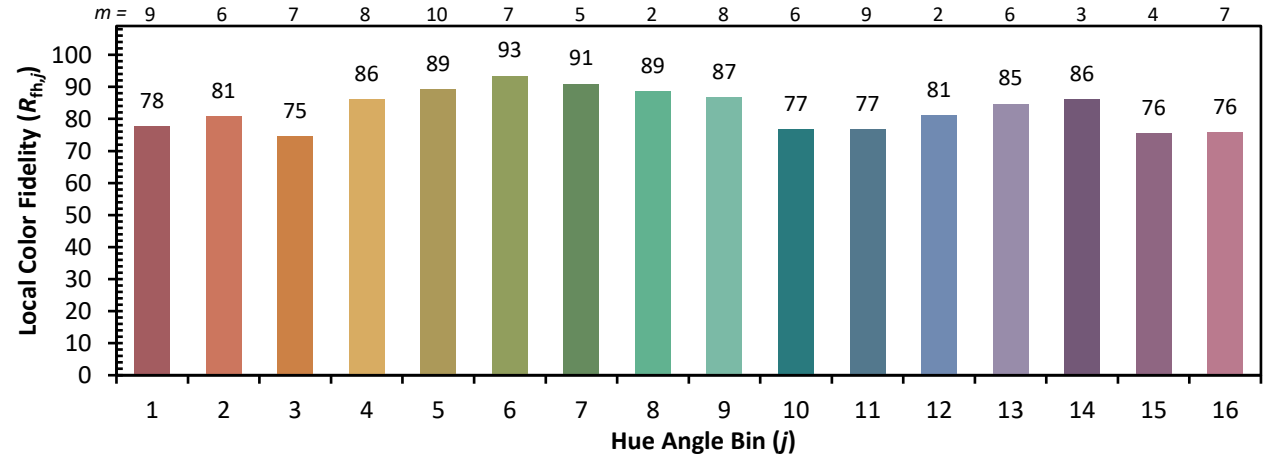
Color Rendition by Hue-Angle Bin







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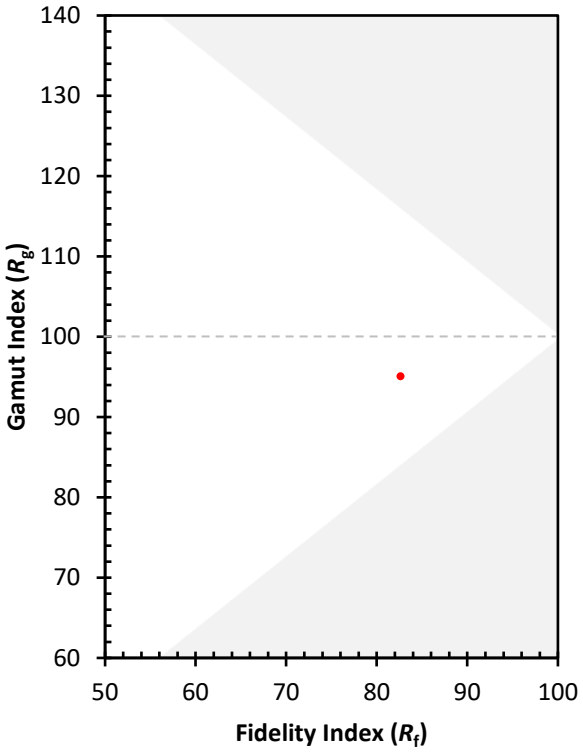
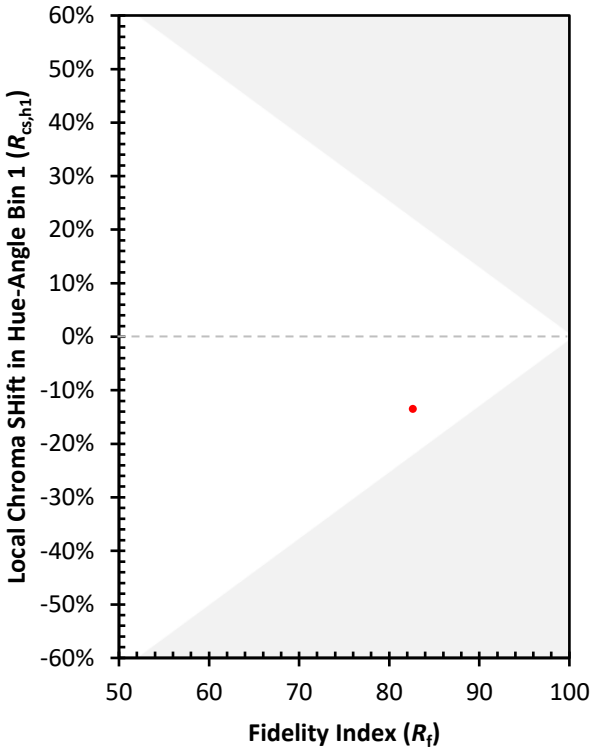
Measure Comparisons





(END OF REPORT)