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: P880044

Luminaire Tested: **MEM2-HSN-VA-80-730-U-MQ**

Issue Date: 10/01/2024

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:	P880044
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HSN-VA-80-730-U-MQ
Description:	EPIC MODERN SHORT HOUSING 80W 70CRI 3000K VISUAL COMFORT FIXTURE w/ TYPE V MEDIUM DISTRIBUTION OPTIC
Light Source:	(1) 3000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	8526.5 lumens
Efficiency:	N/A
Efficacy:	109.3 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G2

Input Watts (W):	78
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	6%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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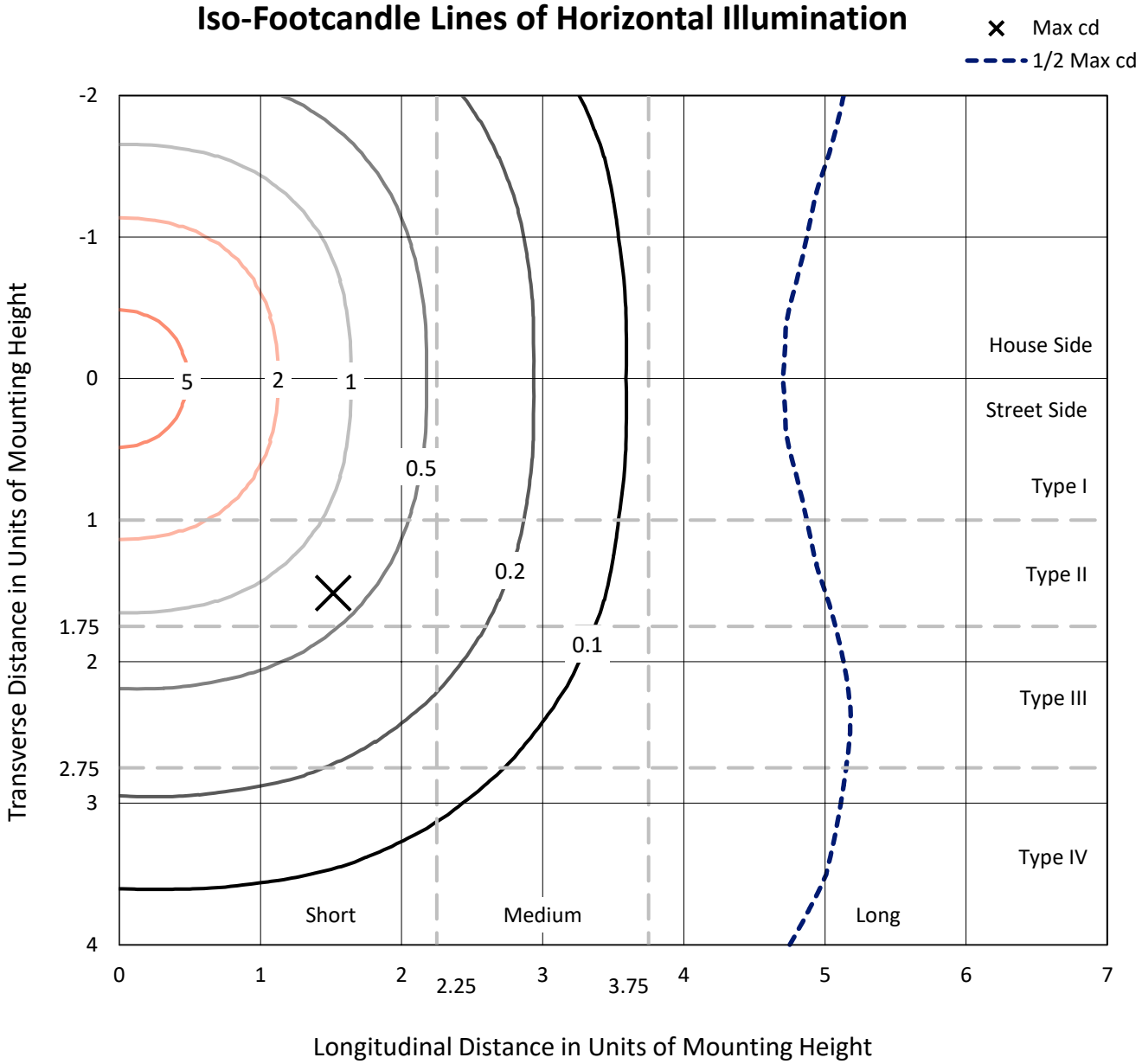
Scaled Data Report

REPORT NUMBER: P880044
CATALOG NUMBER: MEM2-HSN-VA-80-730-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 7 fc
Type V - Short - N/A

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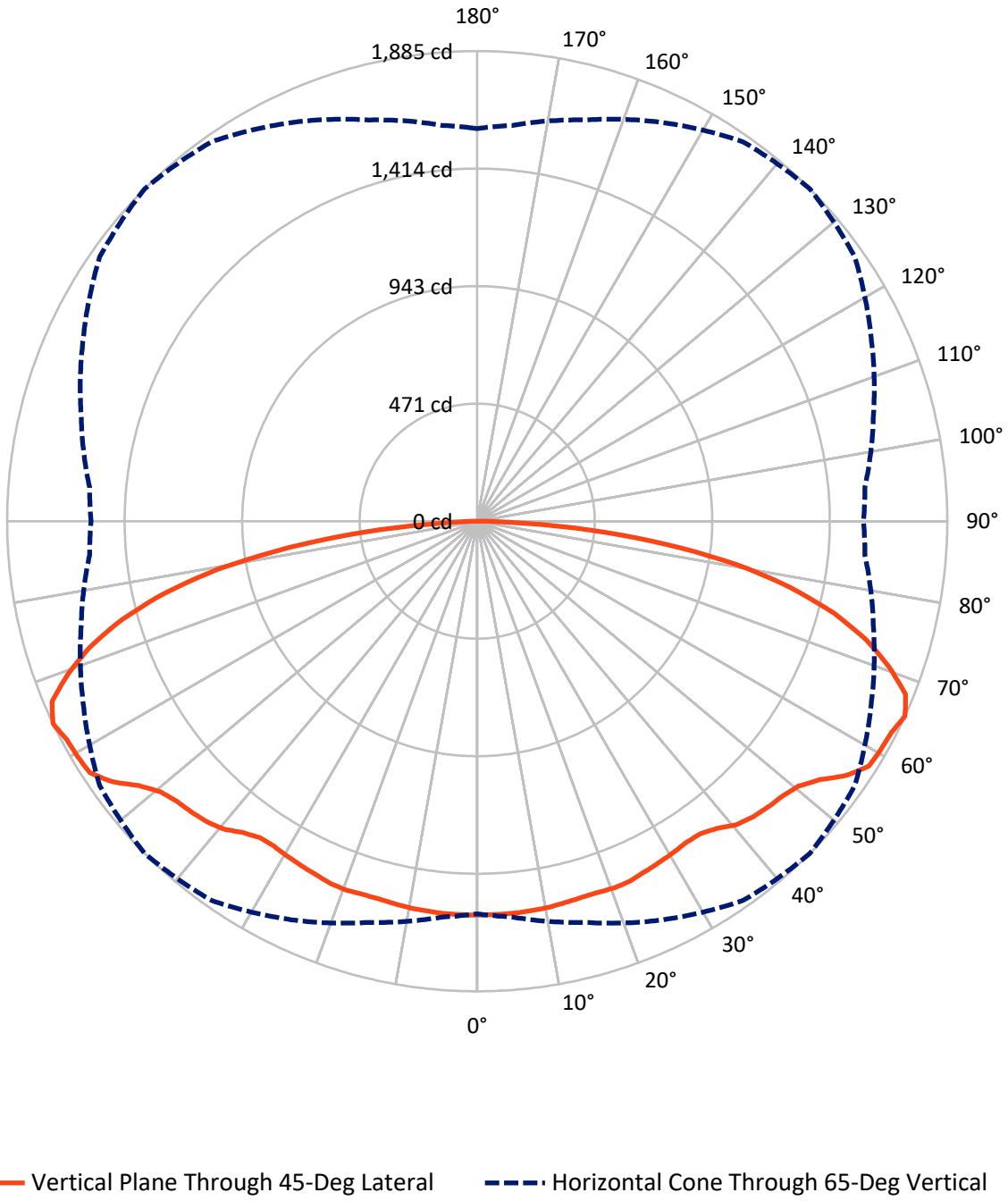
REPORT NUMBER: P880044
CATALOG NUMBER: MEM2-HSN-VA-80-730-U-MQ

Luminous Intensity Polar Plot



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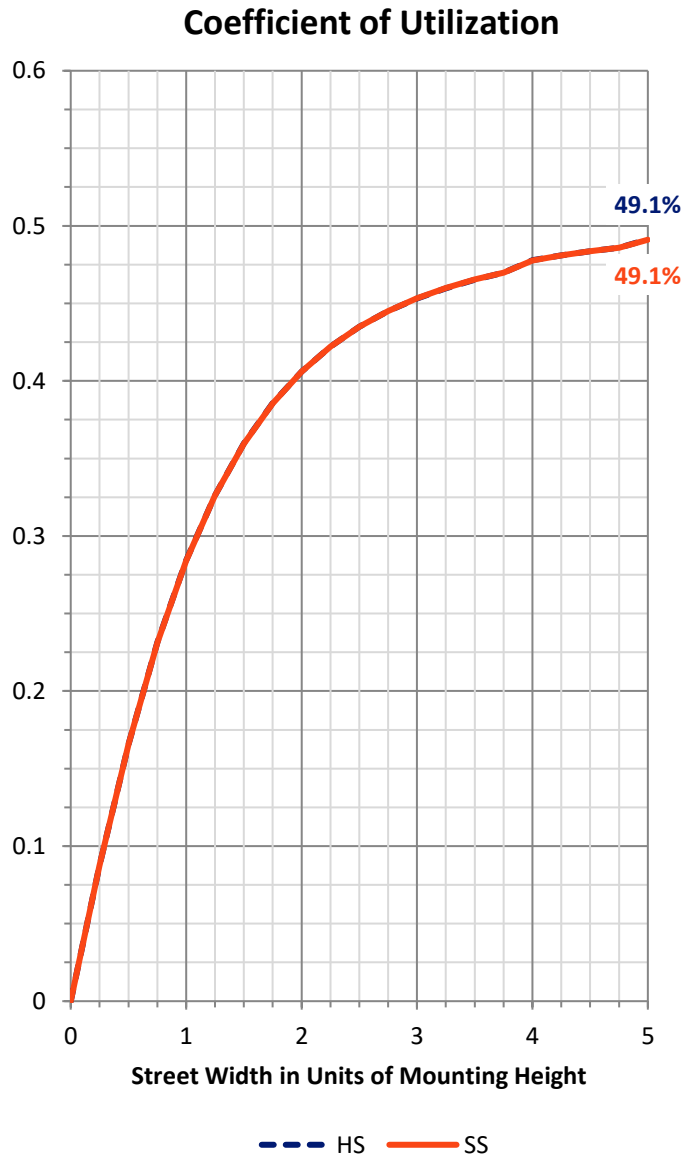
REPORT NUMBER: P880044
CATALOG NUMBER: MEM2-HSN-VA-80-730-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4263.2	0.0	4263.2
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4263.2	0.0	4263.2
	% Fixture	50.0	0.0	50.0
Total	Lumens	8526.5	0.0	8526.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.5	1.8
10°-20°	443.9	5.2
20°-30°	718.7	8.4
30°-40°	965.9	11.3
40°-50°	1232.7	14.5
50°-60°	1516.5	17.8
60°-70°	1688.7	19.8
70°-80°	1370.7	16.1
80°-90°	438.8	5.1
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°	8526.5	100.0
0°-180°	8526.5	100.0



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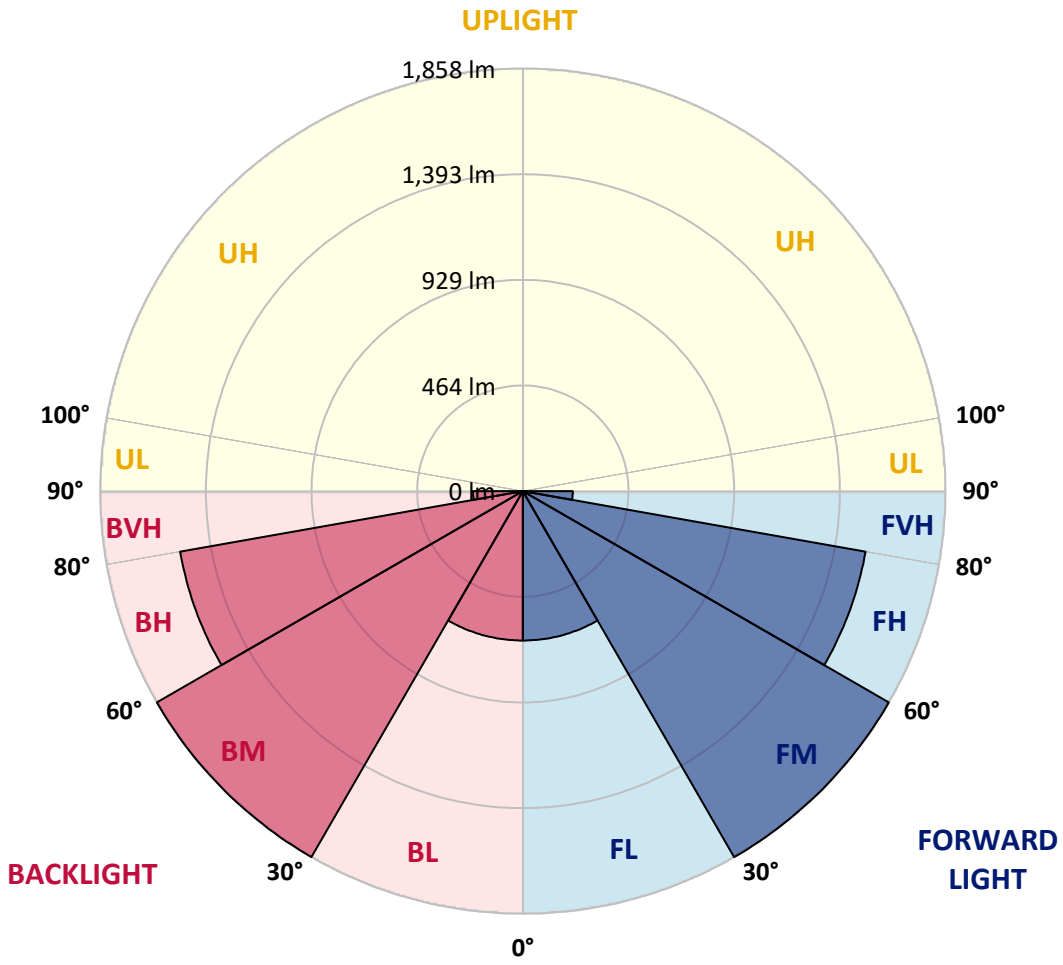
Scaled Data Report

REPORT NUMBER: P880044
CATALOG NUMBER: MEM2-HSN-VA-80-730-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	656.6	7.7			
FM	(30°-60°)	1857.5	21.8			
FH	(60°-80°)	1529.7	17.9			G1/1800
FVH	(80°-90°)	219.4	2.6			G2/225
BL	(0°-30°)	656.6	7.7	B2/1000		
BM	(30°-60°)	1857.5	21.8	B2/2500		
BH	(60°-80°)	1529.7	17.9	B3/2500		G1/1800
BVH	(80°-90°)	219.4	2.6			G2/225
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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REPORT NUMBER: P880044
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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1
2.5°	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1
5°	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1579.1	1576.7	1579.1	1579.1
7.5°	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7	1576.7
10°	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4	1574.4
12.5°	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7	1569.7
15°	1562.7	1565.1	1565.1	1565.1	1565.1	1565.1	1565.1	1565.1	1565.1	1562.7	1562.7
17.5°	1560.4	1560.4	1560.4	1562.7	1565.1	1565.1	1565.1	1562.7	1560.4	1558.0	1558.0
20°	1562.7	1562.7	1562.7	1565.1	1567.4	1569.7	1567.4	1565.1	1560.4	1560.4	1560.4
22.5°	1560.4	1562.7	1562.7	1565.1	1567.4	1567.4	1565.1	1562.7	1560.4	1558.0	1558.0
25°	1553.4	1553.4	1555.7	1558.0	1558.0	1558.0	1558.0	1553.4	1551.0	1548.7	1548.7
27.5°	1544.0	1546.4	1546.4	1548.7	1551.0	1551.0	1548.7	1544.0	1541.7	1539.4	1539.4
30°	1532.4	1532.4	1534.7	1539.4	1541.7	1544.0	1539.4	1534.7	1527.7	1525.3	1525.3
32.5°	1520.7	1523.0	1527.7	1532.4	1534.7	1537.0	1532.4	1527.7	1520.7	1516.0	1513.7
35°	1516.0	1516.0	1523.0	1532.4	1539.4	1539.4	1534.7	1525.3	1516.0	1506.7	1506.7
37.5°	1523.0	1525.3	1534.7	1551.0	1562.7	1562.7	1560.4	1544.0	1527.7	1513.7	1511.3
40°	1539.4	1541.7	1558.0	1579.1	1597.8	1600.1	1590.8	1569.7	1546.4	1530.0	1525.3
42.5°	1548.7	1553.4	1572.1	1597.8	1614.1	1621.1	1609.4	1588.4	1558.0	1537.0	1534.7
45°	1553.4	1558.0	1579.1	1607.1	1628.1	1635.1	1623.5	1595.4	1562.7	1539.4	1537.0
47.5°	1555.7	1560.4	1581.4	1616.4	1639.8	1646.8	1637.5	1604.8	1565.1	1541.7	1539.4
50°	1558.0	1567.4	1593.1	1630.5	1665.5	1670.2	1656.2	1616.4	1574.4	1546.4	1539.4
52.5°	1574.4	1581.4	1618.8	1672.5	1707.5	1721.6	1700.5	1660.8	1597.8	1555.7	1551.0
55°	1614.1	1616.4	1660.8	1728.6	1780.0	1798.6	1765.9	1712.2	1635.1	1593.1	1590.8
57.5°	1625.8	1639.8	1688.9	1765.9	1829.0	1852.4	1824.3	1742.6	1672.5	1616.4	1602.4
60°	1614.1	1625.8	1684.2	1773.0	1840.7	1859.4	1838.4	1761.3	1658.5	1595.4	1583.7
62.5°	1602.4	1616.4	1677.2	1777.6	1843.0	1864.1	1829.0	1763.6	1651.5	1588.4	1576.7
65°	1574.4	1593.1	1665.5	1763.6	1857.0	1885.1	1847.7	1742.6	1644.5	1560.4	1548.7
67.5°	1520.7	1530.0	1609.4	1723.9	1824.3	1852.4	1812.7	1702.9	1586.1	1504.3	1495.0
70°	1420.2	1441.3	1516.0	1642.1	1737.9	1751.9	1721.6	1611.8	1497.3	1410.9	1399.2
72.5°	1287.1	1317.5	1399.2	1527.7	1604.8	1632.8	1593.1	1504.3	1385.2	1287.1	1270.7
75°	1146.9	1163.3	1247.4	1373.5	1452.9	1478.6	1443.6	1357.2	1214.7	1146.9	1130.6
77.5°	992.8	1004.4	1079.2	1191.3	1266.1	1287.1	1252.0	1182.0	1053.5	990.4	983.4
80°	777.9	801.2	871.3	967.1	1023.1	1055.8	1018.5	950.7	857.3	782.5	770.8
82.5°	555.9	572.3	635.4	700.8	754.5	763.8	747.5	682.1	612.0	553.6	539.6
85°	303.7	310.7	350.4	418.1	439.2	455.5	432.1	383.1	348.1	310.7	299.0
87.5°	79.4	81.8	93.4	109.8	119.1	121.5	119.1	105.1	86.4	67.7	74.7
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: SP1-2407-176-3

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-730-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-730-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

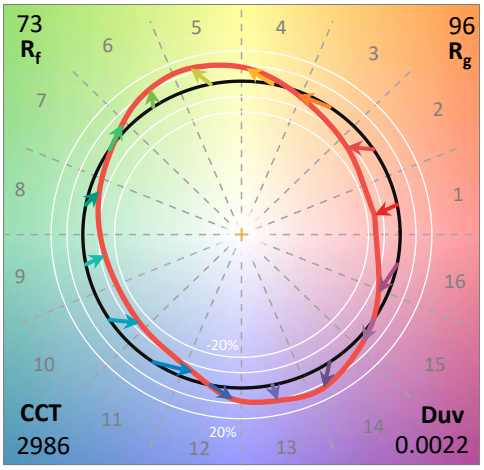
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-3
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	09/27/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-VA-30-730-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	2986	CRI (Ra):	71.3		
CIE u':	0.2503	R1:	68.5	R9:	-25.2
CIE v':	0.5248	R2:	79.2	R10:	51.0
Duv:	0.0022	R3:	88.4	R11:	63.6
CIE x:	0.4413	R4:	69.4	R12:	39.8
CIE y:	0.4112	R5:	66.3	R13:	69.9
CIE z:	0.1476	R6:	70.0	R14:	92.9
Peak Wavelength (nm):	596	R7:	80.1	R15:	61.4
Dominant Wavelength (nm):	582	R8:	48.3		
Purity:	55.87534				

Rf:	73.2
Rg:	95.9



Test Conditions

Stabilization Time:	27M
Operation Time:	1H 27M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-3

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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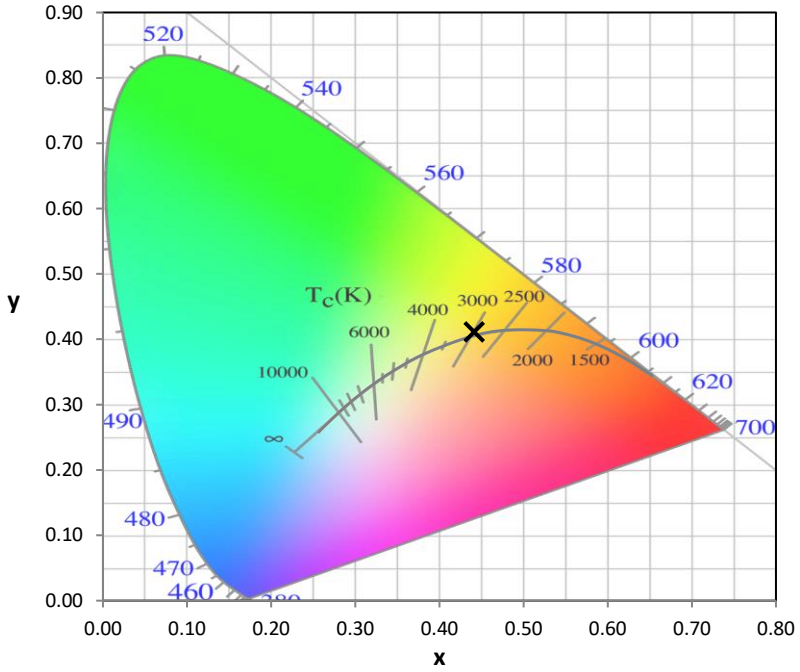
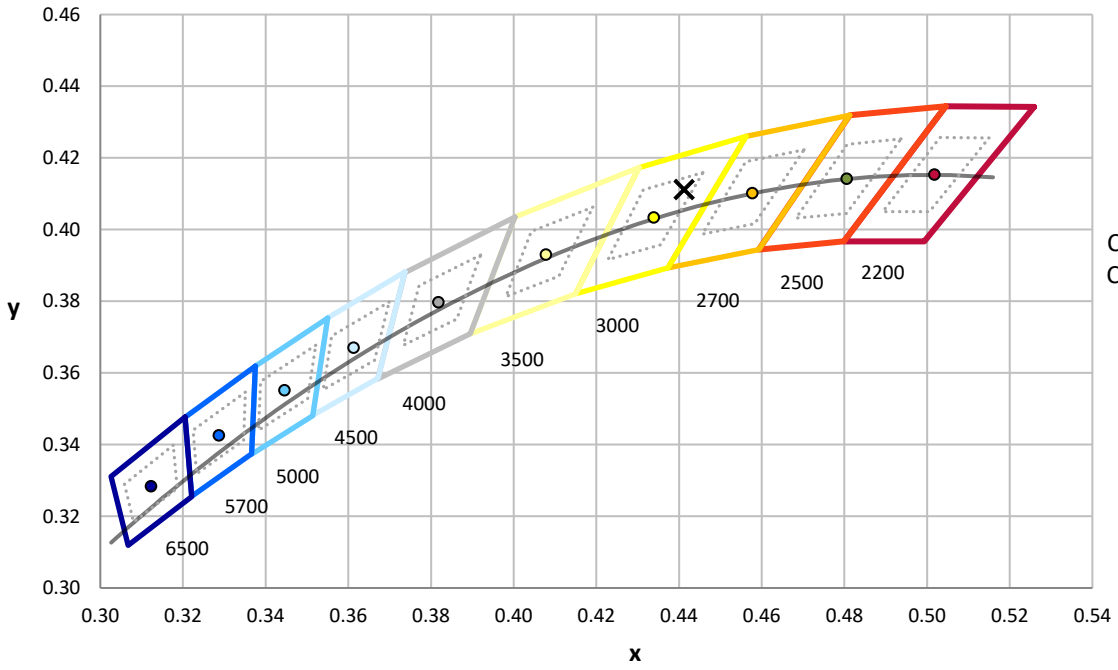
CIE 1931 Chromaticity Diagram



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



CCT = 2986K
CIE x = 0.4413
CIE y = 0.4112
Duv = 0.0022

Point lies inside the ANSI 3000K 4-step quadrangle

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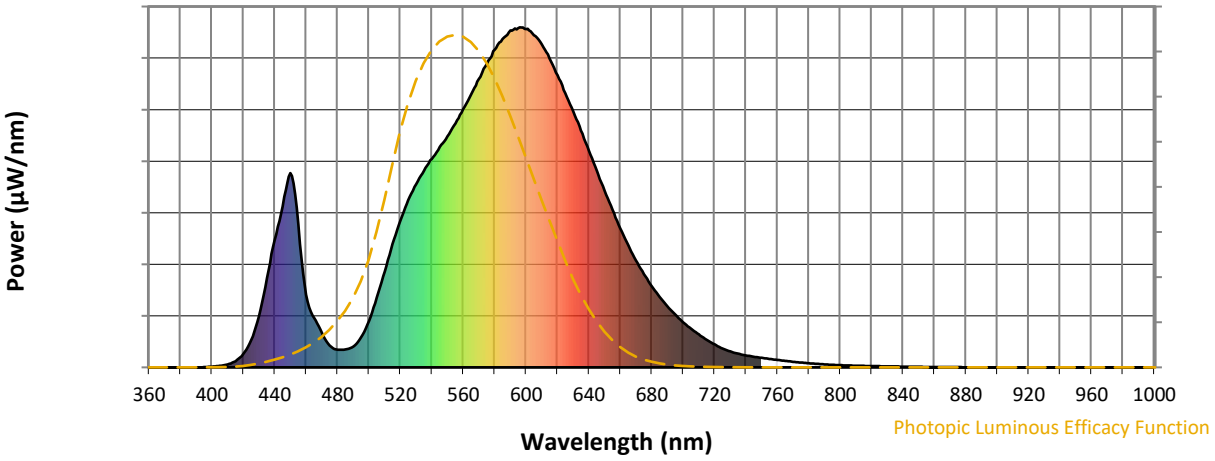
Photopic Flux vs. Wavelength

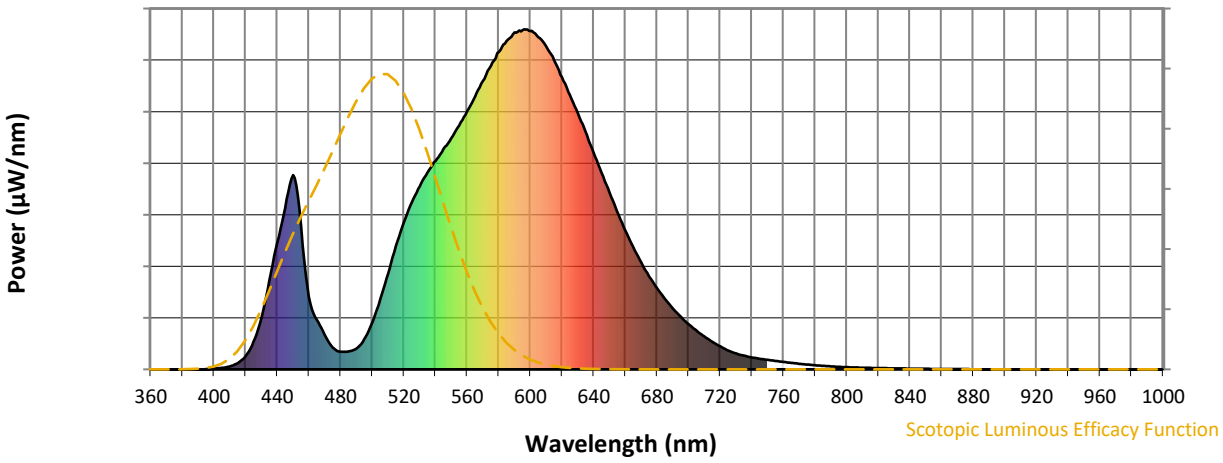


Photopic Lumens: NR

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-3

Scotopic Flux vs. Wavelength

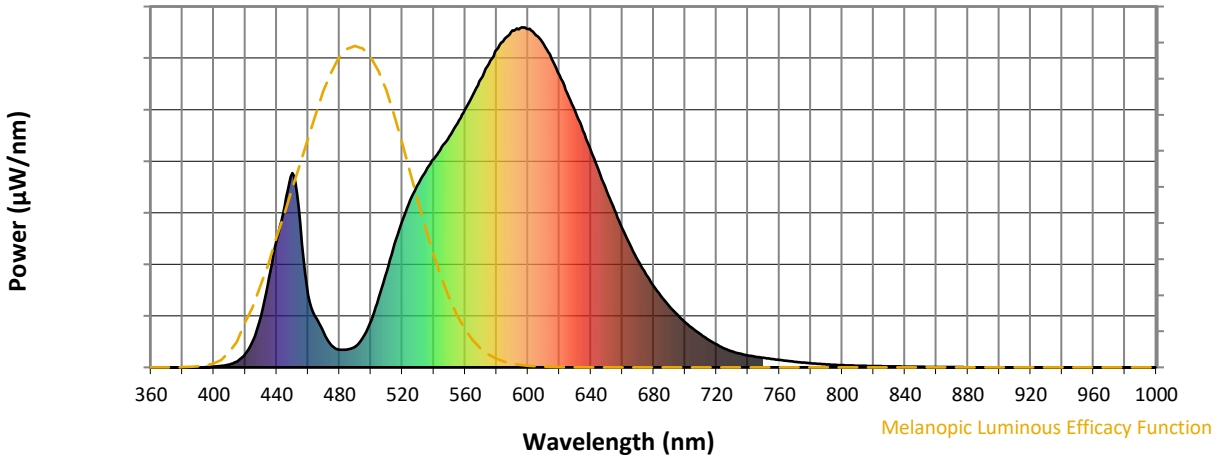


Scotopic Lumens: NR **S/P: 1.15**

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.01**

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

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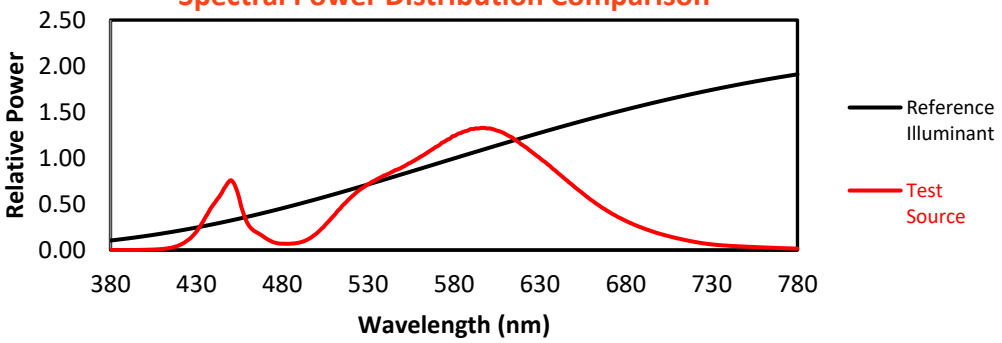
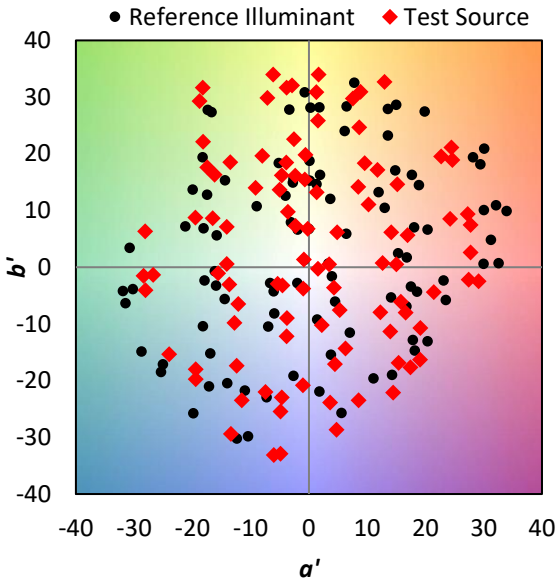
Summary

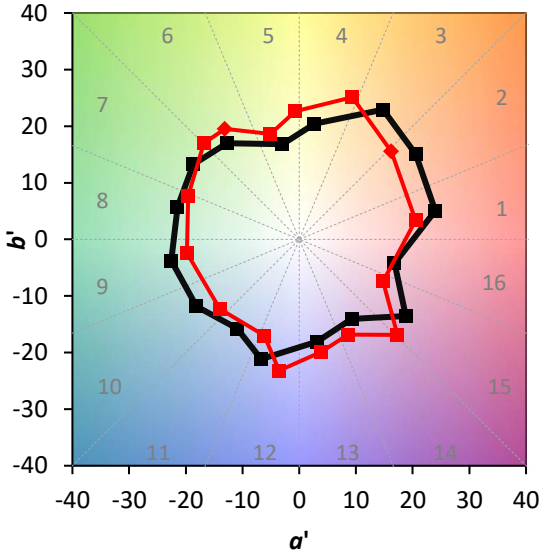
R_f = 73.2
R_g = 95.9
CIE R_a = 71.3
R_9 = -25.2

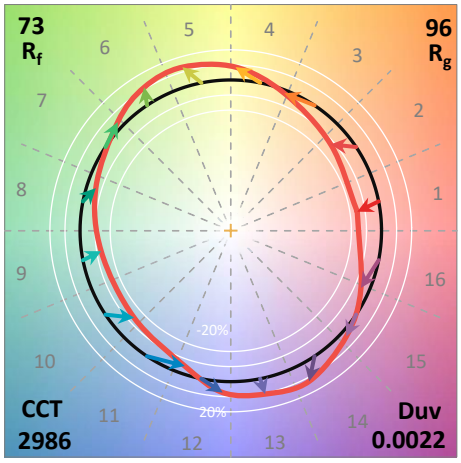
Spectral Power Distribution Comparison

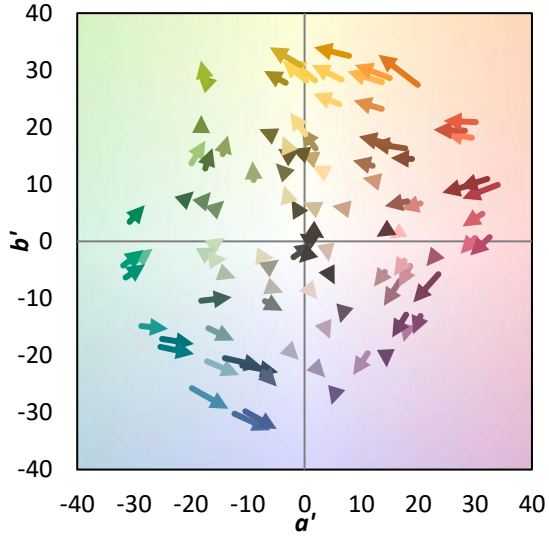


Color Vector Graphics









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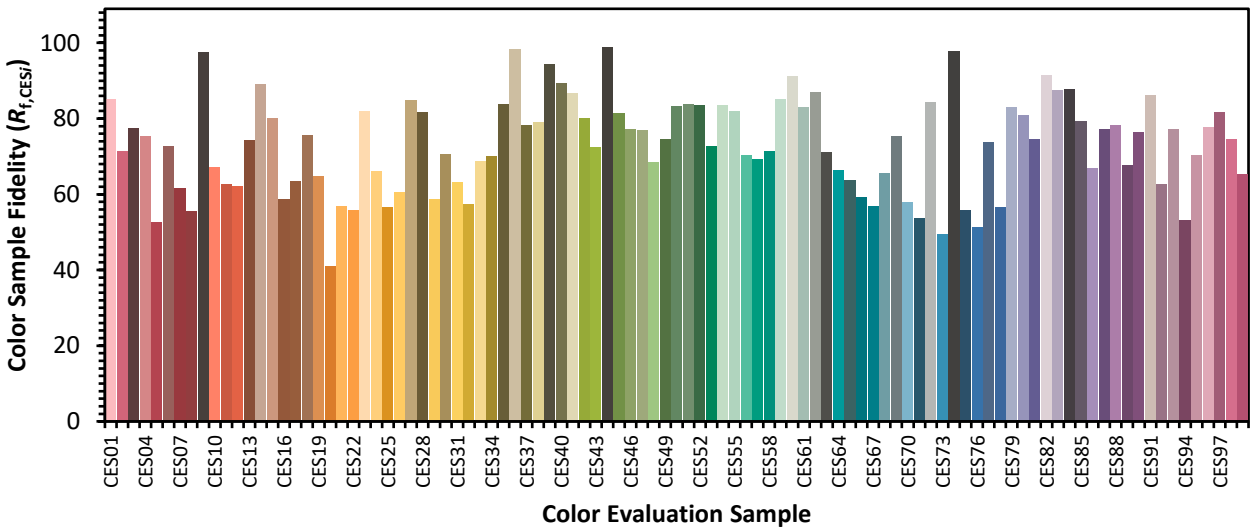
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 61	CES51 = 84	CES76 = 51
CES02 = 62	CES27 = 85	CES52 = 84	CES77 = 74
CES03 = 31	CES28 = 82	CES53 = 73	CES78 = 56
CES04 = 71	CES29 = 59	CES54 = 84	CES79 = 83
CES05 = 49	CES30 = 71	CES55 = 82	CES80 = 81
CES06 = 51	CES31 = 63	CES56 = 70	CES81 = 75
CES07 = 41	CES32 = 57	CES57 = 69	CES82 = 92
CES08 = 40	CES33 = 69	CES58 = 71	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 85	CES84 = 88
CES10 = 76	CES35 = 84	CES60 = 91	CES85 = 79
CES11 = 59	CES36 = 98	CES61 = 83	CES86 = 67
CES12 = 65	CES37 = 78	CES62 = 87	CES87 = 77
CES13 = 43	CES38 = 79	CES63 = 71	CES88 = 78
CES14 = 74	CES39 = 94	CES64 = 66	CES89 = 68
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 76
CES16 = 47	CES41 = 87	CES66 = 59	CES91 = 86
CES17 = 50	CES42 = 80	CES67 = 57	CES92 = 63
CES18 = 56	CES43 = 73	CES68 = 66	CES93 = 77
CES19 = 73	CES44 = 99	CES69 = 75	CES94 = 53
CES20 = 66	CES45 = 81	CES70 = 58	CES95 = 70
CES21 = 87	CES46 = 77	CES71 = 54	CES96 = 78
CES22 = 79	CES47 = 77	CES72 = 84	CES97 = 82
CES23 = 92	CES48 = 68	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 74	CES74 = 98	CES99 = 65
CES25 = 73	CES50 = 83	CES75 = 56	



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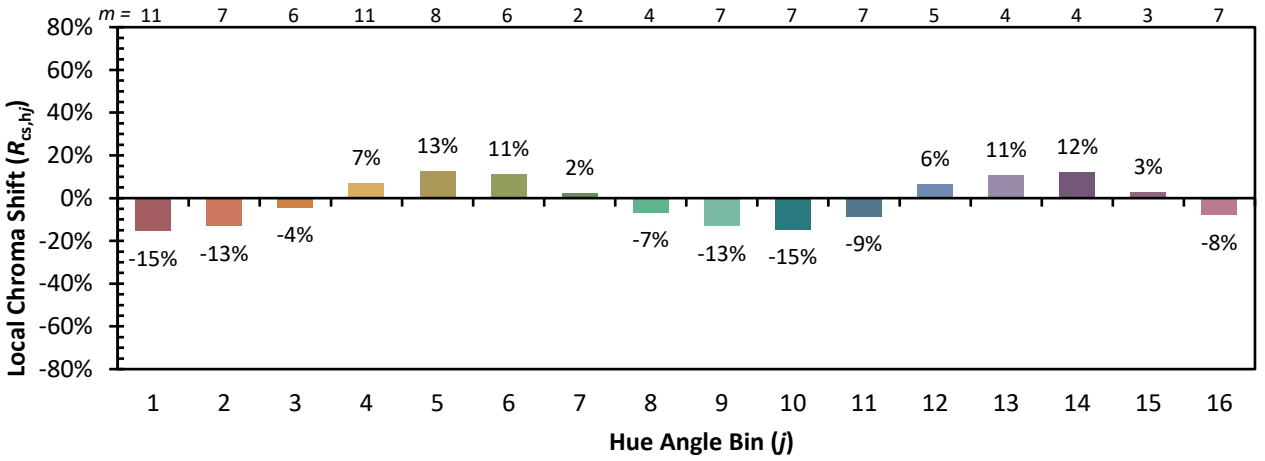
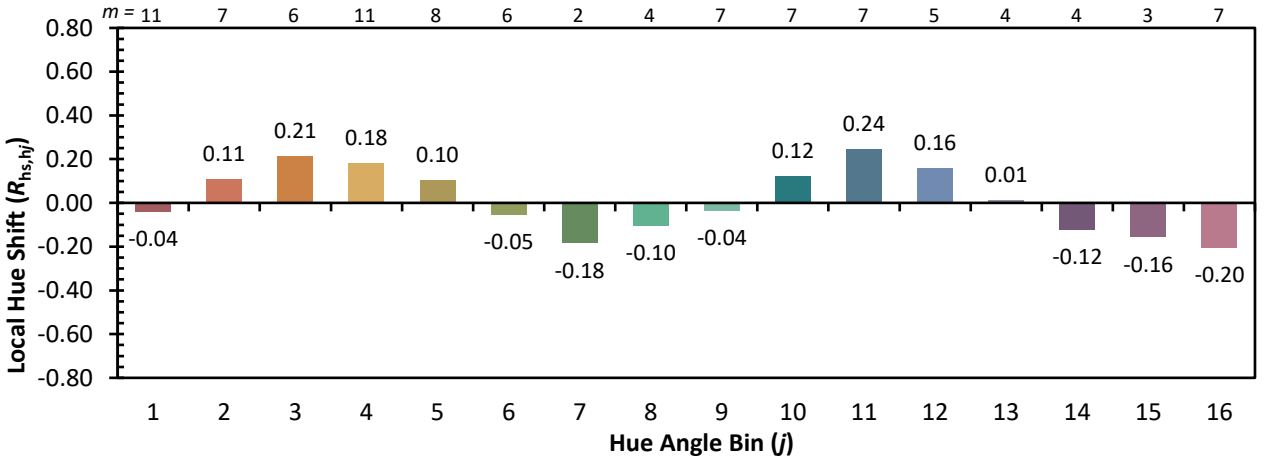
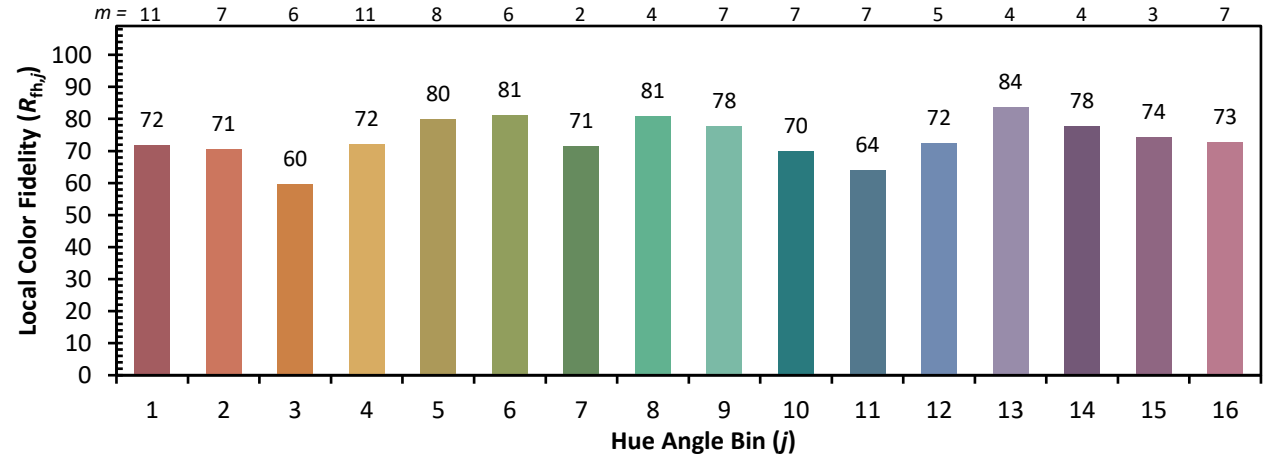
Color Rendition by Hue-Angle Bin







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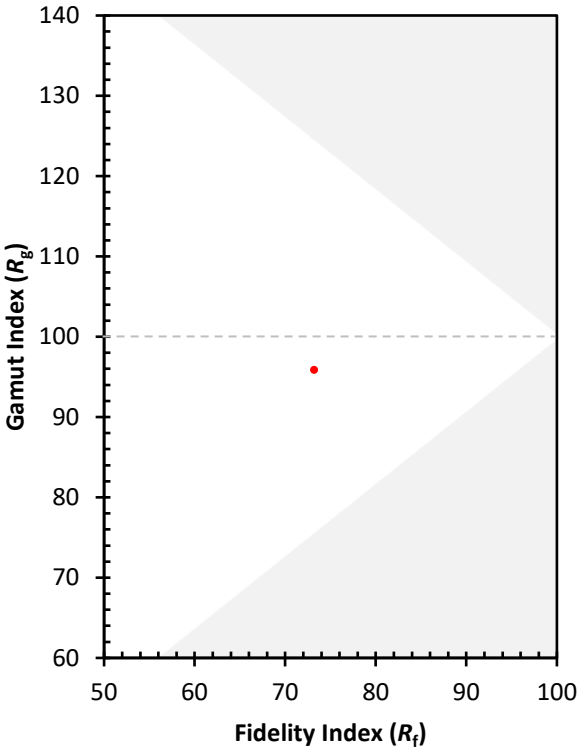
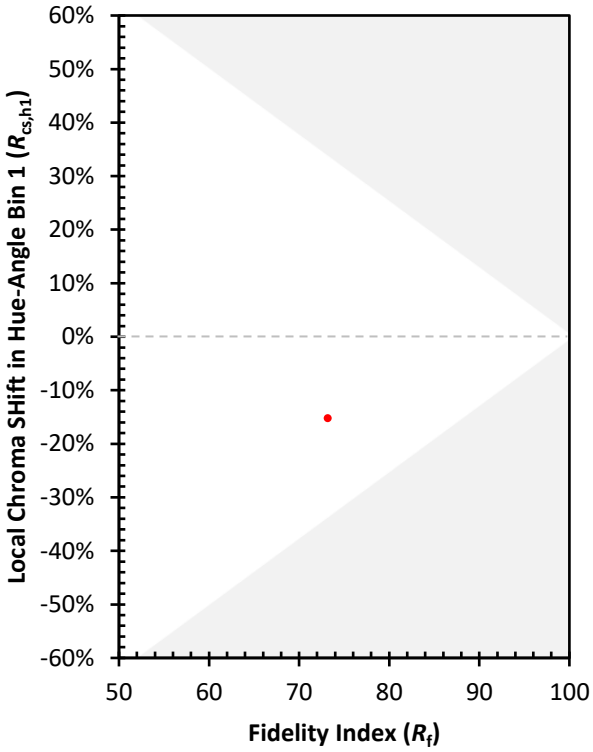
Measure Comparisons





(END OF REPORT)