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: P879653

Luminaire Tested: **EMM2-HTN-VA7-730-U-WQ**

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:	P879653
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA7-730-U-WQ
Description:	EPIC MODERN TALL HOUSING 7W 70CRI 3000K WAVESTREAM FIXTURE w/ TYPE V WIDE DISTRIBUTION OPTIC
Light Source:	(1) 3000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	14959.3 lumens
Efficiency:	N/A
Efficacy:	115.1 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B4 - U0 - G3

Input Watts (W):	130
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.995
Total Harmonic Distortion (THDi):	8.1%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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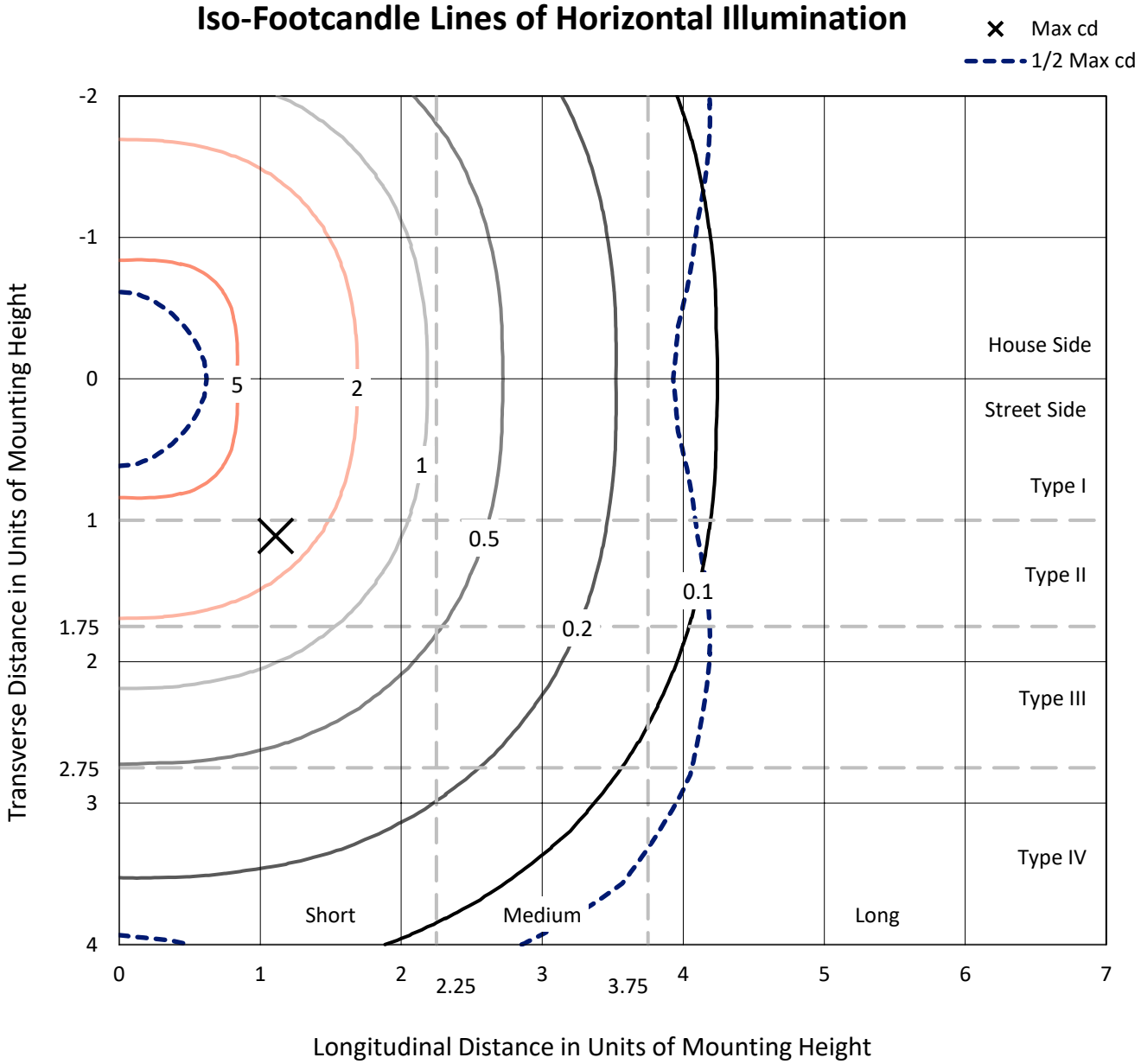
Scaled Data Report

REPORT NUMBER: P879653
CATALOG NUMBER: EMM2-HTN-VA7-730-U-WQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 5.7 fc
Type V - Short - N/A

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REPORT NUMBER: P879653
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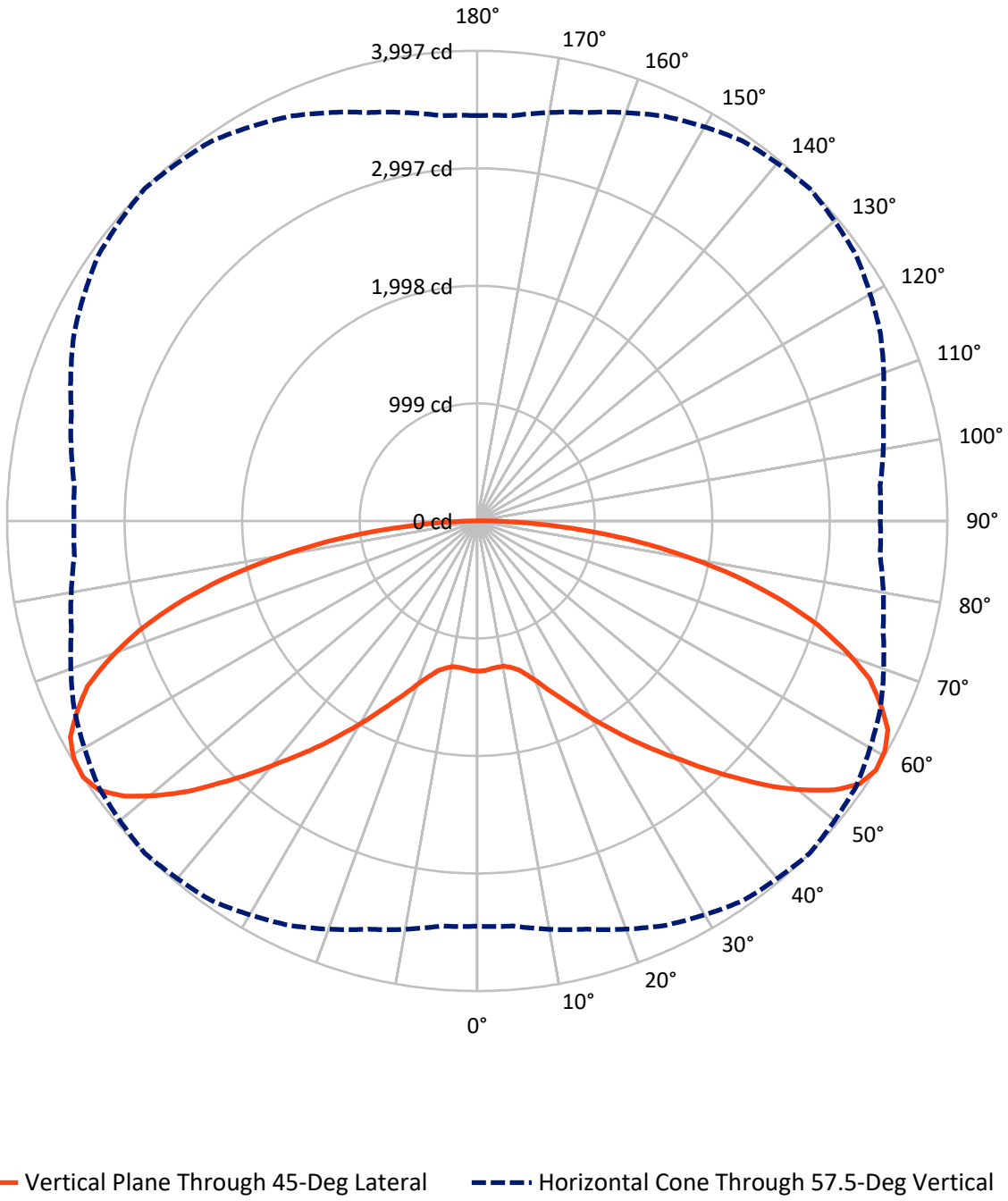
Luminous Intensity Polar Plot



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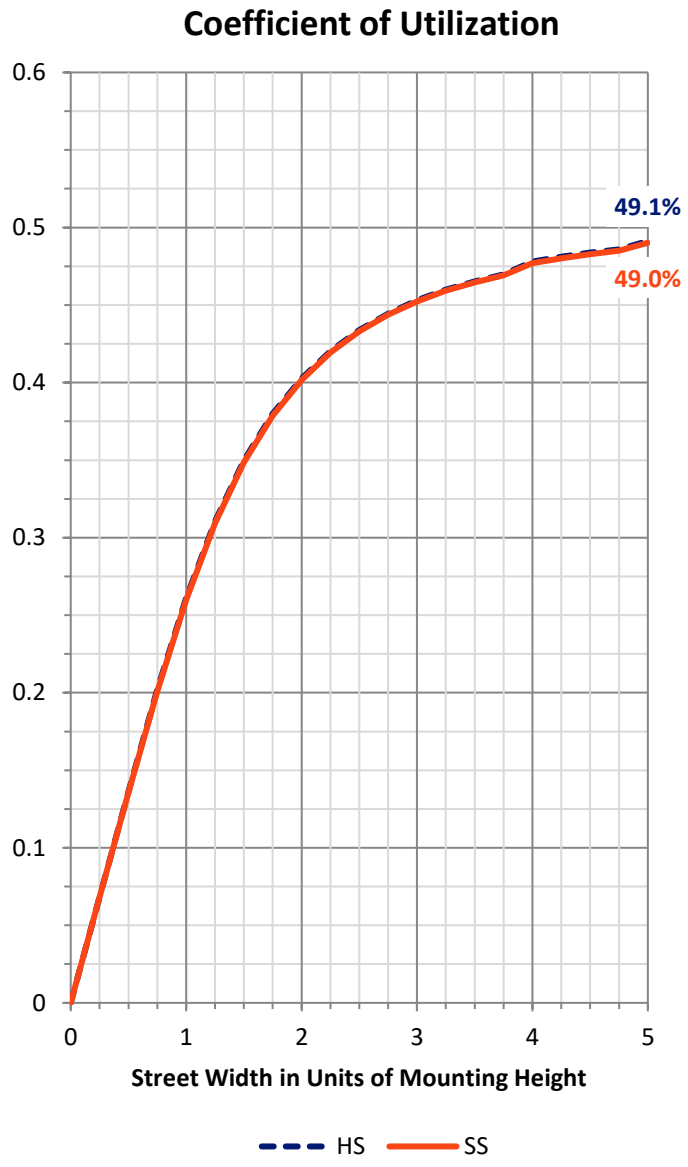
REPORT NUMBER: P879653
CATALOG NUMBER: EMM2-HTN-VA7-730-U-WQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7479.7	0.0	7479.7
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	7479.7	0.0	7479.7
	% Fixture	50.0	0.0	50.0
Total	Lumens	14959.3	0.0	14959.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.3	0.8
10°-20°	378.2	2.5
20°-30°	777.3	5.2
30°-40°	1418.3	9.5
40°-50°	2325.9	15.5
50°-60°	3259.2	21.8
60°-70°	3409.5	22.8
70°-80°	2491.0	16.7
80°-90°	779.7	5.2
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°	14959.3	100.0
0°-180°	14959.3	100.0



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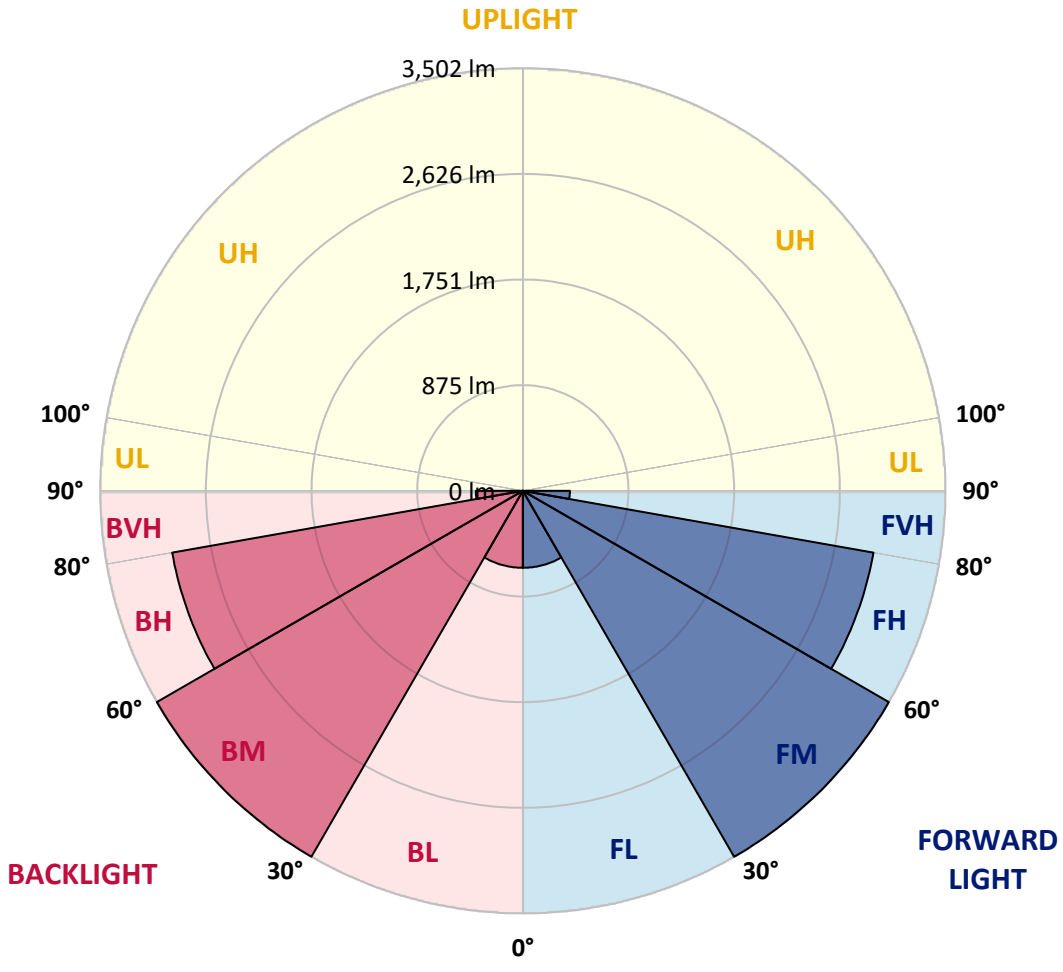
Scaled Data Report

REPORT NUMBER: P879653
CATALOG NUMBER: EMM2-HTN-VA7-730-U-WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	637.9	4.3			
FM	(30°-60°)	3501.7	23.4			
FH	(60°-80°)	2950.3	19.7			G2/5000
FVH	(80°-90°)	389.9	2.6			G3/500
BL	(0°-30°)	637.9	4.3	B2/1000		
BM	(30°-60°)	3501.7	23.4	B3/5000		
BH	(60°-80°)	2950.3	19.7	B4/5000		G2/5000
BVH	(80°-90°)	389.9	2.6			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G3
Type V Short



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CATALOG NUMBER: EMM2-HTN-VA7-730-U-WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2	1277.2
2.5°	1272.5	1274.4	1273.5	1273.5	1272.5	1273.5	1275.4	1276.3	1275.4	1276.3	1275.4
5°	1264.1	1264.1	1263.2	1262.2	1262.2	1262.2	1262.2	1262.2	1263.2	1263.2	1264.1
7.5°	1253.8	1253.8	1253.8	1255.7	1254.7	1255.7	1255.7	1254.7	1253.8	1253.8	1254.7
10°	1255.7	1254.7	1253.8	1255.7	1254.7	1255.7	1255.7	1253.8	1254.7	1255.7	1256.6
12.5°	1271.6	1269.7	1272.5	1275.4	1277.2	1279.1	1278.2	1277.2	1274.4	1271.6	1271.6
15°	1306.3	1304.4	1307.2	1311.0	1311.9	1312.8	1315.6	1311.9	1311.0	1306.3	1305.3
17.5°	1355.9	1355.0	1360.6	1368.1	1371.9	1376.6	1371.9	1368.1	1357.8	1355.9	1358.8
20°	1427.2	1424.3	1435.6	1447.8	1451.5	1457.1	1453.4	1445.9	1435.6	1424.3	1424.3
22.5°	1518.1	1524.6	1530.2	1539.6	1554.6	1564.0	1551.8	1538.7	1523.7	1517.1	1512.4
25°	1636.1	1635.2	1640.8	1659.6	1668.9	1675.5	1673.6	1655.8	1642.7	1633.3	1632.4
27.5°	1749.5	1760.8	1772.0	1784.2	1807.6	1810.4	1807.6	1786.1	1765.4	1757.9	1755.1
30°	1900.4	1898.5	1908.8	1937.9	1961.3	1963.2	1955.7	1929.4	1906.0	1891.9	1893.8
32.5°	2047.5	2032.5	2059.7	2079.4	2099.0	2119.7	2100.0	2079.4	2059.7	2029.7	2039.1
35°	2181.5	2193.7	2208.7	2249.0	2289.3	2297.7	2284.6	2242.4	2204.0	2189.9	2174.0
37.5°	2345.5	2345.5	2370.8	2429.8	2466.4	2479.5	2460.7	2418.6	2365.2	2344.6	2337.1
40°	2510.4	2510.4	2548.8	2598.5	2652.8	2671.6	2651.0	2595.7	2551.6	2498.2	2506.7
42.5°	2670.7	2683.8	2734.4	2795.3	2871.2	2896.5	2867.4	2793.4	2729.7	2679.1	2671.6
45°	2847.8	2868.4	2923.7	3023.9	3088.6	3125.1	3084.8	3021.1	2908.7	2859.9	2833.7
47.5°	3040.8	3054.8	3134.5	3230.1	3335.0	3373.5	3325.7	3221.6	3126.1	3039.9	3036.1
50°	3208.5	3205.7	3307.9	3440.0	3559.0	3595.5	3557.1	3444.7	3289.1	3193.5	3202.9
52.5°	3334.1	3350.0	3457.8	3620.8	3747.3	3800.8	3738.0	3603.0	3440.9	3341.6	3311.6
55°	3415.6	3441.9	3567.4	3743.6	3887.9	3945.1	3883.2	3727.7	3550.6	3422.2	3404.4
57.5°	3445.6	3456.9	3593.7	3793.3	3940.4	3996.6	3932.9	3781.1	3572.1	3438.1	3426.9
60°	3399.7	3410.9	3559.0	3763.3	3931.9	3979.7	3929.1	3751.1	3538.4	3401.6	3382.8
62.5°	3287.2	3318.2	3482.2	3684.6	3877.6	3917.9	3865.4	3670.5	3473.7	3308.8	3281.6
65°	3152.3	3185.1	3324.7	3550.6	3725.8	3768.9	3727.7	3540.3	3325.7	3167.3	3141.1
67.5°	2964.0	2969.6	3133.6	3362.2	3547.7	3600.2	3529.0	3358.5	3125.1	2975.2	2954.6
70°	2728.7	2732.5	2906.8	3118.6	3289.1	3332.2	3285.4	3103.6	2894.6	2731.6	2717.5
72.5°	2427.0	2461.7	2606.0	2815.9	2975.2	3025.8	2964.9	2810.3	2617.2	2456.1	2424.2
75°	2106.5	2128.1	2253.7	2457.0	2593.8	2656.6	2606.9	2457.0	2253.7	2120.6	2092.5
77.5°	1731.7	1760.8	1883.5	2055.0	2168.4	2235.8	2181.5	2048.4	1883.5	1761.7	1760.8
80°	1368.1	1360.6	1472.1	1620.2	1732.6	1772.0	1738.3	1608.9	1460.9	1366.2	1353.1
82.5°	949.3	947.4	1068.3	1167.6	1262.2	1307.2	1255.7	1172.3	1058.0	973.6	946.4
85°	539.8	551.9	631.6	693.4	774.0	801.2	783.4	704.7	602.5	528.5	523.8
87.5°	187.4	204.3	219.3	264.3	316.7	340.2	314.9	302.7	268.9	233.3	235.2
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: SP1-2407-176-20

Test Date: 10/23/2024

Luminaire Tested: MEM2-HTN-VA-150-740-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-150-740-U-WQ

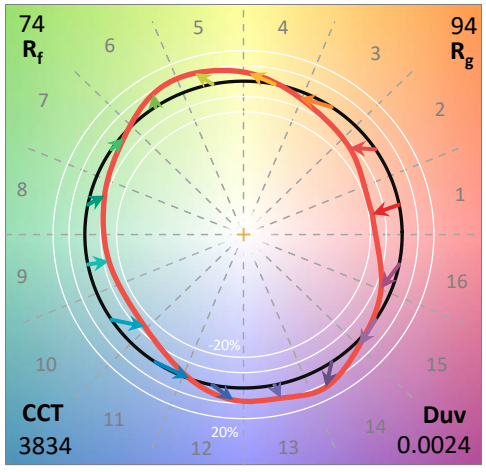
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-20
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	10/23/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-VA-150-740-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 150W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3834	CRI (Ra):	71.3		
CIE u':	0.2270	R1:	67.4	R9:	-37.8
CIE v':	0.5077	R2:	78.6	R10:	50.1
Duv:	0.0024	R3:	88.2	R11:	65.6
CIE x:	0.3900	R4:	70.0	R12:	44.1
CIE y:	0.3877	R5:	67.5	R13:	69.2
CIE z:	0.2223	R6:	70.1	R14:	93.3
Peak Wavelength (nm):	585	R7:	80.0	R15:	59.4
Dominant Wavelength (nm):	578	R8:	48.5		
Purity:	33.41599				
Rf:	74.4				
Rg:	93.6				



Test Conditions

Stabilization Time:	30M
Operation Time:	1H 30M
Sphere Temperature (°C):	25.1

REPORT NUMBER: SP1-2407-176-20

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	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

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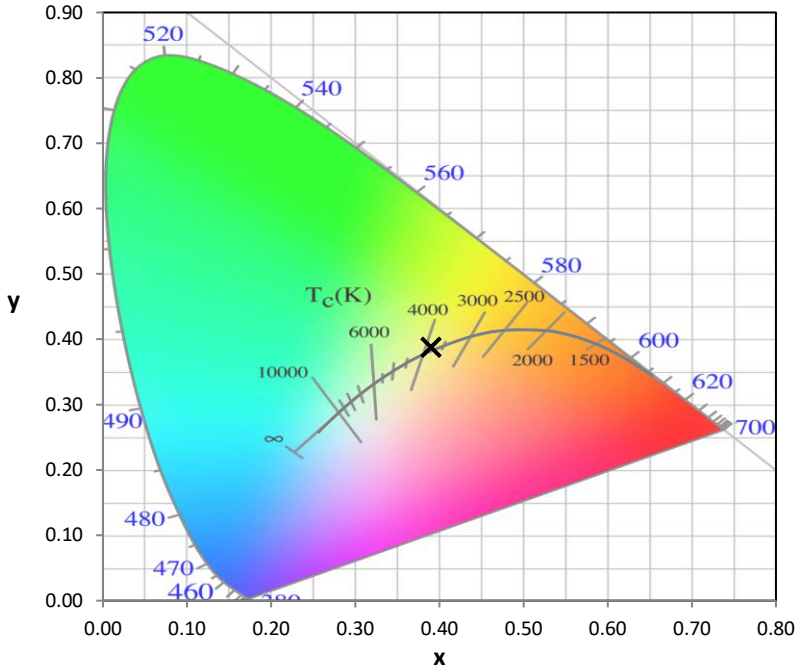
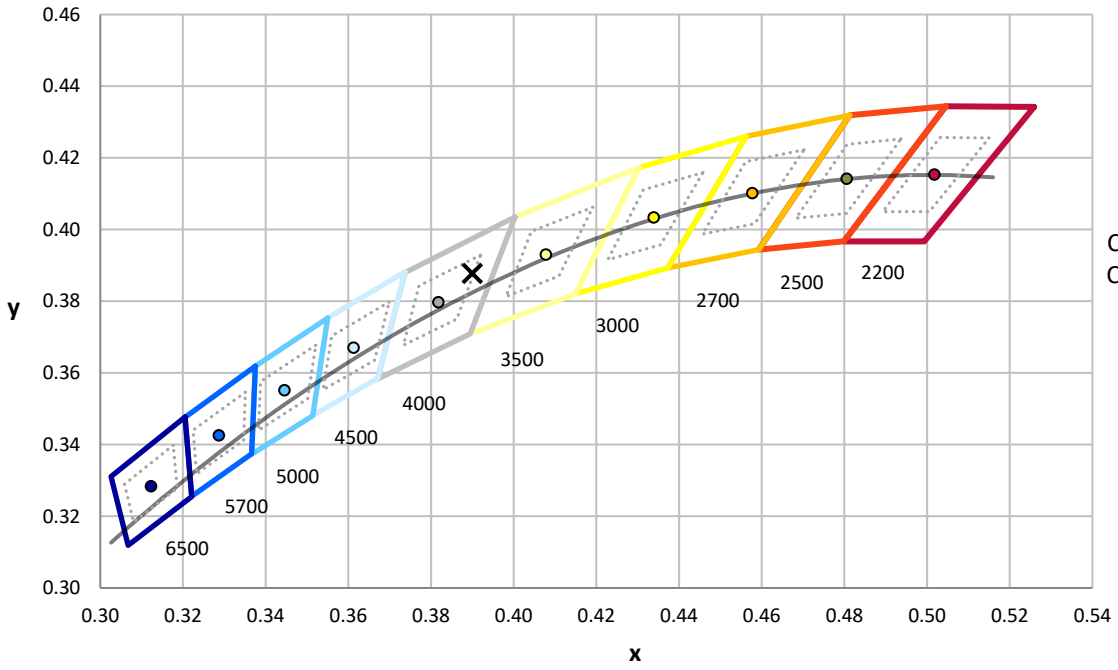
CIE 1931 Chromaticity Diagram



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



CCT = 3834K
CIE x = 0.3900
CIE y = 0.3877
Duv = 0.0024

Point lies inside the ANSI 4000K 4-step quadrangle

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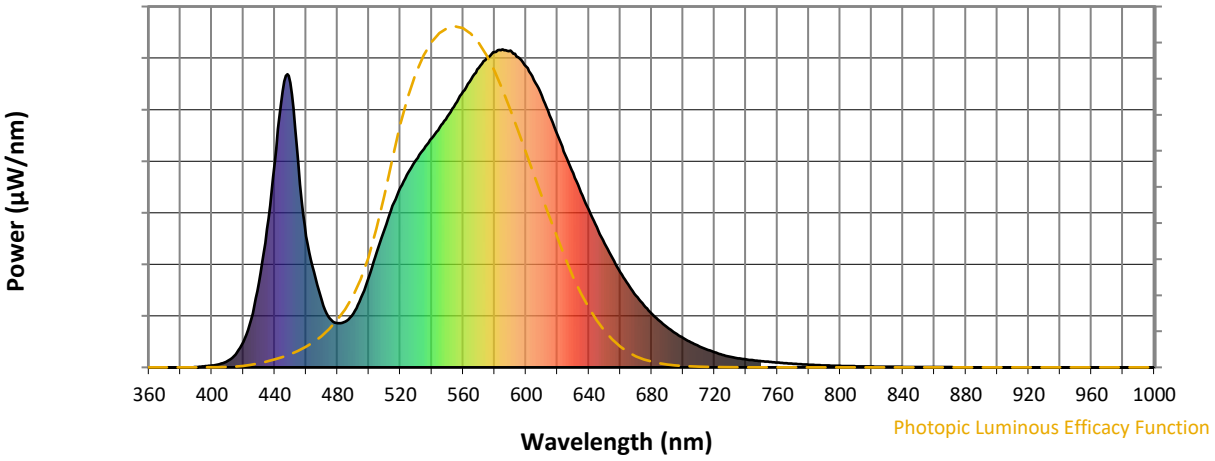
Photopic Flux vs. Wavelength

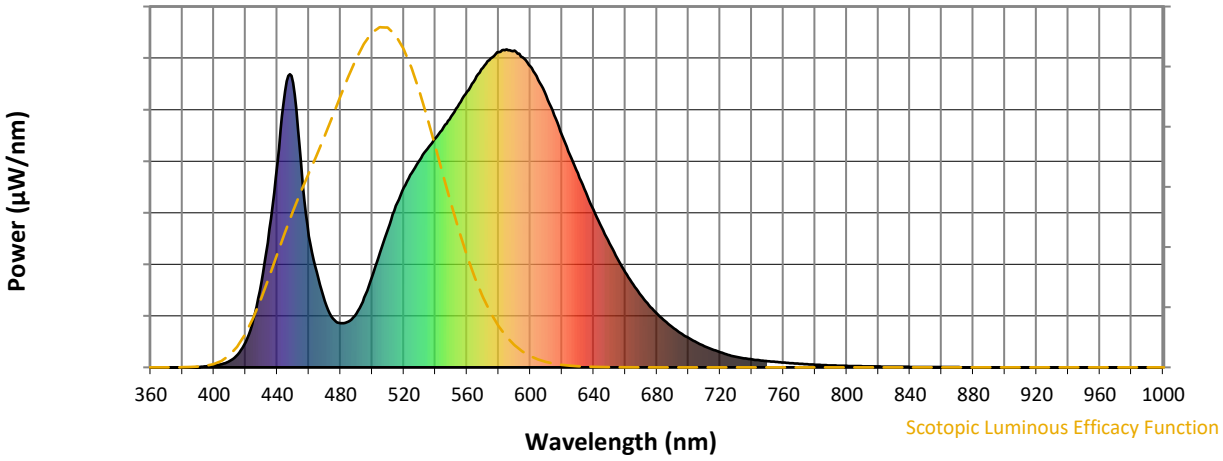


Photopic Lumens: NR

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	169	NR	620	731	NR	750	20	NR	880	0	NR
365	0	NR	495	219	NR	625	668	NR	755	17	NR	885	0	NR
370	0	NR	500	285	NR	630	611	NR	760	15	NR	890	0	NR
375	0	NR	505	362	NR	635	550	NR	765	13	NR	895	0	NR
380	0	NR	510	435	NR	640	495	NR	770	11	NR	900	0	NR
385	0	NR	515	508	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	565	NR	650	390	NR	780	8	NR	910	0	NR
395	3	NR	525	612	NR	655	343	NR	785	7	NR	915	0	NR
400	6	NR	530	652	NR	660	299	NR	790	6	NR	920	0	NR
405	10	NR	535	687	NR	665	261	NR	795	5	NR	925	0	NR
410	20	NR	540	720	NR	670	226	NR	800	5	NR	930	0	NR
415	40	NR	545	755	NR	675	195	NR	805	4	NR	935	0	NR
420	80	NR	550	789	NR	680	169	NR	810	3	NR	940	0	NR
425	152	NR	555	828	NR	685	146	NR	815	3	NR	945	0	NR
430	266	NR	560	867	NR	690	126	NR	820	3	NR	950	0	NR
435	435	NR	565	905	NR	695	108	NR	825	2	NR	955	0	NR
440	641	NR	570	942	NR	700	92	NR	830	2	NR	960	0	NR
445	869	NR	575	972	NR	705	79	NR	835	2	NR	965	0	NR
450	894	NR	580	991	NR	710	67	NR	840	2	NR	970	0	NR
455	640	NR	585	1000	NR	715	56	NR	845	1	NR	975	0	NR
460	413	NR	590	996	NR	720	47	NR	850	1	NR	980	0	NR
465	300	NR	595	975	NR	725	40	NR	855	1	NR	985	0	NR
470	208	NR	600	946	NR	730	33	NR	860	1	NR	990	0	NR
475	154	NR	605	903	NR	735	29	NR	865	1	NR	995	0	NR
480	139	NR	610	854	NR	740	25	NR	870	1	NR	1000	0	NR
485	144	NR	615	793	NR	745	22	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-20

Scotopic Flux vs. Wavelength

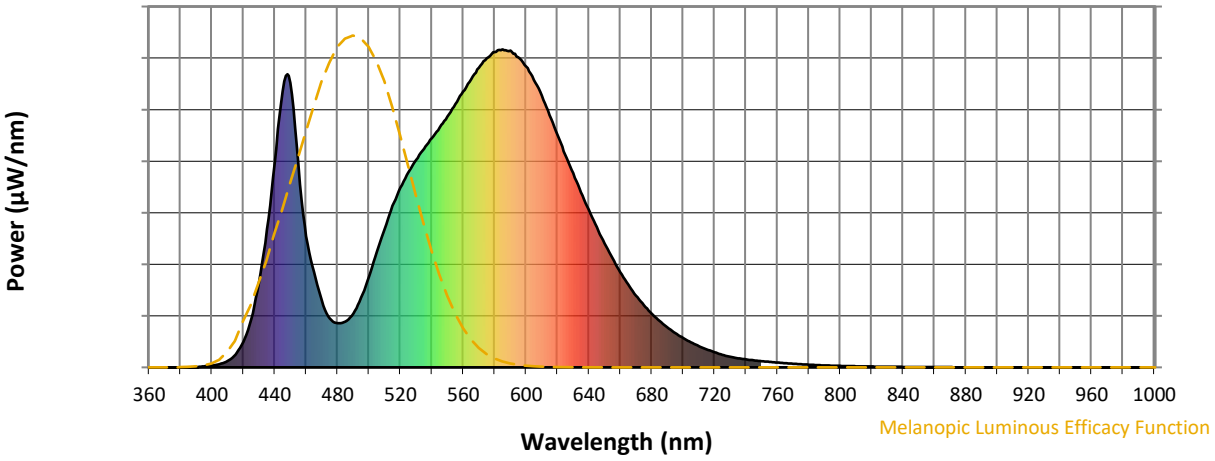


Scotopic Lumens: NR **S/P: 1.47**

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	169	NR	620	731	NR	750	20	NR	880	0	NR
365	0	NR	495	219	NR	625	668	NR	755	17	NR	885	0	NR
370	0	NR	500	285	NR	630	611	NR	760	15	NR	890	0	NR
375	0	NR	505	362	NR	635	550	NR	765	13	NR	895	0	NR
380	0	NR	510	435	NR	640	495	NR	770	11	NR	900	0	NR
385	0	NR	515	508	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	565	NR	650	390	NR	780	8	NR	910	0	NR
395	3	NR	525	612	NR	655	343	NR	785	7	NR	915	0	NR
400	6	NR	530	652	NR	660	299	NR	790	6	NR	920	0	NR
405	10	NR	535	687	NR	665	261	NR	795	5	NR	925	0	NR
410	20	NR	540	720	NR	670	226	NR	800	5	NR	930	0	NR
415	40	NR	545	755	NR	675	195	NR	805	4	NR	935	0	NR
420	80	NR	550	789	NR	680	169	NR	810	3	NR	940	0	NR
425	152	NR	555	828	NR	685	146	NR	815	3	NR	945	0	NR
430	266	NR	560	867	NR	690	126	NR	820	3	NR	950	0	NR
435	435	NR	565	905	NR	695	108	NR	825	2	NR	955	0	NR
440	641	NR	570	942	NR	700	92	NR	830	2	NR	960	0	NR
445	869	NR	575	972	NR	705	79	NR	835	2	NR	965	0	NR
450	894	NR	580	991	NR	710	67	NR	840	2	NR	970	0	NR
455	640	NR	585	1000	NR	715	56	NR	845	1	NR	975	0	NR
460	413	NR	590	996	NR	720	47	NR	850	1	NR	980	0	NR
465	300	NR	595	975	NR	725	40	NR	855	1	NR	985	0	NR
470	208	NR	600	946	NR	730	33	NR	860	1	NR	990	0	NR
475	154	NR	605	903	NR	735	29	NR	865	1	NR	995	0	NR
480	139	NR	610	854	NR	740	25	NR	870	1	NR	1000	0	NR
485	144	NR	615	793	NR	745	22	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-20

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.83**

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	169	NR	620	731	NR	750	20	NR	880	0	NR
365	0	NR	495	219	NR	625	668	NR	755	17	NR	885	0	NR
370	0	NR	500	285	NR	630	611	NR	760	15	NR	890	0	NR
375	0	NR	505	362	NR	635	550	NR	765	13	NR	895	0	NR
380	0	NR	510	435	NR	640	495	NR	770	11	NR	900	0	NR
385	0	NR	515	508	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	565	NR	650	390	NR	780	8	NR	910	0	NR
395	3	NR	525	612	NR	655	343	NR	785	7	NR	915	0	NR
400	6	NR	530	652	NR	660	299	NR	790	6	NR	920	0	NR
405	10	NR	535	687	NR	665	261	NR	795	5	NR	925	0	NR
410	20	NR	540	720	NR	670	226	NR	800	5	NR	930	0	NR
415	40	NR	545	755	NR	675	195	NR	805	4	NR	935	0	NR
420	80	NR	550	789	NR	680	169	NR	810	3	NR	940	0	NR
425	152	NR	555	828	NR	685	146	NR	815	3	NR	945	0	NR
430	266	NR	560	867	NR	690	126	NR	820	3	NR	950	0	NR
435	435	NR	565	905	NR	695	108	NR	825	2	NR	955	0	NR
440	641	NR	570	942	NR	700	92	NR	830	2	NR	960	0	NR
445	869	NR	575	972	NR	705	79	NR	835	2	NR	965	0	NR
450	894	NR	580	991	NR	710	67	NR	840	2	NR	970	0	NR
455	640	NR	585	1000	NR	715	56	NR	845	1	NR	975	0	NR
460	413	NR	590	996	NR	720	47	NR	850	1	NR	980	0	NR
465	300	NR	595	975	NR	725	40	NR	855	1	NR	985	0	NR
470	208	NR	600	946	NR	730	33	NR	860	1	NR	990	0	NR
475	154	NR	605	903	NR	735	29	NR	865	1	NR	995	0	NR
480	139	NR	610	854	NR	740	25	NR	870	1	NR	1000	0	NR
485	144	NR	615	793	NR	745	22	NR	875	0	NR			

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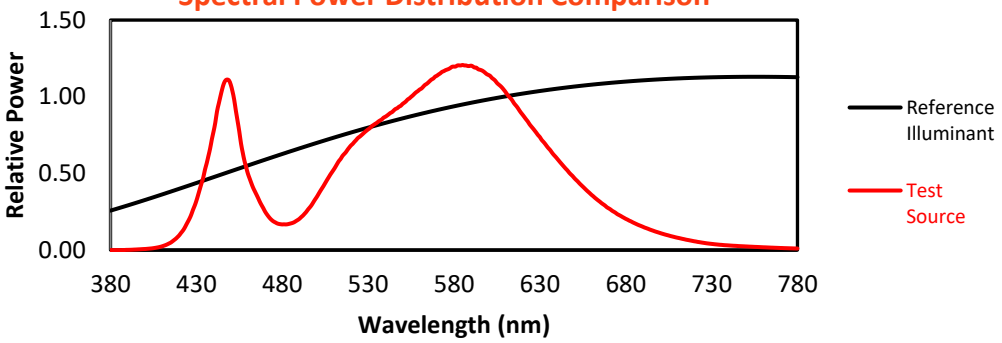
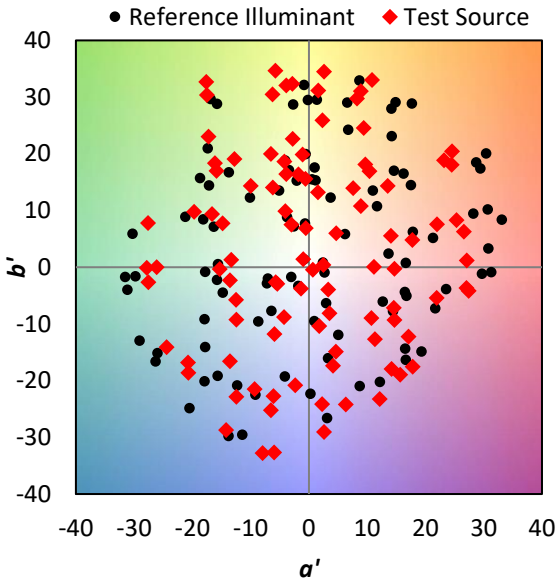
Summary

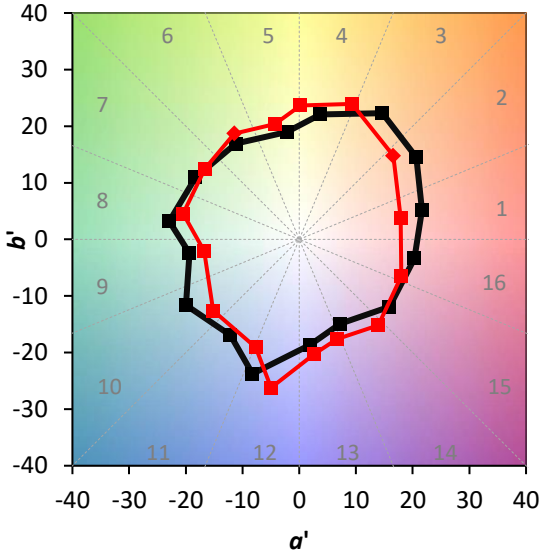
R_f = 74.4
R_g = 93.6
CIE R_a = 71.3
R_9 = -37.8

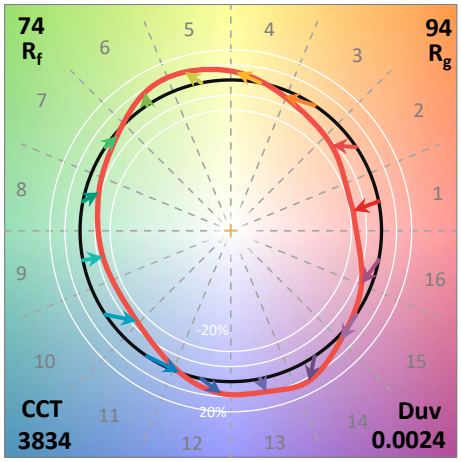
Spectral Power Distribution Comparison

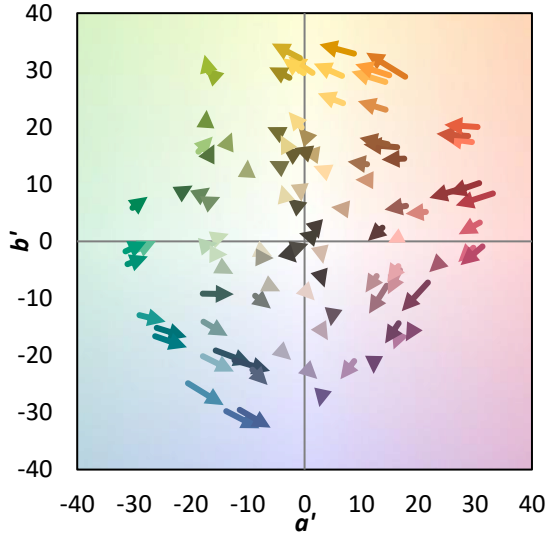


Color Vector Graphics









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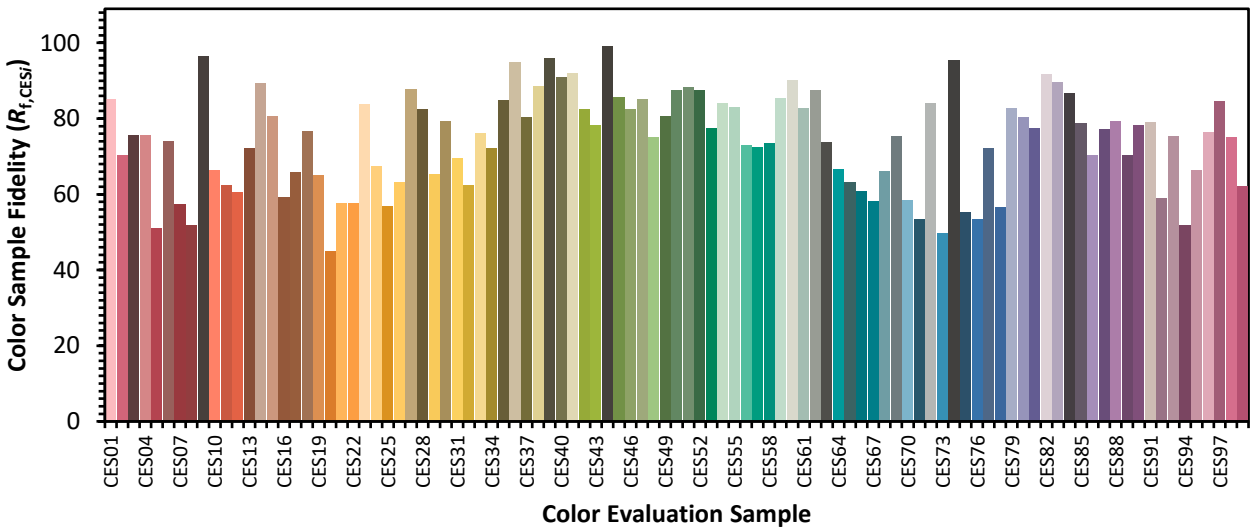
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 54
CES02 = 61	CES27 = 88	CES52 = 87	CES77 = 72
CES03 = 30	CES28 = 83	CES53 = 77	CES78 = 57
CES04 = 70	CES29 = 65	CES54 = 84	CES79 = 83
CES05 = 47	CES30 = 79	CES55 = 83	CES80 = 80
CES06 = 50	CES31 = 69	CES56 = 73	CES81 = 78
CES07 = 40	CES32 = 62	CES57 = 72	CES82 = 92
CES08 = 39	CES33 = 76	CES58 = 74	CES83 = 90
CES09 = 29	CES34 = 72	CES59 = 85	CES84 = 87
CES10 = 74	CES35 = 85	CES60 = 90	CES85 = 79
CES11 = 57	CES36 = 95	CES61 = 83	CES86 = 70
CES12 = 63	CES37 = 80	CES62 = 88	CES87 = 77
CES13 = 42	CES38 = 89	CES63 = 74	CES88 = 79
CES14 = 74	CES39 = 96	CES64 = 67	CES89 = 70
CES15 = 71	CES40 = 91	CES65 = 63	CES90 = 78
CES16 = 46	CES41 = 92	CES66 = 61	CES91 = 79
CES17 = 49	CES42 = 83	CES67 = 58	CES92 = 59
CES18 = 56	CES43 = 78	CES68 = 66	CES93 = 75
CES19 = 72	CES44 = 99	CES69 = 75	CES94 = 52
CES20 = 65	CES45 = 86	CES70 = 59	CES95 = 67
CES21 = 86	CES46 = 82	CES71 = 54	CES96 = 76
CES22 = 78	CES47 = 85	CES72 = 84	CES97 = 85
CES23 = 92	CES48 = 75	CES73 = 50	CES98 = 75
CES24 = 91	CES49 = 81	CES74 = 96	CES99 = 62
CES25 = 72	CES50 = 88	CES75 = 55	



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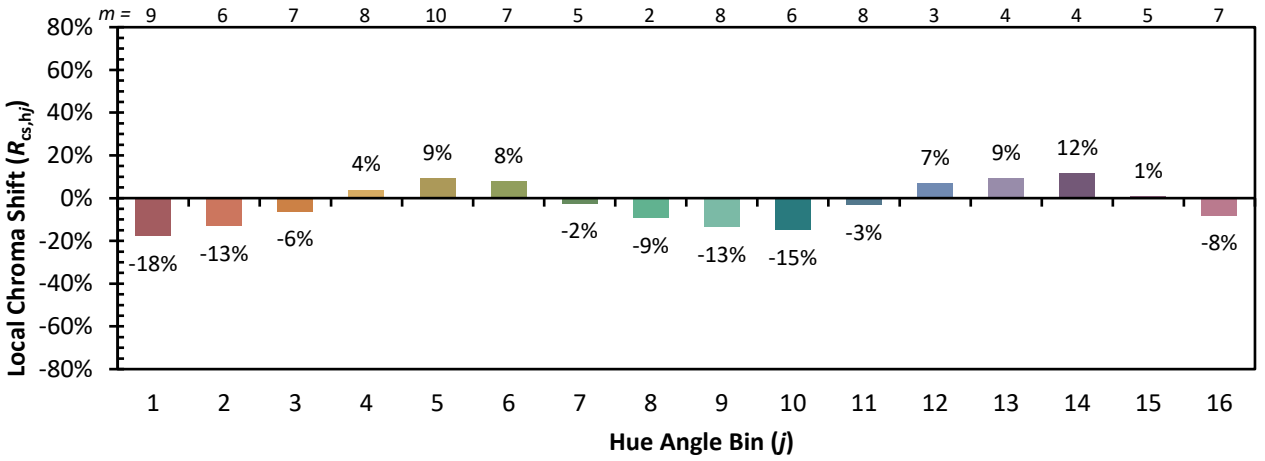
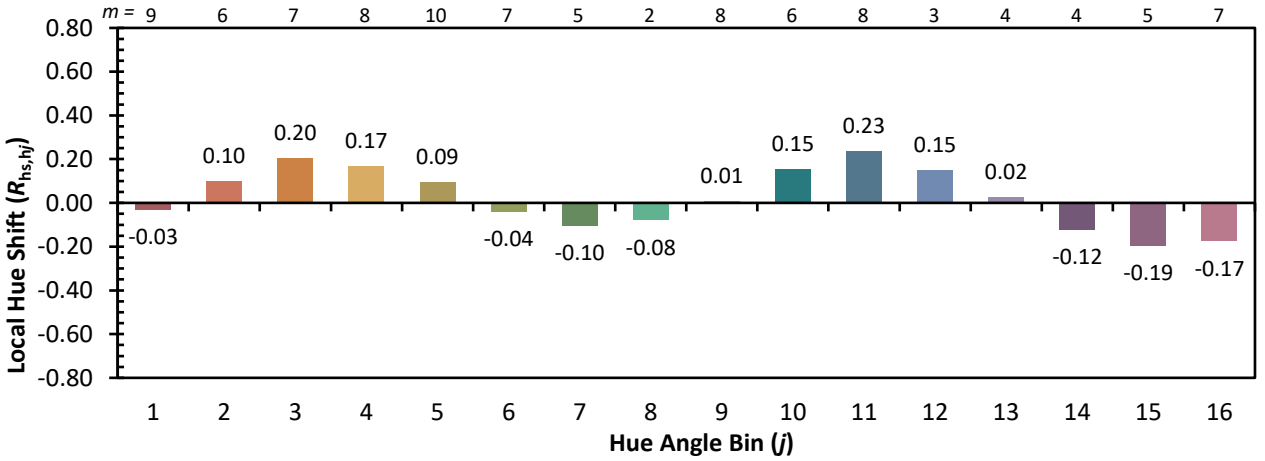
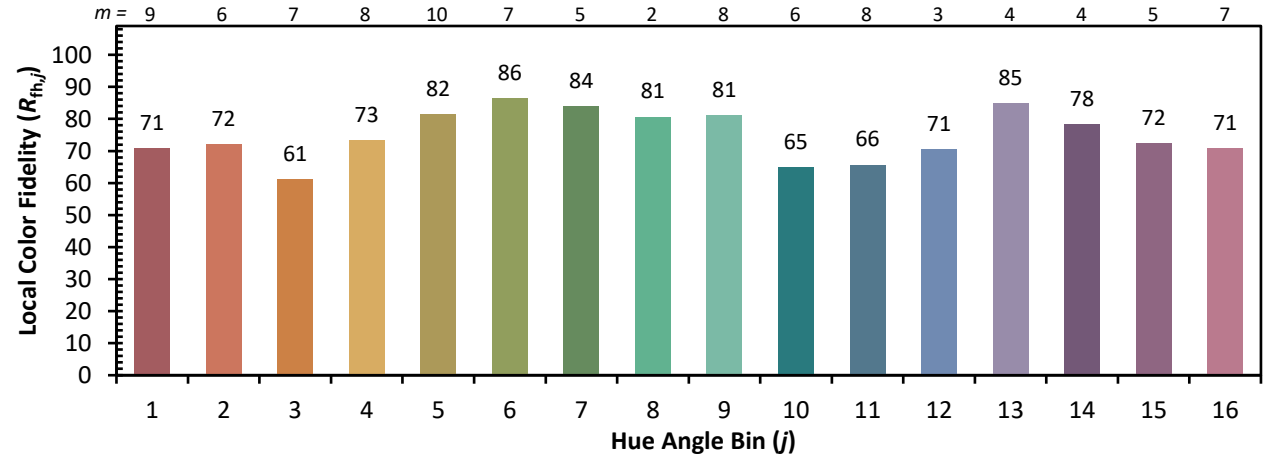
Color Rendition by Hue-Angle Bin







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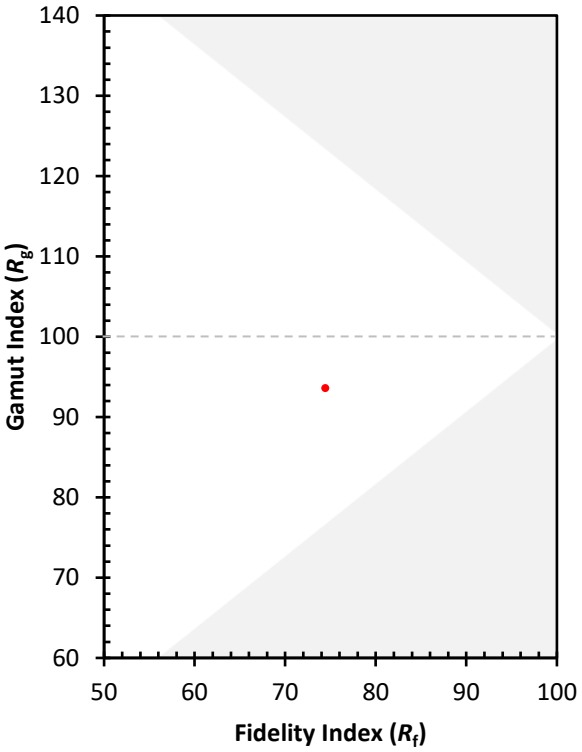
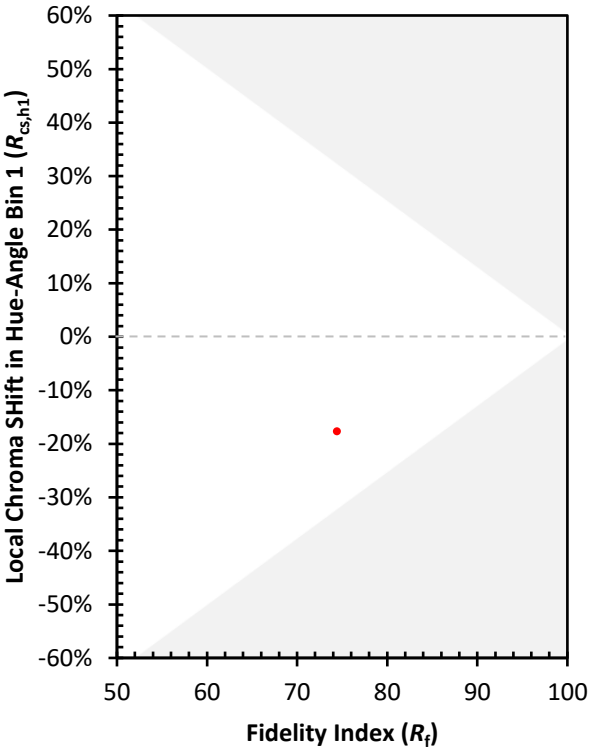
Measure Comparisons





(END OF REPORT)