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: P879731

Luminaire Tested: **EMM2-HTN-VA7-740-U-CQ**

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:	P879731
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA7-740-U-CQ
Description:	EPIC MODERN TALL HOUSING 7W 70CRI 4000K WAVESTREAM FIXTURE w/ TYPE V CONCENTRATED DISTRIBUTION OPTIC
Light Source:	(1) 4000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	12493.1 lumens
Efficiency:	N/A
Efficacy:	96.1 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G2

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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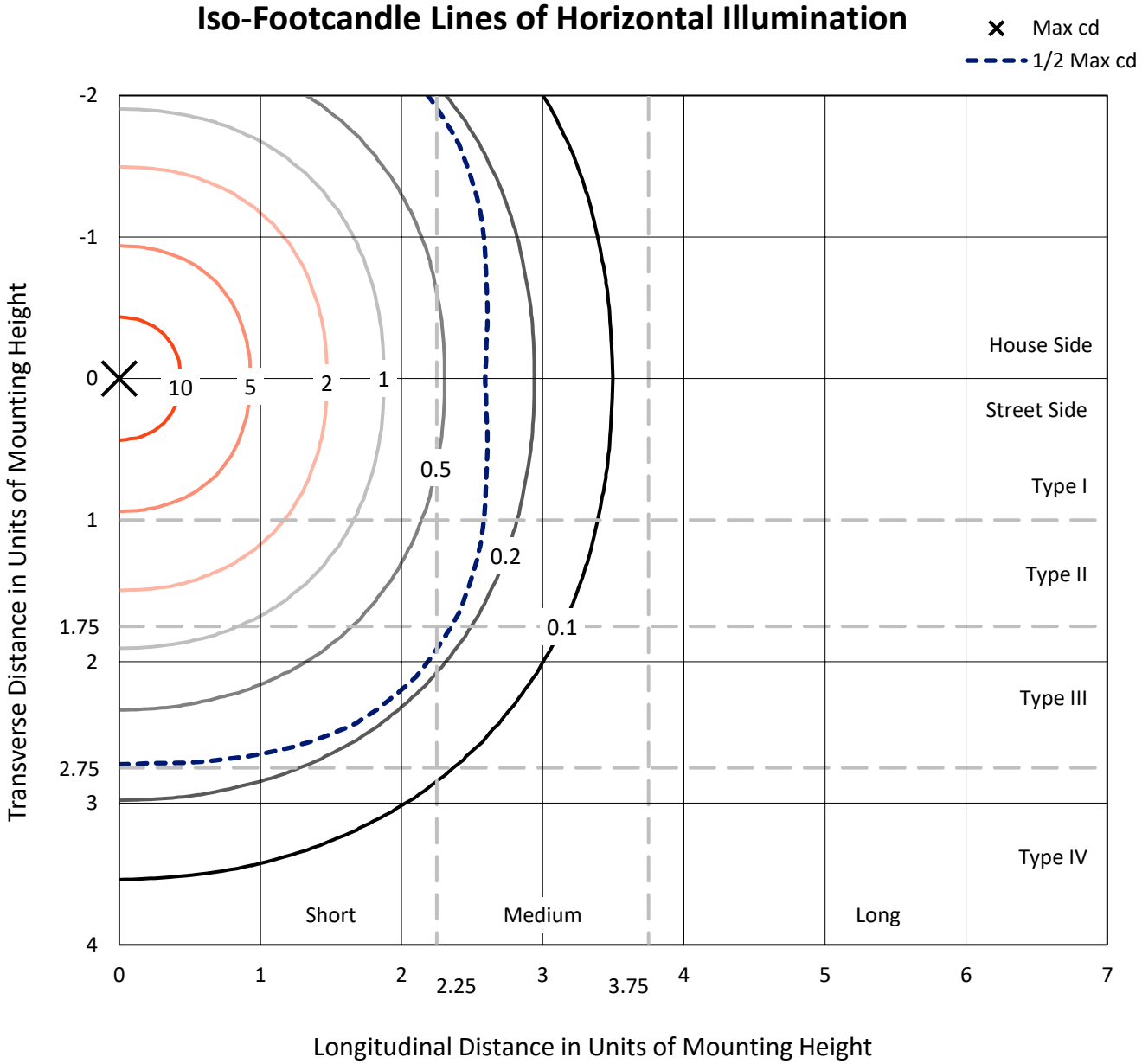
Scaled Data Report

REPORT NUMBER: P879731
CATALOG NUMBER: EMM2-HTN-VA7-740-U-CQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 13.9 fc
Type V - Short - N/A

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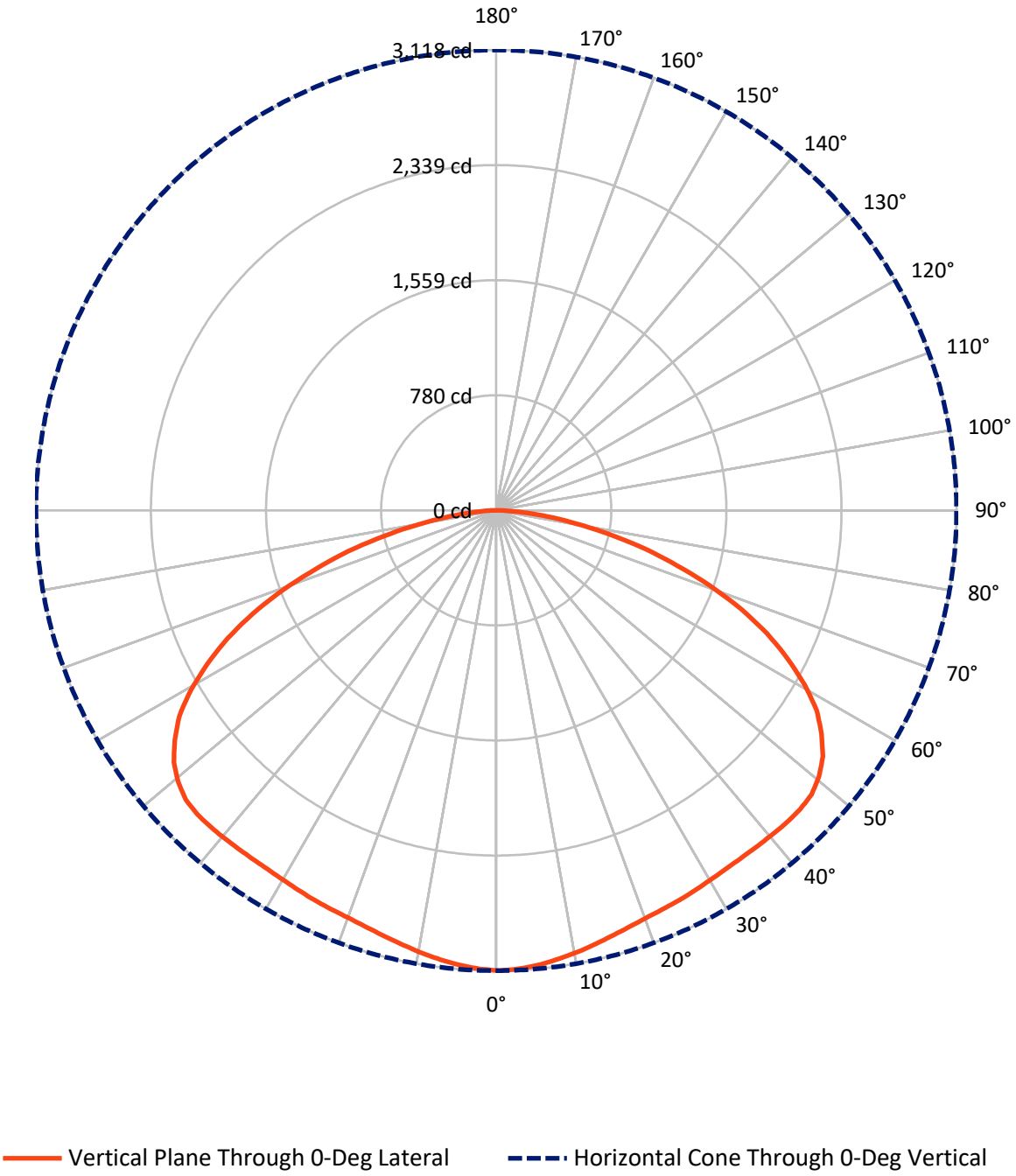
Luminous Intensity Polar Plot



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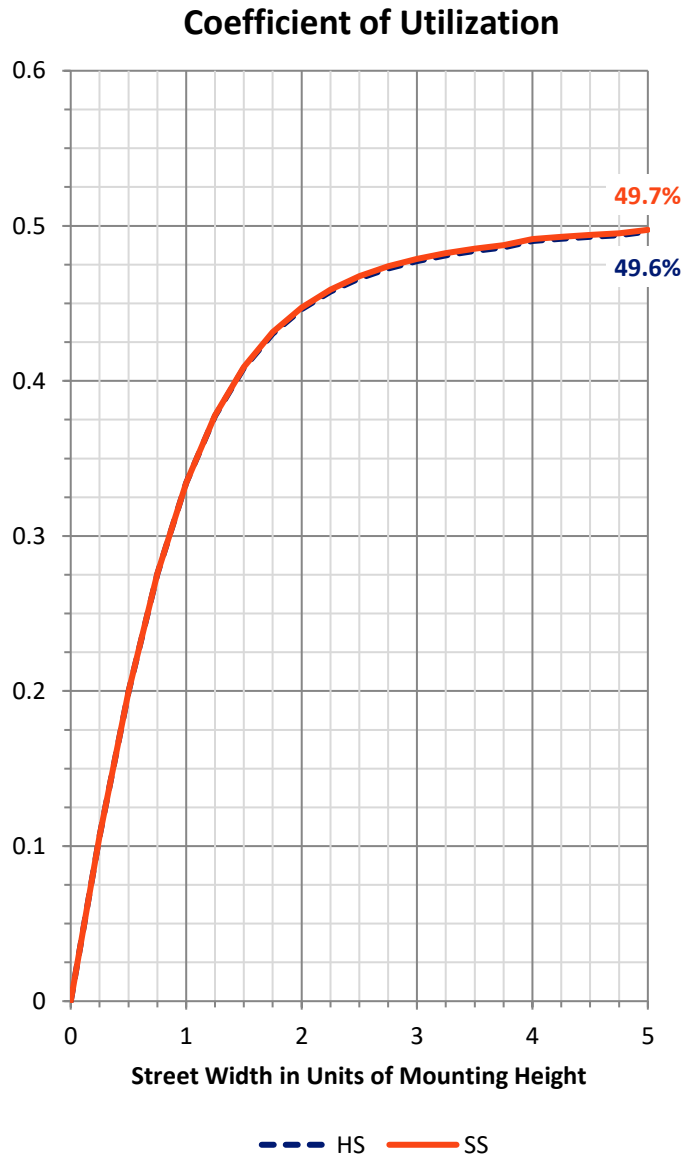
REPORT NUMBER: P879731
CATALOG NUMBER: EMM2-HTN-VA7-740-U-CQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	6246.5	0.0	6246.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	6246.5	0.0	6246.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	12493.1	0.0	12493.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.9	2.4
10°-20°	847.9	6.8
20°-30°	1357.6	10.9
30°-40°	1839.0	14.7
40°-50°	2271.0	18.2
50°-60°	2440.0	19.5
60°-70°	2051.9	16.4
70°-80°	1145.7	9.2
80°-90°	246.2	2.0
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°	12493.1	100.0
0°-180°	12493.1	100.0



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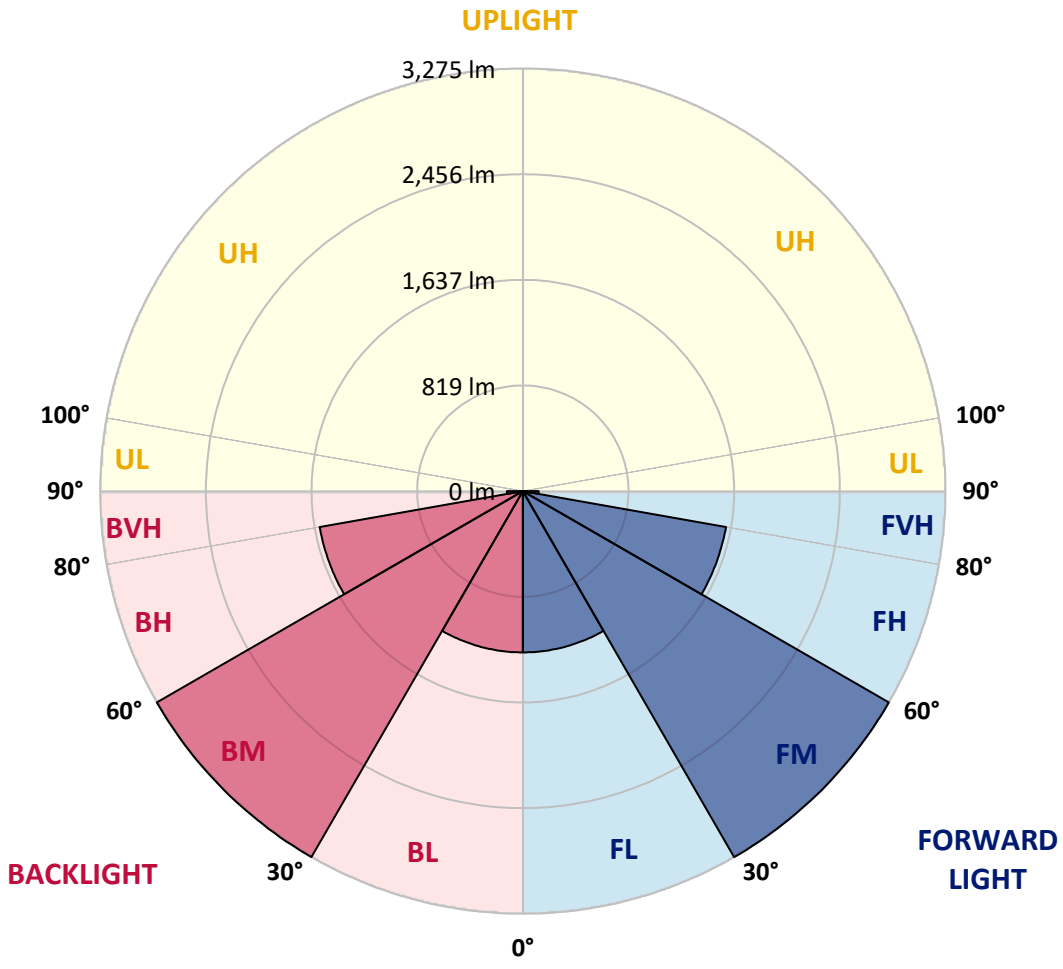
Scaled Data Report

REPORT NUMBER: P879731
CATALOG NUMBER: EMM2-HTN-VA7-740-U-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1249.7	10.0			
FM	(30°-60°)	3275.0	26.2			
FH	(60°-80°)	1598.8	12.8			G1/1800
FVH	(80°-90°)	123.1	1.0			G2/225
BL	(0°-30°)	1249.7	10.0	B3/2500		
BM	(30°-60°)	3275.0	26.2	B3/5000		
BH	(60°-80°)	1598.8	12.8	B3/2500		G1/1800
BVH	(80°-90°)	123.1	1.0			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: P879731
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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4	3118.4
2.5°	3109.1	3112.2	3111.5	3111.5	3111.5	3113.0	3113.0	3113.0	3113.8	3113.8	3114.5
5°	3091.3	3093.6	3093.6	3093.6	3095.2	3096.0	3096.0	3096.7	3098.3	3097.5	3096.7
7.5°	3067.3	3069.6	3069.6	3069.6	3071.2	3072.7	3072.7	3071.9	3074.3	3074.3	3073.5
10°	3041.7	3042.5	3043.3	3044.8	3047.2	3047.9	3047.2	3047.2	3046.4	3047.2	3047.2
12.5°	3011.5	3015.4	3016.2	3017.7	3021.6	3022.4	3022.4	3021.6	3020.8	3020.8	3020.1
15°	2984.4	2986.0	2988.3	2991.4	2996.0	2997.6	2998.4	2996.0	2993.7	2992.9	2993.7
17.5°	2959.6	2962.0	2965.1	2968.2	2974.4	2977.5	2977.5	2974.4	2971.3	2969.7	2969.7
20°	2939.5	2941.8	2945.7	2950.3	2958.9	2962.7	2961.2	2958.1	2952.7	2950.3	2951.1
22.5°	2926.3	2929.4	2932.5	2939.5	2948.8	2953.4	2951.9	2946.5	2940.3	2936.4	2936.4
25°	2915.5	2917.8	2922.5	2931.8	2941.8	2947.2	2944.9	2937.9	2929.4	2924.8	2924.0
27.5°	2903.1	2906.2	2912.4	2924.8	2937.2	2941.8	2940.3	2930.2	2920.1	2913.9	2912.4
30°	2891.5	2894.6	2903.1	2917.0	2932.5	2939.5	2935.6	2924.8	2912.4	2904.6	2903.9
32.5°	2883.7	2887.6	2897.7	2915.5	2934.1	2944.1	2940.3	2927.1	2910.8	2900.8	2900.0
35°	2880.6	2884.5	2899.2	2920.9	2944.1	2958.1	2952.7	2936.4	2916.3	2903.9	2902.3
37.5°	2881.4	2886.1	2904.6	2933.3	2962.7	2977.5	2970.5	2949.6	2924.0	2907.0	2904.6
40°	2884.5	2889.9	2913.9	2949.6	2984.4	2998.4	2987.5	2956.5	2921.7	2897.7	2893.0
42.5°	2888.4	2896.9	2926.3	2968.2	3004.6	3016.2	2996.8	2951.1	2902.3	2871.3	2867.5
45°	2887.6	2894.6	2928.7	2978.2	3017.0	3023.2	2991.4	2934.1	2876.8	2836.5	2833.4
47.5°	2874.4	2881.4	2920.1	2975.1	3013.1	3014.6	2976.7	2910.8	2843.4	2797.0	2792.3
50°	2833.4	2842.7	2886.1	2946.5	2989.1	2989.8	2948.0	2875.2	2797.0	2742.8	2735.0
52.5°	2770.6	2777.6	2828.0	2893.0	2941.0	2947.2	2901.5	2817.1	2728.0	2669.9	2664.5
55°	2673.0	2687.0	2740.4	2808.6	2861.3	2868.2	2822.5	2731.1	2639.7	2573.1	2566.9
57.5°	2560.0	2562.3	2618.8	2693.2	2748.2	2755.9	2706.4	2613.4	2518.1	2456.2	2440.7
60°	2400.4	2409.7	2463.1	2535.9	2594.0	2604.1	2556.9	2467.0	2367.9	2297.4	2296.6
62.5°	2216.0	2226.9	2281.1	2358.6	2417.4	2427.5	2377.2	2289.6	2190.5	2130.1	2108.4
65°	2016.2	2019.3	2073.5	2150.2	2203.7	2209.1	2169.6	2086.7	1984.5	1922.5	1908.5
67.5°	1791.6	1794.7	1836.5	1908.5	1965.9	1973.6	1933.3	1857.4	1765.2	1700.2	1693.2
70°	1542.9	1543.7	1584.8	1643.6	1701.0	1717.2	1680.8	1608.0	1519.7	1467.8	1453.9
72.5°	1281.1	1288.1	1324.5	1385.7	1434.5	1438.4	1408.9	1346.2	1274.2	1231.6	1223.8
75°	1041.8	1037.2	1068.1	1105.3	1143.3	1155.7	1131.6	1089.0	1022.4	985.3	993.0
77.5°	782.3	783.9	807.9	842.0	866.0	887.7	860.5	840.4	787.0	744.4	745.9
80°	553.0	551.5	574.0	590.2	617.3	620.4	605.7	578.6	544.5	526.7	525.2
82.5°	350.1	343.1	360.2	381.1	392.7	387.3	390.4	372.6	345.5	336.2	327.6
85°	178.9	177.4	186.7	194.4	202.9	202.9	198.3	184.3	178.9	168.1	165.0
87.5°	61.2	63.5	66.6	64.3	68.2	66.6	65.1	55.0	48.8	45.7	42.6
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: SP1-2407-176-9

Test Date: 09/25/2024

Luminaire Tested: MEM2-HTN-VA-130-740-U-RW

Data in this report applies to families of products including MEM2-HTN-VA-130-740-U-RW

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

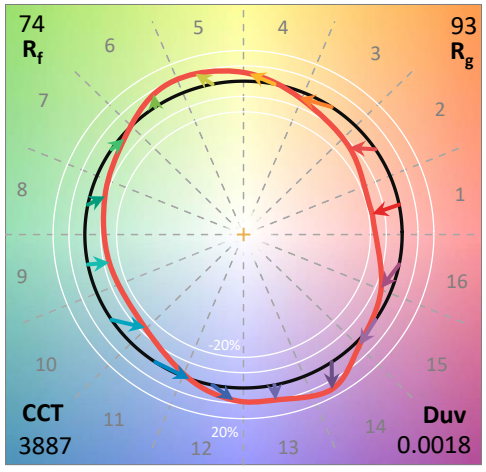
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-9
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-130-740-U-RW**
Description:	EPIC MODERN VISUAL COMFORT 130W WAVESTREAM RECTANGULAR WIDE

Spectral Parameters

CCT (K):	3887	CRI (Ra):	71.4		
CIE u':	0.2262	R1:	67.6	R9:	-36.8
CIE v':	0.5060	R2:	78.8	R10:	50.4
Duv:	0.0018	R3:	88.2	R11:	65.0
CIE x:	0.3870	R4:	69.8	R12:	44.4
CIE y:	0.3847	R5:	67.7	R13:	69.4
CIE z:	0.2283	R6:	70.3	R14:	93.3
Peak Wavelength (nm):	583	R7:	80.1	R15:	59.9
Dominant Wavelength (nm):	578	R8:	49.0		
Purity:	31.59626				

Rf:	74.5
Rg:	93.5



Test Conditions

Stabilization Time:	50M
Operation Time:	1H 50M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-9

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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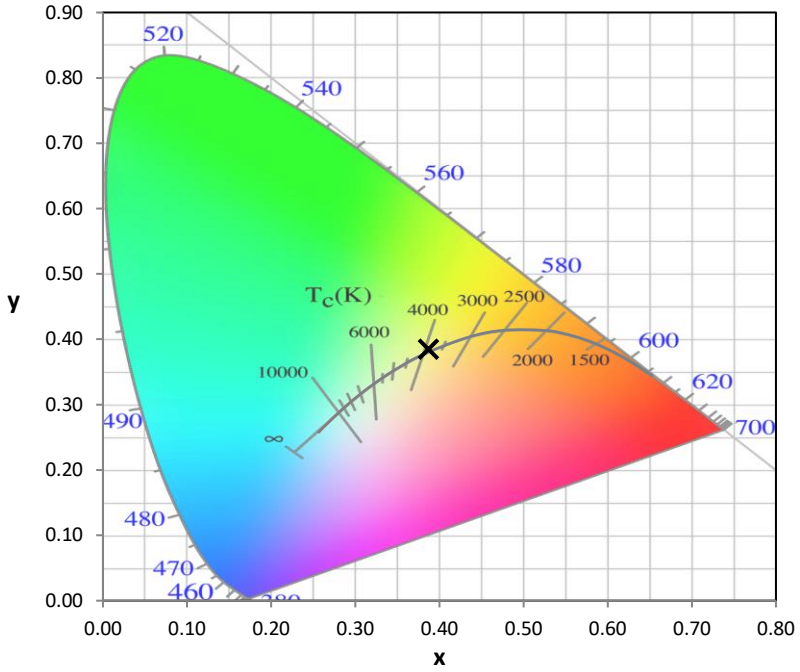
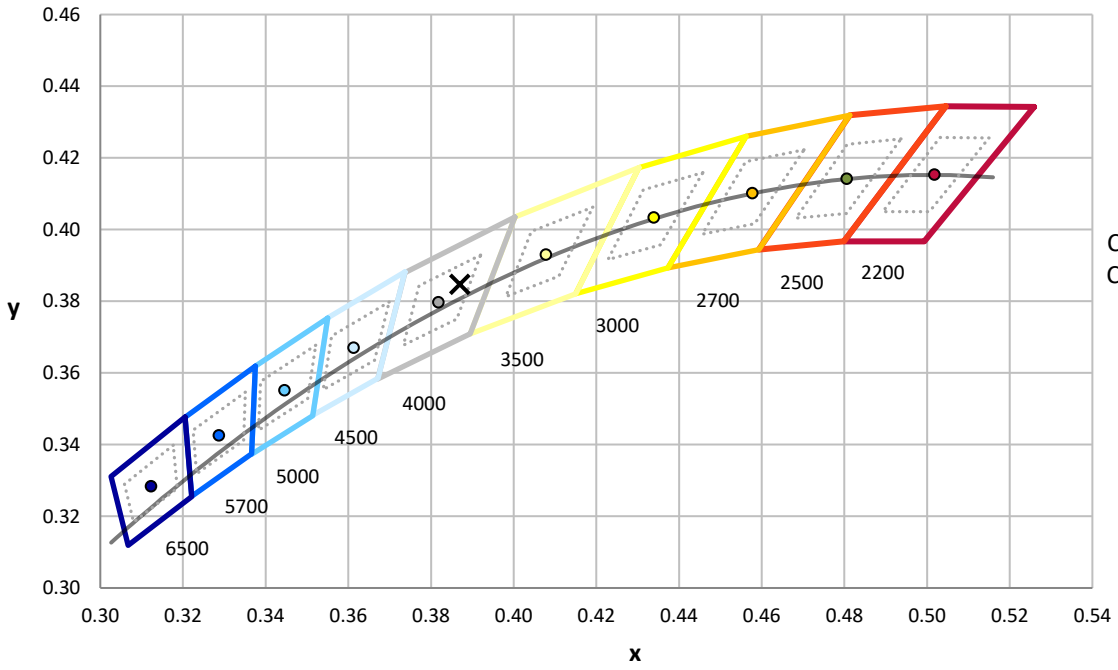
CIE 1931 Chromaticity Diagram



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



CCT = 3887K
CIE x = 0.3870
CIE y = 0.3847
Duv = 0.0018

Point lies inside the ANSI 4000K 4-step quadrangle

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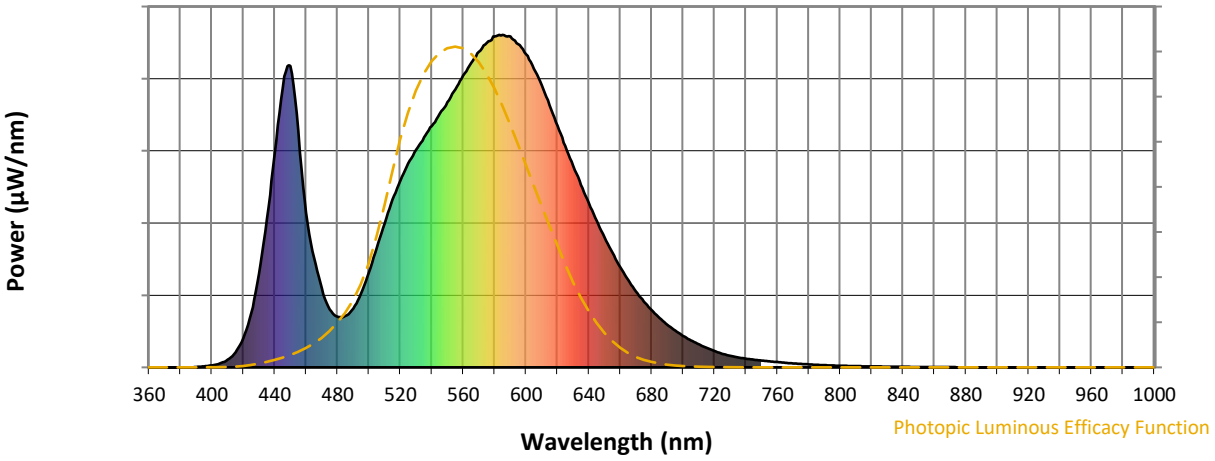
Photopic Flux vs. Wavelength

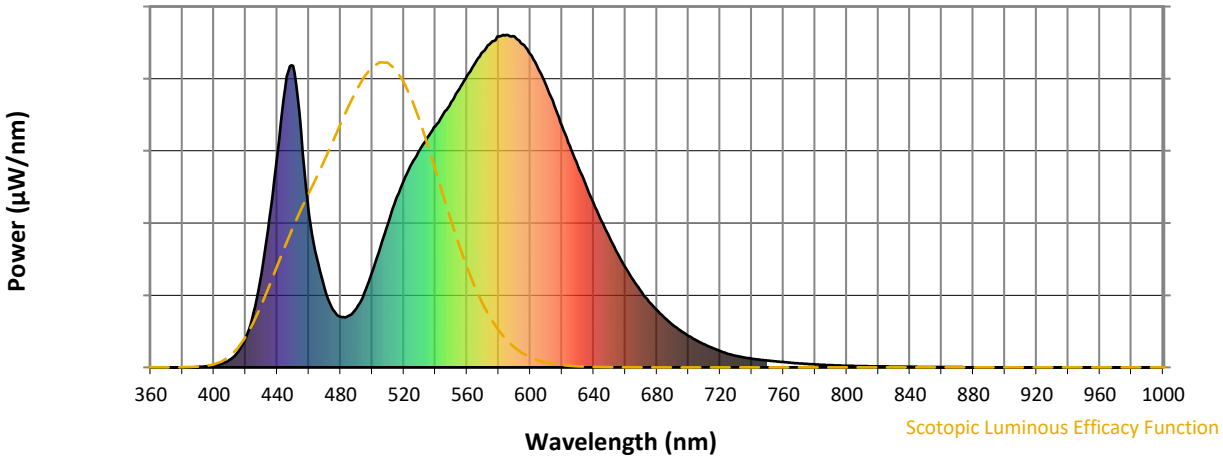


Photopic Lumens: NR

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	177	NR	620	727	NR	750	21	NR	880	0	NR
365	0	NR	495	222	NR	625	666	NR	755	18	NR	885	0	NR
370	0	NR	500	286	NR	630	606	NR	760	16	NR	890	0	NR
375	0	NR	505	359	NR	635	549	NR	765	14	NR	895	0	NR
380	0	NR	510	433	NR	640	493	NR	770	12	NR	900	0	NR
385	0	NR	515	505	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	562	NR	650	390	NR	780	9	NR	910	0	NR
395	3	NR	525	613	NR	655	344	NR	785	8	NR	915	0	NR
400	6	NR	530	654	NR	660	301	NR	790	7	NR	920	0	NR
405	11	NR	535	692	NR	665	263	NR	795	6	NR	925	0	NR
410	23	NR	540	726	NR	670	228	NR	800	5	NR	930	0	NR
415	45	NR	545	763	NR	675	198	NR	805	4	NR	935	0	NR
420	88	NR	550	798	NR	680	172	NR	810	4	NR	940	0	NR
425	164	NR	555	837	NR	685	148	NR	815	3	NR	945	0	NR
430	281	NR	560	878	NR	690	128	NR	820	3	NR	950	0	NR
435	447	NR	565	915	NR	695	110	NR	825	2	NR	955	0	NR
440	642	NR	570	948	NR	700	95	NR	830	2	NR	960	0	NR
445	838	NR	575	976	NR	705	81	NR	835	2	NR	965	0	NR
450	907	NR	580	995	NR	710	69	NR	840	2	NR	970	0	NR
455	710	NR	585	1000	NR	715	58	NR	845	1	NR	975	0	NR
460	465	NR	590	995	NR	720	49	NR	850	1	NR	980	0	NR
465	330	NR	595	972	NR	725	41	NR	855	1	NR	985	0	NR
470	236	NR	600	941	NR	730	35	NR	860	1	NR	990	0	NR
475	174	NR	605	898	NR	735	30	NR	865	1	NR	995	0	NR
480	152	NR	610	848	NR	740	26	NR	870	1	NR	1000	0	NR
485	155	NR	615	788	NR	745	23	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-9

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	177	NR	620	727	NR	750	21	NR	880	0	NR
365	0	NR	495	222	NR	625	666	NR	755	18	NR	885	0	NR
370	0	NR	500	286	NR	630	606	NR	760	16	NR	890	0	NR
375	0	NR	505	359	NR	635	549	NR	765	14	NR	895	0	NR
380	0	NR	510	433	NR	640	493	NR	770	12	NR	900	0	NR
385	0	NR	515	505	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	562	NR	650	390	NR	780	9	NR	910	0	NR
395	3	NR	525	613	NR	655	344	NR	785	8	NR	915	0	NR
400	6	NR	530	654	NR	660	301	NR	790	7	NR	920	0	NR
405	11	NR	535	692	NR	665	263	NR	795	6	NR	925	0	NR
410	23	NR	540	726	NR	670	228	NR	800	5	NR	930	0	NR
415	45	NR	545	763	NR	675	198	NR	805	4	NR	935	0	NR
420	88	NR	550	798	NR	680	172	NR	810	4	NR	940	0	NR
425	164	NR	555	837	NR	685	148	NR	815	3	NR	945	0	NR
430	281	NR	560	878	NR	690	128	NR	820	3	NR	950	0	NR
435	447	NR	565	915	NR	695	110	NR	825	2	NR	955	0	NR
440	642	NR	570	948	NR	700	95	NR	830	2	NR	960	0	NR
445	838	NR	575	976	NR	705	81	NR	835	2	NR	965	0	NR
450	907	NR	580	995	NR	710	69	NR	840	2	NR	970	0	NR
455	710	NR	585	1000	NR	715	58	NR	845	1	NR	975	0	NR
460	465	NR	590	995	NR	720	49	NR	850	1	NR	980	0	NR
465	330	NR	595	972	NR	725	41	NR	855	1	NR	985	0	NR
470	236	NR	600	941	NR	730	35	NR	860	1	NR	990	0	NR
475	174	NR	605	898	NR	735	30	NR	865	1	NR	995	0	NR
480	152	NR	610	848	NR	740	26	NR	870	1	NR	1000	0	NR
485	155	NR	615	788	NR	745	23	NR	875	0	NR			

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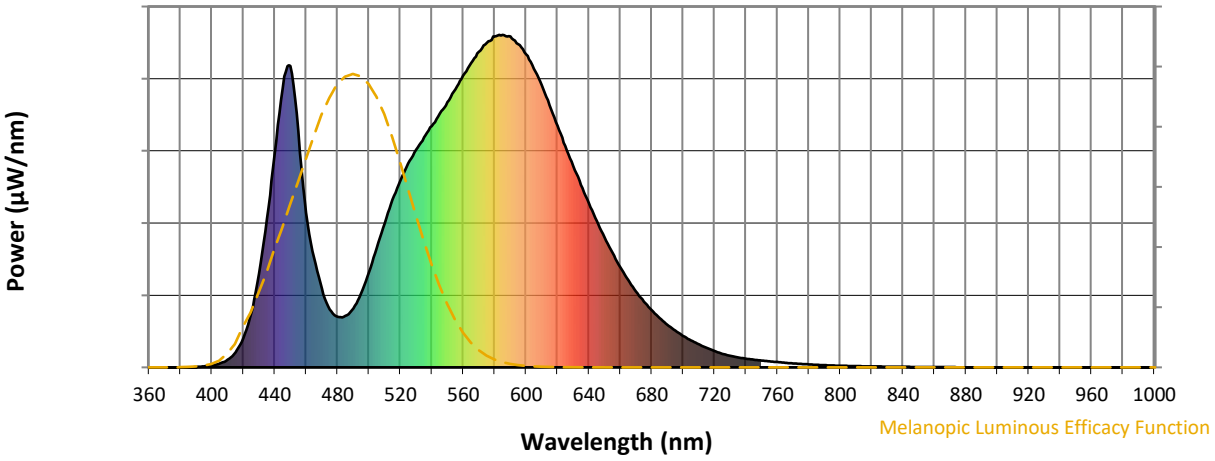
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.89**

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	177	NR	620	727	NR	750	21	NR	880	0	NR
365	0	NR	495	222	NR	625	666	NR	755	18	NR	885	0	NR
370	0	NR	500	286	NR	630	606	NR	760	16	NR	890	0	NR
375	0	NR	505	359	NR	635	549	NR	765	14	NR	895	0	NR
380	0	NR	510	433	NR	640	493	NR	770	12	NR	900	0	NR
385	0	NR	515	505	NR	645	440	NR	775	10	NR	905	0	NR
390	1	NR	520	562	NR	650	390	NR	780	9	NR	910	0	NR
395	3	NR	525	613	NR	655	344	NR	785	8	NR	915	0	NR
400	6	NR	530	654	NR	660	301	NR	790	7	NR	920	0	NR
405	11	NR	535	692	NR	665	263	NR	795	6	NR	925	0	NR
410	23	NR	540	726	NR	670	228	NR	800	5	NR	930	0	NR
415	45	NR	545	763	NR	675	198	NR	805	4	NR	935	0	NR
420	88	NR	550	798	NR	680	172	NR	810	4	NR	940	0	NR
425	164	NR	555	837	NR	685	148	NR	815	3	NR	945	0	NR
430	281	NR	560	878	NR	690	128	NR	820	3	NR	950	0	NR
435	447	NR	565	915	NR	695	110	NR	825	2	NR	955	0	NR
440	642	NR	570	948	NR	700	95	NR	830	2	NR	960	0	NR
445	838	NR	575	976	NR	705	81	NR	835	2	NR	965	0	NR
450	907	NR	580	995	NR	710	69	NR	840	2	NR	970	0	NR
455	710	NR	585	1000	NR	715	58	NR	845	1	NR	975	0	NR
460	465	NR	590	995	NR	720	49	NR	850	1	NR	980	0	NR
465	330	NR	595	972	NR	725	41	NR	855	1	NR	985	0	NR
470	236	NR	600	941	NR	730	35	NR	860	1	NR	990	0	NR
475	174	NR	605	898	NR	735	30	NR	865	1	NR	995	0	NR
480	152	NR	610	848	NR	740	26	NR	870	1	NR	1000	0	NR
485	155	NR	615	788	NR	745	23	NR	875	0	NR			

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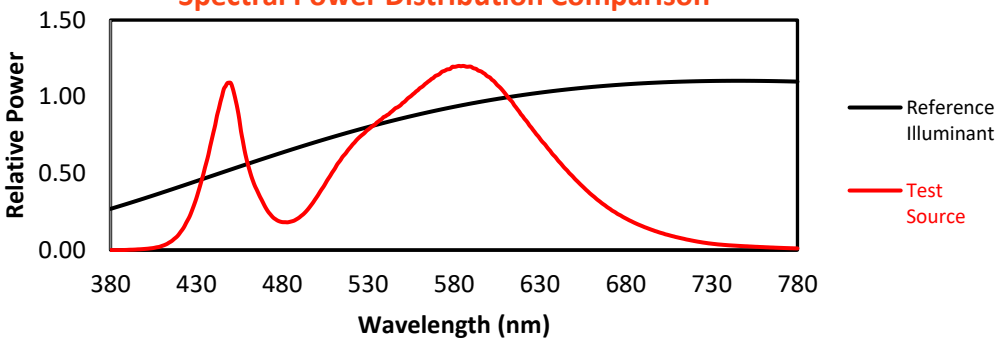
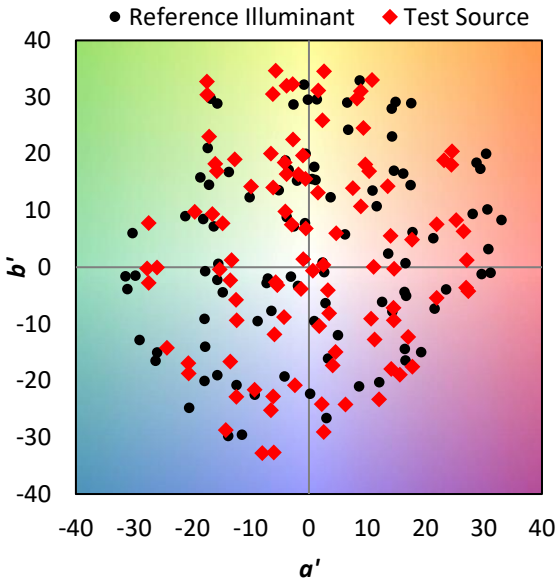
Summary

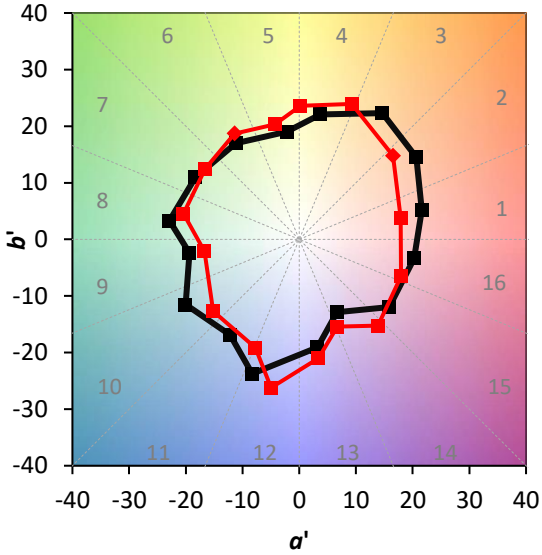
R_f = 74.5
R_g = 93.5
CIE R_a = 71.4
R_9 = -36.8

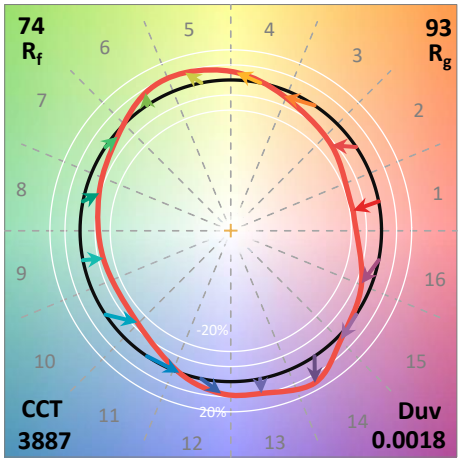
Spectral Power Distribution Comparison

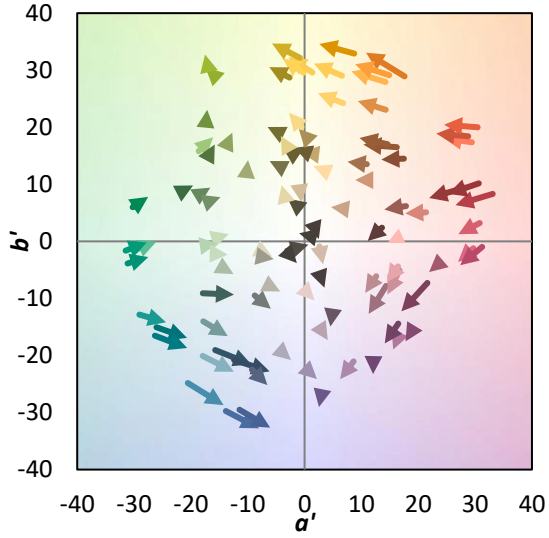


Color Vector Graphics









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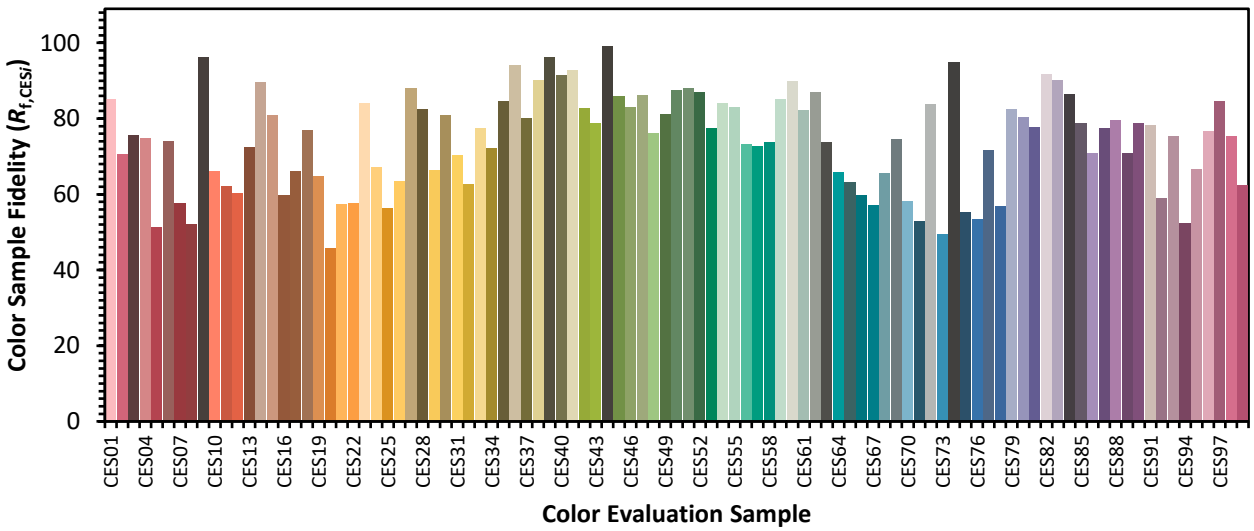
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 54
CES02 = 61	CES27 = 88	CES52 = 87	CES77 = 72
CES03 = 30	CES28 = 82	CES53 = 77	CES78 = 57
CES04 = 70	CES29 = 66	CES54 = 84	CES79 = 83
CES05 = 47	CES30 = 81	CES55 = 83	CES80 = 80
CES06 = 50	CES31 = 70	CES56 = 73	CES81 = 78
CES07 = 40	CES32 = 63	CES57 = 73	CES82 = 92
CES08 = 39	CES33 = 77	CES58 = 74	CES83 = 90
CES09 = 29	CES34 = 72	CES59 = 85	CES84 = 87
CES10 = 74	CES35 = 85	CES60 = 90	CES85 = 79
CES11 = 57	CES36 = 94	CES61 = 82	CES86 = 71
CES12 = 63	CES37 = 80	CES62 = 87	CES87 = 77
CES13 = 42	CES38 = 90	CES63 = 74	CES88 = 80
CES14 = 74	CES39 = 96	CES64 = 66	CES89 = 71
CES15 = 71	CES40 = 92	CES65 = 63	CES90 = 79
CES16 = 46	CES41 = 93	CES66 = 60	CES91 = 78
CES17 = 49	CES42 = 83	CES67 = 57	CES92 = 59
CES18 = 56	CES43 = 79	CES68 = 65	CES93 = 75
CES19 = 72	CES44 = 99	CES69 = 74	CES94 = 52
CES20 = 65	CES45 = 86	CES70 = 58	CES95 = 67
CES21 = 86	CES46 = 83	CES71 = 53	CES96 = 77
CES22 = 78	CES47 = 86	CES72 = 84	CES97 = 85
CES23 = 92	CES48 = 76	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 62
CES25 = 72	CES50 = 88	CES75 = 55	



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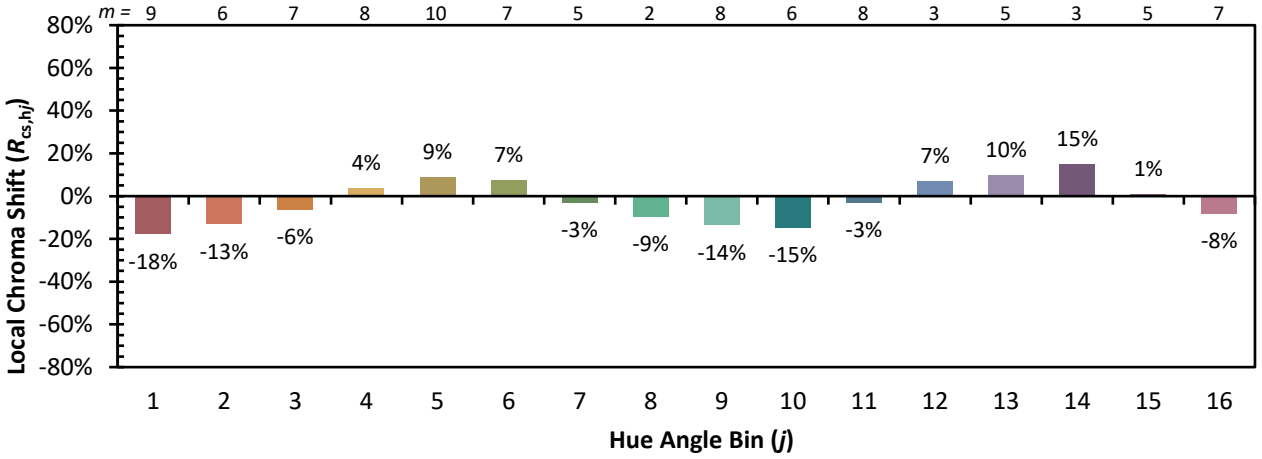
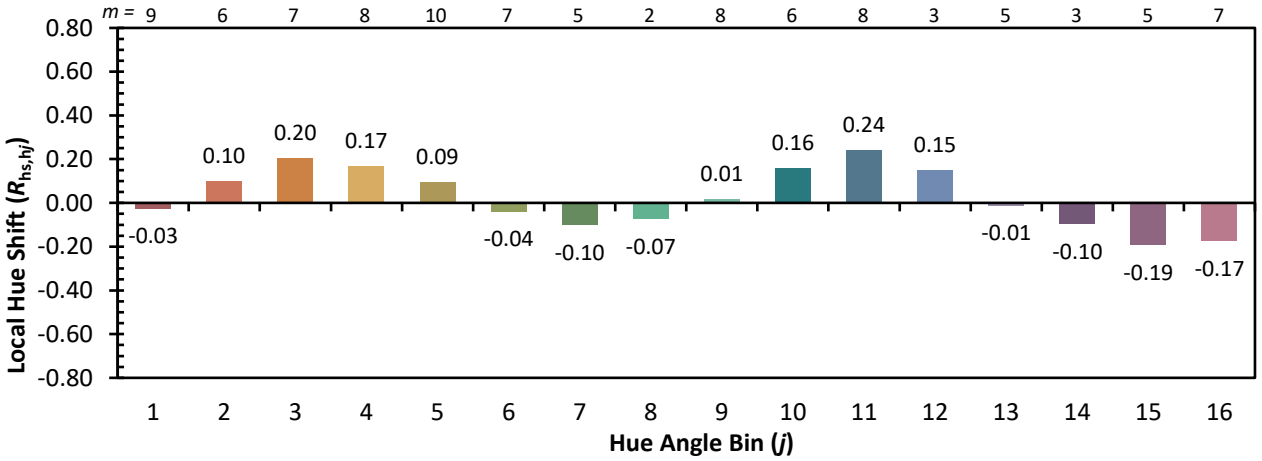
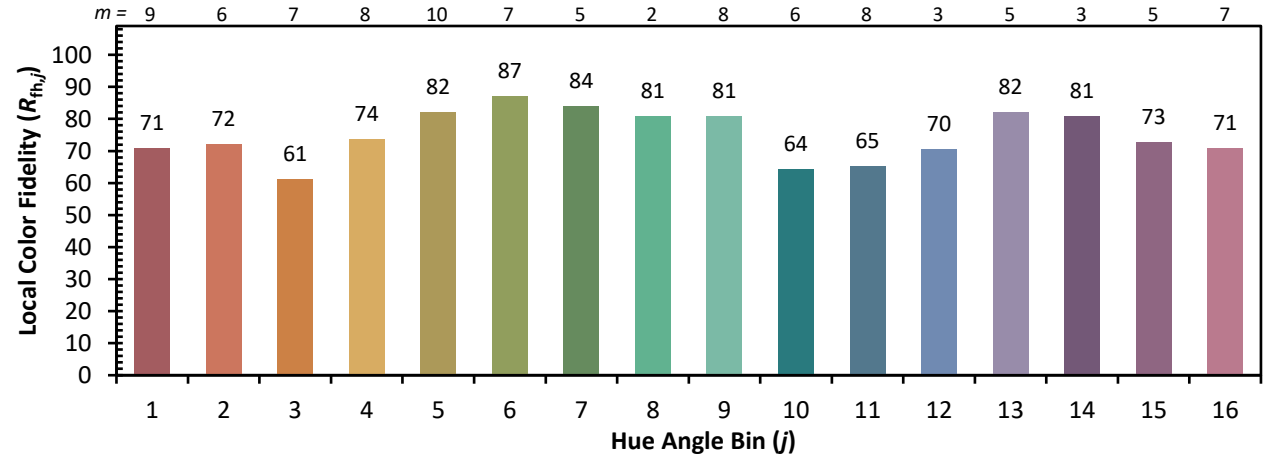
Color Rendition by Hue-Angle Bin







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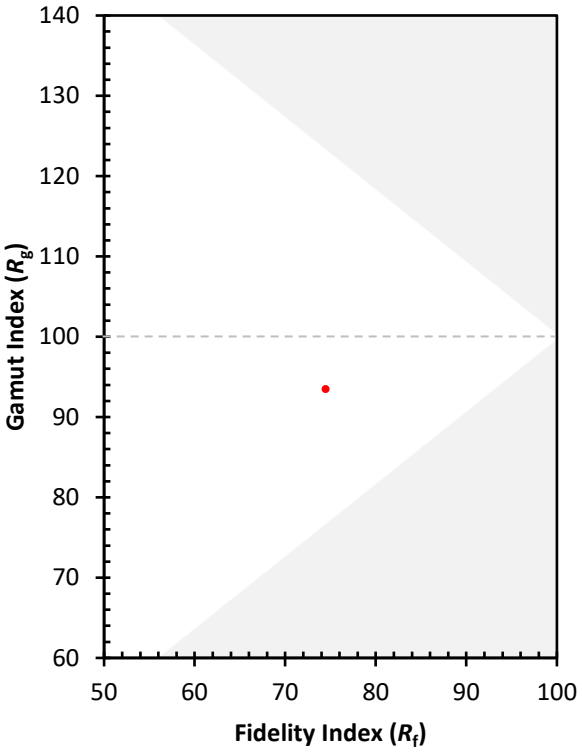
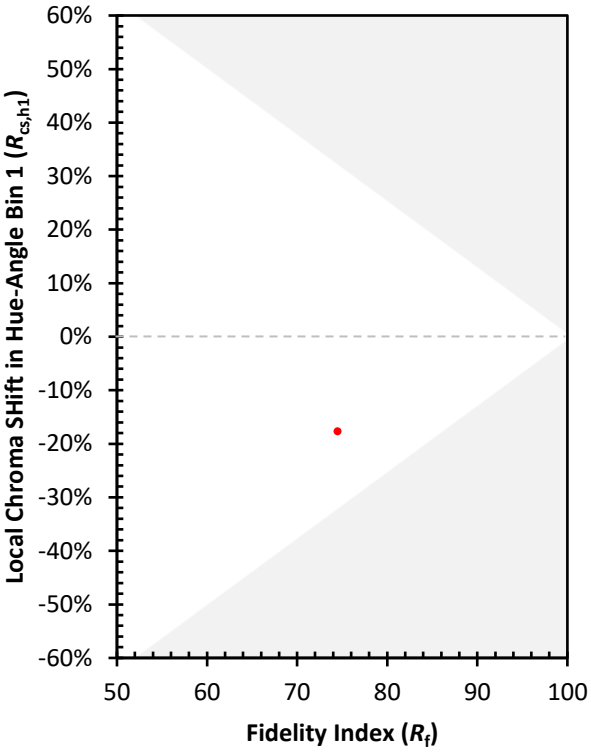
Measure Comparisons





(END OF REPORT)