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: P879705

Luminaire Tested: **EMM2-HSN-VA8-727-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:	P879705
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HSN-VA8-727-U-MQ
Description:	EPIC MODERN SHORT HOUSING 8W 70CRI 2700K WAVESTREAM FIXTURE w/ TYPE V MEDIUM DISTRIBUTION OPTIC
Light Source:	(1) 2700K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	15306.5 lumens
Efficiency:	N/A
Efficacy:	98.1 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B4 - U0 - G3

Input Watts (W):	156
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.995
Total Harmonic Distortion (THDi):	6.6%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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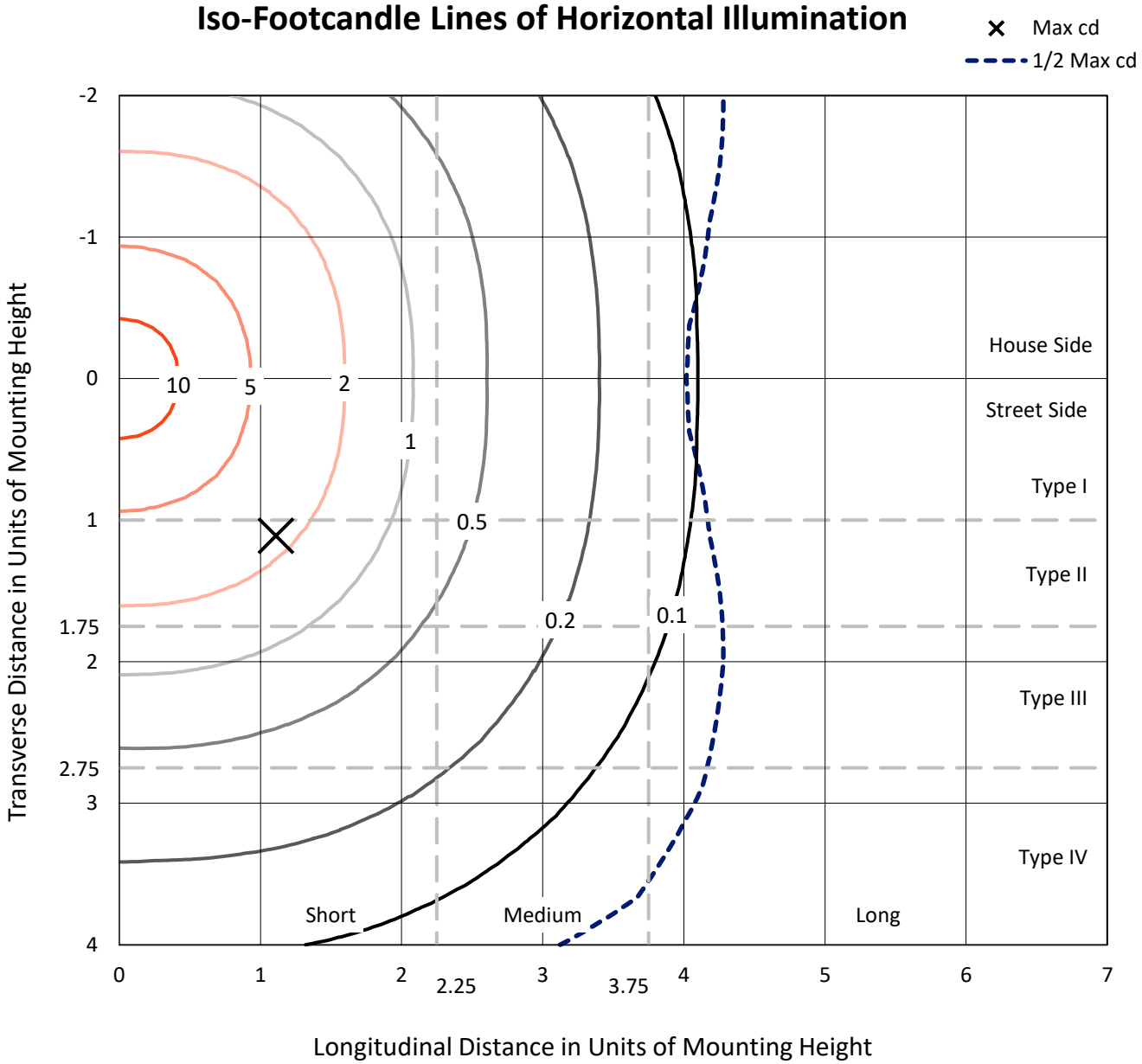
Scaled Data Report

REPORT NUMBER: P879705
CATALOG NUMBER: EMM2-HSN-VA8-727-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 13.8 fc
Type V - Short - N/A

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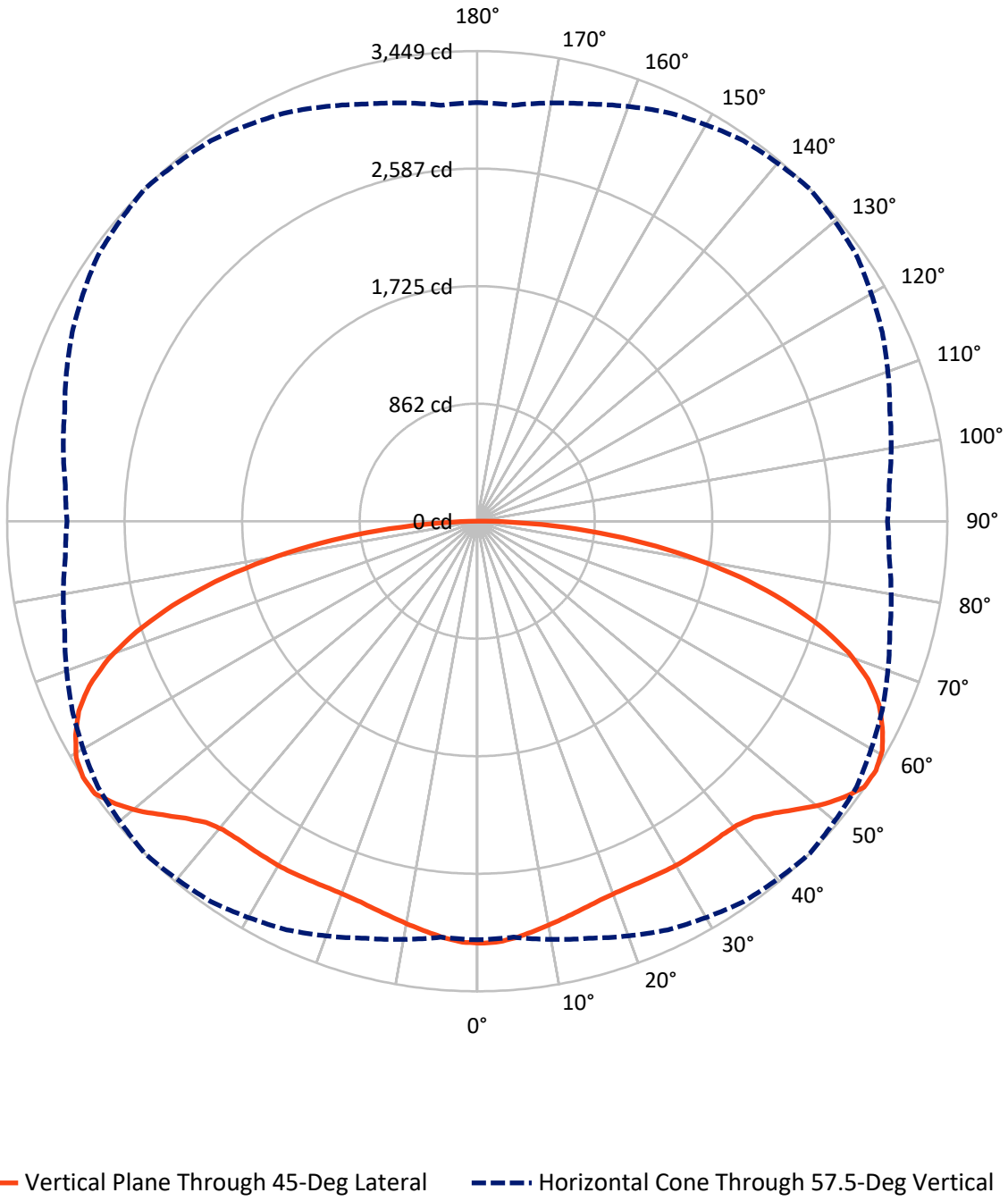
REPORT NUMBER: P879705
CATALOG NUMBER: EMM2-HSN-VA8-727-U-MQ

Luminous Intensity Polar Plot



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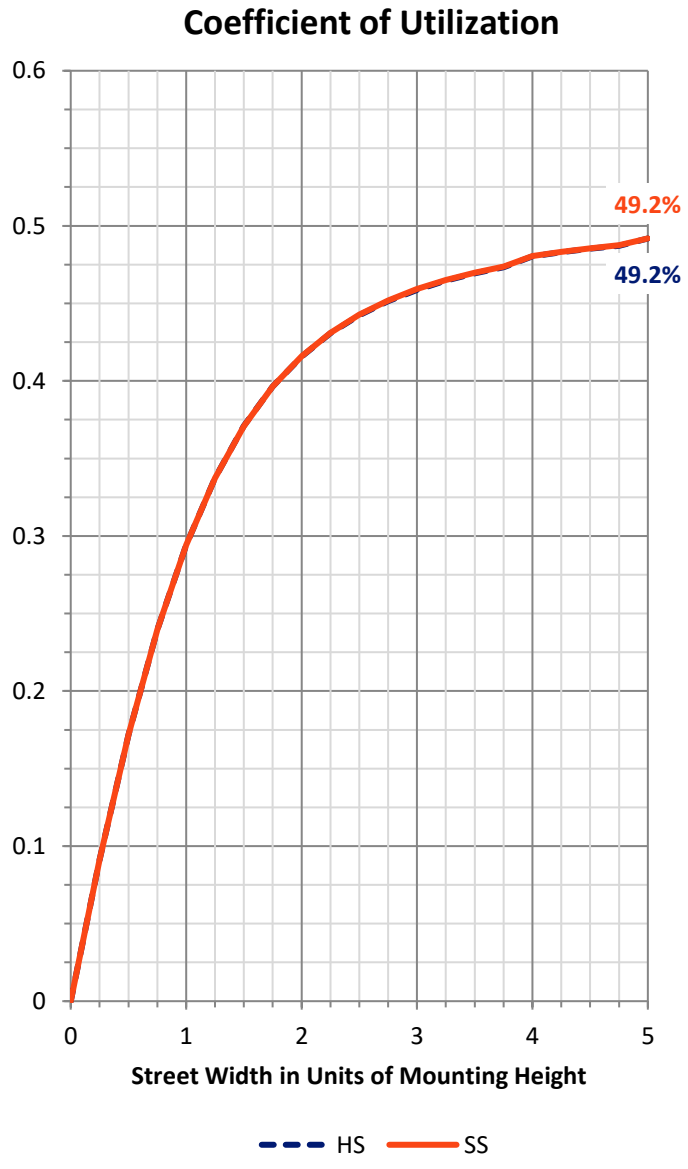
REPORT NUMBER: P879705
CATALOG NUMBER: EMM2-HSN-VA8-727-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7653.3	0.0	7653.3
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	7653.3	0.0	7653.3
	% Fixture	50.0	0.0	50.0
Total	Lumens	15306.5	0.0	15306.5
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	290.7	1.9
10°-20°	833.2	5.4
20°-30°	1339.0	8.7
30°-40°	1815.0	11.9
40°-50°	2318.0	15.1
50°-60°	2889.3	18.9
60°-70°	2944.1	19.2
70°-80°	2181.5	14.3
80°-90°	695.6	4.5
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°	15306.5	100.0
0°-180°	15306.5	100.0



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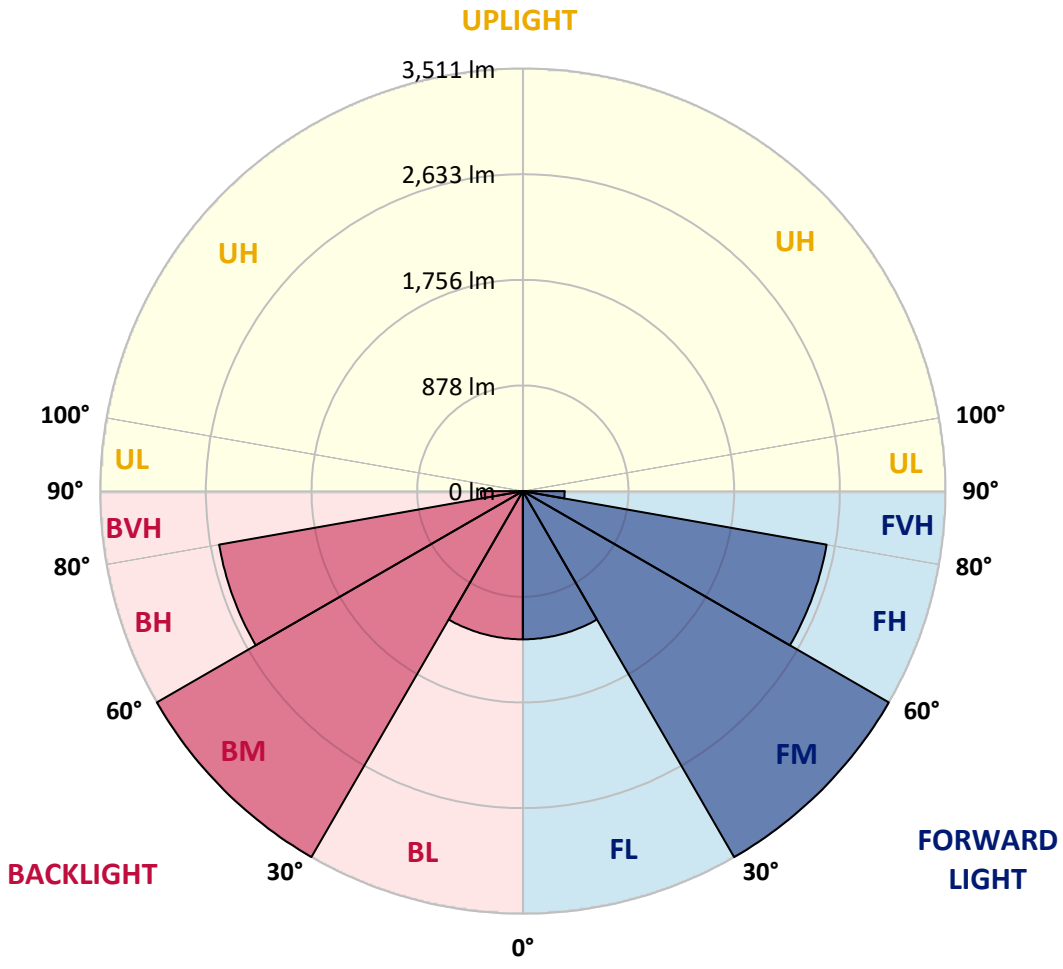
REPORT NUMBER: P879705
CATALOG NUMBER: EMM2-HSN-VA8-727-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1231.4	8.0			
FM	(30°-60°)	3511.2	22.9			
FH	(60°-80°)	2562.8	16.7			G2/5000
FVH	(80°-90°)	347.8	2.3			G3/500
BL	(0°-30°)	1231.4	8.0	B3/2500		
BM	(30°-60°)	3511.2	22.9	B3/5000		
BH	(60°-80°)	2562.8	16.7	B4/5000		G2/5000
BVH	(80°-90°)	347.8	2.3			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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REPORT NUMBER: P879705
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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4	3096.4
2.5°	3091.1	3091.1	3090.3	3090.3	3089.6	3090.3	3091.1	3091.1	3090.3	3089.6	3088.8
5°	3069.0	3069.8	3069.8	3068.2	3066.7	3066.7	3066.7	3067.5	3065.9	3066.7	3065.9
7.5°	3037.0	3034.7	3037.0	3036.2	3037.0	3034.7	3038.5	3037.0	3034.7	3036.2	3036.2
10°	3001.2	3001.9	3002.7	3001.9	3004.2	3003.5	3002.7	3001.9	3000.4	3001.9	2999.7
12.5°	2967.7	2968.4	2970.7	2971.5	2973.8	2973.0	2973.8	2972.2	2971.5	2968.4	2967.7
15°	2935.7	2937.2	2940.2	2942.5	2944.8	2945.6	2944.0	2943.3	2939.5	2937.2	2935.7
17.5°	2909.0	2909.0	2913.6	2917.4	2921.2	2921.9	2921.2	2917.4	2912.0	2906.7	2907.5
20°	2890.7	2890.7	2896.0	2902.1	2907.5	2909.0	2906.7	2899.8	2891.5	2887.7	2886.9
22.5°	2882.3	2883.1	2888.4	2895.3	2902.9	2904.4	2899.8	2891.5	2882.3	2875.5	2874.7
25°	2883.1	2881.6	2886.1	2896.8	2905.2	2906.7	2902.9	2891.5	2880.8	2874.7	2872.4
27.5°	2880.8	2881.6	2886.9	2897.6	2908.2	2911.3	2905.2	2891.5	2877.0	2871.7	2870.1
30°	2880.0	2880.8	2882.3	2899.8	2912.0	2917.4	2908.2	2889.9	2877.8	2869.4	2868.6
32.5°	2877.0	2873.2	2883.8	2894.5	2909.8	2916.6	2907.5	2890.7	2870.9	2864.8	2861.8
35°	2864.8	2868.6	2877.8	2896.0	2913.6	2918.1	2907.5	2886.9	2869.4	2857.2	2856.4
37.5°	2862.5	2862.5	2877.0	2896.0	2913.6	2920.4	2911.3	2888.4	2864.0	2848.8	2848.8
40°	2859.5	2858.7	2877.8	2901.4	2924.2	2933.4	2921.2	2893.0	2863.3	2848.8	2841.2
42.5°	2867.8	2872.4	2894.5	2928.8	2957.8	2973.0	2955.5	2924.2	2889.2	2861.8	2861.0
45°	2907.5	2917.4	2940.2	2998.1	3037.0	3055.3	3034.7	2980.6	2925.8	2889.2	2886.9
47.5°	2969.2	2966.1	3020.2	3081.2	3138.3	3158.1	3128.4	3065.2	2985.9	2941.8	2930.3
50°	3011.8	3019.5	3075.1	3163.5	3248.8	3271.7	3228.2	3146.7	3060.6	2999.7	2989.0
52.5°	3069.8	3071.3	3142.1	3254.1	3341.8	3366.9	3325.0	3223.7	3107.8	3031.7	3026.3
55°	3076.6	3101.8	3187.8	3309.8	3414.9	3444.6	3392.8	3284.6	3149.8	3055.3	3046.1
57.5°	3071.3	3063.7	3168.0	3308.2	3407.3	3449.2	3398.1	3278.5	3133.8	3033.9	3009.6
60°	2961.6	2993.6	3108.6	3245.8	3373.0	3414.9	3355.5	3233.6	3075.1	2965.4	2955.5
62.5°	2886.9	2900.6	3005.8	3190.1	3294.5	3336.4	3290.7	3147.5	2978.3	2864.0	2850.3
65°	2770.3	2781.0	2904.4	3056.0	3201.6	3238.9	3180.2	3059.8	2878.5	2752.8	2727.7
67.5°	2584.4	2613.4	2735.3	2928.0	3028.6	3092.6	3040.0	2870.9	2706.3	2582.9	2564.6
70°	2368.0	2406.9	2532.6	2690.3	2857.9	2889.9	2817.6	2702.5	2518.1	2386.3	2354.3
72.5°	2159.3	2162.3	2279.6	2464.8	2570.7	2630.1	2589.0	2437.4	2256.8	2144.8	2125.0
75°	1867.5	1868.2	1997.0	2148.6	2282.7	2321.6	2256.0	2149.4	1988.6	1862.9	1850.7
77.5°	1529.2	1549.7	1664.0	1810.3	1916.2	1972.6	1926.1	1805.7	1655.6	1548.2	1536.0
80°	1199.3	1225.2	1305.9	1437.0	1528.4	1577.9	1527.6	1422.5	1308.2	1203.1	1204.6
82.5°	846.5	865.5	941.7	1030.9	1120.0	1156.6	1135.3	1057.5	953.2	861.0	835.8
85°	472.4	496.8	547.8	626.3	685.7	733.0	706.3	645.3	554.7	496.8	495.2
87.5°	138.7	150.1	170.7	223.2	279.6	300.2	294.1	278.9	244.6	219.4	203.4
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: SP1-2407-176-12

Test Date: 10/23/2024

Luminaire Tested: MEM2-HTN-VA-130-727-U-RW

Data in this report applies to families of products including MEM2-HTN-VA-130-727-U-RW

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

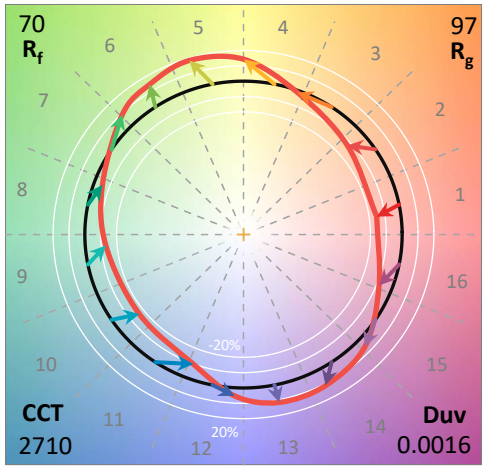
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-12
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	10/24/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Streetworks
Catalog Number:	**MEM2-HTN-VA-130-727-U-RW**
Description:	EPIC MODERN VISUAL COMFORT 130W WAVESTREAM RECTANGULAR WIDE

Spectral Parameters

CCT (K):	2710	CRI (Ra):	70.4		
CIE u':	0.2616	R1:	67.3	R9:	-24.6
CIE v':	0.5295	R2:	79.1	R10:	51.3
Duv:	0.0016	R3:	89.5	R11:	61.0
CIE x:	0.4619	R4:	67.6	R12:	41.2
CIE y:	0.4154	R5:	64.7	R13:	68.7
CIE z:	0.1227	R6:	69.6	R14:	93.5
Peak Wavelength (nm):	601	R7:	78.9	R15:	60.6
Dominant Wavelength (nm):	583	R8:	46.2		
Purity:	63.3407				

Rf:	70.4
Rg:	96.7



Test Conditions

Stabilization Time:	47M
Operation Time:	1H 47M
Sphere Temperature (°C):	24.4

REPORT NUMBER: SP1-2407-176-12

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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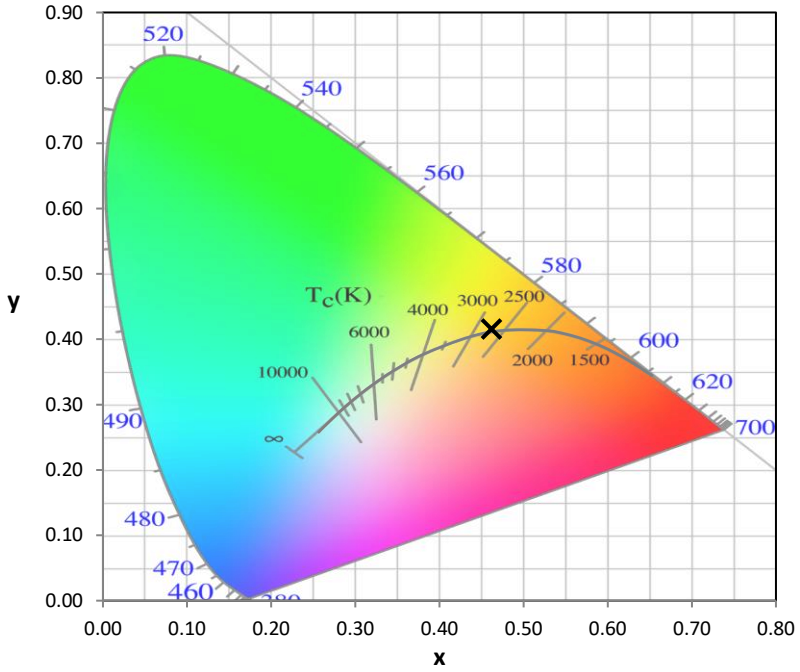
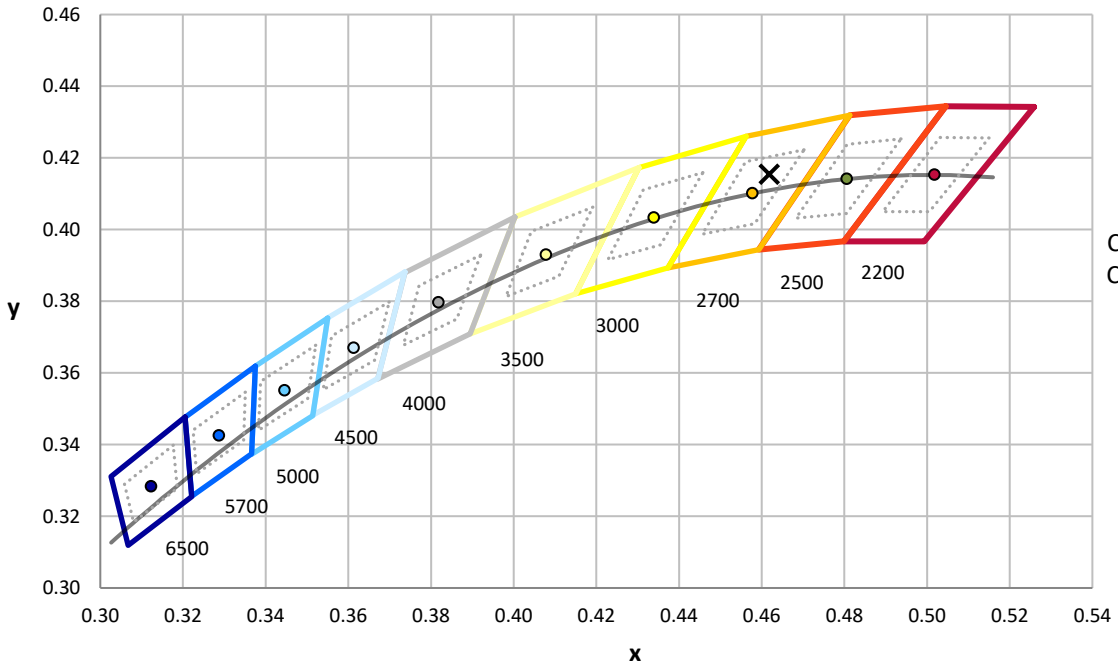
CIE 1931 Chromaticity Diagram



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



CCT = 2710K
CIE x = 0.4619
CIE y = 0.4154
Duv = 0.0016

Point lies inside the ANSI 2700K 4-step quadrangle

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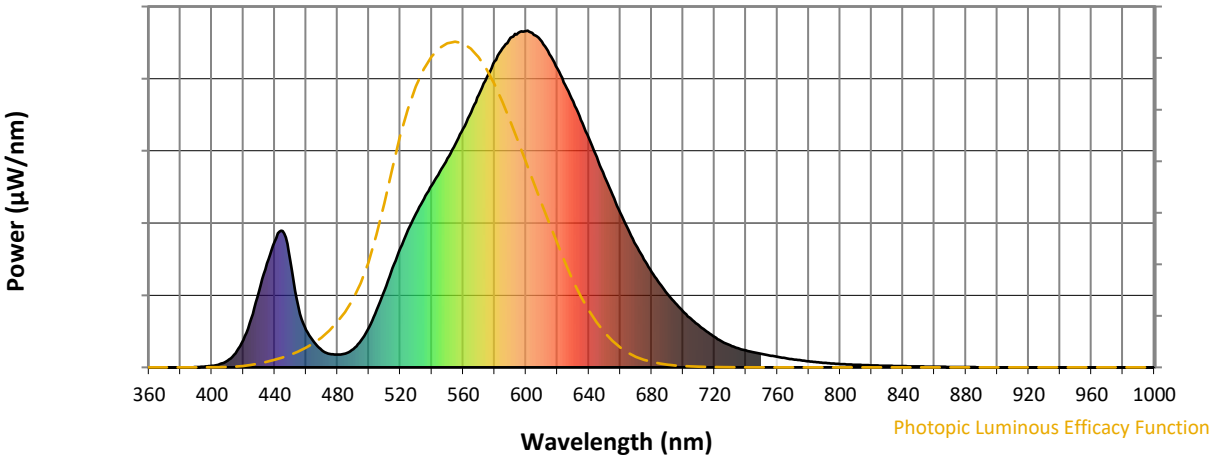
Photopic Flux vs. Wavelength

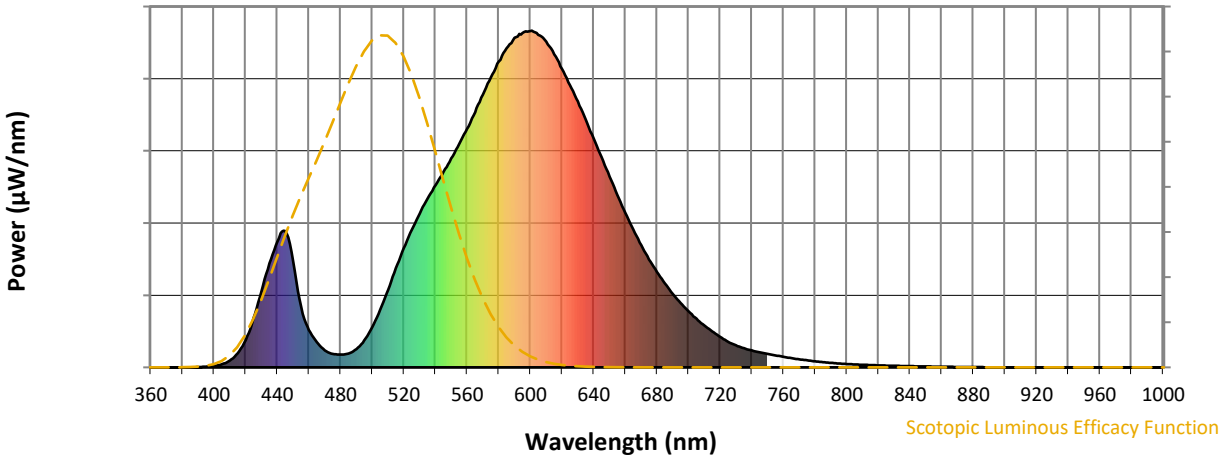


Photopic Lumens: NR

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	54	NR	620	887	NR	750	40	NR	880	1	NR
365	0	NR	495	80	NR	625	838	NR	755	35	NR	885	1	NR
370	0	NR	500	119	NR	630	790	NR	760	31	NR	890	0	NR
375	0	NR	505	171	NR	635	735	NR	765	27	NR	895	0	NR
380	0	NR	510	230	NR	640	681	NR	770	24	NR	900	0	NR
385	0	NR	515	295	NR	645	624	NR	775	21	NR	905	0	NR
390	1	NR	520	354	NR	650	567	NR	780	18	NR	910	0	NR
395	2	NR	525	408	NR	655	512	NR	785	15	NR	915	0	NR
400	5	NR	530	457	NR	660	459	NR	790	13	NR	920	0	NR
405	9	NR	535	500	NR	665	410	NR	795	12	NR	925	0	NR
410	20	NR	540	541	NR	670	363	NR	800	10	NR	930	0	NR
415	42	NR	545	581	NR	675	320	NR	805	9	NR	935	0	NR
420	81	NR	550	620	NR	680	283	NR	810	8	NR	940	0	NR
425	145	NR	555	664	NR	685	249	NR	815	7	NR	945	0	NR
430	225	NR	560	709	NR	690	219	NR	820	6	NR	950	0	NR
435	309	NR	565	758	NR	695	191	NR	825	5	NR	955	0	NR
440	373	NR	570	810	NR	700	166	NR	830	5	NR	960	0	NR
445	405	NR	575	861	NR	705	144	NR	835	4	NR	965	0	NR
450	316	NR	580	908	NR	710	124	NR	840	4	NR	970	0	NR
455	180	NR	585	948	NR	715	106	NR	845	3	NR	975	0	NR
460	111	NR	590	978	NR	720	90	NR	850	3	NR	980	0	NR
465	75	NR	595	993	NR	725	76	NR	855	2	NR	985	0	NR
470	50	NR	600	999	NR	730	65	NR	860	2	NR	990	0	NR
475	40	NR	605	988	NR	735	57	NR	865	2	NR	995	0	NR
480	38	NR	610	967	NR	740	50	NR	870	1	NR	1000	0	NR
485	41	NR	615	930	NR	745	45	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-12

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/P: 1.02**

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	54	NR	620	887	NR	750	40	NR	880	1	NR
365	0	NR	495	80	NR	625	838	NR	755	35	NR	885	1	NR
370	0	NR	500	119	NR	630	790	NR	760	31	NR	890	0	NR
375	0	NR	505	171	NR	635	735	NR	765	27	NR	895	0	NR
380	0	NR	510	230	NR	640	681	NR	770	24	NR	900	0	NR
385	0	NR	515	295	NR	645	624	NR	775	21	NR	905	0	NR
390	1	NR	520	354	NR	650	567	NR	780	18	NR	910	0	NR
395	2	NR	525	408	NR	655	512	NR	785	15	NR	915	0	NR
400	5	NR	530	457	NR	660	459	NR	790	13	NR	920	0	NR
405	9	NR	535	500	NR	665	410	NR	795	12	NR	925	0	NR
410	20	NR	540	541	NR	670	363	NR	800	10	NR	930	0	NR
415	42	NR	545	581	NR	675	320	NR	805	9	NR	935	0	NR
420	81	NR	550	620	NR	680	283	NR	810	8	NR	940	0	NR
425	145	NR	555	664	NR	685	249	NR	815	7	NR	945	0	NR
430	225	NR	560	709	NR	690	219	NR	820	6	NR	950	0	NR
435	309	NR	565	758	NR	695	191	NR	825	5	NR	955	0	NR
440	373	NR	570	810	NR	700	166	NR	830	5	NR	960	0	NR
445	405	NR	575	861	NR	705	144	NR	835	4	NR	965	0	NR
450	316	NR	580	908	NR	710	124	NR	840	4	NR	970	0	NR
455	180	NR	585	948	NR	715	106	NR	845	3	NR	975	0	NR
460	111	NR	590	978	NR	720	90	NR	850	3	NR	980	0	NR
465	75	NR	595	993	NR	725	76	NR	855	2	NR	985	0	NR
470	50	NR	600	999	NR	730	65	NR	860	2	NR	990	0	NR
475	40	NR	605	988	NR	735	57	NR	865	2	NR	995	0	NR
480	38	NR	610	967	NR	740	50	NR	870	1	NR	1000	0	NR
485	41	NR	615	930	NR	745	45	NR	875	1	NR			

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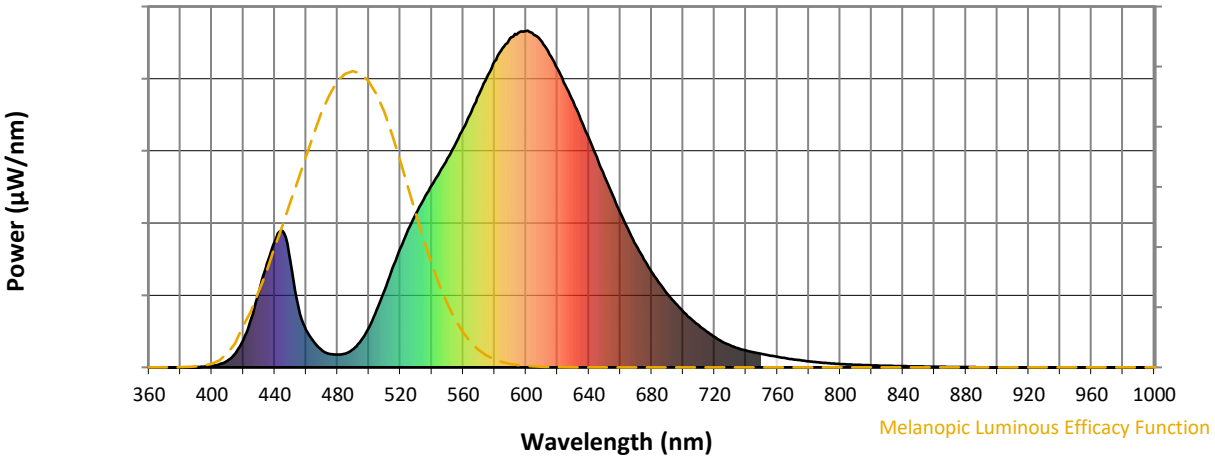
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 1.71**

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	54	NR	620	887	NR	750	40	NR	880	1	NR
365	0	NR	495	80	NR	625	838	NR	755	35	NR	885	1	NR
370	0	NR	500	119	NR	630	790	NR	760	31	NR	890	0	NR
375	0	NR	505	171	NR	635	735	NR	765	27	NR	895	0	NR
380	0	NR	510	230	NR	640	681	NR	770	24	NR	900	0	NR
385	0	NR	515	295	NR	645	624	NR	775	21	NR	905	0	NR
390	1	NR	520	354	NR	650	567	NR	780	18	NR	910	0	NR
395	2	NR	525	408	NR	655	512	NR	785	15	NR	915	0	NR
400	5	NR	530	457	NR	660	459	NR	790	13	NR	920	0	NR
405	9	NR	535	500	NR	665	410	NR	795	12	NR	925	0	NR
410	20	NR	540	541	NR	670	363	NR	800	10	NR	930	0	NR
415	42	NR	545	581	NR	675	320	NR	805	9	NR	935	0	NR
420	81	NR	550	620	NR	680	283	NR	810	8	NR	940	0	NR
425	145	NR	555	664	NR	685	249	NR	815	7	NR	945	0	NR
430	225	NR	560	709	NR	690	219	NR	820	6	NR	950	0	NR
435	309	NR	565	758	NR	695	191	NR	825	5	NR	955	0	NR
440	373	NR	570	810	NR	700	166	NR	830	5	NR	960	0	NR
445	405	NR	575	861	NR	705	144	NR	835	4	NR	965	0	NR
450	316	NR	580	908	NR	710	124	NR	840	4	NR	970	0	NR
455	180	NR	585	948	NR	715	106	NR	845	3	NR	975	0	NR
460	111	NR	590	978	NR	720	90	NR	850	3	NR	980	0	NR
465	75	NR	595	993	NR	725	76	NR	855	2	NR	985	0	NR
470	50	NR	600	999	NR	730	65	NR	860	2	NR	990	0	NR
475	40	NR	605	988	NR	735	57	NR	865	2	NR	995	0	NR
480	38	NR	610	967	NR	740	50	NR	870	1	NR	1000	0	NR
485	41	NR	615	930	NR	745	45	NR	875	1	NR			

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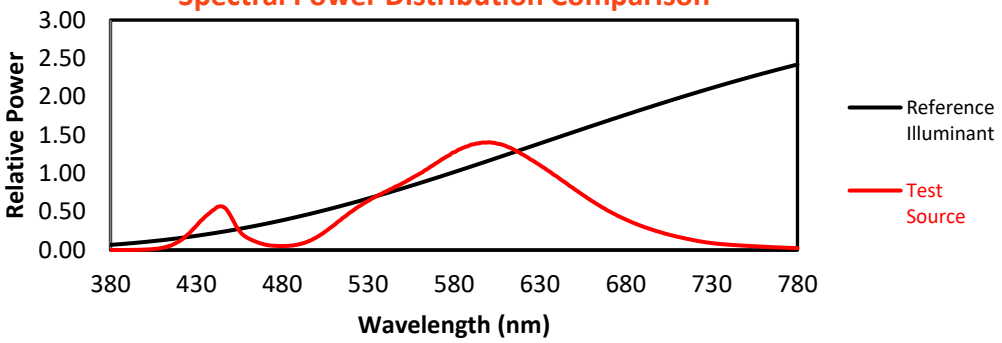
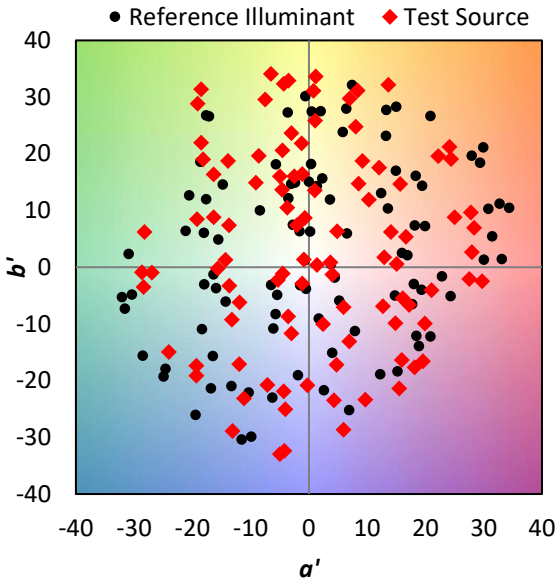
Summary

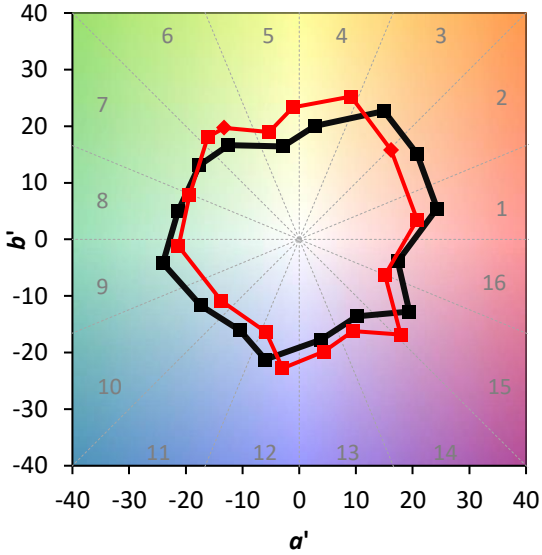
R_f = 70.4
R_g = 96.7
CIE R_a = 70.4
R_9 = -24.6

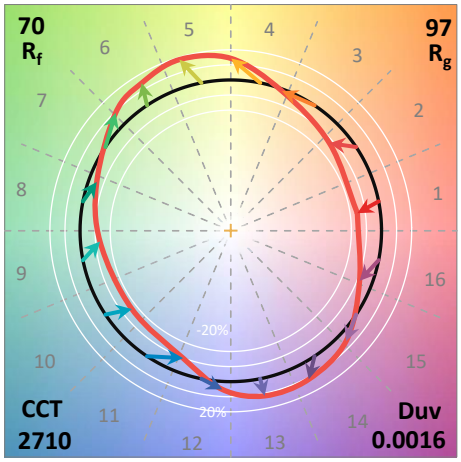
Spectral Power Distribution Comparison

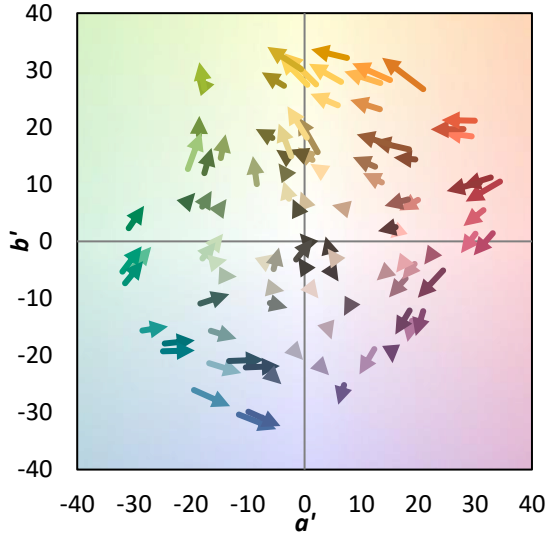


Color Vector Graphics









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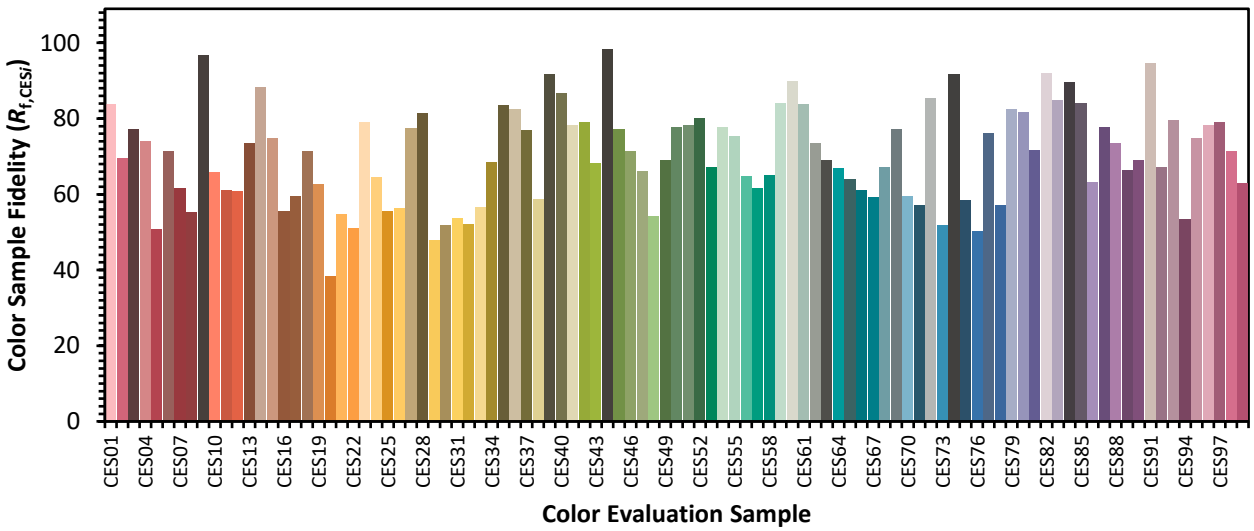
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 56	CES51 = 78	CES76 = 50
CES02 = 63	CES27 = 77	CES52 = 80	CES77 = 76
CES03 = 31	CES28 = 81	CES53 = 67	CES78 = 57
CES04 = 71	CES29 = 48	CES54 = 78	CES79 = 82
CES05 = 50	CES30 = 52	CES55 = 75	CES80 = 82
CES06 = 52	CES31 = 54	CES56 = 65	CES81 = 72
CES07 = 42	CES32 = 52	CES57 = 62	CES82 = 92
CES08 = 41	CES33 = 57	CES58 = 65	CES83 = 85
CES09 = 29	CES34 = 69	CES59 = 84	CES84 = 90
CES10 = 77	CES35 = 84	CES60 = 90	CES85 = 84
CES11 = 60	CES36 = 82	CES61 = 84	CES86 = 63
CES12 = 66	CES37 = 77	CES62 = 73	CES87 = 78
CES13 = 43	CES38 = 59	CES63 = 69	CES88 = 74
CES14 = 74	CES39 = 92	CES64 = 67	CES89 = 66
CES15 = 71	CES40 = 87	CES65 = 64	CES90 = 69
CES16 = 48	CES41 = 78	CES66 = 61	CES91 = 95
CES17 = 51	CES42 = 79	CES67 = 59	CES92 = 67
CES18 = 57	CES43 = 68	CES68 = 67	CES93 = 80
CES19 = 73	CES44 = 98	CES69 = 77	CES94 = 54
CES20 = 67	CES45 = 77	CES70 = 60	CES95 = 75
CES21 = 88	CES46 = 71	CES71 = 57	CES96 = 78
CES22 = 80	CES47 = 66	CES72 = 85	CES97 = 79
CES23 = 92	CES48 = 54	CES73 = 52	CES98 = 71
CES24 = 92	CES49 = 69	CES74 = 92	CES99 = 63
CES25 = 73	CES50 = 78	CES75 = 58	



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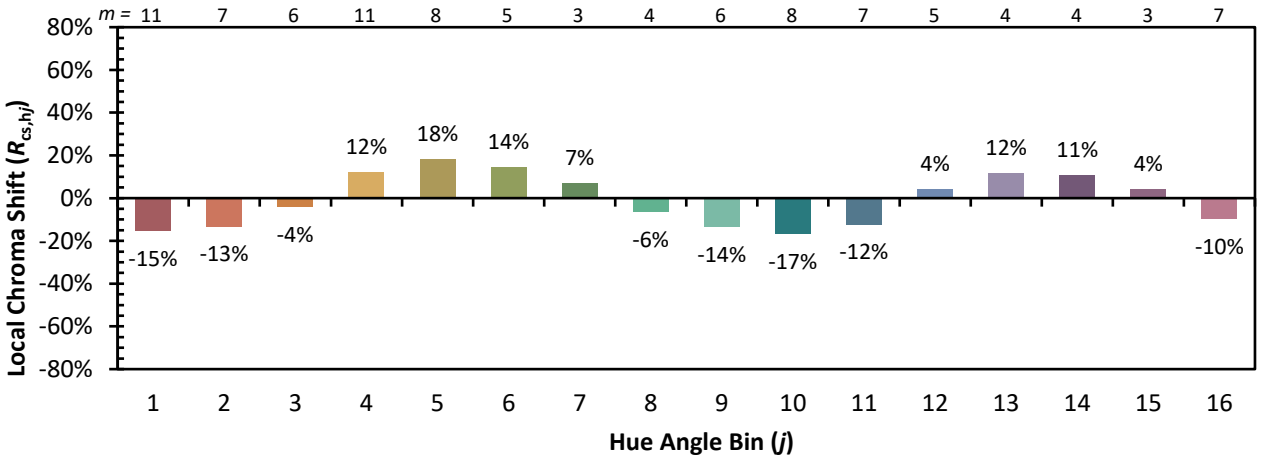
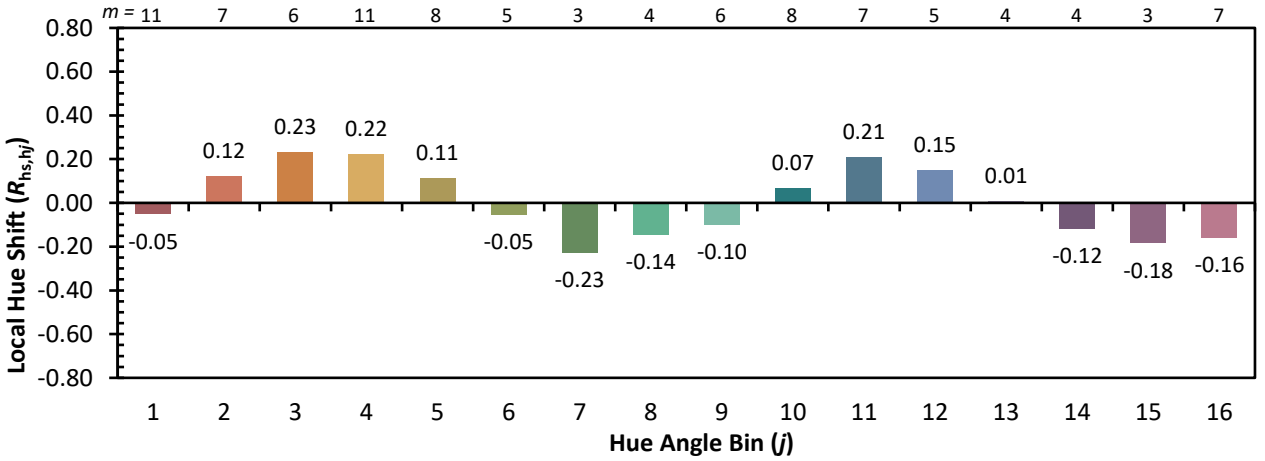
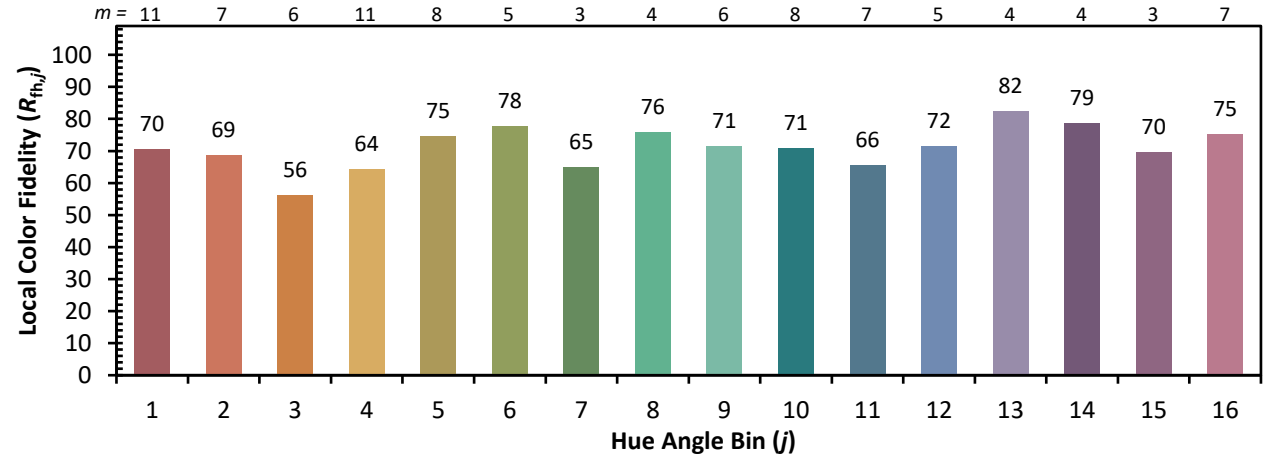
Color Rendition by Hue-Angle Bin







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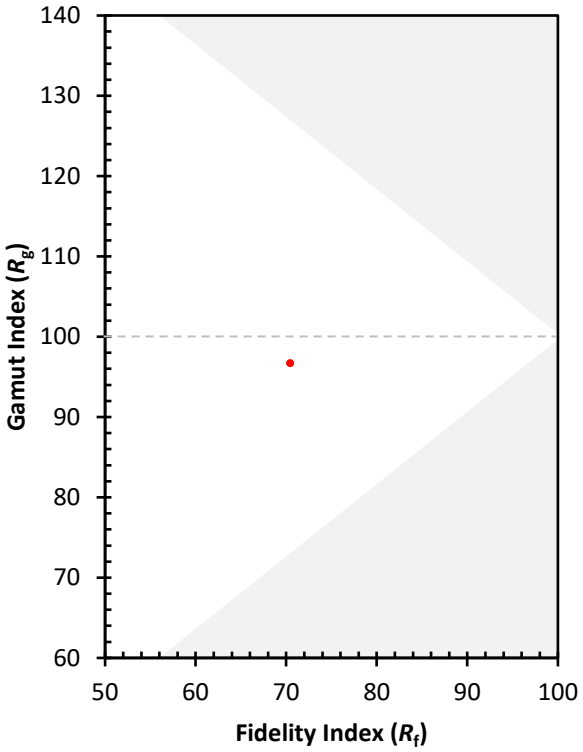
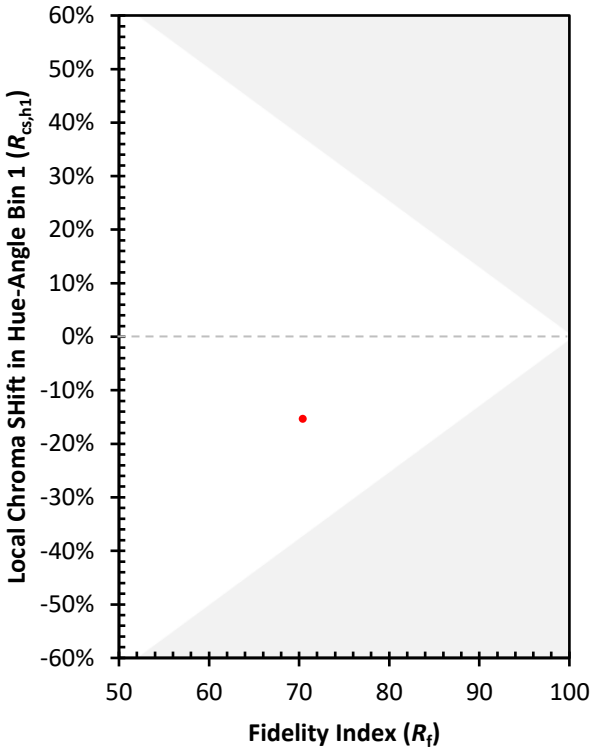
Measure Comparisons





(END OF REPORT)