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: P879618

Luminaire Tested: **MEM2-HSN-VA-160-740-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:	P879618
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HSN-VA-160-740-U-CQ
Description:	EPIC MODERN SHORT HOUSING 160W 70CRI 4000K VISUAL COMFORT 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:	14652.9 lumens
Efficiency:	N/A
Efficacy:	93.9 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G2

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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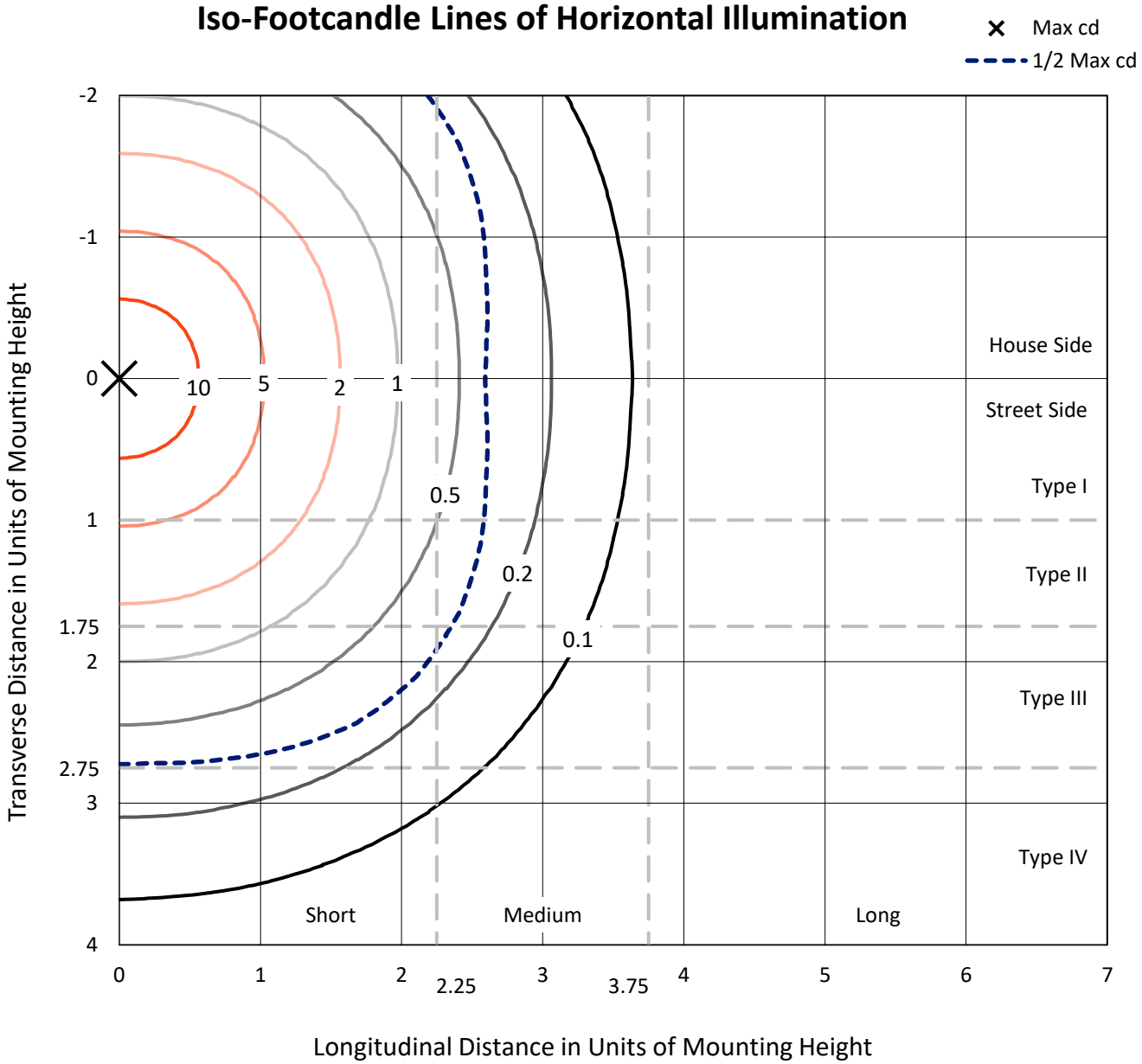
Scaled Data Report

REPORT NUMBER: P879618
CATALOG NUMBER: MEM2-HSN-VA-160-740-U-CQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 16.3 fc
Type V - Short - N/A

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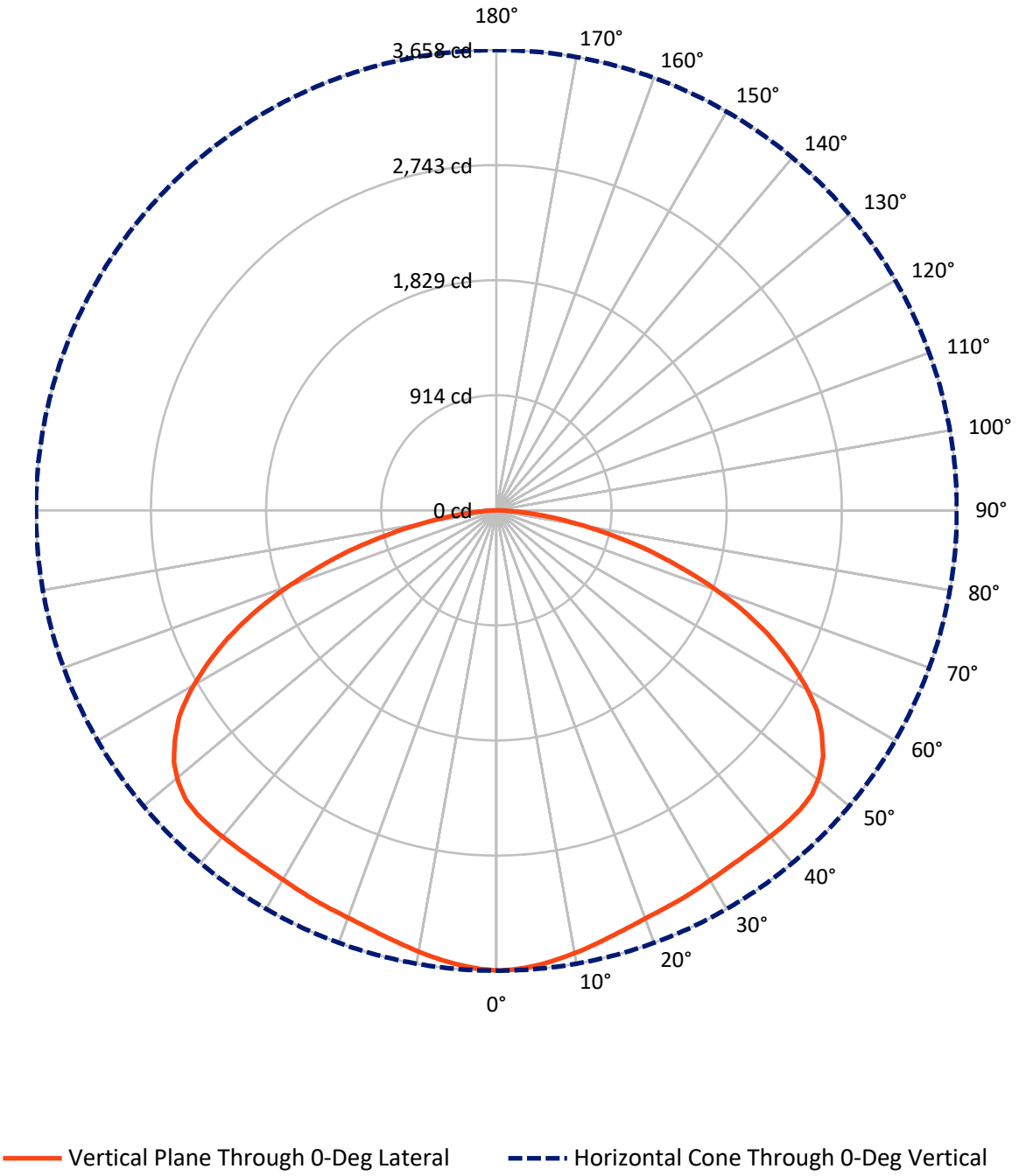
Luminous Intensity Polar Plot



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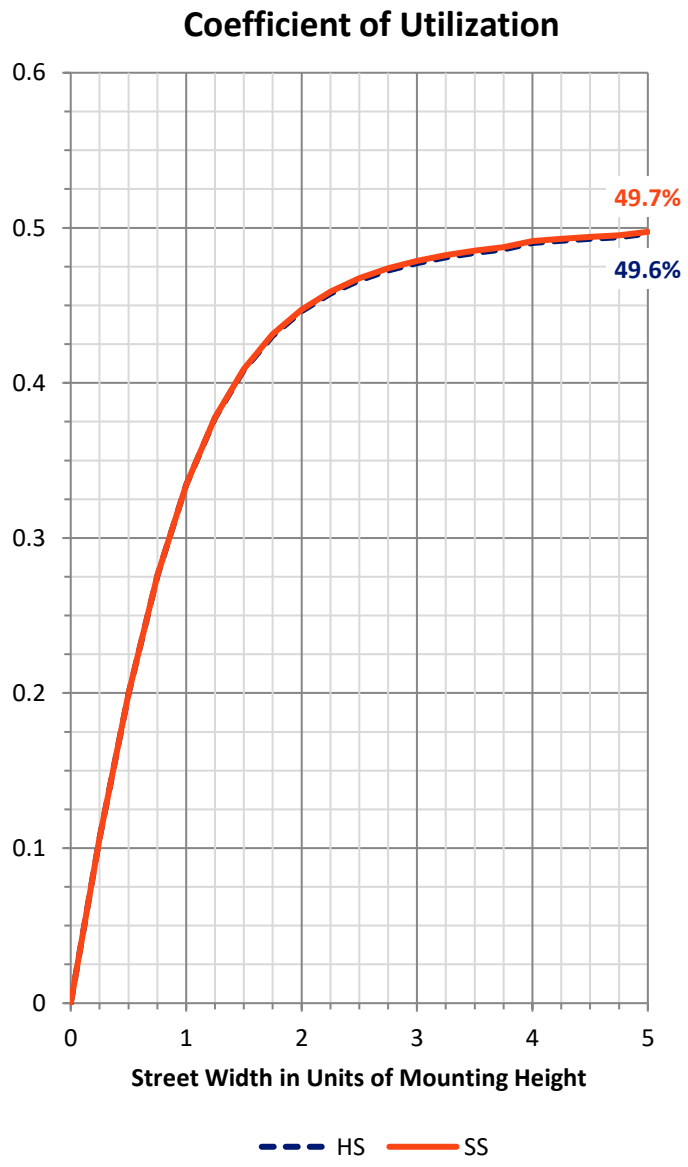
REPORT NUMBER: P879618
CATALOG NUMBER: MEM2-HSN-VA-160-740-U-CQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7326.5	0.0	7326.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	7326.5	0.0	7326.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	14652.9	0.0	14652.9
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	344.7	2.4
10°-20°	994.5	6.8
20°-30°	1592.3	10.9
30°-40°	2156.9	14.7
40°-50°	2663.6	18.2
50°-60°	2861.8	19.5
60°-70°	2406.6	16.4
70°-80°	1343.8	9.2
80°-90°	288.7	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°	14652.9	100.0
0°-180°	14652.9	100.0



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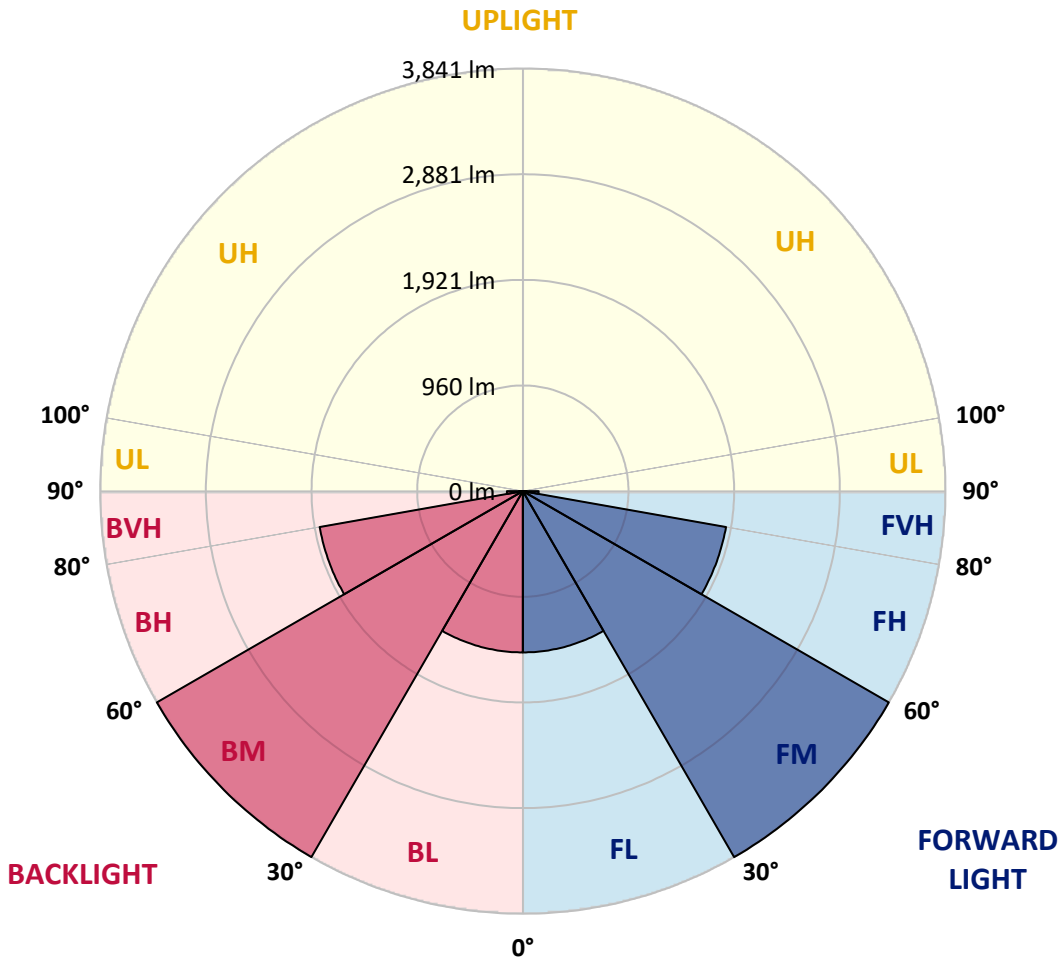
Scaled Data Report

REPORT NUMBER: P879618
CATALOG NUMBER: MEM2-HSN-VA-160-740-U-CQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1465.7	10.0			
FM	(30°-60°)	3841.2	26.2			
FH	(60°-80°)	1875.2	12.8			G2/5000
FVH	(80°-90°)	144.4	1.0			G2/225
BL	(0°-30°)	1465.7	10.0	B3/2500		
BM	(30°-60°)	3841.2	26.2	B3/5000		
BH	(60°-80°)	1875.2	12.8	B3/2500		G2/5000
BVH	(80°-90°)	144.4	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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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5	3657.5
2.5°	3646.6	3650.3	3649.4	3649.4	3649.4	3651.2	3651.2	3651.2	3652.1	3652.1	3653.0
5°	3625.7	3628.5	3628.5	3628.5	3630.3	3631.2	3631.2	3632.1	3633.9	3633.0	3632.1
7.5°	3597.6	3600.3	3600.3	3600.3	3602.1	3603.9	3603.9	3603.0	3605.8	3605.8	3604.9
10°	3567.6	3568.5	3569.4	3571.2	3574.0	3574.9	3574.0	3574.0	3573.1	3574.0	3574.0
12.5°	3532.2	3536.7	3537.6	3539.4	3544.0	3544.9	3544.9	3544.0	3543.1	3543.1	3542.2
15°	3500.4	3502.2	3504.9	3508.6	3514.0	3515.8	3516.7	3514.0	3511.3	3510.4	3511.3
17.5°	3471.3	3474.0	3477.7	3481.3	3488.6	3492.2	3492.2	3488.6	3484.9	3483.1	3483.1
20°	3447.7	3450.4	3455.0	3460.4	3470.4	3474.9	3473.1	3469.5	3463.1	3460.4	3461.3
22.5°	3432.2	3435.9	3439.5	3447.7	3458.6	3464.0	3462.2	3455.9	3448.6	3444.0	3444.0
25°	3419.5	3422.2	3427.7	3438.6	3450.4	3456.8	3454.0	3445.9	3435.9	3430.4	3429.5
27.5°	3405.0	3408.6	3415.9	3430.4	3445.0	3450.4	3448.6	3436.8	3425.0	3417.7	3415.9
30°	3391.4	3395.0	3405.0	3421.3	3439.5	3447.7	3443.1	3430.4	3415.9	3406.8	3405.9
32.5°	3382.3	3386.8	3398.6	3419.5	3441.3	3453.1	3448.6	3433.1	3414.1	3402.3	3401.4
35°	3378.6	3383.2	3400.4	3425.9	3453.1	3469.5	3463.1	3444.0	3420.4	3405.9	3404.1
37.5°	3379.5	3385.0	3406.8	3440.4	3474.9	3492.2	3484.0	3459.5	3429.5	3409.5	3406.8
40°	3383.2	3389.5	3417.7	3459.5	3500.4	3516.7	3504.0	3467.7	3426.8	3398.6	3393.2
42.5°	3387.7	3397.7	3432.2	3481.3	3524.0	3537.6	3514.9	3461.3	3404.1	3367.7	3363.2
45°	3386.8	3395.0	3435.0	3493.1	3538.5	3545.8	3508.6	3441.3	3374.1	3326.9	3323.2
47.5°	3371.4	3379.5	3425.0	3489.5	3534.0	3535.8	3491.3	3414.1	3335.0	3280.5	3275.1
50°	3323.2	3334.1	3385.0	3455.9	3505.8	3506.7	3457.7	3372.3	3280.5	3216.9	3207.8
52.5°	3249.6	3257.8	3316.9	3393.2	3449.5	3456.8	3403.2	3304.1	3199.7	3131.5	3125.2
55°	3135.2	3151.5	3214.2	3294.2	3355.9	3364.1	3310.5	3203.3	3096.1	3018.0	3010.7
57.5°	3002.5	3005.3	3071.6	3158.8	3223.3	3232.4	3174.2	3065.2	2953.5	2880.8	2862.6
60°	2815.4	2826.3	2889.0	2974.4	3042.5	3054.3	2998.9	2893.5	2777.2	2694.6	2693.6
62.5°	2599.2	2611.9	2675.5	2766.3	2835.4	2847.2	2788.1	2685.5	2569.2	2498.3	2472.9
65°	2364.8	2368.4	2432.0	2521.9	2584.6	2591.0	2544.7	2447.4	2327.5	2254.8	2238.5
67.5°	2101.3	2104.9	2154.0	2238.5	2305.7	2314.8	2267.6	2178.5	2070.4	1994.1	1985.9
70°	1809.7	1810.6	1858.8	1927.8	1995.0	2014.1	1971.4	1886.0	1782.4	1721.6	1705.2
72.5°	1502.6	1510.8	1553.5	1625.3	1682.5	1687.0	1652.5	1578.9	1494.5	1444.5	1435.4
75°	1221.9	1216.5	1252.8	1296.4	1340.9	1355.5	1327.3	1277.3	1199.2	1155.6	1164.7
77.5°	917.6	919.4	947.5	987.5	1015.7	1041.1	1009.3	985.7	923.0	873.0	874.9
80°	648.7	646.8	673.2	692.3	724.1	727.7	710.4	678.6	638.7	617.8	615.9
82.5°	410.6	402.5	422.4	447.0	460.6	454.2	457.9	437.0	405.2	394.3	384.3
85°	209.9	208.0	218.9	228.0	238.0	238.0	232.6	216.2	209.9	197.1	193.5
87.5°	71.8	74.5	78.1	75.4	79.9	78.1	76.3	64.5	57.2	53.6	50.0
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

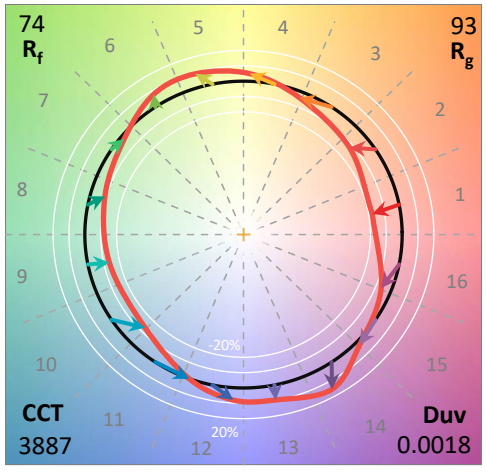
Test Information

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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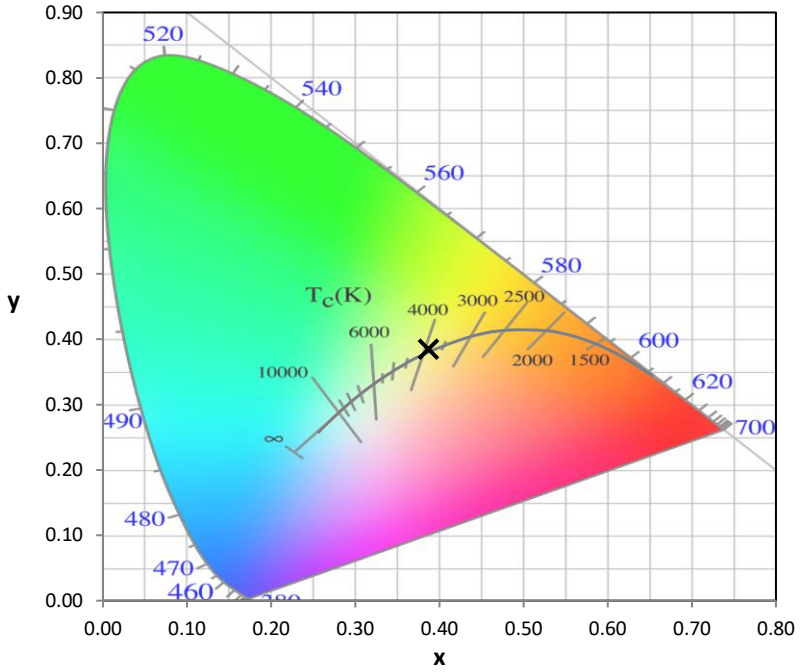
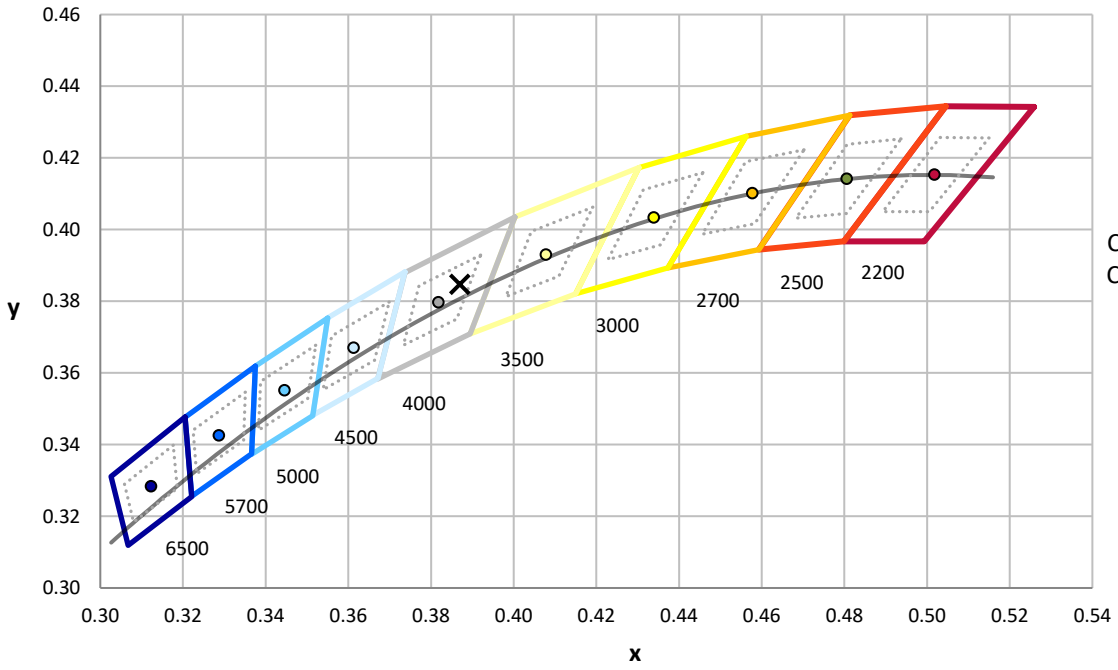
CIE 1931 Chromaticity Diagram



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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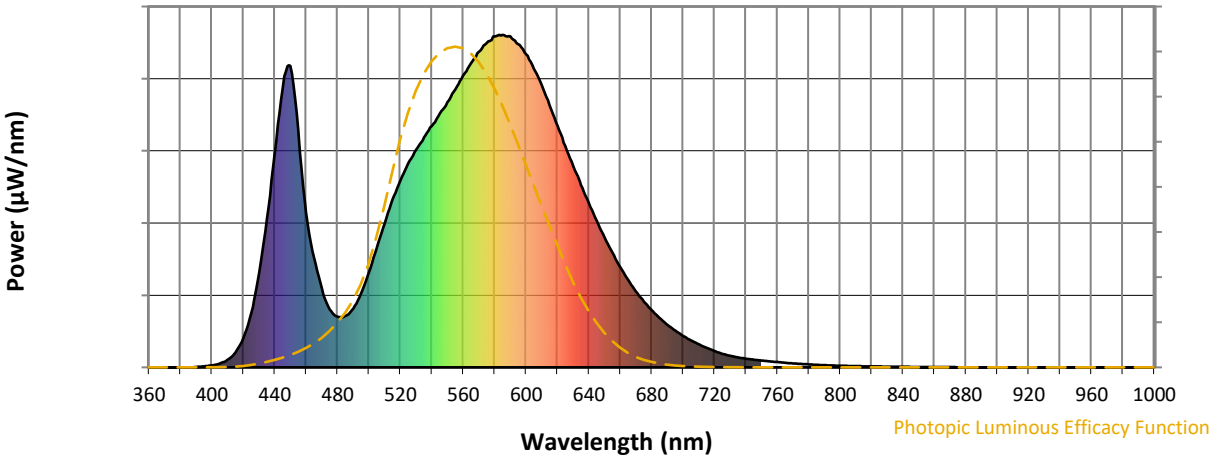
Photopic Flux vs. Wavelength

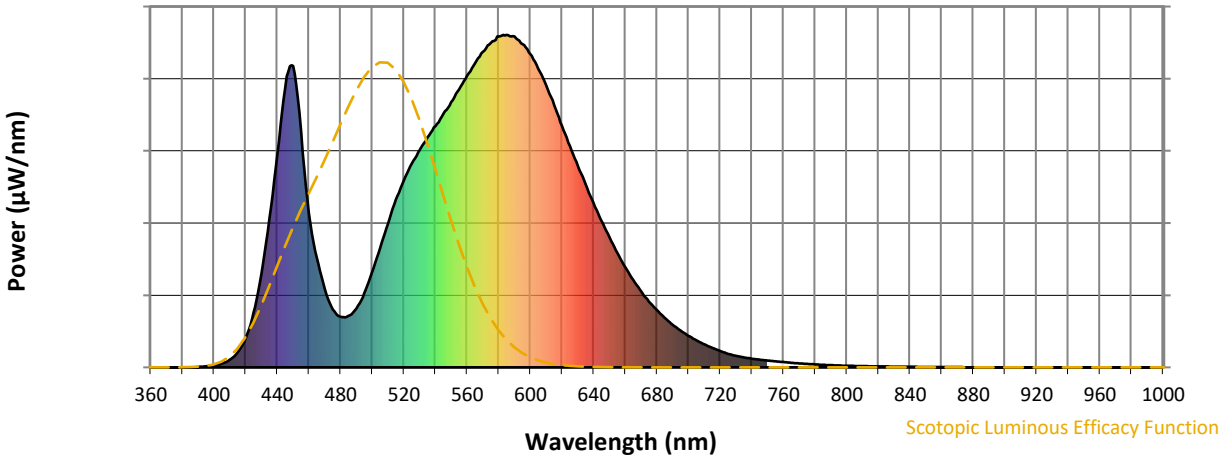


Photopic Lumens: NR

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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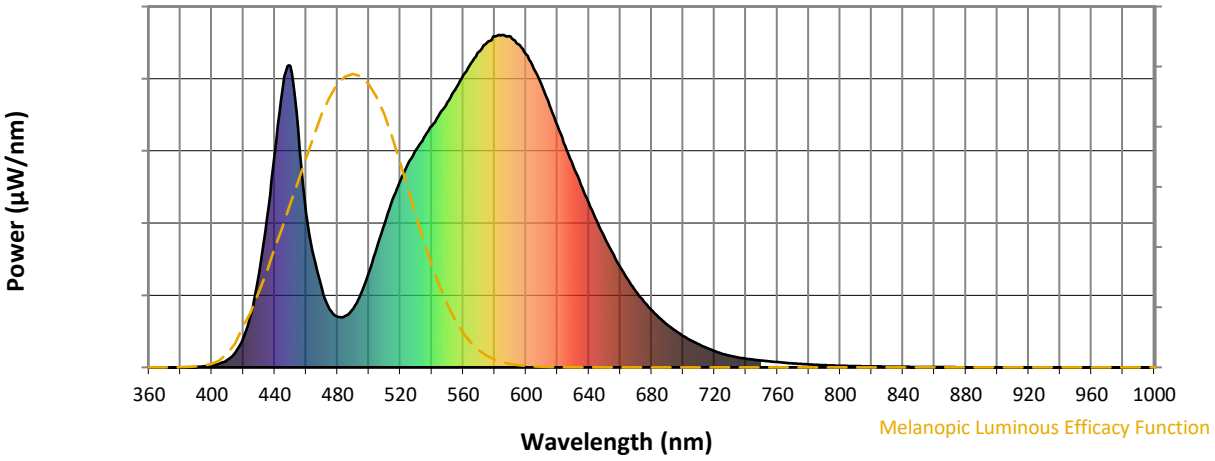
Melanopic Flux vs. Wavelength



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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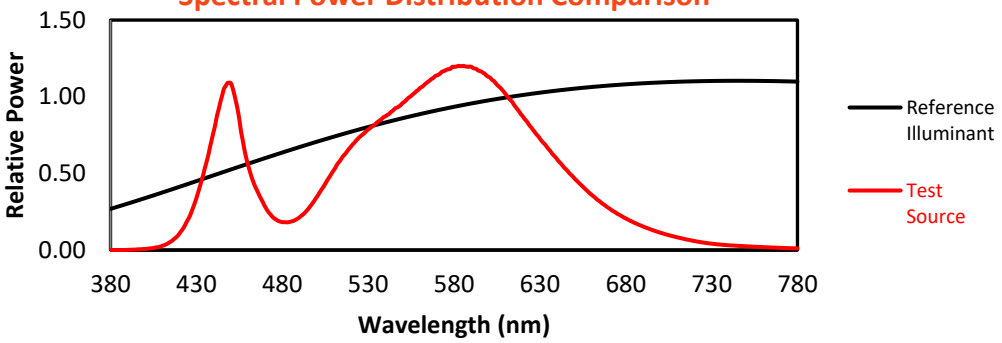
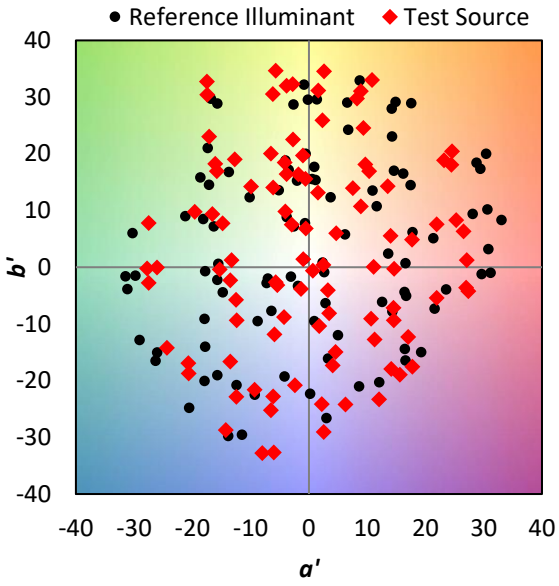
Summary

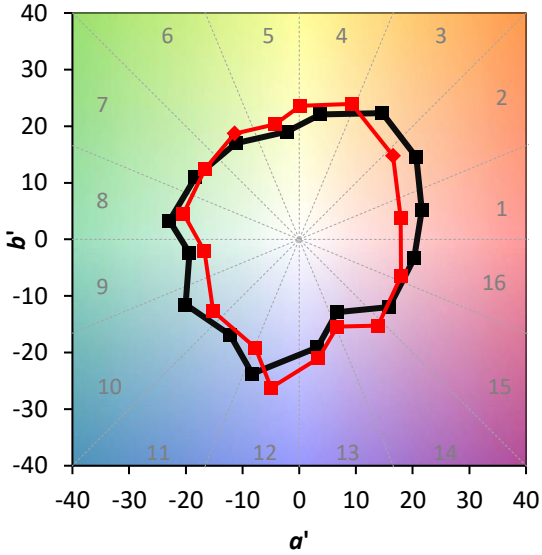
R_f = 74.5
R_g = 93.5
CIE R_a = 71.4
R_9 = -36.8

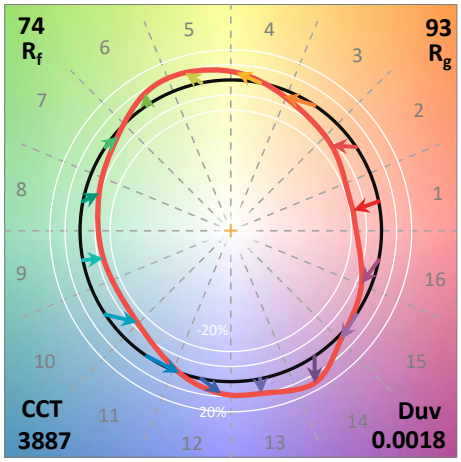
Spectral Power Distribution Comparison

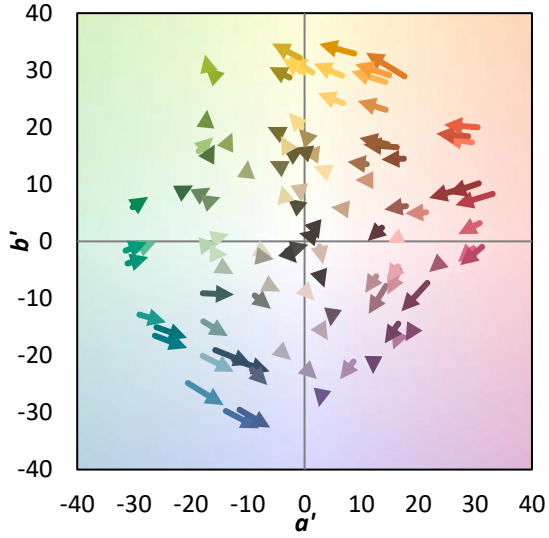


Color Vector Graphics









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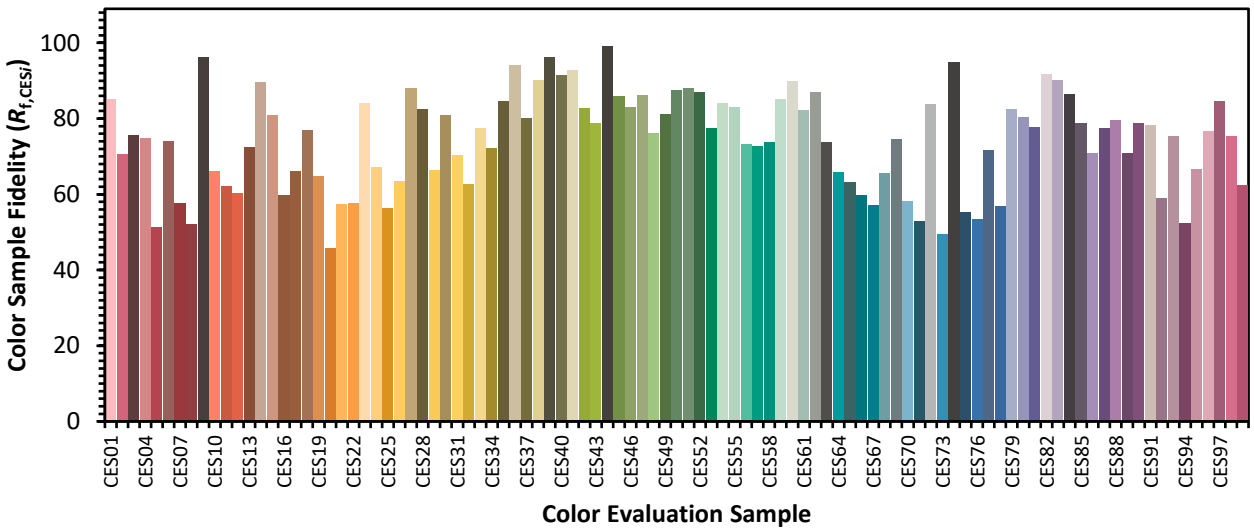
Individual Sample Fidelity Index ($R_{f,i}$)

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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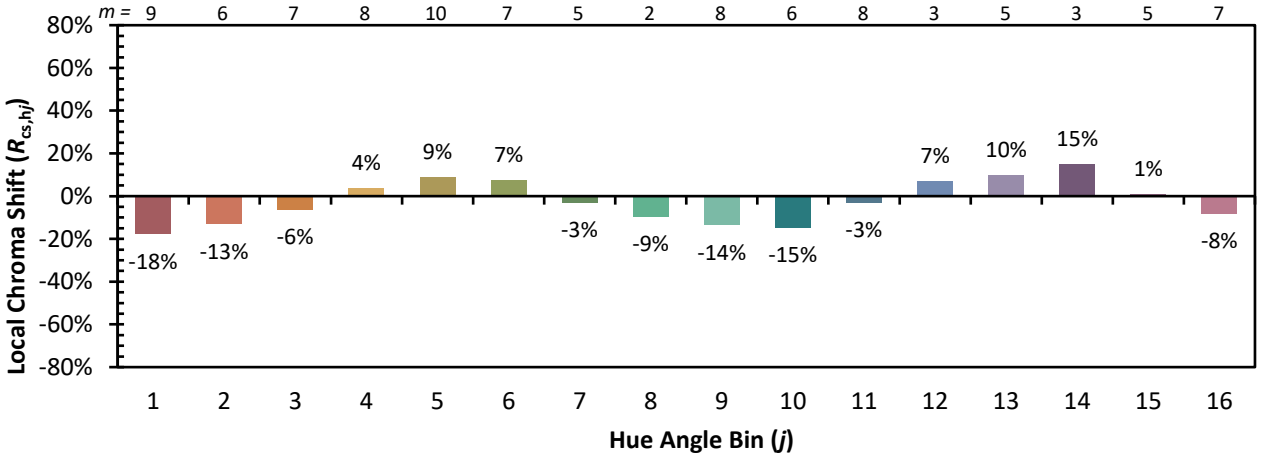
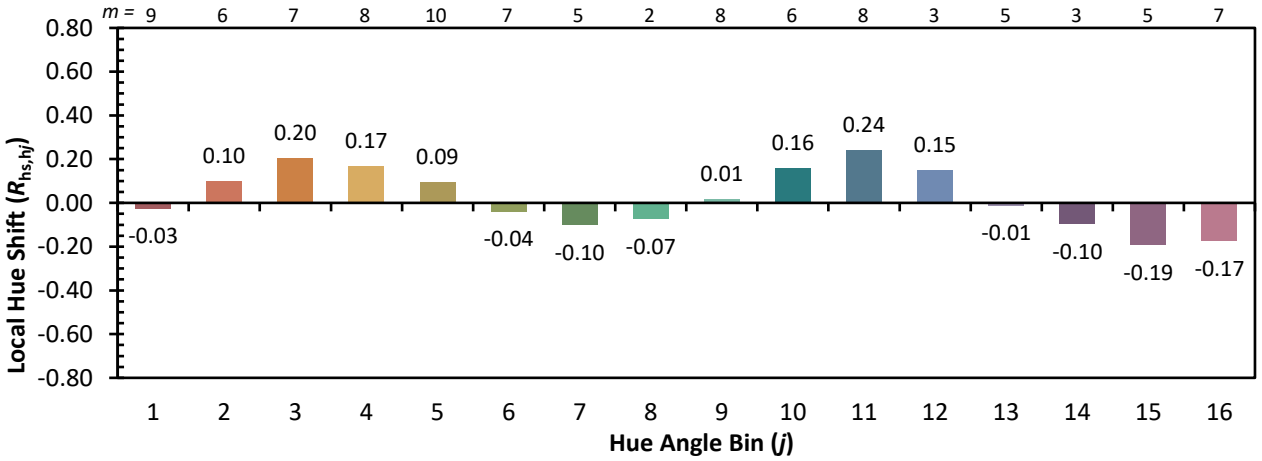
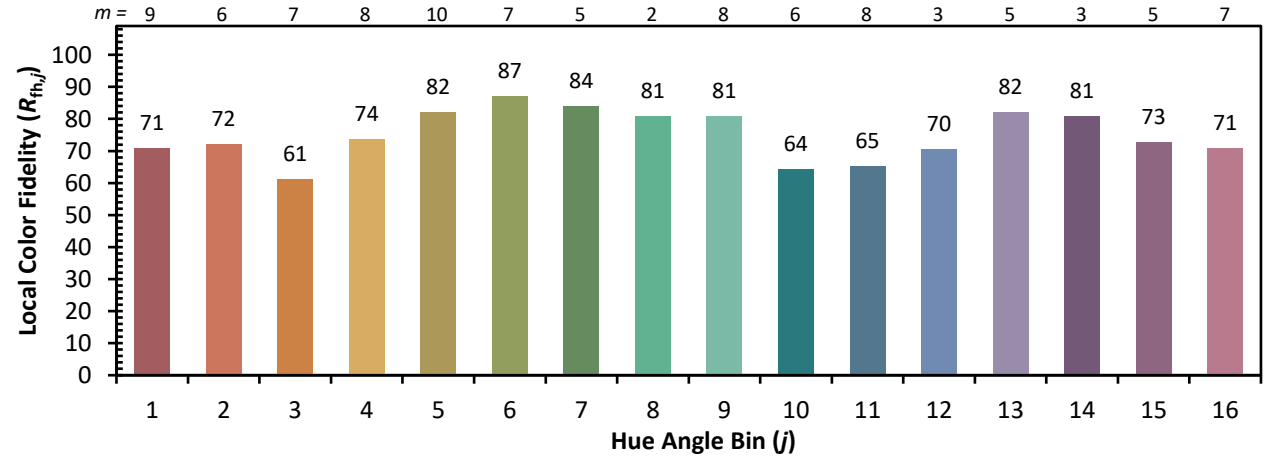
Color Rendition by Hue-Angle Bin







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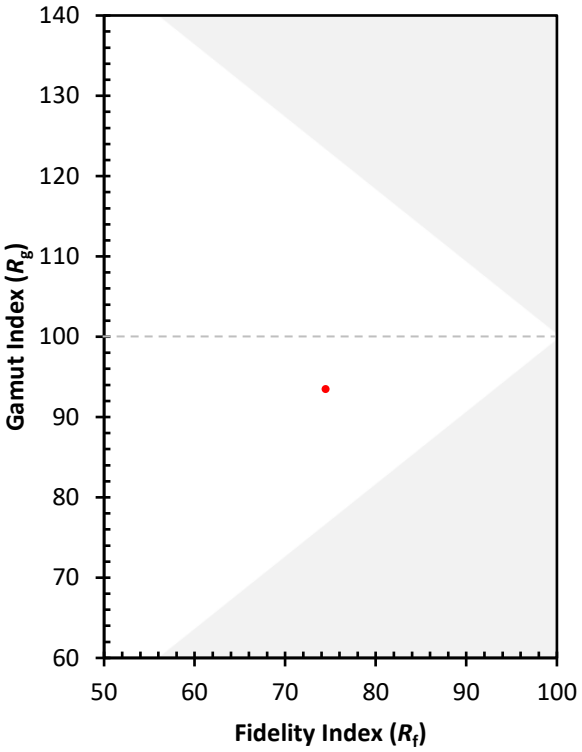
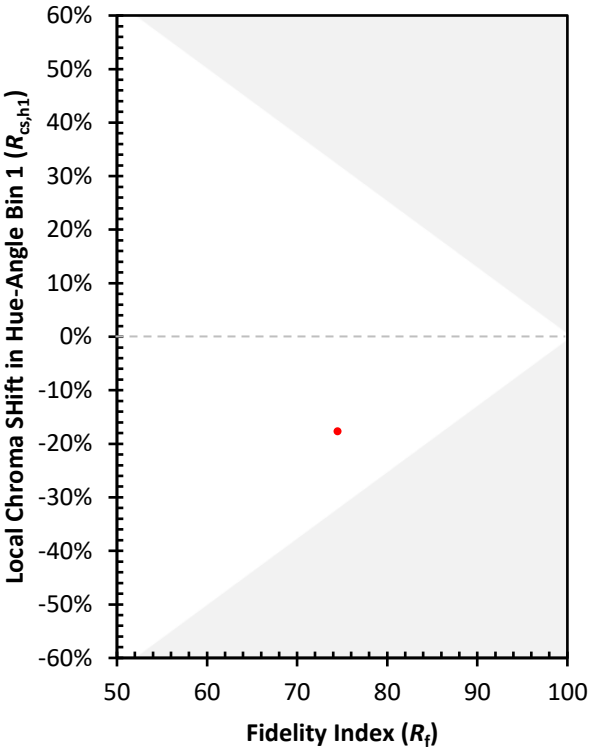
Measure Comparisons





(END OF REPORT)