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: P879696

Luminaire Tested: **EMM2-HTN-VA8-740-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:	P879696
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA8-740-U-MQ
Description:	EPIC MODERN TALL HOUSING 8W 70CRI 4000K WAVESTREAM FIXTURE w/ TYPE V MEDIUM DISTRIBUTION OPTIC
Light Source:	(1) 4000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	18250.3 lumens
Efficiency:	N/A
Efficacy:	117.0 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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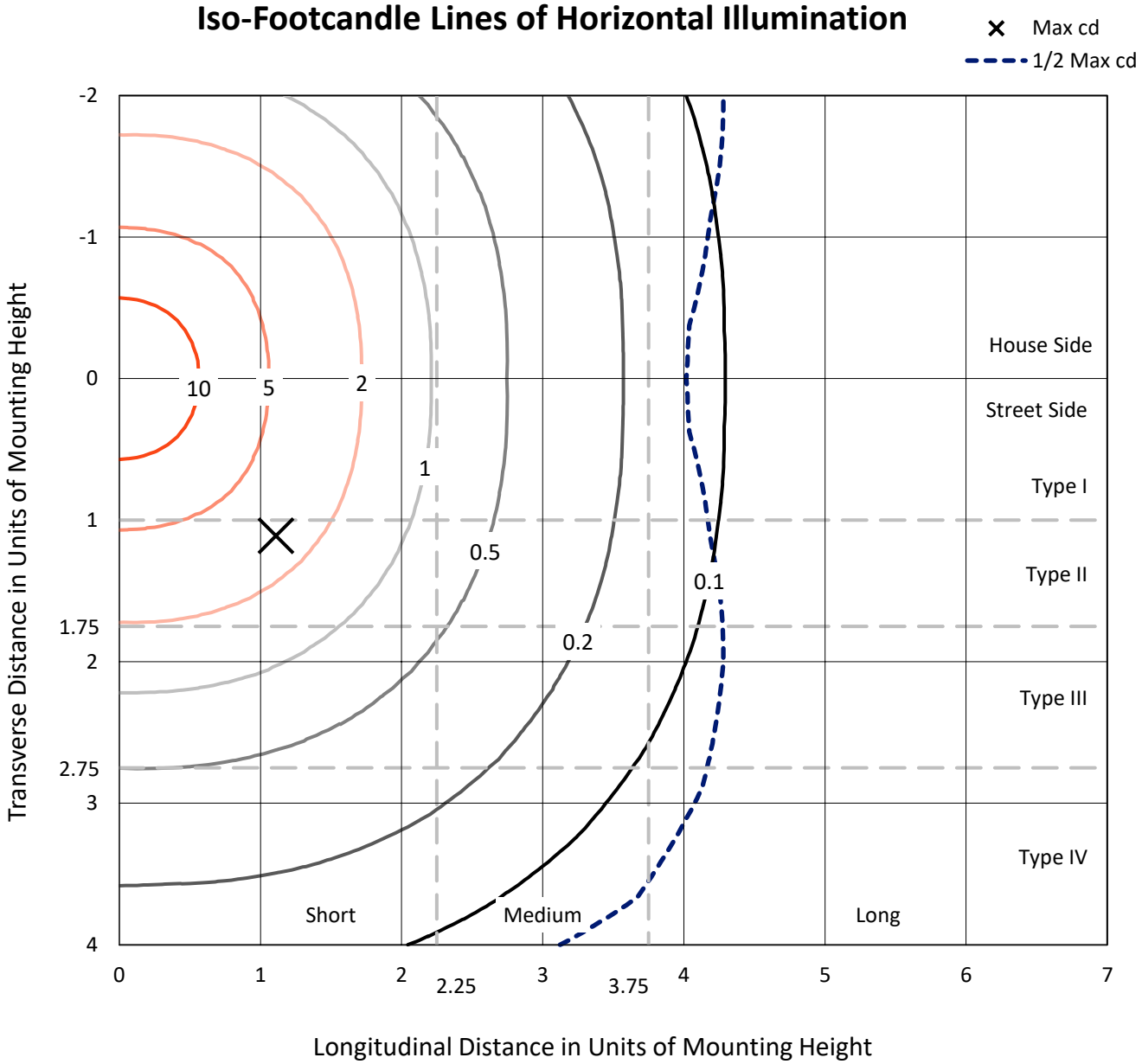
Scaled Data Report

REPORT NUMBER: P879696
CATALOG NUMBER: EMM2-HTN-VA8-740-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 16.4 fc
Type V - Short - N/A

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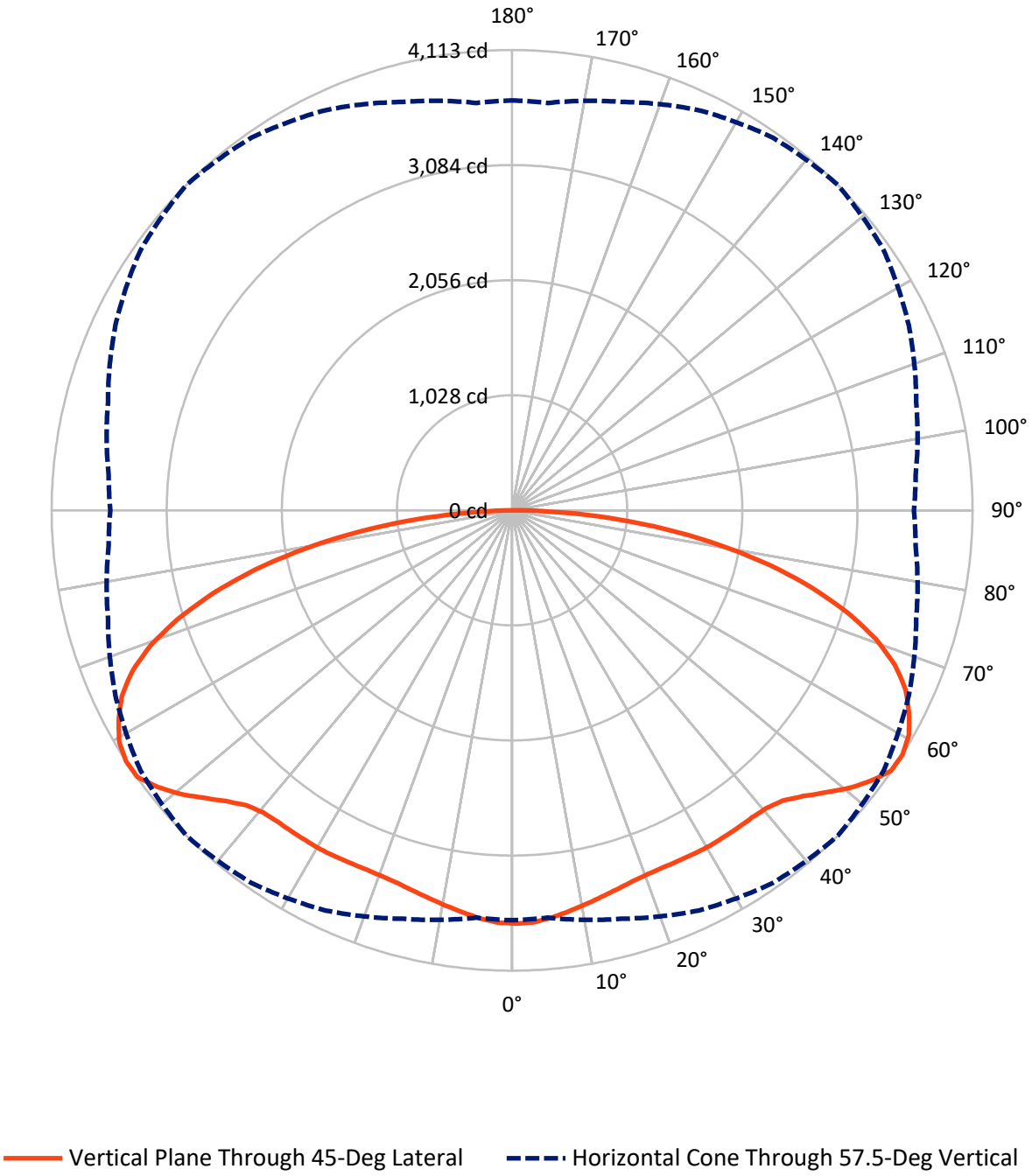
Luminous Intensity Polar Plot



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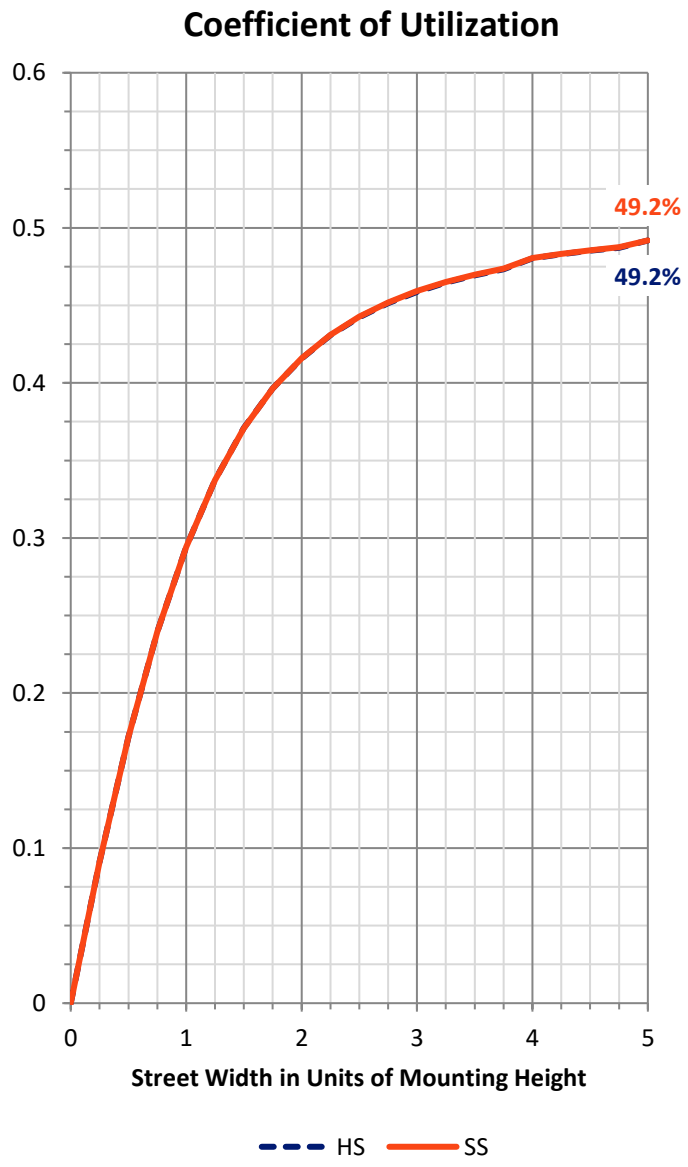
REPORT NUMBER: P879696
CATALOG NUMBER: EMM2-HTN-VA8-740-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	9125.1	0.0	9125.1
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	9125.1	0.0	9125.1
	% Fixture	50.0	0.0	50.0
Total	Lumens	18250.3	0.0	18250.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	346.6	1.9
10°-20°	993.5	5.4
20°-30°	1596.5	8.7
30°-40°	2164.1	11.9
40°-50°	2763.8	15.1
50°-60°	3445.0	18.9
60°-70°	3510.4	19.2
70°-80°	2601.0	14.3
80°-90°	829.4	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°	18250.3	100.0
0°-180°	18250.3	100.0



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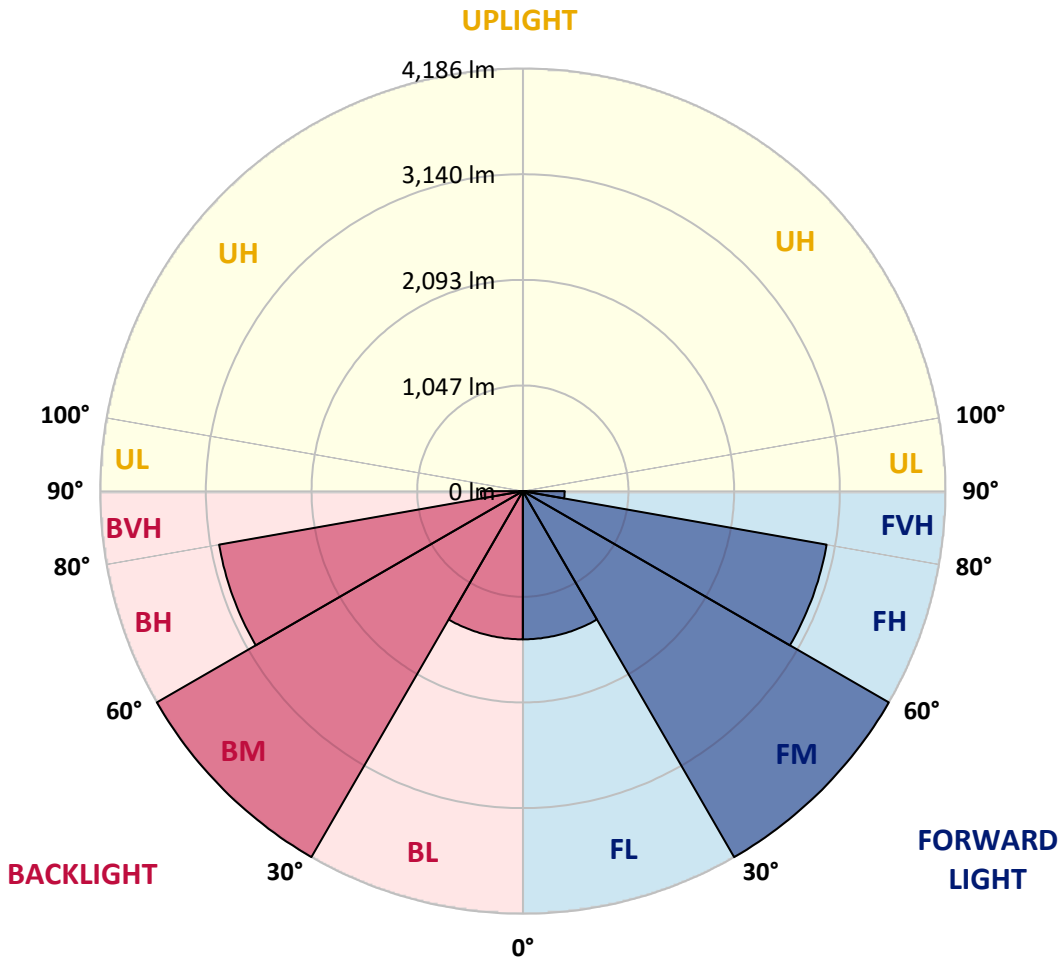
Scaled Data Report

REPORT NUMBER: P879696
CATALOG NUMBER: EMM2-HTN-VA8-740-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1468.3	8.0			
FM	(30°-60°)	4186.5	22.9			
FH	(60°-80°)	3055.7	16.7			G2/5000
FVH	(80°-90°)	414.7	2.3			G3/500
BL	(0°-30°)	1468.3	8.0	B3/2500		
BM	(30°-60°)	4186.5	22.9	B3/5000		
BH	(60°-80°)	3055.7	16.7	B4/5000		G2/5000
BVH	(80°-90°)	414.7	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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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9	3691.9
2.5°	3685.6	3685.6	3684.7	3684.7	3683.8	3684.7	3685.6	3685.6	3684.7	3683.8	3682.8
5°	3659.2	3660.1	3660.1	3658.3	3656.5	3656.5	3656.5	3657.4	3655.6	3656.5	3655.6
7.5°	3621.1	3618.3	3621.1	3620.2	3621.1	3618.3	3622.9	3621.1	3618.3	3620.2	3620.2
10°	3578.4	3579.3	3580.2	3579.3	3582.0	3581.1	3580.2	3579.3	3577.5	3579.3	3576.6
12.5°	3538.4	3539.3	3542.0	3542.9	3545.7	3544.8	3545.7	3543.9	3542.9	3539.3	3538.4
15°	3500.2	3502.1	3505.7	3508.4	3511.1	3512.1	3510.2	3509.3	3504.8	3502.1	3500.2
17.5°	3468.5	3468.5	3473.9	3478.4	3483.0	3483.9	3483.0	3478.4	3472.1	3465.7	3466.6
20°	3446.6	3446.6	3453.0	3460.3	3466.6	3468.5	3465.7	3457.5	3447.6	3443.0	3442.1
22.5°	3436.7	3437.6	3443.9	3452.1	3461.2	3463.0	3457.5	3447.6	3436.7	3428.5	3427.6
25°	3437.6	3435.7	3441.2	3453.9	3463.9	3465.7	3461.2	3447.6	3434.8	3427.6	3424.8
27.5°	3434.8	3435.7	3442.1	3454.8	3467.5	3471.2	3463.9	3447.6	3430.3	3423.9	3422.1
30°	3433.9	3434.8	3436.7	3457.5	3472.1	3478.4	3467.5	3445.7	3431.2	3421.2	3420.3
32.5°	3430.3	3425.8	3438.5	3451.2	3469.4	3477.5	3466.6	3446.6	3423.0	3415.8	3412.1
35°	3415.8	3420.3	3431.2	3453.0	3473.9	3479.4	3466.6	3442.1	3421.2	3406.7	3405.8
37.5°	3413.0	3413.0	3430.3	3453.0	3473.9	3482.1	3471.2	3443.9	3414.9	3396.7	3396.7
40°	3409.4	3408.5	3431.2	3459.4	3486.6	3497.5	3483.0	3449.4	3413.9	3396.7	3387.6
42.5°	3419.4	3424.8	3451.2	3492.1	3526.6	3544.8	3523.9	3486.6	3444.8	3412.1	3411.2
45°	3466.6	3478.4	3505.7	3574.7	3621.1	3642.9	3618.3	3553.8	3488.4	3444.8	3442.1
47.5°	3540.2	3536.6	3601.1	3673.8	3741.9	3765.5	3730.1	3654.7	3560.2	3507.5	3493.9
50°	3591.1	3600.2	3666.5	3771.9	3873.6	3900.9	3849.1	3751.9	3649.2	3576.6	3563.8
52.5°	3660.1	3661.9	3746.4	3880.0	3984.4	4014.4	3964.5	3843.6	3705.6	3614.7	3608.4
55°	3668.3	3698.3	3800.9	3946.3	4071.7	4107.1	4045.3	3916.3	3755.5	3642.9	3632.0
57.5°	3661.9	3652.9	3777.3	3944.5	4062.6	4112.5	4051.7	3909.0	3736.4	3617.4	3588.4
60°	3531.1	3569.3	3706.5	3870.0	4021.7	4071.7	4000.8	3855.4	3666.5	3535.7	3523.9
62.5°	3442.1	3458.5	3583.8	3803.7	3928.1	3978.1	3923.6	3752.8	3551.1	3414.9	3398.5
65°	3303.1	3315.8	3463.0	3643.8	3817.3	3861.8	3791.9	3648.3	3432.1	3282.2	3252.2
67.5°	3081.5	3116.0	3261.3	3491.2	3611.1	3687.4	3624.7	3423.0	3226.8	3079.6	3057.8
70°	2823.5	2869.8	3019.7	3207.7	3407.6	3445.7	3359.4	3222.3	3002.4	2845.3	2807.1
72.5°	2574.5	2578.2	2718.1	2938.8	3065.1	3136.0	3086.9	2906.1	2690.8	2557.3	2533.7
75°	2226.6	2227.5	2381.0	2561.8	2721.7	2768.0	2689.9	2562.7	2371.0	2221.2	2206.6
77.5°	1823.3	1847.8	1984.0	2158.5	2284.7	2352.0	2296.6	2153.0	1974.1	1846.0	1831.4
80°	1429.9	1460.8	1557.1	1713.3	1822.3	1881.4	1821.4	1696.1	1559.8	1434.4	1436.3
82.5°	1009.3	1032.0	1122.8	1229.1	1335.4	1379.0	1353.6	1260.9	1136.5	1026.5	996.6
85°	563.2	592.3	653.2	746.7	817.6	873.9	842.1	769.5	661.3	592.3	590.5
87.5°	165.3	179.0	203.5	266.2	333.4	357.9	350.7	332.5	291.6	261.6	242.6
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

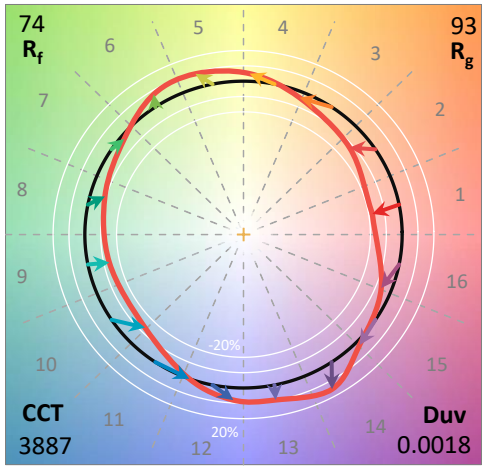
Test Information

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

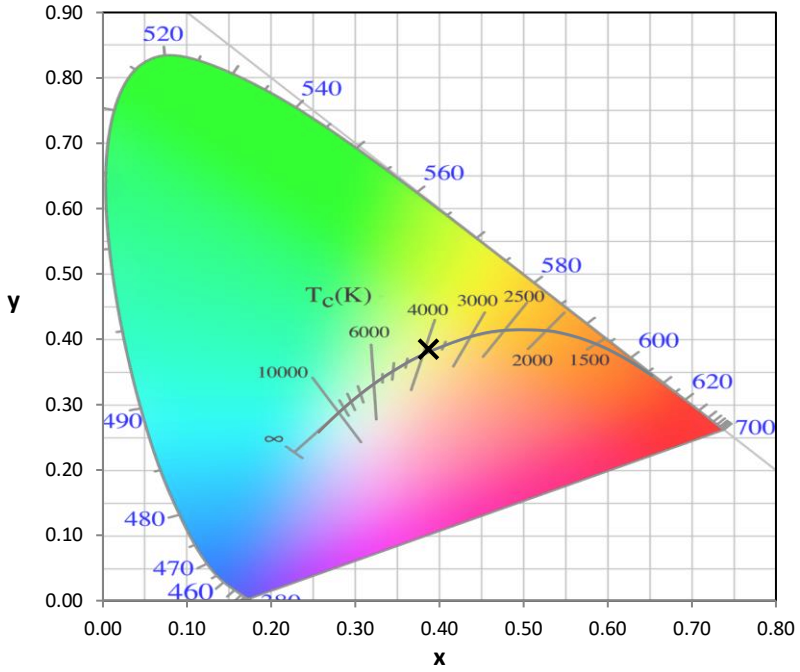
Stabilization Time:	50M
Operation Time:	1H 50M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-9

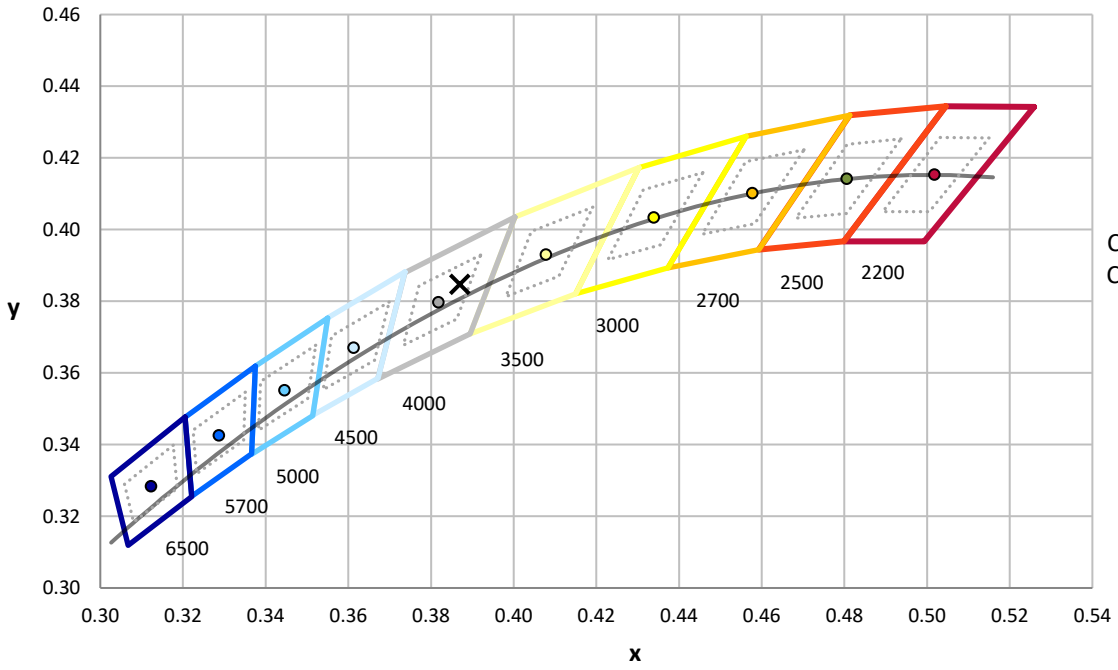
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

REPORT NUMBER: SP1-2407-176-9

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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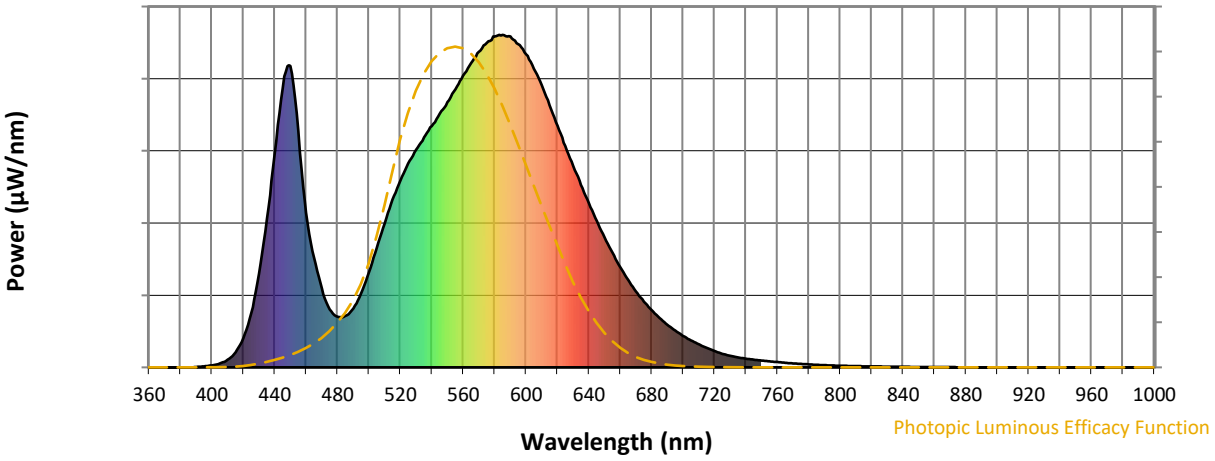
Photopic Flux vs. Wavelength

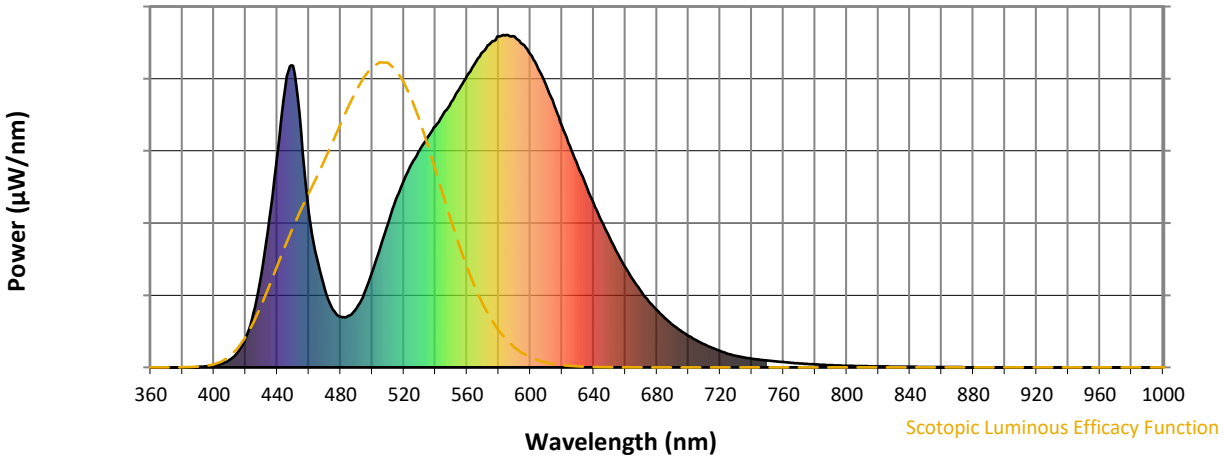


Photopic Lumens: NR

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

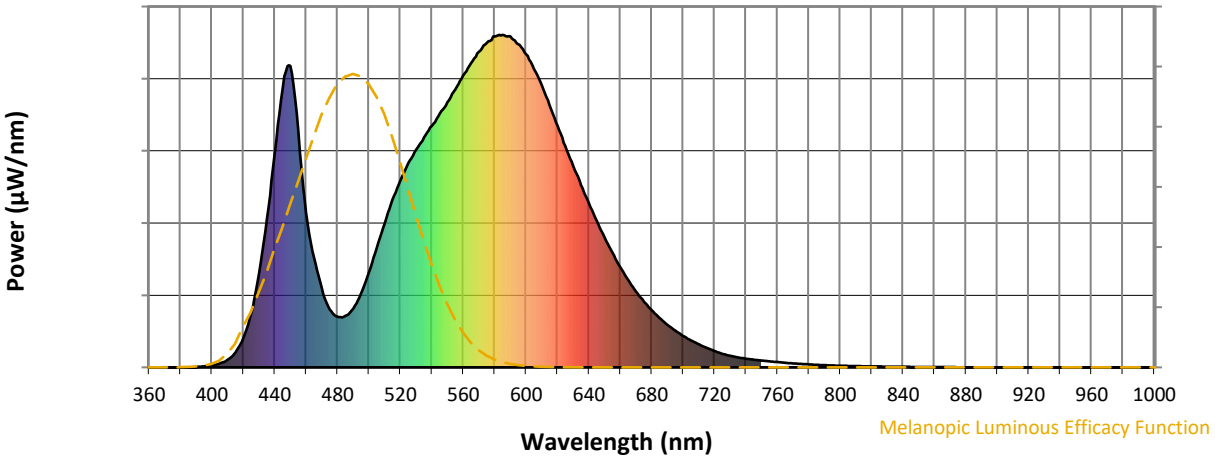


Scotopic Lumens: NR **S/P: 1.49**

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			

REPORT NUMBER: SP1-2407-176-9

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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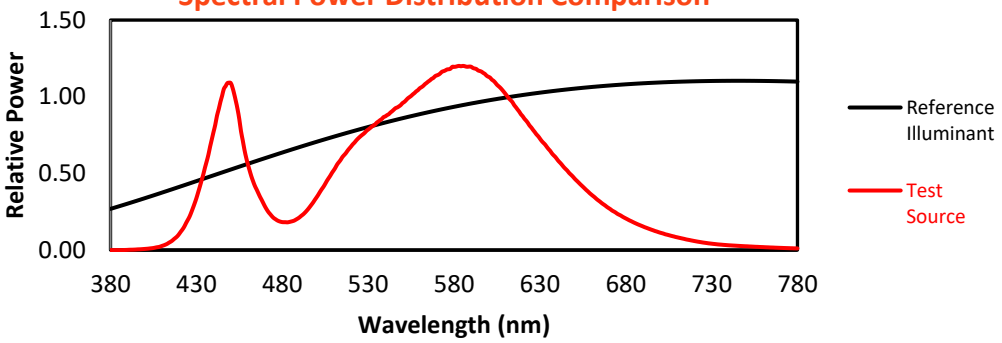
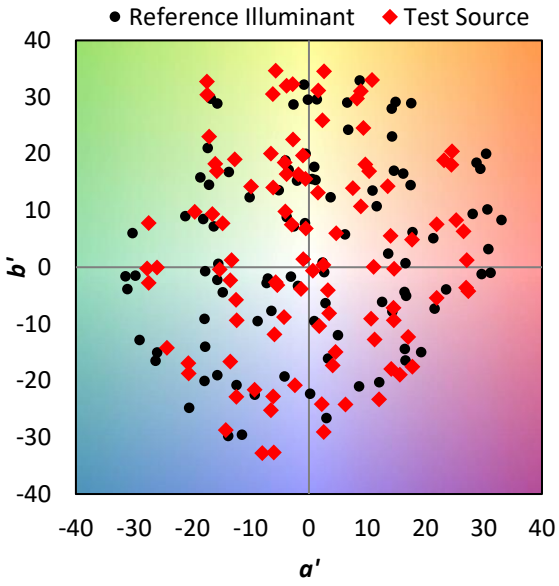
Summary

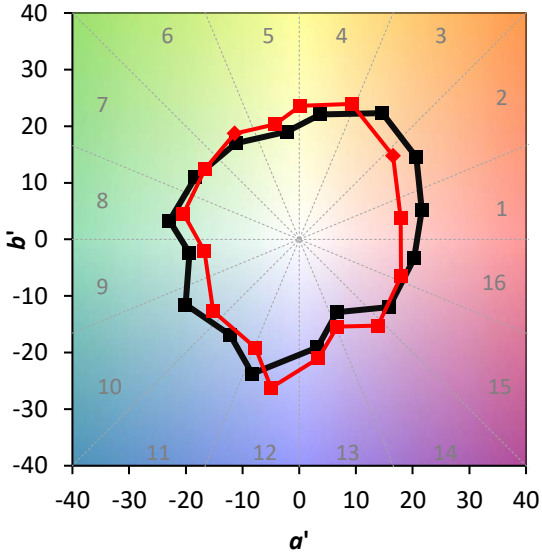
R_f = 74.5
R_g = 93.5
CIE R_a = 71.4
R_9 = -36.8

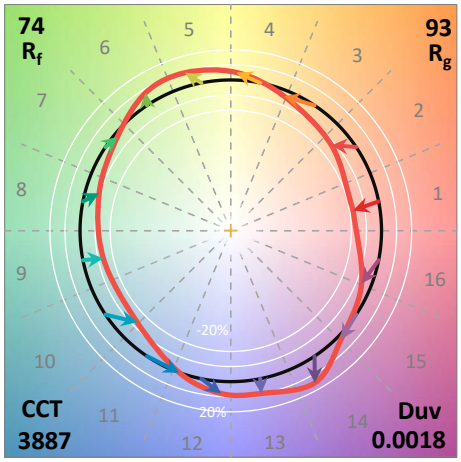
Spectral Power Distribution Comparison

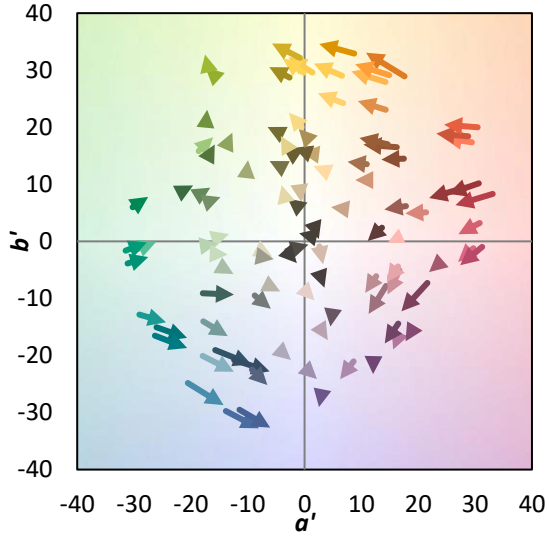


Color Vector Graphics









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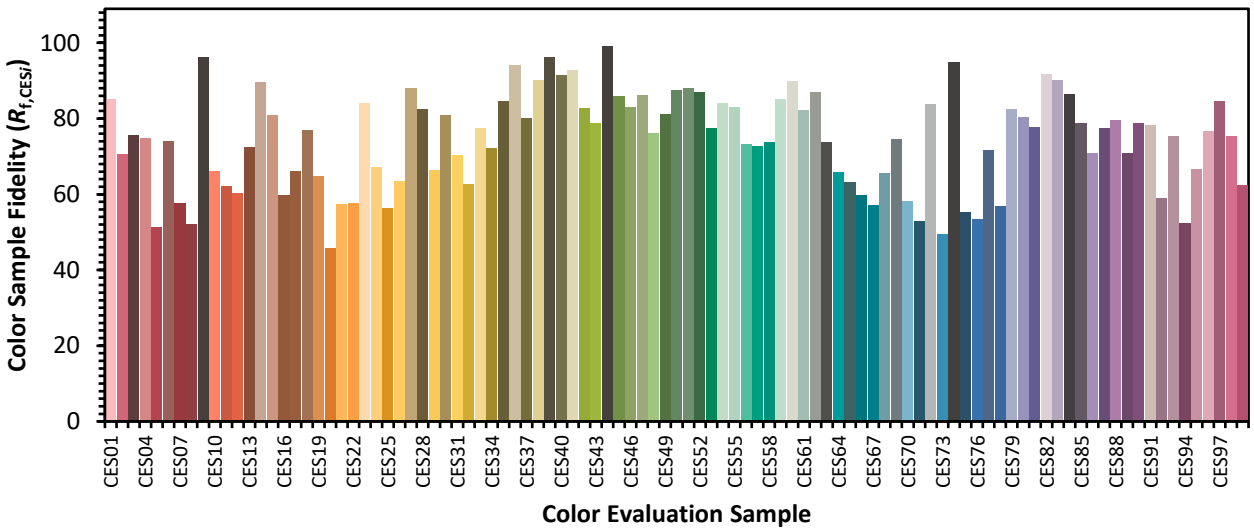
Individual Sample Fidelity Index ($R_{f,i}$)

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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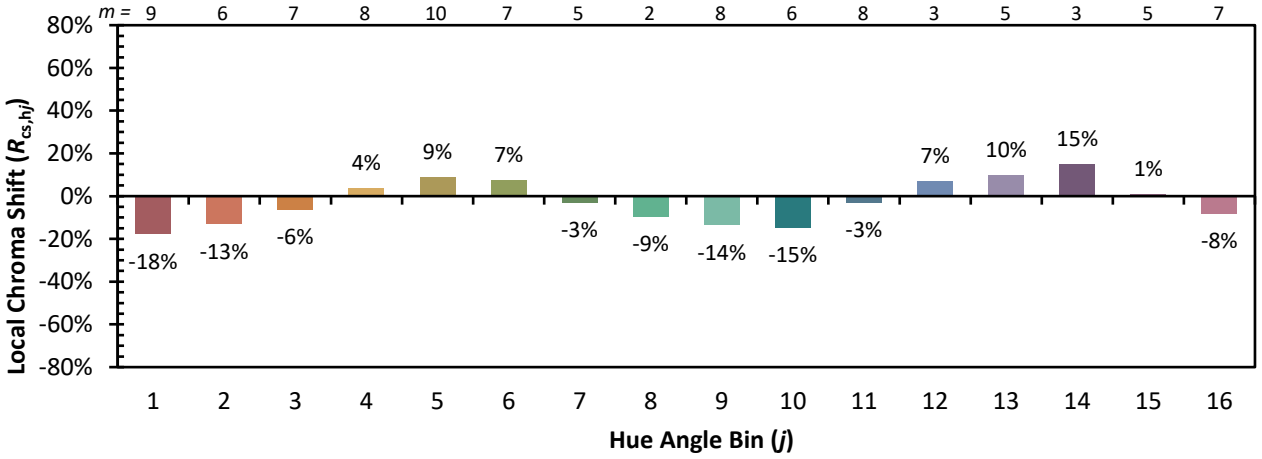
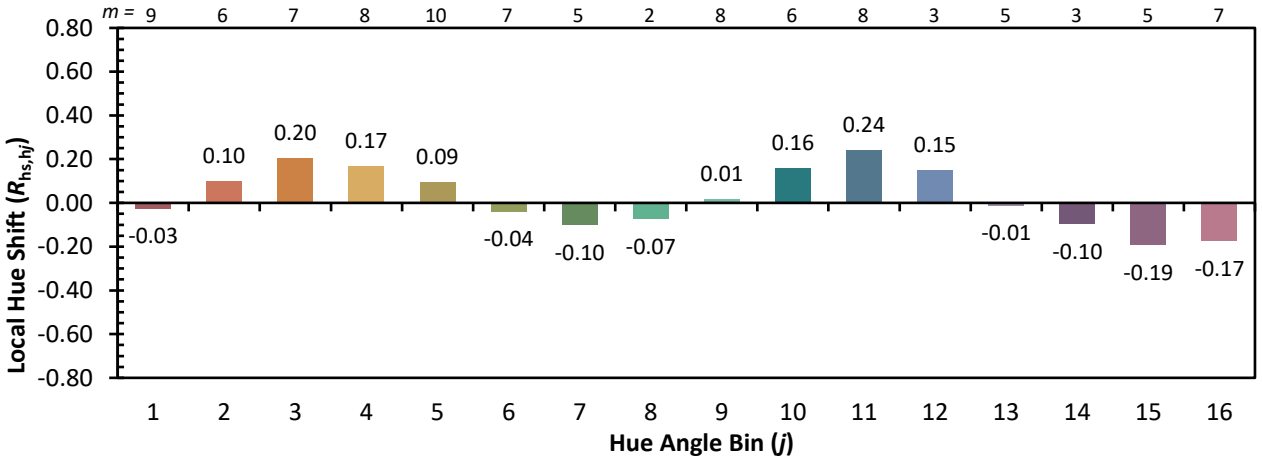
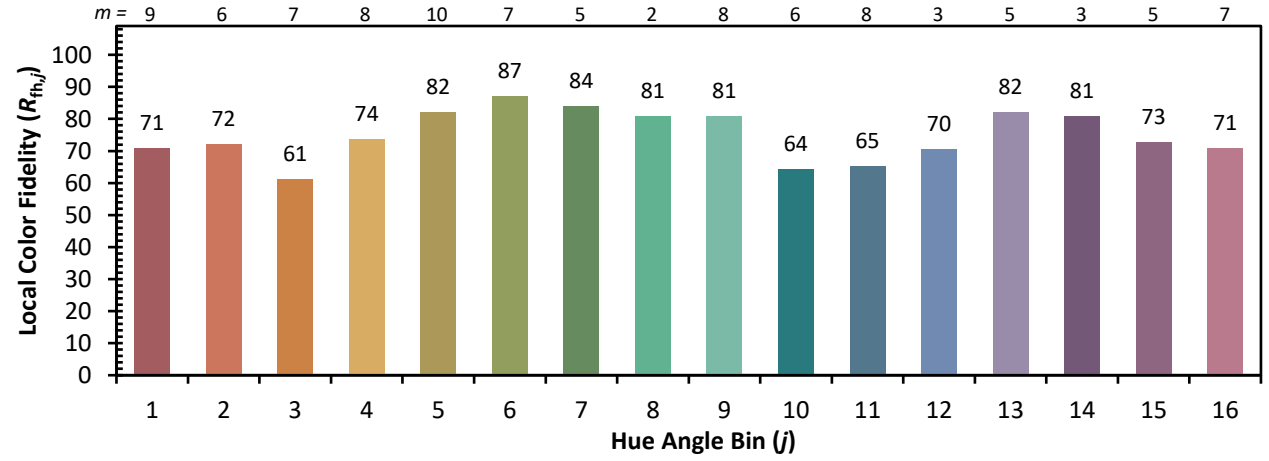
Color Rendition by Hue-Angle Bin







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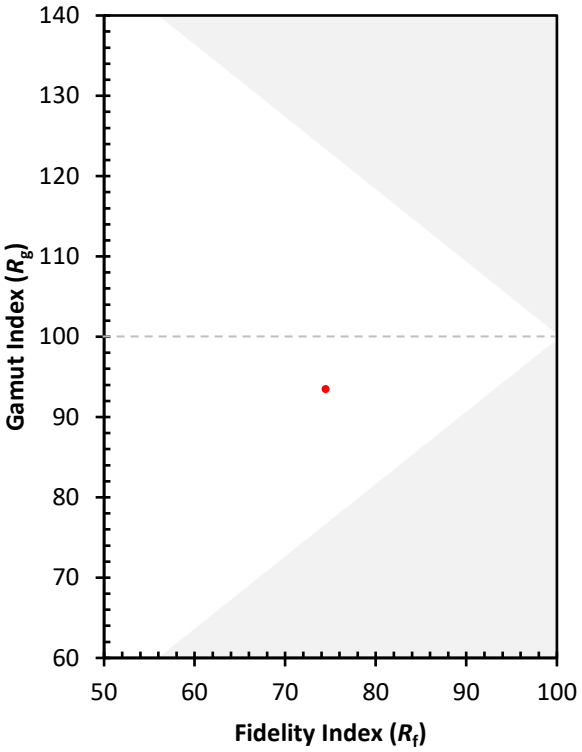
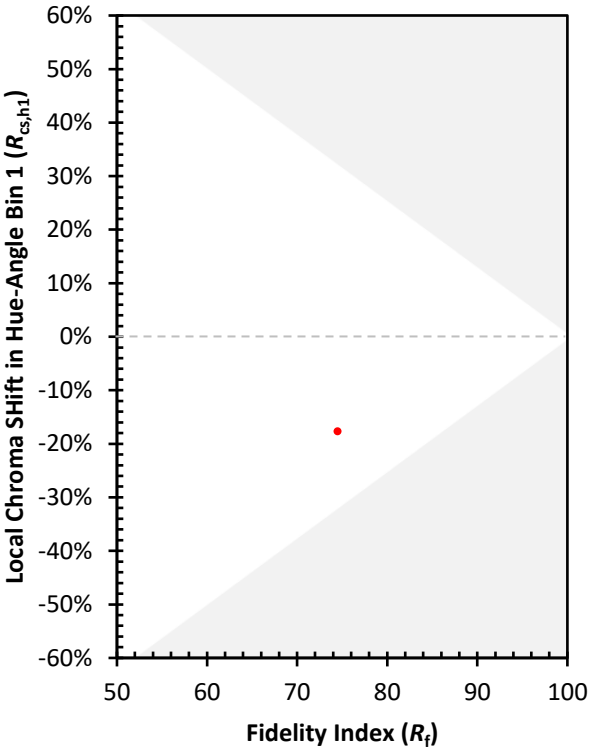
Measure Comparisons





(END OF REPORT)