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: P879717

Luminaire Tested: **EMM2-HSN-VA8-750-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:	P879717
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HSN-VA8-750-U-MQ
Description:	EPIC MODERN SHORT HOUSING 8W 70CRI 5000K WAVESTREAM FIXTURE w/ TYPE V MEDIUM DISTRIBUTION OPTIC
Light Source:	(1) 5000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	18816 lumens
Efficiency:	N/A
Efficacy:	120.6 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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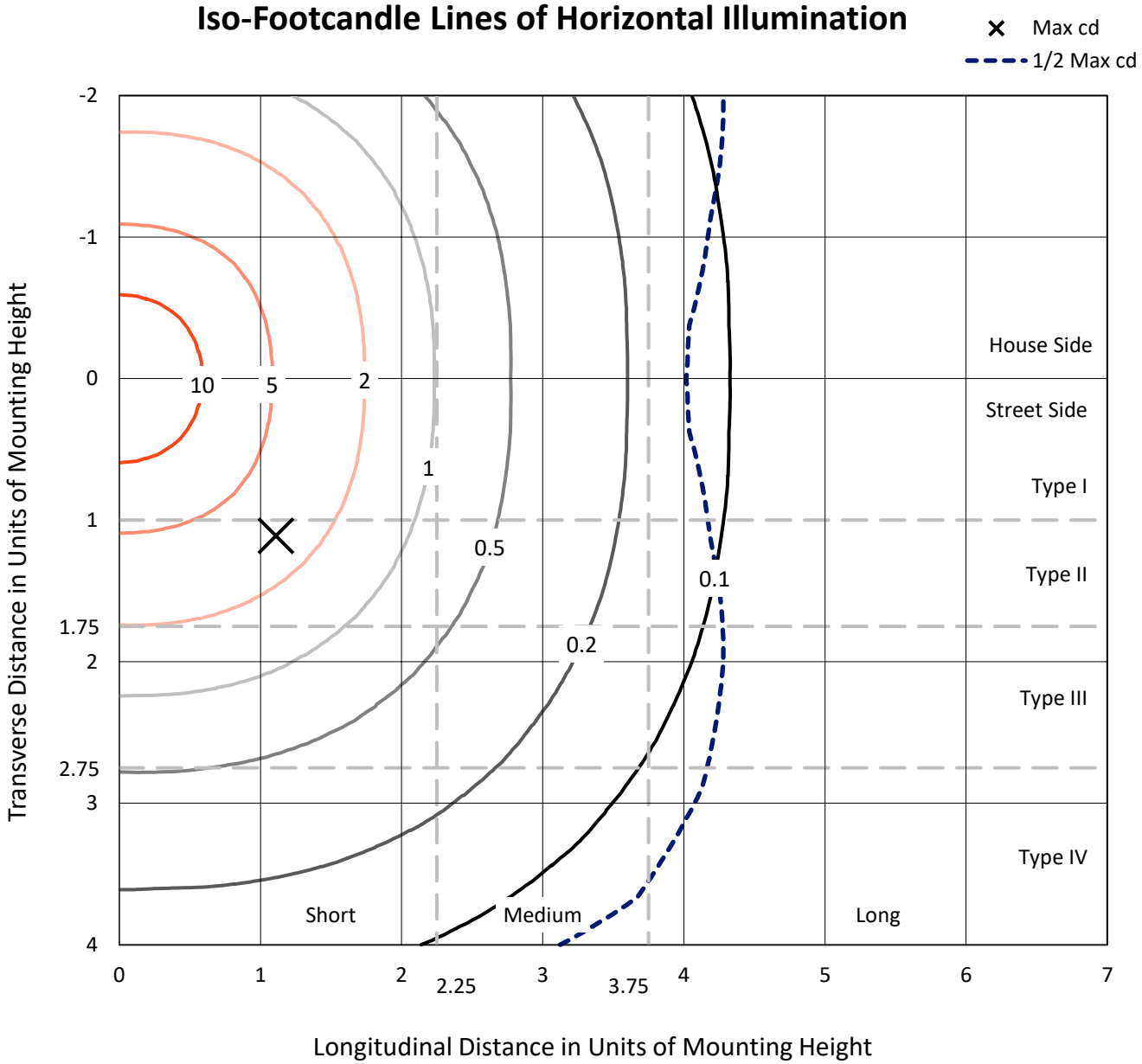
Scaled Data Report

REPORT NUMBER: P879717
CATALOG NUMBER: EMM2-HSN-VA8-750-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 16.9 fc
Type V - Short - N/A

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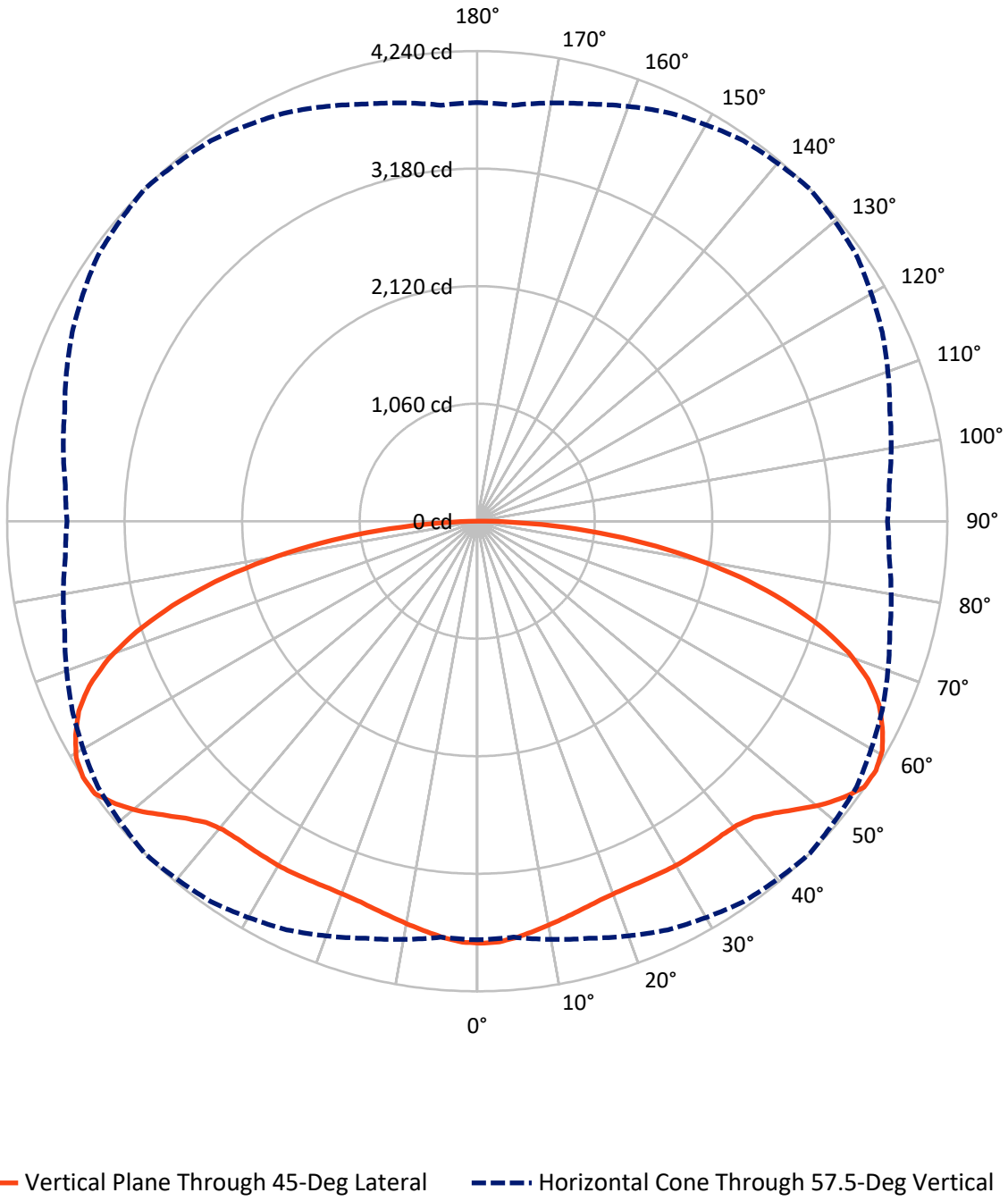
Scaled Data Report

REPORT NUMBER: P879717
CATALOG NUMBER: EMM2-HSN-VA8-750-U-MQ

Luminous Intensity Polar Plot



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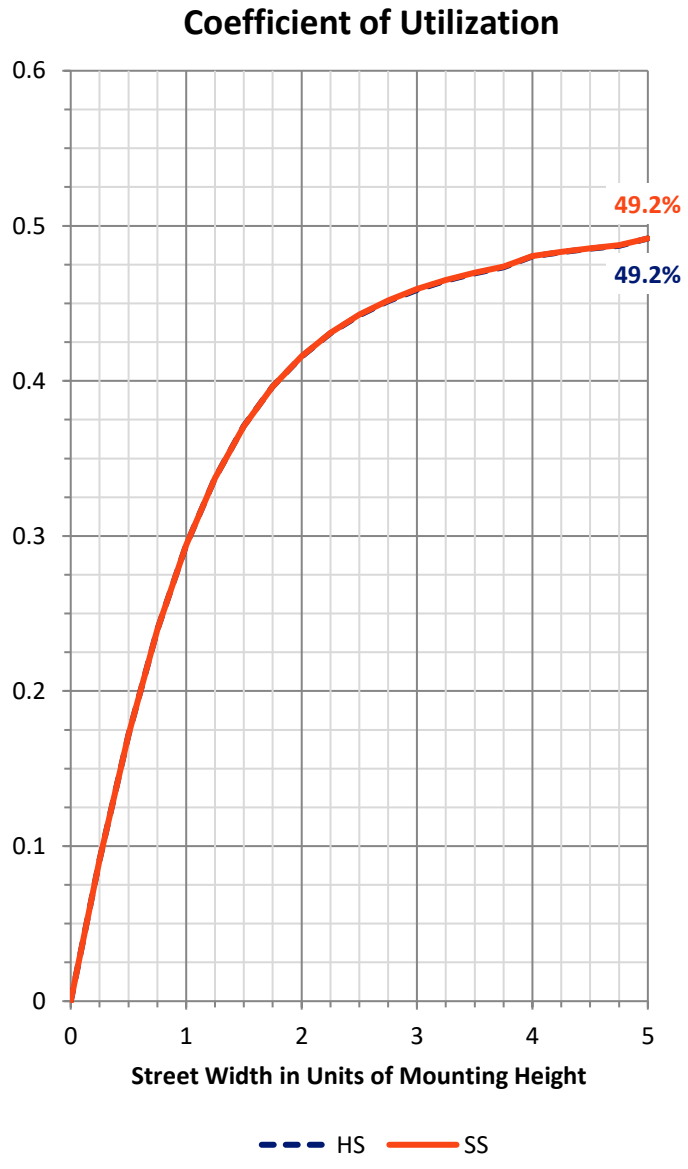
REPORT NUMBER: P879717
CATALOG NUMBER: EMM2-HSN-VA8-750-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	9408.0	0.0	9408.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	9408.0	0.0	9408.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	18816.0	0.0	18816.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	357.3	1.9
10°-20°	1024.3	5.4
20°-30°	1646.0	8.7
30°-40°	2231.2	11.9
40°-50°	2849.5	15.1
50°-60°	3551.8	18.9
60°-70°	3619.2	19.2
70°-80°	2681.7	14.3
80°-90°	855.1	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°	18816.0	100.0
0°-180°	18816.0	100.0



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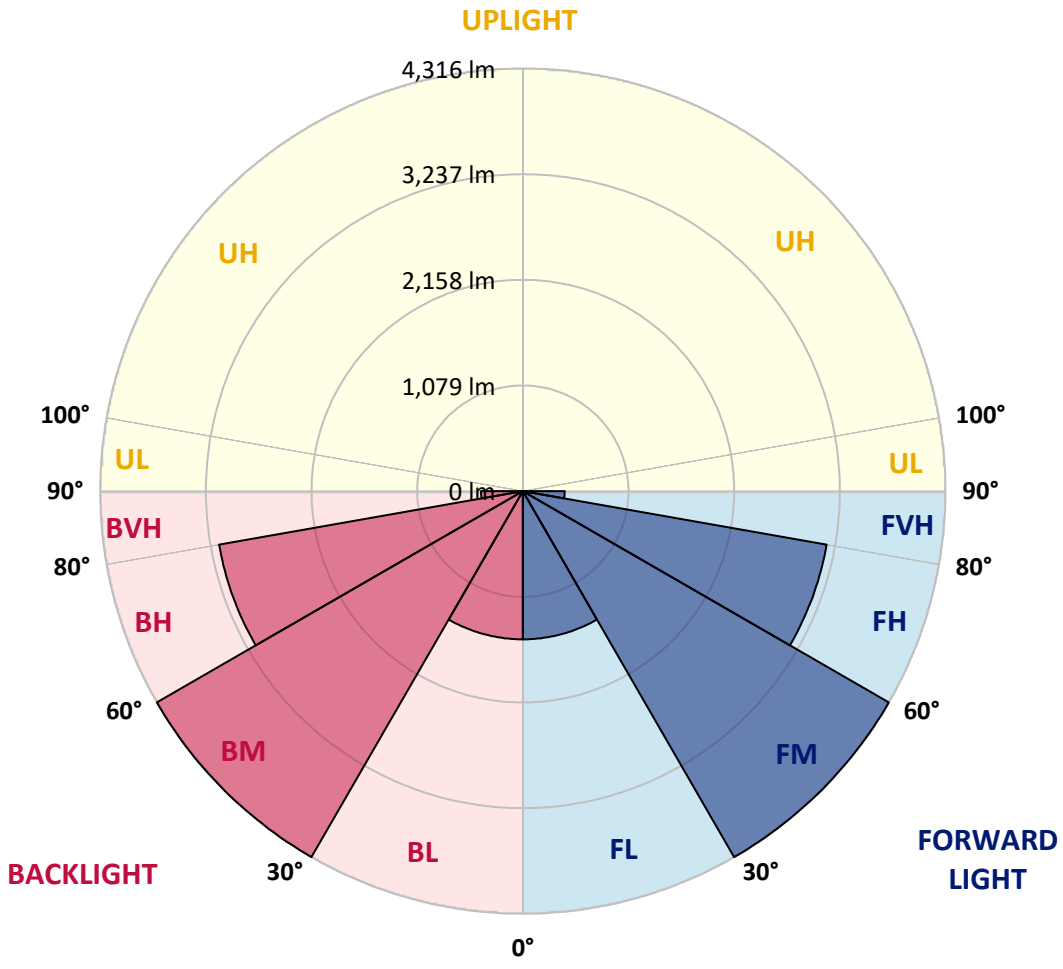
Scaled Data Report

REPORT NUMBER: P879717
CATALOG NUMBER: EMM2-HSN-VA8-750-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1513.8	8.0			
FM	(30°-60°)	4316.3	22.9			
FH	(60°-80°)	3150.4	16.7			G2/5000
FVH	(80°-90°)	427.6	2.3			G3/500
BL	(0°-30°)	1513.8	8.0	B3/2500		
BM	(30°-60°)	4316.3	22.9	B3/5000		
BH	(60°-80°)	3150.4	16.7	B4/5000		G2/5000
BVH	(80°-90°)	427.6	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: P879717
CATALOG NUMBER: EMM2-HSN-VA8-750-U-MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4	3806.4
2.5°	3799.8	3799.8	3798.9	3798.9	3797.9	3798.9	3799.8	3799.8	3798.9	3797.9	3797.0
5°	3772.7	3773.6	3773.6	3771.7	3769.9	3769.9	3769.9	3770.8	3768.9	3769.9	3768.9
7.5°	3733.3	3730.5	3733.3	3732.4	3733.3	3730.5	3735.2	3733.3	3730.5	3732.4	3732.4
10°	3689.3	3690.2	3691.2	3690.2	3693.0	3692.1	3691.2	3690.2	3688.4	3690.2	3687.4
12.5°	3648.1	3649.0	3651.8	3652.8	3655.6	3654.6	3655.6	3653.7	3652.8	3649.0	3648.1
15°	3608.8	3610.6	3614.4	3617.2	3620.0	3620.9	3619.1	3618.1	3613.4	3610.6	3608.8
17.5°	3576.0	3576.0	3581.6	3586.3	3591.0	3591.9	3591.0	3586.3	3579.7	3573.2	3574.1
20°	3553.5	3553.5	3560.0	3567.5	3574.1	3576.0	3573.2	3564.7	3554.4	3549.7	3548.8
22.5°	3543.2	3544.1	3550.7	3559.1	3568.5	3570.4	3564.7	3554.4	3543.2	3534.8	3533.8
25°	3544.1	3542.3	3547.9	3561.0	3571.3	3573.2	3568.5	3554.4	3541.3	3533.8	3531.0
27.5°	3541.3	3542.3	3548.8	3561.9	3575.0	3578.8	3571.3	3554.4	3536.6	3530.1	3528.2
30°	3540.4	3541.3	3543.2	3564.7	3579.7	3586.3	3575.0	3552.6	3537.6	3527.3	3526.3
32.5°	3536.6	3532.0	3545.1	3558.2	3576.9	3585.3	3574.1	3553.5	3529.1	3521.6	3517.9
35°	3521.6	3526.3	3537.6	3560.0	3581.6	3587.2	3574.1	3548.8	3527.3	3512.3	3511.3
37.5°	3518.8	3518.8	3536.6	3560.0	3581.6	3590.0	3578.8	3550.7	3520.7	3502.0	3502.0
40°	3515.1	3514.2	3537.6	3566.6	3594.7	3605.9	3591.0	3556.3	3519.8	3502.0	3492.6
42.5°	3525.4	3531.0	3558.2	3600.3	3635.9	3654.6	3633.1	3594.7	3551.6	3517.9	3517.0
45°	3574.1	3586.3	3614.4	3685.6	3733.3	3755.8	3730.5	3664.0	3596.6	3551.6	3548.8
47.5°	3650.0	3646.2	3712.7	3787.6	3857.9	3882.2	3845.7	3768.0	3670.6	3616.2	3602.2
50°	3702.4	3711.8	3780.2	3888.8	3993.7	4021.8	3968.4	3868.2	3762.4	3687.4	3674.3
52.5°	3773.6	3775.5	3862.6	4000.3	4108.0	4138.9	4087.4	3962.8	3820.4	3726.8	3720.2
55°	3782.0	3812.9	3918.8	4068.6	4197.9	4234.4	4170.7	4037.7	3871.9	3755.8	3744.6
57.5°	3775.5	3766.1	3894.4	4066.8	4188.5	4240.0	4177.3	4030.2	3852.3	3729.6	3699.6
60°	3640.6	3679.9	3821.4	3990.0	4146.4	4197.9	4124.8	3975.0	3780.2	3645.3	3633.1
62.5°	3548.8	3565.7	3694.9	3921.6	4049.9	4101.4	4045.2	3869.1	3661.2	3520.7	3503.9
65°	3405.5	3418.6	3570.4	3756.7	3935.6	3981.5	3909.4	3761.4	3538.5	3384.0	3353.1
67.5°	3177.0	3212.6	3362.4	3599.4	3723.0	3801.7	3737.1	3529.1	3326.8	3175.1	3152.6
70°	2911.0	2958.7	3113.3	3307.2	3513.2	3552.6	3463.6	3322.2	3095.5	2933.5	2894.1
72.5°	2654.3	2658.1	2802.3	3029.9	3160.1	3233.2	3182.6	2996.2	2774.2	2636.6	2612.2
75°	2295.6	2296.6	2454.9	2641.2	2806.1	2853.8	2773.3	2642.2	2444.5	2290.0	2275.0
77.5°	1879.8	1905.1	2045.6	2225.4	2355.6	2424.9	2367.7	2219.8	2035.3	1903.2	1888.2
80°	1474.2	1506.1	1605.3	1766.4	1878.8	1939.7	1877.9	1748.6	1608.2	1478.9	1480.8
82.5°	1040.6	1064.0	1157.6	1267.2	1376.8	1421.8	1395.5	1300.0	1171.7	1058.4	1027.5
85°	580.7	610.7	673.4	769.9	842.9	901.0	868.2	793.3	681.9	610.7	608.8
87.5°	170.5	184.5	209.8	274.4	343.7	369.0	361.5	342.8	300.7	269.7	250.1
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: SP1-2407-176-10

Test Date: 09/25/2024

Luminaire Tested: MEM2-HTN-VA-130-750-U-RW

Data in this report applies to families of products including MEM2-HTN-VA-130-750-U-RW

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

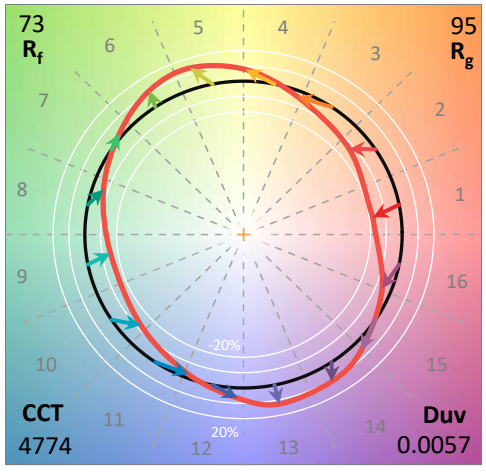
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-10
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-130-750-U-RW**
Description:	EPIC MODERN VISUAL COMFORT 130W WAVESTREAM RECTANGULAR WIDE

Spectral Parameters

CCT (K):	4774
CIE u':	0.2100
CIE v':	0.4945
Duv:	0.0057
CIE x:	0.3535
CIE y:	0.3699
CIE z:	0.2766
Peak Wavelength (nm):	444
Dominant Wavelength (nm):	571
Purity:	17.0787
Rf:	73.1
Rg:	94.9

CRI (Ra):	70.8		
R1:	67.0	R9:	-40.0
R2:	75.4	R10:	43.4
R3:	83.5	R11:	69.3
R4:	71.8	R12:	45.5
R5:	68.4	R13:	67.9
R6:	67.5	R14:	90.8
R7:	80.0	R15:	58.2
R8:	53.1		



Test Conditions

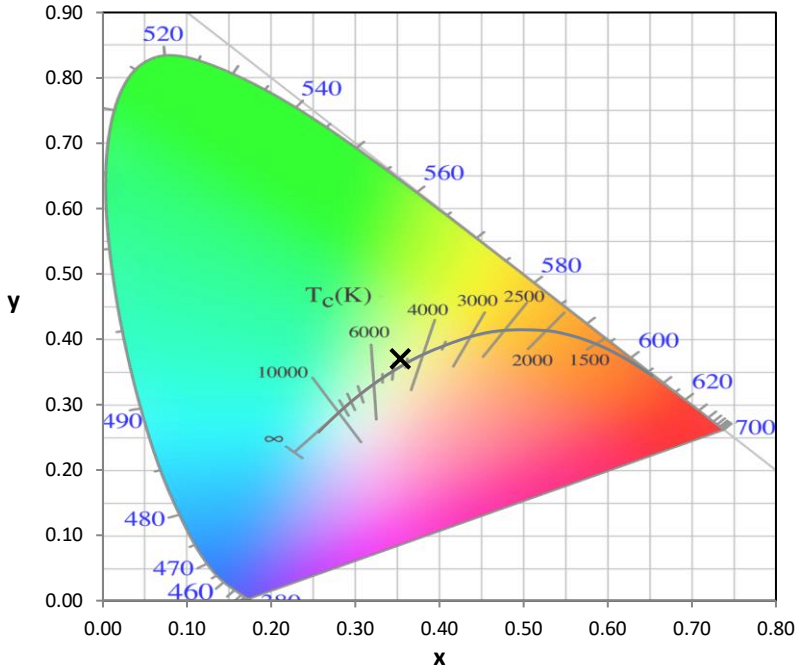
Stabilization Time:	37M
Operation Time:	1H 37M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-10

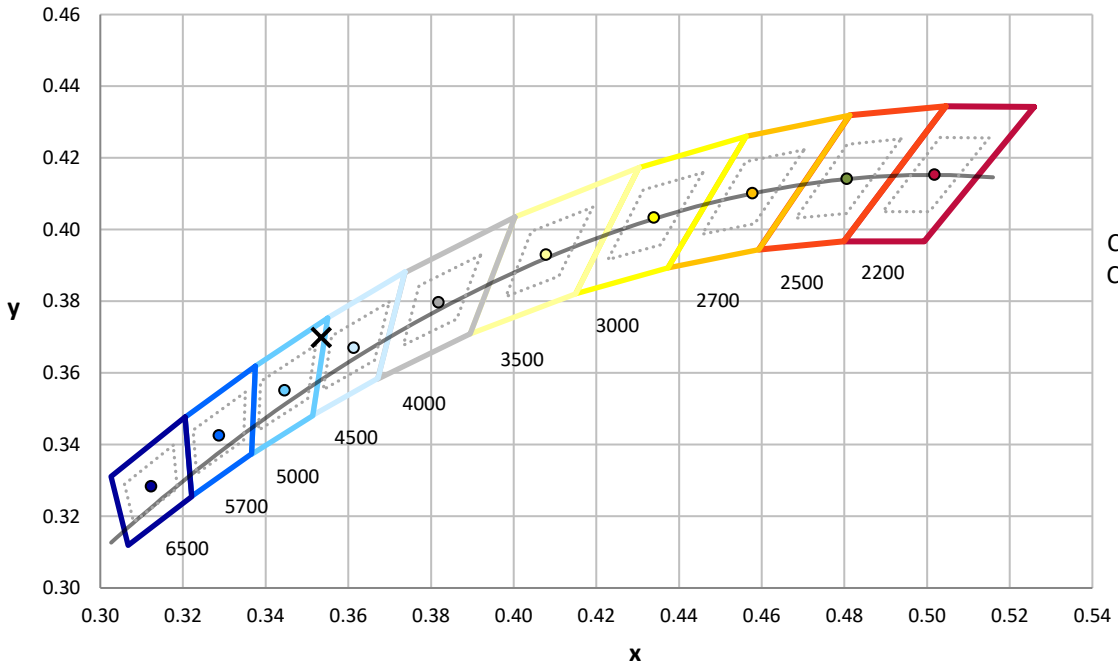
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-10

CIE 1931 Chromaticity Diagram



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



CCT = 4774K
CIE x = 0.3535
CIE y = 0.3699
Duv = 0.0057

Point lies inside the ANSI 5000K 7-step quadrangle

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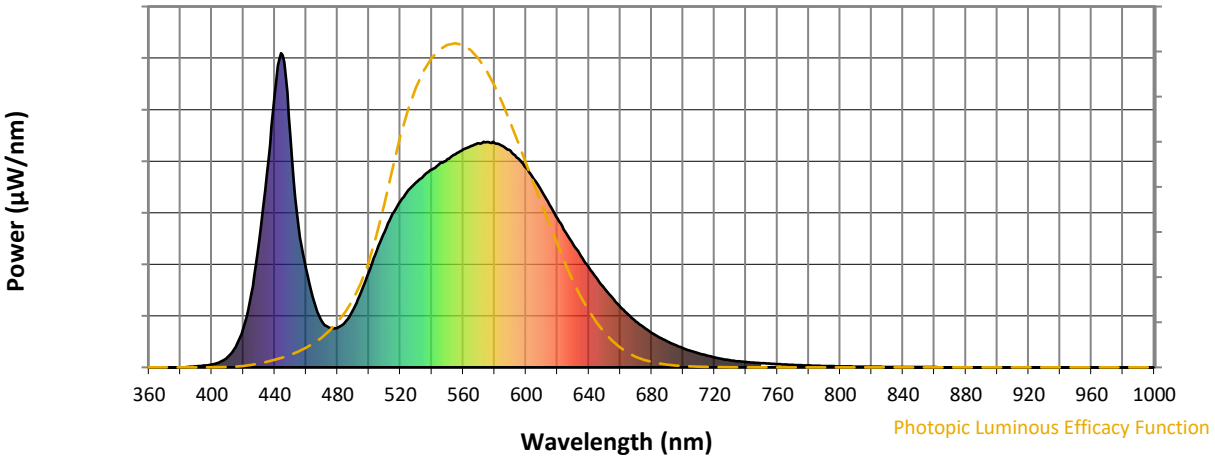
Photopic Flux vs. Wavelength

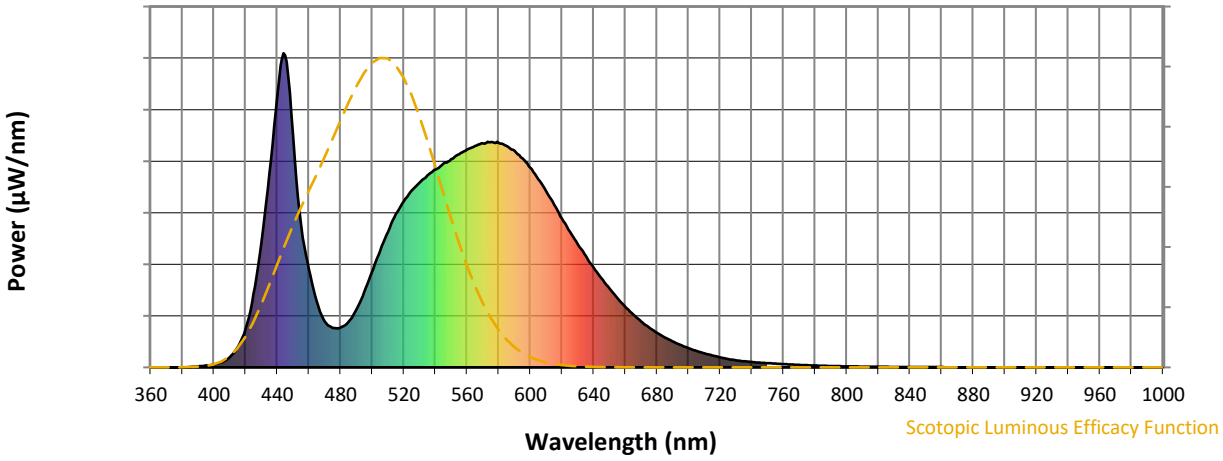


Photopic Lumens: NR

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	184	NR	620	474	NR	750	13	NR	880	0	NR
365	0	NR	495	239	NR	625	432	NR	755	12	NR	885	0	NR
370	0	NR	500	305	NR	630	392	NR	760	10	NR	890	0	NR
375	0	NR	505	371	NR	635	354	NR	765	9	NR	895	0	NR
380	0	NR	510	432	NR	640	318	NR	770	8	NR	900	0	NR
385	1	NR	515	488	NR	645	283	NR	775	7	NR	905	0	NR
390	3	NR	520	529	NR	650	251	NR	780	6	NR	910	0	NR
395	6	NR	525	563	NR	655	221	NR	785	5	NR	915	0	NR
400	9	NR	530	589	NR	660	193	NR	790	4	NR	920	0	NR
405	16	NR	535	611	NR	665	169	NR	795	4	NR	925	0	NR
410	33	NR	540	629	NR	670	146	NR	800	3	NR	930	0	NR
415	64	NR	545	649	NR	675	127	NR	805	3	NR	935	0	NR
420	124	NR	550	663	NR	680	110	NR	810	2	NR	940	0	NR
425	233	NR	555	678	NR	685	95	NR	815	2	NR	945	0	NR
430	397	NR	560	693	NR	690	83	NR	820	2	NR	950	0	NR
435	617	NR	565	705	NR	695	71	NR	825	2	NR	955	0	NR
440	868	NR	570	713	NR	700	61	NR	830	1	NR	960	0	NR
445	994	NR	575	717	NR	705	52	NR	835	1	NR	965	0	NR
450	736	NR	580	715	NR	710	45	NR	840	1	NR	970	0	NR
455	454	NR	585	705	NR	715	38	NR	845	1	NR	975	0	NR
460	314	NR	590	689	NR	720	32	NR	850	1	NR	980	0	NR
465	210	NR	595	665	NR	725	27	NR	855	1	NR	985	0	NR
470	146	NR	600	635	NR	730	23	NR	860	1	NR	990	0	NR
475	126	NR	605	599	NR	735	19	NR	865	0	NR	995	0	NR
480	126	NR	610	561	NR	740	17	NR	870	0	NR	1000	0	NR
485	144	NR	615	517	NR	745	15	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-10

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/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	184	NR	620	474	NR	750	13	NR	880	0	NR
365	0	NR	495	239	NR	625	432	NR	755	12	NR	885	0	NR
370	0	NR	500	305	NR	630	392	NR	760	10	NR	890	0	NR
375	0	NR	505	371	NR	635	354	NR	765	9	NR	895	0	NR
380	0	NR	510	432	NR	640	318	NR	770	8	NR	900	0	NR
385	1	NR	515	488	NR	645	283	NR	775	7	NR	905	0	NR
390	3	NR	520	529	NR	650	251	NR	780	6	NR	910	0	NR
395	6	NR	525	563	NR	655	221	NR	785	5	NR	915	0	NR
400	9	NR	530	589	NR	660	193	NR	790	4	NR	920	0	NR
405	16	NR	535	611	NR	665	169	NR	795	4	NR	925	0	NR
410	33	NR	540	629	NR	670	146	NR	800	3	NR	930	0	NR
415	64	NR	545	649	NR	675	127	NR	805	3	NR	935	0	NR
420	124	NR	550	663	NR	680	110	NR	810	2	NR	940	0	NR
425	233	NR	555	678	NR	685	95	NR	815	2	NR	945	0	NR
430	397	NR	560	693	NR	690	83	NR	820	2	NR	950	0	NR
435	617	NR	565	705	NR	695	71	NR	825	2	NR	955	0	NR
440	868	NR	570	713	NR	700	61	NR	830	1	NR	960	0	NR
445	994	NR	575	717	NR	705	52	NR	835	1	NR	965	0	NR
450	736	NR	580	715	NR	710	45	NR	840	1	NR	970	0	NR
455	454	NR	585	705	NR	715	38	NR	845	1	NR	975	0	NR
460	314	NR	590	689	NR	720	32	NR	850	1	NR	980	0	NR
465	210	NR	595	665	NR	725	27	NR	855	1	NR	985	0	NR
470	146	NR	600	635	NR	730	23	NR	860	1	NR	990	0	NR
475	126	NR	605	599	NR	735	19	NR	865	0	NR	995	0	NR
480	126	NR	610	561	NR	740	17	NR	870	0	NR	1000	0	NR
485	144	NR	615	517	NR	745	15	NR	875	0	NR			

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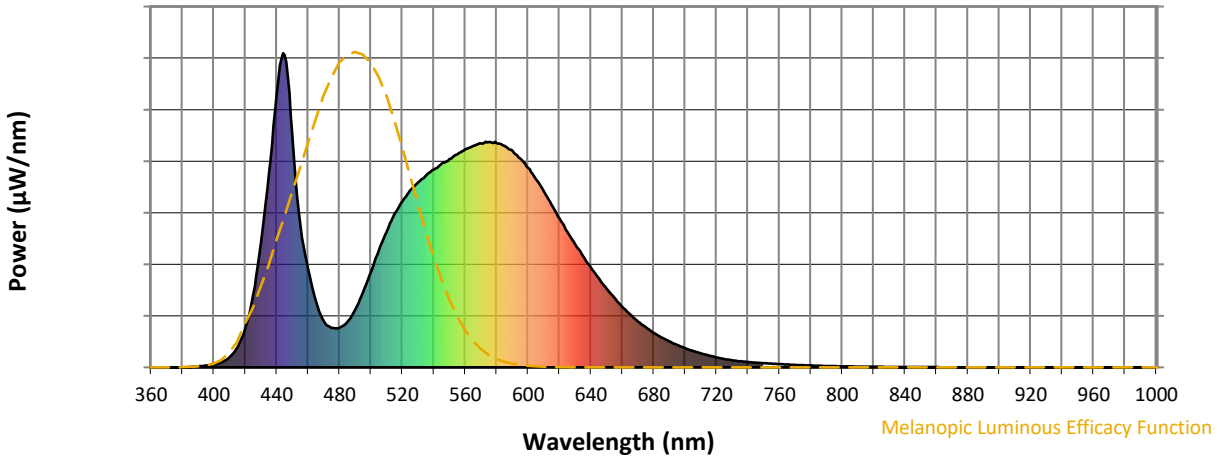
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.39**

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	184	NR	620	474	NR	750	13	NR	880	0	NR
365	0	NR	495	239	NR	625	432	NR	755	12	NR	885	0	NR
370	0	NR	500	305	NR	630	392	NR	760	10	NR	890	0	NR
375	0	NR	505	371	NR	635	354	NR	765	9	NR	895	0	NR
380	0	NR	510	432	NR	640	318	NR	770	8	NR	900	0	NR
385	1	NR	515	488	NR	645	283	NR	775	7	NR	905	0	NR
390	3	NR	520	529	NR	650	251	NR	780	6	NR	910	0	NR
395	6	NR	525	563	NR	655	221	NR	785	5	NR	915	0	NR
400	9	NR	530	589	NR	660	193	NR	790	4	NR	920	0	NR
405	16	NR	535	611	NR	665	169	NR	795	4	NR	925	0	NR
410	33	NR	540	629	NR	670	146	NR	800	3	NR	930	0	NR
415	64	NR	545	649	NR	675	127	NR	805	3	NR	935	0	NR
420	124	NR	550	663	NR	680	110	NR	810	2	NR	940	0	NR
425	233	NR	555	678	NR	685	95	NR	815	2	NR	945	0	NR
430	397	NR	560	693	NR	690	83	NR	820	2	NR	950	0	NR
435	617	NR	565	705	NR	695	71	NR	825	2	NR	955	0	NR
440	868	NR	570	713	NR	700	61	NR	830	1	NR	960	0	NR
445	994	NR	575	717	NR	705	52	NR	835	1	NR	965	0	NR
450	736	NR	580	715	NR	710	45	NR	840	1	NR	970	0	NR
455	454	NR	585	705	NR	715	38	NR	845	1	NR	975	0	NR
460	314	NR	590	689	NR	720	32	NR	850	1	NR	980	0	NR
465	210	NR	595	665	NR	725	27	NR	855	1	NR	985	0	NR
470	146	NR	600	635	NR	730	23	NR	860	1	NR	990	0	NR
475	126	NR	605	599	NR	735	19	NR	865	0	NR	995	0	NR
480	126	NR	610	561	NR	740	17	NR	870	0	NR	1000	0	NR
485	144	NR	615	517	NR	745	15	NR	875	0	NR			

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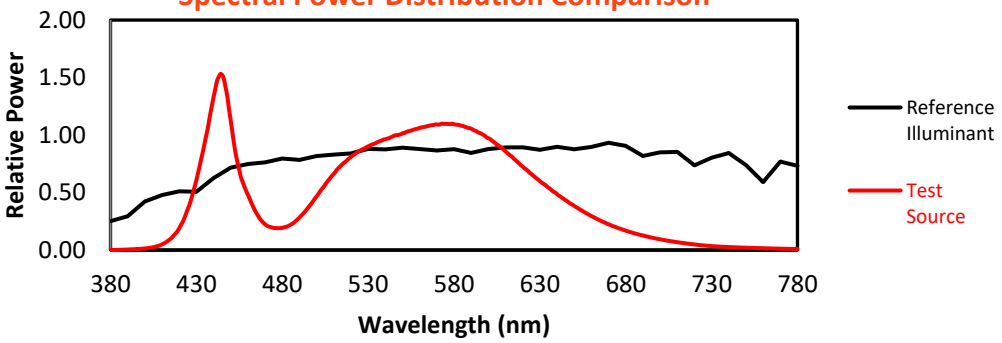
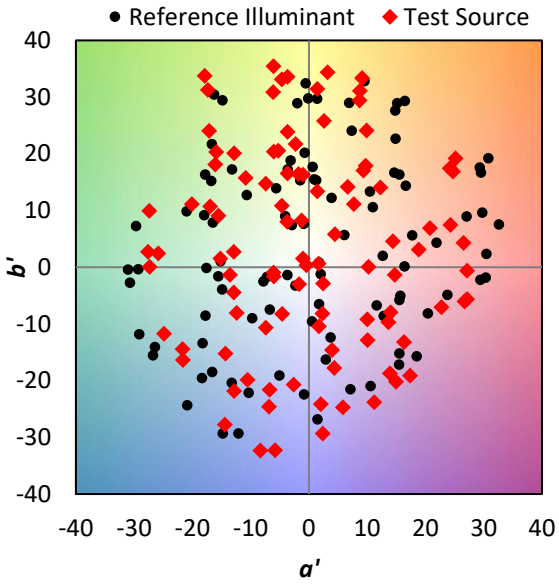
Summary

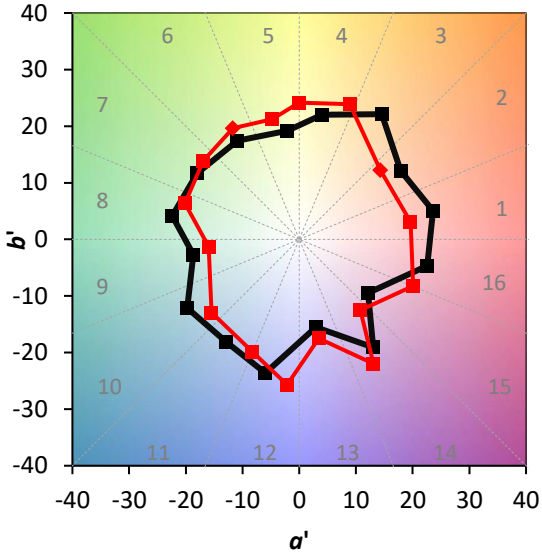
R_f = 73.1
R_g = 94.9
CIE R_a = 70.8
R_9 = -40.0

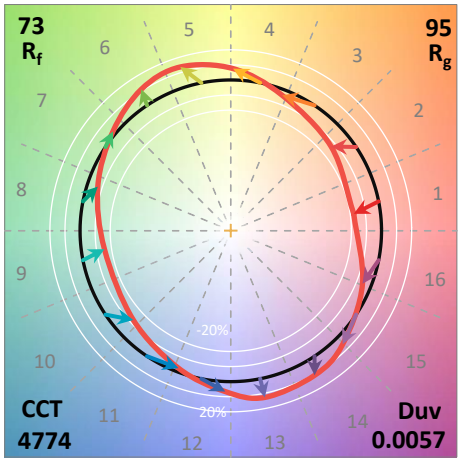
Spectral Power Distribution Comparison

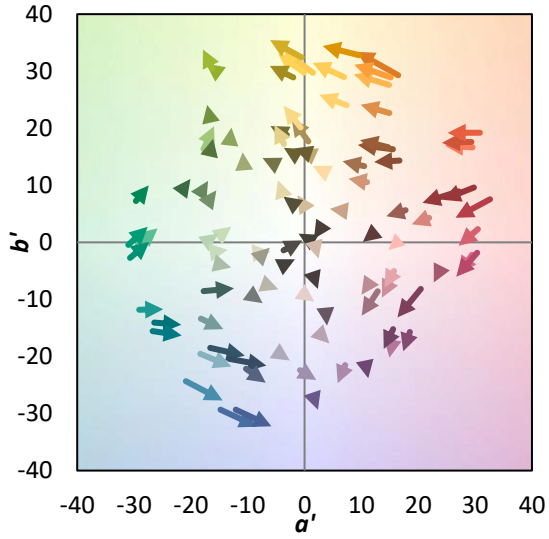


Color Vector Graphics









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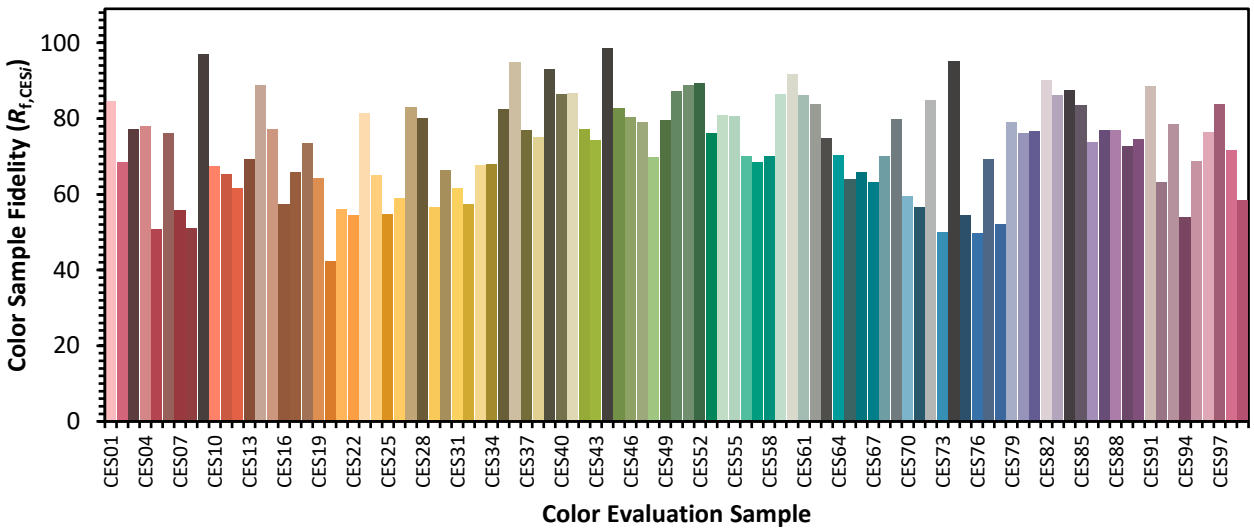
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 59	CES51 = 89	CES76 = 50
CES02 = 59	CES27 = 83	CES52 = 89	CES77 = 69
CES03 = 30	CES28 = 80	CES53 = 76	CES78 = 52
CES04 = 69	CES29 = 57	CES54 = 81	CES79 = 79
CES05 = 46	CES30 = 66	CES55 = 81	CES80 = 76
CES06 = 50	CES31 = 62	CES56 = 70	CES81 = 77
CES07 = 39	CES32 = 57	CES57 = 69	CES82 = 90
CES08 = 38	CES33 = 68	CES58 = 70	CES83 = 86
CES09 = 29	CES34 = 68	CES59 = 86	CES84 = 88
CES10 = 73	CES35 = 83	CES60 = 92	CES85 = 84
CES11 = 56	CES36 = 95	CES61 = 86	CES86 = 74
CES12 = 61	CES37 = 77	CES62 = 84	CES87 = 77
CES13 = 41	CES38 = 75	CES63 = 75	CES88 = 77
CES14 = 74	CES39 = 93	CES64 = 70	CES89 = 73
CES15 = 70	CES40 = 86	CES65 = 64	CES90 = 75
CES16 = 46	CES41 = 87	CES66 = 66	CES91 = 89
CES17 = 49	CES42 = 77	CES67 = 63	CES92 = 63
CES18 = 55	CES43 = 74	CES68 = 70	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 80	CES94 = 54
CES20 = 64	CES45 = 83	CES70 = 60	CES95 = 69
CES21 = 85	CES46 = 80	CES71 = 57	CES96 = 76
CES22 = 77	CES47 = 79	CES72 = 85	CES97 = 84
CES23 = 91	CES48 = 70	CES73 = 50	CES98 = 72
CES24 = 90	CES49 = 80	CES74 = 95	CES99 = 58
CES25 = 71	CES50 = 87	CES75 = 55	



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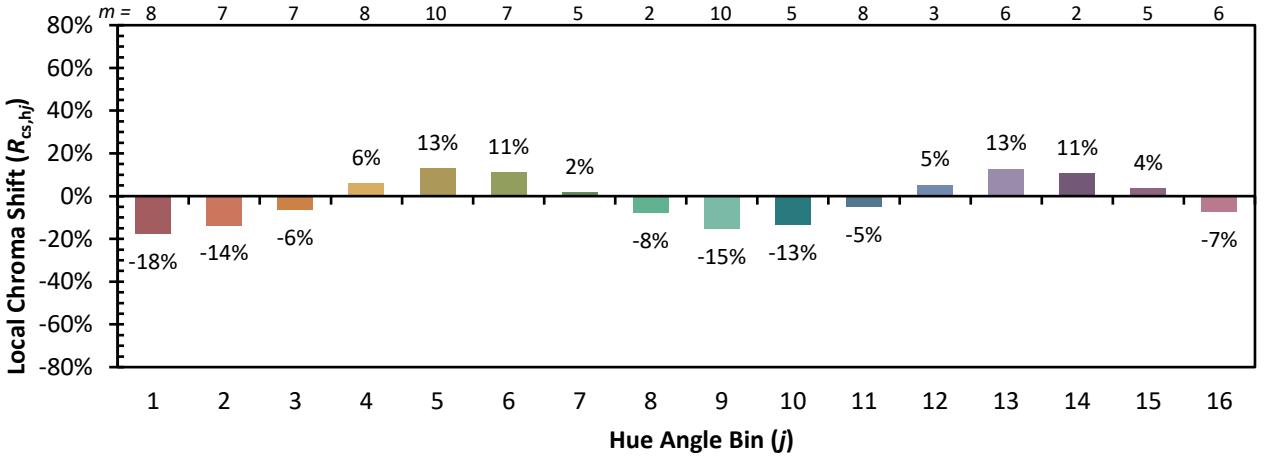
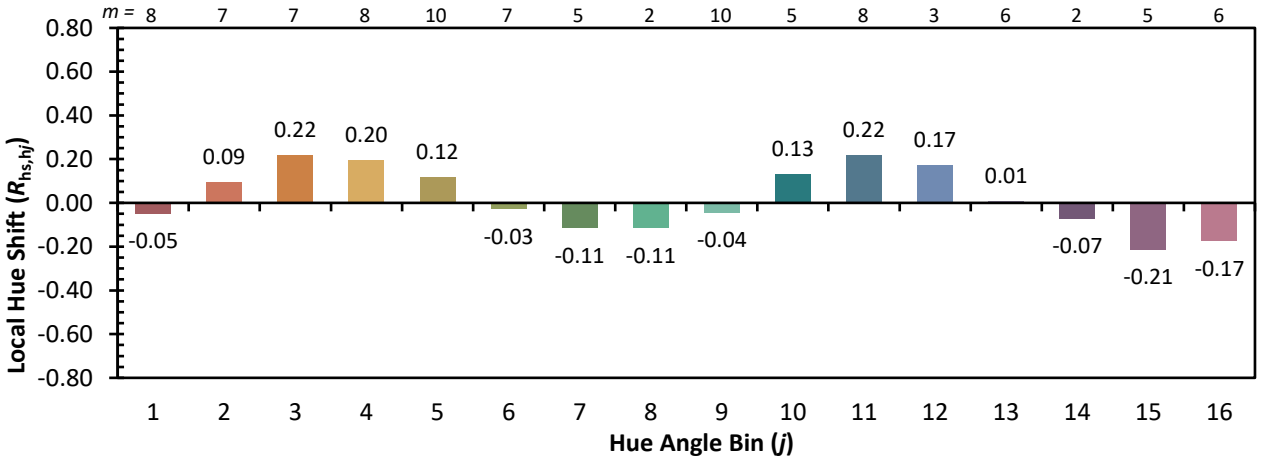
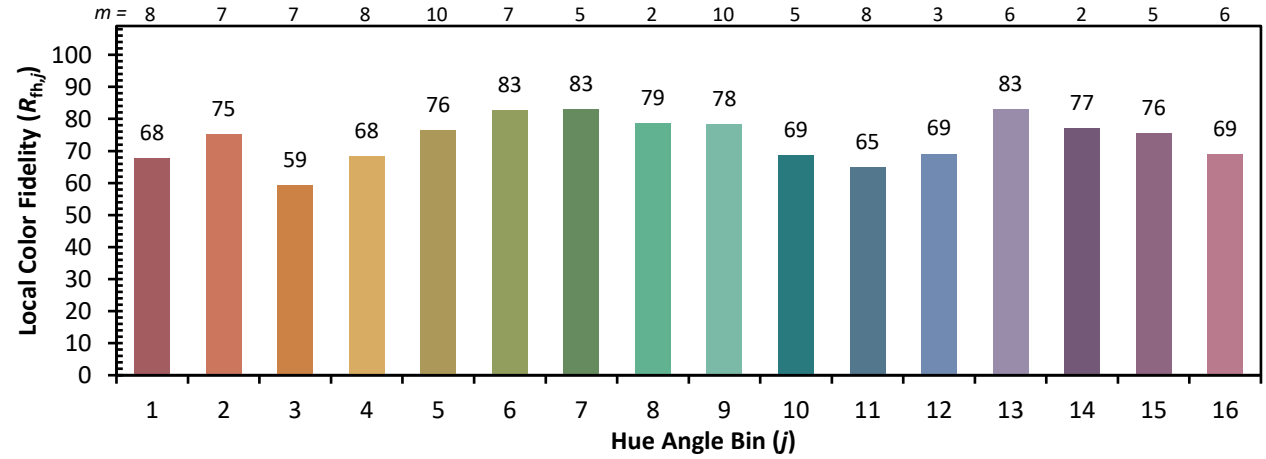
Color Rendition by Hue-Angle Bin







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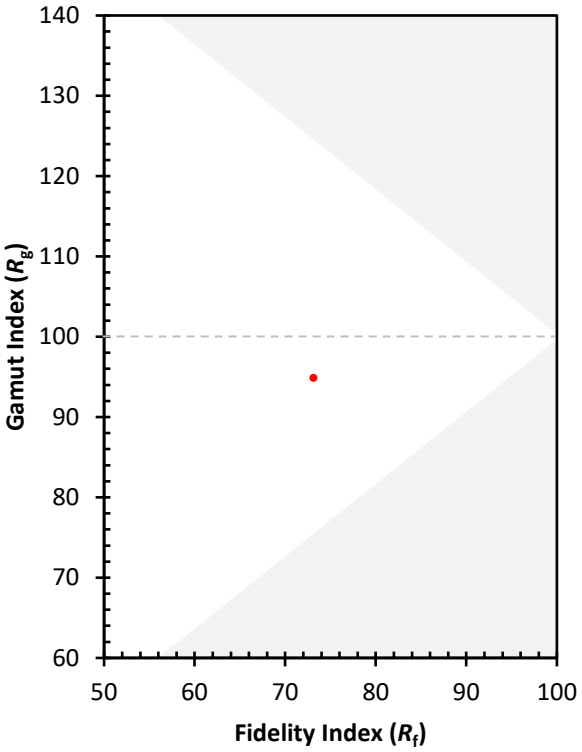
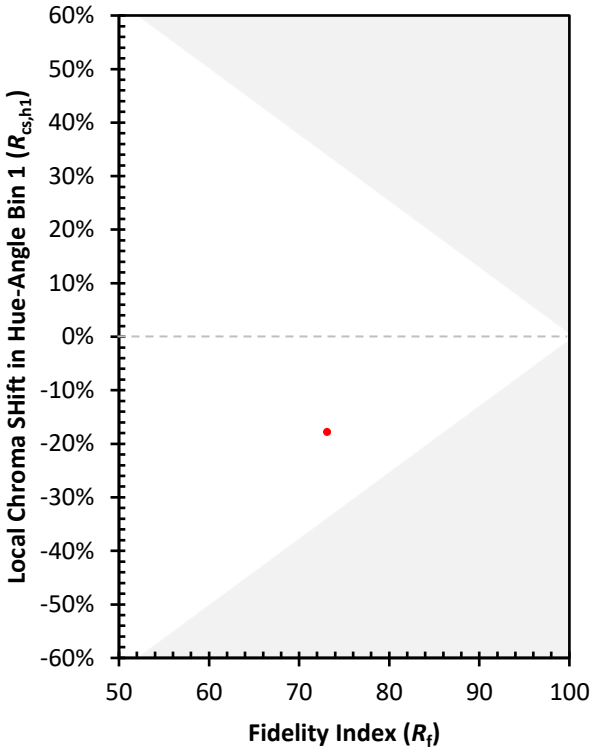
Measure Comparisons





(END OF REPORT)