

Signify Classified - Internal
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: P879680

Luminaire Tested: **EMM2-HSN-VA7-750-U-WQ**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P879680
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HSN-VA7-750-U-WQ
Description: EPIC MODERN SHORT HOUSING 7W 70CRI 5000K WAVESTREAM FIXTURE w/
TYPE V WIDE DISTRIBUTION OPTIC
Light Source: (1) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

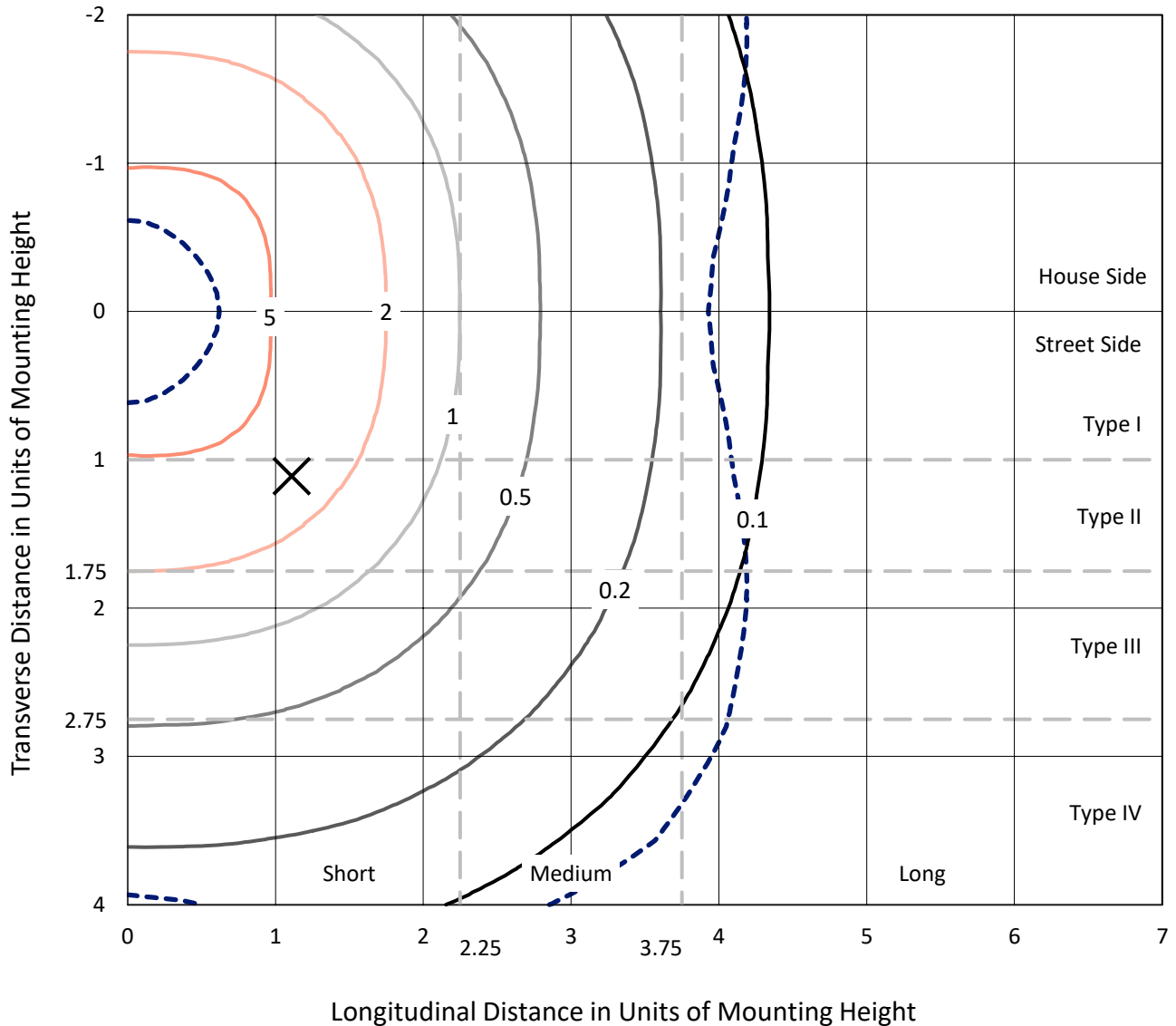
Lumens per Lamp: N/A
Luminaire Lumens: 16310.3 lumens
Efficiency: N/A
Efficacy: 125.5 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G3

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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 CATALOG NUMBER: EMM2-HSN-VA7-750-U-WQ

Iso-Footcandle Lines of Horizontal Illumination

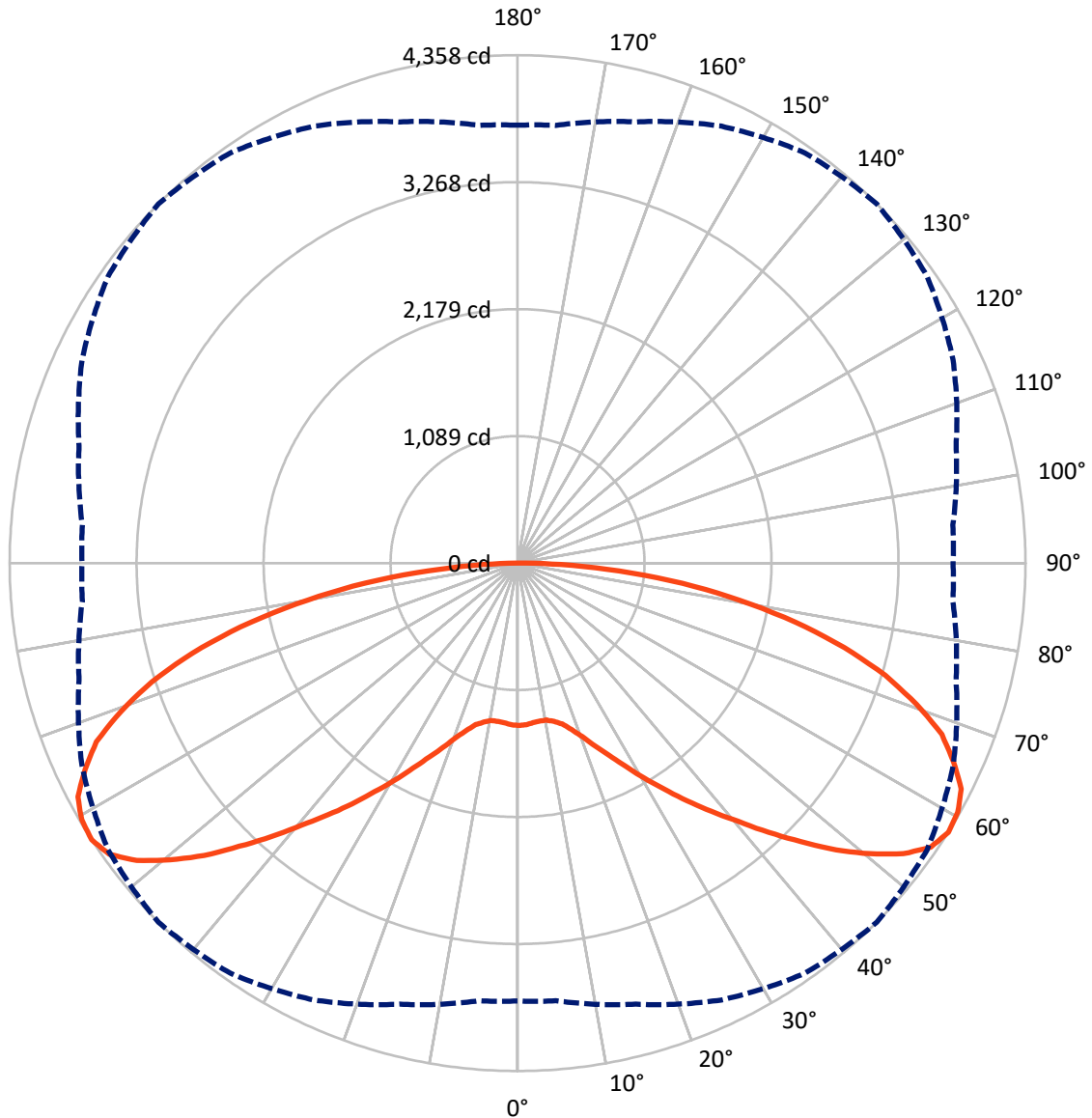
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6.2 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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CATALOG NUMBER: EMM2-HSN-VA7-750-U-WQ

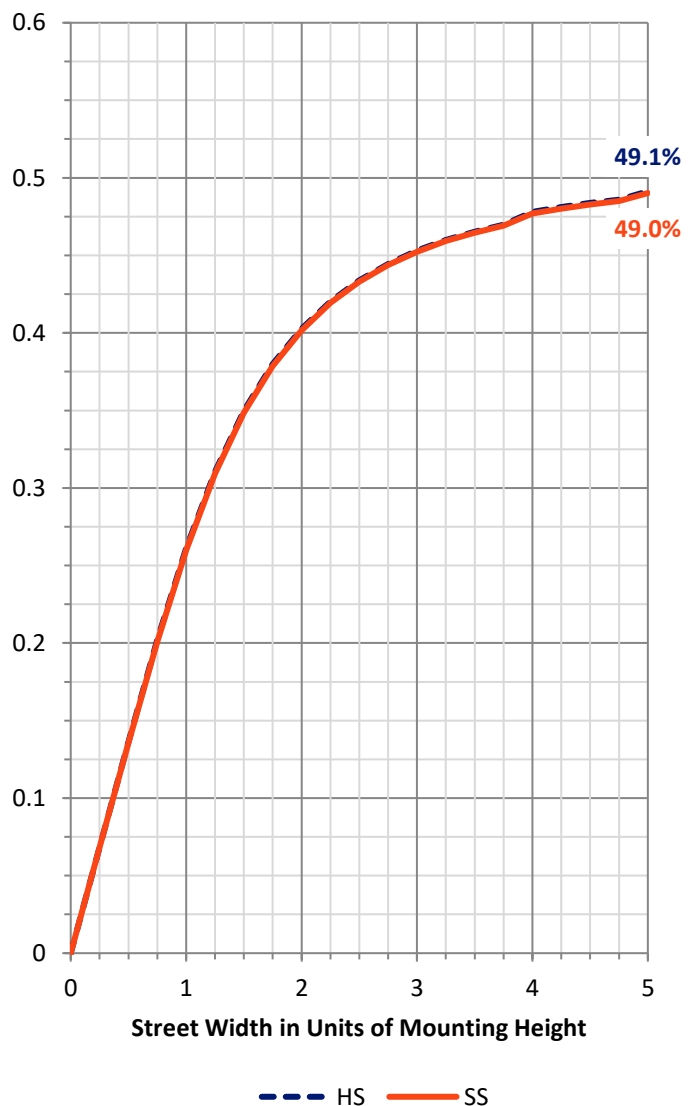
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	8155.2	0.0	8155.2
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	8155.2	0.0	8155.2
	% Fixture	50.0	0.0	50.0
Total	Lumens	16310.3	0.0	16310.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.1	0.8
10°-20°	412.3	2.5
20°-30°	847.5	5.2
30°-40°	1546.4	9.5
40°-50°	2535.9	15.5
50°-60°	3553.5	21.8
60°-70°	3717.4	22.8
70°-80°	2716.0	16.7
80°-90°	850.2	5.2
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°	16310.3	100.0
0°-180°	16310.3	100.0



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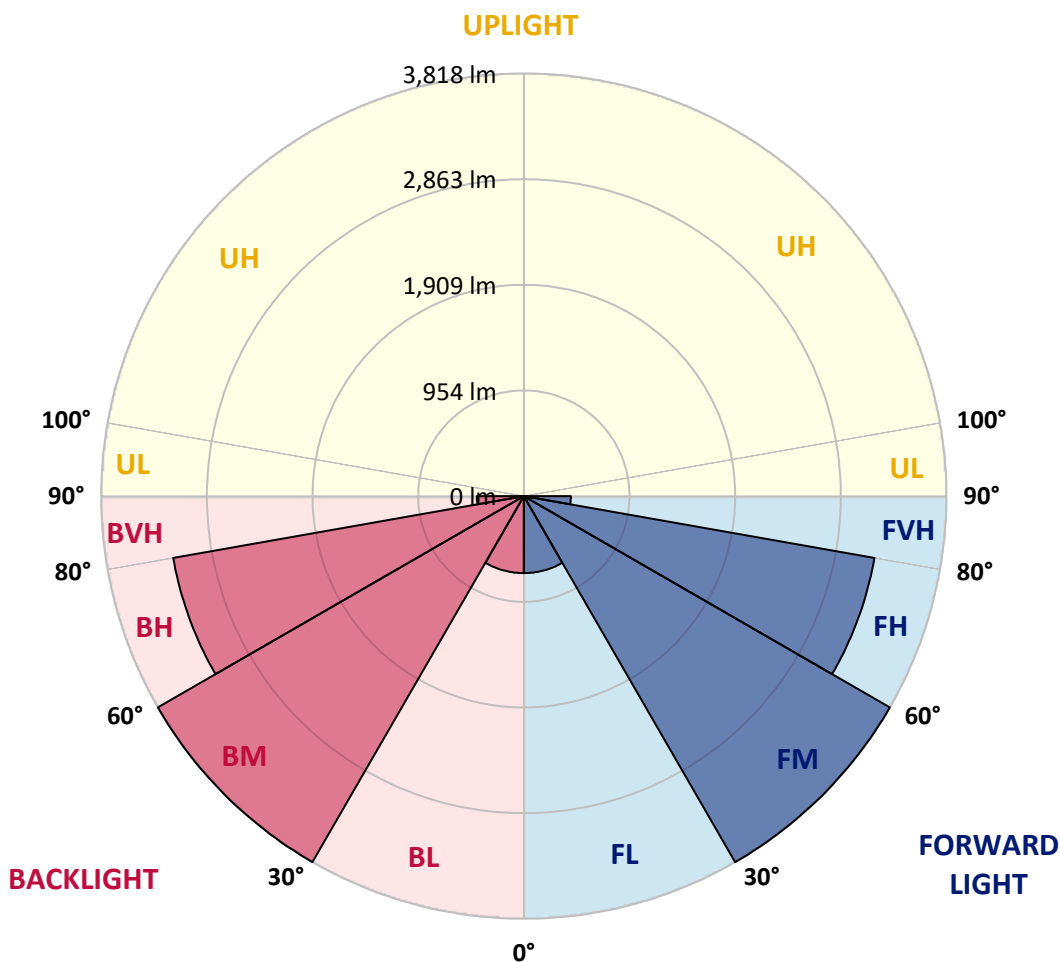
CATALOG NUMBER: EMM2-HSN-VA7-750-U-WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	695.5	4.3			
FM (30°-60°)	3817.9	23.4			
FH (60°-80°)	3216.7	19.7			G2/5000
FVH (80°-90°)	425.1	2.6			G3/500
BL (0°-30°)	695.5	4.3	B2/1000		
BM (30°-60°)	3817.9	23.4	B3/5000		
BH (60°-80°)	3216.7	19.7	B4/5000		G2/5000
BVH (80°-90°)	425.1	2.6			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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CATALOG NUMBER: EMM2-HSN-VA7-750-U-WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6	1392.6
2.5°	1387.5	1389.5	1388.5	1388.5	1387.5	1388.5	1390.5	1391.6	1390.5	1391.6	1390.5
5°	1378.3	1378.3	1377.3	1376.2	1376.2	1376.2	1376.2	1376.2	1377.3	1377.3	1378.3
7.5°	1367.0	1367.0	1367.0	1369.1	1368.1	1369.1	1369.1	1368.1	1367.0	1367.0	1368.1
10°	1369.1	1368.1	1367.0	1369.1	1368.1	1369.1	1369.1	1367.0	1368.1	1369.1	1370.1
12.5°	1386.4	1384.4	1387.5	1390.5	1392.6	1394.6	1393.6	1392.6	1389.5	1386.4	1386.4
15°	1424.2	1422.2	1425.3	1429.4	1430.4	1431.4	1434.5	1430.4	1429.4	1424.2	1423.2
17.5°	1478.4	1477.4	1483.5	1491.7	1495.8	1500.9	1495.8	1491.7	1480.4	1478.4	1481.5
20°	1556.0	1553.0	1565.2	1578.5	1582.6	1588.7	1584.7	1576.5	1565.2	1553.0	1553.0
22.5°	1655.2	1662.3	1668.4	1678.7	1695.0	1705.2	1691.9	1677.6	1661.3	1654.1	1649.0
25°	1783.9	1782.9	1789.0	1809.4	1819.6	1826.8	1824.8	1805.3	1791.0	1780.8	1779.8
27.5°	1907.5	1919.8	1932.0	1945.3	1970.9	1973.9	1970.9	1947.4	1924.9	1916.7	1913.6
30°	2072.0	2070.0	2081.2	2112.9	2138.4	2140.5	2132.3	2103.7	2078.1	2062.8	2064.9
32.5°	2232.4	2216.1	2245.7	2267.2	2288.6	2311.1	2289.6	2267.2	2245.7	2213.0	2223.2
35°	2378.5	2391.8	2408.1	2452.1	2496.0	2505.2	2490.9	2444.9	2403.0	2387.7	2370.3
37.5°	2557.3	2557.3	2584.9	2649.3	2689.1	2703.4	2683.0	2637.0	2578.8	2556.3	2548.1
40°	2737.1	2737.1	2779.0	2833.2	2892.4	2912.9	2890.4	2830.1	2782.1	2723.9	2733.0
42.5°	2911.8	2926.1	2981.3	3047.7	3130.5	3158.1	3126.4	3045.7	2976.2	2921.0	2912.9
45°	3104.9	3127.4	3187.7	3297.0	3367.5	3407.4	3363.4	3294.0	3171.4	3118.2	3089.6
47.5°	3315.4	3330.7	3417.6	3521.8	3636.2	3678.1	3626.0	3512.6	3408.4	3314.4	3310.3
50°	3498.3	3495.2	3606.6	3750.7	3880.4	3920.3	3878.4	3755.8	3586.2	3482.0	3492.2
52.5°	3635.2	3652.6	3770.1	3947.8	4085.8	4144.0	4075.6	3928.4	3751.7	3643.4	3610.7
55°	3724.1	3752.7	3889.6	4081.7	4239.0	4301.4	4233.9	4064.3	3871.2	3731.2	3711.8
57.5°	3756.8	3769.1	3918.2	4135.8	4296.2	4357.6	4288.1	4122.6	3894.7	3748.6	3736.4
60°	3706.7	3719.0	3880.4	4103.1	4287.1	4339.2	4284.0	4089.9	3857.9	3708.8	3688.3
62.5°	3584.1	3617.8	3796.6	4017.3	4227.8	4271.7	4214.5	4002.0	3787.4	3607.6	3578.0
65°	3437.0	3472.8	3625.0	3871.2	4062.3	4109.3	4064.3	3860.0	3626.0	3453.3	3424.7
67.5°	3231.6	3237.8	3416.6	3665.9	3868.2	3925.4	3847.7	3661.8	3407.4	3243.9	3221.4
70°	2975.2	2979.3	3169.3	3400.2	3586.2	3633.2	3582.1	3383.9	3156.0	2978.3	2962.9
72.5°	2646.2	2684.0	2841.3	3070.2	3243.9	3299.1	3232.7	3064.1	2853.6	2677.9	2643.1
75°	2296.8	2320.3	2457.2	2678.9	2828.1	2896.5	2842.4	2678.9	2457.2	2312.1	2281.5
77.5°	1888.1	1919.8	2053.6	2240.6	2364.2	2437.8	2378.5	2233.4	2053.6	1920.8	1919.8
80°	1491.7	1483.5	1605.1	1766.5	1889.1	1932.0	1895.3	1754.3	1592.8	1489.6	1475.3
82.5°	1035.0	1032.9	1164.7	1273.0	1376.2	1425.3	1369.1	1278.1	1153.5	1061.5	1031.9
85°	588.5	601.8	688.6	756.1	843.9	873.6	854.1	768.3	657.0	576.2	571.1
87.5°	204.3	222.7	239.1	288.1	345.3	370.9	343.3	330.0	293.2	254.4	256.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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

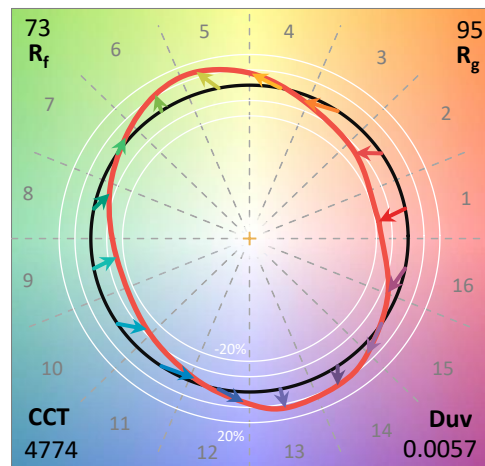
Test Information

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
 R_f: 73.1
 R_g: 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

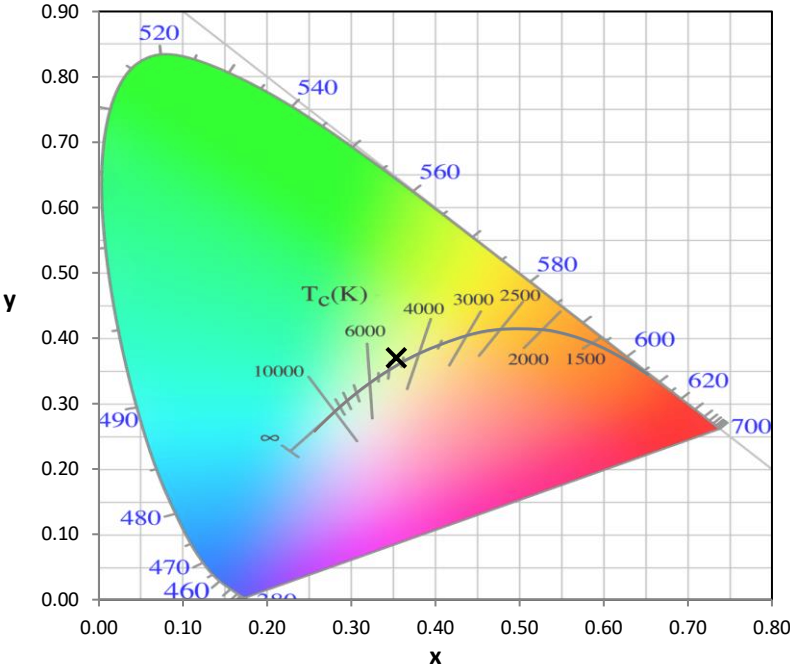
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.2

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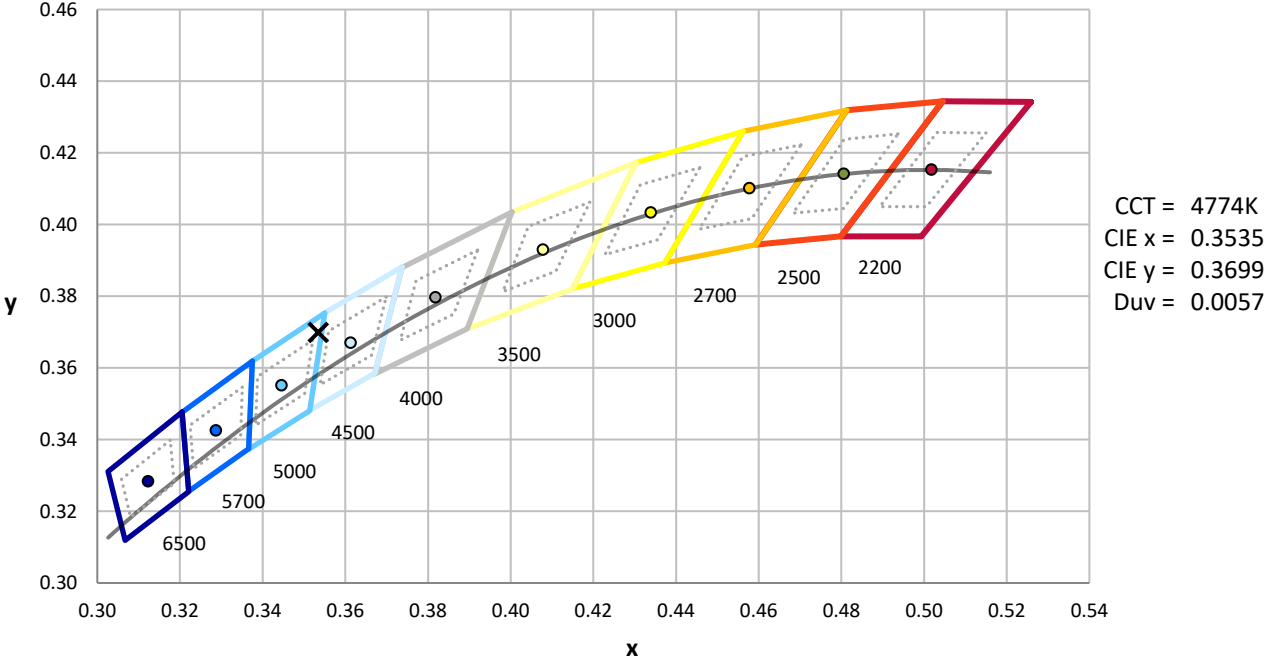
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



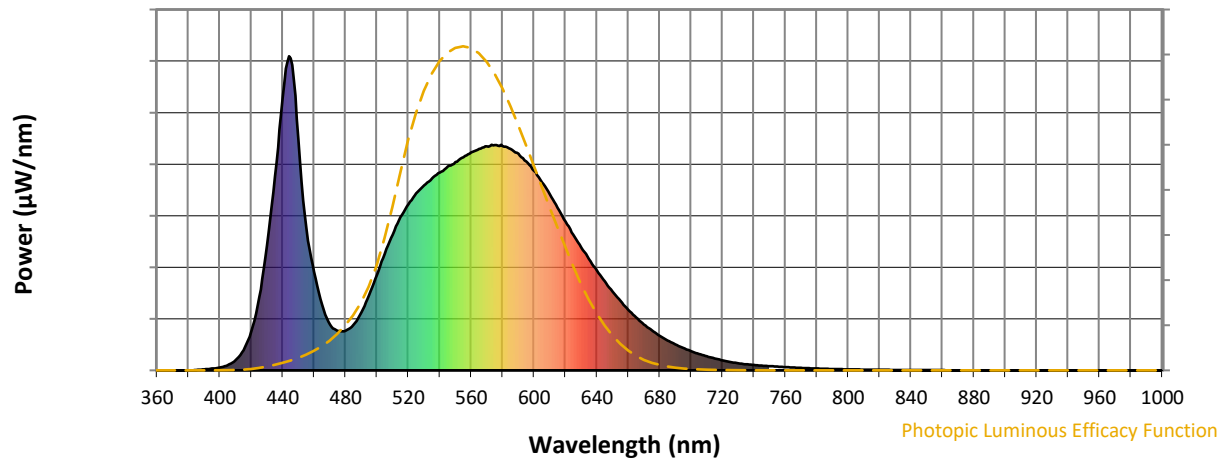
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 7-step quadrangle

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Photopic Flux vs. Wavelength

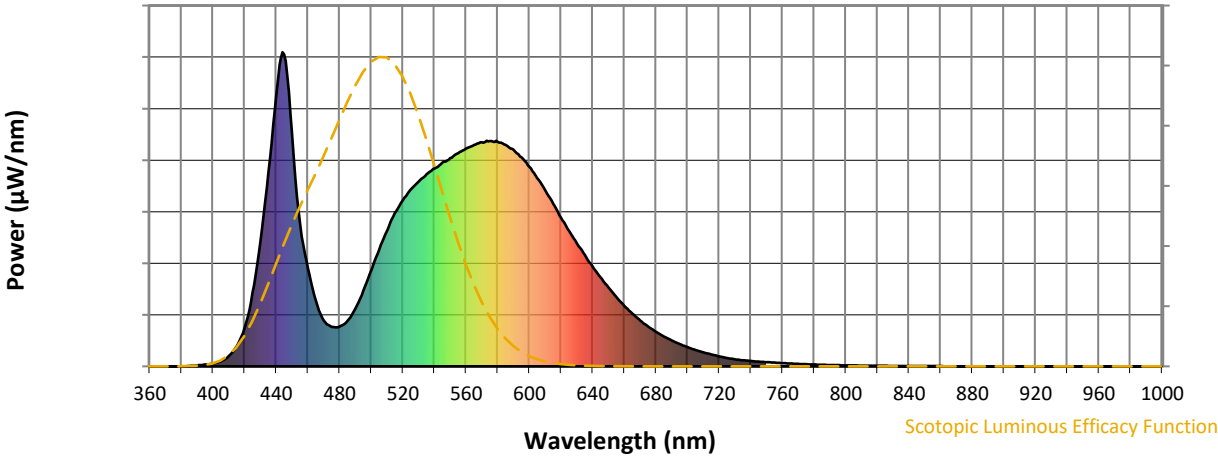


Photopic Lumens: NR

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			

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Scotopic Flux vs. Wavelength

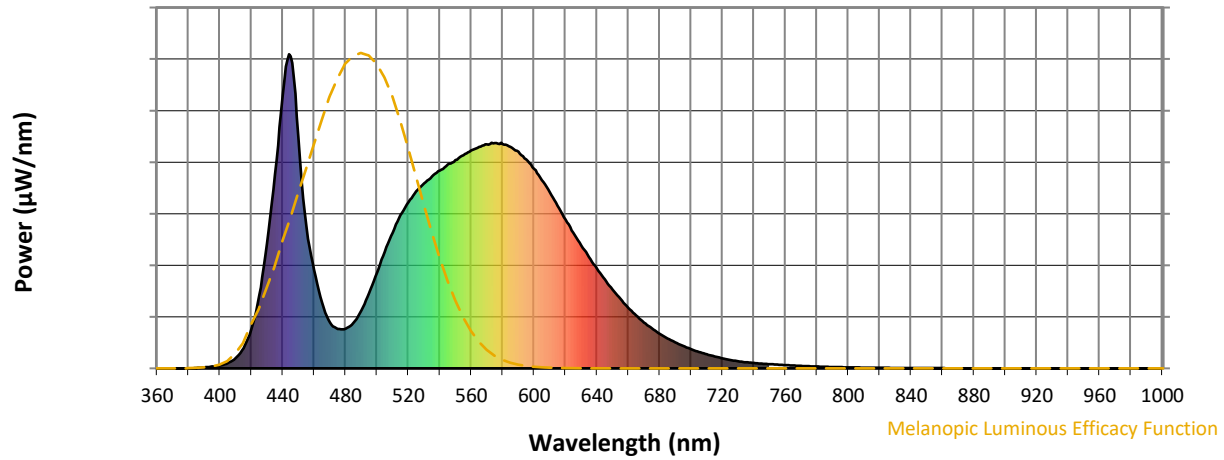


Scotopic Lumens: NR S/P: 1.71

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



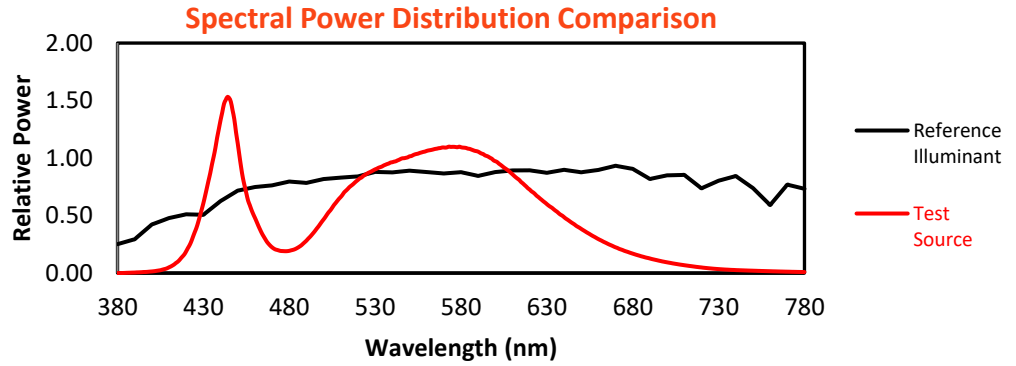
Melanopic Lumens: NR

M/P: 3.39

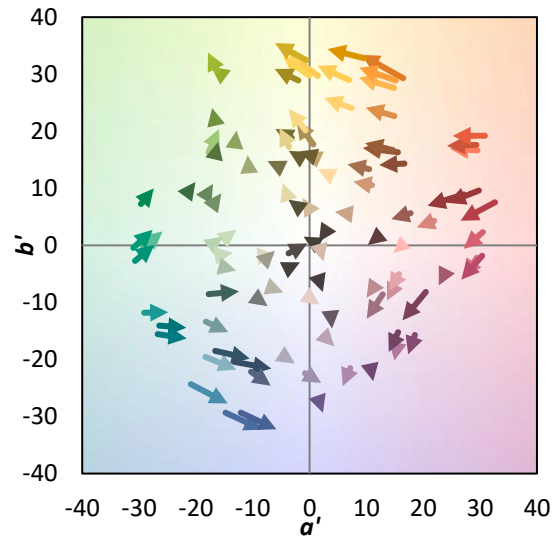
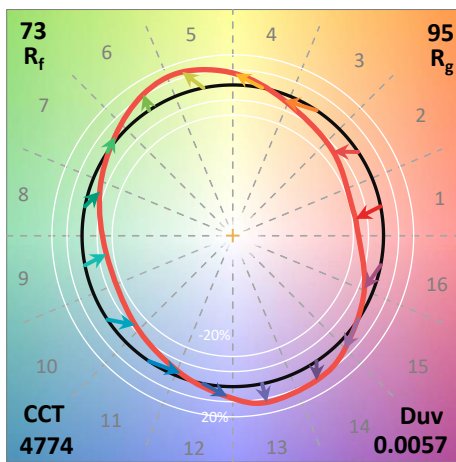
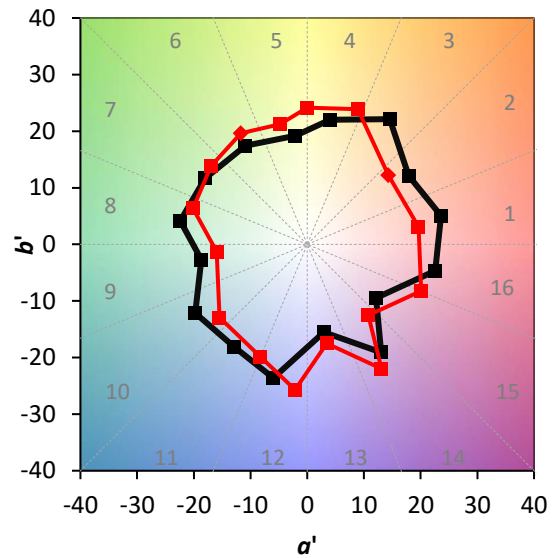
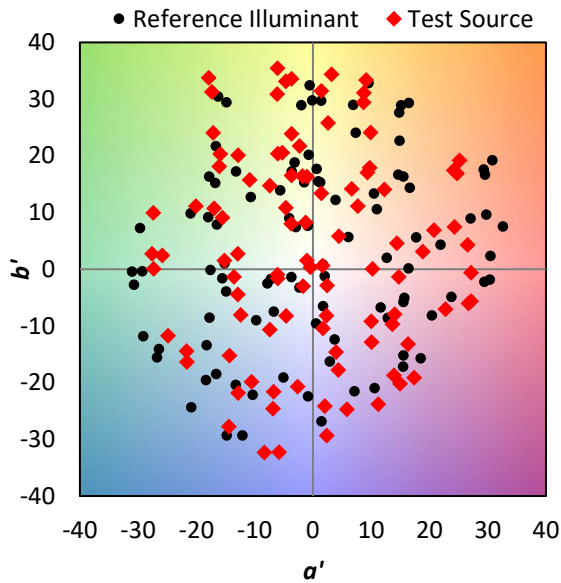
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	184	NR	620	474	NR	750	13	NR	880	0	NR
365	0	NR	495	239	NR	625	432	NR	755	12	NR	885	0	NR
370	0	NR	500	305	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			

Summary

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

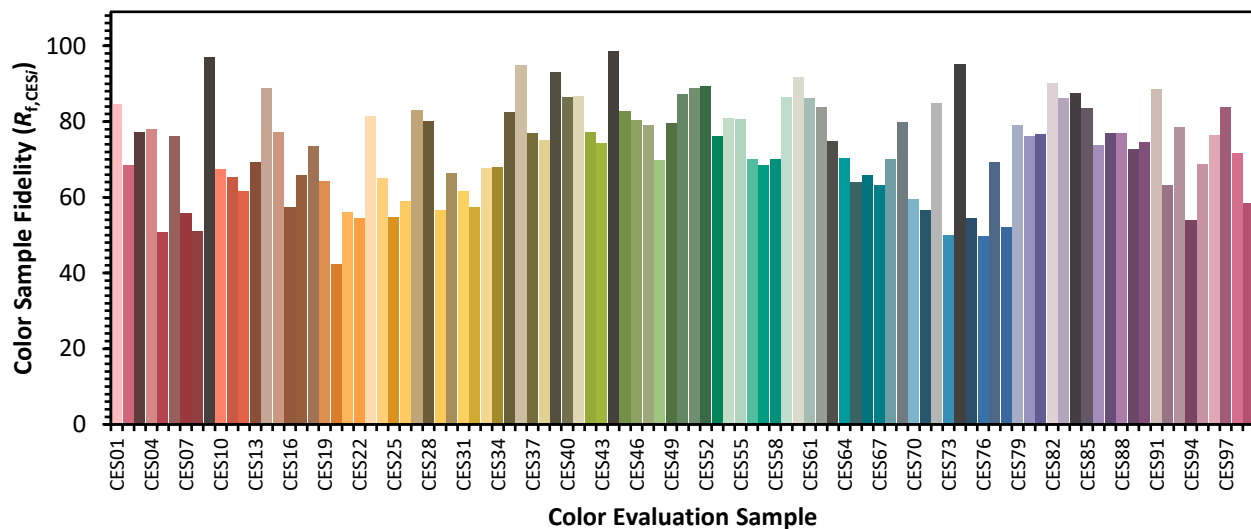


Color Vector Graphics

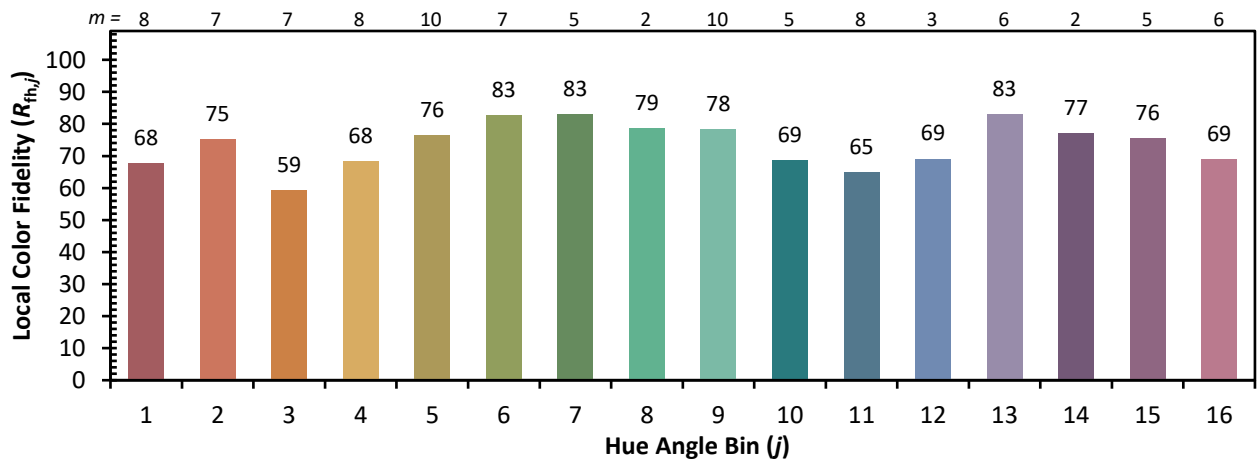
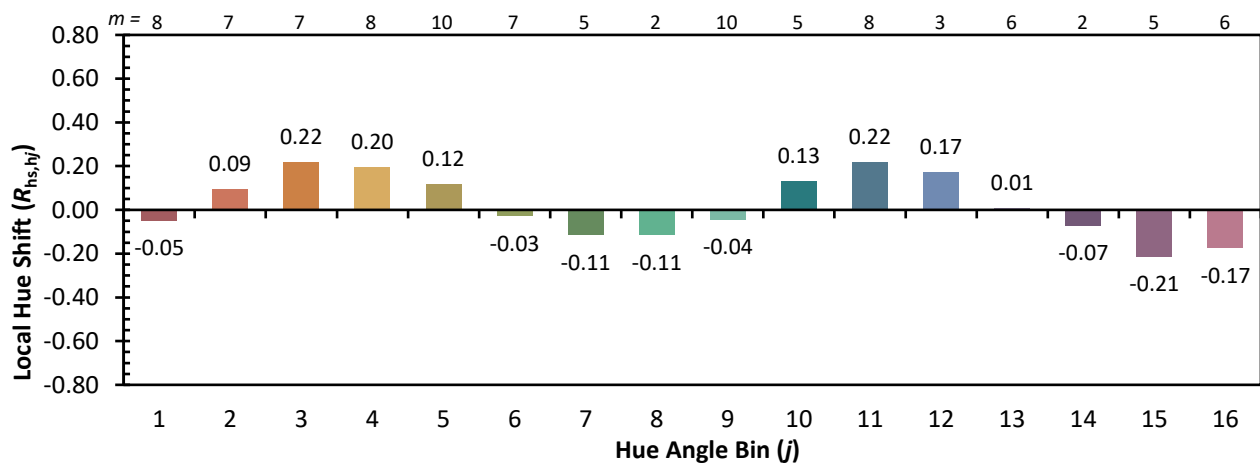
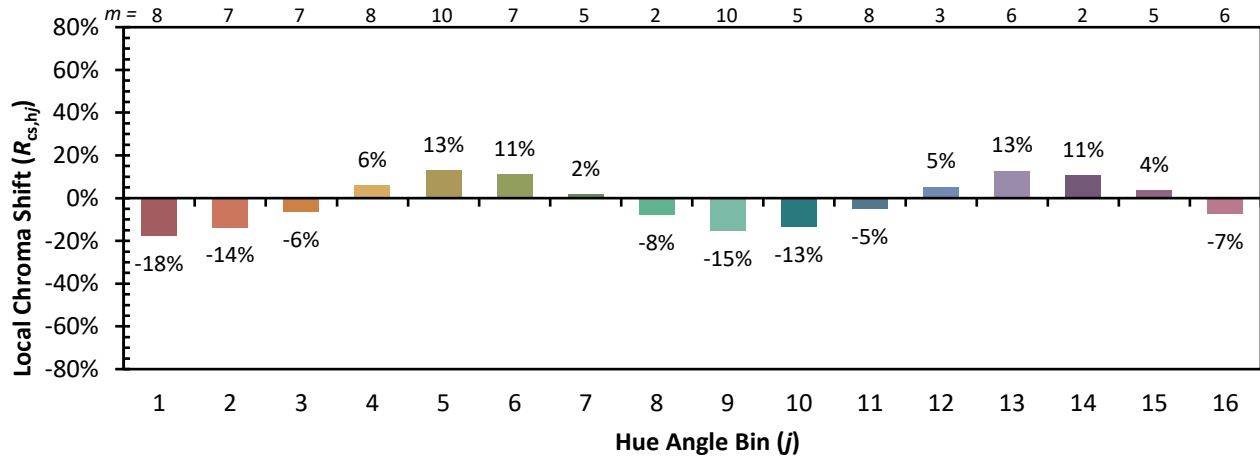


Individual Sample Fidelity Index ($R_{f,i}$)

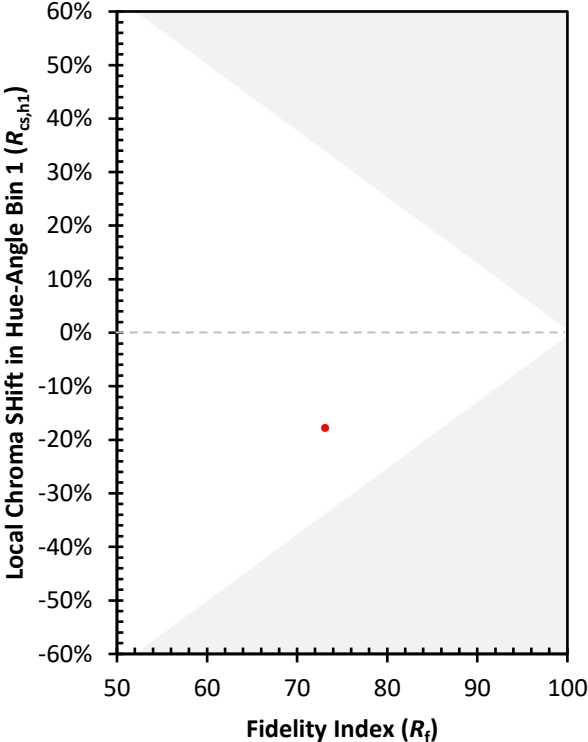
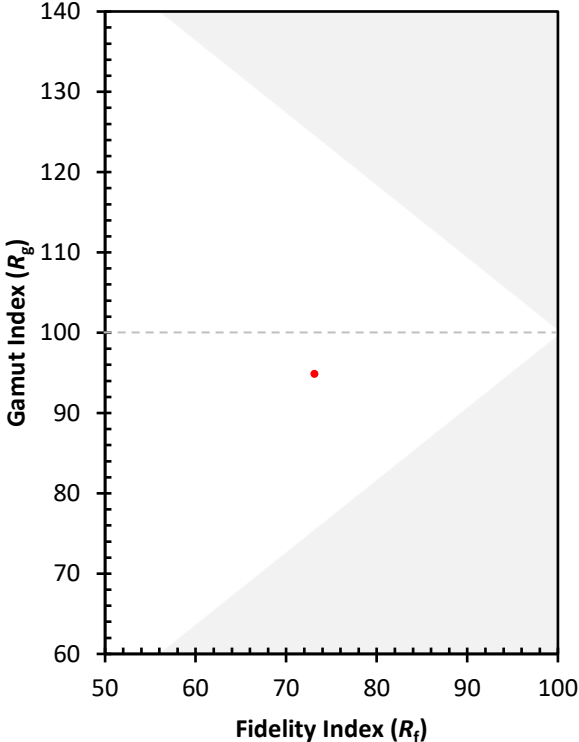
CES01 = 85	CES26 = 59	CES51 = 89	CES76 = 50
CES02 = 59	CES27 = 83	CES52 = 89	CES77 = 69
CES03 = 30	CES28 = 80	CES53 = 76	CES78 = 52
CES04 = 69	CES29 = 57	CES54 = 81	CES79 = 79
CES05 = 46	CES30 = 66	CES55 = 81	CES80 = 76
CES06 = 50	CES31 = 62	CES56 = 70	CES81 = 77
CES07 = 39	CES32 = 57	CES57 = 69	CES82 = 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	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)