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: P880423

Luminaire Tested: **EMM2-HSN-VA6-750-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:	P880423
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HSN-VA6-750-U-MQ
Description:	EPIC MODERN SHORT HOUSING 6W 70CRI 5000K VISUAL COMFORT 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:	11772.2 lumens
Efficiency:	N/A
Efficacy:	111.1 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G3

Input Watts (W):	106
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	5%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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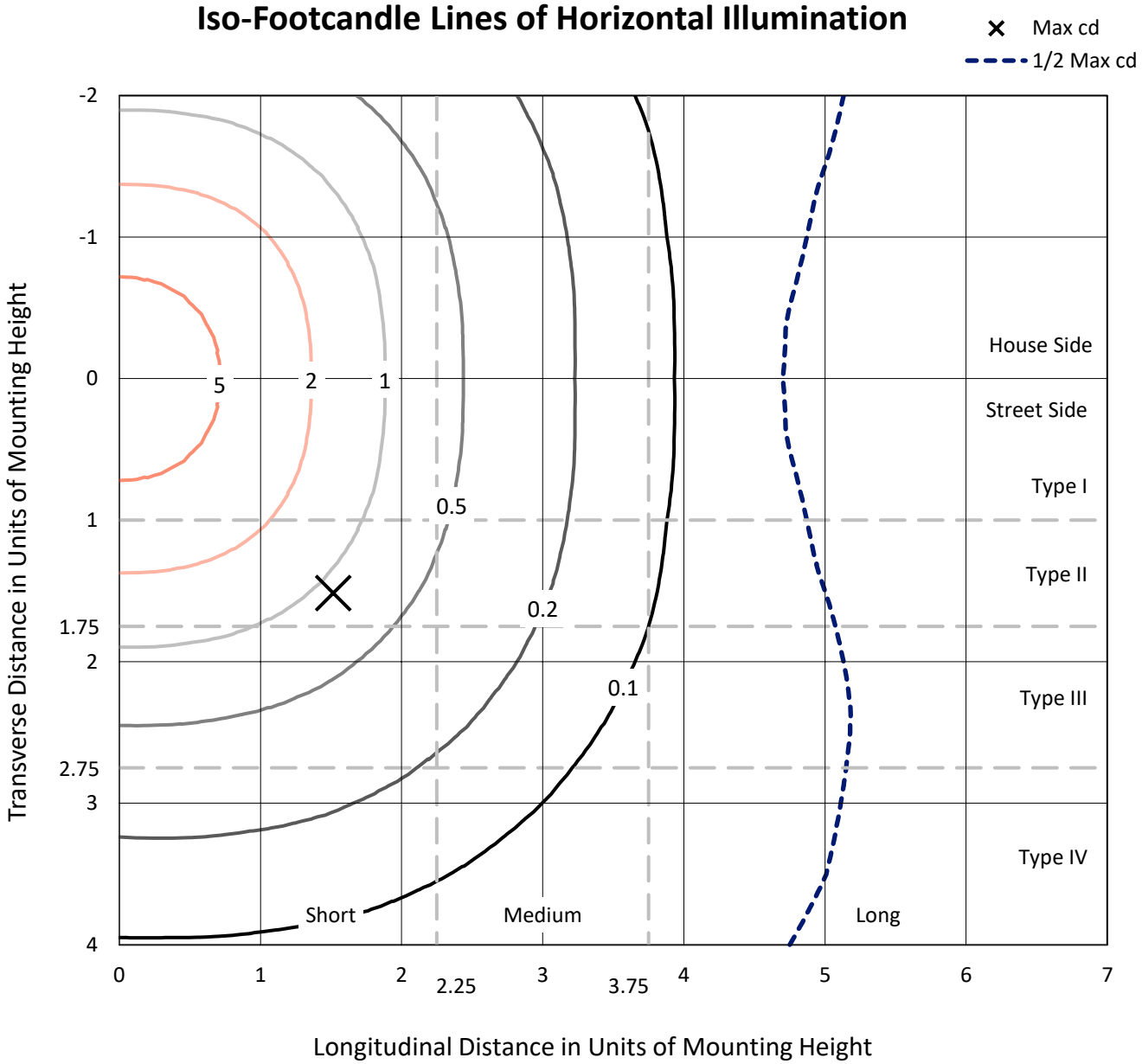
Scaled Data Report

REPORT NUMBER: P880423
CATALOG NUMBER: EMM2-HSN-VA6-750-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 9.7 fc
Type V - Short - N/A

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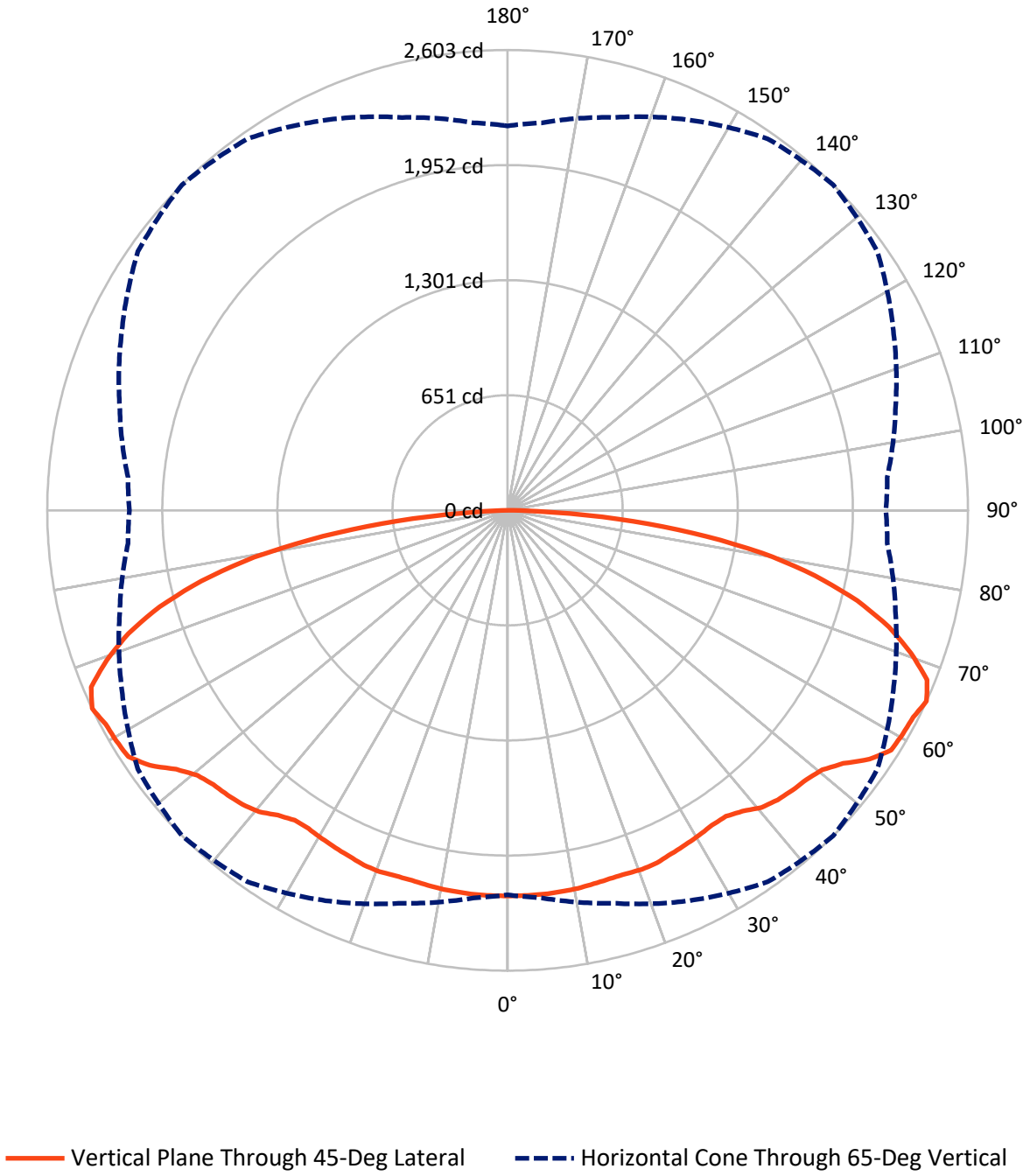
REPORT NUMBER: P880423
CATALOG NUMBER: EMM2-HSN-VA6-750-U-MQ

Luminous Intensity Polar Plot



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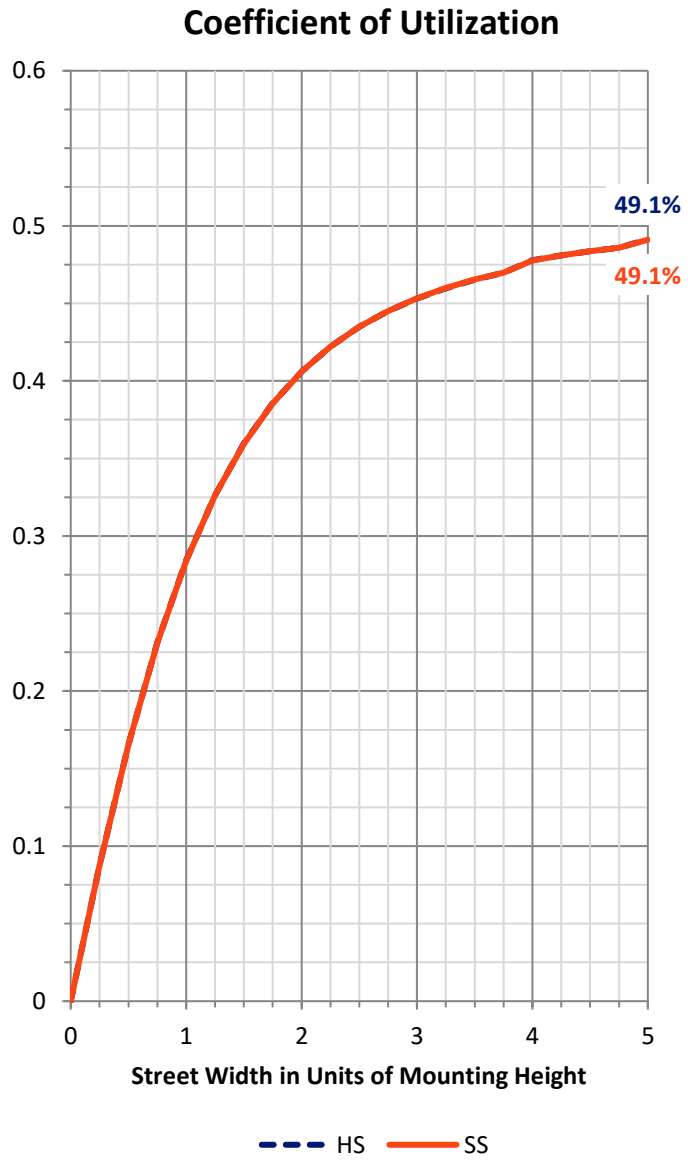
REPORT NUMBER: P880423
CATALOG NUMBER: EMM2-HSN-VA6-750-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5886.1	0.0	5886.1
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	5886.1	0.0	5886.1
	% Fixture	50.0	0.0	50.0
Total	Lumens	11772.2	0.0	11772.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.9	1.8
10°-20°	612.9	5.2
20°-30°	992.3	8.4
30°-40°	1333.6	11.3
40°-50°	1701.9	14.5
50°-60°	2093.8	17.8
60°-70°	2331.5	19.8
70°-80°	1892.5	16.1
80°-90°	605.8	5.1
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°	11772.2	100.0
0°-180°	11772.2	100.0



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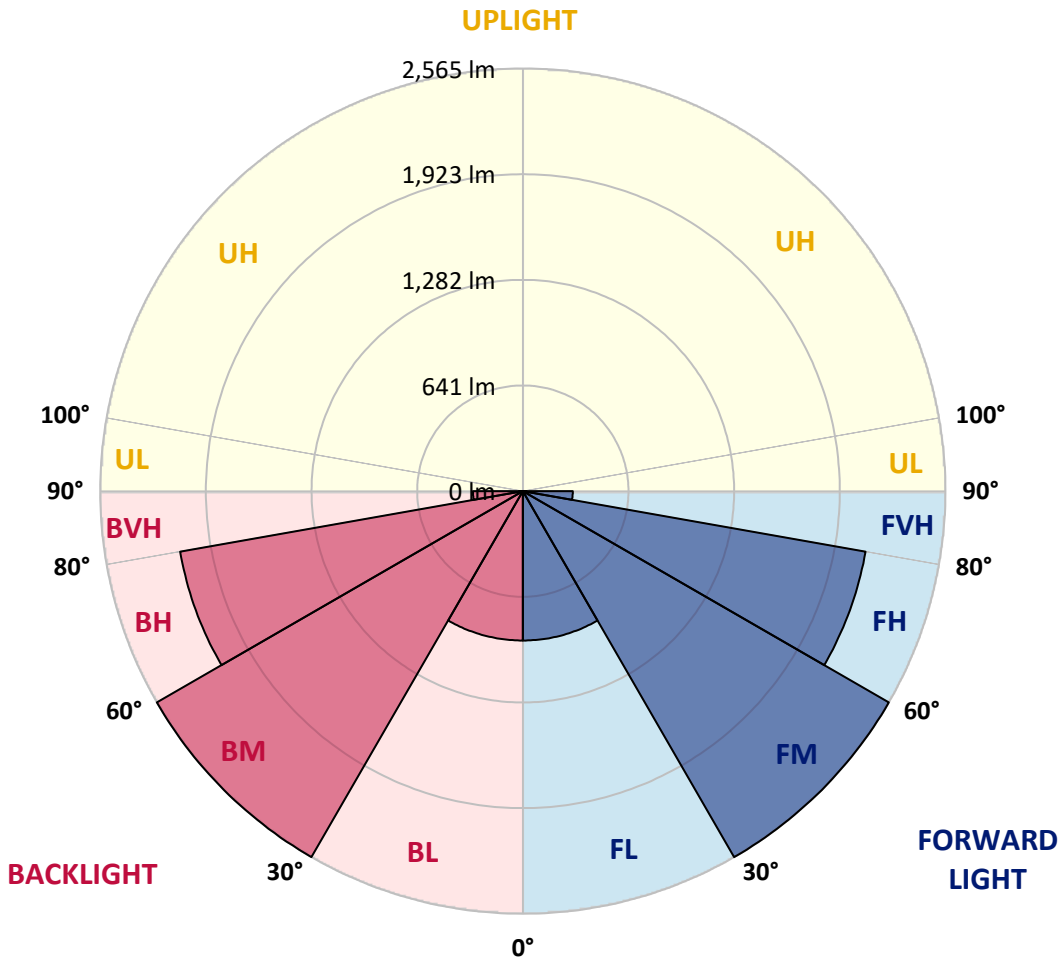
REPORT NUMBER: P880423
CATALOG NUMBER: EMM2-HSN-VA6-750-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	906.5	7.7			
FM	(30°-60°)	2564.6	21.8			
FH	(60°-80°)	2112.0	17.9			G2/5000
FVH	(80°-90°)	302.9	2.6			G3/500
BL	(0°-30°)	906.5	7.7	B2/1000		
BM	(30°-60°)	2564.6	21.8	B3/5000		
BH	(60°-80°)	2112.0	17.9	B3/2500		G2/5000
BVH	(80°-90°)	302.9	2.6			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3
Type V Short



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REPORT NUMBER: P880423
CATALOG NUMBER: EMM2-HSN-VA6-750-U-MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2
2.5°	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2
5°	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2180.2	2176.9	2180.2	2180.2
7.5°	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9	2176.9
10°	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7	2173.7
12.5°	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3
15°	2157.6	2160.8	2160.8	2160.8	2160.8	2160.8	2160.8	2160.8	2160.8	2157.6	2157.6
17.5°	2154.4	2154.4	2154.4	2157.6	2160.8	2160.8	2160.8	2157.6	2154.4	2151.1	2151.1
20°	2157.6	2157.6	2157.6	2160.8	2164.0	2167.3	2164.0	2160.8	2154.4	2154.4	2154.4
22.5°	2154.4	2157.6	2157.6	2160.8	2164.0	2164.0	2160.8	2157.6	2154.4	2151.1	2151.1
25°	2144.7	2144.7	2147.9	2151.1	2151.1	2151.1	2151.1	2144.7	2141.5	2138.2	2138.2
27.5°	2131.8	2135.0	2135.0	2138.2	2141.5	2141.5	2138.2	2131.8	2128.6	2125.3	2125.3
30°	2115.7	2115.7	2118.9	2125.3	2128.6	2131.8	2125.3	2118.9	2109.2	2106.0	2106.0
32.5°	2099.5	2102.8	2109.2	2115.7	2118.9	2122.1	2115.7	2109.2	2099.5	2093.1	2089.9
35°	2093.1	2093.1	2102.8	2115.7	2125.3	2125.3	2118.9	2106.0	2093.1	2080.2	2080.2
37.5°	2102.8	2106.0	2118.9	2141.5	2157.6	2157.6	2154.4	2131.8	2109.2	2089.9	2086.6
40°	2125.3	2128.6	2151.1	2180.2	2206.0	2209.2	2196.3	2167.3	2135.0	2112.4	2106.0
42.5°	2138.2	2144.7	2170.5	2206.0	2228.5	2238.2	2222.1	2193.1	2151.1	2122.1	2118.9
45°	2144.7	2151.1	2180.2	2218.9	2247.9	2257.6	2241.4	2202.7	2157.6	2125.3	2122.1
47.5°	2147.9	2154.4	2183.4	2231.8	2264.0	2273.7	2260.8	2215.6	2160.8	2128.6	2125.3
50°	2151.1	2164.0	2199.5	2251.1	2299.5	2306.0	2286.6	2231.8	2173.7	2135.0	2125.3
52.5°	2173.7	2183.4	2235.0	2309.2	2357.6	2376.9	2347.9	2293.1	2206.0	2147.9	2141.5
55°	2228.5	2231.8	2293.1	2386.6	2457.5	2483.3	2438.2	2364.0	2257.6	2199.5	2196.3
57.5°	2244.7	2264.0	2331.8	2438.2	2525.3	2557.5	2518.8	2405.9	2309.2	2231.8	2212.4
60°	2228.5	2244.7	2325.3	2447.9	2541.4	2567.2	2538.2	2431.7	2289.8	2202.7	2186.6
62.5°	2212.4	2231.8	2315.6	2454.3	2544.6	2573.6	2525.3	2435.0	2280.2	2193.1	2176.9
65°	2173.7	2199.5	2299.5	2435.0	2564.0	2602.7	2551.1	2405.9	2270.5	2154.4	2138.2
67.5°	2099.5	2112.4	2222.1	2380.1	2518.8	2557.5	2502.7	2351.1	2189.8	2077.0	2064.1
70°	1960.9	1989.9	2093.1	2267.2	2399.5	2418.8	2376.9	2225.3	2067.3	1948.0	1931.8
72.5°	1777.0	1819.0	1931.8	2109.2	2215.6	2254.3	2199.5	2077.0	1912.5	1777.0	1754.5
75°	1583.5	1606.1	1722.2	1896.4	2006.0	2041.5	1993.1	1873.8	1677.1	1583.5	1561.0
77.5°	1370.7	1386.8	1490.0	1644.8	1748.0	1777.0	1728.7	1631.9	1454.5	1367.4	1357.8
80°	1074.0	1106.2	1203.0	1335.2	1412.6	1457.7	1406.1	1312.6	1183.6	1080.4	1064.3
82.5°	767.6	790.2	877.2	967.5	1041.7	1054.6	1032.0	941.7	845.0	764.4	745.0
85°	419.3	428.9	483.8	577.3	606.3	628.9	596.6	528.9	480.5	428.9	412.8
87.5°	109.7	112.9	129.0	151.6	164.5	167.7	164.5	145.1	119.3	93.5	103.2
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: SP1-2407-176-6

Test Date: 09/26/2024

Luminaire Tested: MEM2-HTN-VA-30-750-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-750-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

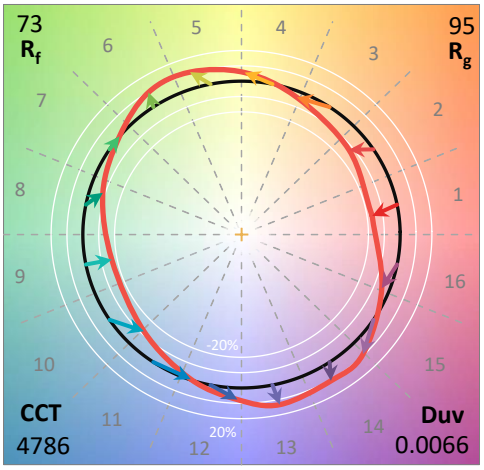
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-6
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-30-750-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	4786
CIE u':	0.2093
CIE v':	0.4953
Duv:	0.0066
CIE x:	0.3533
CIE y:	0.3716
CIE z:	0.2751
Peak Wavelength (nm):	449
Dominant Wavelength (nm):	570
Purity:	17.53512
Rf:	73
Rg:	94.6

CRI (Ra):	70.9				
R1:	67.8	R9:	-29.8		
R2:	75.1	R10:	40.9		
R3:	80.6	R11:	67.4		
R4:	71.6	R12:	35.3		
R5:	67.8	R13:	68.5		
R6:	65.4	R14:	89.0		
R7:	82.0	R15:	60.9		
R8:	57.0				



Test Conditions

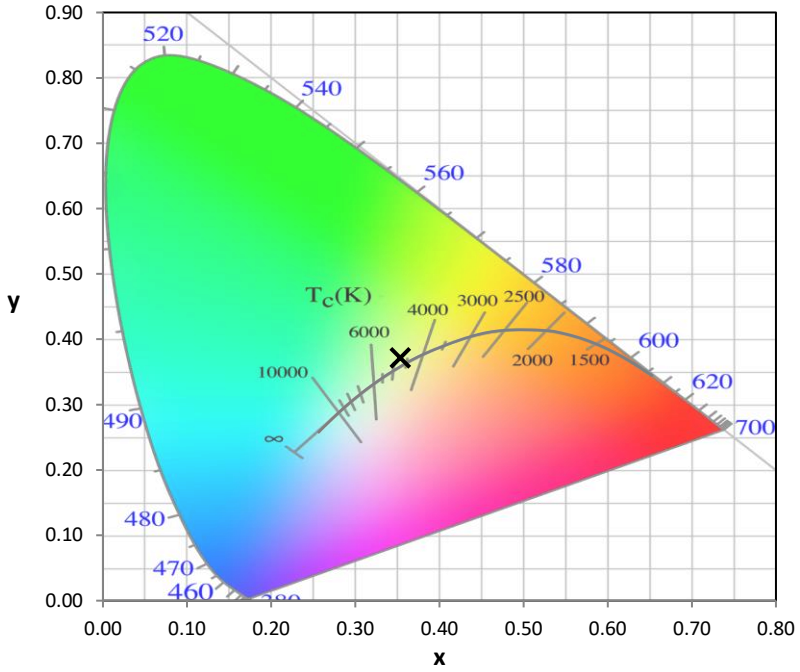
Stabilization Time:	45M
Operation Time:	1H 45M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-6

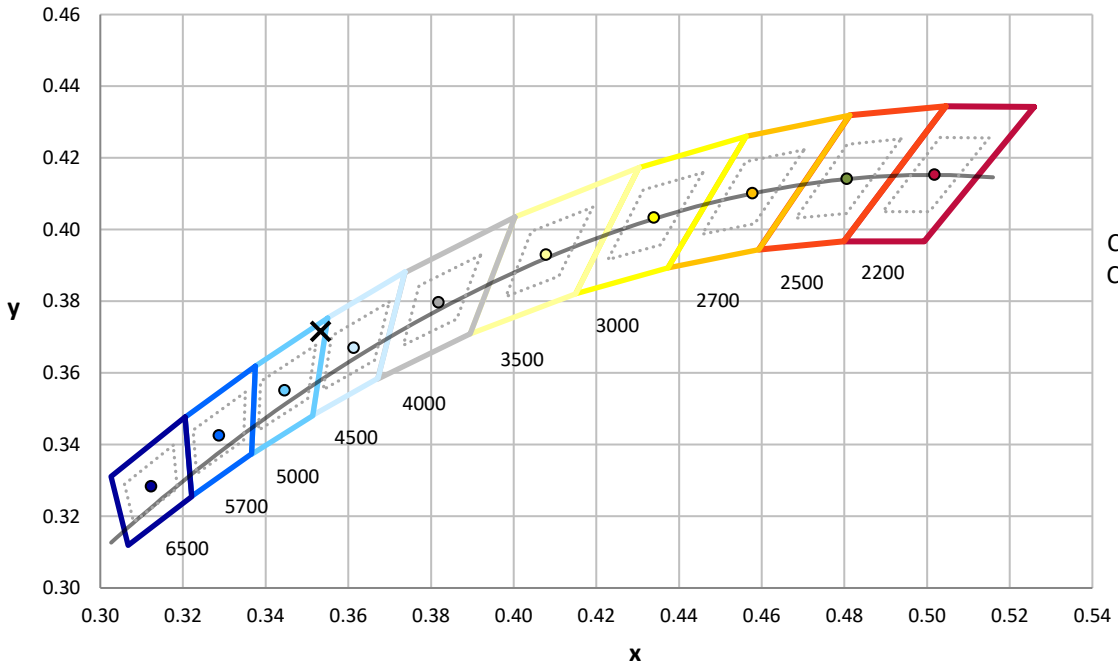
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-6

CIE 1931 Chromaticity Diagram



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



CCT = 4786K
CIE x = 0.3533
CIE y = 0.3716
Duv = 0.0066

Point lies inside the ANSI 5000K 7-step quadrangle

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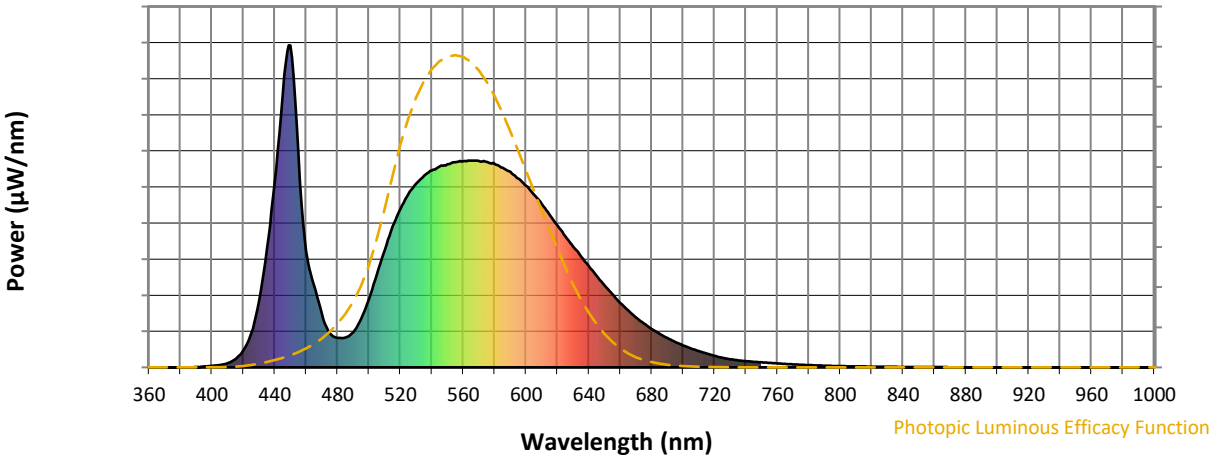
Photopic Flux vs. Wavelength

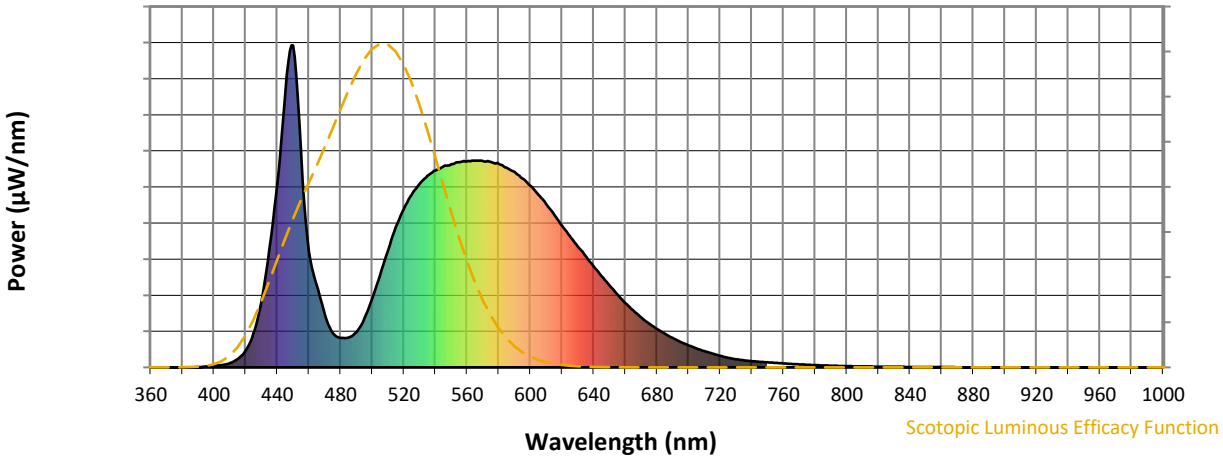


Photopic Lumens: NR

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	110	NR	620	440	NR	750	16	NR	880	0	NR
365	0	NR	495	150	NR	625	407	NR	755	14	NR	885	0	NR
370	0	NR	500	213	NR	630	375	NR	760	12	NR	890	0	NR
375	0	NR	505	288	NR	635	345	NR	765	11	NR	895	0	NR
380	0	NR	510	364	NR	640	314	NR	770	9	NR	900	0	NR
385	0	NR	515	436	NR	645	283	NR	775	8	NR	905	0	NR
390	1	NR	520	492	NR	650	254	NR	780	7	NR	910	0	NR
395	3	NR	525	537	NR	655	227	NR	785	6	NR	915	0	NR
400	5	NR	530	570	NR	660	200	NR	790	5	NR	920	0	NR
405	7	NR	535	595	NR	665	177	NR	795	4	NR	925	0	NR
410	13	NR	540	611	NR	670	155	NR	800	4	NR	930	0	NR
415	25	NR	545	624	NR	675	136	NR	805	3	NR	935	0	NR
420	52	NR	550	631	NR	680	119	NR	810	3	NR	940	0	NR
425	106	NR	555	637	NR	685	104	NR	815	3	NR	945	0	NR
430	204	NR	560	640	NR	690	91	NR	820	2	NR	950	0	NR
435	369	NR	565	642	NR	695	79	NR	825	2	NR	955	0	NR
440	573	NR	570	641	NR	700	68	NR	830	2	NR	960	0	NR
445	844	NR	575	638	NR	705	59	NR	835	2	NR	965	0	NR
450	999	NR	580	632	NR	710	50	NR	840	1	NR	970	0	NR
455	668	NR	585	620	NR	715	43	NR	845	1	NR	975	0	NR
460	361	NR	590	607	NR	720	36	NR	850	1	NR	980	0	NR
465	255	NR	595	586	NR	725	30	NR	855	1	NR	985	0	NR
470	165	NR	600	564	NR	730	25	NR	860	1	NR	990	0	NR
475	106	NR	605	537	NR	735	22	NR	865	1	NR	995	0	NR
480	91	NR	610	507	NR	740	19	NR	870	0	NR	1000	0	NR
485	93	NR	615	474	NR	745	17	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-6

Scotopic Flux vs. Wavelength

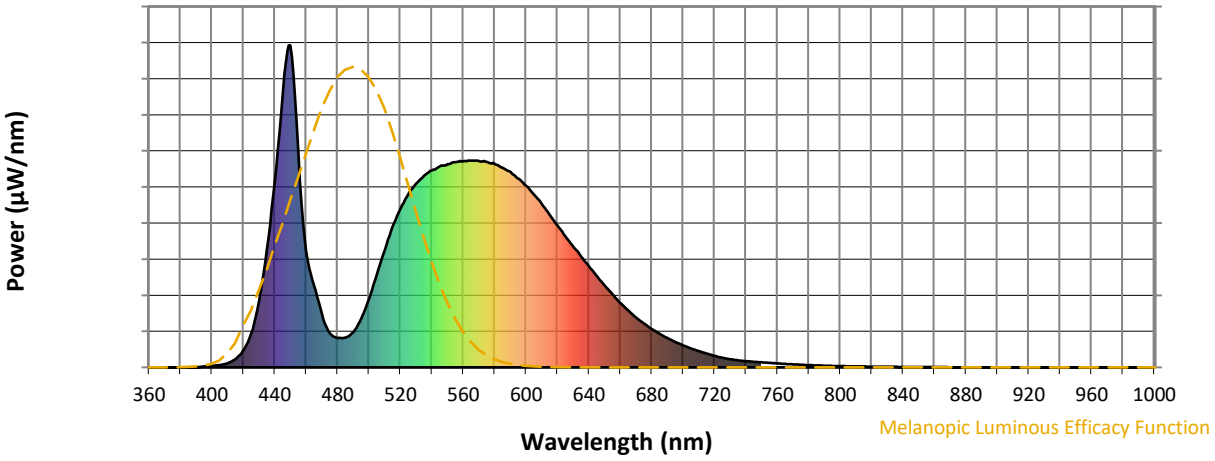


Scotopic Lumens: NR **S/P: 1.69**

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	110	NR	620	440	NR	750	16	NR	880	0	NR
365	0	NR	495	150	NR	625	407	NR	755	14	NR	885	0	NR
370	0	NR	500	213	NR	630	375	NR	760	12	NR	890	0	NR
375	0	NR	505	288	NR	635	345	NR	765	11	NR	895	0	NR
380	0	NR	510	364	NR	640	314	NR	770	9	NR	900	0	NR
385	0	NR	515	436	NR	645	283	NR	775	8	NR	905	0	NR
390	1	NR	520	492	NR	650	254	NR	780	7	NR	910	0	NR
395	3	NR	525	537	NR	655	227	NR	785	6	NR	915	0	NR
400	5	NR	530	570	NR	660	200	NR	790	5	NR	920	0	NR
405	7	NR	535	595	NR	665	177	NR	795	4	NR	925	0	NR
410	13	NR	540	611	NR	670	155	NR	800	4	NR	930	0	NR
415	25	NR	545	624	NR	675	136	NR	805	3	NR	935	0	NR
420	52	NR	550	631	NR	680	119	NR	810	3	NR	940	0	NR
425	106	NR	555	637	NR	685	104	NR	815	3	NR	945	0	NR
430	204	NR	560	640	NR	690	91	NR	820	2	NR	950	0	NR
435	369	NR	565	642	NR	695	79	NR	825	2	NR	955	0	NR
440	573	NR	570	641	NR	700	68	NR	830	2	NR	960	0	NR
445	844	NR	575	638	NR	705	59	NR	835	2	NR	965	0	NR
450	999	NR	580	632	NR	710	50	NR	840	1	NR	970	0	NR
455	668	NR	585	620	NR	715	43	NR	845	1	NR	975	0	NR
460	361	NR	590	607	NR	720	36	NR	850	1	NR	980	0	NR
465	255	NR	595	586	NR	725	30	NR	855	1	NR	985	0	NR
470	165	NR	600	564	NR	730	25	NR	860	1	NR	990	0	NR
475	106	NR	605	537	NR	735	22	NR	865	1	NR	995	0	NR
480	91	NR	610	507	NR	740	19	NR	870	0	NR	1000	0	NR
485	93	NR	615	474	NR	745	17	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-6

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.36**

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	110	NR	620	440	NR	750	16	NR	880	0	NR
365	0	NR	495	150	NR	625	407	NR	755	14	NR	885	0	NR
370	0	NR	500	213	NR	630	375	NR	760	12	NR	890	0	NR
375	0	NR	505	288	NR	635	345	NR	765	11	NR	895	0	NR
380	0	NR	510	364	NR	640	314	NR	770	9	NR	900	0	NR
385	0	NR	515	436	NR	645	283	NR	775	8	NR	905	0	NR
390	1	NR	520	492	NR	650	254	NR	780	7	NR	910	0	NR
395	3	NR	525	537	NR	655	227	NR	785	6	NR	915	0	NR
400	5	NR	530	570	NR	660	200	NR	790	5	NR	920	0	NR
405	7	NR	535	595	NR	665	177	NR	795	4	NR	925	0	NR
410	13	NR	540	611	NR	670	155	NR	800	4	NR	930	0	NR
415	25	NR	545	624	NR	675	136	NR	805	3	NR	935	0	NR
420	52	NR	550	631	NR	680	119	NR	810	3	NR	940	0	NR
425	106	NR	555	637	NR	685	104	NR	815	3	NR	945	0	NR
430	204	NR	560	640	NR	690	91	NR	820	2	NR	950	0	NR
435	369	NR	565	642	NR	695	79	NR	825	2	NR	955	0	NR
440	573	NR	570	641	NR	700	68	NR	830	2	NR	960	0	NR
445	844	NR	575	638	NR	705	59	NR	835	2	NR	965	0	NR
450	999	NR	580	632	NR	710	50	NR	840	1	NR	970	0	NR
455	668	NR	585	620	NR	715	43	NR	845	1	NR	975	0	NR
460	361	NR	590	607	NR	720	36	NR	850	1	NR	980	0	NR
465	255	NR	595	586	NR	725	30	NR	855	1	NR	985	0	NR
470	165	NR	600	564	NR	730	25	NR	860	1	NR	990	0	NR
475	106	NR	605	537	NR	735	22	NR	865	1	NR	995	0	NR
480	91	NR	610	507	NR	740	19	NR	870	0	NR	1000	0	NR
485	93	NR	615	474	NR	745	17	NR	875	0	NR			

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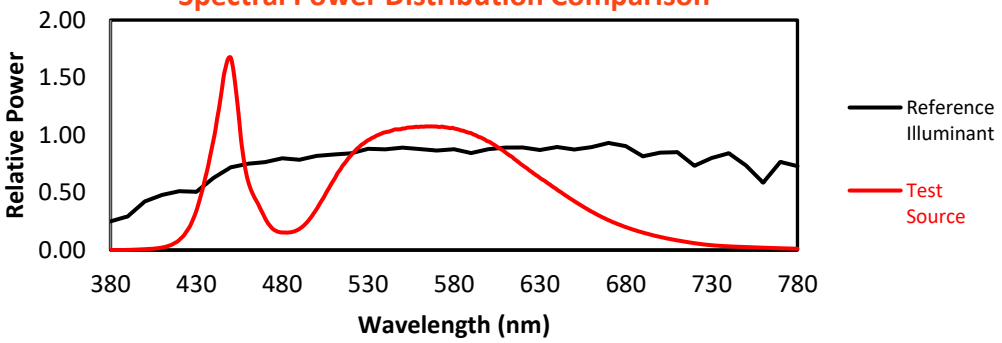
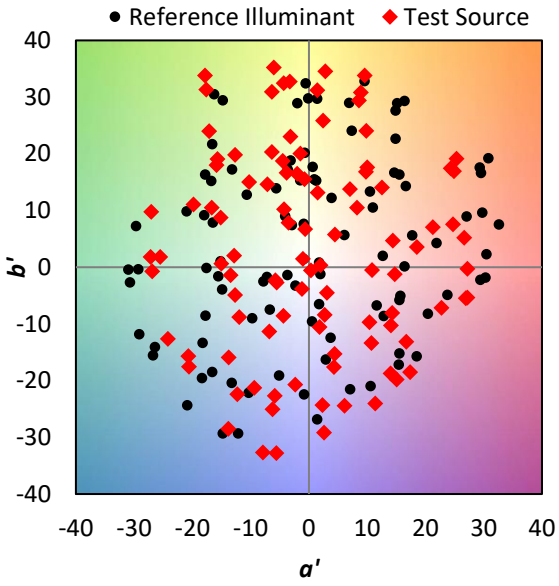
Summary

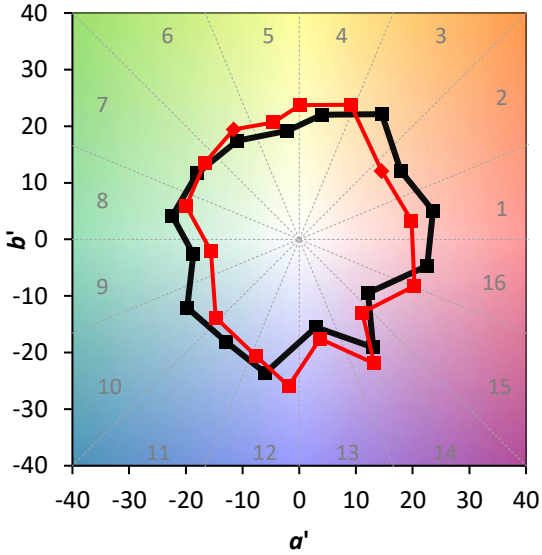
R_f = 73
R_g = 94.6
CIE R_a = 70.9
R_9 = -29.8

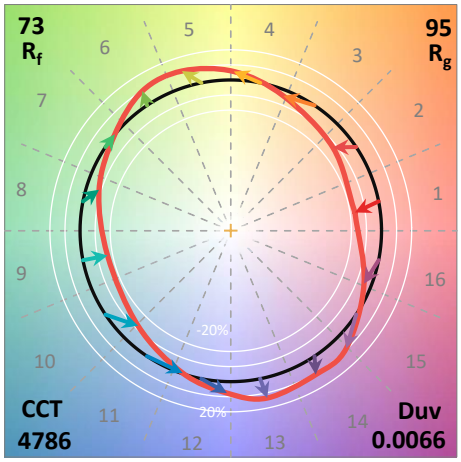
Spectral Power Distribution Comparison

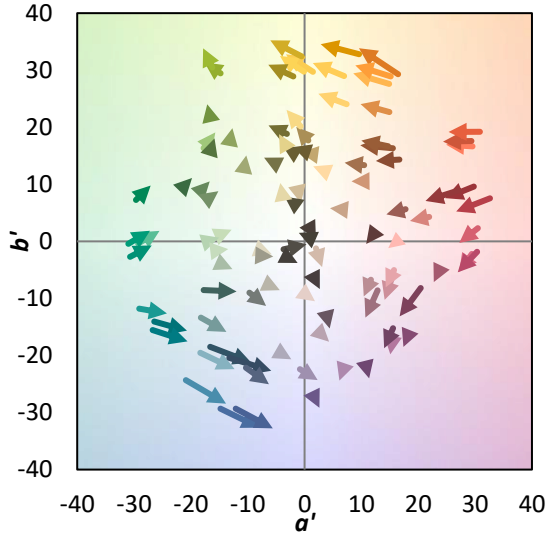


Color Vector Graphics









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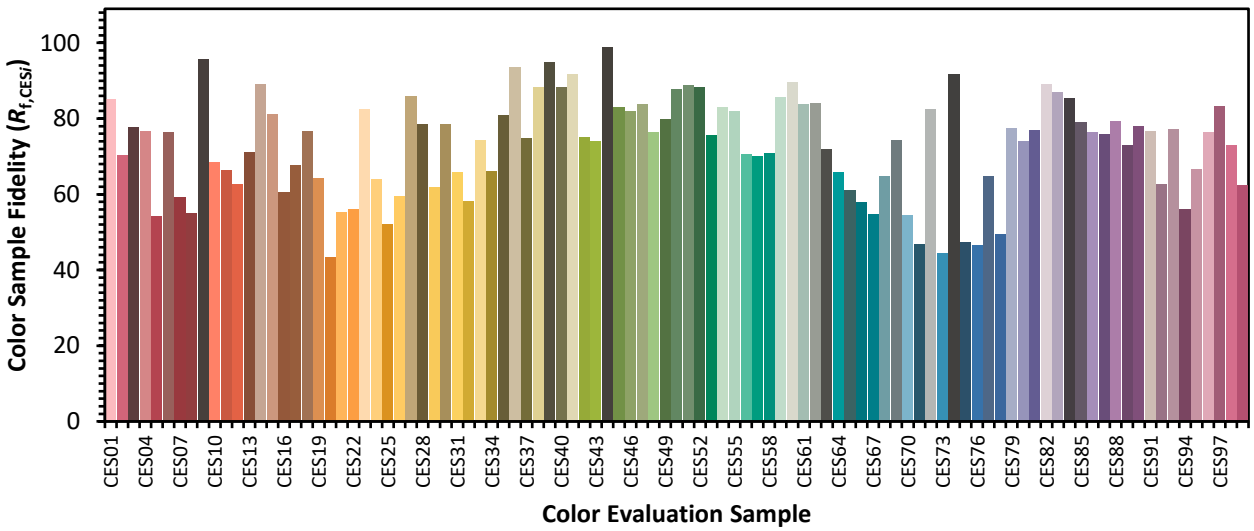
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 60	CES51 = 89	CES76 = 46
CES02 = 59	CES27 = 86	CES52 = 88	CES77 = 65
CES03 = 30	CES28 = 78	CES53 = 76	CES78 = 49
CES04 = 69	CES29 = 62	CES54 = 83	CES79 = 78
CES05 = 46	CES30 = 79	CES55 = 82	CES80 = 74
CES06 = 50	CES31 = 66	CES56 = 71	CES81 = 77
CES07 = 39	CES32 = 58	CES57 = 70	CES82 = 89
CES08 = 38	CES33 = 74	CES58 = 71	CES83 = 87
CES09 = 29	CES34 = 66	CES59 = 86	CES84 = 86
CES10 = 72	CES35 = 81	CES60 = 90	CES85 = 79
CES11 = 56	CES36 = 94	CES61 = 84	CES86 = 76
CES12 = 61	CES37 = 75	CES62 = 84	CES87 = 76
CES13 = 41	CES38 = 88	CES63 = 72	CES88 = 79
CES14 = 74	CES39 = 95	CES64 = 66	CES89 = 73
CES15 = 70	CES40 = 88	CES65 = 61	CES90 = 78
CES16 = 46	CES41 = 92	CES66 = 58	CES91 = 77
CES17 = 49	CES42 = 75	CES67 = 55	CES92 = 63
CES18 = 55	CES43 = 74	CES68 = 65	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 74	CES94 = 56
CES20 = 64	CES45 = 83	CES70 = 55	CES95 = 67
CES21 = 85	CES46 = 82	CES71 = 47	CES96 = 76
CES22 = 77	CES47 = 84	CES72 = 82	CES97 = 83
CES23 = 91	CES48 = 76	CES73 = 44	CES98 = 73
CES24 = 90	CES49 = 80	CES74 = 92	CES99 = 62
CES25 = 71	CES50 = 88	CES75 = 47	



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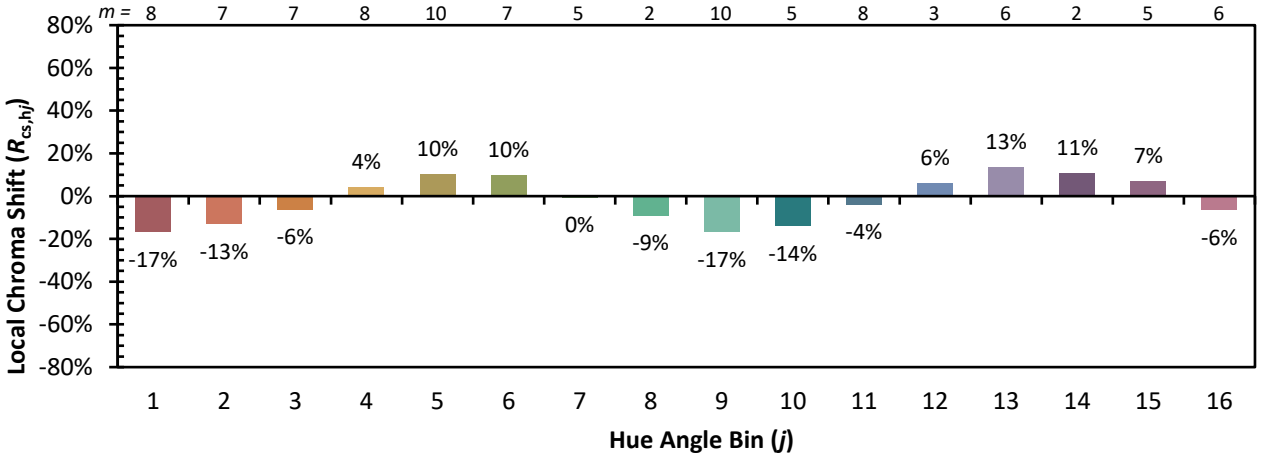
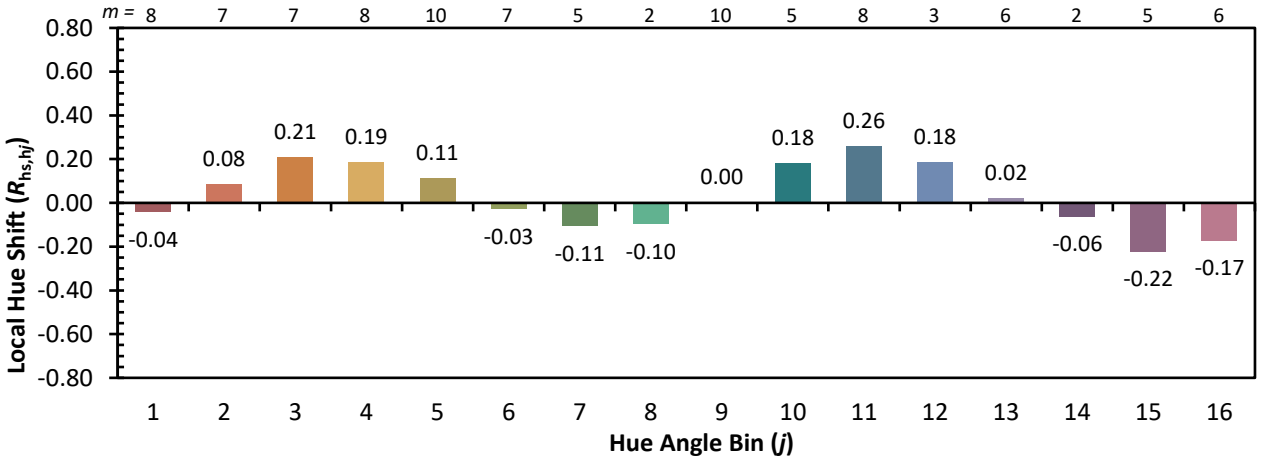
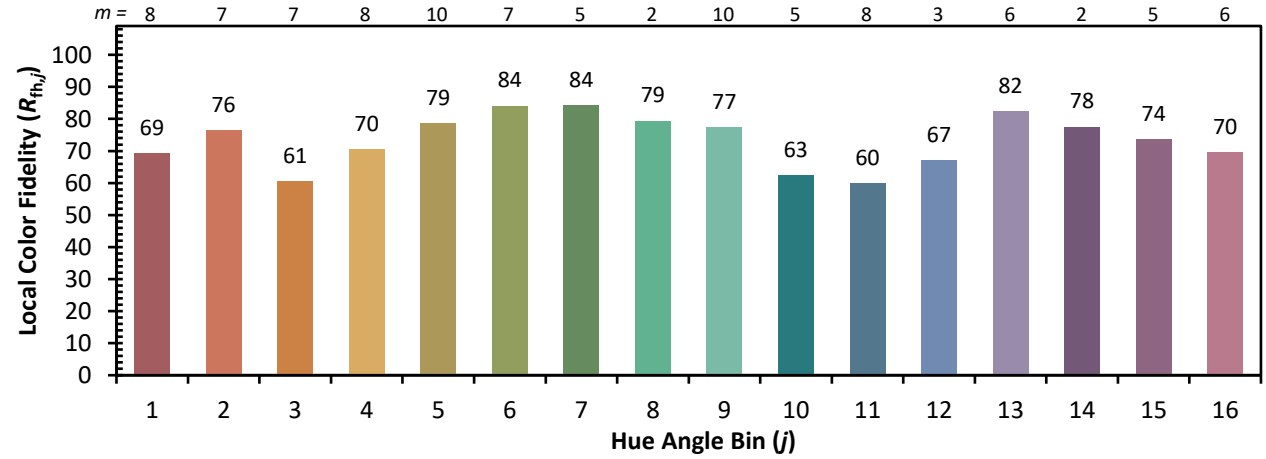
Color Rendition by Hue-Angle Bin







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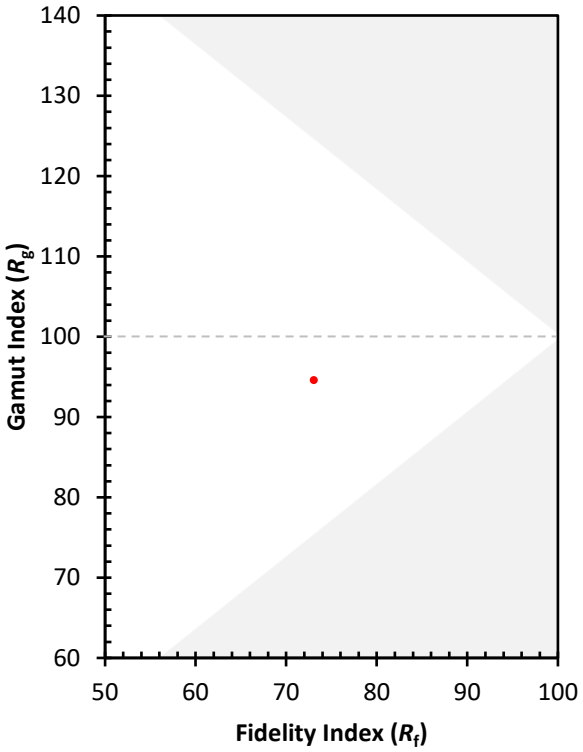
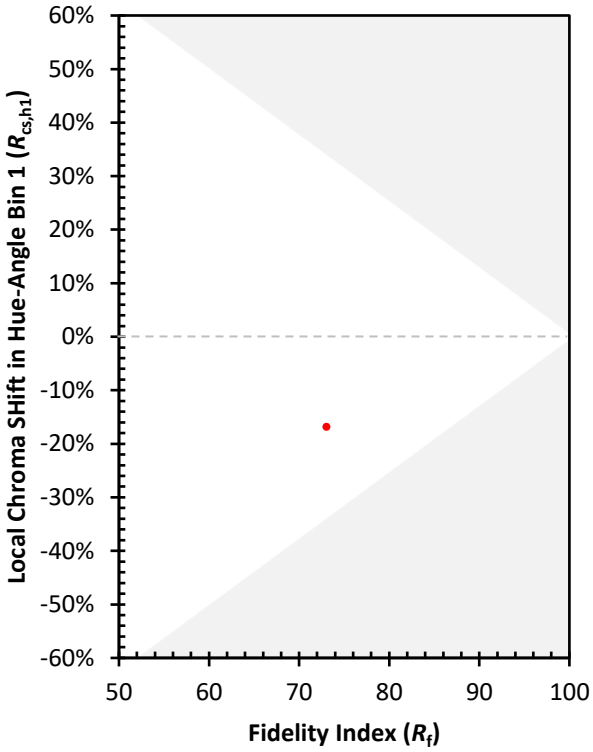
Measure Comparisons





(END OF REPORT)