

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: P880345

Luminaire Tested: **EMM2-HSN-VA6-740-U-WQ**

Issue Date: 10/01/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P880345  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 10/01/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: EMM2-HSN-VA6-740-U-WQ  
Description: EPIC MODERN SHORT HOUSING 6W 70CRI 4000K VISUAL COMFORT FIXTURE w/  
TYPE V WIDE DISTRIBUTION OPTIC  
Light Source: (1) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

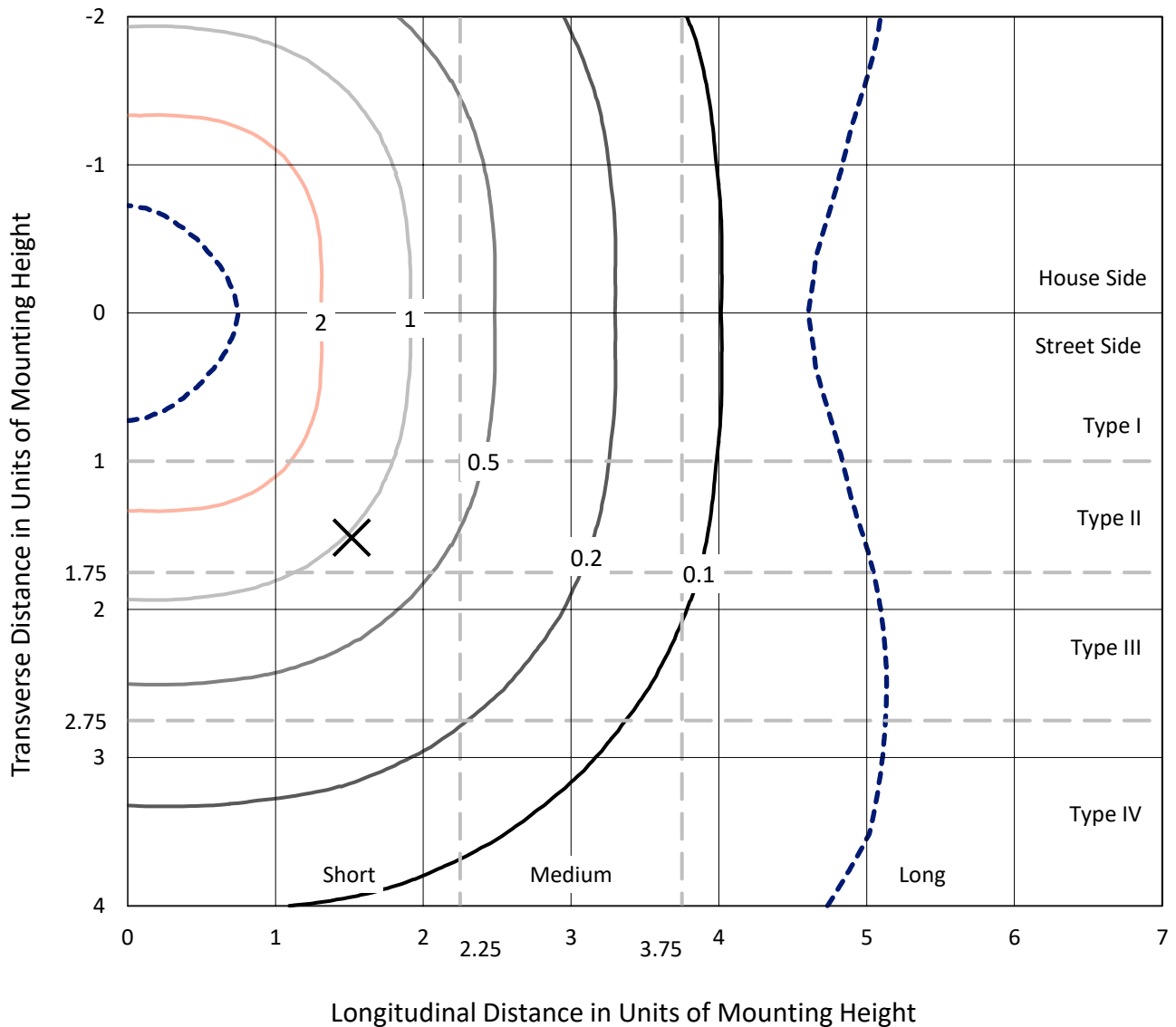
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10569.3 lumens  
Efficiency: N/A  
Efficacy: 99.7 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

REPORT NUMBER: P880345  
 CATALOG NUMBER: EMM2-HSN-VA6-740-U-WQ

### Iso-Footcandle Lines of Horizontal Illumination

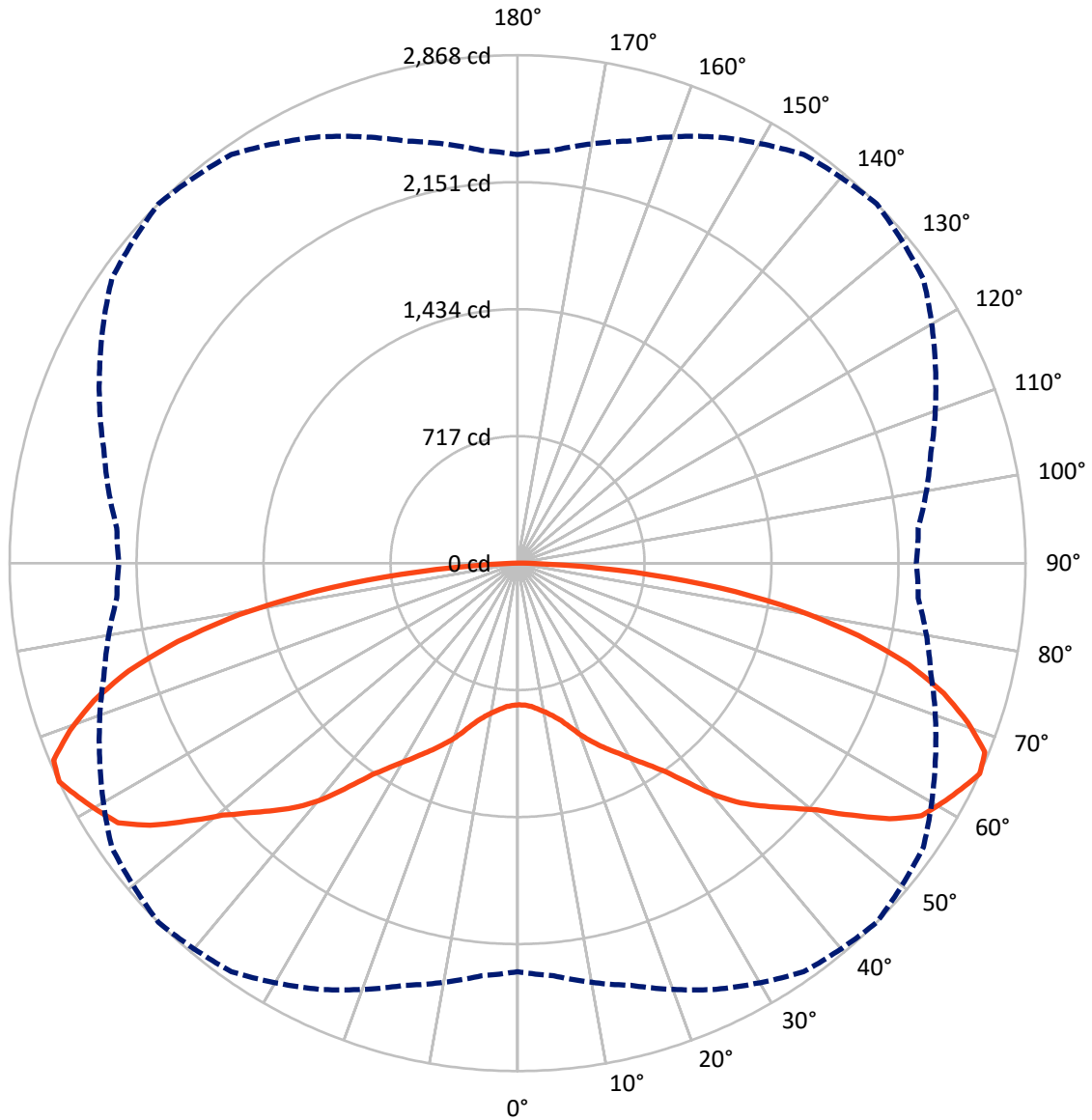
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 3.8 fc  
 Type V - Short - N/A

REPORT NUMBER: P880345  
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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 65-Deg Vertical

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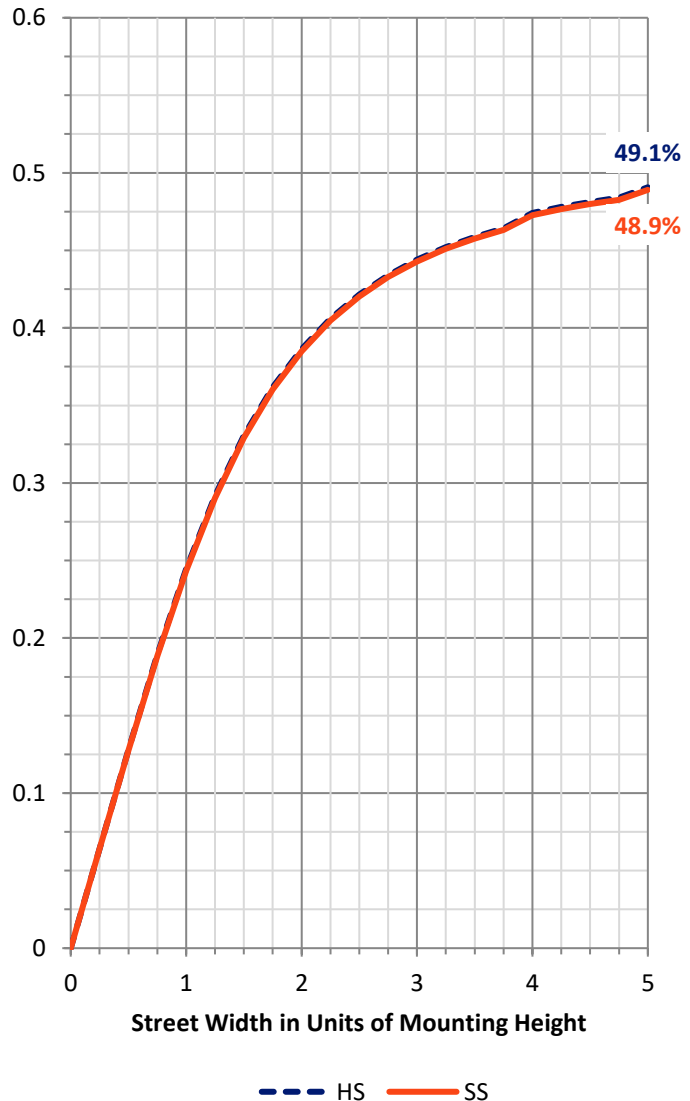
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	5284.6	0.0	5284.6
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	5284.6	0.0	5284.6
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	10569.3	0.0	10569.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.0	0.7
10°-20°	265.9	2.5
20°-30°	534.3	5.1
30°-40°	904.4	8.6
40°-50°	1445.8	13.7
50°-60°	2088.2	19.8
60°-70°	2514.6	23.8
70°-80°	2083.2	19.7
80°-90°	653.7	6.2
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°	10569.3	100.0
0°-180°	10569.3	100.0



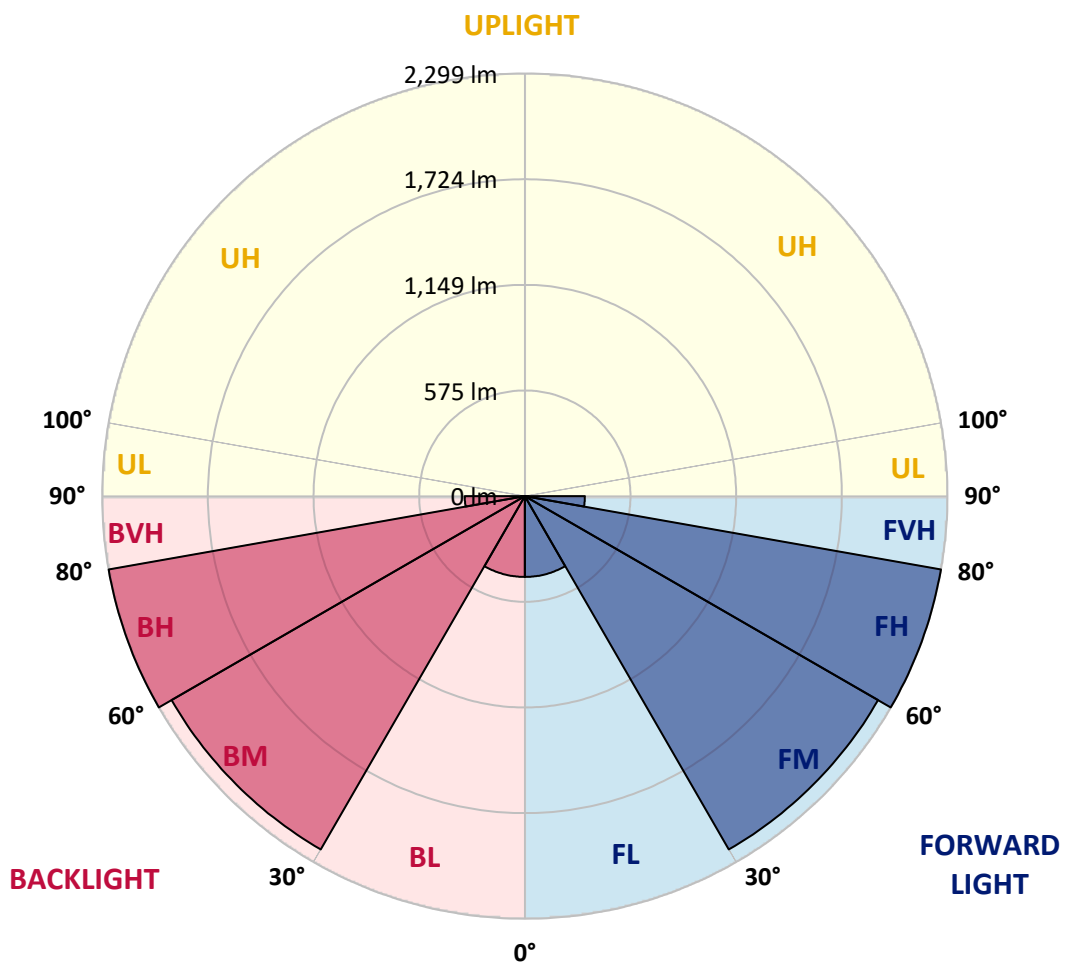
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	439.6	4.2			
FM (30°-60°)	2219.2	21.0			
FH (60°-80°)	2298.9	21.8			G2/5000
FVH (80°-90°)	326.8	3.1			G3/500
BL (0°-30°)	439.6	4.2	B1/500		
BM (30°-60°)	2219.2	21.0	B2/2500		
BH (60°-80°)	2298.9	21.8	B3/2500		G2/5000
BVH (80°-90°)	326.8	3.1			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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CATALOG NUMBER: EMM2-HSN-VA6-740-U-WQ

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	799.9	799.9	799.9	799.9	799.9	799.9	799.9	799.9	799.9	799.9	799.9
2.5°	803.2	803.2	803.2	803.2	803.2	803.2	803.2	803.2	803.2	803.2	803.2
5°	816.1	816.1	816.1	812.8	812.8	812.8	816.1	816.1	816.1	816.1	816.1
7.5°	832.2	832.2	832.2	832.2	832.2	832.2	829.0	829.0	829.0	829.0	832.2
10°	854.8	858.0	858.0	854.8	854.8	854.8	851.6	851.6	854.8	854.8	851.6
12.5°	887.0	887.0	887.0	887.0	883.8	883.8	883.8	883.8	883.8	883.8	883.8
15°	922.5	922.5	922.5	922.5	922.5	922.5	922.5	922.5	919.3	916.1	916.1
17.5°	967.7	964.4	970.9	967.7	974.1	977.4	970.9	967.7	964.4	961.2	958.0
20°	1022.5	1025.7	1032.2	1035.4	1038.6	1041.9	1032.2	1029.0	1022.5	1019.3	1016.1
22.5°	1087.0	1087.0	1093.5	1093.5	1099.9	1099.9	1096.7	1087.0	1080.6	1080.6	1077.3
25°	1141.9	1145.1	1151.5	1151.5	1158.0	1158.0	1154.8	1148.3	1138.6	1132.2	1129.0
27.5°	1199.9	1199.9	1203.1	1212.8	1216.0	1216.0	1212.8	1203.1	1190.2	1183.8	1183.8
30°	1254.8	1258.0	1261.2	1274.1	1280.6	1283.8	1270.9	1261.2	1245.1	1238.6	1238.6
32.5°	1319.3	1319.3	1325.7	1345.1	1354.7	1358.0	1345.1	1328.9	1309.6	1296.7	1296.7
35°	1390.2	1387.0	1406.4	1425.7	1448.3	1448.3	1438.6	1412.8	1383.8	1367.6	1364.4
37.5°	1483.8	1487.0	1506.3	1541.8	1577.3	1577.3	1567.6	1522.5	1490.2	1461.2	1454.7
40°	1593.4	1596.7	1632.1	1674.1	1712.8	1725.7	1706.3	1661.2	1606.3	1564.4	1561.2
42.5°	1687.0	1699.9	1735.4	1793.4	1832.1	1851.5	1822.5	1770.8	1709.6	1661.2	1651.5
45°	1777.3	1790.2	1835.4	1896.6	1945.0	1957.9	1932.1	1870.8	1799.9	1748.3	1741.8
47.5°	1861.2	1874.1	1919.2	1999.9	2051.5	2064.4	2041.8	1970.8	1883.7	1832.1	1825.7
50°	1938.6	1967.6	2022.4	2109.5	2183.7	2190.2	2157.9	2074.0	1983.7	1912.8	1903.1
52.5°	2045.0	2057.9	2135.3	2251.5	2335.3	2364.4	2312.7	2222.4	2090.2	2006.3	1990.2
55°	2174.0	2180.5	2264.4	2399.8	2509.5	2548.2	2483.7	2367.6	2216.0	2132.1	2119.2
57.5°	2248.2	2277.3	2374.0	2519.2	2638.5	2690.1	2628.8	2477.2	2328.9	2222.4	2193.4
60°	2280.5	2309.5	2416.0	2590.1	2719.2	2751.4	2706.3	2557.9	2364.4	2245.0	2225.7
62.5°	2312.7	2341.8	2448.2	2638.5	2764.3	2809.5	2738.5	2606.3	2396.6	2280.5	2254.7
65°	2306.3	2338.5	2467.6	2654.7	2815.9	2867.5	2796.6	2603.0	2416.0	2270.8	2251.5
67.5°	2241.8	2270.8	2406.3	2612.7	2790.1	2845.0	2767.5	2567.6	2357.9	2209.5	2186.9
70°	2112.8	2148.2	2280.5	2506.3	2670.8	2696.6	2638.5	2457.9	2238.6	2080.5	2051.5
72.5°	1938.6	1974.1	2109.5	2341.8	2470.8	2516.0	2451.4	2296.6	2074.0	1912.8	1887.0
75°	1732.1	1754.7	1880.5	2099.9	2238.6	2280.5	2232.1	2064.4	1838.6	1709.6	1680.5
77.5°	1490.2	1522.5	1635.4	1819.2	1928.9	1967.6	1922.4	1803.1	1593.4	1483.8	1461.2
80°	1170.9	1209.6	1312.8	1451.5	1567.6	1596.7	1558.0	1428.9	1296.7	1177.3	1151.5
82.5°	845.1	854.8	948.3	1048.3	1135.4	1151.5	1122.5	1051.5	912.8	832.2	796.7
85°	441.9	454.8	522.5	596.7	651.6	661.2	648.3	570.9	525.8	451.6	422.6
87.5°	100.0	103.2	122.6	135.5	164.5	161.3	171.0	135.5	129.0	106.4	93.5
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: SP1-2407-176-5

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-740-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-740-U-WQ



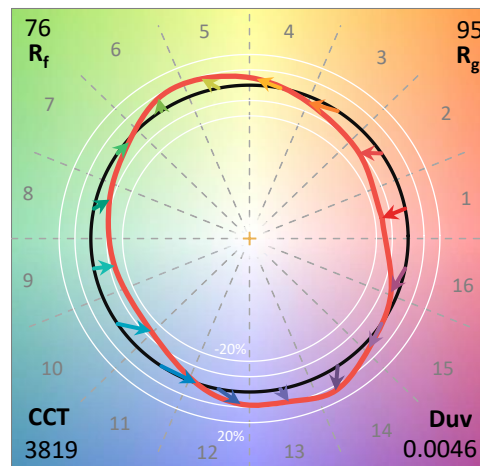
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-176-5  
 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-30-740-U-WQ**  
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

**Spectral Parameters**

CCT (K): 3819  
 CIE u': 0.2261  
 CIE v': 0.5108  
 Duv: 0.0046  
 CIE x: 0.3926  
 CIE y: 0.3942  
 CIE z: 0.2132  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 577  
 Purity: 36.15483  
 Rf: 75.6  
 Rg: 94.8

CRI (Ra):	72.9		
R1:	70.1	R9:	-21.5
R2:	78.4	R10:	48.5
R3:	85.0	R11:	68.4
R4:	72.9	R12:	39.0
R5:	69.1	R13:	71.1
R6:	69.2	R14:	91.3
R7:	82.8	R15:	63.2
R8:	55.4		



**Test Conditions**

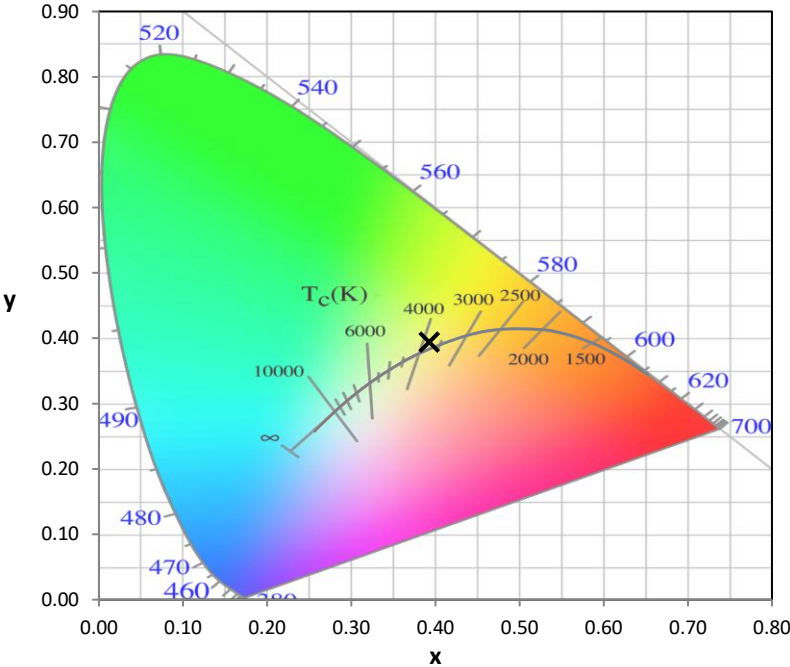
Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.2

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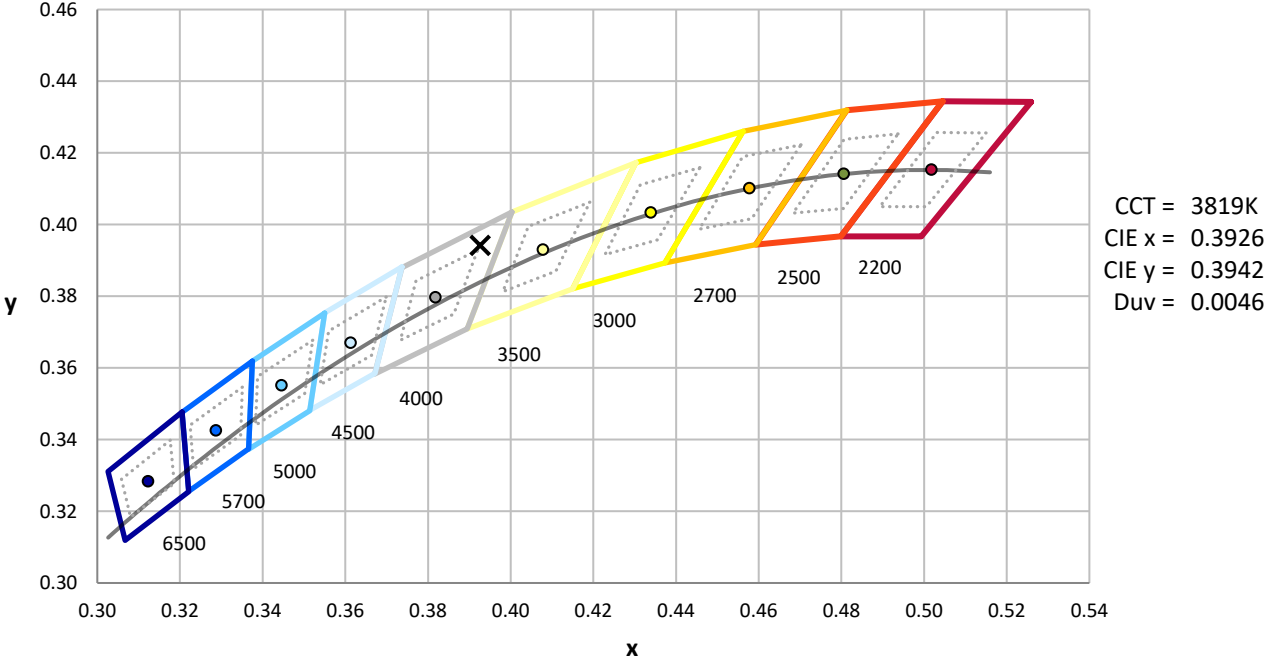
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



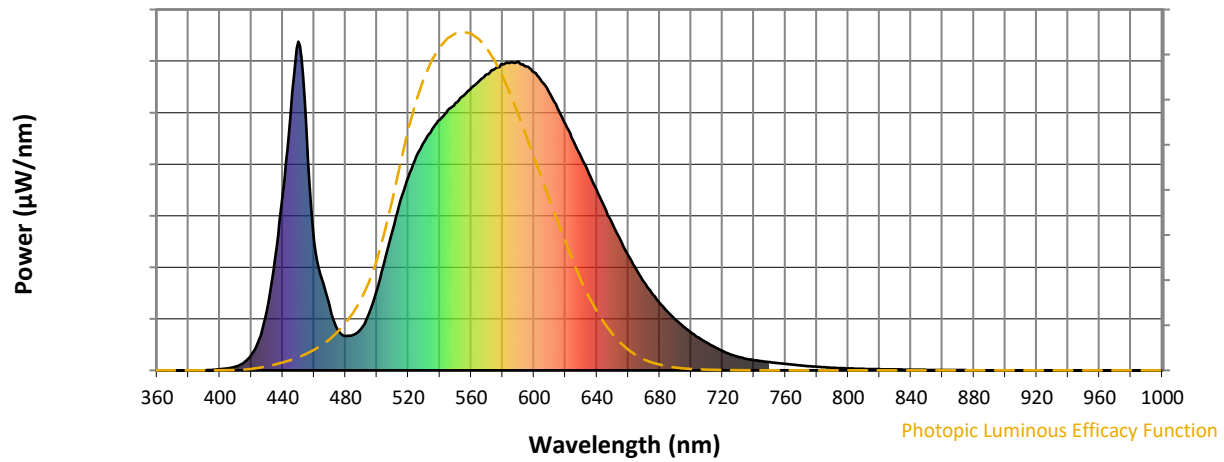
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

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**Photopic Flux vs. Wavelength**

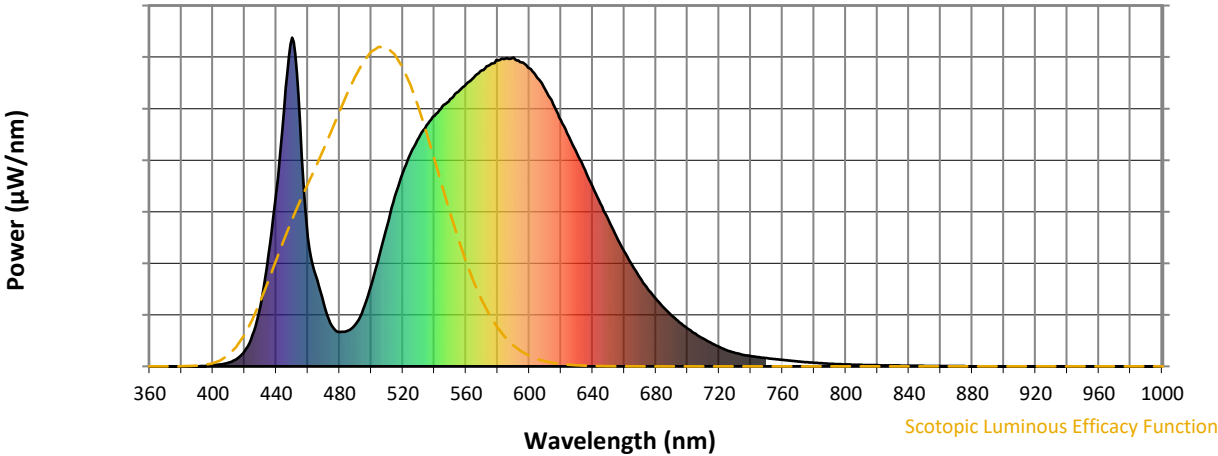


**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

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Scotopic Flux vs. Wavelength

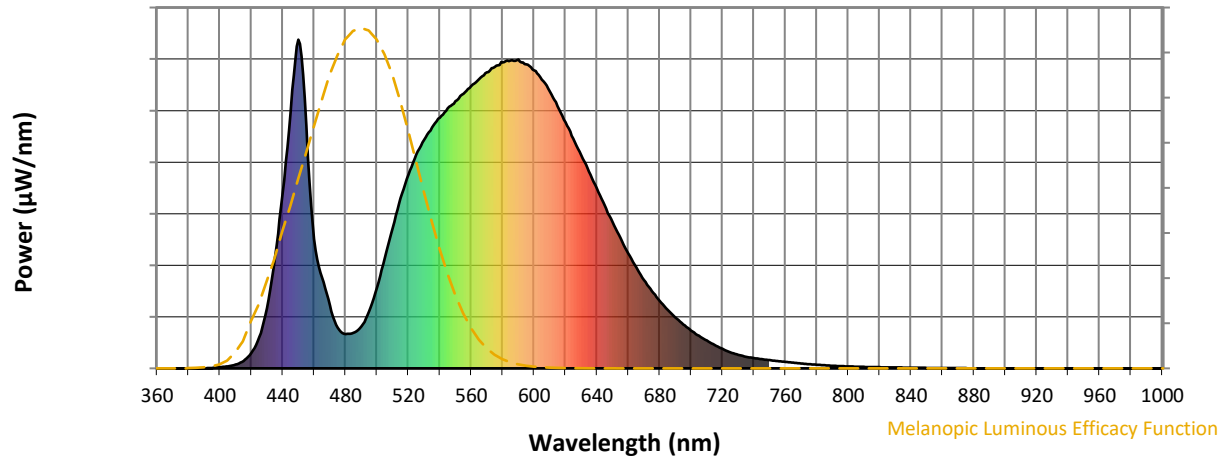


Scotopic Lumens: NR S/P: 1.45

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-5

**Melanopic Flux vs. Wavelength**



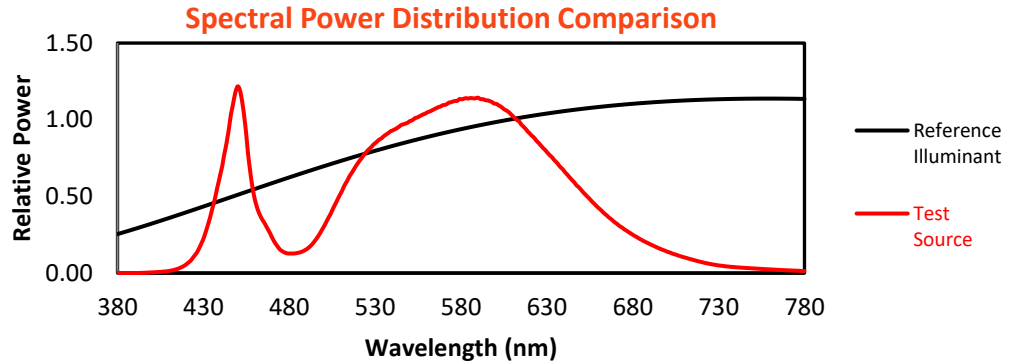
**Melanopic Lumens: NR**

**M/P: 2.76**

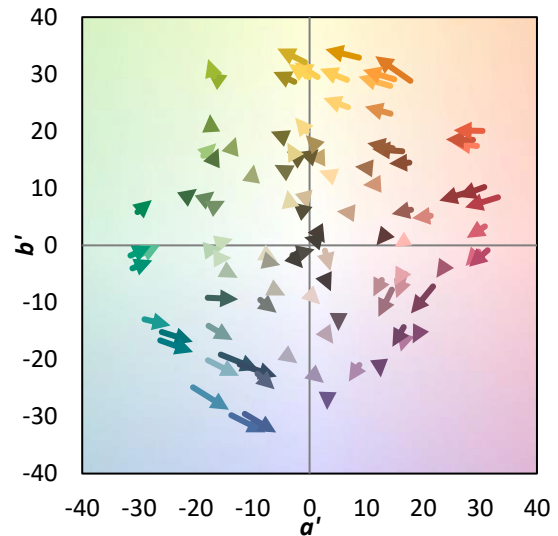
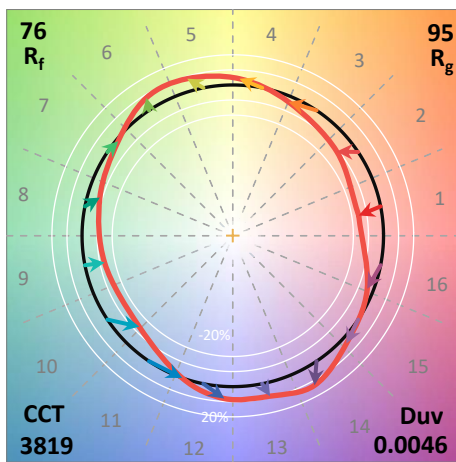
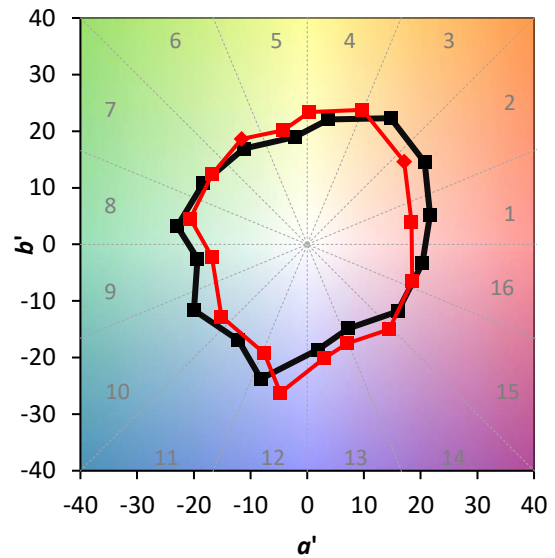
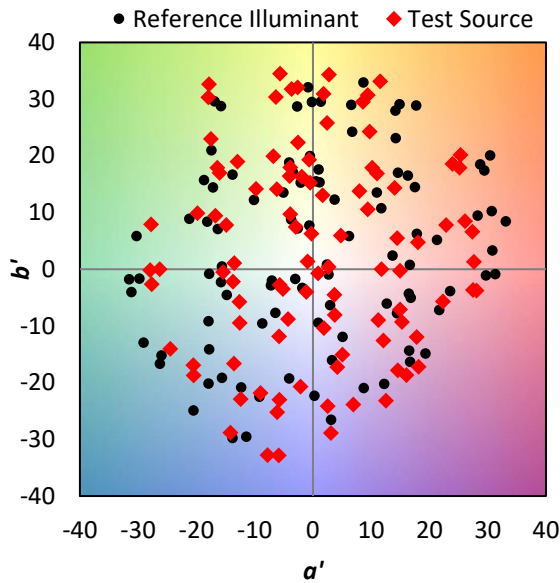
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	127	NR	620	748	NR	750	25	NR	880	0	NR
365	0	NR	495	173	NR	625	699	NR	755	22	NR	885	0	NR
370	0	NR	500	246	NR	630	648	NR	760	20	NR	890	0	NR
375	0	NR	505	335	NR	635	599	NR	765	17	NR	895	0	NR
380	0	NR	510	427	NR	640	547	NR	770	15	NR	900	0	NR
385	0	NR	515	517	NR	645	495	NR	775	13	NR	905	0	NR
390	0	NR	520	589	NR	650	445	NR	780	11	NR	910	0	NR
395	1	NR	525	649	NR	655	396	NR	785	9	NR	915	0	NR
400	4	NR	530	695	NR	660	349	NR	790	8	NR	920	0	NR
405	6	NR	535	733	NR	665	308	NR	795	7	NR	925	0	NR
410	11	NR	540	763	NR	670	269	NR	800	6	NR	930	0	NR
415	23	NR	545	792	NR	675	235	NR	805	5	NR	935	0	NR
420	46	NR	550	813	NR	680	205	NR	810	5	NR	940	0	NR
425	95	NR	555	835	NR	685	178	NR	815	4	NR	945	0	NR
430	183	NR	560	859	NR	690	155	NR	820	3	NR	950	0	NR
435	338	NR	565	880	NR	695	134	NR	825	3	NR	955	0	NR
440	534	NR	570	900	NR	700	115	NR	830	3	NR	960	0	NR
445	782	NR	575	918	NR	705	99	NR	835	2	NR	965	0	NR
450	1000	NR	580	931	NR	710	84	NR	840	2	NR	970	0	NR
455	739	NR	585	937	NR	715	71	NR	845	2	NR	975	0	NR
460	393	NR	590	939	NR	720	59	NR	850	1	NR	980	0	NR
465	276	NR	595	925	NR	725	49	NR	855	1	NR	985	0	NR
470	190	NR	600	907	NR	730	41	NR	860	1	NR	990	0	NR
475	123	NR	605	878	NR	735	35	NR	865	1	NR	995	0	NR
480	105	NR	610	842	NR	740	31	NR	870	1	NR	1000	0	NR
485	108	NR	615	797	NR	745	28	NR	875	1	NR			

**Summary**

$R_f = 75.6$   
 $R_g = 94.8$   
 $CIE R_a = 72.9$   
 $R_g = -21.5$

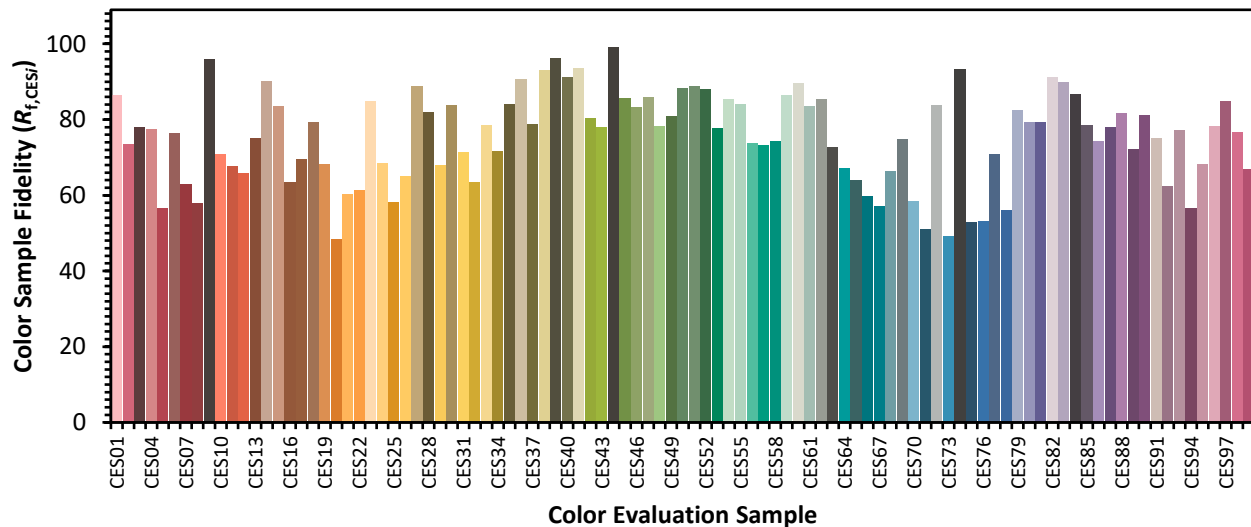


**Color Vector Graphics**



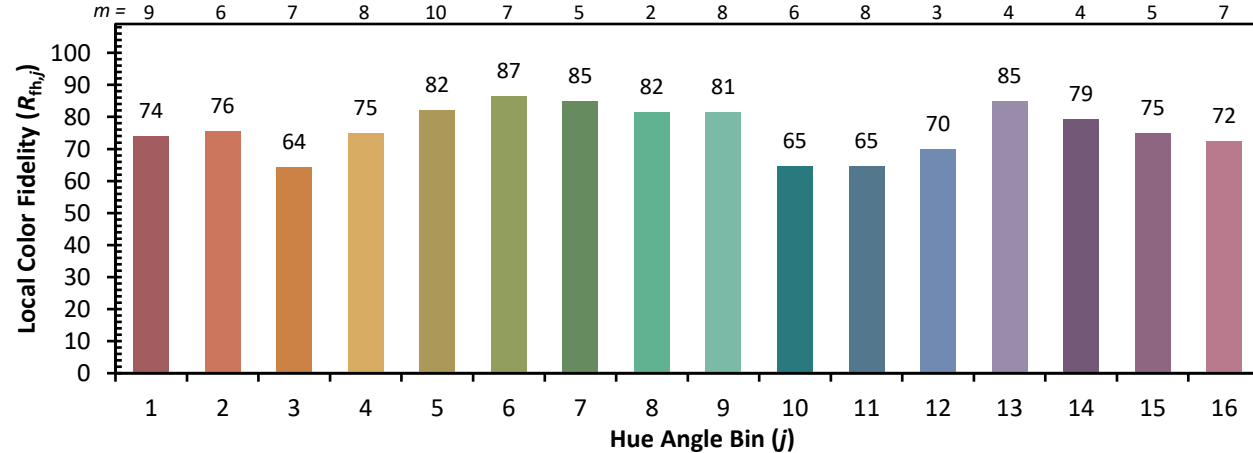
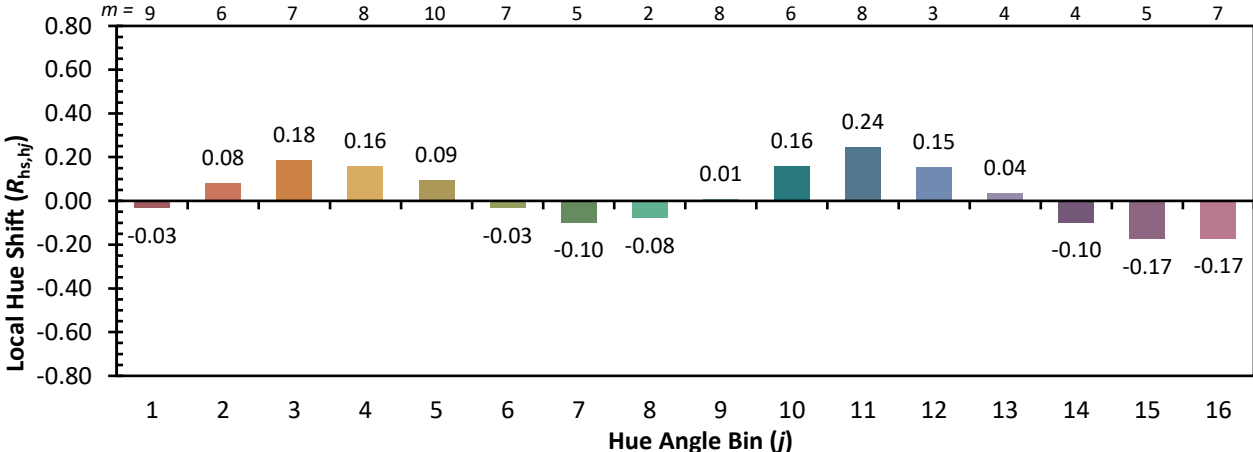
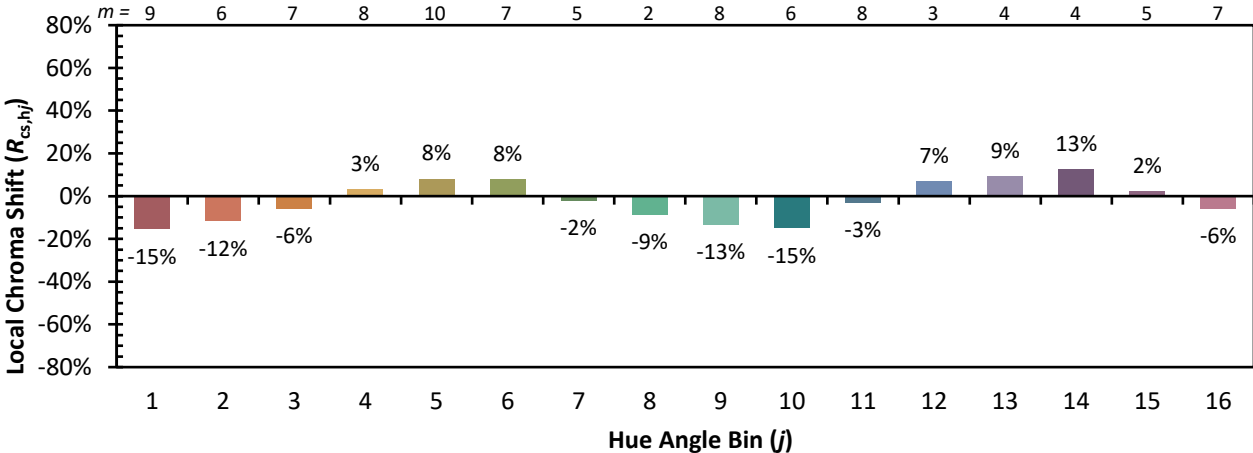
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 85	CES26 = 65	CES51 = 89	CES76 = 53
CES02 = 61	CES27 = 89	CES52 = 88	CES77 = 71
CES03 = 30	CES28 = 82	CES53 = 78	CES78 = 56
CES04 = 70	CES29 = 68	CES54 = 85	CES79 = 83
CES05 = 48	CES30 = 84	CES55 = 84	CES80 = 79
CES06 = 50	CES31 = 71	CES56 = 74	CES81 = 79
CES07 = 40	CES32 = 63	CES57 = 73	CES82 = 91
CES08 = 39	CES33 = 79	CES58 = 74	CES83 = 90
CES09 = 29	CES34 = 72	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 84	CES60 = 90	CES85 = 78
CES11 = 57	CES36 = 91	CES61 = 84	CES86 = 74
CES12 = 63	CES37 = 79	CES62 = 85	CES87 = 78
CES13 = 42	CES38 = 93	CES63 = 73	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 67	CES89 = 72
CES15 = 71	CES40 = 91	CES65 = 64	CES90 = 81
CES16 = 47	CES41 = 93	CES66 = 60	CES91 = 75
CES17 = 49	CES42 = 80	CES67 = 57	CES92 = 62
CES18 = 56	CES43 = 78	CES68 = 66	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 75	CES94 = 57
CES20 = 65	CES45 = 86	CES70 = 58	CES95 = 68
CES21 = 86	CES46 = 83	CES71 = 51	CES96 = 78
CES22 = 78	CES47 = 86	CES72 = 84	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 49	CES98 = 77
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 67
CES25 = 72	CES50 = 88	CES75 = 53	

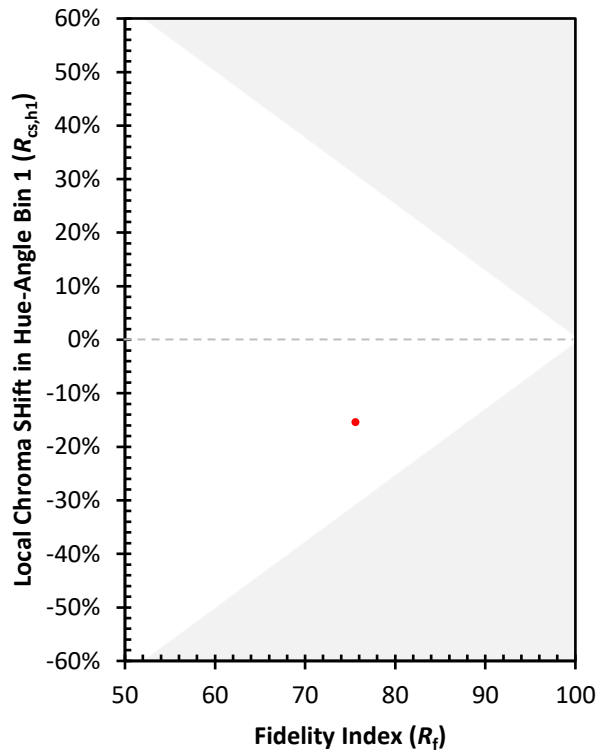
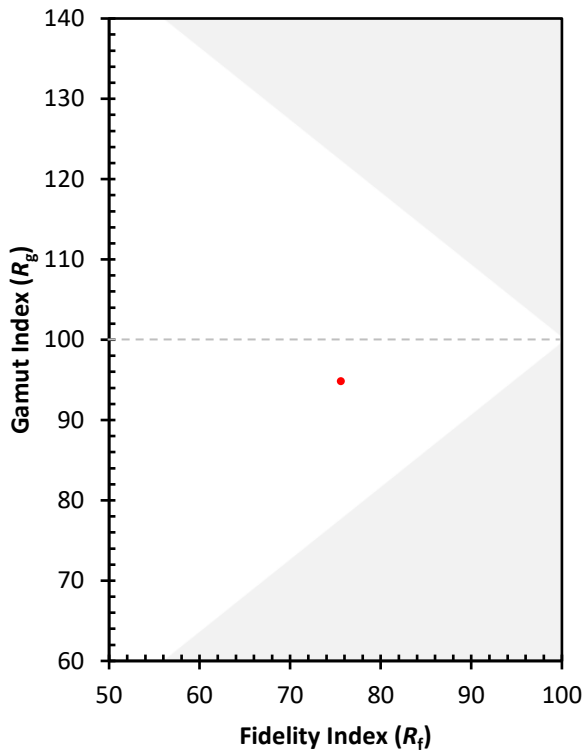




Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)