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: STREETWORKS

Report Number: P880039

Luminaire Tested: **MEM2-HSN-VA-110-727-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:	P880039
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	MEM2-HSN-VA-110-727-U-MQ
Description:	EPIC MODERN SHORT HOUSING 110W 70CRI 2700K VISUAL COMFORT FIXTURE w/ TYPE V MEDIUM DISTRIBUTION OPTIC
Light Source:	(1) 2700K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	10842.2 lumens
Efficiency:	N/A
Efficacy:	102.3 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short
BUG Rating:	B3 - U0 - G3

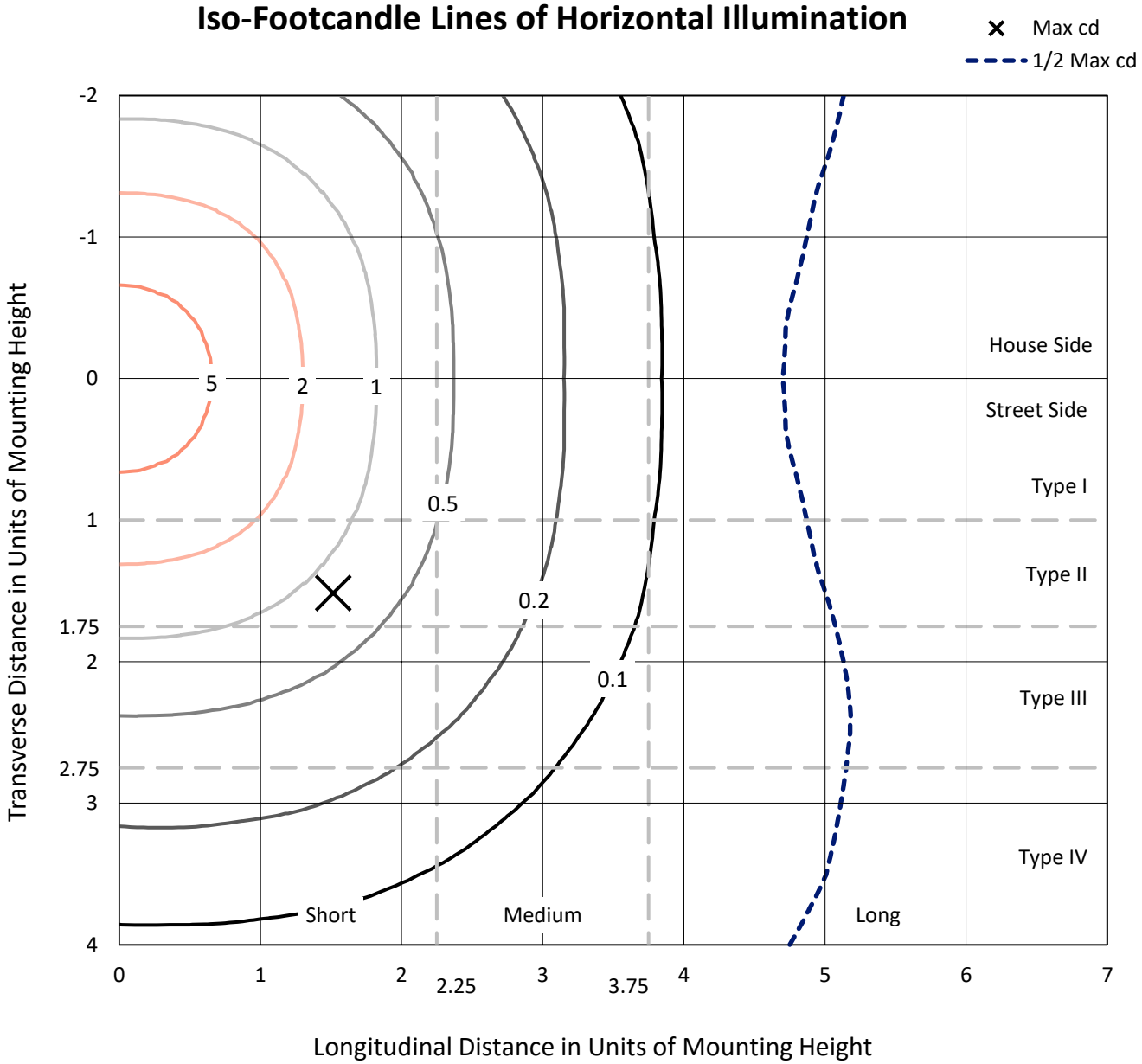
Input Watts (W):	106
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	5%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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

Scaled Data Report

REPORT NUMBER: P880039
CATALOG NUMBER: MEM2-HSN-VA-110-727-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



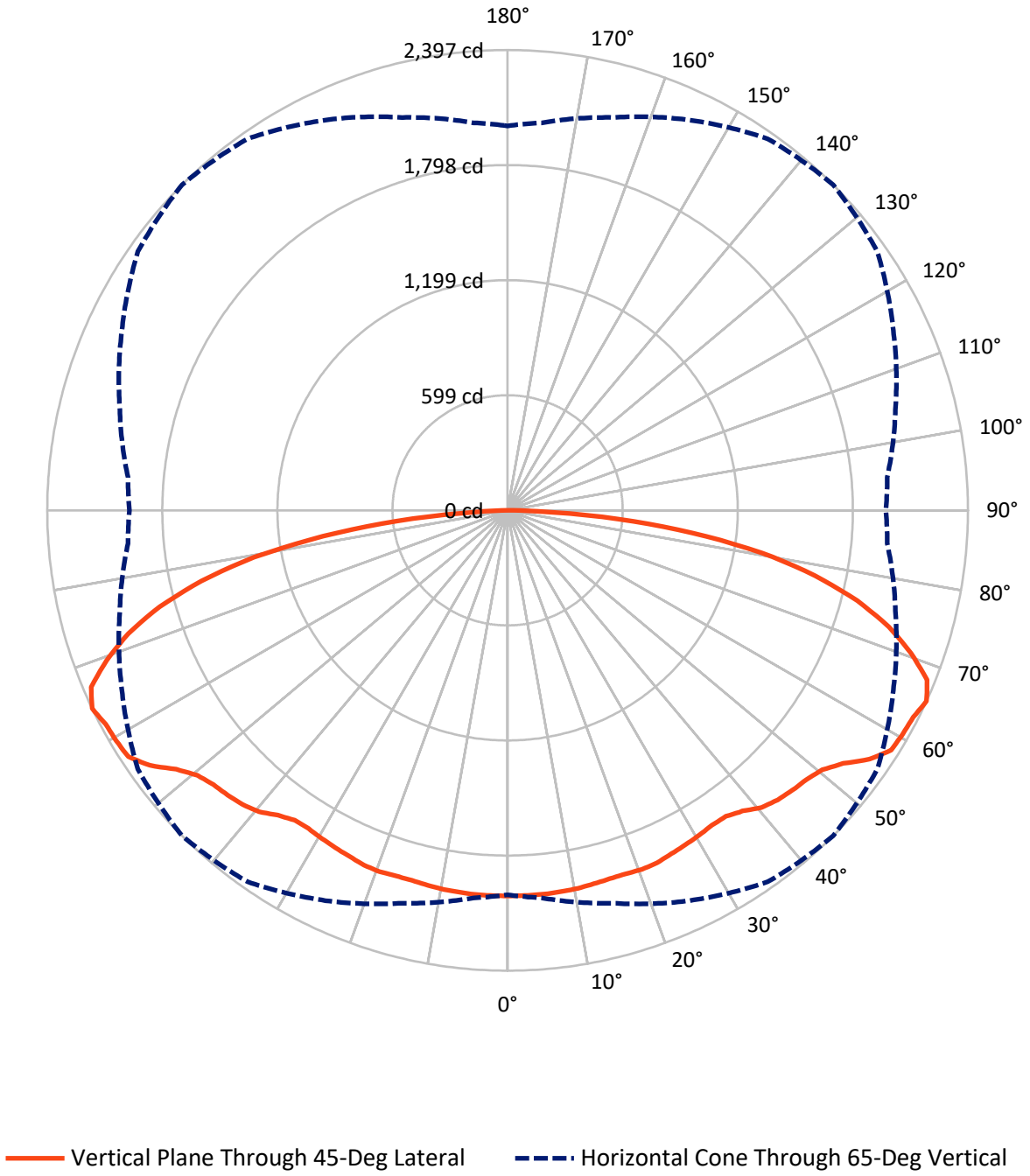
Based on 15 foot mounting height. Maximum calculated value = 8.9 fc
Type V - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P880039
CATALOG NUMBER: MEM2-HSN-VA-110-727-U-MQ

Luminous Intensity Polar Plot



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

Scaled Data Report

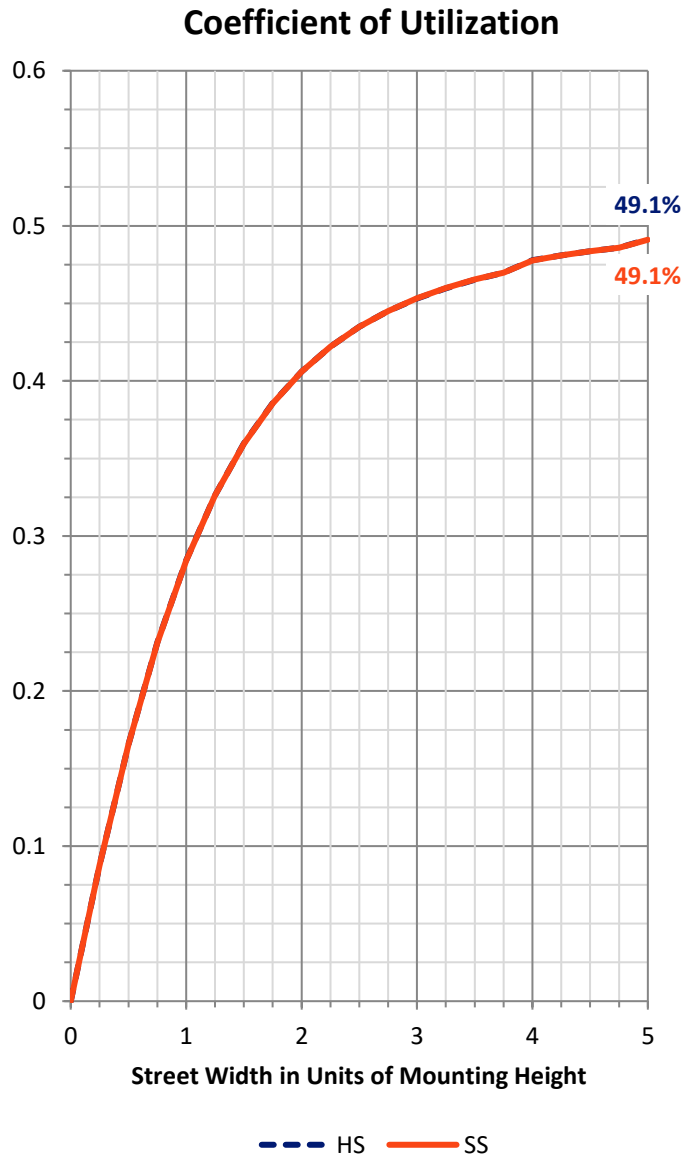
REPORT NUMBER: P880039
CATALOG NUMBER: MEM2-HSN-VA-110-727-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5421.1	0.0	5421.1
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	5421.1	0.0	5421.1
	% Fixture	50.0	0.0	50.0
Total	Lumens	10842.2	0.0	10842.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.4	1.8
10°-20°	564.4	5.2
20°-30°	913.9	8.4
30°-40°	1228.2	11.3
40°-50°	1567.5	14.5
50°-60°	1928.4	17.8
60°-70°	2147.3	19.8
70°-80°	1743.0	16.1
80°-90°	558.0	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°	10842.2	100.0
0°-180°	10842.2	100.0



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

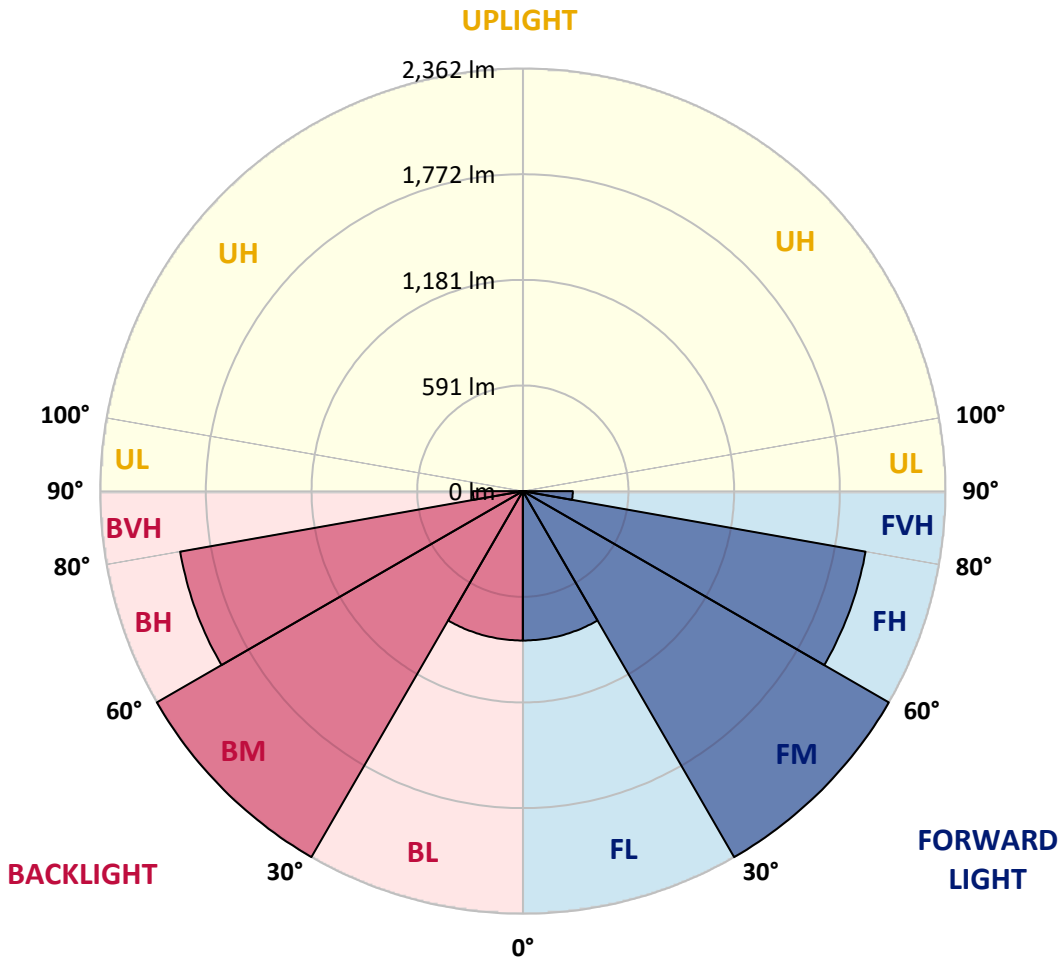
Scaled Data Report

REPORT NUMBER: P880039
CATALOG NUMBER: MEM2-HSN-VA-110-727-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	834.9	7.7			
FM	(30°-60°)	2362.0	21.8			
FH	(60°-80°)	1945.2	17.9			G2/5000
FVH	(80°-90°)	279.0	2.6			G3/500
BL	(0°-30°)	834.9	7.7	B2/1000		
BM	(30°-60°)	2362.0	21.8	B2/2500		
BH	(60°-80°)	1945.2	17.9	B3/2500		G2/5000
BVH	(80°-90°)	279.0	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



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

Scaled Data Report

REPORT NUMBER: P880039
CATALOG NUMBER: MEM2-HSN-VA-110-727-U-MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9
2.5°	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9
5°	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2007.9	2005.0	2007.9	2007.9
7.5°	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0	2005.0
10°	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0
12.5°	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1	1996.1
15°	1987.1	1990.1	1990.1	1990.1	1990.1	1990.1	1990.1	1990.1	1990.1	1987.1	1987.1
17.5°	1984.2	1984.2	1984.2	1987.1	1990.1	1990.1	1990.1	1987.1	1984.2	1981.2	1981.2
20°	1987.1	1987.1	1987.1	1990.1	1993.1	1996.1	1993.1	1990.1	1984.2	1984.2	1984.2
22.5°	1984.2	1987.1	1987.1	1990.1	1993.1	1993.1	1990.1	1987.1	1984.2	1981.2	1981.2
25°	1975.3	1975.3	1978.2	1981.2	1981.2	1981.2	1981.2	1975.3	1972.3	1969.3	1969.3
27.5°	1963.4	1966.4	1966.4	1969.3	1972.3	1972.3	1969.3	1963.4	1960.4	1957.4	1957.4
30°	1948.5	1948.5	1951.5	1957.4	1960.4	1963.4	1957.4	1951.5	1942.6	1939.6	1939.6
32.5°	1933.7	1936.7	1942.6	1948.5	1951.5	1954.5	1948.5	1942.6	1933.7	1927.7	1924.8
35°	1927.7	1927.7	1936.7	1948.5	1957.4	1957.4	1951.5	1939.6	1927.7	1915.9	1915.9
37.5°	1936.7	1939.6	1951.5	1972.3	1987.1	1987.1	1984.2	1963.4	1942.6	1924.8	1921.8
40°	1957.4	1960.4	1981.2	2007.9	2031.7	2034.7	2022.8	1996.1	1966.4	1945.6	1939.6
42.5°	1969.3	1975.3	1999.0	2031.7	2052.5	2061.4	2046.6	2019.8	1981.2	1954.5	1951.5
45°	1975.3	1981.2	2007.9	2043.6	2070.3	2079.2	2064.4	2028.7	1987.1	1957.4	1954.5
47.5°	1978.2	1984.2	2010.9	2055.5	2085.2	2094.1	2082.2	2040.6	1990.1	1960.4	1957.4
50°	1981.2	1993.1	2025.8	2073.3	2117.8	2123.8	2106.0	2055.5	2002.0	1966.4	1957.4
52.5°	2002.0	2010.9	2058.4	2126.8	2171.3	2189.1	2162.4	2111.9	2031.7	1978.2	1972.3
55°	2052.5	2055.5	2111.9	2198.0	2263.4	2287.1	2245.6	2177.2	2079.2	2025.8	2022.8
57.5°	2067.3	2085.2	2147.5	2245.6	2325.8	2355.5	2319.8	2215.9	2126.8	2055.5	2037.6
60°	2052.5	2067.3	2141.6	2254.5	2340.6	2364.4	2337.6	2239.6	2108.9	2028.7	2013.9
62.5°	2037.6	2055.5	2132.7	2260.4	2343.6	2370.3	2325.8	2242.6	2100.0	2019.8	2005.0
65°	2002.0	2025.8	2117.8	2242.6	2361.4	2397.1	2349.5	2215.9	2091.1	1984.2	1969.3
67.5°	1933.7	1945.6	2046.6	2192.1	2319.8	2355.5	2305.0	2165.4	2016.8	1912.9	1901.0
70°	1806.0	1832.7	1927.7	2088.1	2209.9	2227.7	2189.1	2049.5	1904.0	1794.1	1779.2
72.5°	1636.6	1675.3	1779.2	1942.6	2040.6	2076.3	2025.8	1912.9	1761.4	1636.6	1615.9
75°	1458.4	1479.2	1586.2	1746.5	1847.5	1880.2	1835.7	1725.8	1544.6	1458.4	1437.6
77.5°	1262.4	1277.2	1372.3	1514.9	1609.9	1636.6	1592.1	1503.0	1339.6	1259.4	1250.5
80°	989.1	1018.8	1107.9	1229.7	1301.0	1342.6	1295.1	1208.9	1090.1	995.1	980.2
82.5°	706.9	727.7	807.9	891.1	959.4	971.3	950.5	867.3	778.2	704.0	686.1
85°	386.1	395.1	445.5	531.7	558.4	579.2	549.5	487.1	442.6	395.1	380.2
87.5°	101.0	104.0	118.8	139.6	151.5	154.5	151.5	133.7	109.9	86.1	95.1
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: SP1-2407-176-2

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-727-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-727-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

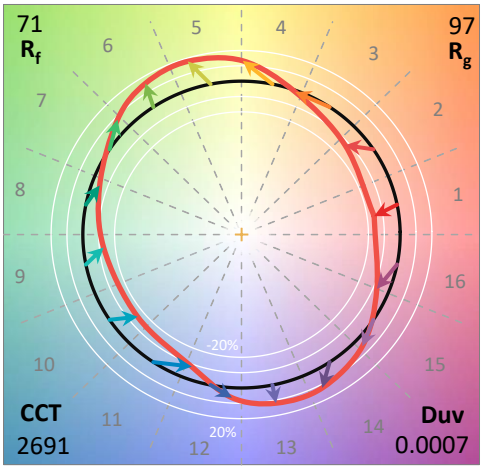
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-2
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-30-727-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	2691	CRI (Ra):	70.6		
CIE u':	0.2627	R1:	67.7	R9:	-27.1
CIE v':	0.5285	R2:	79.8	R10:	53.1
Duv:	0.0007	R3:	90.6	R11:	61.9
CIE x:	0.4618	R4:	67.7	R12:	42.2
CIE y:	0.4129	R5:	65.3	R13:	69.4
CIE z:	0.1254	R6:	71.1	R14:	94.1
Peak Wavelength (nm):	601	R7:	78.1	R15:	60.4
Dominant Wavelength (nm):	584	R8:	44.7		
Purity:	62.54863				

Rf:	70.6
Rg:	97.2



Test Conditions

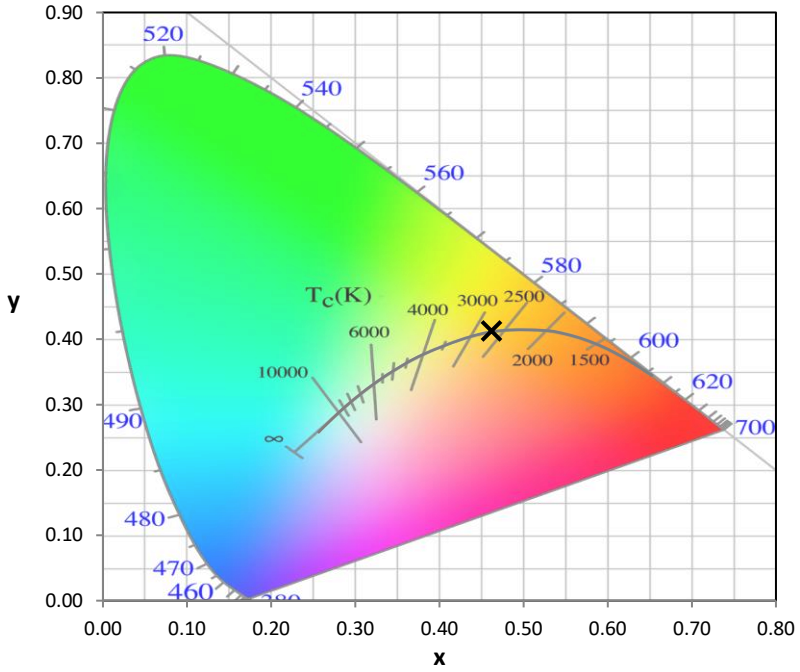
Stabilization Time:	28M
Operation Time:	1H 28M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-2

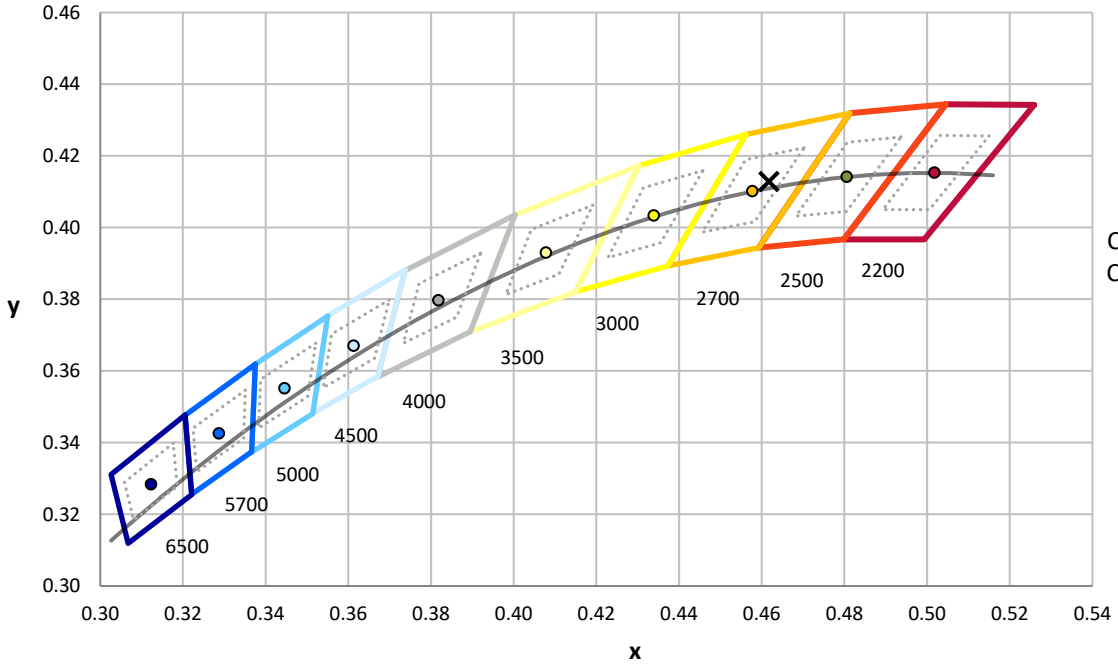
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-2

CIE 1931 Chromaticity Diagram



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

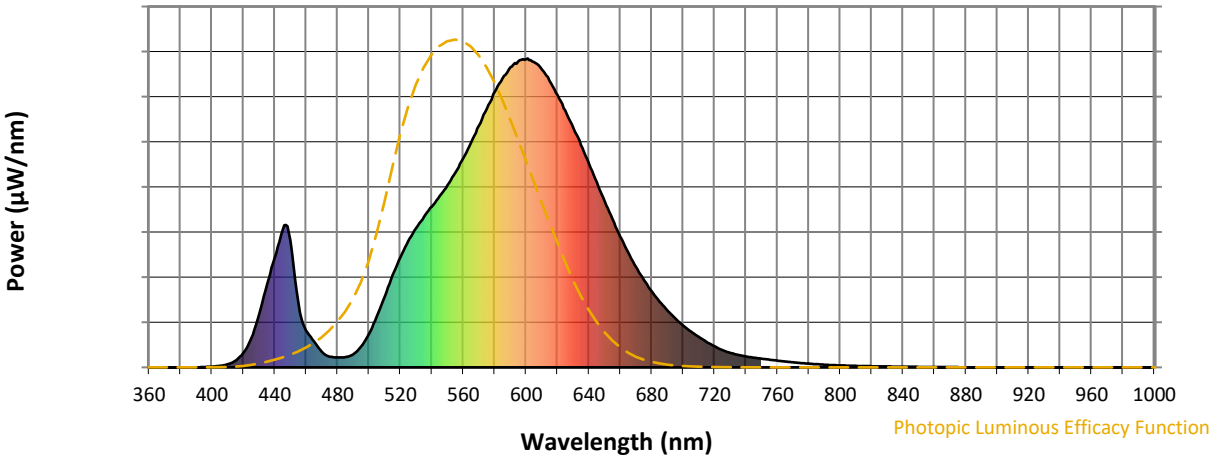


CCT = 2691K
CIE x = 0.4618
CIE y = 0.4129
Duv = 0.0007

Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-2

Photopic Flux vs. Wavelength

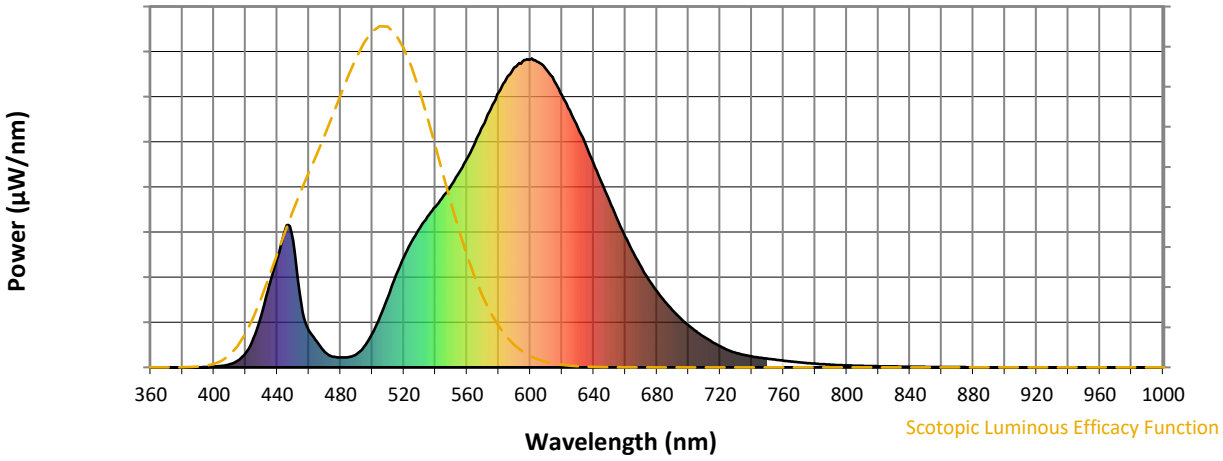


Photopic Lumens: NR

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	43	NR	620	881	NR	750	28	NR	880	0	NR
365	0	NR	495	67	NR	625	832	NR	755	25	NR	885	0	NR
370	0	NR	500	108	NR	630	776	NR	760	22	NR	890	0	NR
375	0	NR	505	165	NR	635	720	NR	765	19	NR	895	0	NR
380	0	NR	510	229	NR	640	660	NR	770	16	NR	900	0	NR
385	0	NR	515	297	NR	645	599	NR	775	14	NR	905	0	NR
390	0	NR	520	357	NR	650	538	NR	780	12	NR	910	0	NR
395	1	NR	525	408	NR	655	480	NR	785	10	NR	915	0	NR
400	3	NR	530	451	NR	660	423	NR	790	9	NR	920	0	NR
405	5	NR	535	488	NR	665	372	NR	795	7	NR	925	0	NR
410	10	NR	540	521	NR	670	325	NR	800	6	NR	930	0	NR
415	21	NR	545	555	NR	675	282	NR	805	5	NR	935	0	NR
420	46	NR	550	590	NR	680	246	NR	810	5	NR	940	0	NR
425	94	NR	555	631	NR	685	213	NR	815	4	NR	945	0	NR
430	169	NR	560	677	NR	690	185	NR	820	4	NR	950	0	NR
435	268	NR	565	728	NR	695	158	NR	825	3	NR	955	0	NR
440	354	NR	570	782	NR	700	136	NR	830	3	NR	960	0	NR
445	445	NR	575	838	NR	705	116	NR	835	2	NR	965	0	NR
450	411	NR	580	891	NR	710	98	NR	840	2	NR	970	0	NR
455	210	NR	585	935	NR	715	82	NR	845	2	NR	975	0	NR
460	119	NR	590	972	NR	720	68	NR	850	2	NR	980	0	NR
465	84	NR	595	991	NR	725	56	NR	855	1	NR	985	0	NR
470	50	NR	600	997	NR	730	47	NR	860	1	NR	990	0	NR
475	35	NR	605	988	NR	735	40	NR	865	1	NR	995	0	NR
480	32	NR	610	965	NR	740	35	NR	870	1	NR	1000	0	NR
485	33	NR	615	927	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-2

Scotopic Flux vs. Wavelength

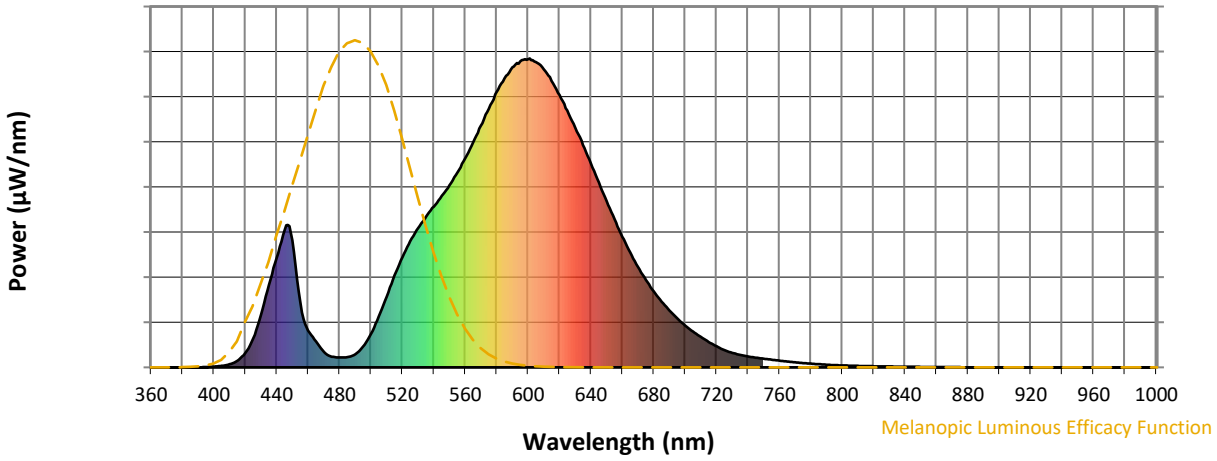


Scotopic Lumens: NR **S/P: 1.03**

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	43	NR	620	881	NR	750	28	NR	880	0	NR
365	0	NR	495	67	NR	625	832	NR	755	25	NR	885	0	NR
370	0	NR	500	108	NR	630	776	NR	760	22	NR	890	0	NR
375	0	NR	505	165	NR	635	720	NR	765	19	NR	895	0	NR
380	0	NR	510	229	NR	640	660	NR	770	16	NR	900	0	NR
385	0	NR	515	297	NR	645	599	NR	775	14	NR	905	0	NR
390	0	NR	520	357	NR	650	538	NR	780	12	NR	910	0	NR
395	1	NR	525	408	NR	655	480	NR	785	10	NR	915	0	NR
400	3	NR	530	451	NR	660	423	NR	790	9	NR	920	0	NR
405	5	NR	535	488	NR	665	372	NR	795	7	NR	925	0	NR
410	10	NR	540	521	NR	670	325	NR	800	6	NR	930	0	NR
415	21	NR	545	555	NR	675	282	NR	805	5	NR	935	0	NR
420	46	NR	550	590	NR	680	246	NR	810	5	NR	940	0	NR
425	94	NR	555	631	NR	685	213	NR	815	4	NR	945	0	NR
430	169	NR	560	677	NR	690	185	NR	820	4	NR	950	0	NR
435	268	NR	565	728	NR	695	158	NR	825	3	NR	955	0	NR
440	354	NR	570	782	NR	700	136	NR	830	3	NR	960	0	NR
445	445	NR	575	838	NR	705	116	NR	835	2	NR	965	0	NR
450	411	NR	580	891	NR	710	98	NR	840	2	NR	970	0	NR
455	210	NR	585	935	NR	715	82	NR	845	2	NR	975	0	NR
460	119	NR	590	972	NR	720	68	NR	850	2	NR	980	0	NR
465	84	NR	595	991	NR	725	56	NR	855	1	NR	985	0	NR
470	50	NR	600	997	NR	730	47	NR	860	1	NR	990	0	NR
475	35	NR	605	988	NR	735	40	NR	865	1	NR	995	0	NR
480	32	NR	610	965	NR	740	35	NR	870	1	NR	1000	0	NR
485	33	NR	615	927	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 1.73**

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	43	NR	620	881	NR	750	28	NR	880	0	NR
365	0	NR	495	67	NR	625	832	NR	755	25	NR	885	0	NR
370	0	NR	500	108	NR	630	776	NR	760	22	NR	890	0	NR
375	0	NR	505	165	NR	635	720	NR	765	19	NR	895	0	NR
380	0	NR	510	229	NR	640	660	NR	770	16	NR	900	0	NR
385	0	NR	515	297	NR	645	599	NR	775	14	NR	905	0	NR
390	0	NR	520	357	NR	650	538	NR	780	12	NR	910	0	NR
395	1	NR	525	408	NR	655	480	NR	785	10	NR	915	0	NR
400	3	NR	530	451	NR	660	423	NR	790	9	NR	920	0	NR
405	5	NR	535	488	NR	665	372	NR	795	7	NR	925	0	NR
410	10	NR	540	521	NR	670	325	NR	800	6	NR	930	0	NR
415	21	NR	545	555	NR	675	282	NR	805	5	NR	935	0	NR
420	46	NR	550	590	NR	680	246	NR	810	5	NR	940	0	NR
425	94	NR	555	631	NR	685	213	NR	815	4	NR	945	0	NR
430	169	NR	560	677	NR	690	185	NR	820	4	NR	950	0	NR
435	268	NR	565	728	NR	695	158	NR	825	3	NR	955	0	NR
440	354	NR	570	782	NR	700	136	NR	830	3	NR	960	0	NR
445	445	NR	575	838	NR	705	116	NR	835	2	NR	965	0	NR
450	411	NR	580	891	NR	710	98	NR	840	2	NR	970	0	NR
455	210	NR	585	935	NR	715	82	NR	845	2	NR	975	0	NR
460	119	NR	590	972	NR	720	68	NR	850	2	NR	980	0	NR
465	84	NR	595	991	NR	725	56	NR	855	1	NR	985	0	NR
470	50	NR	600	997	NR	730	47	NR	860	1	NR	990	0	NR
475	35	NR	605	988	NR	735	40	NR	865	1	NR	995	0	NR
480	32	NR	610	965	NR	740	35	NR	870	1	NR	1000	0	NR
485	33	NR	615	927	NR	745	31	NR	875	1	NR			

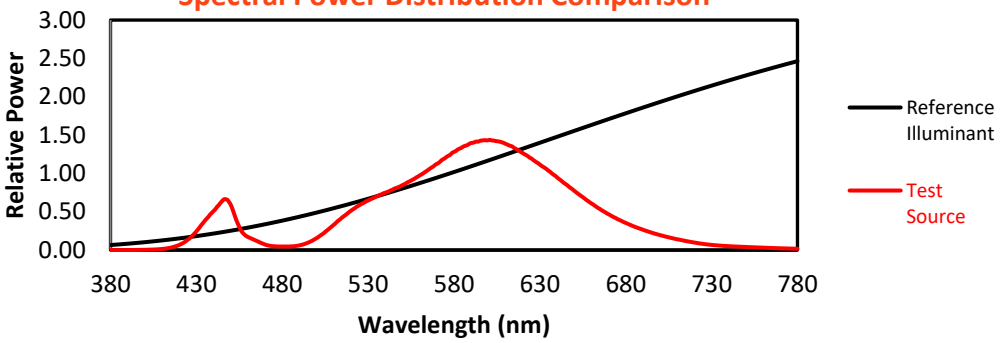
REPORT NUMBER: SP1-2407-176-2

TM-30-18

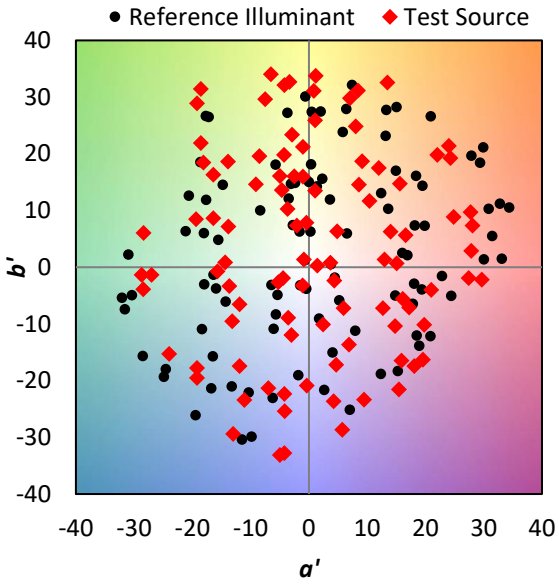
Summary

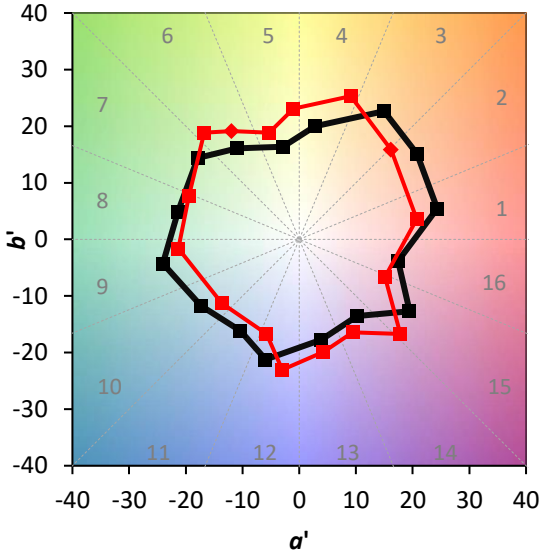
R_f = 70.6
R_g = 97.2
CIE R_a = 70.6
R_9 = -27.1

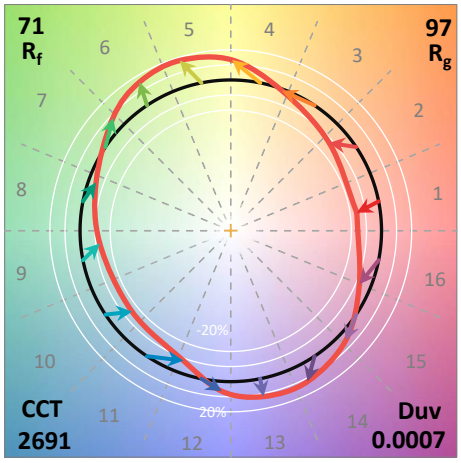
Spectral Power Distribution Comparison

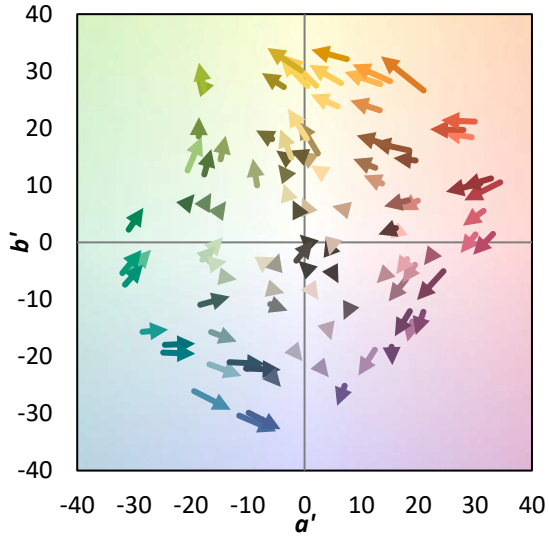


Color Vector Graphics







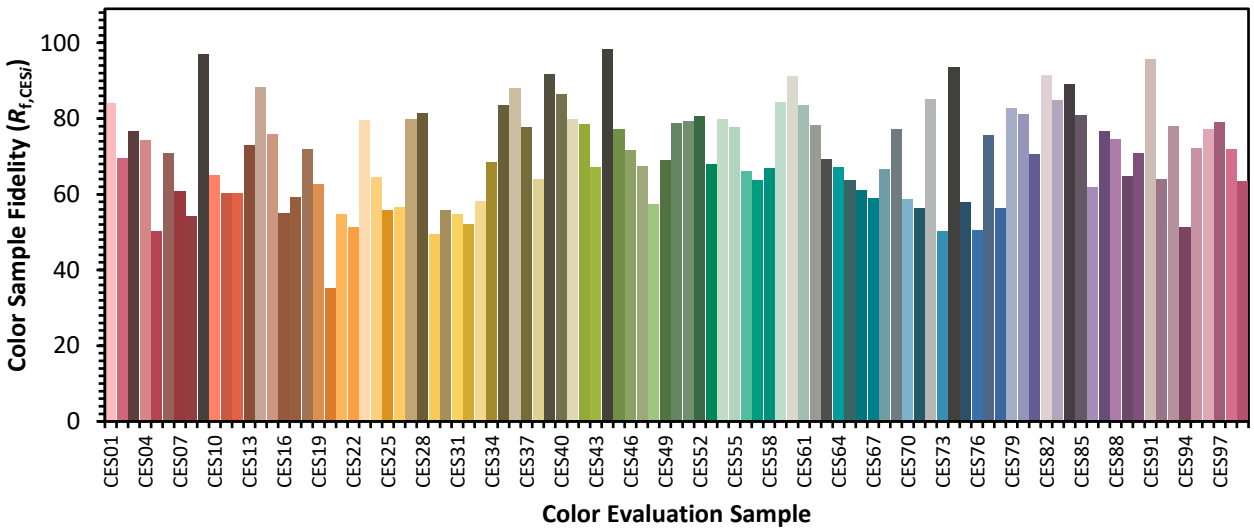


REPORT NUMBER: SP1-2407-176-2

TM-30-18

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

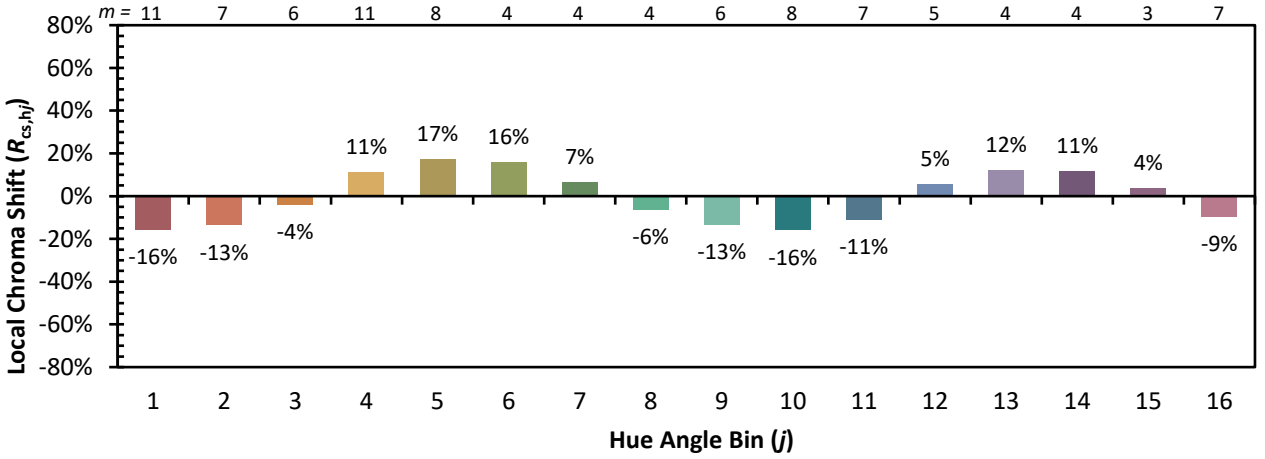
CES01 = 86	CES26 = 57	CES51 = 79	CES76 = 50
CES02 = 63	CES27 = 80	CES52 = 81	CES77 = 76
CES03 = 31	CES28 = 81	CES53 = 68	CES78 = 56
CES04 = 71	CES29 = 49	CES54 = 80	CES79 = 83
CES05 = 50	CES30 = 56	CES55 = 78	CES80 = 81
CES06 = 52	CES31 = 55	CES56 = 66	CES81 = 71
CES07 = 42	CES32 = 52	CES57 = 64	CES82 = 92
CES08 = 41	CES33 = 58	CES58 = 67	CES83 = 85
CES09 = 29	CES34 = 69	CES59 = 84	CES84 = 89
CES10 = 77	CES35 = 84	CES60 = 91	CES85 = 81
CES11 = 60	CES36 = 88	CES61 = 84	CES86 = 62
CES12 = 66	CES37 = 78	CES62 = 78	CES87 = 77
CES13 = 44	CES38 = 64	CES63 = 69	CES88 = 75
CES14 = 74	CES39 = 92	CES64 = 67	CES89 = 65
CES15 = 72	CES40 = 86	CES65 = 64	CES90 = 71
CES16 = 48	CES41 = 80	CES66 = 61	CES91 = 96
CES17 = 51	CES42 = 79	CES67 = 59	CES92 = 64
CES18 = 57	CES43 = 67	CES68 = 67	CES93 = 78
CES19 = 73	CES44 = 98	CES69 = 77	CES94 = 51
CES20 = 67	CES45 = 77	CES70 = 59	CES95 = 72
CES21 = 88	CES46 = 72	CES71 = 56	CES96 = 77
CES22 = 80	CES47 = 67	CES72 = 85	CES97 = 79
CES23 = 92	CES48 = 57	CES73 = 50	CES98 = 72
CES24 = 92	CES49 = 69	CES74 = 94	CES99 = 63
CES25 = 73	CES50 = 79	CES75 = 58	

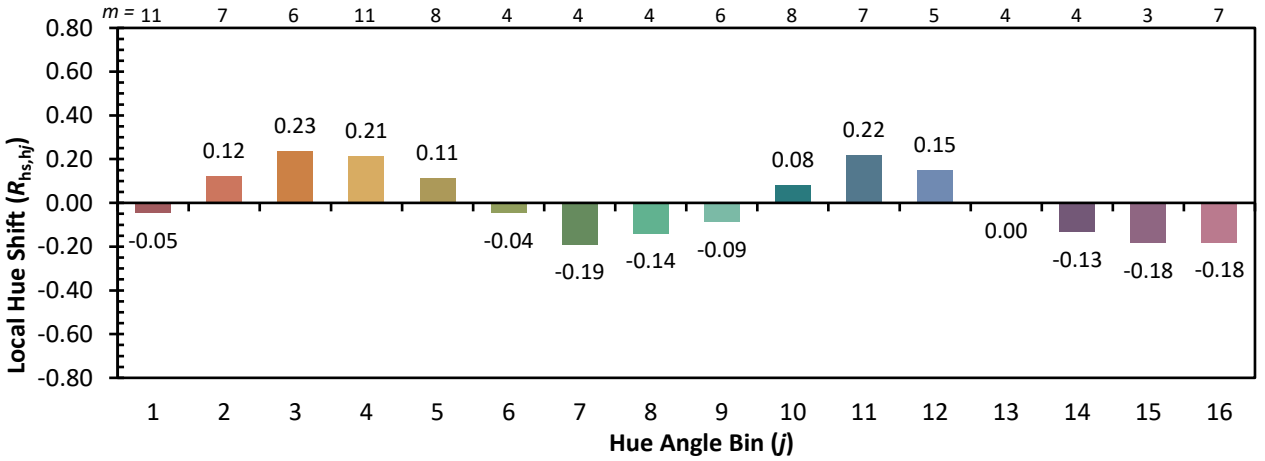


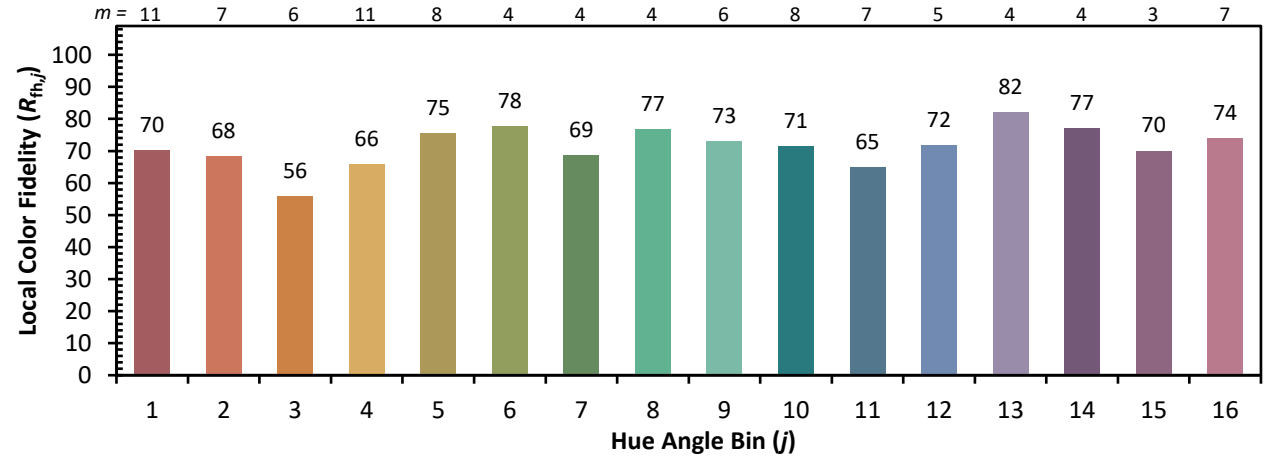
REPORT NUMBER: SP1-2407-176-2

TM-30-18

Color Rendition by Hue-Angle Bin



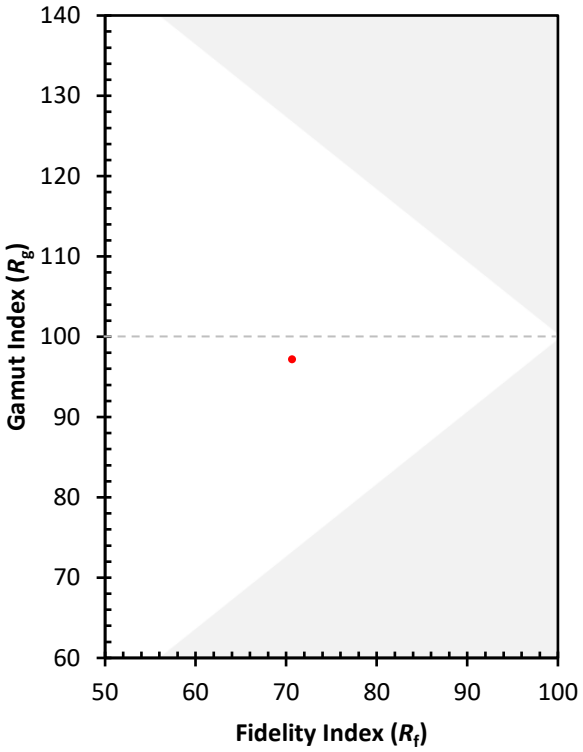


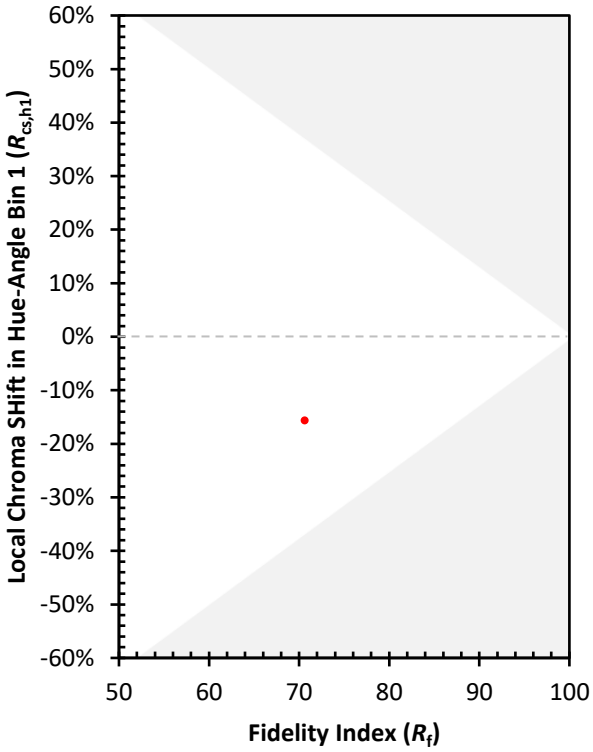


REPORT NUMBER: SP1-2407-176-2

TM-30-18

Measure Comparisons





(END OF REPORT)