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: P880144

Luminaire Tested: **EMM2-HTN-VA3-727-U-RW**

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:	P880144
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA3-727-U-RW
Description:	EPIC MODERN TALL HOUSING 3W 70CRI 2700K VISUAL COMFORT FIXTURE w/ RECTANGULAR WIDE DISTRIBUTION OPTIC
Light Source:	(1) 2700K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3905.9 lumens
Efficiency:	N/A
Efficacy:	79.7 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B3 - U0 - G3

Input Watts (W):	49
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	6%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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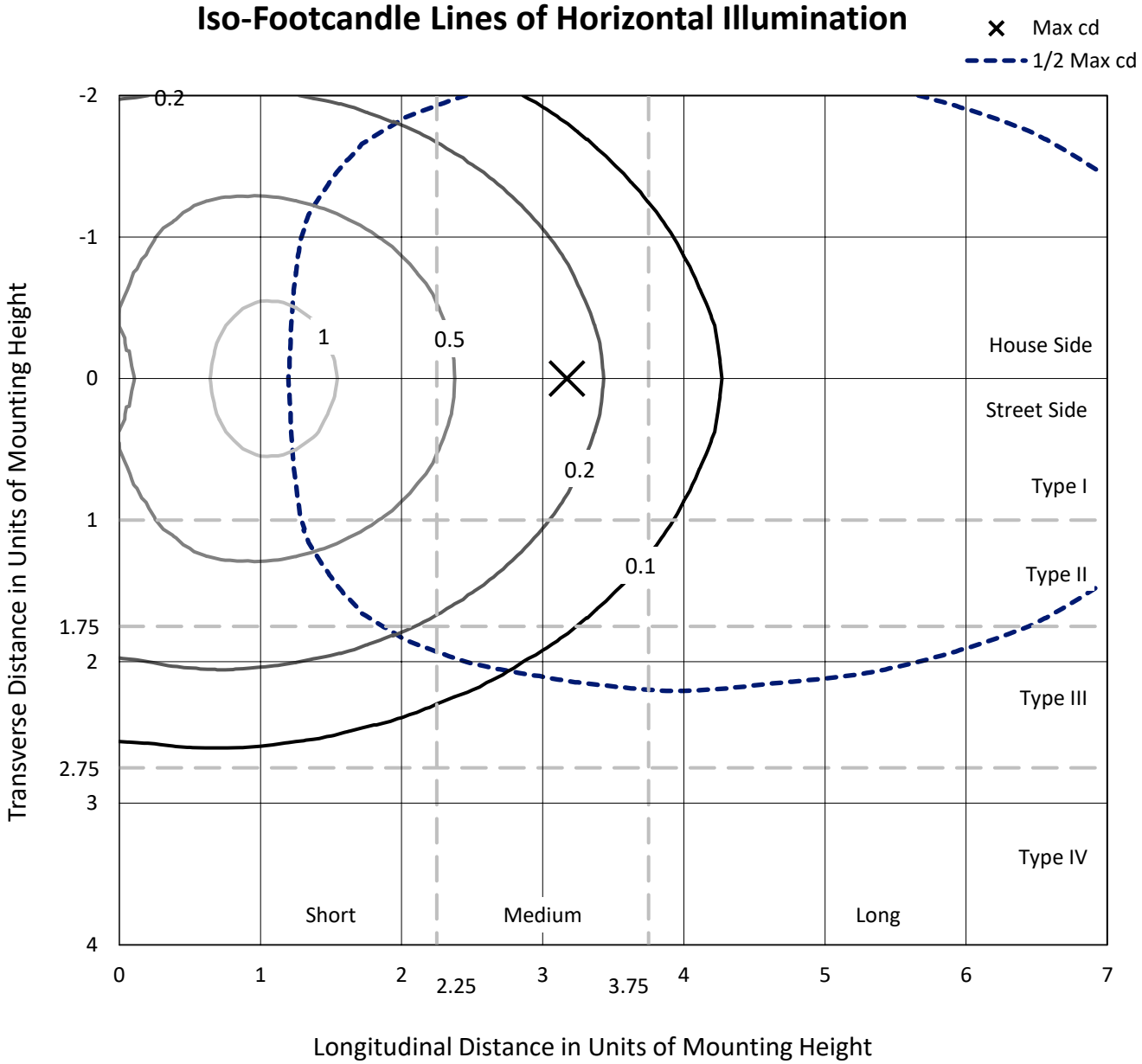
Scaled Data Report

REPORT NUMBER: P880144
CATALOG NUMBER: EMM2-HTN-VA3-727-U-RW

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 1.2 fc
Type III - Short - N/A

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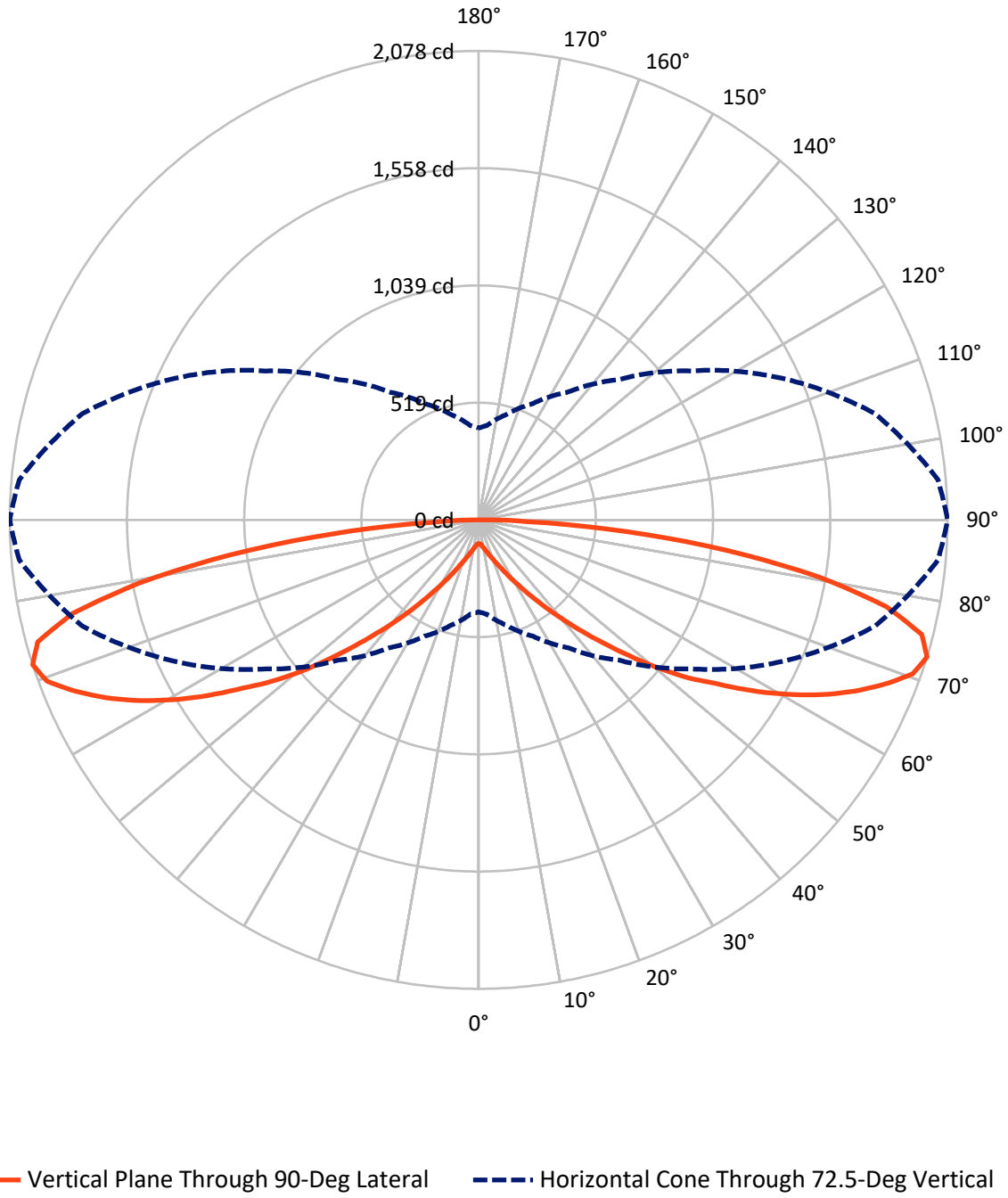
Luminous Intensity Polar Plot



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REPORT NUMBER: P880144
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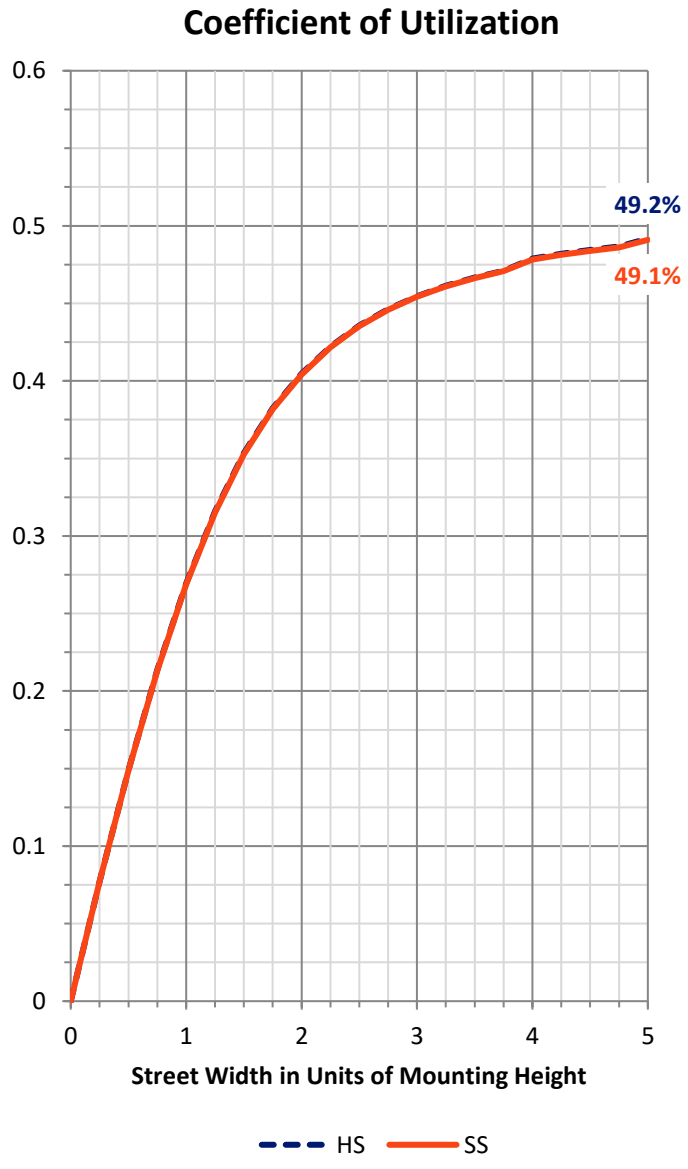
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1952.9	0.0	1952.9
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	1952.9	0.0	1952.9
	% Fixture	50.0	0.0	50.0
Total	Lumens	3905.9	0.0	3905.9
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	10.8	0.3
10°-20°	40.0	1.0
20°-30°	92.4	2.4
30°-40°	197.9	5.1
40°-50°	408.7	10.5
50°-60°	750.7	19.2
60°-70°	1070.3	27.4
70°-80°	995.6	25.5
80°-90°	339.5	8.7
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°	3905.9	100.0
0°-180°	3905.9	100.0



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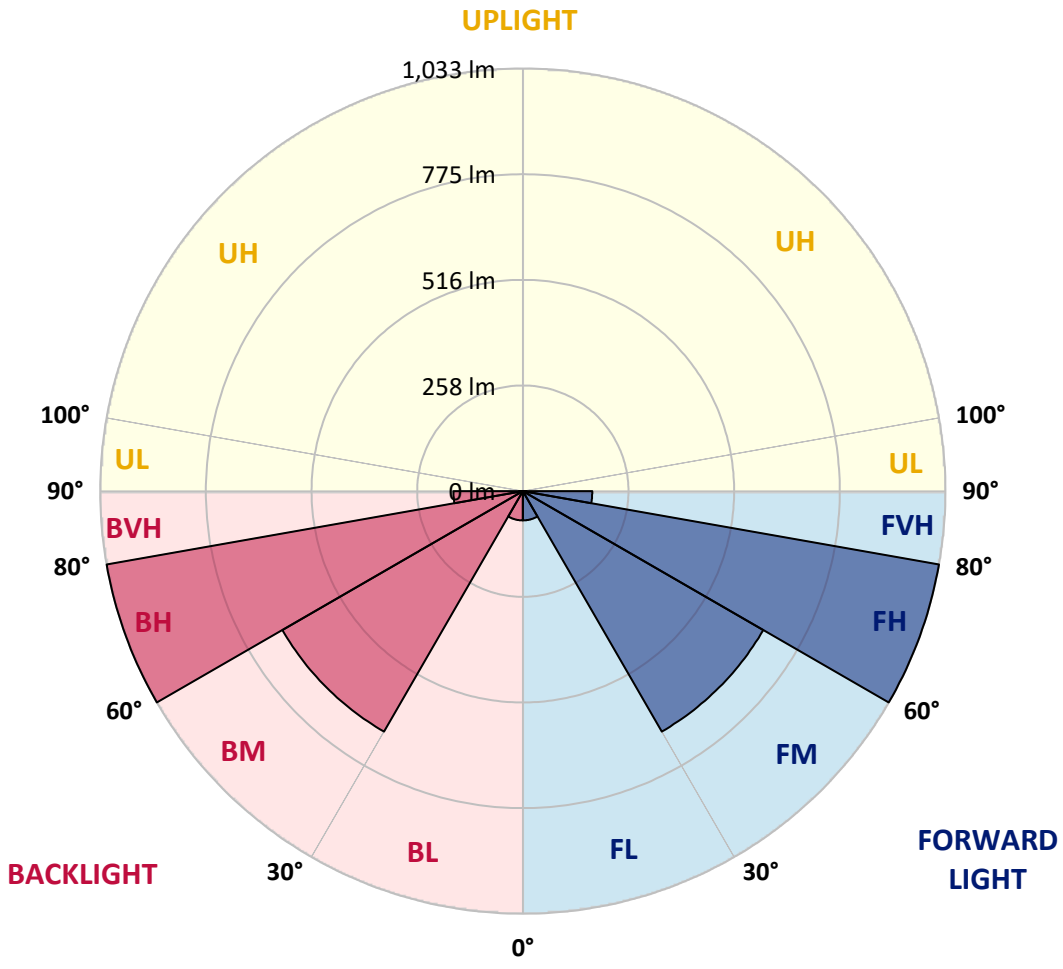
Scaled Data Report

REPORT NUMBER: P880144
CATALOG NUMBER: EMM2-HTN-VA3-727-U-RW

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	71.6	1.8			
FM	(30°-60°)	678.7	17.4			
FH	(60°-80°)	1033.0	26.4			G1/1800
FVH	(80°-90°)	169.7	4.3			G2/225
BL	(0°-30°)	71.6	1.8	B0/110		
BM	(30°-60°)	678.7	17.4	B1/1000		
BH	(60°-80°)	1033.0	26.4	B3/2500		G3/2500
BVH	(80°-90°)	169.7	4.3			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3
Type III Short



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CATALOG NUMBER: EMM2-HTN-VA3-727-U-RW

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	105.1	105.1	105.1	105.1	105.1	105.1	105.1	105.1	105.1	105.1	105.1
2.5°	105.6	105.6	105.6	105.6	106.1	106.1	106.1	106.1	106.1	106.1	106.1
5°	107.1	107.1	107.1	107.6	108.6	109.1	109.6	109.6	110.1	110.1	110.1
7.5°	109.6	109.6	110.1	111.6	112.6	114.0	115.5	116.0	117.5	117.5	117.5
10°	113.1	113.1	114.0	115.5	118.0	121.0	123.5	125.5	126.4	126.9	127.4
12.5°	117.5	117.5	119.0	121.5	125.5	128.9	132.9	135.4	137.9	138.8	138.8
15°	123.0	123.0	125.0	128.4	132.9	137.9	143.3	147.8	151.2	152.7	153.2
17.5°	128.4	128.9	131.4	135.9	141.8	148.3	155.2	161.2	166.6	168.6	169.6
20°	135.4	135.4	138.3	144.3	151.7	160.7	170.1	178.0	185.0	188.9	189.4
22.5°	143.3	143.8	146.8	154.2	163.6	175.0	187.4	198.3	208.3	213.2	212.7
25°	151.2	151.7	156.2	165.1	177.0	192.9	208.8	223.1	236.5	242.5	242.5
27.5°	160.7	161.2	166.6	177.0	192.9	212.7	233.6	254.4	267.8	276.7	279.7
30°	172.1	172.6	179.0	192.4	210.7	235.5	263.3	290.1	307.9	320.8	321.3
32.5°	184.5	185.5	193.4	208.8	232.6	263.8	298.5	331.7	356.5	372.9	372.4
35°	201.3	202.3	213.2	230.6	259.3	296.5	338.7	383.8	412.6	431.4	433.4
37.5°	218.7	220.7	233.1	255.9	290.6	335.2	388.3	438.8	481.5	498.8	503.8
40°	239.0	241.0	256.4	284.1	324.3	381.3	446.8	508.8	557.9	581.7	585.1
42.5°	262.3	265.8	283.6	315.9	366.4	432.4	508.8	585.1	647.1	678.3	676.4
45°	295.5	298.5	321.3	357.5	414.5	490.4	583.1	678.8	745.8	782.0	781.5
47.5°	327.3	331.2	358.5	404.1	470.1	558.3	667.4	776.5	853.4	893.6	900.5
50°	360.0	365.5	400.2	451.2	529.6	637.7	760.2	877.2	970.4	1020.0	1031.9
52.5°	415.5	420.5	457.2	510.7	594.5	714.1	854.9	986.3	1089.4	1142.0	1161.3
55°	453.2	461.2	507.8	574.7	669.9	796.4	951.1	1102.8	1219.3	1270.9	1281.8
57.5°	465.6	474.1	530.1	612.9	730.9	883.1	1051.7	1214.4	1340.8	1410.7	1428.1
60°	466.1	476.5	537.0	626.8	760.7	944.1	1141.5	1334.4	1477.7	1554.5	1569.4
62.5°	482.0	493.9	558.3	642.2	775.5	972.4	1202.5	1436.0	1611.6	1689.4	1705.8
65°	499.8	513.7	582.2	675.4	809.3	1002.6	1241.2	1509.4	1732.1	1822.8	1830.7
67.5°	481.5	493.4	565.3	662.0	801.3	1008.6	1268.4	1555.0	1804.5	1935.9	1942.3
70°	451.2	463.6	532.1	620.3	757.2	963.5	1237.2	1555.0	1847.1	2012.2	2042.0
72.5°	407.1	419.5	484.5	568.8	691.7	878.7	1150.4	1483.6	1817.9	2043.0	2077.7
75°	353.1	364.5	424.5	501.3	608.9	778.0	1024.5	1347.8	1703.8	1986.0	2027.6
77.5°	294.5	305.0	356.0	418.0	509.3	659.5	870.7	1163.3	1504.5	1793.6	1847.6
80°	231.6	242.0	281.2	329.8	403.1	518.2	693.2	935.7	1230.7	1472.7	1525.8
82.5°	173.6	178.5	206.3	241.5	288.6	373.9	502.8	691.7	912.4	1086.0	1109.8
85°	109.1	113.6	132.4	156.7	185.0	229.6	309.9	423.5	551.4	649.1	650.6
87.5°	33.7	39.2	45.1	59.5	67.9	81.8	98.2	138.3	182.0	229.6	215.7
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: SP1-2407-176-2

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

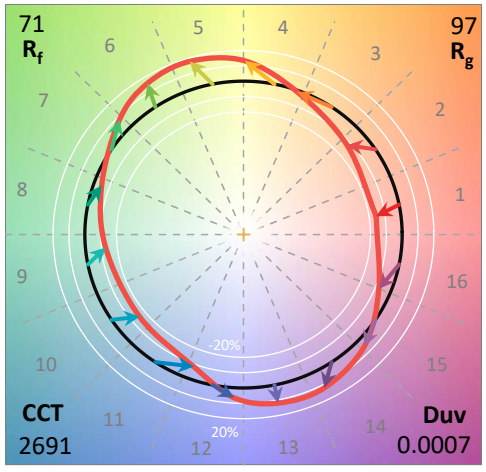
Test Information

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

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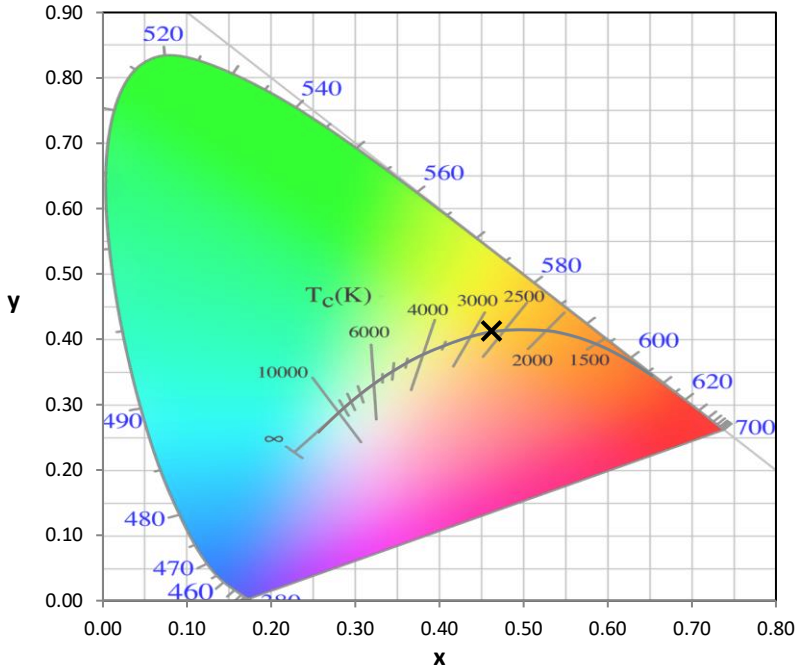
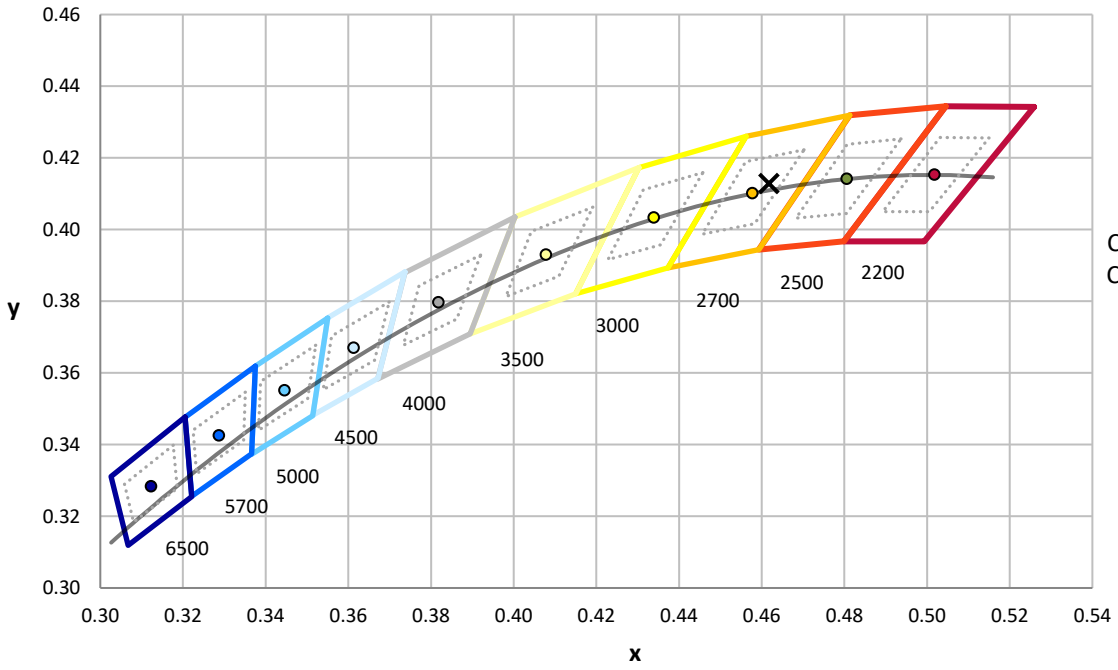
CIE 1931 Chromaticity Diagram



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

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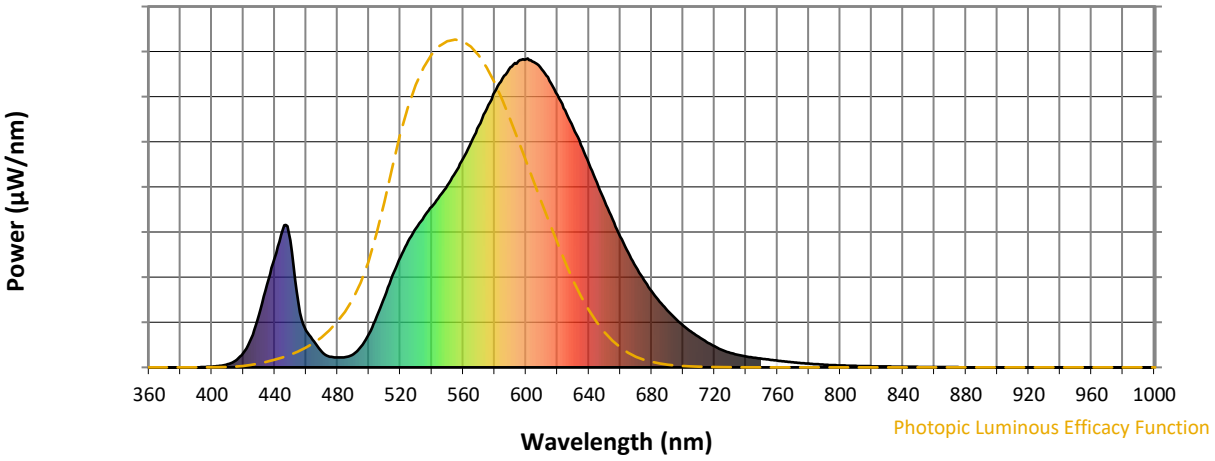
Photopic Flux vs. Wavelength

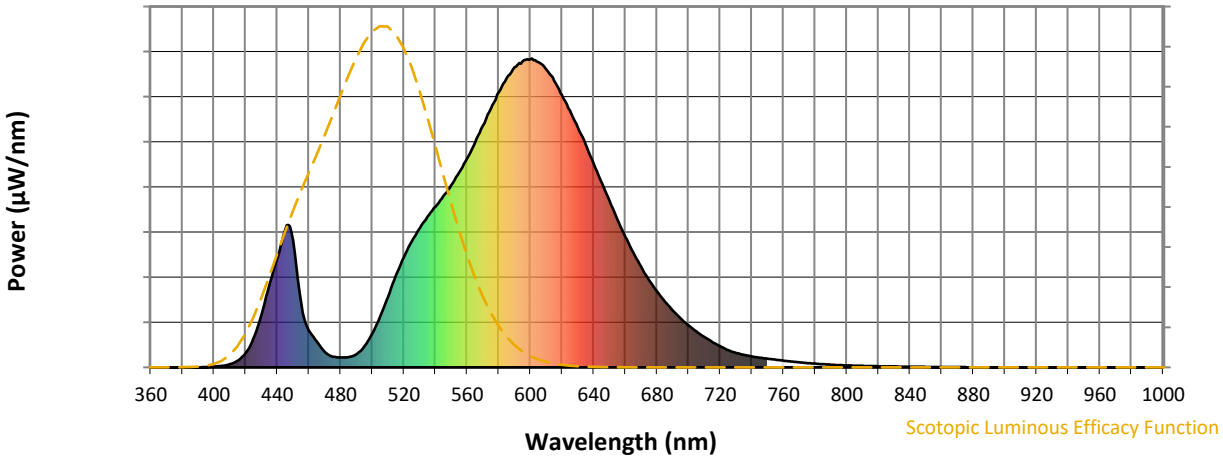


Photopic Lumens: NR

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	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

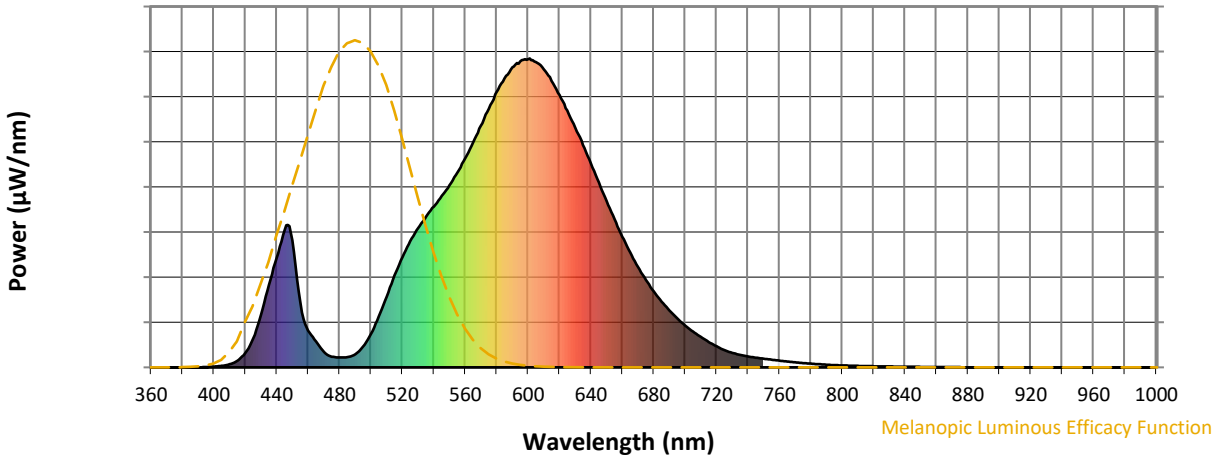


Scotopic Lumens: NR **S/P: 1.03**

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			

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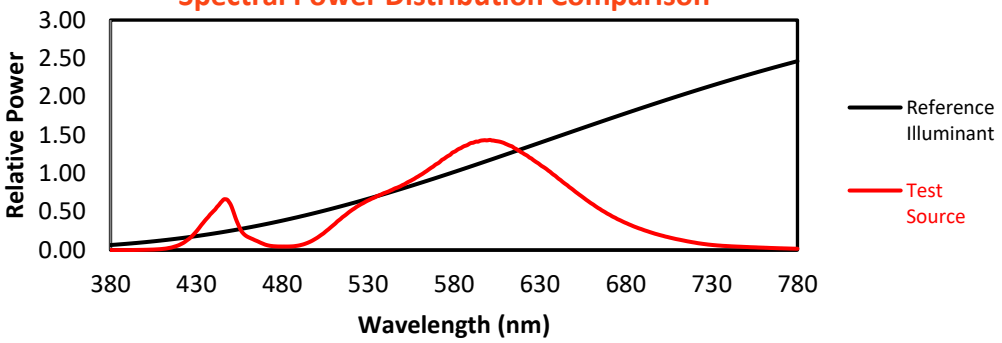
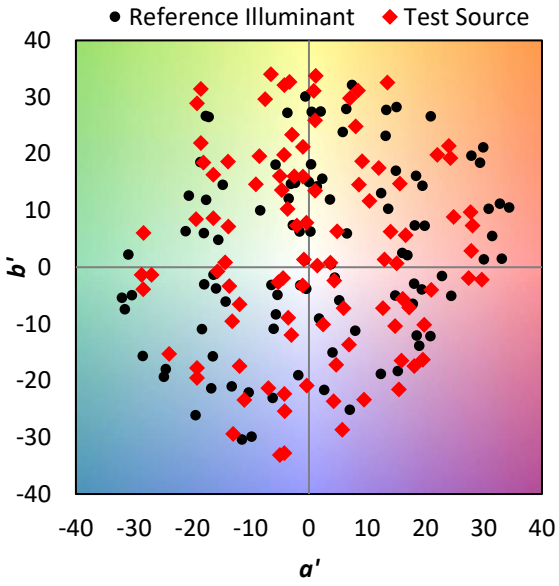
Summary

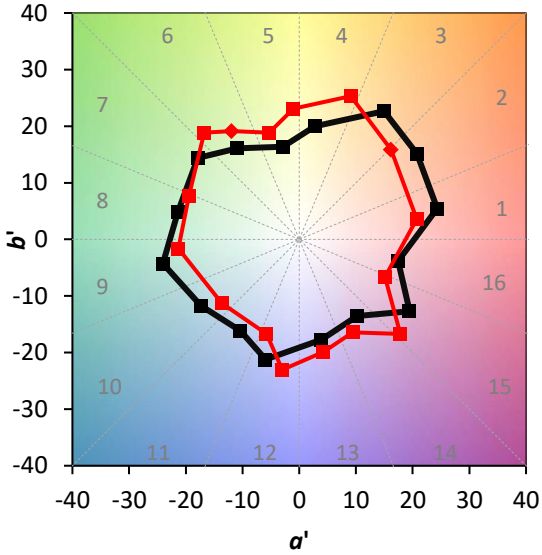
R_f = 70.6
R_g = 97.2
CIE R_a = 70.6
R_9 = -27.1

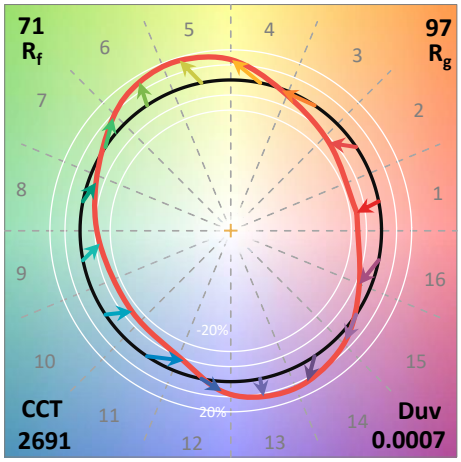
Spectral Power Distribution Comparison

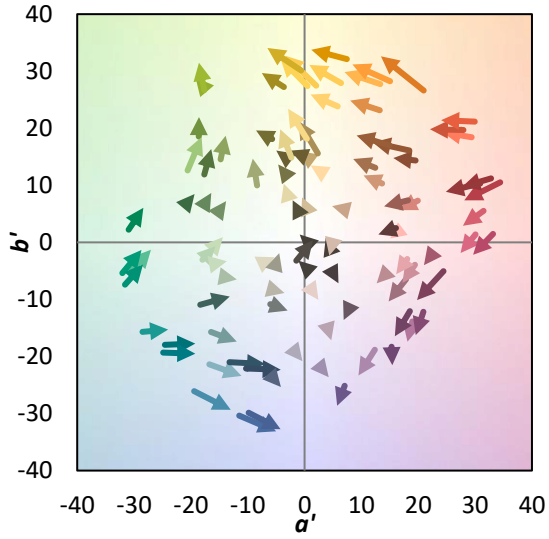


Color Vector Graphics









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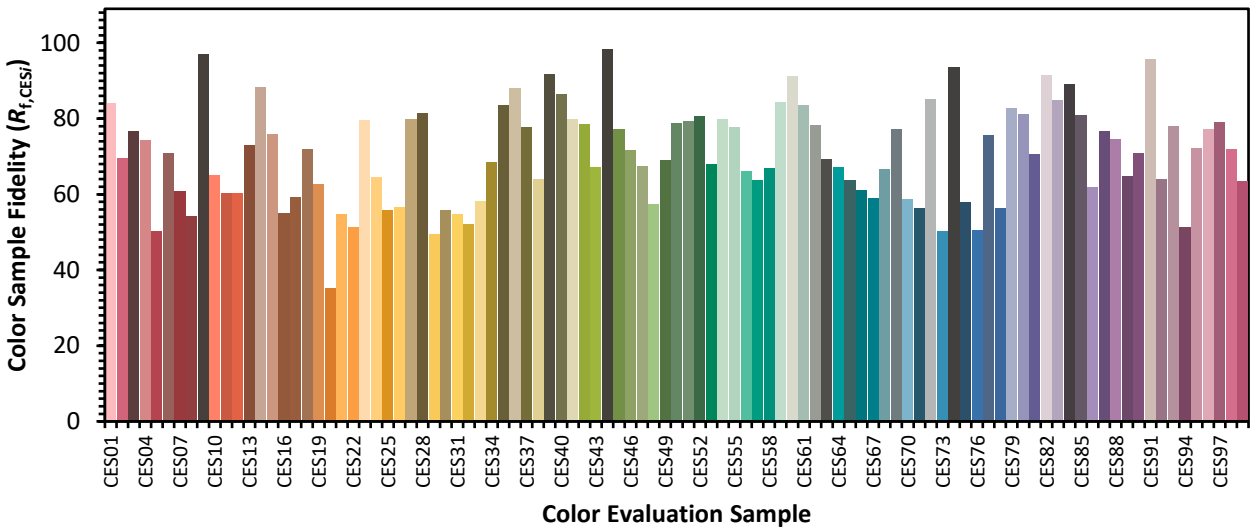
Individual Sample Fidelity Index ($R_{f,i}$)

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	



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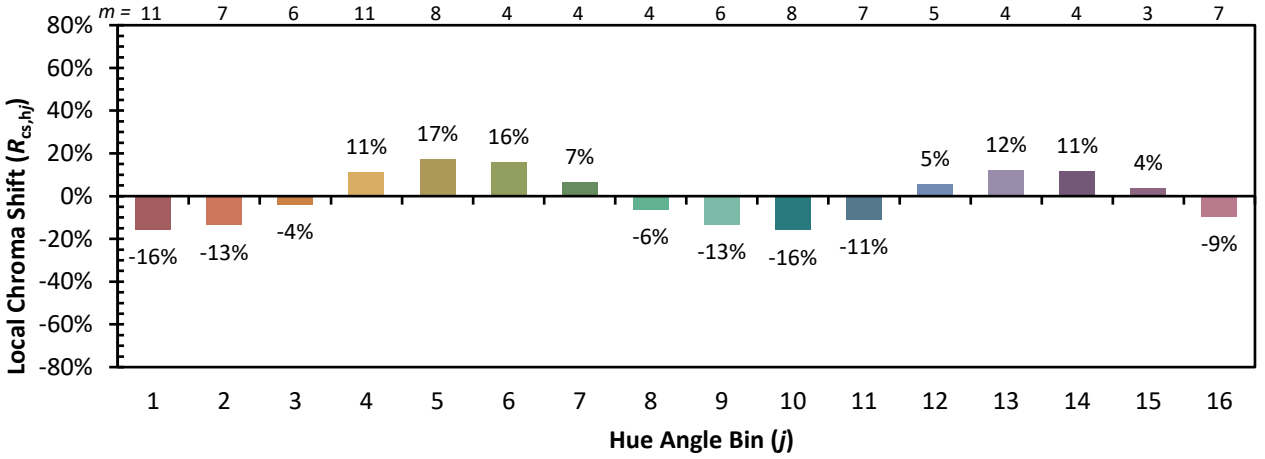
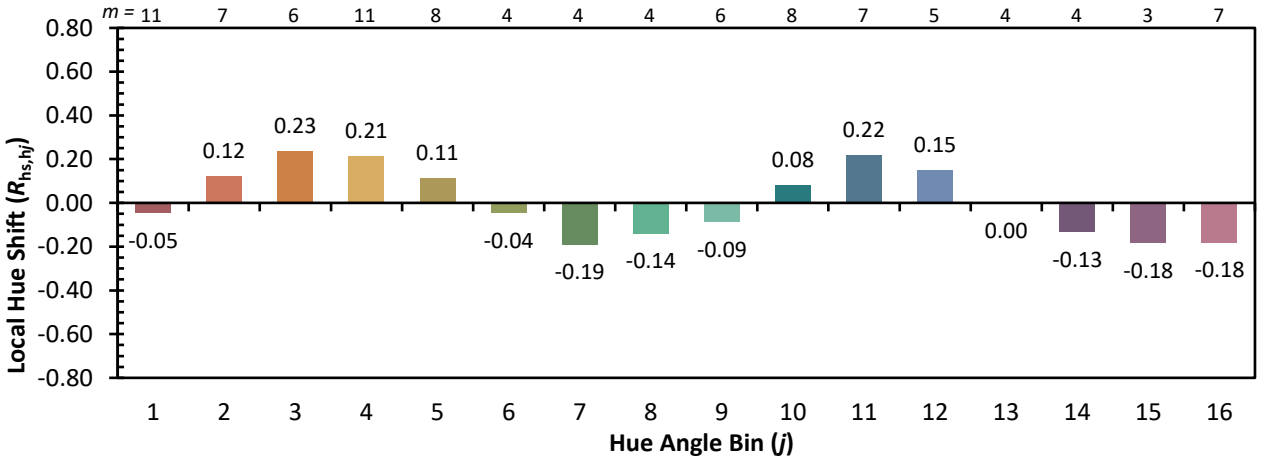
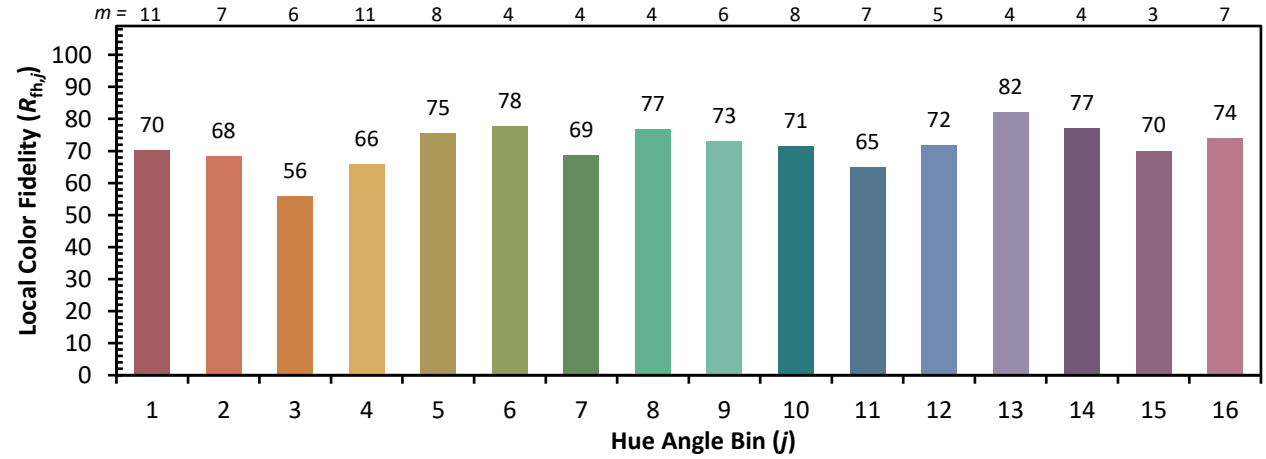
Color Rendition by Hue-Angle Bin







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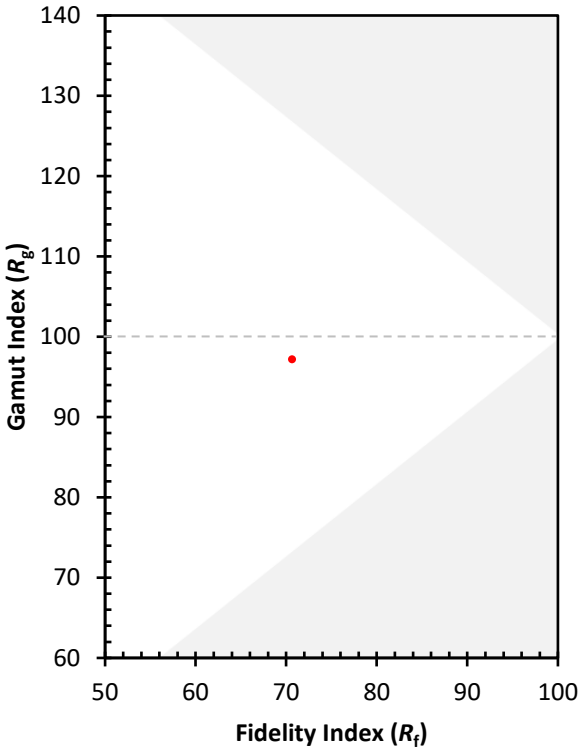
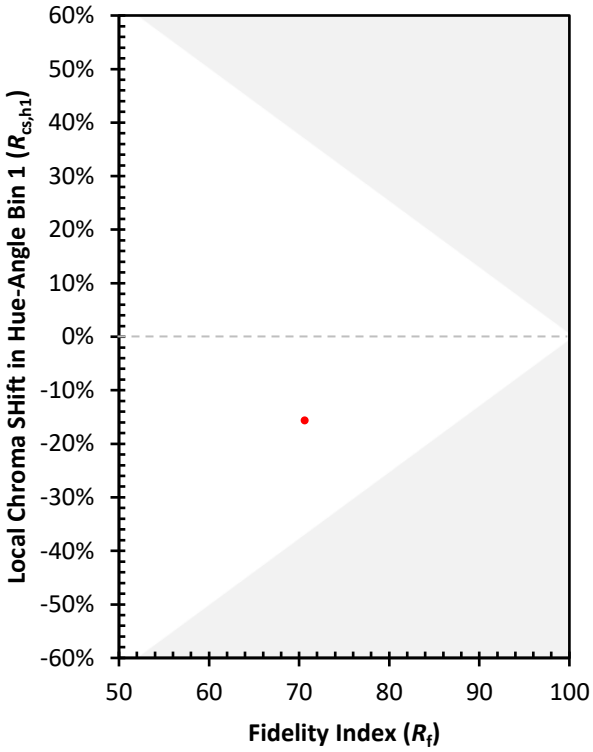
Measure Comparisons





(END OF REPORT)