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: P880192

Luminaire Tested: **EMM2-HSN-VA3-735-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:	P880192
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HSN-VA3-735-U-RW
Description:	EPIC MODERN SHORT HOUSING 3W 70CRI 3500K VISUAL COMFORT FIXTURE w/ RECTANGULAR WIDE DISTRIBUTION OPTIC
Light Source:	(1) 3500K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	4007.7 lumens
Efficiency:	N/A
Efficacy:	81.8 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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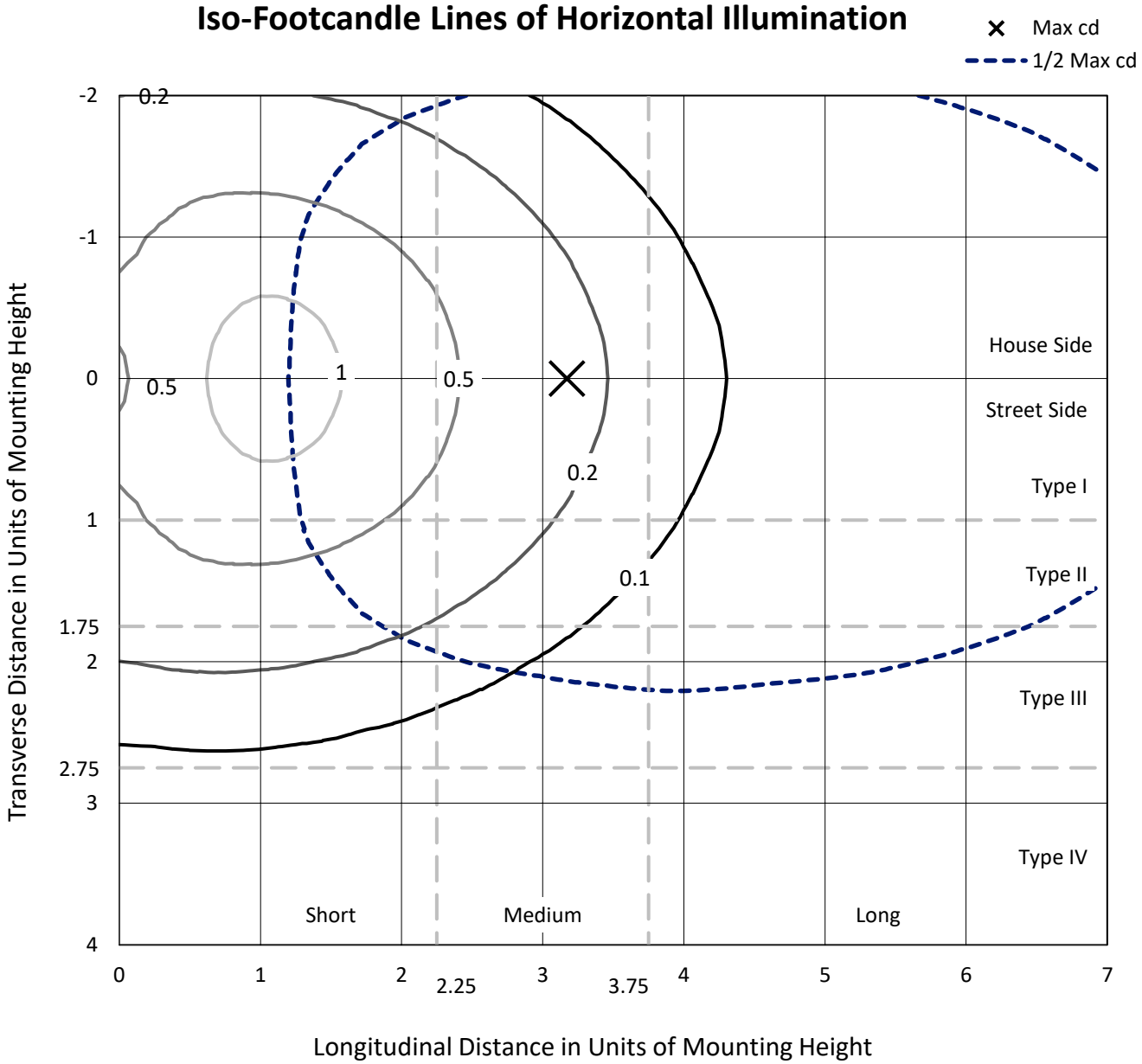
REPORT NUMBER: P880192
CATALOG NUMBER: EMM2-HSN-VA3-735-U-RW

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 1.3 fc
Type III - Short - N/A

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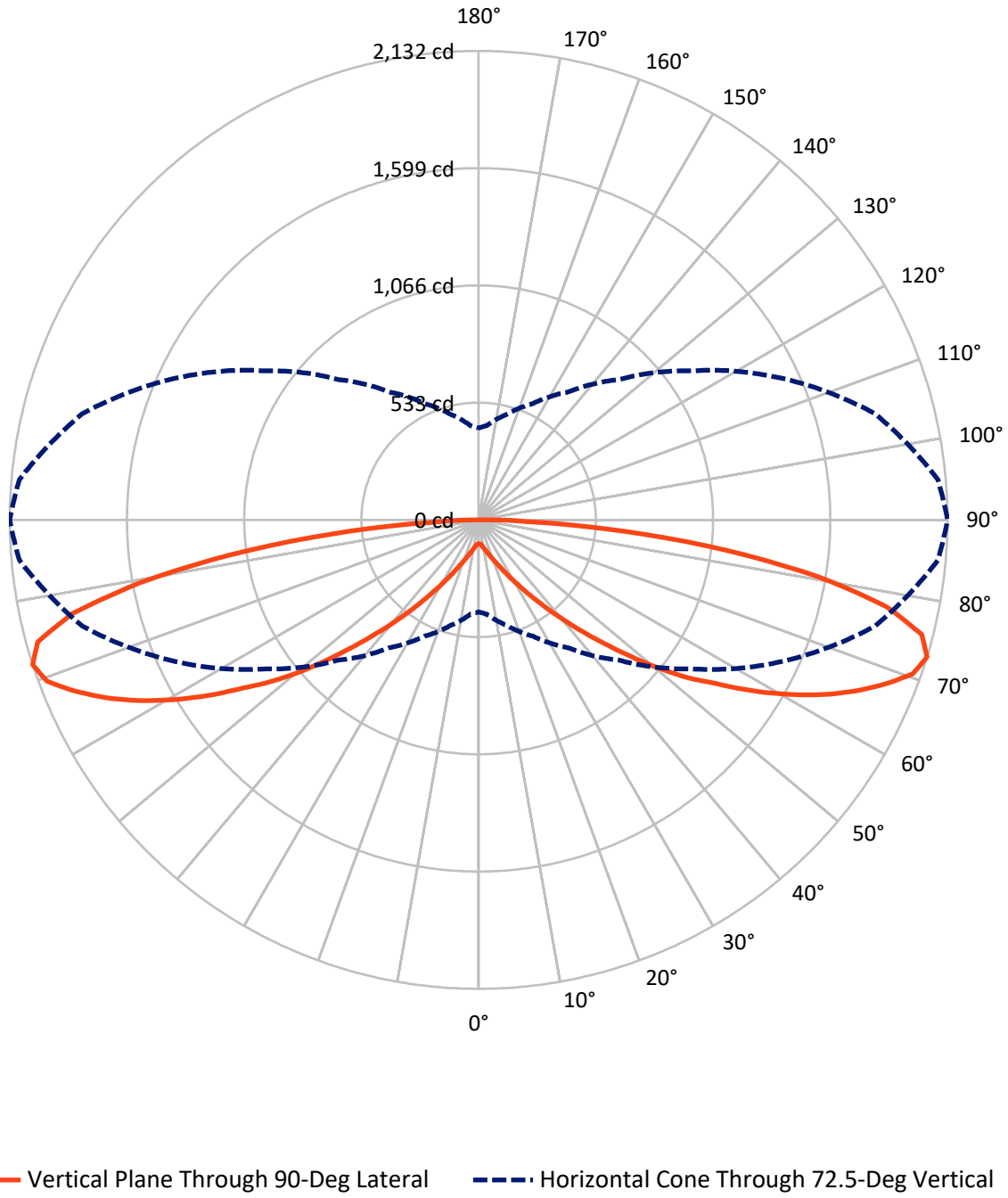
Luminous Intensity Polar Plot



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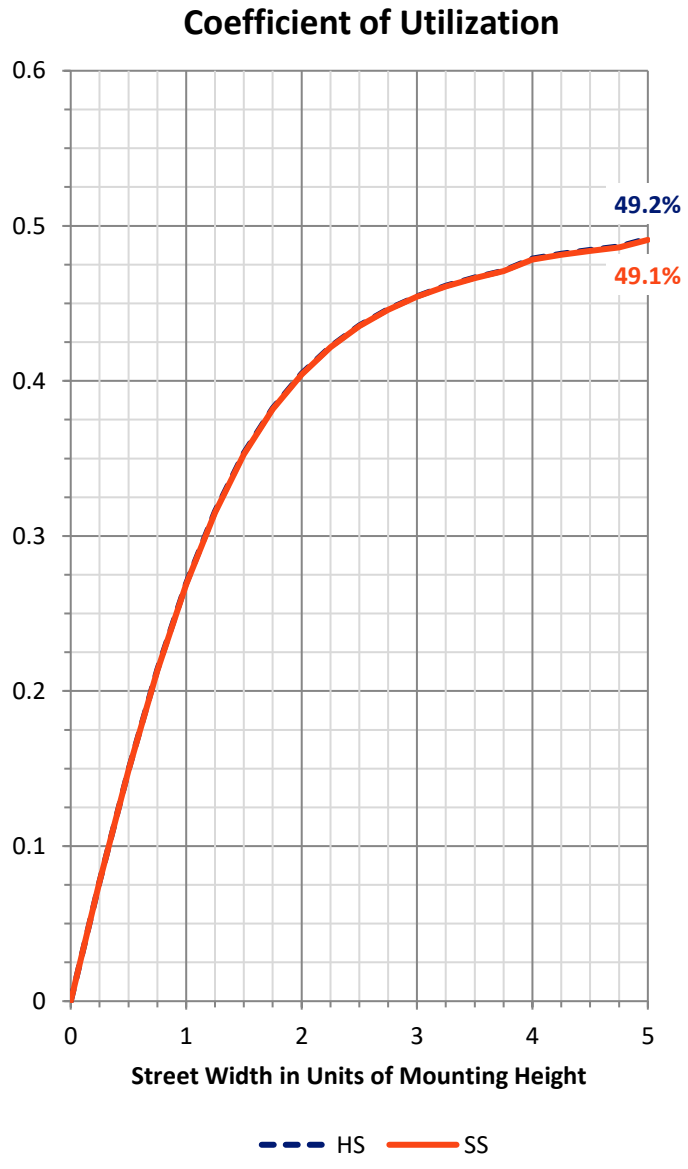
REPORT NUMBER: P880192
CATALOG NUMBER: EMM2-HSN-VA3-735-U-RW

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2003.8	0.0	2003.8
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2003.8	0.0	2003.8
	% Fixture	50.0	0.0	50.0
Total	Lumens	4007.7	0.0	4007.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.0	0.3
10°-20°	41.0	1.0
20°-30°	94.8	2.4
30°-40°	203.1	5.1
40°-50°	419.4	10.5
50°-60°	770.3	19.2
60°-70°	1098.2	27.4
70°-80°	1021.6	25.5
80°-90°	348.3	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°	4007.7	100.0
0°-180°	4007.7	100.0



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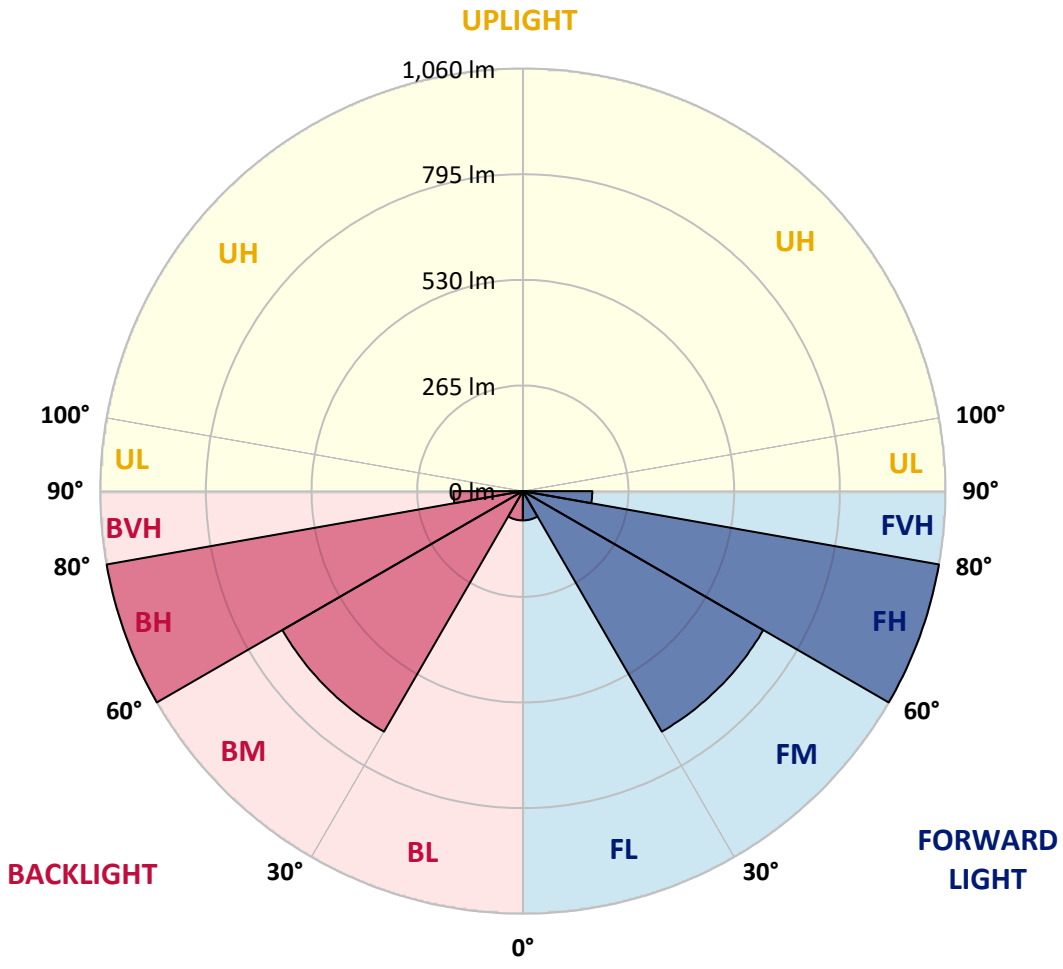
Scaled Data Report

REPORT NUMBER: P880192
CATALOG NUMBER: EMM2-HSN-VA3-735-U-RW

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	73.4	1.8			
FM	(30°-60°)	696.4	17.4			
FH	(60°-80°)	1059.9	26.4			G1/1800
FVH	(80°-90°)	174.2	4.3			G2/225
BL	(0°-30°)	73.4	1.8	B0/110		
BM	(30°-60°)	696.4	17.4	B1/1000		
BH	(60°-80°)	1059.9	26.4	B3/2500		G3/2500
BVH	(80°-90°)	174.2	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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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	*107.9*
2.5°	108.4	108.4	108.4	108.4	108.9	108.9	108.9	108.9	108.9	108.9	*108.9*
5°	109.9	109.9	109.9	110.4	111.4	111.9	112.4	112.4	113.0	113.0	*113.0*
7.5°	112.4	112.4	113.0	114.5	115.5	117.0	118.5	119.1	120.6	120.6	*120.6*
10°	116.0	116.0	117.0	118.5	121.1	124.1	126.7	128.7	129.7	130.3	*130.8*
12.5°	120.6	120.6	122.1	124.7	128.7	132.3	136.4	138.9	141.4	142.5	*142.5*
15°	126.2	126.2	128.2	131.8	136.4	141.4	147.0	151.6	155.2	156.7	*157.2*
17.5°	131.8	132.3	134.8	139.4	145.5	152.1	159.3	165.4	171.0	173.0	*174.0*
20°	138.9	138.9	142.0	148.1	155.7	164.8	174.5	182.7	189.8	193.8	*194.4*
22.5°	147.0	147.5	150.6	158.2	167.9	179.6	192.3	203.5	213.7	218.8	*218.3*
25°	155.2	155.7	160.3	169.4	181.6	197.9	214.2	229.0	242.7	248.8	*248.8*
27.5°	164.8	165.4	171.0	181.6	197.9	218.3	239.6	261.0	274.7	283.9	*287.0*
30°	176.6	177.1	183.7	197.4	216.2	241.7	270.2	297.6	316.0	329.2	*329.7*
32.5°	189.3	190.3	198.4	214.2	238.6	270.7	306.3	340.4	365.8	382.6	*382.1*
35°	206.6	207.6	218.8	236.6	266.1	304.3	347.5	393.8	423.3	442.6	*444.7*
37.5°	224.4	226.4	239.1	262.5	298.2	343.9	398.4	450.3	494.0	511.8	*516.9*
40°	245.2	247.3	263.0	291.5	332.7	391.3	458.4	522.0	572.4	596.8	*600.4*
42.5°	269.2	272.7	291.0	324.1	376.0	443.7	522.0	600.4	664.0	696.0	*694.0*
45°	303.2	306.3	329.7	366.8	425.3	503.2	598.3	696.5	765.2	802.4	*801.9*
47.5°	335.8	339.9	367.9	414.7	482.3	572.9	684.8	796.8	875.6	916.8	*924.0*
50°	369.4	375.0	410.6	463.0	543.4	654.3	780.0	900.1	995.7	1046.6	*1058.8*
52.5°	426.4	431.5	469.1	524.1	610.0	732.7	877.2	1012.0	1117.8	1171.7	*1191.6*
55°	465.0	473.2	521.0	589.7	687.4	817.1	975.9	1131.6	1251.1	1304.0	*1315.2*
57.5°	477.8	486.4	543.9	628.9	750.0	906.2	1079.1	1246.0	1375.8	1447.5	*1465.3*
60°	478.3	488.9	551.0	643.1	780.5	968.7	1171.2	1369.2	1516.2	1595.1	*1610.3*
62.5°	494.5	506.8	572.9	658.9	795.7	997.7	1233.8	1473.5	1653.6	1733.5	*1750.2*
65°	512.9	527.1	597.3	693.0	830.3	1028.8	1273.5	1548.8	1777.2	1870.3	*1878.5*
67.5°	494.0	506.2	580.0	679.2	822.2	1034.9	1301.5	1595.6	1851.5	1986.3	*1992.9*
70°	463.0	475.7	545.9	636.5	776.9	988.6	1269.4	1595.6	1895.2	2064.7	*2095.2*
72.5°	*417.7*	*430.4*	*497.1*	*583.6*	*709.8*	*901.6*	*1180.4*	*1522.3*	*1865.2*	*2096.2*	*2131.8*
75°	362.3	374.0	435.5	514.4	624.8	798.3	1051.2	1382.9	1748.2	2037.7	*2080.4*
77.5°	302.2	312.9	365.3	428.9	522.5	676.7	893.4	1193.6	1543.7	1840.3	*1895.8*
80°	237.6	248.3	288.5	338.3	413.6	531.7	711.3	960.1	1262.8	1511.1	*1565.5*
82.5°	178.1	183.2	211.7	247.8	296.1	383.6	515.9	709.8	936.2	1114.3	*1138.7*
85°	111.9	116.5	135.8	160.8	189.8	235.6	318.0	434.5	565.8	666.0	*667.5*
87.5°	34.6	40.2	46.3	61.1	69.7	84.0	100.7	142.0	186.7	235.6	*221.3*
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: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ

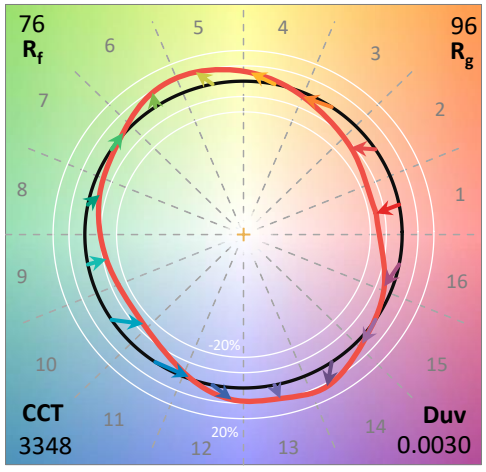
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-4
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-30-735-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	3348	CRI (Ra):	73.4		
CIE u':	0.2384	R1:	70.8	R9:	-19.2
CIE v':	0.5184	R2:	79.9	R10:	52.5
Duv:	0.0030	R3:	87.6	R11:	68.0
CIE x:	0.4177	R4:	72.6	R12:	42.6
CIE y:	0.4036	R5:	69.3	R13:	72.0
CIE z:	0.1787	R6:	71.3	R14:	92.6
Peak Wavelength (nm):	593	R7:	82.1	R15:	63.8
Dominant Wavelength (nm):	580	R8:	53.3		
Purity:	46.5223				
Rf:	75.8				
Rg:	95.8				



Test Conditions

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

REPORT NUMBER: SP1-2407-176-4

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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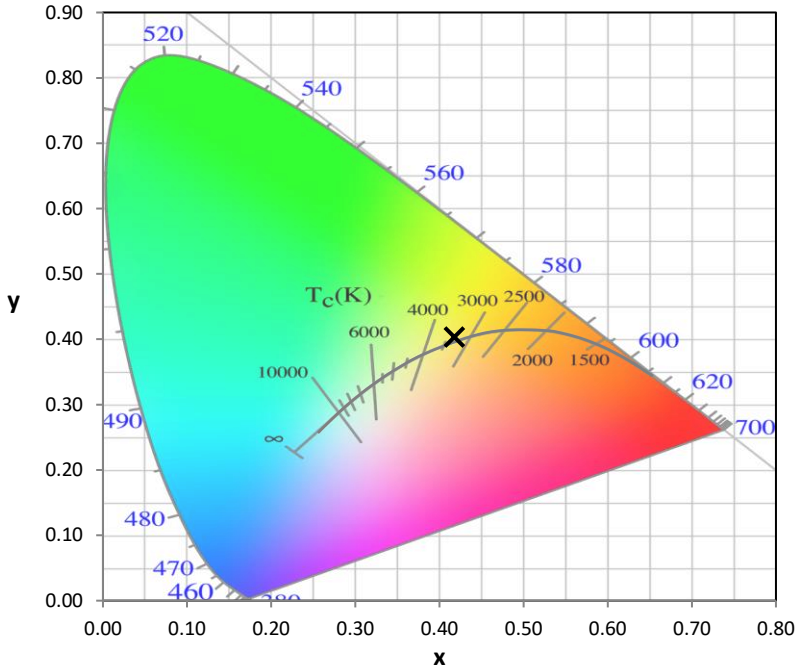
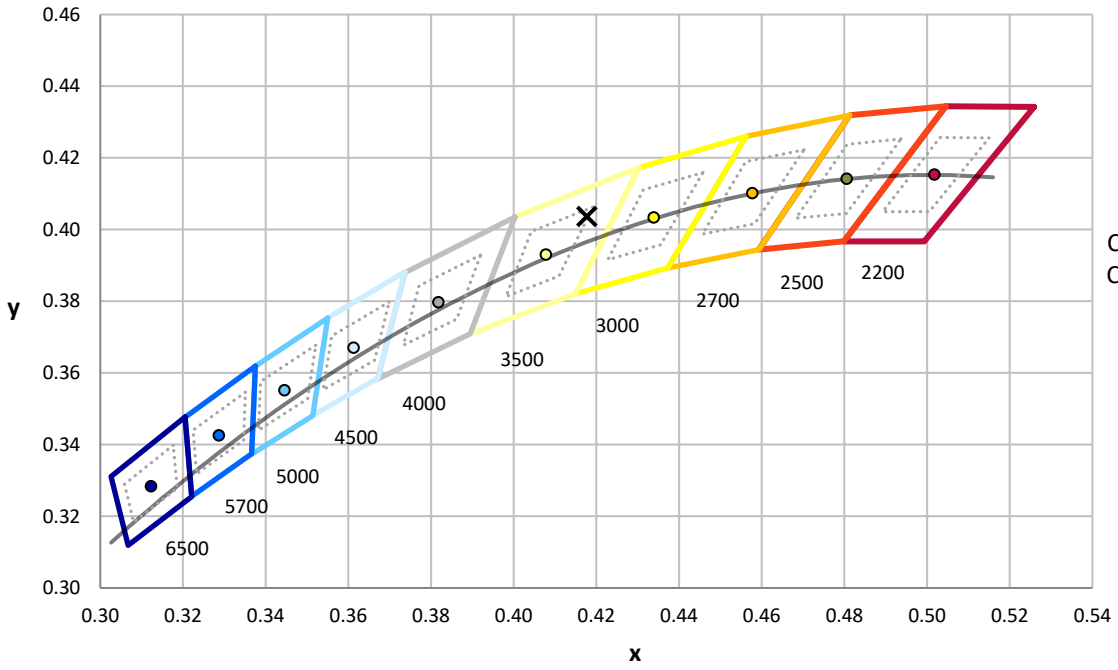
CIE 1931 Chromaticity Diagram



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



CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

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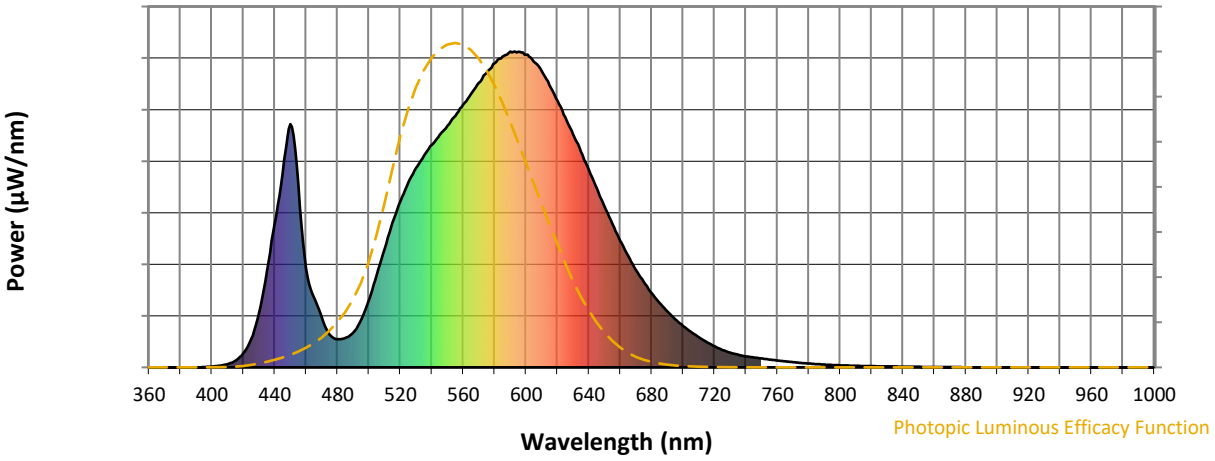
Photopic Flux vs. Wavelength

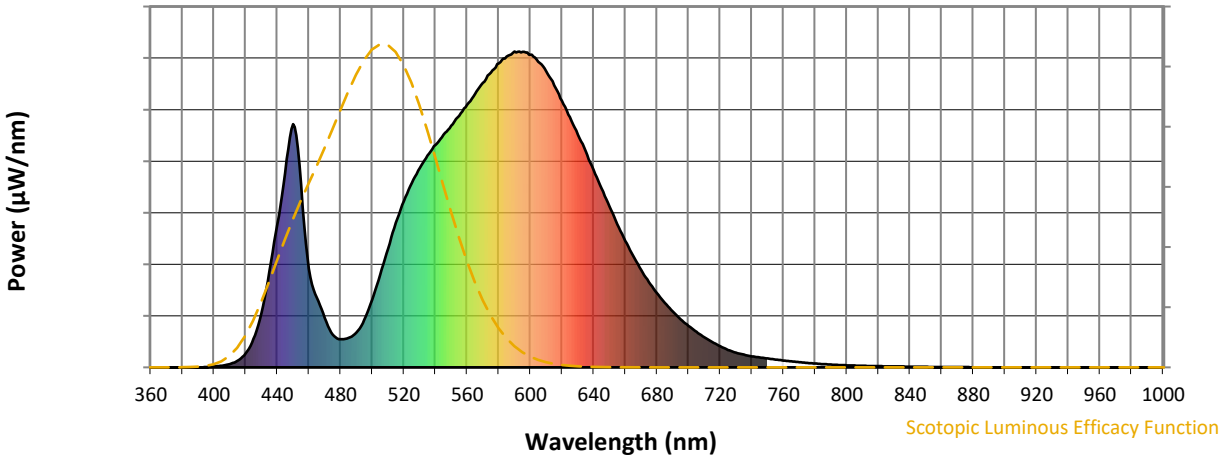


Photopic Lumens: NR

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	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

Scotopic Flux vs. Wavelength

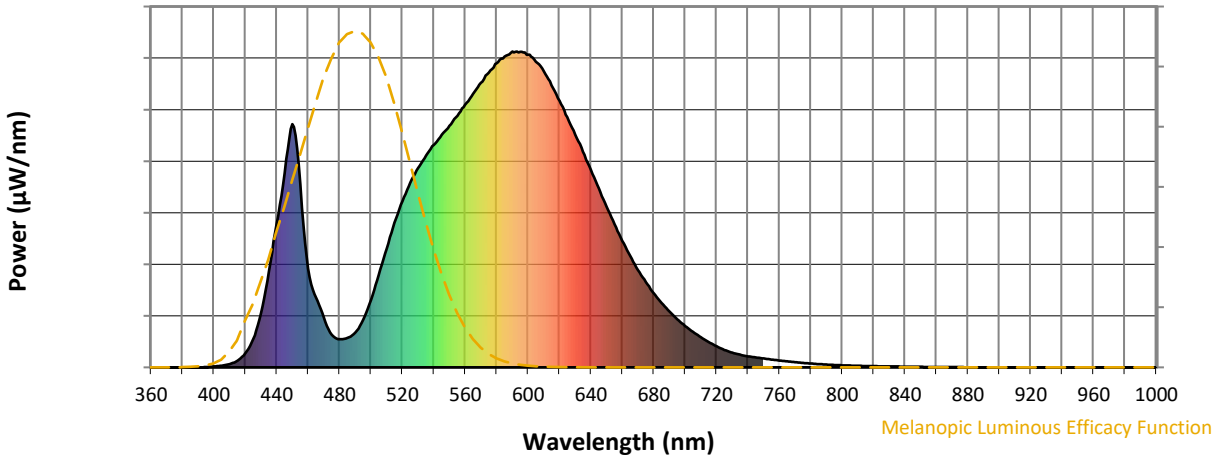


Scotopic Lumens: NR **S/P: 1.31**

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	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.4**

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	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

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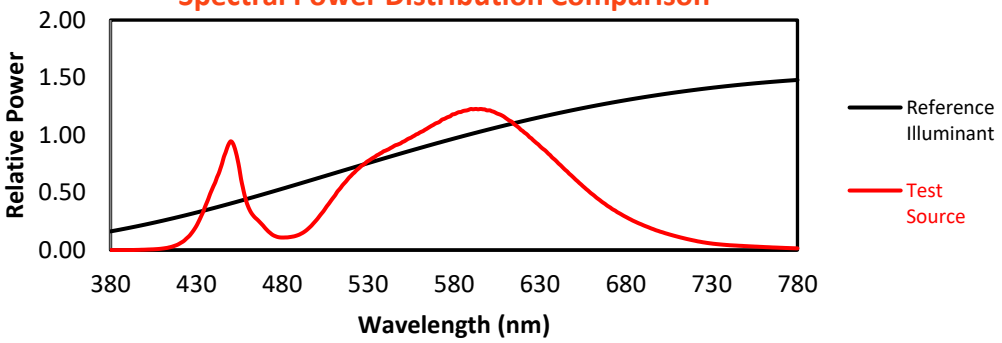
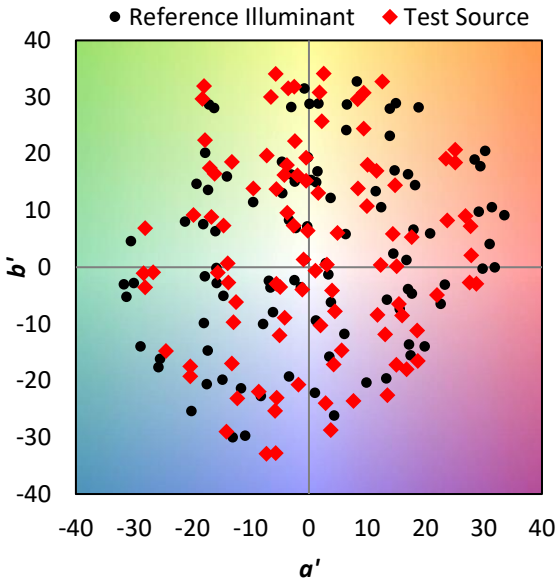
Summary

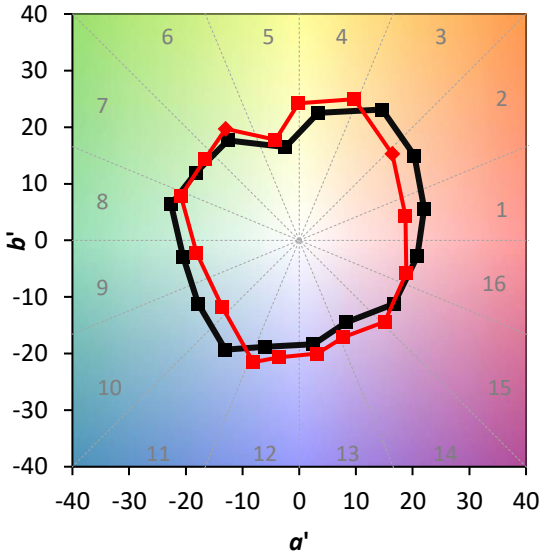
R_f = 75.8
R_g = 95.8
CIE R_a = 73.4
R_9 = -19.2

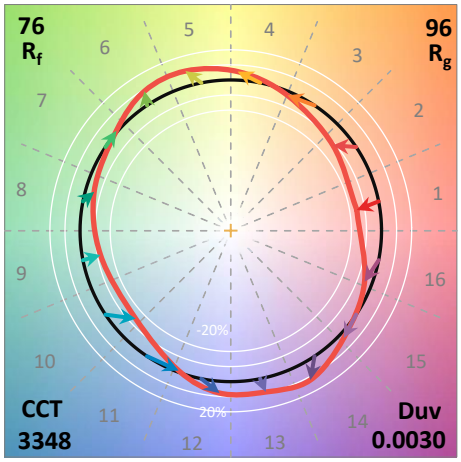
Spectral Power Distribution Comparison

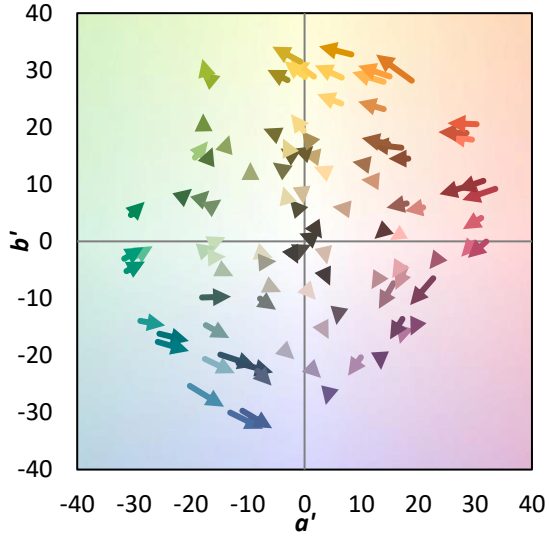


Color Vector Graphics









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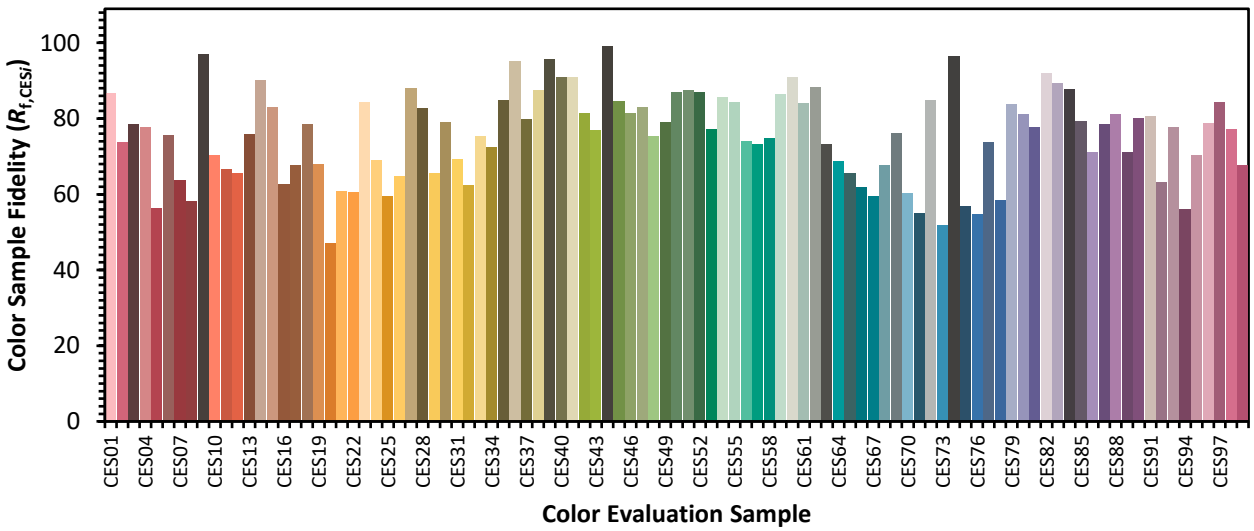
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 92
CES08 = 40	CES33 = 75	CES58 = 75	CES83 = 89
CES09 = 29	CES34 = 73	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 85	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 95	CES61 = 84	CES86 = 71
CES12 = 64	CES37 = 80	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 88	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 71
CES15 = 71	CES40 = 91	CES65 = 66	CES90 = 80
CES16 = 47	CES41 = 91	CES66 = 62	CES91 = 81
CES17 = 50	CES42 = 81	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 77	CES68 = 68	CES93 = 78
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 85	CES70 = 60	CES95 = 70
CES21 = 87	CES46 = 82	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 83	CES72 = 85	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 52	CES98 = 77
CES24 = 91	CES49 = 79	CES74 = 96	CES99 = 68
CES25 = 72	CES50 = 87	CES75 = 57	



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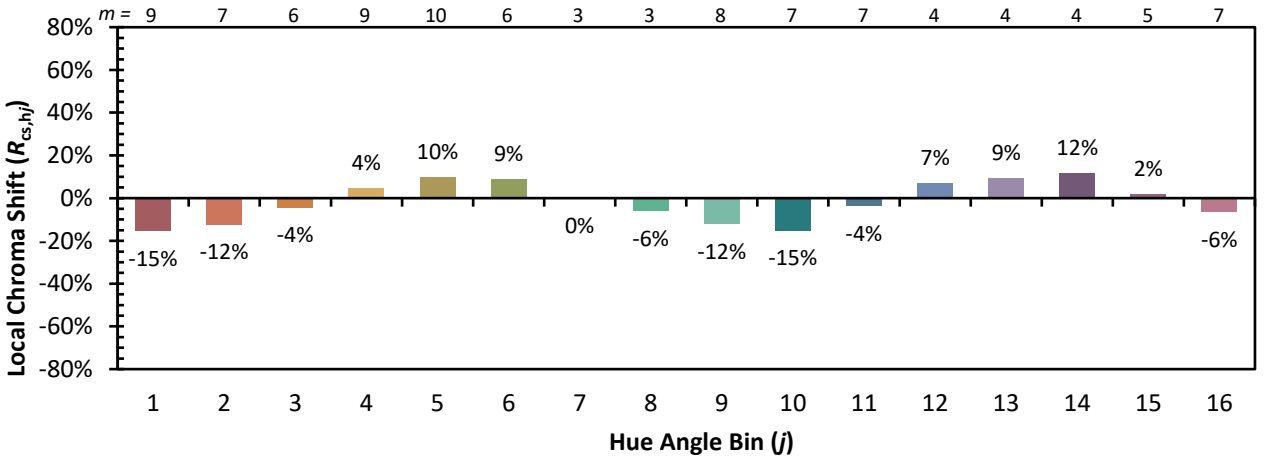
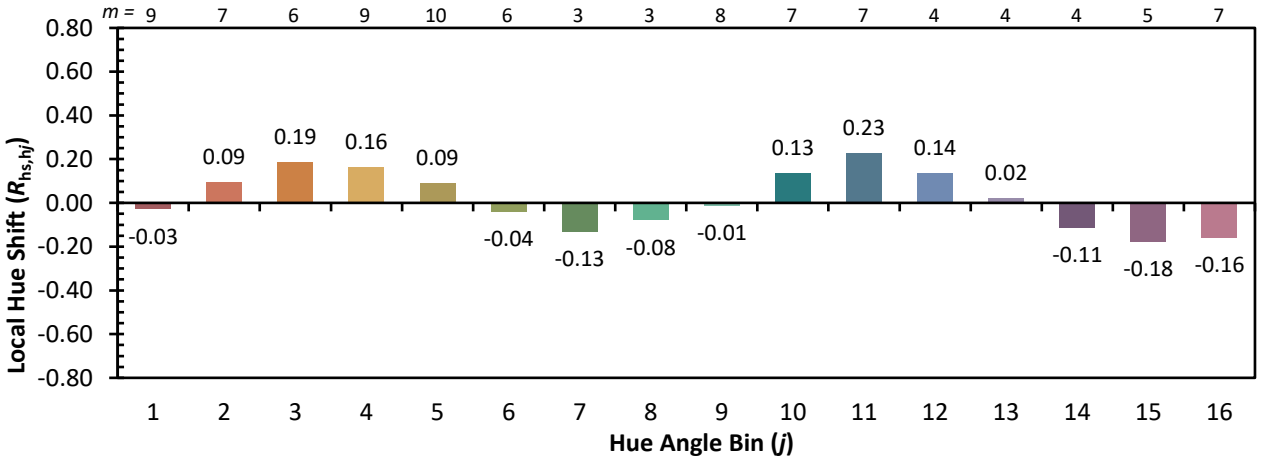
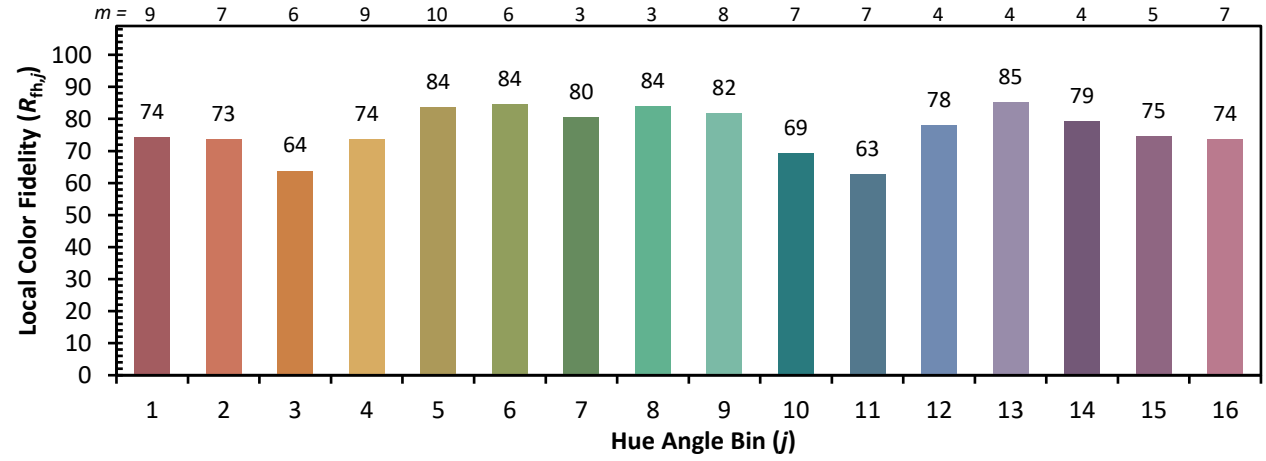
Color Rendition by Hue-Angle Bin







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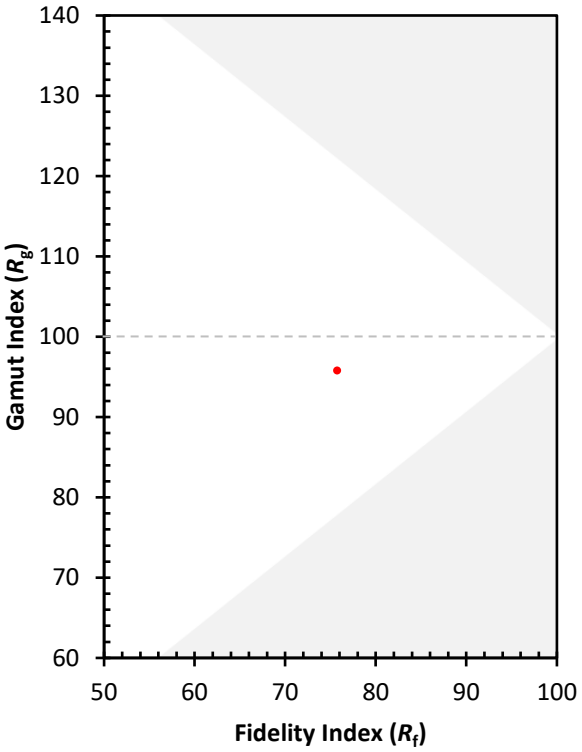
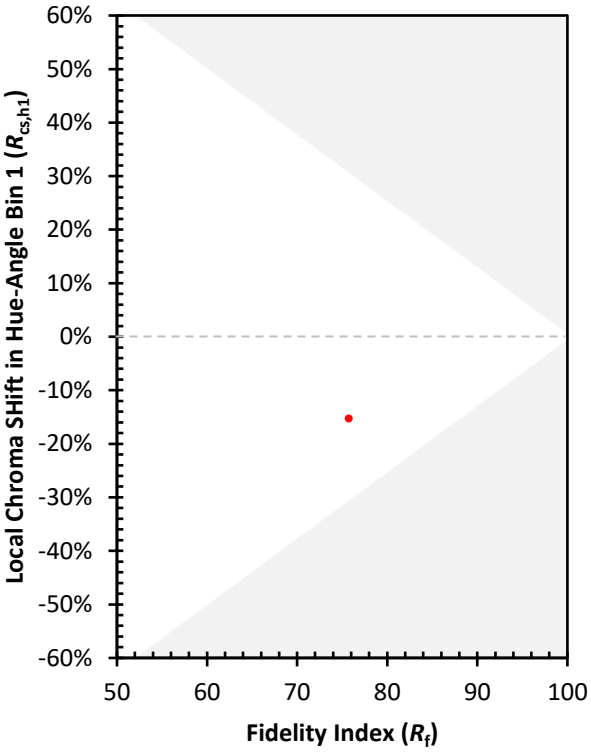
Measure Comparisons





(END OF REPORT)