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: P880148

Luminaire Tested: **EMM2-HTN-VA1-730-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:	P880148
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/01/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA1-730-U-RW
Description:	EPIC MODERN TALL HOUSING 1W 70CRI 3000K VISUAL COMFORT FIXTURE w/ RECTANGULAR WIDE DISTRIBUTION OPTIC
Light Source:	(1) 3000K CCT, 70 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2390.8 lumens
Efficiency:	N/A
Efficacy:	85.4 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B2 - U0 - G2

Input Watts (W):	28
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.99
Total Harmonic Distortion (THDi):	11%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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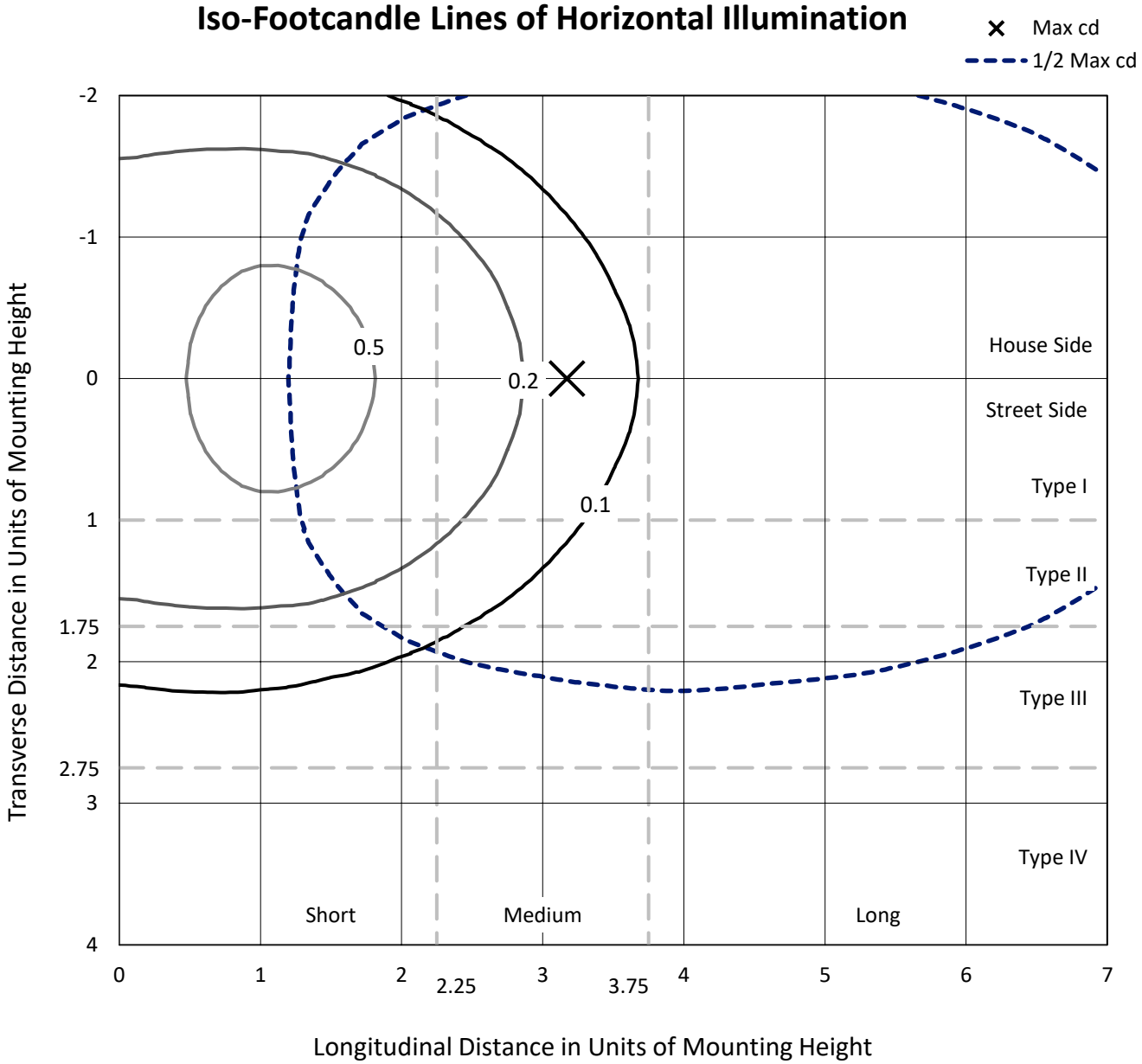
Scaled Data Report

REPORT NUMBER: P880148
CATALOG NUMBER: EMM2-HTN-VA1-730-U-RW

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 0.8 fc
Type III - Short - N/A

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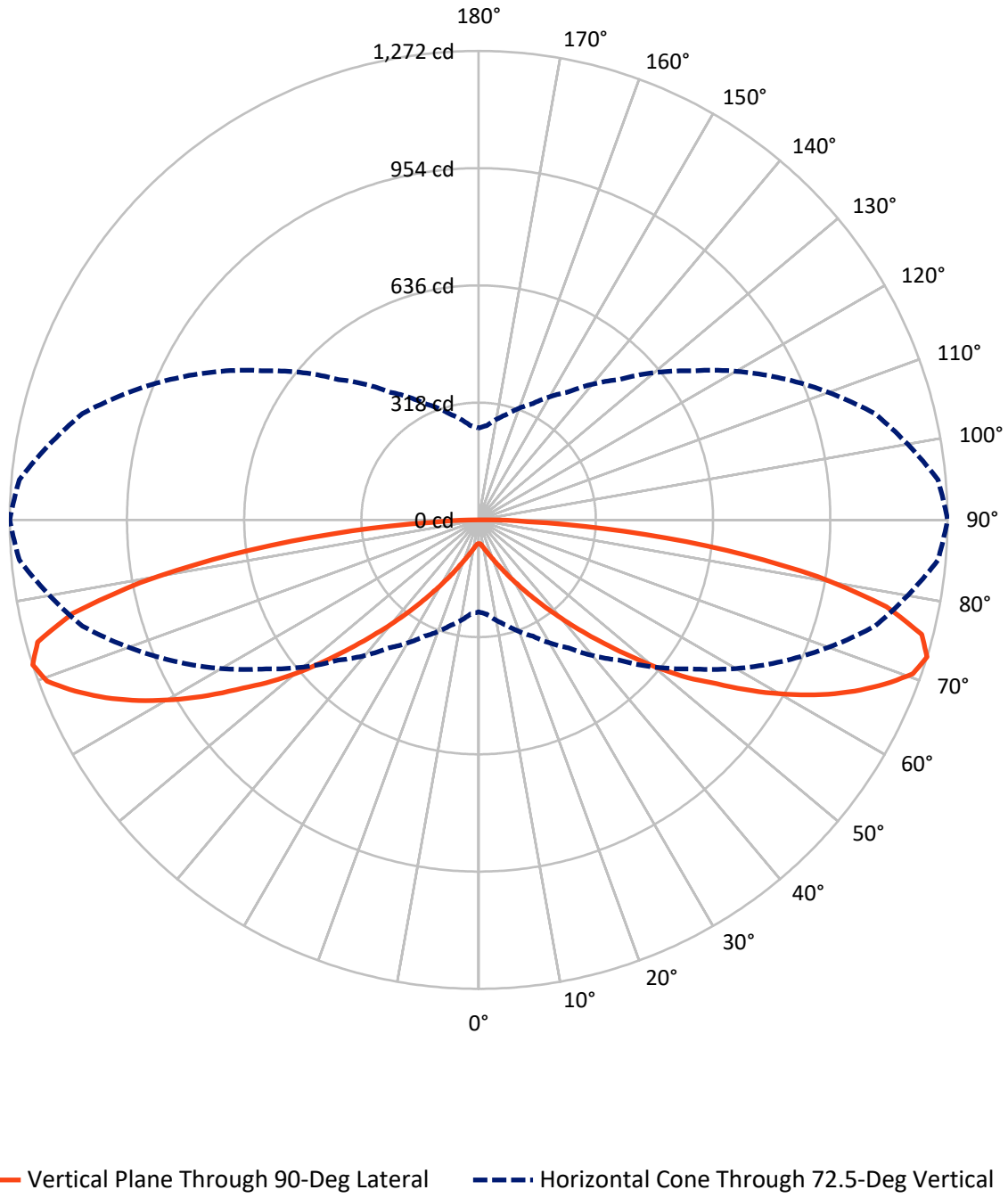
Luminous Intensity Polar Plot



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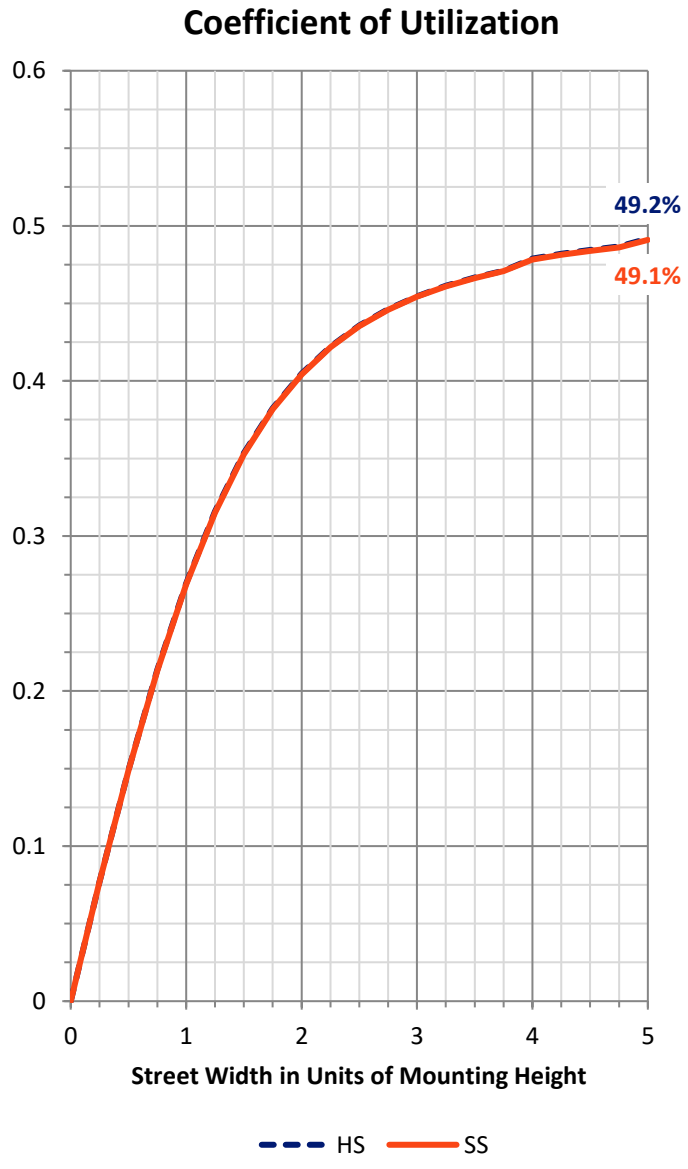
REPORT NUMBER: P880148
CATALOG NUMBER: EMM2-HTN-VA1-730-U-RW

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1195.4	0.0	1195.4
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	1195.4	0.0	1195.4
	% Fixture	50.0	0.0	50.0
Total	Lumens	2390.8	0.0	2390.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	6.6	0.3
10°-20°	24.5	1.0
20°-30°	56.5	2.4
30°-40°	121.2	5.1
40°-50°	250.2	10.5
50°-60°	459.5	19.2
60°-70°	655.2	27.4
70°-80°	609.4	25.5
80°-90°	207.8	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°	2390.8	100.0
0°-180°	2390.8	100.0



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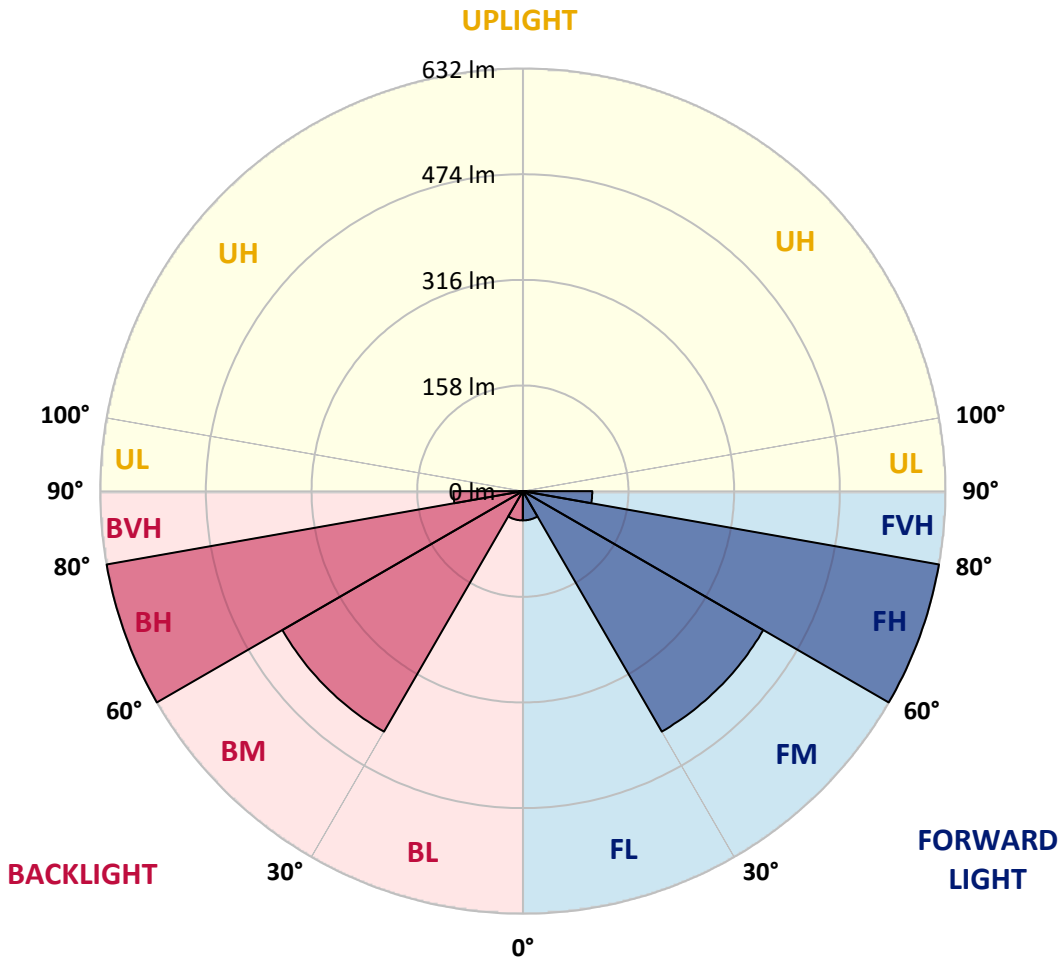
Scaled Data Report

REPORT NUMBER: P880148
CATALOG NUMBER: EMM2-HTN-VA1-730-U-RW

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	43.8	1.8			
FM	(30°-60°)	415.4	17.4			
FH	(60°-80°)	632.3	26.4			G0/660
FVH	(80°-90°)	103.9	4.3			G2/225
BL	(0°-30°)	43.8	1.8	B0/110		
BM	(30°-60°)	415.4	17.4	B1/1000		
BH	(60°-80°)	632.3	26.4	B2/1000		G2/1000
BVH	(80°-90°)	103.9	4.3			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2
Type III Short



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CATALOG NUMBER: EMM2-HTN-VA1-730-U-RW

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
2.5°	64.7	64.7	64.7	64.7	65.0	65.0	65.0	65.0	65.0	65.0	65.0
5°	65.6	65.6	65.6	65.9	66.5	66.8	67.1	67.1	67.4	67.4	67.4
7.5°	67.1	67.1	67.4	68.3	68.9	69.8	70.7	71.0	71.9	71.9	71.9
10°	69.2	69.2	69.8	70.7	72.2	74.1	75.6	76.8	77.4	77.7	78.0
12.5°	71.9	71.9	72.8	74.4	76.8	78.9	81.3	82.9	84.4	85.0	85.0
15°	75.3	75.3	76.5	78.6	81.3	84.4	87.7	90.4	92.6	93.5	93.8
17.5°	78.6	78.9	80.4	83.2	86.8	90.8	95.0	98.6	102.0	103.2	103.8
20°	82.9	82.9	84.7	88.3	92.9	98.3	104.1	109.0	113.2	115.6	115.9
22.5°	87.7	88.0	89.8	94.4	100.2	107.1	114.7	121.4	127.5	130.5	130.2
25°	92.6	92.9	95.6	101.1	108.4	118.1	127.8	136.6	144.8	148.4	148.4
27.5°	98.3	98.6	102.0	108.4	118.1	130.2	143.0	155.7	163.9	169.4	171.2
30°	105.3	105.6	109.6	117.8	129.0	144.2	161.2	177.6	188.5	196.4	196.7
32.5°	112.9	113.5	118.4	127.8	142.4	161.5	182.7	203.1	218.2	228.2	227.9
35°	123.2	123.8	130.5	141.1	158.7	181.5	207.3	234.9	252.5	264.1	265.3
37.5°	133.9	135.1	142.7	156.6	177.9	205.2	237.7	268.6	294.7	305.3	308.4
40°	146.3	147.5	156.9	173.9	198.5	233.4	273.5	311.4	341.5	356.0	358.2
42.5°	160.6	162.7	173.6	193.3	224.3	264.7	311.4	358.2	396.1	415.2	414.0
45°	180.9	182.7	196.7	218.8	253.7	300.2	356.9	415.5	456.5	478.7	478.4
47.5°	200.3	202.8	219.4	247.4	287.7	341.8	408.5	475.3	522.4	546.9	551.2
50°	220.4	223.7	244.9	276.2	324.2	390.3	465.3	536.9	594.0	624.3	631.6
52.5°	254.4	257.4	279.8	312.6	363.9	437.1	523.3	603.7	666.8	699.0	710.9
55°	277.4	282.3	310.8	351.8	410.1	487.5	582.2	675.0	746.4	777.9	784.6
57.5°	285.0	290.2	324.5	375.2	447.4	540.6	643.8	743.3	820.7	863.5	874.1
60°	285.3	291.7	328.7	383.7	465.6	577.9	698.7	816.8	904.5	951.5	960.7
62.5°	295.0	302.3	341.8	393.1	474.7	595.2	736.0	879.0	986.4	1034.1	1044.1
65°	306.0	314.4	356.3	413.4	495.3	613.7	759.7	923.9	1060.2	1115.8	1120.6
67.5°	294.7	302.0	346.0	405.2	490.5	617.4	776.4	951.8	1104.5	1185.0	1188.9
70°	276.2	283.8	325.7	379.7	463.5	589.7	757.3	951.8	1130.6	1231.7	1249.9
72.5°	249.2	256.8	296.5	348.1	423.4	537.8	704.2	908.1	1112.7	1250.5	1271.8
75°	216.1	223.1	259.8	306.9	372.7	476.2	627.1	825.0	1042.9	1215.6	1241.1
77.5°	180.3	186.7	217.9	255.9	311.7	403.7	533.0	712.1	920.9	1097.8	1130.9
80°	141.7	148.1	172.1	201.8	246.8	317.2	424.3	572.7	753.3	901.5	933.9
82.5°	106.2	109.3	126.3	147.8	176.7	228.9	307.8	423.4	558.5	664.7	679.3
85°	66.8	69.5	81.0	95.9	113.2	140.5	189.7	259.2	337.5	397.3	398.2
87.5°	20.6	24.0	27.6	36.4	41.6	50.1	60.1	84.7	111.4	140.5	132.0
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: SP1-2407-176-3

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-730-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-730-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

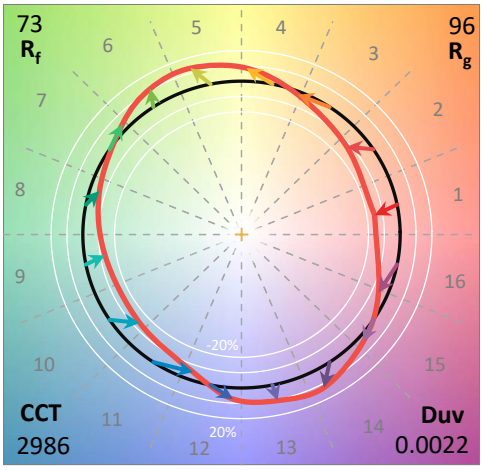
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-3
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-30-730-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K):	2986	CRI (Ra):	71.3		
CIE u':	0.2503	R1:	68.5	R9:	-25.2
CIE v':	0.5248	R2:	79.2	R10:	51.0
Duv:	0.0022	R3:	88.4	R11:	63.6
CIE x:	0.4413	R4:	69.4	R12:	39.8
CIE y:	0.4112	R5:	66.3	R13:	69.9
CIE z:	0.1476	R6:	70.0	R14:	92.9
Peak Wavelength (nm):	596	R7:	80.1	R15:	61.4
Dominant Wavelength (nm):	582	R8:	48.3		
Purity:	55.87534				

Rf:	73.2
Rg:	95.9



Test Conditions

Stabilization Time:	27M
Operation Time:	1H 27M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-3

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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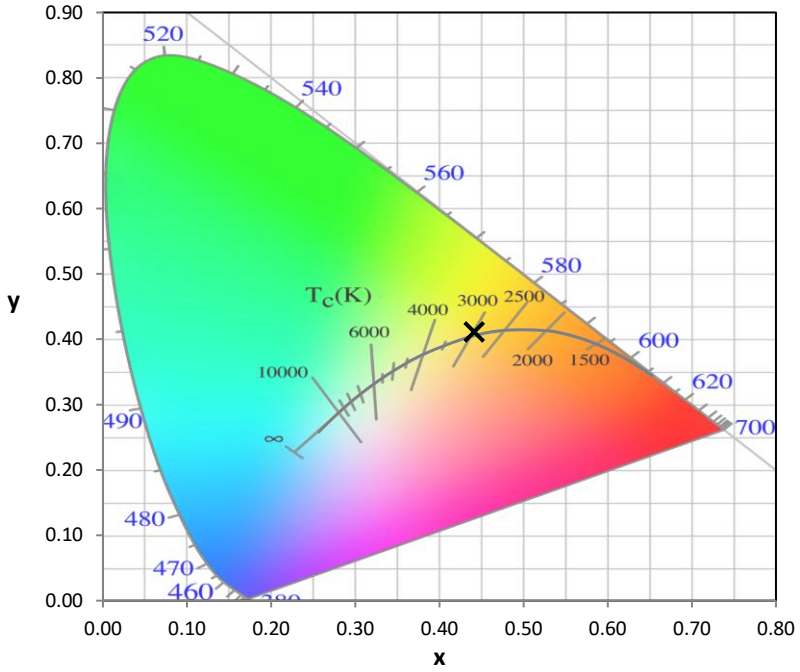
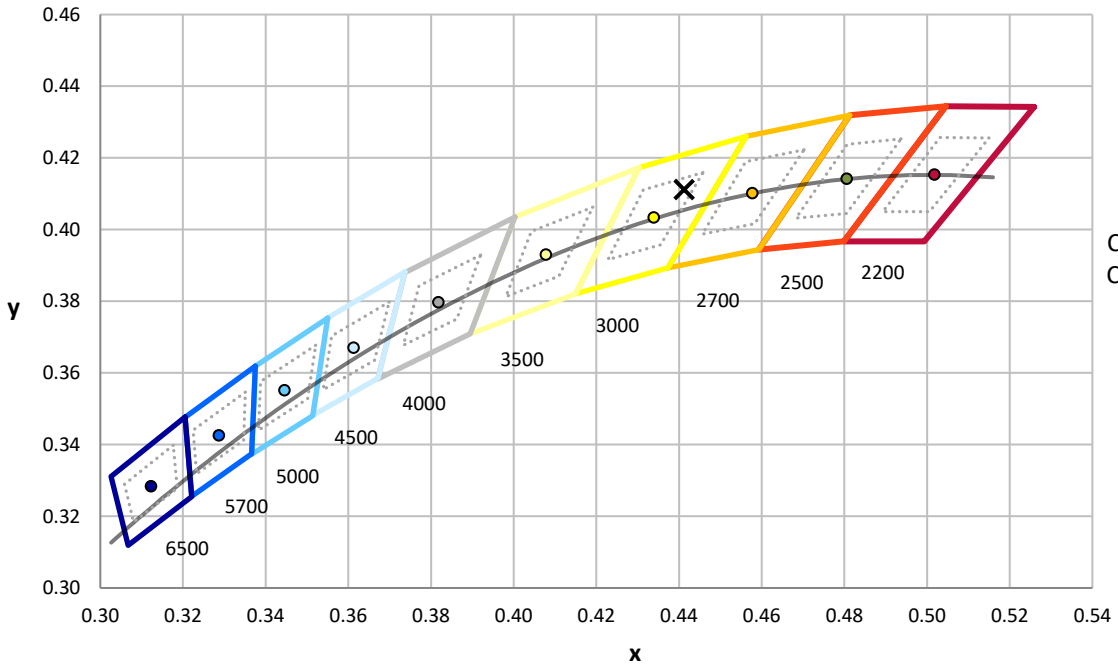
CIE 1931 Chromaticity Diagram



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

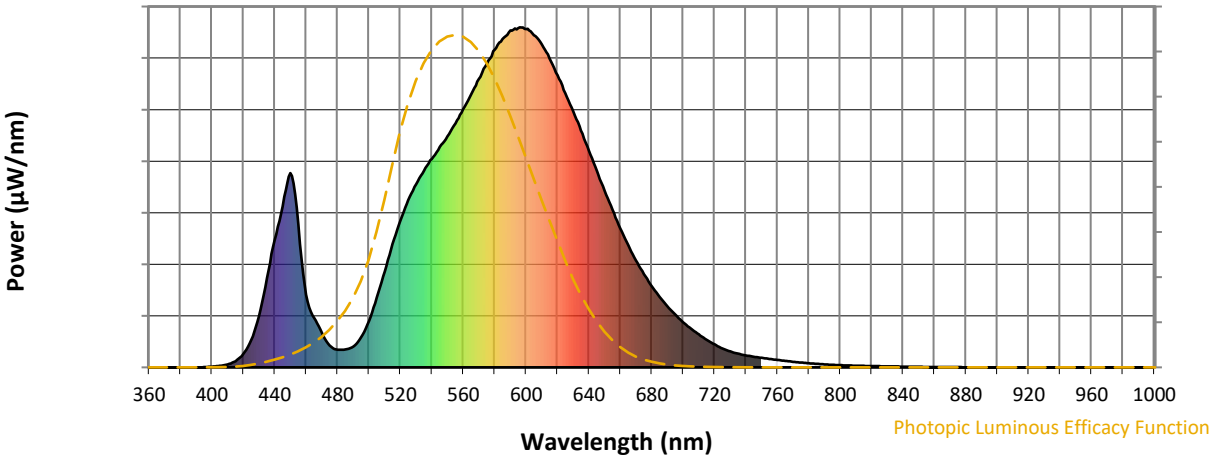


CCT = 2986K
CIE x = 0.4413
CIE y = 0.4112
Duv = 0.0022

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-3

Photopic Flux vs. Wavelength

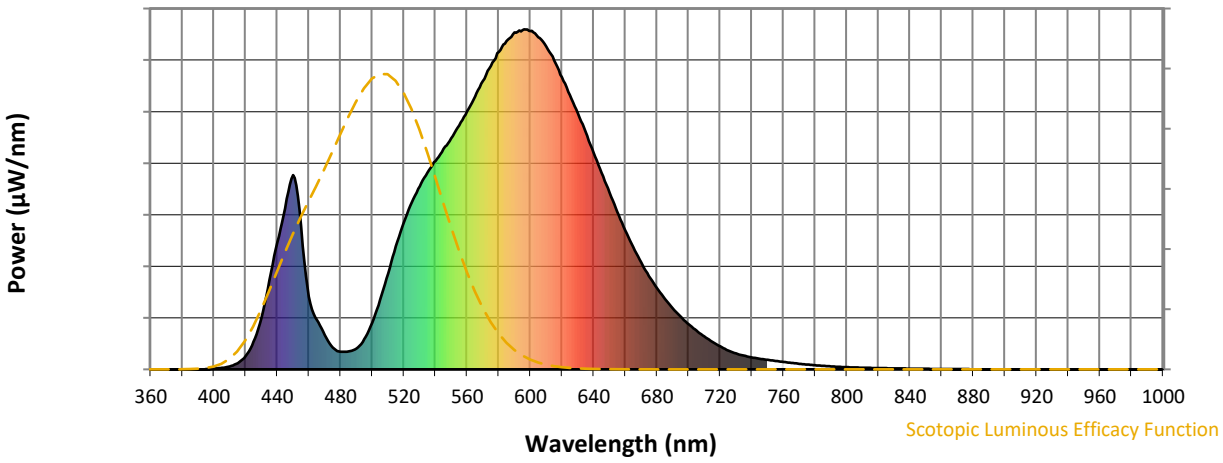


Photopic Lumens: NR

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-3

Scotopic Flux vs. Wavelength

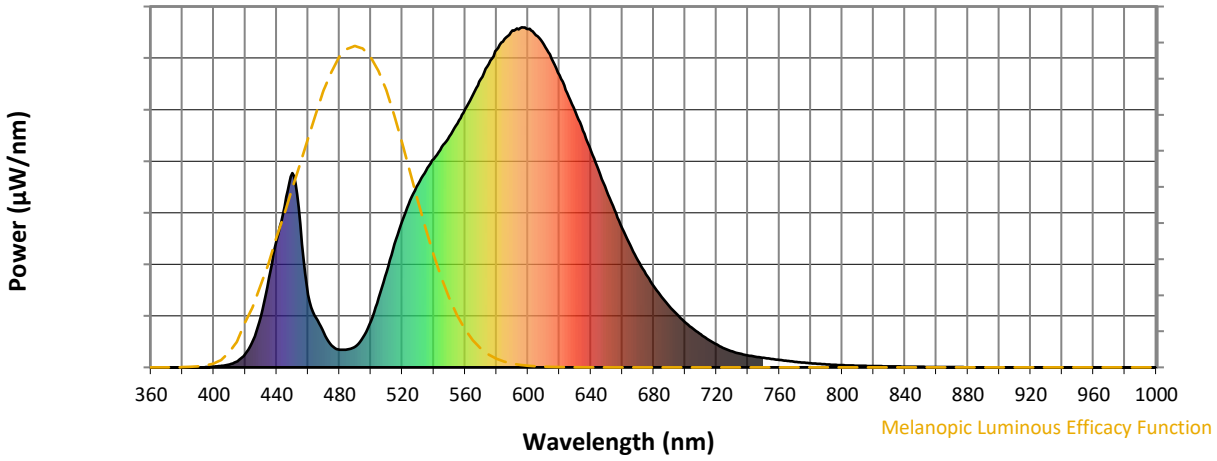


Scotopic Lumens: NR **S/P: 1.15**

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-3

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.01**

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	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

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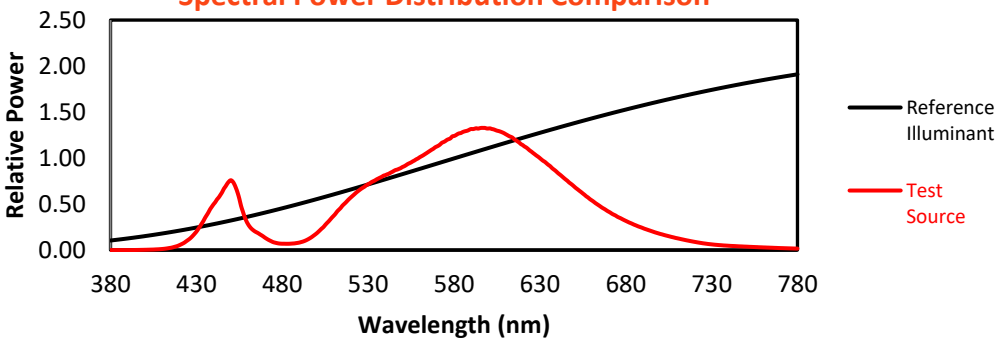
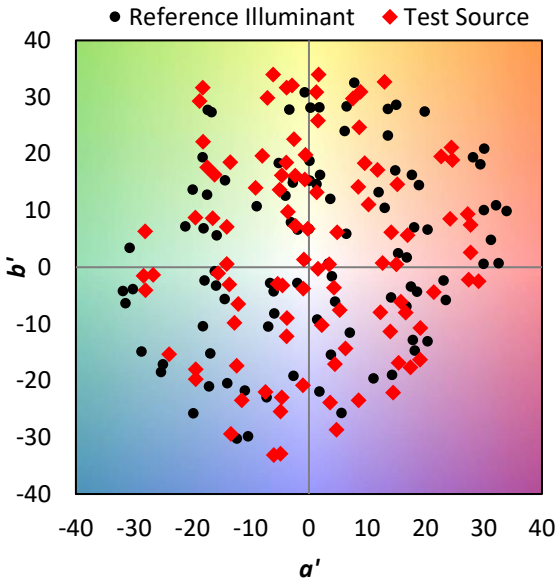
Summary

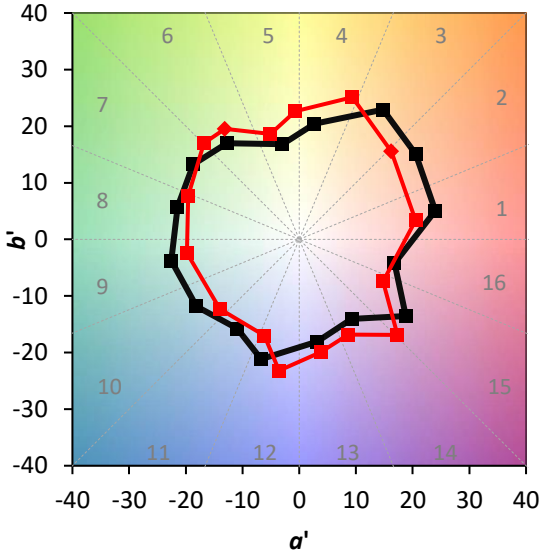
R_f = 73.2
R_g = 95.9
CIE R_a = 71.3
R_9 = -25.2

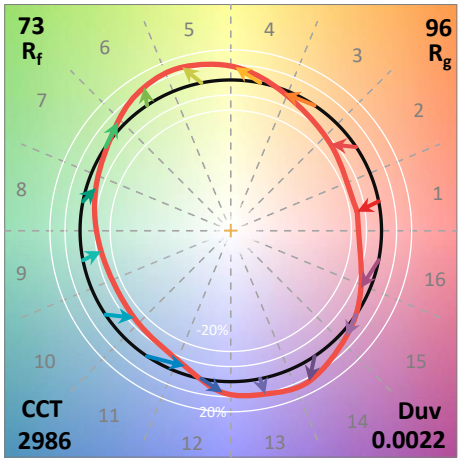
Spectral Power Distribution Comparison

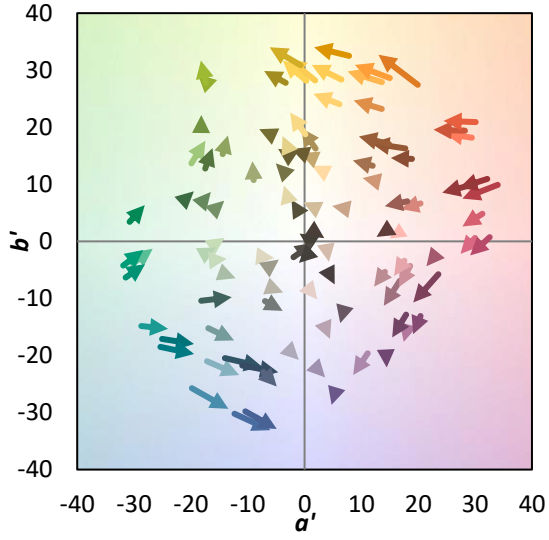


Color Vector Graphics









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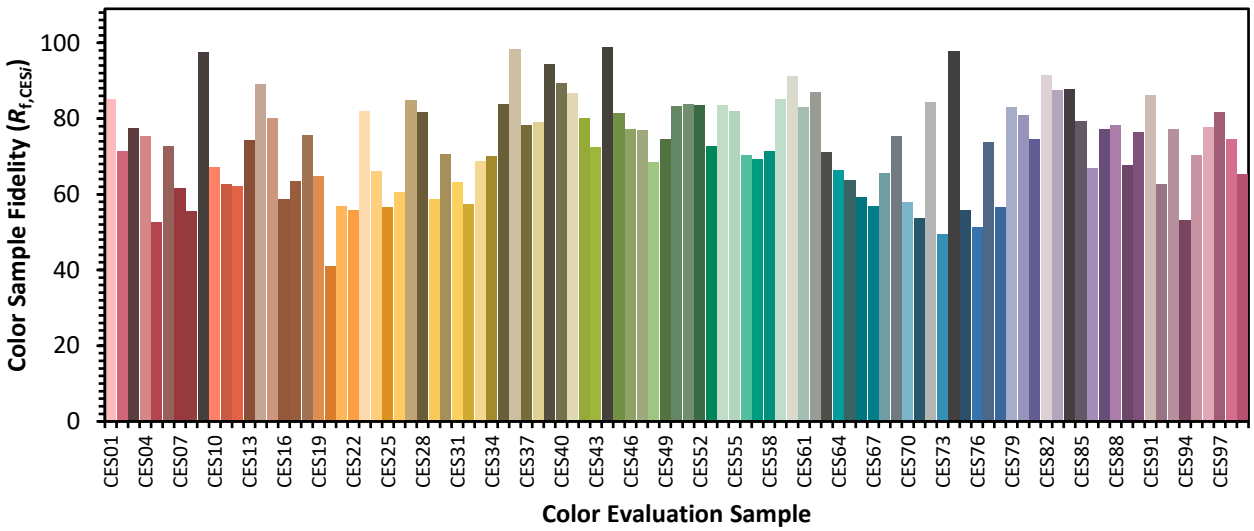
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 61	CES51 = 84	CES76 = 51
CES02 = 62	CES27 = 85	CES52 = 84	CES77 = 74
CES03 = 31	CES28 = 82	CES53 = 73	CES78 = 56
CES04 = 71	CES29 = 59	CES54 = 84	CES79 = 83
CES05 = 49	CES30 = 71	CES55 = 82	CES80 = 81
CES06 = 51	CES31 = 63	CES56 = 70	CES81 = 75
CES07 = 41	CES32 = 57	CES57 = 69	CES82 = 92
CES08 = 40	CES33 = 69	CES58 = 71	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 85	CES84 = 88
CES10 = 76	CES35 = 84	CES60 = 91	CES85 = 79
CES11 = 59	CES36 = 98	CES61 = 83	CES86 = 67
CES12 = 65	CES37 = 78	CES62 = 87	CES87 = 77
CES13 = 43	CES38 = 79	CES63 = 71	CES88 = 78
CES14 = 74	CES39 = 94	CES64 = 66	CES89 = 68
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 76
CES16 = 47	CES41 = 87	CES66 = 59	CES91 = 86
CES17 = 50	CES42 = 80	CES67 = 57	CES92 = 63
CES18 = 56	CES43 = 73	CES68 = 66	CES93 = 77
CES19 = 73	CES44 = 99	CES69 = 75	CES94 = 53
CES20 = 66	CES45 = 81	CES70 = 58	CES95 = 70
CES21 = 87	CES46 = 77	CES71 = 54	CES96 = 78
CES22 = 79	CES47 = 77	CES72 = 84	CES97 = 82
CES23 = 92	CES48 = 68	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 74	CES74 = 98	CES99 = 65
CES25 = 73	CES50 = 83	CES75 = 56	



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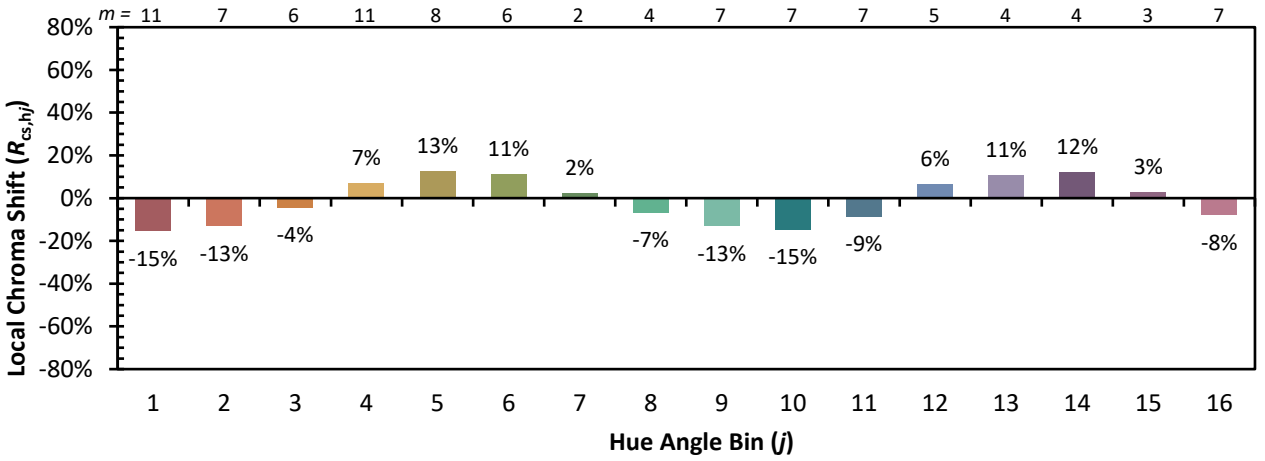
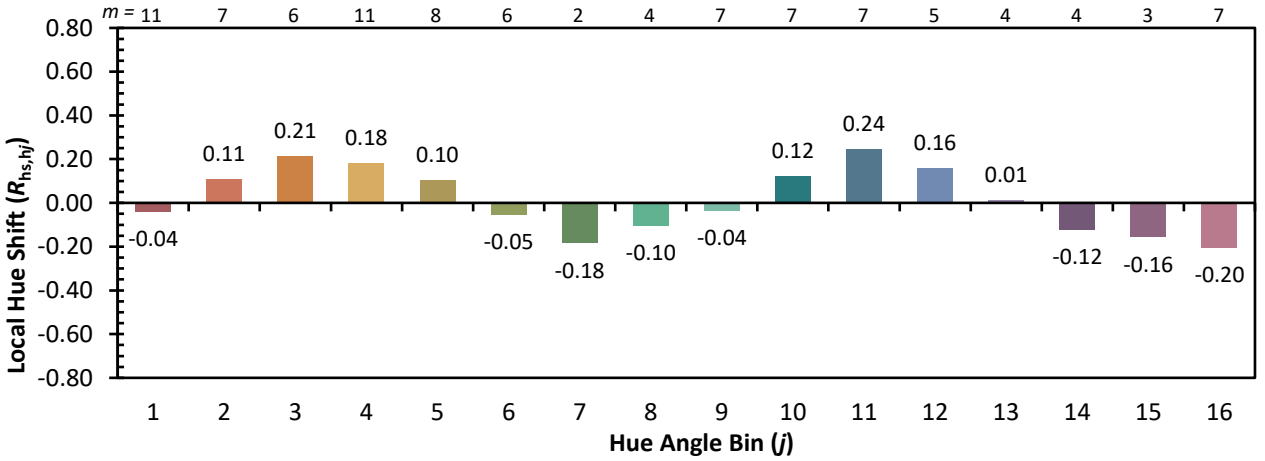
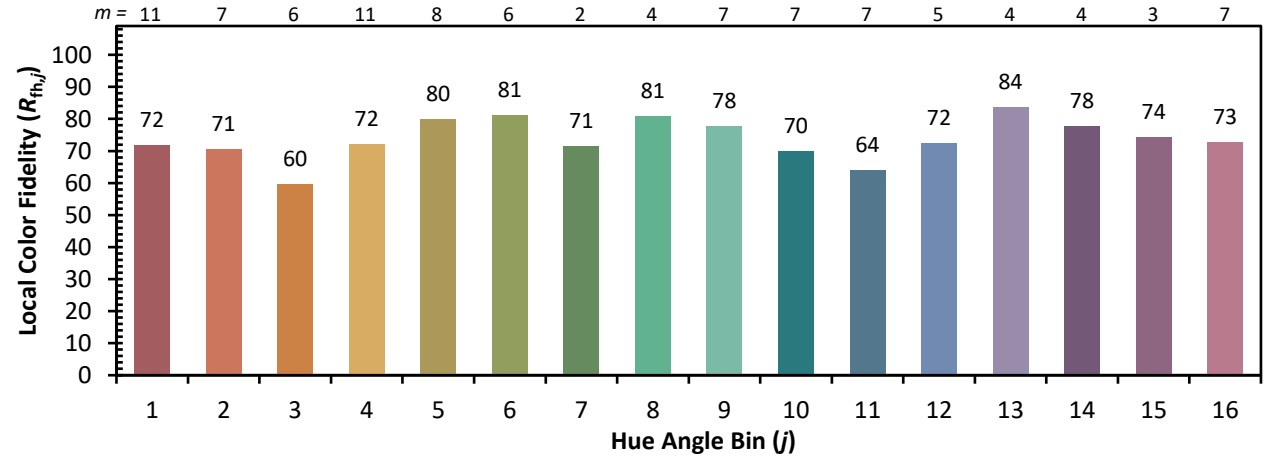
Color Rendition by Hue-Angle Bin







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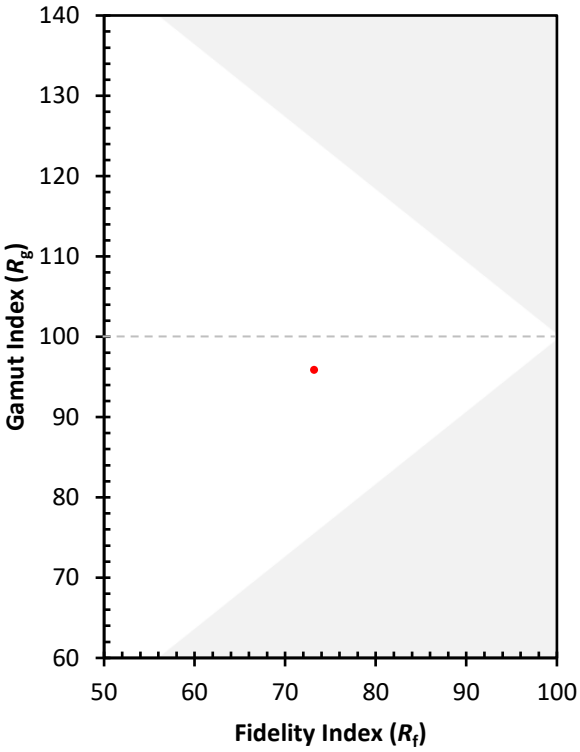
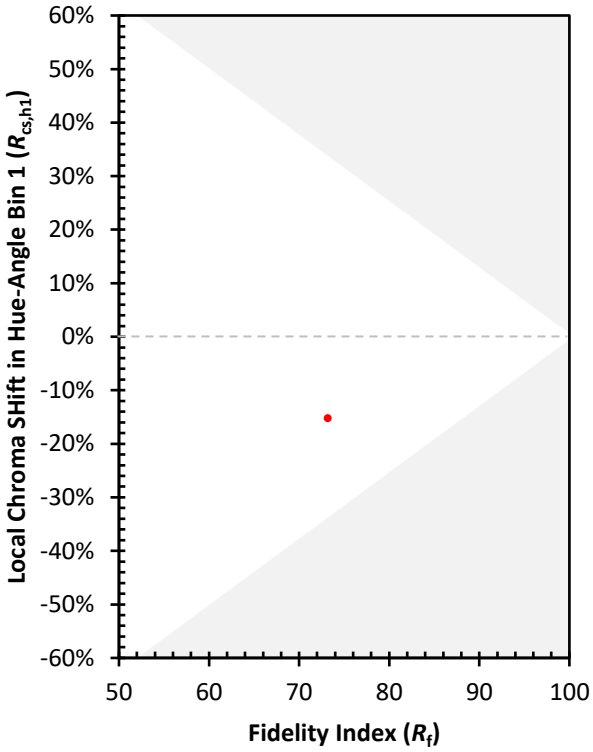
Measure Comparisons





(END OF REPORT)