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: P880518

Luminaire Tested: **EMM2-HTN-VA1-AMB-U-RW**

Issue Date: 10/02/2024

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:	P880518
Test Lab:	INNOVATION CENTER(G3)
Issue Date:	10/02/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	INVUE
Catalog Number:	EMM2-HTN-VA1-AMB-U-RW
Description:	EPIC MODERN TALL HOUSING 1W 0CRI 1554K VISUAL COMFORT FIXTURE w/ RECTANGULAR WIDE DISTRIBUTION OPTIC
Light Source:	(1) 1554K CCT, 0 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	655 lumens
Efficiency:	N/A
Efficacy:	20.5 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B1 - U0 - G1

Input Watts (W):	32
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.98
Total Harmonic Distortion (THDi):	16%
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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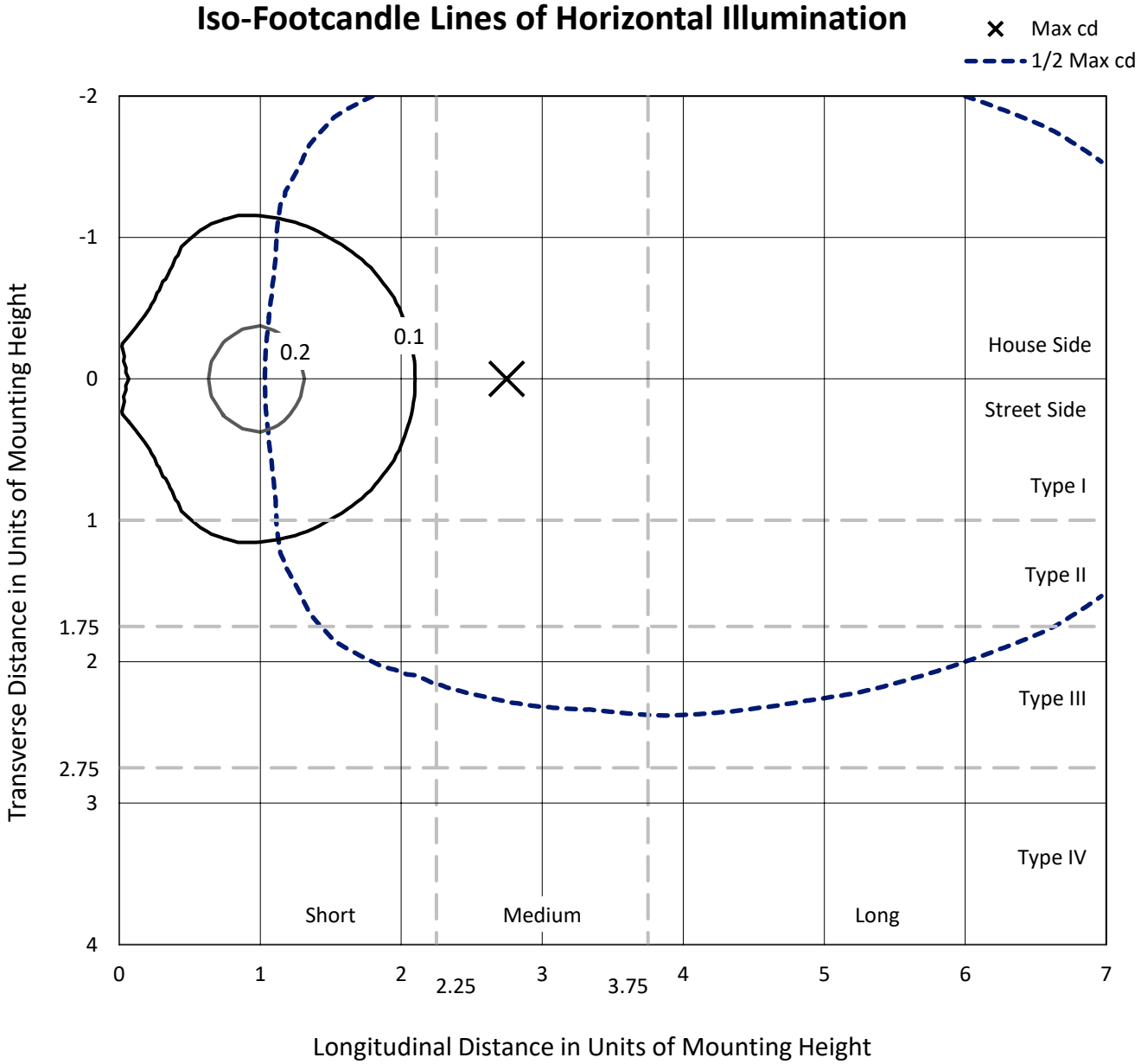
Scaled Data Report

REPORT NUMBER: P880518
CATALOG NUMBER: EMM2-HTN-VA1-AMB-U-RW

Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 0.2 fc
Type III - Short - N/A

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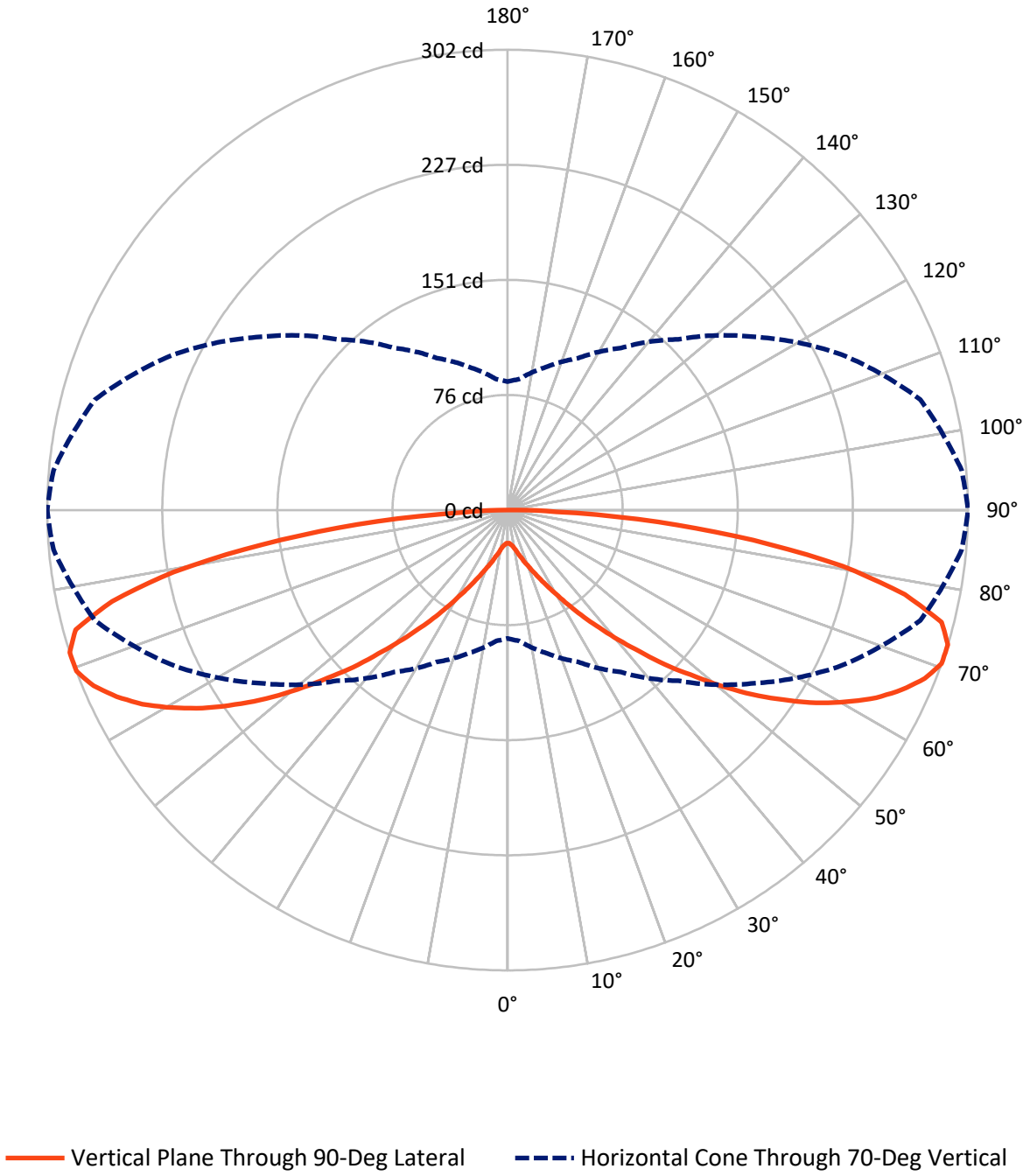
Luminous Intensity Polar Plot



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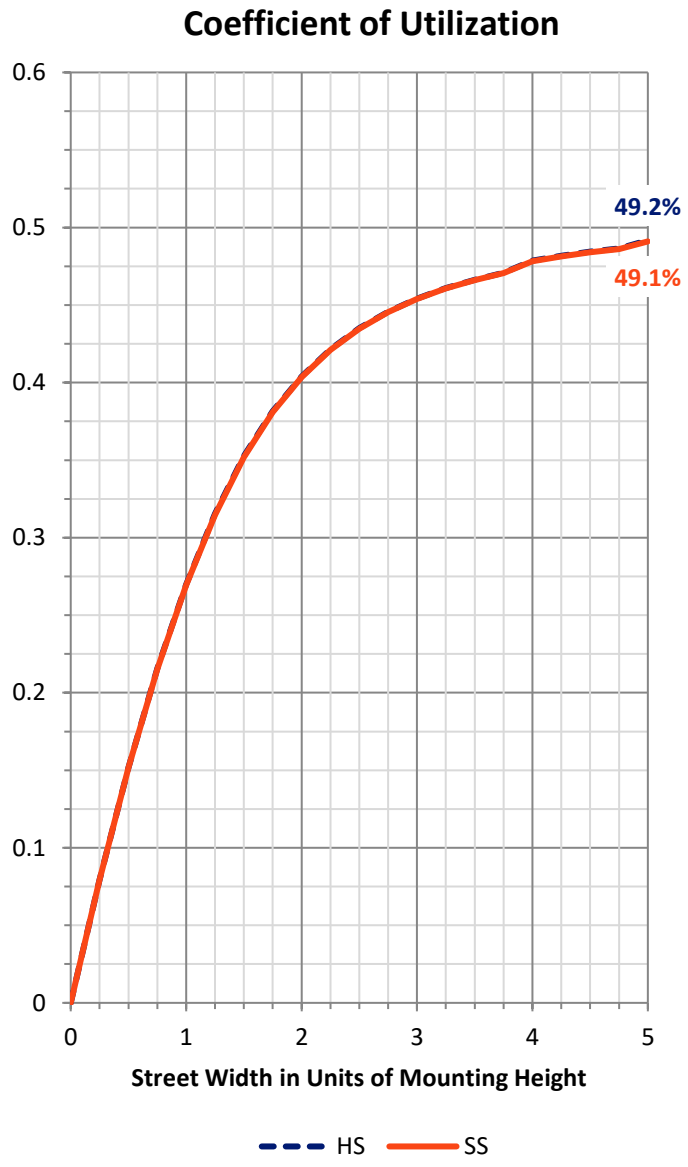
REPORT NUMBER: P880518
CATALOG NUMBER: EMM2-HTN-VA1-AMB-U-RW

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	327.5	0.0	327.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	327.5	0.0	327.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	655.0	0.0	655.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2.2	0.3
10°-20°	8.1	1.2
20°-30°	18.2	2.8
30°-40°	37.3	5.7
40°-50°	73.3	11.2
50°-60°	129.2	19.7
60°-70°	176.0	26.9
70°-80°	157.5	24.1
80°-90°	53.2	8.1
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°	655.0	100.0
0°-180°	655.0	100.0



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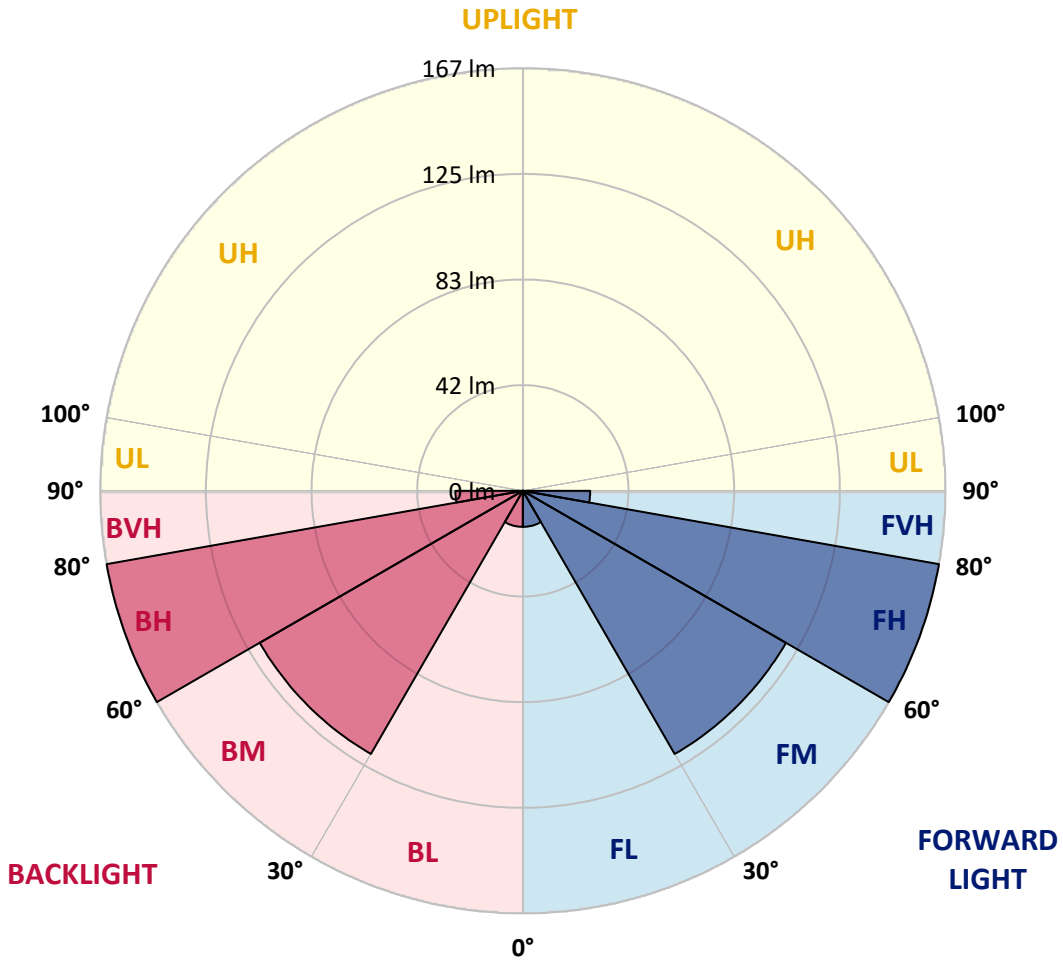
Scaled Data Report

REPORT NUMBER: P880518
CATALOG NUMBER: EMM2-HTN-VA1-AMB-U-RW

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	14.2	2.2			
FM	(30°-60°)	119.9	18.3			
FH	(60°-80°)	166.8	25.5			G0/660
FVH	(80°-90°)	26.6	4.1			G1/100
BL	(0°-30°)	14.2	2.2	B0/110		
BM	(30°-60°)	119.9	18.3	B0/220		
BH	(60°-80°)	166.8	25.5	B1/500		G1/500
BVH	(80°-90°)	26.6	4.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1
Type III Short



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Scaled Data Report

REPORT NUMBER: P880518
CATALOG NUMBER: EMM2-HTN-VA1-AMB-U-RW

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	*21.8*
2.5°	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	21.8	*21.8*
5°	21.8	21.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	*22.8*
7.5°	22.8	22.8	22.8	22.8	22.8	23.8	23.8	23.8	23.8	23.8	*23.8*
10°	22.8	22.8	23.8	23.8	23.8	24.8	25.8	25.8	25.8	25.8	*25.8*
12.5°	23.8	23.8	23.8	24.8	24.8	25.8	26.8	27.8	28.8	28.8	*28.8*
15°	24.8	24.8	24.8	25.8	26.8	27.8	28.8	29.7	30.7	31.7	*31.7*
17.5°	24.8	24.8	25.8	26.8	27.8	29.7	31.7	32.7	34.7	34.7	*35.7*
20°	25.8	25.8	26.8	27.8	29.7	31.7	34.7	36.7	38.7	39.7	*39.7*
22.5°	26.8	26.8	27.8	29.7	31.7	34.7	37.7	40.7	42.6	44.6	*44.6*
25°	27.8	27.8	28.8	30.7	33.7	37.7	41.6	45.6	48.6	50.6	*50.6*
27.5°	28.8	28.8	29.7	32.7	36.7	41.6	46.6	51.6	55.5	57.5	*57.5*
30°	29.7	30.7	31.7	34.7	39.7	45.6	52.6	58.5	62.5	65.4	*65.4*
32.5°	31.7	31.7	33.7	37.7	43.6	50.6	57.5	66.4	72.4	75.4	*75.4*
35°	34.7	34.7	36.7	40.7	46.6	55.5	65.4	74.4	82.3	86.3	*86.3*
37.5°	37.7	37.7	39.7	44.6	52.6	62.5	73.4	84.3	93.2	98.2	*98.2*
40°	40.7	40.7	43.6	49.6	58.5	69.4	83.3	96.2	106.1	111.1	*112.0*
42.5°	45.6	45.6	48.6	55.5	65.4	78.3	93.2	108.1	120.0	127.9	*126.9*
45°	51.6	51.6	55.5	62.5	73.4	88.2	105.1	122.9	136.8	144.8	*144.8*
47.5°	57.5	58.5	62.5	71.4	82.3	99.2	118.0	137.8	153.7	161.6	*161.6*
50°	65.4	66.4	70.4	79.3	93.2	111.1	131.9	153.7	170.5	181.4	*181.4*
52.5°	77.3	77.3	82.3	90.2	104.1	122.9	146.7	169.6	188.4	198.3	*201.3*
55°	84.3	85.3	92.2	102.1	117.0	136.8	160.6	186.4	206.2	217.1	*220.1*
57.5°	86.3	88.2	96.2	109.1	126.9	149.7	176.5	202.3	224.1	235.0	*239.0*
60°	87.3	89.2	98.2	112.0	131.9	159.6	188.4	218.1	240.9	253.8	*255.8*
62.5°	92.2	93.2	103.1	116.0	134.8	163.6	196.3	232.0	257.8	269.7	*271.7*
65°	94.2	96.2	106.1	120.0	139.8	167.6	202.3	239.9	270.7	284.6	*284.6*
67.5°	90.2	92.2	103.1	117.0	137.8	167.6	204.3	244.9	278.6	294.5	*295.5*
70°	*84.3*	*86.3*	*97.2*	*110.1*	*129.9*	*158.6*	*198.3*	*241.9*	*280.6*	*299.4*	*302.4*
72.5°	75.4	77.3	88.2	101.1	118.0	144.8	183.4	229.0	273.7	298.4	*302.4*
75°	65.4	67.4	77.3	88.2	104.1	127.9	162.6	208.2	253.8	287.5	*294.5*
77.5°	54.5	56.5	64.4	74.4	87.3	108.1	138.8	178.5	224.1	262.8	*266.7*
80°	42.6	44.6	50.6	58.5	68.4	85.3	110.1	143.8	182.4	217.1	*223.1*
82.5°	30.7	32.7	37.7	42.6	50.6	60.5	80.3	104.1	135.8	158.6	*162.6*
85°	19.8	19.8	22.8	26.8	30.7	37.7	48.6	65.4	84.3	98.2	*99.2*
87.5°	5.9	5.9	7.9	8.9	10.9	12.9	15.9	19.8	26.8	31.7	*31.7*
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: SP1-2407-176-1

Test Date: 09/23/2024

Luminaire Tested: MEM2-HTN-VA-60-AMB-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-60-AMB-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

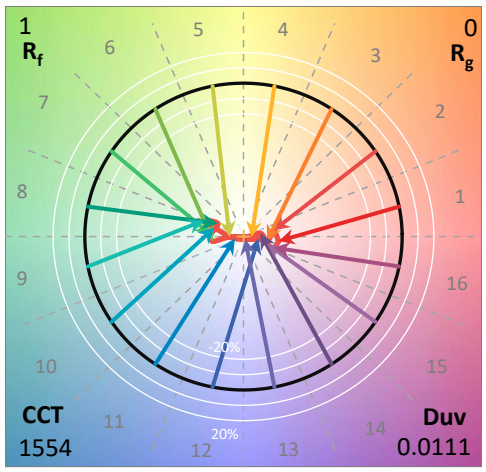
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-176-1
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-60-AMB-U-WQ**
Description:	EPIC MODERN VISUAL COMFORT 60W AMBER WAVESTREAM WIDE

Spectral Parameters

CCT (K):	1554
CIE u':	0.3509
CIE v':	0.5472
Duv:	0.0111
CIE x:	0.5903
CIE y:	0.4091
CIE z:	0.0006
Peak Wavelength (nm):	596
Dominant Wavelength (nm):	592
Purity:	99.98723
Rf:	1.1
Rg:	0

CRI (Ra):	-22.5				
R1:	-35.4	R9:	-390.1		
R2:	51.6	R10:	27.7		
R3:	17.0	R11:	-96.9		
R4:	-69.3	R12:	-12.7		
R5:	-41.7	R13:	-16.6		
R6:	40.2	R14:	45.8		
R7:	-7.3	R15:	-68.6		
R8:	-135.2				



Test Conditions

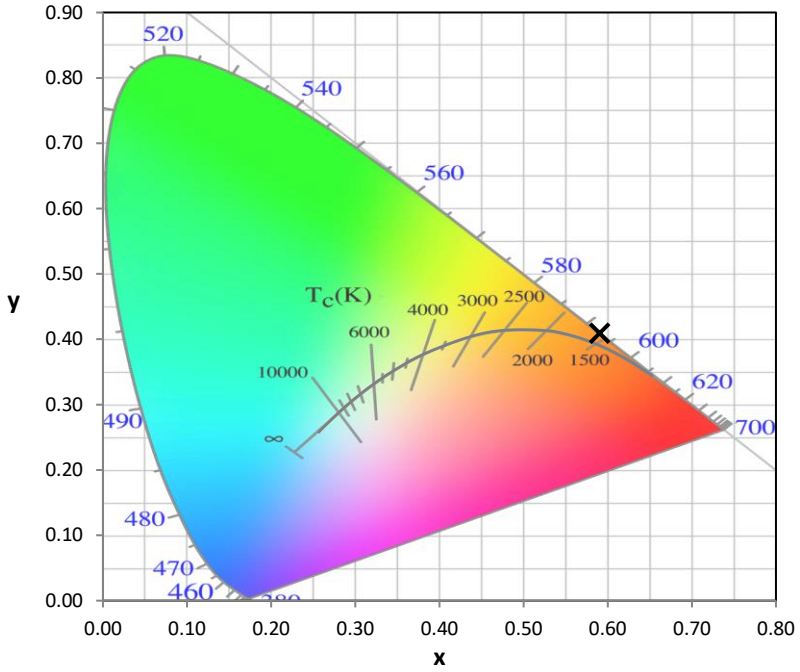
Stabilization Time:	98M
Operation Time:	2H 38M
Sphere Temperature (°C):	25.2

REPORT NUMBER: SP1-2407-176-1

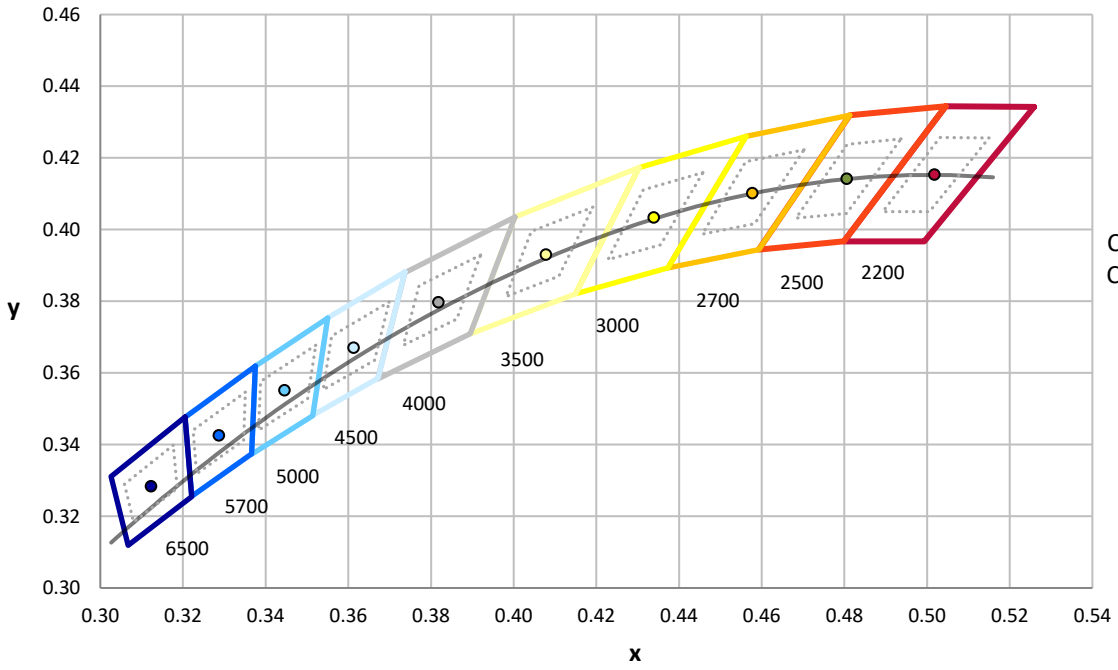
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-176-1

CIE 1931 Chromaticity Diagram



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

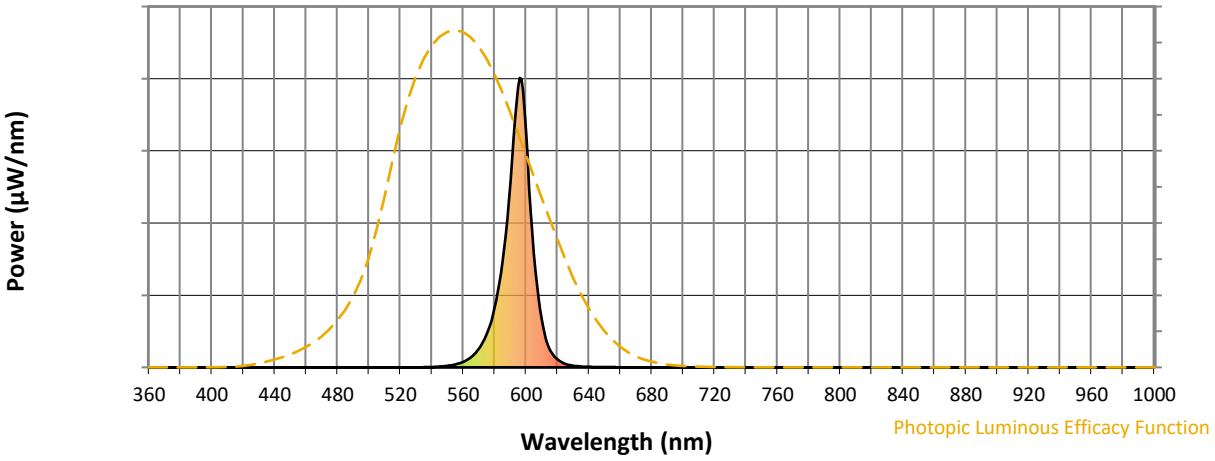


CCT = 1554K
CIE x = 0.5903
CIE y = 0.4091
Duv = 0.0111

Point lies outside the range

REPORT NUMBER: SP1-2407-176-1

Photopic Flux vs. Wavelength

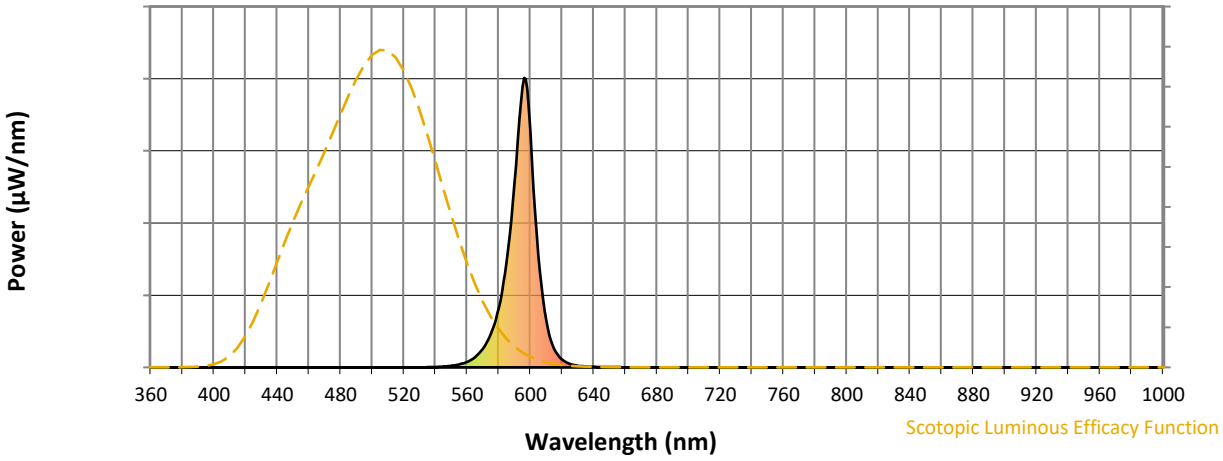


Photopic Lumens: NR

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	0	NR	620	27	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	12	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	6	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	3	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	2	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	1	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	1	NR	780	0	NR	910	0	NR
395	0	NR	525	0	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	0	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	0	NR	795	0	NR	925	0	NR
410	0	NR	540	1	NR	670	0	NR	800	0	NR	930	0	NR
415	0	NR	545	3	NR	675	0	NR	805	0	NR	935	0	NR
420	0	NR	550	5	NR	680	0	NR	810	0	NR	940	0	NR
425	0	NR	555	10	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	19	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	35	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	64	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	116	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	206	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	364	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	639	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	970	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	808	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	391	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	164	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	63	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-1

Scotopic Flux vs. Wavelength

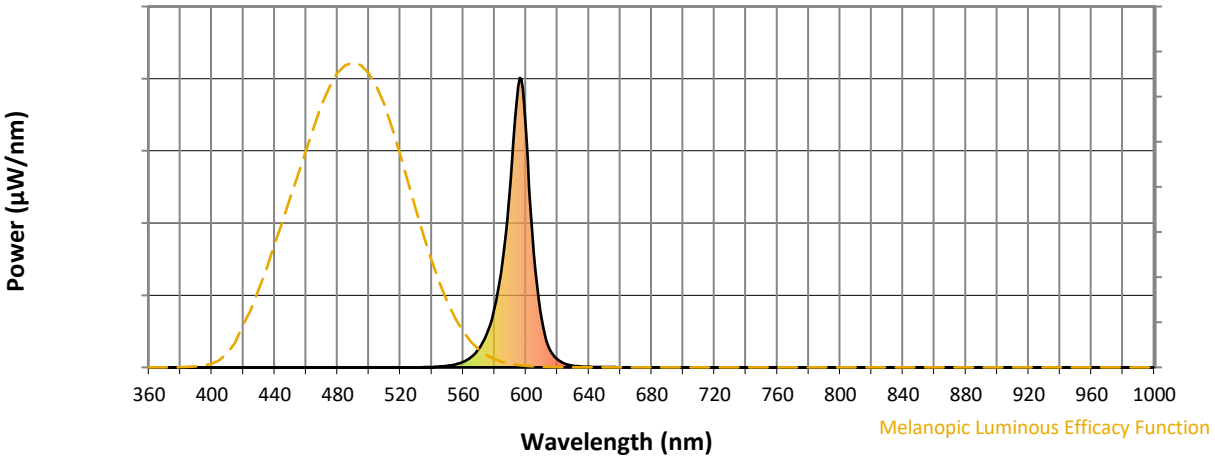


Scotopic Lumens: NR **S/P: 0.22**

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	0	NR	620	27	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	12	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	6	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	3	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	2	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	1	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	1	NR	780	0	NR	910	0	NR
395	0	NR	525	0	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	0	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	0	NR	795	0	NR	925	0	NR
410	0	NR	540	1	NR	670	0	NR	800	0	NR	930	0	NR
415	0	NR	545	3	NR	675	0	NR	805	0	NR	935	0	NR
420	0	NR	550	5	NR	680	0	NR	810	0	NR	940	0	NR
425	0	NR	555	10	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	19	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	35	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	64	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	116	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	206	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	364	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	639	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	970	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	808	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	391	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	164	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	63	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2407-176-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 0.12**

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	0	NR	620	27	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	12	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	6	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	3	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	2	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	1	NR	775	0	NR	905	0	NR
390	0	NR	520	0	NR	650	1	NR	780	0	NR	910	0	NR
395	0	NR	525	0	NR	655	1	NR	785	0	NR	915	0	NR
400	0	NR	530	0	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	1	NR	665	0	NR	795	0	NR	925	0	NR
410	0	NR	540	1	NR	670	0	NR	800	0	NR	930	0	NR
415	0	NR	545	3	NR	675	0	NR	805	0	NR	935	0	NR
420	0	NR	550	5	NR	680	0	NR	810	0	NR	940	0	NR
425	0	NR	555	10	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	19	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	35	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	64	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	116	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	206	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	364	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	639	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	970	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	808	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	391	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	164	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	63	NR	745	0	NR	875	0	NR			

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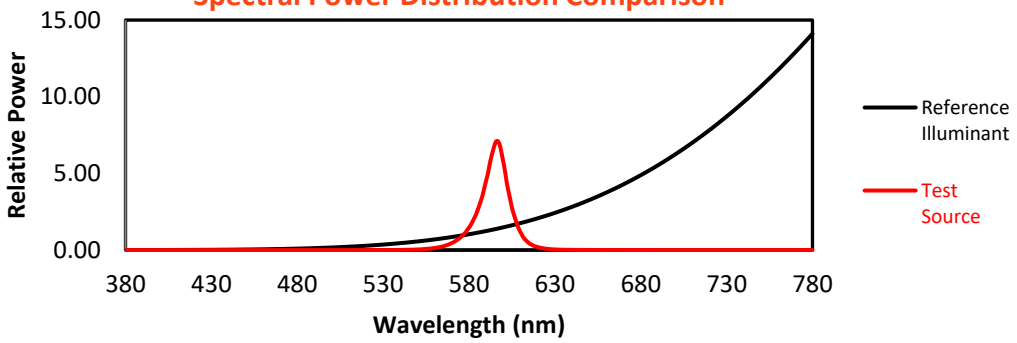
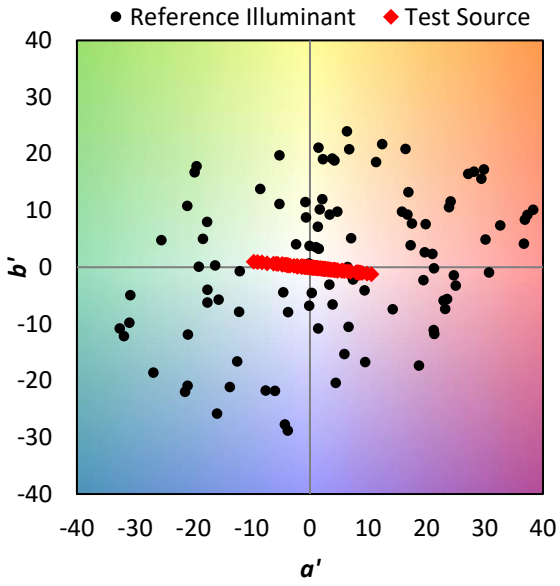
Summary

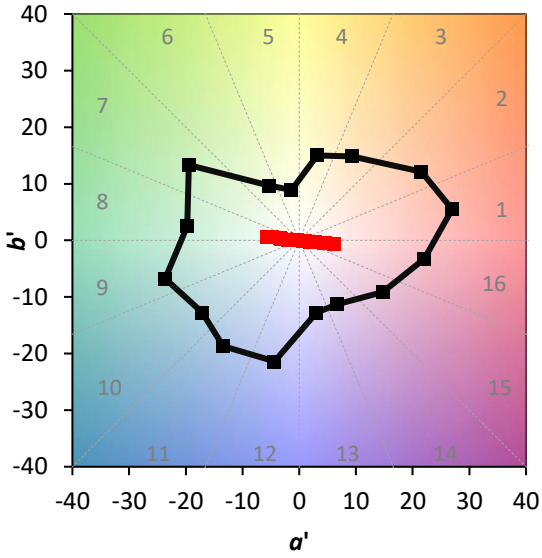
R_f = 1.1
R_g = 0
CIE R_a = -22.5
R_9 = -390.1

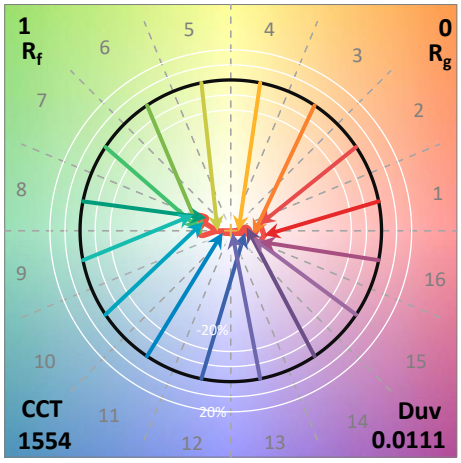
Spectral Power Distribution Comparison

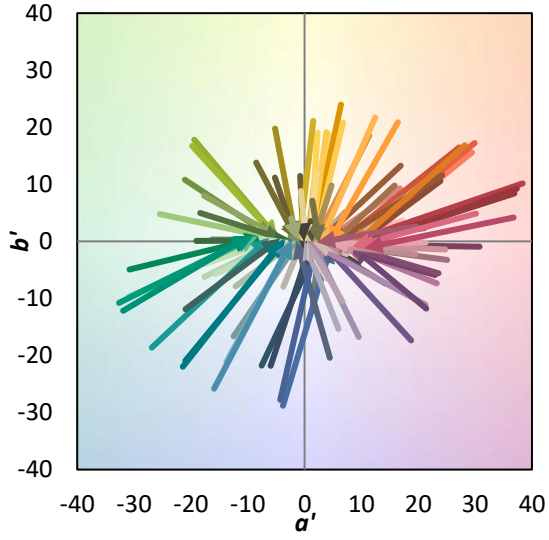


Color Vector Graphics









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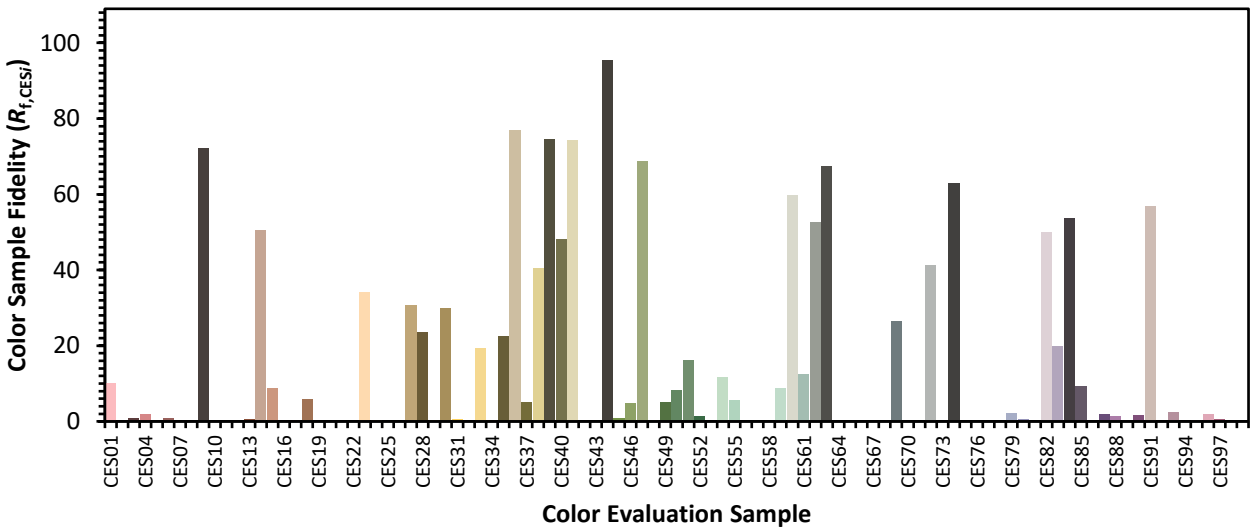
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 90	CES26 = 0	CES51 = 16	CES76 = 0
CES02 = 69	CES27 = 31	CES52 = 2	CES77 = 0
CES03 = 31	CES28 = 24	CES53 = 0	CES78 = 0
CES04 = 77	CES29 = 0	CES54 = 12	CES79 = 2
CES05 = 52	CES30 = 30	CES55 = 6	CES80 = 1
CES06 = 56	CES31 = 1	CES56 = 0	CES81 = 0
CES07 = 41	CES32 = 0	CES57 = 0	CES82 = 50
CES08 = 38	CES33 = 19	CES58 = 0	CES83 = 20
CES09 = 29	CES34 = 0	CES59 = 9	CES84 = 54
CES10 = 87	CES35 = 22	CES60 = 60	CES85 = 9
CES11 = 70	CES36 = 77	CES61 = 12	CES86 = 0
CES12 = 75	CES37 = 5	CES62 = 53	CES87 = 2
CES13 = 47	CES38 = 40	CES63 = 67	CES88 = 1
CES14 = 76	CES39 = 75	CES64 = 0	CES89 = 0
CES15 = 74	CES40 = 48	CES65 = 0	CES90 = 2
CES16 = 49	CES41 = 74	CES66 = 0	CES91 = 57
CES17 = 56	CES42 = 0	CES67 = 0	CES92 = 0
CES18 = 59	CES43 = 0	CES68 = 0	CES93 = 2
CES19 = 80	CES44 = 95	CES69 = 26	CES94 = 0
CES20 = 71	CES45 = 1	CES70 = 0	CES95 = 0
CES21 = 94	CES46 = 5	CES71 = 0	CES96 = 2
CES22 = 87	CES47 = 69	CES72 = 41	CES97 = 1
CES23 = 94	CES48 = 0	CES73 = 0	CES98 = 0
CES24 = 95	CES49 = 5	CES74 = 63	CES99 = 0
CES25 = 79	CES50 = 8	CES75 = 0	



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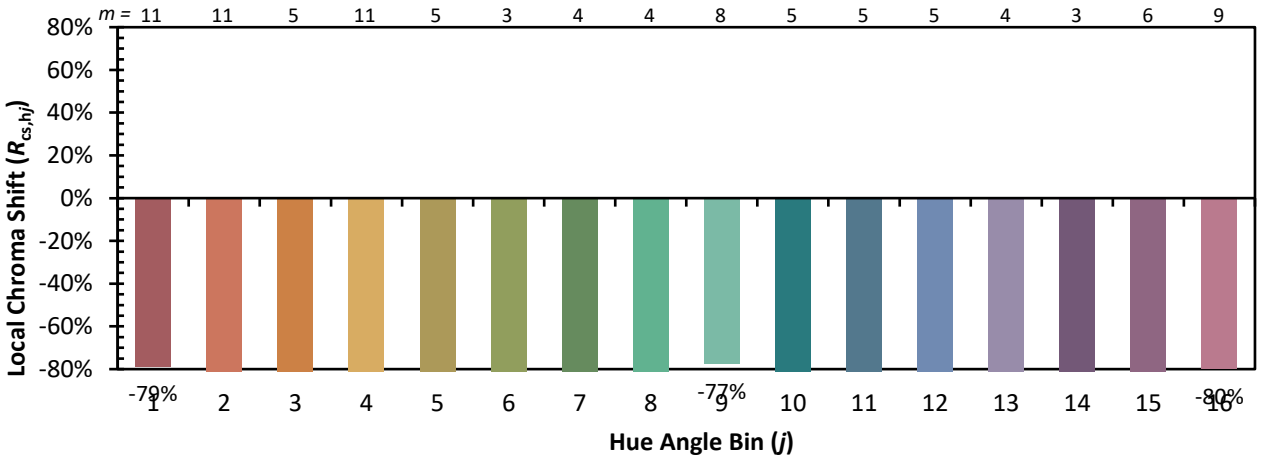
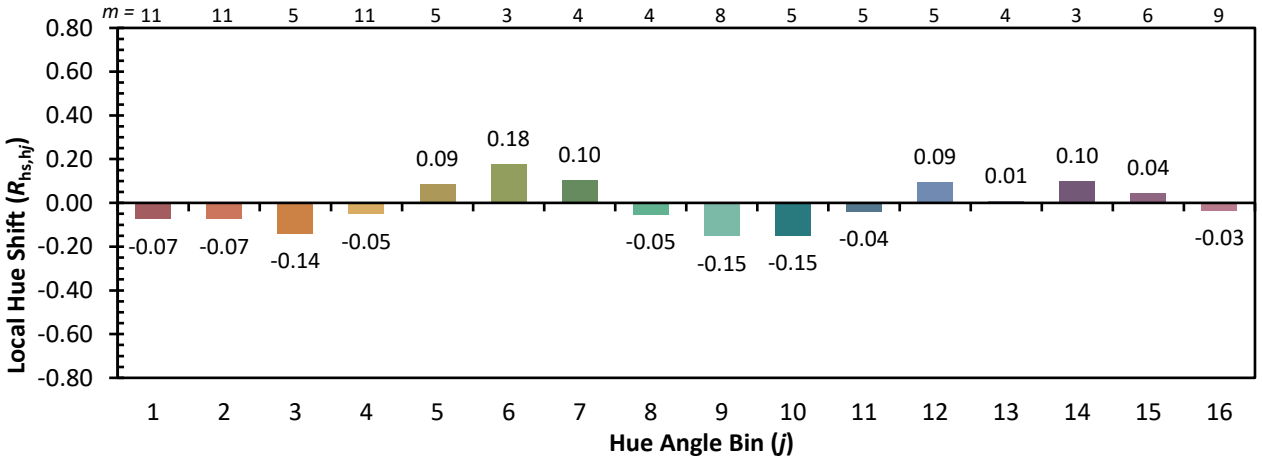
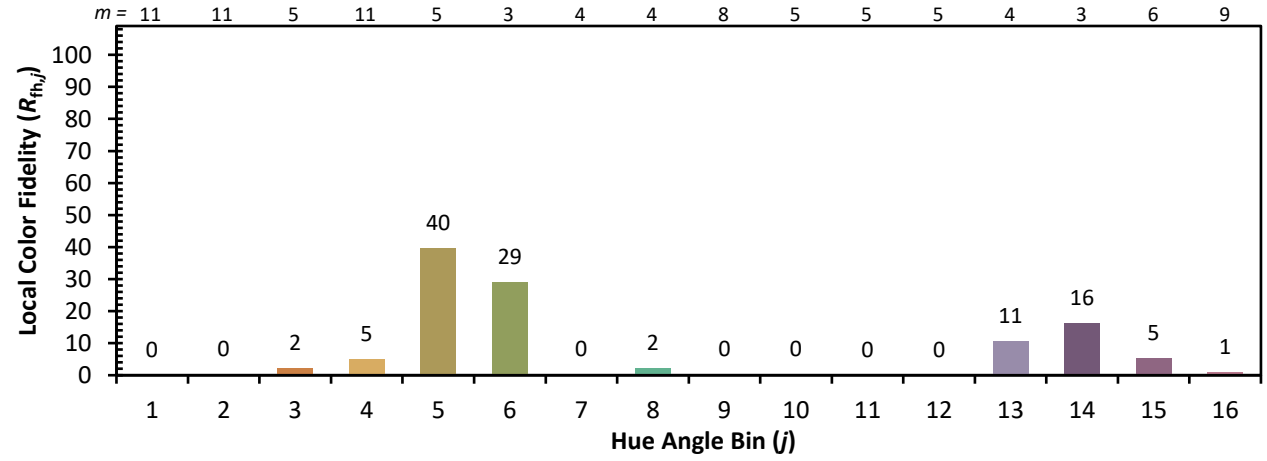
Color Rendition by Hue-Angle Bin







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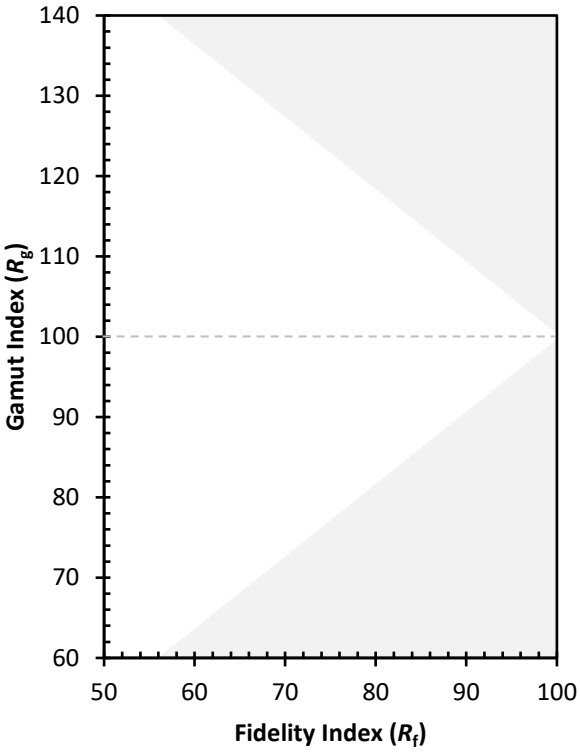
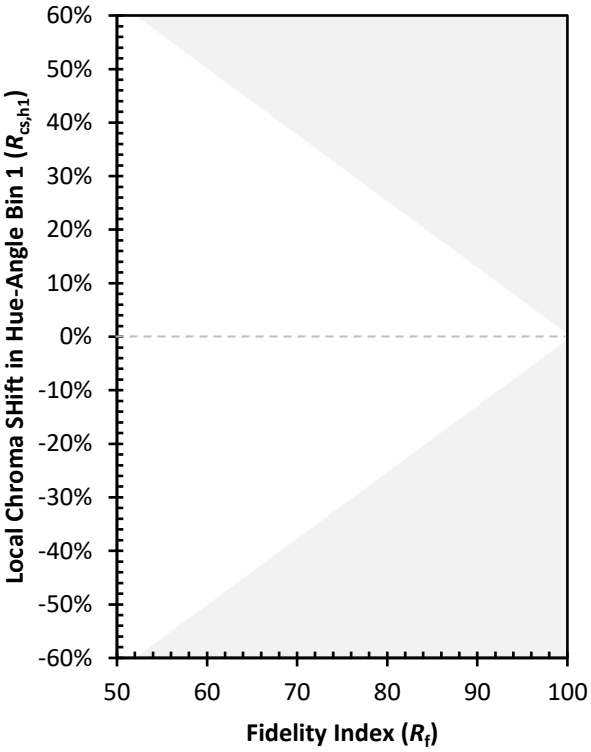
Measure Comparisons





(END OF REPORT)