

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: P348717

Luminaire Tested: **ARCH-N-PA1-20-750-24VDC-5WQ**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P348717
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-2)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: ARCH-N-PA1-20-750-24VDC-5WQ
Description: ARCHEON ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 5000K, 420mA LIGHT ENGINE WITH 16 LEDS AND
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3497 lumens
Efficiency: N/A
Efficacy: 159.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.75' x H: 0')
IES Classification: Type V - Short
BUG Rating: B2 - U0 - G1

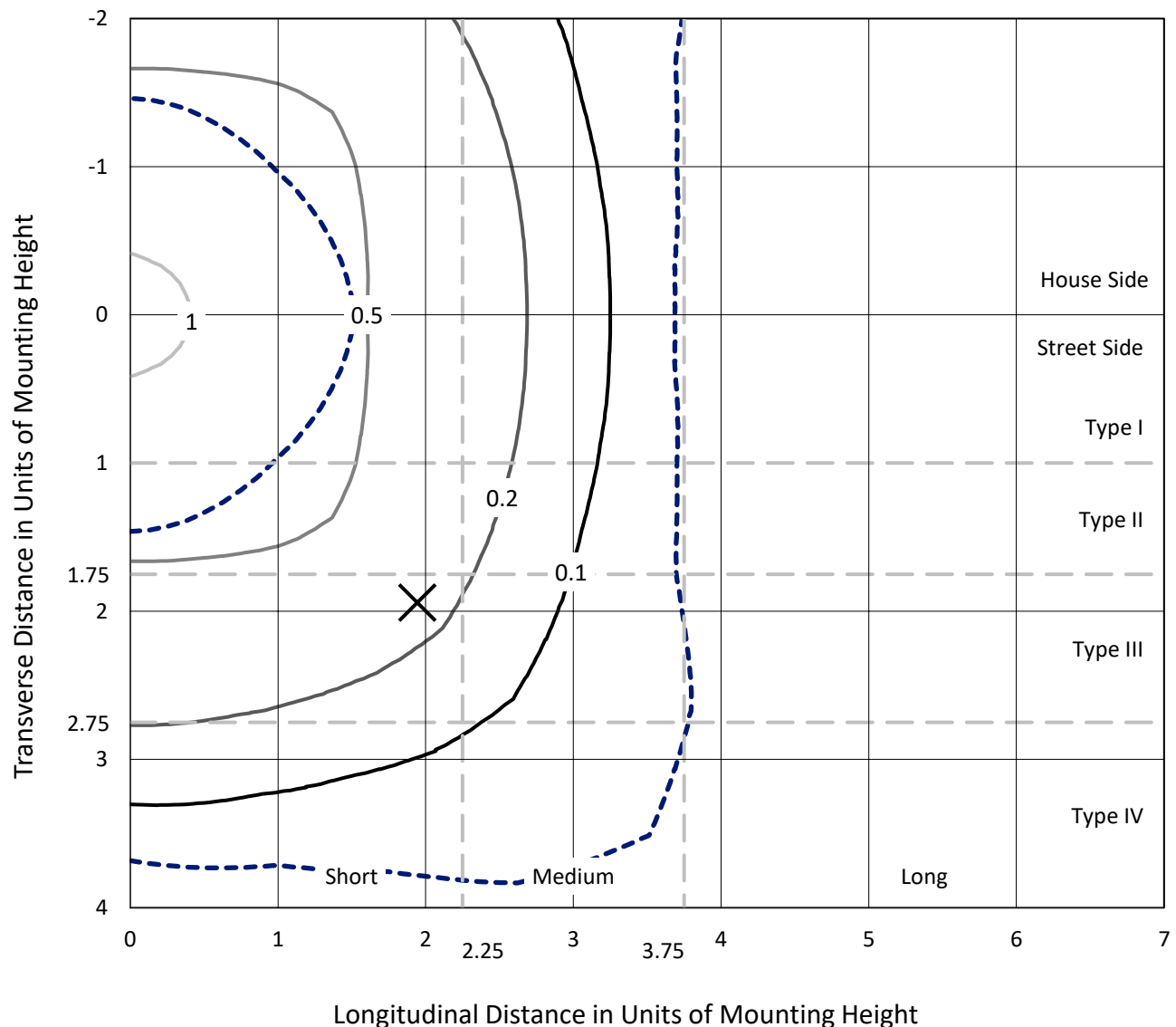
Input Watts (W): 22
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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CATALOG NUMBER: ARCH-N-PA1-20-750-24VDC-5WQ

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

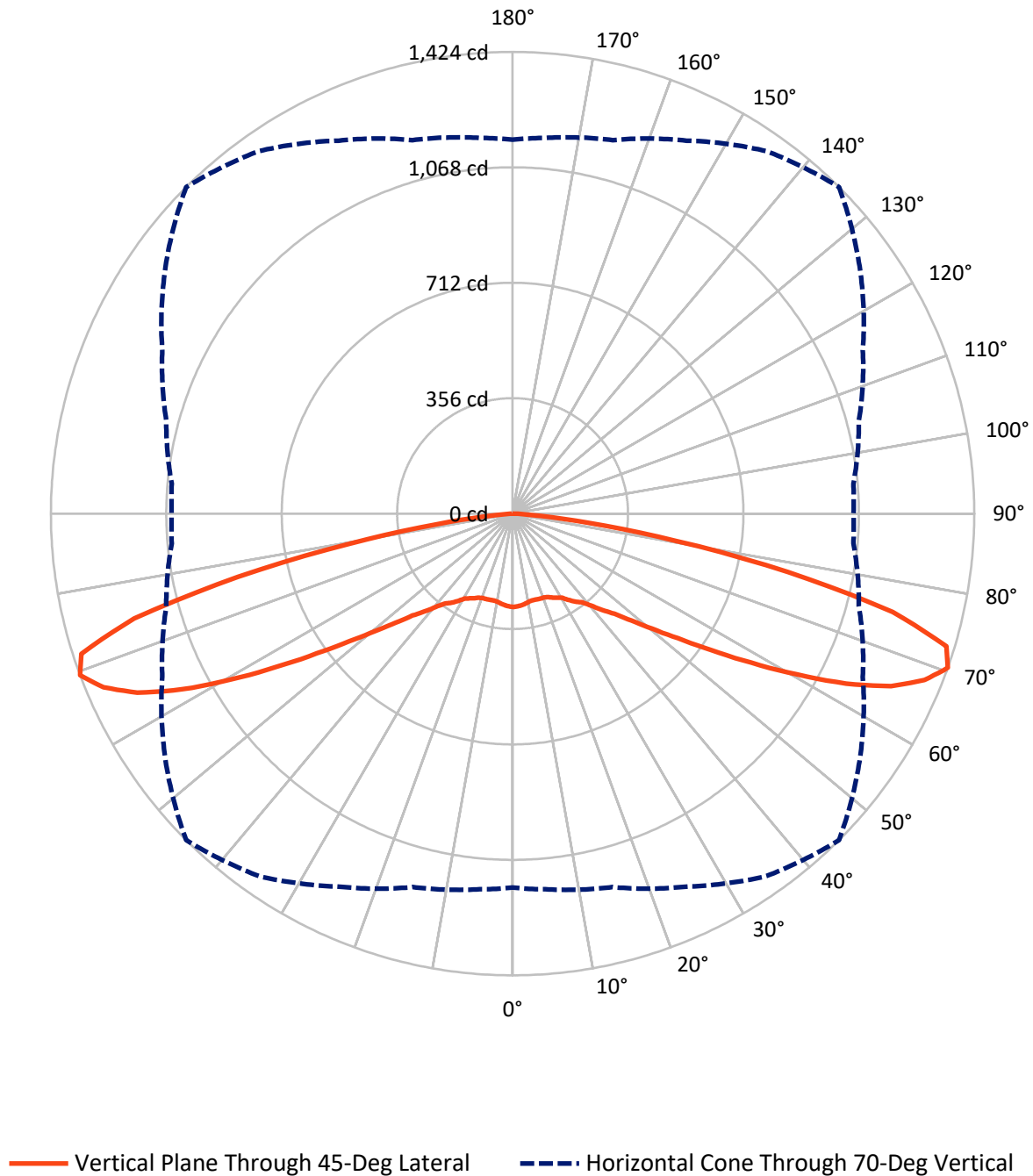


Based on 15 foot mounting height. Maximum calculated value = 1.3 fc
 Type V - Short - N/A

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CATALOG NUMBER: ARCH-N-PA1-20-750-24VDC-5WQ

Luminous Intensity Polar Plot



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CATALOG NUMBER: ARCH-N-PA1-20-750-24VDC-5WQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1748.5	0.0	1748.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	1748.5	0.0	1748.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	3497.0	0.0	3497.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.9	0.8
10°-20°	78.5	2.2
20°-30°	133.8	3.8
30°-40°	209.0	6.0
40°-50°	354.3	10.1
50°-60°	646.0	18.5
60°-70°	1112.2	31.8
70°-80°	871.8	24.9
80°-90°	64.6	1.8
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°	3497.0	100.0
0°-180°	3497.0	100.0



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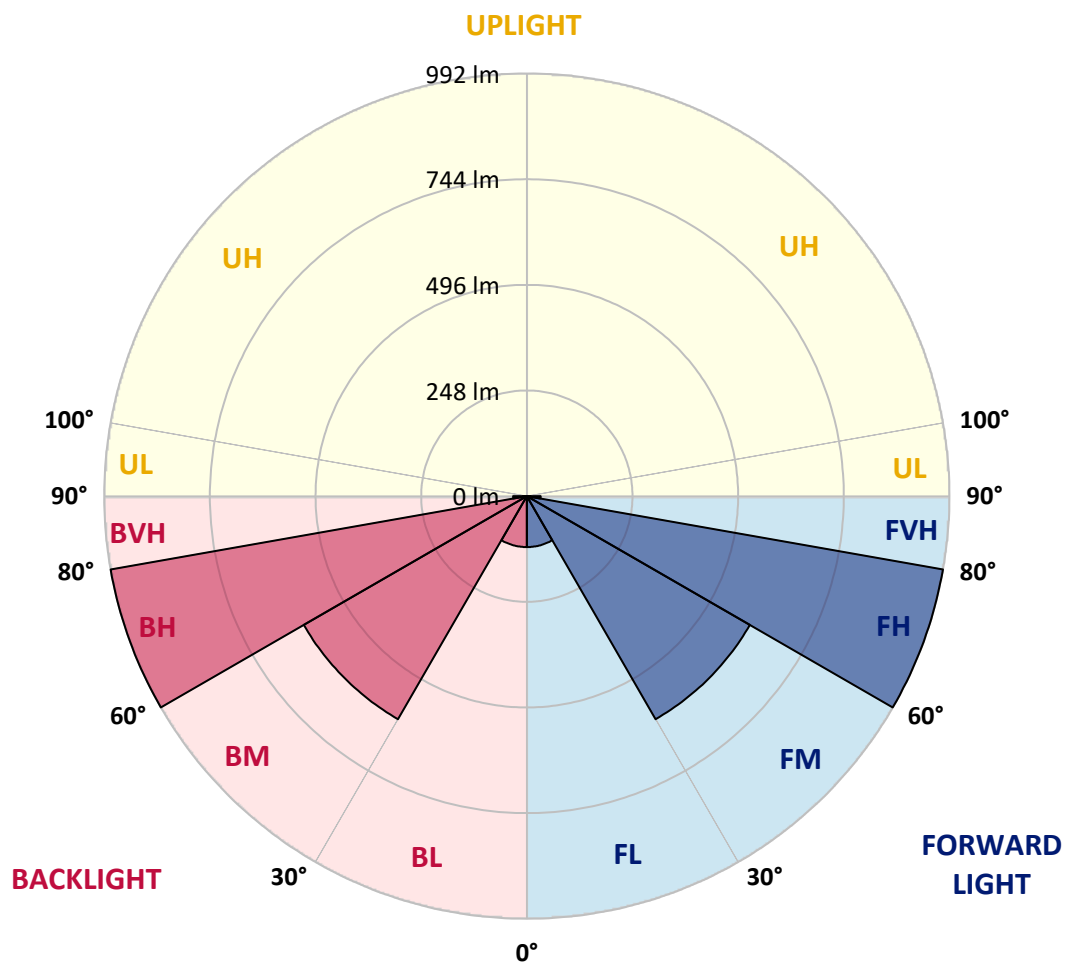
CATALOG NUMBER: ARCH-N-PA1-20-750-24VDC-5WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	119.6	3.4			
FM	(30°-60°)	604.7	17.3			
FH	(60°-80°)	992.0	28.4			G1/1800
FVH	(80°-90°)	32.3	0.9			G1/100
BL	(0°-30°)	119.6	3.4	B1/500		
BM	(30°-60°)	604.7	17.3	B1/1000		
BH	(60°-80°)	992.0	28.4	B2/1000		G1/1800
BVH	(80°-90°)	32.3	0.9			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G1

Type V Short



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CATALOG NUMBER: ARCH-N-PA1-20-750-24VDC-5WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	287.8	287.8	287.8	287.8	287.8	287.8	287.8	287.8	287.8	287.8	287.8
2.5°	286.5	286.9	286.5	286.8	286.2	286.4	286.4	286.4	286.3	286.4	286.2
5°	284.0	284.2	283.8	284.0	283.6	284.0	284.1	284.0	283.8	283.9	283.4
7.5°	280.2	280.4	280.1	280.4	279.9	280.5	280.4	280.1	279.7	279.7	279.2
10°	278.1	278.2	277.3	276.9	275.9	276.1	276.5	276.8	277.2	277.9	277.7
12.5°	278.2	278.2	276.8	275.3	273.8	274.2	274.7	276.0	277.4	278.7	278.8
15°	279.4	279.2	277.2	274.7	273.7	274.7	275.1	275.9	278.1	280.3	280.4
17.5°	280.2	280.2	276.9	274.2	274.0	275.7	275.5	275.9	278.3	281.6	281.7
20°	281.7	281.7	277.5	274.5	274.5	276.2	276.4	276.9	279.4	282.9	283.5
22.5°	285.0	285.1	280.7	278.3	278.5	279.6	279.9	280.9	283.1	287.0	287.7
25°	289.8	290.0	285.5	284.1	284.9	286.9	286.6	287.3	289.8	293.6	294.3
27.5°	296.4	295.8	291.6	291.0	291.9	293.2	293.1	293.2	295.2	298.7	299.5
30°	304.9	304.7	301.7	302.0	301.7	301.2	301.3	302.3	303.3	306.1	306.9
32.5°	313.3	313.5	311.6	313.4	315.9	317.6	315.0	312.4	311.3	312.8	313.5
35°	328.3	328.9	326.0	324.8	328.3	333.4	325.9	321.7	324.0	326.0	326.6
37.5°	353.9	354.2	349.3	344.7	342.2	347.0	339.5	339.9	348.0	351.7	351.5
40°	383.0	383.1	379.9	375.8	371.4	372.6	369.6	370.5	375.8	379.2	380.1
42.5°	417.7	417.4	412.3	406.5	405.2	406.4	401.3	400.6	406.7	412.7	412.9
45°	462.7	461.9	455.3	448.9	442.8	440.3	439.0	442.3	450.8	456.3	456.5
47.5°	511.2	509.0	505.5	500.4	495.1	492.6	490.5	492.1	498.2	500.4	500.6
50°	561.0	561.5	562.2	560.2	558.3	557.4	552.0	548.9	550.7	546.7	546.1
52.5°	620.1	621.1	627.8	633.4	636.8	638.5	628.2	617.5	611.5	603.6	601.3
55°	689.9	691.4	701.2	717.0	733.2	741.7	723.1	703.0	684.3	669.7	664.9
57.5°	767.6	770.3	783.8	814.0	847.2	867.5	836.0	799.4	763.5	742.3	738.6
60°	858.8	861.3	880.1	923.3	977.1	1007.5	959.9	900.1	855.3	835.1	828.2
62.5°	967.3	967.5	990.5	1041.1	1112.1	1154.5	1089.9	1010.0	963.8	939.4	932.8
65°	1084.0	1084.6	1108.4	1163.0	1236.5	1282.5	1209.6	1126.3	1069.9	1033.9	1028.8
67.5°	1166.5	1168.9	1194.0	1259.7	1328.4	1370.0	1294.5	1200.4	1135.1	1092.2	1087.9
70°	1153.3	1162.8	1192.3	1269.0	1364.5	1423.7	1308.3	1191.6	1105.5	1054.9	1051.3
72.5°	1005.8	1024.0	1063.3	1163.9	1316.7	1398.3	1233.2	1067.2	969.8	926.7	920.2
75°	684.9	714.4	773.8	918.9	1125.0	1210.7	1038.2	850.9	759.3	699.6	695.2
77.5°	305.4	312.1	387.3	554.4	776.3	869.4	754.3	556.6	417.8	333.3	315.5
80°	85.1	86.2	115.0	206.5	388.6	510.8	417.1	216.9	121.9	85.9	81.0
82.5°	27.1	29.4	35.9	53.6	130.6	233.1	134.1	57.8	41.2	32.9	29.6
85°	13.2	13.1	18.2	21.7	33.3	51.6	35.5	26.8	23.5	15.6	14.1
87.5°	5.6	5.7	8.4	7.6	9.7	8.3	11.5	12.0	12.6	6.9	6.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2101-121-8

Luminaire Tested: IFLD-S-SA2E-750-U-T2

Test Date: 03/05/2021

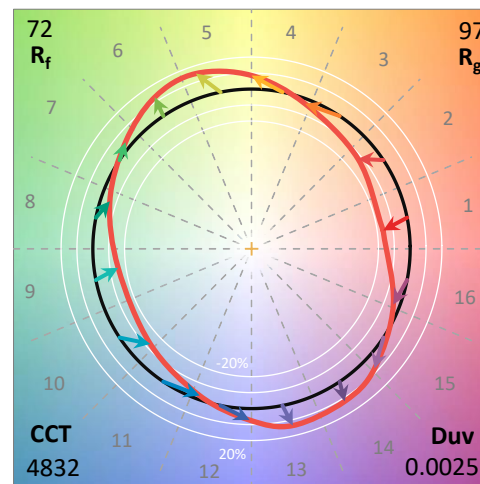
Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-8
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2E-750-U-T2**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

Spectral Parameters

CCT (K):	4832	CRI (Ra):	71.7		
CIE u':	0.2115	R1:	69.5	R9:	-27.7
CIE v':	0.4900	R2:	75.7	R10:	42.9
Duv:	0.0025	R3:	80.8	R11:	71.2
CIE x:	0.3506	R4:	73.2	R12:	44.6
CIE y:	0.3611	R5:	70.3	R13:	69.8
CIE z:	0.2884	R6:	67.3	R14:	89.2
Peak Wavelength (nm):	444	R7:	79.9		
Dominant Wavelength (nm):	572	R8:	57.2		
Purity:	13.7				
Rf:	72.3				
Rg:	96.7				



Test Conditions

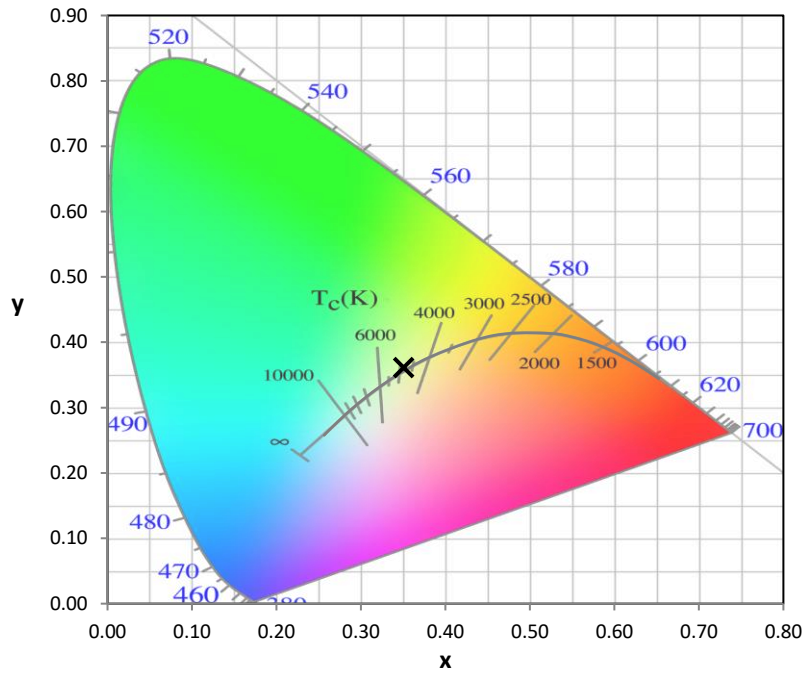
Stabilization Time: 47M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.9/31%
 Sphere Temperature (°C): 24.4

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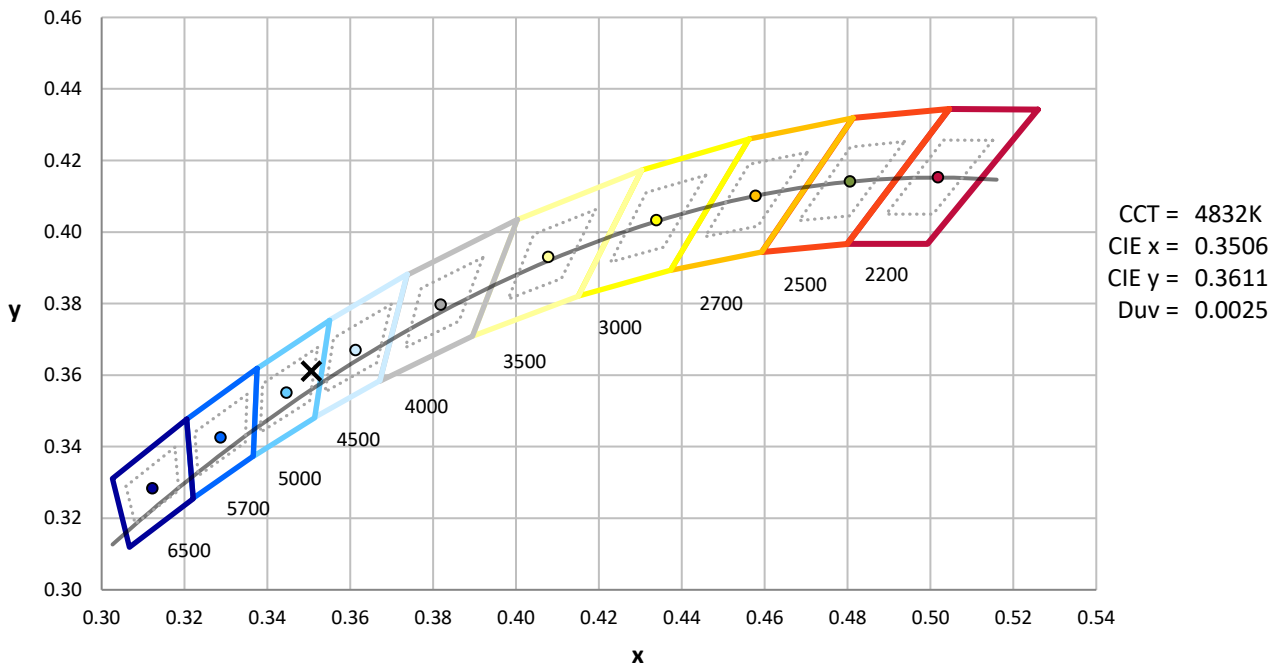
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	1/31/2021	7/31/2021
Power Meter	IN0071	12/1/2020	12/1/2021
AC Power Source	IN0063	12/1/2020	12/1/2021
DC Power Source	IN0208	12/1/2020	12/1/2021
Sphere Thermometer	IN0085	12/1/2020	12/1/2021
Room Thermometer	IN0046	12/1/2020	12/1/2021

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CIE 1931 Chromaticity Diagram



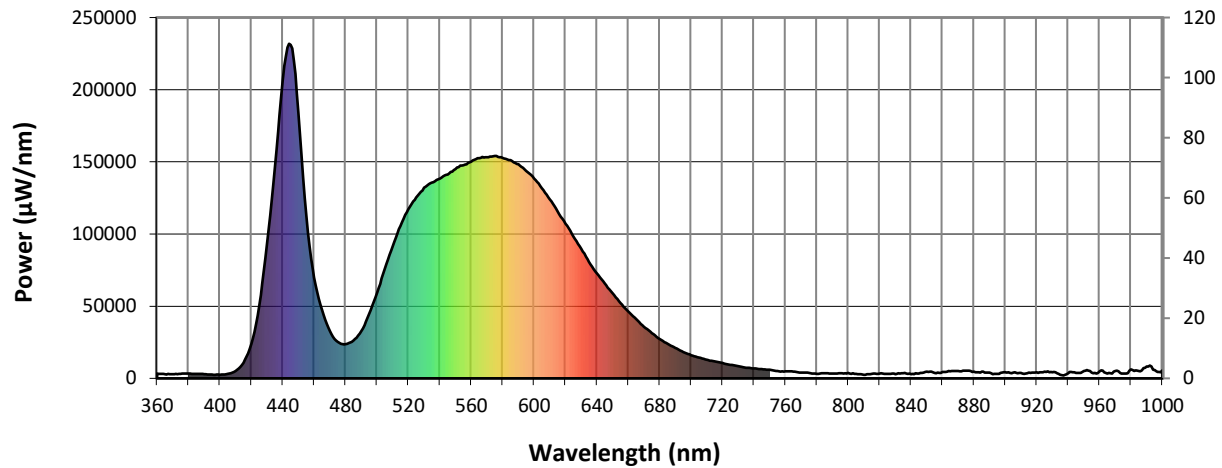
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

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Photopic Flux vs. Wavelength

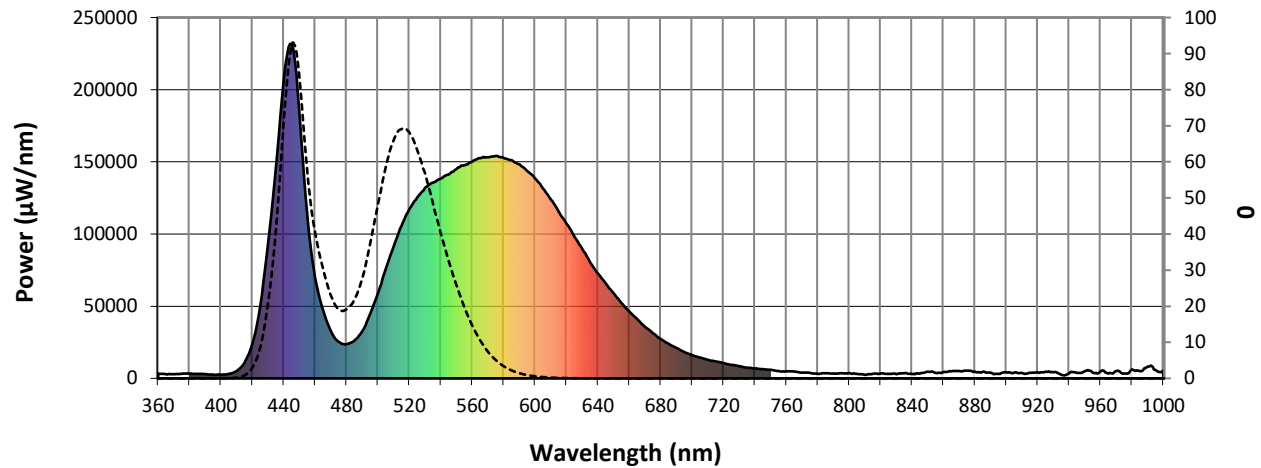


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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	3353	0.0	490	32805	4.7	620	107081	27.9	750	5910	0.0	880	4619	0.0
365	2862	0.0	495	44523	8.1	625	98536	21.7	755	5030	0.0	885	4614	0.0
370	2810	0.0	500	59272	13.1	630	89745	16.2	760	4853	0.0	890	3959	0.0
375	3214	0.0	505	75789	21.2	635	80639	12.1	765	4704	0.0	895	3106	0.0
380	3349	0.0	510	91523	31.4	640	72702	8.7	770	3920	0.0	900	4270	0.0
385	3025	0.0	515	105611	43.7	645	65679	6.3	775	3859	0.0	905	3918	0.0
390	2882	0.0	520	117273	56.9	650	59001	4.3	780	3115	0.0	910	3872	0.0
395	2575	0.0	525	125211	67.2	655	52143	3.0	785	3474	0.0	915	3970	0.0
400	2553	0.0	530	132145	77.8	660	46377	1.9	790	3401	0.0	920	4123	0.0
405	3040	0.0	535	135784	84.2	665	41029	1.3	795	3536	0.0	925	4692	0.0
410	5218	0.0	540	138313	90.1	670	35613	0.8	800	3687	0.0	930	4313	0.0
415	10898	0.0	545	141311	94.1	675	31345	0.5	805	3213	0.0	935	2374	0.0
420	23692	0.1	550	144916	98.5	680	27204	0.3	810	2541	0.0	940	3564	0.0
425	50574	0.3	555	147753	100.9	685	23938	0.2	815	3033	0.0	945	3888	0.0
430	93101	0.7	560	150201	102.1	690	21157	0.1	820	3270	0.0	950	5143	0.0
435	146856	1.7	565	152596	101.5	695	18244	0.1	825	3208	0.0	955	3966	0.0
440	206284	3.2	570	153241	99.6	700	16063	0.0	830	2991	0.0	960	4927	0.0
445	230963	4.8	575	154079	95.9	705	14433	0.0	835	3477	0.0	965	3279	0.0
450	184279	4.8	580	152658	90.7	710	12921	0.0	840	2982	0.0	970	5201	0.0
455	112612	3.8	585	151127	84.0	715	11715	0.0	845	3443	0.0	975	3421	0.0
460	69904	2.9	590	148249	76.6	720	10565	0.0	850	4753	0.0	980	6148	0.0
465	47480	2.4	595	143567	68.1	725	9312	0.0	855	3744	0.0	985	5069	0.0
470	32573	2.0	600	138422	59.7	730	8354	0.0	860	4355	0.0	990	8231	0.0
475	25178	2.0	605	131783	51.0	735	7425	0.0	865	4984	0.0	995	5852	0.0
480	23726	2.3	610	124021	42.6	740	6965	0.0	870	5065	0.0	1000	5471	0.0
485	26206	3.1	615	115646	34.9	745	6343	0.0	875	5430	0.0			

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Scotopic Flux vs. Wavelength



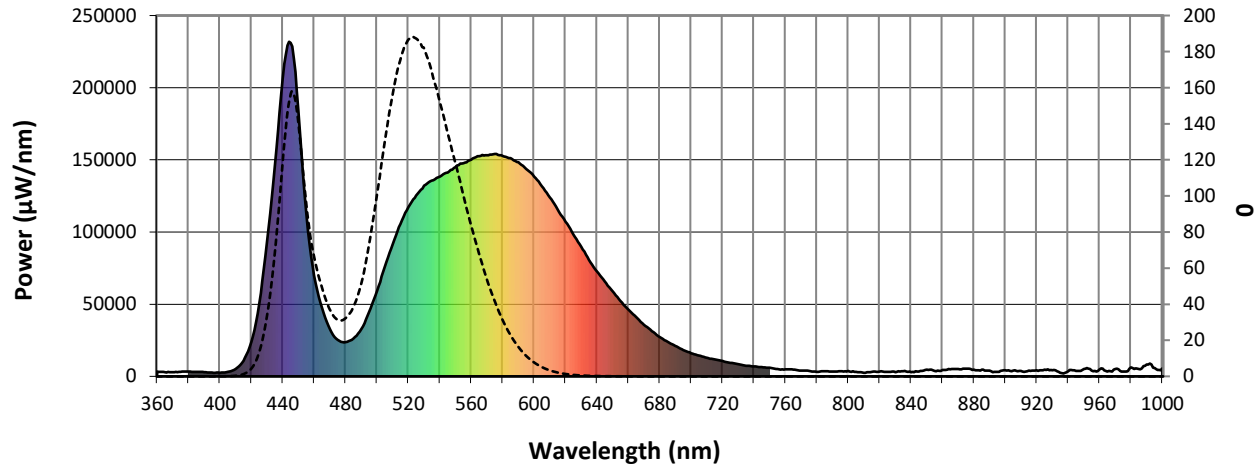
Scotopic Lumens: 15745.7

S/P: 1.71

λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	3353	0.0	490	32805	50.5	620	107081	1.3	750	5910	0.0	880	4619	0.0
365	2862	0.0	495	44523	72.0	625	98536	0.8	755	5030	0.0	885	4614	0.0
370	2810	0.0	500	59272	99.1	630	89745	0.5	760	4853	0.0	890	3959	0.0
375	3214	0.0	505	75789	128.8	635	80639	0.3	765	4704	0.0	895	3106	0.0
380	3349	0.0	510	91523	155.1	640	72702	0.2	770	3920	0.0	900	4270	0.0
385	3025	0.0	515	105611	175.1	645	65679	0.1	775	3859	0.0	905	3918	0.0
390	2882	0.0	520	117273	186.4	650	59001	0.1	780	3115	0.0	910	3872	0.0
395	2575	0.0	525	125211	187.3	655	52143	0.0	785	3474	0.0	915	3970	0.0
400	2553	0.0	530	132145	182.2	660	46377	0.0	790	3401	0.0	920	4123	0.0
405	3040	0.1	535	135784	169.2	665	41029	0.0	795	3536	0.0	925	4692	0.0
410	5218	0.3	540	138313	152.8	670	35613	0.0	800	3687	0.0	930	4313	0.0
415	10898	1.1	545	141311	135.5	675	31345	0.0	805	3213	0.0	935	2374	0.0
420	23692	3.9	550	144916	118.5	680	27204	0.0	810	2541	0.0	940	3564	0.0
425	50574	12.4	555	147753	101.0	685	23938	0.0	815	3033	0.0	945	3888	0.0
430	93101	31.7	560	150201	84.0	690	21157	0.0	820	3270	0.0	950	5143	0.0
435	146856	65.7	565	152596	68.5	695	18244	0.0	825	3208	0.0	955	3966	0.0
440	206284	115.3	570	153241	54.1	700	16063	0.0	830	2991	0.0	960	4927	0.0
445	230963	154.7	575	154079	42.0	705	14433	0.0	835	3477	0.0	965	3279	0.0
450	184279	142.8	580	152658	31.5	710	12921	0.0	840	2982	0.0	970	5201	0.0
455	112612	98.4	585	151127	23.1	715	11715	0.0	845	3443	0.0	975	3421	0.0
460	69904	67.5	590	148249	16.5	720	10565	0.0	850	4753	0.0	980	6148	0.0
465	47480	50.1	595	143567	11.4	725	9312	0.0	855	3744	0.0	985	5069	0.0
470	32573	37.5	600	138422	7.8	730	8354	0.0	860	4355	0.0	990	8231	0.0
475	25178	31.5	605	131783	5.2	735	7425	0.0	865	4984	0.0	995	5852	0.0
480	23726	32.0	610	124021	3.4	740	6965	0.0	870	5065	0.0	1000	5471	0.0
485	26206	38.0	615	115646	2.1	745	6343	0.0	875	5430	0.0			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 6193.8

M/P: 0.67

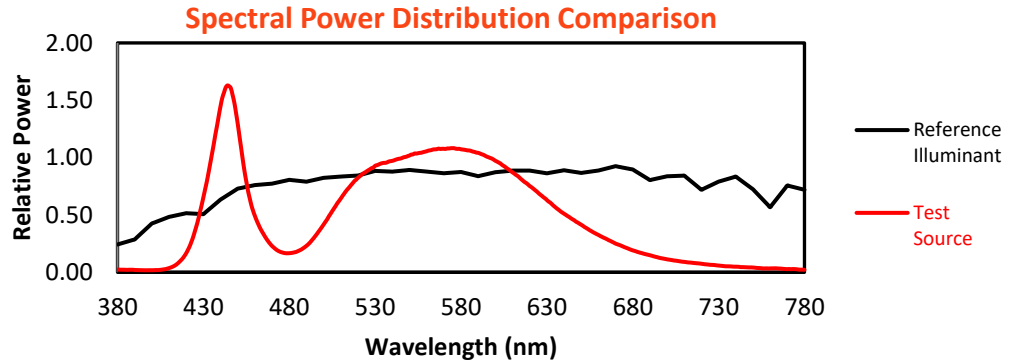
λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	3353	0.0	490	32805	27.3	620	107081	0.1	750	5910	0.0	880	4619	0.0
365	2862	0.0	495	44523	36.8	625	98536	0.1	755	5030	0.0	885	4614	0.0
370	2810	0.0	500	59272	47.6	630	89745	0.0	760	4853	0.0	890	3959	0.0
375	3214	0.0	505	75789	58.2	635	80639	0.0	765	4704	0.0	895	3106	0.0
380	3349	0.0	510	91523	65.7	640	72702	0.0	770	3920	0.0	900	4270	0.0
385	3025	0.0	515	105611	69.0	645	65679	0.0	775	3859	0.0	905	3918	0.0
390	2882	0.0	520	117273	68.3	650	59001	0.0	780	3115	0.0	910	3872	0.0
395	2575	0.0	525	125211	63.5	655	52143	0.0	785	3474	0.0	915	3970	0.0
400	2553	0.0	530	132145	57.1	660	46377	0.0	790	3401	0.0	920	4123	0.0
405	3040	0.1	535	135784	48.9	665	41029	0.0	795	3536	0.0	925	4692	0.0
410	5218	0.2	540	138313	40.5	670	35613	0.0	800	3687	0.0	930	4313	0.0
415	10898	0.7	545	141311	32.8	675	31345	0.0	805	3213	0.0	935	2374	0.0
420	23692	2.7	550	144916	26.0	680	27204	0.0	810	2541	0.0	940	3564	0.0
425	50574	7.9	555	147753	19.9	685	23938	0.0	815	3033	0.0	945	3888	0.0
430	93101	19.7	560	150201	14.8	690	21157	0.0	820	3270	0.0	950	5143	0.0
435	146856	39.2	565	152596	10.7	695	18244	0.0	825	3208	0.0	955	3966	0.0
440	206284	68.9	570	153241	7.5	700	16063	0.0	830	2991	0.0	960	4927	0.0
445	230963	91.1	575	154079	5.1	705	14433	0.0	835	3477	0.0	965	3279	0.0
450	184279	84.9	580	152658	3.4	710	12921	0.0	840	2982	0.0	970	5201	0.0
455	112612	59.0	585	151127	2.2	715	11715	0.0	845	3443	0.0	975	3421	0.0
460	69904	41.2	590	148249	1.5	720	10565	0.0	850	4753	0.0	980	6148	0.0
465	47480	31.0	595	143567	0.9	725	9312	0.0	855	3744	0.0	985	5069	0.0
470	32573	23.3	600	138422	0.6	730	8354	0.0	860	4355	0.0	990	8231	0.0
475	25178	19.2	605	131783	0.4	735	7425	0.0	865	4984	0.0	995	5852	0.0
480	23726	19.1	610	124021	0.2	740	6965	0.0	870	5065	0.0	1000	5471	0.0
485	26206	21.6	615	115646	0.1	745	6343	0.0	875	5430	0.0			

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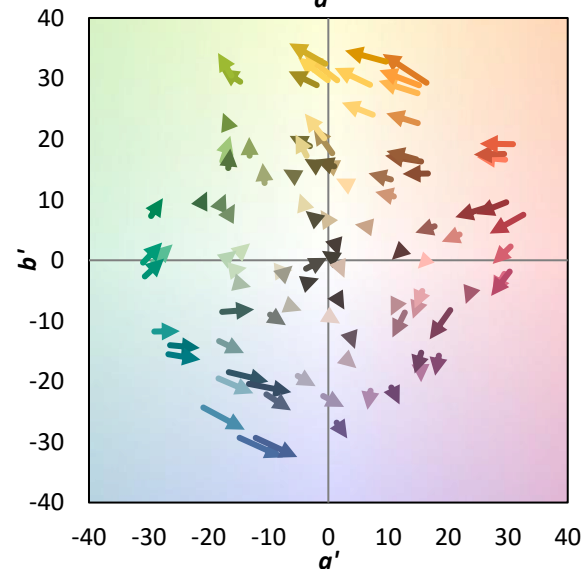
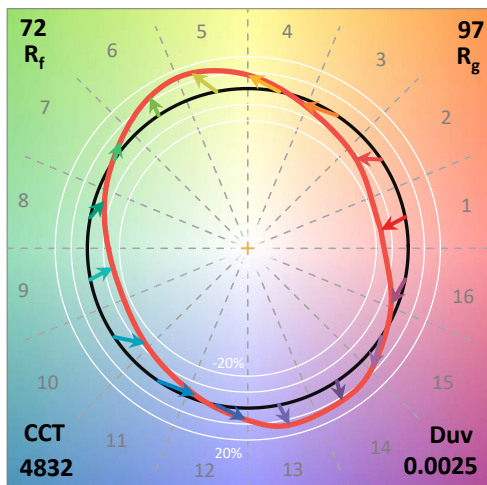
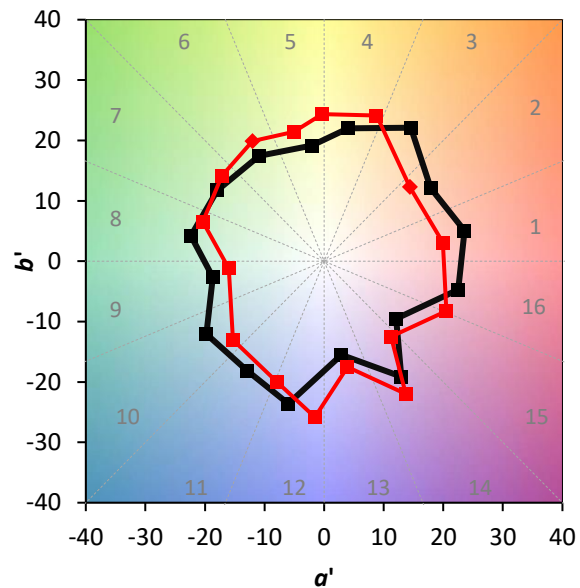
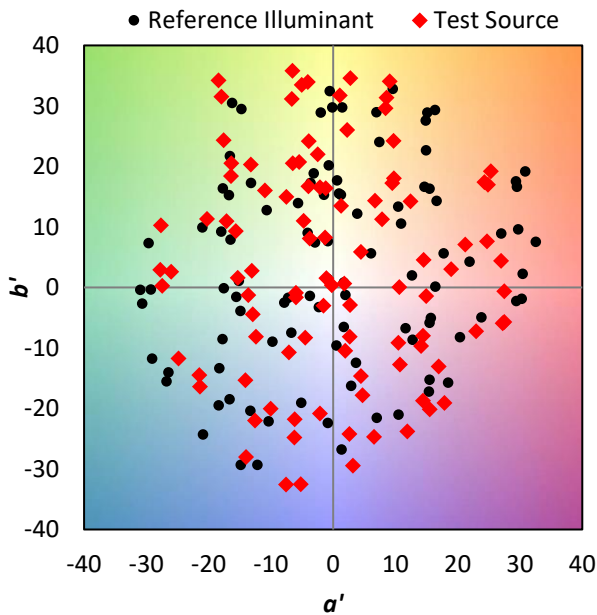
TM-30-18

Summary

$R_f = 72.3$
 $R_g = 96.7$
 CIE $R_a = 71.7$
 $R_g = -27.7$

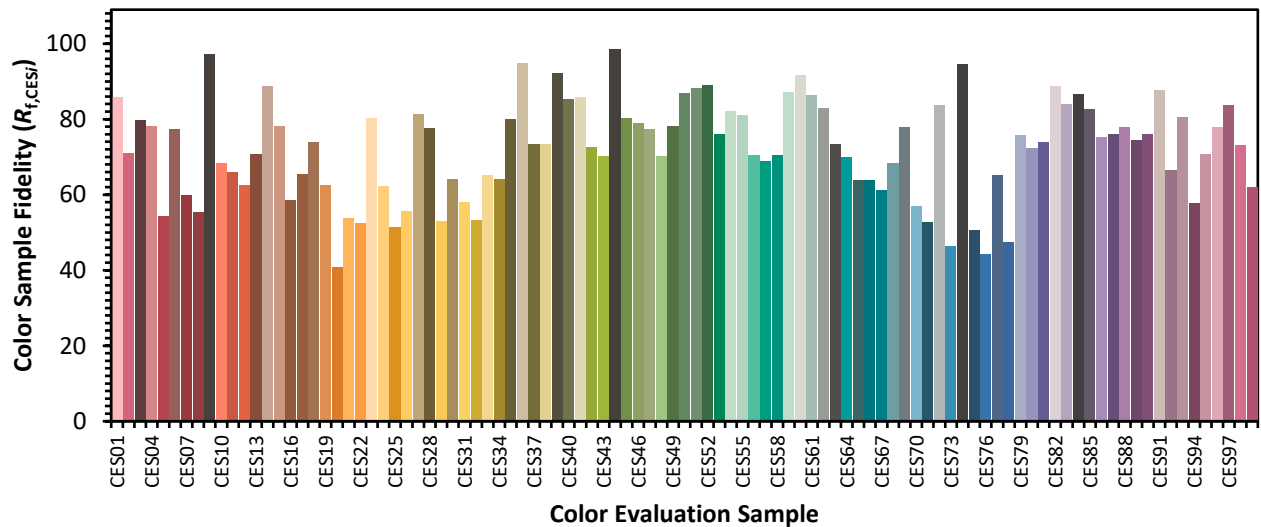


Color Vector Graphics

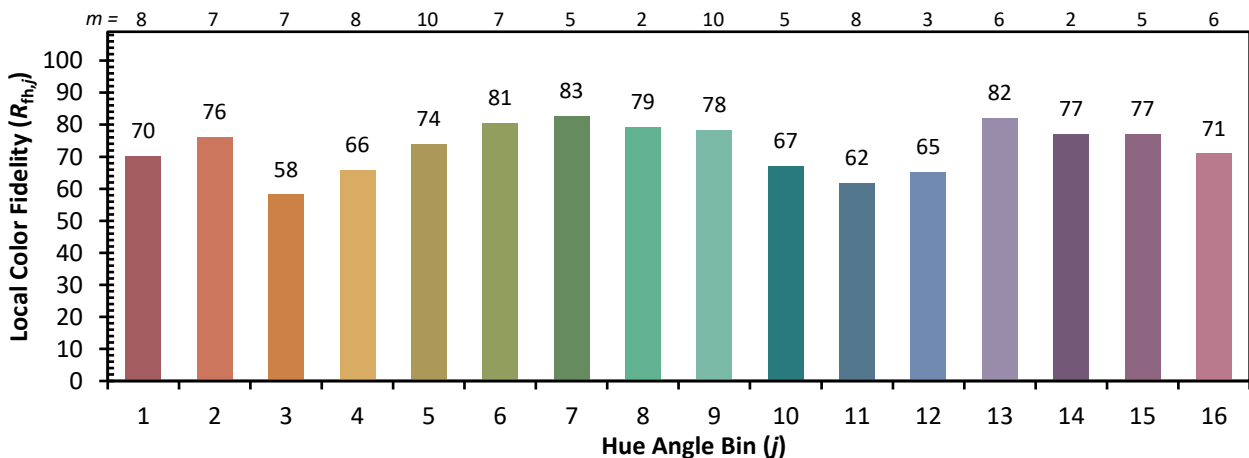
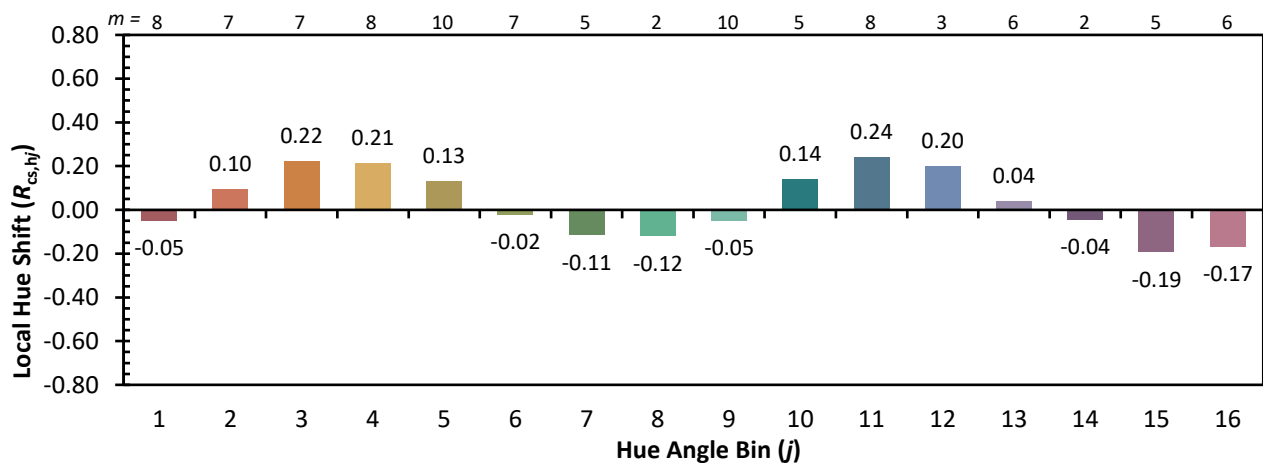
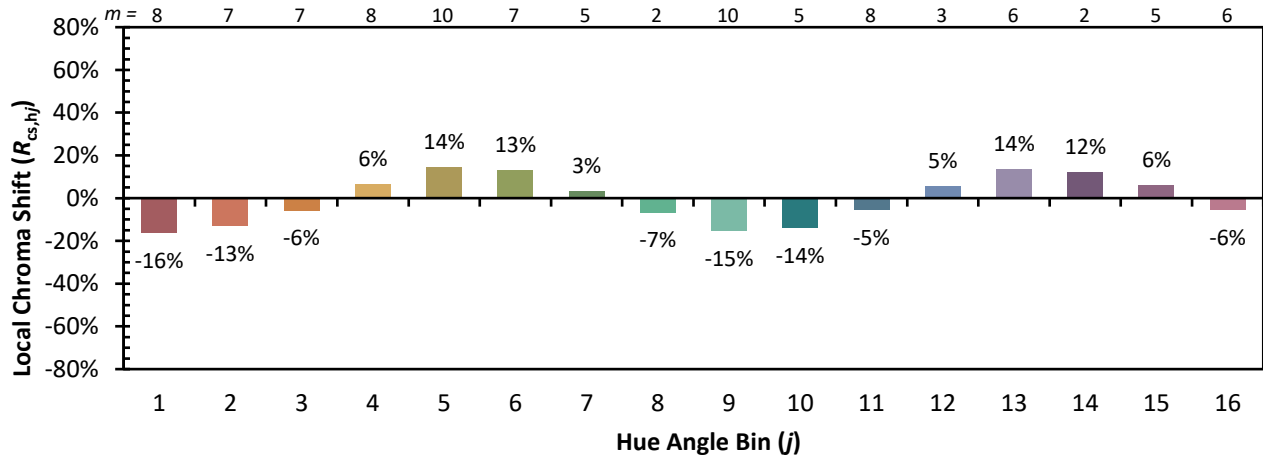


Individual Sample Fidelity Index ($R_{f,i}$)

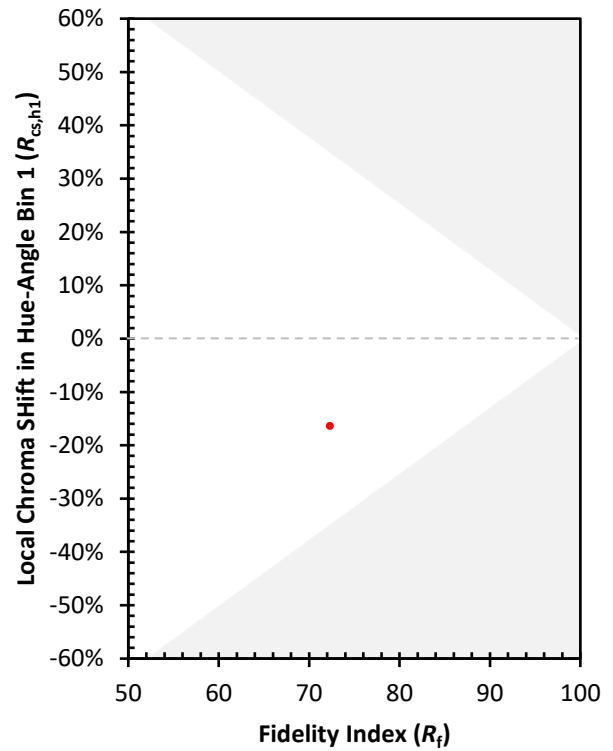
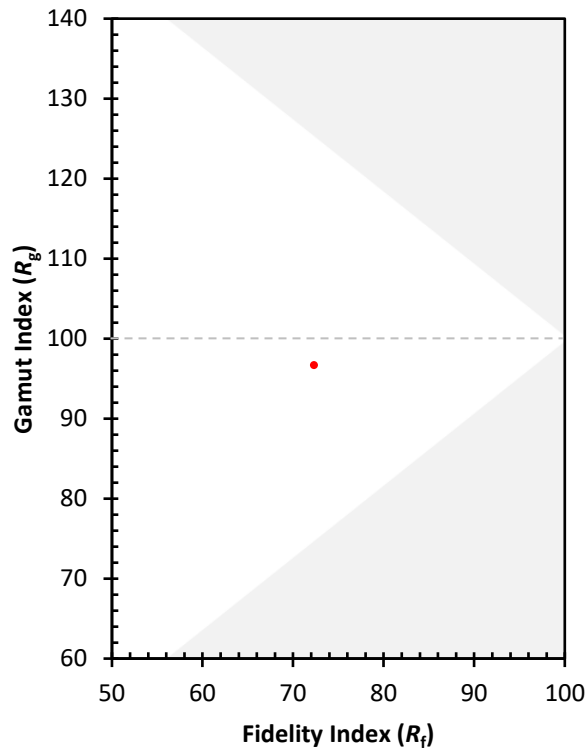
CES01 = 85	CES26 = 56	CES51 = 88	CES76 = 44
CES02 = 60	CES27 = 81	CES52 = 89	CES77 = 65
CES03 = 30	CES28 = 78	CES53 = 76	CES78 = 47
CES04 = 69	CES29 = 53	CES54 = 82	CES79 = 76
CES05 = 46	CES30 = 64	CES55 = 81	CES80 = 72
CES06 = 50	CES31 = 58	CES56 = 70	CES81 = 74
CES07 = 39	CES32 = 53	CES57 = 69	CES82 = 89
CES08 = 38	CES33 = 65	CES58 = 70	CES83 = 84
CES09 = 29	CES34 = 64	CES59 = 87	CES84 = 87
CES10 = 73	CES35 = 80	CES60 = 92	CES85 = 83
CES11 = 56	CES36 = 95	CES61 = 86	CES86 = 75
CES12 = 62	CES37 = 73	CES62 = 83	CES87 = 76
CES13 = 42	CES38 = 73	CES63 = 73	CES88 = 78
CES14 = 74	CES39 = 92	CES64 = 70	CES89 = 74
CES15 = 70	CES40 = 85	CES65 = 64	CES90 = 76
CES16 = 46	CES41 = 86	CES66 = 64	CES91 = 88
CES17 = 49	CES42 = 73	CES67 = 61	CES92 = 66
CES18 = 55	CES43 = 70	CES68 = 68	CES93 = 81
CES19 = 71	CES44 = 98	CES69 = 78	CES94 = 58
CES20 = 64	CES45 = 80	CES70 = 57	CES95 = 71
CES21 = 85	CES46 = 79	CES71 = 53	CES96 = 78
CES22 = 77	CES47 = 77	CES72 = 84	CES97 = 84
CES23 = 91	CES48 = 70	CES73 = 46	CES98 = 73
CES24 = 90	CES49 = 78	CES74 = 95	CES99 = 62
CES25 = 71	CES50 = 87	CES75 = 50	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)