

Signify Classified - Internal
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: P553676

Luminaire Tested: **ARB-B4-LED-D1-T5-7030**

Issue Date: 7/12/2021

Test Information

Test Method: LM-79-08
Report Number: P553676
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P34659)
Test Lab: INNOVATION CENTER
Issue Date: 7/12/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: ARB-B4-LED-D1-T5-7030
Description: ARBOR OUTDOOR ARCHITECTURAL POST TOP
70 CRI, 3000K LEDS AND TYPE V OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8761 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Luminous Opening: Circular (Dia: 1.62' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 96
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: 24 FT

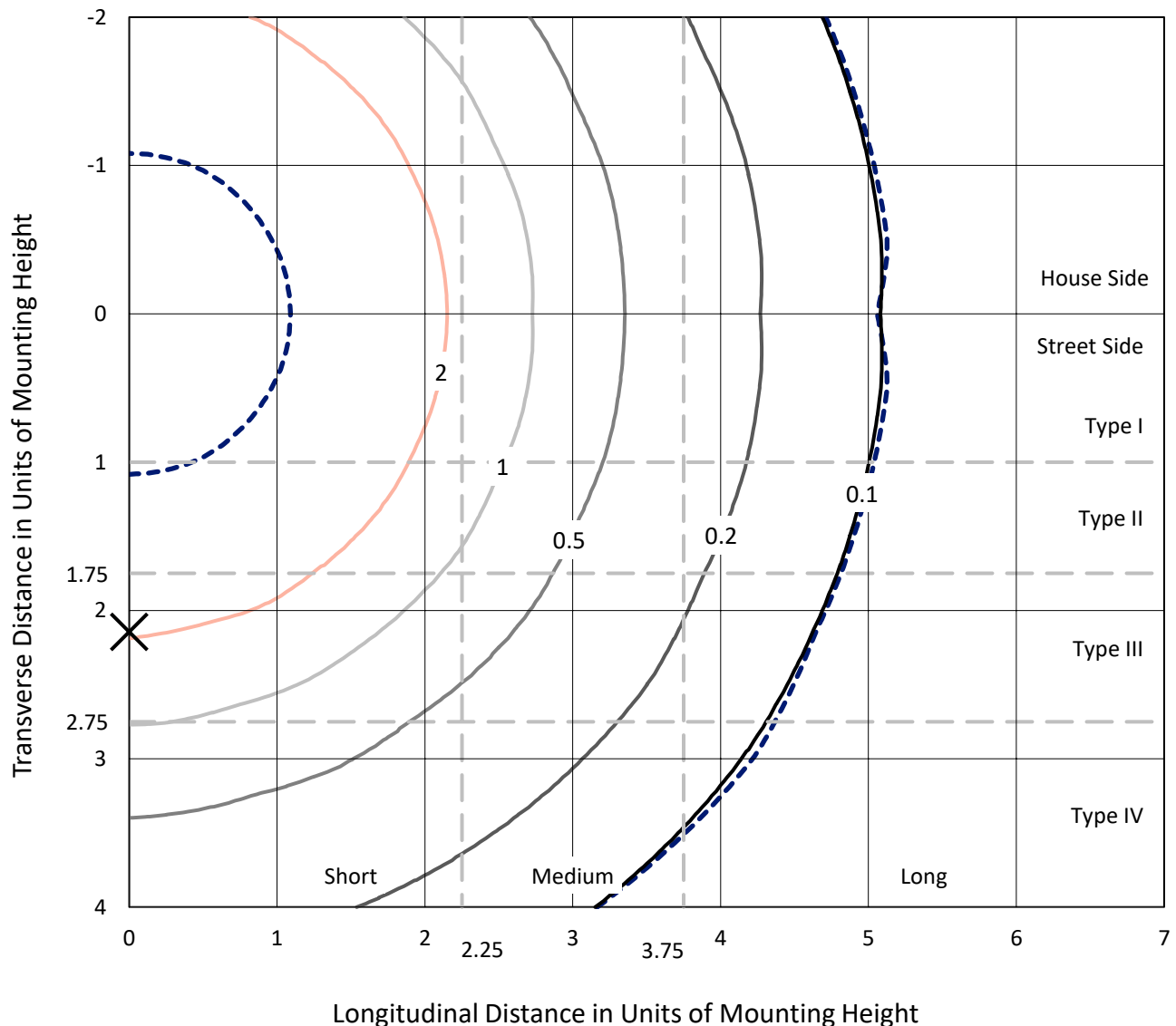


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CATALOG NUMBER: ARB-B4-LED-D1-T5-7030

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

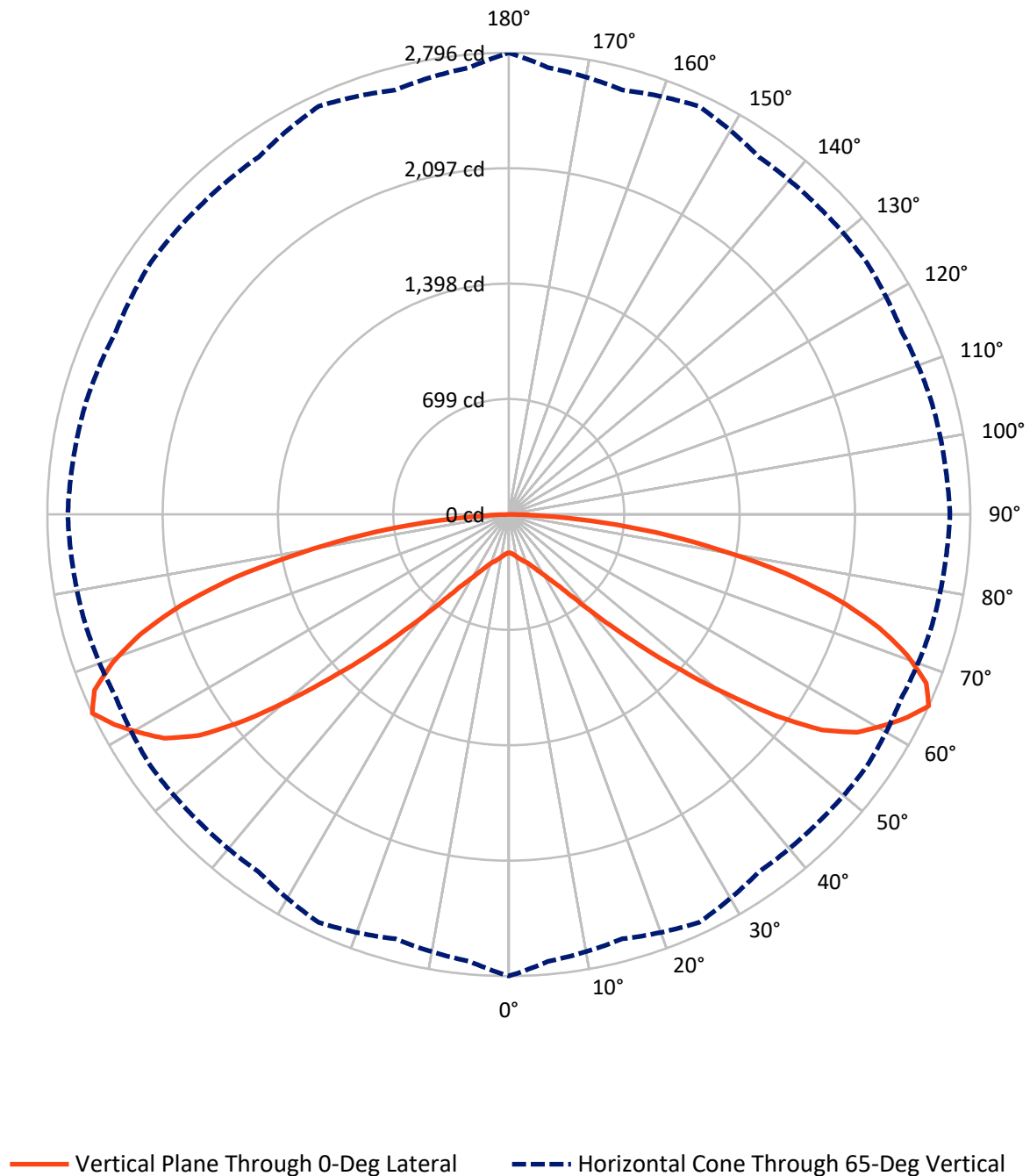


Based on 10 foot mounting height. Maximum calculated value = 4.6 fc
 Type V - Short - N/A

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CATALOG NUMBER: ARB-B4-LED-D1-T5-7030

Luminous Intensity Polar Plot



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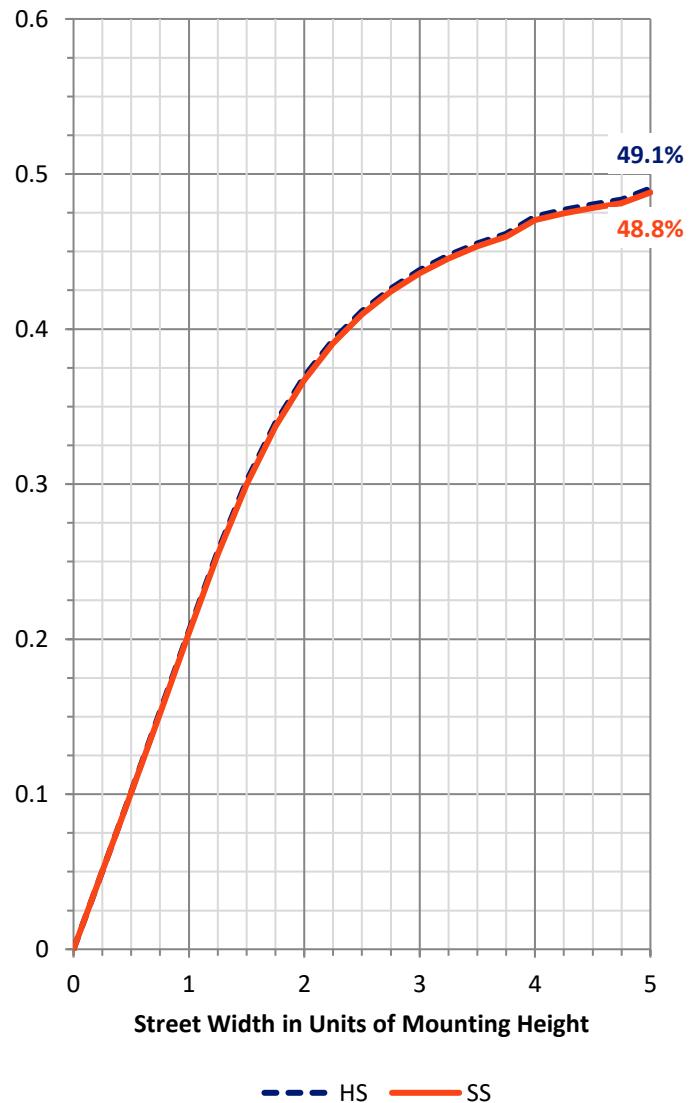
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4380.5	0.0	4380.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4380.5	0.0	4380.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	8761.0	0.0	8761.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.5	0.3
10°-20°	80.6	0.9
20°-30°	166.0	1.9
30°-40°	358.7	4.1
40°-50°	925.2	10.6
50°-60°	1996.2	22.8
60°-70°	2595.7	29.6
70°-80°	2034.3	23.2
80°-90°	580.7	6.6
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°	8761.0	100.0
0°-180°	8761.0	100.0

Coefficient of Utilization



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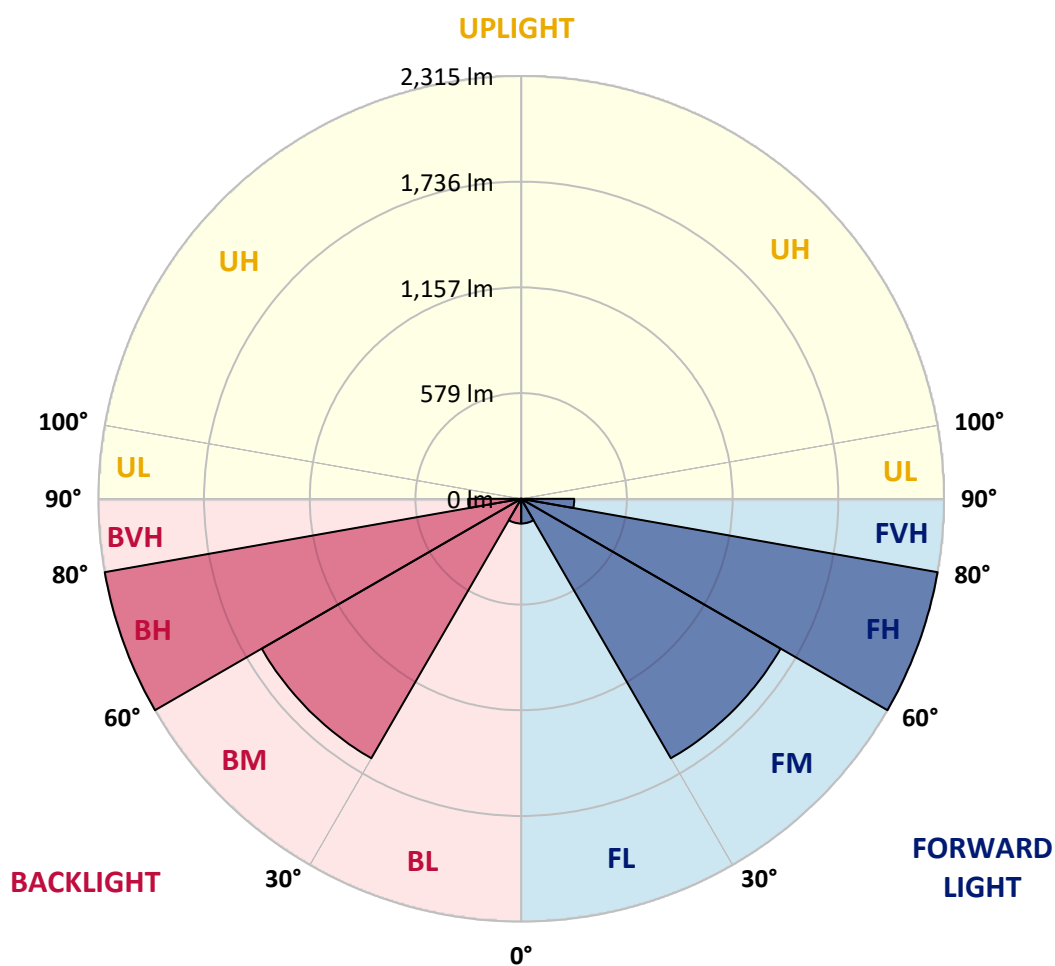
CATALOG NUMBER: ARB-B4-LED-D1-T5-7030

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	135.1	1.5			
FM	(30°-60°)	1640.1	18.7			
FH	(60°-80°)	2315.0	26.4			G2/5000
FVH	(80°-90°)	290.4	3.3			G3/500
BL	(0°-30°)	135.1	1.5	B1/500		
BM	(30°-60°)	1640.1	18.7	B2/2500		
BH	(60°-80°)	2315.0	26.4	B3/2500		G2/5000
BVH	(80°-90°)	290.4	3.3			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type V Short



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CATALOG NUMBER: ARB-B4-LED-D1-T5-7030

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6
2.5°	234.4	234.4	234.4	234.4	234.4	234.4	234.4	234.4	234.4	234.4	234.4
5°	240.9	240.9	240.9	240.9	240.9	240.9	240.0	240.0	240.0	240.0	240.0
7.5°	249.3	249.3	249.3	249.3	249.3	248.4	248.4	248.4	248.4	248.4	248.4
10°	259.5	259.5	259.5	259.5	259.5	258.6	258.6	258.6	257.7	258.6	258.6
12.5°	271.6	270.7	270.7	270.7	269.8	269.8	268.8	267.9	267.9	267.9	268.8
15°	284.6	283.7	282.8	282.8	281.9	281.9	280.9	280.0	279.1	280.0	280.0
17.5°	298.6	298.6	296.7	294.9	296.7	296.7	295.8	293.0	291.2	291.2	291.2
20°	309.8	308.8	304.2	306.0	307.9	309.8	307.9	301.4	297.7	300.5	301.4
22.5°	331.2	331.2	325.6	325.6	330.2	333.0	327.4	321.9	317.2	320.0	320.9
25°	358.1	359.1	352.6	349.8	355.3	359.1	355.3	345.1	341.4	344.2	345.1
27.5°	390.7	389.8	383.3	379.5	385.1	390.7	387.0	376.7	370.2	372.1	372.1
30°	430.7	430.7	422.3	417.7	425.1	428.8	427.0	414.9	409.3	406.5	407.4
32.5°	480.0	479.1	472.6	471.6	476.3	479.1	474.4	463.3	458.6	459.5	461.4
35°	542.3	545.1	547.0	547.0	548.8	555.3	543.3	532.1	535.8	533.0	532.1
37.5°	640.9	640.9	649.3	654.9	658.6	653.0	638.1	637.2	638.1	643.7	640.0
40°	775.8	772.1	776.7	785.1	781.4	778.6	778.6	764.6	766.5	764.6	769.3
42.5°	945.1	947.9	941.4	948.8	938.6	937.7	947.0	942.3	925.6	930.2	921.9
45°	1163.7	1166.5	1161.9	1150.7	1154.4	1164.6	1160.0	1161.9	1144.2	1138.6	1145.1
47.5°	1413.9	1413.0	1413.9	1397.2	1403.7	1408.4	1413.0	1399.1	1384.2	1389.8	1390.7
50°	1706.0	1695.8	1695.8	1668.8	1696.7	1696.7	1683.7	1689.3	1669.8	1680.9	1680.0
52.5°	2025.1	2025.1	2036.3	1987.9	2021.4	2008.4	1995.3	1999.1	1984.2	1998.1	2009.3
55°	2306.0	2298.6	2299.5	2266.0	2302.3	2280.9	2254.9	2267.0	2254.9	2278.1	2290.2
57.5°	2489.3	2483.7	2466.0	2461.4	2464.2	2454.9	2418.6	2423.2	2434.4	2467.0	2461.4
60°	2600.9	2616.7	2575.8	2573.0	2581.4	2586.0	2547.0	2514.4	2558.1	2586.0	2573.9
62.5°	2708.8	2711.6	2663.2	2666.0	2682.8	2637.2	2651.1	2605.6	2644.6	2652.1	2673.5
65°	2796.3	2718.1	2661.4	2727.4	2642.8	2644.6	2652.1	2626.0	2650.2	2663.2	2672.5
67.5°	2727.4	2668.8	2587.0	2634.4	2588.8	2635.3	2632.5	2534.9	2610.2	2626.0	2574.9
70°	2562.8	2564.6	2474.4	2500.5	2452.1	2446.5	2488.4	2421.4	2482.8	2470.7	2438.1
72.5°	2347.0	2330.2	2241.8	2293.0	2195.3	2246.5	2266.0	2217.7	2254.9	2230.7	2245.6
75°	2060.5	2013.0	1948.8	1959.1	1943.2	2000.9	2005.6	1911.6	1969.3	1954.4	1943.2
77.5°	1712.5	1673.5	1635.3	1609.3	1608.4	1607.4	1640.0	1586.0	1625.1	1632.5	1586.0
80°	1284.6	1288.4	1260.5	1269.8	1221.4	1243.7	1248.4	1253.0	1231.6	1240.0	1222.3
82.5°	895.8	892.1	877.2	861.4	875.3	902.3	885.6	868.8	856.7	872.6	885.6
85°	498.6	504.2	498.6	487.4	511.6	493.0	495.8	481.9	486.5	478.1	479.1
87.5°	140.5	147.9	144.2	141.4	138.6	134.0	156.3	140.5	128.4	133.0	134.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

INVUE

Report Number: SP1-2205-670-3

Test Date: 07/01/2022

Luminaire Tested: LXS-VA1-730-U-SYM-A

Data in this report applies to families of products including LXS-VA1-730.

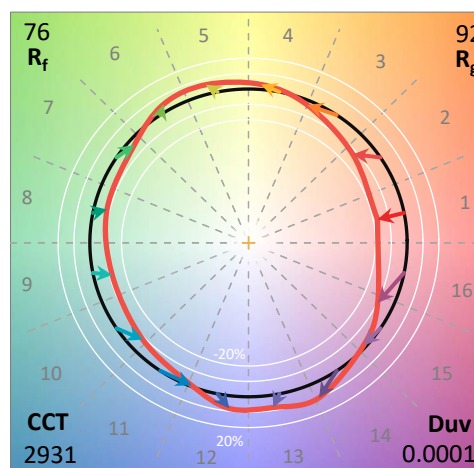
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2205-670-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 07/01/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: INVUE
 Catalog Number: **LXS-VA1-730-U-SYM-A**
 Description: INVUE LUXESCAPE

ARM MOUNT

Spectral Parameters

CCT (K):	2931	CRI (Ra):	71.7		
CIE u':	0.2530	R1:	67.7	R9:	-37.7
CIE v':	0.5229	R2:	83.8	R10:	64.3
Duv:	0.0001	R3:	94.3	R11:	62.0
CIE x:	0.4420	R4:	66.3	R12:	53.4
CIE y:	0.4060	R5:	67.6	R13:	70.9
CIE z:	0.1520	R6:	78.5	R14:	97.3
Peak Wavelength (nm):	593	R7:	75.4		
Dominant Wavelength (nm):	583	R8:	39.8		
Purity:	54.7				
Rf:	76.1				
Rg:	92.5				



Test Conditions

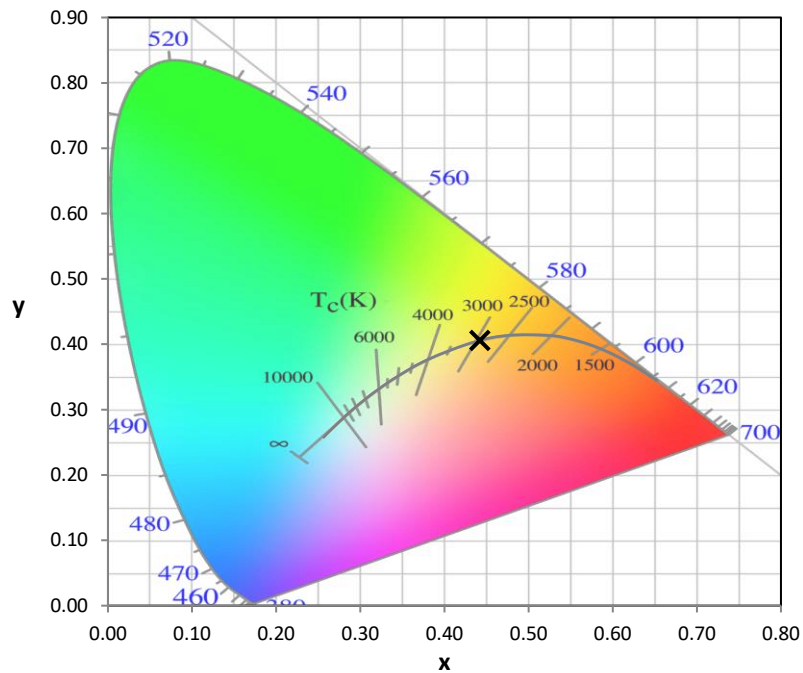
Stabilization Time: 76M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 26.0/60%
 Sphere Temperature (°C): 25.8

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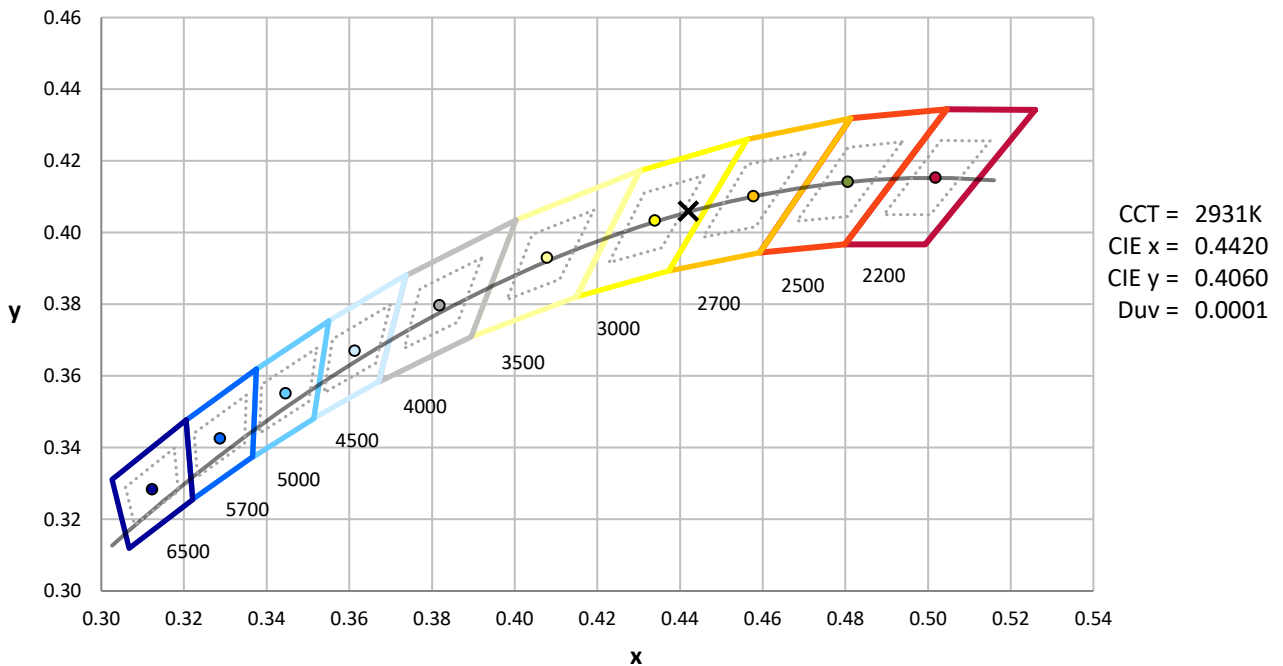
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/7/2022	8/7/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208	11/29/2021	11/29/2022
Sphere Thermometer	ONSET IN0085	11/29/2021	11/29/2022
Room Thermometer	ONSET IN0046	11/29/2021	11/29/2022

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CIE 1931 Chromaticity Diagram



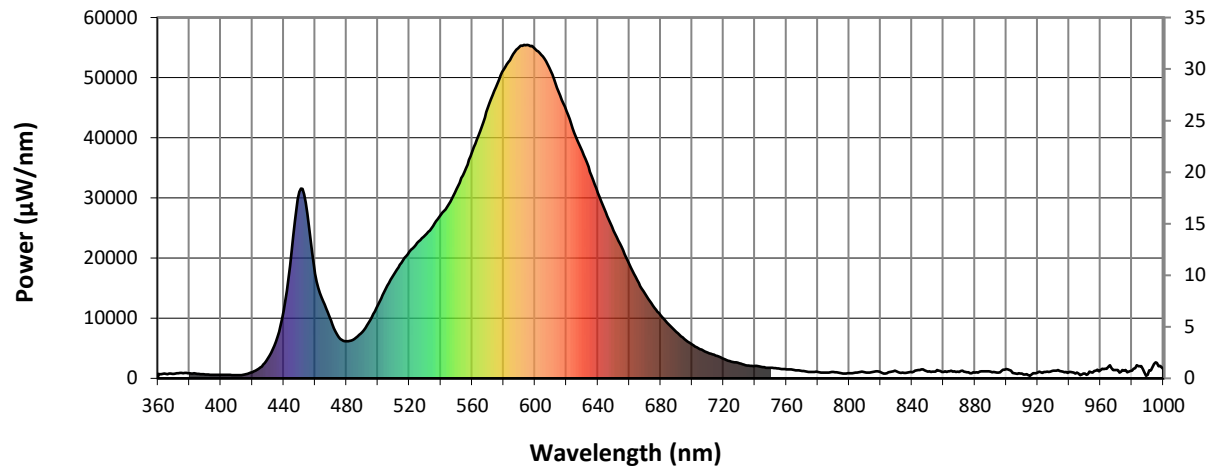
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 7-step quadrangle

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Photopic Flux vs. Wavelength

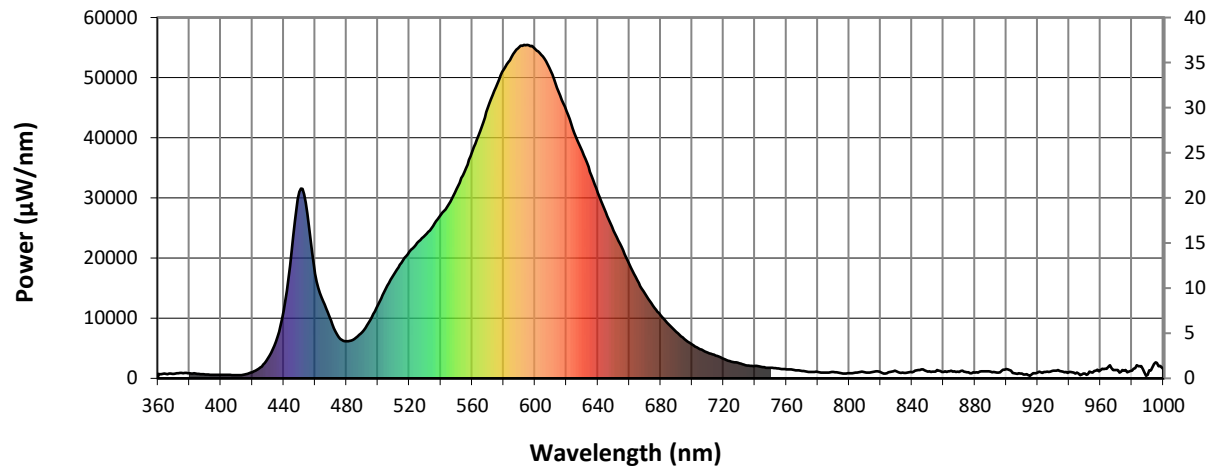


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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	759	NR	490	7726	NR	620	44418	NR	750	1761	NR	880	979	NR
365	724	NR	495	9658	NR	625	40836	NR	755	1670	NR	885	1196	NR
370	743	NR	500	12246	NR	630	37768	NR	760	1515	NR	890	1123	NR
375	925	NR	505	14899	NR	635	34326	NR	765	1364	NR	895	947	NR
380	837	NR	510	17223	NR	640	30833	NR	770	1232	NR	900	1531	NR
385	766	NR	515	19222	NR	645	27583	NR	775	1086	NR	905	875	NR
390	641	NR	520	21080	NR	650	24548	NR	780	1082	NR	910	776	NR
395	605	NR	525	22505	NR	655	21894	NR	785	966	NR	915	422	NR
400	598	NR	530	23799	NR	660	19024	NR	790	1040	NR	920	971	NR
405	576	NR	535	25334	NR	665	16327	NR	795	840	NR	925	1041	NR
410	529	NR	540	27169	NR	670	14097	NR	800	838	NR	930	1265	NR
415	633	NR	545	28947	NR	675	12075	NR	805	973	NR	935	1163	NR
420	1033	NR	550	31471	NR	680	10464	NR	810	1020	NR	940	1076	NR
425	1791	NR	555	34342	NR	685	8996	NR	815	1067	NR	945	966	NR
430	3342	NR	560	37667	NR	690	7713	NR	820	1016	NR	950	777	NR
435	6130	NR	565	41063	NR	695	6542	NR	825	1001	NR	955	950	NR
440	11205	NR	570	45025	NR	700	5618	NR	830	1180	NR	960	1369	NR
445	21174	NR	575	48356	NR	705	4869	NR	835	923	NR	965	1917	NR
450	31019	NR	580	51301	NR	710	4264	NR	840	1038	NR	970	1401	NR
455	27378	NR	585	53409	NR	715	3805	NR	845	1393	NR	975	1291	NR
460	17416	NR	590	55137	NR	720	3265	NR	850	1114	NR	980	1296	NR
465	12872	NR	595	55426	NR	725	2772	NR	855	1132	NR	985	2010	NR
470	9610	NR	600	54778	NR	730	2505	NR	860	1045	NR	990	605	NR
475	6871	NR	605	53509	NR	735	2131	NR	865	1255	NR	995	2672	NR
480	6151	NR	610	51056	NR	740	2054	NR	870	1093	NR	1000	1530	NR
485	6565	NR	615	47700	NR	745	1890	NR	875	1015	NR			

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Scotopic Flux vs. Wavelength



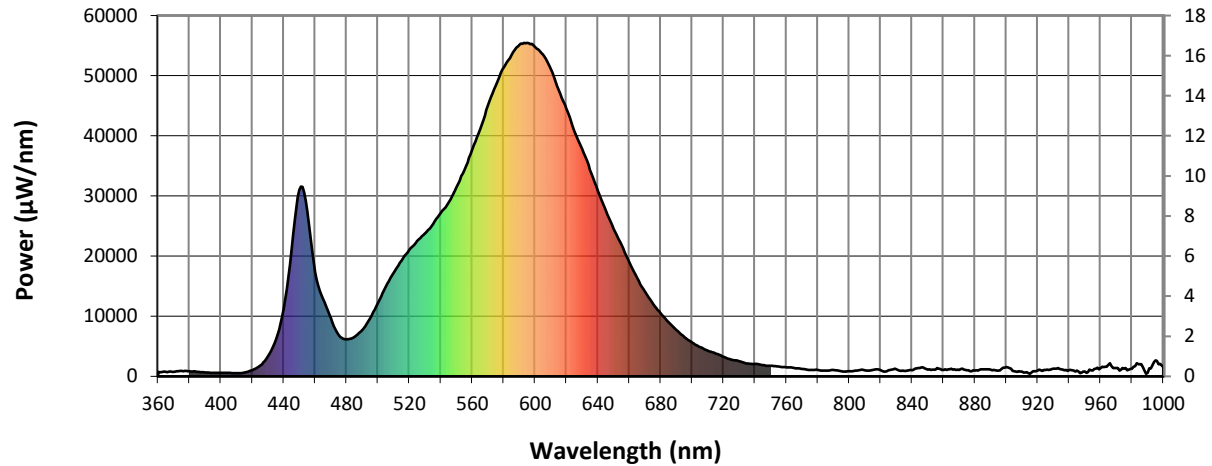
Scotopic Lumens: 3103

S/P: 1.21

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	759	NR	490	7726	NR	620	44418	NR	750	1761	NR	880	979	NR
365	724	NR	495	9658	NR	625	40836	NR	755	1670	NR	885	1196	NR
370	743	NR	500	12246	NR	630	37768	NR	760	1515	NR	890	1123	NR
375	925	NR	505	14899	NR	635	34326	NR	765	1364	NR	895	947	NR
380	837	NR	510	17223	NR	640	30833	NR	770	1232	NR	900	1531	NR
385	766	NR	515	19222	NR	645	27583	NR	775	1086	NR	905	875	NR
390	641	NR	520	21080	NR	650	24548	NR	780	1082	NR	910	776	NR
395	605	NR	525	22505	NR	655	21894	NR	785	966	NR	915	422	NR
400	598	NR	530	23799	NR	660	19024	NR	790	1040	NR	920	971	NR
405	576	NR	535	25334	NR	665	16327	NR	795	840	NR	925	1041	NR
410	529	NR	540	27169	NR	670	14097	NR	800	838	NR	930	1265	NR
415	633	NR	545	28947	NR	675	12075	NR	805	973	NR	935	1163	NR
420	1033	NR	550	31471	NR	680	10464	NR	810	1020	NR	940	1076	NR
425	1791	NR	555	34342	NR	685	8996	NR	815	1067	NR	945	966	NR
430	3342	NR	560	37667	NR	690	7713	NR	820	1016	NR	950	777	NR
435	6130	NR	565	41063	NR	695	6542	NR	825	1001	NR	955	950	NR
440	11205	NR	570	45025	NR	700	5618	NR	830	1180	NR	960	1369	NR
445	21174	NR	575	48356	NR	705	4869	NR	835	923	NR	965	1917	NR
450	31019	NR	580	51301	NR	710	4264	NR	840	1038	NR	970	1401	NR
455	27378	NR	585	53409	NR	715	3805	NR	845	1393	NR	975	1291	NR
460	17416	NR	590	55137	NR	720	3265	NR	850	1114	NR	980	1296	NR
465	12872	NR	595	55426	NR	725	2772	NR	855	1132	NR	985	2010	NR
470	9610	NR	600	54778	NR	730	2505	NR	860	1045	NR	990	605	NR
475	6871	NR	605	53509	NR	735	2131	NR	865	1255	NR	995	2672	NR
480	6151	NR	610	51056	NR	740	2054	NR	870	1093	NR	1000	1530	NR
485	6565	NR	615	47700	NR	745	1890	NR	875	1015	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 1136.3 S/P: 0.44

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	759	NR	490	7726	NR	620	44418	NR	750	1761	NR	880	979	NR
365	724	NR	495	9658	NR	625	40836	NR	755	1670	NR	885	1196	NR
370	743	NR	500	12246	NR	630	37768	NR	760	1515	NR	890	1123	NR
375	925	NR	505	14899	NR	635	34326	NR	765	1364	NR	895	947	NR
380	837	NR	510	17223	NR	640	30833	NR	770	1232	NR	900	1531	NR
385	766	NR	515	19222	NR	645	27583	NR	775	1086	NR	905	875	NR
390	641	NR	520	21080	NR	650	24548	NR	780	1082	NR	910	776	NR
395	605	NR	525	22505	NR	655	21894	NR	785	966	NR	915	422	NR
400	598	NR	530	23799	NR	660	19024	NR	790	1040	NR	920	971	NR
405	576	NR	535	25334	NR	665	16327	NR	795	840	NR	925	1041	NR
410	529	NR	540	27169	NR	670	14097	NR	800	838	NR	930	1265	NR
415	633	NR	545	28947	NR	675	12075	NR	805	973	NR	935	1163	NR
420	1033	NR	550	31471	NR	680	10464	NR	810	1020	NR	940	1076	NR
425	1791	NR	555	34342	NR	685	8996	NR	815	1067	NR	945	966	NR
430	3342	NR	560	37667	NR	690	7713	NR	820	1016	NR	950	777	NR
435	6130	NR	565	41063	NR	695	6542	NR	825	1001	NR	955	950	NR
440	11205	NR	570	45025	NR	700	5618	NR	830	1180	NR	960	1369	NR
445	21174	NR	575	48356	NR	705	4869	NR	835	923	NR	965	1917	NR
450	31019	NR	580	51301	NR	710	4264	NR	840	1038	NR	970	1401	NR
455	27378	NR	585	53409	NR	715	3805	NR	845	1393	NR	975	1291	NR
460	17416	NR	590	55137	NR	720	3265	NR	850	1114	NR	980	1296	NR
465	12872	NR	595	55426	NR	725	2772	NR	855	1132	NR	985	2010	NR
470	9610	NR	600	54778	NR	730	2505	NR	860	1045	NR	990	605	NR
475	6871	NR	605	53509	NR	735	2131	NR	865	1255	NR	995	2672	NR
480	6151	NR	610	51056	NR	740	2054	NR	870	1093	NR	1000	1530	NR
485	6565	NR	615	47700	NR	745	1890	NR	875	1015	NR			

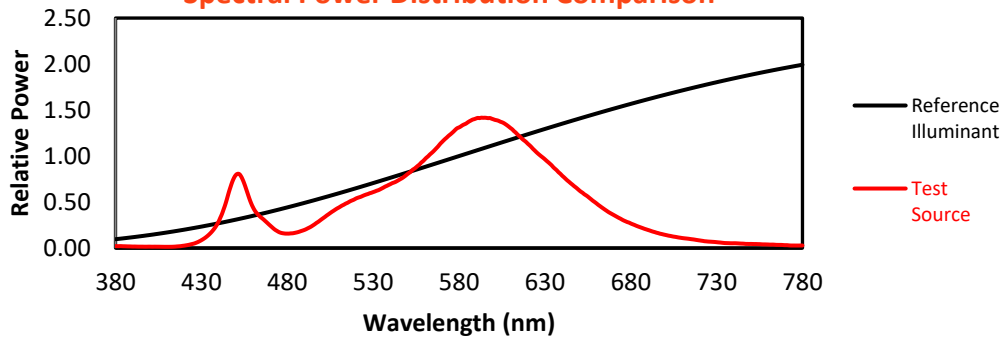
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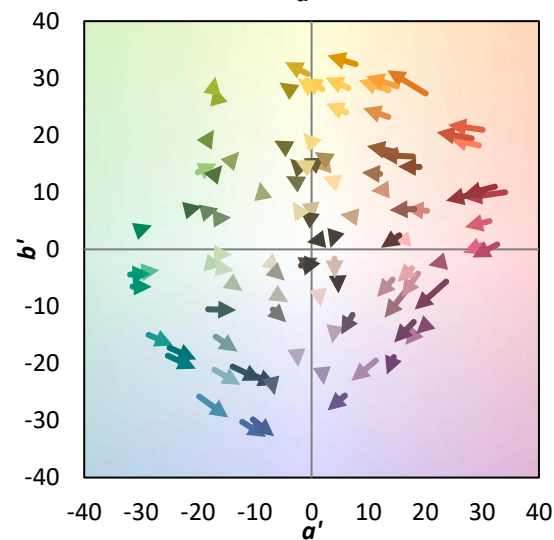
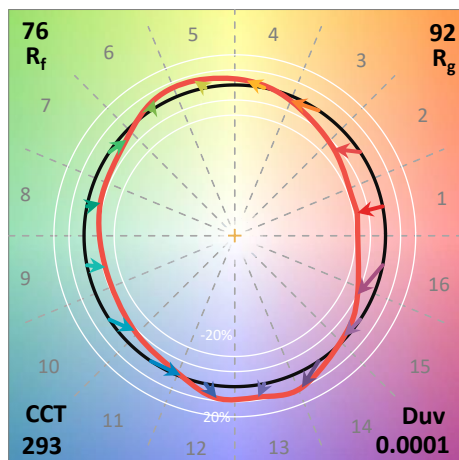
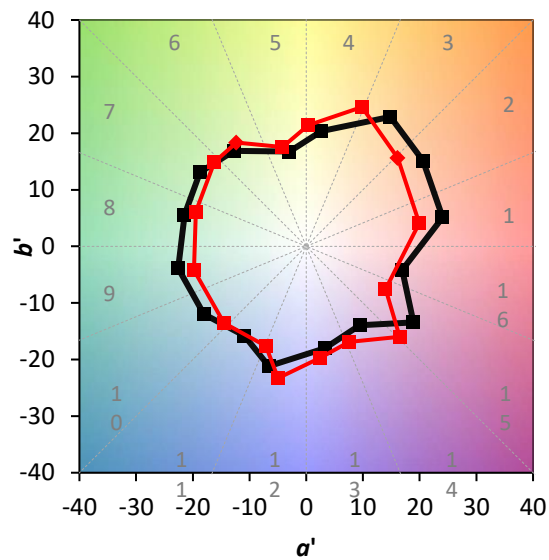
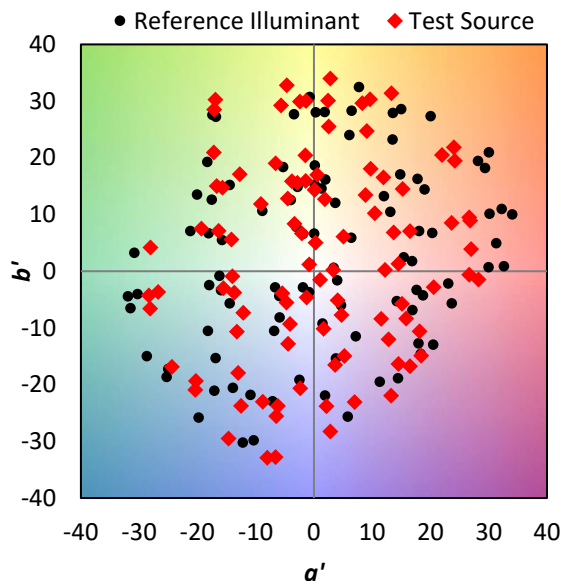
Summary

$R_f = 76.1$
 $R_g = 92.5$
 CIE $R_a = 71.7$
 $R_g = -37.7$

Spectral Power Distribution Comparison



Color Vector Graphics

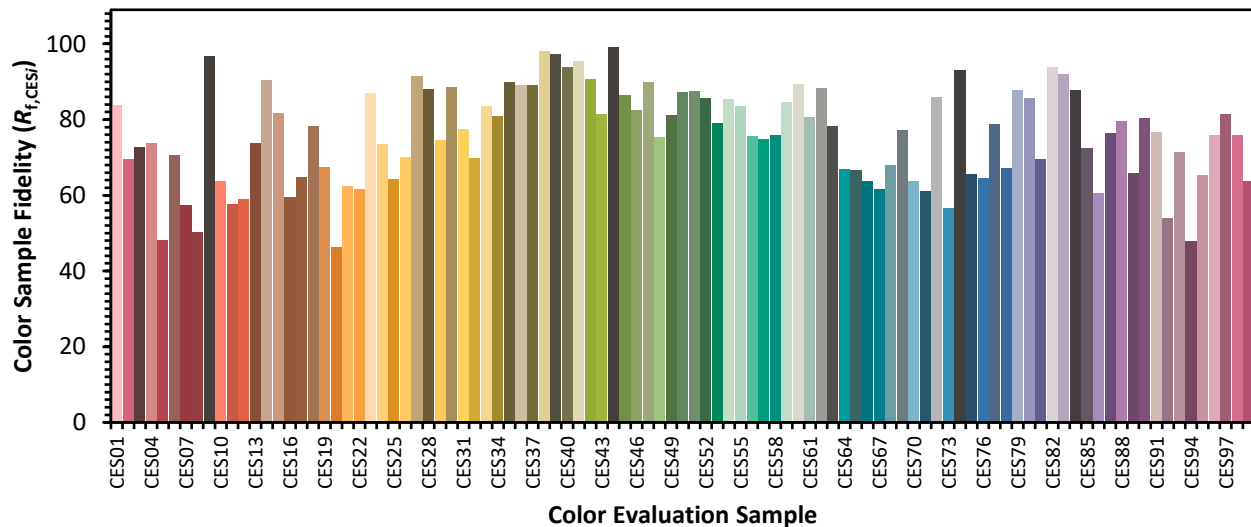


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Individual Sample Fidelity Index ($R_{f,i}$)

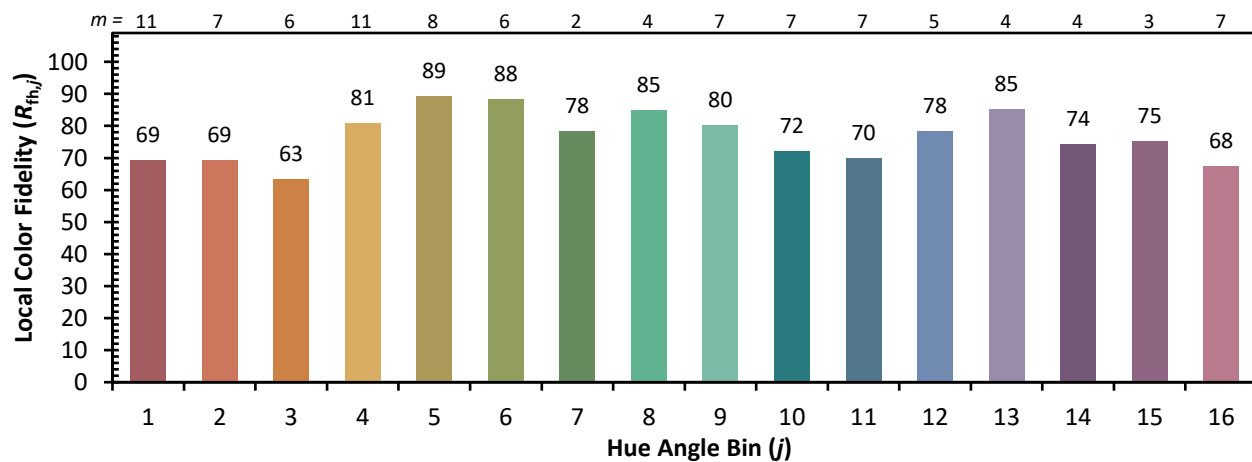
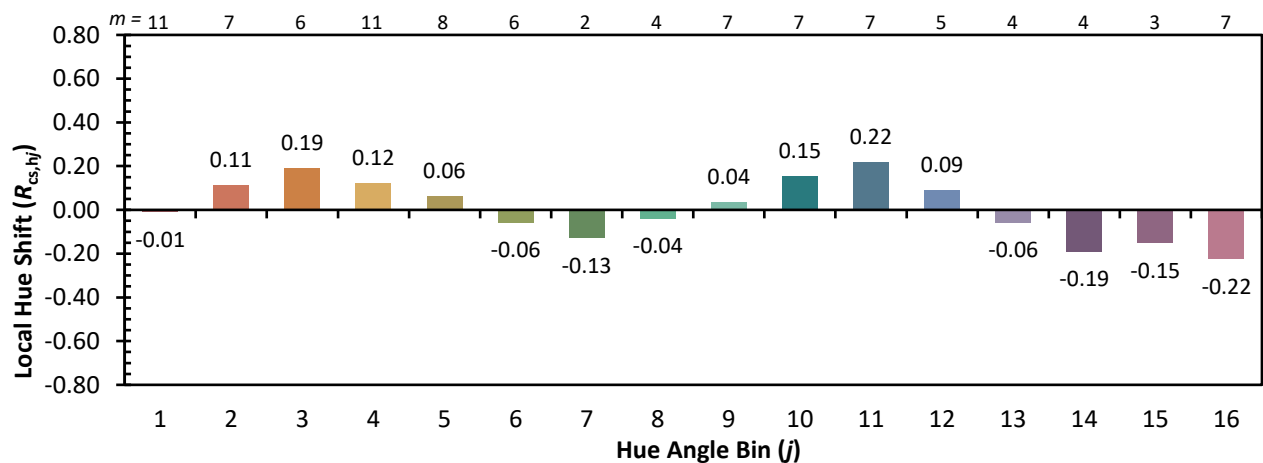
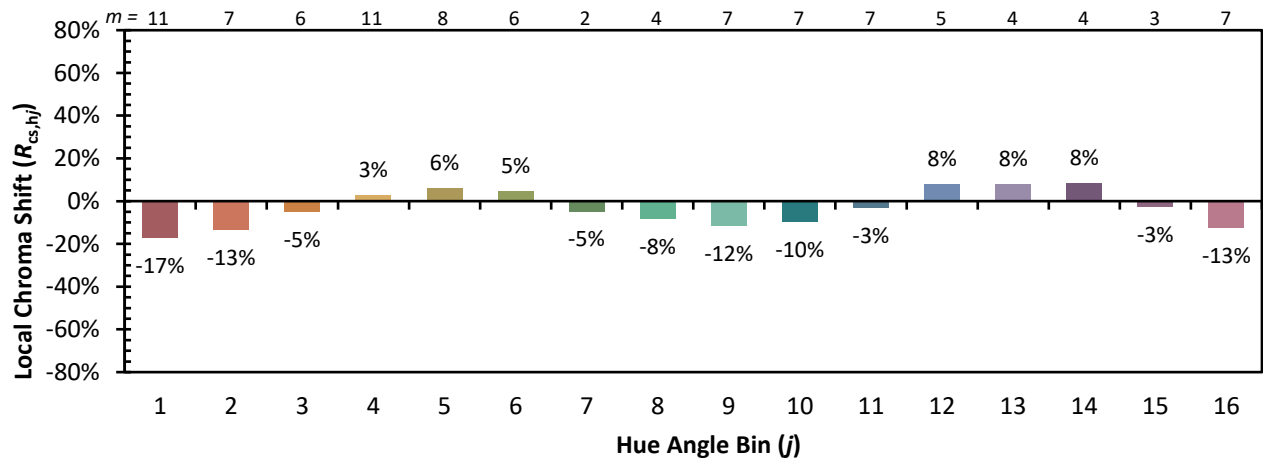
CES01 = 86	CES26 = 70	CES51 = 88	CES76 = 65
CES02 = 63	CES27 = 92	CES52 = 86	CES77 = 79
CES03 = 31	CES28 = 88	CES53 = 79	CES78 = 67
CES04 = 71	CES29 = 75	CES54 = 85	CES79 = 88
CES05 = 49	CES30 = 89	CES55 = 83	CES80 = 86
CES06 = 51	CES31 = 77	CES56 = 76	CES81 = 69
CES07 = 41	CES32 = 70	CES57 = 75	CES82 = 94
CES08 = 40	CES33 = 84	CES58 = 76	CES83 = 92
CES09 = 29	CES34 = 81	CES59 = 85	CES84 = 88
CES10 = 76	CES35 = 90	CES60 = 89	CES85 = 72
CES11 = 59	CES36 = 89	CES61 = 81	CES86 = 60
CES12 = 65	CES37 = 89	CES62 = 88	CES87 = 76
CES13 = 43	CES38 = 98	CES63 = 78	CES88 = 80
CES14 = 74	CES39 = 97	CES64 = 67	CES89 = 66
CES15 = 71	CES40 = 94	CES65 = 67	CES90 = 80
CES16 = 47	CES41 = 95	CES66 = 64	CES91 = 77
CES17 = 50	CES42 = 91	CES67 = 62	CES92 = 54
CES18 = 56	CES43 = 81	CES68 = 68	CES93 = 72
CES19 = 73	CES44 = 99	CES69 = 77	CES94 = 48
CES20 = 66	CES45 = 86	CES70 = 64	CES95 = 65
CES21 = 87	CES46 = 83	CES71 = 61	CES96 = 76
CES22 = 79	CES47 = 90	CES72 = 86	CES97 = 81
CES23 = 92	CES48 = 75	CES73 = 57	CES98 = 76
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 64
CES25 = 73	CES50 = 87	CES75 = 66	



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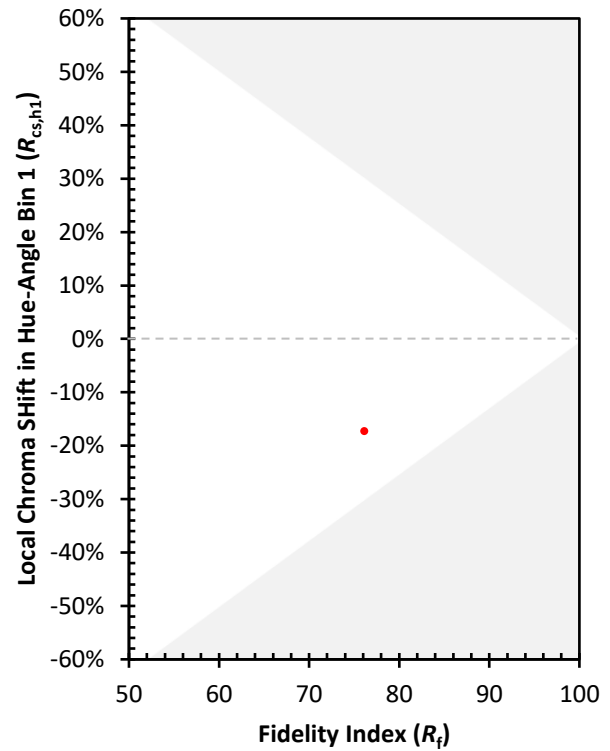
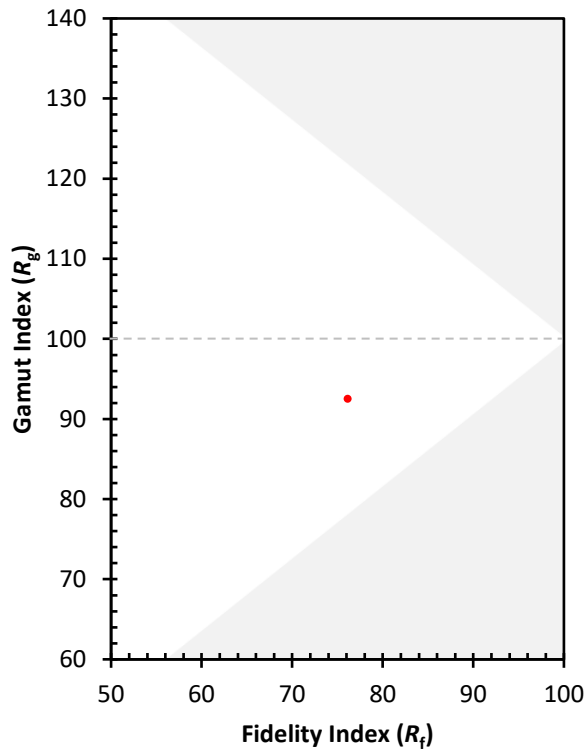
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)