

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: P553678

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

Issue Date: 7/12/2021

Test Information

Test Method: LM-79-08
Report Number: P553678
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
Description: ARBOR OUTDOOR ARCHITECTURAL POST TOP
70 CRI, 4000K LEDS AND TYPE V OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9464 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Luminous Opening: Circular (Dia: 1.62' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - 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



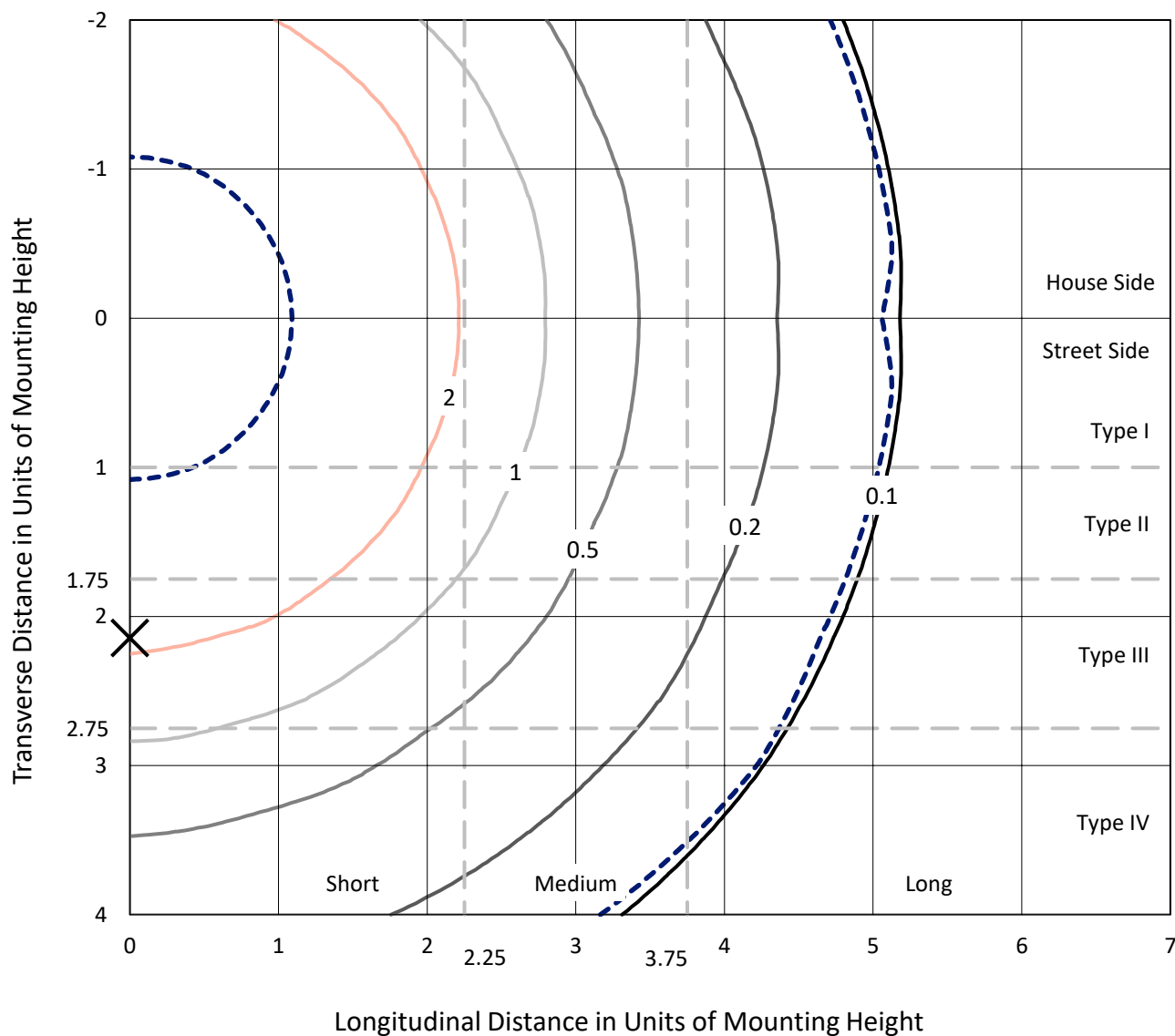
REPORT NUMBER: P553678

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

Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd



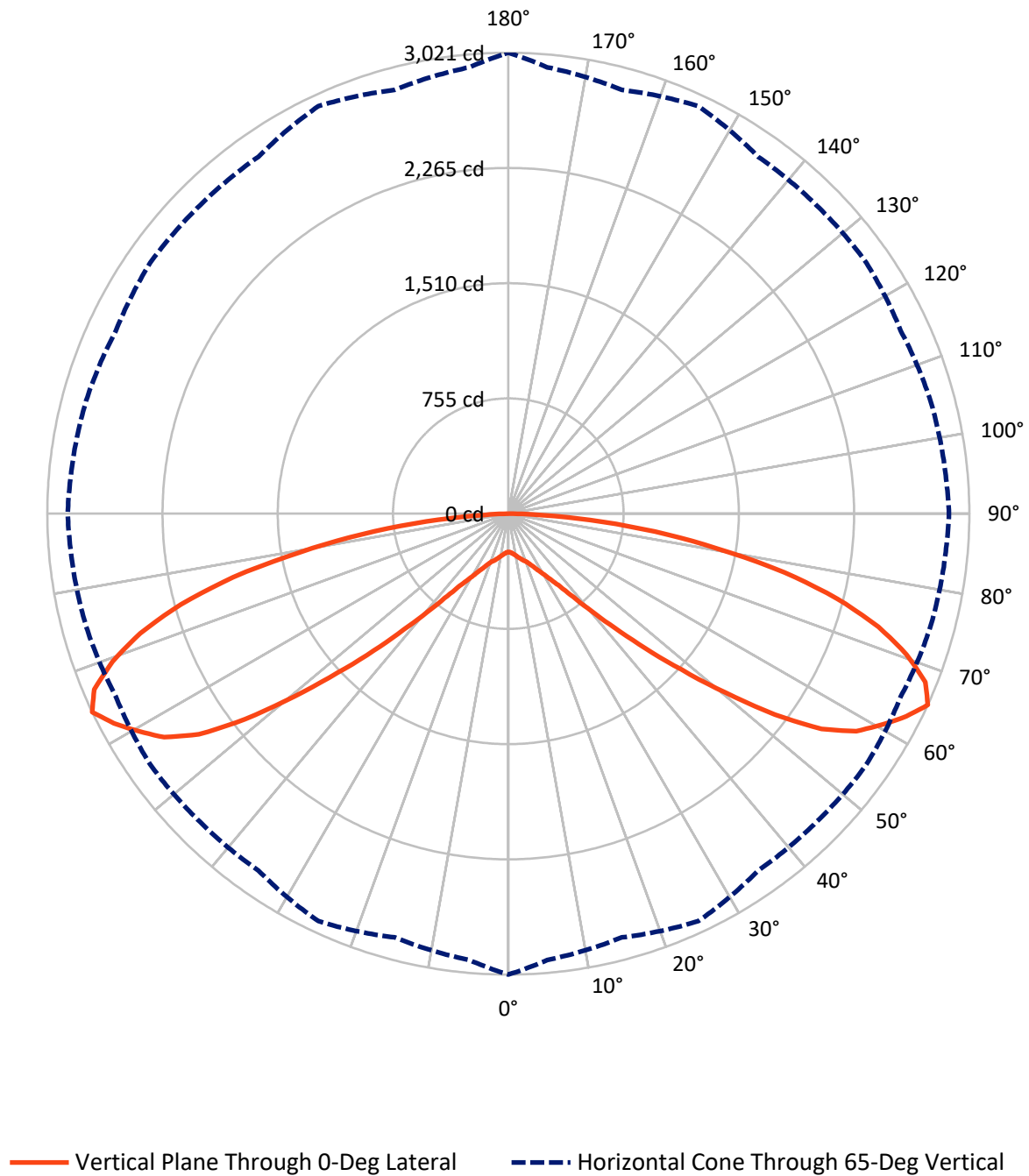
Based on 10 foot mounting height. Maximum calculated value = 5 fc

Type V - Short - N/A

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

Luminous Intensity Polar Plot



REPORT NUMBER: P553678

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

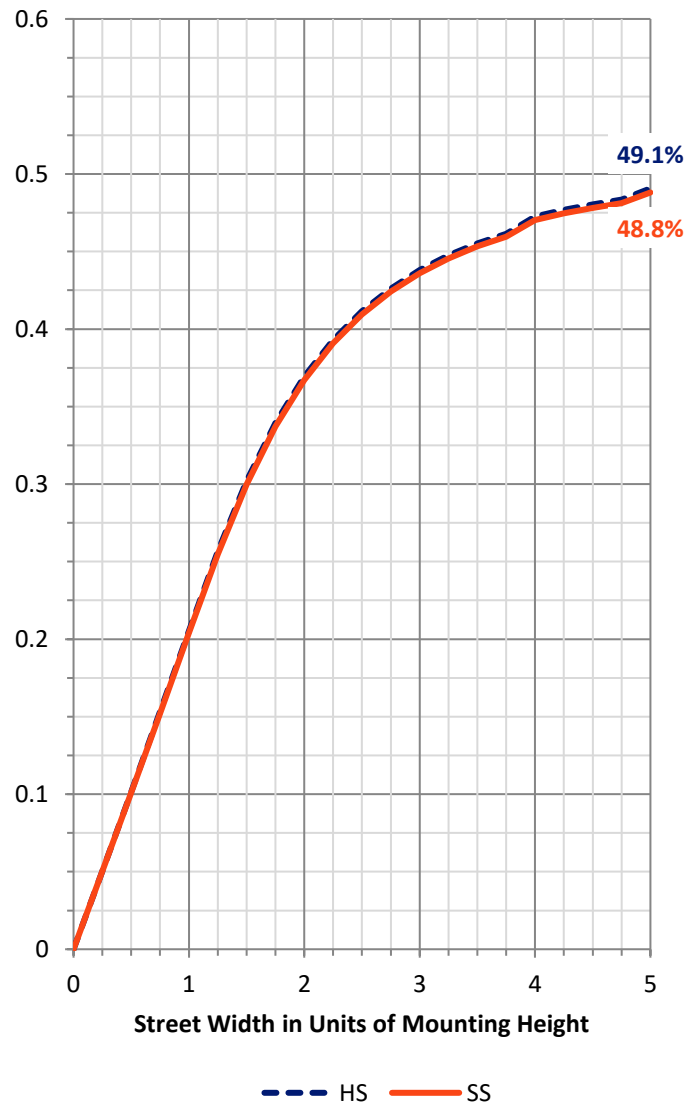
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4732.0	0.0	4732.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4732.0	0.0	4732.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	9464.0	0.0	9464.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.4	0.3
10°-20°	87.1	0.9
20°-30°	179.3	1.9
30°-40°	387.5	4.1
40°-50°	999.4	10.6
50°-60°	2156.4	22.8
60°-70°	2803.9	29.6
70°-80°	2197.5	23.2
80°-90°	627.3	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°	9464.0	100.0
0°-180°	9464.0	100.0

Coefficient of Utilization



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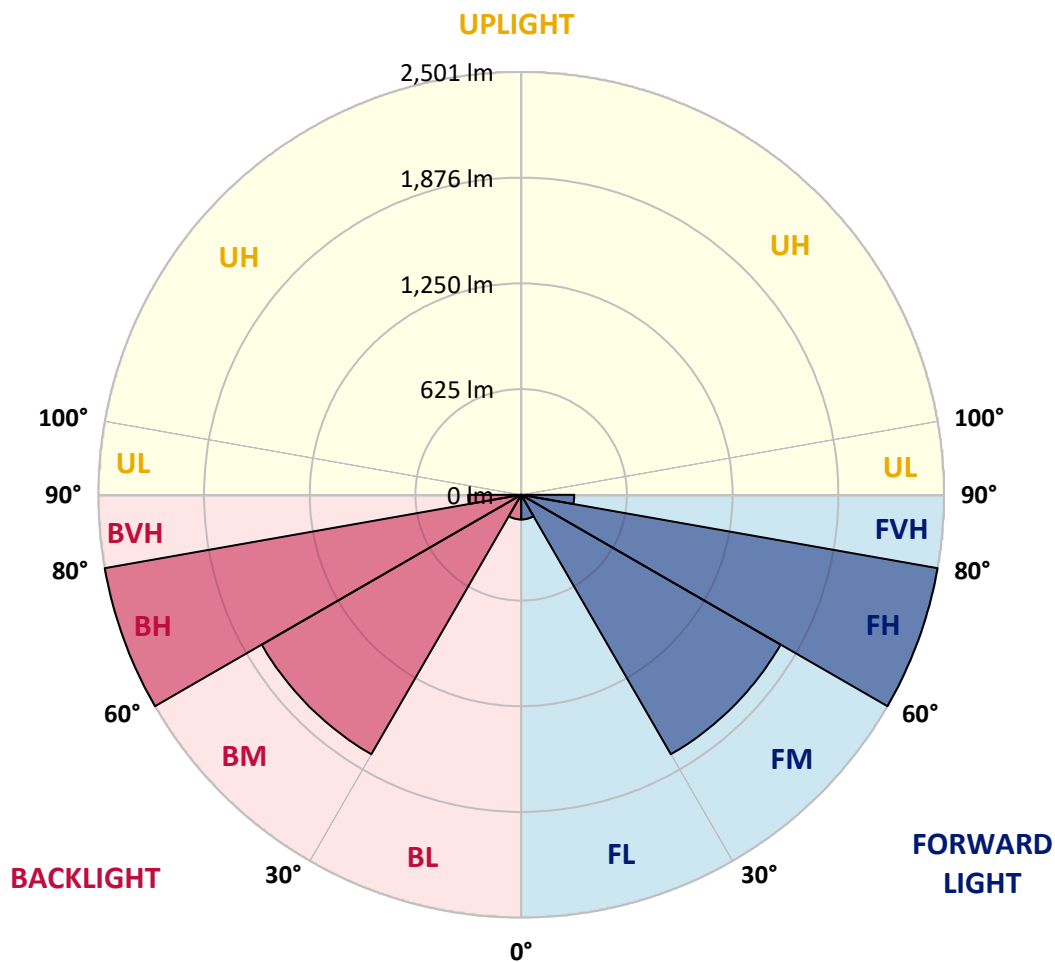
CATALOG NUMBER: ARB-B4-LED-D1-T5

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	145.9	1.5			
FM	(30°-60°)	1771.7	18.7			
FH	(60°-80°)	2500.7	26.4			G2/5000
FVH	(80°-90°)	313.7	3.3			G3/500
BL	(0°-30°)	145.9	1.5	B1/500		
BM	(30°-60°)	1771.7	18.7	B2/2500		
BH	(60°-80°)	2500.7	26.4	B4/5000		G2/5000
BVH	(80°-90°)	313.7	3.3			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G3

Type V Short



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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	251.2	251.2	251.2	251.2	251.2	251.2	251.2	251.2	251.2	251.2	251.2
2.5°	253.2	253.2	253.2	253.2	253.2	253.2	253.2	253.2	253.2	253.2	253.2
5°	260.3	260.3	260.3	260.3	260.3	260.3	259.3	259.3	259.3	259.3	259.3
7.5°	269.3	269.3	269.3	269.3	269.3	268.3	268.3	268.3	268.3	268.3	268.3
10°	280.4	280.4	280.4	280.4	280.4	279.4	279.4	279.4	278.3	279.4	279.4
12.5°	293.4	292.4	292.4	292.4	291.4	291.4	290.4	289.4	289.4	289.4	290.4
15°	307.5	306.5	305.5	305.5	304.5	304.5	303.5	302.5	301.5	302.5	302.5
17.5°	322.6	322.6	320.6	318.5	320.6	320.6	319.5	316.5	314.5	314.5	314.5
20°	334.6	333.6	328.6	330.6	332.6	334.6	332.6	325.6	321.6	324.6	325.6
22.5°	357.7	357.7	351.7	351.7	356.7	359.7	353.7	347.7	342.7	345.7	346.7
25°	386.9	387.9	380.8	377.8	383.9	387.9	383.9	372.8	368.8	371.8	372.8
27.5°	422.0	421.0	414.0	410.0	416.0	422.0	418.0	407.0	399.9	401.9	401.9
30°	465.3	465.3	456.2	451.2	459.2	463.2	461.2	448.2	442.1	439.1	440.1
32.5°	518.5	517.5	510.5	509.5	514.5	517.5	512.5	500.4	495.4	496.4	498.4
35°	585.8	588.9	590.9	590.9	592.9	599.9	586.8	574.8	578.8	575.8	574.8
37.5°	692.4	692.4	701.4	707.4	711.4	705.4	689.3	688.3	689.3	695.4	691.4
40°	838.1	834.0	839.1	848.1	844.1	841.1	841.1	826.0	828.0	826.0	831.0
42.5°	1020.9	1024.0	1016.9	1025.0	1013.9	1012.9	1023.0	1017.9	999.8	1004.9	995.8
45°	1257.1	1260.1	1255.1	1243.0	1247.0	1258.1	1253.1	1255.1	1236.0	1230.0	1237.0
47.5°	1527.4	1526.4	1527.4	1509.3	1516.3	1521.4	1526.4	1511.3	1495.2	1501.3	1502.3
50°	1842.9	1831.9	1831.9	1802.7	1832.9	1832.9	1818.8	1824.8	1803.7	1815.8	1814.8
52.5°	2187.6	2187.6	2199.7	2147.4	2183.6	2169.5	2155.4	2159.5	2143.4	2158.5	2170.5
55°	2491.1	2483.0	2484.0	2447.9	2487.1	2463.9	2435.8	2448.9	2435.8	2460.9	2474.0
57.5°	2689.0	2683.0	2663.9	2658.9	2661.9	2651.9	2612.7	2617.7	2629.7	2664.9	2658.9
60°	2809.6	2826.7	2782.5	2779.5	2788.5	2793.5	2751.3	2716.2	2763.4	2793.5	2780.5
62.5°	2926.2	2929.2	2876.9	2880.0	2898.0	2848.8	2863.9	2814.6	2856.8	2864.9	2888.0
65°	3020.6	2936.2	2874.9	2946.3	2854.8	2856.8	2864.9	2836.7	2862.9	2876.9	2887.0
67.5°	2946.3	2883.0	2794.5	2845.8	2796.6	2846.8	2843.8	2738.3	2819.7	2836.7	2781.5
70°	2768.4	2770.4	2673.0	2701.1	2648.8	2642.8	2688.0	2615.7	2682.0	2668.9	2633.8
72.5°	2535.3	2517.2	2421.7	2477.0	2371.5	2426.8	2447.9	2395.6	2435.8	2409.7	2425.8
75°	2225.8	2174.5	2105.2	2116.3	2099.2	2161.5	2166.5	2065.0	2127.3	2111.2	2099.2
77.5°	1850.0	1807.8	1766.6	1738.4	1737.4	1736.4	1771.6	1713.3	1755.5	1763.5	1713.3
80°	1387.7	1391.7	1361.6	1371.6	1319.4	1343.5	1348.5	1353.6	1330.4	1339.5	1320.4
82.5°	967.7	963.7	947.6	930.5	945.6	974.7	956.6	938.5	925.5	942.6	956.6
85°	538.6	544.6	538.6	526.6	552.7	532.6	535.6	520.5	525.5	516.5	517.5
87.5°	151.7	159.8	155.8	152.7	149.7	144.7	168.8	151.7	138.7	143.7	144.7
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: SP1-2205-670-4

Test Date: 07/01/2022

Luminaire Tested: LXS-VA1-740-U-ASW-A

Data in this report applies to families of products including LXS-VA1-740.

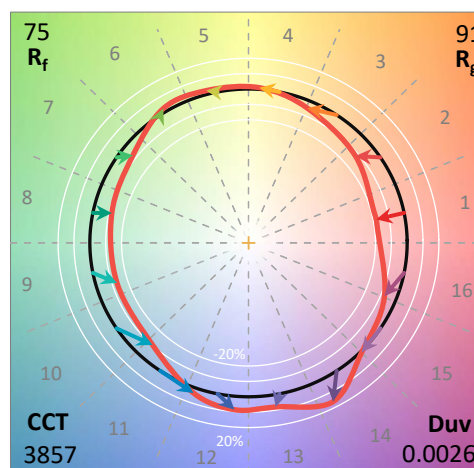
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2205-670-4
 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-VA1-740-U-ASW-A**
 Description: INVUE LUXESCAPE

ARM MOUNT

Spectral Parameters

CCT (K):	3857	CRI (Ra):	71.9		
CIE u':	0.2263	R1:	67.8	R9:	-35.4
CIE v':	0.5075	R2:	80.8	R10:	54.2
Duv:	0.0026	R3:	90.4	R11:	61.9
CIE x:	0.3890	R4:	67.8	R12:	38.9
CIE y:	0.3876	R5:	67.1	R13:	70.5
CIE z:	0.2234	R6:	71.9	R14:	94.7
Peak Wavelength (nm):	454	R7:	80.8		
Dominant Wavelength (nm):	578	R8:	48.4		
Purity:	33.2				
Rf:	74.8				
Rg:	91				



Test Conditions

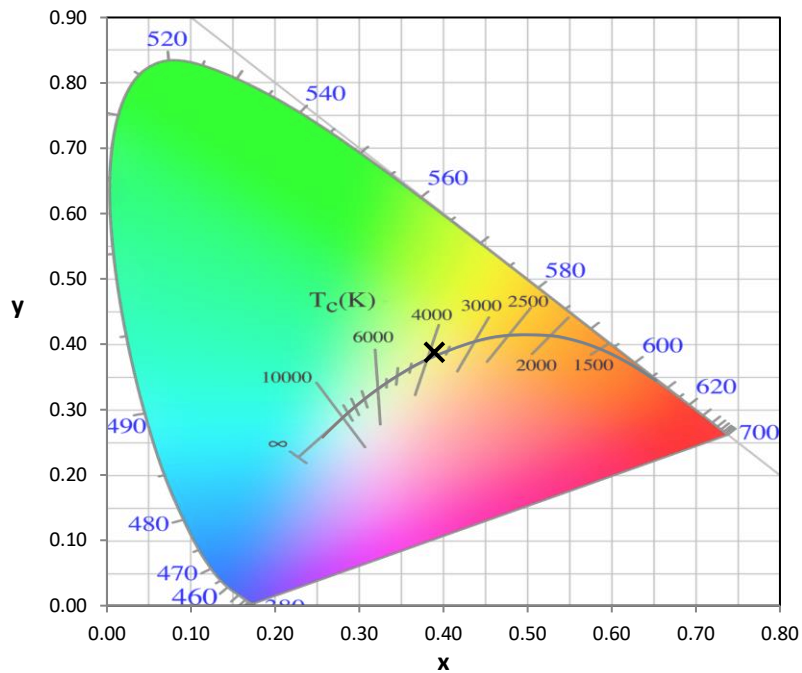
Stabilization Time: 247M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.5/62%
 Sphere Temperature (°C): 25.6

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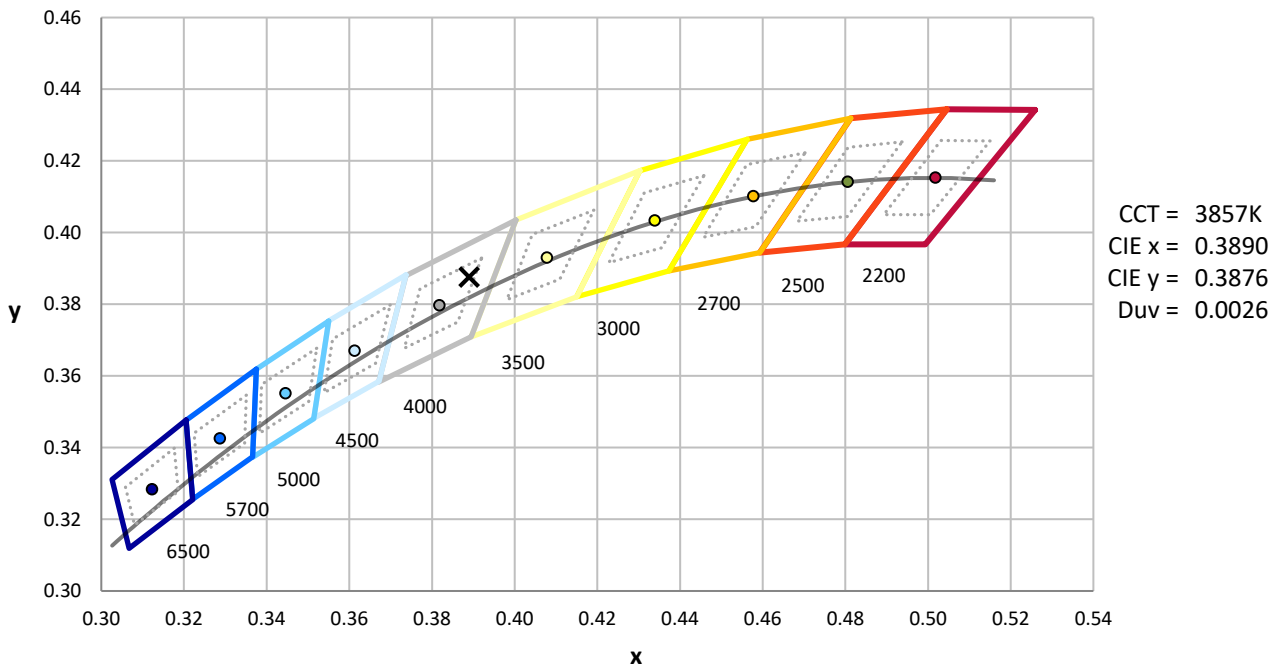
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/7/2022	8/7/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208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



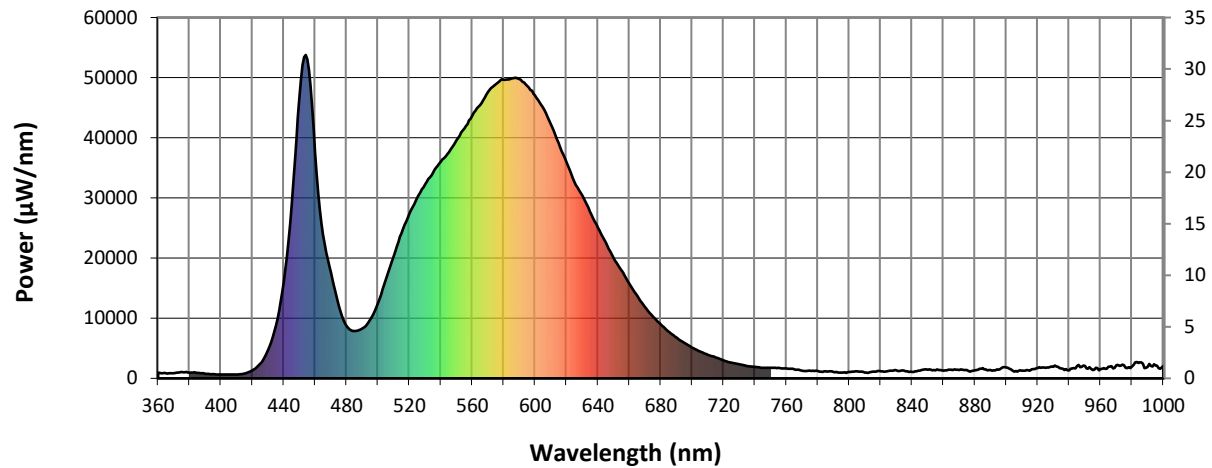
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength

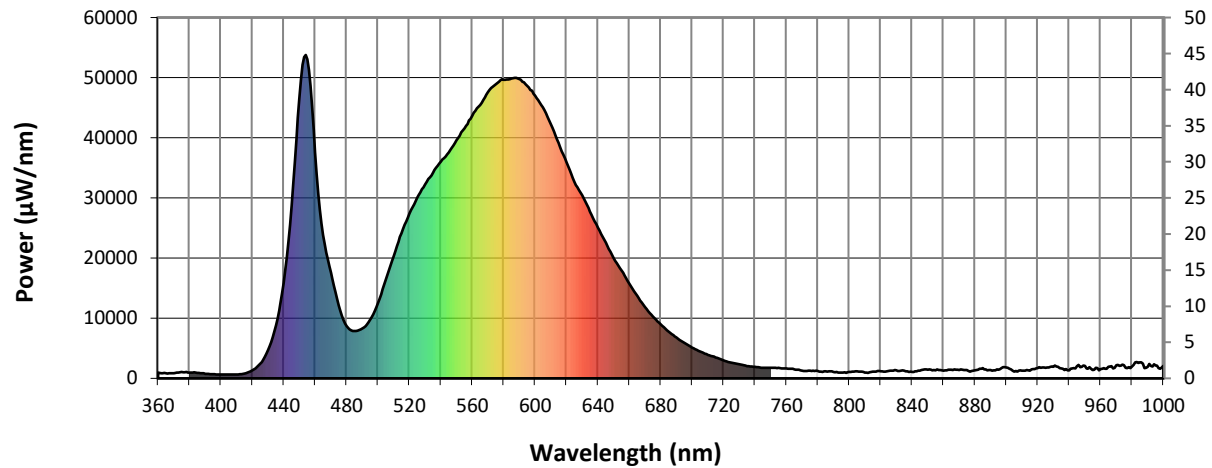


#####

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	947	NR	490	8278	NR	620	35923	NR	750	1756	NR	880	1334	NR
365	838	NR	495	9729	NR	625	32734	NR	755	1740	NR	885	1679	NR
370	842	NR	500	12546	NR	630	30434	NR	760	1656	NR	890	1374	NR
375	1046	NR	505	16368	NR	635	27712	NR	765	1506	NR	895	1455	NR
380	963	NR	510	20312	NR	640	25062	NR	770	1292	NR	900	1837	NR
385	900	NR	515	24128	NR	645	22549	NR	775	1263	NR	905	1101	NR
390	768	NR	520	27426	NR	650	19997	NR	780	1222	NR	910	1253	NR
395	673	NR	525	30032	NR	655	17955	NR	785	1156	NR	915	1283	NR
400	649	NR	530	32270	NR	660	15768	NR	790	1090	NR	920	1728	NR
405	632	NR	535	34190	NR	665	13707	NR	795	964	NR	925	1742	NR
410	649	NR	540	36035	NR	670	11877	NR	800	1057	NR	930	1944	NR
415	796	NR	545	37557	NR	675	10247	NR	805	1191	NR	935	1659	NR
420	1331	NR	550	39565	NR	680	8994	NR	810	969	NR	940	1350	NR
425	2430	NR	555	41537	NR	685	7774	NR	815	1104	NR	945	2049	NR
430	4669	NR	560	43649	NR	690	6795	NR	820	1159	NR	950	2090	NR
435	8795	NR	565	45446	NR	695	5887	NR	825	1209	NR	955	1409	NR
440	15873	NR	570	47583	NR	700	5131	NR	830	1309	NR	960	1549	NR
445	28752	NR	575	48903	NR	705	4466	NR	835	1271	NR	965	1912	NR
450	46625	NR	580	49648	NR	710	3906	NR	840	1064	NR	970	2208	NR
455	53028	NR	585	49883	NR	715	3458	NR	845	1254	NR	975	2191	NR
460	37593	NR	590	49763	NR	720	2962	NR	850	1460	NR	980	1948	NR
465	23860	NR	595	48622	NR	725	2602	NR	855	1351	NR	985	2686	NR
470	17548	NR	600	46962	NR	730	2333	NR	860	1304	NR	990	1925	NR
475	12160	NR	605	45045	NR	735	2050	NR	865	1417	NR	995	2149	NR
480	8684	NR	610	42242	NR	740	1899	NR	870	1408	NR	1000	2060	NR
485	7873	NR	615	39152	NR	745	1770	NR	875	1361	NR			

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Scotopic Flux vs. Wavelength



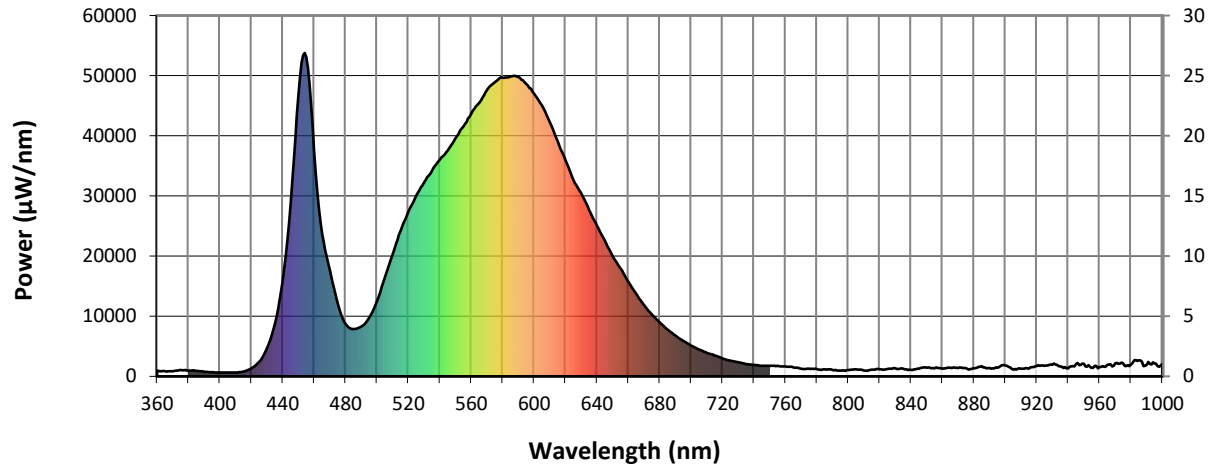
Scotopic Lumens: 4054.9

S/P: 1.51

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	947	NR	490	8278	NR	620	35923	NR	750	1756	NR	880	1334	NR
365	838	NR	495	9729	NR	625	32734	NR	755	1740	NR	885	1679	NR
370	842	NR	500	12546	NR	630	30434	NR	760	1656	NR	890	1374	NR
375	1046	NR	505	16368	NR	635	27712	NR	765	1506	NR	895	1455	NR
380	963	NR	510	20312	NR	640	25062	NR	770	1292	NR	900	1837	NR
385	900	NR	515	24128	NR	645	22549	NR	775	1263	NR	905	1101	NR
390	768	NR	520	27426	NR	650	19997	NR	780	1222	NR	910	1253	NR
395	673	NR	525	30032	NR	655	17955	NR	785	1156	NR	915	1283	NR
400	649	NR	530	32270	NR	660	15768	NR	790	1090	NR	920	1728	NR
405	632	NR	535	34190	NR	665	13707	NR	795	964	NR	925	1742	NR
410	649	NR	540	36035	NR	670	11877	NR	800	1057	NR	930	1944	NR
415	796	NR	545	37557	NR	675	10247	NR	805	1191	NR	935	1659	NR
420	1331	NR	550	39565	NR	680	8994	NR	810	969	NR	940	1350	NR
425	2430	NR	555	41537	NR	685	7774	NR	815	1104	NR	945	2049	NR
430	4669	NR	560	43649	NR	690	6795	NR	820	1159	NR	950	2090	NR
435	8795	NR	565	45446	NR	695	5887	NR	825	1209	NR	955	1409	NR
440	15873	NR	570	47583	NR	700	5131	NR	830	1309	NR	960	1549	NR
445	28752	NR	575	48903	NR	705	4466	NR	835	1271	NR	965	1912	NR
450	46625	NR	580	49648	NR	710	3906	NR	840	1064	NR	970	2208	NR
455	53028	NR	585	49883	NR	715	3458	NR	845	1254	NR	975	2191	NR
460	37593	NR	590	49763	NR	720	2962	NR	850	1460	NR	980	1948	NR
465	23860	NR	595	48622	NR	725	2602	NR	855	1351	NR	985	2686	NR
470	17548	NR	600	46962	NR	730	2333	NR	860	1304	NR	990	1925	NR
475	12160	NR	605	45045	NR	735	2050	NR	865	1417	NR	995	2149	NR
480	8684	NR	610	42242	NR	740	1899	NR	870	1408	NR	1000	2060	NR
485	7873	NR	615	39152	NR	745	1770	NR	875	1361	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: 1575.2 S/P: 0.59

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	947	NR	490	8278	NR	620	35923	NR	750	1756	NR	880	1334	NR
365	838	NR	495	9729	NR	625	32734	NR	755	1740	NR	885	1679	NR
370	842	NR	500	12546	NR	630	30434	NR	760	1656	NR	890	1374	NR
375	1046	NR	505	16368	NR	635	27712	NR	765	1506	NR	895	1455	NR
380	963	NR	510	20312	NR	640	25062	NR	770	1292	NR	900	1837	NR
385	900	NR	515	24128	NR	645	22549	NR	775	1263	NR	905	1101	NR
390	768	NR	520	27426	NR	650	19997	NR	780	1222	NR	910	1253	NR
395	673	NR	525	30032	NR	655	17955	NR	785	1156	NR	915	1283	NR
400	649	NR	530	32270	NR	660	15768	NR	790	1090	NR	920	1728	NR
405	632	NR	535	34190	NR	665	13707	NR	795	964	NR	925	1742	NR
410	649	NR	540	36035	NR	670	11877	NR	800	1057	NR	930	1944	NR
415	796	NR	545	37557	NR	675	10247	NR	805	1191	NR	935	1659	NR
420	1331	NR	550	39565	NR	680	8994	NR	810	969	NR	940	1350	NR
425	2430	NR	555	41537	NR	685	7774	NR	815	1104	NR	945	2049	NR
430	4669	NR	560	43649	NR	690	6795	NR	820	1159	NR	950	2090	NR
435	8795	NR	565	45446	NR	695	5887	NR	825	1209	NR	955	1409	NR
440	15873	NR	570	47583	NR	700	5131	NR	830	1309	NR	960	1549	NR
445	28752	NR	575	48903	NR	705	4466	NR	835	1271	NR	965	1912	NR
450	46625	NR	580	49648	NR	710	3906	NR	840	1064	NR	970	2208	NR
455	53028	NR	585	49883	NR	715	3458	NR	845	1254	NR	975	2191	NR
460	37593	NR	590	49763	NR	720	2962	NR	850	1460	NR	980	1948	NR
465	23860	NR	595	48622	NR	725	2602	NR	855	1351	NR	985	2686	NR
470	17548	NR	600	46962	NR	730	2333	NR	860	1304	NR	990	1925	NR
475	12160	NR	605	45045	NR	735	2050	NR	865	1417	NR	995	2149	NR
480	8684	NR	610	42242	NR	740	1899	NR	870	1408	NR	1000	2060	NR
485	7873	NR	615	39152	NR	745	1770	NR	875	1361	NR			

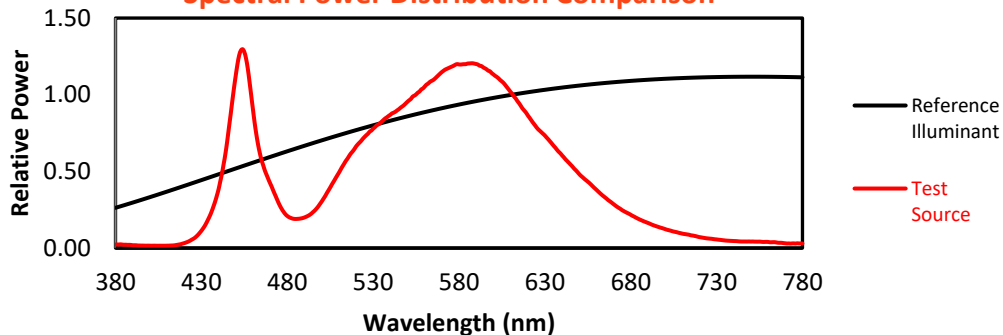
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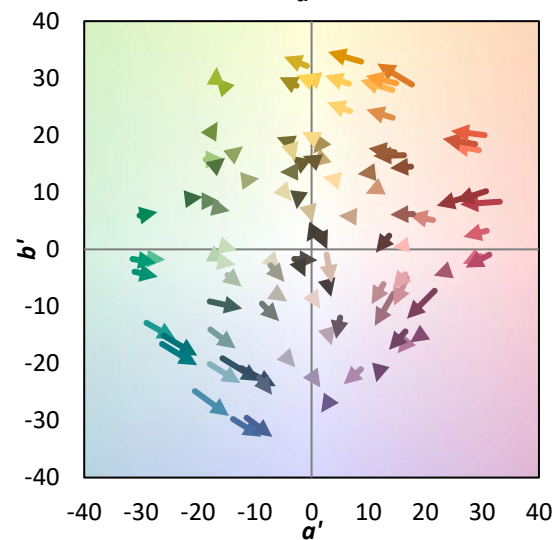
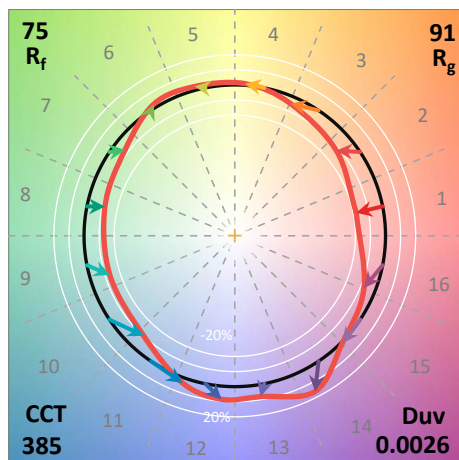
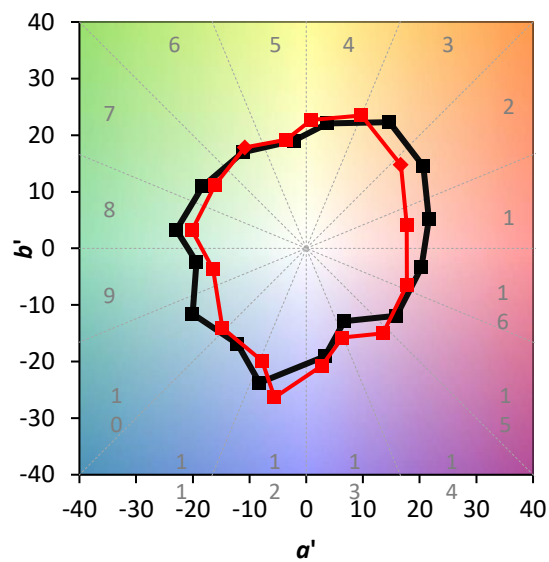
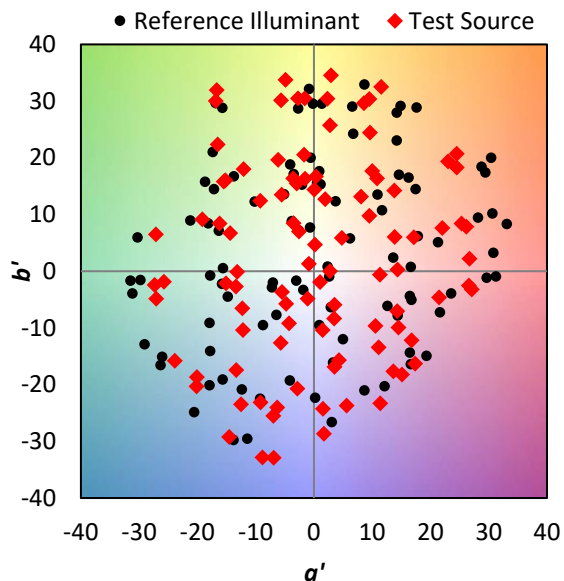
Summary

$R_f = 74.8$
 $R_g = 91$
 CIE $R_a = 71.9$
 $R_g = -35.4$

Spectral Power Distribution Comparison



Color Vector Graphics

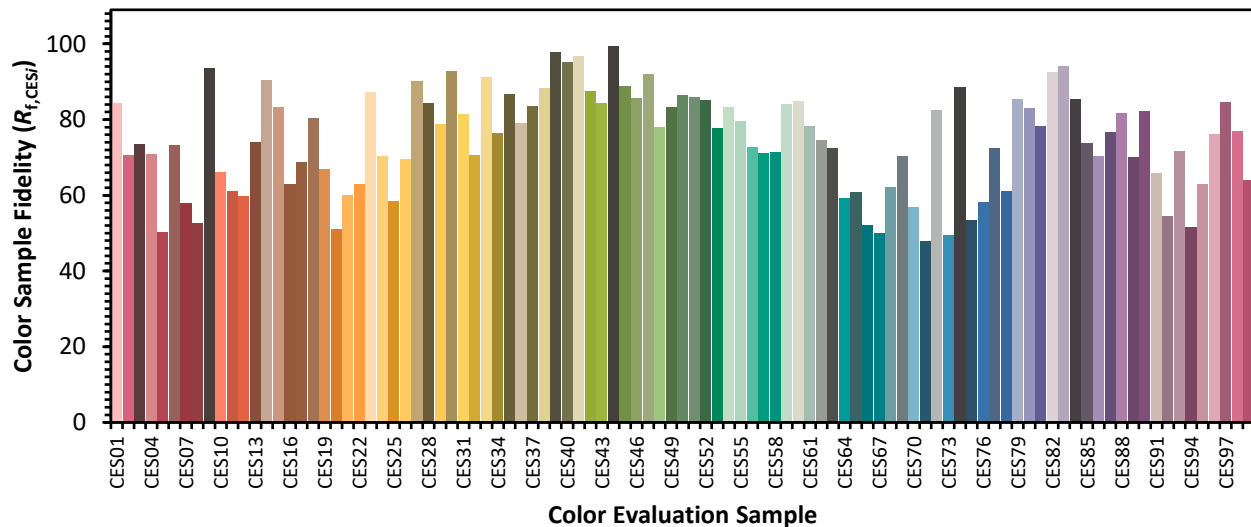


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Individual Sample Fidelity Index ($R_{f,i}$)

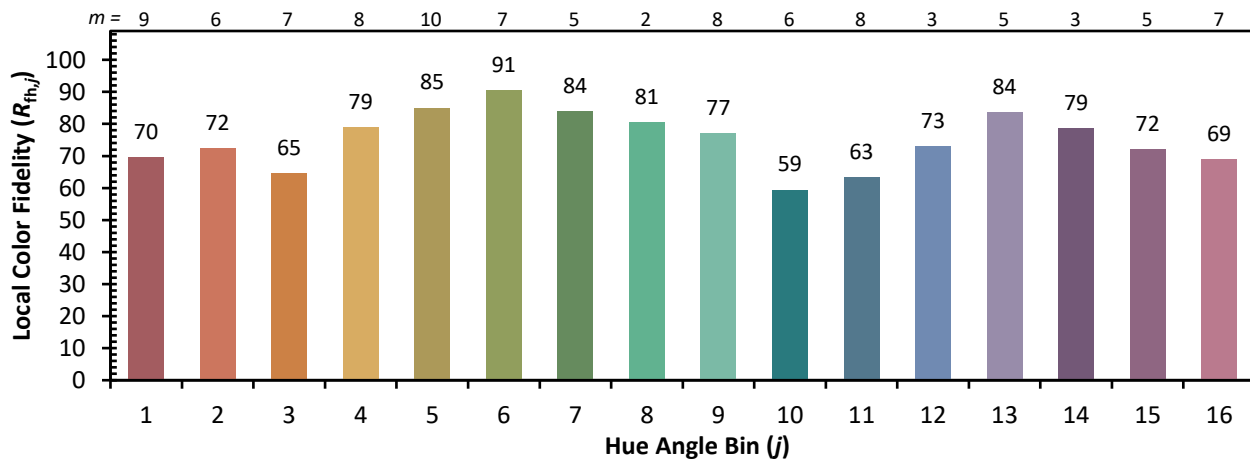
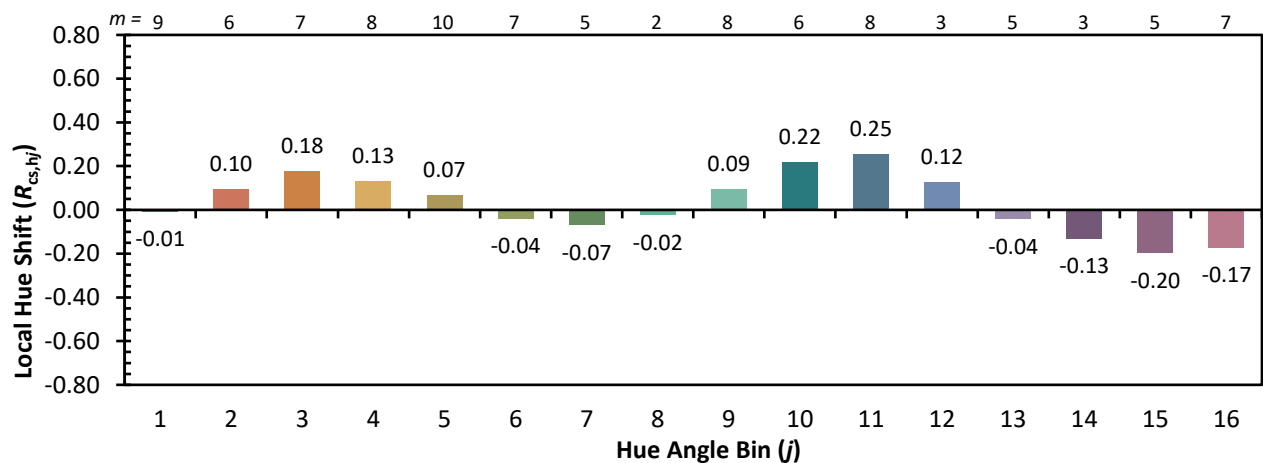
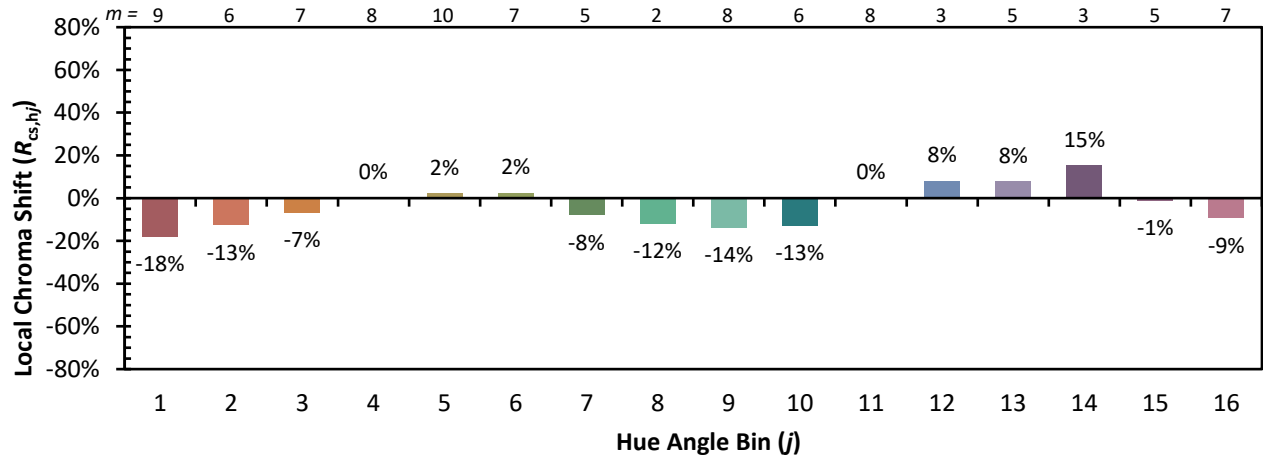
CES01 = 85	CES26 = 69	CES51 = 86	CES76 = 58
CES02 = 61	CES27 = 90	CES52 = 85	CES77 = 73
CES03 = 30	CES28 = 84	CES53 = 78	CES78 = 61
CES04 = 70	CES29 = 79	CES54 = 83	CES79 = 85
CES05 = 47	CES30 = 93	CES55 = 80	CES80 = 83
CES06 = 50	CES31 = 81	CES56 = 73	CES81 = 78
CES07 = 40	CES32 = 71	CES57 = 71	CES82 = 93
CES08 = 39	CES33 = 91	CES58 = 71	CES83 = 94
CES09 = 29	CES34 = 77	CES59 = 84	CES84 = 85
CES10 = 74	CES35 = 87	CES60 = 85	CES85 = 74
CES11 = 57	CES36 = 79	CES61 = 78	CES86 = 70
CES12 = 63	CES37 = 83	CES62 = 74	CES87 = 77
CES13 = 42	CES38 = 88	CES63 = 72	CES88 = 82
CES14 = 74	CES39 = 98	CES64 = 59	CES89 = 70
CES15 = 71	CES40 = 95	CES65 = 61	CES90 = 82
CES16 = 46	CES41 = 97	CES66 = 52	CES91 = 66
CES17 = 49	CES42 = 87	CES67 = 50	CES92 = 55
CES18 = 56	CES43 = 84	CES68 = 62	CES93 = 72
CES19 = 72	CES44 = 99	CES69 = 70	CES94 = 51
CES20 = 65	CES45 = 89	CES70 = 57	CES95 = 63
CES21 = 86	CES46 = 86	CES71 = 48	CES96 = 76
CES22 = 78	CES47 = 92	CES72 = 83	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 49	CES98 = 77
CES24 = 91	CES49 = 83	CES74 = 88	CES99 = 64
CES25 = 72	CES50 = 87	CES75 = 54	



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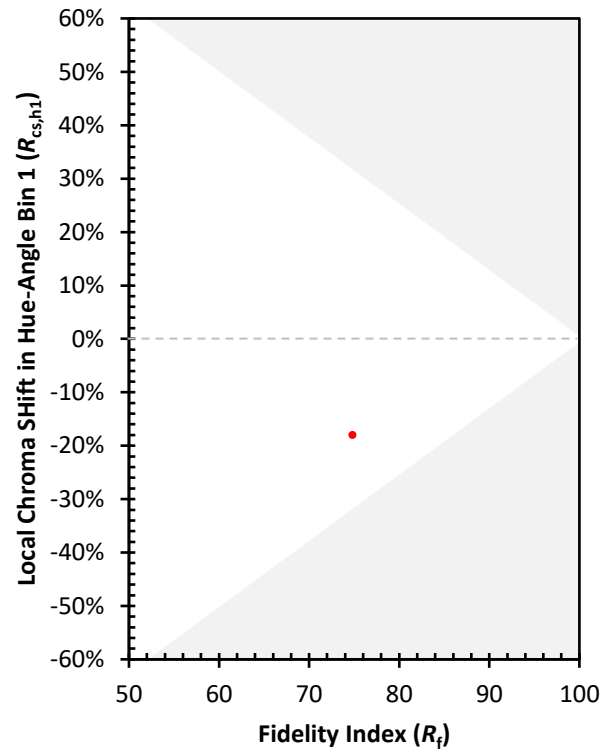
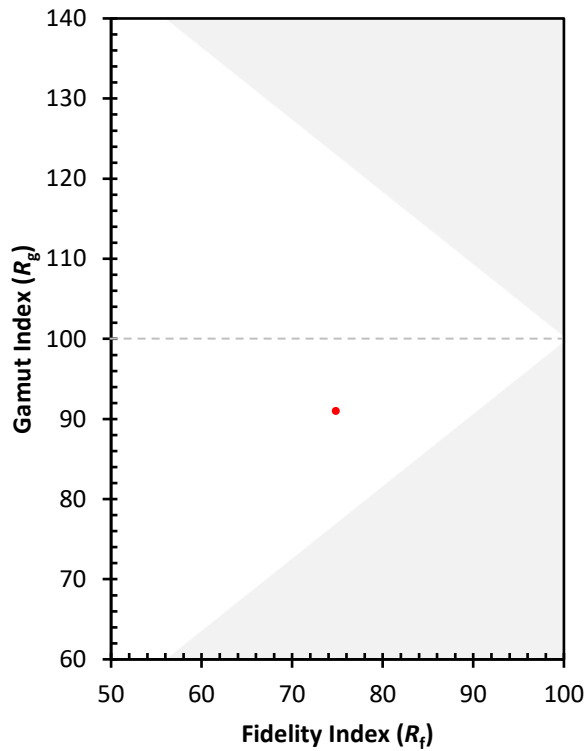
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)