Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: INVUE

Report Number: P1442052

Luminaire Tested: ABB-C3-840-X-U-S-GM

Issue Date: 4/23/2026

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-2024
Report Number:	P1442052
	TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-539-29)
Test Lab:	COOPER LIGHTING SOLUTIONS
Issue Date:	4/24/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	INVUE
Catalog Number:	ABB-C3-840-X-U-S-GM
Description:	ARBOR OUTDOOR ARCHITECTURAL BOLLARD LUMINAIRE
	SYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH
Light Source:	4000K CCT, 80 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	1504.8 lumens
Efficiency:	N/A
Efficacy:	44.1 lumens/watt
Luminous Opening:	Circular (Dia: 0.4' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B1 - U0 - G1

Input Watts (W):	34.1
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9934
Total Harmonic Distortion (THDi):	0.0961153
Frequency (hertz):	60
Stabilization Time:	0.5 HR
Operation Time:	3 HR
Ambient Temperature (°C):	NR
Test Distance:	28.75 FT

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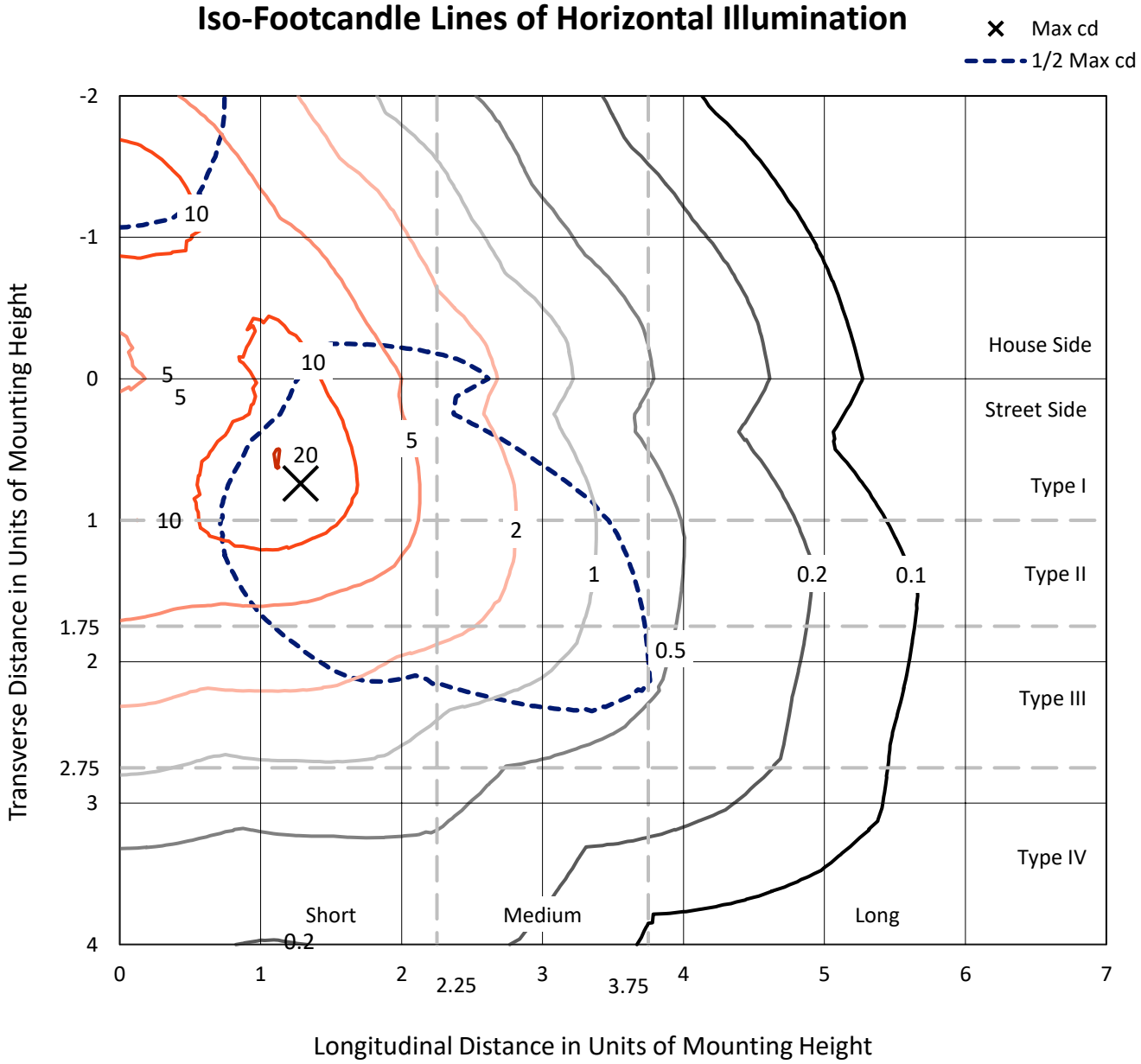
Iso-Footcandle Lines of Horizontal Illumination



Based on 3 foot mounting height. Maximum calculated value = 20.1 fc
Type III - Short - N/A

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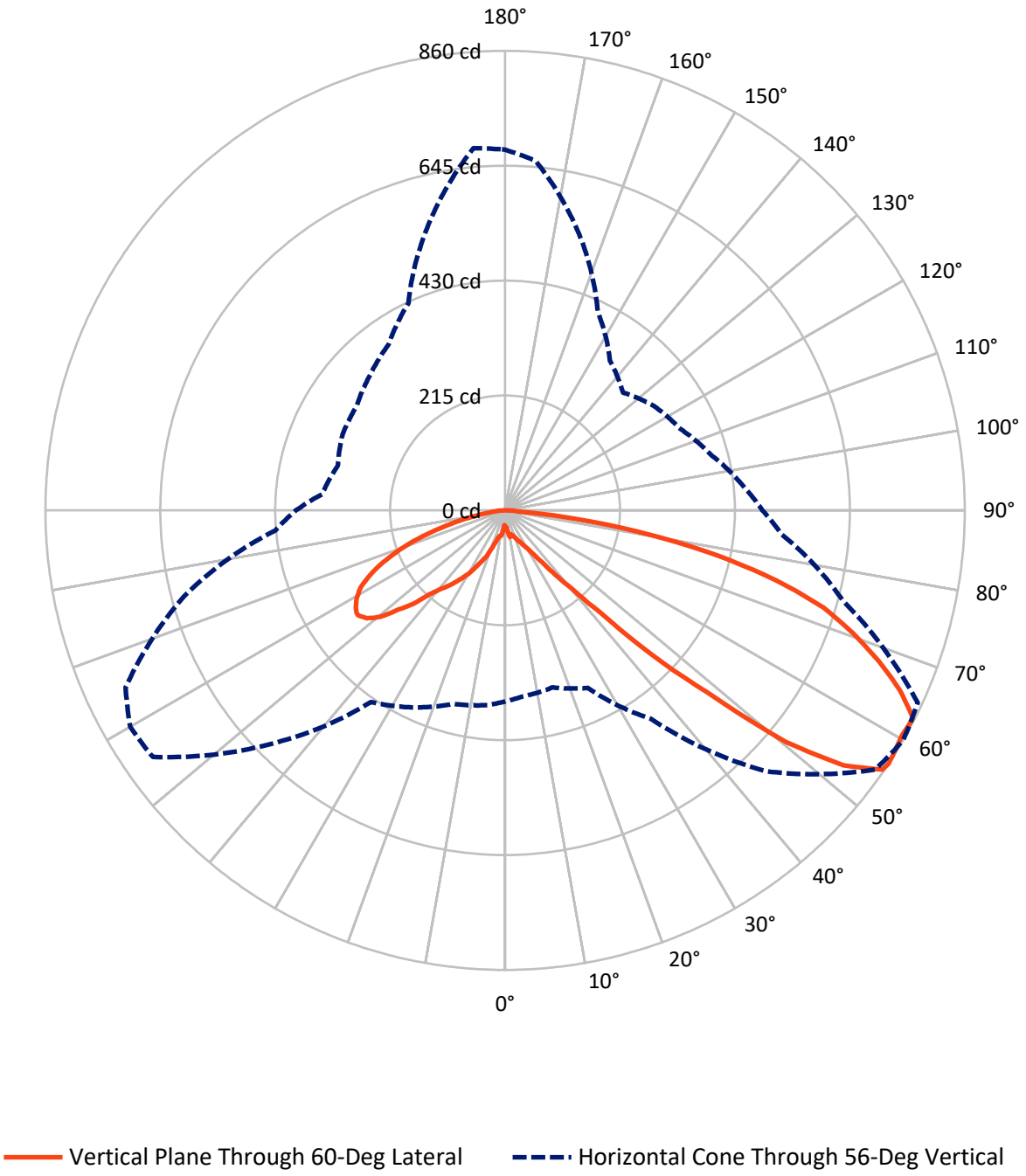
Luminous Intensity Polar Plot



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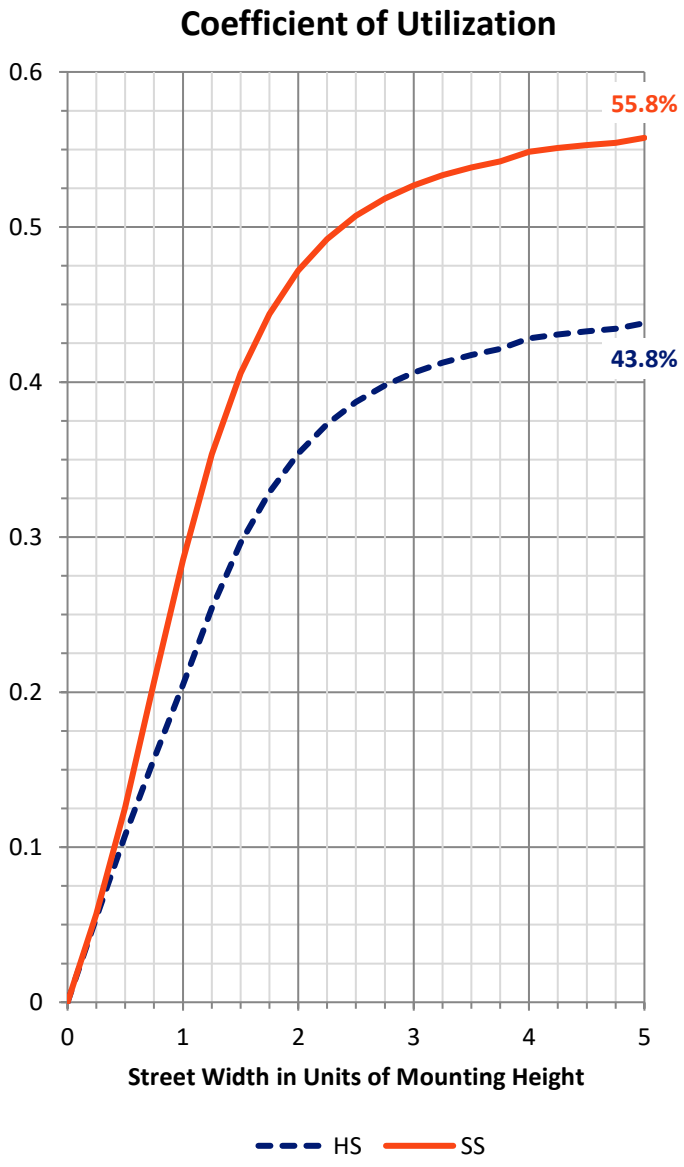
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	660.9	0.0	660.9
	% Fixture	43.9	0.0	43.9
Street Side	Lumens	843.8	0.0	843.8
	% Fixture	56.1	0.0	56.1
Total	Lumens	1504.8	0.0	1504.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.8	0.2
10°-20°	16.1	1.1
20°-30°	39.8	2.6
30°-40°	87.8	5.8
40°-50°	218.0	14.5
50°-60°	420.2	27.9
60°-70°	426.7	28.4
70°-80°	254.7	16.9
80°-90°	37.6	2.5
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°	1504.8	100.0
0°-180°	1504.8	100.0



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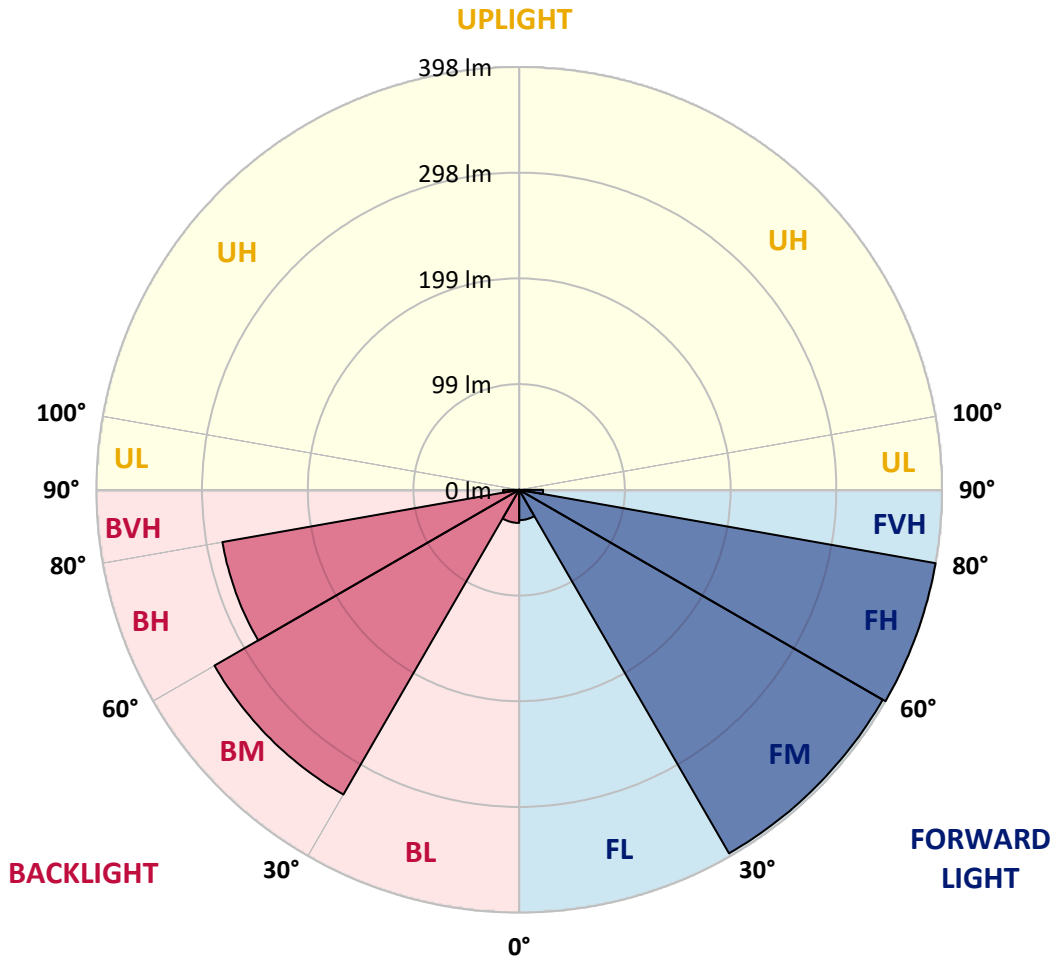
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	28.6	1.9			
FM	(30°-60°)	395.0	26.2			
FH	(60°-80°)	397.8	26.4			G0/660
FVH	(80°-90°)	22.5	1.5			G1/100
BL	(0°-30°)	31.2	2.1	B0/110		
BM	(30°-60°)	331.0	22.0	B1/1000		
BH	(60°-80°)	283.6	18.8	B1/500		G1/500
BVH	(80°-90°)	15.1	1.0			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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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	*30.1*	30.1	30.1	30.1
2.5°	35.6	36.5	40.1	41.0	38.3	36.5	34.7	*34.7*	33.7	31.9	30.1
5°	52.0	47.4	42.0	42.0	41.0	37.4	32.8	*32.8*	33.7	30.1	28.3
7.5°	51.1	54.7	56.5	55.6	52.9	53.8	47.4	*43.8*	39.2	38.3	42.0
10°	52.9	52.9	51.1	61.1	55.6	56.5	52.9	*51.1*	47.4	47.4	48.3
12.5°	50.2	48.3	51.1	55.6	50.2	54.7	49.2	*45.6*	45.6	49.2	52.0
15°	51.1	53.8	54.7	61.1	61.1	55.6	49.2	*49.2*	50.2	56.5	57.5
17.5°	58.4	63.8	62.9	64.8	66.6	58.4	48.3	*50.2*	52.9	56.5	63.8
20°	69.3	68.4	68.4	69.3	70.2	62.9	52.9	*54.7*	57.5	60.2	68.4
22.5°	80.3	83.0	85.7	79.3	78.4	67.5	62.0	*61.1*	65.7	63.8	73.0
25°	99.4	108.5	98.5	85.7	85.7	71.1	65.7	*65.7*	69.3	76.6	79.3
27.5°	118.6	123.1	105.8	91.2	94.8	81.2	73.9	*73.9*	77.5	86.6	93.0
30°	129.5	132.2	116.7	101.2	105.8	92.1	83.9	*83.0*	86.6	96.7	108.5
32.5°	142.3	147.7	130.4	114.0	117.6	113.1	101.2	*97.6*	98.5	107.6	117.6
35°	160.5	160.5	141.4	124.9	131.3	135.0	126.8	*119.5*	121.3	118.6	135.0
37.5°	175.1	175.1	160.5	140.4	145.9	157.8	158.7	*152.3*	151.4	135.0	151.4
40°	189.7	194.3	176.0	156.9	169.6	196.1	202.5	*193.3*	192.4	162.3	169.6
42.5°	207.9	215.2	199.7	184.2	207.9	257.2	273.6	*259.9*	259.9	205.2	202.5
45°	249.0	258.1	244.4	228.0	260.8	345.6	385.8	*385.8*	380.3	277.2	260.8
47.5°	277.2	286.4	270.9	259.9	310.1	435.0	498.9	*508.9*	539.0	352.9	326.5
50°	319.2	320.1	311.0	312.8	386.7	572.7	662.1	*681.3*	707.7	477.9	417.7
52.5°	342.0	338.4	333.8	346.6	441.4	640.2	767.9	*792.5*	814.4	571.8	477.9
55°	355.7	350.2	343.8	364.8	469.7	684.0	836.3	*856.4*	848.2	640.2	511.6
56°	*357.5*	*350.2*	*342.9*	*366.6*	*476.1*	*690.4*	*845.4*	*860.0*	*851.8*	*654.8*	*519.8*
57.5°	356.6	348.4	339.3	369.4	479.7	692.2	847.2	*857.3*	853.6	671.2	530.8
60°	347.5	340.2	326.5	369.4	481.5	675.8	836.3	*853.6*	859.1	675.8	529.0
62.5°	333.8	329.2	310.1	363.0	476.1	643.9	831.7	*856.4*	841.8	663.0	503.4
65°	309.2	306.4	282.7	351.1	452.4	594.6	791.6	*811.7*	785.2	630.2	455.1
67.5°	276.3	274.5	253.5	328.3	428.6	536.3	731.4	*754.2*	727.8	589.2	404.0
70°	241.7	238.0	222.5	299.1	401.3	468.8	665.8	*691.3*	673.1	541.7	353.9
72.5°	200.6	199.7	189.7	261.7	366.6	394.0	585.5	*622.9*	595.5	477.9	292.8
75°	155.0	154.1	153.2	216.1	310.1	308.3	487.9	*525.3*	492.5	403.1	228.0
77.5°	111.3	108.5	116.7	162.3	253.5	211.6	373.0	*406.8*	371.2	311.0	156.9
80°	73.0	67.5	76.6	101.2	170.5	124.9	241.7	*273.6*	237.1	203.4	87.6
82.5°	42.9	38.3	42.9	46.5	73.0	52.9	114.0	*136.8*	104.0	94.8	36.5
85°	21.0	18.2	19.2	18.2	19.2	21.0	21.9	*22.8*	19.2	16.4	15.5
87.5°	15.5	12.8	12.8	13.7	13.7	16.4	15.5	*16.4*	15.5	10.9	11.9
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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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1
2.5°	28.3	26.4	26.4	26.4	24.6	28.3	31.0	30.1	29.2	30.1	29.2
5°	29.2	31.9	33.7	36.5	39.2	36.5	34.7	31.0	27.4	25.5	25.5
7.5°	43.8	46.5	41.0	43.8	43.8	41.0	42.0	41.0	36.5	34.7	33.7
10°	49.2	49.2	57.5	55.6	52.9	52.9	50.2	49.2	44.7	42.0	41.0
12.5°	54.7	56.5	57.5	52.9	58.4	56.5	54.7	50.2	47.4	43.8	43.8
15°	55.6	62.0	62.0	62.9	60.2	62.0	57.5	52.9	52.0	43.8	42.9
17.5°	68.4	68.4	71.1	70.2	64.8	68.4	64.8	61.1	55.6	48.3	47.4
20°	69.3	77.5	79.3	79.3	76.6	76.6	78.4	73.0	64.8	60.2	58.4
22.5°	77.5	83.9	89.4	96.7	87.6	88.5	85.7	73.9	62.9	64.8	60.2
25°	84.8	92.1	95.8	108.5	101.2	92.1	93.0	83.0	72.0	71.1	68.4
27.5°	96.7	104.9	113.1	128.6	111.3	104.9	101.2	92.1	79.3	77.5	77.5
30°	116.7	117.6	128.6	138.6	135.0	110.4	110.4	99.4	90.3	85.7	87.6
32.5°	134.1	133.2	145.9	151.4	149.6	121.3	120.4	113.1	109.4	102.1	99.4
35°	148.7	157.8	159.6	165.1	162.3	143.2	131.3	124.9	124.0	122.2	120.4
37.5°	164.2	175.1	175.1	180.6	176.0	158.7	147.7	140.4	145.0	151.4	145.0
40°	186.0	199.7	192.4	196.1	191.5	177.8	168.7	164.2	176.0	193.3	185.1
42.5°	212.5	231.6	219.8	216.1	210.7	197.9	195.2	201.6	228.0	253.5	245.3
45°	263.6	279.1	262.7	254.4	247.2	232.6	233.5	253.5	306.4	349.3	356.6
47.5°	308.3	334.7	300.0	288.2	277.2	255.4	264.5	291.8	373.9	441.4	450.5
50°	390.3	404.0	358.4	327.4	311.0	291.8	303.7	362.1	461.5	529.9	551.8
52.5°	451.4	437.8	385.8	352.0	331.1	309.2	326.5	398.5	511.6	601.9	623.8
55°	477.0	451.4	400.4	362.1	340.2	313.7	340.2	410.4	533.5	650.3	673.1
56°	*481.5*	*452.4*	*399.5*	*361.2*	*340.2*	*311.9*	*342.0*	*410.4*	*535.3*	*656.6*	*674.9*
57.5°	490.7	451.4	395.8	358.4	337.4	307.3	341.1	405.8	533.5	658.5	678.5
60°	506.2	450.5	380.3	349.3	326.5	297.3	336.5	405.8	525.3	649.3	680.4
62.5°	511.6	445.1	357.5	328.3	313.7	282.7	324.7	402.2	506.2	640.2	677.6
65°	489.7	432.3	323.8	299.1	288.2	260.8	301.9	387.6	473.3	610.1	638.4
67.5°	456.9	412.2	289.1	259.9	254.4	231.6	279.1	362.1	425.0	550.8	575.5
70°	411.3	384.9	252.6	220.7	219.8	199.7	249.0	331.1	362.1	485.2	508.9
72.5°	351.1	335.6	219.8	177.8	182.4	166.9	212.5	292.8	294.6	415.0	440.5
75°	277.2	263.6	179.7	135.9	135.9	132.2	164.2	240.8	227.1	330.1	350.2
77.5°	197.9	184.2	132.2	95.8	98.5	95.8	116.7	179.7	158.7	237.1	262.7
80°	114.0	97.6	82.1	62.0	62.0	62.0	70.2	112.2	93.9	151.4	164.2
82.5°	40.1	31.0	40.1	34.7	35.6	33.7	31.0	43.8	40.1	62.0	71.1
85°	15.5	13.7	19.2	18.2	17.3	16.4	16.4	17.3	20.1	20.1	19.2
87.5°	11.9	10.0	15.5	15.5	12.8	12.8	12.8	12.8	16.4	16.4	15.5
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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CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1
2.5°	30.1	31.0	31.9	31.0	29.2	28.3	27.4	29.2	30.1	30.1	30.1
5°	26.4	28.3	30.1	30.1	32.8	34.7	33.7	31.9	25.5	25.5	26.4
7.5°	33.7	38.3	36.5	34.7	37.4	44.7	42.9	41.0	35.6	32.8	32.8
10°	43.8	50.2	45.6	50.2	53.8	51.1	46.5	42.0	50.2	47.4	43.8
12.5°	44.7	48.3	49.2	59.3	63.8	50.2	47.4	51.1	51.1	49.2	46.5
15°	44.7	52.9	56.5	62.0	67.5	59.3	48.3	54.7	57.5	55.6	53.8
17.5°	48.3	55.6	59.3	68.4	73.9	68.4	58.4	59.3	63.8	69.3	66.6
20°	56.5	60.2	62.9	73.9	76.6	81.2	70.2	68.4	66.6	71.1	70.2
22.5°	63.8	70.2	71.1	81.2	81.2	95.8	89.4	72.0	67.5	74.8	76.6
25°	68.4	75.7	80.3	87.6	91.2	105.8	102.1	86.6	78.4	81.2	82.1
27.5°	78.4	83.9	90.3	97.6	106.7	114.0	121.3	96.7	89.4	89.4	90.3
30°	85.7	93.0	101.2	114.9	122.2	129.5	138.6	107.6	96.7	98.5	99.4
32.5°	101.2	102.1	112.2	129.5	133.2	145.9	148.7	123.1	109.4	108.5	108.5
35°	117.6	114.9	124.0	148.7	148.7	165.1	159.6	138.6	121.3	120.4	121.3
37.5°	143.2	135.0	139.5	163.2	166.9	180.6	173.3	156.0	136.8	136.8	140.4
40°	172.4	159.6	156.9	184.2	183.3	195.2	187.9	174.2	156.9	156.9	162.3
42.5°	223.4	194.3	187.0	209.8	204.3	215.2	207.0	198.8	183.3	191.5	200.6
45°	329.2	268.1	243.5	256.3	248.1	249.9	240.8	238.0	223.4	233.5	251.7
47.5°	427.7	339.3	299.1	302.8	281.8	275.4	268.1	269.0	249.0	274.5	292.8
50°	529.0	430.5	368.4	350.2	332.0	308.3	305.5	302.8	301.0	332.0	357.5
52.5°	617.4	502.5	414.0	377.6	354.8	331.1	324.7	320.1	327.4	372.1	403.1
55°	677.6	548.1	425.9	381.2	359.3	340.2	335.6	325.6	342.9	388.5	427.7
56°	*680.4*	*553.6*	*427.7*	*379.4*	*357.5*	*339.3*	*335.6*	*323.8*	*343.8*	*391.2*	*431.4*
57.5°	678.5	560.0	425.0	378.5	352.0	333.8	332.0	316.5	343.8	393.1	434.1
60°	664.8	556.3	414.0	376.7	336.5	321.9	321.9	301.9	339.3	397.6	440.5
62.5°	667.6	544.5	395.8	363.9	312.8	302.8	308.3	280.9	327.4	397.6	436.8
65°	643.0	524.4	365.7	343.8	285.5	274.5	283.6	252.6	308.3	379.4	416.8
67.5°	583.7	483.4	330.1	320.1	253.5	241.7	252.6	223.4	280.9	355.7	394.9
70°	518.0	425.0	286.4	283.6	221.6	205.2	216.1	190.6	250.8	325.6	369.4
72.5°	449.6	359.3	233.5	241.7	187.0	165.1	175.1	160.5	217.1	283.6	327.4
75°	364.8	283.6	176.0	190.6	148.7	125.9	130.4	124.9	176.0	230.7	274.5
77.5°	268.1	205.2	117.6	134.1	105.8	87.6	90.3	90.3	129.5	170.5	210.7
80°	166.0	123.1	65.7	76.6	65.7	57.5	55.6	57.5	81.2	102.1	135.0
82.5°	68.4	46.5	29.2	29.2	32.8	32.8	31.9	30.1	38.3	42.9	49.2
85°	19.2	12.8	14.6	12.8	16.4	17.3	15.5	13.7	15.5	14.6	15.5
87.5°	15.5	10.0	11.9	9.1	12.8	13.7	11.9	10.9	11.9	10.9	11.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1442052
CATALOG NUMBER: ABB-C3-840-X-U-S-GM

CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1
2.5°	29.2	29.2	30.1	32.8	35.6	35.6	35.6	36.5	35.6	35.6
5°	27.4	25.5	24.6	23.7	26.4	29.2	33.7	37.4	45.6	52.0
7.5°	32.8	32.8	31.9	31.9	31.9	33.7	37.4	43.8	50.2	51.1
10°	43.8	42.9	42.0	43.8	43.8	39.2	45.6	52.9	57.5	52.9
12.5°	45.6	43.8	40.1	40.1	42.9	44.7	53.8	60.2	49.2	50.2
15°	49.2	46.5	44.7	44.7	43.8	52.0	58.4	62.9	51.1	51.1
17.5°	54.7	47.4	44.7	46.5	49.2	55.6	63.8	63.8	57.5	58.4
20°	59.3	52.9	50.2	52.9	53.8	64.8	65.7	69.3	68.4	69.3
22.5°	64.8	55.6	53.8	54.7	60.2	70.2	73.9	83.9	73.9	80.3
25°	72.0	62.0	62.0	60.2	65.7	75.7	83.9	90.3	93.0	99.4
27.5°	81.2	73.0	73.9	71.1	73.0	82.1	97.6	102.1	112.2	118.6
30°	94.8	89.4	88.5	82.1	83.0	89.4	107.6	122.2	134.1	129.5
32.5°	105.8	107.6	104.0	103.1	95.8	100.3	120.4	137.7	143.2	142.3
35°	124.0	127.7	126.8	119.5	113.1	116.7	135.0	155.0	160.5	160.5
37.5°	153.2	155.0	157.8	142.3	131.3	131.3	153.2	168.7	176.0	175.1
40°	187.9	199.7	197.9	175.1	155.0	151.4	173.3	184.2	191.5	189.7
42.5°	237.1	255.4	268.1	232.6	184.2	172.4	197.0	208.8	209.8	207.9
45°	321.0	371.2	400.4	353.9	258.1	224.4	251.7	259.9	256.3	249.0
47.5°	395.8	452.4	518.0	464.2	328.3	266.3	289.1	296.4	286.4	277.2
50°	513.5	610.1	643.0	615.6	456.0	341.1	348.4	347.5	327.4	319.2
52.5°	575.5	707.7	747.8	721.4	545.4	399.5	387.6	369.4	352.0	342.0
55°	614.7	775.2	808.0	798.0	603.7	435.0	405.8	377.6	363.9	355.7
56°	*622.0*	*783.4*	*809.9*	*804.4*	*617.4*	*437.8*	*406.8*	*374.8*	*365.7*	*357.5*
57.5°	623.8	785.2	800.7	800.7	630.2	439.6	405.8	370.3	363.0	356.6
60°	605.6	773.4	787.1	780.7	634.8	437.8	403.1	353.9	352.0	347.5
62.5°	565.4	764.3	791.6	787.1	628.4	422.3	403.1	331.1	334.7	333.8
65°	523.5	725.0	755.1	756.0	602.8	393.1	394.0	300.0	301.0	309.2
67.5°	467.9	662.1	687.6	694.9	559.1	349.3	374.8	270.9	262.7	276.3
70°	397.6	588.2	616.5	623.8	504.3	304.6	348.4	238.0	222.5	241.7
72.5°	322.8	506.2	539.0	549.0	438.7	256.3	307.3	210.7	181.5	200.6
75°	246.2	409.5	438.7	453.3	365.7	203.4	248.1	176.0	140.4	155.0
77.5°	169.6	304.6	328.3	343.8	277.2	145.9	183.3	132.2	99.4	111.3
80°	98.5	196.1	211.6	227.1	182.4	90.3	110.4	84.8	64.8	73.0
82.5°	37.4	88.5	92.1	108.5	82.1	43.8	42.0	42.9	36.5	42.9
85°	17.3	19.2	18.2	21.9	15.5	17.3	14.6	20.1	19.2	21.0
87.5°	13.7	14.6	13.7	15.5	10.9	11.9	10.9	14.6	15.5	15.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Invue

Report Number: SP1-2509-539-8

Test Date: 04/14/2026

Luminaire Tested: Luxscape Bollard

Data in this report applies to families of products including ;Luxscape

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

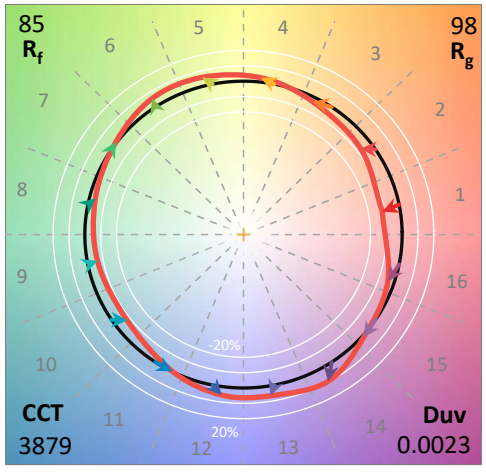
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2509-539-8
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	04/15/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Invue
Catalog Number:	**Luxscape Bollard**
Description:	ARB-C1-840-LED-XX-Dx-S-GM-SPECULAR REFLECTOR

Spectral Parameters

CCT (K):	3879
CIE u':	0.2261
CIE v':	0.5068
Duv:	0.0023
CIE x:	0.3878
CIE y:	0.3863
CIE z:	0.2260
Peak Wavelength (nm):	445
Dominant Wavelength (nm):	578
Purity:	32.30035
Rf:	84.8
Rg:	97.9

CRI (Ra):	83.0				
R1:	81.2	R9:	8.2
R2:	87.4	R10:	71.6
R3:	93.9	R11:	84.7
R4:	84.2	R12:	68.5
R5:	81.9	R13:	82.3
R6:	84.2	R14:	96.6
R7:	86.4	R15:	73.7
R8:	65.2		



Test Conditions

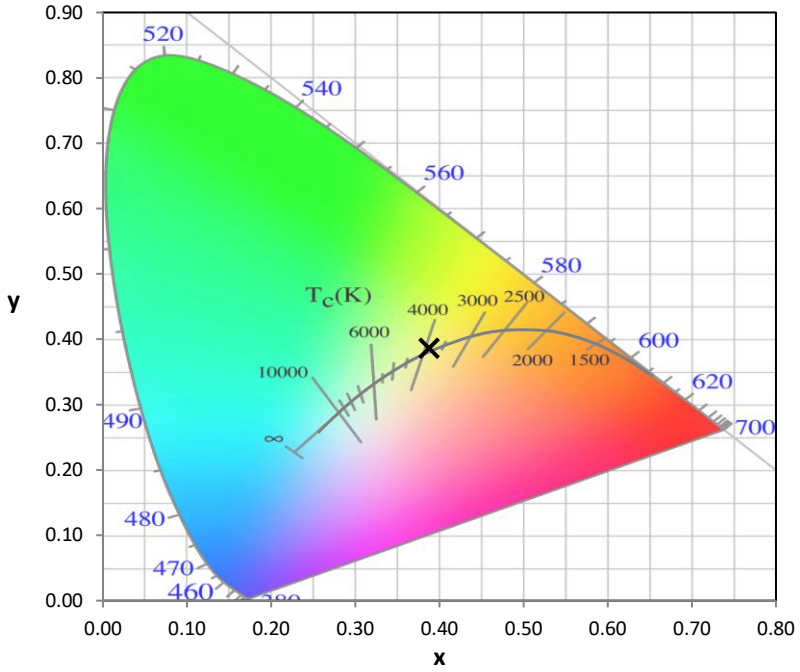
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.1

REPORT NUMBER: SP1-2509-539-8

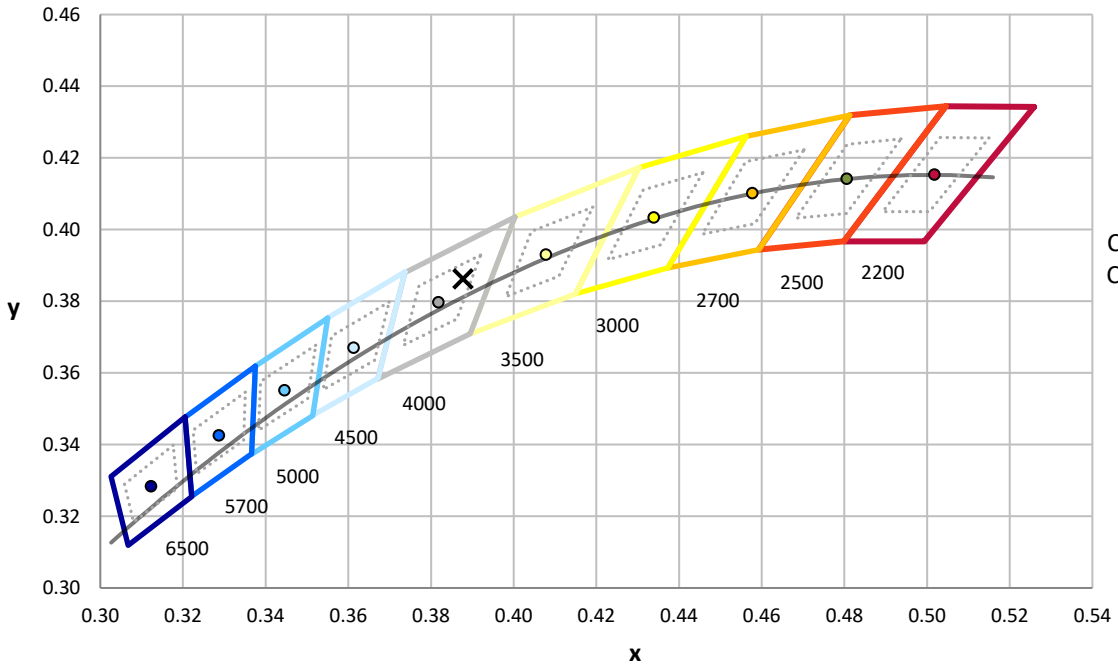
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	10/21/2025	10/21/2026
Sphere Thermometer	ONSET IN0085	10/21/2025	10/21/2026
Room Thermometer	ONSET IN0046	10/21/2025	10/21/2026

REPORT NUMBER: SP1-2509-539-8

CIE 1931 Chromaticity Diagram



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

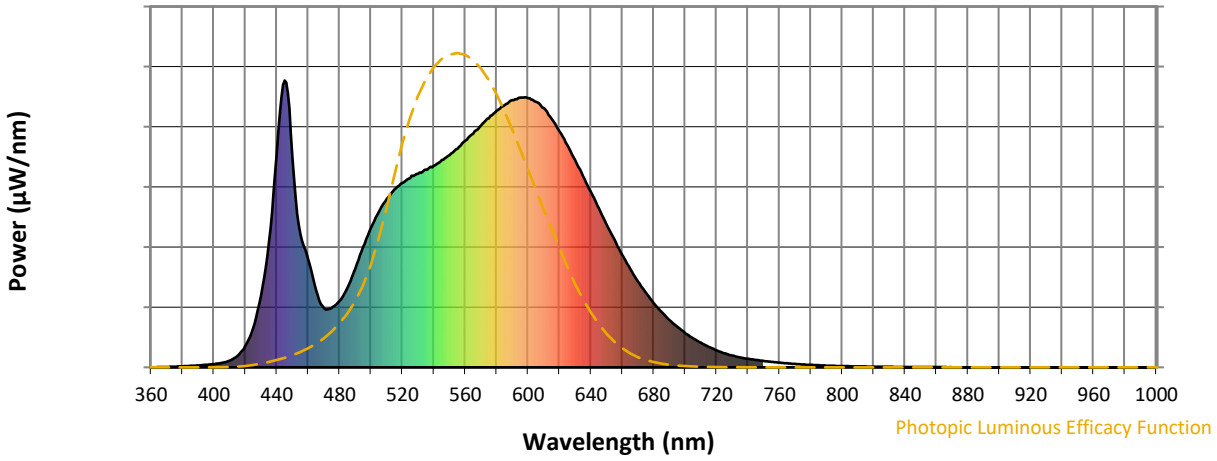


CCT = 3879K
CIE x = 0.3878
CIE y = 0.3863
Duv = 0.0023

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2509-539-8

Photopic Flux vs. Wavelength

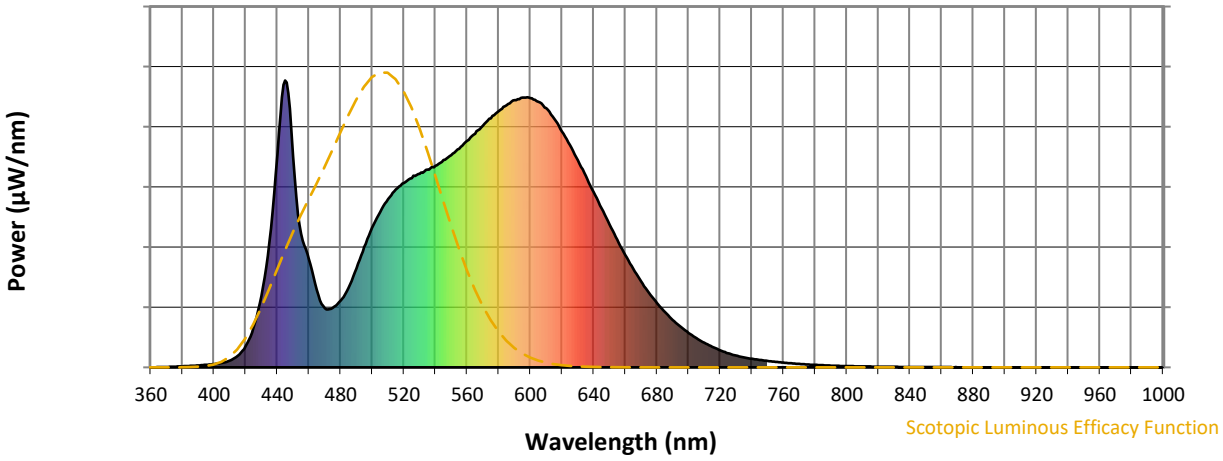


Photopic Lumens: NR

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	345	NR	620	822	NR	750	23	NR	880	0	NR
365	1	NR	495	419	NR	625	776	NR	755	19	NR	885	0	NR
370	1	NR	500	487	NR	630	722	NR	760	16	NR	890	0	NR
375	3	NR	505	541	NR	635	667	NR	765	14	NR	895	0	NR
380	4	NR	510	586	NR	640	611	NR	770	12	NR	900	0	NR
385	5	NR	515	620	NR	645	555	NR	775	10	NR	905	0	NR
390	7	NR	520	643	NR	650	498	NR	780	9	NR	910	0	NR
395	9	NR	525	660	NR	655	445	NR	785	7	NR	915	0	NR
400	11	NR	530	675	NR	660	391	NR	790	6	NR	920	0	NR
405	15	NR	535	690	NR	665	344	NR	795	5	NR	925	0	NR
410	24	NR	540	702	NR	670	300	NR	800	4	NR	930	0	NR
415	40	NR	545	723	NR	675	260	NR	805	4	NR	935	0	NR
420	75	NR	550	740	NR	680	224	NR	810	3	NR	940	0	NR
425	139	NR	555	762	NR	685	193	NR	815	3	NR	945	0	NR
430	249	NR	560	790	NR	690	166	NR	820	3	NR	950	0	NR
435	437	NR	565	814	NR	695	141	NR	825	2	NR	955	0	NR
440	741	NR	570	843	NR	700	120	NR	830	2	NR	960	0	NR
445	1000	NR	575	868	NR	705	102	NR	835	2	NR	965	0	NR
450	734	NR	580	894	NR	710	86	NR	840	1	NR	970	0	NR
455	466	NR	585	914	NR	715	72	NR	845	1	NR	975	0	NR
460	378	NR	590	932	NR	720	60	NR	850	1	NR	980	0	NR
465	270	NR	595	940	NR	725	49	NR	855	1	NR	985	0	NR
470	207	NR	600	938	NR	730	41	NR	860	1	NR	990	0	NR
475	207	NR	605	926	NR	735	35	NR	865	1	NR	995	0	NR
480	232	NR	610	903	NR	740	30	NR	870	1	NR	1000	0	NR
485	276	NR	615	867	NR	745	26	NR	875	0	NR			

REPORT NUMBER: SP1-2509-539-8

Scotopic Flux vs. Wavelength

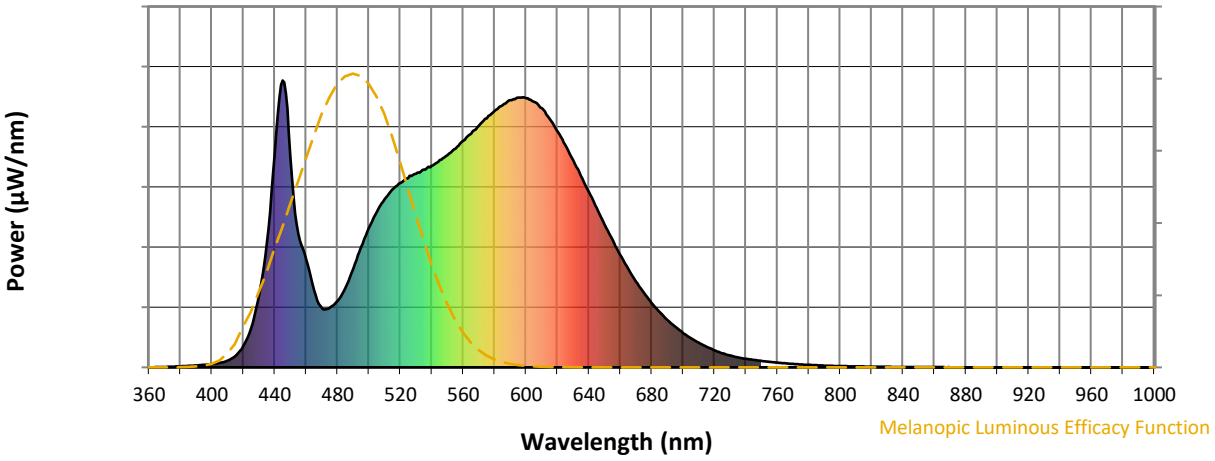


Scotopic Lumens: NR **S/P: 1.63**

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	345	NR	620	822	NR	750	23	NR	880	0	NR
365	1	NR	495	419	NR	625	776	NR	755	19	NR	885	0	NR
370	1	NR	500	487	NR	630	722	NR	760	16	NR	890	0	NR
375	3	NR	505	541	NR	635	667	NR	765	14	NR	895	0	NR
380	4	NR	510	586	NR	640	611	NR	770	12	NR	900	0	NR
385	5	NR	515	620	NR	645	555	NR	775	10	NR	905	0	NR
390	7	NR	520	643	NR	650	498	NR	780	9	NR	910	0	NR
395	9	NR	525	660	NR	655	445	NR	785	7	NR	915	0	NR
400	11	NR	530	675	NR	660	391	NR	790	6	NR	920	0	NR
405	15	NR	535	690	NR	665	344	NR	795	5	NR	925	0	NR
410	24	NR	540	702	NR	670	300	NR	800	4	NR	930	0	NR
415	40	NR	545	723	NR	675	260	NR	805	4	NR	935	0	NR
420	75	NR	550	740	NR	680	224	NR	810	3	NR	940	0	NR
425	139	NR	555	762	NR	685	193	NR	815	3	NR	945	0	NR
430	249	NR	560	790	NR	690	166	NR	820	3	NR	950	0	NR
435	437	NR	565	814	NR	695	141	NR	825	2	NR	955	0	NR
440	741	NR	570	843	NR	700	120	NR	830	2	NR	960	0	NR
445	1000	NR	575	868	NR	705	102	NR	835	2	NR	965	0	NR
450	734	NR	580	894	NR	710	86	NR	840	1	NR	970	0	NR
455	466	NR	585	914	NR	715	72	NR	845	1	NR	975	0	NR
460	378	NR	590	932	NR	720	60	NR	850	1	NR	980	0	NR
465	270	NR	595	940	NR	725	49	NR	855	1	NR	985	0	NR
470	207	NR	600	938	NR	730	41	NR	860	1	NR	990	0	NR
475	207	NR	605	926	NR	735	35	NR	865	1	NR	995	0	NR
480	232	NR	610	903	NR	740	30	NR	870	1	NR	1000	0	NR
485	276	NR	615	867	NR	745	26	NR	875	0	NR			

REPORT NUMBER: SP1-2509-539-8

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.25**

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	345	NR	620	822	NR	750	23	NR	880	0	NR
365	1	NR	495	419	NR	625	776	NR	755	19	NR	885	0	NR
370	1	NR	500	487	NR	630	722	NR	760	16	NR	890	0	NR
375	3	NR	505	541	NR	635	667	NR	765	14	NR	895	0	NR
380	4	NR	510	586	NR	640	611	NR	770	12	NR	900	0	NR
385	5	NR	515	620	NR	645	555	NR	775	10	NR	905	0	NR
390	7	NR	520	643	NR	650	498	NR	780	9	NR	910	0	NR
395	9	NR	525	660	NR	655	445	NR	785	7	NR	915	0	NR
400	11	NR	530	675	NR	660	391	NR	790	6	NR	920	0	NR
405	15	NR	535	690	NR	665	344	NR	795	5	NR	925	0	NR
410	24	NR	540	702	NR	670	300	NR	800	4	NR	930	0	NR
415	40	NR	545	723	NR	675	260	NR	805	4	NR	935	0	NR
420	75	NR	550	740	NR	680	224	NR	810	3	NR	940	0	NR
425	139	NR	555	762	NR	685	193	NR	815	3	NR	945	0	NR
430	249	NR	560	790	NR	690	166	NR	820	3	NR	950	0	NR
435	437	NR	565	814	NR	695	141	NR	825	2	NR	955	0	NR
440	741	NR	570	843	NR	700	120	NR	830	2	NR	960	0	NR
445	1000	NR	575	868	NR	705	102	NR	835	2	NR	965	0	NR
450	734	NR	580	894	NR	710	86	NR	840	1	NR	970	0	NR
455	466	NR	585	914	NR	715	72	NR	845	1	NR	975	0	NR
460	378	NR	590	932	NR	720	60	NR	850	1	NR	980	0	NR
465	270	NR	595	940	NR	725	49	NR	855	1	NR	985	0	NR
470	207	NR	600	938	NR	730	41	NR	860	1	NR	990	0	NR
475	207	NR	605	926	NR	735	35	NR	865	1	NR	995	0	NR
480	232	NR	610	903	NR	740	30	NR	870	1	NR	1000	0	NR
485	276	NR	615	867	NR	745	26	NR	875	0	NR			

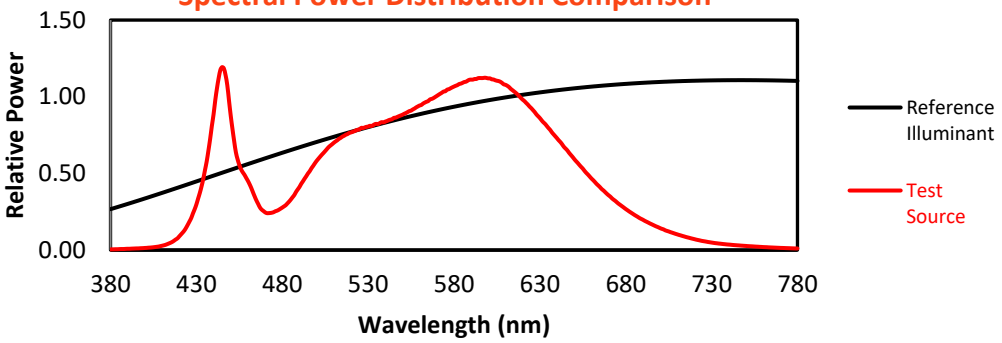
REPORT NUMBER: SP1-2509-539-8

TM-30-18

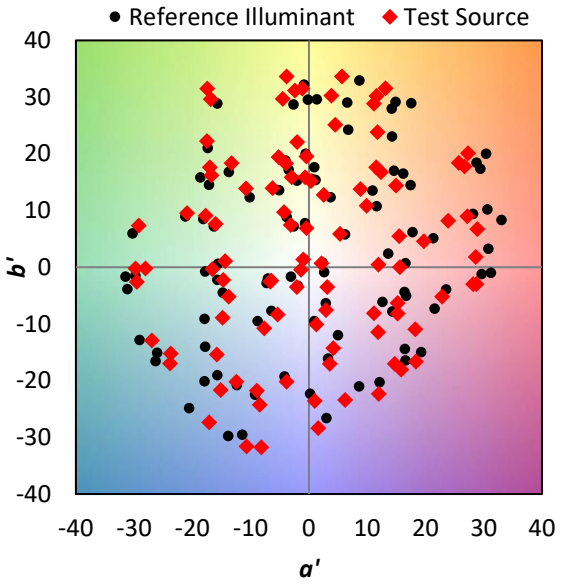
Summary

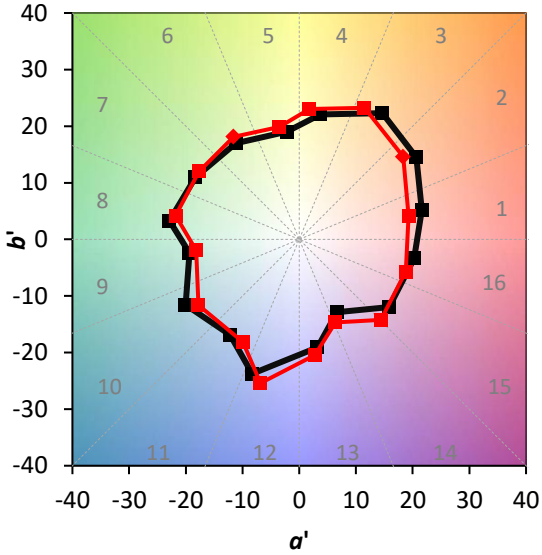
R_f = 84.8
R_g = 97.9
CIE R_a = 83.0
R_9 = 8.2

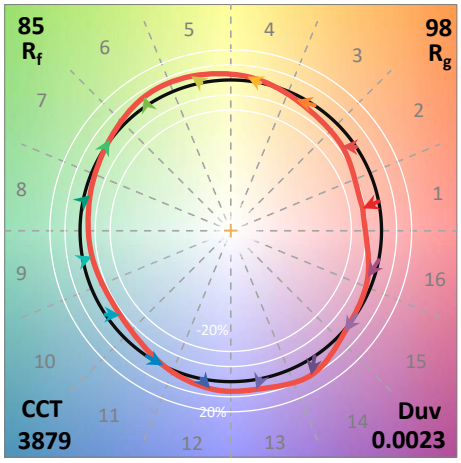
Spectral Power Distribution Comparison

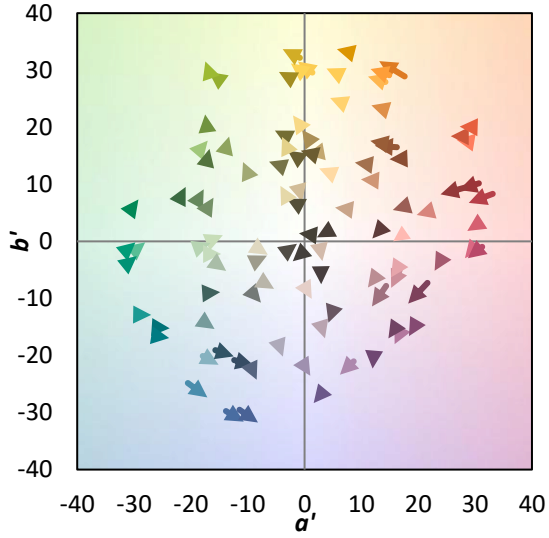


Color Vector Graphics







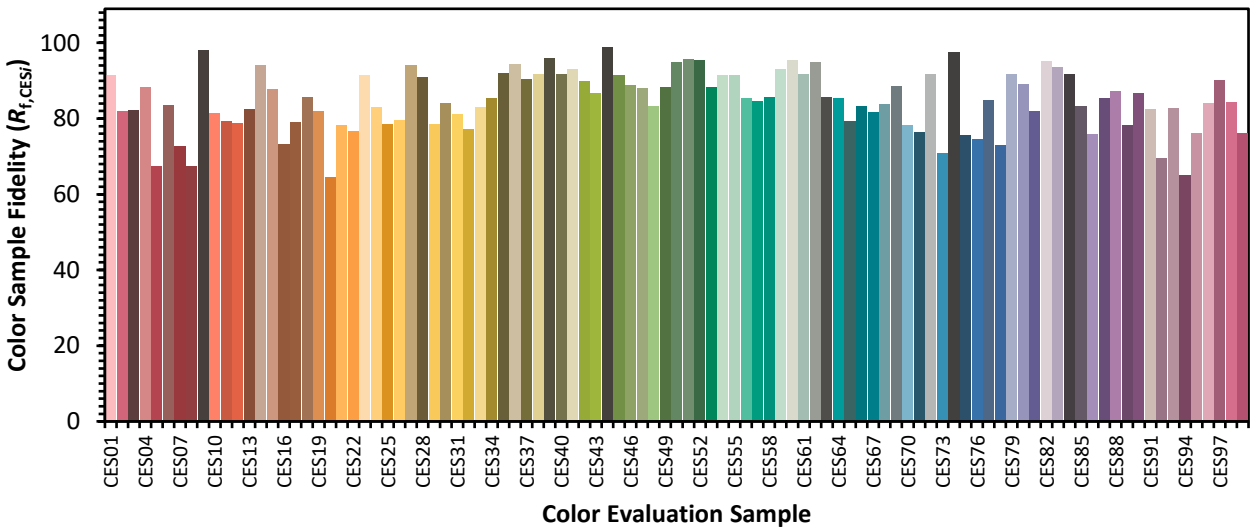


REPORT NUMBER: SP1-2509-539-8

TM-30-18

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

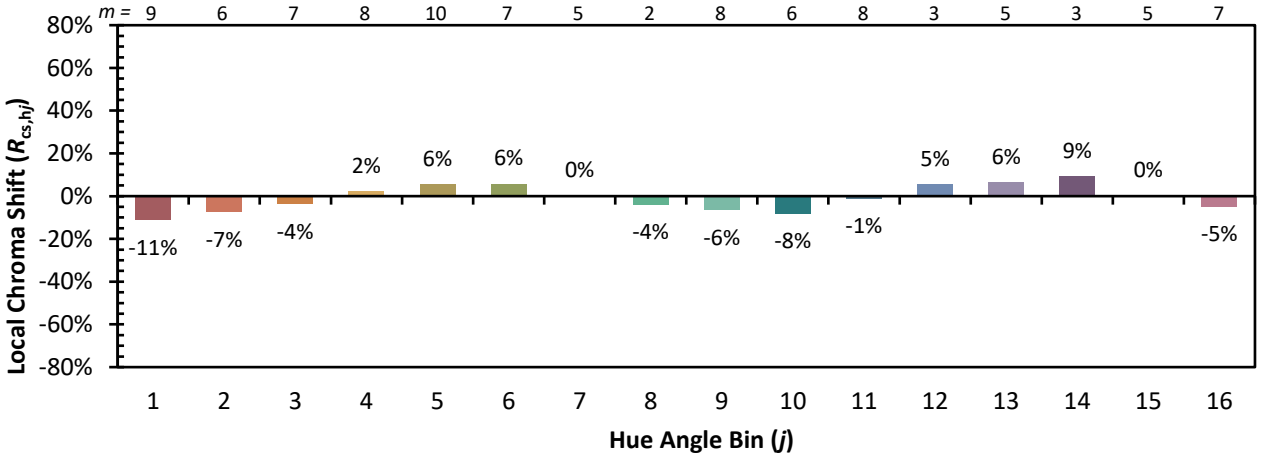
CES01 = 86	CES26 = 80	CES51 = 96	CES76 = 74
CES02 = 61	CES27 = 94	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 91	CES53 = 88	CES78 = 73
CES04 = 69	CES29 = 79	CES54 = 91	CES79 = 92
CES05 = 48	CES30 = 84	CES55 = 91	CES80 = 89
CES06 = 50	CES31 = 81	CES56 = 85	CES81 = 82
CES07 = 41	CES32 = 77	CES57 = 85	CES82 = 95
CES08 = 40	CES33 = 83	CES58 = 86	CES83 = 94
CES09 = 29	CES34 = 85	CES59 = 93	CES84 = 92
CES10 = 74	CES35 = 92	CES60 = 95	CES85 = 83
CES11 = 57	CES36 = 94	CES61 = 92	CES86 = 76
CES12 = 63	CES37 = 90	CES62 = 95	CES87 = 85
CES13 = 43	CES38 = 92	CES63 = 86	CES88 = 87
CES14 = 74	CES39 = 96	CES64 = 85	CES89 = 78
CES15 = 71	CES40 = 92	CES65 = 79	CES90 = 87
CES16 = 47	CES41 = 93	CES66 = 83	CES91 = 82
CES17 = 49	CES42 = 90	CES67 = 82	CES92 = 69
CES18 = 56	CES43 = 87	CES68 = 84	CES93 = 83
CES19 = 71	CES44 = 99	CES69 = 89	CES94 = 65
CES20 = 65	CES45 = 92	CES70 = 78	CES95 = 76
CES21 = 86	CES46 = 89	CES71 = 76	CES96 = 84
CES22 = 78	CES47 = 88	CES72 = 92	CES97 = 90
CES23 = 91	CES48 = 83	CES73 = 71	CES98 = 84
CES24 = 90	CES49 = 88	CES74 = 97	CES99 = 76
CES25 = 71	CES50 = 95	CES75 = 76	

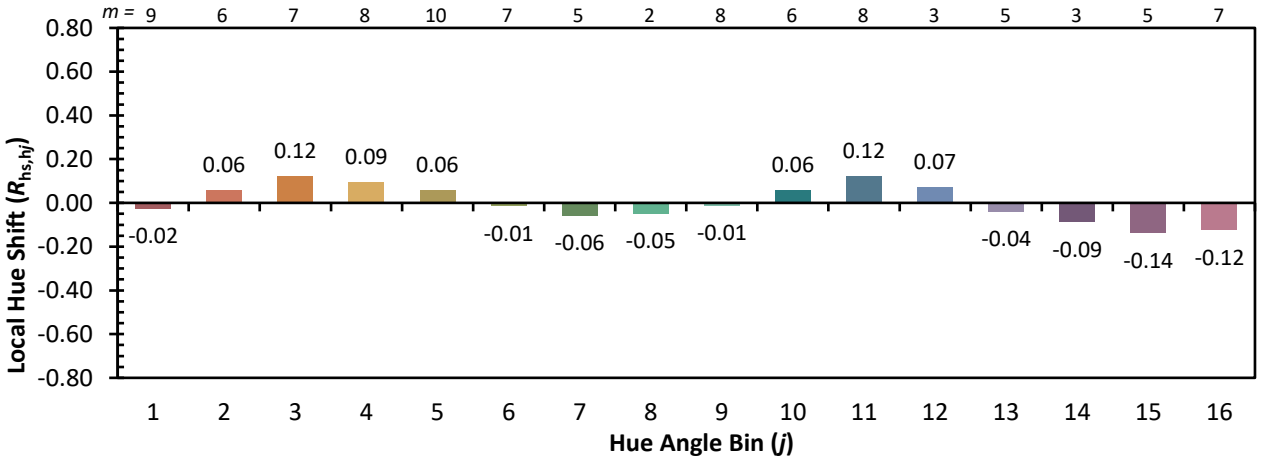


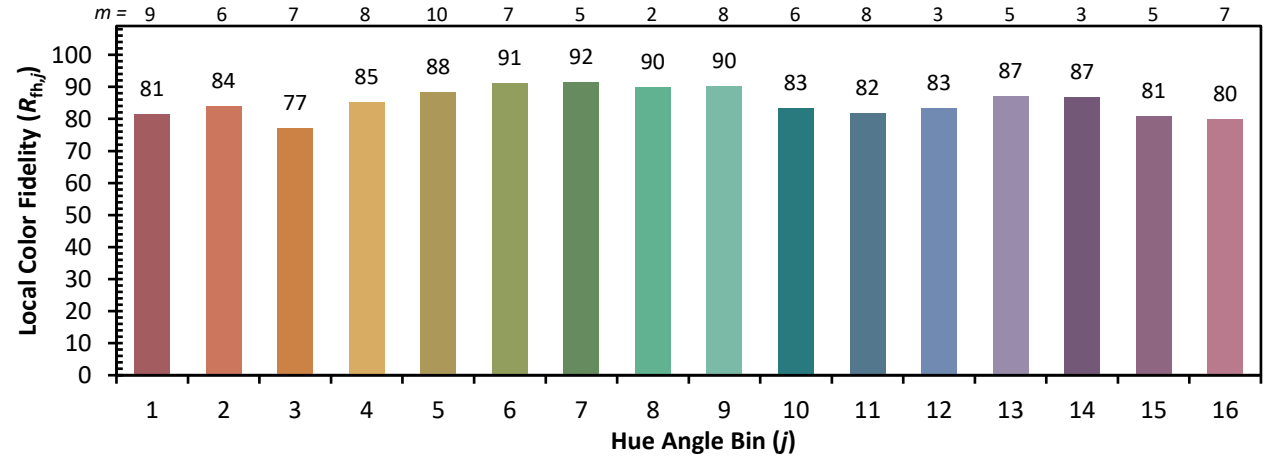
REPORT NUMBER: SP1-2509-539-8

TM-30-18

Color Rendition by Hue-Angle Bin







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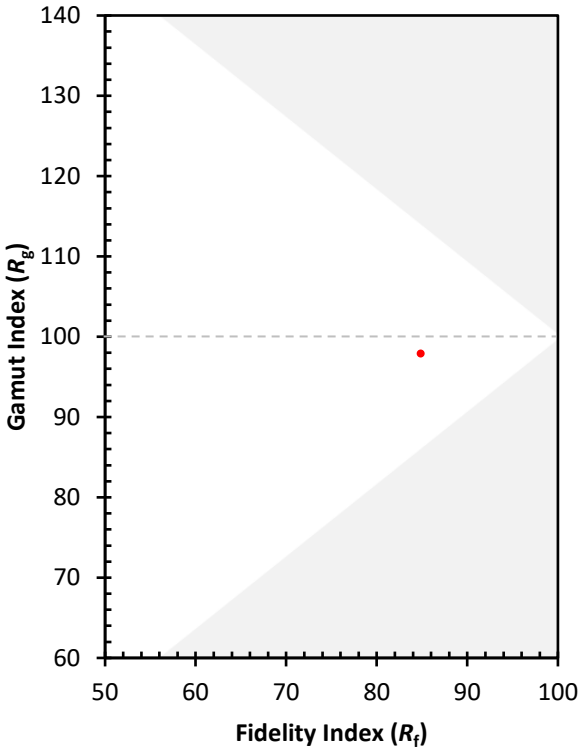
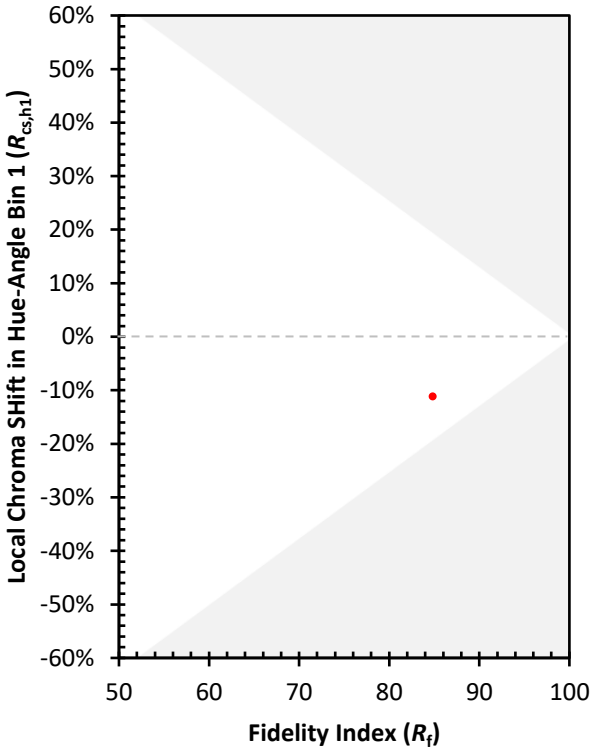
Measure Comparisons





(END OF REPORT)