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: P1442024

Luminaire Tested: ABB-C1-830-X-U-S-GM

Issue Date: 4/23/2026

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Scaled Data Report

Test Information

Test Method:	LM-79-2024
Report Number:	P1442024
	TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-539-31)
Test Lab:	COOPER LIGHTING SOLUTIONS
Issue Date:	4/24/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	INVUE
Catalog Number:	ABB-C1-830-X-U-S-GM
Description:	ARBOR OUTDOOR ARCHITECTURAL BOLLARD LUMINAIRE
	SYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH
Light Source:	3000K CCT, 80 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	670.9 lumens
Efficiency:	N/A
Efficacy:	43.3 lumens/watt
Luminous Opening:	Circular (Dia: 0.4' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B1 - U0 - G1

Input Watts (W):	15.5
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9882
Total Harmonic Distortion (THDi):	0.0895776
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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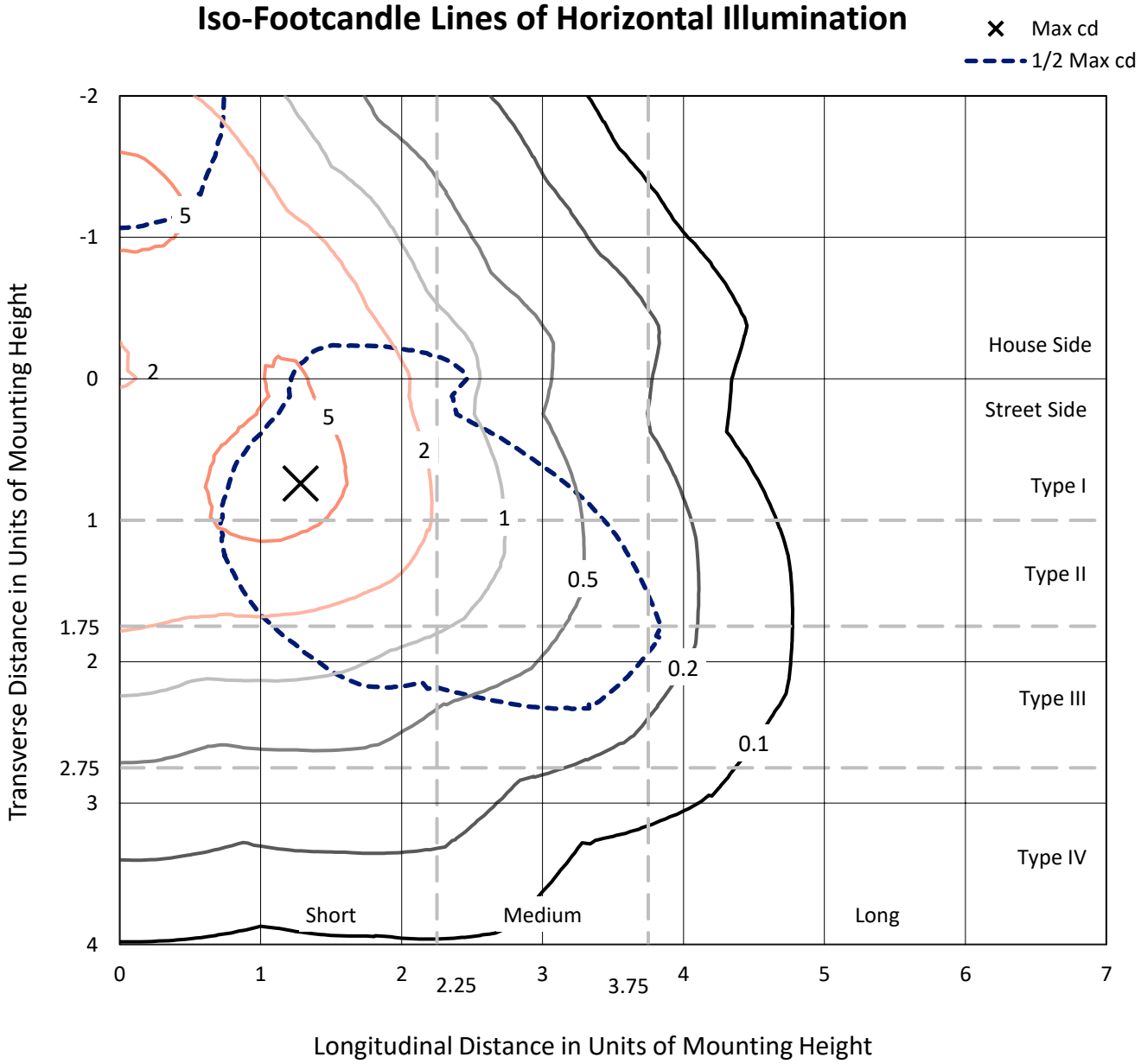
Iso-Footcandle Lines of Horizontal Illumination



Based on 3 foot mounting height. Maximum calculated value = 9 fc
Type III - Short - N/A

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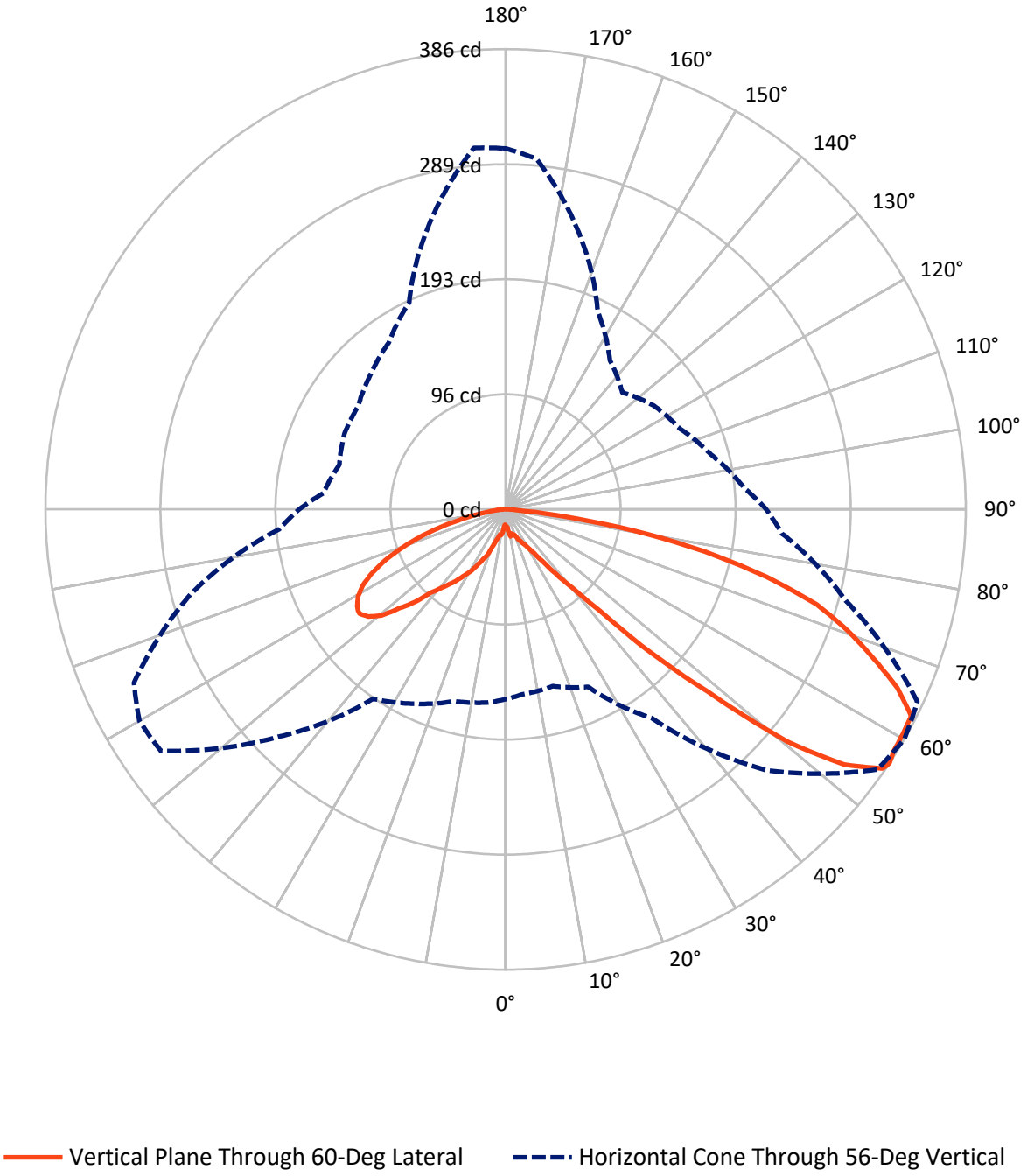
Luminous Intensity Polar Plot



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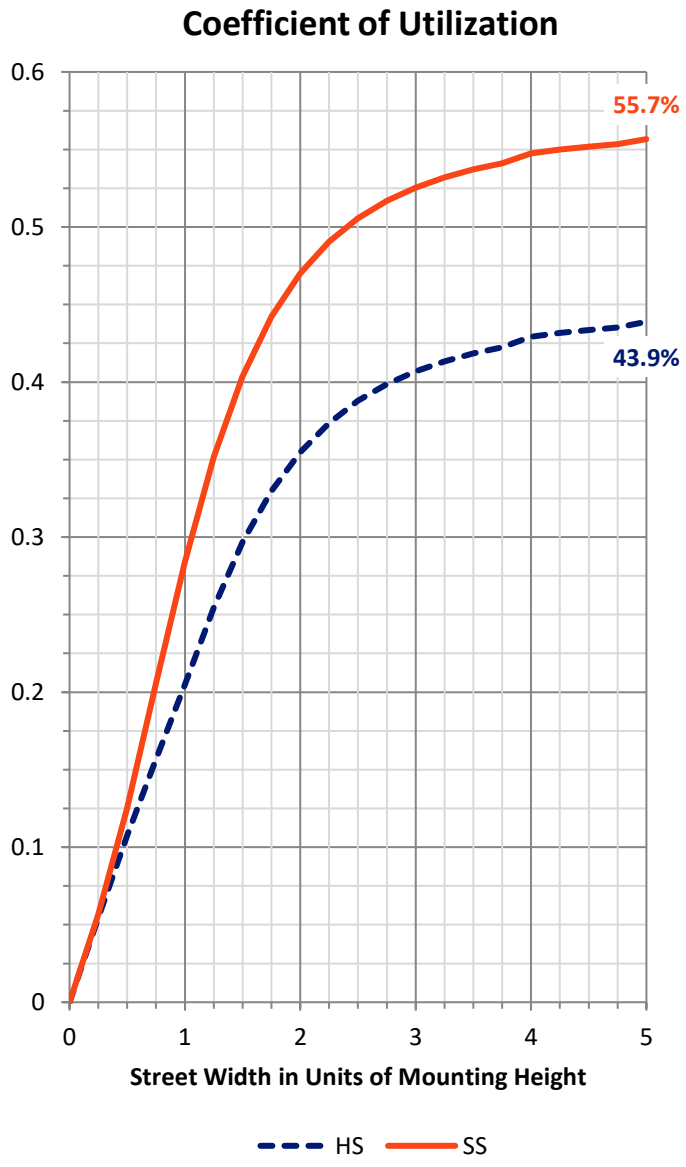
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	295.2	0.0	295.2
	% Fixture	44.0	0.0	44.0
Street Side	Lumens	375.7	0.0	375.7
	% Fixture	56.0	0.0	56.0
Total	Lumens	670.9	0.0	670.9
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1.7	0.3
10°-20°	7.2	1.1
20°-30°	17.8	2.7
30°-40°	39.2	5.8
40°-50°	97.1	14.5
50°-60°	187.0	27.9
60°-70°	190.0	28.3
70°-80°	114.0	17.0
80°-90°	16.8	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°	670.9	100.0
0°-180°	670.9	100.0



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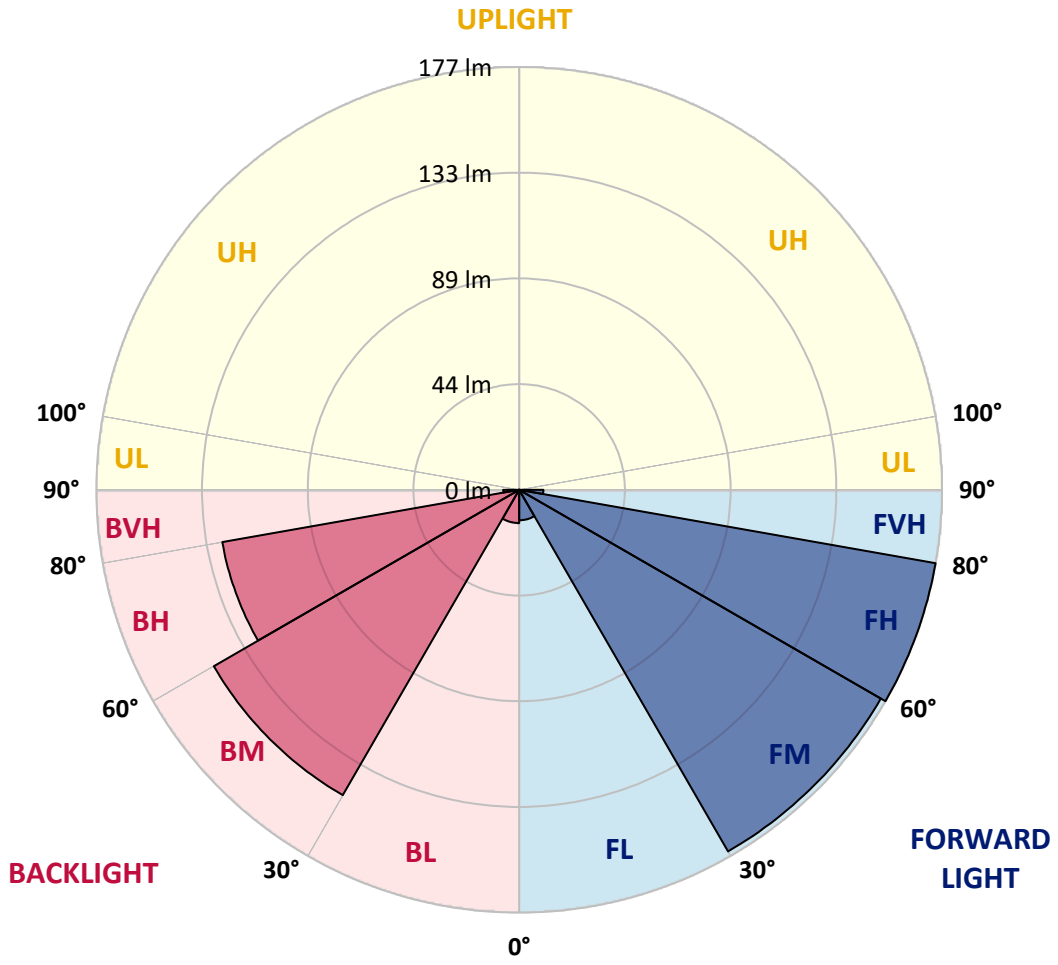
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	12.8	1.9			
FM	(30°-60°)	175.3	26.1			
FH	(60°-80°)	177.5	26.5			G0/660
FVH	(80°-90°)	10.1	1.5			G1/100
BL	(0°-30°)	14.0	2.1	B0/110		
BM	(30°-60°)	148.0	22.1	B0/220		
BH	(60°-80°)	126.6	18.9	B1/500		G1/500
BVH	(80°-90°)	6.7	1.0			G0/10
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°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	*14.0*	14.0	14.0	14.0
2.5°	16.5	16.5	18.1	19.0	18.1	16.5	15.7	*15.7*	15.7	14.8	13.2
5°	23.1	21.4	19.0	19.0	18.1	17.3	14.8	*14.8*	14.8	13.2	12.4
7.5°	22.2	24.7	24.7	24.7	23.9	23.9	21.4	*19.8*	19.8	17.3	18.1
10°	23.9	23.9	23.1	27.2	25.5	25.5	23.1	*23.1*	23.1	22.2	22.2
12.5°	22.2	21.4	23.1	24.7	22.2	23.9	22.2	*20.6*	20.6	22.2	23.1
15°	23.1	23.9	24.7	27.2	26.4	24.7	22.2	*22.2*	22.2	25.5	25.5
17.5°	26.4	28.0	28.0	28.8	28.8	26.4	22.2	*22.2*	23.1	25.5	28.8
20°	30.5	30.5	30.5	30.5	30.5	28.0	23.9	*23.9*	25.5	27.2	30.5
22.5°	36.3	36.3	38.7	35.4	34.6	29.7	28.0	*27.2*	29.7	28.8	33.0
25°	44.5	47.0	44.5	37.9	37.1	32.1	29.7	*29.7*	30.5	34.6	35.4
27.5°	52.7	54.4	47.0	41.2	42.0	36.3	33.8	*33.0*	34.6	38.7	41.2
30°	57.7	58.5	51.9	45.3	47.0	41.2	38.7	*37.1*	38.7	43.7	48.6
32.5°	63.4	65.1	58.5	51.1	51.9	51.1	47.0	*43.7*	43.7	48.6	52.7
35°	71.7	70.9	63.4	56.0	57.7	61.0	59.3	*53.6*	52.7	52.7	60.2
37.5°	78.3	76.6	71.7	62.6	64.3	70.9	74.2	*68.4*	65.9	61.8	67.6
40°	84.9	84.9	79.1	69.2	76.6	86.5	94.8	*86.5*	82.4	75.0	75.8
42.5°	93.1	93.9	89.8	80.8	93.1	113.7	128.5	*116.2*	109.6	94.8	89.8
45°	109.6	112.9	108.8	100.5	117.0	152.4	179.6	*172.2*	161.5	127.7	116.2
47.5°	122.8	125.2	121.1	114.5	139.3	191.2	239.8	*228.2*	224.1	165.6	145.0
50°	140.9	140.9	139.3	138.4	173.0	254.6	303.2	*305.7*	306.5	219.2	186.2
52.5°	151.6	150.0	148.3	154.1	198.6	284.3	350.2	*355.1*	359.3	261.2	213.4
55°	158.2	155.7	153.3	163.2	210.9	305.7	375.7	*383.2*	379.0	288.4	227.4
56°	*159.0*	*155.7*	*153.3*	*164.0*	*213.4*	*309.0*	*379.9*	*385.6*	*380.7*	*295.0*	*232.4*
57.5°	158.2	154.9	151.6	164.8	214.2	309.0	378.2	*383.2*	382.3	299.9	235.7
60°	154.9	151.6	146.7	164.8	215.9	303.2	373.3	*382.3*	384.0	301.6	236.5
62.5°	149.1	147.5	139.3	162.3	213.4	290.9	371.6	*381.5*	379.9	294.2	226.6
65°	138.4	137.6	127.7	157.4	202.7	269.4	350.2	*360.9*	356.0	278.5	206.0
67.5°	124.4	122.8	113.7	148.3	192.0	243.9	325.5	*332.1*	330.4	260.4	182.9
70°	107.1	107.1	100.5	135.1	181.3	214.2	296.6	*304.1*	306.5	239.0	161.5
72.5°	89.0	89.8	86.5	118.7	164.8	182.1	260.4	*272.7*	275.2	210.9	134.3
75°	69.2	70.0	70.0	98.9	141.7	144.2	216.7	*225.8*	229.1	176.3	105.5
77.5°	49.4	49.4	51.9	75.0	113.7	101.4	164.0	*170.6*	176.3	133.5	70.9
80°	32.1	30.5	33.8	47.8	75.8	61.0	104.6	*109.6*	115.4	84.0	39.6
82.5°	19.0	17.3	19.0	22.2	32.1	28.0	47.8	*48.6*	61.8	37.1	16.5
85°	9.1	9.1	8.2	9.1	8.2	9.9	9.1	*9.1*	10.7	6.6	7.4
87.5°	6.6	5.8	5.8	5.8	5.8	7.4	6.6	*6.6*	7.4	4.9	5.8
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°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
2.5°	13.2	12.4	11.5	11.5	10.7	12.4	14.0	14.0	13.2	13.2	13.2
5°	13.2	14.0	14.8	16.5	18.1	16.5	15.7	14.0	12.4	11.5	11.5
7.5°	19.8	19.8	18.1	19.0	19.8	18.1	19.0	18.1	16.5	15.7	14.8
10°	22.2	23.1	26.4	24.7	23.9	23.9	23.1	22.2	20.6	19.0	18.1
12.5°	24.7	25.5	26.4	23.9	26.4	25.5	24.7	22.2	21.4	19.8	19.8
15°	26.4	28.0	27.2	28.0	27.2	27.2	26.4	23.9	23.1	19.8	19.0
17.5°	30.5	30.5	32.1	31.3	28.8	30.5	28.8	27.2	24.7	21.4	21.4
20°	32.1	34.6	35.4	35.4	33.8	34.6	35.4	33.0	28.8	26.4	26.4
22.5°	36.3	37.9	40.4	43.7	39.6	39.6	38.7	33.0	28.0	28.8	27.2
25°	41.2	39.6	42.8	48.6	45.3	41.2	42.0	37.1	33.0	32.1	30.5
27.5°	45.3	45.3	50.3	57.7	49.4	47.0	45.3	41.2	36.3	34.6	34.6
30°	56.0	51.9	57.7	61.8	60.2	49.4	49.4	44.5	41.2	38.7	39.6
32.5°	62.6	59.3	65.1	67.6	66.7	54.4	54.4	51.1	48.6	47.0	44.5
35°	69.2	70.0	70.9	74.2	72.5	64.3	58.5	56.0	56.0	56.0	54.4
37.5°	77.5	78.3	79.1	80.8	78.3	70.9	65.1	62.6	65.1	69.2	65.9
40°	85.7	89.0	86.5	87.3	85.7	79.1	75.0	73.3	79.1	88.2	83.2
42.5°	102.2	102.2	98.9	96.4	93.9	88.2	86.5	89.8	101.4	117.0	111.2
45°	123.6	122.8	117.0	112.9	109.6	103.0	103.0	112.9	136.0	159.9	160.7
47.5°	160.7	145.0	135.1	128.5	122.8	115.4	116.2	134.3	166.4	203.5	204.4
50°	190.3	178.0	160.7	145.8	138.4	130.2	134.3	161.5	206.0	239.8	248.0
52.5°	208.5	194.5	172.2	156.6	147.5	138.4	145.8	178.8	229.1	271.9	281.0
55°	215.1	199.4	178.8	161.5	151.6	140.1	152.4	183.8	238.1	291.7	300.8
56°	*218.4*	*201.1*	*178.0*	*160.7*	*151.6*	*138.4*	*152.4*	*182.9*	*239.0*	*295.0*	*302.4*
57.5°	221.7	200.2	176.3	159.9	150.8	136.8	152.4	181.3	238.1	295.0	303.2
60°	228.2	200.2	168.9	155.7	145.0	131.8	150.8	181.3	234.8	290.0	304.1
62.5°	223.3	198.6	159.0	146.7	140.1	126.1	145.0	178.8	226.6	285.9	304.1
65°	210.9	192.8	144.2	133.5	128.5	115.4	136.0	172.2	211.8	271.9	287.6
67.5°	195.3	184.6	128.5	117.8	113.7	103.8	124.4	159.9	191.2	244.7	260.4
70°	173.9	173.9	112.1	100.5	98.1	89.0	111.2	146.7	163.2	215.1	229.9
72.5°	143.4	149.1	98.1	81.6	79.9	75.0	94.8	128.5	133.5	183.8	199.4
75°	109.6	120.3	79.1	62.6	61.0	59.3	75.0	105.5	103.0	145.0	160.7
77.5°	72.5	84.9	57.7	44.5	42.0	42.8	53.6	80.8	71.7	103.0	116.2
80°	35.4	46.1	35.4	29.7	26.4	28.0	33.0	51.1	40.4	60.2	72.5
82.5°	11.5	14.8	17.3	16.5	14.8	14.8	15.7	20.6	18.1	22.2	30.5
85°	5.8	6.6	8.2	8.2	7.4	7.4	7.4	8.2	9.1	8.2	8.2
87.5°	4.1	4.1	6.6	6.6	5.8	5.8	5.8	5.8	7.4	6.6	6.6
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°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
2.5°	14.0	14.0	14.0	14.0	12.4	13.2	12.4	13.2	13.2	13.2	13.2
5°	12.4	13.2	14.0	13.2	14.8	14.8	14.8	14.0	11.5	11.5	11.5
7.5°	16.5	17.3	17.3	15.7	17.3	19.8	19.0	18.1	15.7	14.8	14.0
10°	19.8	23.1	20.6	23.1	23.9	23.1	20.6	19.0	22.2	21.4	20.6
12.5°	19.8	21.4	23.1	26.4	28.8	22.2	20.6	23.1	22.2	22.2	20.6
15°	19.8	23.9	25.5	28.0	30.5	26.4	21.4	24.7	26.4	25.5	23.9
17.5°	22.2	24.7	26.4	30.5	33.0	30.5	25.5	27.2	28.8	31.3	29.7
20°	25.5	27.2	28.0	33.0	33.8	36.3	30.5	30.5	30.5	32.1	31.3
22.5°	28.8	32.1	32.1	36.3	37.1	42.8	40.4	32.1	30.5	34.6	33.8
25°	30.5	33.8	36.3	39.6	41.2	47.0	45.3	38.7	35.4	36.3	36.3
27.5°	35.4	37.9	40.4	42.8	48.6	51.1	54.4	43.7	40.4	40.4	40.4
30°	37.9	42.0	45.3	50.3	55.2	57.7	61.8	47.8	43.7	44.5	44.5
32.5°	44.5	46.1	51.1	56.9	60.2	65.1	65.9	53.6	48.6	48.6	47.8
35°	51.9	51.9	56.0	64.3	66.7	73.3	70.9	61.0	54.4	54.4	53.6
37.5°	63.4	61.0	63.4	71.7	75.0	79.9	77.5	68.4	61.0	61.8	61.0
40°	78.3	72.5	71.7	80.8	82.4	87.3	84.0	76.6	70.0	70.9	70.0
42.5°	102.2	88.2	86.5	90.6	92.3	95.6	92.3	86.5	82.4	84.9	86.5
45°	150.0	121.1	110.4	112.9	111.2	111.2	107.1	103.8	99.7	103.0	107.9
47.5°	195.3	154.9	138.4	127.7	124.4	122.8	119.5	117.0	111.2	119.5	131.0
50°	239.0	193.6	167.3	154.9	148.3	137.6	136.0	133.5	133.5	145.8	159.0
52.5°	277.7	225.8	186.2	168.9	158.2	147.5	144.2	141.7	145.8	164.8	178.8
55°	303.2	244.7	191.2	171.4	160.7	151.6	149.1	145.0	152.4	172.2	189.5
56°	*304.1*	*247.2*	*191.2*	*170.6*	*159.9*	*150.8*	*149.1*	*144.2*	*153.3*	*173.0*	*190.3*
57.5°	303.2	249.7	189.5	169.7	157.4	149.1	147.5	141.7	153.3	173.9	192.0
60°	296.6	248.0	184.6	168.9	150.8	143.4	143.4	135.1	150.8	175.5	193.6
62.5°	298.3	242.3	176.3	164.0	140.1	134.3	136.8	126.9	145.0	175.5	192.8
65°	286.8	233.2	161.5	154.9	127.7	121.1	126.9	113.7	136.8	167.3	183.8
67.5°	260.4	215.1	145.8	145.0	113.7	107.1	112.9	101.4	125.2	157.4	173.9
70°	230.7	189.5	126.1	130.2	99.7	90.6	96.4	86.5	112.1	144.2	162.3
72.5°	200.2	159.9	102.2	110.4	84.0	74.2	78.3	72.5	96.4	126.1	142.6
75°	162.3	126.1	76.6	87.3	66.7	56.9	58.5	56.9	78.3	103.8	118.7
77.5°	118.7	90.6	50.3	61.8	47.8	39.6	40.4	41.2	57.7	76.6	89.8
80°	72.5	57.7	28.0	36.3	29.7	26.4	24.7	26.4	36.3	47.0	55.2
82.5°	28.8	23.1	11.5	14.0	14.8	14.8	14.0	14.0	17.3	18.1	17.3
85°	8.2	5.8	6.6	5.8	7.4	7.4	6.6	5.8	6.6	6.6	6.6
87.5°	6.6	4.1	4.9	4.1	5.8	6.6	4.9	4.9	4.9	4.9	4.9
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: P1442024
CATALOG NUMBER: ABB-C1-830-X-U-S-GM

CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
2.5°	13.2	14.0	14.0	14.8	15.7	16.5	16.5	16.5	16.5	16.5
5°	12.4	11.5	11.5	10.7	11.5	13.2	14.8	16.5	20.6	23.1
7.5°	14.8	14.8	14.8	14.8	14.0	14.8	17.3	19.8	22.2	22.2
10°	20.6	19.8	19.0	19.8	19.8	18.1	20.6	23.9	25.5	23.9
12.5°	19.8	19.0	18.1	18.1	19.0	19.8	23.9	26.4	22.2	22.2
15°	22.2	20.6	19.8	19.8	19.8	23.1	26.4	28.0	23.1	23.1
17.5°	24.7	21.4	19.8	20.6	22.2	24.7	28.8	28.8	26.4	26.4
20°	26.4	23.1	22.2	23.9	23.9	28.8	29.7	31.3	30.5	30.5
22.5°	28.8	24.7	23.9	24.7	27.2	31.3	33.8	37.9	33.8	36.3
25°	32.1	28.0	28.0	27.2	29.7	33.8	37.9	40.4	40.4	44.5
27.5°	35.4	33.0	33.0	32.1	32.1	37.1	43.7	45.3	50.3	52.7
30°	40.4	39.6	37.9	37.1	37.1	39.6	47.8	54.4	60.2	57.7
32.5°	47.0	47.0	45.3	46.1	42.8	45.3	54.4	61.0	64.3	63.4
35°	54.4	56.0	54.4	53.6	50.3	51.9	60.2	69.2	71.7	71.7
37.5°	66.7	67.6	65.9	63.4	59.3	58.5	68.4	75.0	78.3	78.3
40°	82.4	87.3	83.2	78.3	69.2	67.6	77.5	82.4	85.7	84.9
42.5°	103.8	111.2	110.4	103.0	82.4	77.5	88.2	92.3	93.9	93.1
45°	140.1	159.9	164.0	154.9	114.5	99.7	112.1	114.5	112.9	109.6
47.5°	171.4	201.9	216.7	204.4	141.7	118.7	129.4	131.0	126.1	122.8
50°	224.1	269.4	276.9	269.4	196.9	151.6	154.9	152.4	145.0	140.9
52.5°	253.0	311.5	322.2	315.6	238.1	177.2	171.4	162.3	155.7	151.6
55°	268.6	339.5	353.5	348.6	262.9	192.0	178.8	167.3	162.3	158.2
56°	*272.7*	*343.6*	*354.3*	*352.7*	*269.4*	*193.6*	*179.6*	*166.4*	*162.3*	*159.0*
57.5°	274.4	343.6	351.8	351.0	275.2	193.6	178.8	164.0	161.5	158.2
60°	267.8	338.7	344.4	342.8	277.7	192.8	178.0	157.4	156.6	154.9
62.5°	250.5	334.5	346.9	344.4	275.2	186.2	178.0	146.7	148.3	149.1
65°	233.2	316.4	331.2	331.2	264.5	173.0	173.9	134.3	134.3	138.4
67.5°	210.1	289.2	304.9	305.7	246.4	154.1	165.6	122.0	119.5	124.4
70°	179.6	256.3	273.6	273.6	223.3	134.3	154.1	107.9	102.2	107.1
72.5°	150.0	220.8	240.6	241.4	193.6	113.7	136.8	93.9	84.0	89.0
75°	117.8	178.8	198.6	203.5	162.3	89.8	113.7	79.1	65.9	69.2
77.5°	84.0	133.5	150.0	151.6	124.4	64.3	85.7	59.3	47.0	49.4
80°	51.1	84.9	98.1	105.5	82.4	39.6	53.6	38.7	31.3	32.1
82.5°	22.2	37.1	45.3	51.9	38.7	19.0	17.3	19.8	18.1	19.0
85°	8.2	8.2	9.1	9.9	7.4	7.4	6.6	9.1	9.1	9.1
87.5°	6.6	6.6	6.6	6.6	4.9	5.8	4.1	6.6	6.6	6.6
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: SP1-2509-539-5

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

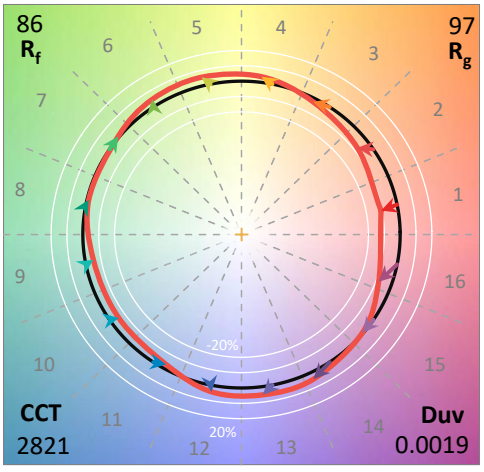
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2509-539-5
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-C1-830-LED-XX-Dx-S-GM-SPECULAR REFLECTOR

Spectral Parameters

CCT (K):	2821
CIE u':	0.2567
CIE v':	0.5277
Duv:	0.0019
CIE x:	0.4533
CIE y:	0.4141
CIE z:	0.1326
Peak Wavelength (nm):	607
Dominant Wavelength (nm):	583
Purity:	60.36315
Rf:	86.1
Rg:	97.2

CRI (Ra):	83.8				
R1:	82.0	R9:	8.2		
R2:	90.6	R10:	79.9		
R3:	97.7	R11:	85.5		
R4:	84.0	R12:	78.4		
R5:	82.7	R13:	83.9		
R6:	90.4	R14:	99.2		
R7:	83.6	R15:	73.1		
R8:	59.4				



Test Conditions

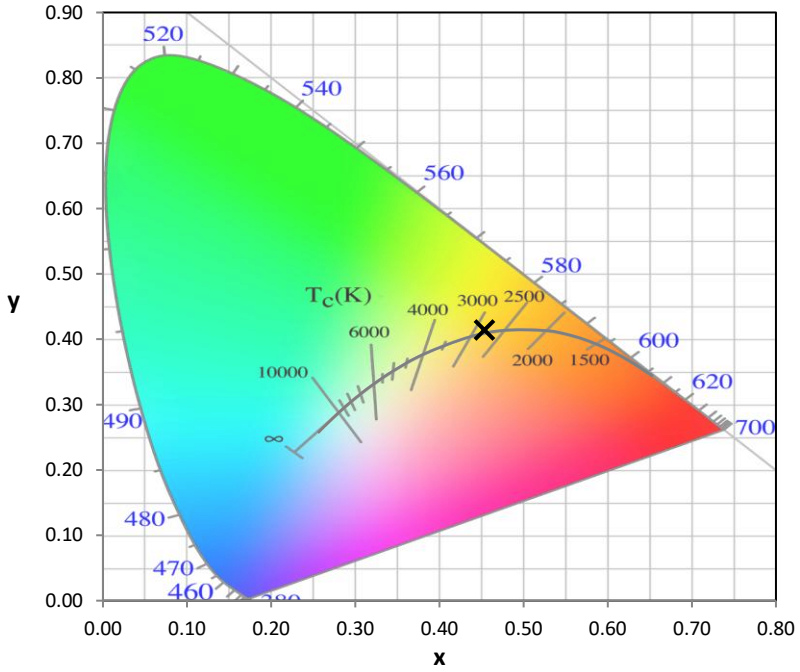
Stabilization Time:	28M
Operation Time:	1H 28M
Sphere Temperature (°C):	25.1

REPORT NUMBER: SP1-2509-539-5

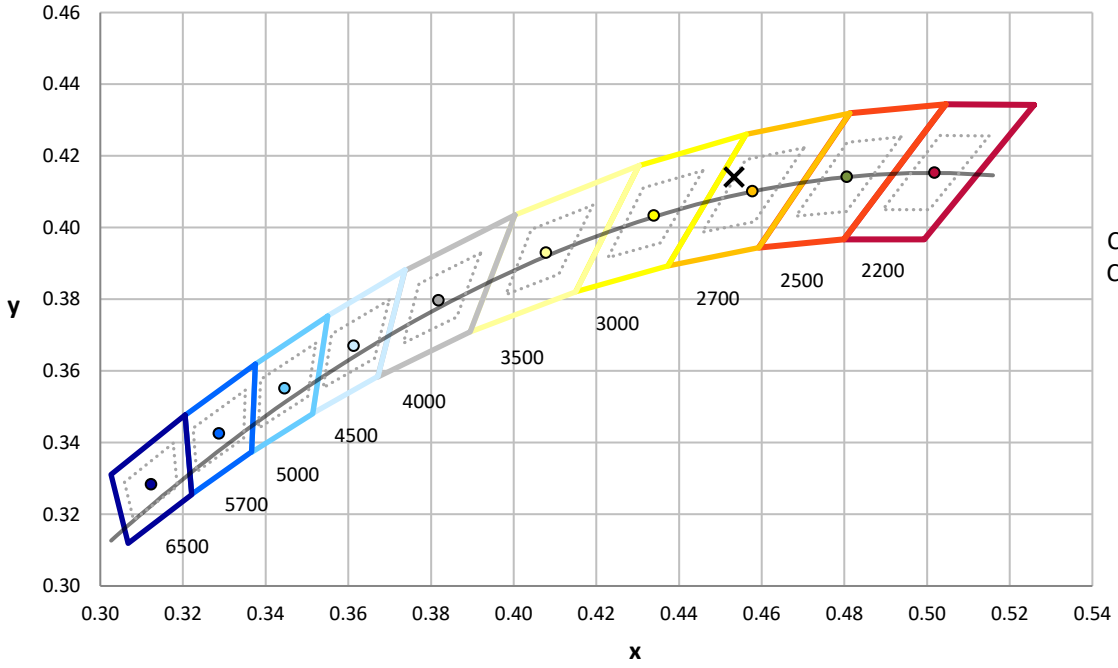
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	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: SP1-2509-539-5

CIE 1931 Chromaticity Diagram



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

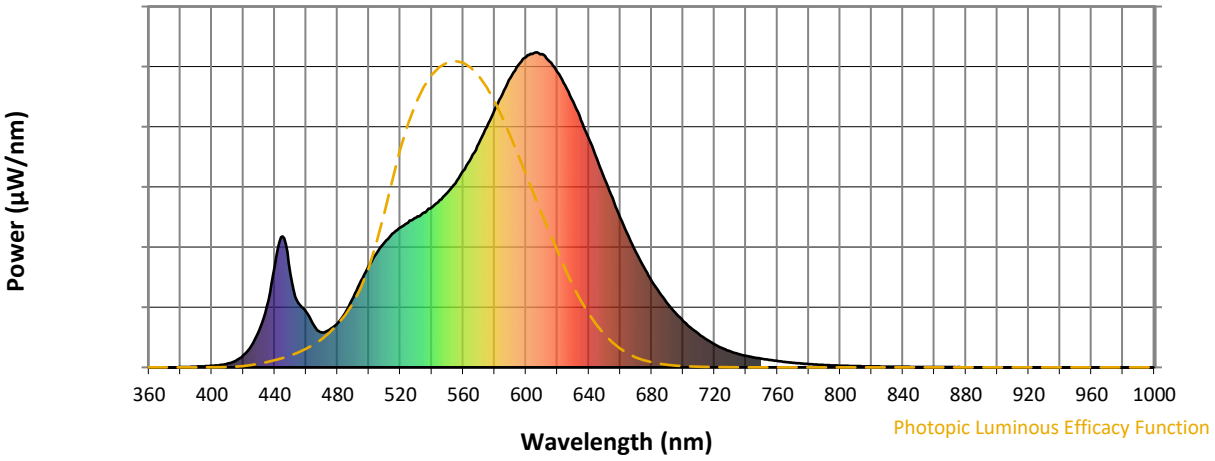


CCT = 2821K
CIE x = 0.4533
CIE y = 0.4141
Duv = 0.0019

Point lies inside the ANSI 2700K 7-step quadrangle

REPORT NUMBER: SP1-2509-539-5

Photopic Flux vs. Wavelength

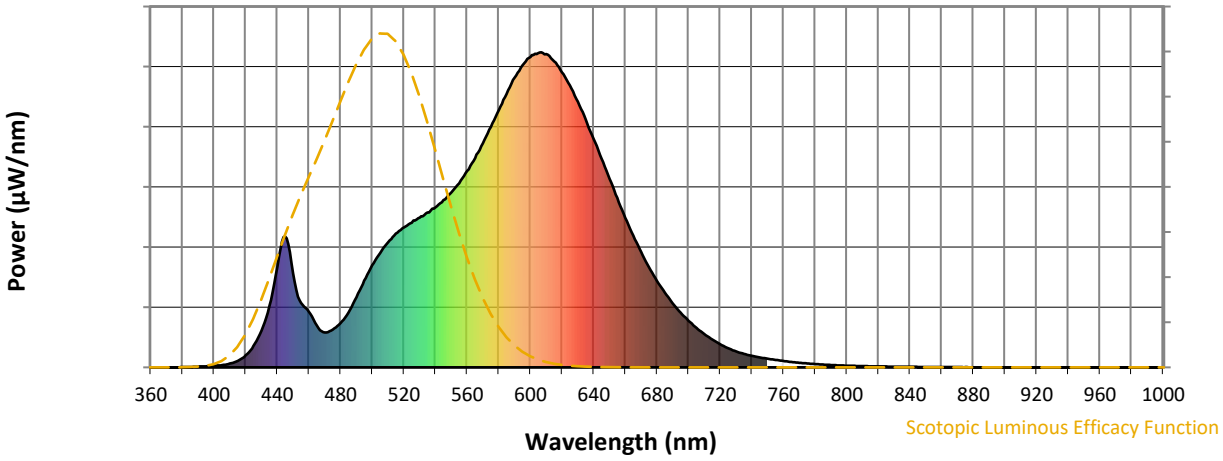


Photopic Lumens: NR

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	223	NR	620	936	NR	750	28	NR	880	0	NR
365	0	NR	495	275	NR	625	895	NR	755	24	NR	885	0	NR
370	0	NR	500	324	NR	630	843	NR	760	20	NR	890	0	NR
375	0	NR	505	363	NR	635	786	NR	765	17	NR	895	0	NR
380	1	NR	510	397	NR	640	725	NR	770	15	NR	900	0	NR
385	1	NR	515	425	NR	645	663	NR	775	12	NR	905	0	NR
390	2	NR	520	444	NR	650	599	NR	780	11	NR	910	0	NR
395	3	NR	525	459	NR	655	538	NR	785	9	NR	915	0	NR
400	5	NR	530	476	NR	660	475	NR	790	8	NR	920	0	NR
405	7	NR	535	492	NR	665	419	NR	795	6	NR	925	0	NR
410	12	NR	540	508	NR	670	365	NR	800	5	NR	930	0	NR
415	20	NR	545	531	NR	675	318	NR	805	5	NR	935	0	NR
420	38	NR	550	554	NR	680	274	NR	810	4	NR	940	0	NR
425	68	NR	555	584	NR	685	237	NR	815	3	NR	945	0	NR
430	116	NR	560	623	NR	690	204	NR	820	3	NR	950	0	NR
435	195	NR	565	664	NR	695	174	NR	825	3	NR	955	0	NR
440	320	NR	570	711	NR	700	148	NR	830	2	NR	960	0	NR
445	416	NR	575	762	NR	705	125	NR	835	2	NR	965	0	NR
450	297	NR	580	817	NR	710	106	NR	840	2	NR	970	0	NR
455	204	NR	585	867	NR	715	88	NR	845	1	NR	975	0	NR
460	177	NR	590	920	NR	720	73	NR	850	1	NR	980	0	NR
465	133	NR	595	959	NR	725	61	NR	855	1	NR	985	0	NR
470	111	NR	600	986	NR	730	51	NR	860	1	NR	990	0	NR
475	120	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	994	NR	740	37	NR	870	1	NR	1000	0	NR
485	174	NR	615	972	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2509-539-5

Scotopic Flux vs. Wavelength

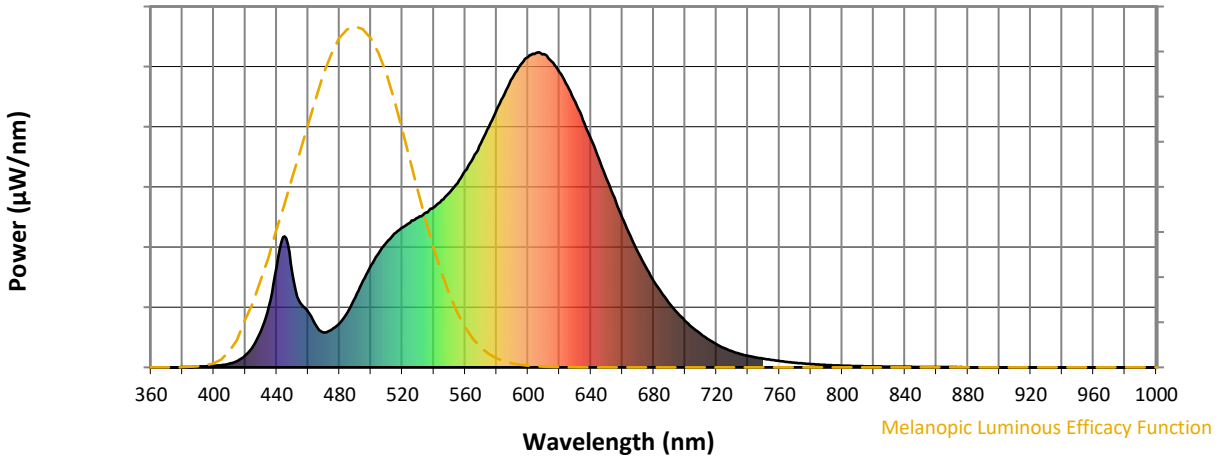


Scotopic Lumens: NR **S/P: 1.26**

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	223	NR	620	936	NR	750	28	NR	880	0	NR
365	0	NR	495	275	NR	625	895	NR	755	24	NR	885	0	NR
370	0	NR	500	324	NR	630	843	NR	760	20	NR	890	0	NR
375	0	NR	505	363	NR	635	786	NR	765	17	NR	895	0	NR
380	1	NR	510	397	NR	640	725	NR	770	15	NR	900	0	NR
385	1	NR	515	425	NR	645	663	NR	775	12	NR	905	0	NR
390	2	NR	520	444	NR	650	599	NR	780	11	NR	910	0	NR
395	3	NR	525	459	NR	655	538	NR	785	9	NR	915	0	NR
400	5	NR	530	476	NR	660	475	NR	790	8	NR	920	0	NR
405	7	NR	535	492	NR	665	419	NR	795	6	NR	925	0	NR
410	12	NR	540	508	NR	670	365	NR	800	5	NR	930	0	NR
415	20	NR	545	531	NR	675	318	NR	805	5	NR	935	0	NR
420	38	NR	550	554	NR	680	274	NR	810	4	NR	940	0	NR
425	68	NR	555	584	NR	685	237	NR	815	3	NR	945	0	NR
430	116	NR	560	623	NR	690	204	NR	820	3	NR	950	0	NR
435	195	NR	565	664	NR	695	174	NR	825	3	NR	955	0	NR
440	320	NR	570	711	NR	700	148	NR	830	2	NR	960	0	NR
445	416	NR	575	762	NR	705	125	NR	835	2	NR	965	0	NR
450	297	NR	580	817	NR	710	106	NR	840	2	NR	970	0	NR
455	204	NR	585	867	NR	715	88	NR	845	1	NR	975	0	NR
460	177	NR	590	920	NR	720	73	NR	850	1	NR	980	0	NR
465	133	NR	595	959	NR	725	61	NR	855	1	NR	985	0	NR
470	111	NR	600	986	NR	730	51	NR	860	1	NR	990	0	NR
475	120	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	994	NR	740	37	NR	870	1	NR	1000	0	NR
485	174	NR	615	972	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2509-539-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.34**

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	223	NR	620	936	NR	750	28	NR	880	0	NR
365	0	NR	495	275	NR	625	895	NR	755	24	NR	885	0	NR
370	0	NR	500	324	NR	630	843	NR	760	20	NR	890	0	NR
375	0	NR	505	363	NR	635	786	NR	765	17	NR	895	0	NR
380	1	NR	510	397	NR	640	725	NR	770	15	NR	900	0	NR
385	1	NR	515	425	NR	645	663	NR	775	12	NR	905	0	NR
390	2	NR	520	444	NR	650	599	NR	780	11	NR	910	0	NR
395	3	NR	525	459	NR	655	538	NR	785	9	NR	915	0	NR
400	5	NR	530	476	NR	660	475	NR	790	8	NR	920	0	NR
405	7	NR	535	492	NR	665	419	NR	795	6	NR	925	0	NR
410	12	NR	540	508	NR	670	365	NR	800	5	NR	930	0	NR
415	20	NR	545	531	NR	675	318	NR	805	5	NR	935	0	NR
420	38	NR	550	554	NR	680	274	NR	810	4	NR	940	0	NR
425	68	NR	555	584	NR	685	237	NR	815	3	NR	945	0	NR
430	116	NR	560	623	NR	690	204	NR	820	3	NR	950	0	NR
435	195	NR	565	664	NR	695	174	NR	825	3	NR	955	0	NR
440	320	NR	570	711	NR	700	148	NR	830	2	NR	960	0	NR
445	416	NR	575	762	NR	705	125	NR	835	2	NR	965	0	NR
450	297	NR	580	817	NR	710	106	NR	840	2	NR	970	0	NR
455	204	NR	585	867	NR	715	88	NR	845	1	NR	975	0	NR
460	177	NR	590	920	NR	720	73	NR	850	1	NR	980	0	NR
465	133	NR	595	959	NR	725	61	NR	855	1	NR	985	0	NR
470	111	NR	600	986	NR	730	51	NR	860	1	NR	990	0	NR
475	120	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	994	NR	740	37	NR	870	1	NR	1000	0	NR
485	174	NR	615	972	NR	745	32	NR	875	1	NR			

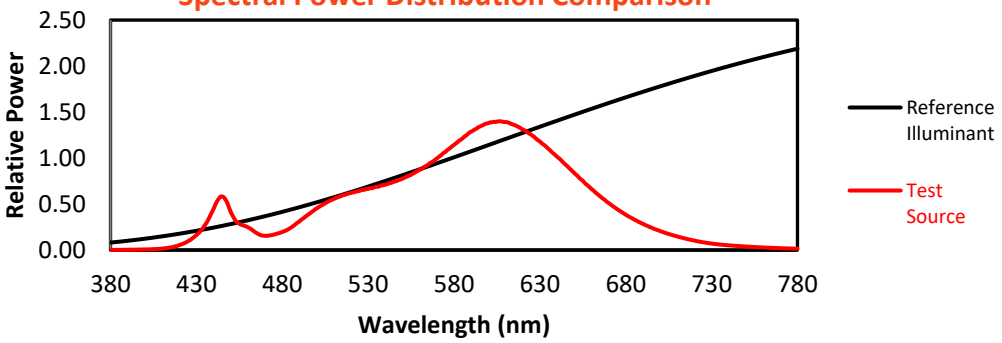
REPORT NUMBER: SP1-2509-539-5

TM-30-18

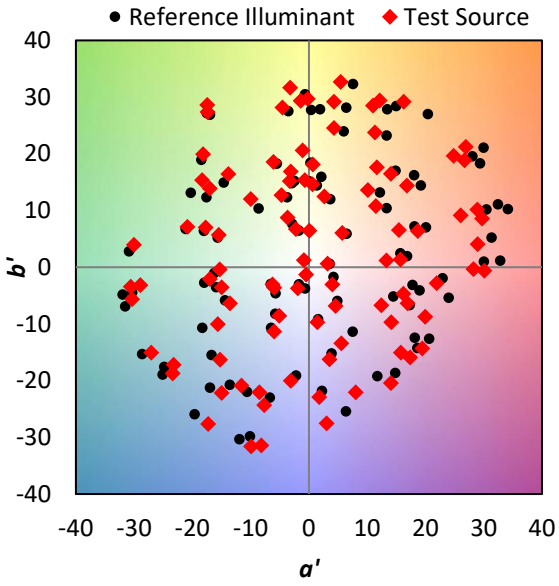
Summary

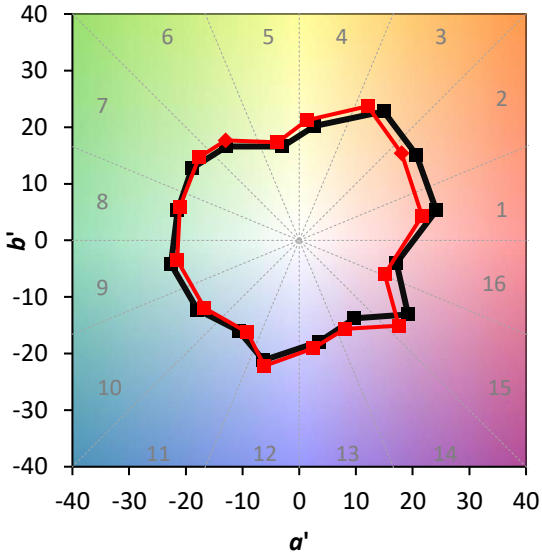
R_f = 86.1
R_g = 97.2
CIE R_a = 83.8
R_9 = 8.2

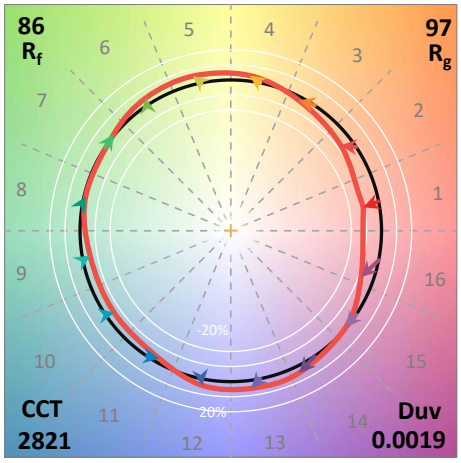
Spectral Power Distribution Comparison

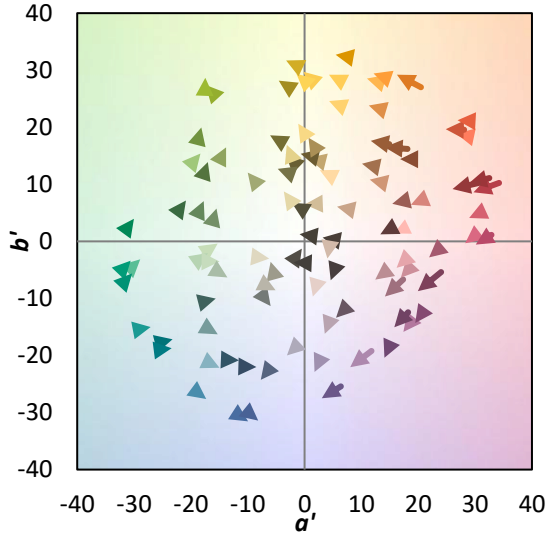


Color Vector Graphics







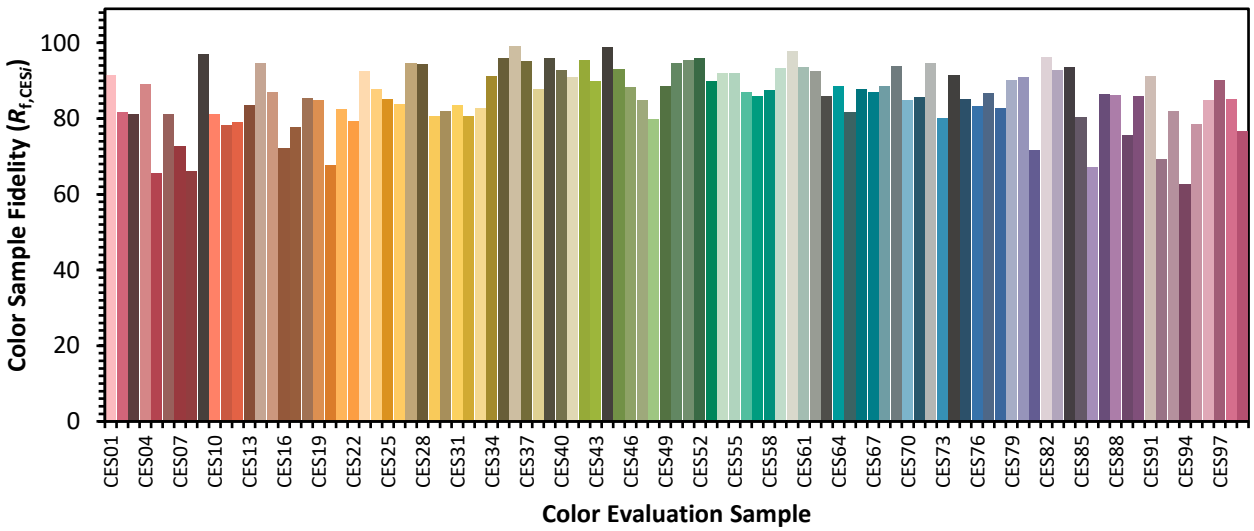


REPORT NUMBER: SP1-2509-539-5

TM-30-18

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

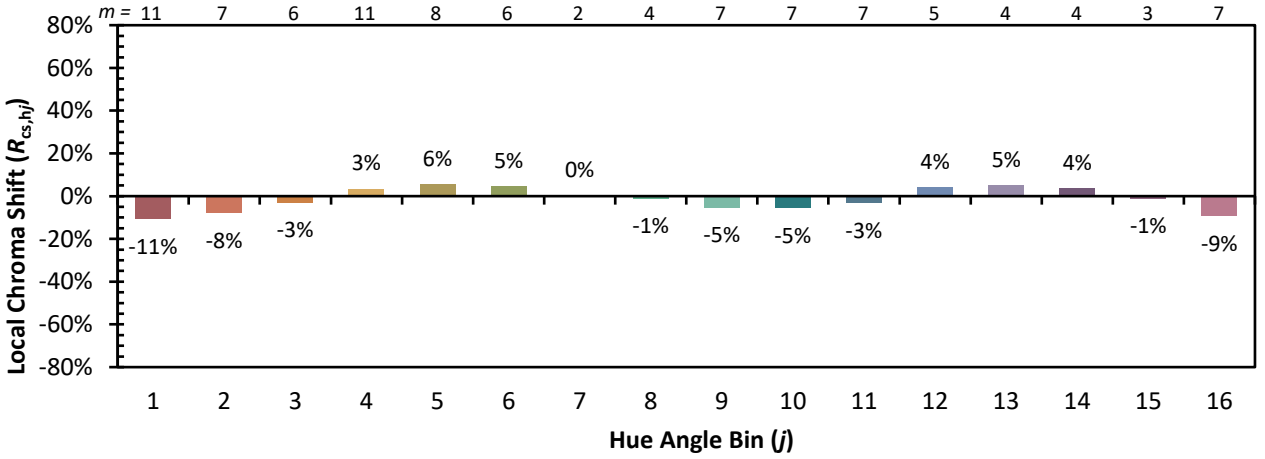
CES01 = 86	CES26 = 84	CES51 = 95	CES76 = 83
CES02 = 63	CES27 = 95	CES52 = 96	CES77 = 87
CES03 = 31	CES28 = 94	CES53 = 90	CES78 = 83
CES04 = 71	CES29 = 81	CES54 = 92	CES79 = 90
CES05 = 50	CES30 = 82	CES55 = 92	CES80 = 91
CES06 = 51	CES31 = 84	CES56 = 87	CES81 = 72
CES07 = 43	CES32 = 81	CES57 = 86	CES82 = 96
CES08 = 41	CES33 = 83	CES58 = 88	CES83 = 93
CES09 = 29	CES34 = 91	CES59 = 93	CES84 = 94
CES10 = 76	CES35 = 96	CES60 = 98	CES85 = 80
CES11 = 59	CES36 = 99	CES61 = 94	CES86 = 67
CES12 = 65	CES37 = 95	CES62 = 92	CES87 = 87
CES13 = 44	CES38 = 88	CES63 = 86	CES88 = 86
CES14 = 74	CES39 = 96	CES64 = 88	CES89 = 76
CES15 = 72	CES40 = 93	CES65 = 82	CES90 = 86
CES16 = 48	CES41 = 91	CES66 = 88	CES91 = 91
CES17 = 50	CES42 = 95	CES67 = 87	CES92 = 69
CES18 = 57	CES43 = 90	CES68 = 89	CES93 = 82
CES19 = 72	CES44 = 99	CES69 = 94	CES94 = 63
CES20 = 67	CES45 = 93	CES70 = 85	CES95 = 79
CES21 = 87	CES46 = 88	CES71 = 86	CES96 = 85
CES22 = 79	CES47 = 85	CES72 = 95	CES97 = 90
CES23 = 92	CES48 = 80	CES73 = 80	CES98 = 85
CES24 = 91	CES49 = 89	CES74 = 91	CES99 = 77
CES25 = 72	CES50 = 95	CES75 = 85	

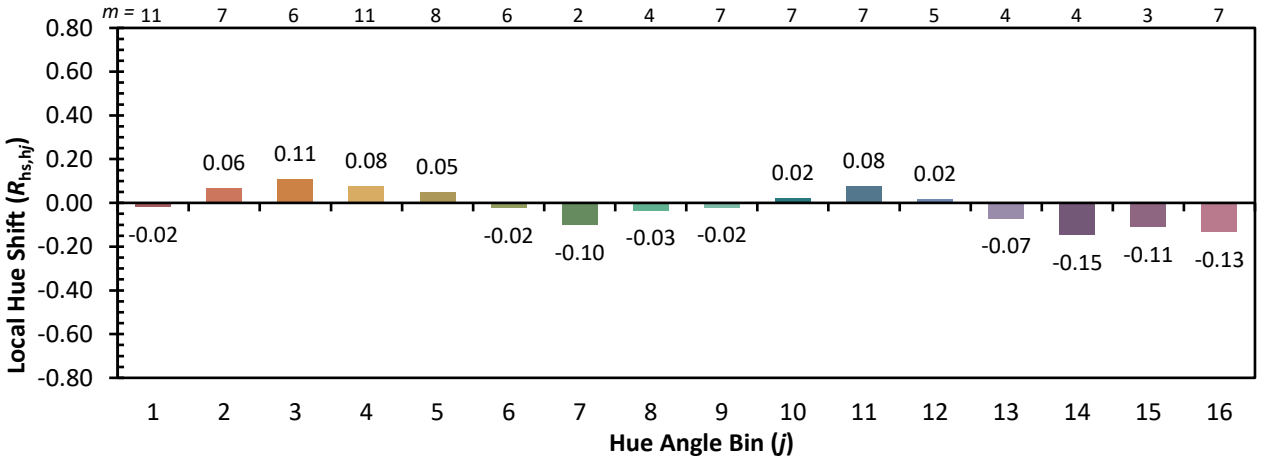


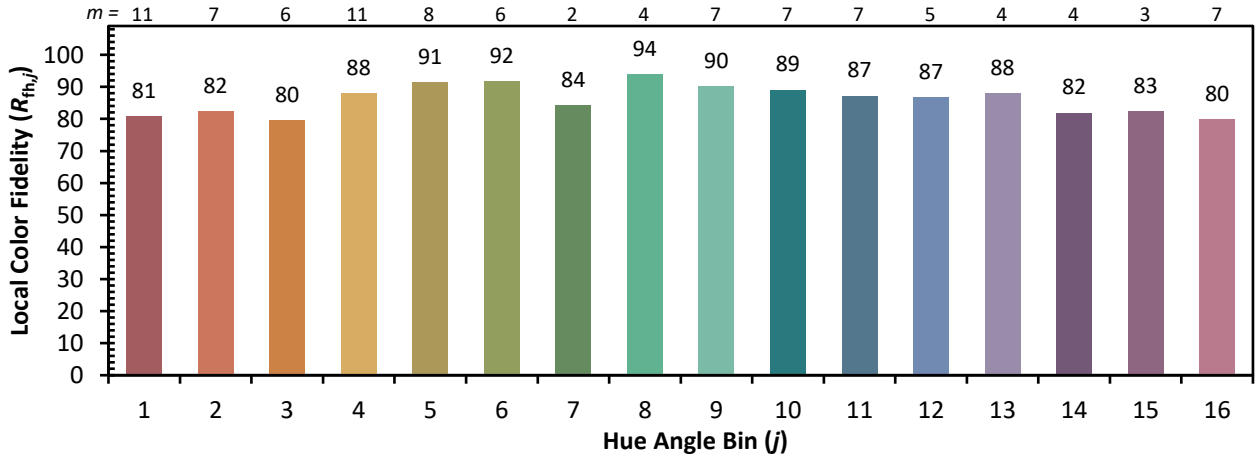
REPORT NUMBER: SP1-2509-539-5

TM-30-18

Color Rendition by Hue-Angle Bin







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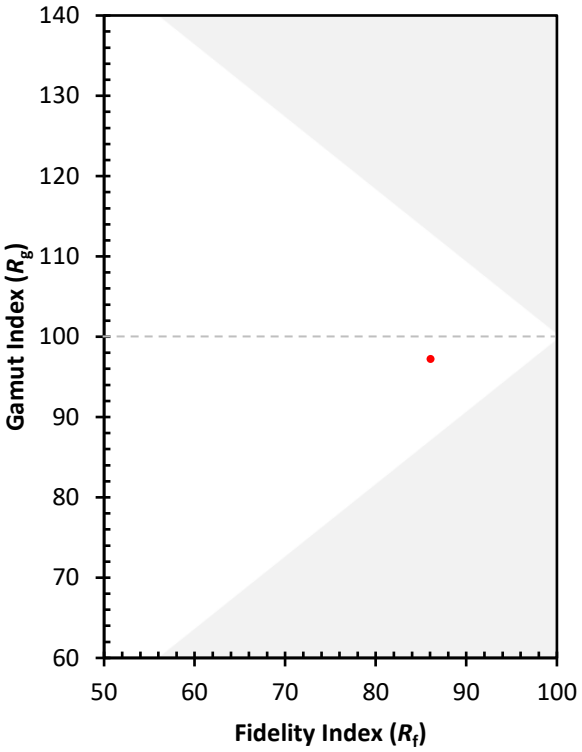
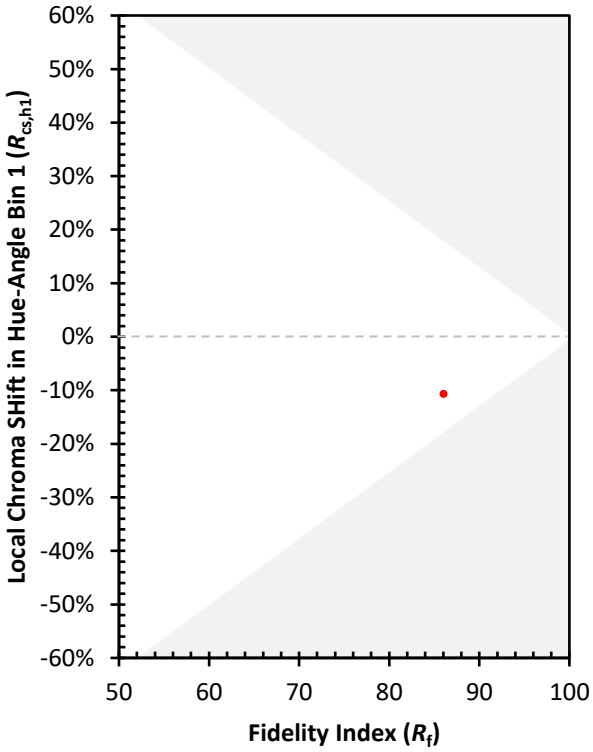
Measure Comparisons





(END OF REPORT)