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: P1459760

Luminaire Tested: ABB-CX-840-X-U-S-GM-CBP

Issue Date: 5/26/2026

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Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-2024
Report Number:	P1459760
	TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-539-31)
Test Lab:	COOPER LIGHTING SOLUTIONS
Issue Date:	5/27/2026
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	INVUE
Catalog Number:	ABB-CX-840-X-U-S-GM-CBP
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:	282.1 lumens
Efficiency:	N/A
Efficacy:	48.6 lumens/watt
Luminous Opening:	Circular (Dia: 0.4' x H: 0')
IES Classification:	Type III - Short
BUG Rating:	B0 - U0 - G0

Input Watts (W):	5.8
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	N/R
Total Harmonic Distortion (THDi):	N/R
Frequency (hertz):	60
Stabilization Time:	HR
Operation Time:	3 HR
Ambient Temperature (°C):	NR
Test Distance:	28.75 FT

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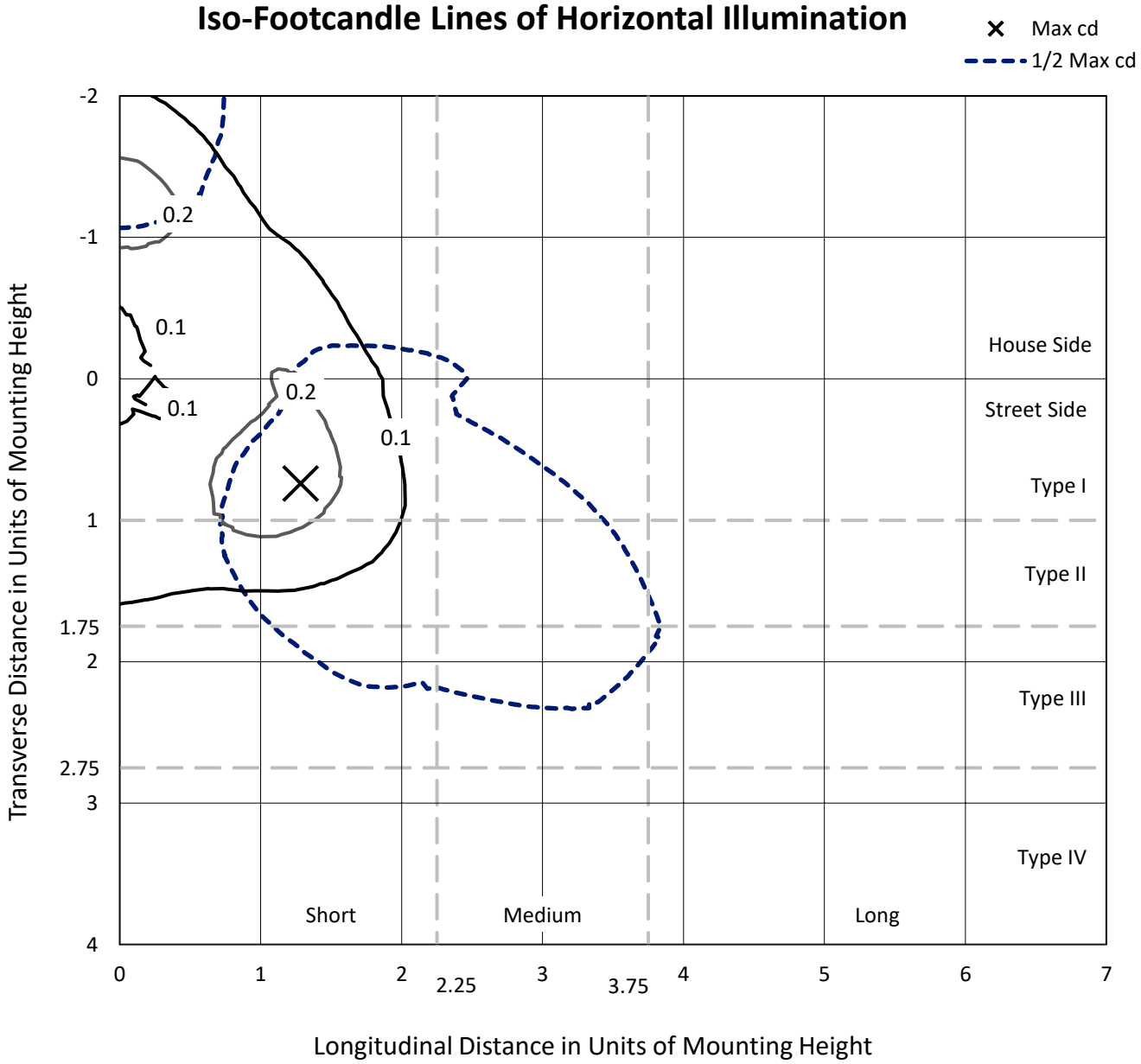
REPORT NUMBER: P1459760
CATALOG NUMBER: ABB-CX-840-X-U-S-GM-CBP

Iso-Footcandle Lines of Horizontal Illumination



Based on 10 foot mounting height. Maximum calculated value = 0.3 fc
Type III - Short - N/A

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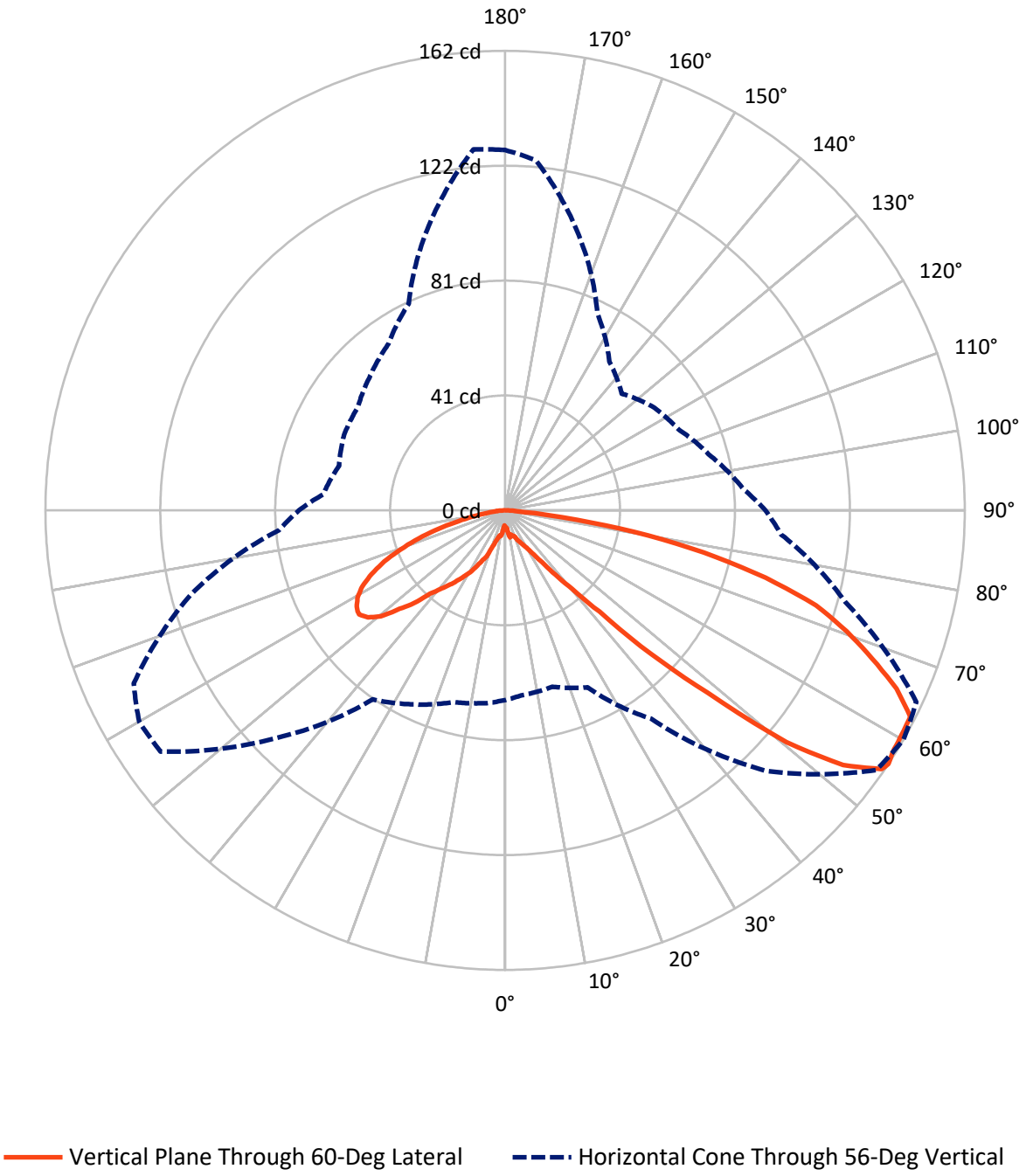
Luminous Intensity Polar Plot



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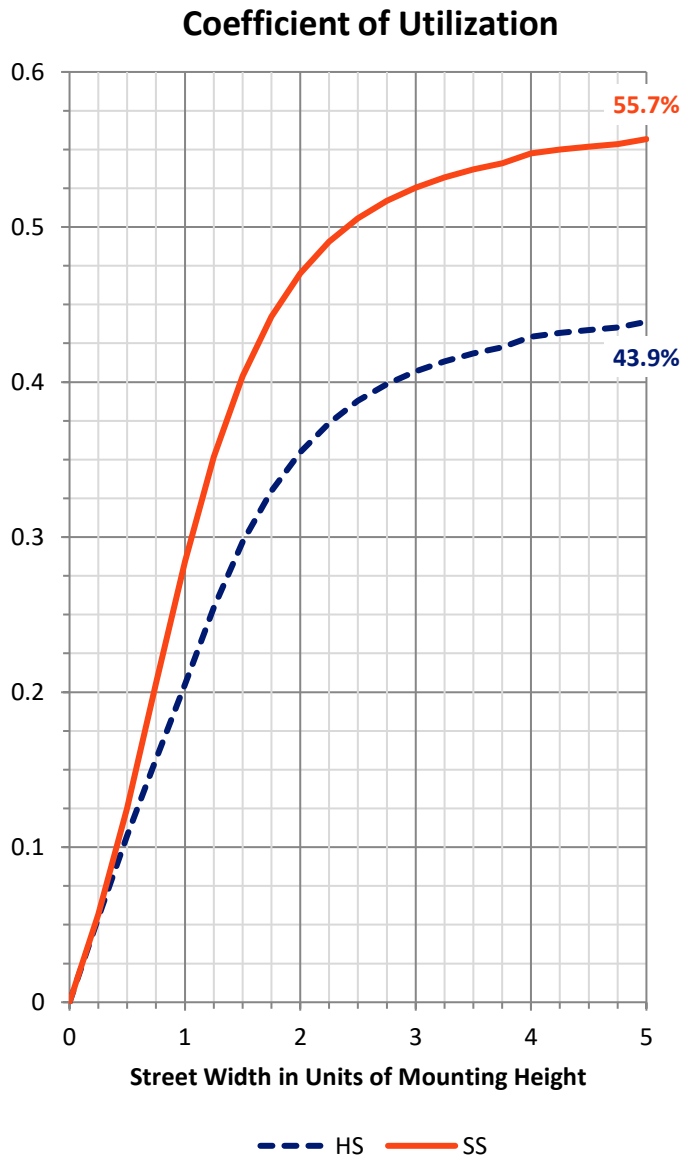
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	124.1	0.0	124.1
	% Fixture	44.0	0.0	44.0
Street Side	Lumens	158.0	0.0	158.0
	% Fixture	56.0	0.0	56.0
Total	Lumens	282.1	0.0	282.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.7	0.3
10°-20°	3.0	1.1
20°-30°	7.5	2.7
30°-40°	16.5	5.8
40°-50°	40.8	14.5
50°-60°	78.6	27.9
60°-70°	79.9	28.3
70°-80°	47.9	17.0
80°-90°	7.1	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°	282.1	100.0
0°-180°	282.1	100.0



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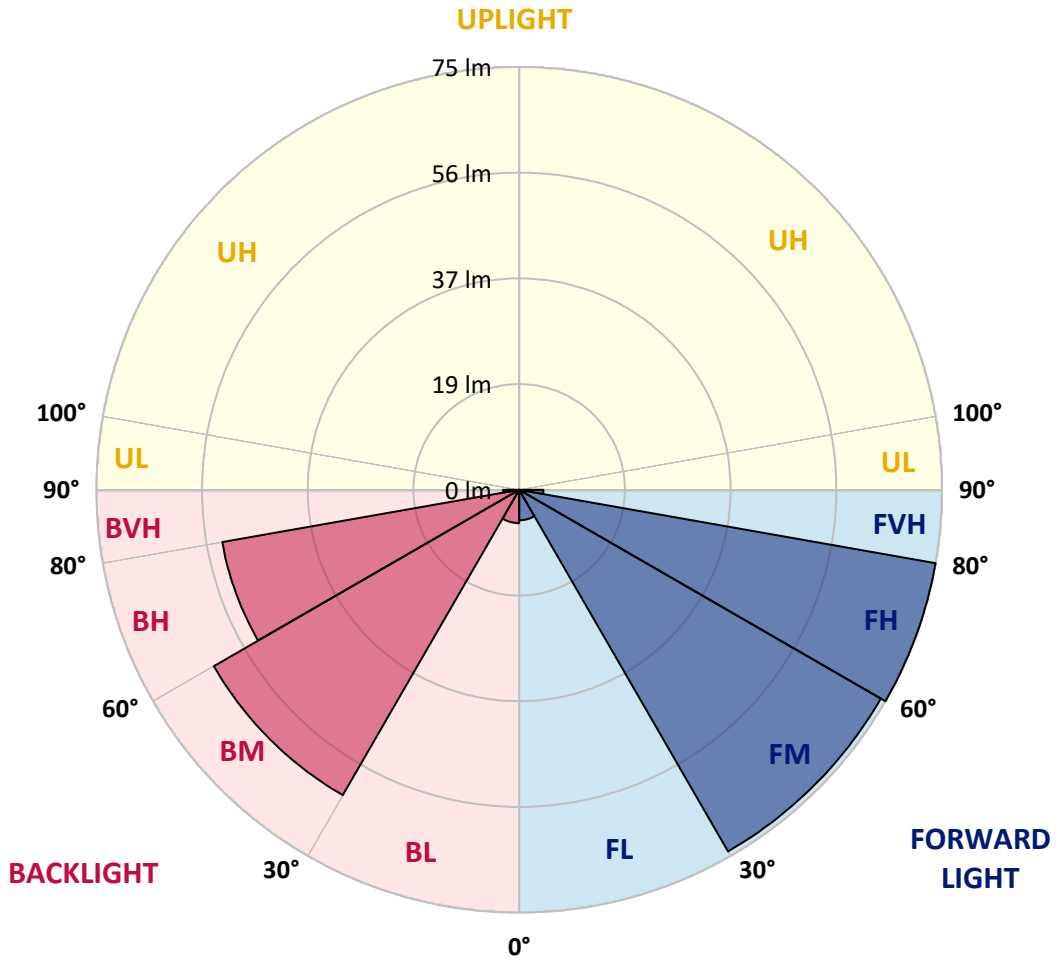
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	5.4	1.9			
FM	(30°-60°)	73.7	26.1			
FH	(60°-80°)	74.6	26.5			G0/660
FVH	(80°-90°)	4.3	1.5			G0/10
BL	(0°-30°)	5.9	2.1	B0/110		
BM	(30°-60°)	62.2	22.1	B0/220		
BH	(60°-80°)	53.2	18.9	B0/110		G0/110
BVH	(80°-90°)	2.8	1.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G0
Type III Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
2.5°	6.9	6.9	7.6	8.0	7.6	6.9	6.6	6.6	6.6	6.2	5.5
5°	9.7	9.0	8.0	8.0	7.6	7.3	6.2	6.2	6.2	5.5	5.2
7.5°	9.4	10.4	10.4	10.4	10.0	10.0	9.0	8.3	8.3	7.3	7.6
10°	10.0	10.0	9.7	11.4	10.7	10.7	9.7	9.7	9.7	9.4	9.4
12.5°	9.4	9.0	9.7	10.4	9.4	10.0	9.4	8.7	8.7	9.4	9.7
15°	9.7	10.0	10.4	11.4	11.1	10.4	9.4	9.4	9.4	10.7	10.7
17.5°	11.1	11.8	11.8	12.1	12.1	11.1	9.4	9.4	9.7	10.7	12.1
20°	12.8	12.8	12.8	12.8	12.8	11.8	10.0	10.0	10.7	11.4	12.8
22.5°	15.2	15.2	16.3	14.9	14.5	12.5	11.8	11.4	12.5	12.1	13.9
25°	18.7	19.7	18.7	15.9	15.6	13.5	12.5	12.5	12.8	14.5	14.9
27.5°	22.2	22.9	19.7	17.3	17.7	15.2	14.2	13.9	14.5	16.3	17.3
30°	24.2	24.6	21.8	19.1	19.7	17.3	16.3	15.6	16.3	18.4	20.4
32.5°	26.7	27.4	24.6	21.5	21.8	21.5	19.7	18.4	18.4	20.4	22.2
35°	30.1	29.8	26.7	23.6	24.2	25.6	24.9	22.5	22.2	22.2	25.3
37.5°	32.9	32.2	30.1	26.3	27.0	29.8	31.2	28.8	27.7	26.0	28.4
40°	35.7	35.7	33.3	29.1	32.2	36.4	39.8	36.4	34.6	31.5	31.9
42.5°	39.1	39.5	37.8	33.9	39.1	47.8	54.0	48.8	46.1	39.8	37.8
45°	46.1	47.5	45.7	42.3	49.2	64.1	75.5	72.4	67.9	53.7	48.8
47.5°	51.6	52.7	50.9	48.2	58.5	80.4	100.8	96.0	94.2	69.6	61.0
50°	59.2	59.2	58.5	58.2	72.7	107.0	127.5	128.5	128.9	92.1	78.3
52.5°	63.7	63.0	62.4	64.8	83.5	119.5	147.2	149.3	151.0	109.8	89.7
55°	66.5	65.5	64.4	68.6	88.7	128.5	158.0	161.1	159.3	121.2	95.6
56°	66.9	65.5	64.4	68.9	89.7	129.9	159.7	162.1	160.0	124.0	97.7
57.5°	66.5	65.1	63.7	69.3	90.1	129.9	159.0	161.1	160.7	126.1	99.1
60°	65.1	63.7	61.7	69.3	90.8	127.5	156.9	160.7	161.4	126.8	99.4
62.5°	62.7	62.0	58.5	68.2	89.7	122.3	156.2	160.4	159.7	123.7	95.3
65°	58.2	57.9	53.7	66.2	85.2	113.3	147.2	151.7	149.6	117.1	86.6
67.5°	52.3	51.6	47.8	62.4	80.7	102.5	136.8	139.6	138.9	109.5	76.9
70°	45.0	45.0	42.3	56.8	76.2	90.1	124.7	127.8	128.9	100.5	67.9
72.5°	37.4	37.8	36.4	49.9	69.3	76.6	109.5	114.7	115.7	88.7	56.5
75°	29.1	29.4	29.4	41.6	59.6	60.6	91.1	94.9	96.3	74.1	44.3
77.5°	20.8	20.8	21.8	31.5	47.8	42.6	68.9	71.7	74.1	56.1	29.8
80°	13.5	12.8	14.2	20.1	31.9	25.6	44.0	46.1	48.5	35.3	16.6
82.5°	8.0	7.3	8.0	9.4	13.5	11.8	20.1	20.4	26.0	15.6	6.9
85°	3.8	3.8	3.5	3.8	3.5	4.2	3.8	3.8	4.5	2.8	3.1
87.5°	2.8	2.4	2.4	2.4	2.4	3.1	2.8	2.8	3.1	2.1	2.4
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°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
2.5°	5.5	5.2	4.8	4.8	4.5	5.2	5.9	5.9	5.5	5.5	5.5
5°	5.5	5.9	6.2	6.9	7.6	6.9	6.6	5.9	5.2	4.8	4.8
7.5°	8.3	8.3	7.6	8.0	8.3	7.6	8.0	7.6	6.9	6.6	6.2
10°	9.4	9.7	11.1	10.4	10.0	10.0	9.7	9.4	8.7	8.0	7.6
12.5°	10.4	10.7	11.1	10.0	11.1	10.7	10.4	9.4	9.0	8.3	8.3
15°	11.1	11.8	11.4	11.8	11.4	11.4	11.1	10.0	9.7	8.3	8.0
17.5°	12.8	12.8	13.5	13.2	12.1	12.8	12.1	11.4	10.4	9.0	9.0
20°	13.5	14.5	14.9	14.9	14.2	14.5	14.9	13.9	12.1	11.1	11.1
22.5°	15.2	15.9	17.0	18.4	16.6	16.6	16.3	13.9	11.8	12.1	11.4
25°	17.3	16.6	18.0	20.4	19.1	17.3	17.7	15.6	13.9	13.5	12.8
27.5°	19.1	19.1	21.1	24.2	20.8	19.7	19.1	17.3	15.2	14.5	14.5
30°	23.6	21.8	24.2	26.0	25.3	20.8	20.8	18.7	17.3	16.3	16.6
32.5°	26.3	24.9	27.4	28.4	28.1	22.9	22.9	21.5	20.4	19.7	18.7
35°	29.1	29.4	29.8	31.2	30.5	27.0	24.6	23.6	23.6	23.6	22.9
37.5°	32.6	32.9	33.3	33.9	32.9	29.8	27.4	26.3	27.4	29.1	27.7
40°	36.0	37.4	36.4	36.7	36.0	33.3	31.5	30.8	33.3	37.1	35.0
42.5°	43.0	43.0	41.6	40.5	39.5	37.1	36.4	37.8	42.6	49.2	46.8
45°	52.0	51.6	49.2	47.5	46.1	43.3	43.3	47.5	57.2	67.2	67.5
47.5°	67.5	61.0	56.8	54.0	51.6	48.5	48.8	56.5	70.0	85.6	85.9
50°	80.0	74.8	67.5	61.3	58.2	54.7	56.5	67.9	86.6	100.8	104.3
52.5°	87.6	81.8	72.4	65.8	62.0	58.2	61.3	75.2	96.3	114.3	118.1
55°	90.4	83.8	75.2	67.9	63.7	58.9	64.1	77.2	100.1	122.6	126.4
56°	*91.8*	*84.5*	*74.8*	*67.5*	*63.7*	*58.2*	*64.1*	*76.9*	*100.5*	*124.0*	*127.1*
57.5°	93.2	84.2	74.1	67.2	63.4	57.5	64.1	76.2	100.1	124.0	127.5
60°	96.0	84.2	71.0	65.5	61.0	55.4	63.4	76.2	98.7	121.9	127.8
62.5°	93.9	83.5	66.9	61.7	58.9	53.0	61.0	75.2	95.3	120.2	127.8
65°	88.7	81.1	60.6	56.1	54.0	48.5	57.2	72.4	89.0	114.3	120.9
67.5°	82.1	77.6	54.0	49.5	47.8	43.6	52.3	67.2	80.4	102.9	109.5
70°	73.1	73.1	47.1	42.3	41.2	37.4	46.8	61.7	68.6	90.4	96.6
72.5°	60.3	62.7	41.2	34.3	33.6	31.5	39.8	54.0	56.1	77.2	83.8
75°	46.1	50.6	33.3	26.3	25.6	24.9	31.5	44.3	43.3	61.0	67.5
77.5°	30.5	35.7	24.2	18.7	17.7	18.0	22.5	33.9	30.1	43.3	48.8
80°	14.9	19.4	14.9	12.5	11.1	11.8	13.9	21.5	17.0	25.3	30.5
82.5°	4.8	6.2	7.3	6.9	6.2	6.2	6.6	8.7	7.6	9.4	12.8
85°	2.4	2.8	3.5	3.5	3.1	3.1	3.1	3.5	3.8	3.5	3.5
87.5°	1.7	1.7	2.8	2.8	2.4	2.4	2.4	2.4	3.1	2.8	2.8
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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
2.5°	5.9	5.9	5.9	5.9	5.2	5.5	5.2	5.5	5.5	5.5	5.5
5°	5.2	5.5	5.9	5.5	6.2	6.2	6.2	5.9	4.8	4.8	4.8
7.5°	6.9	7.3	7.3	6.6	7.3	8.3	8.0	7.6	6.6	6.2	5.9
10°	8.3	9.7	8.7	9.7	10.0	9.7	8.7	8.0	9.4	9.0	8.7
12.5°	8.3	9.0	9.7	11.1	12.1	9.4	8.7	9.7	9.4	9.4	8.7
15°	8.3	10.0	10.7	11.8	12.8	11.1	9.0	10.4	11.1	10.7	10.0
17.5°	9.4	10.4	11.1	12.8	13.9	12.8	10.7	11.4	12.1	13.2	12.5
20°	10.7	11.4	11.8	13.9	14.2	15.2	12.8	12.8	12.8	13.5	13.2
22.5°	12.1	13.5	13.5	15.2	15.6	18.0	17.0	13.5	12.8	14.5	14.2
25°	12.8	14.2	15.2	16.6	17.3	19.7	19.1	16.3	14.9	15.2	15.2
27.5°	14.9	15.9	17.0	18.0	20.4	21.5	22.9	18.4	17.0	17.0	17.0
30°	15.9	17.7	19.1	21.1	23.2	24.2	26.0	20.1	18.4	18.7	18.7
32.5°	18.7	19.4	21.5	23.9	25.3	27.4	27.7	22.5	20.4	20.4	20.1
35°	21.8	21.8	23.6	27.0	28.1	30.8	29.8	25.6	22.9	22.9	22.5
37.5°	26.7	25.6	26.7	30.1	31.5	33.6	32.6	28.8	25.6	26.0	25.6
40°	32.9	30.5	30.1	33.9	34.6	36.7	35.3	32.2	29.4	29.8	29.4
42.5°	43.0	37.1	36.4	38.1	38.8	40.2	38.8	36.4	34.6	35.7	36.4
45°	63.0	50.9	46.4	47.5	46.8	46.8	45.0	43.6	41.9	43.3	45.4
47.5°	82.1	65.1	58.2	53.7	52.3	51.6	50.2	49.2	46.8	50.2	55.1
50°	100.5	81.4	70.3	65.1	62.4	57.9	57.2	56.1	56.1	61.3	66.9
52.5°	116.7	94.9	78.3	71.0	66.5	62.0	60.6	59.6	61.3	69.3	75.2
55°	127.5	102.9	80.4	72.1	67.5	63.7	62.7	61.0	64.1	72.4	79.7
56°	*127.8*	*103.9*	*80.4*	*71.7*	*67.2*	*63.4*	*62.7*	*60.6*	*64.4*	*72.7*	*80.0*
57.5°	127.5	105.0	79.7	71.4	66.2	62.7	62.0	59.6	64.4	73.1	80.7
60°	124.7	104.3	77.6	71.0	63.4	60.3	60.3	56.8	63.4	73.8	81.4
62.5°	125.4	101.8	74.1	68.9	58.9	56.5	57.5	53.3	61.0	73.8	81.1
65°	120.6	98.0	67.9	65.1	53.7	50.9	53.3	47.8	57.5	70.3	77.2
67.5°	109.5	90.4	61.3	61.0	47.8	45.0	47.5	42.6	52.7	66.2	73.1
70°	97.0	79.7	53.0	54.7	41.9	38.1	40.5	36.4	47.1	60.6	68.2
72.5°	84.2	67.2	43.0	46.4	35.3	31.2	32.9	30.5	40.5	53.0	59.9
75°	68.2	53.0	32.2	36.7	28.1	23.9	24.6	23.9	32.9	43.6	49.9
77.5°	49.9	38.1	21.1	26.0	20.1	16.6	17.0	17.3	24.2	32.2	37.8
80°	30.5	24.2	11.8	15.2	12.5	11.1	10.4	11.1	15.2	19.7	23.2
82.5°	12.1	9.7	4.8	5.9	6.2	6.2	5.9	5.9	7.3	7.6	7.3
85°	3.5	2.4	2.8	2.4	3.1	3.1	2.8	2.4	2.8	2.8	2.8
87.5°	2.8	1.7	2.1	1.7	2.4	2.8	2.1	2.1	2.1	2.1	2.1
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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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1459760
CATALOG NUMBER: ABB-CX-840-X-U-S-GM-CBP

CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
2.5°	5.5	5.9	5.9	6.2	6.6	6.9	6.9	6.9	6.9	6.9
5°	5.2	4.8	4.8	4.5	4.8	5.5	6.2	6.9	8.7	9.7
7.5°	6.2	6.2	6.2	6.2	5.9	6.2	7.3	8.3	9.4	9.4
10°	8.7	8.3	8.0	8.3	8.3	7.6	8.7	10.0	10.7	10.0
12.5°	8.3	8.0	7.6	7.6	8.0	8.3	10.0	11.1	9.4	9.4
15°	9.4	8.7	8.3	8.3	8.3	9.7	11.1	11.8	9.7	9.7
17.5°	10.4	9.0	8.3	8.7	9.4	10.4	12.1	12.1	11.1	11.1
20°	11.1	9.7	9.4	10.0	10.0	12.1	12.5	13.2	12.8	12.8
22.5°	12.1	10.4	10.0	10.4	11.4	13.2	14.2	15.9	14.2	15.2
25°	13.5	11.8	11.8	11.4	12.5	14.2	15.9	17.0	17.0	18.7
27.5°	14.9	13.9	13.9	13.5	13.5	15.6	18.4	19.1	21.1	22.2
30°	17.0	16.6	15.9	15.6	15.6	16.6	20.1	22.9	25.3	24.2
32.5°	19.7	19.7	19.1	19.4	18.0	19.1	22.9	25.6	27.0	26.7
35°	22.9	23.6	22.9	22.5	21.1	21.8	25.3	29.1	30.1	30.1
37.5°	28.1	28.4	27.7	26.7	24.9	24.6	28.8	31.5	32.9	32.9
40°	34.6	36.7	35.0	32.9	29.1	28.4	32.6	34.6	36.0	35.7
42.5°	43.6	46.8	46.4	43.3	34.6	32.6	37.1	38.8	39.5	39.1
45°	58.9	67.2	68.9	65.1	48.2	41.9	47.1	48.2	47.5	46.1
47.5°	72.1	84.9	91.1	85.9	59.6	49.9	54.4	55.1	53.0	51.6
50°	94.2	113.3	116.4	113.3	82.8	63.7	65.1	64.1	61.0	59.2
52.5°	106.3	130.9	135.4	132.7	100.1	74.5	72.1	68.2	65.5	63.7
55°	112.9	142.7	148.6	146.5	110.5	80.7	75.2	70.3	68.2	66.5
56°	*114.7*	*144.5*	*149.0*	*148.3*	*113.3*	*81.4*	*75.5*	*70.0*	*68.2*	*66.9*
57.5°	115.4	144.5	147.9	147.6	115.7	81.4	75.2	68.9	67.9	66.5
60°	112.6	142.4	144.8	144.1	116.7	81.1	74.8	66.2	65.8	65.1
62.5°	105.3	140.6	145.8	144.8	115.7	78.3	74.8	61.7	62.4	62.7
65°	98.0	133.0	139.3	139.3	111.2	72.7	73.1	56.5	56.5	58.2
67.5°	88.3	121.6	128.2	128.5	103.6	64.8	69.6	51.3	50.2	52.3
70°	75.5	107.7	115.0	115.0	93.9	56.5	64.8	45.4	43.0	45.0
72.5°	63.0	92.8	101.2	101.5	81.4	47.8	57.5	39.5	35.3	37.4
75°	49.5	75.2	83.5	85.6	68.2	37.8	47.8	33.3	27.7	29.1
77.5°	35.3	56.1	63.0	63.7	52.3	27.0	36.0	24.9	19.7	20.8
80°	21.5	35.7	41.2	44.3	34.6	16.6	22.5	16.3	13.2	13.5
82.5°	9.4	15.6	19.1	21.8	16.3	8.0	7.3	8.3	7.6	8.0
85°	3.5	3.5	3.8	4.2	3.1	3.1	2.8	3.8	3.8	3.8
87.5°	2.8	2.8	2.8	2.8	2.1	2.4	1.7	2.8	2.8	2.8
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

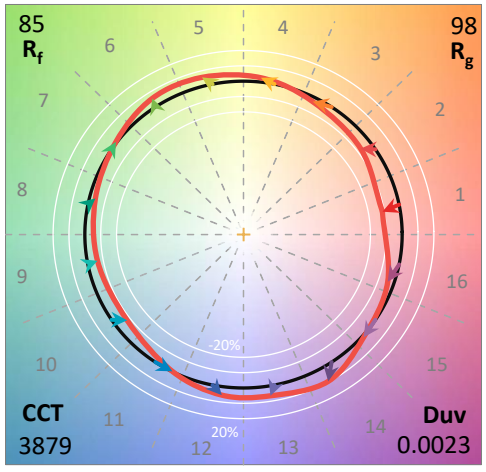
Test Information

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



Test Conditions

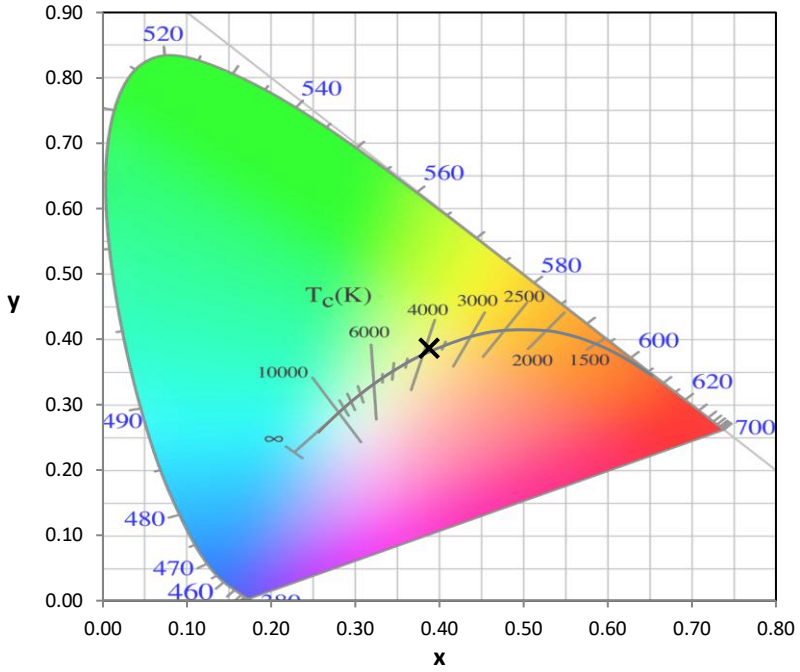
Stabilization Time:	29M
Operation Time:	1H 29M
Sphere Temperature (°C):	25.1

REPORT NUMBER: SP1-2509-539-8

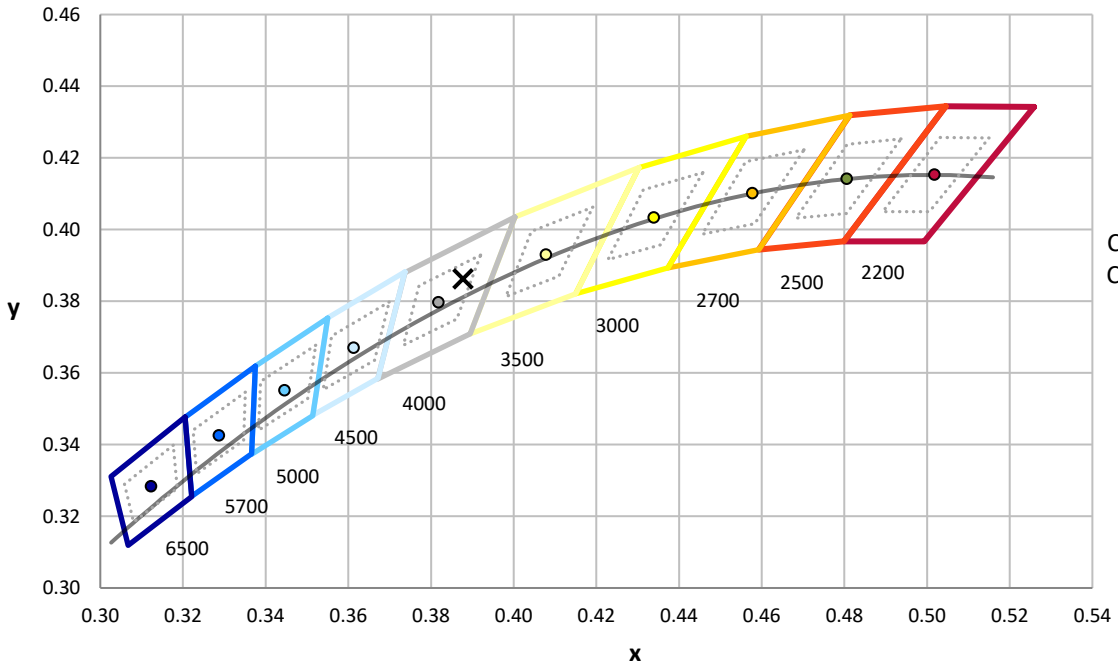
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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

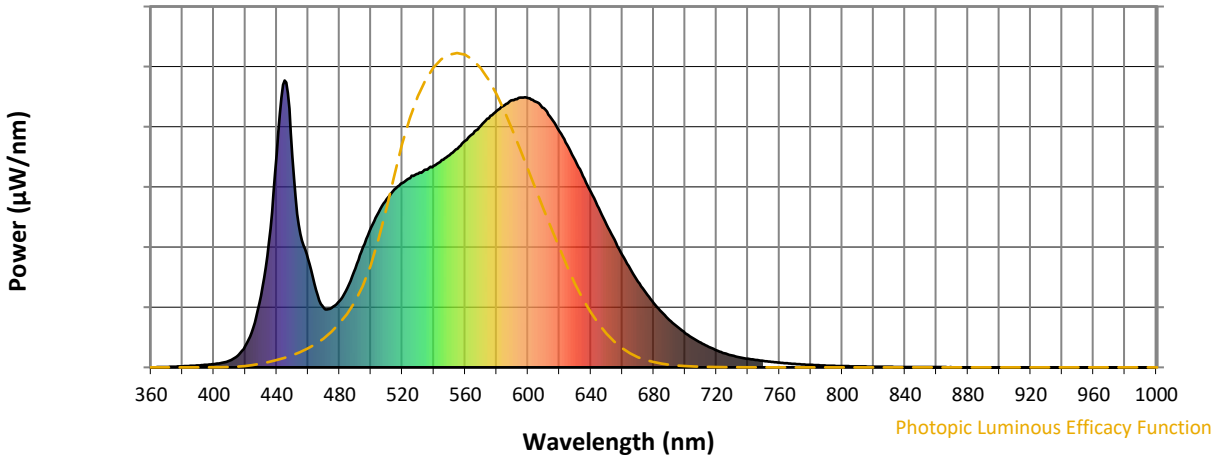


CCT = 3879K
CIE x = 0.3878
CIE y = 0.3863
Duv = 0.0023

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2509-539-8

Photopic Flux vs. Wavelength

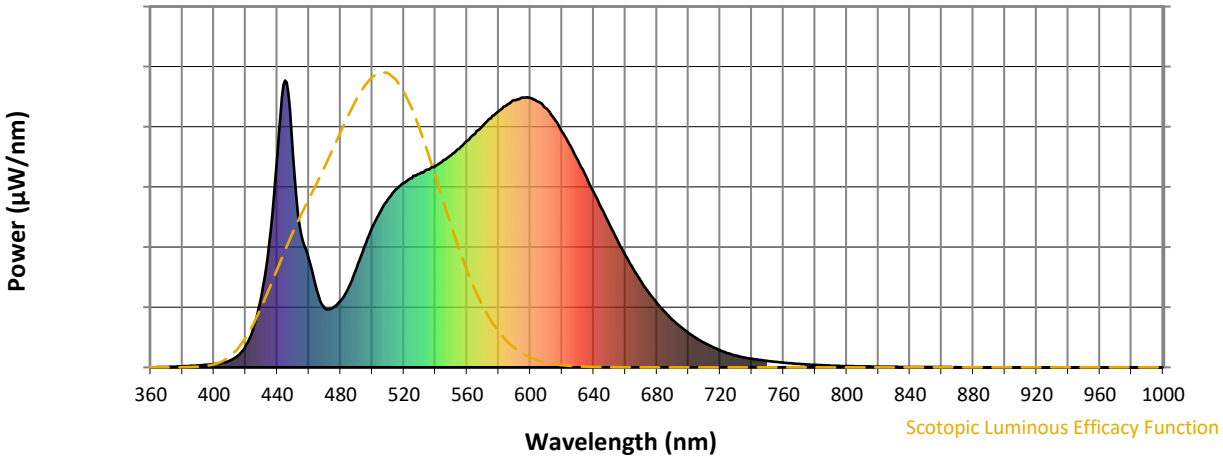


Photopic Lumens: NR

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

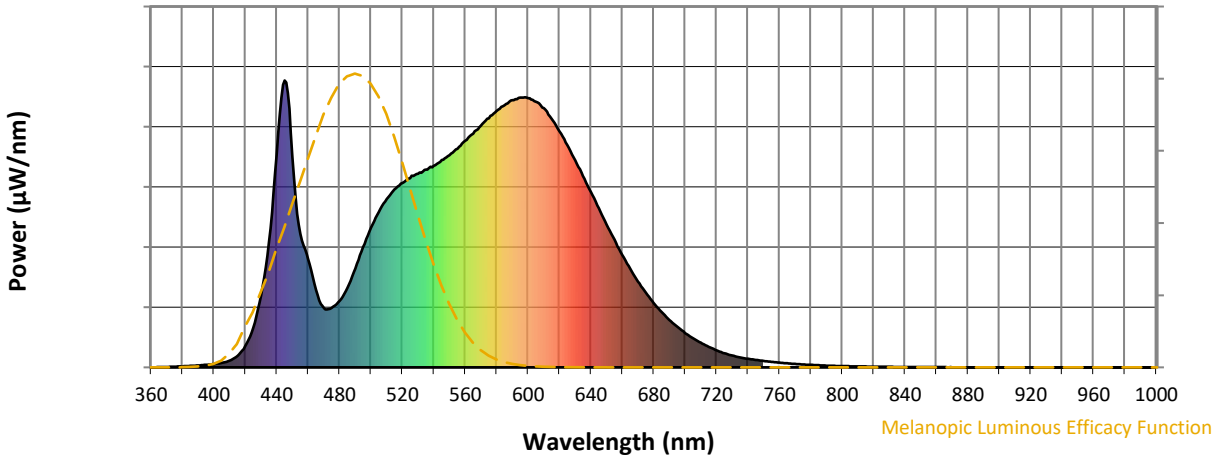


Scotopic Lumens: NR **S/P: 1.63**

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			

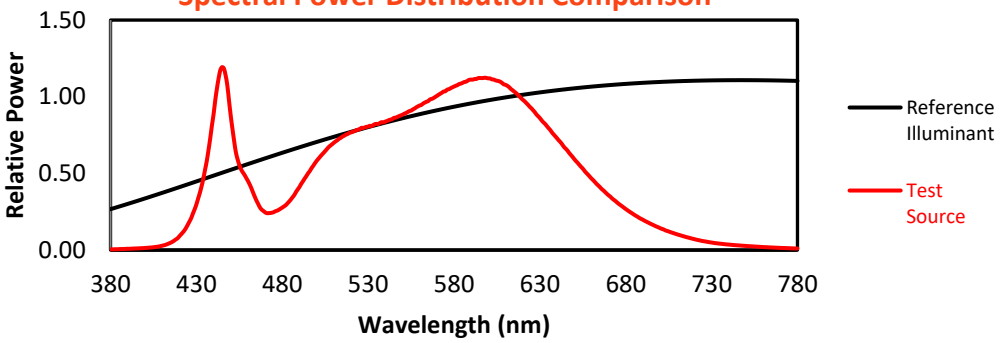
REPORT NUMBER: SP1-2509-539-8

TM-30-18

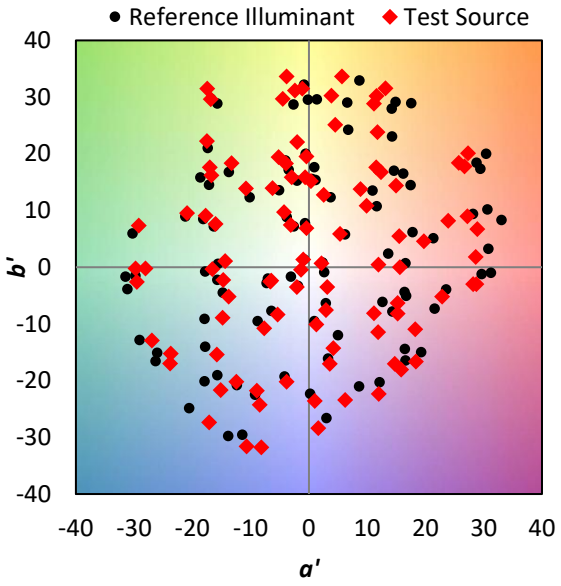
Summary

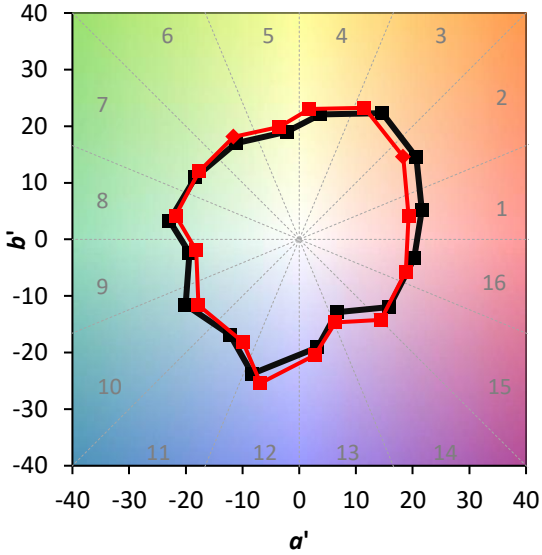
R_f = 84.8
R_g = 97.9
CIE R_a = 83.0
R_9 = 8.2

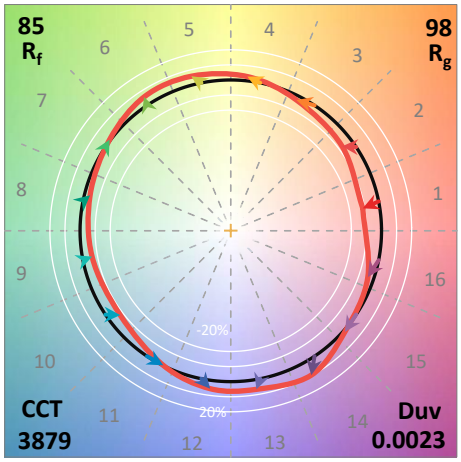
Spectral Power Distribution Comparison

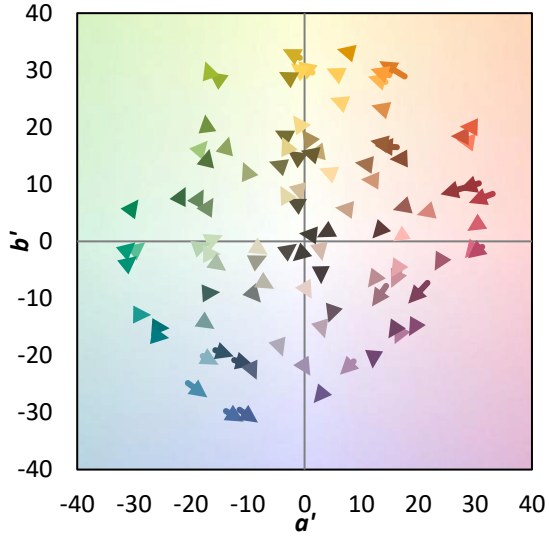


Color Vector Graphics







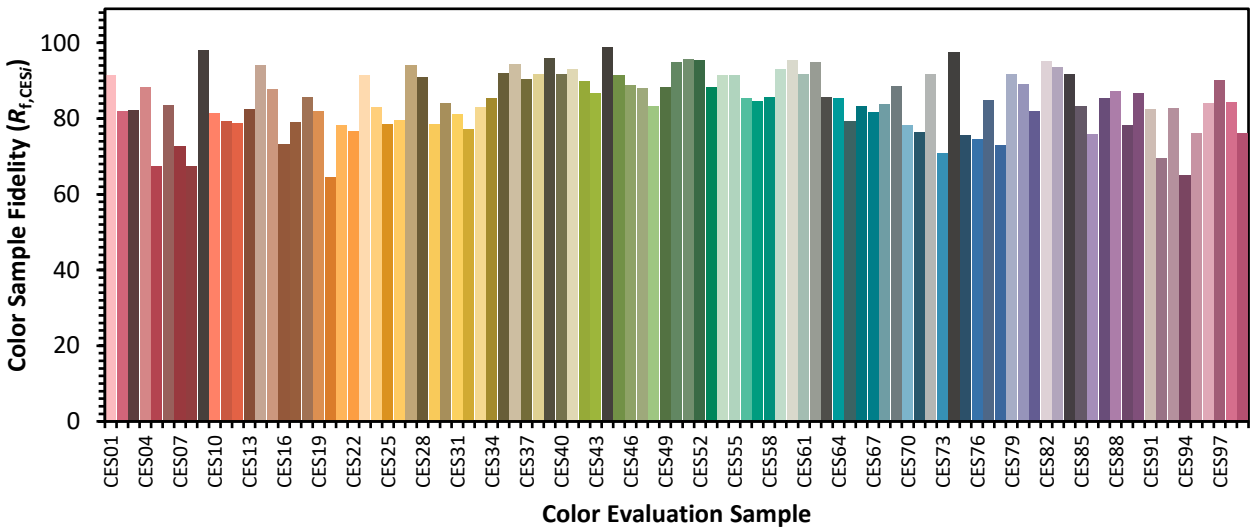


REPORT NUMBER: SP1-2509-539-8

TM-30-18

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

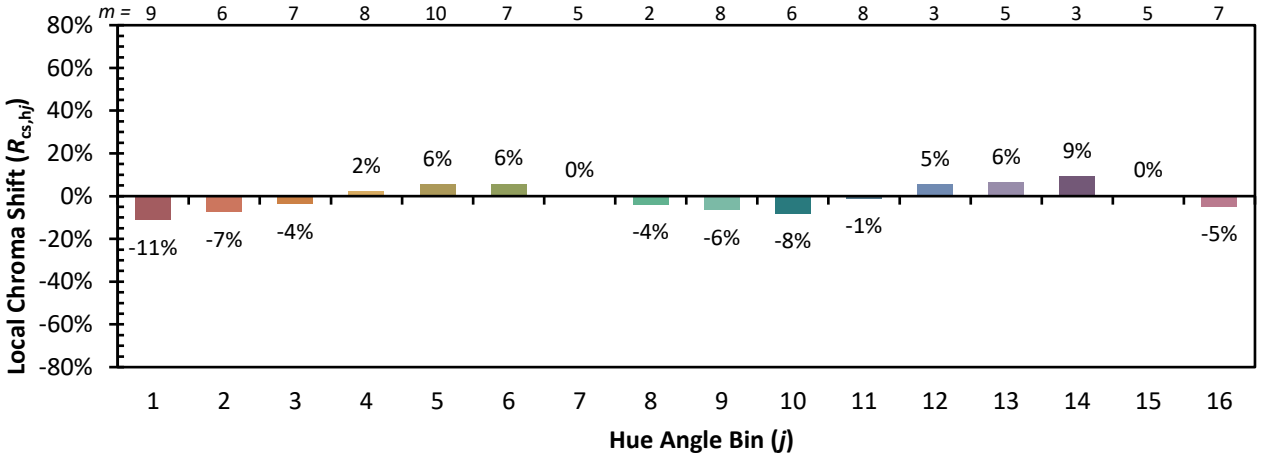
CES01 = 86	CES26 = 80	CES51 = 96	CES76 = 74
CES02 = 61	CES27 = 94	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 91	CES53 = 88	CES78 = 73
CES04 = 69	CES29 = 79	CES54 = 91	CES79 = 92
CES05 = 48	CES30 = 84	CES55 = 91	CES80 = 89
CES06 = 50	CES31 = 81	CES56 = 85	CES81 = 82
CES07 = 41	CES32 = 77	CES57 = 85	CES82 = 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	

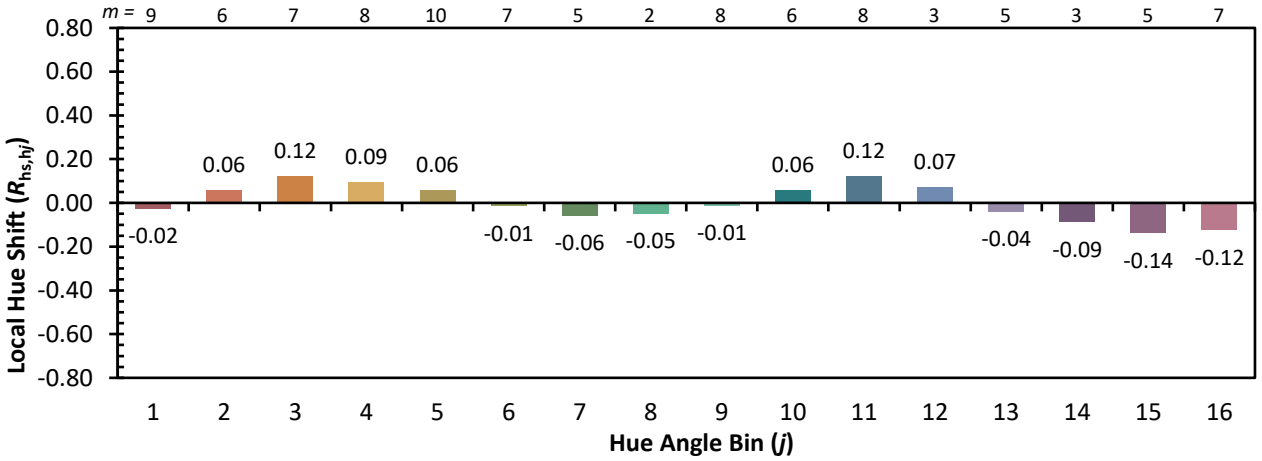


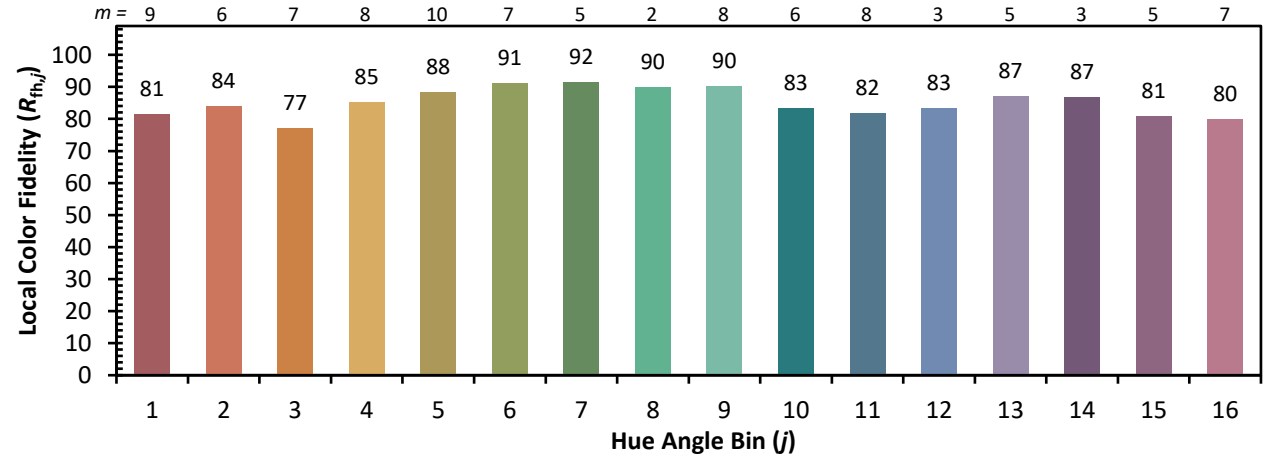
REPORT NUMBER: SP1-2509-539-8

TM-30-18

Color Rendition by Hue-Angle Bin



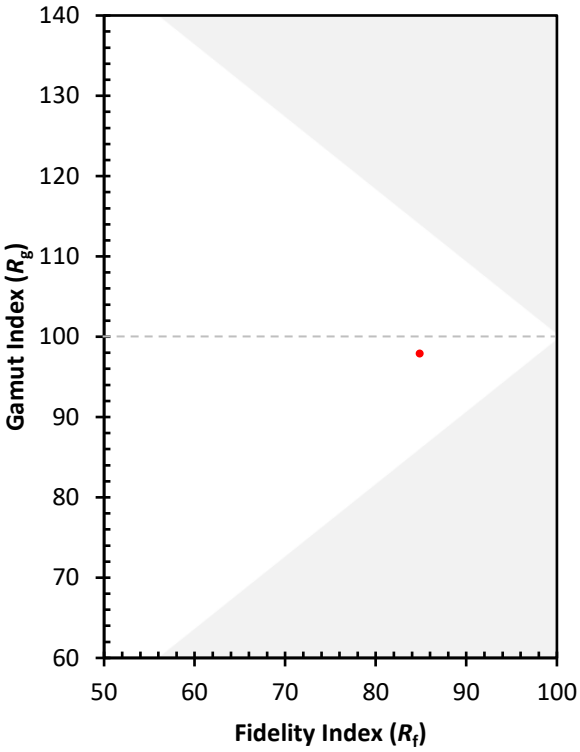


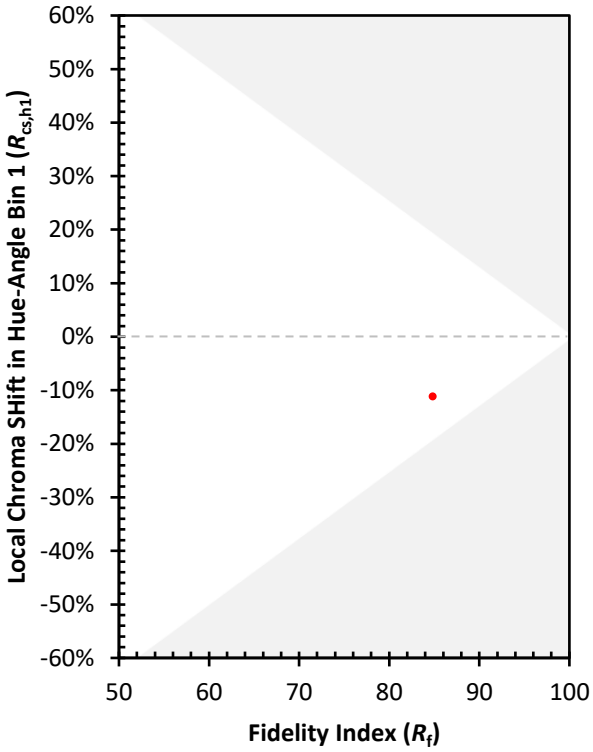


REPORT NUMBER: SP1-2509-539-8

TM-30-18

Measure Comparisons





(END OF REPORT)