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: P1459754

Luminaire Tested: ABB-CX-827-X-U-S-GM-CBP

Issue Date: 5/26/2026

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Scaled Data Report

Test Information

Test Method:	LM-79-2024
Report Number:	P1459754
	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-827-X-U-S-GM-CBP
Description:	ARBOR OUTDOOR ARCHITECTURAL BOLLARD LUMINAIRE
	SYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH
Light Source:	2700K CCT, 80 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	245.6 lumens
Efficiency:	N/A
Efficacy:	42.3 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: P1459754
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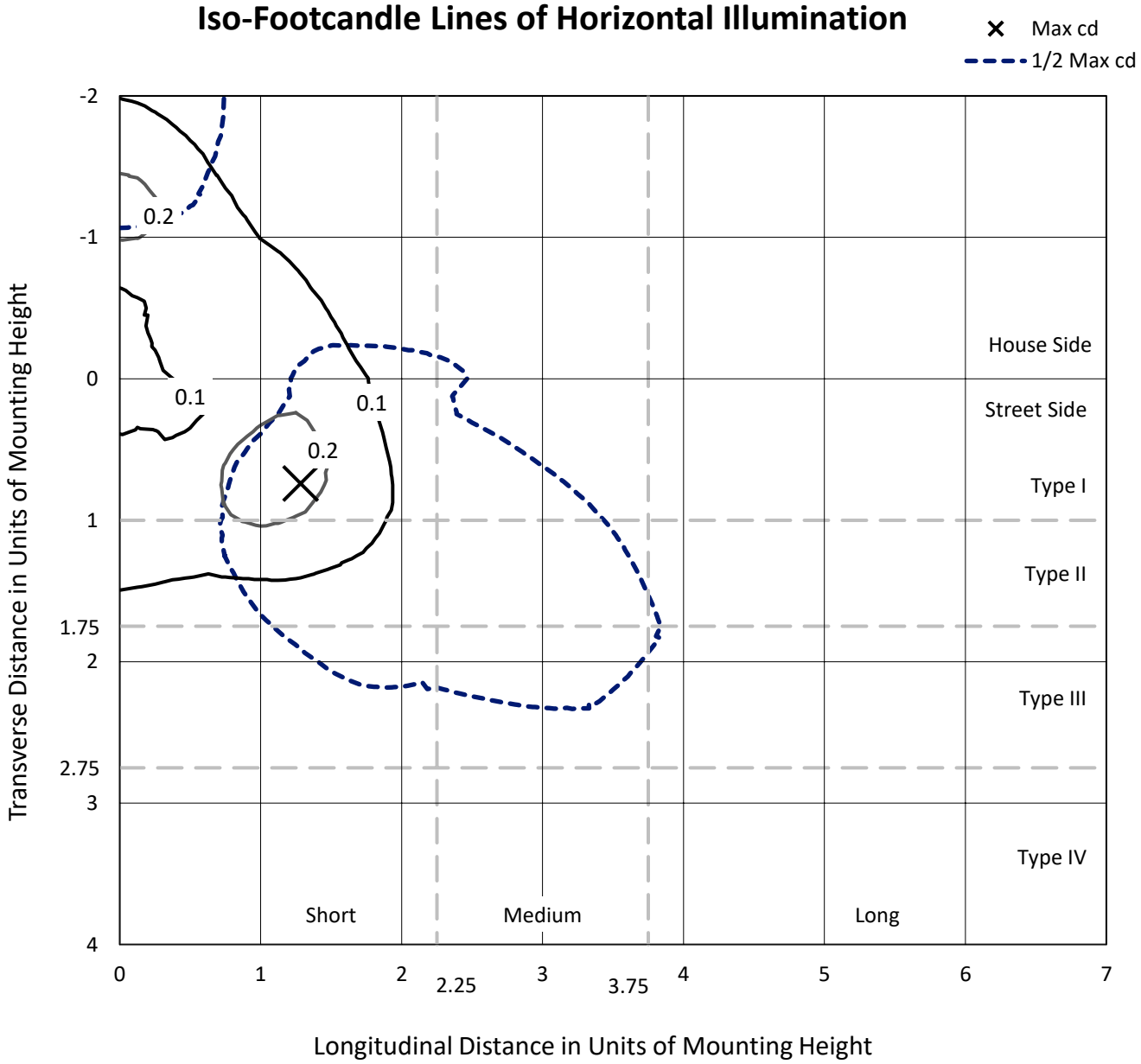
Iso-Footcandle Lines of Horizontal Illumination



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

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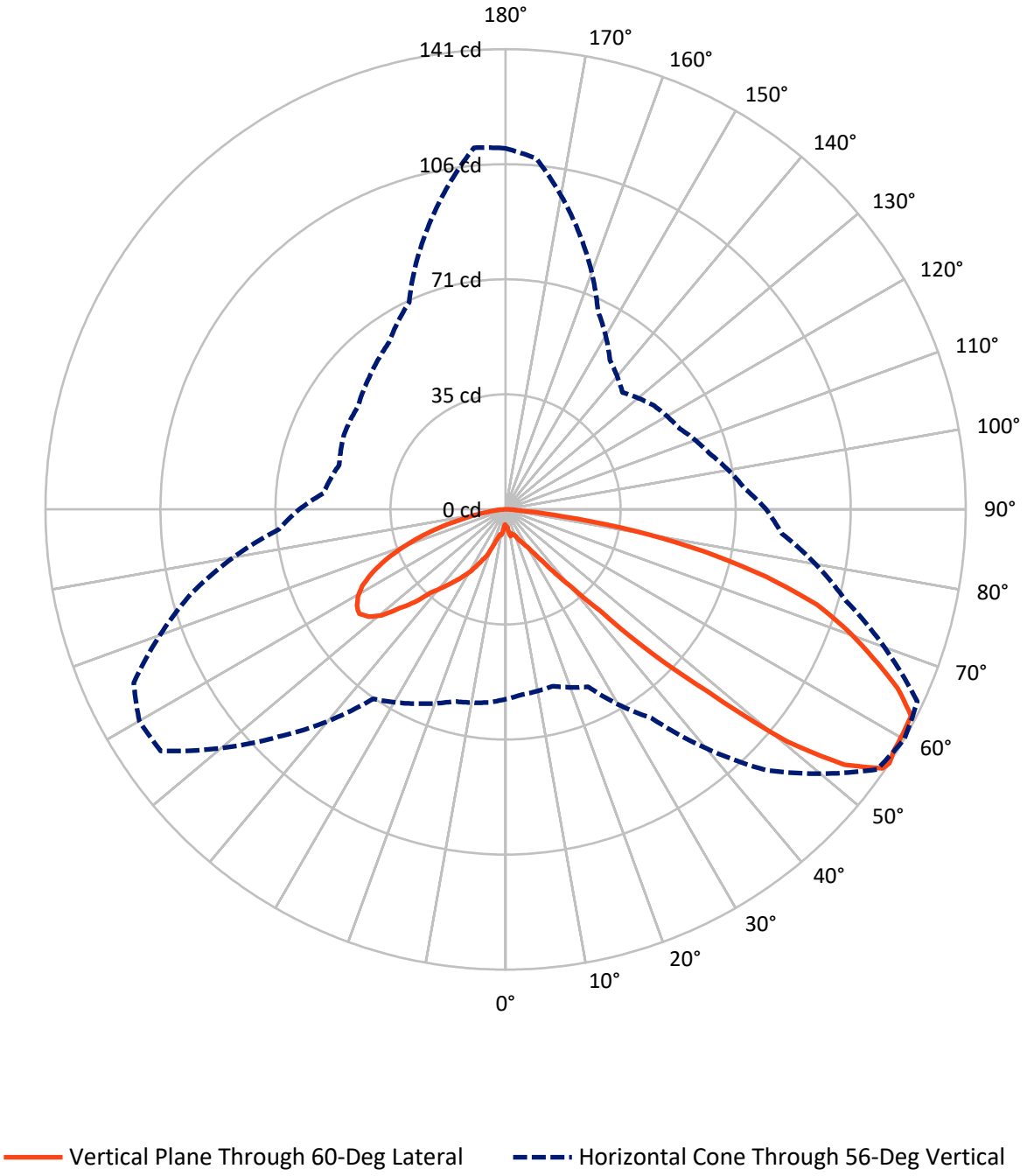
Luminous Intensity Polar Plot



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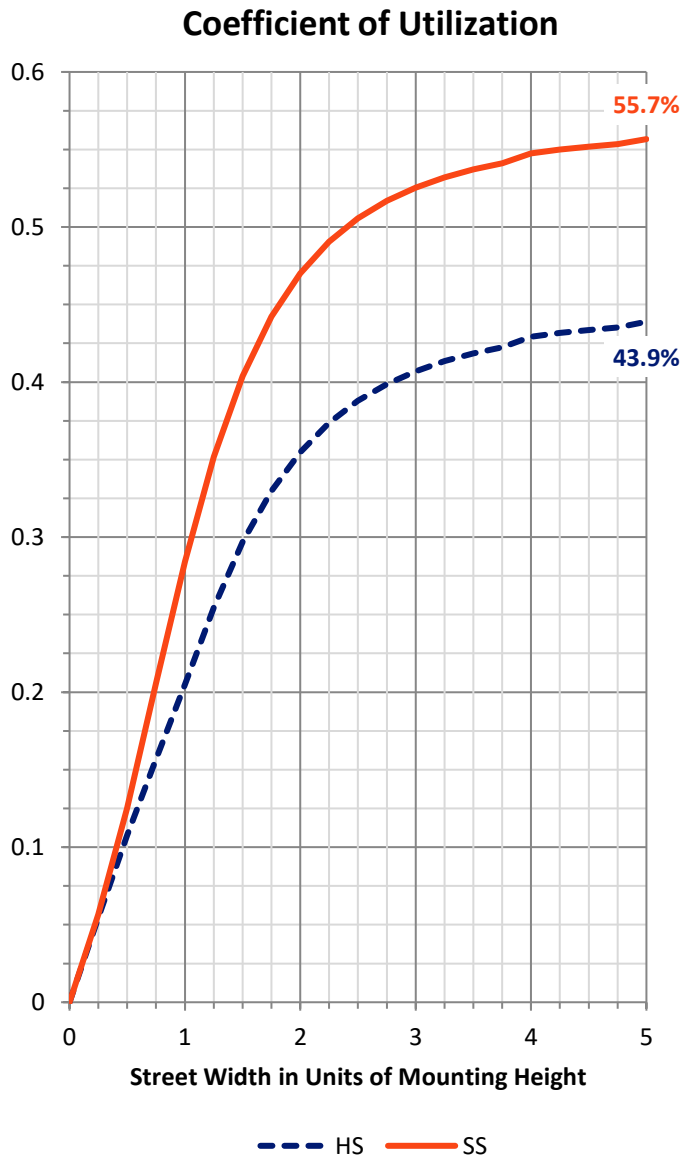
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	108.1	0.0	108.1
	% Fixture	44.0	0.0	44.0
Street Side	Lumens	137.5	0.0	137.5
	% Fixture	56.0	0.0	56.0
Total	Lumens	245.6	0.0	245.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.6	0.3
10°-20°	2.6	1.1
20°-30°	6.5	2.7
30°-40°	14.3	5.8
40°-50°	35.5	14.5
50°-60°	68.5	27.9
60°-70°	69.6	28.3
70°-80°	41.7	17.0
80°-90°	6.2	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°	245.6	100.0
0°-180°	245.6	100.0



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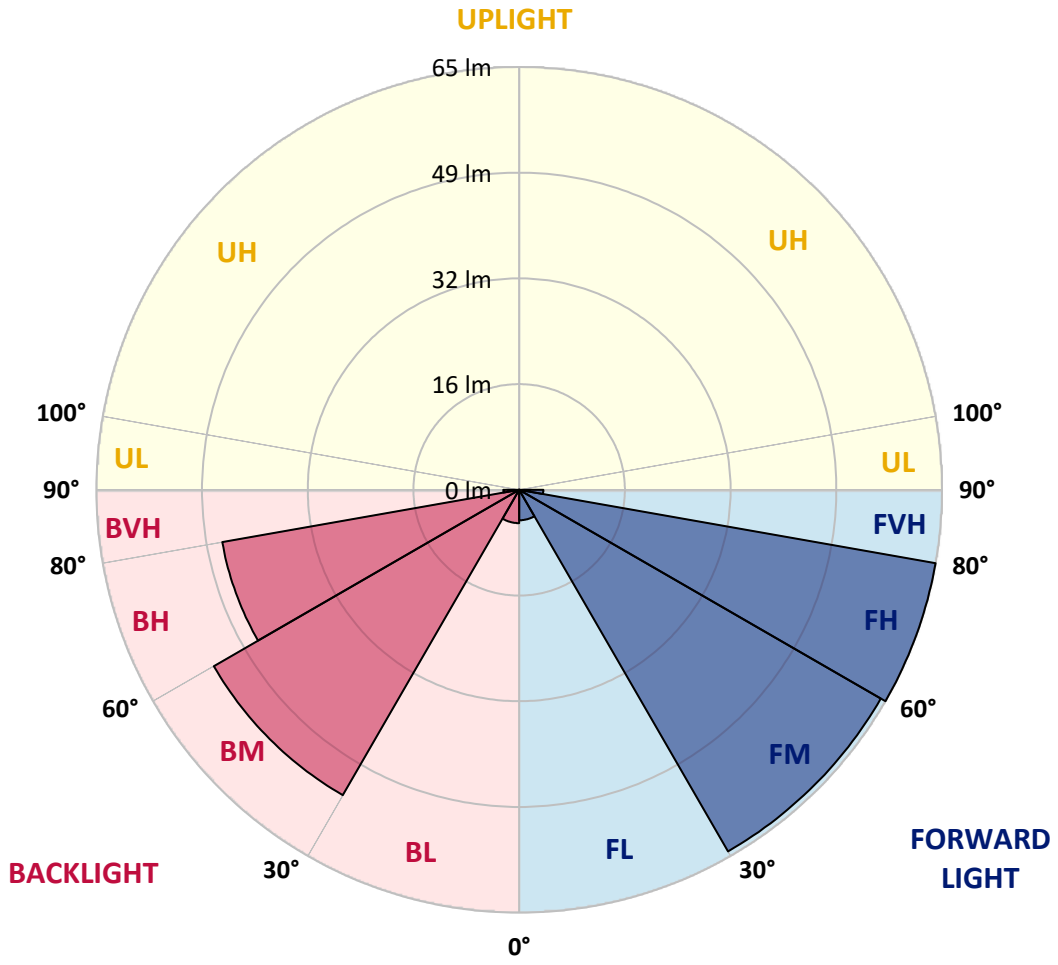
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	4.7	1.9			
FM	(30°-60°)	64.2	26.1			
FH	(60°-80°)	65.0	26.5			G0/660
FVH	(80°-90°)	3.7	1.5			G0/10
BL	(0°-30°)	5.1	2.1	B0/110		
BM	(30°-60°)	54.2	22.1	B0/220		
BH	(60°-80°)	46.3	18.9	B0/110		G0/110
BVH	(80°-90°)	2.4	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°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2.5°	6.0	6.0	6.6	6.9	6.6	6.0	5.7	5.7	5.7	5.4	4.8
5°	8.4	7.8	6.9	6.9	6.6	6.3	5.4	5.4	5.4	4.8	4.5
7.5°	8.1	9.0	9.0	9.0	8.7	8.7	7.8	7.2	7.2	6.3	6.6
10°	8.7	8.7	8.4	10.0	9.3	9.3	8.4	8.4	8.4	8.1	8.1
12.5°	8.1	7.8	8.4	9.0	8.1	8.7	8.1	7.5	7.5	8.1	8.4
15°	8.4	8.7	9.0	10.0	9.7	9.0	8.1	8.1	8.1	9.3	9.3
17.5°	9.7	10.3	10.3	10.6	10.6	9.7	8.1	8.1	8.4	9.3	10.6
20°	11.2	11.2	11.2	11.2	11.2	10.3	8.7	8.7	9.3	10.0	11.2
22.5°	13.3	13.3	14.2	13.0	12.7	10.9	10.3	10.0	10.9	10.6	12.1
25°	16.3	17.2	16.3	13.9	13.6	11.8	10.9	10.9	11.2	12.7	13.0
27.5°	19.3	19.9	17.2	15.1	15.4	13.3	12.4	12.1	12.7	14.2	15.1
30°	21.1	21.4	19.0	16.6	17.2	15.1	14.2	13.6	14.2	16.0	17.8
32.5°	23.2	23.8	21.4	18.7	19.0	18.7	17.2	16.0	16.0	17.8	19.3
35°	26.2	25.9	23.2	20.5	21.1	22.3	21.7	19.6	19.3	19.3	22.0
37.5°	28.7	28.0	26.2	22.9	23.5	25.9	27.1	25.0	24.1	22.6	24.7
40°	31.1	31.1	29.0	25.3	28.0	31.7	34.7	31.7	30.2	27.4	27.7
42.5°	34.1	34.4	32.9	29.6	34.1	41.6	47.0	42.5	40.1	34.7	32.9
45°	40.1	41.3	39.8	36.8	42.8	55.8	65.7	63.0	59.1	46.7	42.5
47.5°	44.9	45.8	44.3	41.9	51.0	70.0	87.8	83.5	82.0	60.6	53.1
50°	51.6	51.6	51.0	50.7	63.3	93.2	111.0	111.9	112.2	80.2	68.2
52.5°	55.5	54.9	54.3	56.4	72.7	104.0	128.2	130.0	131.5	95.6	78.1
55°	57.9	57.0	56.1	59.7	77.2	111.9	137.5	140.2	138.7	105.6	83.2
56°	58.2	57.0	56.1	60.0	78.1	113.1	139.0	141.1	139.3	108.0	85.0
57.5°	57.9	56.7	55.5	60.3	78.4	113.1	138.4	140.2	139.9	109.8	86.3
60°	56.7	55.5	53.7	60.3	79.0	111.0	136.6	139.9	140.5	110.4	86.6
62.5°	54.6	54.0	51.0	59.4	78.1	106.5	136.0	139.6	139.0	107.7	82.9
65°	50.7	50.4	46.7	57.6	74.2	98.6	128.2	132.1	130.3	101.9	75.4
67.5°	45.5	44.9	41.6	54.3	70.3	89.3	119.1	121.5	120.9	95.3	67.0
70°	39.2	39.2	36.8	49.5	66.3	78.4	108.6	111.3	112.2	87.5	59.1
72.5°	32.6	32.9	31.7	43.4	60.3	66.7	95.3	99.8	100.7	77.2	49.2
75°	25.3	25.6	25.6	36.2	51.9	52.8	79.3	82.6	83.8	64.5	38.6
77.5°	18.1	18.1	19.0	27.4	41.6	37.1	60.0	62.4	64.5	48.9	25.9
80°	11.8	11.2	12.4	17.5	27.7	22.3	38.3	40.1	42.2	30.8	14.5
82.5°	6.9	6.3	6.9	8.1	11.8	10.3	17.5	17.8	22.6	13.6	6.0
85°	3.3	3.3	3.0	3.3	3.0	3.6	3.3	3.3	3.9	2.4	2.7
87.5°	2.4	2.1	2.1	2.1	2.1	2.7	2.4	2.4	2.7	1.8	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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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2.5°	4.8	4.5	4.2	4.2	3.9	4.5	5.1	5.1	4.8	4.8	4.8
5°	4.8	5.1	5.4	6.0	6.6	6.0	5.7	5.1	4.5	4.2	4.2
7.5°	7.2	7.2	6.6	6.9	7.2	6.6	6.9	6.6	6.0	5.7	5.4
10°	8.1	8.4	9.7	9.0	8.7	8.7	8.4	8.1	7.5	6.9	6.6
12.5°	9.0	9.3	9.7	8.7	9.7	9.3	9.0	8.1	7.8	7.2	7.2
15°	9.7	10.3	10.0	10.3	10.0	10.0	9.7	8.7	8.4	7.2	6.9
17.5°	11.2	11.2	11.8	11.5	10.6	11.2	10.6	10.0	9.0	7.8	7.8
20°	11.8	12.7	13.0	13.0	12.4	12.7	13.0	12.1	10.6	9.7	9.7
22.5°	13.3	13.9	14.8	16.0	14.5	14.5	14.2	12.1	10.3	10.6	10.0
25°	15.1	14.5	15.7	17.8	16.6	15.1	15.4	13.6	12.1	11.8	11.2
27.5°	16.6	16.6	18.4	21.1	18.1	17.2	16.6	15.1	13.3	12.7	12.7
30°	20.5	19.0	21.1	22.6	22.0	18.1	18.1	16.3	15.1	14.2	14.5
32.5°	22.9	21.7	23.8	24.7	24.4	19.9	19.9	18.7	17.8	17.2	16.3
35°	25.3	25.6	25.9	27.1	26.5	23.5	21.4	20.5	20.5	20.5	19.9
37.5°	28.3	28.7	29.0	29.6	28.7	25.9	23.8	22.9	23.8	25.3	24.1
40°	31.4	32.6	31.7	32.0	31.4	29.0	27.4	26.8	29.0	32.3	30.5
42.5°	37.4	37.4	36.2	35.3	34.4	32.3	31.7	32.9	37.1	42.8	40.7
45°	45.2	44.9	42.8	41.3	40.1	37.7	37.7	41.3	49.8	58.5	58.8
47.5°	58.8	53.1	49.5	47.0	44.9	42.2	42.5	49.2	60.9	74.5	74.8
50°	69.7	65.1	58.8	53.4	50.7	47.7	49.2	59.1	75.4	87.8	90.8
52.5°	76.3	71.2	63.0	57.3	54.0	50.7	53.4	65.4	83.8	99.5	102.8
55°	78.7	73.0	65.4	59.1	55.5	51.3	55.8	67.3	87.2	106.8	110.1
56°	*79.9*	*73.6*	*65.1*	*58.8*	*55.5*	*50.7*	*55.8*	*67.0*	*87.5*	*108.0*	*110.7*
57.5°	81.1	73.3	64.5	58.5	55.2	50.1	55.8	66.3	87.2	108.0	111.0
60°	83.5	73.3	61.8	57.0	53.1	48.3	55.2	66.3	86.0	106.2	111.3
62.5°	81.7	72.7	58.2	53.7	51.3	46.1	53.1	65.4	82.9	104.7	111.3
65°	77.2	70.6	52.8	48.9	47.0	42.2	49.8	63.0	77.5	99.5	105.3
67.5°	71.5	67.6	47.0	43.1	41.6	38.0	45.5	58.5	70.0	89.6	95.3
70°	63.6	63.6	41.0	36.8	35.9	32.6	40.7	53.7	59.7	78.7	84.1
72.5°	52.5	54.6	35.9	29.9	29.3	27.4	34.7	47.0	48.9	67.3	73.0
75°	40.1	44.0	29.0	22.9	22.3	21.7	27.4	38.6	37.7	53.1	58.8
77.5°	26.5	31.1	21.1	16.3	15.4	15.7	19.6	29.6	26.2	37.7	42.5
80°	13.0	16.9	13.0	10.9	9.7	10.3	12.1	18.7	14.8	22.0	26.5
82.5°	4.2	5.4	6.3	6.0	5.4	5.4	5.7	7.5	6.6	8.1	11.2
85°	2.1	2.4	3.0	3.0	2.7	2.7	2.7	3.0	3.3	3.0	3.0
87.5°	1.5	1.5	2.4	2.4	2.1	2.1	2.1	2.1	2.7	2.4	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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2.5°	5.1	5.1	5.1	5.1	4.5	4.8	4.5	4.8	4.8	4.8	4.8
5°	4.5	4.8	5.1	4.8	5.4	5.4	5.4	5.1	4.2	4.2	4.2
7.5°	6.0	6.3	6.3	5.7	6.3	7.2	6.9	6.6	5.7	5.4	5.1
10°	7.2	8.4	7.5	8.4	8.7	8.4	7.5	6.9	8.1	7.8	7.5
12.5°	7.2	7.8	8.4	9.7	10.6	8.1	7.5	8.4	8.1	8.1	7.5
15°	7.2	8.7	9.3	10.3	11.2	9.7	7.8	9.0	9.7	9.3	8.7
17.5°	8.1	9.0	9.7	11.2	12.1	11.2	9.3	10.0	10.6	11.5	10.9
20°	9.3	10.0	10.3	12.1	12.4	13.3	11.2	11.2	11.2	11.8	11.5
22.5°	10.6	11.8	11.8	13.3	13.6	15.7	14.8	11.8	11.2	12.7	12.4
25°	11.2	12.4	13.3	14.5	15.1	17.2	16.6	14.2	13.0	13.3	13.3
27.5°	13.0	13.9	14.8	15.7	17.8	18.7	19.9	16.0	14.8	14.8	14.8
30°	13.9	15.4	16.6	18.4	20.2	21.1	22.6	17.5	16.0	16.3	16.3
32.5°	16.3	16.9	18.7	20.8	22.0	23.8	24.1	19.6	17.8	17.8	17.5
35°	19.0	19.0	20.5	23.5	24.4	26.8	25.9	22.3	19.9	19.9	19.6
37.5°	23.2	22.3	23.2	26.2	27.4	29.3	28.3	25.0	22.3	22.6	22.3
40°	28.7	26.5	26.2	29.6	30.2	32.0	30.8	28.0	25.6	25.9	25.6
42.5°	37.4	32.3	31.7	33.2	33.8	35.0	33.8	31.7	30.2	31.1	31.7
45°	54.9	44.3	40.4	41.3	40.7	40.7	39.2	38.0	36.5	37.7	39.5
47.5°	71.5	56.7	50.7	46.7	45.5	44.9	43.7	42.8	40.7	43.7	48.0
50°	87.5	70.9	61.2	56.7	54.3	50.4	49.8	48.9	48.9	53.4	58.2
52.5°	101.6	82.6	68.2	61.8	57.9	54.0	52.8	51.9	53.4	60.3	65.4
55°	111.0	89.6	70.0	62.7	58.8	55.5	54.6	53.1	55.8	63.0	69.4
56°	*111.3*	*90.5*	*70.0*	*62.4*	*58.5*	*55.2*	*54.6*	*52.8*	*56.1*	*63.3*	*69.7*
57.5°	111.0	91.4	69.4	62.1	57.6	54.6	54.0	51.9	56.1	63.6	70.3
60°	108.6	90.8	67.6	61.8	55.2	52.5	52.5	49.5	55.2	64.2	70.9
62.5°	109.2	88.7	64.5	60.0	51.3	49.2	50.1	46.4	53.1	64.2	70.6
65°	105.0	85.3	59.1	56.7	46.7	44.3	46.4	41.6	50.1	61.2	67.3
67.5°	95.3	78.7	53.4	53.1	41.6	39.2	41.3	37.1	45.8	57.6	63.6
70°	84.4	69.4	46.1	47.7	36.5	33.2	35.3	31.7	41.0	52.8	59.4
72.5°	73.3	58.5	37.4	40.4	30.8	27.1	28.7	26.5	35.3	46.1	52.2
75°	59.4	46.1	28.0	32.0	24.4	20.8	21.4	20.8	28.7	38.0	43.4
77.5°	43.4	33.2	18.4	22.6	17.5	14.5	14.8	15.1	21.1	28.0	32.9
80°	26.5	21.1	10.3	13.3	10.9	9.7	9.0	9.7	13.3	17.2	20.2
82.5°	10.6	8.4	4.2	5.1	5.4	5.4	5.1	5.1	6.3	6.6	6.3
85°	3.0	2.1	2.4	2.1	2.7	2.7	2.4	2.1	2.4	2.4	2.4
87.5°	2.4	1.5	1.8	1.5	2.1	2.4	1.8	1.8	1.8	1.8	1.8
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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Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P1459754
CATALOG NUMBER: ABB-CX-827-X-U-S-GM-CBP

CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2.5°	4.8	5.1	5.1	5.4	5.7	6.0	6.0	6.0	6.0	6.0
5°	4.5	4.2	4.2	3.9	4.2	4.8	5.4	6.0	7.5	8.4
7.5°	5.4	5.4	5.4	5.4	5.1	5.4	6.3	7.2	8.1	8.1
10°	7.5	7.2	6.9	7.2	7.2	6.6	7.5	8.7	9.3	8.7
12.5°	7.2	6.9	6.6	6.6	6.9	7.2	8.7	9.7	8.1	8.1
15°	8.1	7.5	7.2	7.2	7.2	8.4	9.7	10.3	8.4	8.4
17.5°	9.0	7.8	7.2	7.5	8.1	9.0	10.6	10.6	9.7	9.7
20°	9.7	8.4	8.1	8.7	8.7	10.6	10.9	11.5	11.2	11.2
22.5°	10.6	9.0	8.7	9.0	10.0	11.5	12.4	13.9	12.4	13.3
25°	11.8	10.3	10.3	10.0	10.9	12.4	13.9	14.8	14.8	16.3
27.5°	13.0	12.1	12.1	11.8	11.8	13.6	16.0	16.6	18.4	19.3
30°	14.8	14.5	13.9	13.6	13.6	14.5	17.5	19.9	22.0	21.1
32.5°	17.2	17.2	16.6	16.9	15.7	16.6	19.9	22.3	23.5	23.2
35°	19.9	20.5	19.9	19.6	18.4	19.0	22.0	25.3	26.2	26.2
37.5°	24.4	24.7	24.1	23.2	21.7	21.4	25.0	27.4	28.7	28.7
40°	30.2	32.0	30.5	28.7	25.3	24.7	28.3	30.2	31.4	31.1
42.5°	38.0	40.7	40.4	37.7	30.2	28.3	32.3	33.8	34.4	34.1
45°	51.3	58.5	60.0	56.7	41.9	36.5	41.0	41.9	41.3	40.1
47.5°	62.7	73.9	79.3	74.8	51.9	43.4	47.3	48.0	46.1	44.9
50°	82.0	98.6	101.3	98.6	72.1	55.5	56.7	55.8	53.1	51.6
52.5°	92.6	114.0	117.9	115.5	87.2	64.8	62.7	59.4	57.0	55.5
55°	98.3	124.3	129.4	127.6	96.2	70.3	65.4	61.2	59.4	57.9
56°	*99.8*	*125.8*	*129.7*	*129.1*	*98.6*	*70.9*	*65.7*	*60.9*	*59.4*	*58.2*
57.5°	100.4	125.8	128.8	128.5	100.7	70.9	65.4	60.0	59.1	57.9
60°	98.0	124.0	126.1	125.5	101.6	70.6	65.1	57.6	57.3	56.7
62.5°	91.7	122.4	127.0	126.1	100.7	68.2	65.1	53.7	54.3	54.6
65°	85.3	115.8	121.2	121.2	96.8	63.3	63.6	49.2	49.2	50.7
67.5°	76.9	105.9	111.6	111.9	90.2	56.4	60.6	44.6	43.7	45.5
70°	65.7	93.8	100.1	100.1	81.7	49.2	56.4	39.5	37.4	39.2
72.5°	54.9	80.8	88.1	88.4	70.9	41.6	50.1	34.4	30.8	32.6
75°	43.1	65.4	72.7	74.5	59.4	32.9	41.6	29.0	24.1	25.3
77.5°	30.8	48.9	54.9	55.5	45.5	23.5	31.4	21.7	17.2	18.1
80°	18.7	31.1	35.9	38.6	30.2	14.5	19.6	14.2	11.5	11.8
82.5°	8.1	13.6	16.6	19.0	14.2	6.9	6.3	7.2	6.6	6.9
85°	3.0	3.0	3.3	3.6	2.7	2.7	2.4	3.3	3.3	3.3
87.5°	2.4	2.4	2.4	2.4	1.8	2.1	1.5	2.4	2.4	2.4
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: SP1-2509-539-6

Test Date: 04/15/2026

Luminaire Tested: Luxscape Bollard

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

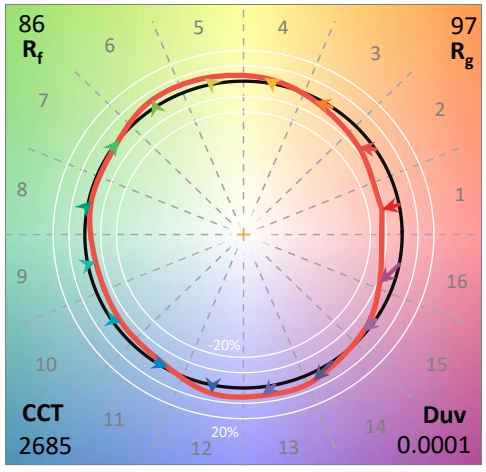
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2509-539-6
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-C1-827-LED-XX-Dx-S-GM-SPECULAR REFLECTOR

Spectral Parameters

CCT (K):	2685
CIE u':	0.2631
CIE v':	0.5278
Duv:	0.0001
CIE x:	0.4613
CIE y:	0.4112
CIE z:	0.1276
Peak Wavelength (nm):	607
Dominant Wavelength (nm):	584
Purity:	61.87869
Rf:	85.8
Rg:	97.1

CRI (Ra):	83.3				
R1:	82.0	R9:	7.2		
R2:	92.1	R10:	83.2		
R3:	95.4	R11:	84.1		
R4:	82.6	R12:	80.9		
R5:	82.9	R13:	84.4		
R6:	92.4	R14:	98.1		
R7:	81.6	R15:	73.2		
R8:	57.2				



Test Conditions

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

REPORT NUMBER: SP1-2509-539-6

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

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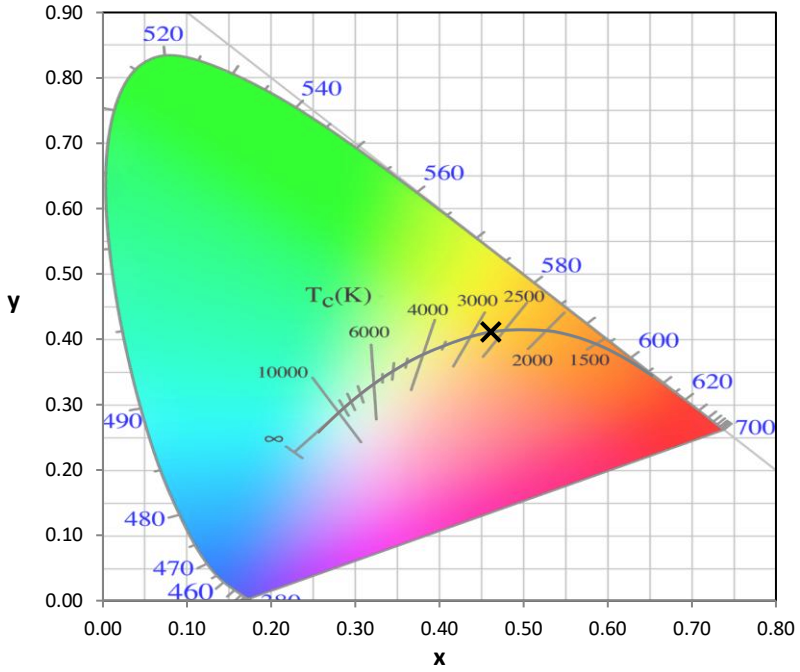
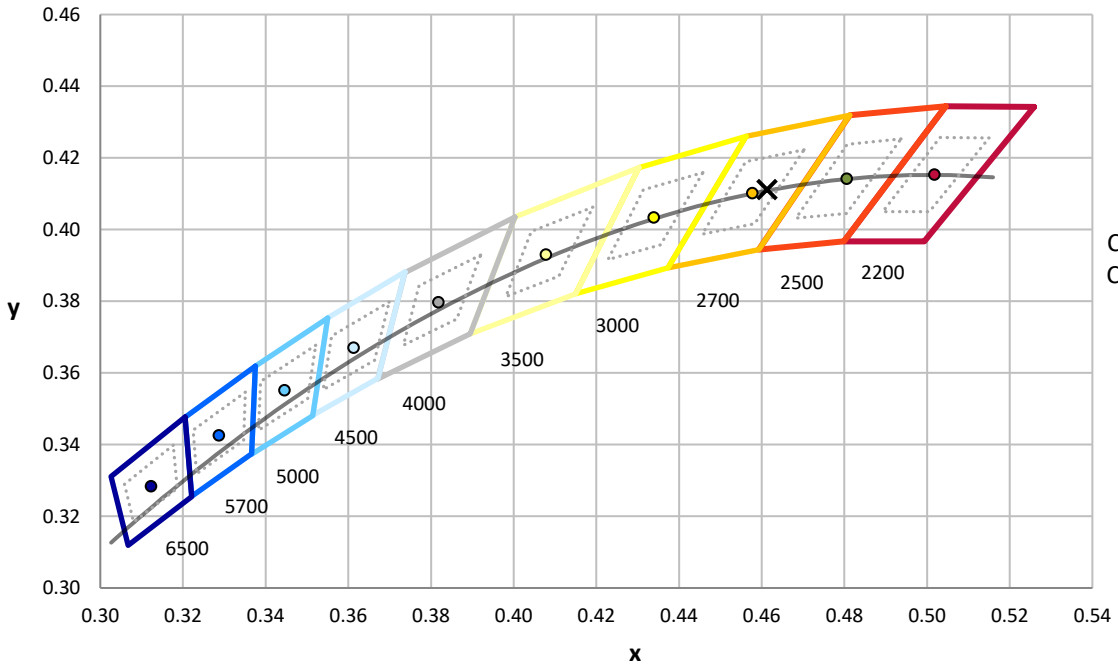
CIE 1931 Chromaticity Diagram



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



CCT = 2685K
CIE x = 0.4613
CIE y = 0.4112
Duv = 0.0001

Point lies inside the ANSI 2700K 4-step quadrangle

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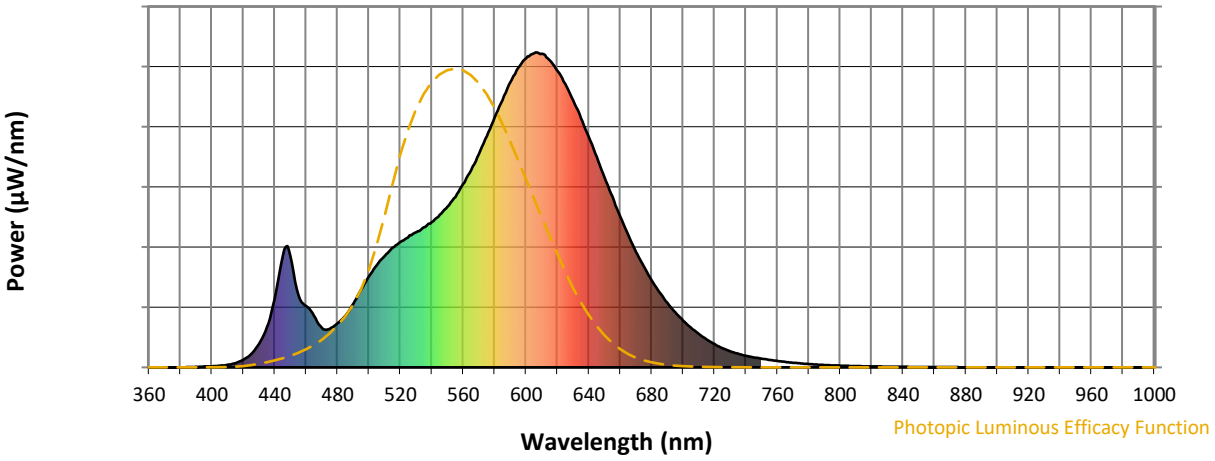
Photopic Flux vs. Wavelength



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	202	NR	620	941	NR	750	28	NR	880	0	NR
365	0	NR	495	247	NR	625	900	NR	755	24	NR	885	0	NR
370	0	NR	500	290	NR	630	847	NR	760	20	NR	890	0	NR
375	0	NR	505	324	NR	635	791	NR	765	17	NR	895	0	NR
380	0	NR	510	354	NR	640	730	NR	770	15	NR	900	0	NR
385	1	NR	515	380	NR	645	668	NR	775	13	NR	905	0	NR
390	2	NR	520	398	NR	650	602	NR	780	11	NR	910	0	NR
395	3	NR	525	413	NR	655	541	NR	785	9	NR	915	0	NR
400	3	NR	530	428	NR	660	478	NR	790	8	NR	920	0	NR
405	5	NR	535	445	NR	665	421	NR	795	6	NR	925	0	NR
410	8	NR	540	461	NR	670	367	NR	800	5	NR	930	0	NR
415	14	NR	545	485	NR	675	320	NR	805	5	NR	935	0	NR
420	24	NR	550	510	NR	680	277	NR	810	4	NR	940	0	NR
425	43	NR	555	541	NR	685	238	NR	815	3	NR	945	0	NR
430	74	NR	560	582	NR	690	205	NR	820	3	NR	950	0	NR
435	128	NR	565	626	NR	695	175	NR	825	3	NR	955	0	NR
440	218	NR	570	677	NR	700	148	NR	830	2	NR	960	0	NR
445	352	NR	575	734	NR	705	126	NR	835	2	NR	965	0	NR
450	354	NR	580	793	NR	710	106	NR	840	2	NR	970	0	NR
455	230	NR	585	849	NR	715	89	NR	845	1	NR	975	0	NR
460	195	NR	590	907	NR	720	74	NR	850	1	NR	980	0	NR
465	164	NR	595	951	NR	725	61	NR	855	1	NR	985	0	NR
470	125	NR	600	981	NR	730	51	NR	860	1	NR	990	0	NR
475	122	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	996	NR	740	37	NR	870	1	NR	1000	0	NR
485	164	NR	615	976	NR	745	32	NR	875	1	NR			

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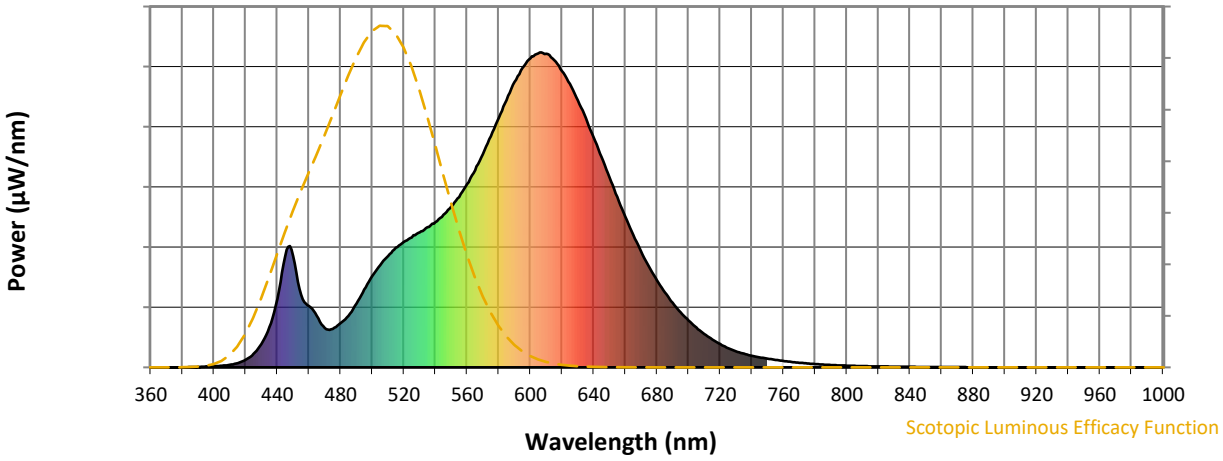
Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/P: 1.22**

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	202	NR	620	941	NR	750	28	NR	880	0	NR
365	0	NR	495	247	NR	625	900	NR	755	24	NR	885	0	NR
370	0	NR	500	290	NR	630	847	NR	760	20	NR	890	0	NR
375	0	NR	505	324	NR	635	791	NR	765	17	NR	895	0	NR
380	0	NR	510	354	NR	640	730	NR	770	15	NR	900	0	NR
385	1	NR	515	380	NR	645	668	NR	775	13	NR	905	0	NR
390	2	NR	520	398	NR	650	602	NR	780	11	NR	910	0	NR
395	3	NR	525	413	NR	655	541	NR	785	9	NR	915	0	NR
400	3	NR	530	428	NR	660	478	NR	790	8	NR	920	0	NR
405	5	NR	535	445	NR	665	421	NR	795	6	NR	925	0	NR
410	8	NR	540	461	NR	670	367	NR	800	5	NR	930	0	NR
415	14	NR	545	485	NR	675	320	NR	805	5	NR	935	0	NR
420	24	NR	550	510	NR	680	277	NR	810	4	NR	940	0	NR
425	43	NR	555	541	NR	685	238	NR	815	3	NR	945	0	NR
430	74	NR	560	582	NR	690	205	NR	820	3	NR	950	0	NR
435	128	NR	565	626	NR	695	175	NR	825	3	NR	955	0	NR
440	218	NR	570	677	NR	700	148	NR	830	2	NR	960	0	NR
445	352	NR	575	734	NR	705	126	NR	835	2	NR	965	0	NR
450	354	NR	580	793	NR	710	106	NR	840	2	NR	970	0	NR
455	230	NR	585	849	NR	715	89	NR	845	1	NR	975	0	NR
460	195	NR	590	907	NR	720	74	NR	850	1	NR	980	0	NR
465	164	NR	595	951	NR	725	61	NR	855	1	NR	985	0	NR
470	125	NR	600	981	NR	730	51	NR	860	1	NR	990	0	NR
475	122	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	996	NR	740	37	NR	870	1	NR	1000	0	NR
485	164	NR	615	976	NR	745	32	NR	875	1	NR			

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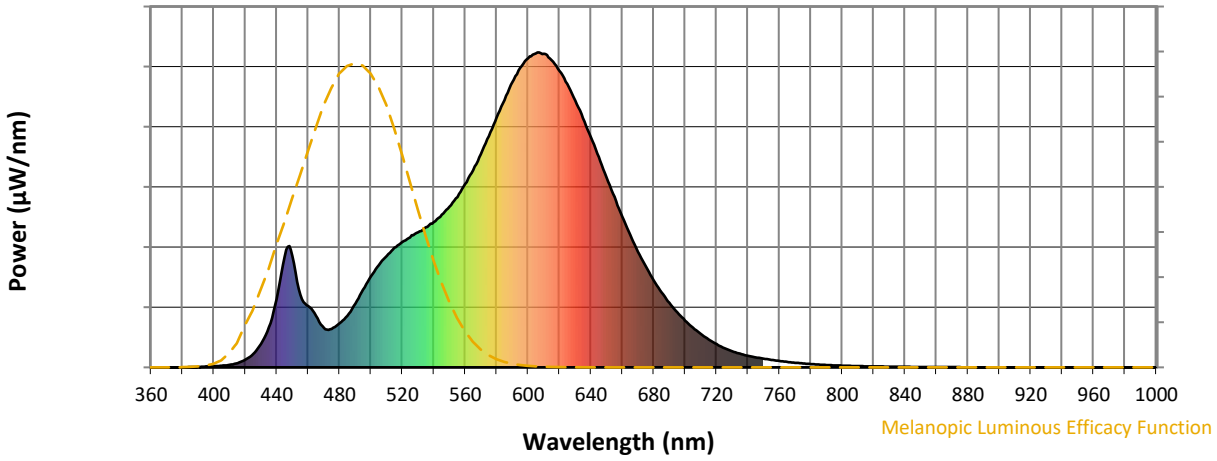
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.26**

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	202	NR	620	941	NR	750	28	NR	880	0	NR
365	0	NR	495	247	NR	625	900	NR	755	24	NR	885	0	NR
370	0	NR	500	290	NR	630	847	NR	760	20	NR	890	0	NR
375	0	NR	505	324	NR	635	791	NR	765	17	NR	895	0	NR
380	0	NR	510	354	NR	640	730	NR	770	15	NR	900	0	NR
385	1	NR	515	380	NR	645	668	NR	775	13	NR	905	0	NR
390	2	NR	520	398	NR	650	602	NR	780	11	NR	910	0	NR
395	3	NR	525	413	NR	655	541	NR	785	9	NR	915	0	NR
400	3	NR	530	428	NR	660	478	NR	790	8	NR	920	0	NR
405	5	NR	535	445	NR	665	421	NR	795	6	NR	925	0	NR
410	8	NR	540	461	NR	670	367	NR	800	5	NR	930	0	NR
415	14	NR	545	485	NR	675	320	NR	805	5	NR	935	0	NR
420	24	NR	550	510	NR	680	277	NR	810	4	NR	940	0	NR
425	43	NR	555	541	NR	685	238	NR	815	3	NR	945	0	NR
430	74	NR	560	582	NR	690	205	NR	820	3	NR	950	0	NR
435	128	NR	565	626	NR	695	175	NR	825	3	NR	955	0	NR
440	218	NR	570	677	NR	700	148	NR	830	2	NR	960	0	NR
445	352	NR	575	734	NR	705	126	NR	835	2	NR	965	0	NR
450	354	NR	580	793	NR	710	106	NR	840	2	NR	970	0	NR
455	230	NR	585	849	NR	715	89	NR	845	1	NR	975	0	NR
460	195	NR	590	907	NR	720	74	NR	850	1	NR	980	0	NR
465	164	NR	595	951	NR	725	61	NR	855	1	NR	985	0	NR
470	125	NR	600	981	NR	730	51	NR	860	1	NR	990	0	NR
475	122	NR	605	997	NR	735	43	NR	865	1	NR	995	0	NR
480	140	NR	610	996	NR	740	37	NR	870	1	NR	1000	0	NR
485	164	NR	615	976	NR	745	32	NR	875	1	NR			

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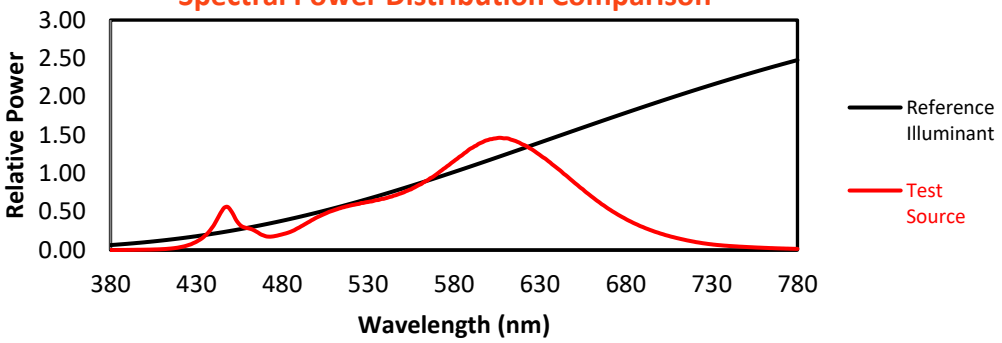
TM-30-18

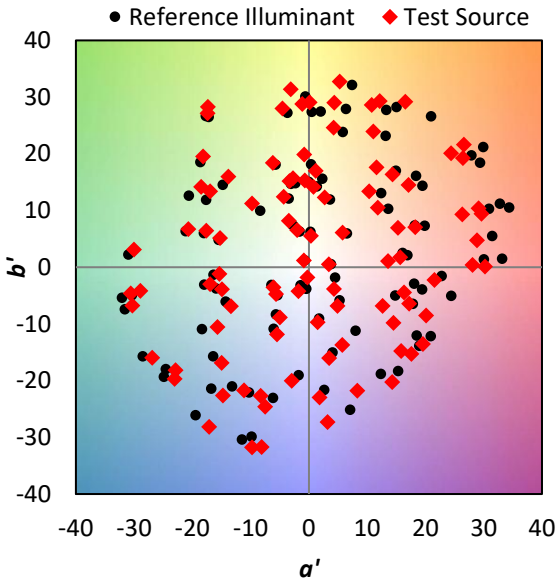
Summary

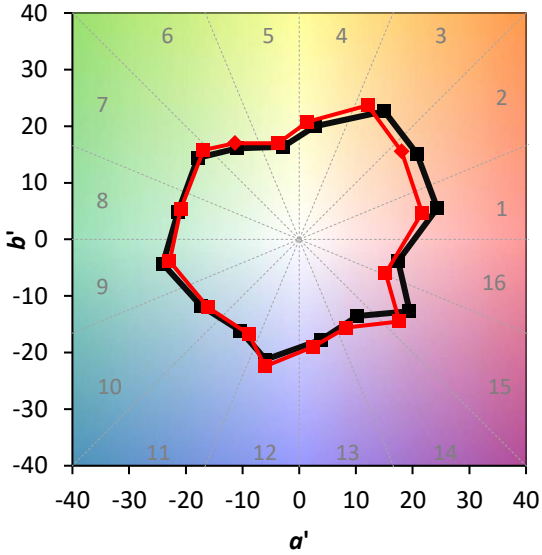
R_f = 85.8
R_g = 97.1
CIE R_a = 83.3
R_9 = 7.2

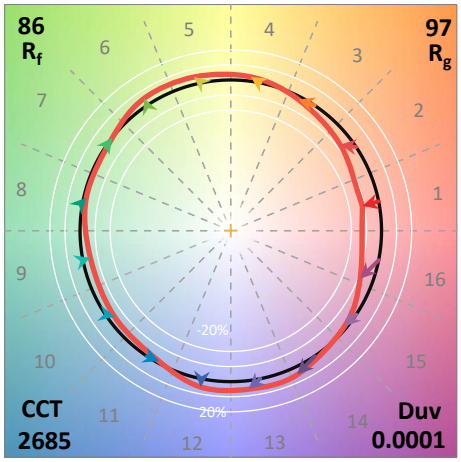
Spectral Power Distribution Comparison

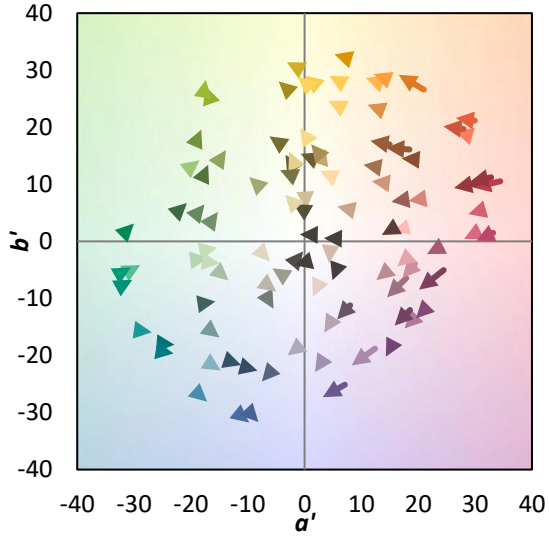


Color Vector Graphics









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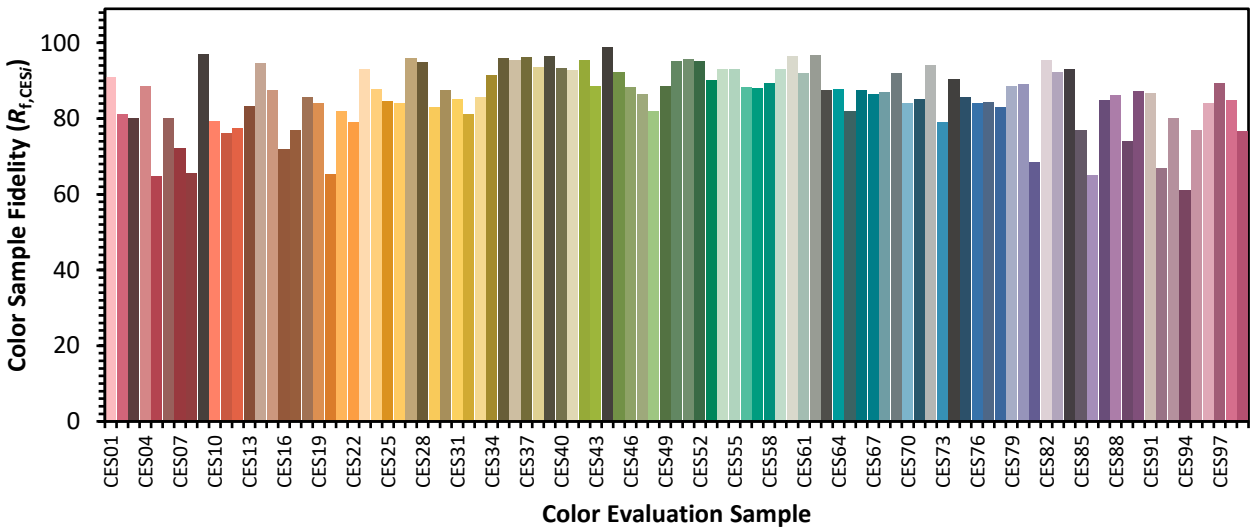
TM-30-18

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

CES01 = 86	CES26 = 84	CES51 = 96	CES76 = 84
CES02 = 64	CES27 = 96	CES52 = 95	CES77 = 84
CES03 = 32	CES28 = 95	CES53 = 90	CES78 = 83
CES04 = 71	CES29 = 83	CES54 = 93	CES79 = 89
CES05 = 51	CES30 = 87	CES55 = 93	CES80 = 89
CES06 = 52	CES31 = 85	CES56 = 88	CES81 = 69
CES07 = 43	CES32 = 81	CES57 = 88	CES82 = 95
CES08 = 42	CES33 = 86	CES58 = 89	CES83 = 92
CES09 = 29	CES34 = 91	CES59 = 93	CES84 = 93
CES10 = 77	CES35 = 96	CES60 = 97	CES85 = 77
CES11 = 60	CES36 = 95	CES61 = 92	CES86 = 65
CES12 = 66	CES37 = 96	CES62 = 97	CES87 = 85
CES13 = 44	CES38 = 94	CES63 = 87	CES88 = 86
CES14 = 74	CES39 = 96	CES64 = 88	CES89 = 74
CES15 = 72	CES40 = 93	CES65 = 82	CES90 = 87
CES16 = 48	CES41 = 93	CES66 = 87	CES91 = 87
CES17 = 50	CES42 = 95	CES67 = 86	CES92 = 67
CES18 = 57	CES43 = 89	CES68 = 87	CES93 = 80
CES19 = 73	CES44 = 99	CES69 = 92	CES94 = 61
CES20 = 67	CES45 = 92	CES70 = 84	CES95 = 77
CES21 = 87	CES46 = 88	CES71 = 85	CES96 = 84
CES22 = 79	CES47 = 86	CES72 = 94	CES97 = 89
CES23 = 92	CES48 = 82	CES73 = 79	CES98 = 85
CES24 = 91	CES49 = 89	CES74 = 90	CES99 = 77
CES25 = 72	CES50 = 95	CES75 = 86	



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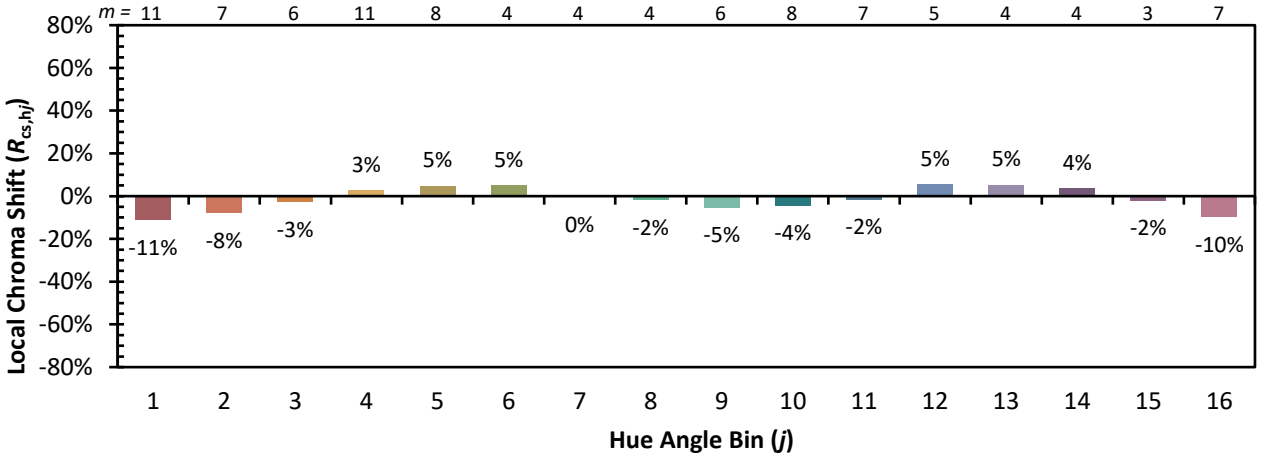
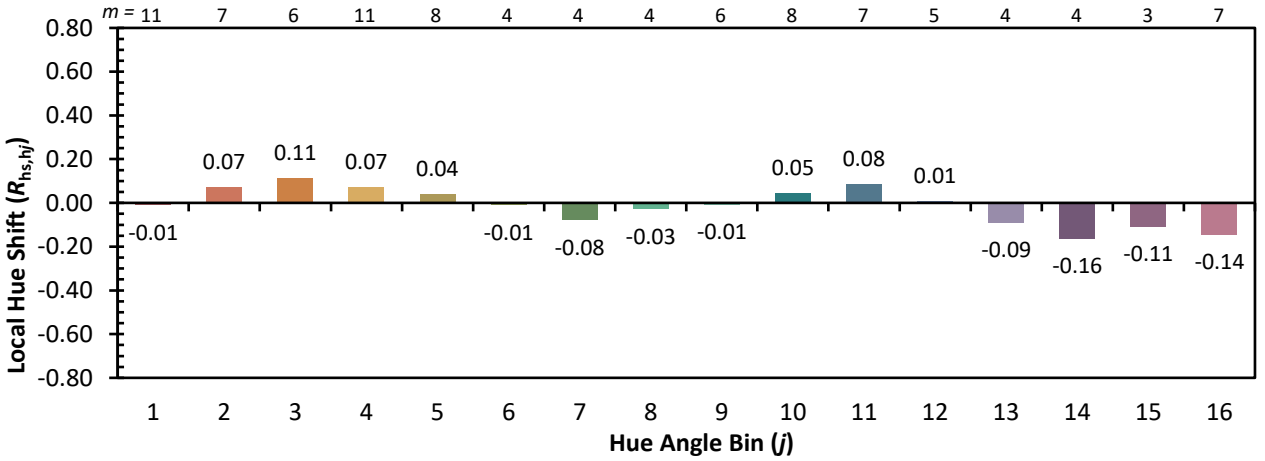
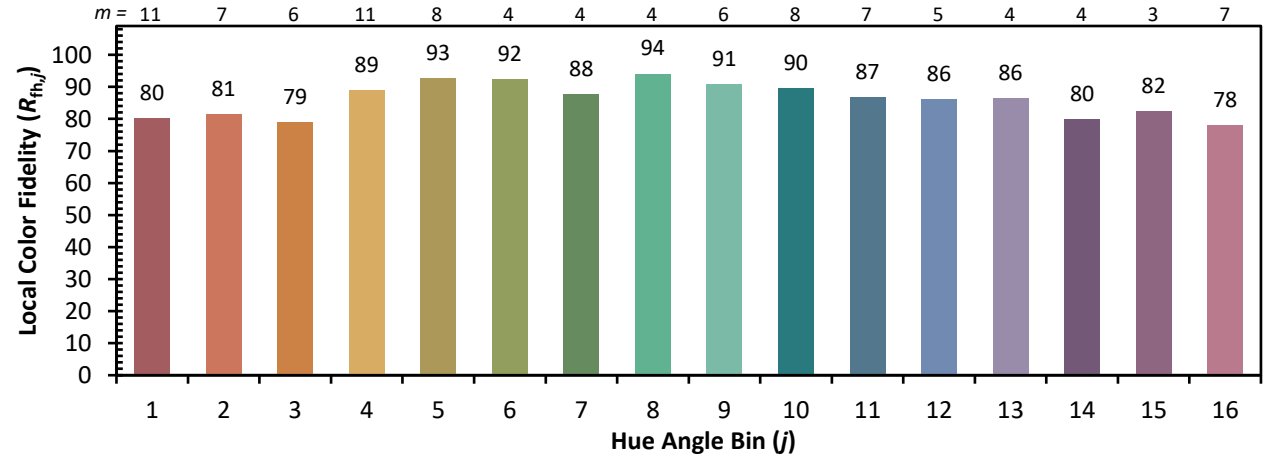
TM-30-18

Color Rendition by Hue-Angle Bin







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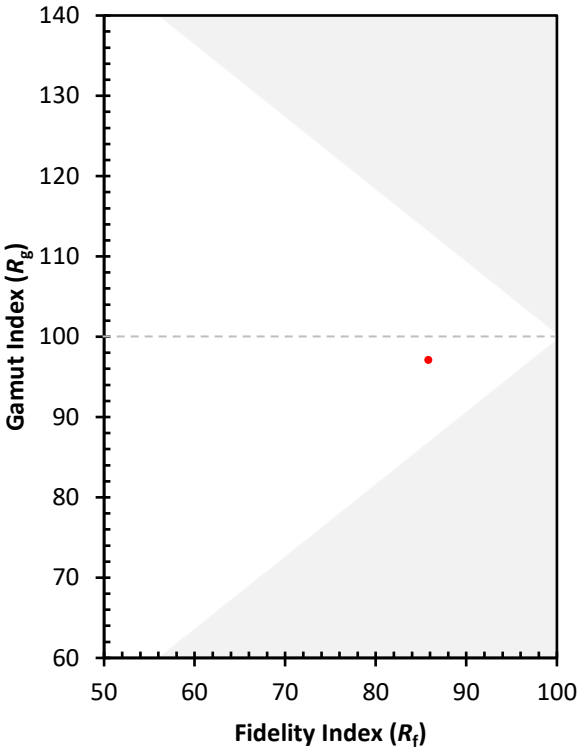
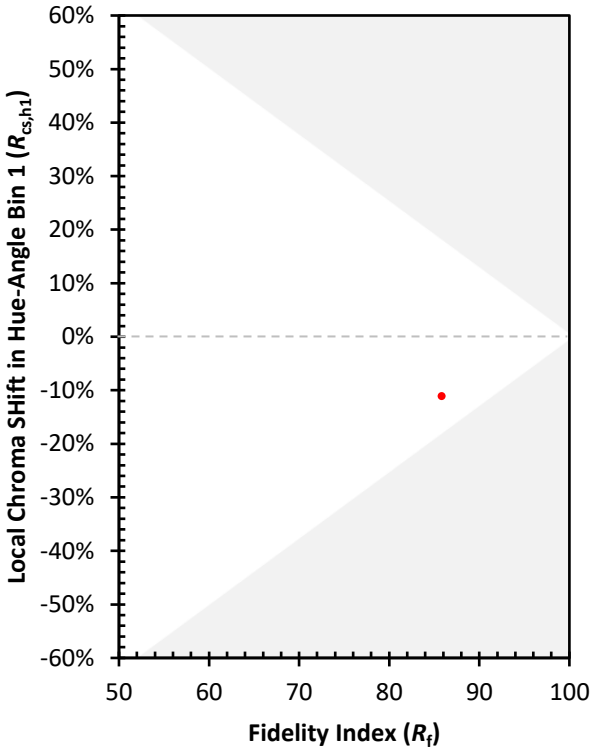
Measure Comparisons





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