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: P1459762

Luminaire Tested: ABB-CX-AMB-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:	P1459762
	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-AMB-X-U-S-GM-CBP
Description:	ARBOR OUTDOOR ARCHITECTURAL BOLLARD LUMINAIRE
	SYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH
Light Source:	1571K CCT, 0 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	97 lumens
Efficiency:	N/A
Efficacy:	16.7 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: P1459762
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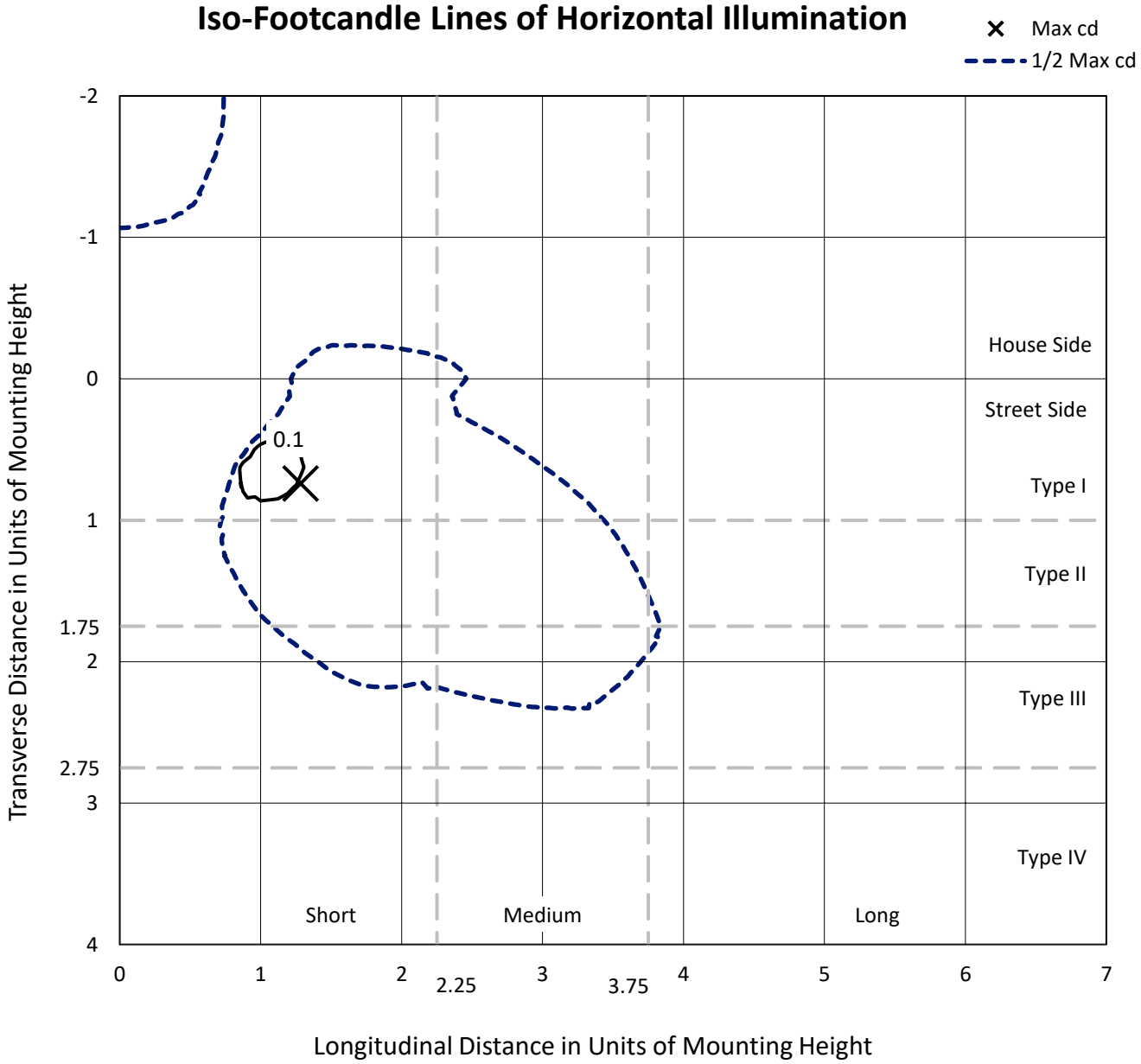
Iso-Footcandle Lines of Horizontal Illumination



Based on 10 foot mounting height. Maximum calculated value = 0.1 fc
Type III - Short - N/A

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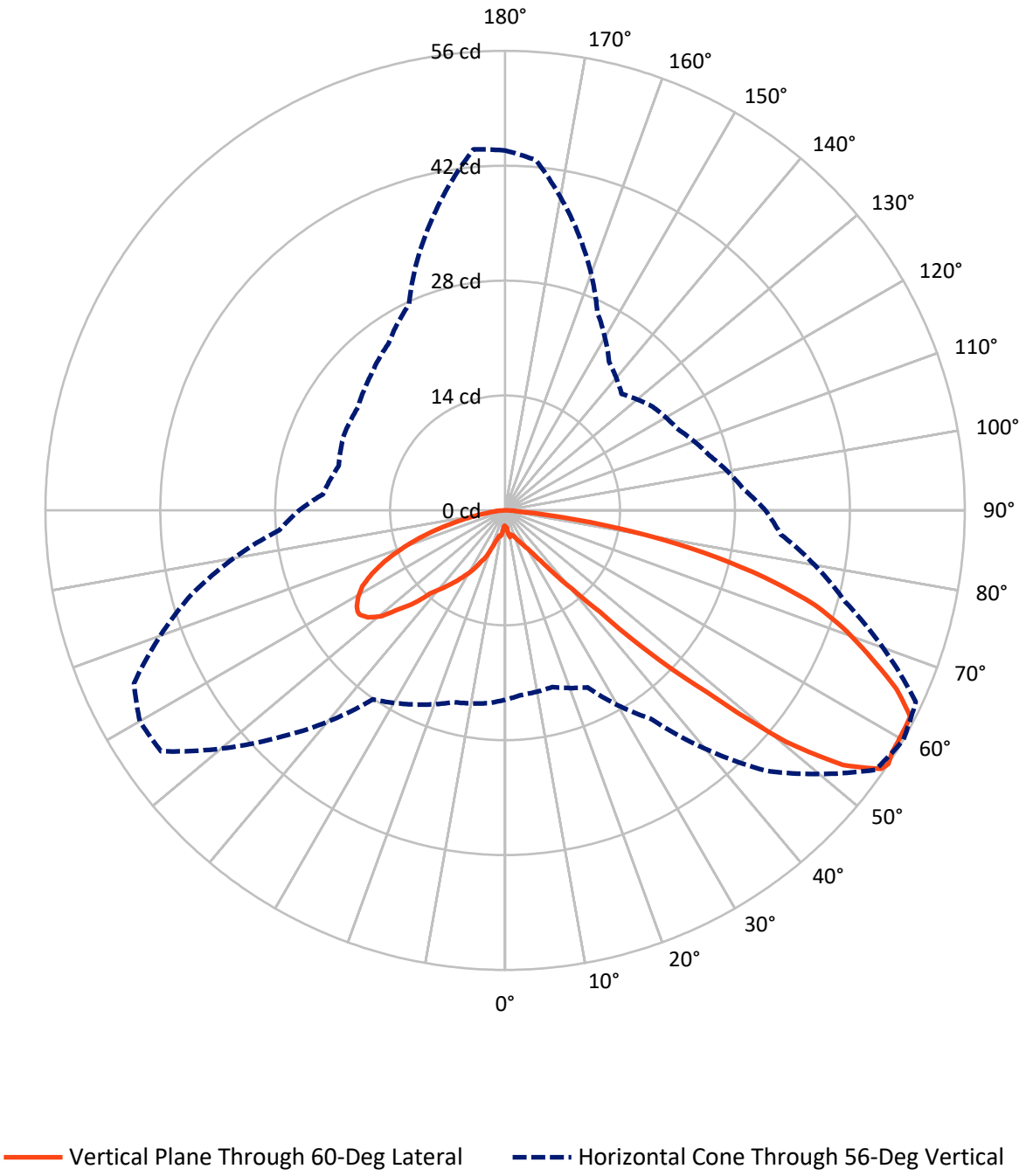
Luminous Intensity Polar Plot



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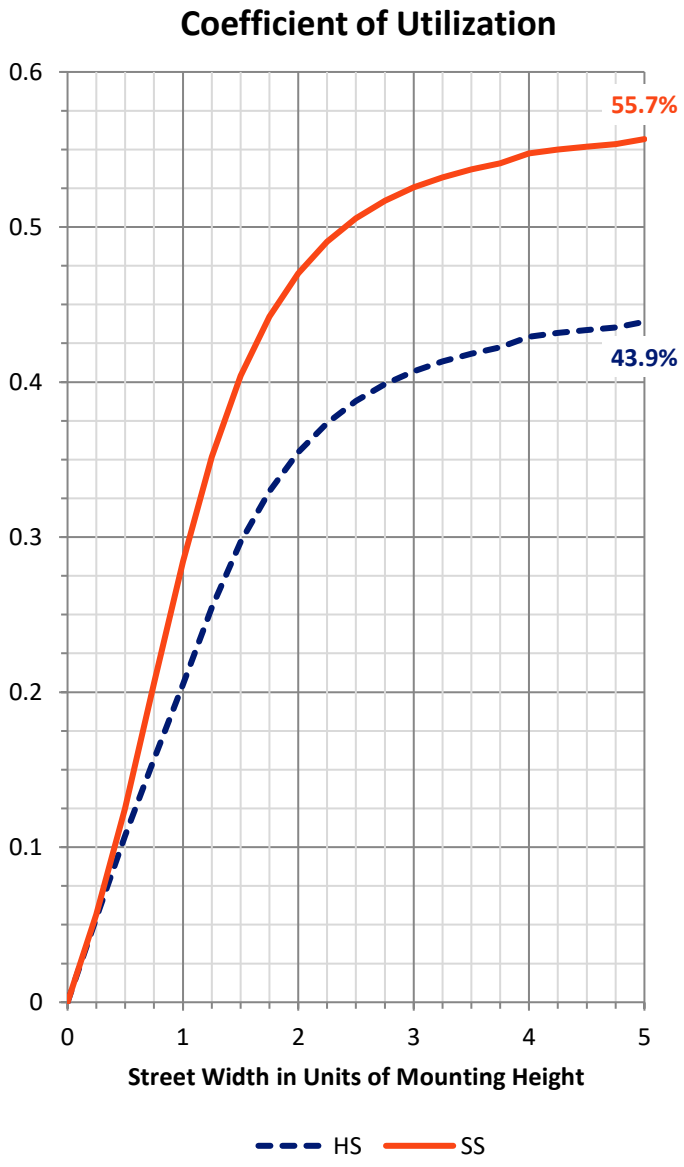
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	42.7	0.0	42.7
	% Fixture	44.0	0.0	44.0
Street Side	Lumens	54.3	0.0	54.3
	% Fixture	56.0	0.0	56.0
Total	Lumens	97.0	0.0	97.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.2	0.3
10°-20°	1.0	1.1
20°-30°	2.6	2.7
30°-40°	5.7	5.8
40°-50°	14.0	14.5
50°-60°	27.0	27.9
60°-70°	27.5	28.3
70°-80°	16.5	17.0
80°-90°	2.4	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°	97.0	100.0
0°-180°	97.0	100.0



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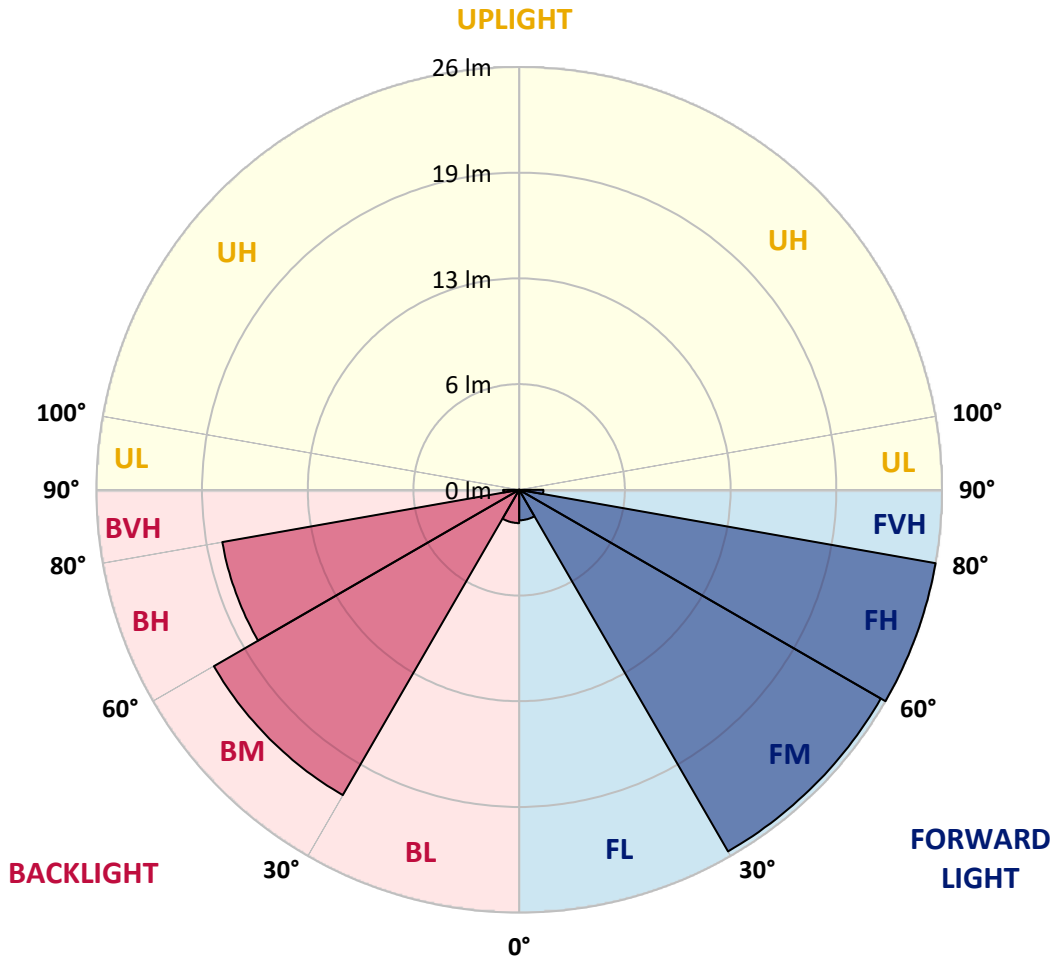
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1.8	1.9			
FM	(30°-60°)	25.3	26.1			
FH	(60°-80°)	25.7	26.5			G0/660
FVH	(80°-90°)	1.5	1.5			G0/10
BL	(0°-30°)	2.0	2.1	B0/110		
BM	(30°-60°)	21.4	22.1	B0/220		
BH	(60°-80°)	18.3	18.9	B0/110		G0/110
BVH	(80°-90°)	1.0	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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	*2.0*	2.0	2.0	2.0
2.5°	2.4	2.4	2.6	2.7	2.6	2.4	2.3	*2.3*	2.3	2.1	1.9
5°	3.3	3.1	2.7	2.7	2.6	2.5	2.1	*2.1*	2.1	1.9	1.8
7.5°	3.2	3.6	3.6	3.6	3.5	3.5	3.1	*2.9*	2.9	2.5	2.6
10°	3.5	3.5	3.3	3.9	3.7	3.7	3.3	*3.3*	3.3	3.2	3.2
12.5°	3.2	3.1	3.3	3.6	3.2	3.5	3.2	*3.0*	3.0	3.2	3.3
15°	3.3	3.5	3.6	3.9	3.8	3.6	3.2	*3.2*	3.2	3.7	3.7
17.5°	3.8	4.1	4.1	4.2	4.2	3.8	3.2	*3.2*	3.3	3.7	4.2
20°	4.4	4.4	4.4	4.4	4.4	4.1	3.5	*3.5*	3.7	3.9	4.4
22.5°	5.2	5.2	5.6	5.1	5.0	4.3	4.1	*3.9*	4.3	4.2	4.8
25°	6.4	6.8	6.4	5.5	5.4	4.6	4.3	*4.3*	4.4	5.0	5.1
27.5°	7.6	7.9	6.8	6.0	6.1	5.2	4.9	*4.8*	5.0	5.6	6.0
30°	8.3	8.5	7.5	6.6	6.8	6.0	5.6	*5.4*	5.6	6.3	7.0
32.5°	9.2	9.4	8.5	7.4	7.5	7.4	6.8	*6.3*	6.3	7.0	7.6
35°	10.4	10.2	9.2	8.1	8.3	8.8	8.6	*7.7*	7.6	7.6	8.7
37.5°	11.3	11.1	10.4	9.1	9.3	10.2	10.7	*9.9*	9.5	8.9	9.8
40°	12.3	12.3	11.4	10.0	11.1	12.5	13.7	*12.5*	11.9	10.8	11.0
42.5°	13.5	13.6	13.0	11.7	13.5	16.4	18.6	*16.8*	15.8	13.7	13.0
45°	15.8	16.3	15.7	14.5	16.9	22.0	26.0	*24.9*	23.4	18.5	16.8
47.5°	17.8	18.1	17.5	16.6	20.1	27.6	34.7	*33.0*	32.4	23.9	21.0
50°	20.4	20.4	20.1	20.0	25.0	36.8	43.8	*44.2*	44.3	31.7	26.9
52.5°	21.9	21.7	21.4	22.3	28.7	41.1	50.6	*51.4*	51.9	37.8	30.9
55°	22.9	22.5	22.2	23.6	30.5	44.2	54.3	*55.4*	54.8	41.7	32.9
56°	*23.0*	*22.5*	*22.2*	*23.7*	*30.9*	*44.7*	*54.9*	*55.8*	*55.0*	*42.7*	*33.6*
57.5°	22.9	22.4	21.9	23.8	31.0	44.7	54.7	*55.4*	55.3	43.4	34.1
60°	22.4	21.9	21.2	23.8	31.2	43.8	54.0	*55.3*	55.5	43.6	34.2
62.5°	21.6	21.3	20.1	23.5	30.9	42.1	53.7	*55.2*	54.9	42.5	32.8
65°	20.0	19.9	18.5	22.8	29.3	39.0	50.6	*52.2*	51.5	40.3	29.8
67.5°	18.0	17.8	16.4	21.4	27.8	35.3	47.1	*48.0*	47.8	37.7	26.5
70°	15.5	15.5	14.5	19.5	26.2	31.0	42.9	*44.0*	44.3	34.6	23.4
72.5°	12.9	13.0	12.5	17.2	23.8	26.3	37.7	*39.4*	39.8	30.5	19.4
75°	10.0	10.1	10.1	14.3	20.5	20.9	31.3	*32.6*	33.1	25.5	15.3
77.5°	7.1	7.1	7.5	10.8	16.4	14.7	23.7	*24.7*	25.5	19.3	10.2
80°	4.6	4.4	4.9	6.9	11.0	8.8	15.1	*15.8*	16.7	12.2	5.7
82.5°	2.7	2.5	2.7	3.2	4.6	4.1	6.9	*7.0*	8.9	5.4	2.4
85°	1.3	1.3	1.2	1.3	1.2	1.4	1.3	*1.3*	1.5	1.0	1.1
87.5°	1.0	0.8	0.8	0.8	0.8	1.1	1.0	*1.0*	1.1	0.7	0.8
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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REPORT NUMBER: P1459762
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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.5°	1.9	1.8	1.7	1.7	1.5	1.8	2.0	2.0	1.9	1.9	1.9
5°	1.9	2.0	2.1	2.4	2.6	2.4	2.3	2.0	1.8	1.7	1.7
7.5°	2.9	2.9	2.6	2.7	2.9	2.6	2.7	2.6	2.4	2.3	2.1
10°	3.2	3.3	3.8	3.6	3.5	3.5	3.3	3.2	3.0	2.7	2.6
12.5°	3.6	3.7	3.8	3.5	3.8	3.7	3.6	3.2	3.1	2.9	2.9
15°	3.8	4.1	3.9	4.1	3.9	3.9	3.8	3.5	3.3	2.9	2.7
17.5°	4.4	4.4	4.6	4.5	4.2	4.4	4.2	3.9	3.6	3.1	3.1
20°	4.6	5.0	5.1	5.1	4.9	5.0	5.1	4.8	4.2	3.8	3.8
22.5°	5.2	5.5	5.8	6.3	5.7	5.7	5.6	4.8	4.1	4.2	3.9
25°	6.0	5.7	6.2	7.0	6.6	6.0	6.1	5.4	4.8	4.6	4.4
27.5°	6.6	6.6	7.3	8.3	7.1	6.8	6.6	6.0	5.2	5.0	5.0
30°	8.1	7.5	8.3	8.9	8.7	7.1	7.1	6.4	6.0	5.6	5.7
32.5°	9.1	8.6	9.4	9.8	9.7	7.9	7.9	7.4	7.0	6.8	6.4
35°	10.0	10.1	10.2	10.7	10.5	9.3	8.5	8.1	8.1	8.1	7.9
37.5°	11.2	11.3	11.4	11.7	11.3	10.2	9.4	9.1	9.4	10.0	9.5
40°	12.4	12.9	12.5	12.6	12.4	11.4	10.8	10.6	11.4	12.7	12.0
42.5°	14.8	14.8	14.3	13.9	13.6	12.7	12.5	13.0	14.7	16.9	16.1
45°	17.9	17.8	16.9	16.3	15.8	14.9	14.9	16.3	19.7	23.1	23.2
47.5°	23.2	21.0	19.5	18.6	17.8	16.7	16.8	19.4	24.1	29.4	29.5
50°	27.5	25.7	23.2	21.1	20.0	18.8	19.4	23.4	29.8	34.7	35.9
52.5°	30.1	28.1	24.9	22.6	21.3	20.0	21.1	25.9	33.1	39.3	40.6
55°	31.1	28.8	25.9	23.4	21.9	20.3	22.0	26.6	34.4	42.2	43.5
56°	*31.6*	*29.1*	*25.7*	*23.2*	*21.9*	*20.0*	*22.0*	*26.5*	*34.6*	*42.7*	*43.7*
57.5°	32.1	29.0	25.5	23.1	21.8	19.8	22.0	26.2	34.4	42.7	43.8
60°	33.0	29.0	24.4	22.5	21.0	19.1	21.8	26.2	34.0	41.9	44.0
62.5°	32.3	28.7	23.0	21.2	20.3	18.2	21.0	25.9	32.8	41.3	44.0
65°	30.5	27.9	20.9	19.3	18.6	16.7	19.7	24.9	30.6	39.3	41.6
67.5°	28.2	26.7	18.6	17.0	16.4	15.0	18.0	23.1	27.6	35.4	37.7
70°	25.1	25.1	16.2	14.5	14.2	12.9	16.1	21.2	23.6	31.1	33.2
72.5°	20.7	21.6	14.2	11.8	11.6	10.8	13.7	18.6	19.3	26.6	28.8
75°	15.8	17.4	11.4	9.1	8.8	8.6	10.8	15.3	14.9	21.0	23.2
77.5°	10.5	12.3	8.3	6.4	6.1	6.2	7.7	11.7	10.4	14.9	16.8
80°	5.1	6.7	5.1	4.3	3.8	4.1	4.8	7.4	5.8	8.7	10.5
82.5°	1.7	2.1	2.5	2.4	2.1	2.1	2.3	3.0	2.6	3.2	4.4
85°	0.8	1.0	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.2	1.2
87.5°	0.6	0.6	1.0	1.0	0.8	0.8	0.8	0.8	1.1	1.0	1.0
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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.5°	2.0	2.0	2.0	2.0	1.8	1.9	1.8	1.9	1.9	1.9	1.9
5°	1.8	1.9	2.0	1.9	2.1	2.1	2.1	2.0	1.7	1.7	1.7
7.5°	2.4	2.5	2.5	2.3	2.5	2.9	2.7	2.6	2.3	2.1	2.0
10°	2.9	3.3	3.0	3.3	3.5	3.3	3.0	2.7	3.2	3.1	3.0
12.5°	2.9	3.1	3.3	3.8	4.2	3.2	3.0	3.3	3.2	3.2	3.0
15°	2.9	3.5	3.7	4.1	4.4	3.8	3.1	3.6	3.8	3.7	3.5
17.5°	3.2	3.6	3.8	4.4	4.8	4.4	3.7	3.9	4.2	4.5	4.3
20°	3.7	3.9	4.1	4.8	4.9	5.2	4.4	4.4	4.4	4.6	4.5
22.5°	4.2	4.6	4.6	5.2	5.4	6.2	5.8	4.6	4.4	5.0	4.9
25°	4.4	4.9	5.2	5.7	6.0	6.8	6.6	5.6	5.1	5.2	5.2
27.5°	5.1	5.5	5.8	6.2	7.0	7.4	7.9	6.3	5.8	5.8	5.8
30°	5.5	6.1	6.6	7.3	8.0	8.3	8.9	6.9	6.3	6.4	6.4
32.5°	6.4	6.7	7.4	8.2	8.7	9.4	9.5	7.7	7.0	7.0	6.9
35°	7.5	7.5	8.1	9.3	9.7	10.6	10.2	8.8	7.9	7.9	7.7
37.5°	9.2	8.8	9.2	10.4	10.8	11.6	11.2	9.9	8.8	8.9	8.8
40°	11.3	10.5	10.4	11.7	11.9	12.6	12.2	11.1	10.1	10.2	10.1
42.5°	14.8	12.7	12.5	13.1	13.3	13.8	13.3	12.5	11.9	12.3	12.5
45°	21.7	17.5	16.0	16.3	16.1	16.1	15.5	15.0	14.4	14.9	15.6
47.5°	28.2	22.4	20.0	18.5	18.0	17.8	17.3	16.9	16.1	17.3	18.9
50°	34.6	28.0	24.2	22.4	21.4	19.9	19.7	19.3	19.3	21.1	23.0
52.5°	40.2	32.6	26.9	24.4	22.9	21.3	20.9	20.5	21.1	23.8	25.9
55°	43.8	35.4	27.6	24.8	23.2	21.9	21.6	21.0	22.0	24.9	27.4
56°	*44.0*	*35.7*	*27.6*	*24.7*	*23.1*	*21.8*	*21.6*	*20.9*	*22.2*	*25.0*	*27.5*
57.5°	43.8	36.1	27.4	24.5	22.8	21.6	21.3	20.5	22.2	25.1	27.8
60°	42.9	35.9	26.7	24.4	21.8	20.7	20.7	19.5	21.8	25.4	28.0
62.5°	43.1	35.0	25.5	23.7	20.3	19.4	19.8	18.3	21.0	25.4	27.9
65°	41.5	33.7	23.4	22.4	18.5	17.5	18.3	16.4	19.8	24.2	26.6
67.5°	37.7	31.1	21.1	21.0	16.4	15.5	16.3	14.7	18.1	22.8	25.1
70°	33.4	27.4	18.2	18.8	14.4	13.1	13.9	12.5	16.2	20.9	23.5
72.5°	29.0	23.1	14.8	16.0	12.2	10.7	11.3	10.5	13.9	18.2	20.6
75°	23.5	18.2	11.1	12.6	9.7	8.2	8.5	8.2	11.3	15.0	17.2
77.5°	17.2	13.1	7.3	8.9	6.9	5.7	5.8	6.0	8.3	11.1	13.0
80°	10.5	8.3	4.1	5.2	4.3	3.8	3.6	3.8	5.2	6.8	8.0
82.5°	4.2	3.3	1.7	2.0	2.1	2.1	2.0	2.0	2.5	2.6	2.5
85°	1.2	0.8	1.0	0.8	1.1	1.1	1.0	0.8	1.0	1.0	1.0
87.5°	1.0	0.6	0.7	0.6	0.8	1.0	0.7	0.7	0.7	0.7	0.7
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: P1459762
CATALOG NUMBER: ABB-CX-AMB-X-U-S-GM-CBP

CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.5°	1.9	2.0	2.0	2.1	2.3	2.4	2.4	2.4	2.4	2.4
5°	1.8	1.7	1.7	1.5	1.7	1.9	2.1	2.4	3.0	3.3
7.5°	2.1	2.1	2.1	2.1	2.0	2.1	2.5	2.9	3.2	3.2
10°	3.0	2.9	2.7	2.9	2.9	2.6	3.0	3.5	3.7	3.5
12.5°	2.9	2.7	2.6	2.6	2.7	2.9	3.5	3.8	3.2	3.2
15°	3.2	3.0	2.9	2.9	2.9	3.3	3.8	4.1	3.3	3.3
17.5°	3.6	3.1	2.9	3.0	3.2	3.6	4.2	4.2	3.8	3.8
20°	3.8	3.3	3.2	3.5	3.5	4.2	4.3	4.5	4.4	4.4
22.5°	4.2	3.6	3.5	3.6	3.9	4.5	4.9	5.5	4.9	5.2
25°	4.6	4.1	4.1	3.9	4.3	4.9	5.5	5.8	5.8	6.4
27.5°	5.1	4.8	4.8	4.6	4.6	5.4	6.3	6.6	7.3	7.6
30°	5.8	5.7	5.5	5.4	5.4	5.7	6.9	7.9	8.7	8.3
32.5°	6.8	6.8	6.6	6.7	6.2	6.6	7.9	8.8	9.3	9.2
35°	7.9	8.1	7.9	7.7	7.3	7.5	8.7	10.0	10.4	10.4
37.5°	9.7	9.8	9.5	9.2	8.6	8.5	9.9	10.8	11.3	11.3
40°	11.9	12.6	12.0	11.3	10.0	9.8	11.2	11.9	12.4	12.3
42.5°	15.0	16.1	16.0	14.9	11.9	11.2	12.7	13.3	13.6	13.5
45°	20.3	23.1	23.7	22.4	16.6	14.4	16.2	16.6	16.3	15.8
47.5°	24.8	29.2	31.3	29.5	20.5	17.2	18.7	18.9	18.2	17.8
50°	32.4	39.0	40.0	39.0	28.5	21.9	22.4	22.0	21.0	20.4
52.5°	36.6	45.0	46.6	45.6	34.4	25.6	24.8	23.5	22.5	21.9
55°	38.8	49.1	51.1	50.4	38.0	27.8	25.9	24.2	23.5	22.9
56°	*39.4*	*49.7*	*51.2*	*51.0*	*39.0*	*28.0*	*26.0*	*24.1*	*23.5*	*23.0*
57.5°	39.7	49.7	50.9	50.8	39.8	28.0	25.9	23.7	23.4	22.9
60°	38.7	49.0	49.8	49.6	40.2	27.9	25.7	22.8	22.6	22.4
62.5°	36.2	48.4	50.2	49.8	39.8	26.9	25.7	21.2	21.4	21.6
65°	33.7	45.8	47.9	47.9	38.2	25.0	25.1	19.4	19.4	20.0
67.5°	30.4	41.8	44.1	44.2	35.6	22.3	23.9	17.6	17.3	18.0
70°	26.0	37.1	39.6	39.6	32.3	19.4	22.3	15.6	14.8	15.5
72.5°	21.7	31.9	34.8	34.9	28.0	16.4	19.8	13.6	12.2	12.9
75°	17.0	25.9	28.7	29.4	23.5	13.0	16.4	11.4	9.5	10.0
77.5°	12.2	19.3	21.7	21.9	18.0	9.3	12.4	8.6	6.8	7.1
80°	7.4	12.3	14.2	15.3	11.9	5.7	7.7	5.6	4.5	4.6
82.5°	3.2	5.4	6.6	7.5	5.6	2.7	2.5	2.9	2.6	2.7
85°	1.2	1.2	1.3	1.4	1.1	1.1	1.0	1.3	1.3	1.3
87.5°	1.0	1.0	1.0	1.0	0.7	0.8	0.6	1.0	1.0	1.0
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: SP1-2509-539-4

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

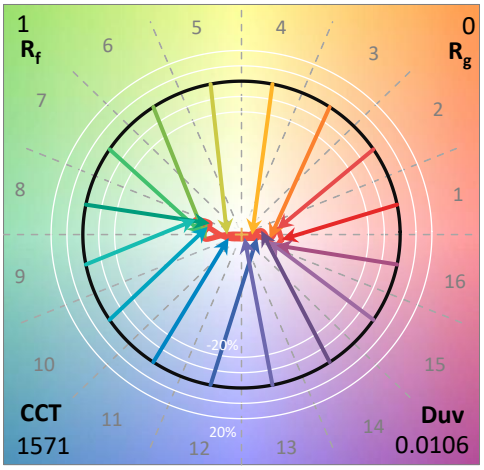
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2509-539-4
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:	LXS-C1-AMB-LED-XX-Dx-S-GM-SPECULAR REFLECTOR

Spectral Parameters

CCT (K):	1571
CIE u':	0.3487
CIE v':	0.5475
Duv:	0.0106
CIE x:	0.5886
CIE y:	0.4107
CIE z:	0.0007
Peak Wavelength (nm):	596
Dominant Wavelength (nm):	592
Purity:	99.96896
Rf:	1.4
Rg:	0.2

CRI (Ra):	-19.0				
R1:	-31.4	R9:	-376.7		
R2:	52.4	R10:	27.7		
R3:	21.1	R11:	-91.5		
R4:	-63.8	R12:	-12.3		
R5:	-37.6	R13:	-13.7		
R6:	40.7	R14:	48.6		
R7:	-3.9	R15:	-63.0		
R8:	-129.2				



Test Conditions

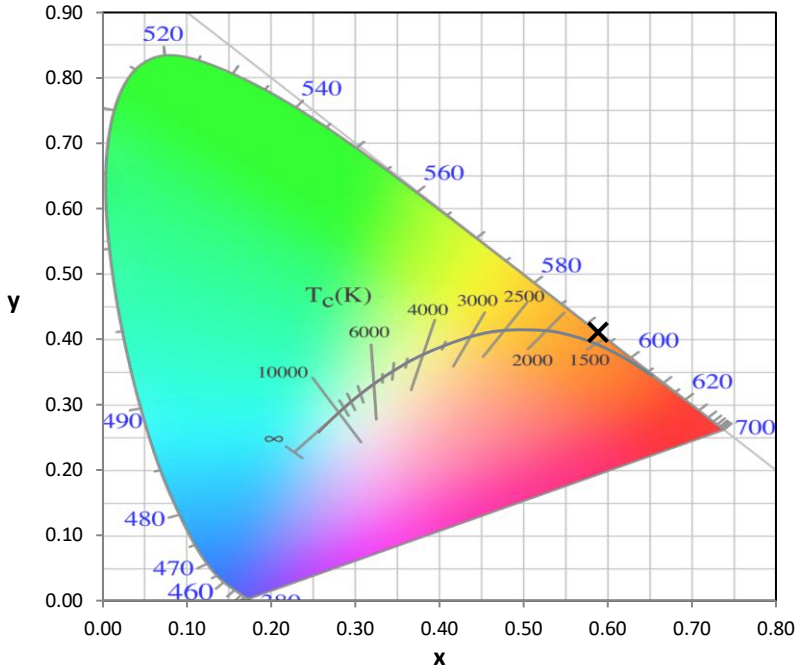
Stabilization Time:	95M
Operation Time:	2H 35M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2509-539-4

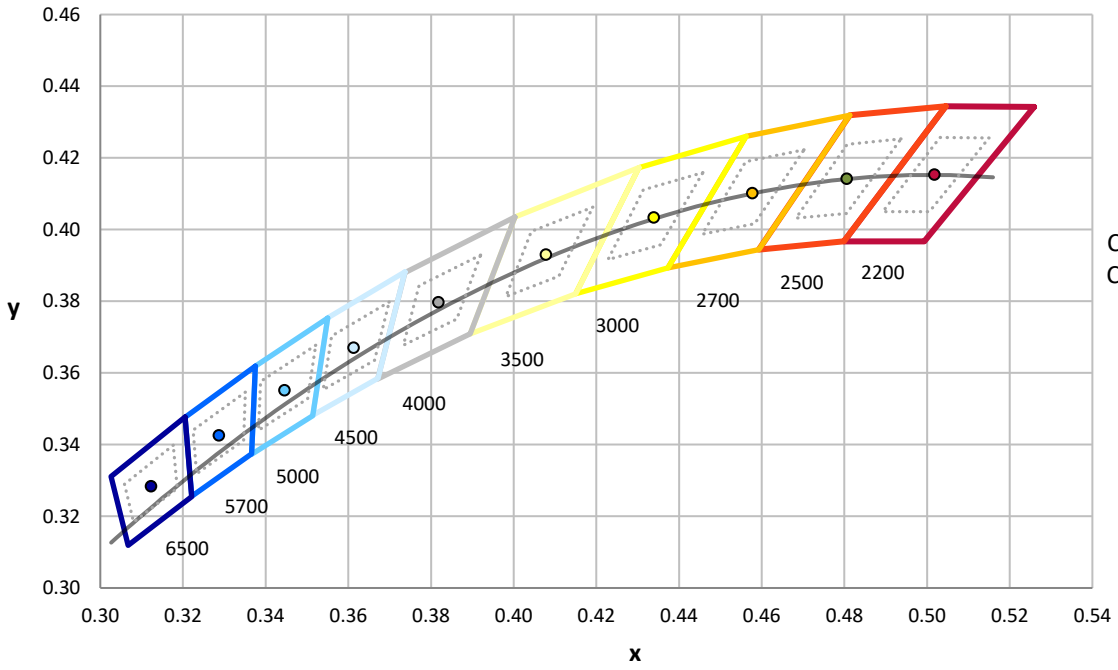
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	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: SP1-2509-539-4

CIE 1931 Chromaticity Diagram



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

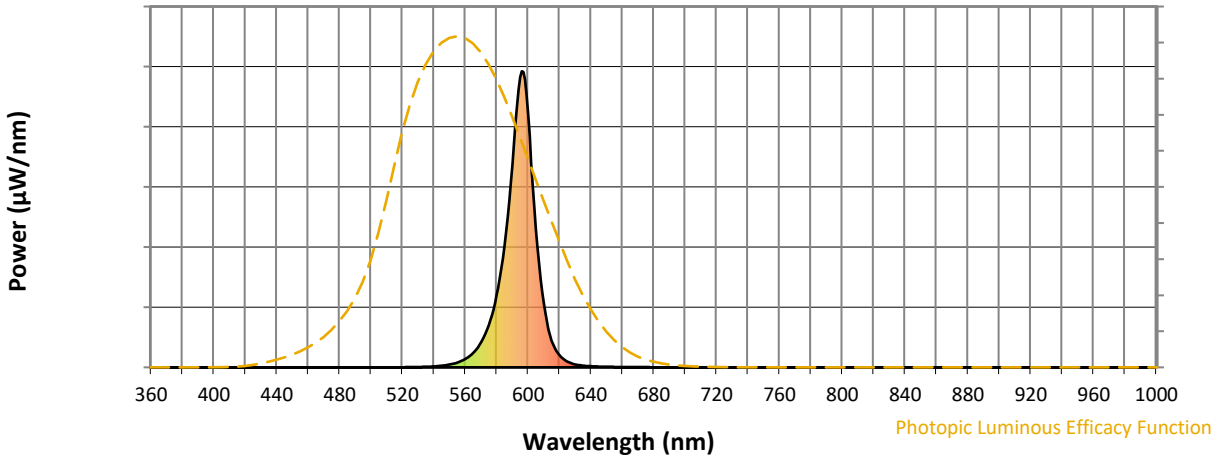


CCT = 1571K
CIE x = 0.5886
CIE y = 0.4107
Duv = 0.0106

Point lies outside the range

REPORT NUMBER: SP1-2509-539-4

Photopic Flux vs. Wavelength

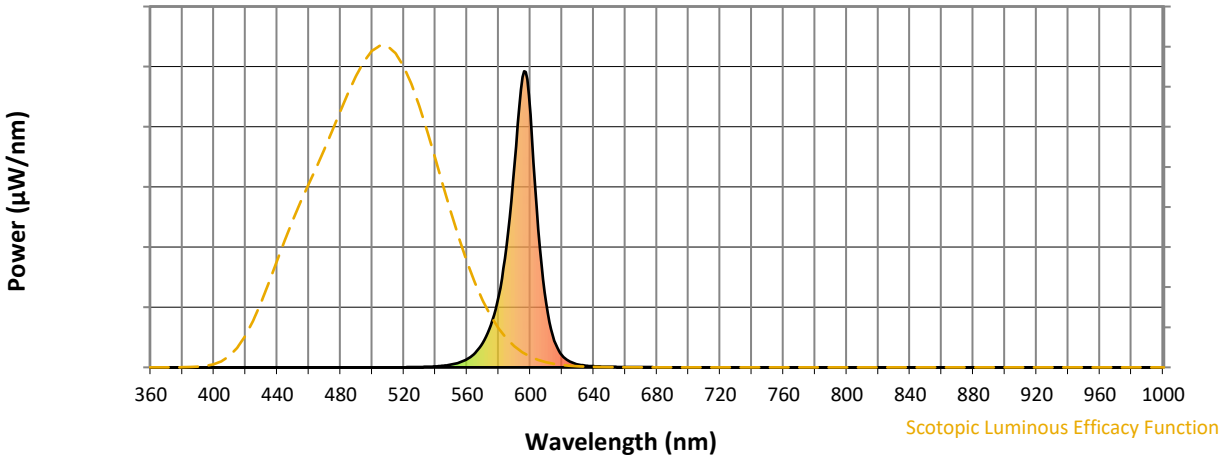


Photopic Lumens: NR

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	0	NR	620	41	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	19	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	10	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	6	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	4	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	1	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	2	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	3	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	6	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	10	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	16	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	28	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	48	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	84	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	143	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	243	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	409	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	686	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	980	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	854	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	466	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	216	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	90	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2509-539-4

Scotopic Flux vs. Wavelength

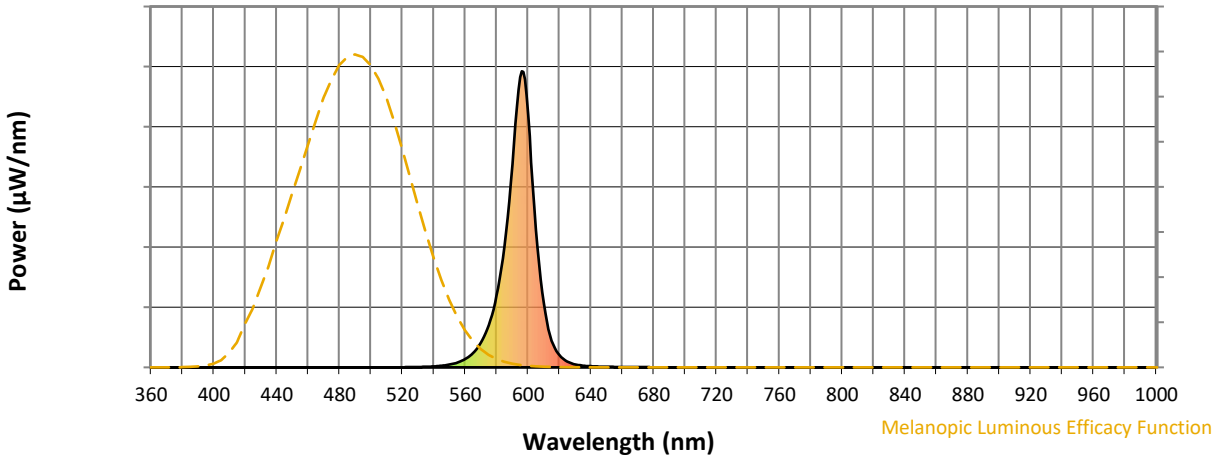


Scotopic Lumens: NR **S/P: 0.23**

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	0	NR	620	41	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	19	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	10	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	6	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	4	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	1	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	2	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	3	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	6	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	10	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	16	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	28	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	48	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	84	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	143	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	243	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	409	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	686	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	980	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	854	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	466	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	216	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	90	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2509-539-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 0.13**

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	0	NR	620	41	NR	750	0	NR	880	0	NR
365	0	NR	495	0	NR	625	19	NR	755	0	NR	885	0	NR
370	0	NR	500	0	NR	630	10	NR	760	0	NR	890	0	NR
375	0	NR	505	0	NR	635	6	NR	765	0	NR	895	0	NR
380	0	NR	510	0	NR	640	4	NR	770	0	NR	900	0	NR
385	0	NR	515	0	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	1	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	1	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	1	NR	660	1	NR	790	0	NR	920	0	NR
405	0	NR	535	2	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	3	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	6	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	10	NR	680	1	NR	810	0	NR	940	0	NR
425	0	NR	555	16	NR	685	0	NR	815	0	NR	945	0	NR
430	0	NR	560	28	NR	690	0	NR	820	0	NR	950	0	NR
435	0	NR	565	48	NR	695	0	NR	825	0	NR	955	0	NR
440	0	NR	570	84	NR	700	0	NR	830	0	NR	960	0	NR
445	0	NR	575	143	NR	705	0	NR	835	0	NR	965	0	NR
450	0	NR	580	243	NR	710	0	NR	840	0	NR	970	0	NR
455	0	NR	585	409	NR	715	0	NR	845	0	NR	975	0	NR
460	0	NR	590	686	NR	720	0	NR	850	0	NR	980	0	NR
465	0	NR	595	980	NR	725	0	NR	855	0	NR	985	0	NR
470	0	NR	600	854	NR	730	0	NR	860	0	NR	990	0	NR
475	0	NR	605	466	NR	735	0	NR	865	0	NR	995	0	NR
480	0	NR	610	216	NR	740	0	NR	870	0	NR	1000	0	NR
485	0	NR	615	90	NR	745	0	NR	875	0	NR			

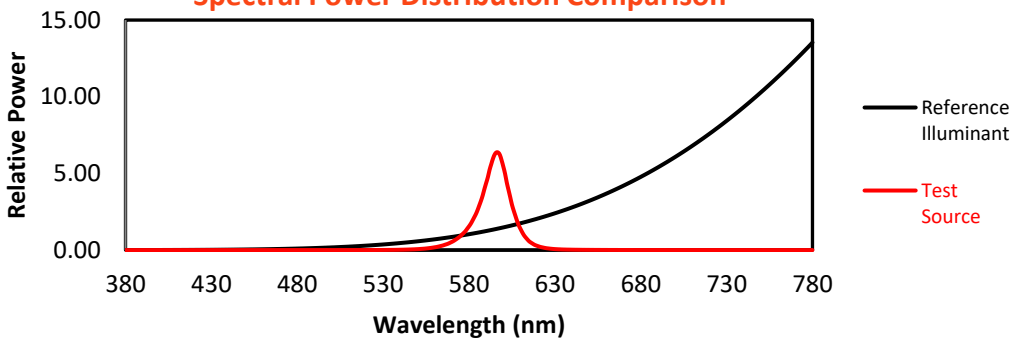
REPORT NUMBER: SP1-2509-539-4

TM-30-18

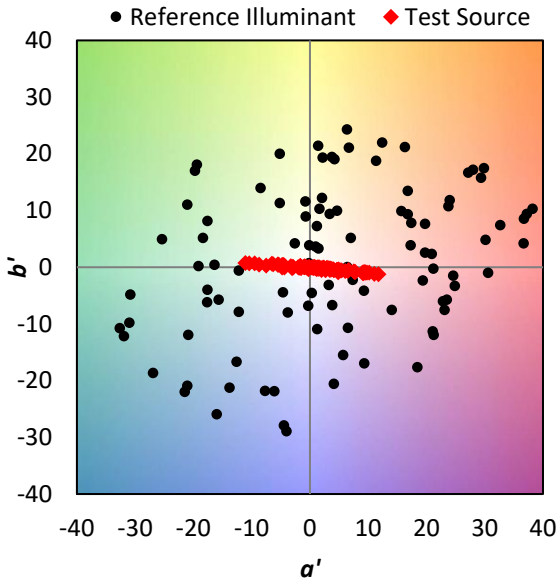
Summary

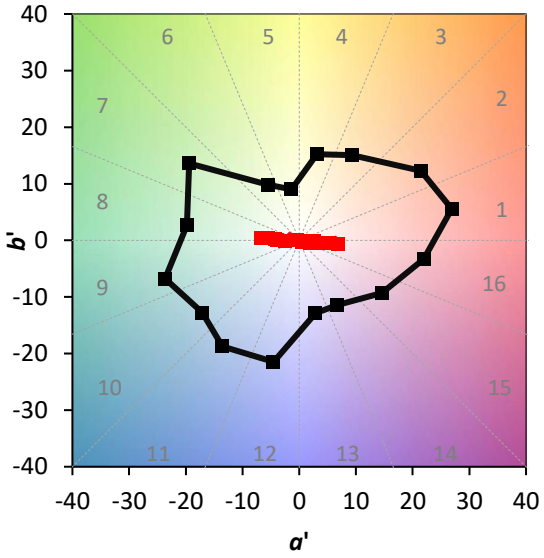
R_f = 1.4
R_g = 0.2
CIE R_a = -19.0
R_9 = -376.7

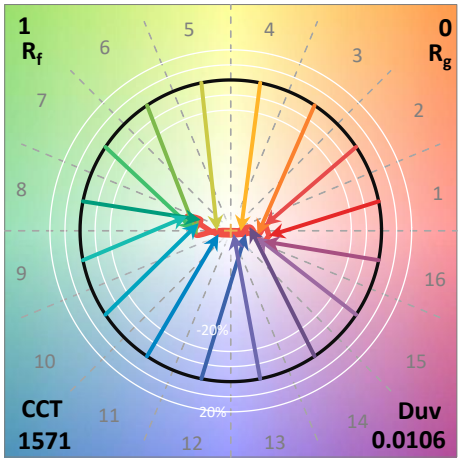
Spectral Power Distribution Comparison

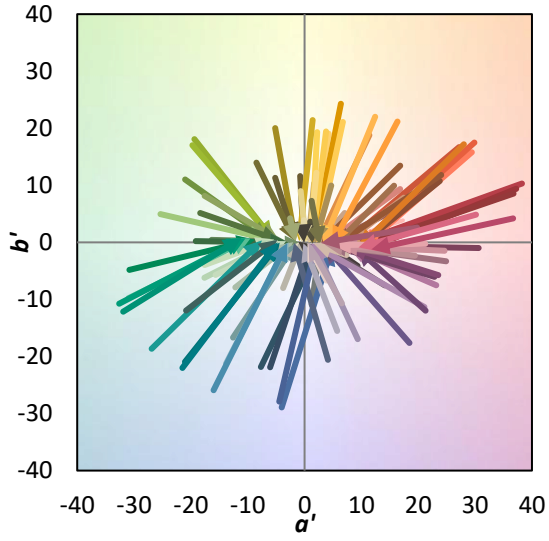


Color Vector Graphics







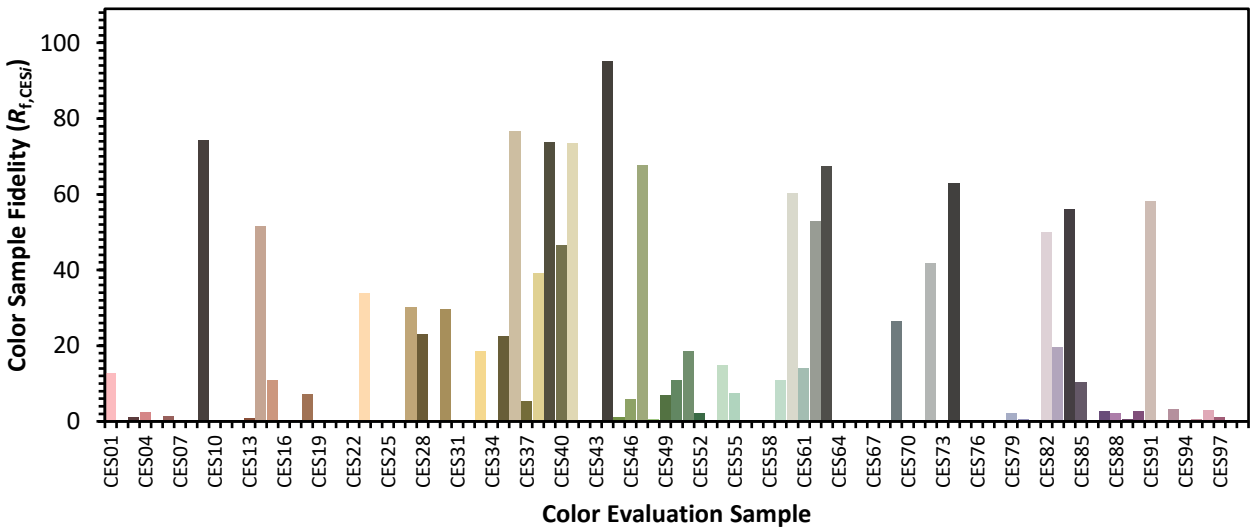


REPORT NUMBER: SP1-2509-539-4

TM-30-18

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

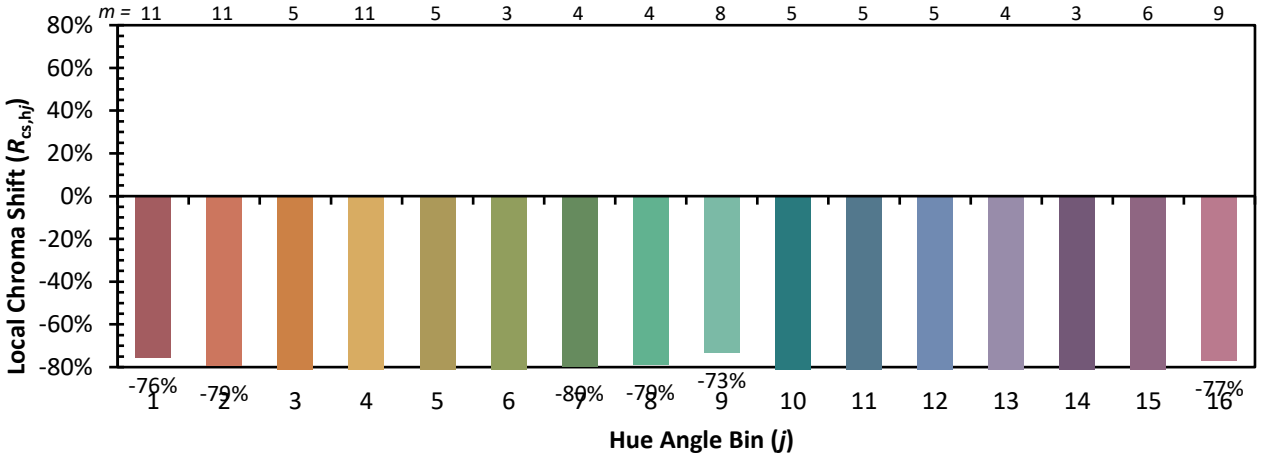
CES01 = 90	CES26 = 0	CES51 = 19	CES76 = 0
CES02 = 69	CES27 = 30	CES52 = 2	CES77 = 0
CES03 = 31	CES28 = 23	CES53 = 0	CES78 = 0
CES04 = 77	CES29 = 0	CES54 = 15	CES79 = 2
CES05 = 52	CES30 = 30	CES55 = 8	CES80 = 1
CES06 = 56	CES31 = 0	CES56 = 0	CES81 = 0
CES07 = 41	CES32 = 0	CES57 = 0	CES82 = 50
CES08 = 38	CES33 = 19	CES58 = 0	CES83 = 20
CES09 = 29	CES34 = 0	CES59 = 11	CES84 = 56
CES10 = 87	CES35 = 22	CES60 = 60	CES85 = 10
CES11 = 70	CES36 = 77	CES61 = 14	CES86 = 0
CES12 = 75	CES37 = 5	CES62 = 53	CES87 = 3
CES13 = 47	CES38 = 39	CES63 = 68	CES88 = 2
CES14 = 76	CES39 = 74	CES64 = 0	CES89 = 1
CES15 = 74	CES40 = 46	CES65 = 0	CES90 = 3
CES16 = 49	CES41 = 74	CES66 = 0	CES91 = 58
CES17 = 56	CES42 = 0	CES67 = 0	CES92 = 0
CES18 = 59	CES43 = 0	CES68 = 0	CES93 = 3
CES19 = 80	CES44 = 95	CES69 = 26	CES94 = 0
CES20 = 71	CES45 = 1	CES70 = 0	CES95 = 1
CES21 = 94	CES46 = 6	CES71 = 0	CES96 = 3
CES22 = 87	CES47 = 68	CES72 = 42	CES97 = 1
CES23 = 94	CES48 = 0	CES73 = 0	CES98 = 0
CES24 = 95	CES49 = 7	CES74 = 63	CES99 = 0
CES25 = 79	CES50 = 11	CES75 = 0	

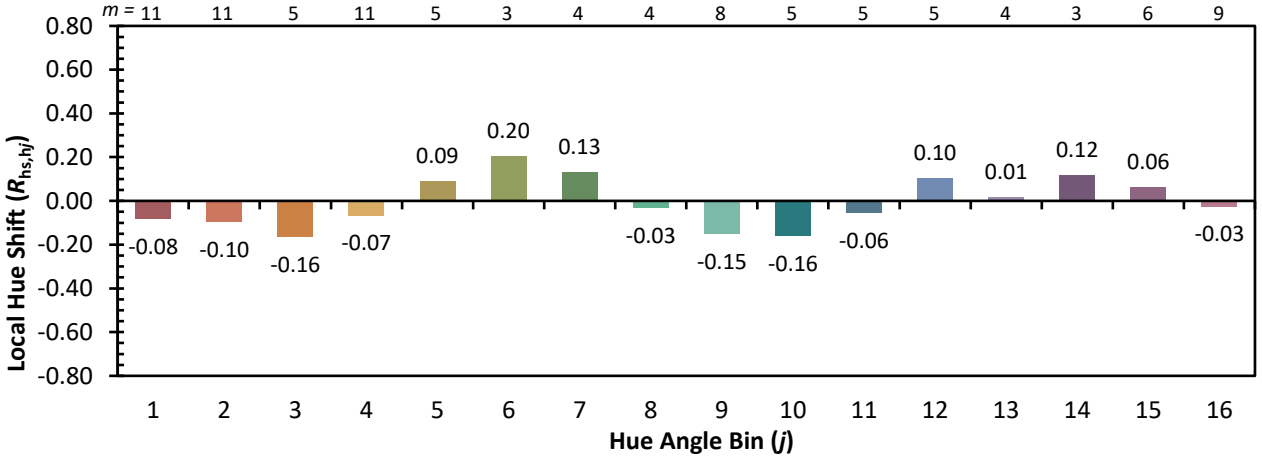


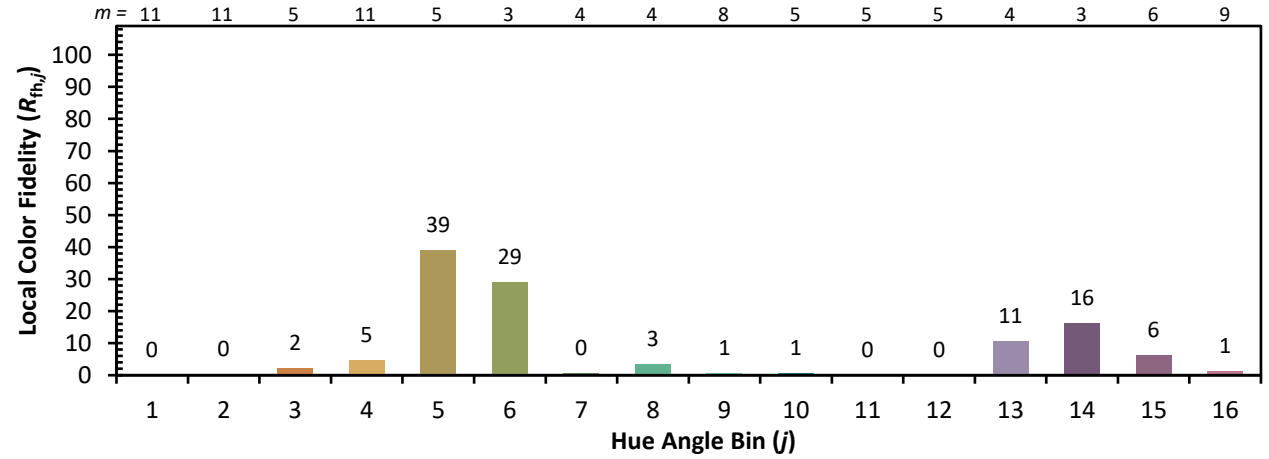
REPORT NUMBER: SP1-2509-539-4

TM-30-18

Color Rendition by Hue-Angle Bin







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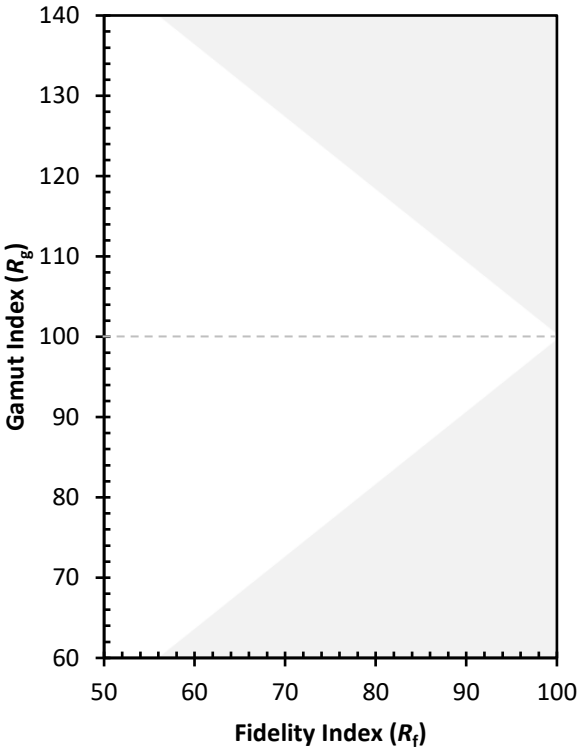
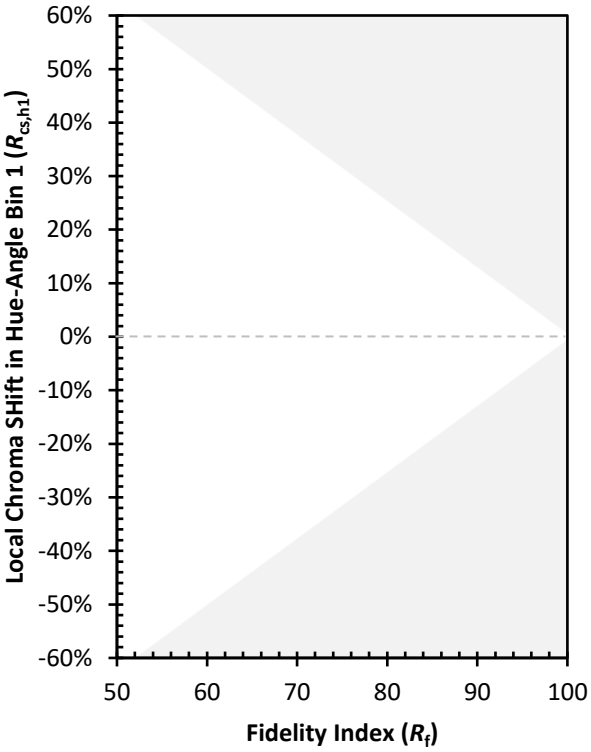
Measure Comparisons





(END OF REPORT)