

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: P1442028

Luminaire Tested: ABB-C1-840-X-U-S-GM

Issue Date: 4/23/2026

Test Information

Test Method: LM-79-2024
Report Number: P1442028
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-C1-840-X-U-S-GM
Description: ARBOR OUTDOOR ARCHITECTURAL BOLLARD LUMINAIRE
SYMMETRIC OPTIC, GRAPHITE METALLIC PAINTED FINISH
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

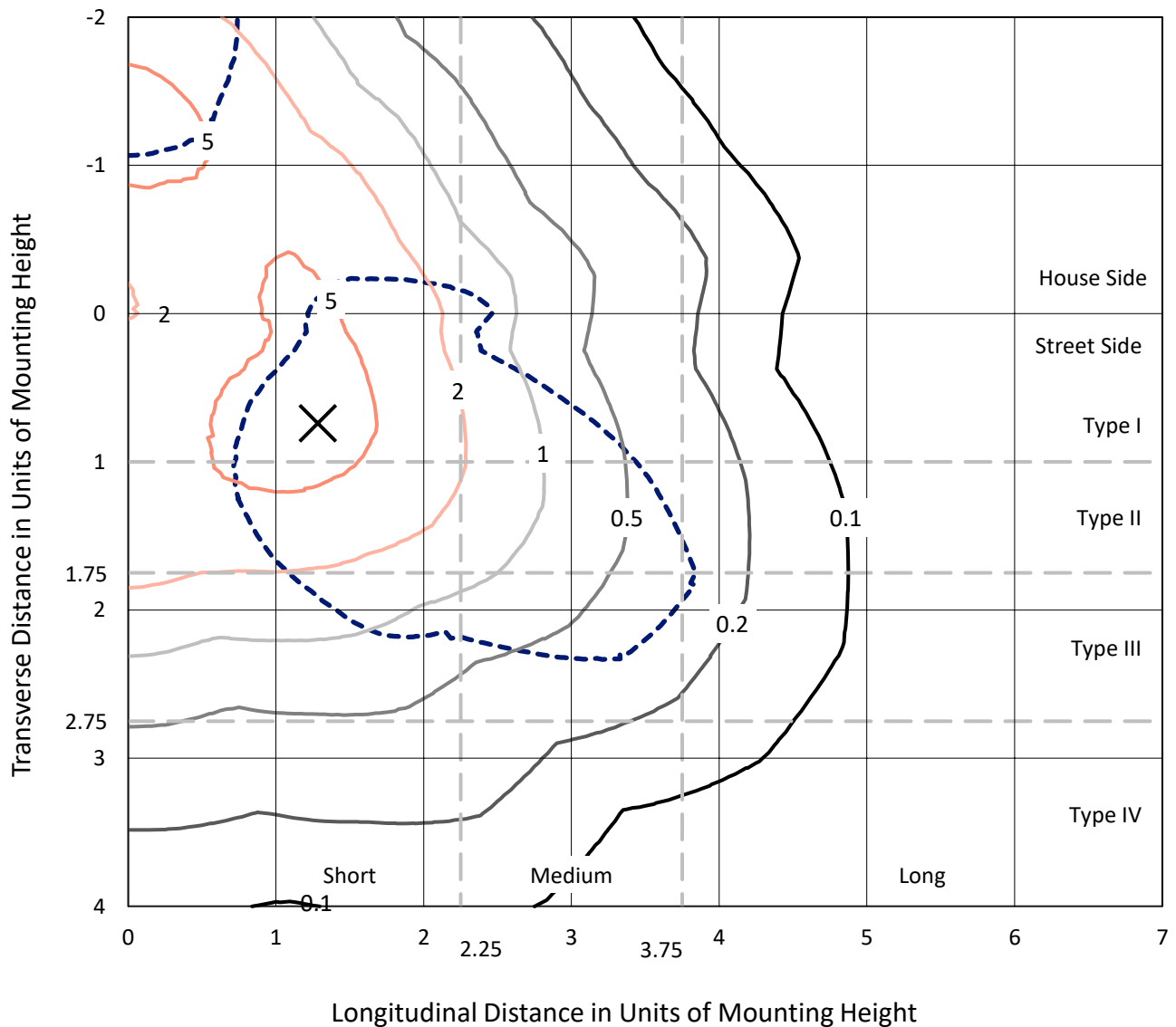
Lumens per Lamp: N/A
Luminaire Lumens: 742.6 lumens
Efficiency: N/A
Efficacy: 47.9 lumens/watt
Luminous Opening: Circular (Dia: 0.4' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G1

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

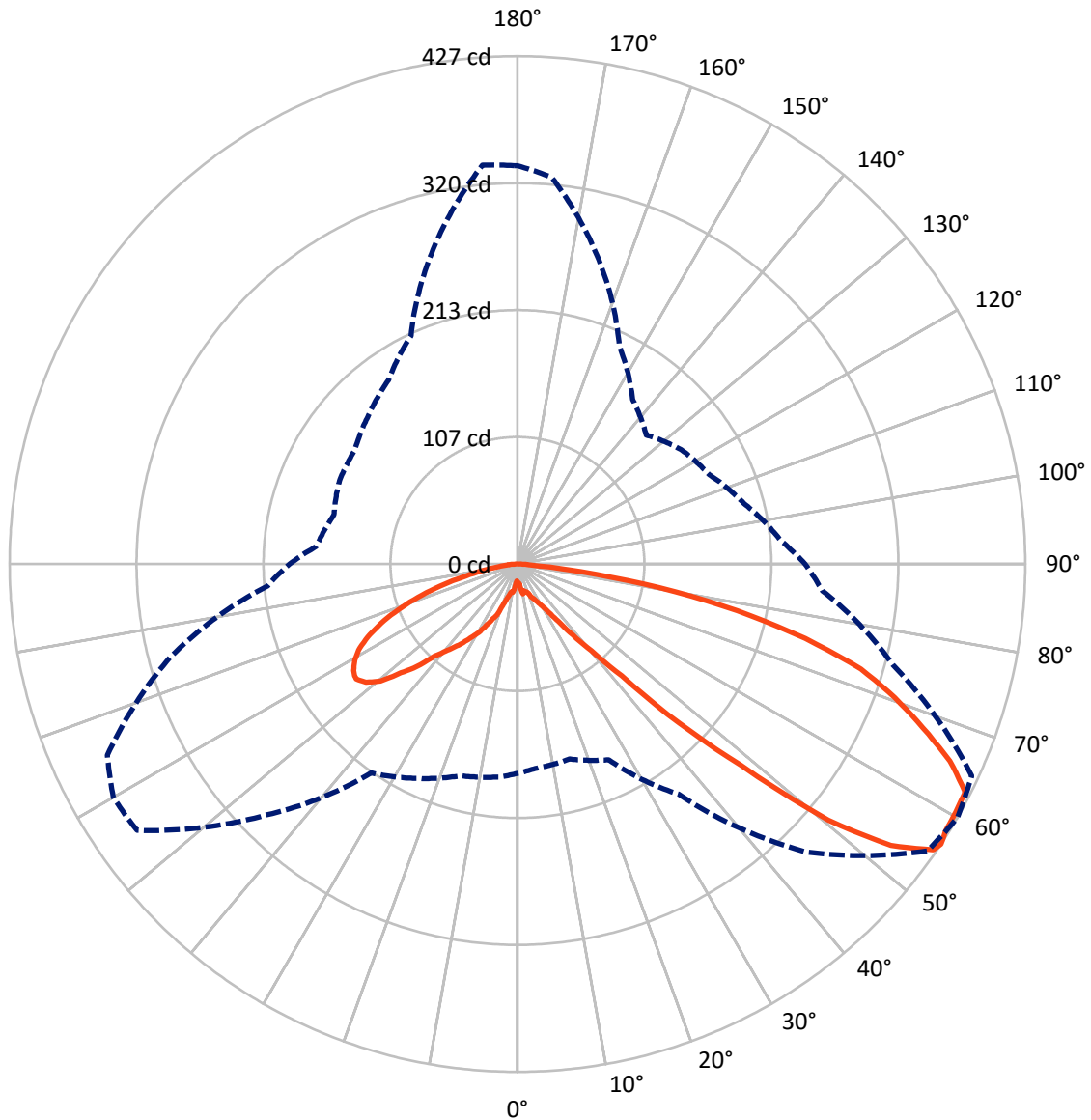
× Max cd
 - - - 1/2 Max cd



Based on 3 foot mounting height. Maximum calculated value = 9.9 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 56-Deg Vertical

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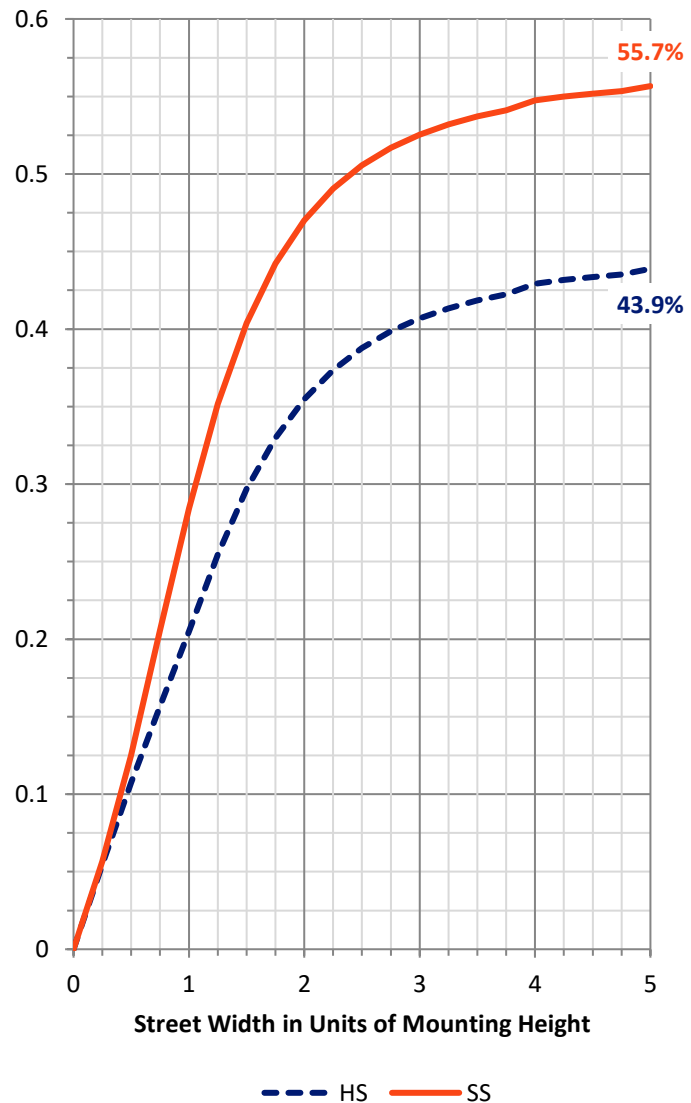
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	326.8	0.0	326.8
	% Fixture	44.0	0.0	44.0
Street Side	Lumens	415.9	0.0	415.9
	% Fixture	56.0	0.0	56.0
Total	Lumens	742.6	0.0	742.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1.9	0.3
10°-20°	8.0	1.1
20°-30°	19.7	2.7
30°-40°	43.4	5.8
40°-50°	107.4	14.5
50°-60°	207.0	27.9
60°-70°	210.3	28.3
70°-80°	126.2	17.0
80°-90°	18.6	2.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	742.6	100.0
0°-180°	742.6	100.0



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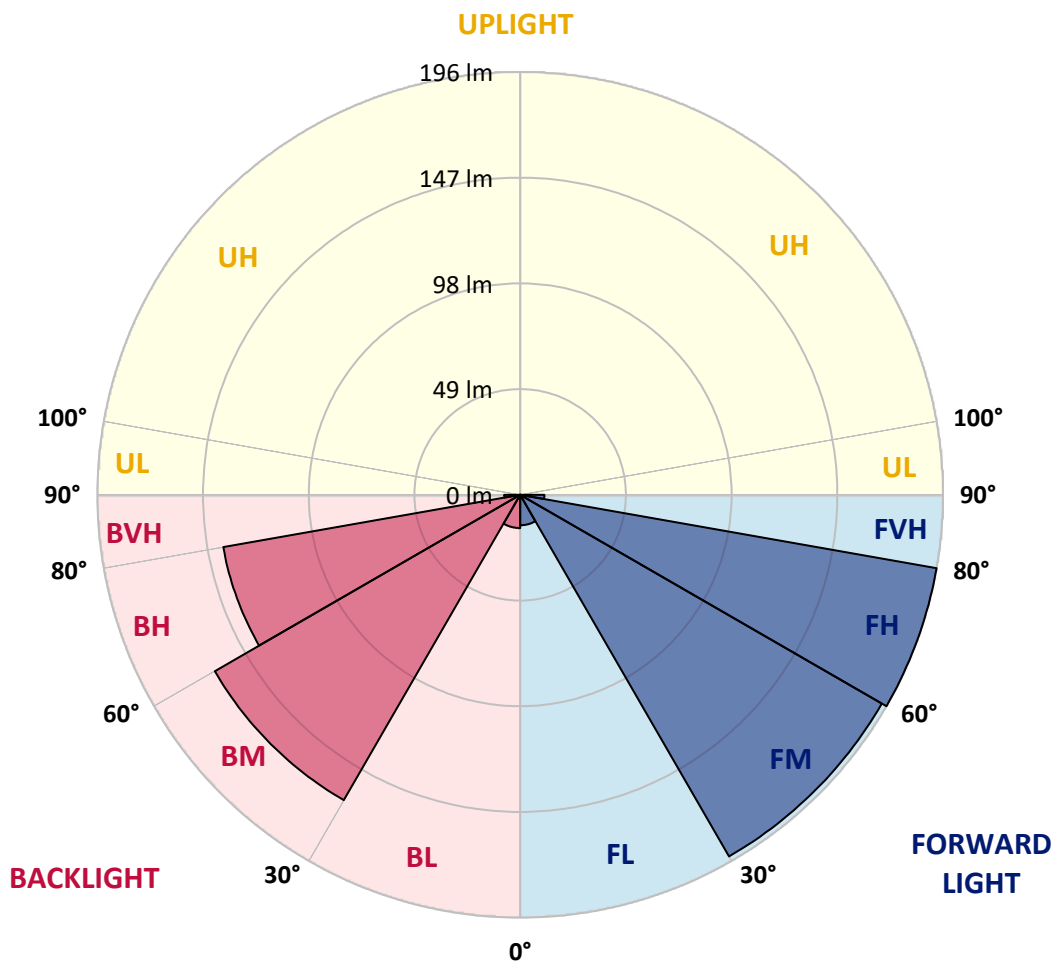
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	14.1	1.9			
FM	(30°-60°)	194.0	26.1			
FH	(60°-80°)	196.5	26.5			G0/660
FVH	(80°-90°)	11.2	1.5			G1/100
BL	(0°-30°)	15.5	2.1	B0/110		
BM	(30°-60°)	163.8	22.1	B0/220		
BH	(60°-80°)	140.1	18.9	B1/500		G1/500
BVH	(80°-90°)	7.4	1.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: 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°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
2.5°	18.2	18.2	20.1	21.0	20.1	18.2	17.3	17.3	17.3	16.4	14.6
5°	25.5	23.7	21.0	21.0	20.1	19.2	16.4	16.4	16.4	14.6	13.7
7.5°	24.6	27.4	27.4	27.4	26.4	26.4	23.7	21.9	21.9	19.2	20.1
10°	26.4	26.4	25.5	30.1	28.3	28.3	25.5	25.5	25.5	24.6	24.6
12.5°	24.6	23.7	25.5	27.4	24.6	26.4	24.6	22.8	22.8	24.6	25.5
15°	25.5	26.4	27.4	30.1	29.2	27.4	24.6	24.6	24.6	28.3	28.3
17.5°	29.2	31.0	31.0	31.9	31.9	29.2	24.6	24.6	25.5	28.3	31.9
20°	33.7	33.7	33.7	33.7	33.7	31.0	26.4	26.4	28.3	30.1	33.7
22.5°	40.1	40.1	42.9	39.2	38.3	32.8	31.0	30.1	32.8	31.9	36.5
25°	49.2	52.0	49.2	42.0	41.0	35.6	32.8	32.8	33.7	38.3	39.2
27.5°	58.4	60.2	52.0	45.6	46.5	40.1	37.4	36.5	38.3	42.9	45.6
30°	63.8	64.8	57.5	50.2	52.0	45.6	42.9	41.0	42.9	48.3	53.8
32.5°	70.2	72.0	64.8	56.5	57.5	56.5	52.0	48.3	48.3	53.8	58.4
35°	79.3	78.4	70.2	62.0	63.8	67.5	65.7	59.3	58.4	58.4	66.6
37.5°	86.6	84.8	79.3	69.3	71.1	78.4	82.1	75.7	73.0	68.4	74.8
40°	93.9	93.9	87.6	76.6	84.8	95.8	104.9	95.8	91.2	83.0	83.9
42.5°	103.1	104.0	99.4	89.4	103.1	125.9	142.3	128.6	121.3	104.9	99.4
45°	121.3	124.9	120.4	111.3	129.5	168.7	198.8	190.6	178.8	141.4	128.6
47.5°	135.9	138.6	134.1	126.8	154.1	211.6	265.4	252.6	248.1	183.3	160.5
50°	156.0	156.0	154.1	153.2	191.5	281.8	335.6	338.4	339.3	242.6	206.1
52.5°	167.8	166.0	164.2	170.5	219.8	314.6	387.6	393.1	397.6	289.1	236.2
55°	175.1	172.4	169.6	180.6	233.5	338.4	415.9	424.1	419.5	319.2	251.7
56°	176.0	172.4	169.6	181.5	236.2	342.0	420.4	426.8	421.3	326.5	257.2
57.5°	175.1	171.5	167.8	182.4	237.1	342.0	418.6	424.1	423.2	332.0	260.8
60°	171.5	167.8	162.3	182.4	238.9	335.6	413.1	423.2	425.0	333.8	261.7
62.5°	165.1	163.2	154.1	179.7	236.2	321.9	411.3	422.3	420.4	325.6	250.8
65°	153.2	152.3	141.4	174.2	224.4	298.2	387.6	399.5	394.0	308.3	228.0
67.5°	137.7	135.9	125.9	164.2	212.5	270.0	360.2	367.5	365.7	288.2	202.5
70°	118.6	118.6	111.3	149.6	200.6	237.1	328.3	336.5	339.3	264.5	178.8
72.5°	98.5	99.4	95.8	131.3	182.4	201.6	288.2	301.9	304.6	233.5	148.7
75°	76.6	77.5	77.5	109.4	156.9	159.6	239.9	249.9	253.5	195.2	116.7
77.5°	54.7	54.7	57.5	83.0	125.9	112.2	181.5	188.8	195.2	147.7	78.4
80°	35.6	33.7	37.4	52.9	83.9	67.5	115.8	121.3	127.7	93.0	43.8
82.5°	21.0	19.2	21.0	24.6	35.6	31.0	52.9	53.8	68.4	41.0	18.2
85°	10.0	10.0	9.1	10.0	9.1	10.9	10.0	10.0	11.9	7.3	8.2
87.5°	7.3	6.4	6.4	6.4	6.4	8.2	7.3	7.3	8.2	5.5	6.4
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°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
2.5°	14.6	13.7	12.8	12.8	11.9	13.7	15.5	15.5	14.6	14.6	14.6
5°	14.6	15.5	16.4	18.2	20.1	18.2	17.3	15.5	13.7	12.8	12.8
7.5°	21.9	21.9	20.1	21.0	21.9	20.1	21.0	20.1	18.2	17.3	16.4
10°	24.6	25.5	29.2	27.4	26.4	26.4	25.5	24.6	22.8	21.0	20.1
12.5°	27.4	28.3	29.2	26.4	29.2	28.3	27.4	24.6	23.7	21.9	21.9
15°	29.2	31.0	30.1	31.0	30.1	30.1	29.2	26.4	25.5	21.9	21.0
17.5°	33.7	33.7	35.6	34.7	31.9	33.7	31.9	30.1	27.4	23.7	23.7
20°	35.6	38.3	39.2	39.2	37.4	38.3	39.2	36.5	31.9	29.2	29.2
22.5°	40.1	42.0	44.7	48.3	43.8	43.8	42.9	36.5	31.0	31.9	30.1
25°	45.6	43.8	47.4	53.8	50.2	45.6	46.5	41.0	36.5	35.6	33.7
27.5°	50.2	50.2	55.6	63.8	54.7	52.0	50.2	45.6	40.1	38.3	38.3
30°	62.0	57.5	63.8	68.4	66.6	54.7	54.7	49.2	45.6	42.9	43.8
32.5°	69.3	65.7	72.0	74.8	73.9	60.2	60.2	56.5	53.8	52.0	49.2
35°	76.6	77.5	78.4	82.1	80.3	71.1	64.8	62.0	62.0	62.0	60.2
37.5°	85.7	86.6	87.6	89.4	86.6	78.4	72.0	69.3	72.0	76.6	73.0
40°	94.8	98.5	95.8	96.7	94.8	87.6	83.0	81.2	87.6	97.6	92.1
42.5°	113.1	113.1	109.4	106.7	104.0	97.6	95.8	99.4	112.2	129.5	123.1
45°	136.8	135.9	129.5	124.9	121.3	114.0	114.0	124.9	150.5	176.9	177.8
47.5°	177.8	160.5	149.6	142.3	135.9	127.7	128.6	148.7	184.2	225.3	226.2
50°	210.7	197.0	177.8	161.4	153.2	144.1	148.7	178.8	228.0	265.4	274.5
52.5°	230.7	215.2	190.6	173.3	163.2	153.2	161.4	197.9	253.5	301.0	311.0
55°	238.0	220.7	197.9	178.8	167.8	155.0	168.7	203.4	263.6	322.8	332.9
56°	241.7	222.5	197.0	177.8	167.8	153.2	168.7	202.5	264.5	326.5	334.7
57.5°	245.3	221.6	195.2	176.9	166.9	151.4	168.7	200.6	263.6	326.5	335.6
60°	252.6	221.6	187.0	172.4	160.5	145.9	166.9	200.6	259.9	321.0	336.5
62.5°	247.2	219.8	176.0	162.3	155.0	139.5	160.5	197.9	250.8	316.5	336.5
65°	233.5	213.4	159.6	147.7	142.3	127.7	150.5	190.6	234.4	301.0	318.3
67.5°	216.1	204.3	142.3	130.4	125.9	114.9	137.7	176.9	211.6	270.9	288.2
70°	192.4	192.4	124.0	111.3	108.5	98.5	123.1	162.3	180.6	238.0	254.4
72.5°	158.7	165.1	108.5	90.3	88.5	83.0	104.9	142.3	147.7	203.4	220.7
75°	121.3	133.2	87.6	69.3	67.5	65.7	83.0	116.7	114.0	160.5	177.8
77.5°	80.3	93.9	63.8	49.2	46.5	47.4	59.3	89.4	79.3	114.0	128.6
80°	39.2	51.1	39.2	32.8	29.2	31.0	36.5	56.5	44.7	66.6	80.3
82.5°	12.8	16.4	19.2	18.2	16.4	16.4	17.3	22.8	20.1	24.6	33.7
85°	6.4	7.3	9.1	9.1	8.2	8.2	8.2	9.1	10.0	9.1	9.1
87.5°	4.6	4.6	7.3	7.3	6.4	6.4	6.4	6.4	8.2	7.3	7.3
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°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
2.5°	15.5	15.5	15.5	15.5	13.7	14.6	13.7	14.6	14.6	14.6	14.6
5°	13.7	14.6	15.5	14.6	16.4	16.4	16.4	15.5	12.8	12.8	12.8
7.5°	18.2	19.2	19.2	17.3	19.2	21.9	21.0	20.1	17.3	16.4	15.5
10°	21.9	25.5	22.8	25.5	26.4	25.5	22.8	21.0	24.6	23.7	22.8
12.5°	21.9	23.7	25.5	29.2	31.9	24.6	22.8	25.5	24.6	24.6	22.8
15°	21.9	26.4	28.3	31.0	33.7	29.2	23.7	27.4	29.2	28.3	26.4
17.5°	24.6	27.4	29.2	33.7	36.5	33.7	28.3	30.1	31.9	34.7	32.8
20°	28.3	30.1	31.0	36.5	37.4	40.1	33.7	33.7	33.7	35.6	34.7
22.5°	31.9	35.6	35.6	40.1	41.0	47.4	44.7	35.6	33.7	38.3	37.4
25°	33.7	37.4	40.1	43.8	45.6	52.0	50.2	42.9	39.2	40.1	40.1
27.5°	39.2	42.0	44.7	47.4	53.8	56.5	60.2	48.3	44.7	44.7	44.7
30°	42.0	46.5	50.2	55.6	61.1	63.8	68.4	52.9	48.3	49.2	49.2
32.5°	49.2	51.1	56.5	62.9	66.6	72.0	73.0	59.3	53.8	53.8	52.9
35°	57.5	57.5	62.0	71.1	73.9	81.2	78.4	67.5	60.2	60.2	59.3
37.5°	70.2	67.5	70.2	79.3	83.0	88.5	85.7	75.7	67.5	68.4	67.5
40°	86.6	80.3	79.3	89.4	91.2	96.7	93.0	84.8	77.5	78.4	77.5
42.5°	113.1	97.6	95.8	100.3	102.1	105.8	102.1	95.8	91.2	93.9	95.8
45°	166.0	134.1	122.2	124.9	123.1	123.1	118.6	114.9	110.4	114.0	119.5
47.5°	216.1	171.5	153.2	141.4	137.7	135.9	132.2	129.5	123.1	132.2	145.0
50°	264.5	214.3	185.1	171.5	164.2	152.3	150.5	147.7	147.7	161.4	176.0
52.5°	307.3	249.9	206.1	187.0	175.1	163.2	159.6	156.9	161.4	182.4	197.9
55°	335.6	270.9	211.6	189.7	177.8	167.8	165.1	160.5	168.7	190.6	209.8
56°	336.5	273.6	211.6	188.8	176.9	166.9	165.1	159.6	169.6	191.5	210.7
57.5°	335.6	276.3	209.8	187.9	174.2	165.1	163.2	156.9	169.6	192.4	212.5
60°	328.3	274.5	204.3	187.0	166.9	158.7	158.7	149.6	166.9	194.3	214.3
62.5°	330.1	268.1	195.2	181.5	155.0	148.7	151.4	140.4	160.5	194.3	213.4
65°	317.4	258.1	178.8	171.5	141.4	134.1	140.4	125.9	151.4	185.1	203.4
67.5°	288.2	238.0	161.4	160.5	125.9	118.6	124.9	112.2	138.6	174.2	192.4
70°	255.4	209.8	139.5	144.1	110.4	100.3	106.7	95.8	124.0	159.6	179.7
72.5°	221.6	176.9	113.1	122.2	93.0	82.1	86.6	80.3	106.7	139.5	157.8
75°	179.7	139.5	84.8	96.7	73.9	62.9	64.8	62.9	86.6	114.9	131.3
77.5°	131.3	100.3	55.6	68.4	52.9	43.8	44.7	45.6	63.8	84.8	99.4
80°	80.3	63.8	31.0	40.1	32.8	29.2	27.4	29.2	40.1	52.0	61.1
82.5°	31.9	25.5	12.8	15.5	16.4	16.4	15.5	15.5	19.2	20.1	19.2
85°	9.1	6.4	7.3	6.4	8.2	8.2	7.3	6.4	7.3	7.3	7.3
87.5°	7.3	4.6	5.5	4.6	6.4	7.3	5.5	5.5	5.5	5.5	5.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	285°	295°	300°	305°	315°	325°	335°	345°	355°	360°
0°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
2.5°	14.6	15.5	15.5	16.4	17.3	18.2	18.2	18.2	18.2	18.2
5°	13.7	12.8	12.8	11.9	12.8	14.6	16.4	18.2	22.8	25.5
7.5°	16.4	16.4	16.4	16.4	15.5	16.4	19.2	21.9	24.6	24.6
10°	22.8	21.9	21.0	21.9	21.9	20.1	22.8	26.4	28.3	26.4
12.5°	21.9	21.0	20.1	20.1	21.0	21.9	26.4	29.2	24.6	24.6
15°	24.6	22.8	21.9	21.9	21.9	25.5	29.2	31.0	25.5	25.5
17.5°	27.4	23.7	21.9	22.8	24.6	27.4	31.9	31.9	29.2	29.2
20°	29.2	25.5	24.6	26.4	26.4	31.9	32.8	34.7	33.7	33.7
22.5°	31.9	27.4	26.4	27.4	30.1	34.7	37.4	42.0	37.4	40.1
25°	35.6	31.0	31.0	30.1	32.8	37.4	42.0	44.7	44.7	49.2
27.5°	39.2	36.5	36.5	35.6	35.6	41.0	48.3	50.2	55.6	58.4
30°	44.7	43.8	42.0	41.0	41.0	43.8	52.9	60.2	66.6	63.8
32.5°	52.0	52.0	50.2	51.1	47.4	50.2	60.2	67.5	71.1	70.2
35°	60.2	62.0	60.2	59.3	55.6	57.5	66.6	76.6	79.3	79.3
37.5°	73.9	74.8	73.0	70.2	65.7	64.8	75.7	83.0	86.6	86.6
40°	91.2	96.7	92.1	86.6	76.6	74.8	85.7	91.2	94.8	93.9
42.5°	114.9	123.1	122.2	114.0	91.2	85.7	97.6	102.1	104.0	103.1
45°	155.0	176.9	181.5	171.5	126.8	110.4	124.0	126.8	124.9	121.3
47.5°	189.7	223.4	239.9	226.2	156.9	131.3	143.2	145.0	139.5	135.9
50°	248.1	298.2	306.4	298.2	218.0	167.8	171.5	168.7	160.5	156.0
52.5°	280.0	344.7	356.6	349.3	263.6	196.1	189.7	179.7	172.4	167.8
55°	297.3	375.7	391.2	385.8	290.9	212.5	197.9	185.1	179.7	175.1
56°	301.9	380.3	392.2	390.3	298.2	214.3	198.8	184.2	179.7	176.0
57.5°	303.7	380.3	389.4	388.5	304.6	214.3	197.9	181.5	178.8	175.1
60°	296.4	374.8	381.2	379.4	307.3	213.4	197.0	174.2	173.3	171.5
62.5°	277.2	370.3	384.0	381.2	304.6	206.1	197.0	162.3	164.2	165.1
65°	258.1	350.2	366.6	366.6	292.8	191.5	192.4	148.7	148.7	153.2
67.5°	232.6	320.1	337.4	338.4	272.7	170.5	183.3	135.0	132.2	137.7
70°	198.8	283.6	302.8	302.8	247.2	148.7	170.5	119.5	113.1	118.6
72.5°	166.0	244.4	266.3	267.2	214.3	125.9	151.4	104.0	93.0	98.5
75°	130.4	197.9	219.8	225.3	179.7	99.4	125.9	87.6	73.0	76.6
77.5°	93.0	147.7	166.0	167.8	137.7	71.1	94.8	65.7	52.0	54.7
80°	56.5	93.9	108.5	116.7	91.2	43.8	59.3	42.9	34.7	35.6
82.5°	24.6	41.0	50.2	57.5	42.9	21.0	19.2	21.9	20.1	21.0
85°	9.1	9.1	10.0	10.9	8.2	8.2	7.3	10.0	10.0	10.0
87.5°	7.3	7.3	7.3	7.3	5.5	6.4	4.6	7.3	7.3	7.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

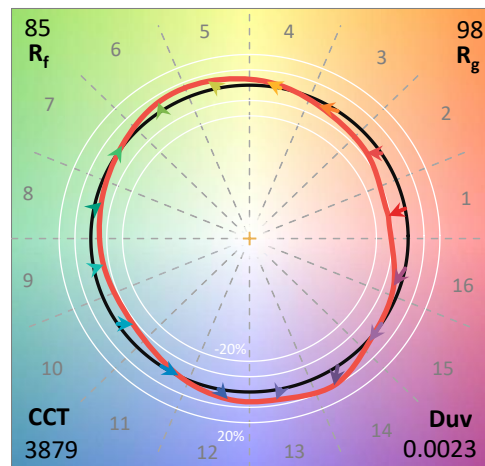
Test Information

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

Spectral Parameters

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

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



Test Conditions

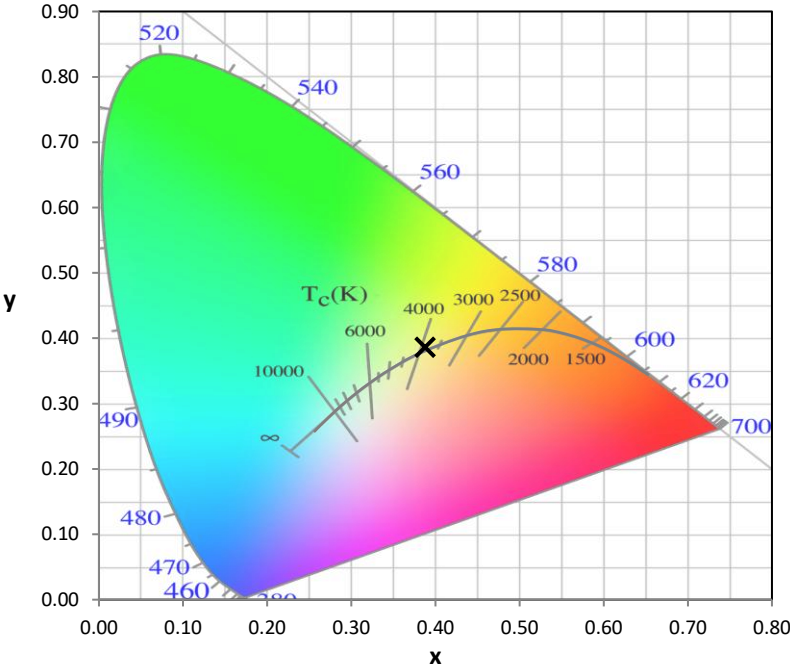
Stabilization Time: 29M
 Operation Time: 1H 29M
 Sphere Temperature (°C): 25.1

REPORT NUMBER: SP1-2509-539-8

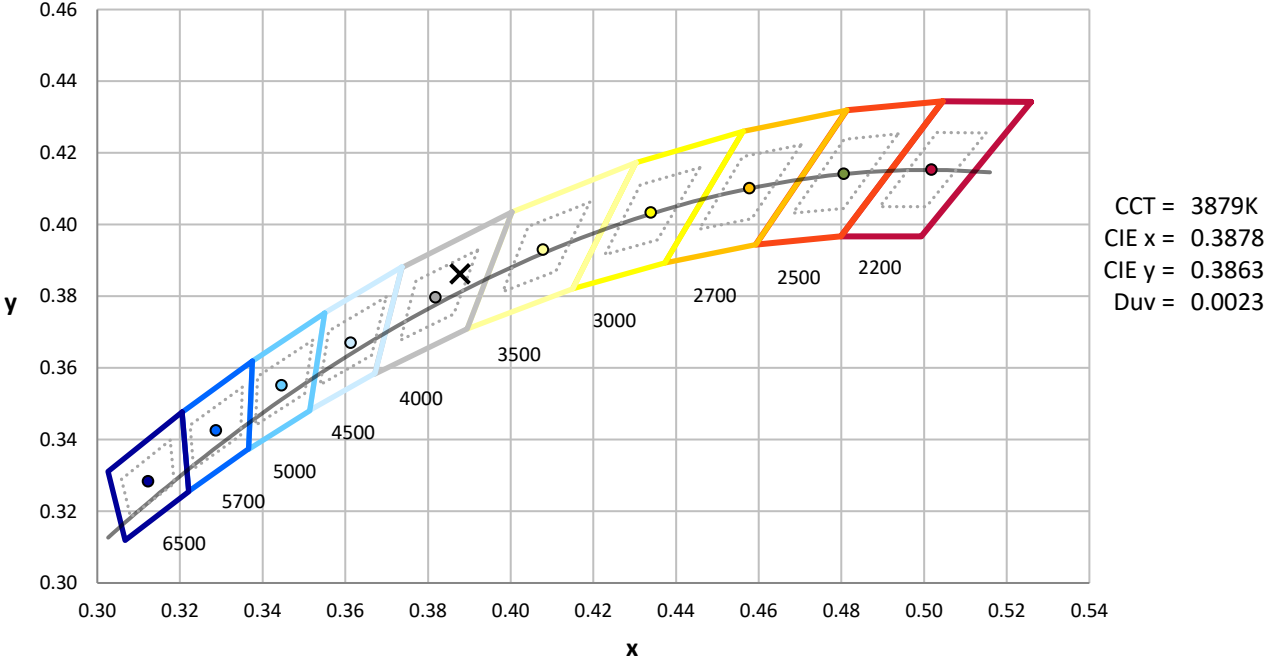
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208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

REPORT NUMBER: SP1-2509-539-8

CIE 1931 Chromaticity Diagram



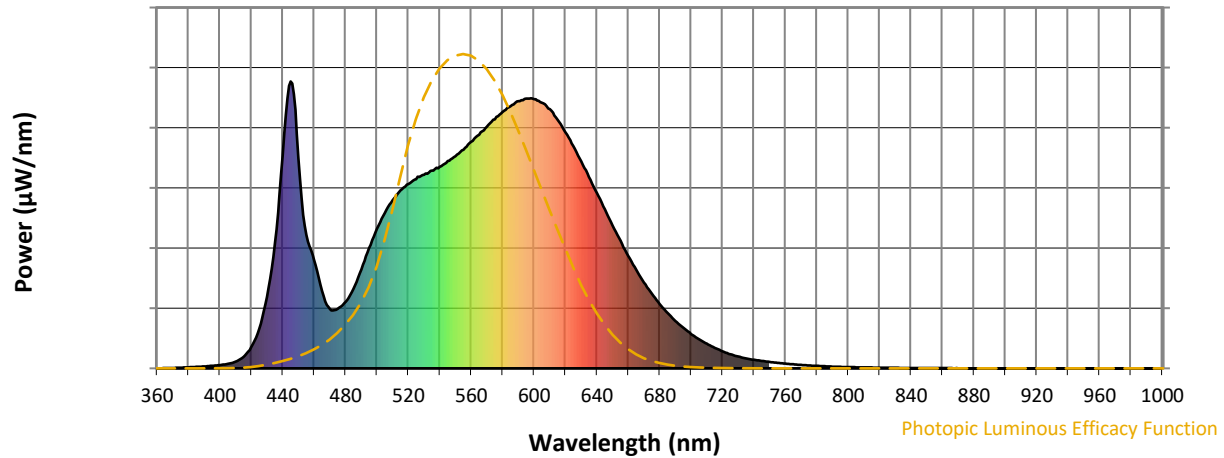
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2509-539-8

Photopic Flux vs. Wavelength

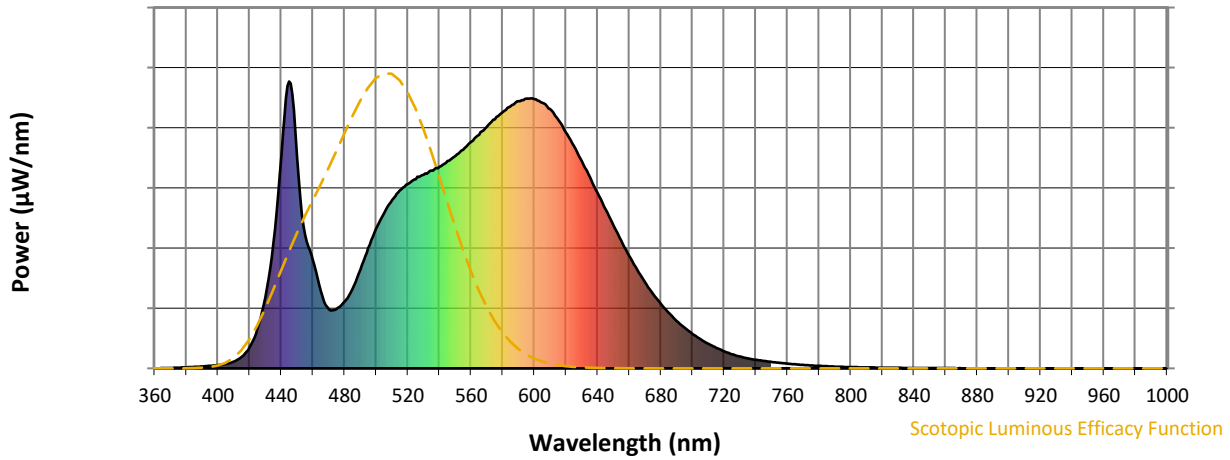


Photopic Lumens: NR

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



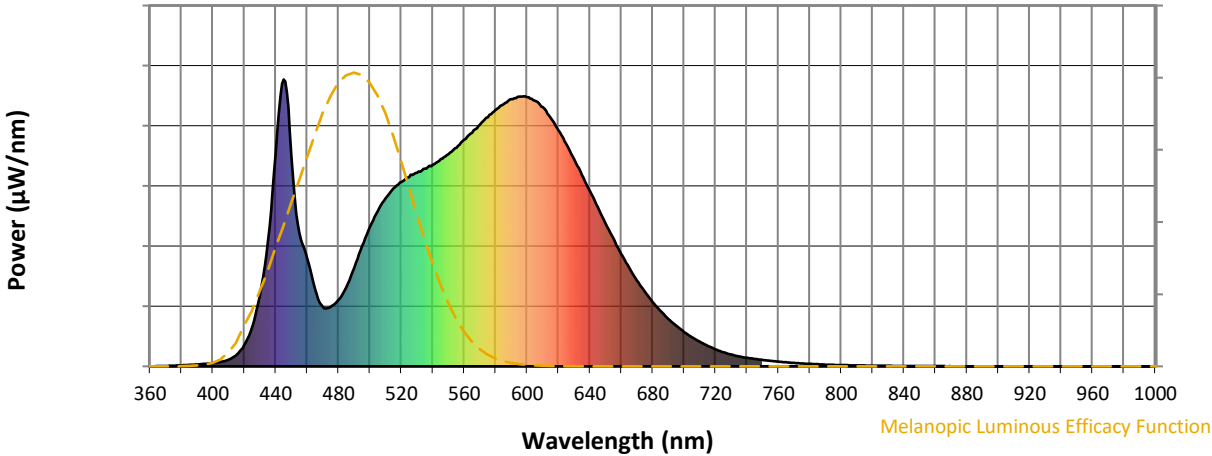
Scotopic Lumens: NR

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			

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Melanopic Flux vs. Wavelength

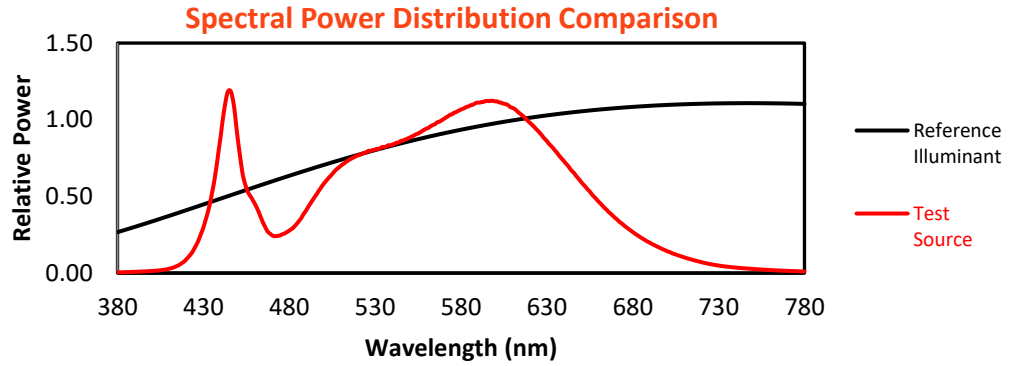


Melanopic Lumens: NR M/P: 3.25

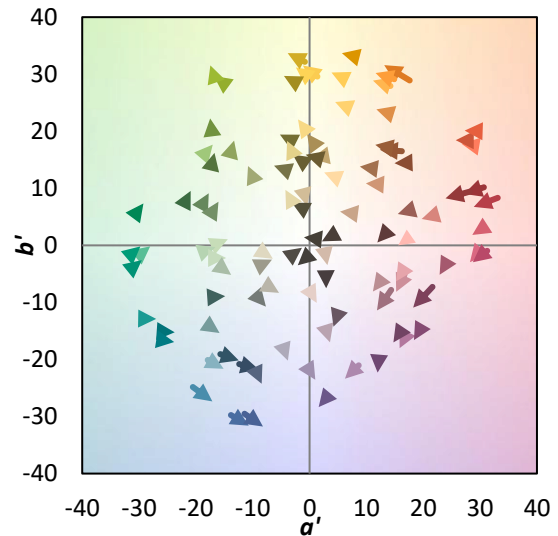
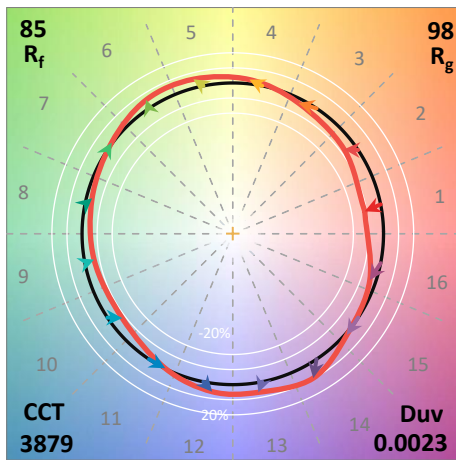
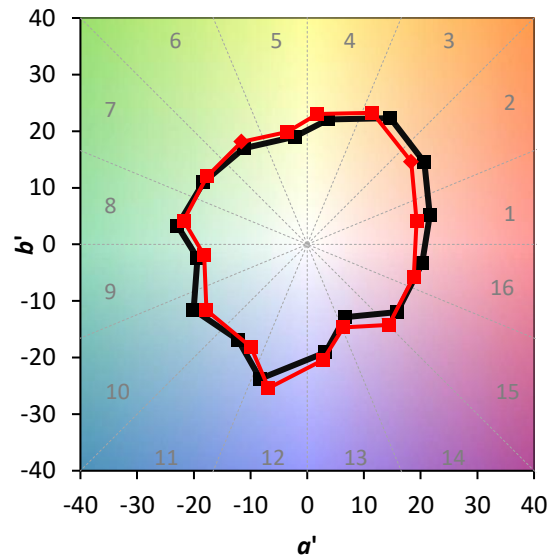
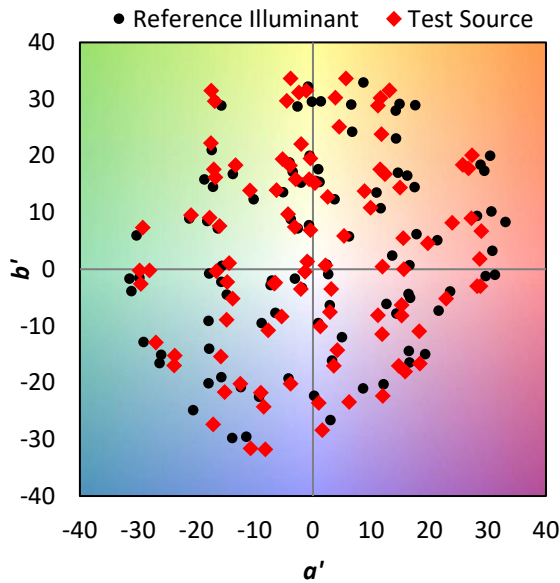
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	345	NR	620	822	NR	750	23	NR	880	0	NR
365	1	NR	495	419	NR	625	776	NR	755	19	NR	885	0	NR
370	1	NR	500	487	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			

Summary

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

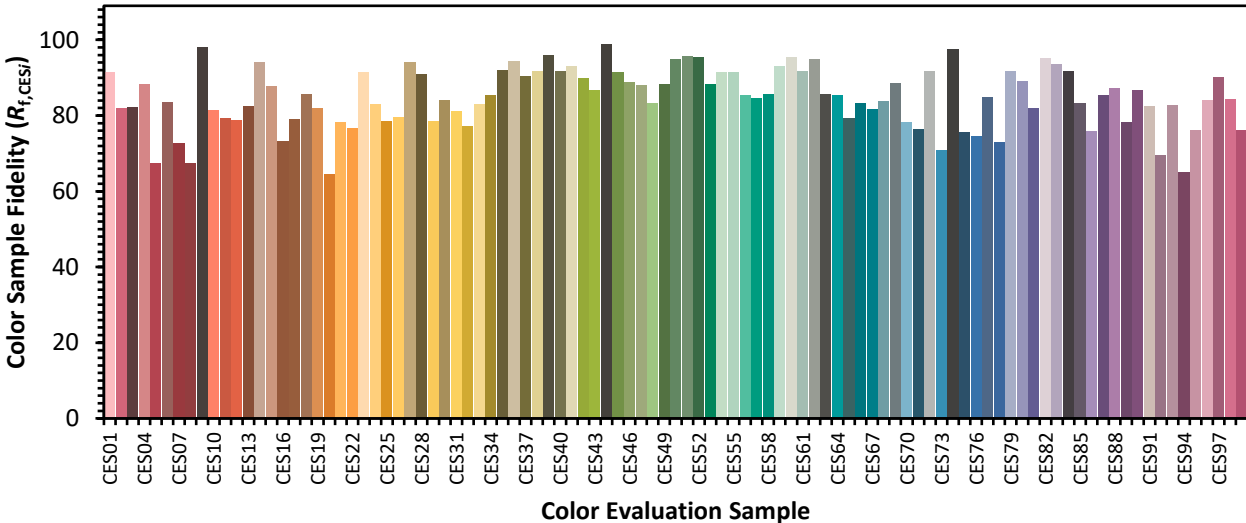


Color Vector Graphics

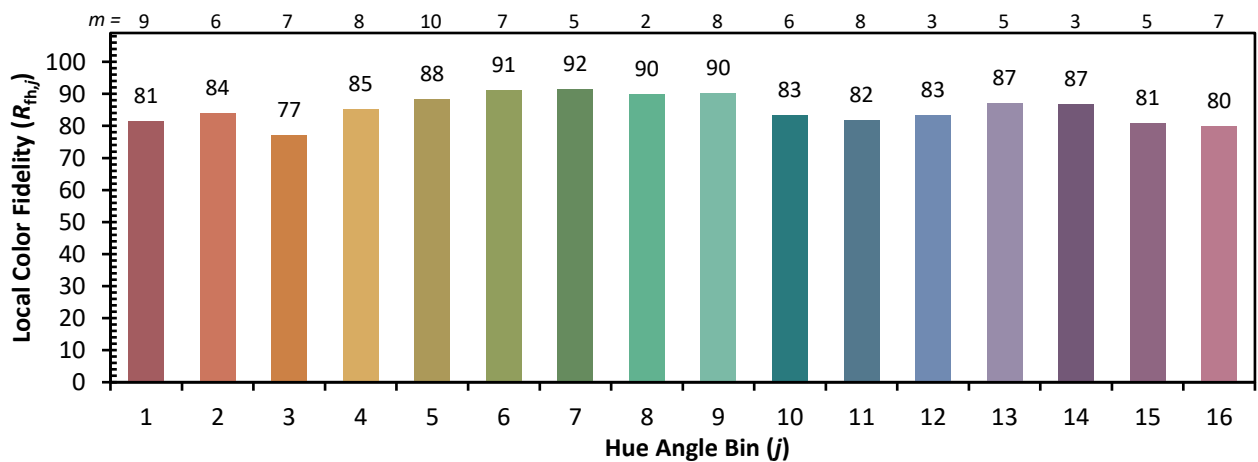
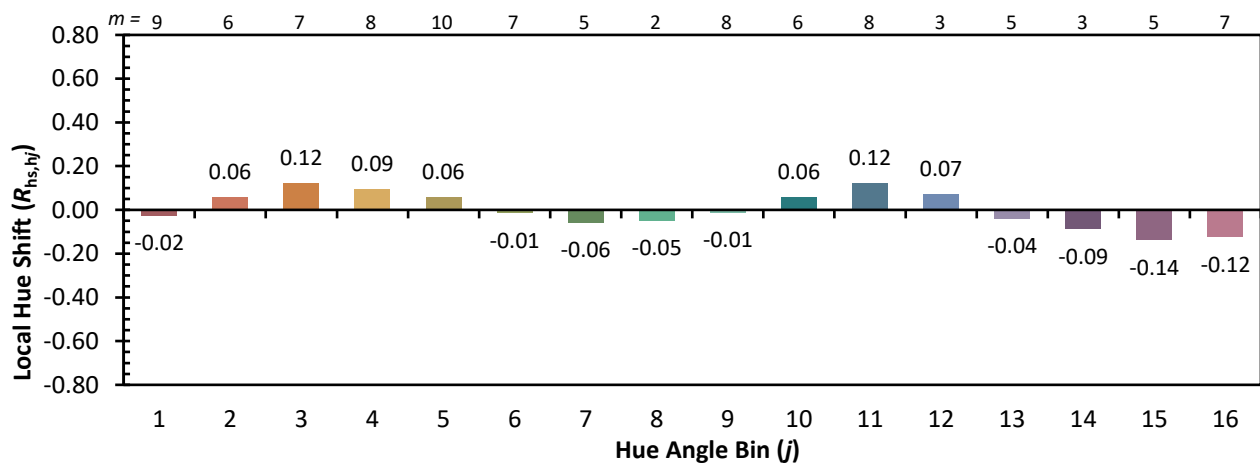
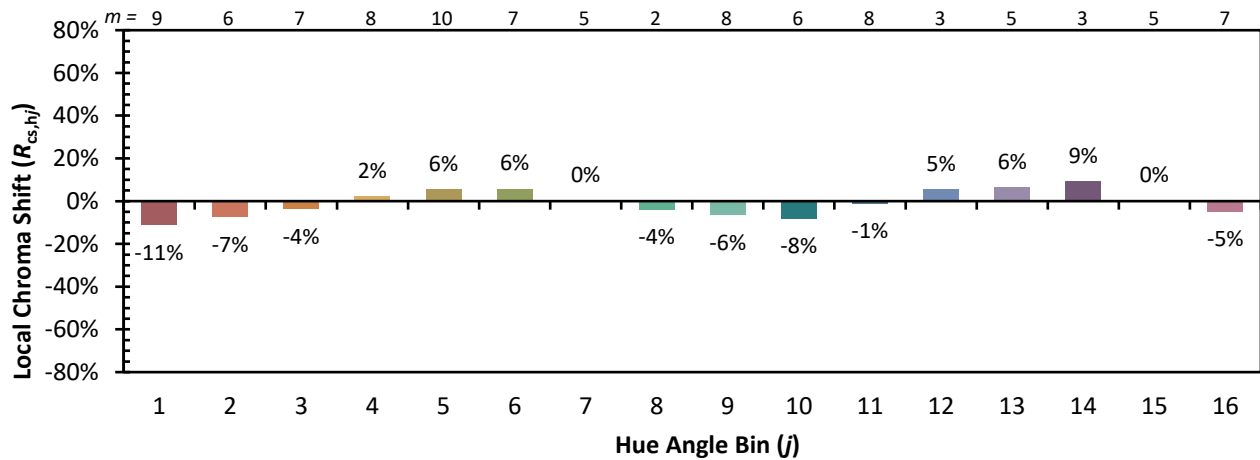


Individual Sample Fidelity Index ($R_{f,i}$)

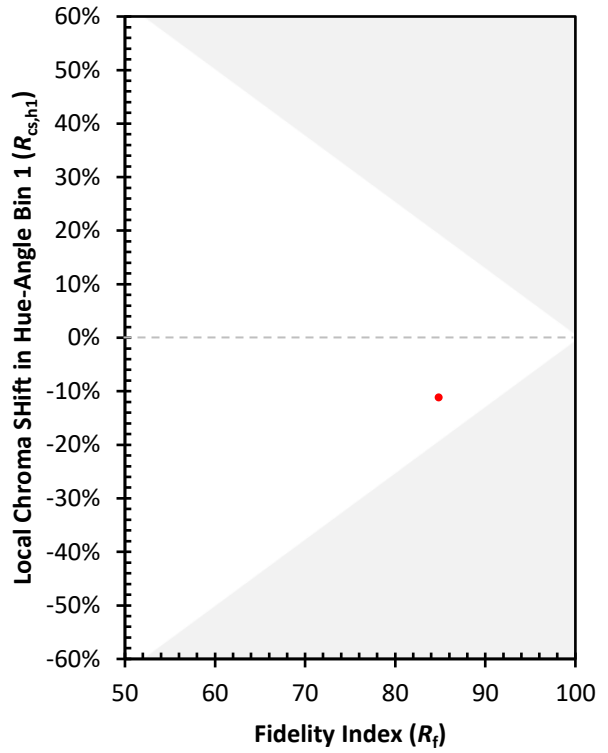
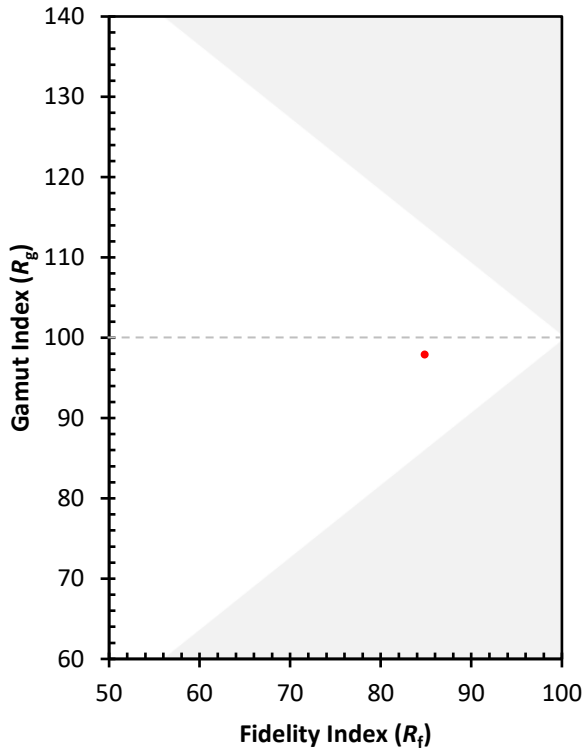
CES01 = 86	CES26 = 80	CES51 = 96	CES76 = 74
CES02 = 61	CES27 = 94	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 91	CES53 = 88	CES78 = 73
CES04 = 69	CES29 = 79	CES54 = 91	CES79 = 92
CES05 = 48	CES30 = 84	CES55 = 91	CES80 = 89
CES06 = 50	CES31 = 81	CES56 = 85	CES81 = 82
CES07 = 41	CES32 = 77	CES57 = 85	CES82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



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)