Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: STREETWORKS

Report Number: P579389

Luminaire Tested: **CST-CA10-630-722-U-T5-HSS-HM-EX180**

Issue Date: 11/18/2021

Report Generated By 670246102

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P579389
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2110-429-3)
Test Lab:	COOPER LIGHTING SOLUTIONS
Issue Date:	11/18/2021
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	CST-CA10-630-722-U-T5-HSS-HM-EX180
Description:	CELESTEON HIGH MAST LUMINAIRE WITH FIELD INSTALLED SHIELD
Light Source:	(10) 2200K CCT, 70 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	46374 lumens
Efficiency:	N/A
Efficacy:	73.4 lumens/watt
Luminous Opening:	Circular (Dia: 2.08' x H: 0')
IES Classification:	Type IV - Short
BUG Rating:	B4 - U3 - G5

Input Watts (W):	631.4
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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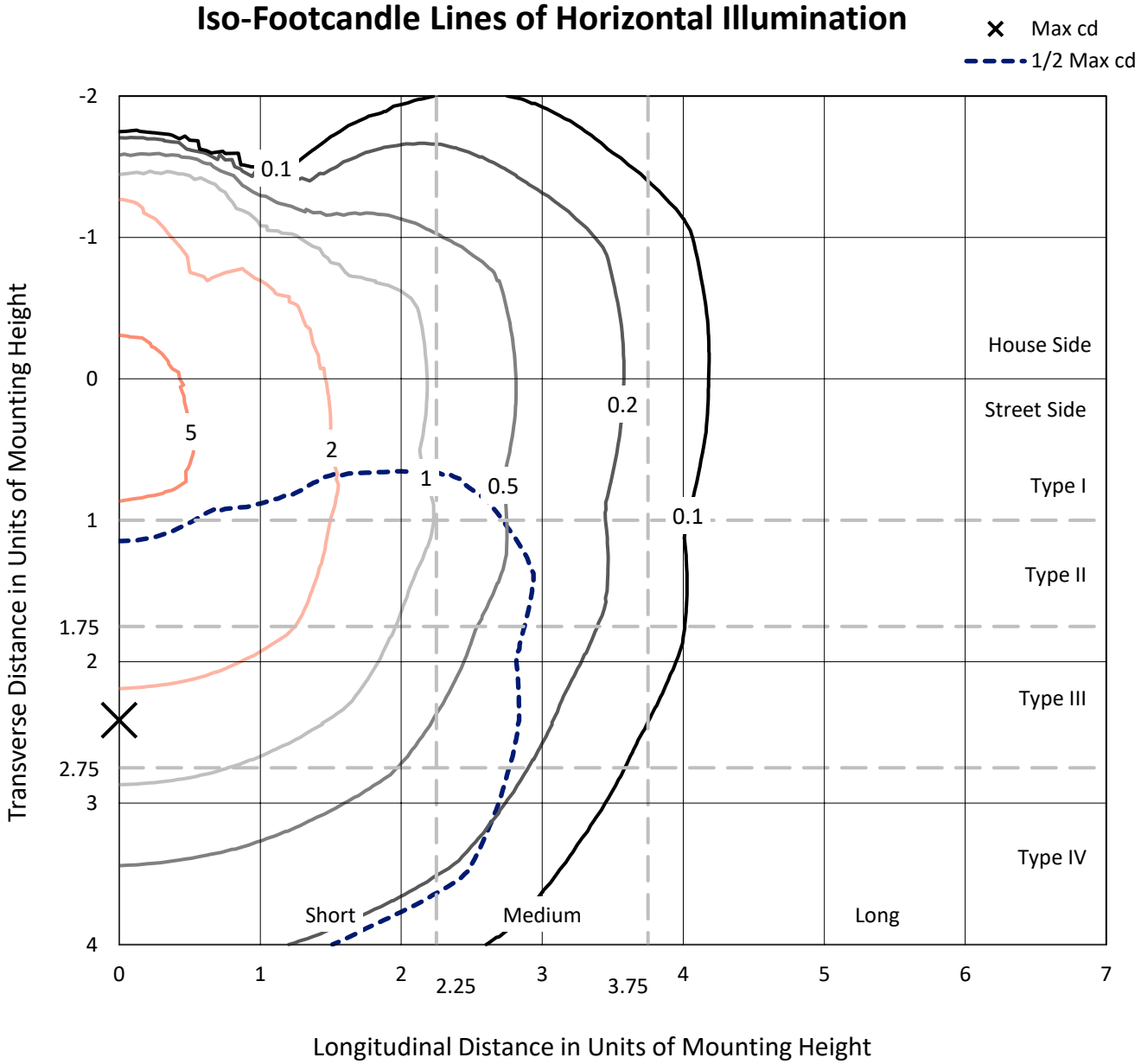
Iso-Footcandle Lines of Horizontal Illumination



Based on 30 foot mounting height. Maximum calculated value = 6.1 fc
Type IV - Short - N/A

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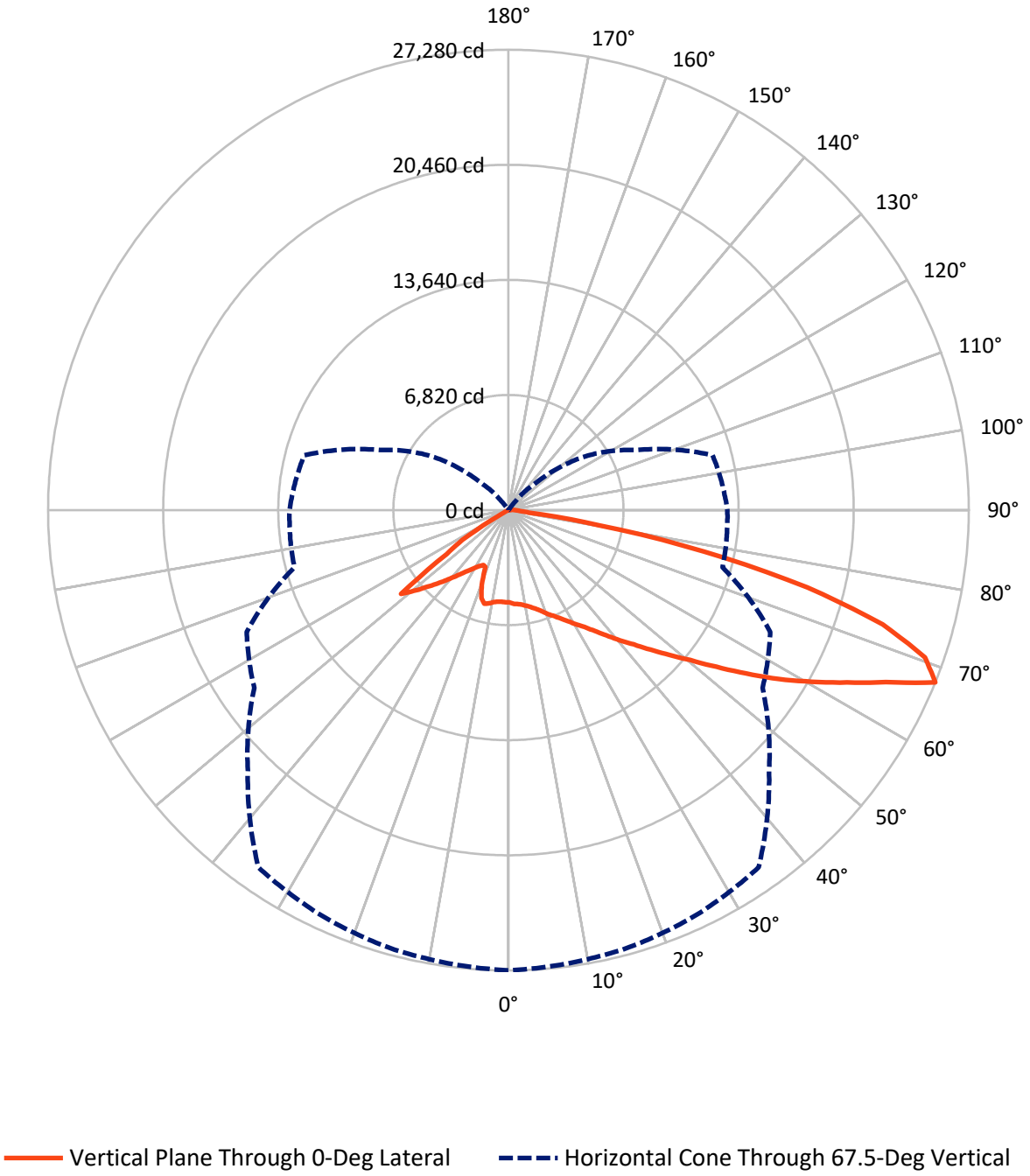
Luminous Intensity Polar Plot



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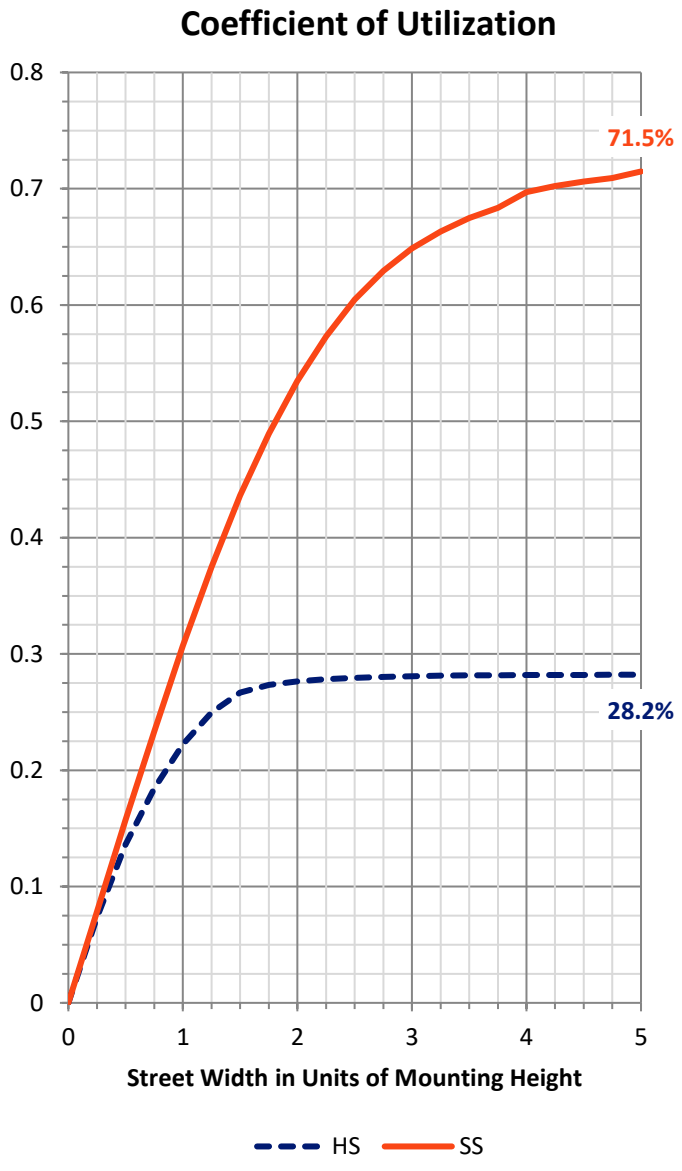
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	13143.2	0.2	13143.4
	% Fixture	28.3	0.0	28.3
Street Side	Lumens	33171.5	59.0	33230.5
	% Fixture	71.5	0.1	71.7
Total	Lumens	46314.7	59.2	46374.0
	% Fixture	99.9	0.1	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	526.7	1.1
10°-20°	1621.5	3.5
20°-30°	2684.9	5.8
30°-40°	4226.4	9.1
40°-50°	6614.4	14.3
50°-60°	9550.1	20.6
60°-70°	11830.9	25.5
70°-80°	8616.2	18.6
80°-90°	643.7	1.4
90°-100°	50.5	0.1
100°-110°	8.4	0.0
110°-120°	0.3	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°	46314.7	99.9
0°-180°	46374.0	100.0



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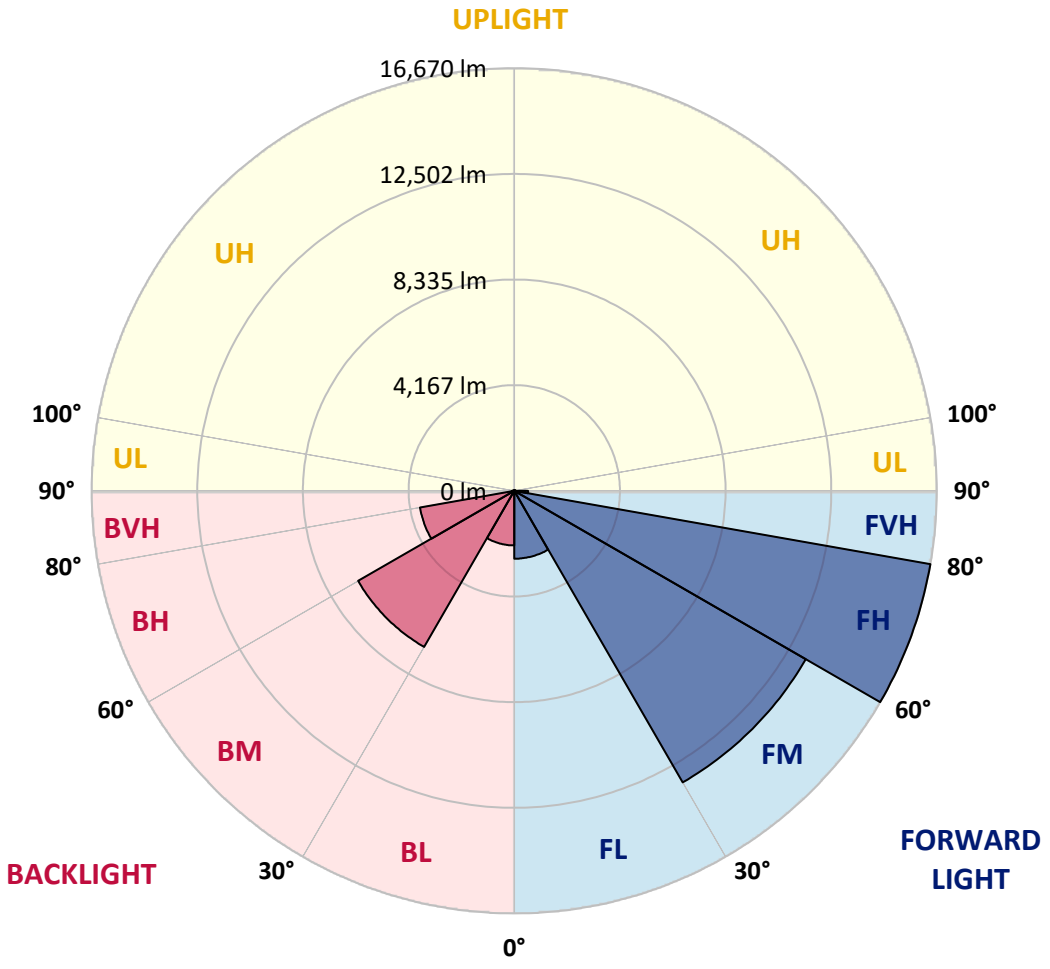
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	2678.5	5.8			
FM	(30°-60°)	13280.2	28.6			
FH	(60°-80°)	16669.9	35.9			G5
FVH	(80°-90°)	542.9	1.2			G4/750
BL	(0°-30°)	2154.6	4.6	B3/2500		
BM	(30°-60°)	7110.8	15.3	B4/8500		
BH	(60°-80°)	3777.2	8.1	B4/5000		G4/5000
BVH	(80°-90°)	100.7	0.2			G2/225
UL	(90°-100°)	50.5	0.1		U3/500	
UH	(100°-180°)	8.7	0.0		U1/10	

BUG Rating: B4-U3-G5
Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7
2.5°	5561.6	5531.4	5531.4	5563.9	5473.3	5501.2	5464.0	5496.5	5477.9	5487.2	5498.8
5°	5594.1	5559.3	5561.6	5601.1	5519.8	5543.0	5498.8	5515.1	5498.8	5505.8	5505.8
7.5°	5654.6	5624.4	5624.4	5647.6	5566.2	5573.2	5533.7	5533.7	5512.8	5529.1	5515.1
10°	5768.4	5735.9	5719.6	5731.3	5659.2	5649.9	5596.5	5596.5	5563.9	5589.5	5568.6
12.5°	5905.6	5859.1	5854.4	5856.8	5775.4	5759.1	5698.7	5701.0	5640.6	5675.5	5649.9
15°	6070.6	6012.5	6007.8	6017.1	5931.1	5900.9	5833.5	5833.5	5766.1	5784.7	5749.9
17.5°	6282.1	6214.7	6203.1	6219.3	6133.3	6105.4	6026.4	6012.5	5938.1	5924.2	5893.9
20°	6561.0	6484.3	6461.0	6495.9	6386.7	6361.1	6265.8	6235.6	6135.7	5970.6	5754.5
22.5°	6812.0	6751.5	6737.6	6760.8	6660.9	6635.3	6542.4	6479.6	6237.9	5905.6	5705.7
25°	7097.8	7074.6	7067.6	7053.7	6963.0	6918.9	6830.6	6742.2	6193.8	5738.2	5733.6
27.5°	7451.1	7439.5	7406.9	7395.3	7295.4	7267.5	7151.3	6581.9	6035.7	6003.2	5984.6
30°	7836.9	7813.7	7781.1	7783.5	7716.1	7664.9	7388.4	6440.1	6340.2	6340.2	6291.4
32.5°	8264.5	8239.0	8206.4	8213.4	8185.5	8141.4	7309.3	6814.3	6737.6	6758.5	6698.1
35°	8794.4	8752.6	8741.0	8768.9	8771.2	8485.3	7448.8	7323.3	7262.9	7248.9	7021.1
37.5°	9412.7	9377.8	9419.6	9484.7	9410.3	8573.6	8004.2	7964.7	7904.3	7567.3	7028.1
40°	10154.0	10091.3	10142.4	10184.3	10135.5	9098.9	8587.6	8601.5	8548.1	7548.7	6951.4
42.5°	10888.5	10828.0	10872.2	10976.8	10958.2	9749.7	9298.8	9329.0	8789.8	7592.9	7546.4
45°	11797.2	11776.3	11762.3	11848.3	11920.4	10528.2	10142.4	10140.1	8617.8	8294.8	8252.9
47.5°	12826.8	12798.9	12805.9	12915.1	13024.3	11457.9	11139.5	10205.2	9061.7	9094.3	9057.1
50°	13974.9	13944.7	14035.3	14193.4	14249.1	12501.4	12110.9	10028.5	9986.7	10021.6	9958.8
52.5°	15432.1	15364.7	15504.2	15673.8	15745.9	13735.5	12164.4	11072.1	11002.3	11009.3	10809.4
55°	17089.2	17035.7	17161.2	17351.8	17458.7	15113.7	13275.3	12087.7	12045.9	10860.6	9779.9
57.5°	18890.4	18830.0	18997.3	19053.1	19081.0	16538.4	14393.2	13189.3	11253.4	9917.0	9856.6
60°	20656.7	20591.6	20803.1	20812.4	20893.8	17960.7	15455.3	14251.5	10842.0	10665.4	10614.2
62.5°	22511.3	22430.0	22615.9	22609.0	22448.6	19262.2	16508.2	15271.7	11576.4	11437.0	11357.9
65°	24570.5	24510.1	24640.2	24431.1	24112.7	20607.9	17600.5	16382.7	12431.7	12406.1	12387.5
67.5°	27280.4	27161.9	26899.3	26453.0	25844.1	21842.0	18381.4	17114.8	13126.6	13008.1	12970.9
70°	26190.4	26051.0	25851.1	25360.7	24740.2	20682.3	17126.4	16008.5	12273.6	12278.3	12190.0
72.5°	23190.0	22948.3	22760.0	22072.1	21730.4	18063.0	14923.1	13893.5	10616.5	10814.1	10772.3
75°	18293.1	18046.7	17737.6	17468.0	17430.8	14651.2	12031.9	11290.5	8464.4	8608.5	8713.1
77.5°	11857.6	11767.0	12157.4	11901.8	12131.9	10089.0	8594.6	7957.8	5833.5	6198.4	6149.6
80°	5426.8	5322.2	5949.7	5773.1	5859.1	4955.0	4199.7	4034.7	2640.2	2658.8	2714.6
82.5°	1227.1	1185.3	1229.5	1129.5	1101.6	932.0	820.4	743.7	467.1	495.0	520.6
85°	671.7	671.7	662.4	615.9	527.6	434.6	344.0	264.9	144.1	158.0	155.7
87.5°	471.8	460.2	457.9	409.0	350.9	297.5	237.1	169.7	81.3	55.8	51.1
90°	323.1	318.4	302.1	271.9	234.7	192.9	144.1	83.7	34.9	16.3	11.6
92.5°	234.7	230.1	218.5	192.9	160.4	130.2	95.3	55.8	27.9	11.6	2.3
95°	155.7	153.4	146.4	125.5	104.6	83.7	60.4	34.9	23.2	9.3	2.3
97.5°	106.9	104.6	97.6	83.7	67.4	53.5	37.2	25.6	18.6	7.0	2.3
100°	72.0	69.7	65.1	53.5	41.8	32.5	23.2	18.6	13.9	7.0	2.3
102.5°	46.5	44.2	39.5	32.5	23.2	18.6	16.3	13.9	9.3	4.6	2.3
105°	27.9	25.6	20.9	16.3	13.9	11.6	11.6	9.3	7.0	2.3	2.3
107.5°	13.9	11.6	9.3	9.3	9.3	7.0	7.0	7.0	4.6	2.3	0.0
110°	2.3	2.3	4.6	4.6	4.6	4.6	4.6	4.6	4.6	2.3	0.0

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CATALOG NUMBER: CST-CA10-630-722-U-T5-HSS-HM-EX180

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	*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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7	5461.7
2.5°	5487.2	5450.0	5471.0	5438.4	5431.4	5396.6	5452.4	5459.3	5454.7	5464.0
5°	5494.2	5454.7	5477.9	5438.4	5438.4	5401.2	5454.7	5454.7	5440.7	5445.4
7.5°	5512.8	5473.3	5489.6	5445.4	5447.7	5403.6	5468.6	5461.7	5450.0	5466.3
10°	5566.2	5522.1	5519.8	5477.9	5487.2	5440.7	5522.1	5522.1	5510.5	5540.7
12.5°	5652.2	5587.2	5575.5	5524.4	5543.0	5503.5	5603.4	5608.1	5610.4	5659.2
15°	5742.9	5663.9	5675.5	5615.1	5608.1	5587.2	5677.8	5673.2	5670.8	5738.2
17.5°	5870.7	5498.8	5438.4	5396.6	5387.3	5336.2	5419.8	5580.2	5496.5	5450.0
20°	5668.5	5473.3	5233.9	5152.6	5136.3	4692.4	4341.4	4499.5	4713.3	4731.9
22.5°	5484.9	5415.2	5396.6	5268.8	4559.9	4411.2	4425.1	4367.0	3860.4	3639.6
25°	5712.7	5652.2	5573.2	4792.3	4625.0	4571.5	4555.3	3960.3	3560.5	3586.1
27.5°	5966.0	5898.6	5210.7	4803.9	4841.1	4766.8	4399.5	3695.3	3672.1	3716.3
30°	6282.1	5742.9	5085.2	5061.9	5096.8	5001.5	3909.2	3858.0	3851.1	3897.5
32.5°	6642.3	5538.4	5419.8	5419.8	5403.6	4374.0	4118.3	4083.5	4102.1	4150.9
35°	6507.5	5859.1	5845.1	5903.2	5512.8	4487.9	4453.0	4392.6	4406.5	4422.8
37.5°	6358.8	6386.7	6393.6	6363.4	4020.7	4813.2	4785.3	4773.7	4759.8	4764.4
40°	6911.9	6930.5	6923.5	6647.0	4339.1	4876.0	5161.9	5140.9	5138.6	5166.5
42.5°	7558.0	7609.1	7569.6	5863.7	4764.4	4099.7	5596.5	5584.8	5580.2	5638.3
45°	8285.5	8334.3	7504.6	6279.8	5217.6	4243.8	5626.7	6059.0	6093.8	6145.0
47.5°	9073.3	9064.0	6925.9	6918.9	5749.9	4643.6	4678.4	6626.0	6684.1	6702.7
50°	9979.7	8490.0	7583.6	7327.9	6351.8	5092.1	4959.7	6079.9	7362.8	7381.4
52.5°	9786.8	8399.3	8338.9	6428.5	6891.0	5587.2	5457.0	5422.2	7632.4	8080.9
55°	9122.1	9191.9	9105.9	7053.7	5052.6	6028.7	5947.4	5912.5	5677.8	4494.8
57.5°	9861.2	9882.1	9807.8	7627.7	5138.6	3758.1	5854.4	5022.4	3263.1	3246.8
60°	10628.2	10663.0	7304.7	5603.4	3293.3	1257.3	299.8	316.1	901.8	792.5
62.5°	11360.3	11395.1	7732.3	5120.0	2080.1	93.0	60.4	41.8	46.5	46.5
65°	12315.5	12329.4	8276.2	5419.8	2161.4	23.2	7.0	0.0	0.0	0.0
67.5°	*12810.5*	*12524.6*	*8413.3*	*5557.0*	*2219.5*	*13.9*	*4.6*	*0.0*	*0.0*	*0.0*
70°	12062.1	11755.4	7832.3	5208.3	2068.5	11.6	2.3	0.0	0.0	0.0
72.5°	10628.2	10479.4	7030.4	4618.0	1831.4	7.0	2.3	0.0	0.0	0.0
75°	8808.4	8610.8	5828.9	3848.7	1515.3	4.6	0.0	0.0	0.0	0.0
77.5°	6265.8	6289.0	4062.5	2805.2	1031.9	4.6	0.0	0.0	0.0	0.0
80°	2742.5	2805.2	1780.3	1287.6	364.9	2.3	0.0	0.0	0.0	0.0
82.5°	522.9	481.1	232.4	183.6	46.5	0.0	0.0	0.0	0.0	0.0
85°	172.0	188.3	86.0	69.7	20.9	0.0	0.0	0.0	0.0	0.0
87.5°	60.4	76.7	25.6	20.9	4.6	0.0	0.0	0.0	0.0	0.0
90°	9.3	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	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: P579389
CATALOG NUMBER: CST-CA10-630-722-U-T5-HSS-HM-EX180

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2104-215-4

Luminaire Tested: CST-CA10-630-722-U-T3

Test Date: 04/20/2021

Report Generated By controller / USPTCWHP6086842

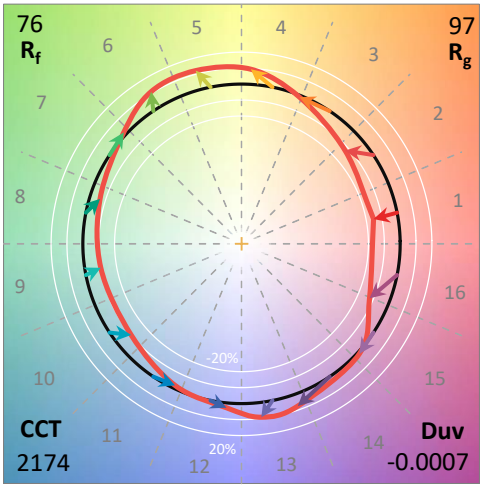
Test Information

Test Method:	LM-79-08
Report Number:	SP1-2104-215-4
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1
Measurement Geometry:	4π
Issue Date:	04/20/2021
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	STREETWORKS
Catalog Number:	**CST-CA10-630-722-U-T3**
Description:	STREETWORKS HIGH MAST LUMINAIRE

Spectral Parameters

CCT (K):	2174	CRI (Ra):	72.8		
CIE u':	0.2919	R1:	70.2	R9:	-23.3
CIE v':	0.5354	R2:	86.8	R10:	71.8
Duv:	-0.0007	R3:	92.8	R11:	63.6
CIE x:	0.5067	R4:	66.8	R12:	66.0
CIE y:	0.4131	R5:	69.1	R13:	73.5
CIE z:	0.0802	R6:	84.7	R14:	96.9
Peak Wavelength (nm):	608	R7:	73.2		
Dominant Wavelength (nm):	587	R8:	39.0		
Purity:	76.7				

Rf:	75.7
Rg:	96.7



Test Conditions

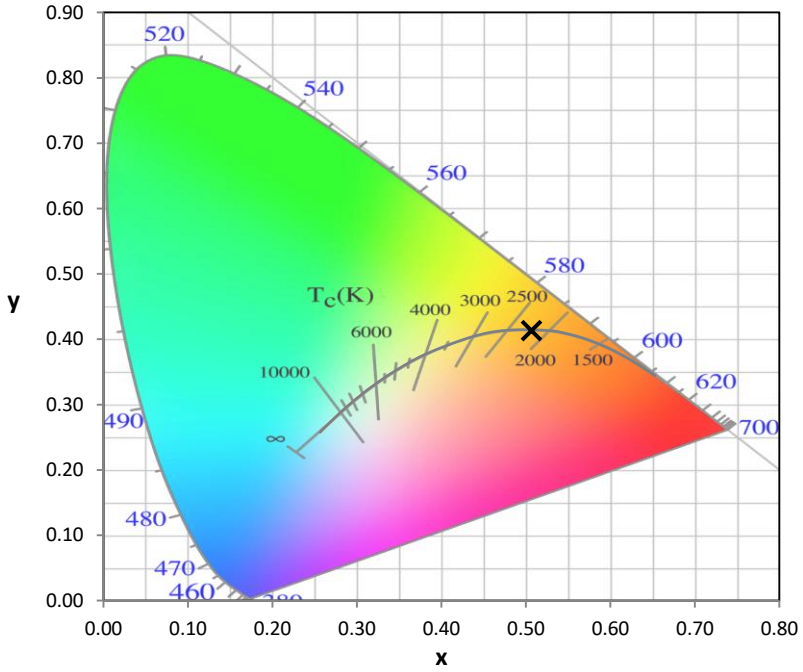
Stabilization Time:	79M
Operation Time:	12H
Room Temperature (°C) / RH%:	25.7/32%
Sphere Temperature (°C):	24.8

REPORT NUMBER: SP1-2104-215-4

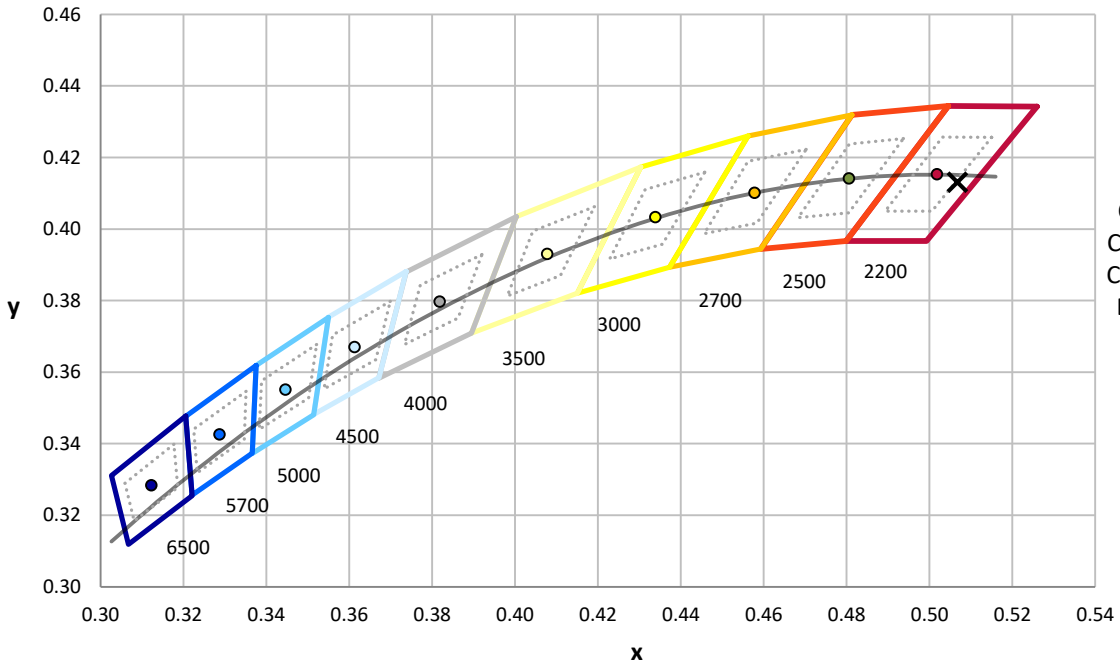
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	1/31/2021	7/31/2021
Power Meter	IN0071	12/1/2020	12/1/2021
AC Power Source	IN0063	12/1/2020	12/1/2021
DC Power Source	IN0208	12/1/2020	12/1/2021
Sphere Thermometer	IN0085	12/1/2020	12/1/2021
Room Thermometer	IN0046	12/1/2020	12/1/2021

REPORT NUMBER: SP1-2104-215-4

CIE 1931 Chromaticity Diagram



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

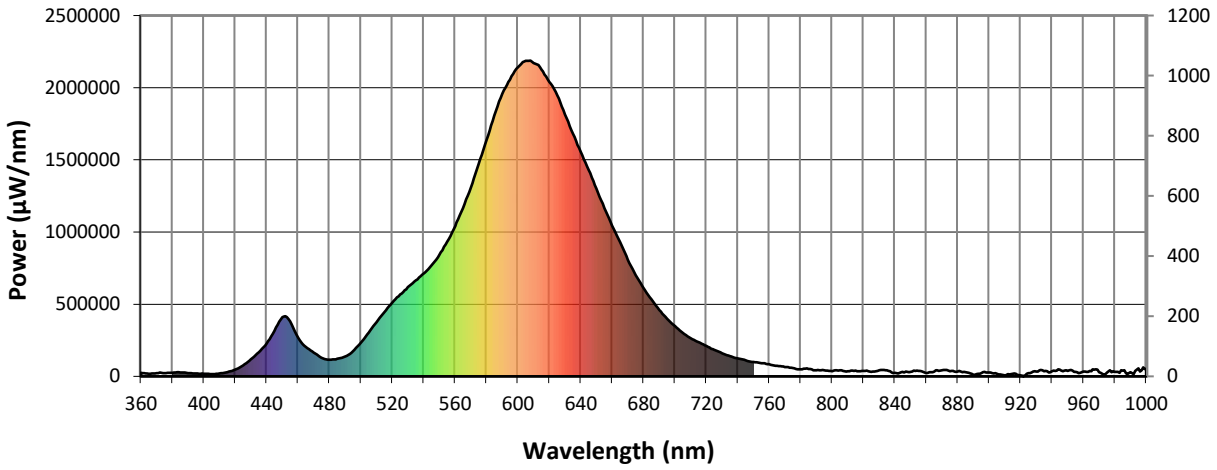


CCT = 2174K
CIE x = 0.5067
CIE y = 0.4131
Duv = -0.0007

Point lies inside the ANSI 2200K 7-step quadrangle

REPORT NUMBER: SP1-2104-215-4

Photopic Flux vs. Wavelength



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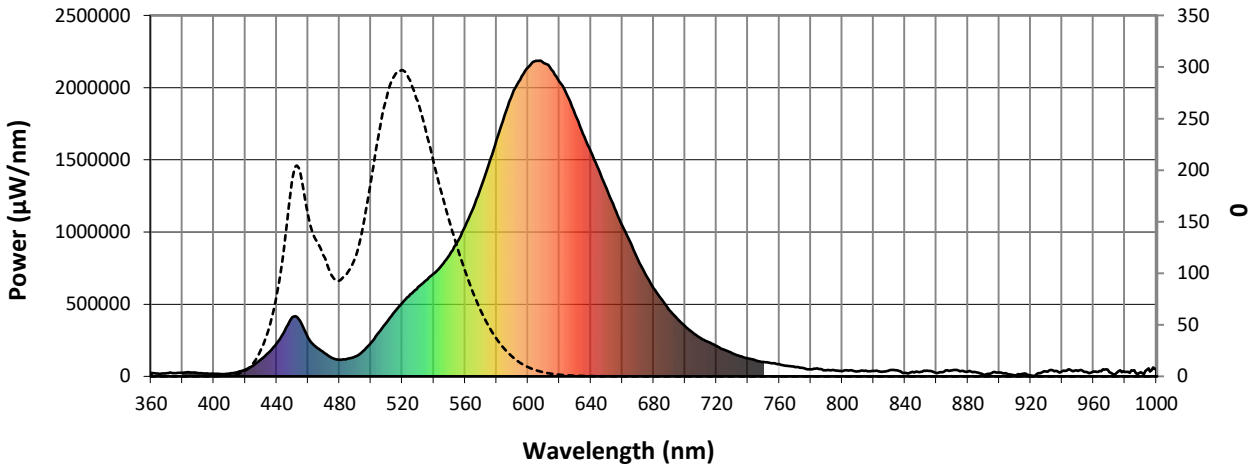
λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	23398	0.0	490	137099	19.5	620	2038916	530.6	750	99721	0.0	880	32326	0.0
365	18626	0.0	495	174286	31.6	625	1946743	429.5	755	91432	0.0	885	29783	0.0
370	21702	0.0	500	232711	51.3	630	1814508	328.4	760	83300	0.0	890	12135	0.0
375	22606	0.0	505	303528	84.9	635	1681061	252.6	765	72172	0.0	895	22953	0.0
380	25296	0.0	510	374456	128.6	640	1557170	186.1	770	65008	0.0	900	27214	0.0
385	27032	0.0	515	445274	184.5	645	1430182	137.7	775	56809	0.0	905	17038	0.0
390	22156	0.0	520	510296	247.5	650	1300435	95.0	780	49368	0.0	910	6896	0.0
395	20190	0.0	525	566771	304.3	655	1165554	66.9	785	51733	0.0	915	17142	0.0
400	18423	0.0	530	617892	363.8	660	1044122	43.5	790	41796	0.0	920	7675	0.0
405	16139	0.0	535	664903	412.3	665	932131	29.6	795	42601	0.0	925	21587	0.0
410	19812	0.0	540	711603	463.7	670	808971	17.7	800	36382	0.0	930	32992	0.0
415	29121	0.1	545	768835	511.7	675	701208	11.7	805	41419	0.0	935	35464	0.0
420	46007	0.1	550	841179	571.6	680	610741	7.1	810	35865	0.0	940	34460	0.0
425	76329	0.4	555	932641	637.0	685	533825	4.6	815	39722	0.0	945	46305	0.0
430	117696	0.9	560	1040487	707.1	690	459427	2.6	820	37236	0.0	950	38353	0.0
435	166890	2.0	565	1164360	774.2	695	399973	1.7	825	31566	0.0	955	30772	0.0
440	227762	3.6	570	1307677	850.3	700	347460	1.0	830	42647	0.0	960	32413	0.0
445	315427	6.6	575	1470810	915.2	705	302187	0.6	835	41433	0.0	965	35310	0.0
450	409560	10.6	580	1637734	973.2	710	262909	0.4	840	24213	0.0	970	28048	0.0
455	381103	12.8	585	1807622	1004.4	715	236689	0.3	845	31358	0.0	975	26258	0.0
460	269221	11.0	590	1958195	1012.4	720	209675	0.1	850	30957	0.0	980	31067	0.0
465	203513	10.5	595	2055425	974.3	725	184999	0.1	855	38865	0.0	985	40288	0.0
470	163989	10.2	600	2141598	923.0	730	160261	0.1	860	23238	0.0	990	29366	0.0
475	129159	10.1	605	2185430	846.3	735	140736	0.0	865	32686	0.0	995	54854	0.0
480	115440	11.0	610	2170089	745.5	740	125207	0.0	870	41855	0.0	1000	50994	0.0
485	120959	14.3	615	2123505	641.1	745	110736	0.0	875	35838	0.0			

REPORT NUMBER: SP1-2104-215-4

Scotopic Flux vs. Wavelength

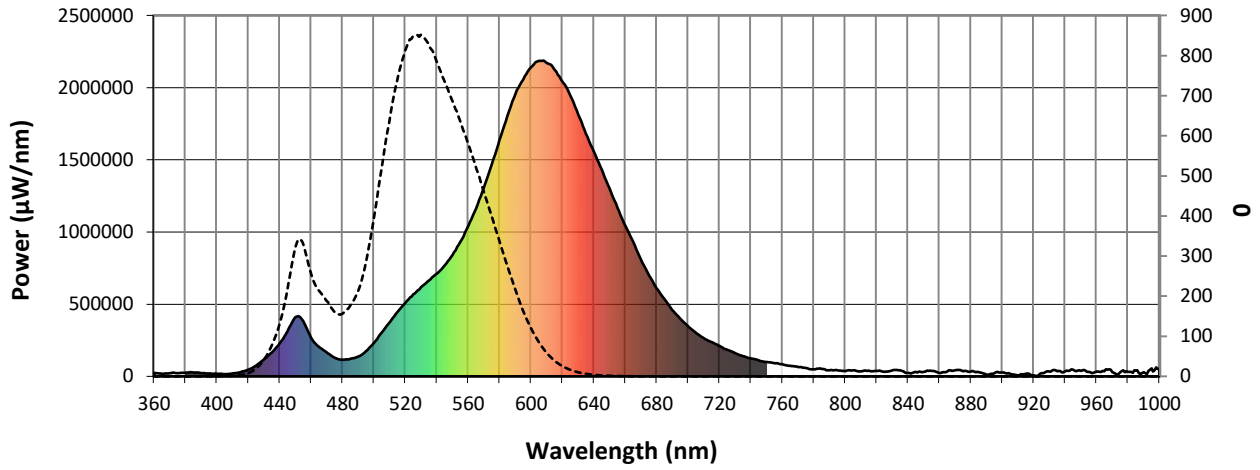


Scotopic Lumens: 72942.9 **S/P: 0.88**

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	23398	0.0	490	137099	211.1	620	2038916	25.5	750	99721	0.0	880	32326	0.0
365	18626	0.0	495	174286	281.7	625	1946743	16.4	755	91432	0.0	885	29783	0.0
370	21702	0.0	500	232711	389.3	630	1814508	10.3	760	83300	0.0	890	12135	0.0
375	22606	0.0	505	303528	516.0	635	1681061	6.4	765	72172	0.0	895	22953	0.0
380	25296	0.0	510	374456	634.7	640	1557170	4.0	770	65008	0.0	900	27214	0.0
385	27032	0.1	515	445274	738.0	645	1430182	2.4	775	56809	0.0	905	17038	0.0
390	22156	0.1	520	510296	811.1	650	1300435	1.5	780	49368	0.0	910	6896	0.0
395	20190	0.2	525	566771	847.9	655	1165554	0.9	785	51733	0.0	915	17142	0.0
400	18423	0.3	530	617892	851.9	660	1044122	0.6	790	41796	0.0	920	7675	0.0
405	16139	0.5	535	664903	828.5	665	932131	0.3	795	42601	0.0	925	21587	0.0
410	19812	1.2	540	711603	786.3	670	808971	0.2	800	36382	0.0	930	32992	0.0
415	29121	3.0	545	768835	737.2	675	701208	0.1	805	41419	0.0	935	35464	0.0
420	46007	7.6	550	841179	687.8	680	610741	0.1	810	35865	0.0	940	34460	0.0
425	76329	18.7	555	932641	637.4	685	533825	0.0	815	39722	0.0	945	46305	0.0
430	117696	40.1	560	1040487	581.6	690	459427	0.0	820	37236	0.0	950	38353	0.0
435	166890	74.6	565	1164360	522.4	695	399973	0.0	825	31566	0.0	955	30772	0.0
440	227762	127.3	570	1307677	461.5	700	347460	0.0	830	42647	0.0	960	32413	0.0
445	315427	211.2	575	1470810	400.6	705	302187	0.0	835	41433	0.0	965	35310	0.0
450	409560	317.4	580	1637734	337.4	710	262909	0.0	840	24213	0.0	970	28048	0.0
455	381103	333.0	585	1807622	276.3	715	236689	0.0	845	31358	0.0	975	26258	0.0
460	269221	260.0	590	1958195	218.0	720	209675	0.0	850	30957	0.0	980	31067	0.0
465	203513	214.9	595	2055425	163.9	725	184999	0.0	855	38865	0.0	985	40288	0.0
470	163989	188.8	600	2141598	120.7	730	160261	0.0	860	23238	0.0	990	29366	0.0
475	129159	161.5	605	2185430	85.9	735	140736	0.0	865	32686	0.0	995	54854	0.0
480	115440	155.9	610	2170089	58.8	740	125207	0.0	870	41855	0.0	1000	50994	0.0
485	120959	175.3	615	2123505	39.3	745	110736	0.0	875	35838	0.0			

REPORT NUMBER: SP1-2104-215-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 23955.7 **M/P: 0.29**

λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)	λ (nm)	Power (µW/nm)	Lumens (ϕ/nm)
360	23398	0.0	490	137099	114.1	620	2038916	1.6	750	99721	0.0	880	32326	0.0
365	18626	0.0	495	174286	143.9	625	1946743	1.0	755	91432	0.0	885	29783	0.0
370	21702	0.0	500	232711	187.1	630	1814508	0.6	760	83300	0.0	890	12135	0.0
375	22606	0.0	505	303528	232.9	635	1681061	0.4	765	72172	0.0	895	22953	0.0
380	25296	0.0	510	374456	268.9	640	1557170	0.2	770	65008	0.0	900	27214	0.0
385	27032	0.0	515	445274	290.9	645	1430182	0.2	775	56809	0.0	905	17038	0.0
390	22156	0.1	520	510296	297.1	650	1300435	0.1	780	49368	0.0	910	6896	0.0
395	20190	0.1	525	566771	287.4	655	1165554	0.1	785	51733	0.0	915	17142	0.0
400	18423	0.2	530	617892	267.0	660	1044122	0.0	790	41796	0.0	920	7675	0.0
405	16139	0.3	535	664903	239.3	665	932131	0.0	795	42601	0.0	925	21587	0.0
410	19812	0.8	540	711603	208.3	670	808971	0.0	800	36382	0.0	930	32992	0.0
415	29121	1.9	545	768835	178.6	675	701208	0.0	805	41419	0.0	935	35464	0.0
420	46007	5.3	550	841179	151.0	680	610741	0.0	810	35865	0.0	940	34460	0.0
425	76329	11.9	555	932641	125.8	685	533825	0.0	815	39722	0.0	945	46305	0.0
430	117696	24.9	560	1040487	102.6	690	459427	0.0	820	37236	0.0	950	38353	0.0
435	166890	44.5	565	1164360	81.7	695	399973	0.0	825	31566	0.0	955	30772	0.0
440	227762	76.1	570	1307677	63.9	700	347460	0.0	830	42647	0.0	960	32413	0.0
445	315427	124.4	575	1470810	49.0	705	302187	0.0	835	41433	0.0	965	35310	0.0
450	409560	188.7	580	1637734	36.6	710	262909	0.0	840	24213	0.0	970	28048	0.0
455	381103	199.7	585	1807622	26.9	715	236689	0.0	845	31358	0.0	975	26258	0.0
460	269221	158.6	590	1958195	19.2	720	209675	0.0	850	30957	0.0	980	31067	0.0
465	203513	133.0	595	2055425	13.2	725	184999	0.0	855	38865	0.0	985	40288	0.0
470	163989	117.4	600	2141598	9.0	730	160261	0.0	860	23238	0.0	990	29366	0.0
475	129159	98.6	605	2185430	6.0	735	140736	0.0	865	32686	0.0	995	54854	0.0
480	115440	92.8	610	2170089	3.9	740	125207	0.0	870	41855	0.0	1000	50994	0.0
485	120959	99.7	615	2123505	2.5	745	110736	0.0	875	35838	0.0			

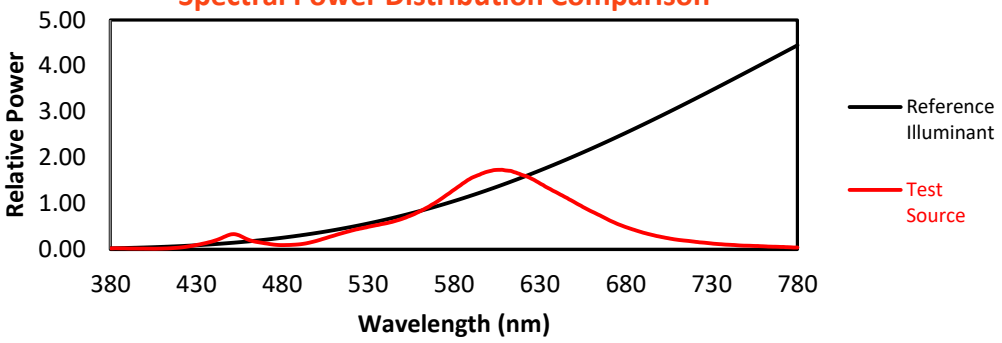
REPORT NUMBER: SP1-2104-215-4

TM-30-18

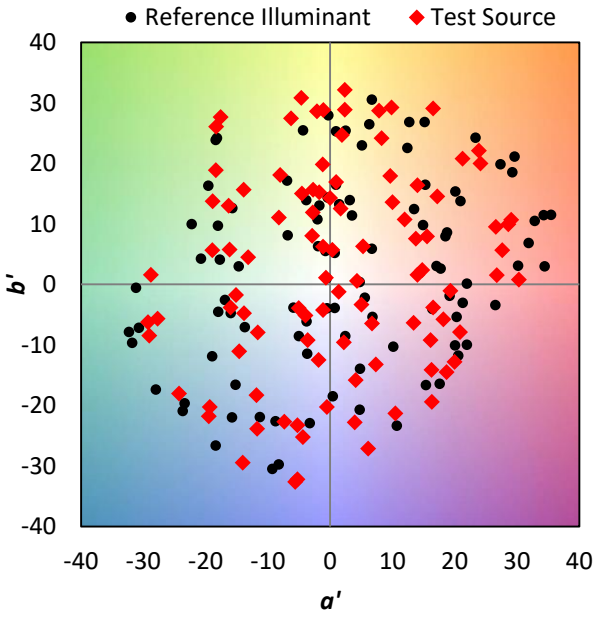
Summary

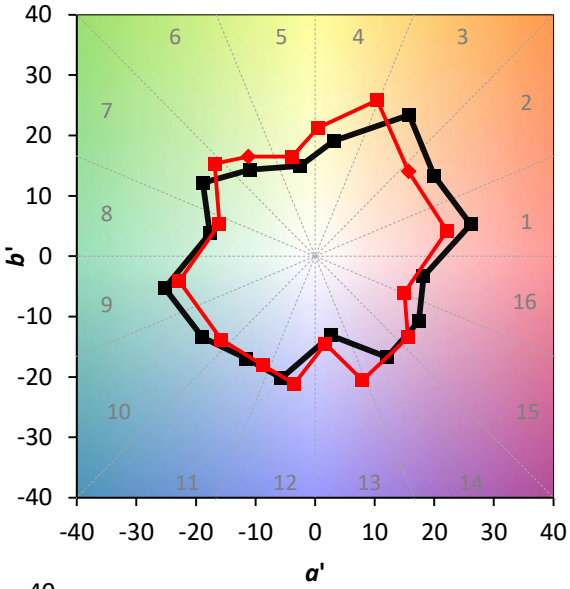
R_f = 75.7
R_g = 96.7
CIE R_a = 72.8
R_9 = -23.3

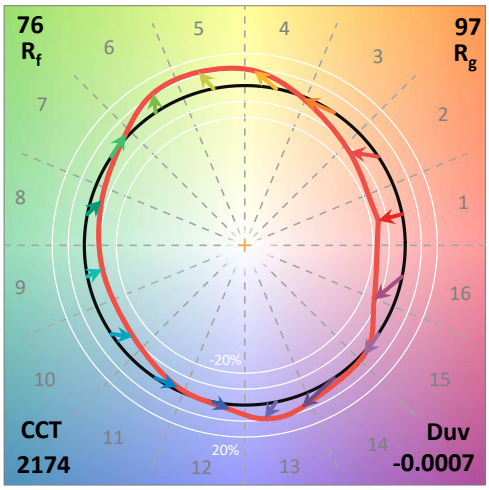
Spectral Power Distribution Comparison

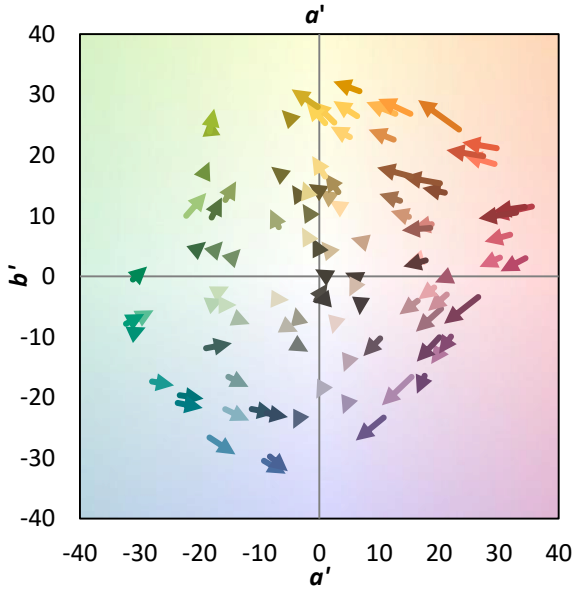


Color Vector Graphics









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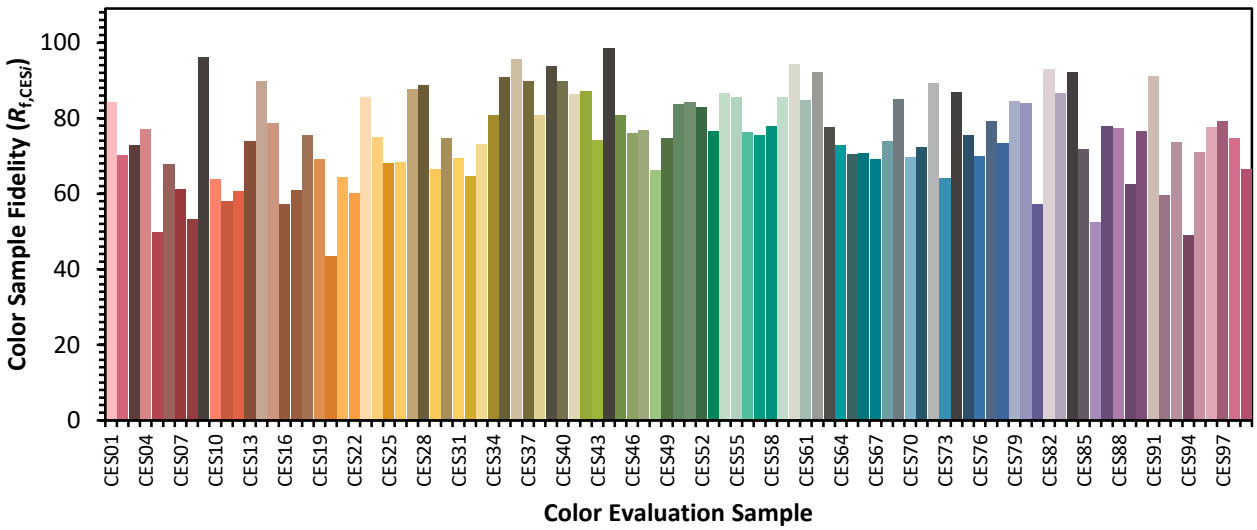
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 87	CES26 = 68	CES51 = 84	CES76 = 70
CES02 = 65	CES27 = 88	CES52 = 83	CES77 = 79
CES03 = 32	CES28 = 89	CES53 = 77	CES78 = 73
CES04 = 72	CES29 = 66	CES54 = 87	CES79 = 85
CES05 = 52	CES30 = 75	CES55 = 85	CES80 = 84
CES06 = 53	CES31 = 69	CES56 = 76	CES81 = 57
CES07 = 44	CES32 = 65	CES57 = 75	CES82 = 93
CES08 = 43	CES33 = 73	CES58 = 78	CES83 = 87
CES09 = 29	CES34 = 81	CES59 = 86	CES84 = 92
CES10 = 79	CES35 = 91	CES60 = 94	CES85 = 72
CES11 = 62	CES36 = 96	CES61 = 85	CES86 = 52
CES12 = 68	CES37 = 90	CES62 = 92	CES87 = 78
CES13 = 45	CES38 = 81	CES63 = 78	CES88 = 77
CES14 = 75	CES39 = 94	CES64 = 73	CES89 = 62
CES15 = 72	CES40 = 90	CES65 = 71	CES90 = 77
CES16 = 49	CES41 = 86	CES66 = 71	CES91 = 91
CES17 = 51	CES42 = 87	CES67 = 69	CES92 = 60
CES18 = 57	CES43 = 74	CES68 = 74	CES93 = 74
CES19 = 74	CES44 = 99	CES69 = 85	CES94 = 49
CES20 = 69	CES45 = 81	CES70 = 70	CES95 = 71
CES21 = 89	CES46 = 76	CES71 = 72	CES96 = 77
CES22 = 81	CES47 = 77	CES72 = 89	CES97 = 79
CES23 = 92	CES48 = 66	CES73 = 64	CES98 = 75
CES24 = 92	CES49 = 75	CES74 = 87	CES99 = 67
CES25 = 74	CES50 = 84	CES75 = 75	



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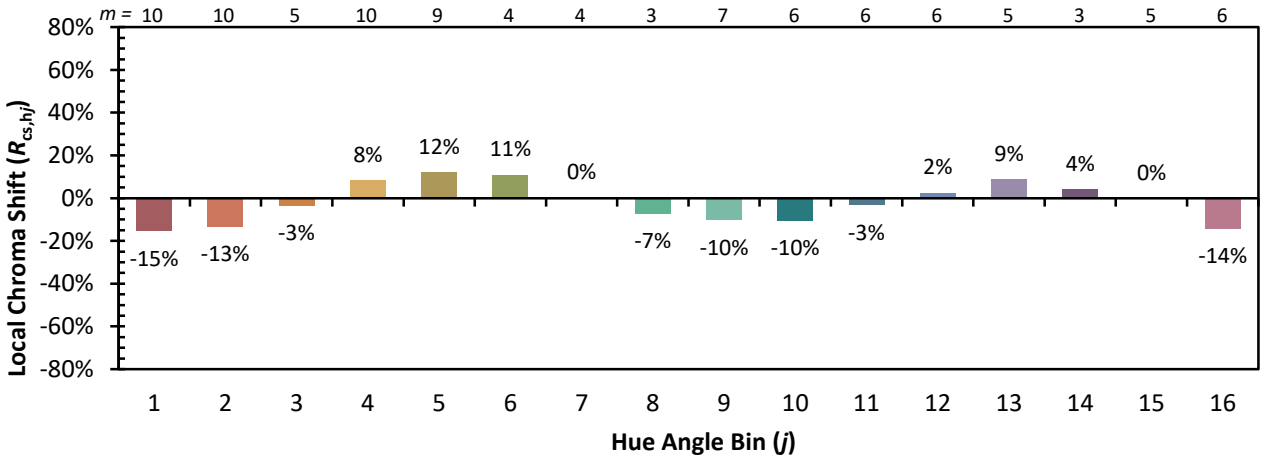
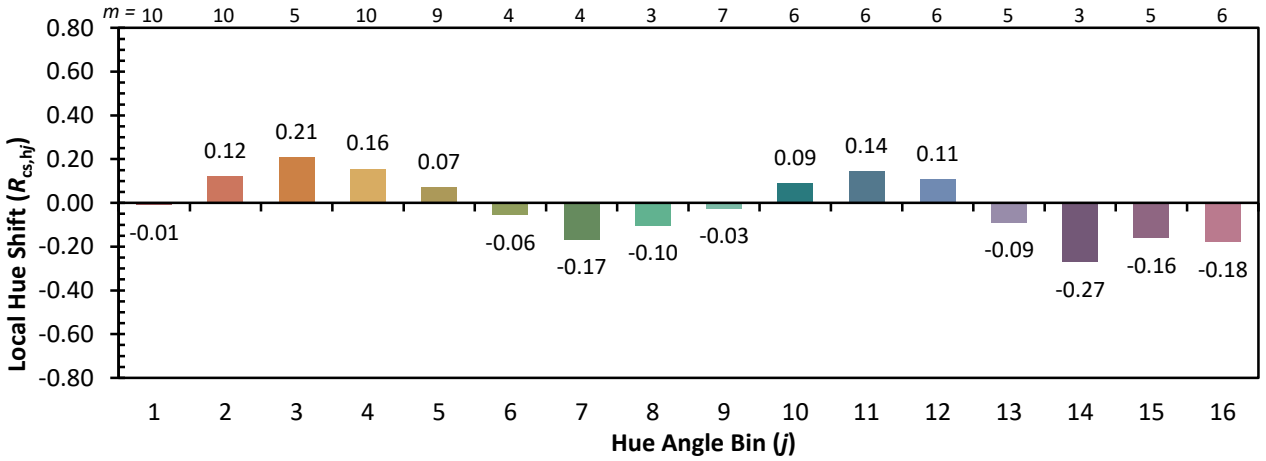
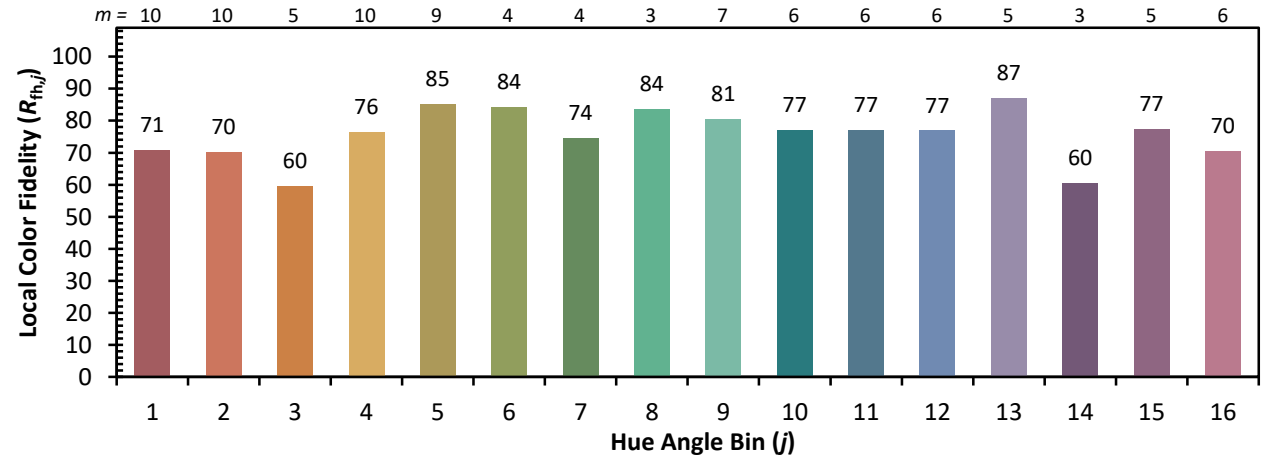
Color Rendition by Hue-Angle Bin







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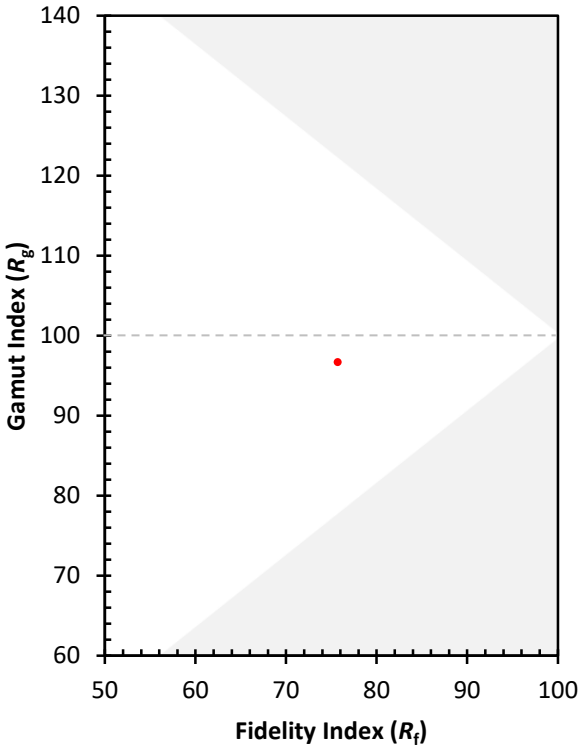
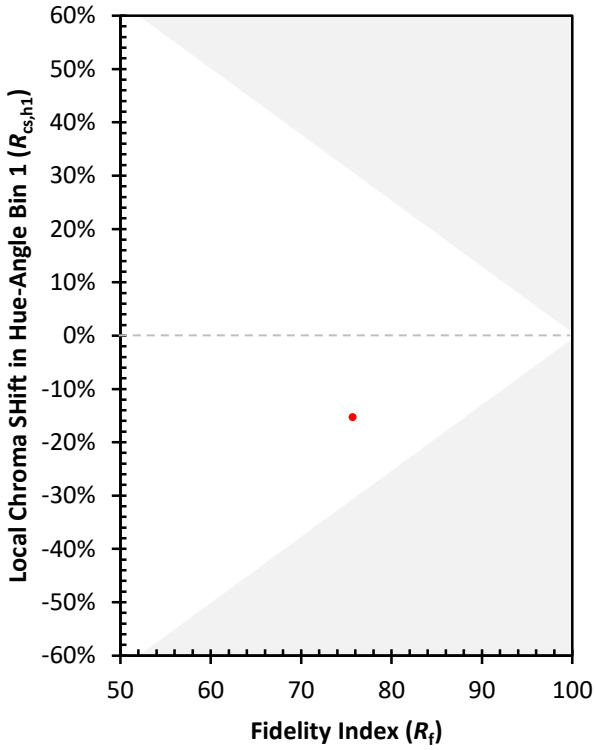
Measure Comparisons





(END OF REPORT)