

Signify Classified - Internal
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: LUMARK

Report Number: P979162

Luminaire Tested: **WPLLED38S-150W-6500K**

Issue Date: 03/31/2025



Test Information

Test Method: LM-79-08
Report Number: P979162
Test Lab: Cooper Lighting Solutions
Issue Date: 03/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: WPLLED38S-150W-6500K
Description: LUMARK WALL PACK LED LARGE 80CRI CCT AND LUMEN SELECTIVE FIXTURE
OPERATING @150W-6500K
Light Source: 6500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

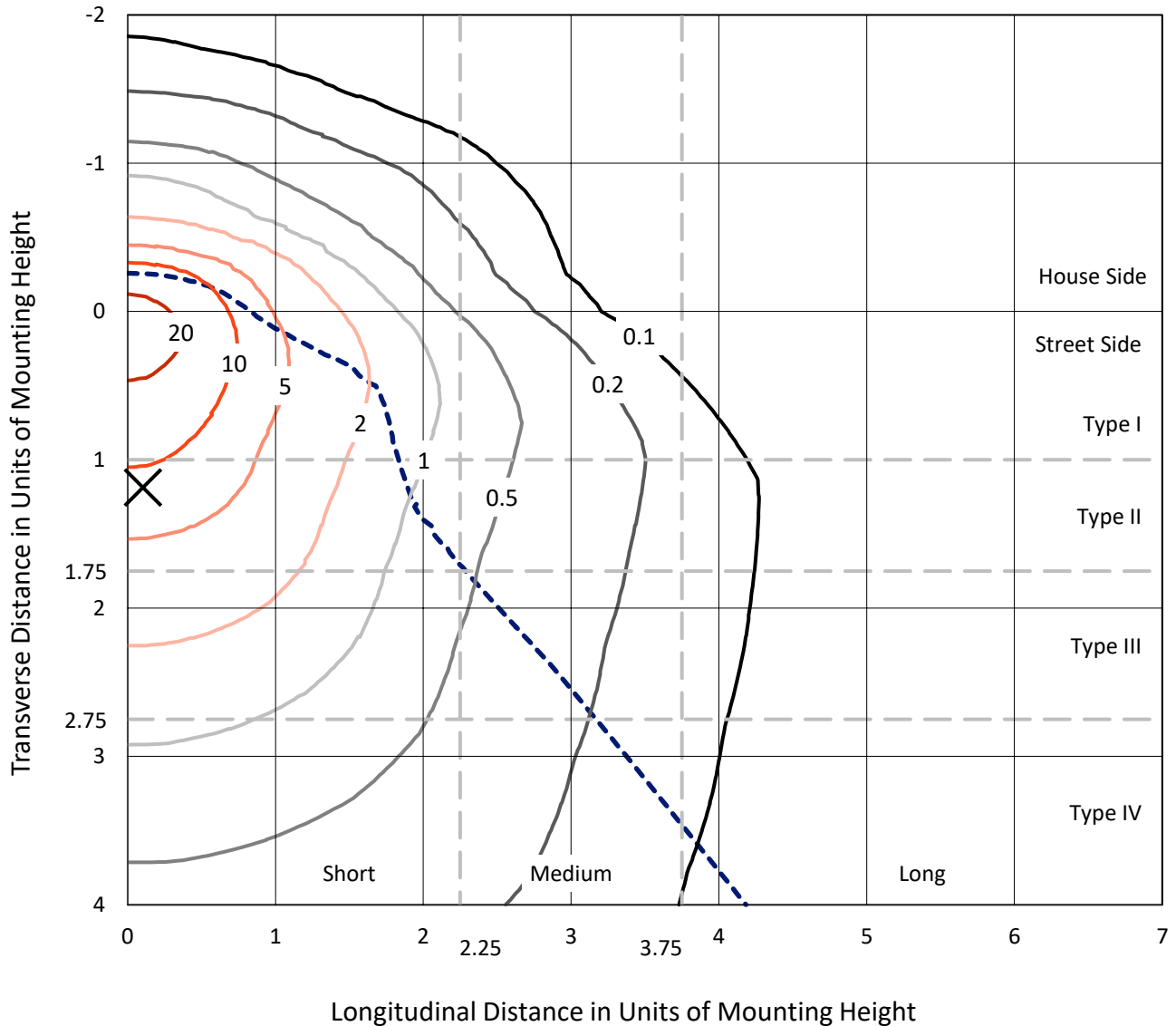
Lumens per Lamp: N/A
Luminaire Lumens: 20618.4 lumens
Efficiency: N/A
Efficacy: 136.8 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 1.25' x L: 0.33' x H: 0.58')
IES Classification: Type IV - Short
BUG Rating: B3 - U5 - G5

Input Watts (W): 150.7
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: 28.75 FT

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Iso-Footcandle Lines of Horizontal Illumination

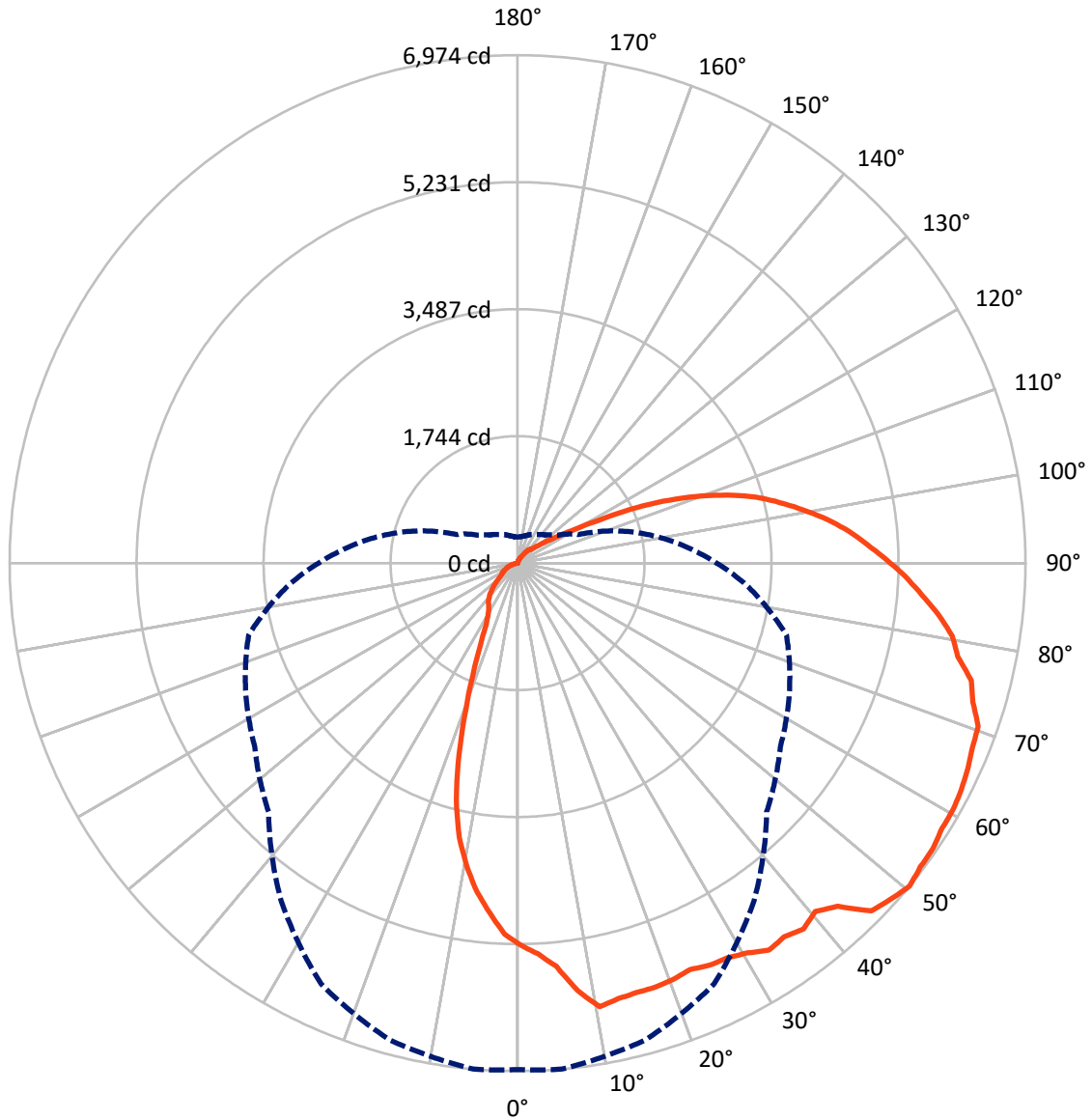
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 25.4 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 50-Deg Vertical

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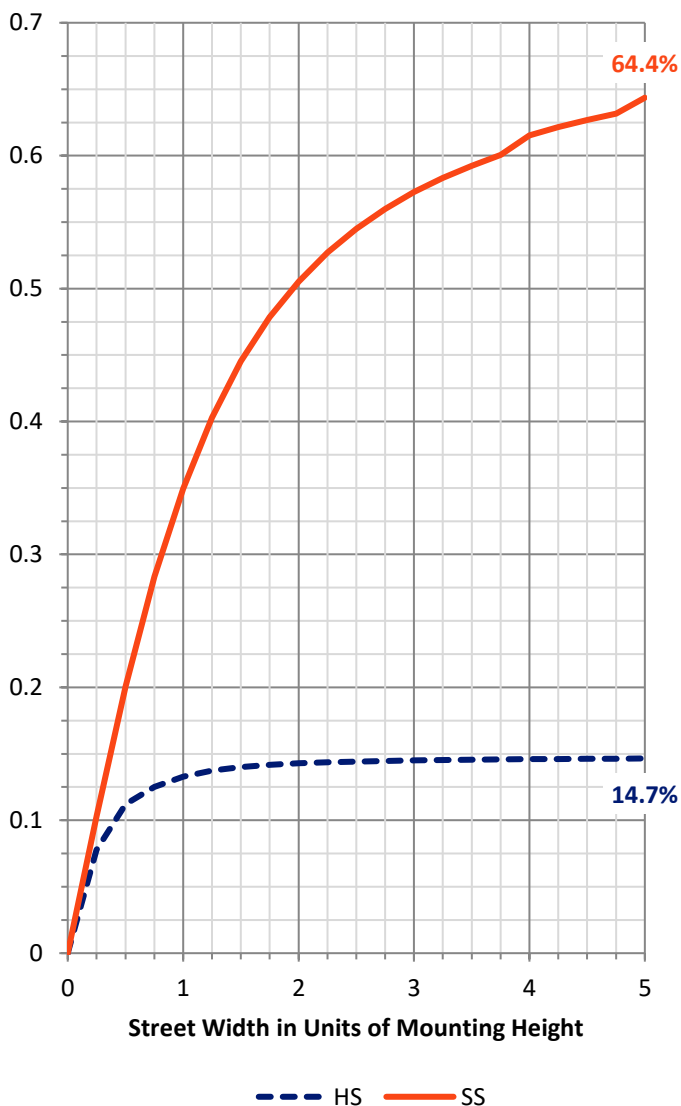
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3064.5	117.8	3182.2
	% Fixture	14.9	0.6	15.4
Street Side	Lumens	14567.7	2868.5	17436.2
	% Fixture	70.7	13.9	84.6
Total	Lumens	17632.1	2986.3	20618.4
	% Fixture	85.5	14.5	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	502.5	2.4
10°-20°	1395.8	6.8
20°-30°	1914.6	9.3
30°-40°	2213.0	10.7
40°-50°	2414.6	11.7
50°-60°	2557.7	12.4
60°-70°	2525.2	12.2
70°-80°	2271.4	11.0
80°-90°	1837.2	8.9
90°-100°	1373.5	6.7
100°-110°	886.2	4.3
110°-120°	409.0	2.0
120°-130°	164.6	0.8
130°-140°	85.5	0.4
140°-150°	43.1	0.2
150°-160°	16.8	0.1
160°-170°	5.9	0.0
170°-180°	1.7	0.0
0°-90°	17632.1	85.5
0°-180°	20618.4	100.0

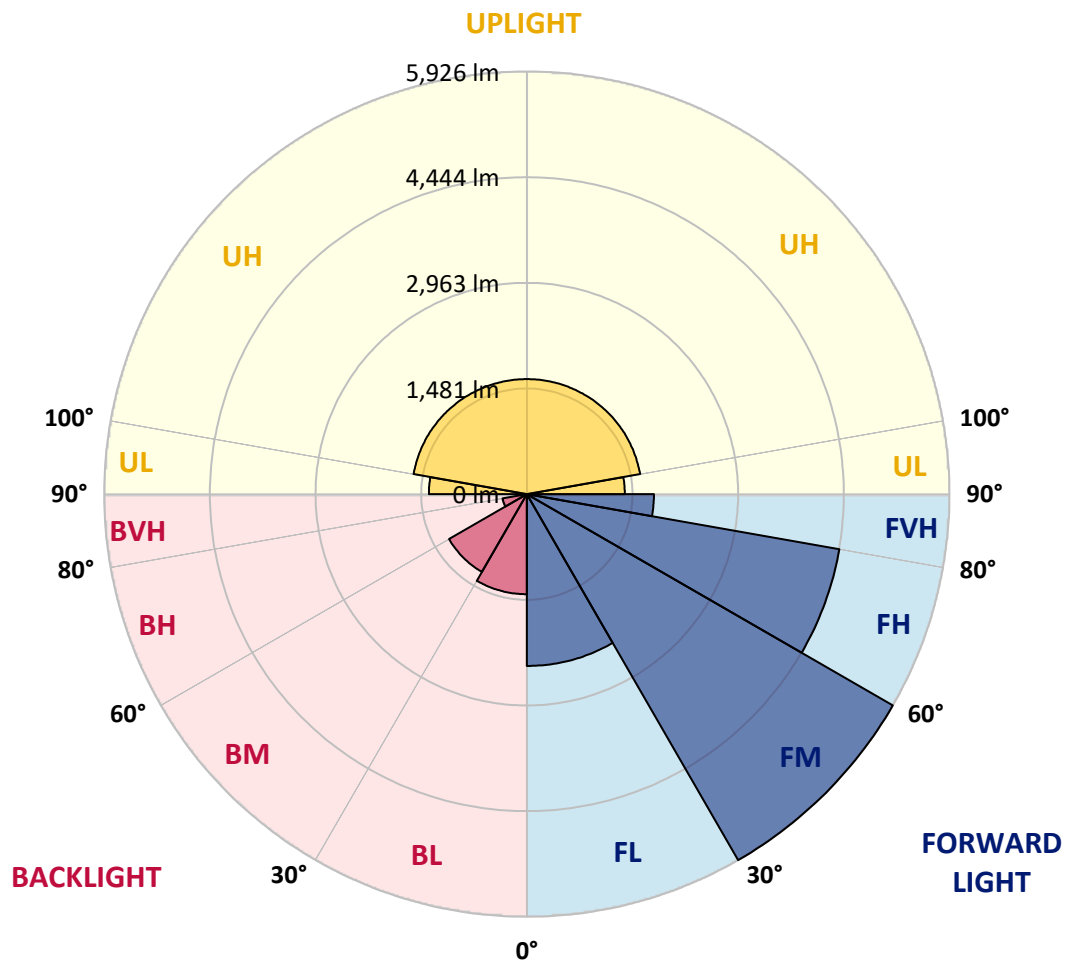


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2409.5	11.7			
FM (30°-60°)	5925.8	28.7			
FH (60°-80°)	4450.2	21.6			G2/5000
FVH (80°-90°)	1782.1	8.6			G5
BL (0°-30°)	1403.4	6.8	B3/2500		
BM (30°-60°)	1259.6	6.1	B2/2500		
BH (60°-80°)	346.4	1.7	B1/500		G1/500
BVH (80°-90°)	55.1	0.3			G1/100
UL (90°-100°)	1373.5	6.7		U5	
UH (100°-180°)	1612.7	7.8		U5	

BUG Rating: B3-U5-G5
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3
2.5°	5372.2	5371.3	5352.3	5400.3	5419.3	5438.3	5433.7	5382.2	5393.9	5375.8	5353.2
5°	5551.4	5561.4	5562.3	5634.7	5612.1	5581.3	5554.1	5483.5	5437.4	5401.2	5363.1
7.5°	5911.7	5928.0	6000.4	5931.6	5834.7	5706.2	5604.8	5508.0	5385.8	5287.1	5234.6
10°	6163.3	6194.1	6281.9	6257.5	6084.6	5861.9	5665.5	5523.4	5414.7	5283.5	5232.8
12.5°	6073.7	6137.1	6195.9	6216.7	6123.5	6109.0	5880.0	5634.7	5474.5	5258.1	5187.5
15°	6074.6	6118.1	6130.7	6161.5	6086.4	6134.3	6021.2	5752.4	5380.3	5193.0	5097.0
17.5°	6061.0	6122.6	6046.5	6058.3	6061.9	6042.0	6038.4	5780.4	5420.2	5137.8	5009.2
20°	5977.8	6101.8	6061.0	5981.4	5985.0	5980.5	5907.2	5829.3	5368.6	5066.2	4921.4
22.5°	5973.2	6061.9	6038.4	5927.1	5871.8	5836.5	5813.0	5818.4	5330.6	4968.5	4801.0
25°	6048.4	6119.0	6050.2	5950.6	5826.6	5708.0	5707.1	5658.2	5307.0	4831.8	4653.5
27.5°	6099.0	6135.3	6045.6	5973.2	5793.1	5594.9	5528.8	5464.5	5183.0	4694.2	4498.7
30°	6202.2	6211.3	6136.2	5962.4	5781.3	5555.9	5339.6	5325.1	5138.7	4544.0	4322.2
32.5°	6334.4	6337.1	6241.2	6032.1	5759.6	5487.2	5201.1	5103.4	4984.8	4362.0	4133.9
35°	6310.0	6301.8	6272.8	6060.1	5765.9	5384.0	5071.7	4902.4	4828.2	4162.9	3919.4
37.5°	6379.6	6375.1	6286.4	6053.8	5740.6	5311.5	4950.4	4744.9	4629.0	3952.0	3665.0
40°	6298.2	6291.8	6226.7	6007.6	5714.3	5230.1	4801.9	4561.2	4423.6	3726.6	3427.9
42.5°	6447.5	6440.3	6296.4	6003.1	5622.0	5120.6	4701.5	4412.7	4204.5	3529.3	3229.7
45°	6799.6	6813.2	6557.1	6127.1	5573.1	5020.1	4620.9	4309.5	4057.9	3375.4	3043.2
47.5°	6866.6	6895.6	6746.2	6278.3	5626.5	4913.3	4483.3	4200.9	3930.3	3235.1	2875.7
50°	6955.3	6974.3	6779.7	6379.6	5659.1	4834.5	4403.7	4120.3	3822.5	3121.9	2732.7
52.5°	6927.3	6926.4	6800.6	6417.7	5671.8	4771.2	4266.1	4027.1	3732.0	3007.9	2598.7
55°	6914.6	6919.1	6809.6	6425.8	5693.5	4682.5	4154.7	3935.7	3653.3	2899.3	2449.4
57.5°	6871.2	6872.1	6738.1	6405.9	5675.4	4607.3	4019.9	3795.4	3551.9	2801.5	2303.7
60°	6858.5	6871.2	6679.3	6329.9	5619.3	4518.6	3882.3	3647.8	3446.9	2683.8	2124.4
62.5°	6838.6	6840.4	6644.9	6292.8	5574.0	4422.7	3726.6	3504.8	3346.4	2546.2	1920.8
65°	6774.3	6793.3	6602.3	6292.8	5513.4	4320.4	3596.2	3341.9	3202.5	2359.8	1677.3
67.5°	6702.8	6737.2	6559.8	6245.7	5476.3	4240.7	3460.5	3180.8	3057.7	2103.6	1426.6
70°	6684.7	6709.1	6496.4	6164.2	5399.3	4124.9	3318.4	3017.8	2873.9	1820.3	1136.0
72.5°	6506.4	6538.1	6349.8	6037.5	5293.4	4025.3	3180.8	2825.0	2650.3	1489.0	860.8
75°	6391.4	6433.1	6240.3	5926.2	5184.8	3914.9	3061.3	2635.9	2368.8	1161.3	635.4
77.5°	6136.2	6180.5	5982.3	5707.1	5005.6	3755.6	2912.8	2444.0	2065.6	850.9	481.6
80°	5994.0	6048.4	5843.8	5536.9	4859.0	3589.9	2755.3	2249.4	1738.8	600.1	393.7
82.5°	5781.3	5825.7	5629.3	5304.3	4631.8	3418.8	2598.7	2062.9	1445.6	437.2	324.1
85°	5533.3	5570.4	5357.7	5043.6	4381.0	3208.8	2433.1	1892.7	1179.4	340.3	270.6
87.5°	5314.3	5327.8	5148.6	4790.2	4141.2	2993.4	2257.5	1682.7	930.5	277.0	228.1
90°	5069.9	5069.0	4880.7	4535.8	3878.7	2778.9	2077.4	1483.6	727.8	240.8	200.0
92.5°	4839.0	4810.1	4620.0	4245.3	3599.0	2570.7	1896.3	1285.3	577.5	214.5	183.7
95°	4591.9	4568.4	4363.8	4000.9	3318.4	2373.4	1714.4	1093.4	469.8	197.3	173.8
97.5°	4346.6	4299.6	4088.7	3715.7	3038.7	2159.7	1519.8	916.9	395.6	184.7	167.5
100°	4016.2	3994.5	3815.3	3427.0	2728.2	1918.1	1316.1	739.5	334.9	177.4	161.1
102.5°	3711.2	3696.7	3488.5	3096.6	2420.4	1671.9	1095.3	617.3	289.7	174.7	155.7
105°	3429.7	3396.2	3189.8	2760.8	2103.6	1431.1	893.4	493.3	257.1	172.9	152.1
107.5°	3045.0	3024.2	2786.1	2370.6	1729.8	1166.8	710.6	404.6	234.4	170.2	148.4
110°	2627.7	2614.1	2380.6	1936.2	1418.4	938.7	573.0	336.7	216.3	165.6	143.0



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 CATALOG NUMBER: WPLLED38S-150W-6500K

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	2193.2	2173.3	1928.0	1549.7	1117.9	731.4	468.9	292.4	202.8	159.3	136.7
115°	1721.6	1710.8	1501.7	1174.0	861.7	591.1	387.4	255.3	191.9	151.2	129.4
117.5°	1258.2	1236.5	1088.0	876.2	678.9	491.5	330.4	230.8	182.8	139.4	119.5
120°	912.4	905.2	802.9	687.0	571.2	417.3	285.1	209.1	172.0	128.5	108.6
122.5°	690.6	695.2	633.6	560.3	487.0	360.3	253.4	191.9	157.5	115.0	97.8
125°	559.4	554.9	521.4	472.5	413.7	314.1	231.7	179.2	143.0	102.3	88.7
127.5°	458.9	454.4	429.1	401.9	354.8	283.3	216.3	171.1	127.6	90.5	78.7
130°	376.6	372.0	355.7	342.2	314.1	257.1	205.5	161.1	114.1	79.7	68.8
132.5°	313.2	314.1	304.1	293.3	276.1	238.1	195.5	150.3	100.5	70.6	61.6
135°	273.4	273.4	264.3	254.4	248.0	220.0	185.6	137.6	87.8	63.4	57.0
137.5°	252.5	250.7	238.1	228.1	223.6	207.3	171.1	122.2	76.9	57.9	52.5
140°	232.6	231.7	216.3	203.7	198.2	187.4	153.9	105.9	67.0	53.4	48.9
142.5°	197.3	196.4	188.3	181.9	172.0	165.6	132.2	89.6	57.9	48.9	45.3
145°	152.1	153.0	152.1	149.4	143.0	138.5	110.4	75.1	49.8	45.3	42.5
147.5°	122.2	121.3	122.2	119.5	115.9	111.3	91.4	62.5	45.3	41.6	39.8
150°	100.5	99.6	99.6	97.8	94.1	86.9	75.1	51.6	40.7	38.9	37.1
152.5°	81.5	82.4	81.5	78.7	76.0	68.8	58.8	42.5	37.1	36.2	35.3
155°	65.2	66.1	67.0	64.3	61.6	55.2	46.2	36.2	34.4	34.4	33.5
157.5°	53.4	52.5	52.5	51.6	47.1	42.5	36.2	31.7	31.7	32.6	32.6
160°	39.8	39.8	40.7	38.9	35.3	31.7	29.0	28.1	29.9	31.7	30.8
162.5°	27.2	28.1	28.1	28.1	26.2	23.5	24.4	27.2	29.0	29.9	29.9
165°	17.2	17.2	19.0	19.9	18.1	19.0	22.6	26.2	28.1	29.9	29.9
167.5°	9.1	9.1	10.9	12.7	14.5	16.3	22.6	26.2	28.1	29.9	29.9
170°	4.5	4.5	6.3	10.0	12.7	16.3	22.6	26.2	29.0	29.9	29.9
172.5°	3.6	3.6	6.3	10.0	12.7	17.2	22.6	26.2	29.0	29.9	29.9
175°	3.6	3.6	6.3	10.0	13.6	17.2	23.5	27.2	29.0	29.9	29.9
177.5°	3.6	4.5	7.2	10.9	13.6	18.1	23.5	27.2	29.0	30.8	29.9
180°	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3	5247.3
2.5°	5319.7	5288.0	5273.5	5221.0	5153.1	5127.8	5107.0	5114.2	5096.1	5104.3
5°	5306.1	5267.2	5188.4	5093.4	5019.2	4941.3	4890.6	4839.0	4820.0	4811.0
7.5°	5184.8	5101.5	5000.2	4906.0	4830.9	4706.9	4622.7	4594.7	4552.1	4517.7
10°	5183.9	5030.0	4863.5	4715.0	4551.2	4452.5	4327.6	4252.5	4217.2	4229.0
12.5°	5112.4	4932.3	4715.9	4508.7	4310.4	4145.7	4003.6	3827.1	3852.4	3842.5
15°	5010.1	4770.3	4533.1	4280.6	4014.4	3790.9	3608.0	3427.9	3354.6	3383.5
17.5°	4890.6	4618.2	4339.4	4014.4	3710.3	3372.7	3137.3	2888.4	2748.1	2761.7
20°	4805.6	4440.8	4109.5	3732.9	3335.6	2924.6	2530.9	2260.2	2118.1	2169.7
22.5°	4661.6	4278.7	3875.0	3397.1	2881.2	2376.1	1970.6	1745.2	1610.3	1604.0
25°	4493.3	4062.4	3617.1	3072.2	2405.0	1878.2	1497.2	1283.5	1206.6	1178.5
27.5°	4296.8	3835.2	3321.1	2664.8	1944.3	1469.1	1154.1	1008.4	948.6	934.1
30°	4098.6	3618.0	3011.5	2258.4	1567.8	1121.5	935.9	853.6	822.8	814.7
32.5°	3868.7	3351.9	2730.0	1896.3	1266.3	932.3	825.5	769.4	746.8	744.1
35°	3627.9	3109.3	2382.4	1568.7	1031.0	833.7	757.6	713.3	699.7	697.0
37.5°	3372.7	2824.1	2082.8	1320.6	895.2	763.1	707.8	678.0	665.3	662.6
40°	3130.1	2564.4	1803.1	1086.2	790.2	702.4	662.6	621.9	611.9	612.8
42.5°	2908.3	2331.7	1531.6	910.6	715.1	646.3	604.7	576.6	561.2	562.1
45°	2721.9	2115.4	1287.2	795.6	654.4	585.6	550.3	508.7	493.3	490.6
47.5°	2553.5	1895.4	1072.6	723.2	596.5	539.5	487.0	445.3	430.0	432.7
50°	2361.6	1644.7	928.7	667.1	544.9	479.7	431.8	386.5	360.3	359.4
52.5°	2191.4	1427.5	827.3	620.9	502.4	433.6	375.6	329.5	296.0	290.6
55°	2015.8	1222.9	759.4	569.4	448.1	386.5	327.7	280.6	261.6	260.7
57.5°	1816.7	1072.6	714.2	528.6	399.2	332.2	278.8	248.0	248.0	251.6
60°	1626.6	933.2	675.3	473.4	352.1	286.9	245.3	220.0	224.5	230.8
62.5°	1421.1	834.6	635.4	427.2	307.8	248.0	212.7	193.7	199.1	200.0
65°	1180.3	762.2	589.3	378.4	267.0	214.5	179.2	171.1	171.1	173.8
67.5°	945.9	697.9	530.4	332.2	227.2	175.6	154.8	148.4	154.8	155.7
70°	759.4	631.8	468.9	286.9	192.8	145.7	136.7	132.2	132.2	131.2
72.5°	631.8	570.3	405.5	244.4	158.4	123.1	115.0	109.5	103.2	105.0
75°	540.4	503.3	349.4	204.6	128.5	99.6	85.1	79.7	75.1	72.4
77.5°	468.9	430.0	290.6	166.6	102.3	76.0	57.9	47.1	44.4	42.5
80°	399.2	363.0	244.4	135.8	78.7	50.7	28.1	15.4	10.9	10.9
82.5°	338.5	298.7	201.9	109.5	57.9	26.2	6.3	0.9	0.0	0.0
85°	283.3	248.9	169.3	89.6	47.1	22.6	6.3	1.8	0.0	0.0
87.5°	238.1	207.3	147.5	77.8	42.5	21.7	7.2	1.8	0.9	0.0
90°	210.0	182.8	133.1	70.6	38.9	20.8	8.1	3.6	1.8	1.8
92.5°	187.4	164.7	121.3	65.2	37.1	20.8	9.1	4.5	3.6	2.7
95°	171.1	150.3	110.4	61.6	35.3	20.8	10.0	6.3	4.5	4.5
97.5°	157.5	139.4	102.3	57.0	33.5	20.8	10.0	7.2	5.4	5.4
100°	147.5	129.4	94.1	53.4	32.6	19.9	10.0	7.2	5.4	5.4
102.5°	140.3	123.1	86.0	49.8	31.7	19.9	10.9	7.2	6.3	5.4
105°	134.0	117.7	78.7	48.0	29.9	19.0	10.9	8.1	6.3	5.4
107.5°	130.3	113.1	73.3	45.3	29.0	18.1	10.9	7.2	5.4	5.4
110°	124.9	105.0	67.9	42.5	27.2	17.2	10.0	7.2	5.4	5.4



REPORT NUMBER: P979162
 CATALOG NUMBER: WPLLED38S-150W-6500K

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	118.6	95.0	62.5	39.8	25.3	16.3	10.0	6.3	4.5	4.5
115°	112.2	83.3	57.0	37.1	25.3	15.4	10.0	6.3	4.5	4.5
117.5°	103.2	74.2	51.6	35.3	23.5	14.5	9.1	6.3	3.6	3.6
120°	93.2	66.1	48.0	33.5	22.6	13.6	9.1	5.4	3.6	3.6
122.5°	84.2	59.7	44.4	32.6	21.7	12.7	9.1	5.4	3.6	3.6
125°	74.2	54.3	41.6	31.7	20.8	12.7	9.1	5.4	3.6	2.7
127.5°	66.1	49.8	39.8	30.8	19.9	12.7	9.1	5.4	3.6	2.7
130°	59.7	47.1	38.9	29.9	19.9	12.7	9.1	5.4	3.6	3.6
132.5°	54.3	44.4	37.1	29.9	19.9	12.7	10.0	5.4	3.6	3.6
135°	50.7	41.6	36.2	29.0	19.0	13.6	10.0	6.3	3.6	3.6
137.5°	48.0	40.7	34.4	28.1	19.0	13.6	10.0	6.3	4.5	4.5
140°	45.3	38.9	33.5	27.2	19.0	13.6	10.9	6.3	4.5	4.5
142.5°	42.5	38.0	32.6	27.2	18.1	14.5	10.9	6.3	4.5	4.5
145°	39.8	36.2	31.7	25.3	18.1	14.5	10.9	6.3	4.5	4.5
147.5°	38.0	34.4	29.9	24.4	18.1	14.5	10.9	6.3	4.5	4.5
150°	36.2	32.6	29.0	23.5	18.1	14.5	10.9	6.3	4.5	3.6
152.5°	34.4	31.7	28.1	23.5	17.2	14.5	10.9	6.3	4.5	3.6
155°	33.5	30.8	27.2	23.5	17.2	13.6	10.9	6.3	4.5	3.6
157.5°	31.7	29.9	27.2	22.6	17.2	13.6	10.0	6.3	3.6	3.6
160°	30.8	29.0	27.2	23.5	17.2	13.6	10.0	6.3	3.6	3.6
162.5°	29.9	29.0	26.2	22.6	17.2	13.6	10.0	5.4	3.6	3.6
165°	29.9	29.0	26.2	22.6	17.2	13.6	10.0	5.4	3.6	2.7
167.5°	29.9	29.0	26.2	22.6	17.2	13.6	10.0	5.4	2.7	2.7
170°	29.9	28.1	26.2	22.6	17.2	12.7	9.1	5.4	2.7	2.7
172.5°	29.9	29.0	26.2	22.6	17.2	12.7	9.1	4.5	2.7	2.7
175°	29.9	29.0	26.2	22.6	17.2	12.7	9.1	4.5	2.7	2.7
177.5°	30.8	29.0	26.2	22.6	17.2	12.7	9.1	4.5	2.7	1.8
180°	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2407-168-5

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 6500k

Data in this report applies to families of products including LSDL-92S-100W 6500k.

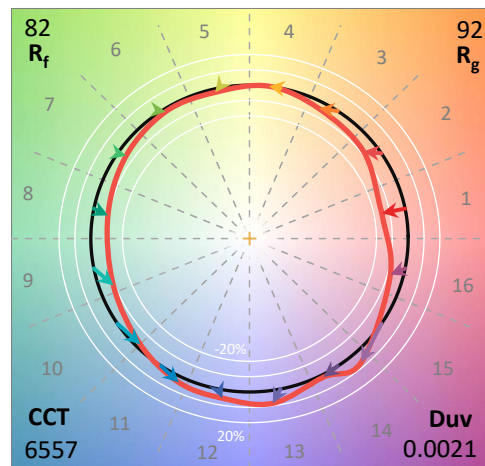
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-168-5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/12/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Lumark
 Catalog Number: **LSDL-92S-100W 6500k**
 Description: Lumark Wallpack 100W

Spectral Parameters

CCT (K): 6557
 CIE u': 0.1985
 CIE v': 0.4668
 Duv: 0.0021
 CIE x: 0.3121
 CIE y: 0.3263
 CIE z: 0.3616
 Peak Wavelength (nm): 453
 Dominant Wavelength (nm): 487
 Purity: 7.689333
 Rf: 81.6
 Rg: 92.3

CRI (Ra):	82.1		
R1:	80.1	R9:	-3.7
R2:	89.1	R10:	72.9
R3:	92.6	R11:	78.9
R4:	79.9	R12:	57.0
R5:	80.7	R13:	83.1
R6:	82.7	R14:	96.5
R7:	86.0	R15:	74.6
R8:	65.5		



Test Conditions

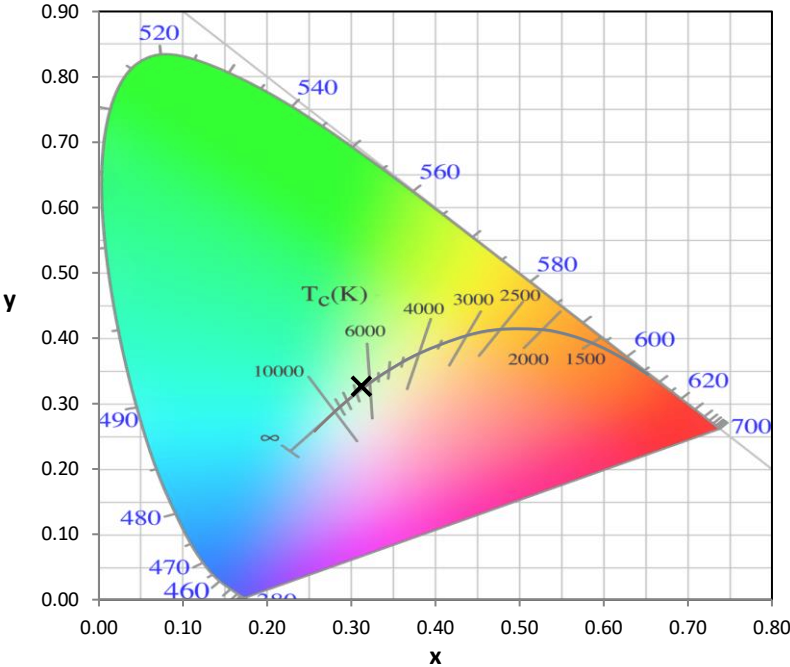
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-5

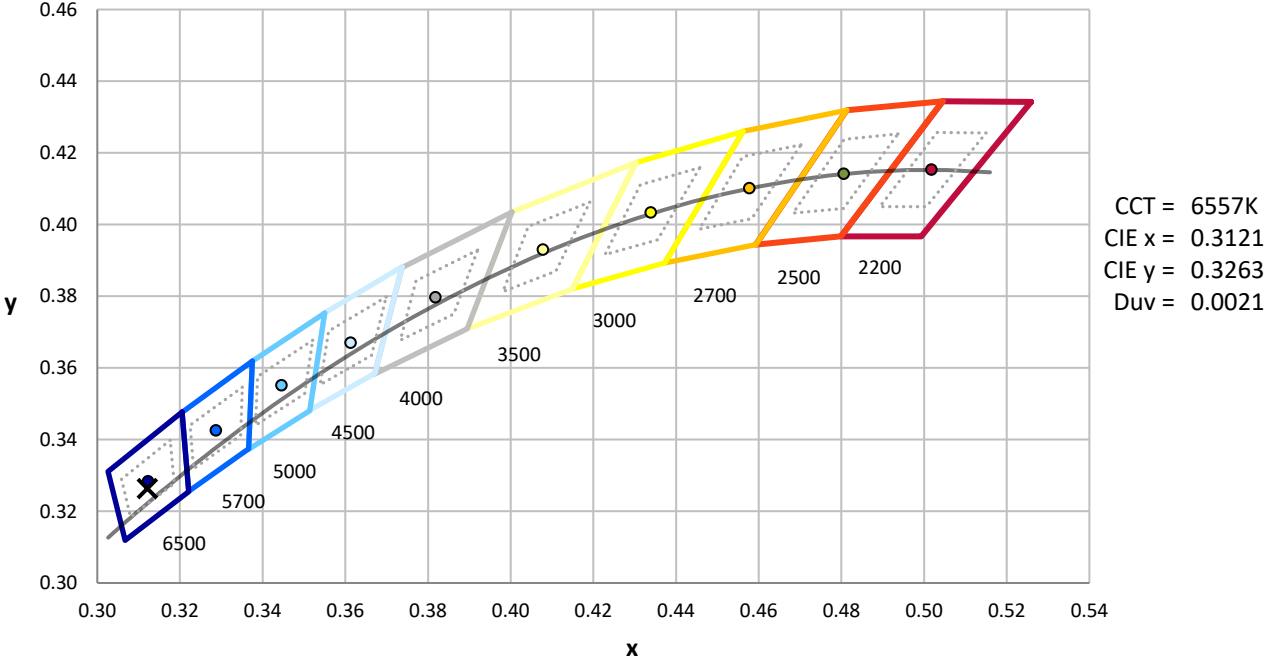
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

REPORT NUMBER: SP1-2407-168-5

CIE 1931 Chromaticity Diagram



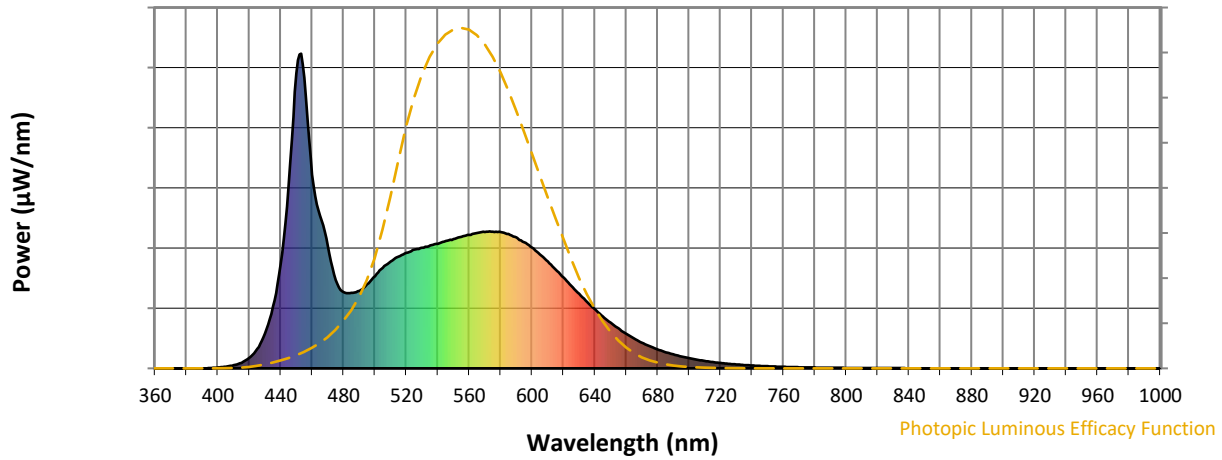
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 6500K 4-step quadrangle

REPORT NUMBER: SP1-2407-168-5

Photopic Flux vs. Wavelength

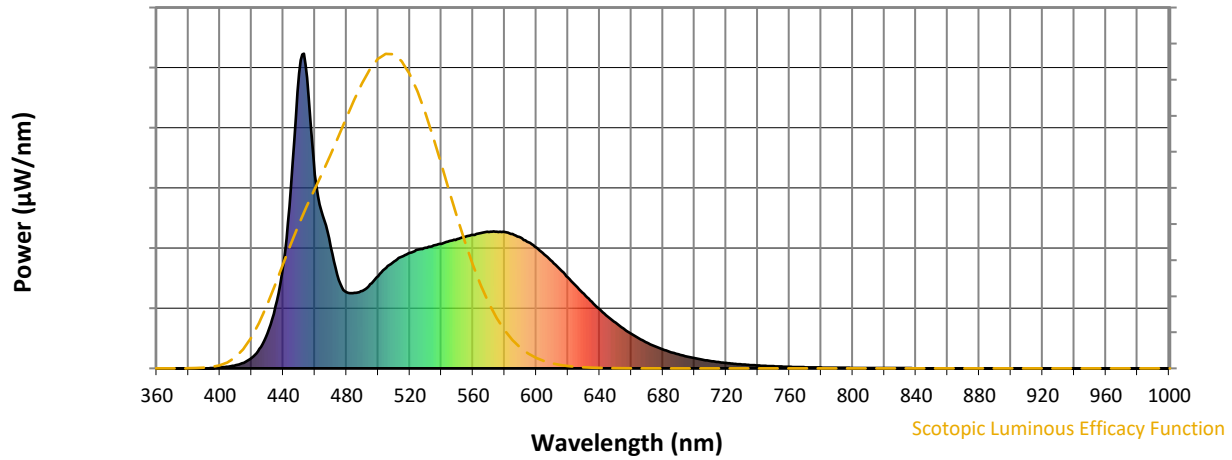


Photopic Lumens: NR

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	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2407-168-5

Scotopic Flux vs. Wavelength



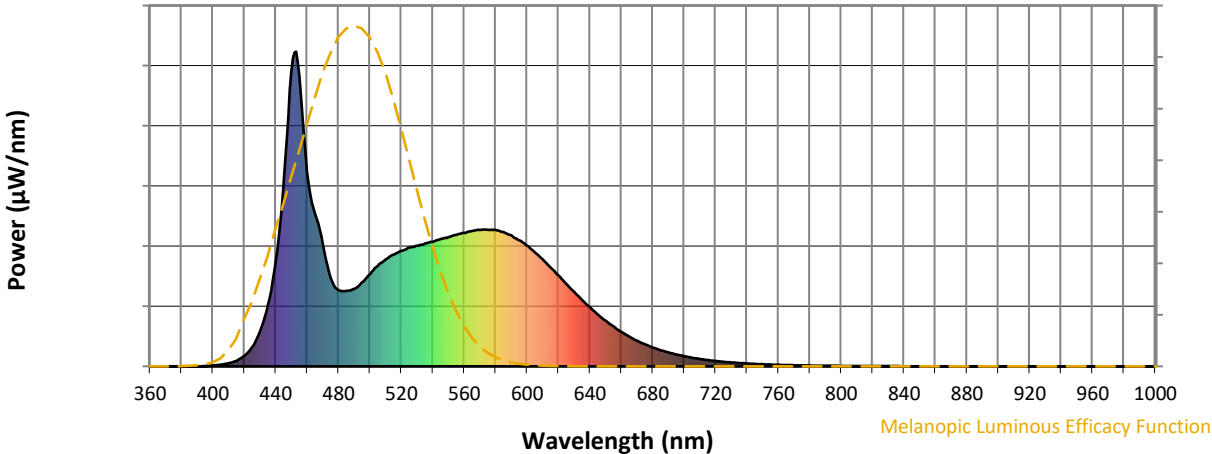
Scotopic Lumens: NR

S/P: 2.27

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	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2407-168-5

Melanopic Flux vs. Wavelength

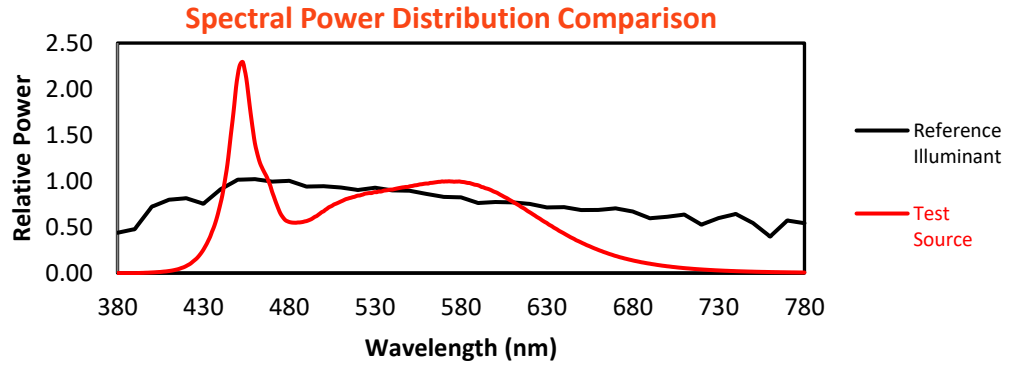


Melanopic Lumens: NR M/P: 5.06

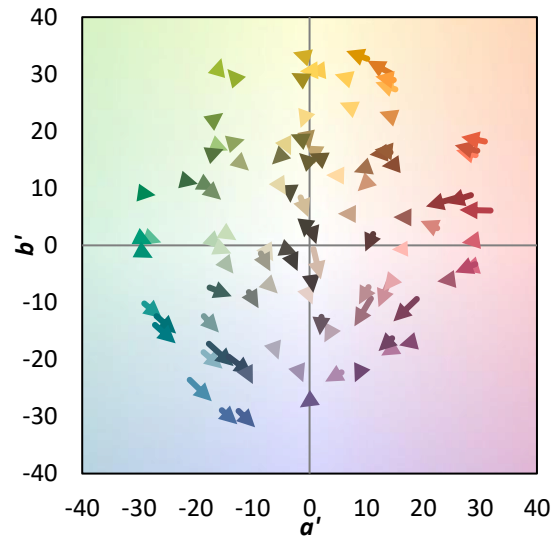
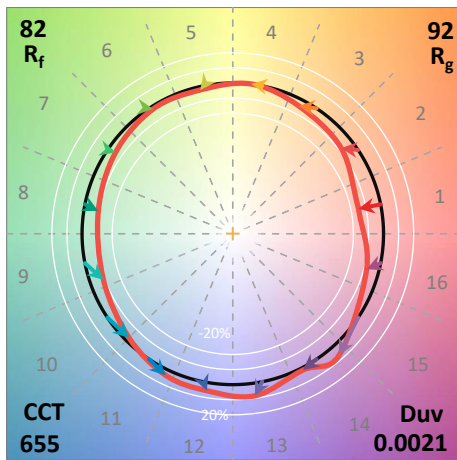
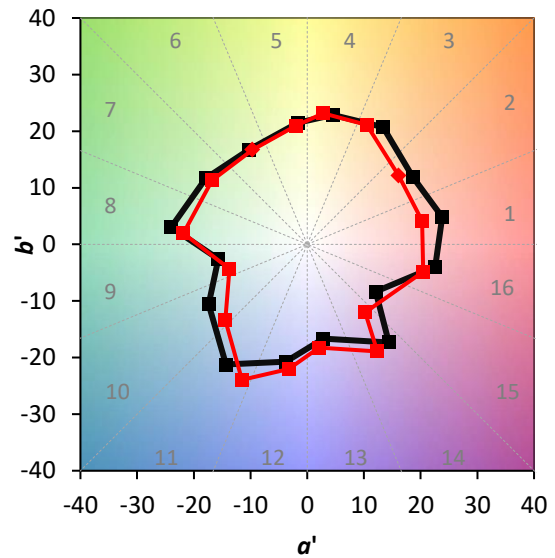
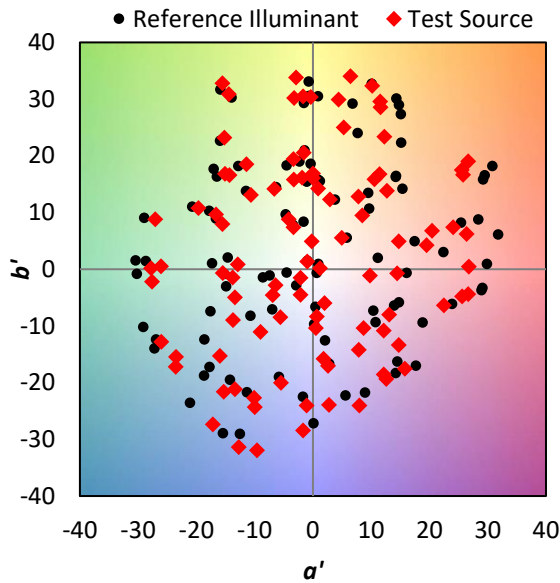
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	246	NR	620	288	NR	750	7	NR	880	0	NR
365	0	NR	495	267	NR	625	262	NR	755	6	NR	885	0	NR
370	0	NR	500	293	NR	630	237	NR	760	5	NR	890	0	NR
375	0	NR	505	319	NR	635	211	NR	765	4	NR	895	0	NR
380	0	NR	510	339	NR	640	188	NR	770	4	NR	900	0	NR
385	0	NR	515	355	NR	645	165	NR	775	3	NR	905	0	NR
390	0	NR	520	367	NR	650	145	NR	780	3	NR	910	0	NR
395	1	NR	525	377	NR	655	127	NR	785	2	NR	915	0	NR
400	3	NR	530	384	NR	660	110	NR	790	2	NR	920	0	NR
405	5	NR	535	391	NR	665	95	NR	795	2	NR	925	0	NR
410	10	NR	540	396	NR	670	81	NR	800	1	NR	930	0	NR
415	18	NR	545	405	NR	675	70	NR	805	1	NR	935	0	NR
420	33	NR	550	411	NR	680	60	NR	810	1	NR	940	0	NR
425	62	NR	555	418	NR	685	51	NR	815	1	NR	945	0	NR
430	111	NR	560	425	NR	690	44	NR	820	1	NR	950	0	NR
435	196	NR	565	430	NR	695	38	NR	825	1	NR	955	0	NR
440	331	NR	570	434	NR	700	32	NR	830	1	NR	960	0	NR
445	583	NR	575	434	NR	705	28	NR	835	1	NR	965	0	NR
450	937	NR	580	433	NR	710	23	NR	840	1	NR	970	0	NR
455	923	NR	585	427	NR	715	20	NR	845	0	NR	975	0	NR
460	616	NR	590	416	NR	720	17	NR	850	0	NR	980	0	NR
465	485	NR	595	401	NR	725	15	NR	855	0	NR	985	0	NR
470	386	NR	600	384	NR	730	13	NR	860	0	NR	990	0	NR
475	280	NR	605	362	NR	735	11	NR	865	0	NR	995	0	NR
480	242	NR	610	339	NR	740	9	NR	870	0	NR	1000	0	NR
485	240	NR	615	314	NR	745	8	NR	875	0	NR			

Summary

$R_f = 81.6$
 $R_g = 92.3$
 $CIE R_a = 82.1$
 $R_9 = -3.7$

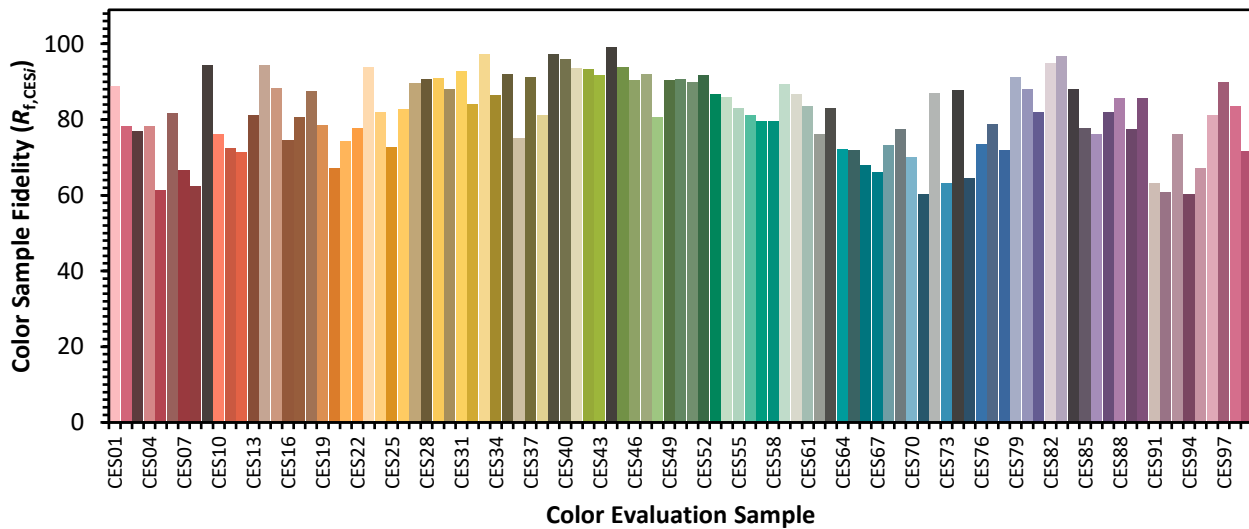


Color Vector Graphics

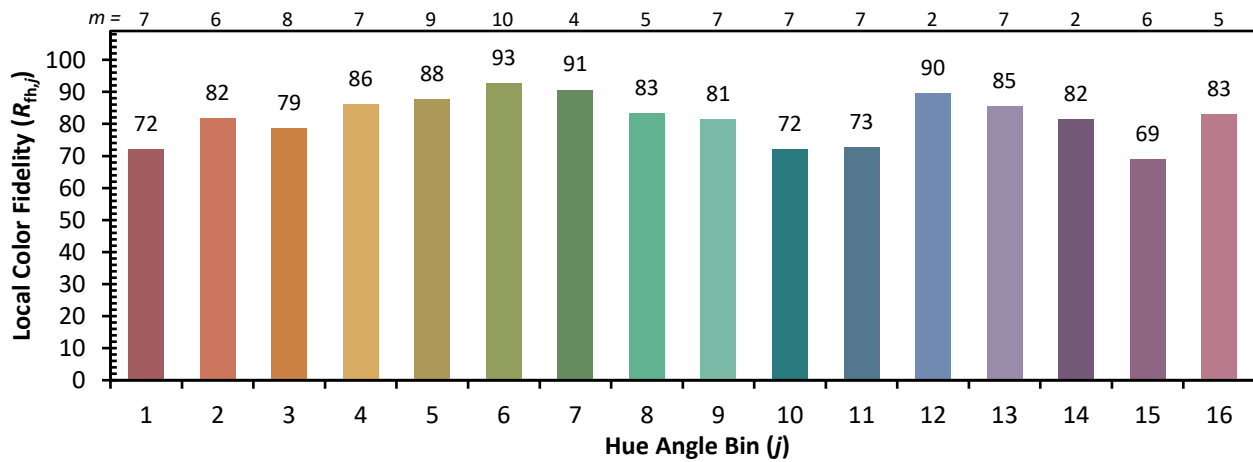
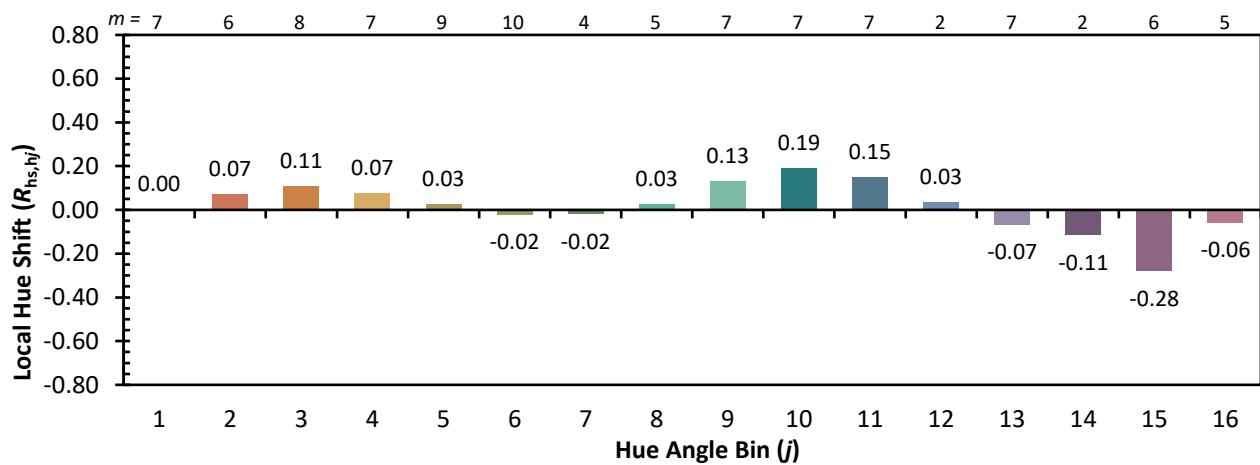
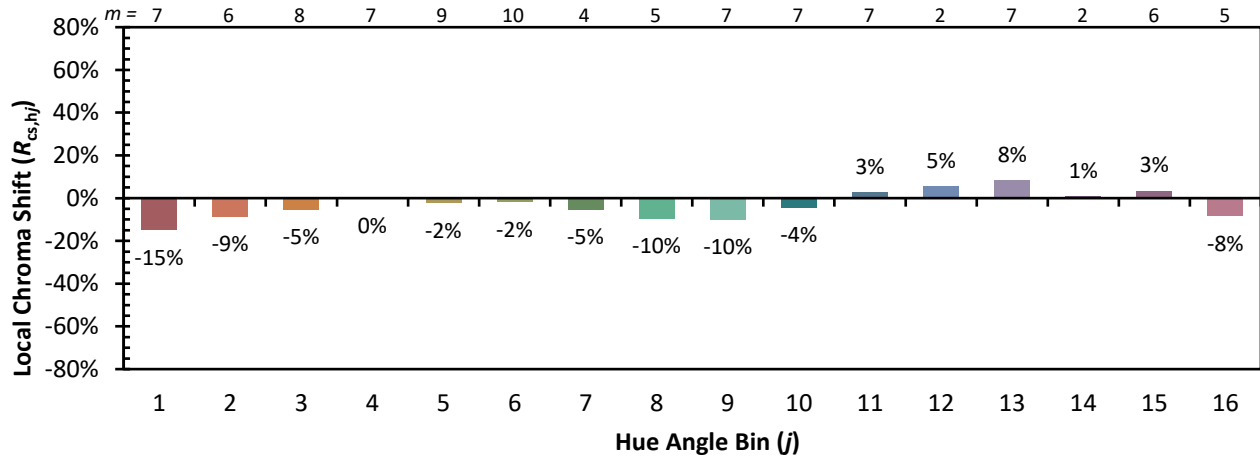


Individual Sample Fidelity Index ($R_{f,i}$)

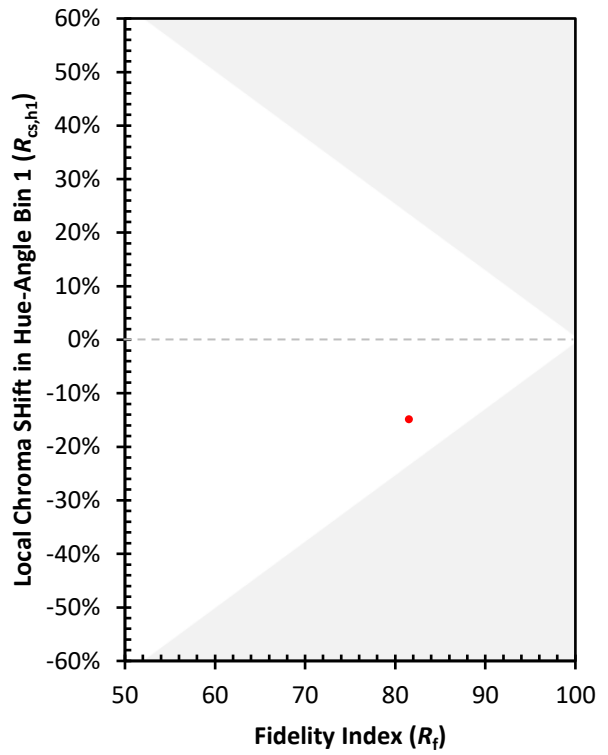
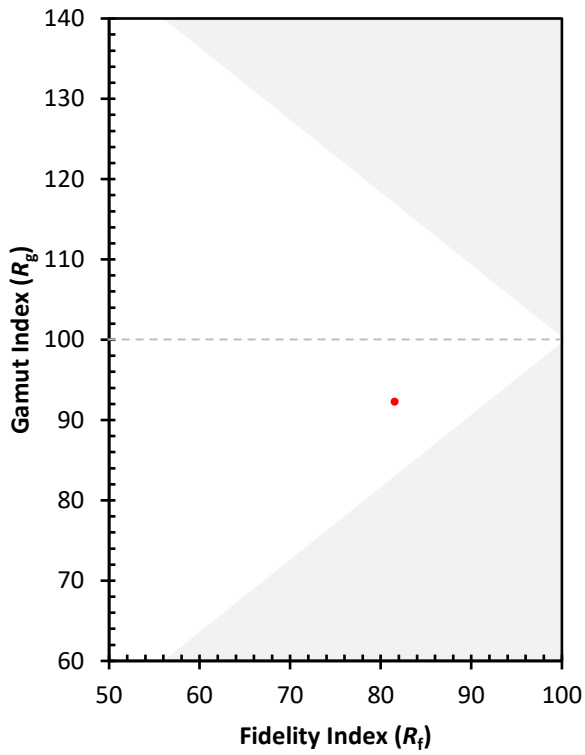
CES01 = 85	CES26 = 83	CES51 = 90	CES76 = 74
CES02 = 59	CES27 = 90	CES52 = 92	CES77 = 79
CES03 = 30	CES28 = 91	CES53 = 87	CES78 = 72
CES04 = 68	CES29 = 91	CES54 = 86	CES79 = 91
CES05 = 45	CES30 = 88	CES55 = 83	CES80 = 88
CES06 = 49	CES31 = 93	CES56 = 81	CES81 = 82
CES07 = 38	CES32 = 84	CES57 = 80	CES82 = 95
CES08 = 38	CES33 = 97	CES58 = 80	CES83 = 97
CES09 = 29	CES34 = 86	CES59 = 89	CES84 = 88
CES10 = 72	CES35 = 92	CES60 = 87	CES85 = 78
CES11 = 55	CES36 = 75	CES61 = 83	CES86 = 76
CES12 = 60	CES37 = 91	CES62 = 76	CES87 = 82
CES13 = 41	CES38 = 81	CES63 = 83	CES88 = 86
CES14 = 74	CES39 = 97	CES64 = 72	CES89 = 77
CES15 = 70	CES40 = 96	CES65 = 72	CES90 = 86
CES16 = 45	CES41 = 93	CES66 = 68	CES91 = 63
CES17 = 48	CES42 = 93	CES67 = 66	CES92 = 61
CES18 = 55	CES43 = 92	CES68 = 73	CES93 = 76
CES19 = 70	CES44 = 99	CES69 = 77	CES94 = 60
CES20 = 63	CES45 = 94	CES70 = 70	CES95 = 67
CES21 = 84	CES46 = 90	CES71 = 60	CES96 = 81
CES22 = 76	CES47 = 92	CES72 = 87	CES97 = 90
CES23 = 91	CES48 = 81	CES73 = 63	CES98 = 83
CES24 = 90	CES49 = 90	CES74 = 88	CES99 = 72
CES25 = 70	CES50 = 91	CES75 = 65	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)