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: P979164

Luminaire Tested: **WPLLED38S-140W-3500K**

Issue Date: 03/31/2025

Report Generated By 670245763

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:	P979164
Test Lab:	Cooper Lighting Solutions
Issue Date:	03/31/2025
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	LUMARK
Catalog Number:	WPLLED38S-140W-3500K
Description:	LUMARK WALL PACK LED LARGE 80CRI CCT AND LUMEN SELECTIVE FIXTURE OPERATING @140W-3500K
Light Source:	3500K CCT, 80 CRI LEDS
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	19475.6 lumens
Efficiency:	N/A
Efficacy:	144.4 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):	134.9
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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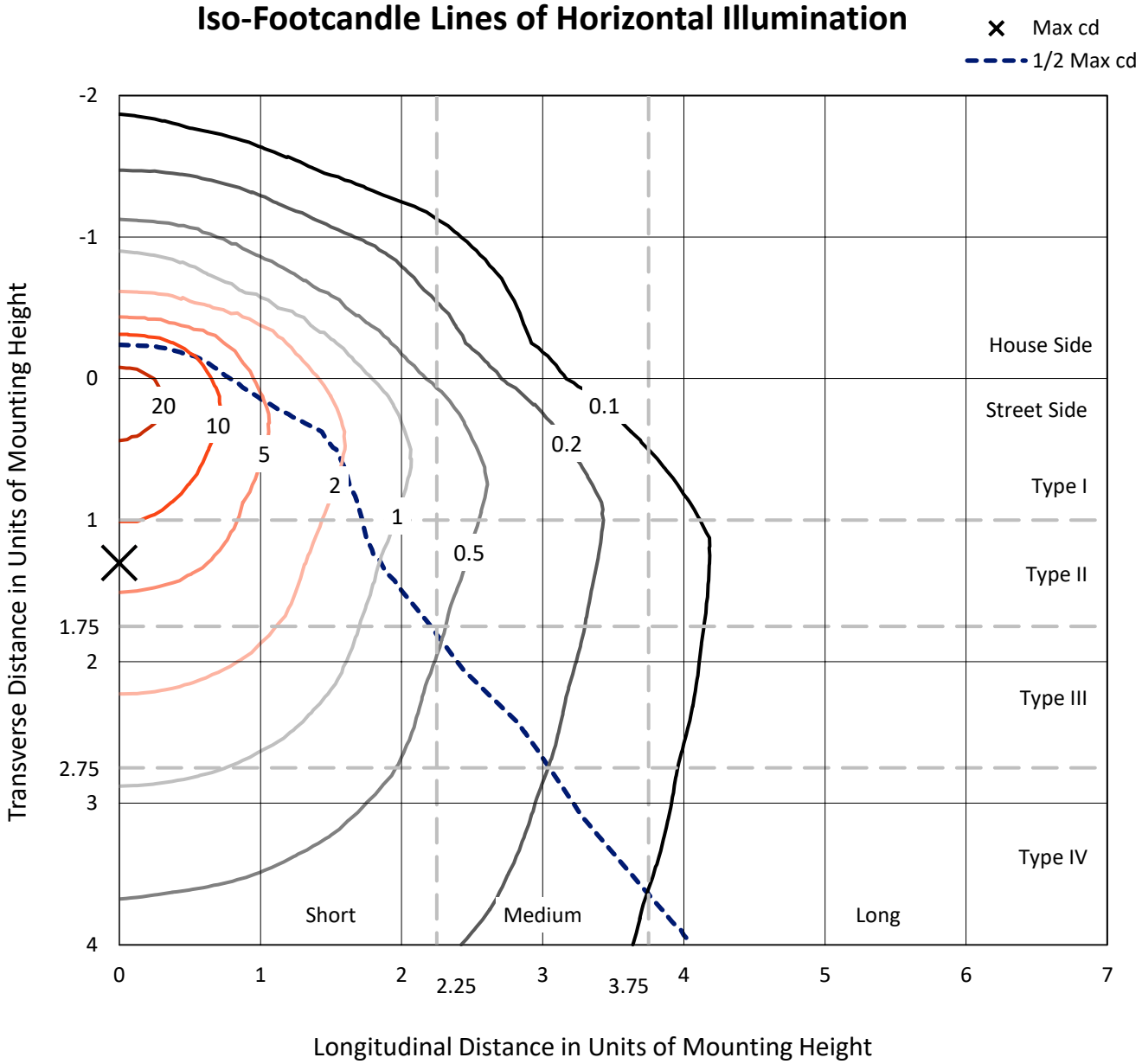
Iso-Footcandle Lines of Horizontal Illumination



Based on 15 foot mounting height. Maximum calculated value = 24.5 fc
Type IV - Short - N/A

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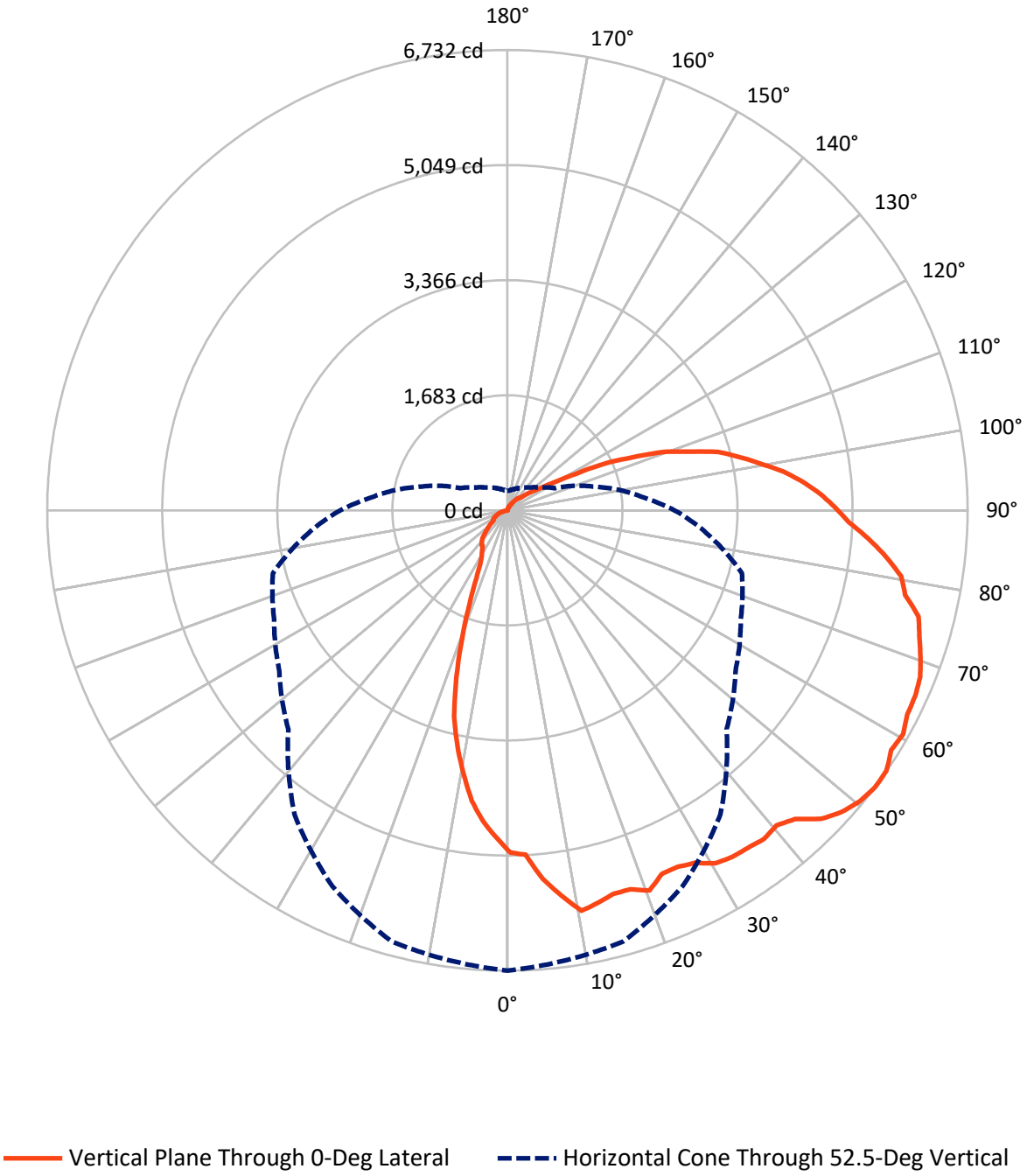
Luminous Intensity Polar Plot



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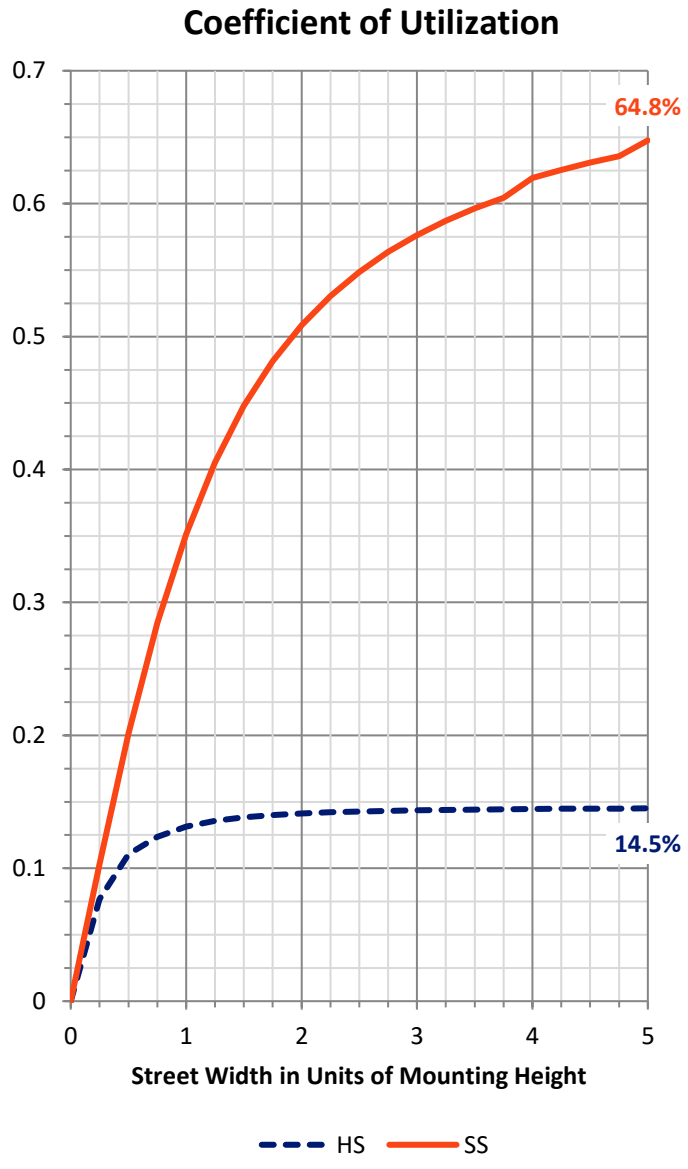
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2866.8	110.4	2977.2
	% Fixture	14.7	0.6	15.3
Street Side	Lumens	13831.6	2666.8	16498.4
	% Fixture	71.0	13.7	84.7
Total	Lumens	16698.4	2777.2	19475.6
	% Fixture	85.7	14.3	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	473.6	2.4
10°-20°	1317.4	6.8
20°-30°	1813.8	9.3
30°-40°	2101.2	10.8
40°-50°	2295.1	11.8
50°-60°	2426.0	12.5
60°-70°	2398.8	12.3
70°-80°	2147.3	11.0
80°-90°	1725.2	8.9
90°-100°	1281.4	6.6
100°-110°	823.5	4.2
110°-120°	376.4	1.9
120°-130°	152.5	0.8
130°-140°	79.9	0.4
140°-150°	40.4	0.2
150°-160°	15.9	0.1
160°-170°	5.6	0.0
170°-180°	1.6	0.0
0°-90°	16698.4	85.7
0°-180°	19475.6	100.0



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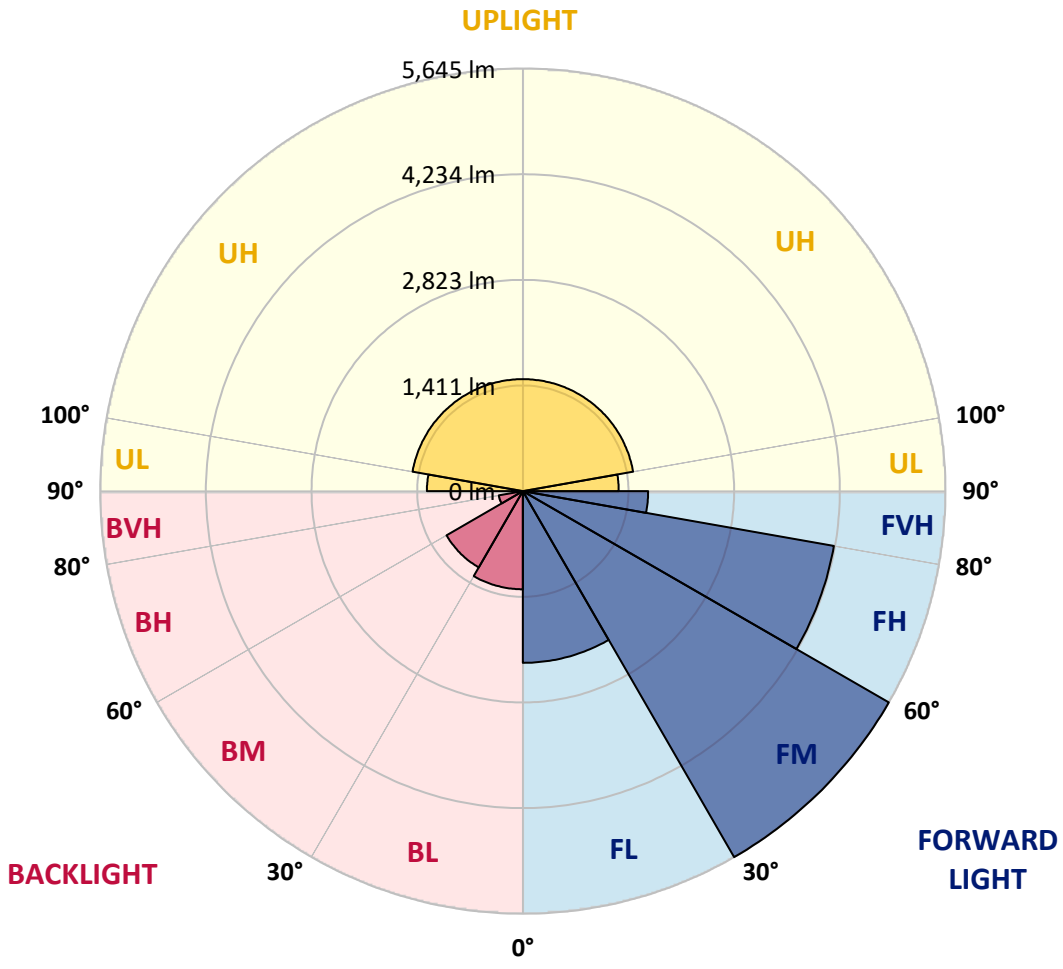
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	2293.7	11.8			
FM	(30°-60°)	5645.1	29.0			
FH	(60°-80°)	4219.3	21.7			G2/5000
FVH	(80°-90°)	1673.5	8.6			G5
BL	(0°-30°)	1311.2	6.7	B3/2500		
BM	(30°-60°)	1177.2	6.0	B2/2500		
BH	(60°-80°)	326.8	1.7	B1/500		G1/500
BVH	(80°-90°)	51.8	0.3			G1/100
UL	(90°-100°)	1281.4	6.6		U5	
UH	(100°-180°)	1495.8	7.7		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°	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0
2.5°	5042.9	5186.3	5254.6	5117.1	5206.5	5134.9	5075.8	5045.5	5053.1	5012.6	5081.7
5°	5414.8	5333.9	5336.4	5273.2	5268.9	5140.8	5175.3	5123.9	5096.1	5017.6	5019.3
7.5°	5693.1	5658.5	5647.6	5469.6	5446.9	5435.1	5248.7	5204.0	5134.0	5048.0	5019.3
10°	5956.2	5946.1	5924.2	5774.9	5881.2	5670.3	5413.1	5322.1	5122.2	5015.1	4997.4
12.5°	5889.6	5916.6	5834.8	5840.7	5877.0	5817.9	5535.4	5308.6	5166.1	4920.7	4899.6
15°	5818.8	5864.3	5739.5	5823.8	5893.0	5800.2	5707.5	5415.7	5105.3	4877.6	4912.2
17.5°	5825.5	5809.5	5771.5	5833.1	5745.4	5807.0	5744.6	5418.2	5128.1	4849.8	4710.7
20°	5935.1	5719.3	5790.9	5725.2	5682.2	5687.2	5619.7	5570.0	5058.1	4722.5	4631.4
22.5°	5776.6	5749.6	5793.5	5722.6	5667.0	5495.8	5628.2	5509.3	5131.5	4693.8	4510.0
25°	5777.4	5857.6	5833.1	5681.3	5554.0	5471.3	5380.3	5364.2	4979.7	4555.5	4394.4
27.5°	5838.2	5916.6	5782.5	5696.5	5500.8	5414.8	5282.4	5245.3	4941.7	4471.2	4208.1
30°	5992.5	5978.1	5905.6	5748.8	5497.5	5340.6	5189.7	5064.9	4846.4	4305.9	4083.3
32.5°	6042.2	6076.8	6063.3	5789.3	5567.5	5232.7	4981.4	4885.2	4707.3	4107.7	3868.2
35°	6060.8	6106.3	6133.3	5739.5	5535.4	5134.0	4786.6	4634.8	4583.3	3946.6	3614.4
37.5°	6098.7	6121.5	6059.1	5797.7	5505.9	5022.7	4719.9	4529.4	4404.6	3729.9	3410.3
40°	6059.1	5986.6	5986.6	5715.9	5423.3	4893.7	4623.0	4301.7	4171.8	3508.1	3226.5
42.5°	6170.4	6157.8	6099.6	5779.1	5344.0	4907.2	4481.3	4199.6	3993.9	3328.5	3001.3
45°	6437.7	6560.9	6271.6	5882.9	5301.8	4786.6	4450.1	4094.2	3837.9	3179.2	2804.0
47.5°	6588.7	6598.8	6552.4	6000.9	5341.5	4719.9	4244.3	4008.2	3701.2	3046.0	2665.7
50°	6684.0	6693.3	6499.3	6053.2	5380.3	4529.4	4188.7	3907.8	3594.1	2890.8	2501.2
52.5°	6732.1	6667.1	6531.4	6064.2	5429.2	4533.6	4074.8	3766.2	3551.1	2819.1	2444.7
55°	6727.8	6681.5	6592.9	6151.9	5388.7	4438.3	3849.7	3690.3	3430.5	2750.8	2305.6
57.5°	6619.1	6605.6	6329.0	6163.7	5396.3	4429.9	3756.9	3509.8	3340.3	2607.5	2143.7
60°	6648.6	6662.9	6341.6	6051.5	5277.4	4208.9	3677.6	3410.3	3254.3	2500.4	1989.3
62.5°	6566.8	6616.5	6360.2	6032.1	5336.4	4170.1	3524.1	3296.5	3099.1	2389.9	1810.6
65°	6553.3	6588.7	6426.8	6042.2	5256.3	4053.7	3380.8	3141.3	3004.7	2196.8	1555.0
67.5°	6512.0	6453.8	6278.4	5957.9	5188.0	4027.6	3260.2	2996.2	2853.7	1941.3	1339.2
70°	6409.9	6388.0	6230.3	5860.9	5081.7	3901.1	3126.1	2824.2	2686.8	1664.7	1038.9
72.5°	6302.0	6237.0	6171.3	5796.8	5037.0	3713.9	2997.1	2637.0	2436.3	1370.4	817.2
75°	6212.6	6076.0	5996.7	5624.8	4886.1	3710.5	2901.8	2469.2	2202.7	1075.2	596.2
77.5°	5948.6	5801.9	5732.7	5424.9	4632.2	3491.3	2728.9	2270.2	1916.8	796.9	456.2
80°	5838.2	5643.4	5521.1	5223.4	4601.9	3401.9	2576.3	2100.7	1600.6	565.0	371.1
82.5°	5580.1	5473.9	5349.0	5090.2	4334.6	3143.8	2448.1	1927.8	1328.2	429.2	305.3
85°	5298.5	5188.8	5076.7	4744.4	4099.3	2958.3	2271.8	1720.3	1080.3	323.0	258.9
87.5°	4997.4	4969.6	4864.2	4485.5	3884.2	2838.5	2107.4	1571.9	857.6	258.9	211.7
90°	4792.5	4777.3	4607.8	4259.5	3616.1	2593.1	1932.0	1365.3	671.3	229.4	186.4
92.5°	4583.3	4472.0	4295.8	4063.9	3346.2	2373.9	1750.7	1172.2	536.3	204.9	170.3
95°	4341.3	4266.3	4075.7	3781.4	3055.3	2163.9	1582.9	1001.8	430.9	183.8	161.9
97.5°	4075.7	4016.6	3816.8	3468.5	2828.4	2033.2	1409.2	862.7	370.2	172.0	152.6
100°	3756.1	3740.9	3565.5	3202.0	2531.6	1768.4	1210.1	699.9	307.8	166.1	148.4
102.5°	3475.2	3401.0	3288.9	2906.9	2250.8	1548.3	1006.1	556.6	269.0	160.2	146.7
105°	3194.4	3141.3	2972.6	2567.8	1937.1	1309.6	829.8	463.0	242.0	161.1	144.2
107.5°	2771.9	2782.0	2609.2	2203.5	1602.3	1087.9	652.7	381.2	224.3	158.5	139.1
110°	2441.4	2383.2	2191.7	1792.9	1320.6	885.5	533.0	315.4	202.4	155.2	133.2

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	*1975.0*	1964.0	1783.6	1418.4	1024.6	686.4	430.9	271.5	191.4	145.0	126.5
115°	*1604.0*	1535.6	1355.2	1080.3	788.5	547.3	355.0	239.5	182.2	142.5	118.9
117.5°	*1142.7*	1140.1	990.0	825.6	629.9	451.2	303.6	210.8	171.2	131.6	113.8
120°	*827.3*	815.5	737.9	626.6	527.9	389.6	265.6	196.5	161.9	118.9	102.9
122.5°	*635.8*	628.3	582.7	511.0	456.2	337.3	233.6	178.8	151.0	107.1	91.9
125°	*509.4*	516.1	479.8	440.2	385.4	290.9	215.0	164.4	134.1	97.0	81.8
127.5°	*427.6*	424.2	398.0	369.4	330.6	264.0	199.9	158.5	119.7	85.2	74.2
130°	*356.7*	341.5	332.3	317.1	292.6	238.7	190.6	150.1	108.8	74.2	64.9
132.5°	*286.7*	288.4	284.2	272.4	261.4	222.6	183.8	138.3	94.4	66.6	58.2
135°	*255.5*	254.7	247.1	241.2	232.8	206.6	172.0	125.7	82.6	60.7	53.1
137.5°	*239.5*	233.6	222.6	210.8	208.3	194.8	156.9	113.0	71.7	54.8	49.8
140°	*217.6*	215.0	201.5	192.3	186.4	175.4	143.4	97.8	64.1	49.8	47.2
142.5°	*181.3*	181.3	176.2	166.1	162.8	153.5	124.0	84.3	54.8	47.2	43.0
145°	*145.9*	142.5	142.5	139.1	134.9	129.9	102.9	71.7	48.9	42.2	41.3
147.5°	*110.5*	110.5	111.3	111.3	107.1	105.4	86.0	57.3	43.0	38.8	37.1
150°	*92.8*	93.6	92.8	88.5	88.5	83.5	70.8	48.1	37.9	37.1	35.4
152.5°	*75.9*	75.1	75.9	75.1	70.8	64.9	54.8	39.6	35.4	35.4	34.6
155°	*61.6*	62.4	61.6	58.2	55.7	49.8	43.0	33.7	32.9	32.9	32.0
157.5°	*48.1*	49.8	48.1	48.1	45.5	39.6	33.7	30.4	31.2	31.2	31.2
160°	*37.1*	37.1	37.9	37.1	33.7	29.5	27.8	27.8	29.5	30.4	31.2
162.5°	*25.3*	27.0	27.0	26.1	24.5	21.9	22.8	26.1	28.7	28.7	30.4
165°	*15.2*	15.2	16.9	17.7	16.9	17.7	21.1	23.6	26.1	28.7	28.7
167.5°	*7.6*	8.4	10.1	11.8	13.5	15.2	21.1	24.5	27.0	28.7	28.7
170°	*3.4*	3.4	5.9	9.3	12.6	16.0	21.9	25.3	27.0	28.7	27.8
172.5°	*3.4*	3.4	5.9	10.1	12.6	16.0	22.8	23.6	27.8	29.5	28.7
175°	*2.5*	4.2	5.9	10.1	13.5	16.9	22.8	26.1	27.0	29.5	29.5
177.5°	*2.5*	4.2	6.7	10.1	13.5	16.9	21.9	26.1	27.8	28.7	30.4
180°	*17.7*	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0	5005.0
2.5°	4977.2	4993.2	4918.1	4885.2	4790.8	4744.4	4871.7	4921.5	4828.7	4784.9
5°	4873.4	4904.6	4838.9	4773.9	4711.5	4591.8	4669.3	4547.9	4549.6	4558.9
7.5°	5014.3	4812.7	4687.1	4491.4	4492.3	4405.4	4368.3	4259.5	4265.4	4278.1
10°	4892.0	4694.6	4567.3	4426.5	4350.6	4160.0	4042.8	4025.9	3957.6	3895.2
12.5°	4722.5	4636.5	4353.1	4262.9	4083.3	3826.0	3712.2	3669.2	3546.9	3519.1
15°	4693.0	4454.3	4266.3	4011.6	3786.4	3518.2	3302.4	3264.4	3128.6	3116.0
17.5°	4651.6	4348.9	4102.7	3726.5	3450.8	3139.6	2853.7	2692.7	2526.5	2549.3
20°	4471.2	4128.0	3851.3	3498.0	3125.3	2716.3	2380.6	2090.5	2003.7	1984.3
22.5°	4393.6	3988.8	3618.6	3165.7	2726.4	2195.1	1827.4	1604.8	1527.2	1480.0
25°	4205.5	3706.3	3358.9	2860.5	2217.0	1770.9	1384.7	1178.9	1114.0	1090.4
27.5°	3996.4	3607.6	3038.4	2499.5	1828.3	1346.7	1078.6	915.8	877.9	871.1
30°	3829.4	3373.2	2810.7	2077.0	1485.9	1052.4	878.7	796.1	763.2	762.3
32.5°	3614.4	3132.0	2511.3	1738.9	1169.7	885.5	769.9	723.6	682.2	699.1
35°	3384.2	2900.9	2236.4	1450.5	956.3	774.1	710.9	662.8	658.6	640.9
37.5°	3104.2	2579.7	1949.7	1211.8	829.8	720.2	661.1	637.5	639.2	625.7
40°	2914.4	2400.9	1668.0	1017.9	728.6	662.8	622.4	586.9	579.3	586.9
42.5°	2690.1	2174.9	1426.9	866.9	667.9	608.9	564.2	544.8	531.3	541.4
45°	2561.1	1988.5	1200.0	750.5	612.2	549.0	513.6	484.1	468.9	470.6
47.5°	2362.1	1808.0	1012.0	681.4	557.4	506.0	459.6	413.2	401.4	401.4
50°	2200.2	1558.4	867.8	629.1	508.5	449.5	398.0	362.6	339.8	353.3
52.5°	*2029.0*	*1332.4*	*763.2*	*577.7*	*471.4*	*404.8*	*355.0*	*316.2*	*290.1*	*284.2*
55°	1873.0	1146.9	707.5	541.4	414.9	360.9	307.0	276.6	253.8	250.5
57.5°	1724.5	1002.7	656.1	497.5	373.6	315.4	272.4	245.4	242.9	247.1
60°	1497.7	864.4	615.6	442.7	332.3	273.2	237.0	218.4	223.5	228.5
62.5°	1317.2	782.6	586.1	398.9	287.6	236.1	210.0	194.8	203.2	208.3
65°	1083.6	706.7	547.3	356.7	249.6	202.4	178.8	177.1	184.7	189.7
67.5°	891.4	656.1	495.9	314.6	217.6	168.7	155.2	157.7	165.3	163.6
70°	716.8	589.5	431.8	266.5	179.6	138.3	133.2	131.6	134.1	136.6
72.5°	595.4	532.1	376.1	231.1	151.0	118.1	110.5	107.9	105.4	109.6
75°	492.5	480.7	326.4	194.0	122.3	96.1	84.3	80.1	73.4	75.9
77.5°	432.6	403.1	264.8	155.2	97.0	72.5	56.5	48.1	43.9	46.4
80°	375.3	333.9	223.5	123.1	74.2	46.4	27.0	16.0	12.6	12.6
82.5°	312.0	274.9	191.4	101.2	53.1	26.1	5.9	0.8	0.0	0.0
85°	266.5	233.6	162.8	85.2	44.7	21.9	8.4	1.7	0.8	0.0
87.5°	223.5	196.5	138.3	74.2	40.5	21.1	7.6	2.5	1.7	1.7
90°	192.3	171.2	126.5	66.6	36.3	20.2	8.4	3.4	2.5	2.5
92.5°	173.7	152.6	114.7	59.9	33.7	18.6	7.6	4.2	3.4	4.2
95°	161.1	139.1	103.7	57.3	32.0	19.4	8.4	5.9	4.2	5.1
97.5°	145.9	129.0	93.6	51.4	28.7	16.9	8.4	5.9	4.2	3.4
100°	137.5	120.6	85.2	49.8	29.5	18.6	9.3	6.7	5.9	5.1
102.5°	131.6	115.5	80.1	47.2	29.5	19.4	11.0	7.6	6.7	5.9
105°	126.5	109.6	74.2	44.7	27.0	17.7	10.1	7.6	5.9	5.9
107.5°	121.4	104.6	69.2	42.2	26.1	17.7	10.1	7.6	5.9	5.1
110°	116.4	97.8	63.2	39.6	25.3	16.0	10.1	7.6	5.1	6.7

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

Scaled Data Report

REPORT NUMBER: P979164
CATALOG NUMBER: WPLLED38S-140W-3500K

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	111.3	89.4	58.2	37.1	24.5	15.2	8.4	6.7	4.2	4.2
115°	103.7	78.4	54.0	34.6	22.8	14.3	8.4	5.9	4.2	4.2
117.5°	95.3	69.2	48.9	33.7	21.9	13.5	8.4	5.9	4.2	4.2
120°	89.4	62.4	45.5	31.2	20.2	12.6	9.3	5.1	4.2	3.4
122.5°	79.3	56.5	42.2	30.4	21.1	11.8	8.4	5.1	4.2	3.4
125°	69.2	49.8	39.6	29.5	20.2	11.8	7.6	5.1	3.4	3.4
127.5°	62.4	47.2	37.1	29.5	19.4	12.6	8.4	4.2	3.4	3.4
130°	56.5	43.9	36.3	27.8	18.6	12.6	8.4	5.1	3.4	3.4
132.5°	51.4	43.0	35.4	28.7	18.6	11.8	9.3	5.1	4.2	2.5
135°	48.9	39.6	32.9	27.0	17.7	11.8	9.3	5.9	4.2	3.4
137.5°	44.7	38.8	33.7	27.0	18.6	12.6	9.3	5.9	5.1	4.2
140°	43.0	37.1	32.0	26.1	17.7	12.6	10.1	5.9	4.2	4.2
142.5°	40.5	35.4	32.0	25.3	18.6	13.5	11.0	6.7	5.1	5.1
145°	38.8	35.4	31.2	24.5	16.9	13.5	10.1	6.7	5.1	5.1
147.5°	35.4	33.7	28.7	22.8	16.9	11.8	9.3	5.1	4.2	4.2
150°	36.3	31.2	27.8	22.8	16.9	13.5	11.0	5.9	4.2	4.2
152.5°	32.9	31.2	27.8	22.8	16.0	13.5	10.1	6.7	4.2	4.2
155°	31.2	29.5	27.8	22.8	16.0	12.6	10.1	5.9	4.2	4.2
157.5°	30.4	28.7	26.1	22.8	16.9	13.5	9.3	5.9	4.2	3.4
160°	30.4	28.7	26.1	22.8	16.0	13.5	10.1	6.7	4.2	4.2
162.5°	28.7	27.0	25.3	21.9	16.0	13.5	10.1	5.9	4.2	4.2
165°	28.7	27.0	24.5	20.2	15.2	11.8	8.4	5.1	3.4	2.5
167.5°	29.5	27.0	25.3	21.9	15.2	12.6	8.4	5.1	3.4	2.5
170°	29.5	27.0	26.1	21.9	16.0	12.6	8.4	4.2	2.5	2.5
172.5°	29.5	27.8	25.3	21.9	16.0	12.6	8.4	4.2	3.4	2.5
175°	30.4	27.8	25.3	21.9	16.0	11.8	8.4	4.2	2.5	2.5
177.5°	29.5	27.0	25.3	21.9	16.0	11.8	8.4	4.2	2.5	2.5
180°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7

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

Lumark

Report Number: SP1-2407-168-2

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 3500k

Data in this report applies to families of products including LSDL-92S-100W 3500k.

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

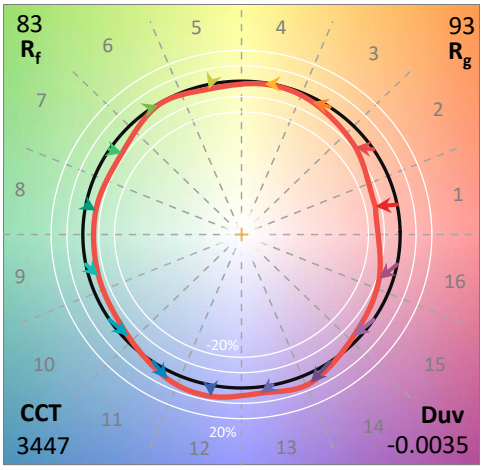
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2407-168-2
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 3500k**
Description:	Lumark Wallpack 100W

Spectral Parameters

CCT (K):	3447	CRI (Ra):	81.3		
CIE u':	0.2387	R1:	80.7	R9:	-0.6
CIE v':	0.5076	R2:	93.3	R10:	84.3
Duv:	-0.0035	R3:	92.2	R11:	76.0
CIE x:	0.4046	R4:	77.2	R12:	69.4
CIE y:	0.3824	R5:	81.3	R13:	84.3
CIE z:	0.2130	R6:	90.3	R14:	96.4
Peak Wavelength (nm):	597	R7:	79.5	R15:	73.7
Dominant Wavelength (nm):	582	R8:	55.9		
Purity:	36.18615				

Rf:	82.6
Rg:	93



Test Conditions

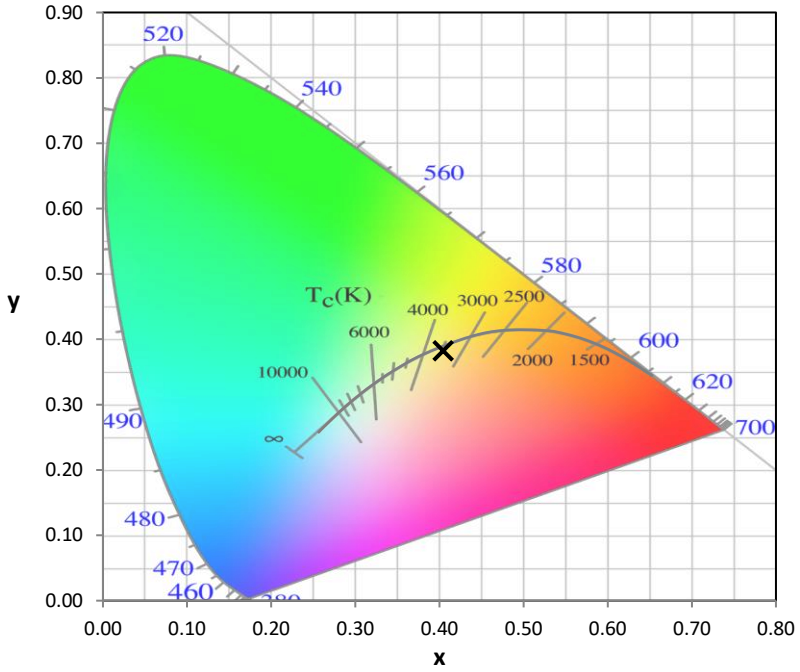
Stabilization Time:	20M
Operation Time:	1H 20M
Sphere Temperature (°C):	24.2

REPORT NUMBER: SP1-2407-168-2

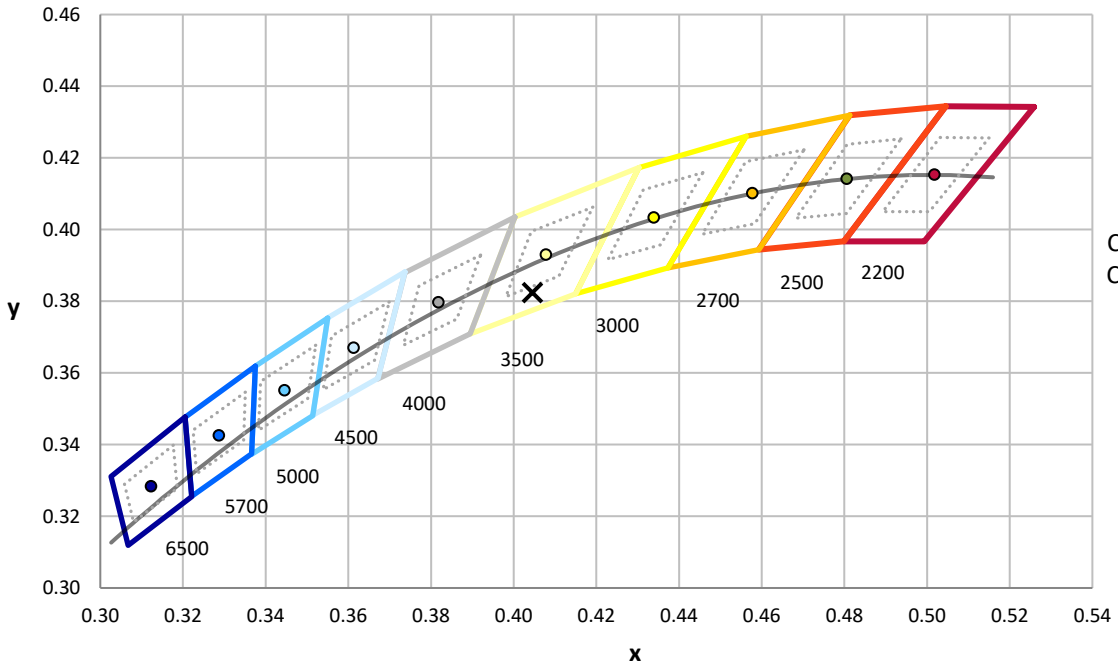
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2407-168-2

CIE 1931 Chromaticity Diagram



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

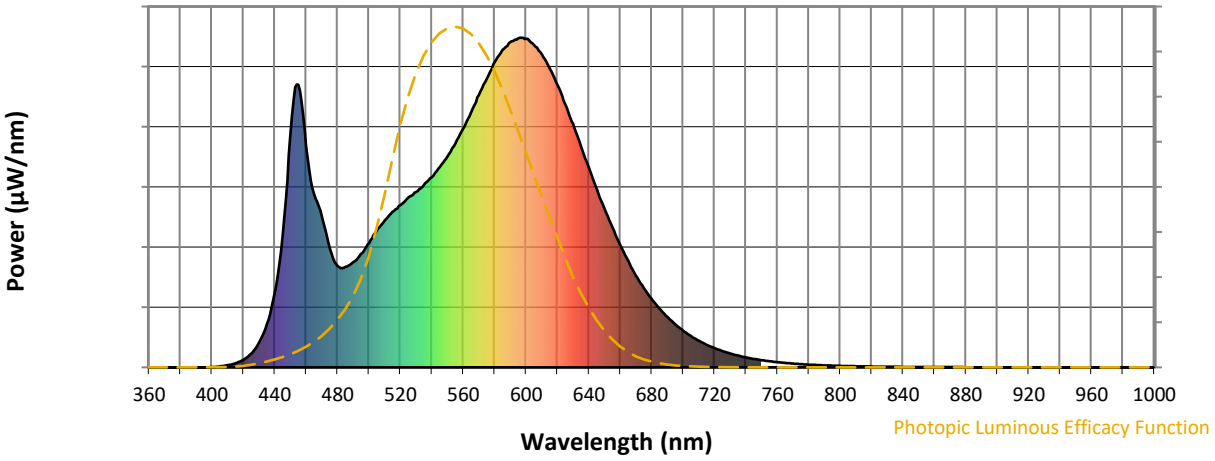


CCT = 3447K
CIE x = 0.4046
CIE y = 0.3824
Duv = -0.0035

Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2407-168-2

Photopic Flux vs. Wavelength

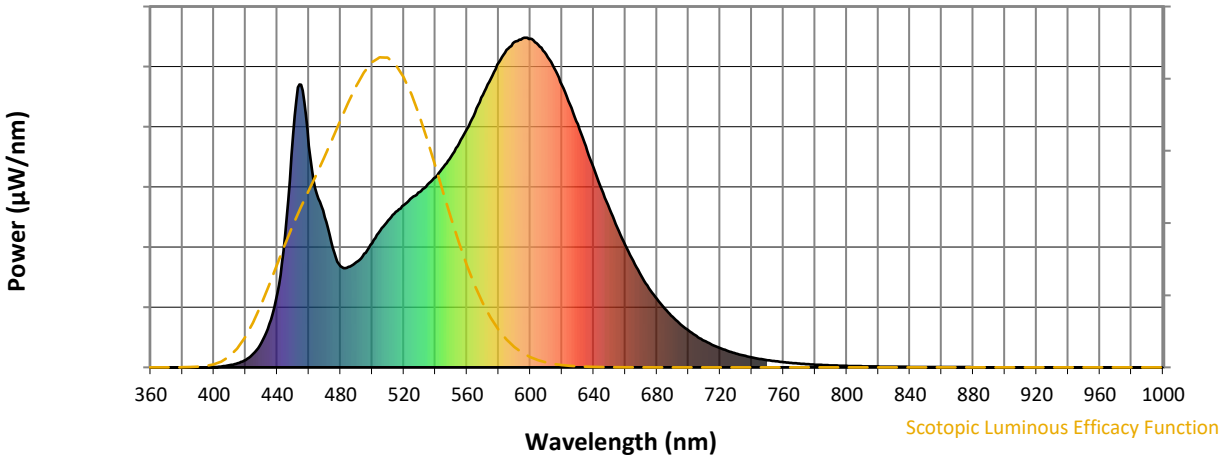


Photopic Lumens: NR

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	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-2

Scotopic Flux vs. Wavelength

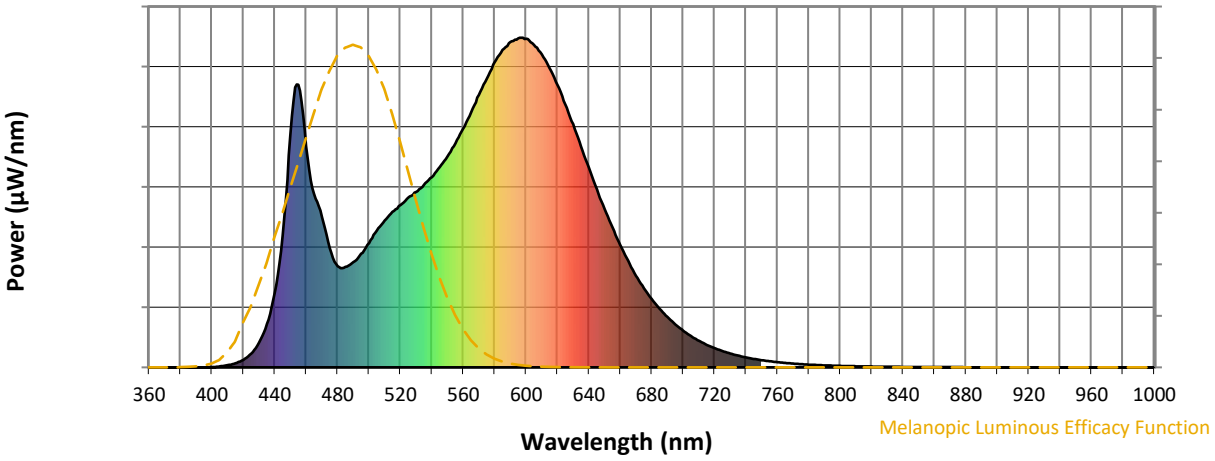


Scotopic Lumens: NR **S/P: 1.56**

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	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.22**

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	319	NR	620	856	NR	750	22	NR	880	1	NR
365	0	NR	495	344	NR	625	798	NR	755	18	NR	885	0	NR
370	0	NR	500	377	NR	630	738	NR	760	16	NR	890	0	NR
375	0	NR	505	415	NR	635	671	NR	765	13	NR	895	0	NR
380	0	NR	510	445	NR	640	606	NR	770	11	NR	900	0	NR
385	0	NR	515	472	NR	645	541	NR	775	10	NR	905	0	NR
390	0	NR	520	492	NR	650	481	NR	780	8	NR	910	0	NR
395	0	NR	525	514	NR	655	424	NR	785	7	NR	915	0	NR
400	1	NR	530	532	NR	660	371	NR	790	6	NR	920	0	NR
405	3	NR	535	554	NR	665	323	NR	795	5	NR	925	0	NR
410	6	NR	540	577	NR	670	278	NR	800	4	NR	930	0	NR
415	12	NR	545	608	NR	675	240	NR	805	4	NR	935	0	NR
420	23	NR	550	640	NR	680	207	NR	810	3	NR	940	0	NR
425	42	NR	555	680	NR	685	178	NR	815	3	NR	945	0	NR
430	75	NR	560	725	NR	690	154	NR	820	3	NR	950	0	NR
435	132	NR	565	774	NR	695	131	NR	825	2	NR	955	0	NR
440	225	NR	570	826	NR	700	111	NR	830	2	NR	960	0	NR
445	400	NR	575	875	NR	705	95	NR	835	2	NR	965	0	NR
450	706	NR	580	925	NR	710	80	NR	840	1	NR	970	0	NR
455	858	NR	585	963	NR	715	68	NR	845	1	NR	975	0	NR
460	672	NR	590	987	NR	720	58	NR	850	1	NR	980	0	NR
465	526	NR	595	998	NR	725	49	NR	855	1	NR	985	0	NR
470	456	NR	600	997	NR	730	42	NR	860	1	NR	990	0	NR
475	363	NR	605	978	NR	735	36	NR	865	1	NR	995	0	NR
480	307	NR	610	950	NR	740	30	NR	870	1	NR	1000	0	NR
485	305	NR	615	908	NR	745	26	NR	875	1	NR			

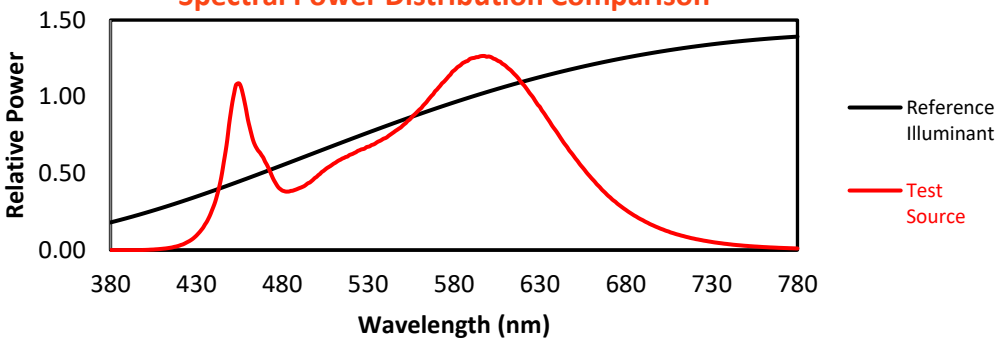
REPORT NUMBER: SP1-2407-168-2

TM-30-18

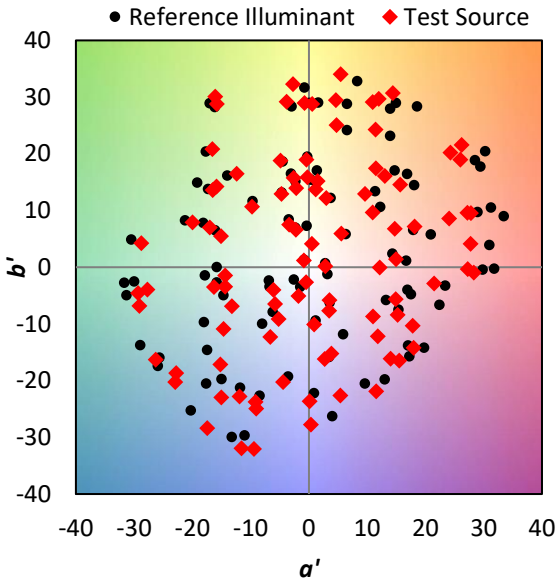
Summary

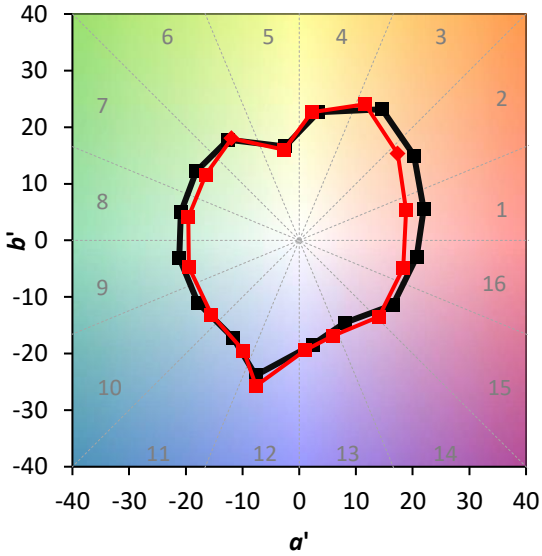
R_f = 82.6
R_g = 93
CIE R_a = 81.3
R_9 = -0.6

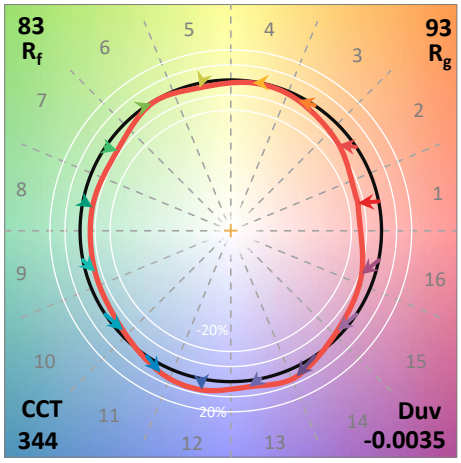
Spectral Power Distribution Comparison

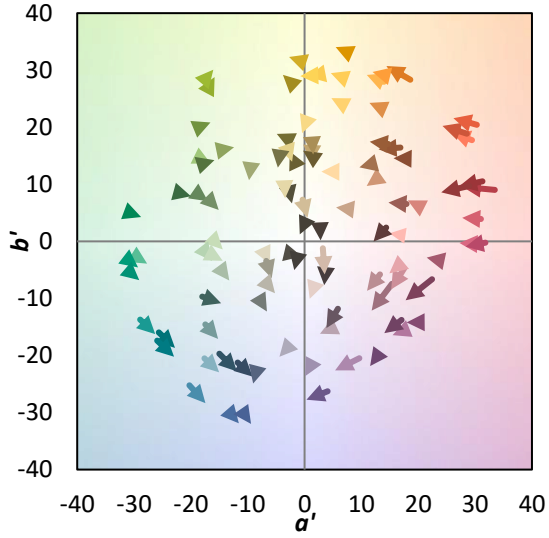


Color Vector Graphics







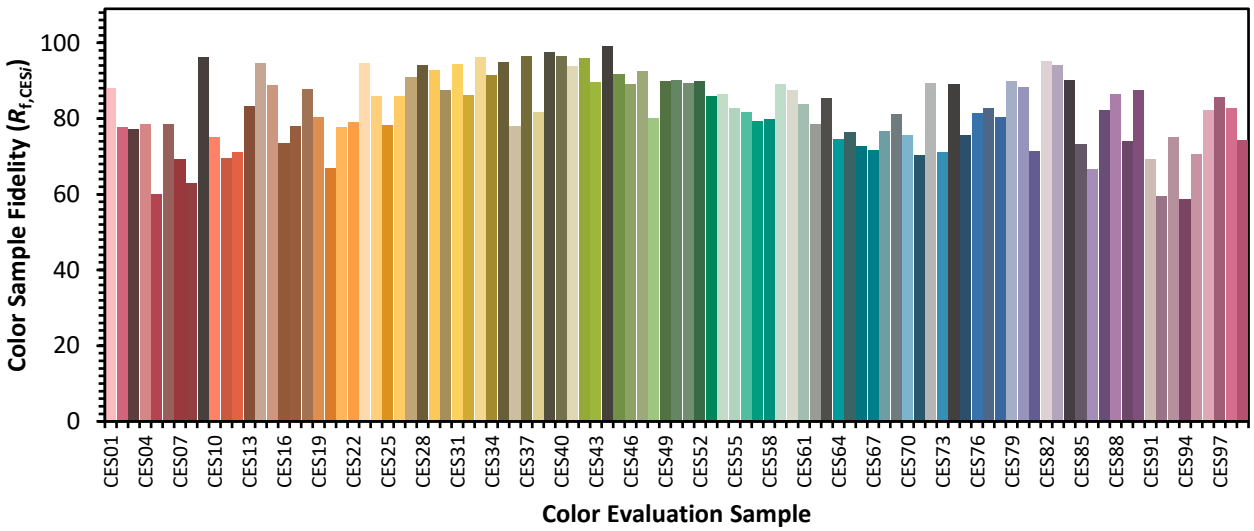


REPORT NUMBER: SP1-2407-168-2

TM-30-18

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

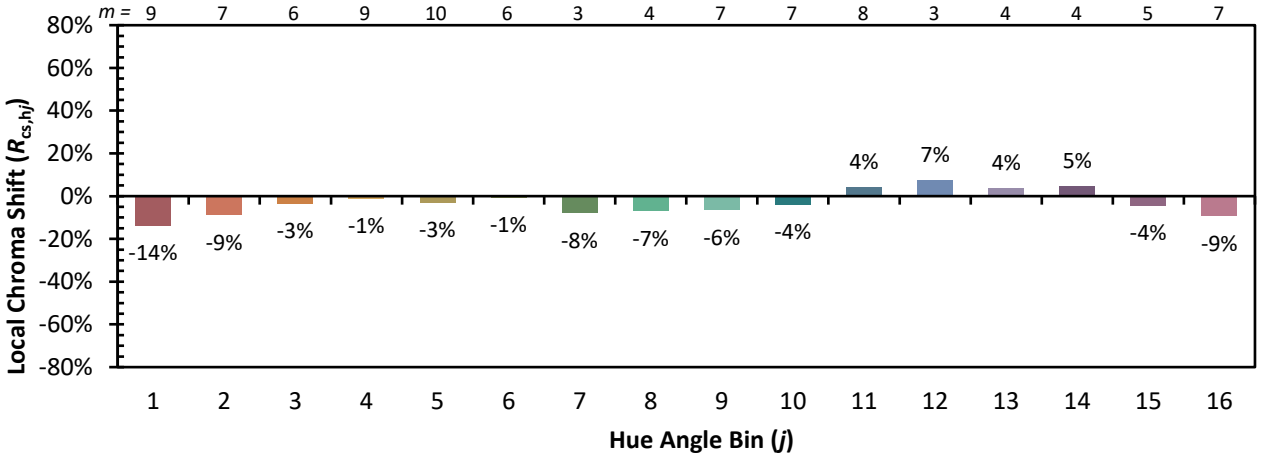
CES01 = 86	CES26 = 86	CES51 = 89	CES76 = 81
CES02 = 62	CES27 = 91	CES52 = 90	CES77 = 83
CES03 = 31	CES28 = 94	CES53 = 86	CES78 = 80
CES04 = 70	CES29 = 93	CES54 = 86	CES79 = 90
CES05 = 49	CES30 = 87	CES55 = 83	CES80 = 88
CES06 = 51	CES31 = 94	CES56 = 82	CES81 = 71
CES07 = 41	CES32 = 86	CES57 = 79	CES82 = 95
CES08 = 40	CES33 = 96	CES58 = 80	CES83 = 94
CES09 = 29	CES34 = 91	CES59 = 89	CES84 = 90
CES10 = 75	CES35 = 95	CES60 = 88	CES85 = 73
CES11 = 58	CES36 = 78	CES61 = 84	CES86 = 67
CES12 = 64	CES37 = 96	CES62 = 79	CES87 = 82
CES13 = 43	CES38 = 82	CES63 = 86	CES88 = 86
CES14 = 74	CES39 = 97	CES64 = 74	CES89 = 74
CES15 = 71	CES40 = 96	CES65 = 76	CES90 = 88
CES16 = 47	CES41 = 94	CES66 = 73	CES91 = 69
CES17 = 50	CES42 = 96	CES67 = 72	CES92 = 59
CES18 = 56	CES43 = 90	CES68 = 77	CES93 = 75
CES19 = 72	CES44 = 99	CES69 = 81	CES94 = 59
CES20 = 66	CES45 = 92	CES70 = 76	CES95 = 71
CES21 = 86	CES46 = 89	CES71 = 70	CES96 = 82
CES22 = 79	CES47 = 92	CES72 = 89	CES97 = 86
CES23 = 92	CES48 = 80	CES73 = 71	CES98 = 83
CES24 = 91	CES49 = 90	CES74 = 89	CES99 = 74
CES25 = 72	CES50 = 90	CES75 = 76	

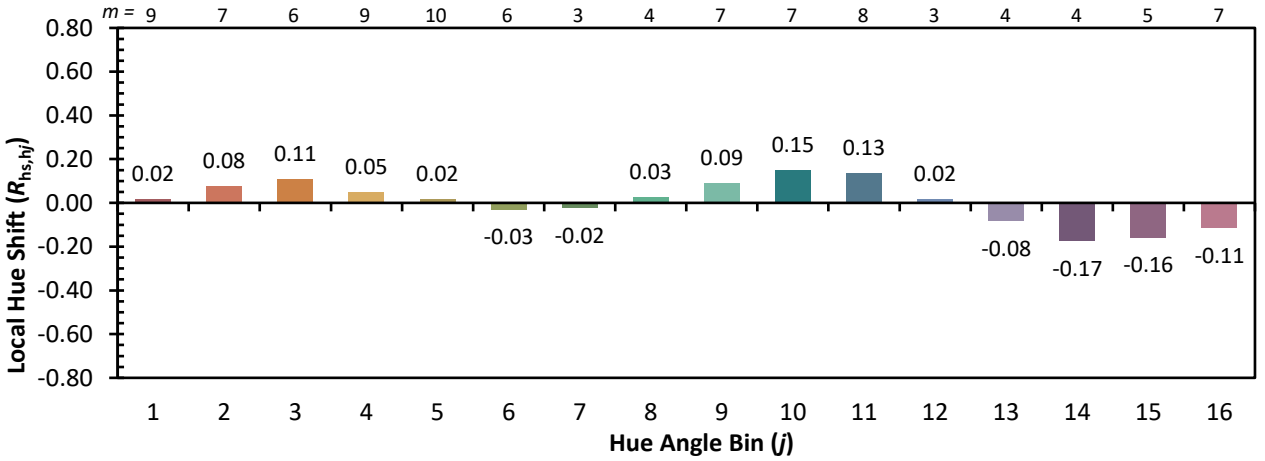


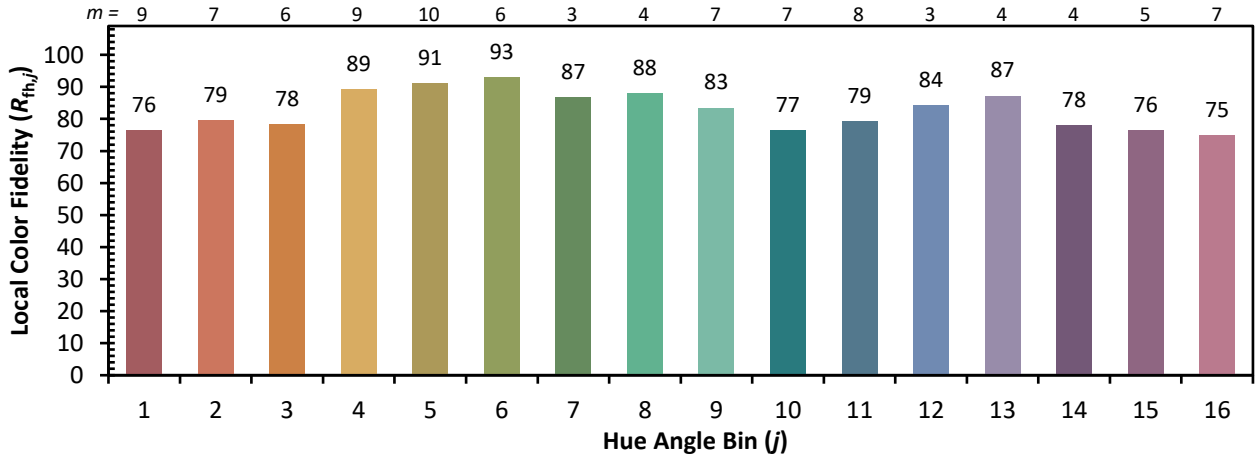
REPORT NUMBER: SP1-2407-168-2

TM-30-18

Color Rendition by Hue-Angle Bin







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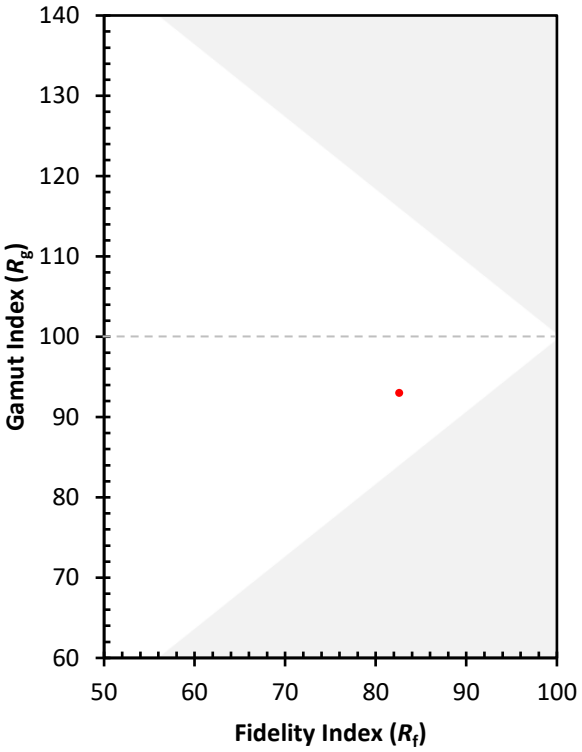
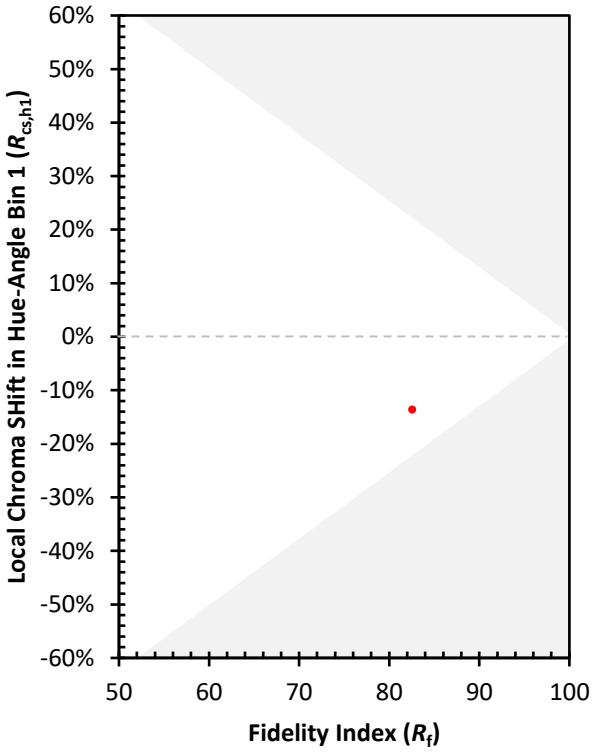
Measure Comparisons





(END OF REPORT)