

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: P979123

Luminaire Tested: **WPSLED15S-50W-3000K**

Issue Date: 03/31/2025



Test Information

Test Method: LM-79-08
Report Number: P979123
Test Lab: Cooper Lighting Solutions
Issue Date: 03/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: WPSLED15S-50W-3000K
Description: LUMARK WALL PACK LED SMALL 80CRI CCT AND LUMEN SELECTIVE FIXTURE
OPERATING @50W-3000K
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

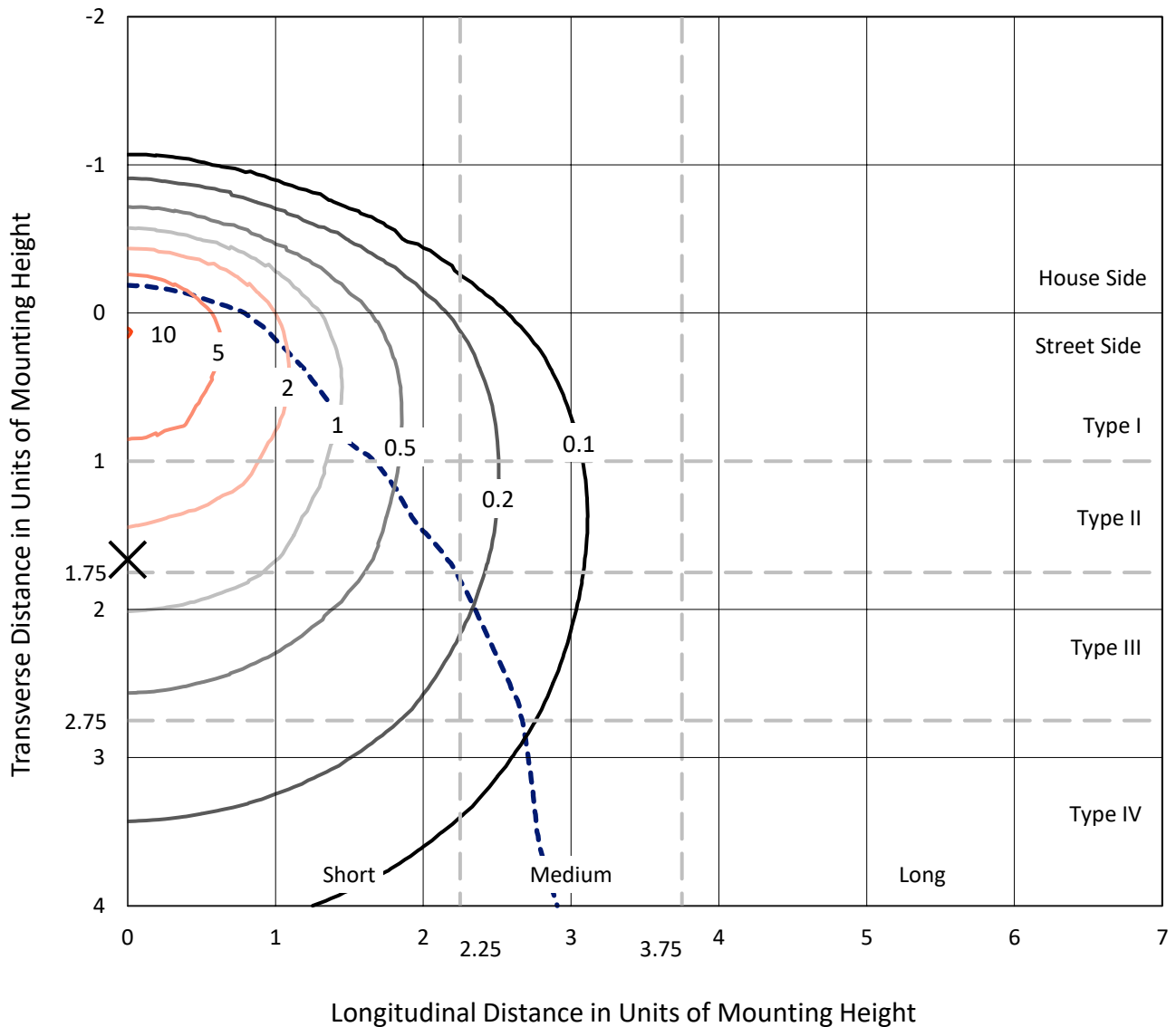
Lumens per Lamp: N/A
Luminaire Lumens: 6715.6 lumens
Efficiency: N/A
Efficacy: 133.0 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.61' x L: 0.12' x H: 0.44')
IES Classification: Type IV - Short
BUG Rating: B2 - U3 - G3

Input Watts (W): 50.5
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

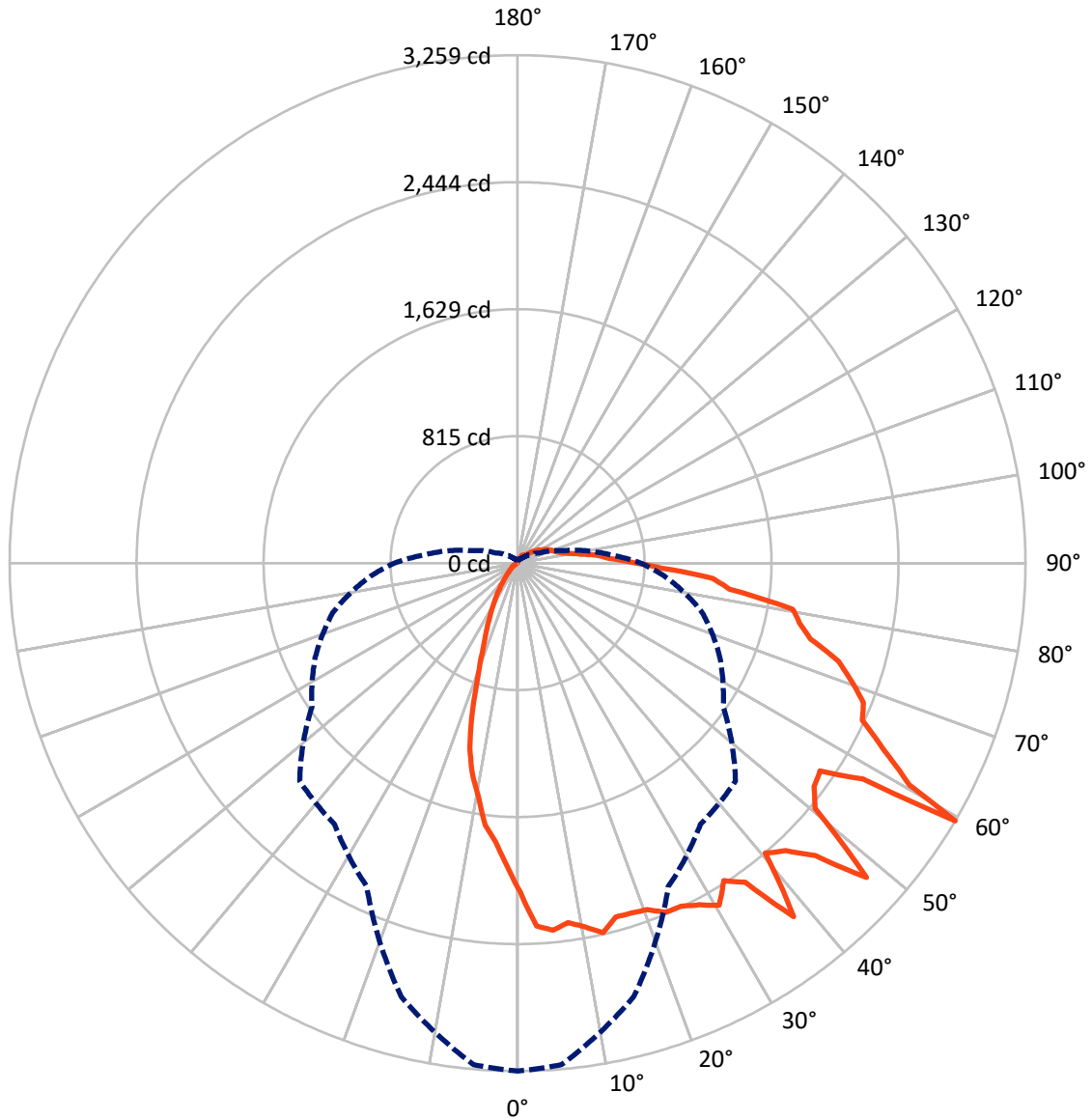
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 10.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 59-Deg Vertical

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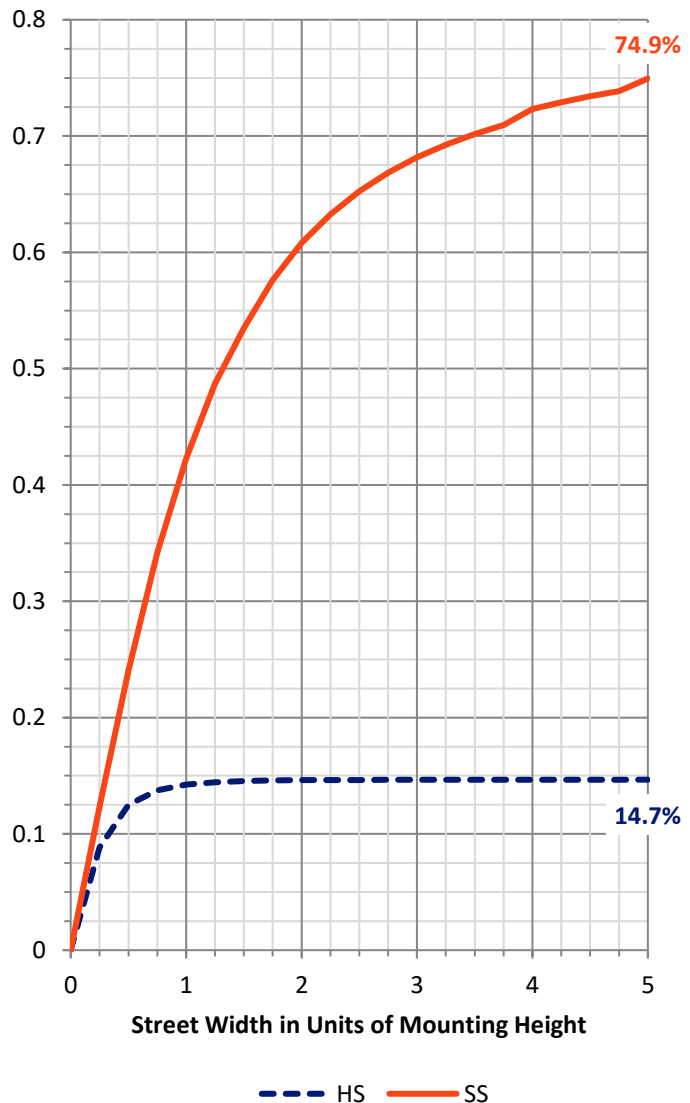
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	996.7	8.1	1004.7
	% Fixture	14.8	0.1	15.0
Street Side	Lumens	5314.5	396.4	5710.9
	% Fixture	79.1	5.9	85.0
Total	Lumens	6311.2	404.5	6715.6
	% Fixture	94.0	6.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	196.5	2.9
10°-20°	523.5	7.8
20°-30°	734.5	10.9
30°-40°	870.4	13.0
40°-50°	944.2	14.1
50°-60°	943.3	14.0
60°-70°	922.3	13.7
70°-80°	738.2	11.0
80°-90°	438.3	6.5
90°-100°	178.6	2.7
100°-110°	92.7	1.4
110°-120°	59.7	0.9
120°-130°	35.1	0.5
130°-140°	19.5	0.3
140°-150°	12.3	0.2
150°-160°	5.3	0.1
160°-170°	1.3	0.0
170°-180°	0.1	0.0
0°-90°	6311.2	94.0
0°-180°	6715.6	100.0



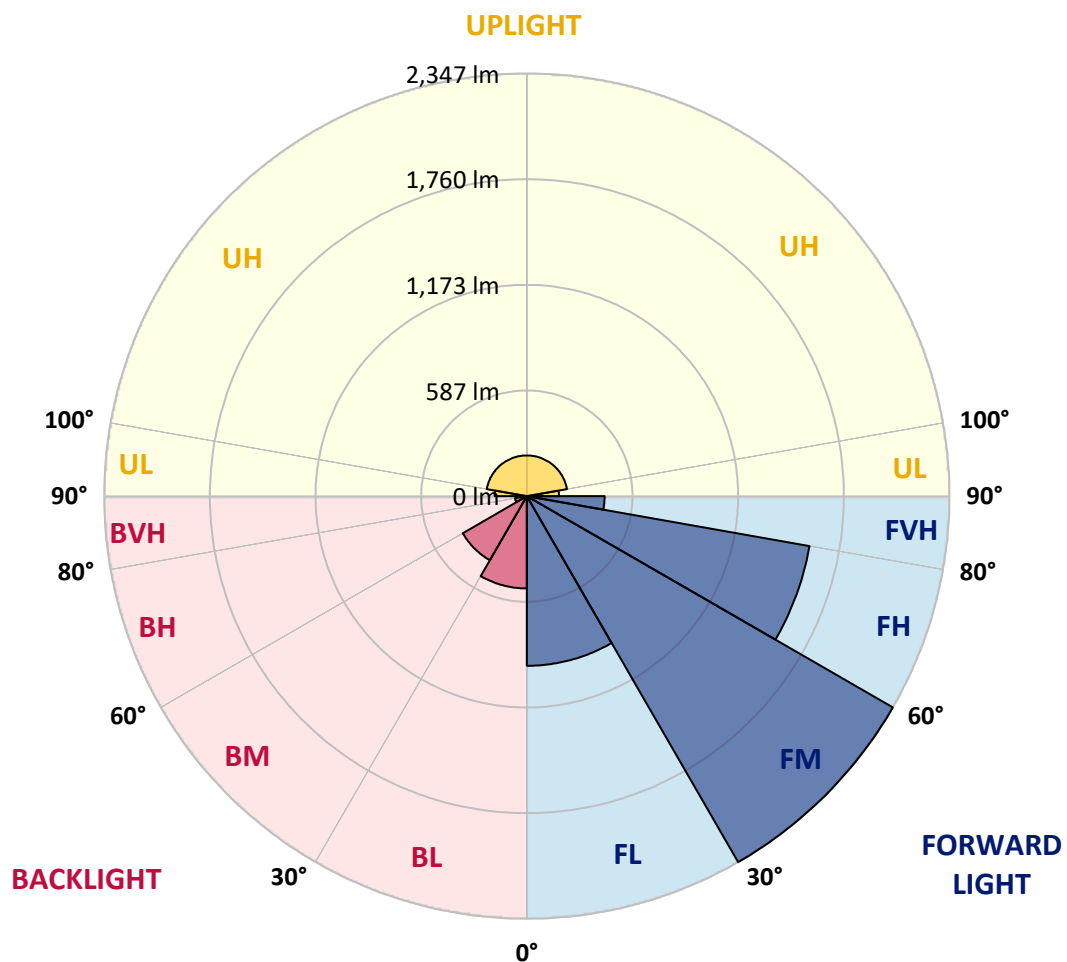
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	941.8	14.0			
FM (30°-60°)	2346.8	34.9			
FH (60°-80°)	1594.0	23.7			G1/1800
FVH (80°-90°)	432.0	6.4			G3/500
BL (0°-30°)	512.7	7.6	B2/1000		
BM (30°-60°)	411.1	6.1	B1/1000		
BH (60°-80°)	66.6	1.0	B0/110		G0/110
BVH (80°-90°)	6.3	0.1			G0/10
UL (90°-100°)	178.6	2.7		U3/500	
UH (100°-180°)	225.9	3.4		U3/500	

BUG Rating: B2-U3-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4
2.5°	2331.2	2331.2	2329.6	2327.9	2327.9	2324.5	2316.1	2295.9	2242.0	2155.3	2111.6
5°	2365.7	2374.2	2351.4	2306.8	2267.3	2259.7	2296.7	2303.5	2289.2	2182.3	2097.3
7.5°	2327.9	2326.2	2316.1	2276.5	2311.9	2369.1	2234.5	2245.4	2261.4	2168.8	2048.5
10°	2373.3	2375.8	2370.0	2319.5	2301.8	2230.3	2311.0	2194.1	2230.3	2139.4	1994.6
12.5°	2433.1	2439.8	2412.0	2371.6	2295.9	2261.4	2207.5	2266.4	2193.2	2121.7	1960.1
15°	2355.6	2370.8	2308.5	2263.9	2373.3	2263.9	2220.2	2201.6	2145.2	2106.5	1936.5
17.5°	2360.7	2380.1	2371.6	2334.6	2251.3	2316.9	2215.9	2166.3	2133.5	2095.6	1933.2
20°	2372.5	2375.8	2329.6	2282.4	2323.7	2221.0	2225.2	2164.6	2138.5	2066.1	1897.0
22.5°	2433.1	2441.5	2374.2	2312.7	2252.1	2287.5	2247.9	2149.5	2111.6	2033.3	1848.2
25°	2438.1	2441.5	2396.0	2332.1	2289.2	2233.6	2169.7	2102.3	2067.8	1983.7	1796.0
27.5°	2482.7	2472.6	2369.1	2328.7	2293.4	2205.8	2193.2	2093.1	2012.3	1917.2	1753.1
30°	2548.4	2528.2	2495.4	2370.8	2274.9	2220.2	2159.6	2082.1	1958.4	1855.7	1709.3
32.5°	2428.9	2413.7	2380.1	2439.0	2329.6	2206.7	2093.1	1990.4	1921.4	1785.0	1655.4
35°	2514.7	2471.8	2354.8	2341.3	2390.2	2173.0	2067.0	1962.6	1863.3	1727.0	1602.4
37.5°	2878.3	2840.4	2598.9	2366.6	2306.0	2221.0	2057.7	1991.2	1803.6	1662.2	1525.8
40°	2447.4	2429.7	2432.2	2612.3	2266.4	2208.4	2014.0	1961.8	1742.1	1590.6	1451.8
42.5°	2521.4	2486.9	2391.8	2360.7	2439.8	2144.4	2001.3	1896.1	1669.7	1507.3	1358.3
45°	2677.1	2646.0	2491.1	2364.9	2266.4	2152.8	1958.4	1816.2	1616.7	1409.7	1271.7
47.5°	3013.8	2968.3	2603.9	2375.0	2207.5	2176.4	1957.6	1763.2	1549.4	1316.3	1177.4
50°	2472.6	2450.8	2603.1	2619.1	2163.8	2031.6	1921.4	1692.5	1488.8	1217.8	1076.4
52.5°	2381.7	2364.1	2339.7	2372.5	2321.1	1972.7	1879.3	1618.4	1411.4	1139.5	995.6
55°	2354.8	2322.0	2279.9	2210.1	2258.9	1957.6	1754.7	1552.8	1339.0	1059.6	920.7
57.5°	2613.2	2541.6	2359.0	2200.8	2041.7	2056.9	1664.7	1488.8	1270.0	988.0	835.7
59°	3258.7	3230.9	2880.0	2289.2	2045.9	1976.9	1610.8	1432.4	1227.1	943.4	791.1
60°	2887.5	2850.5	3045.8	2465.1	2079.6	1897.8	1585.6	1403.8	1204.3	920.7	770.1
62.5°	2635.9	2611.5	2547.5	2556.8	2270.6	1838.9	1620.9	1339.0	1117.7	855.1	710.3
65°	2429.7	2416.2	2391.8	2303.5	2229.4	1886.0	1557.0	1293.5	1053.7	773.4	611.0
67.5°	2393.5	2377.5	2316.1	2206.7	2039.2	1859.9	1453.5	1201.0	968.7	688.4	515.9
70°	2274.0	2265.6	2197.4	2118.3	1955.9	1721.1	1423.2	1151.3	899.7	600.1	419.1
72.5°	2152.0	2136.0	2090.5	2015.6	1884.4	1602.4	1336.5	1089.9	800.4	507.5	335.0
75°	1939.9	1931.5	1906.2	1852.4	1725.3	1503.1	1229.6	967.0	707.8	424.2	256.7
77.5°	1849.8	1836.4	1762.3	1687.4	1560.3	1351.6	1092.4	867.7	614.4	334.1	188.5
80°	1790.1	1781.7	1717.7	1601.6	1466.9	1238.0	1000.7	777.6	527.7	254.2	134.7
82.5°	1368.4	1378.5	1328.1	1302.0	1215.3	1054.5	839.1	667.4	427.5	182.6	97.6
85°	1256.5	1241.4	1204.3	1155.5	1076.4	902.2	694.3	542.8	333.3	130.4	70.7
87.5°	923.2	914.8	909.8	904.7	837.4	714.5	552.1	414.1	255.0	92.6	51.3
90°	725.5	724.6	714.5	678.3	637.1	552.1	420.0	305.5	181.8	67.3	40.4
92.5°	582.4	584.1	568.9	547.0	500.8	430.9	319.0	222.2	135.5	50.5	34.5
95°	517.6	508.3	486.4	450.3	411.5	359.4	253.3	175.1	108.6	42.1	30.3
97.5°	410.7	408.2	398.9	385.5	355.2	302.1	208.7	144.8	88.4	36.2	27.8
100°	340.8	340.8	331.6	313.1	292.0	260.1	180.9	126.2	73.2	33.7	26.9
102.5°	292.9	292.0	288.7	271.8	252.5	212.1	157.4	111.1	60.6	32.0	26.9
105°	264.3	262.6	257.5	243.2	234.8	184.3	136.3	95.9	52.2	32.0	26.1
107.5°	247.4	247.4	244.1	228.9	208.7	164.1	120.3	80.8	46.3	31.1	26.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	233.1	231.4	225.5	212.9	189.4	149.8	106.0	69.0	42.9	31.1	25.2
112.5°	219.7	219.7	212.1	196.9	169.2	133.0	93.4	59.8	41.2	30.3	24.4
115°	204.5	202.8	195.3	176.7	152.3	117.8	82.5	53.9	39.6	28.6	21.9
117.5°	182.6	182.6	176.7	161.6	135.5	104.4	74.9	50.5	38.7	26.9	20.2
120°	165.8	165.8	159.9	143.9	120.3	92.6	66.5	47.1	37.0	25.2	18.5
122.5°	150.6	150.6	143.1	127.1	104.4	80.8	58.1	44.6	35.3	23.6	16.0
125°	132.1	133.0	126.2	111.1	90.1	71.5	53.0	42.9	34.5	21.0	14.3
127.5°	117.8	116.1	109.4	95.1	78.3	62.3	49.7	41.2	32.8	19.4	12.6
130°	99.3	98.5	92.6	80.8	69.0	58.9	48.8	39.6	30.3	16.8	10.9
132.5°	85.0	83.3	78.3	70.7	62.3	56.4	47.1	37.9	27.8	14.3	9.3
135°	71.5	70.7	67.3	64.8	58.1	53.0	45.4	35.3	25.2	12.6	7.6
137.5°	63.1	63.1	61.4	59.8	55.5	50.5	42.9	33.7	22.7	10.1	5.9
140°	58.9	58.9	59.8	58.9	53.9	48.0	41.2	32.0	20.2	9.3	5.0
142.5°	59.8	59.8	59.8	57.2	52.2	46.3	38.7	29.5	17.7	7.6	4.2
145°	62.3	62.3	59.8	55.5	49.7	42.9	36.2	26.1	15.1	5.9	3.4
147.5°	60.6	59.8	56.4	50.5	44.6	39.6	32.0	21.9	12.6	5.0	3.4
150°	56.4	55.5	50.5	45.4	40.4	34.5	26.9	18.5	10.1	4.2	2.5
152.5°	49.7	48.8	44.6	38.7	33.7	28.6	22.7	14.3	7.6	3.4	2.5
155°	37.9	37.9	34.5	30.3	26.1	22.7	17.7	11.8	5.9	2.5	1.7
157.5°	27.8	27.8	26.1	23.6	21.0	18.5	14.3	9.3	4.2	1.7	1.7
160°	22.7	22.7	21.9	19.4	16.8	15.1	10.9	7.6	3.4	1.7	1.7
162.5°	19.4	18.5	17.7	16.0	13.5	10.9	7.6	5.0	3.4	1.7	1.7
165°	15.1	15.1	14.3	12.6	10.1	8.4	5.9	4.2	2.5	1.7	1.7
167.5°	10.9	10.9	10.1	8.4	6.7	5.0	3.4	2.5	2.5	1.7	1.7
170°	6.7	6.7	5.9	5.0	3.4	3.4	2.5	2.5	1.7	1.7	1.7
172.5°	2.5	2.5	1.7	1.7	2.5	2.5	1.7	1.7	1.7	1.7	1.7
175°	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.8
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°	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4	2112.4
2.5°	2071.2	2012.3	2000.5	1990.4	1988.7	1970.2	1955.0	1939.9	1945.8	1942.4
5°	2022.4	1979.5	1955.9	1908.8	1875.1	1831.3	1820.4	1796.0	1789.3	1791.8
7.5°	1965.1	1929.8	1855.7	1801.9	1777.5	1809.4	1790.1	1726.1	1703.4	1694.1
10°	1914.6	1857.4	1772.4	1774.9	1694.1	1636.9	1598.2	1543.5	1511.5	1519.9
12.5°	1889.4	1796.0	1725.3	1652.9	1553.6	1438.3	1371.8	1361.7	1383.6	1388.6
15°	1875.1	1742.1	1694.1	1524.1	1376.0	1336.5	1322.2	1270.8	1218.6	1223.7
17.5°	1862.5	1701.7	1569.6	1381.1	1296.1	1209.4	1051.2	994.8	988.9	984.7
20°	1821.2	1658.0	1470.3	1300.3	1181.6	968.7	901.4	807.9	756.6	748.2
22.5°	1764.8	1593.2	1359.2	1220.3	976.3	825.6	683.4	627.8	595.9	589.1
25°	1709.3	1494.7	1269.1	1062.9	839.9	653.9	547.0	502.4	487.3	483.9
27.5°	1649.5	1402.1	1193.4	891.3	693.5	541.2	453.6	418.3	398.9	393.0
30°	1590.6	1303.6	1076.4	776.8	576.5	447.7	377.9	343.4	331.6	328.2
32.5°	1513.2	1215.3	936.7	667.4	476.3	378.7	312.2	281.9	268.5	267.6
35°	1437.5	1122.7	801.2	564.7	406.5	308.9	256.7	225.5	210.4	212.1
37.5°	1350.8	1036.0	701.1	470.5	331.6	255.8	203.7	181.8	168.3	167.5
40°	1270.0	954.4	616.1	397.2	273.5	202.0	165.0	140.5	133.0	132.1
42.5°	1177.4	853.4	533.6	335.8	224.7	166.6	131.3	112.8	106.0	106.0
45°	1067.2	733.9	440.2	268.5	179.3	133.0	104.4	89.2	82.5	81.6
47.5°	958.6	626.2	358.5	218.8	145.6	105.2	82.5	69.9	65.6	64.8
50°	854.2	540.3	297.9	176.7	120.3	82.5	64.0	55.5	50.5	50.5
52.5°	771.8	474.7	253.3	145.6	96.8	64.8	51.3	42.9	43.8	44.6
55°	704.4	418.3	208.7	122.0	76.6	50.5	38.7	35.3	37.9	37.9
57.5°	638.8	345.9	172.5	102.7	59.8	41.2	28.6	29.5	31.1	31.1
59°	600.1	308.9	154.0	93.4	52.2	34.5	23.6	25.2	24.4	24.4
60°	570.6	287.0	143.9	85.0	46.3	30.3	21.0	21.0	20.2	20.2
62.5°	500.8	228.9	121.2	69.0	35.3	19.4	13.5	12.6	10.9	11.8
65°	410.7	181.8	100.2	54.7	26.1	10.9	5.0	3.4	2.5	1.7
67.5°	331.6	146.4	80.8	42.1	17.7	3.4	0.0	0.0	0.0	0.0
70°	260.1	117.8	65.6	32.0	9.3	0.0	0.0	0.0	0.0	0.0
72.5°	201.1	95.9	53.0	21.9	2.5	0.0	0.0	0.0	0.0	0.0
75°	149.0	77.4	40.4	14.3	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	109.4	58.9	31.1	9.3	0.0	0.0	0.0	0.0	0.0	0.0
80°	83.3	46.3	23.6	5.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	64.0	36.2	17.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0
85°	48.0	27.8	13.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	37.0	22.7	10.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0
90°	29.5	17.7	8.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	25.2	15.1	6.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
95°	22.7	13.5	5.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	21.9	12.6	5.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
100°	21.0	11.8	4.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	21.0	11.8	4.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0
105°	21.0	10.9	3.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	21.0	10.1	3.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0



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 CATALOG NUMBER: WPSLED15S-50W-3000K

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	20.2	9.3	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	19.4	7.6	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
115°	16.8	5.9	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	14.3	4.2	2.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
120°	10.9	3.4	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	9.3	2.5	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
125°	8.4	1.7	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	7.6	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
130°	6.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	5.9	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
135°	5.0	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	4.2	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
140°	3.4	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	3.4	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
145°	3.4	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
147.5°	2.5	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
150°	2.5	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.7	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	1.7	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	1.7	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.8	0.8	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



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

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2407-168-1

Test Date: 08/08/2024

Luminaire Tested: LSDL-92S-100W 3000k

Data in this report applies to families of products including LSDL-92S-100W 3000k.

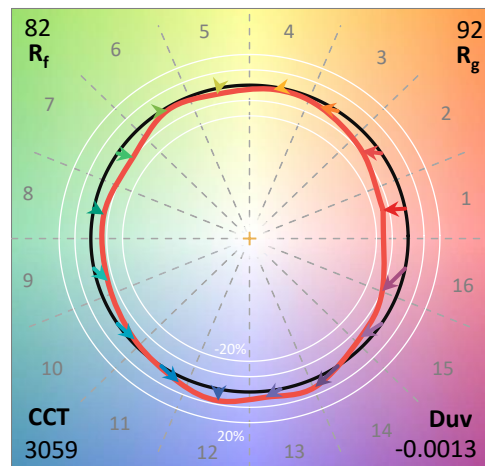
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-168-1
 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 3000k**
 Description: Lumark Wallpack 100W

Spectral Parameters

CCT (K): 3059
 CIE u': 0.2490
 CIE v': 0.5184
 Duv: -0.0013
 CIE x: 0.4310
 CIE y: 0.3988
 CIE z: 0.1702
 Peak Wavelength (nm): 600
 Dominant Wavelength (nm): 583
 Purity: 49.0643
 Rf: 81.8
 Rg: 91.9

CRI (Ra):	79.3		
R1:	78.1	R9:	-8.3
R2:	92.3	R10:	82.8
R3:	91.2	R11:	73.1
R4:	74.6	R12:	70.5
R5:	78.8	R13:	81.8
R6:	90.5	R14:	95.7
R7:	77.6	R15:	69.8
R8:	50.9		



Test Conditions

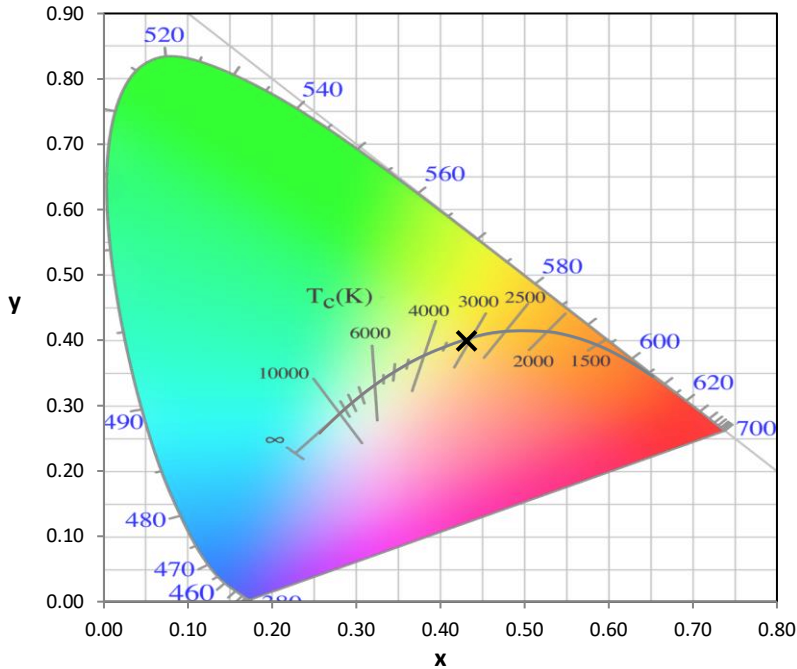
Stabilization Time: 51M
 Operation Time: 1H 51M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-168-1

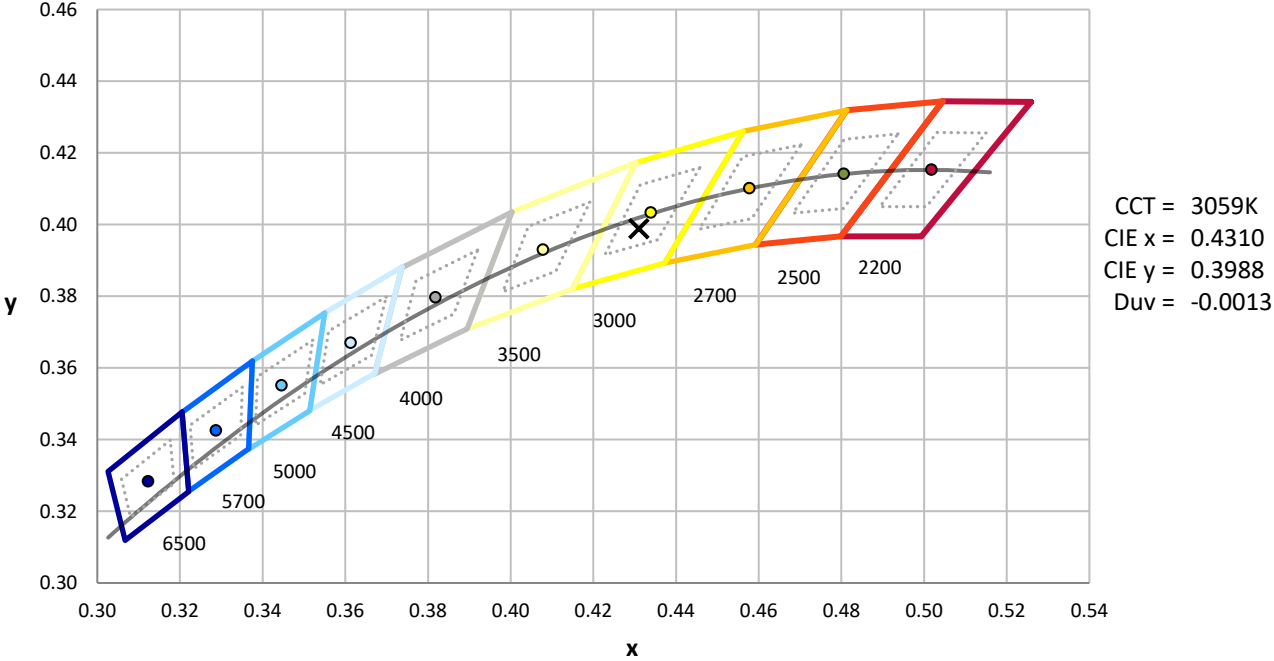
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



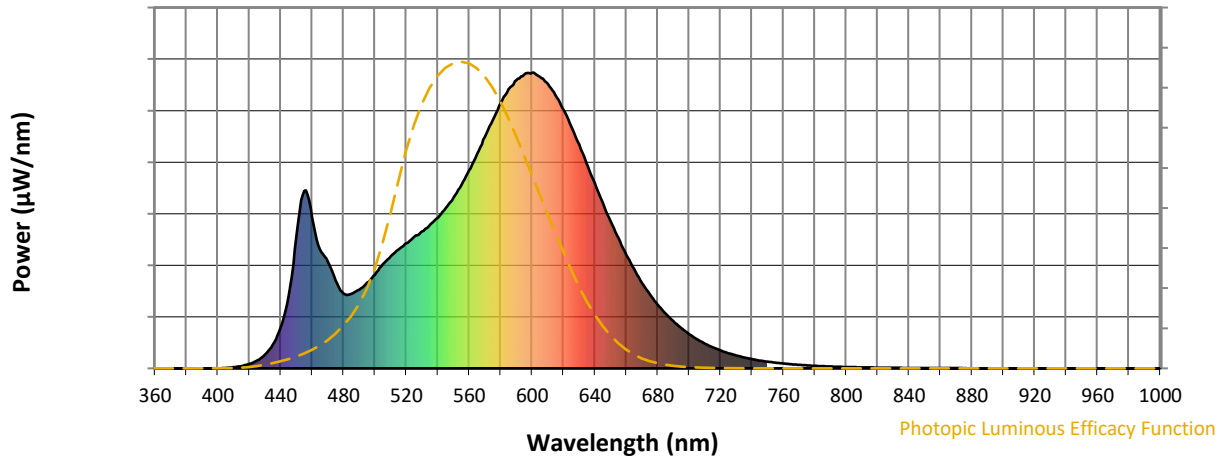
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

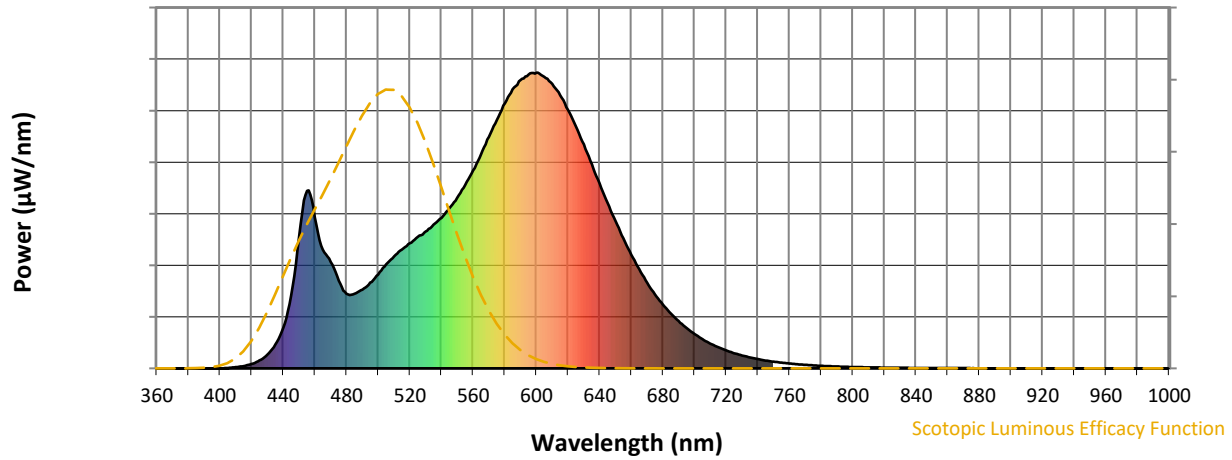


Photopic Lumens: NR

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	266	NR	620	875	NR	750	23	NR	880	0	NR
365	0	NR	495	290	NR	625	818	NR	755	19	NR	885	0	NR
370	0	NR	500	317	NR	630	758	NR	760	16	NR	890	0	NR
375	0	NR	505	352	NR	635	690	NR	765	14	NR	895	0	NR
380	0	NR	510	379	NR	640	625	NR	770	12	NR	900	0	NR
385	0	NR	515	402	NR	645	560	NR	775	10	NR	905	0	NR
390	0	NR	520	423	NR	650	498	NR	780	9	NR	910	0	NR
395	0	NR	525	445	NR	655	440	NR	785	7	NR	915	0	NR
400	0	NR	530	463	NR	660	385	NR	790	6	NR	920	0	NR
405	1	NR	535	486	NR	665	335	NR	795	5	NR	925	0	NR
410	4	NR	540	509	NR	670	289	NR	800	5	NR	930	0	NR
415	8	NR	545	542	NR	675	250	NR	805	4	NR	935	0	NR
420	15	NR	550	577	NR	680	216	NR	810	3	NR	940	0	NR
425	27	NR	555	620	NR	685	185	NR	815	3	NR	945	0	NR
430	46	NR	560	670	NR	690	160	NR	820	3	NR	950	0	NR
435	81	NR	565	725	NR	695	136	NR	825	2	NR	955	0	NR
440	139	NR	570	782	NR	700	116	NR	830	2	NR	960	0	NR
445	246	NR	575	840	NR	705	99	NR	835	2	NR	965	0	NR
450	446	NR	580	896	NR	710	84	NR	840	1	NR	970	0	NR
455	601	NR	585	944	NR	715	71	NR	845	1	NR	975	0	NR
460	511	NR	590	975	NR	720	61	NR	850	1	NR	980	0	NR
465	402	NR	595	994	NR	725	51	NR	855	1	NR	985	0	NR
470	359	NR	600	1000	NR	730	44	NR	860	1	NR	990	0	NR
475	297	NR	605	985	NR	735	37	NR	865	1	NR	995	0	NR
480	252	NR	610	962	NR	740	32	NR	870	1	NR	1000	0	NR
485	252	NR	615	923	NR	745	27	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-1

Scotopic Flux vs. Wavelength



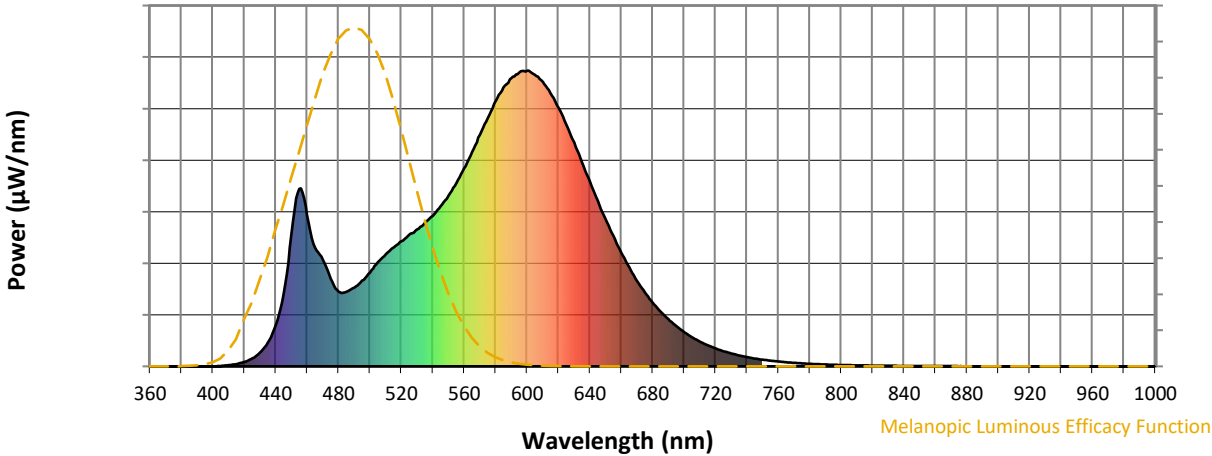
Scotopic Lumens: NR

S/P: 1.39

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	266	NR	620	875	NR	750	23	NR	880	0	NR
365	0	NR	495	290	NR	625	818	NR	755	19	NR	885	0	NR
370	0	NR	500	317	NR	630	758	NR	760	16	NR	890	0	NR
375	0	NR	505	352	NR	635	690	NR	765	14	NR	895	0	NR
380	0	NR	510	379	NR	640	625	NR	770	12	NR	900	0	NR
385	0	NR	515	402	NR	645	560	NR	775	10	NR	905	0	NR
390	0	NR	520	423	NR	650	498	NR	780	9	NR	910	0	NR
395	0	NR	525	445	NR	655	440	NR	785	7	NR	915	0	NR
400	0	NR	530	463	NR	660	385	NR	790	6	NR	920	0	NR
405	1	NR	535	486	NR	665	335	NR	795	5	NR	925	0	NR
410	4	NR	540	509	NR	670	289	NR	800	5	NR	930	0	NR
415	8	NR	545	542	NR	675	250	NR	805	4	NR	935	0	NR
420	15	NR	550	577	NR	680	216	NR	810	3	NR	940	0	NR
425	27	NR	555	620	NR	685	185	NR	815	3	NR	945	0	NR
430	46	NR	560	670	NR	690	160	NR	820	3	NR	950	0	NR
435	81	NR	565	725	NR	695	136	NR	825	2	NR	955	0	NR
440	139	NR	570	782	NR	700	116	NR	830	2	NR	960	0	NR
445	246	NR	575	840	NR	705	99	NR	835	2	NR	965	0	NR
450	446	NR	580	896	NR	710	84	NR	840	1	NR	970	0	NR
455	601	NR	585	944	NR	715	71	NR	845	1	NR	975	0	NR
460	511	NR	590	975	NR	720	61	NR	850	1	NR	980	0	NR
465	402	NR	595	994	NR	725	51	NR	855	1	NR	985	0	NR
470	359	NR	600	1000	NR	730	44	NR	860	1	NR	990	0	NR
475	297	NR	605	985	NR	735	37	NR	865	1	NR	995	0	NR
480	252	NR	610	962	NR	740	32	NR	870	1	NR	1000	0	NR
485	252	NR	615	923	NR	745	27	NR	875	1	NR			

REPORT NUMBER: SP1-2407-168-1

Melanopic Flux vs. Wavelength



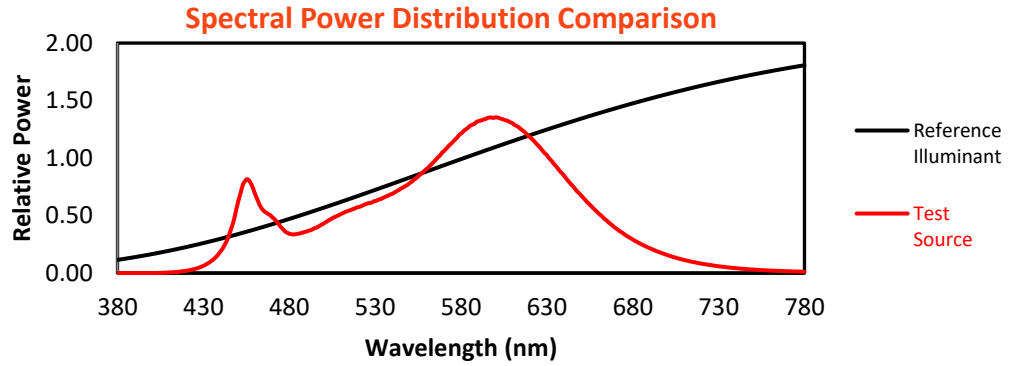
Melanopic Lumens: NR

M/P: 2.77

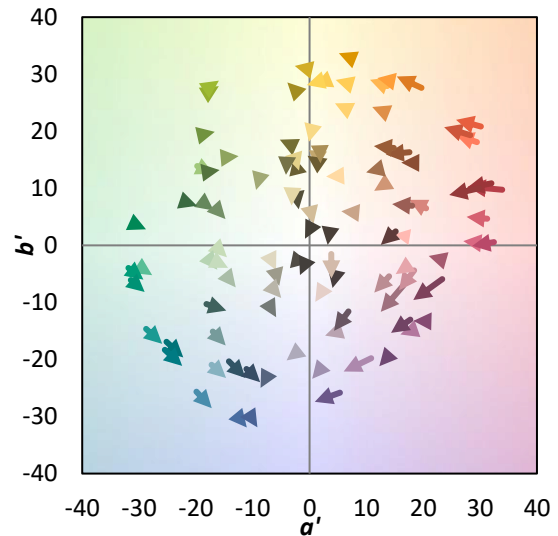
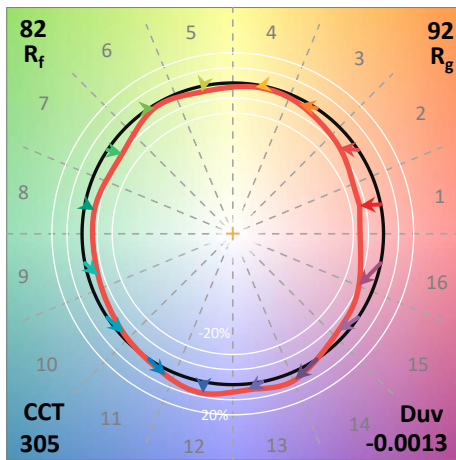
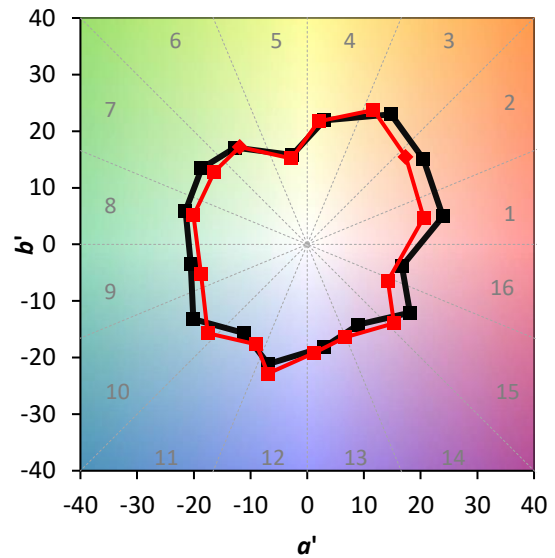
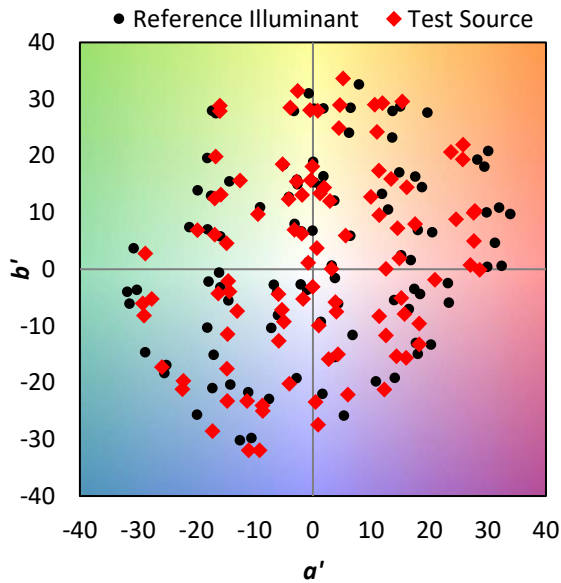
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	266	NR	620	875	NR	750	23	NR	880	0	NR
365	0	NR	495	290	NR	625	818	NR	755	19	NR	885	0	NR
370	0	NR	500	317	NR	630	758	NR	760	16	NR	890	0	NR
375	0	NR	505	352	NR	635	690	NR	765	14	NR	895	0	NR
380	0	NR	510	379	NR	640	625	NR	770	12	NR	900	0	NR
385	0	NR	515	402	NR	645	560	NR	775	10	NR	905	0	NR
390	0	NR	520	423	NR	650	498	NR	780	9	NR	910	0	NR
395	0	NR	525	445	NR	655	440	NR	785	7	NR	915	0	NR
400	0	NR	530	463	NR	660	385	NR	790	6	NR	920	0	NR
405	1	NR	535	486	NR	665	335	NR	795	5	NR	925	0	NR
410	4	NR	540	509	NR	670	289	NR	800	5	NR	930	0	NR
415	8	NR	545	542	NR	675	250	NR	805	4	NR	935	0	NR
420	15	NR	550	577	NR	680	216	NR	810	3	NR	940	0	NR
425	27	NR	555	620	NR	685	185	NR	815	3	NR	945	0	NR
430	46	NR	560	670	NR	690	160	NR	820	3	NR	950	0	NR
435	81	NR	565	725	NR	695	136	NR	825	2	NR	955	0	NR
440	139	NR	570	782	NR	700	116	NR	830	2	NR	960	0	NR
445	246	NR	575	840	NR	705	99	NR	835	2	NR	965	0	NR
450	446	NR	580	896	NR	710	84	NR	840	1	NR	970	0	NR
455	601	NR	585	944	NR	715	71	NR	845	1	NR	975	0	NR
460	511	NR	590	975	NR	720	61	NR	850	1	NR	980	0	NR
465	402	NR	595	994	NR	725	51	NR	855	1	NR	985	0	NR
470	359	NR	600	1000	NR	730	44	NR	860	1	NR	990	0	NR
475	297	NR	605	985	NR	735	37	NR	865	1	NR	995	0	NR
480	252	NR	610	962	NR	740	32	NR	870	1	NR	1000	0	NR
485	252	NR	615	923	NR	745	27	NR	875	1	NR			

Summary

$R_f = 81.8$
 $R_g = 91.9$
 $CIE R_a = 79.3$
 $R_9 = -8.3$

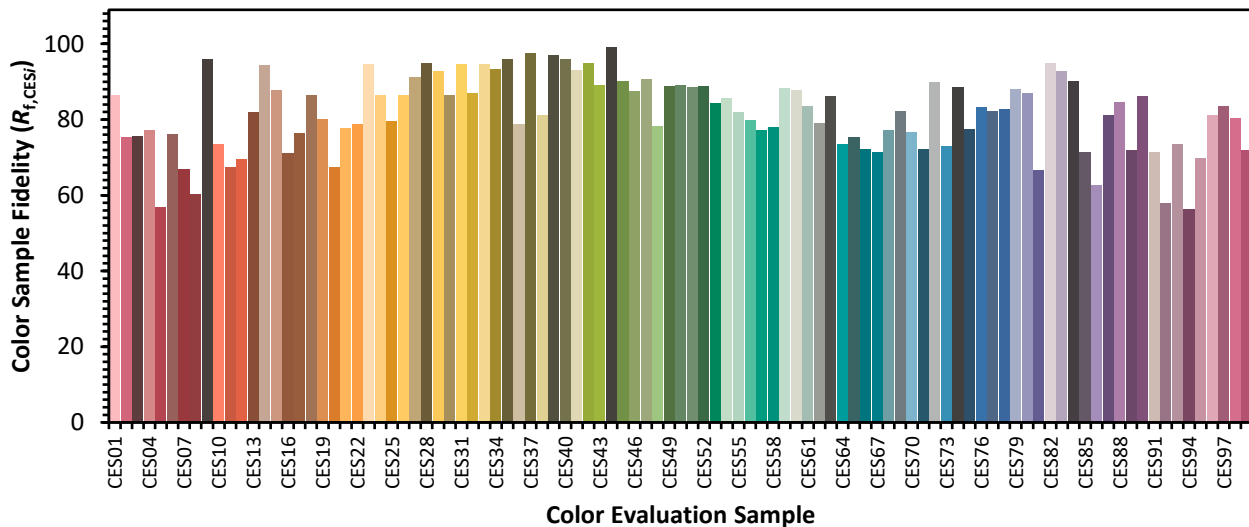


Color Vector Graphics

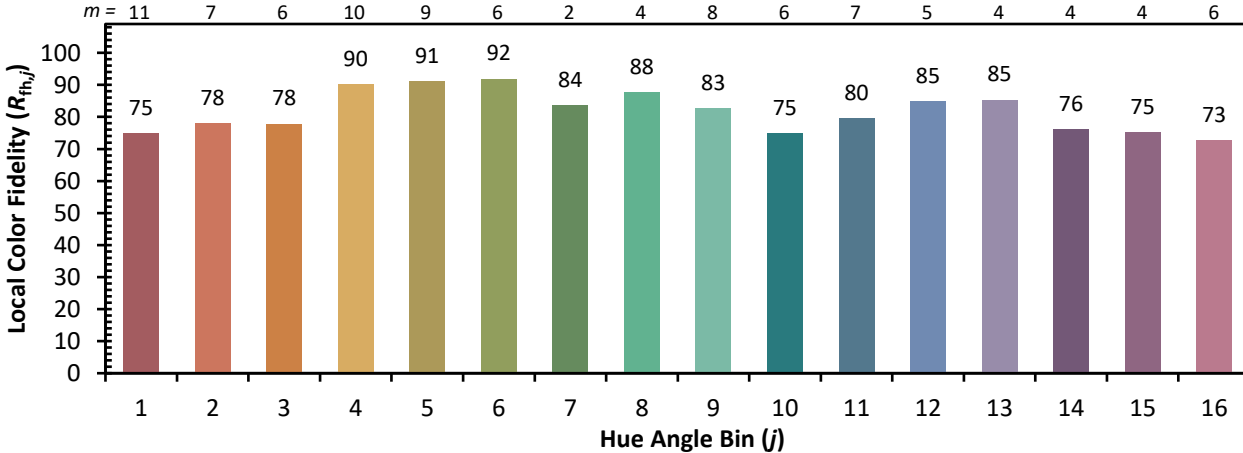
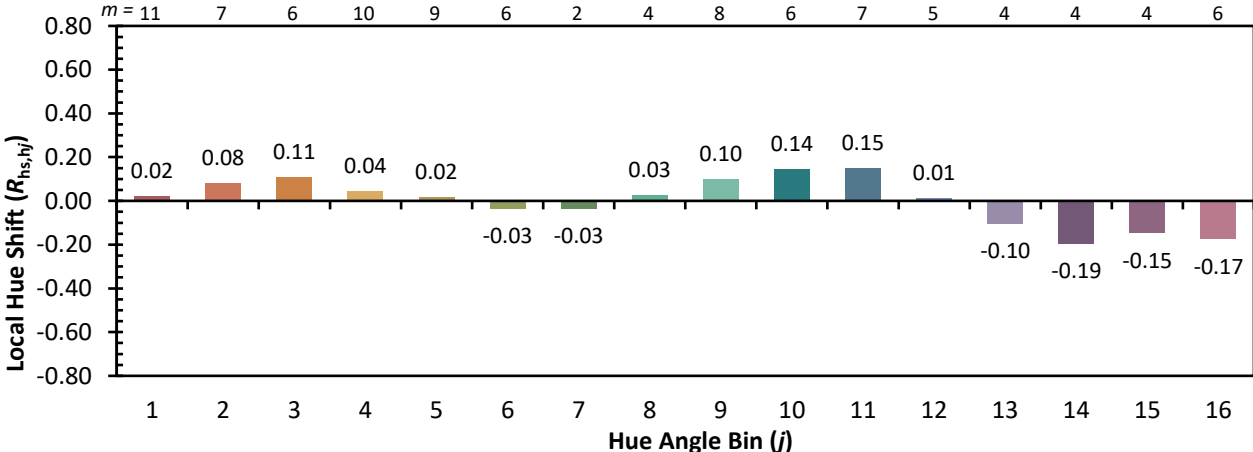
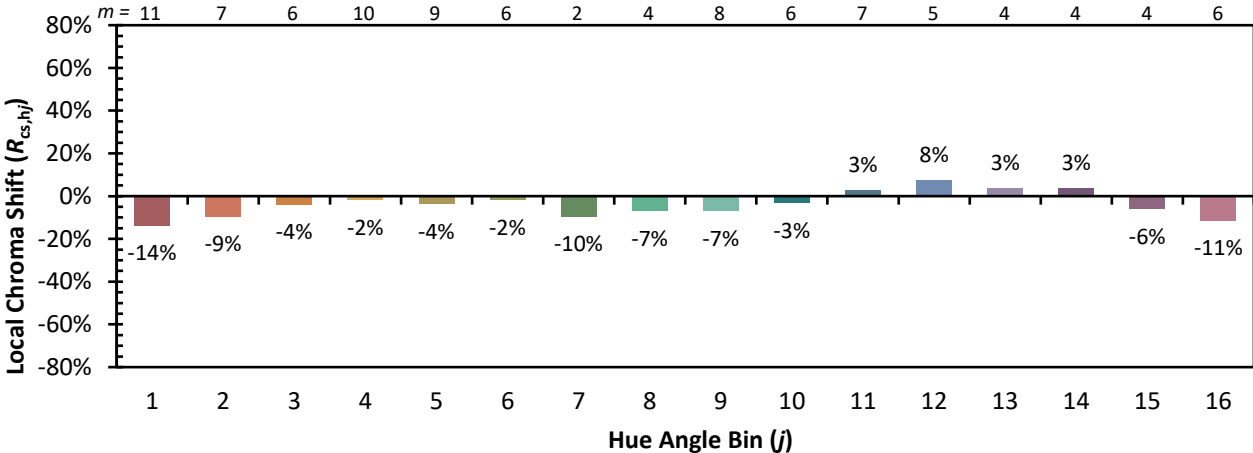


Individual Sample Fidelity Index ($R_{f,i}$)

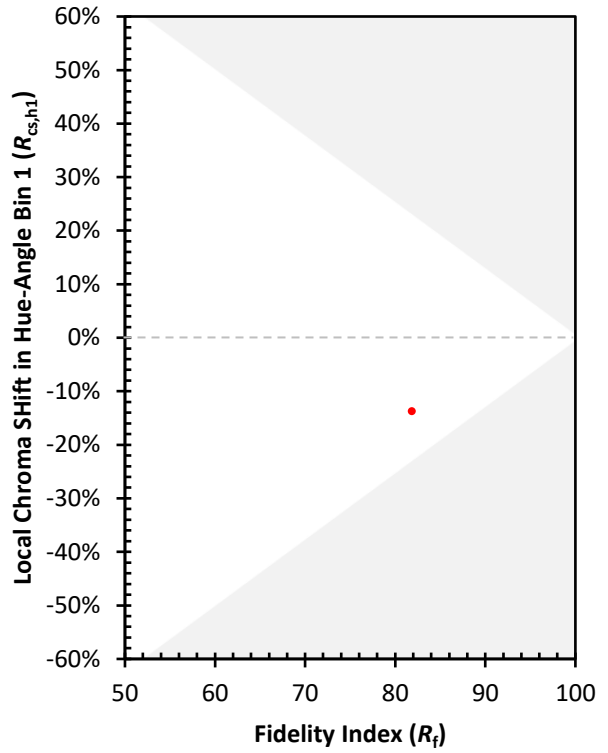
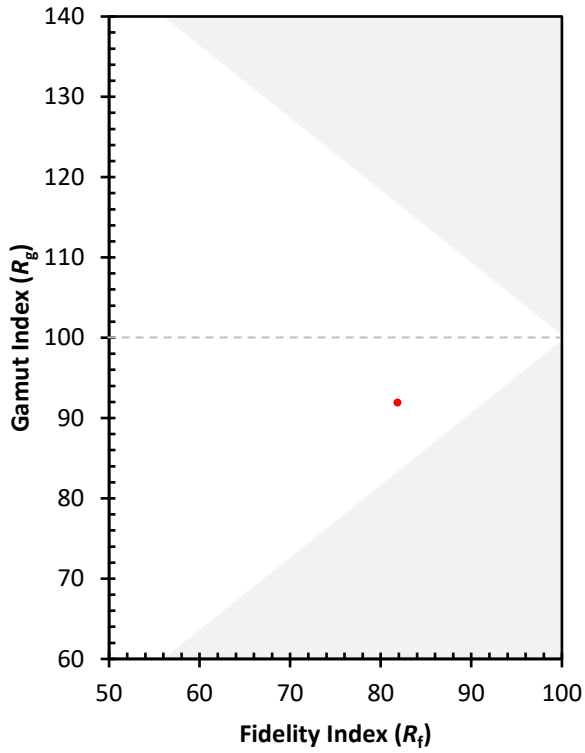
CES01 = 86	CES26 = 86	CES51 = 88	CES76 = 83
CES02 = 63	CES27 = 91	CES52 = 89	CES77 = 82
CES03 = 31	CES28 = 95	CES53 = 84	CES78 = 83
CES04 = 71	CES29 = 93	CES54 = 86	CES79 = 88
CES05 = 49	CES30 = 86	CES55 = 82	CES80 = 87
CES06 = 51	CES31 = 95	CES56 = 80	CES81 = 67
CES07 = 42	CES32 = 87	CES57 = 77	CES82 = 95
CES08 = 40	CES33 = 95	CES58 = 78	CES83 = 93
CES09 = 29	CES34 = 93	CES59 = 88	CES84 = 90
CES10 = 76	CES35 = 96	CES60 = 88	CES85 = 71
CES11 = 59	CES36 = 79	CES61 = 84	CES86 = 63
CES12 = 65	CES37 = 98	CES62 = 79	CES87 = 81
CES13 = 43	CES38 = 81	CES63 = 86	CES88 = 85
CES14 = 74	CES39 = 97	CES64 = 73	CES89 = 72
CES15 = 71	CES40 = 96	CES65 = 75	CES90 = 86
CES16 = 47	CES41 = 93	CES66 = 72	CES91 = 71
CES17 = 50	CES42 = 95	CES67 = 71	CES92 = 58
CES18 = 56	CES43 = 89	CES68 = 77	CES93 = 74
CES19 = 72	CES44 = 99	CES69 = 82	CES94 = 56
CES20 = 66	CES45 = 90	CES70 = 77	CES95 = 70
CES21 = 87	CES46 = 88	CES71 = 72	CES96 = 81
CES22 = 79	CES47 = 91	CES72 = 90	CES97 = 84
CES23 = 92	CES48 = 78	CES73 = 73	CES98 = 80
CES24 = 91	CES49 = 89	CES74 = 89	CES99 = 72
CES25 = 72	CES50 = 89	CES75 = 78	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)