

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: P980932

Luminaire Tested: **NFFLD-S-C15-7022-66**

Issue Date: 04/10/2025

Test Information

Test Method: LM-79-08
Report Number: P980932
Test Lab: INNOVATION CENTER(G2)
Issue Date: 04/10/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NFFLD-S-C15-7022-66
Description: LUMARK NIGHT FALCON SMALL SIZE 50W 70CRI 2200K LED FIXTURE NEMA 6
Light Source: (1) 2200K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5736.2 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Luminous Opening: Rectangular (W 0.42' x L: 0.31' x H: 0')
IES Classification: Type I - Short
BUG Rating: B2 - U0 - G1

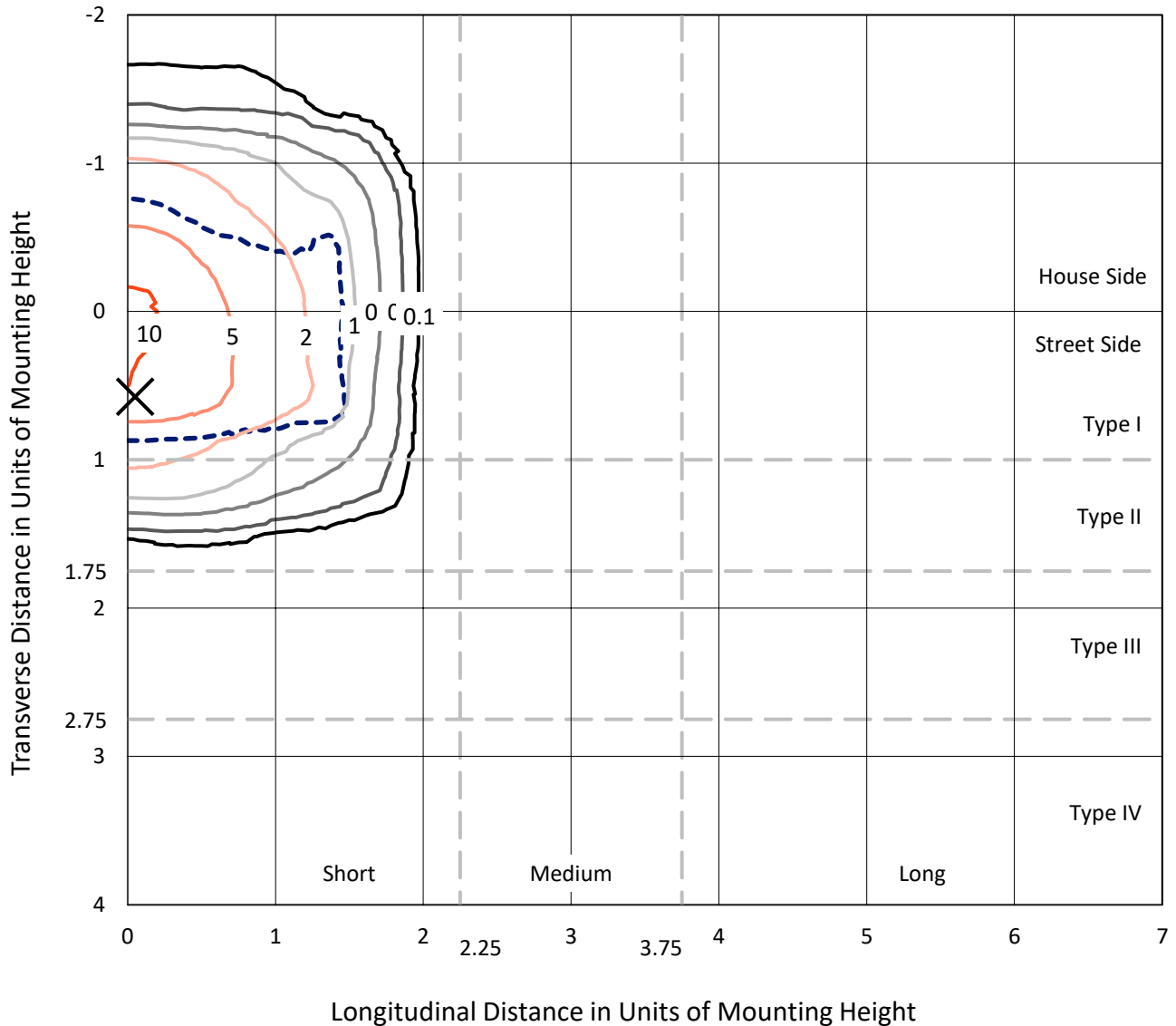
Input Watts (W): 51.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 8.18%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P980932
 CATALOG NUMBER: NFFLD-S-C15-7022-66

Iso-Footcandle Lines of Horizontal Illumination

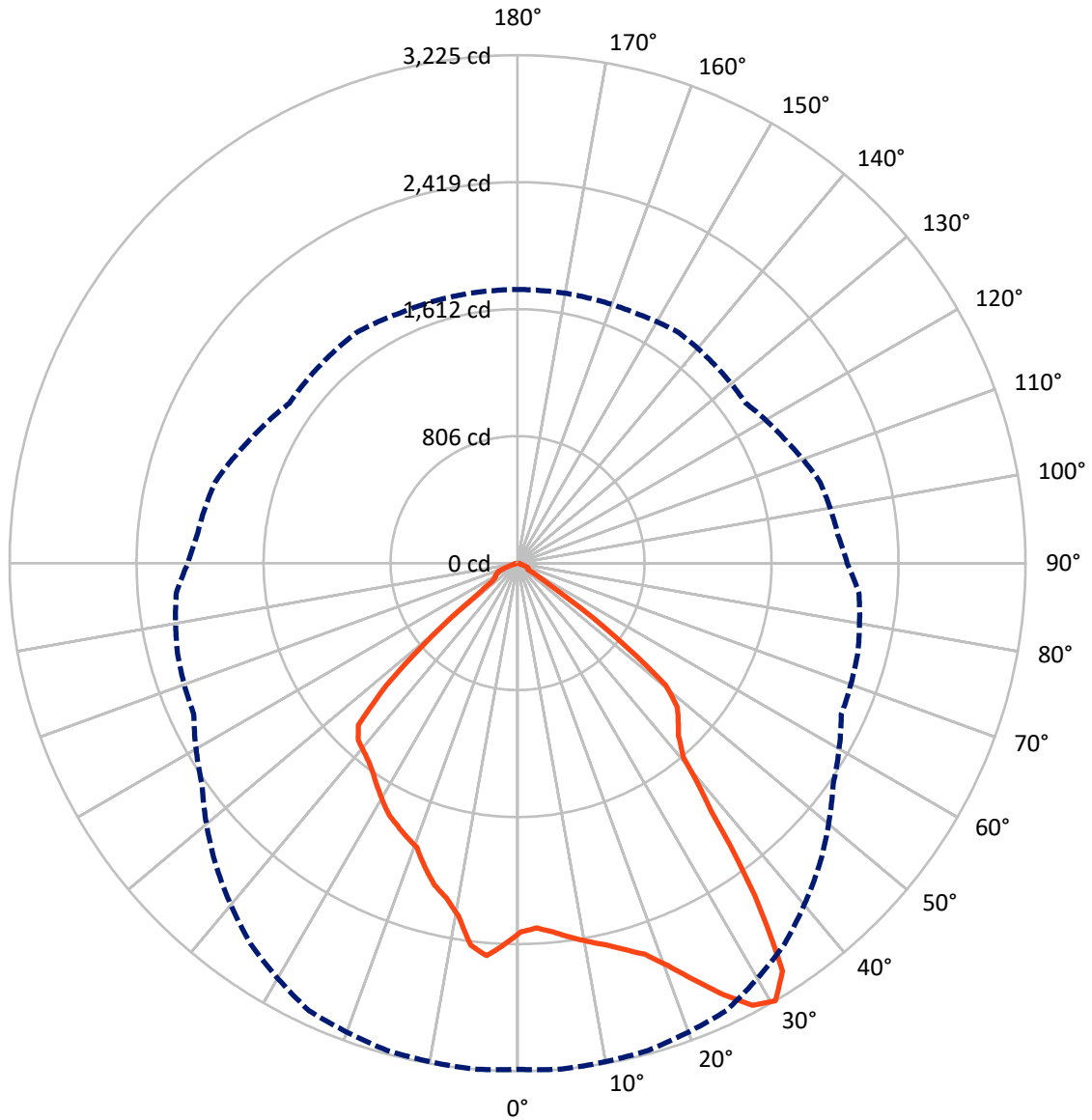
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 10.7 fc
 Type I - Short - N/A

REPORT NUMBER: P980932
CATALOG NUMBER: NFFLD-S-C15-7022-66

Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 30-Deg Vertical

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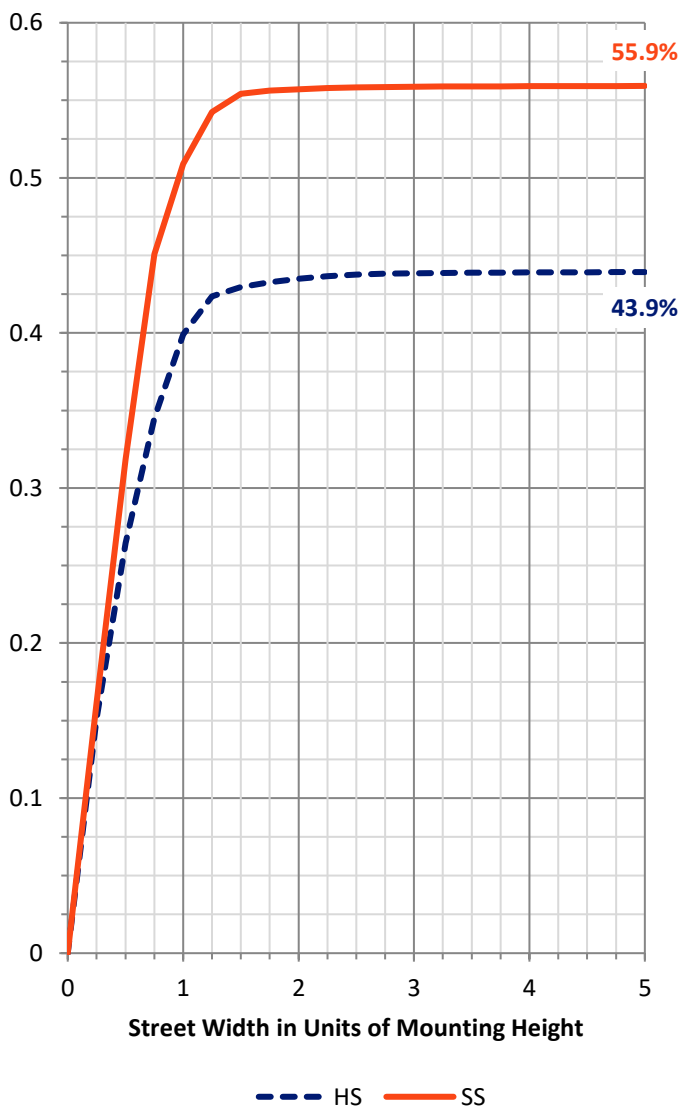
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2537.1 | 0.0 | 2537.1 |
| | % Fixture | 44.2 | 0.0 | 44.2 |
| Street Side | Lumens | 3199.2 | 0.0 | 3199.2 |
| | % Fixture | 55.8 | 0.0 | 55.8 |
| Total | Lumens | 5736.2 | 0.0 | 5736.2 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 229.0 | 4.0 |
| 10°-20° | 663.5 | 11.6 |
| 20°-30° | 1057.3 | 18.4 |
| 30°-40° | 1321.8 | 23.0 |
| 40°-50° | 1297.2 | 22.6 |
| 50°-60° | 927.4 | 16.2 |
| 60°-70° | 205.2 | 3.6 |
| 70°-80° | 31.5 | 0.5 |
| 80°-90° | 3.3 | 0.1 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 5736.2 | 100.0 |
| 0°-180° | 5736.2 | 100.0 |



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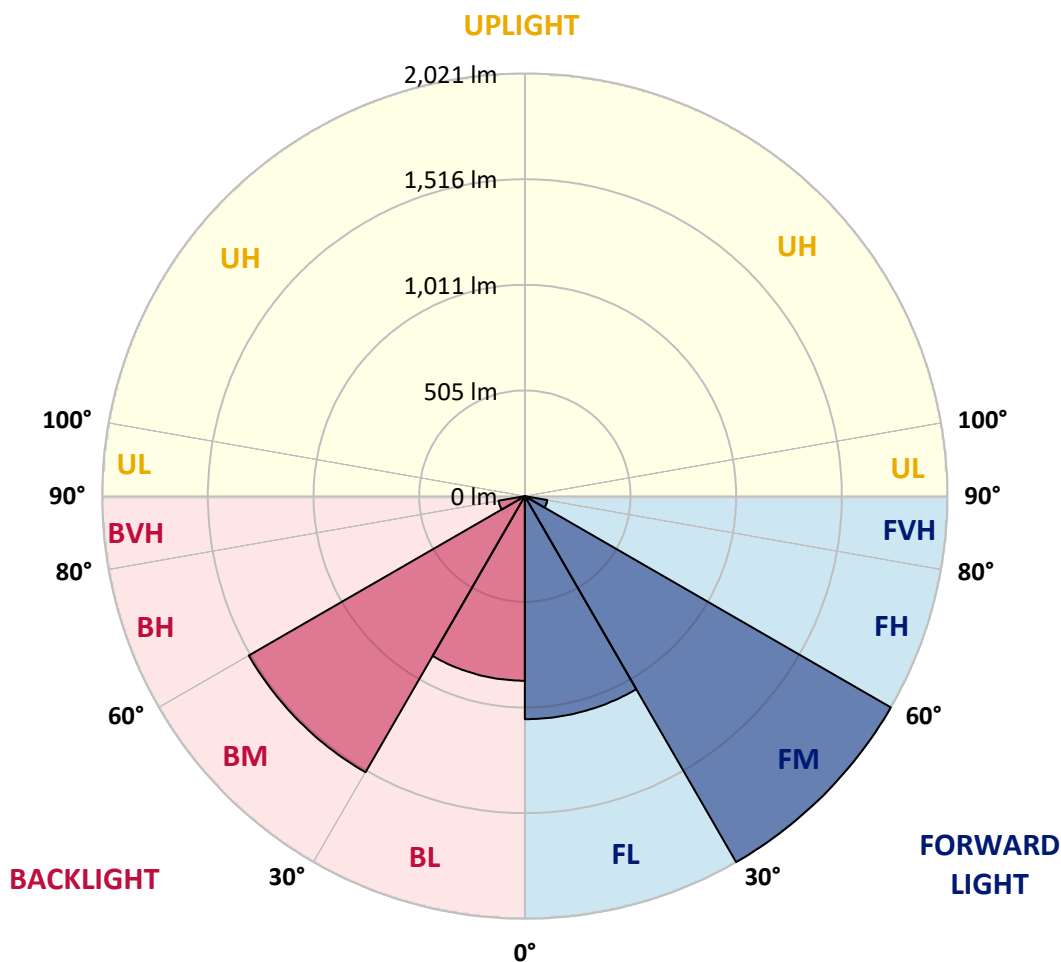
CATALOG NUMBER: NFFLD-S-C15-7022-66

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 1066.9 | 18.6 | | | |
| FM (30°-60°) | 2021.5 | 35.2 | | | |
| FH (60°-80°) | 109.1 | 1.9 | | | G0/660 |
| FVH (80°-90°) | 1.7 | 0.0 | | | G0/10 |
| BL (0°-30°) | 883.0 | 15.4 | B2/1000 | | |
| BM (30°-60°) | 1524.9 | 26.6 | B2/2500 | | |
| BH (60°-80°) | 127.6 | 2.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.6 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G1

Type I Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 |
| 2.5° | 2315.1 | 2318.9 | 2322.6 | 2328.2 | 2335.7 | 2339.5 | 2335.7 | 2332.0 | 2330.1 | 2333.8 | 2335.7 |
| 5° | 2346.9 | 2352.6 | 2354.4 | 2358.2 | 2361.9 | 2358.2 | 2356.3 | 2352.6 | 2350.7 | 2352.6 | 2358.2 |
| 7.5° | 2393.7 | 2397.5 | 2395.6 | 2393.7 | 2391.9 | 2378.8 | 2365.7 | 2360.0 | 2360.0 | 2365.7 | 2380.6 |
| 10° | 2434.9 | 2442.4 | 2433.0 | 2425.6 | 2412.5 | 2391.9 | 2369.4 | 2356.3 | 2360.0 | 2371.3 | 2390.0 |
| 12.5° | 2487.3 | 2487.3 | 2478.0 | 2470.5 | 2440.5 | 2416.2 | 2386.3 | 2365.7 | 2365.7 | 2386.3 | 2406.8 |
| 15° | 2550.9 | 2545.3 | 2541.6 | 2521.0 | 2485.4 | 2446.1 | 2408.7 | 2378.8 | 2373.1 | 2405.0 | 2418.1 |
| 17.5° | 2631.4 | 2610.8 | 2601.5 | 2565.9 | 2517.3 | 2466.7 | 2416.2 | 2391.9 | 2375.0 | 2408.7 | 2393.7 |
| 20° | 2741.8 | 2726.9 | 2696.9 | 2640.8 | 2541.6 | 2476.1 | 2416.2 | 2384.4 | 2371.3 | 2390.0 | 2375.0 |
| 22.5° | 2884.1 | 2874.7 | 2807.4 | 2736.2 | 2605.2 | 2483.6 | 2406.8 | 2363.8 | 2360.0 | 2350.7 | 2318.9 |
| 25° | 3058.1 | 3033.8 | 2964.6 | 2863.5 | 2700.7 | 2556.6 | 2405.0 | 2326.4 | 2313.3 | 2288.9 | 2232.8 |
| 27.5° | 3206.0 | 3179.8 | 3095.6 | 3005.7 | 2831.7 | 2665.1 | 2419.9 | 2281.4 | 2266.5 | 2249.6 | 2180.4 |
| 30° | 3213.5 | 3224.7 | 3202.3 | 3134.9 | 2953.3 | 2710.0 | 2446.1 | 2268.3 | 2234.7 | 2174.8 | 2092.4 |
| 32.5° | 3061.9 | 3088.1 | 3142.4 | 3166.7 | 3045.0 | 2764.3 | 2468.6 | 2274.0 | 2212.2 | 2068.1 | 2000.7 |
| 35° | 2543.5 | 2595.9 | 2818.6 | 3028.2 | 3071.2 | 2842.9 | 2487.3 | 2274.0 | 2204.7 | 1991.3 | 1938.9 |
| 37.5° | 1953.9 | 1997.0 | 2186.0 | 2565.9 | 2955.2 | 2891.6 | 2528.5 | 2260.9 | 2195.4 | 1997.0 | 1925.8 |
| 40° | 1596.4 | 1620.8 | 1703.1 | 1961.4 | 2547.2 | 2811.1 | 2569.7 | 2275.8 | 2167.3 | 2000.7 | 1933.3 |
| 42.5° | 1499.1 | 1497.3 | 1480.4 | 1575.9 | 1942.7 | 2575.3 | 2597.7 | 2313.3 | 2120.5 | 1976.4 | 1920.2 |
| 45° | 1433.6 | 1429.9 | 1414.9 | 1433.6 | 1536.6 | 2107.4 | 2577.2 | 2380.6 | 2062.5 | 1890.3 | 1852.9 |
| 47.5° | 1362.5 | 1364.4 | 1358.8 | 1366.2 | 1347.5 | 1600.2 | 2461.1 | 2408.7 | 1963.3 | 1746.2 | 1733.1 |
| 50° | 1192.2 | 1220.3 | 1295.1 | 1302.6 | 1254.0 | 1291.4 | 2107.4 | 2395.6 | 1892.2 | 1705.0 | 1693.8 |
| 52.5° | 741.1 | 786.1 | 1006.9 | 1194.1 | 1166.0 | 1166.0 | 1607.7 | 2414.3 | 1764.9 | 1690.0 | 1697.5 |
| 55° | 262.0 | 295.7 | 539.0 | 821.6 | 1044.3 | 1064.9 | 1270.8 | 2148.6 | 1749.9 | 1716.2 | 1723.7 |
| 57.5° | 65.5 | 80.5 | 164.7 | 355.6 | 703.7 | 965.7 | 1136.0 | 1774.2 | 1328.8 | 1282.0 | 1300.7 |
| 60° | 76.7 | 74.9 | 102.9 | 114.2 | 273.2 | 763.6 | 1023.7 | 1197.8 | 857.2 | 802.9 | 812.3 |
| 62.5° | 82.3 | 76.7 | 80.5 | 101.1 | 44.9 | 374.3 | 816.0 | 713.1 | 353.7 | 262.0 | 277.0 |
| 65° | 73.0 | 69.2 | 63.6 | 93.6 | 31.8 | 69.2 | 481.0 | 209.6 | 50.5 | 80.5 | 73.0 |
| 67.5° | 48.7 | 50.5 | 52.4 | 74.9 | 29.9 | 29.9 | 63.6 | 52.4 | 35.6 | 73.0 | 63.6 |
| 70° | 28.1 | 29.9 | 35.6 | 44.9 | 29.9 | 24.3 | 28.1 | 43.0 | 29.9 | 73.0 | 63.6 |
| 72.5° | 16.8 | 16.8 | 16.8 | 18.7 | 29.9 | 20.6 | 18.7 | 35.6 | 26.2 | 67.4 | 63.6 |
| 75° | 13.1 | 13.1 | 13.1 | 11.2 | 26.2 | 13.1 | 13.1 | 28.1 | 22.5 | 48.7 | 48.7 |
| 77.5° | 11.2 | 11.2 | 11.2 | 9.4 | 15.0 | 11.2 | 11.2 | 20.6 | 20.6 | 24.3 | 28.1 |
| 80° | 7.5 | 7.5 | 7.5 | 7.5 | 9.4 | 9.4 | 7.5 | 11.2 | 9.4 | 11.2 | 13.1 |
| 82.5° | 3.7 | 5.6 | 5.6 | 3.7 | 5.6 | 5.6 | 5.6 | 7.5 | 5.6 | 7.5 | 7.5 |
| 85° | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 3.7 | 1.9 | 1.9 | 3.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P980932
 CATALOG NUMBER: NFFLD-S-C15-7022-66

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 | 2341.3 |
| 2.5° | 2339.5 | 2348.8 | 2361.9 | 2382.5 | 2390.0 | 2403.1 | 2414.3 | 2423.7 | 2423.7 | 2419.9 |
| 5° | 2369.4 | 2395.6 | 2431.2 | 2463.0 | 2474.2 | 2487.3 | 2492.9 | 2502.3 | 2500.4 | 2498.5 |
| 7.5° | 2395.6 | 2436.8 | 2474.2 | 2496.7 | 2492.9 | 2476.1 | 2464.9 | 2449.9 | 2444.3 | 2448.0 |
| 10° | 2416.2 | 2453.6 | 2470.5 | 2455.5 | 2410.6 | 2371.3 | 2320.7 | 2287.1 | 2270.2 | 2275.8 |
| 12.5° | 2423.7 | 2436.8 | 2421.8 | 2339.5 | 2283.3 | 2245.9 | 2204.7 | 2182.2 | 2172.9 | 2174.8 |
| 15° | 2425.6 | 2395.6 | 2313.3 | 2251.5 | 2210.3 | 2163.5 | 2129.8 | 2109.3 | 2109.3 | 2111.1 |
| 17.5° | 2386.3 | 2313.3 | 2242.1 | 2195.4 | 2137.3 | 2088.7 | 2070.0 | 2062.5 | 2015.7 | 2023.2 |
| 20° | 2350.7 | 2245.9 | 2206.6 | 2133.6 | 2064.3 | 2032.5 | 1924.0 | 1912.7 | 1914.6 | 1916.5 |
| 22.5° | 2275.8 | 2197.2 | 2161.7 | 2066.2 | 1987.6 | 1899.6 | 1884.7 | 1873.4 | 1875.3 | 1875.3 |
| 25° | 2172.9 | 2128.0 | 2079.3 | 1980.1 | 1884.7 | 1867.8 | 1856.6 | 1841.6 | 1834.1 | 1836.0 |
| 27.5° | 2114.9 | 2058.7 | 1968.9 | 1884.7 | 1822.9 | 1830.4 | 1817.3 | 1794.8 | 1794.8 | 1796.7 |
| 30° | 2041.9 | 1987.6 | 1867.8 | 1768.6 | 1774.2 | 1785.5 | 1753.7 | 1742.4 | 1736.8 | 1736.8 |
| 32.5° | 1952.0 | 1877.2 | 1772.4 | 1678.8 | 1712.5 | 1708.7 | 1669.4 | 1673.2 | 1676.9 | 1673.2 |
| 35° | 1884.7 | 1787.3 | 1699.4 | 1648.9 | 1635.8 | 1620.8 | 1600.2 | 1613.3 | 1618.9 | 1615.2 |
| 37.5° | 1867.8 | 1751.8 | 1660.1 | 1624.5 | 1574.0 | 1545.9 | 1551.5 | 1564.6 | 1572.1 | 1570.2 |
| 40° | 1862.2 | 1716.2 | 1626.4 | 1589.0 | 1521.6 | 1497.3 | 1504.7 | 1530.9 | 1540.3 | 1538.4 |
| 42.5° | 1854.7 | 1691.9 | 1605.8 | 1560.9 | 1467.3 | 1450.5 | 1486.0 | 1510.4 | 1512.2 | 1510.4 |
| 45° | 1815.4 | 1665.7 | 1592.7 | 1502.9 | 1385.0 | 1405.5 | 1450.5 | 1463.6 | 1441.1 | 1431.8 |
| 47.5° | 1723.7 | 1617.0 | 1553.4 | 1431.8 | 1317.6 | 1356.9 | 1362.5 | 1220.3 | 1137.9 | 1119.2 |
| 50° | 1697.5 | 1618.9 | 1508.5 | 1347.5 | 1276.4 | 1315.7 | 1070.5 | 817.9 | 714.9 | 694.4 |
| 52.5° | 1690.0 | 1600.2 | 1525.3 | 1259.6 | 1261.4 | 1109.8 | 675.6 | 400.5 | 321.9 | 306.9 |
| 55° | 1708.7 | 1682.5 | 1553.4 | 1207.2 | 1173.5 | 722.4 | 314.4 | 189.0 | 194.6 | 189.0 |
| 57.5° | 1289.5 | 1407.4 | 1587.1 | 1124.8 | 857.2 | 348.1 | 198.4 | 183.4 | 170.3 | 166.6 |
| 60° | 804.8 | 917.1 | 1162.2 | 967.6 | 439.8 | 207.7 | 202.1 | 170.3 | 164.7 | 162.8 |
| 62.5° | 265.8 | 408.0 | 666.3 | 636.3 | 121.7 | 205.9 | 204.0 | 151.6 | 151.6 | 151.6 |
| 65° | 67.4 | 69.2 | 183.4 | 219.0 | 89.8 | 183.4 | 194.6 | 142.2 | 138.5 | 144.1 |
| 67.5° | 58.0 | 52.4 | 97.3 | 86.1 | 74.9 | 127.3 | 170.3 | 136.6 | 129.1 | 129.1 |
| 70° | 58.0 | 61.8 | 95.5 | 80.5 | 46.8 | 69.2 | 123.5 | 84.2 | 74.9 | 69.2 |
| 72.5° | 54.3 | 59.9 | 84.2 | 73.0 | 31.8 | 33.7 | 54.3 | 28.1 | 26.2 | 22.5 |
| 75° | 46.8 | 48.7 | 65.5 | 65.5 | 33.7 | 16.8 | 22.5 | 18.7 | 18.7 | 16.8 |
| 77.5° | 31.8 | 24.3 | 37.4 | 46.8 | 24.3 | 11.2 | 9.4 | 9.4 | 9.4 | 7.5 |
| 80° | 16.8 | 9.4 | 9.4 | 7.5 | 9.4 | 9.4 | 5.6 | 7.5 | 7.5 | 5.6 |
| 82.5° | 9.4 | 5.6 | 5.6 | 3.7 | 3.7 | 5.6 | 3.7 | 3.7 | 3.7 | 3.7 |
| 85° | 3.7 | 3.7 | 1.9 | 1.9 | 1.9 | 3.7 | 1.9 | 1.9 | 1.9 | 1.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2501-319-8

Test Date: 02/05/2025

Luminaire Tested: NFFLD-C55-7022-66

Data in this report applies to families of products including NFFLD-C55-7022-66

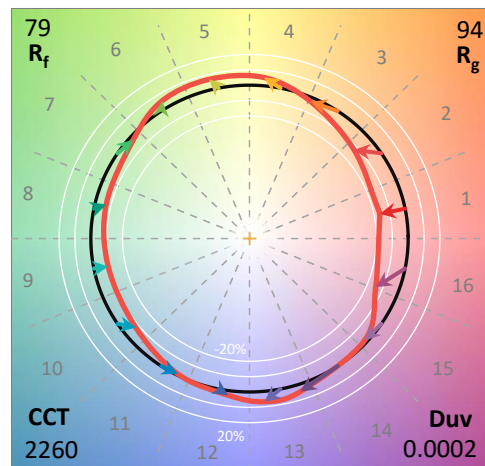
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2501-319-8
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 02/06/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Lumark
 Catalog Number: **NFFLD-C55-7022-66**
 Description: LUMARK NIGHT FALCON 16900LM NEMA 6

Spectral Parameters

CCT (K): 2260
 CIE u': 0.2861
 CIE v': 0.5354
 Duv: 0.0002
 CIE x: 0.5000
 CIE y: 0.4158
 CIE z: 0.0842
 Peak Wavelength (nm): 604
 Dominant Wavelength (nm): 586
 Purity: 74.90898
 Rf: 78.7
 Rg: 93.7

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.8 | | |
| R1: | 70.2 | R9: | -28.5 |
| R2: | 88.0 | R10: | 76.1 |
| R3: | 89.4 | R11: | 65.3 |
| R4: | 67.3 | R12: | 73.8 |
| R5: | 70.5 | R13: | 73.9 |
| R6: | 87.8 | R14: | 94.5 |
| R7: | 71.9 | R15: | 60.0 |
| R8: | 36.8 | | |



Test Conditions

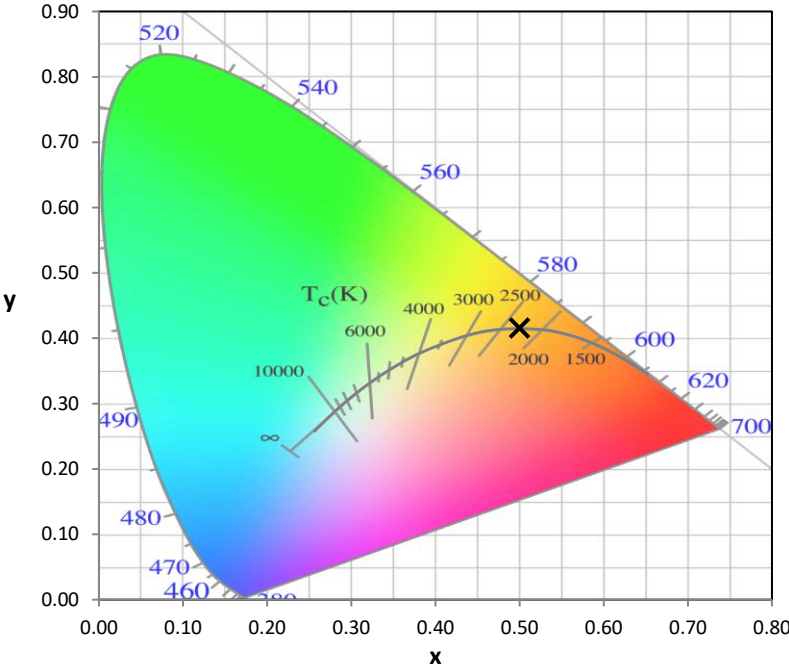
Stabilization Time: 59M
 Operation Time: 1H 59M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2501-319-8

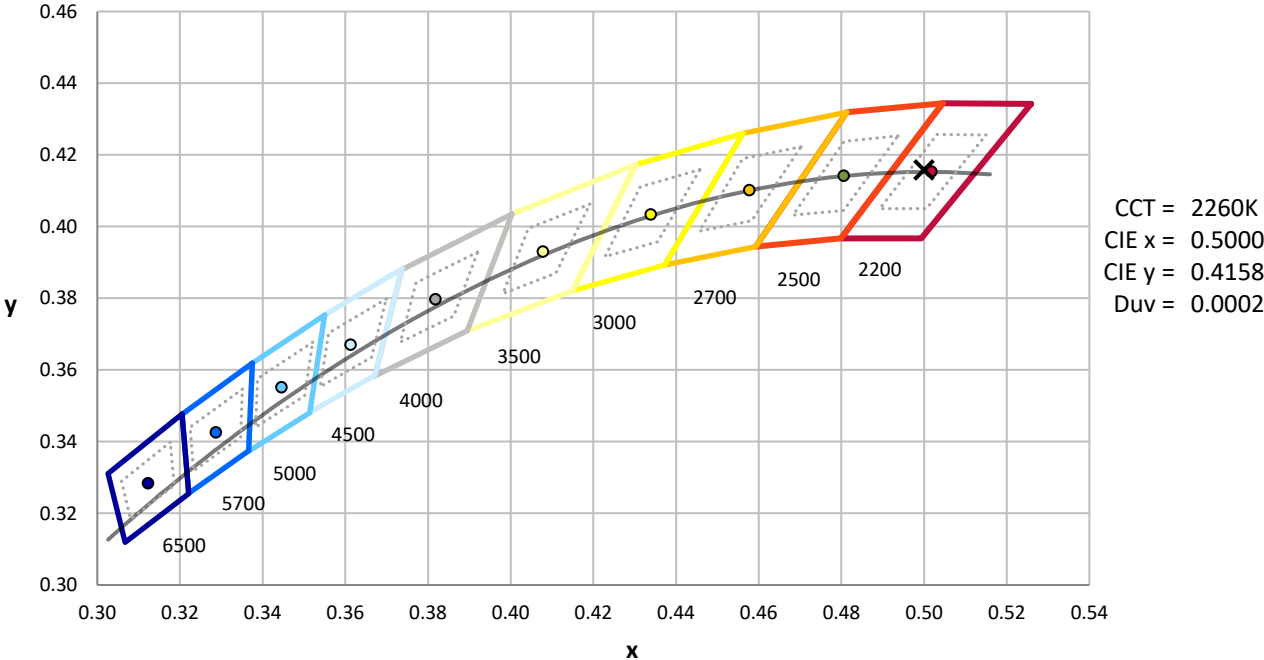
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | IN0046 | 10/22/2024 | 10/22/2025 |

REPORT NUMBER: SP1-2501-319-8

CIE 1931 Chromaticity Diagram



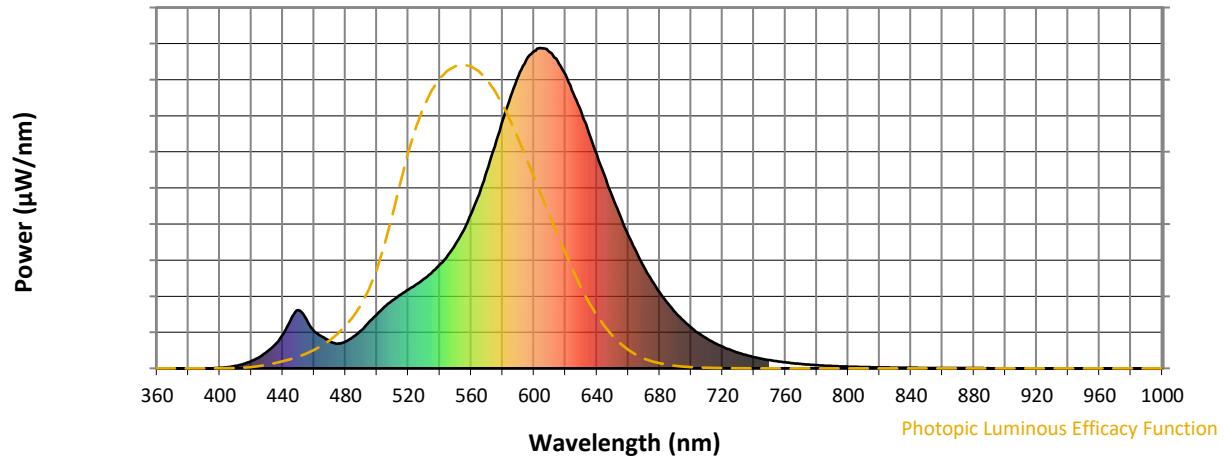
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2200K 4-step quadrangle

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Photopic Flux vs. Wavelength

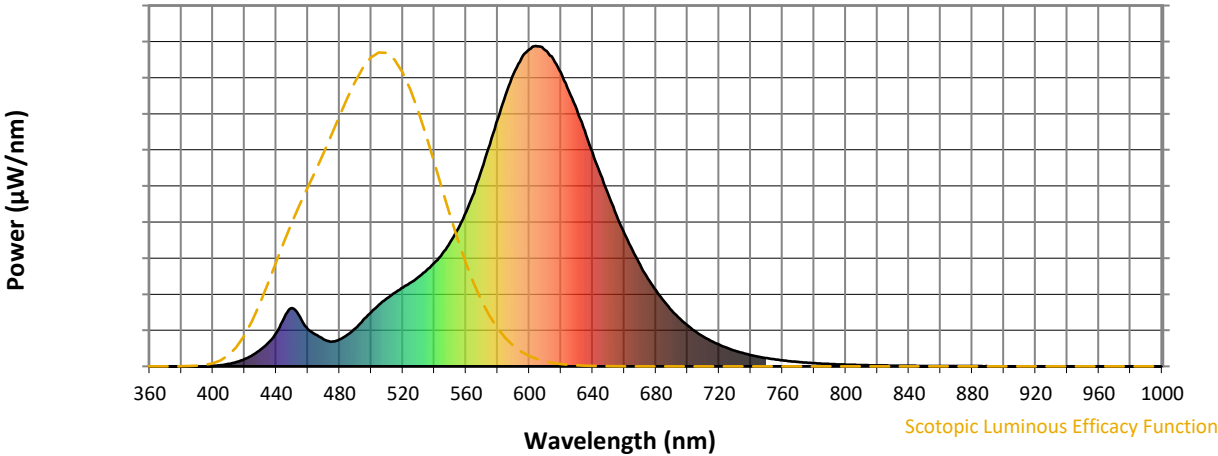


Photopic Lumens: NR

| 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 | 118 | NR | 620 | 917 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 859 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 169 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 193 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 213 | NR | 640 | 667 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 230 | NR | 645 | 600 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 246 | NR | 650 | 534 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 473 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 280 | NR | 660 | 416 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 299 | NR | 665 | 364 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 324 | NR | 670 | 316 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 352 | NR | 675 | 274 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 23 | NR | 550 | 388 | NR | 680 | 237 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 429 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 482 | NR | 690 | 174 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 74 | NR | 565 | 543 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 105 | NR | 570 | 616 | NR | 700 | 128 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 151 | NR | 575 | 692 | NR | 705 | 109 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 182 | NR | 580 | 773 | NR | 710 | 93 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 154 | NR | 585 | 847 | NR | 715 | 79 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 116 | NR | 590 | 913 | NR | 720 | 68 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 99 | NR | 595 | 962 | NR | 725 | 58 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 84 | NR | 600 | 990 | NR | 730 | 49 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 77 | NR | 605 | 999 | NR | 735 | 42 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 84 | NR | 610 | 986 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 960 | NR | 745 | 30 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2501-319-8

Scotopic Flux vs. Wavelength



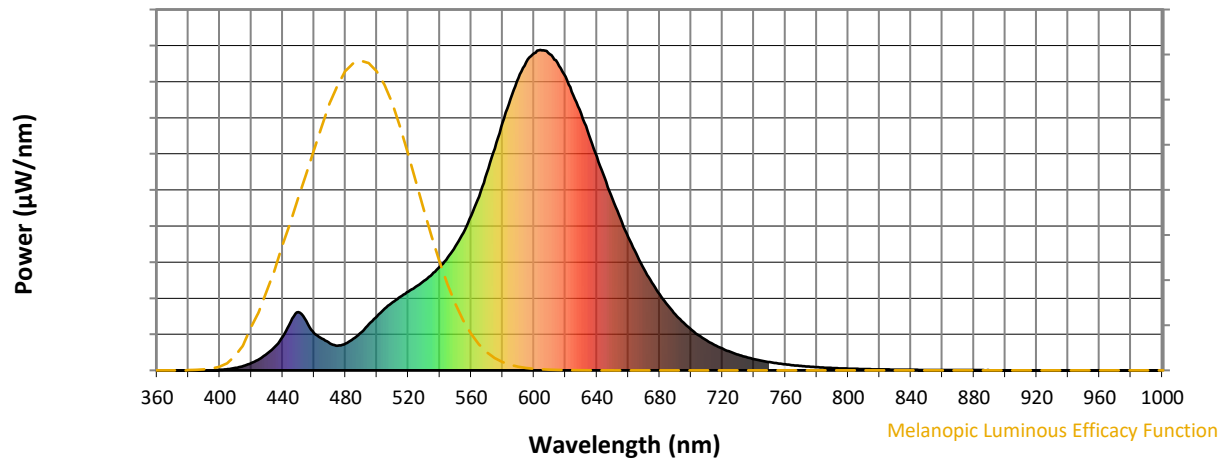
Scotopic Lumens: NR

S/P: 0.95

| 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 | 118 | NR | 620 | 917 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 859 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 169 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 193 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 213 | NR | 640 | 667 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 230 | NR | 645 | 600 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 246 | NR | 650 | 534 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 473 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 280 | NR | 660 | 416 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 299 | NR | 665 | 364 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 324 | NR | 670 | 316 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 352 | NR | 675 | 274 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 23 | NR | 550 | 388 | NR | 680 | 237 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 429 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 482 | NR | 690 | 174 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 74 | NR | 565 | 543 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 105 | NR | 570 | 616 | NR | 700 | 128 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 151 | NR | 575 | 692 | NR | 705 | 109 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 182 | NR | 580 | 773 | NR | 710 | 93 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 154 | NR | 585 | 847 | NR | 715 | 79 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 116 | NR | 590 | 913 | NR | 720 | 68 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 99 | NR | 595 | 962 | NR | 725 | 58 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 84 | NR | 600 | 990 | NR | 730 | 49 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 77 | NR | 605 | 999 | NR | 735 | 42 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 84 | NR | 610 | 986 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 960 | NR | 745 | 30 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2501-319-8

Melanopic Flux vs. Wavelength



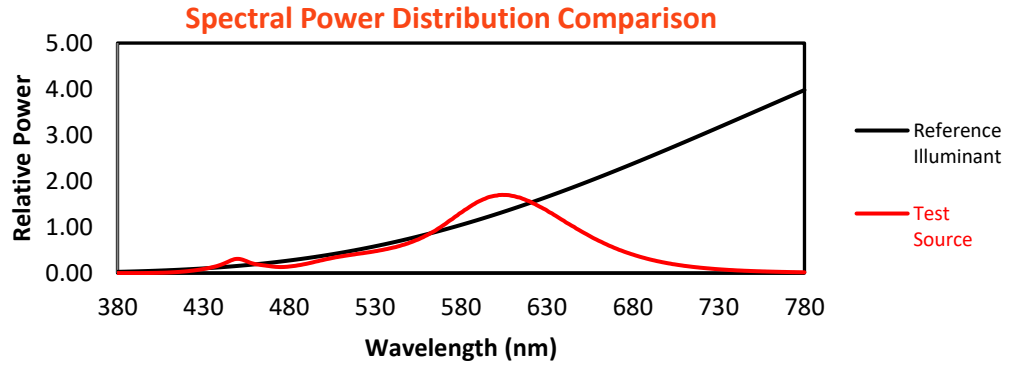
Melanopic Lumens: NR

M/P: 1.64

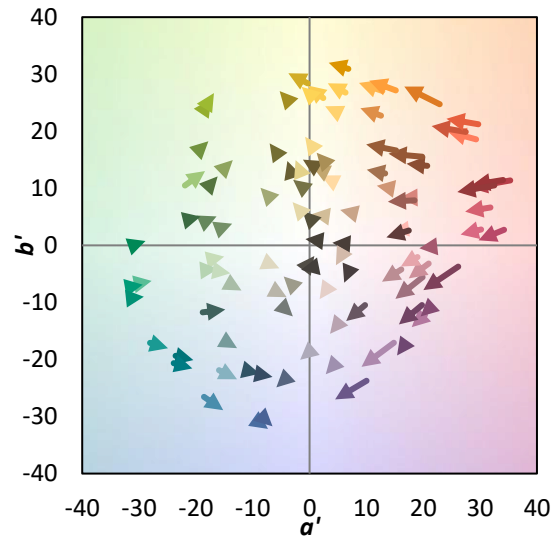
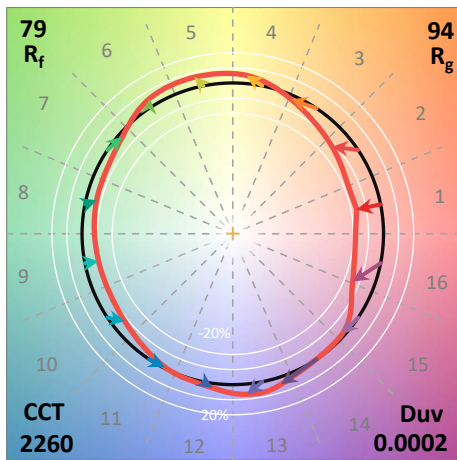
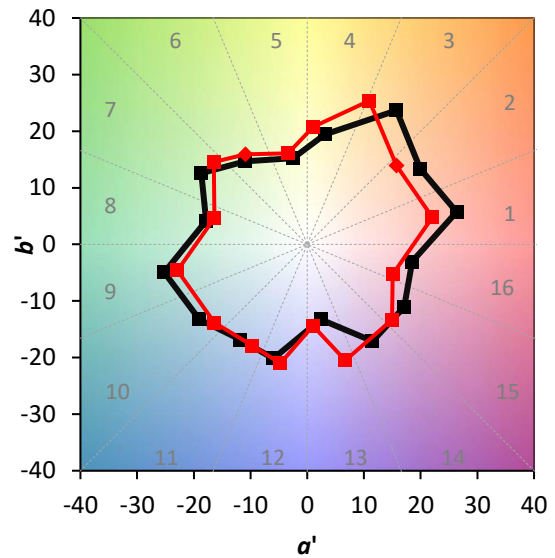
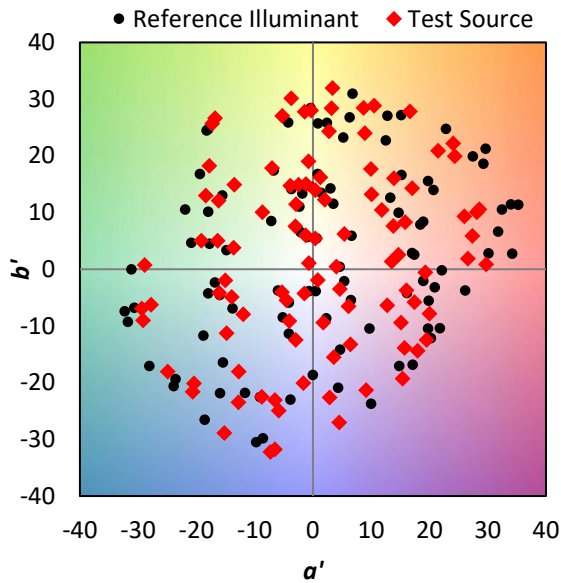
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 118 | NR | 620 | 917 | NR | 750 | 26 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 145 | NR | 625 | 859 | NR | 755 | 22 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 169 | NR | 630 | 801 | NR | 760 | 19 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 193 | NR | 635 | 735 | NR | 765 | 16 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 213 | NR | 640 | 667 | NR | 770 | 14 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 230 | NR | 645 | 600 | NR | 775 | 12 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 246 | NR | 650 | 534 | NR | 780 | 10 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 262 | NR | 655 | 473 | NR | 785 | 8 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 280 | NR | 660 | 416 | NR | 790 | 7 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 299 | NR | 665 | 364 | NR | 795 | 6 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 324 | NR | 670 | 316 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 352 | NR | 675 | 274 | NR | 805 | 5 | NR | 935 | 0 | NR |
| 420 | 23 | NR | 550 | 388 | NR | 680 | 237 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 35 | NR | 555 | 429 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 482 | NR | 690 | 174 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 74 | NR | 565 | 543 | NR | 695 | 150 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 105 | NR | 570 | 616 | NR | 700 | 128 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 151 | NR | 575 | 692 | NR | 705 | 109 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 182 | NR | 580 | 773 | NR | 710 | 93 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 154 | NR | 585 | 847 | NR | 715 | 79 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 116 | NR | 590 | 913 | NR | 720 | 68 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 99 | NR | 595 | 962 | NR | 725 | 58 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 84 | NR | 600 | 990 | NR | 730 | 49 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 77 | NR | 605 | 999 | NR | 735 | 42 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 84 | NR | 610 | 986 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 99 | NR | 615 | 960 | NR | 745 | 30 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 78.7$
 $R_g = 93.7$
 CIE $R_a = 72.8$
 $R_9 = -28.5$

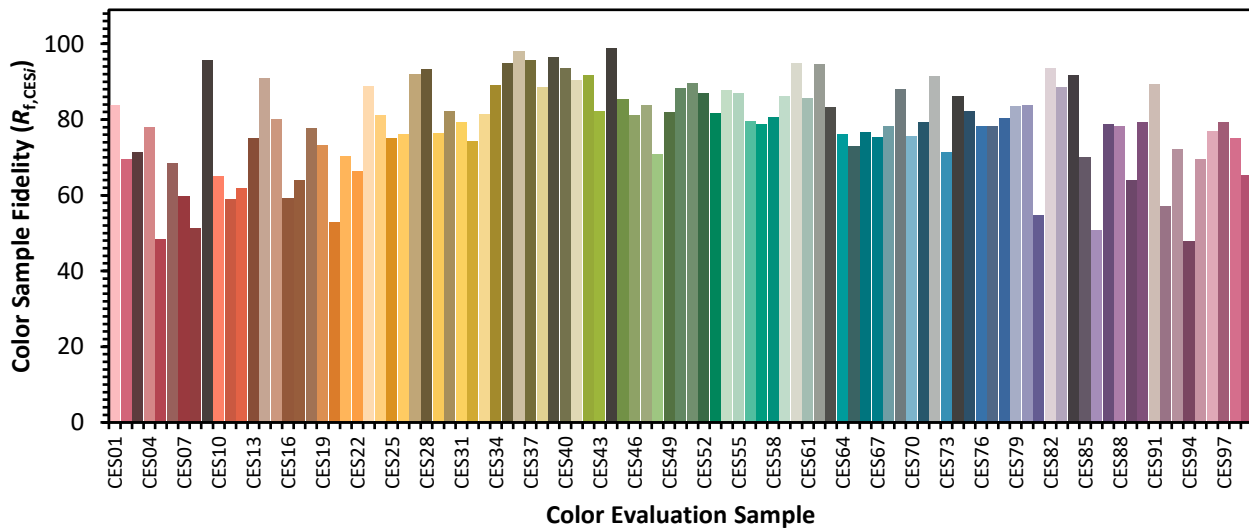


Color Vector Graphics

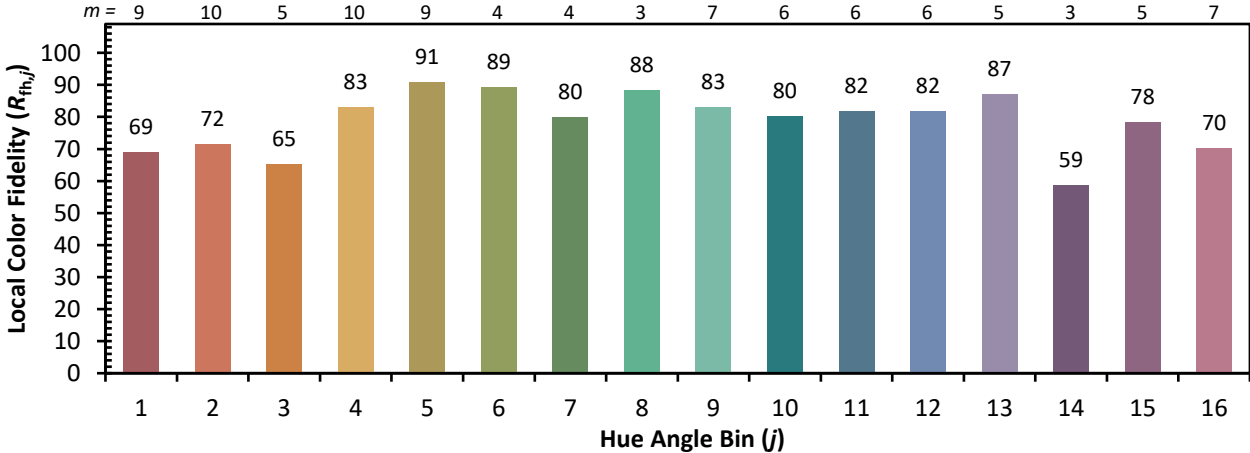
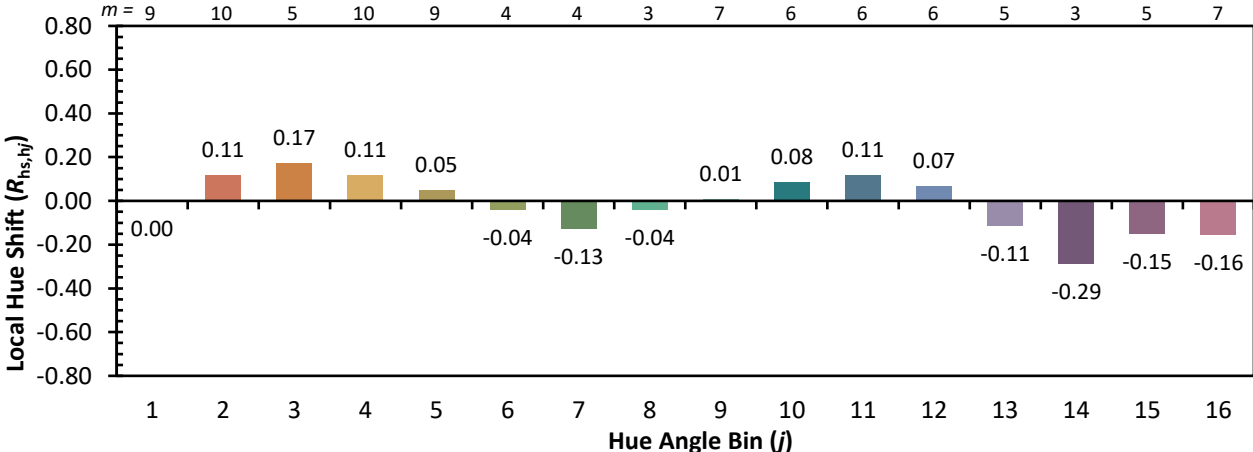
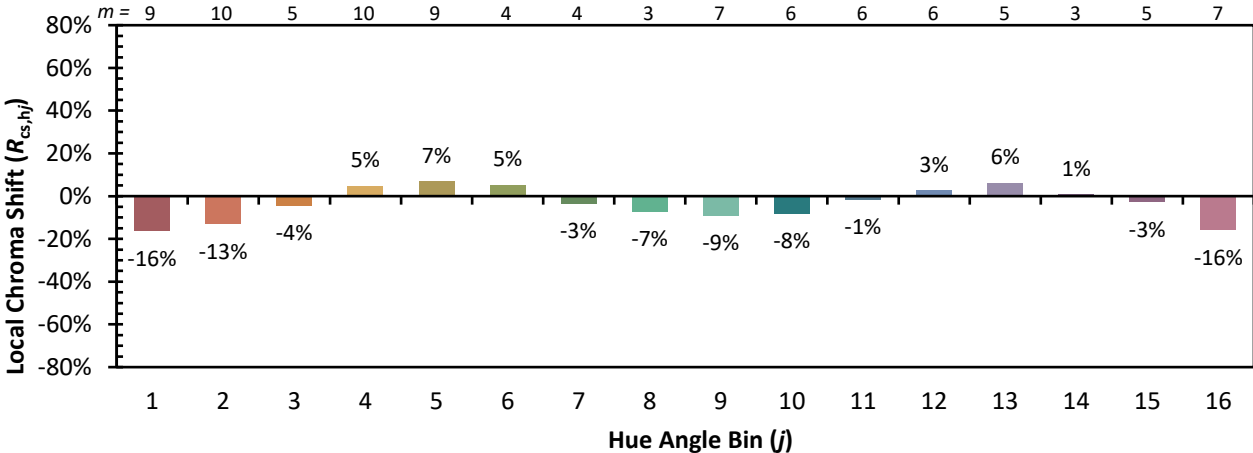


Individual Sample Fidelity Index ($R_{f,i}$)

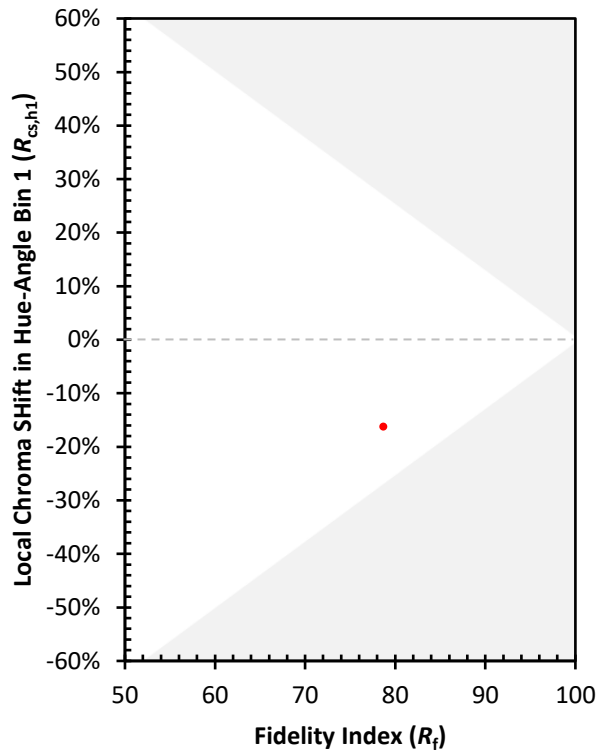
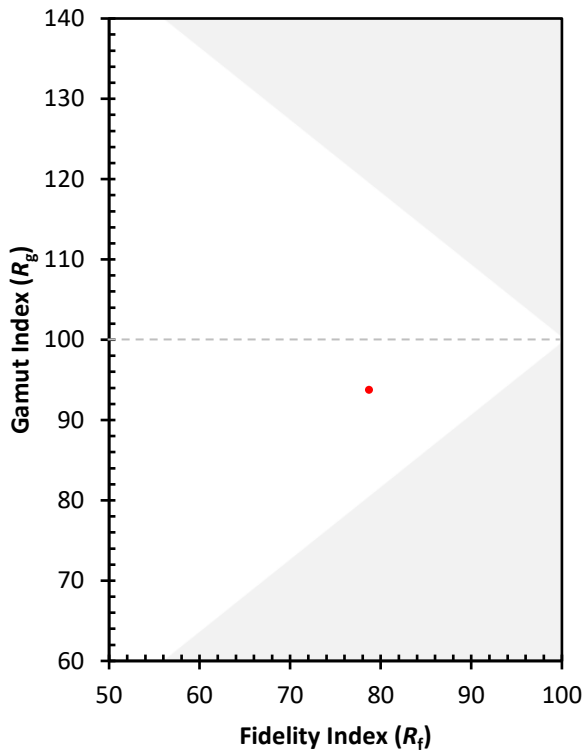
| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 76 | CES51 = 90 | CES76 = 78 |
| CES02 = 65 | CES27 = 92 | CES52 = 87 | CES77 = 78 |
| CES03 = 32 | CES28 = 93 | CES53 = 82 | CES78 = 80 |
| CES04 = 72 | CES29 = 77 | CES54 = 88 | CES79 = 84 |
| CES05 = 51 | CES30 = 82 | CES55 = 87 | CES80 = 84 |
| CES06 = 52 | CES31 = 79 | CES56 = 80 | CES81 = 55 |
| CES07 = 44 | CES32 = 74 | CES57 = 79 | CES82 = 94 |
| CES08 = 42 | CES33 = 81 | CES58 = 81 | CES83 = 88 |
| CES09 = 29 | CES34 = 89 | CES59 = 86 | CES84 = 92 |
| CES10 = 79 | CES35 = 95 | CES60 = 95 | CES85 = 70 |
| CES11 = 61 | CES36 = 98 | CES61 = 86 | CES86 = 51 |
| CES12 = 68 | CES37 = 96 | CES62 = 95 | CES87 = 79 |
| CES13 = 45 | CES38 = 89 | CES63 = 83 | CES88 = 78 |
| CES14 = 75 | CES39 = 96 | CES64 = 76 | CES89 = 64 |
| CES15 = 72 | CES40 = 94 | CES65 = 73 | CES90 = 79 |
| CES16 = 48 | CES41 = 91 | CES66 = 77 | CES91 = 89 |
| CES17 = 51 | CES42 = 92 | CES67 = 75 | CES92 = 57 |
| CES18 = 57 | CES43 = 82 | CES68 = 78 | CES93 = 72 |
| CES19 = 74 | CES44 = 99 | CES69 = 88 | CES94 = 48 |
| CES20 = 68 | CES45 = 85 | CES70 = 76 | CES95 = 70 |
| CES21 = 88 | CES46 = 81 | CES71 = 79 | CES96 = 77 |
| CES22 = 81 | CES47 = 84 | CES72 = 91 | CES97 = 79 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 75 |
| CES24 = 92 | CES49 = 82 | CES74 = 86 | CES99 = 65 |
| CES25 = 73 | CES50 = 88 | CES75 = 82 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)