

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

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Peachtree City, GA 30269

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P1462003

Luminaire Tested: PRV-P-70-740-U-T4W

Issue Date: 06/10/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1462003  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 6/11/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-70-740-U-T4W  
Description: PREVAIL PETITE DISCRETE LED 2 SQUARES 70W 70CRI 4000K FIXTURE w/ TYPE IV WIDE DISTRIBUTION OPTIC  
Light Source: (20) 4000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9841.7 lumens  
Efficiency: N/A  
Efficacy: 133.0 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G2

Input Watts (W): 74  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 8.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

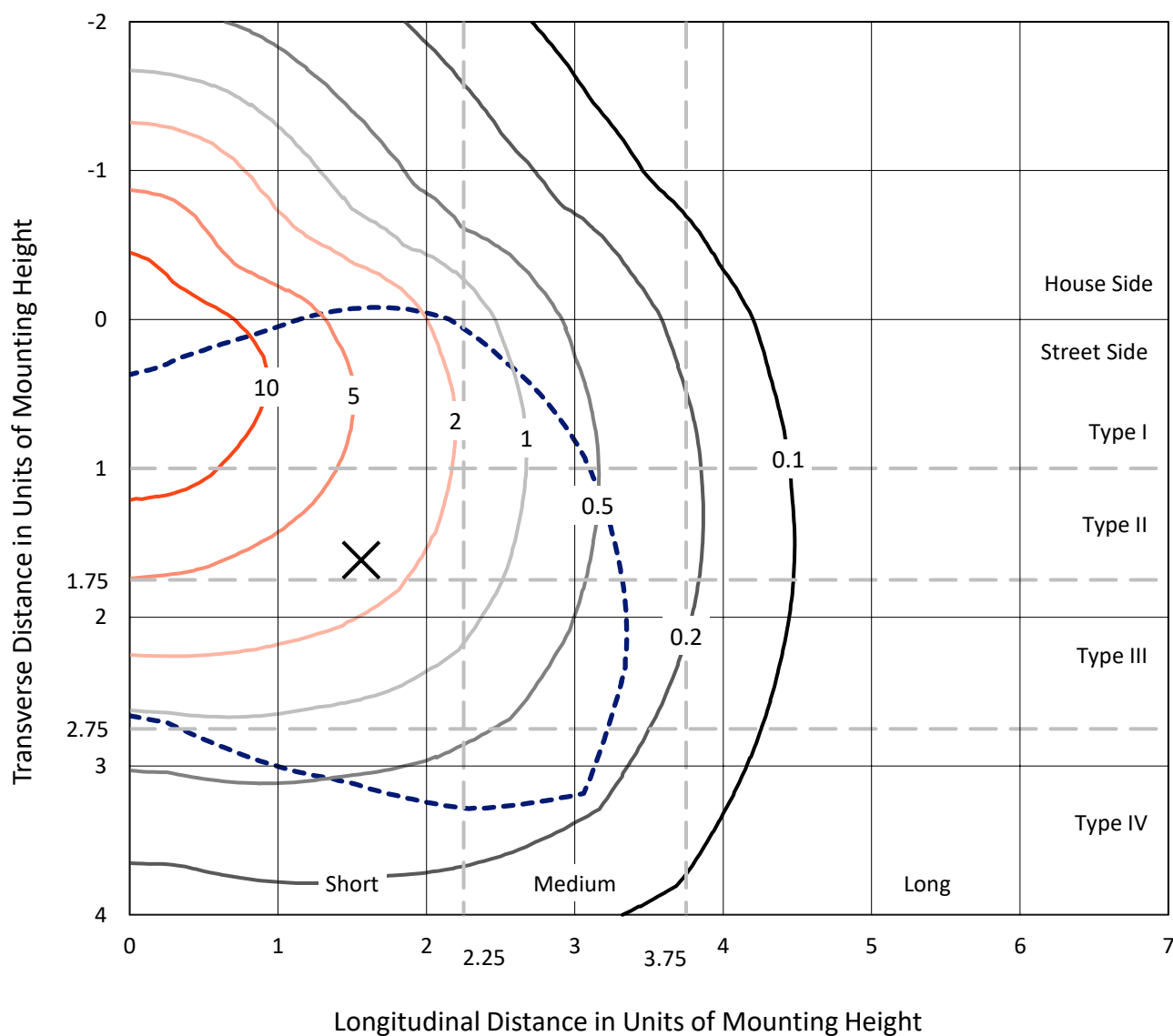
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd



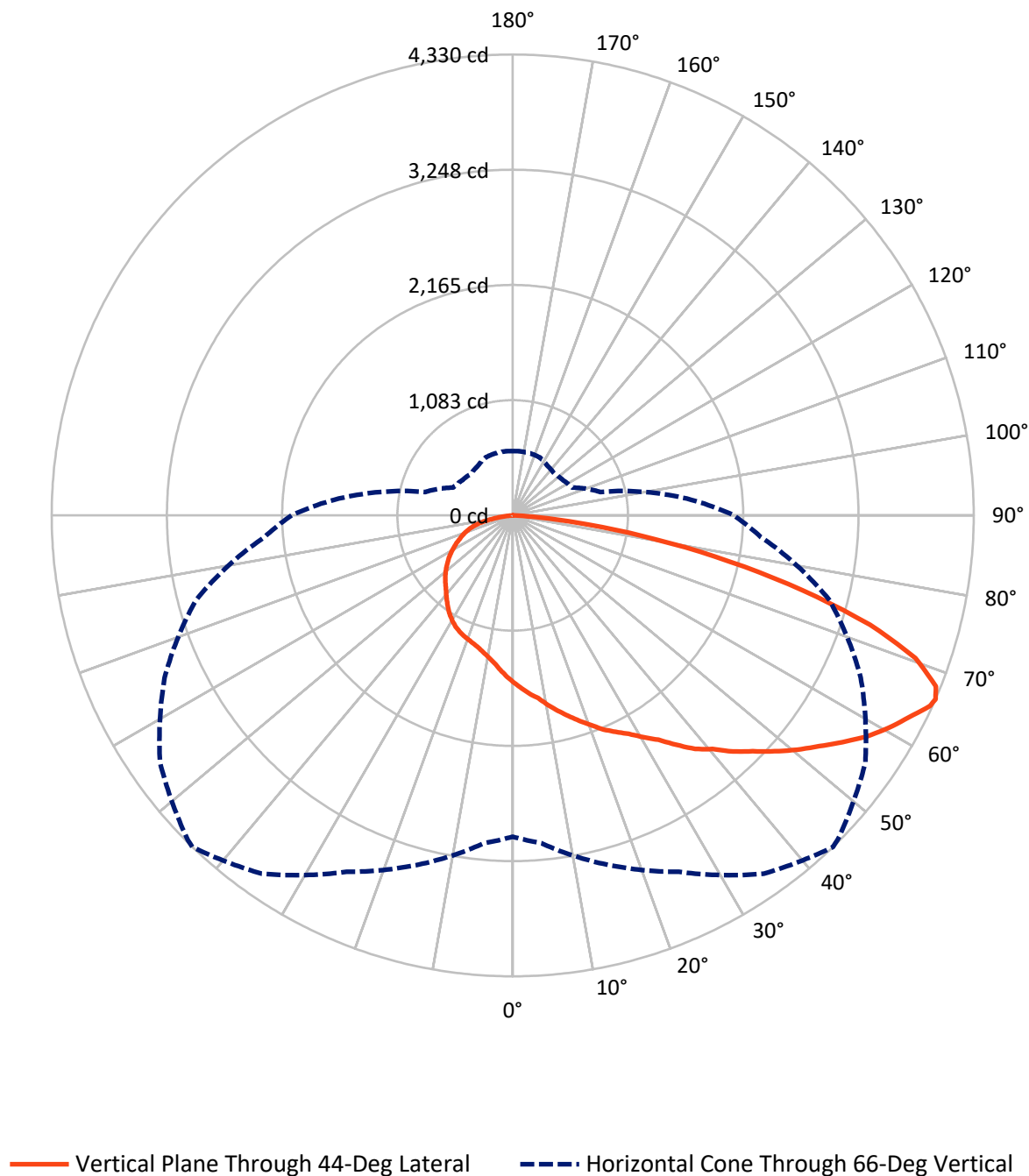
Based on 10 foot mounting height. Maximum calculated value = 18.4 fc

Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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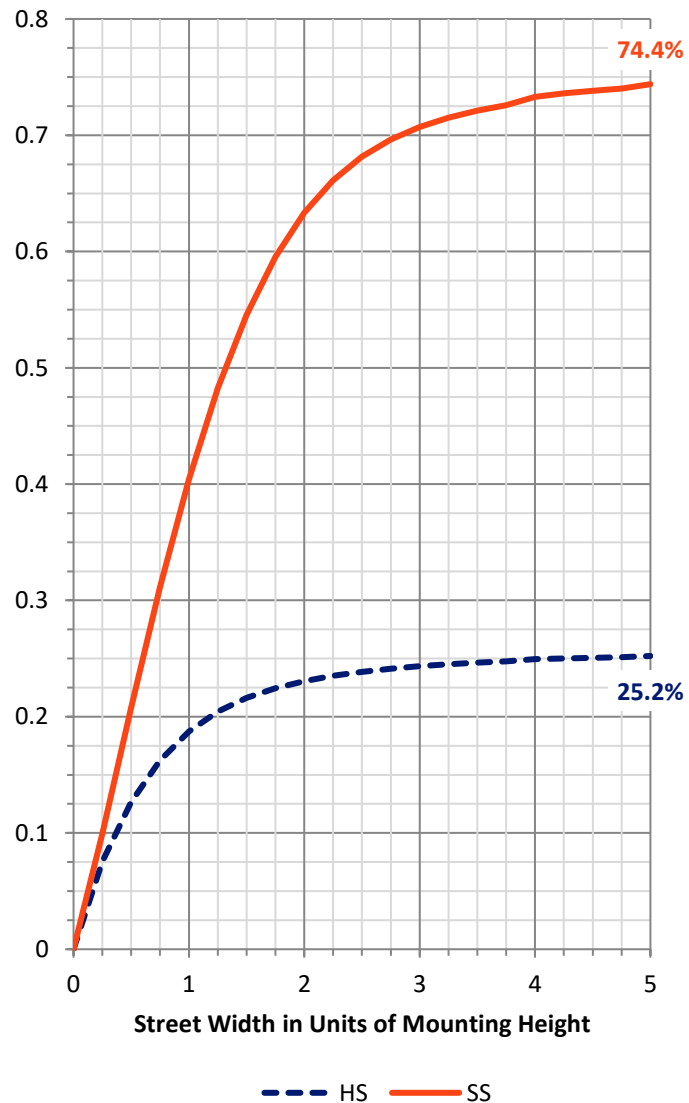
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2494.2   | 0.0    | 2494.2 |
|                    | % Fixture | 25.3     | 0.0    | 25.3   |
| <b>Street Side</b> | Lumens    | 7347.5   | 0.0    | 7347.5 |
|                    | % Fixture | 74.7     | 0.0    | 74.7   |
| <b>Total</b>       | Lumens    | 9841.7   | 0.0    | 9841.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 150.2  | 1.5       |
| 10°-20°   | 462.6  | 4.7       |
| 20°-30°   | 802.8  | 8.2       |
| 30°-40°   | 1197.8 | 12.2      |
| 40°-50°   | 1638.2 | 16.6      |
| 50°-60°   | 2044.9 | 20.8      |
| 60°-70°   | 2116.0 | 21.5      |
| 70°-80°   | 1231.0 | 12.5      |
| 80°-90°   | 198.1  | 2.0       |
| 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°    | 9841.7 | 100.0     |
| 0°-180°   | 9841.7 | 100.0     |

**Coefficient of Utilization**



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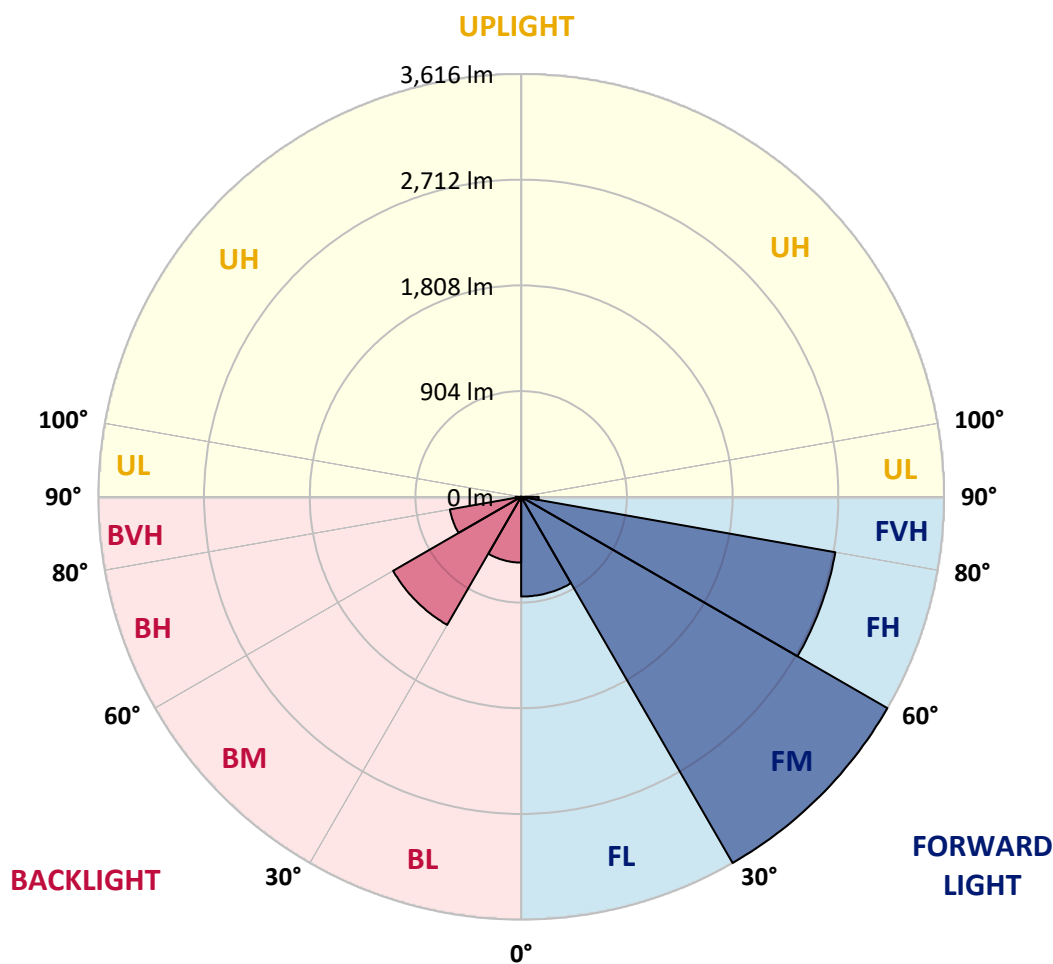
CATALOG NUMBER: PRV-P-70-740-U-T4W

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 853.4  | 8.7       |                         |      |         |
| FM   | (30°-60°)   | 3616.1 | 36.7      |                         |      |         |
| FH   | (60°-80°)   | 2728.3 | 27.7      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 149.7  | 1.5       |                         |      | G2/225  |
| BL   | (0°-30°)    | 562.2  | 5.7       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1264.8 | 12.9      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 618.8  | 6.3       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 48.5   | 0.5       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 |
| 2.5°  | 1642.6 | 1642.6 | 1645.8 | 1642.6 | 1634.7 | 1626.7 | 1626.7 | 1620.4 | 1598.1 | 1594.9 | 1577.4 |
| 5°    | 1715.8 | 1720.5 | 1715.8 | 1709.4 | 1703.1 | 1685.6 | 1684.0 | 1663.3 | 1629.9 | 1606.1 | 1583.8 |
| 7.5°  | 1784.1 | 1792.1 | 1792.1 | 1784.1 | 1761.9 | 1733.3 | 1734.9 | 1711.0 | 1663.3 | 1628.3 | 1596.5 |
| 10°   | 1879.6 | 1876.4 | 1881.1 | 1860.5 | 1839.8 | 1809.6 | 1796.9 | 1760.3 | 1709.4 | 1664.9 | 1612.4 |
| 12.5° | 1978.1 | 1968.6 | 1970.2 | 1947.9 | 1920.9 | 1882.7 | 1868.4 | 1814.4 | 1755.5 | 1698.3 | 1633.1 |
| 15°   | 2040.2 | 2044.9 | 2049.7 | 2024.3 | 2008.4 | 1954.3 | 1943.2 | 1890.7 | 1806.4 | 1730.1 | 1653.8 |
| 17.5° | 2105.4 | 2094.2 | 2116.5 | 2094.2 | 2081.5 | 2029.0 | 2030.6 | 1954.3 | 1855.7 | 1773.0 | 1679.2 |
| 20°   | 2149.9 | 2153.1 | 2162.6 | 2161.0 | 2151.5 | 2102.2 | 2102.2 | 2040.2 | 1925.7 | 1811.2 | 1699.9 |
| 22.5° | 2197.6 | 2199.2 | 2213.5 | 2215.1 | 2202.4 | 2184.9 | 2181.7 | 2107.0 | 1994.0 | 1865.2 | 1728.5 |
| 25°   | 2280.3 | 2273.9 | 2280.3 | 2267.6 | 2269.1 | 2253.2 | 2253.2 | 2208.7 | 2078.3 | 1922.5 | 1766.7 |
| 27.5° | 2393.2 | 2394.8 | 2378.9 | 2363.0 | 2343.9 | 2323.2 | 2334.3 | 2283.5 | 2169.0 | 1994.0 | 1808.0 |
| 30°   | 2539.5 | 2542.7 | 2523.6 | 2477.5 | 2437.7 | 2417.0 | 2407.5 | 2382.0 | 2264.4 | 2067.2 | 1857.3 |
| 32.5° | 2758.9 | 2738.2 | 2701.7 | 2628.5 | 2564.9 | 2512.4 | 2515.6 | 2480.6 | 2372.5 | 2153.1 | 1905.0 |
| 35°   | 2922.7 | 2908.4 | 2879.8 | 2819.3 | 2746.2 | 2646.0 | 2646.0 | 2585.6 | 2474.3 | 2242.1 | 1954.3 |
| 37.5° | 3076.9 | 3078.5 | 3051.5 | 2976.8 | 2921.1 | 2784.4 | 2762.1 | 2681.0 | 2569.7 | 2328.0 | 2014.7 |
| 40°   | 3321.8 | 3270.9 | 3210.5 | 3135.8 | 3035.6 | 2886.1 | 2876.6 | 2797.1 | 2677.8 | 2426.6 | 2075.1 |
| 42.5° | 3469.7 | 3441.1 | 3379.1 | 3283.7 | 3162.8 | 3032.4 | 3014.9 | 2910.0 | 2793.9 | 2526.8 | 2151.5 |
| 45°   | 3671.7 | 3624.0 | 3542.9 | 3477.7 | 3283.7 | 3161.2 | 3146.9 | 3045.1 | 2921.1 | 2636.5 | 2221.4 |
| 47.5° | 3822.7 | 3717.8 | 3697.1 | 3652.6 | 3425.2 | 3310.7 | 3291.6 | 3186.7 | 3054.7 | 2773.2 | 2308.9 |
| 50°   | 3876.8 | 3818.0 | 3840.2 | 3760.7 | 3552.4 | 3460.2 | 3453.8 | 3345.7 | 3188.3 | 2892.5 | 2388.4 |
| 52.5° | 3895.9 | 3910.2 | 3934.0 | 3824.3 | 3676.4 | 3603.3 | 3596.9 | 3493.6 | 3323.4 | 3003.8 | 2461.6 |
| 55°   | 4004.0 | 4000.8 | 4032.6 | 3921.3 | 3832.3 | 3759.1 | 3749.6 | 3658.9 | 3445.9 | 3100.8 | 2526.8 |
| 57.5° | 4102.6 | 4062.8 | 4099.4 | 4015.1 | 3977.0 | 3919.7 | 3918.1 | 3811.6 | 3563.5 | 3180.3 | 2564.9 |
| 60°   | 4066.0 | 4008.8 | 4072.4 | 4004.0 | 4054.9 | 4054.9 | 4069.2 | 3934.0 | 3655.8 | 3247.1 | 2584.0 |
| 62.5° | 3759.1 | 3757.5 | 3905.4 | 3926.1 | 4102.6 | 4177.3 | 4161.4 | 4008.8 | 3698.7 | 3255.0 | 2553.8 |
| 65°   | 3242.3 | 3302.7 | 3577.8 | 3794.1 | 4121.7 | 4310.9 | 4295.0 | 4039.0 | 3649.4 | 3145.3 | 2434.5 |
| 66°   | 3018.1 | 3091.3 | 3395.0 | 3693.9 | 4109.0 | 4330.0 | 4314.1 | 4043.8 | 3606.5 | 3080.1 | 2340.7 |
| 67.5° | 2628.5 | 2709.6 | 3099.2 | 3519.0 | 4026.3 | 4287.0 | 4293.4 | 4018.3 | 3477.7 | 2917.9 | 2200.8 |
| 70°   | 2006.8 | 2092.6 | 2558.6 | 3042.0 | 3698.7 | 4012.0 | 4010.4 | 3749.6 | 3159.6 | 2550.6 | 1862.1 |
| 72.5° | 1451.8 | 1502.7 | 1989.3 | 2450.4 | 3150.1 | 3507.9 | 3528.5 | 3228.0 | 2661.9 | 2081.5 | 1470.9 |
| 75°   | 1030.4 | 1055.9 | 1426.4 | 1825.5 | 2432.9 | 2814.6 | 2790.7 | 2529.9 | 2035.4 | 1559.9 | 1116.3 |
| 77.5° | 702.8  | 755.3  | 1012.9 | 1278.5 | 1742.8 | 2081.5 | 2046.5 | 1757.1 | 1443.9 | 1095.6 | 814.2  |
| 80°   | 438.9  | 469.1  | 621.7  | 790.3  | 1113.1 | 1362.8 | 1369.1 | 1156.0 | 911.2  | 747.4  | 597.9  |
| 82.5° | 241.7  | 254.4  | 362.6  | 437.3  | 543.8  | 717.2  | 744.2  | 694.9  | 566.1  | 488.2  | 419.8  |
| 85°   | 66.8   | 66.8   | 112.9  | 128.8  | 173.3  | 240.1  | 240.1  | 251.2  | 221.0  | 174.9  | 135.2  |
| 87.5° | 3.2    | 3.2    | 3.2    | 4.8    | 4.8    | 4.8    | 4.8    | 8.0    | 6.4    | 3.2    | 3.2    |
| 90°   | 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 | 1571.1 |
| 2.5°  | 1569.5 | 1564.7 | 1552.0 | 1540.9 | 1526.5 | 1518.6 | 1507.5 | 1497.9 | 1494.7 | 1485.2 | 1485.2 |
| 5°    | 1564.7 | 1556.8 | 1521.8 | 1499.5 | 1480.4 | 1458.2 | 1447.0 | 1431.1 | 1424.8 | 1413.6 | 1415.2 |
| 7.5°  | 1571.1 | 1555.2 | 1507.5 | 1464.5 | 1434.3 | 1400.9 | 1383.4 | 1373.9 | 1362.8 | 1353.2 | 1350.0 |
| 10°   | 1582.2 | 1556.8 | 1494.7 | 1435.9 | 1386.6 | 1354.8 | 1332.5 | 1316.6 | 1315.1 | 1310.3 | 1308.7 |
| 12.5° | 1593.3 | 1558.3 | 1486.8 | 1413.6 | 1359.6 | 1319.8 | 1294.4 | 1281.7 | 1284.8 | 1292.8 | 1289.6 |
| 15°   | 1610.8 | 1567.9 | 1472.5 | 1383.4 | 1324.6 | 1284.8 | 1268.9 | 1262.6 | 1278.5 | 1284.8 | 1286.4 |
| 17.5° | 1622.0 | 1572.7 | 1455.0 | 1356.4 | 1291.2 | 1259.4 | 1251.4 | 1257.8 | 1272.1 | 1291.2 | 1294.4 |
| 20°   | 1636.3 | 1575.8 | 1437.5 | 1327.8 | 1261.0 | 1238.7 | 1245.1 | 1261.0 | 1280.1 | 1305.5 | 1310.3 |
| 22.5° | 1656.9 | 1583.8 | 1428.0 | 1294.4 | 1229.2 | 1219.6 | 1238.7 | 1265.8 | 1286.4 | 1318.2 | 1321.4 |
| 25°   | 1682.4 | 1598.1 | 1404.1 | 1261.0 | 1192.6 | 1195.8 | 1232.4 | 1267.4 | 1288.0 | 1318.2 | 1327.8 |
| 27.5° | 1715.8 | 1614.0 | 1388.2 | 1222.8 | 1157.6 | 1171.9 | 1214.9 | 1259.4 | 1284.8 | 1315.1 | 1324.6 |
| 30°   | 1747.6 | 1628.3 | 1370.7 | 1183.1 | 1116.3 | 1138.5 | 1191.0 | 1237.1 | 1267.4 | 1294.4 | 1308.7 |
| 32.5° | 1785.7 | 1650.6 | 1354.8 | 1149.7 | 1078.1 | 1102.0 | 1159.2 | 1216.5 | 1248.3 | 1275.3 | 1286.4 |
| 35°   | 1822.3 | 1672.8 | 1346.9 | 1116.3 | 1040.0 | 1062.2 | 1119.5 | 1186.3 | 1221.2 | 1238.7 | 1257.8 |
| 37.5° | 1868.4 | 1706.2 | 1342.1 | 1087.7 | 1000.2 | 1016.1 | 1081.3 | 1151.3 | 1187.8 | 1205.3 | 1222.8 |
| 40°   | 1927.3 | 1752.3 | 1343.7 | 1059.0 | 958.9  | 971.6  | 1041.5 | 1117.9 | 1159.2 | 1167.2 | 1183.1 |
| 42.5° | 1984.5 | 1793.7 | 1346.9 | 1032.0 | 922.3  | 928.6  | 1001.8 | 1079.7 | 1114.7 | 1121.1 | 1137.0 |
| 45°   | 2048.1 | 1850.9 | 1346.9 | 998.6  | 884.1  | 893.7  | 963.6  | 1038.4 | 1078.1 | 1081.3 | 1094.0 |
| 47.5° | 2118.1 | 1906.6 | 1340.5 | 963.6  | 847.6  | 857.1  | 925.5  | 990.7  | 1027.2 | 1032.0 | 1044.7 |
| 50°   | 2188.0 | 1951.1 | 1326.2 | 920.7  | 811.0  | 823.7  | 880.9  | 941.4  | 966.8  | 974.8  | 984.3  |
| 52.5° | 2254.8 | 1990.9 | 1291.2 | 876.2  | 774.4  | 783.9  | 834.8  | 884.1  | 904.8  | 914.3  | 919.1  |
| 55°   | 2305.7 | 2017.9 | 1243.5 | 826.9  | 742.6  | 745.8  | 782.4  | 823.7  | 838.0  | 838.0  | 846.0  |
| 57.5° | 2332.8 | 2022.7 | 1176.7 | 776.0  | 706.0  | 706.0  | 731.5  | 768.0  | 774.4  | 772.8  | 774.4  |
| 60°   | 2340.7 | 1995.6 | 1095.6 | 728.3  | 669.5  | 661.5  | 682.2  | 706.0  | 707.6  | 707.6  | 715.6  |
| 62.5° | 2300.9 | 1920.9 | 998.6  | 682.2  | 632.9  | 615.4  | 631.3  | 655.1  | 659.9  | 659.9  | 661.5  |
| 65°   | 2167.4 | 1761.9 | 892.1  | 636.1  | 593.1  | 572.5  | 586.8  | 617.0  | 626.5  | 624.9  | 623.3  |
| 66°   | 2076.7 | 1684.0 | 849.1  | 617.0  | 577.2  | 553.4  | 569.3  | 601.1  | 605.8  | 605.8  | 604.3  |
| 67.5° | 1922.5 | 1523.4 | 774.4  | 588.4  | 548.6  | 527.9  | 545.4  | 569.3  | 577.2  | 582.0  | 582.0  |
| 70°   | 1598.1 | 1254.6 | 677.4  | 537.5  | 499.3  | 485.0  | 497.7  | 515.2  | 520.0  | 526.3  | 523.2  |
| 72.5° | 1261.0 | 982.7  | 589.9  | 486.6  | 454.8  | 437.3  | 443.7  | 459.6  | 472.3  | 477.0  | 470.7  |
| 75°   | 957.3  | 761.7  | 513.6  | 435.7  | 405.5  | 384.8  | 384.8  | 381.6  | 381.6  | 394.4  | 376.9  |
| 77.5° | 718.7  | 602.7  | 446.8  | 370.5  | 338.7  | 316.4  | 303.7  | 306.9  | 286.2  | 270.3  | 257.6  |
| 80°   | 531.1  | 458.0  | 365.7  | 291.0  | 254.4  | 219.4  | 221.0  | 229.0  | 179.7  | 127.2  | 63.6   |
| 82.5° | 376.9  | 332.3  | 262.4  | 198.8  | 151.1  | 132.0  | 132.0  | 138.3  | 100.2  | 36.6   | 0.0    |
| 85°   | 119.3  | 114.5  | 103.4  | 74.7   | 66.8   | 50.9   | 39.8   | 36.6   | 41.3   | 8.0    | 0.0    |
| 87.5° | 3.2    | 3.2    | 3.2    | 3.2    | 1.6    | 1.6    | 1.6    | 1.6    | 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    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP2-2501-321-1

Test Date: 04/09/2025

Luminaire Tested: GKO-PB1E-740-U-T4W

Data in this report applies to families of products including GKO-PB1E-740-U-T4W

### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP2 - 165CM SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 04/10/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1E-740-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 3916     | CRI (Ra): | 71.0 |      |       |
| CIE u':                   | 0.2259   | R1:       | 67.4 | R9:  | -37.9 |
| CIE v':                   | 0.5049   | R2:       | 78.3 | R10: | 48.9  |
| Duv:                      | 0.0014   | R3:       | 87.2 | R11: | 64.6  |
| CIE x:                    | 0.3853   | R4:       | 69.5 | R12: | 40.9  |
| CIE y:                    | 0.3827   | R5:       | 67.2 | R13: | 69.2  |
| CIE z:                    | 0.2321   | R6:       | 69.3 | R14: | 92.7  |
| Peak Wavelength (nm):     | 449      | R7:       | 79.9 | R15: | 59.8  |
| Dominant Wavelength (nm): | 578      | R8:       | 48.9 |      |       |
| Purity:                   | 30.46652 |           |      |      |       |
| Rf:                       | 73.5     |           |      |      |       |
| Rg:                       | 93.5     |           |      |      |       |



### Test Conditions

Stabilization Time: 33M  
 Operation Time: 1H 33M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP2-2501-321-1

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN2187                | 1/6/2025         | 7/6/2025             |
| Power Meter                    | INXT2011002           | 1/21/2025        | 1/21/2026            |
| AC Power Source                | IN0458                | 10/22/2024       | 10/22/2025           |
| DC Power Source                | IN0212                | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | IN4036B               | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | IN0046                | 10/22/2024       | 10/22/2025           |



REPORT NUMBER: SP2-2501-321-1

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 0                             | NR                             | 490               | 132                           | NR                             | 620               | 668                           | NR                             | 750               | 17                            | NR                             | 880               | 1                             | NR                             |
| 365               | 0                             | NR                             | 495               | 174                           | NR                             | 625               | 611                           | NR                             | 755               | 15                            | NR                             | 885               | 0                             | NR                             |
| 370               | 0                             | NR                             | 500               | 238                           | NR                             | 630               | 554                           | NR                             | 760               | 13                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 314                           | NR                             | 635               | 498                           | NR                             | 765               | 11                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 392                           | NR                             | 640               | 445                           | NR                             | 770               | 10                            | NR                             | 900               | 0                             | NR                             |
| 385               | 1                             | NR                             | 515               | 467                           | NR                             | 645               | 394                           | NR                             | 775               | 8                             | NR                             | 905               | 0                             | NR                             |
| 390               | 2                             | NR                             | 520               | 526                           | NR                             | 650               | 347                           | NR                             | 780               | 7                             | NR                             | 910               | 0                             | NR                             |
| 395               | 4                             | NR                             | 525               | 575                           | NR                             | 655               | 305                           | NR                             | 785               | 6                             | NR                             | 915               | 0                             | NR                             |
| 400               | 6                             | NR                             | 530               | 613                           | NR                             | 660               | 266                           | NR                             | 790               | 5                             | NR                             | 920               | 0                             | NR                             |
| 405               | 10                            | NR                             | 535               | 644                           | NR                             | 665               | 231                           | NR                             | 795               | 5                             | NR                             | 925               | 0                             | NR                             |
| 410               | 18                            | NR                             | 540               | 673                           | NR                             | 670               | 200                           | NR                             | 800               | 4                             | NR                             | 930               | 0                             | NR                             |
| 415               | 34                            | NR                             | 545               | 703                           | NR                             | 675               | 174                           | NR                             | 805               | 4                             | NR                             | 935               | 0                             | NR                             |
| 420               | 66                            | NR                             | 550               | 734                           | NR                             | 680               | 150                           | NR                             | 810               | 3                             | NR                             | 940               | 0                             | NR                             |
| 425               | 124                           | NR                             | 555               | 768                           | NR                             | 685               | 129                           | NR                             | 815               | 3                             | NR                             | 945               | 0                             | NR                             |
| 430               | 216                           | NR                             | 560               | 804                           | NR                             | 690               | 111                           | NR                             | 820               | 2                             | NR                             | 950               | 0                             | NR                             |
| 435               | 352                           | NR                             | 565               | 838                           | NR                             | 695               | 95                            | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 548                           | NR                             | 570               | 872                           | NR                             | 700               | 81                            | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 836                           | NR                             | 575               | 896                           | NR                             | 705               | 69                            | NR                             | 835               | 2                             | NR                             | 965               | 0                             | NR                             |
| 450               | 997                           | NR                             | 580               | 913                           | NR                             | 710               | 60                            | NR                             | 840               | 1                             | NR                             | 970               | 0                             | NR                             |
| 455               | 705                           | NR                             | 585               | 917                           | NR                             | 715               | 51                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 429                           | NR                             | 590               | 911                           | NR                             | 720               | 44                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 316                           | NR                             | 595               | 891                           | NR                             | 725               | 38                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 213                           | NR                             | 600               | 862                           | NR                             | 730               | 32                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 143                           | NR                             | 605               | 822                           | NR                             | 735               | 28                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 121                           | NR                             | 610               | 776                           | NR                             | 740               | 24                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 118                           | NR                             | 615               | 725                           | NR                             | 745               | 20                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



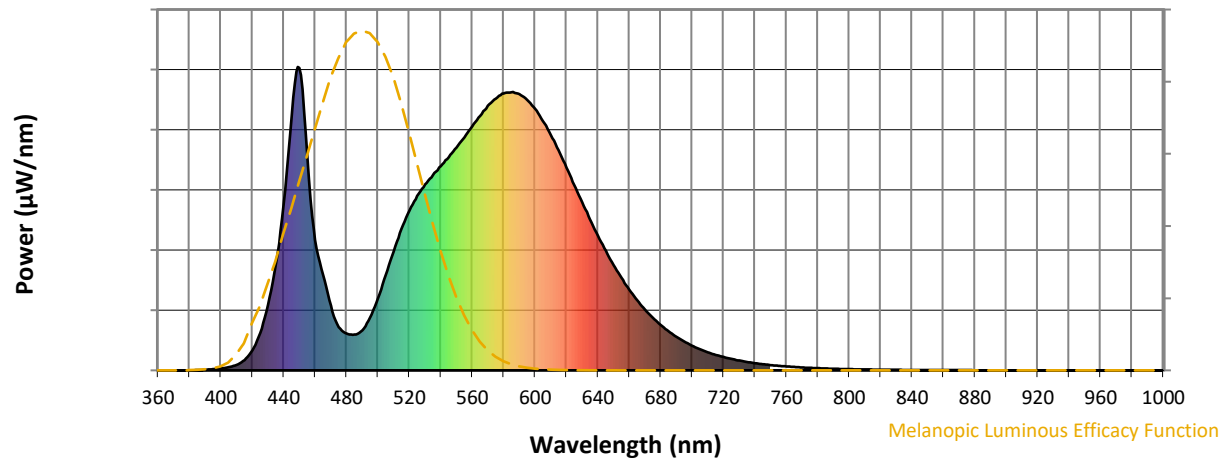
Scotopic Lumens: NR

S/P: 1.49

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 132                                  | NR                             | 620               | 668                                  | NR                             | 750               | 17                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 174                                  | NR                             | 625               | 611                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 238                                  | NR                             | 630               | 554                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 314                                  | NR                             | 635               | 498                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 392                                  | NR                             | 640               | 445                                  | NR                             | 770               | 10                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 1                                    | NR                             | 515               | 467                                  | NR                             | 645               | 394                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 2                                    | NR                             | 520               | 526                                  | NR                             | 650               | 347                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 575                                  | NR                             | 655               | 305                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 613                                  | NR                             | 660               | 266                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 10                                   | NR                             | 535               | 644                                  | NR                             | 665               | 231                                  | NR                             | 795               | 5                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 18                                   | NR                             | 540               | 673                                  | NR                             | 670               | 200                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 34                                   | NR                             | 545               | 703                                  | NR                             | 675               | 174                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 66                                   | NR                             | 550               | 734                                  | NR                             | 680               | 150                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 124                                  | NR                             | 555               | 768                                  | NR                             | 685               | 129                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 216                                  | NR                             | 560               | 804                                  | NR                             | 690               | 111                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 352                                  | NR                             | 565               | 838                                  | NR                             | 695               | 95                                   | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 548                                  | NR                             | 570               | 872                                  | NR                             | 700               | 81                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 836                                  | NR                             | 575               | 896                                  | NR                             | 705               | 69                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 997                                  | NR                             | 580               | 913                                  | NR                             | 710               | 60                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 705                                  | NR                             | 585               | 917                                  | NR                             | 715               | 51                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 429                                  | NR                             | 590               | 911                                  | NR                             | 720               | 44                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 316                                  | NR                             | 595               | 891                                  | NR                             | 725               | 38                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 213                                  | NR                             | 600               | 862                                  | NR                             | 730               | 32                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 143                                  | NR                             | 605               | 822                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 121                                  | NR                             | 610               | 776                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 118                                  | NR                             | 615               | 725                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.88

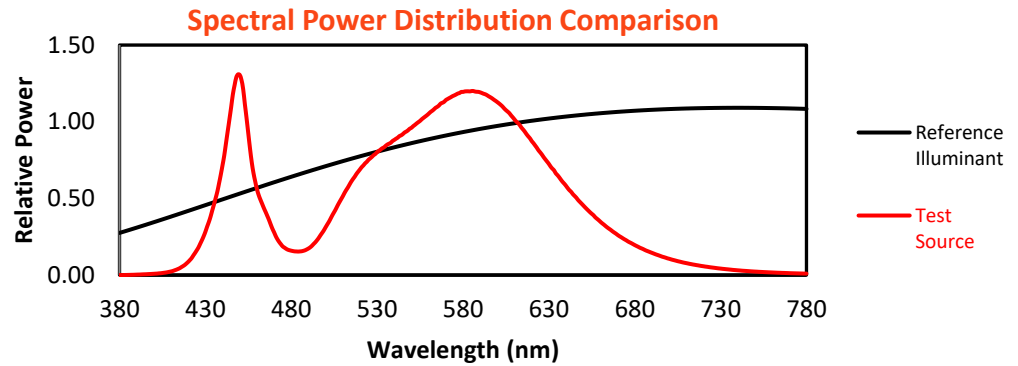
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|-------------------|----------------------------------------|--------------------------------|
| 360               | 0                                      | NR                             | 490               | 132                                    | NR                             | 620               | 668                                    | NR                             | 750               | 17                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 174                                    | NR                             | 625               | 611                                    | NR                             | 755               | 15                                     | NR                             | 885               | 0                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 238                                    | NR                             | 630               | 554                                    | NR                             | 760               | 13                                     | NR                             | 890               | 0                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 314                                    | NR                             | 635               | 498                                    | NR                             | 765               | 11                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 392                                    | NR                             | 640               | 445                                    | NR                             | 770               | 10                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 1                                      | NR                             | 515               | 467                                    | NR                             | 645               | 394                                    | NR                             | 775               | 8                                      | NR                             | 905               | 0                                      | NR                             |
| 390               | 2                                      | NR                             | 520               | 526                                    | NR                             | 650               | 347                                    | NR                             | 780               | 7                                      | NR                             | 910               | 0                                      | NR                             |
| 395               | 4                                      | NR                             | 525               | 575                                    | NR                             | 655               | 305                                    | NR                             | 785               | 6                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 6                                      | NR                             | 530               | 613                                    | NR                             | 660               | 266                                    | NR                             | 790               | 5                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 10                                     | NR                             | 535               | 644                                    | NR                             | 665               | 231                                    | NR                             | 795               | 5                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 18                                     | NR                             | 540               | 673                                    | NR                             | 670               | 200                                    | NR                             | 800               | 4                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 34                                     | NR                             | 545               | 703                                    | NR                             | 675               | 174                                    | NR                             | 805               | 4                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 66                                     | NR                             | 550               | 734                                    | NR                             | 680               | 150                                    | NR                             | 810               | 3                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 124                                    | NR                             | 555               | 768                                    | NR                             | 685               | 129                                    | NR                             | 815               | 3                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 216                                    | NR                             | 560               | 804                                    | NR                             | 690               | 111                                    | NR                             | 820               | 2                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 352                                    | NR                             | 565               | 838                                    | NR                             | 695               | 95                                     | NR                             | 825               | 2                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 548                                    | NR                             | 570               | 872                                    | NR                             | 700               | 81                                     | NR                             | 830               | 2                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 836                                    | NR                             | 575               | 896                                    | NR                             | 705               | 69                                     | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 997                                    | NR                             | 580               | 913                                    | NR                             | 710               | 60                                     | NR                             | 840               | 1                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 705                                    | NR                             | 585               | 917                                    | NR                             | 715               | 51                                     | NR                             | 845               | 1                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 429                                    | NR                             | 590               | 911                                    | NR                             | 720               | 44                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 316                                    | NR                             | 595               | 891                                    | NR                             | 725               | 38                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 213                                    | NR                             | 600               | 862                                    | NR                             | 730               | 32                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 143                                    | NR                             | 605               | 822                                    | NR                             | 735               | 28                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 121                                    | NR                             | 610               | 776                                    | NR                             | 740               | 24                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 118                                    | NR                             | 615               | 725                                    | NR                             | 745               | 20                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

REPORT NUMBER: SP2-2501-321-1

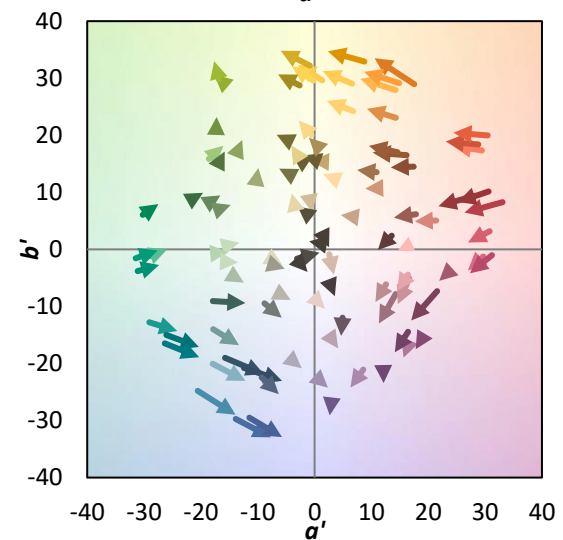
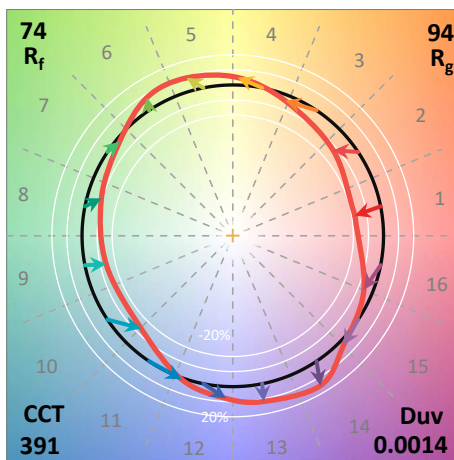
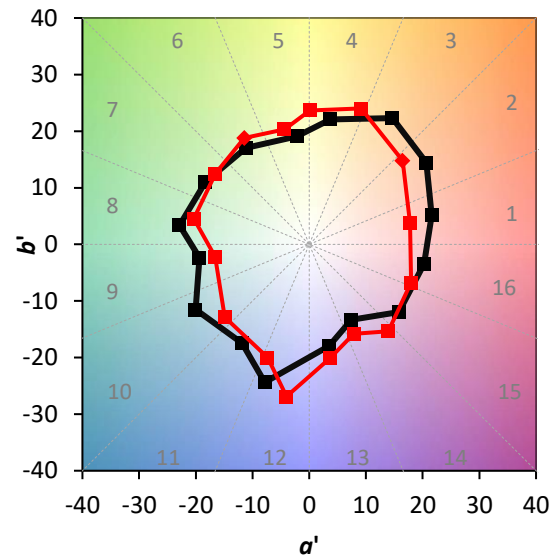
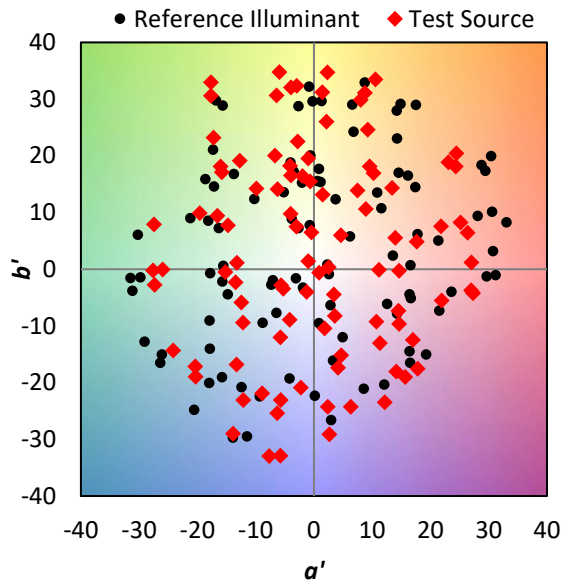
TM-30-18

### Summary

$R_f = 73.5$   
 $R_g = 93.5$   
 CIE  $R_a = 71.0$   
 $R_g = -37.9$

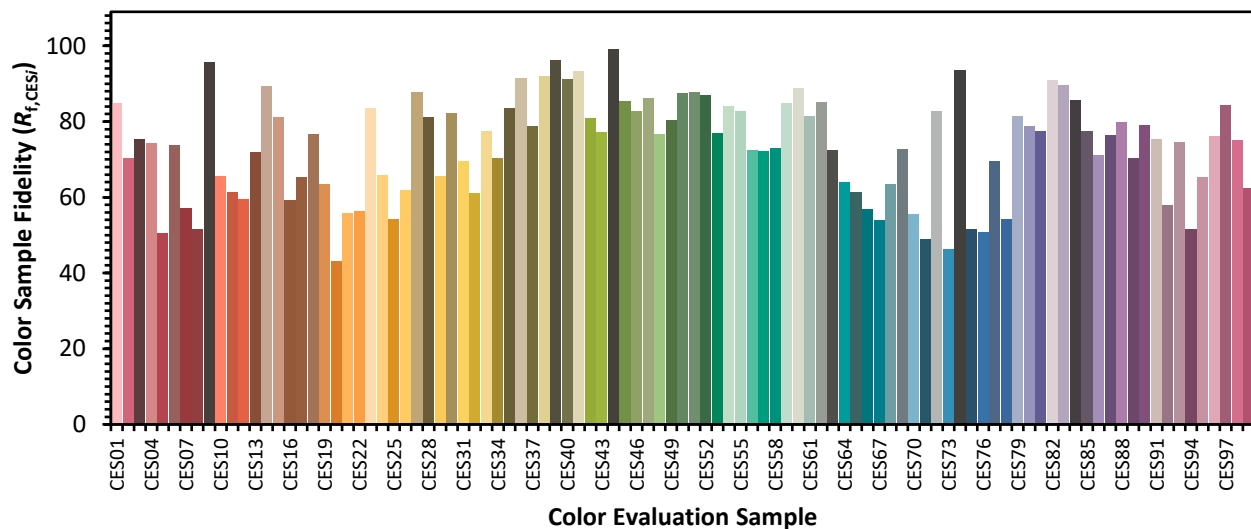


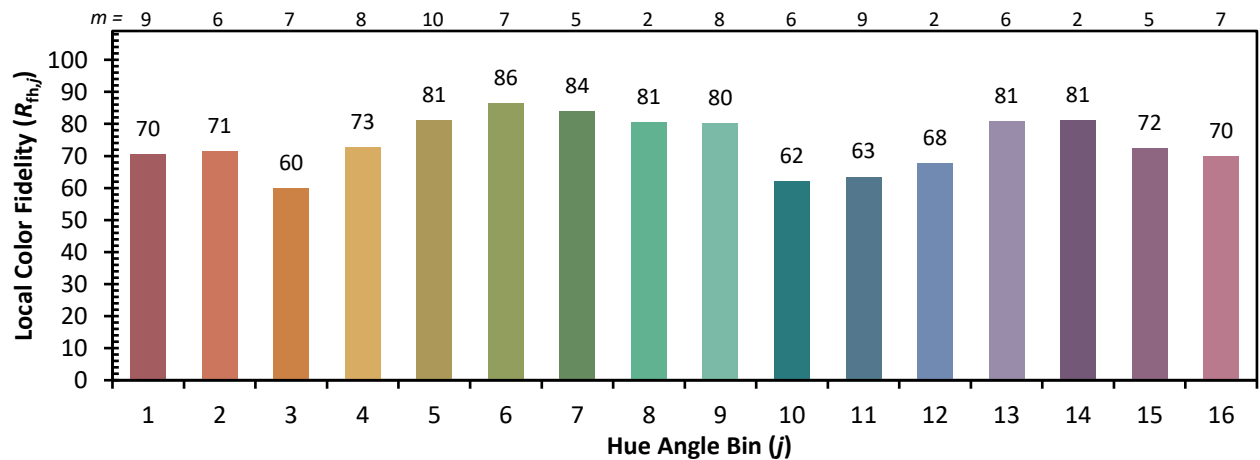
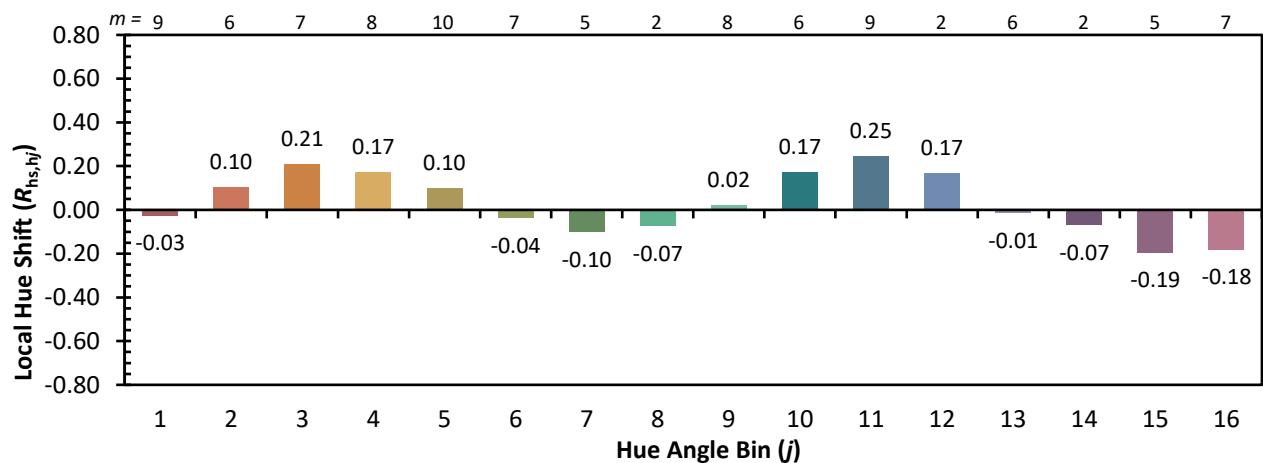
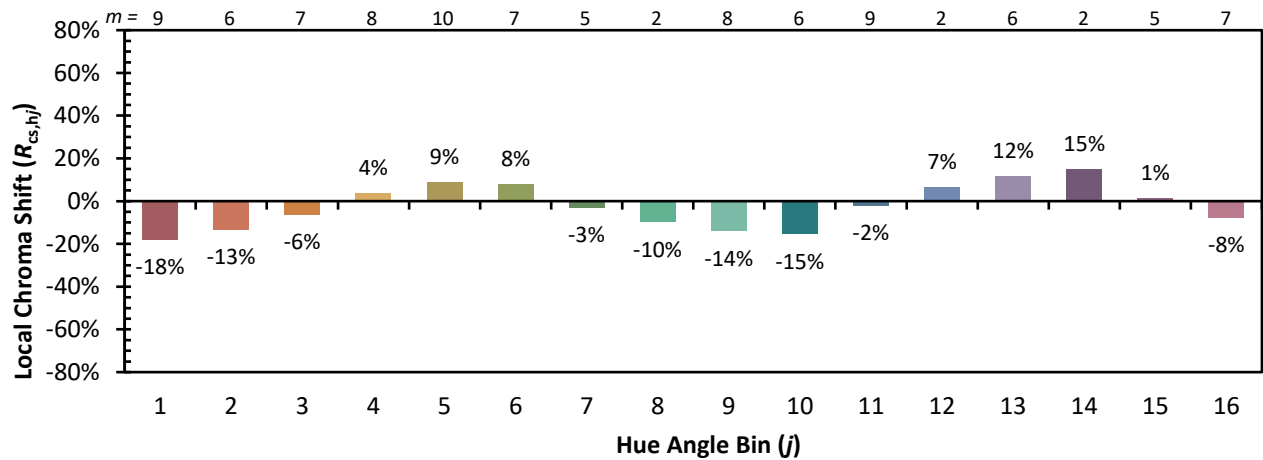
### Color Vector Graphics



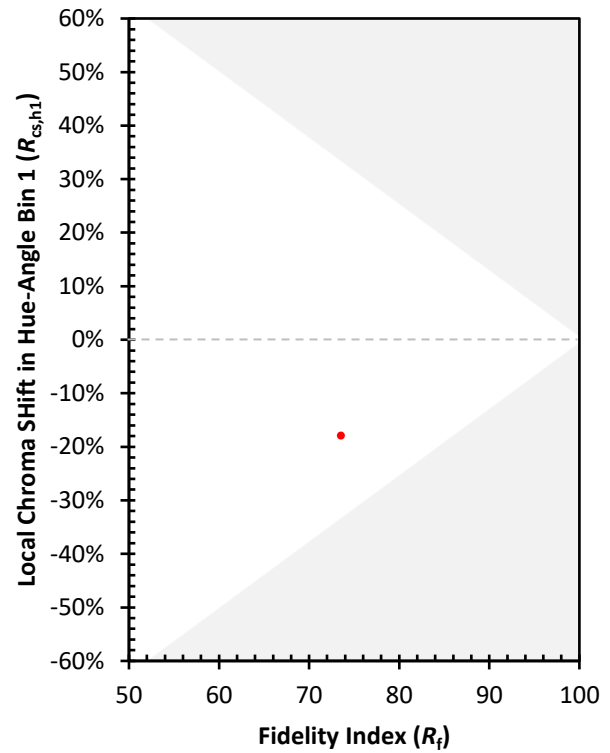
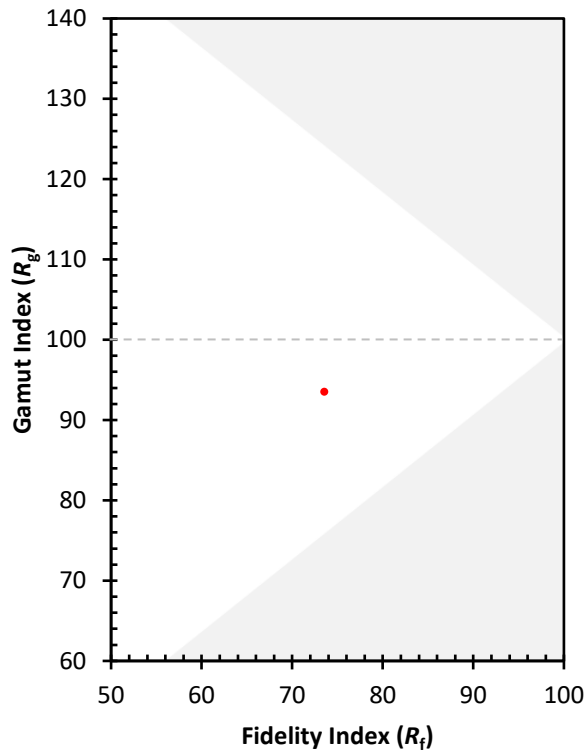
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 62 | CES51 = 88 | CES76 = 51 |
| CES02 = 61 | CES27 = 88 | CES52 = 87 | CES77 = 70 |
| CES03 = 30 | CES28 = 81 | CES53 = 77 | CES78 = 54 |
| CES04 = 70 | CES29 = 66 | CES54 = 84 | CES79 = 81 |
| CES05 = 47 | CES30 = 82 | CES55 = 83 | CES80 = 79 |
| CES06 = 50 | CES31 = 69 | CES56 = 73 | CES81 = 77 |
| CES07 = 40 | CES32 = 61 | CES57 = 72 | CES82 = 91 |
| CES08 = 39 | CES33 = 77 | CES58 = 73 | CES83 = 90 |
| CES09 = 29 | CES34 = 70 | CES59 = 85 | CES84 = 86 |
| CES10 = 74 | CES35 = 84 | CES60 = 89 | CES85 = 77 |
| CES11 = 57 | CES36 = 91 | CES61 = 81 | CES86 = 71 |
| CES12 = 63 | CES37 = 79 | CES62 = 85 | CES87 = 76 |
| CES13 = 42 | CES38 = 92 | CES63 = 72 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 64 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 61 | CES90 = 79 |
| CES16 = 46 | CES41 = 93 | CES66 = 57 | CES91 = 75 |
| CES17 = 49 | CES42 = 81 | CES67 = 54 | CES92 = 58 |
| CES18 = 56 | CES43 = 77 | CES68 = 63 | CES93 = 75 |
| CES19 = 72 | CES44 = 99 | CES69 = 73 | CES94 = 52 |
| CES20 = 65 | CES45 = 85 | CES70 = 56 | CES95 = 65 |
| CES21 = 86 | CES46 = 83 | CES71 = 49 | CES96 = 76 |
| CES22 = 78 | CES47 = 86 | CES72 = 83 | CES97 = 84 |
| CES23 = 92 | CES48 = 77 | CES73 = 46 | CES98 = 75 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 62 |
| CES25 = 72 | CES50 = 87 | CES75 = 52 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)