

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: P1502869

Luminaire Tested: PRV-P-50-722-U-T2RE

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1502869  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 7/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-50-722-U-T2RE  
Description: PREVAIL PETITE DISCRETE LED 1 SQUARE 50W 70CRI 2200K FIXTURE w/ TYPE II  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC  
Light Source: (10) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5539.4 lumens  
Efficiency: N/A  
Efficacy: 105.5 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B1 - U0 - G1

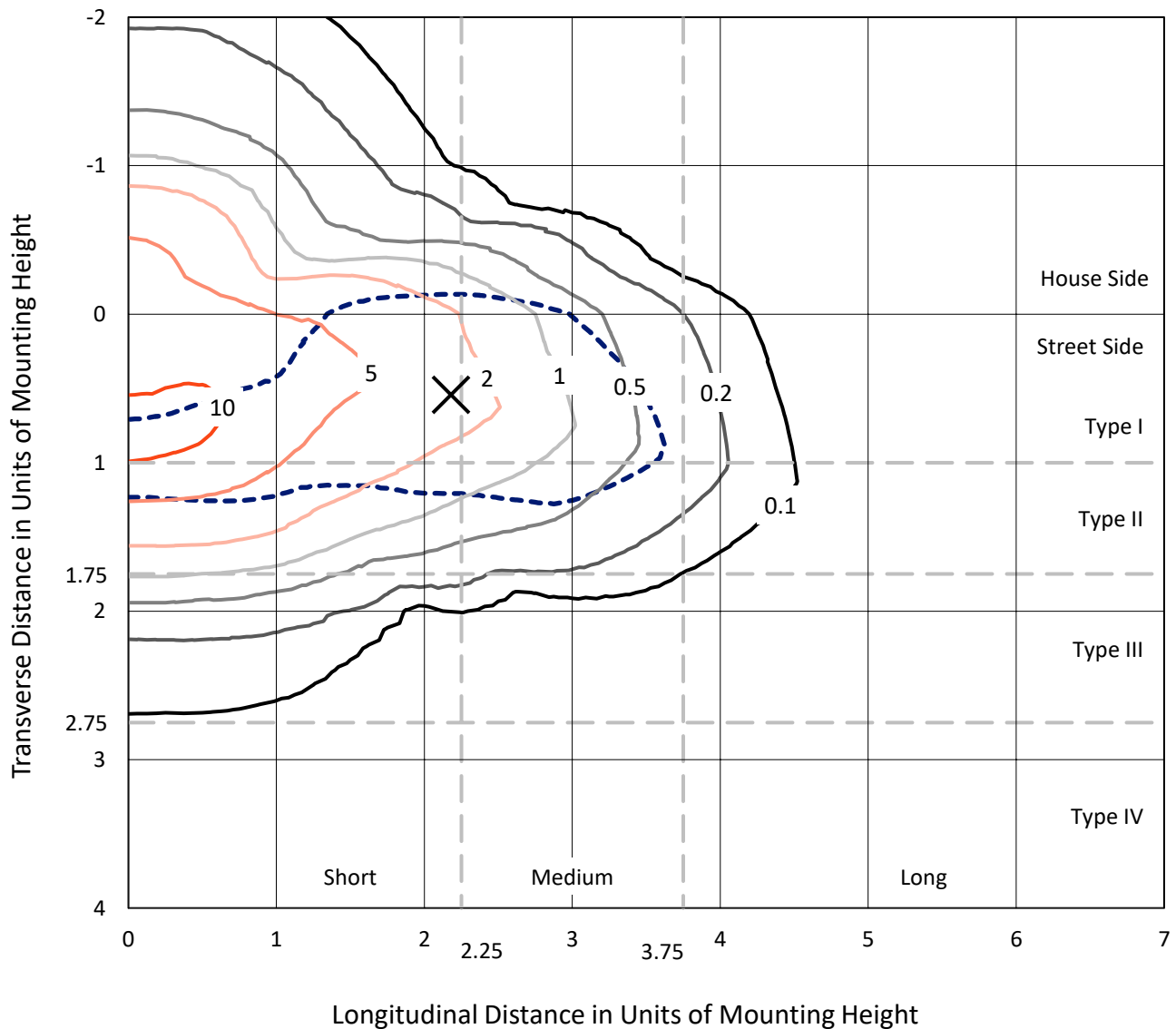
Input Watts (W): 52.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 6.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

REPORT NUMBER: P1502869

CATALOG NUMBER: PRV-P-50-722-U-T2RE

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
- - - 1/2 Max cd

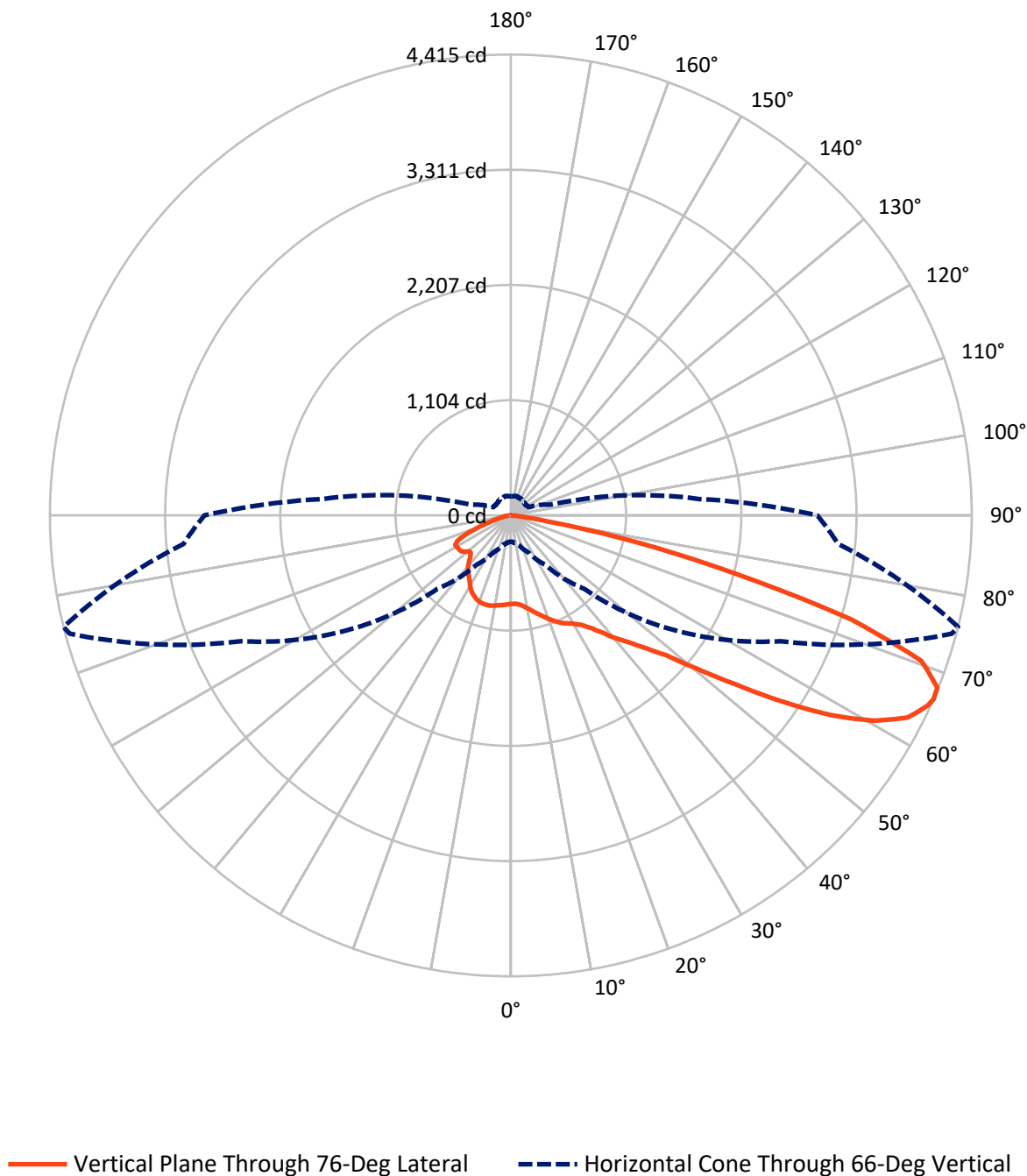


Based on 10 foot mounting height. Maximum calculated value = 11.9 fc  
Type II - Short - N/A

REPORT NUMBER: P1502869

CATALOG NUMBER: PRV-P-50-722-U-T2RE

## Luminous Intensity Polar Plot



REPORT NUMBER: P1502869

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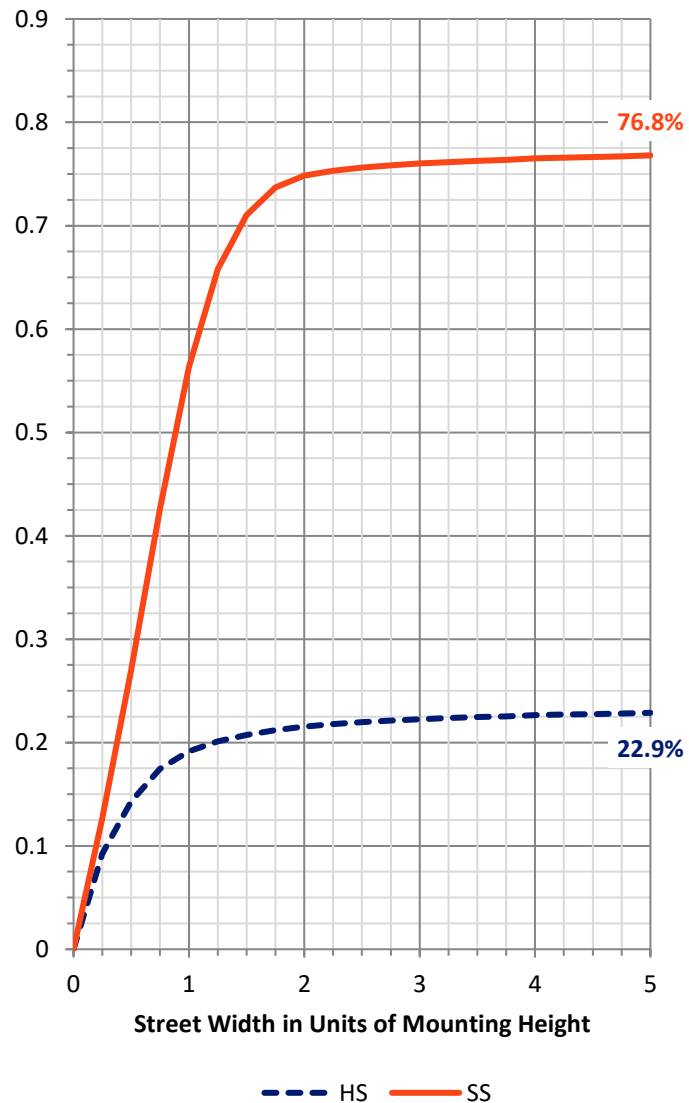
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1275.3   | 0.0    | 1275.3 |
|                    | % Fixture | 23.0     | 0.0    | 23.0   |
| <b>Street Side</b> | Lumens    | 4264.1   | 0.0    | 4264.1 |
|                    | % Fixture | 77.0     | 0.0    | 77.0   |
| <b>Total</b>       | Lumens    | 5539.4   | 0.0    | 5539.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 79.7   | 1.4       |
| 10°-20°   | 234.2  | 4.2       |
| 20°-30°   | 445.5  | 8.0       |
| 30°-40°   | 775.7  | 14.0      |
| 40°-50°   | 1124.4 | 20.3      |
| 50°-60°   | 1290.9 | 23.3      |
| 60°-70°   | 1078.3 | 19.5      |
| 70°-80°   | 466.2  | 8.4       |
| 80°-90°   | 44.5   | 0.8       |
| 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°    | 5539.4 | 100.0     |
| 0°-180°   | 5539.4 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P1502869

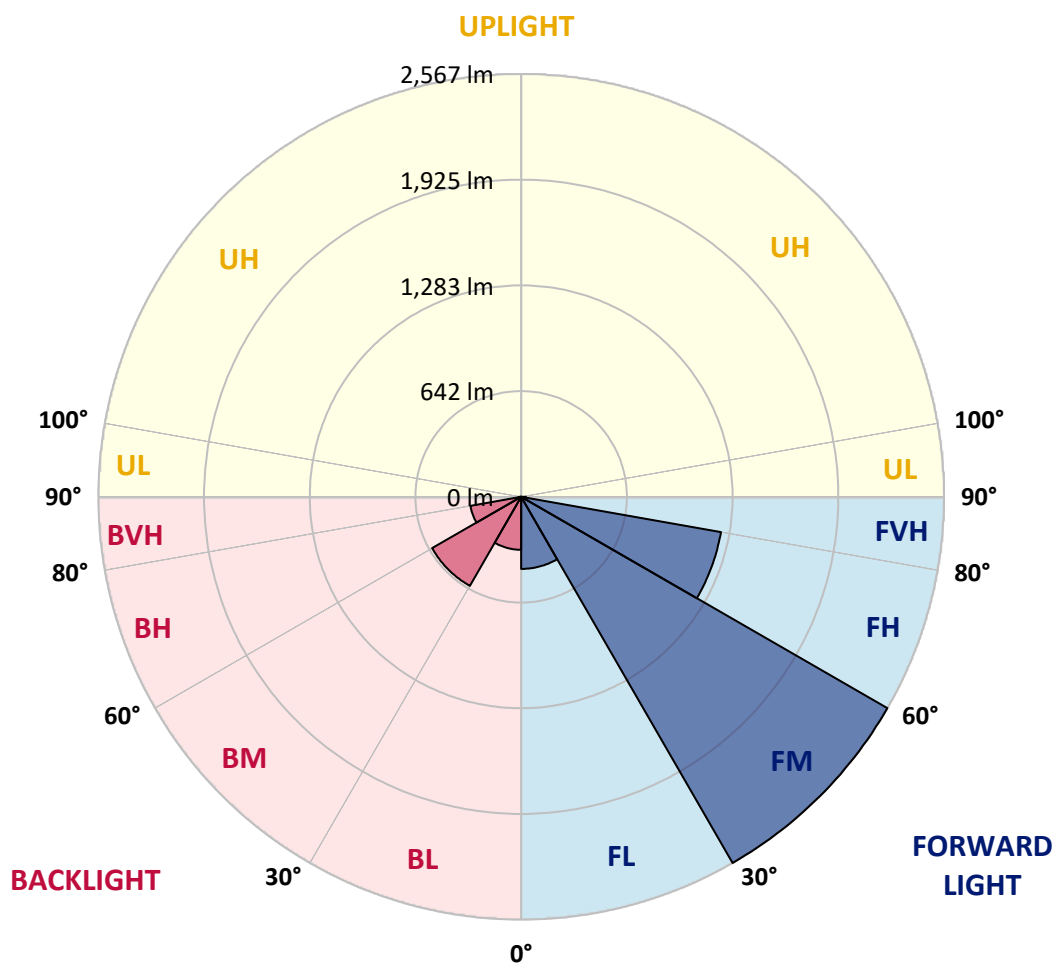
CATALOG NUMBER: PRV-P-50-722-U-T2RE

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 437.6  | 7.9       |                         |      |         |
| FM   | (30°-60°)   | 2566.6 | 46.3      |                         |      |         |
| FH   | (60°-80°)   | 1231.5 | 22.2      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 28.4   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 321.8  | 5.8       | B1/500                  |      |         |
| BM   | (30°-60°)   | 624.4  | 11.3      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 313.0  | 5.7       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 16.1   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type II Short



REPORT NUMBER: P1502869

CATALOG NUMBER: PRV-P-50-722-U-T2RE

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 76°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  | 848.0  |
| 2.5°  | 853.9  | 856.3  | 859.8  | 859.8  | 859.8  | 853.9  | 852.7  | 849.2  | 849.2  | 846.8  | 850.4  |
| 5°    | 855.1  | 857.5  | 865.7  | 875.2  | 881.1  | 878.7  | 875.2  | 864.5  | 857.5  | 856.3  | 857.5  |
| 7.5°  | 779.5  | 781.9  | 796.0  | 816.1  | 840.9  | 864.5  | 890.5  | 891.7  | 876.3  | 878.7  | 871.6  |
| 10°   | 733.4  | 732.3  | 739.3  | 752.3  | 785.4  | 827.9  | 872.8  | 909.4  | 908.2  | 907.1  | 897.6  |
| 12.5° | 757.1  | 757.1  | 758.2  | 763.0  | 771.2  | 792.5  | 855.1  | 915.3  | 940.1  | 941.3  | 928.3  |
| 15°   | 812.6  | 811.4  | 810.2  | 812.6  | 807.8  | 806.7  | 840.9  | 916.5  | 979.1  | 979.1  | 970.8  |
| 17.5° | 869.3  | 869.3  | 874.0  | 878.7  | 877.5  | 858.6  | 859.8  | 927.1  | 1016.9 | 1018.1 | 1014.5 |
| 20°   | 953.1  | 949.6  | 954.3  | 960.2  | 957.8  | 938.9  | 910.6  | 944.9  | 1057.1 | 1063.0 | 1065.3 |
| 22.5° | 1052.3 | 1046.4 | 1052.3 | 1055.9 | 1054.7 | 1024.0 | 989.7  | 977.9  | 1092.5 | 1101.9 | 1122.0 |
| 25°   | 1177.5 | 1170.4 | 1183.4 | 1188.2 | 1178.7 | 1143.3 | 1085.4 | 1028.7 | 1127.9 | 1142.1 | 1172.8 |
| 27.5° | 1358.2 | 1351.1 | 1360.6 | 1368.9 | 1347.6 | 1286.2 | 1201.1 | 1094.8 | 1158.6 | 1171.6 | 1217.7 |
| 30°   | 1619.2 | 1634.6 | 1599.2 | 1581.4 | 1544.8 | 1455.1 | 1340.5 | 1181.1 | 1191.7 | 1204.7 | 1257.8 |
| 32.5° | 1922.8 | 1924.0 | 1896.8 | 1808.2 | 1752.7 | 1648.8 | 1503.5 | 1301.5 | 1242.5 | 1251.9 | 1295.6 |
| 35°   | 2177.9 | 2172.0 | 2146.0 | 2091.7 | 1978.3 | 1855.5 | 1680.7 | 1437.4 | 1312.2 | 1325.2 | 1342.9 |
| 37.5° | 2372.8 | 2369.2 | 2369.2 | 2319.6 | 2220.4 | 2066.9 | 1868.4 | 1598.0 | 1416.1 | 1424.4 | 1409.0 |
| 40°   | 2532.2 | 2527.5 | 2541.7 | 2528.7 | 2453.1 | 2277.1 | 2043.2 | 1737.3 | 1537.7 | 1547.2 | 1477.5 |
| 42.5° | 2670.4 | 2662.1 | 2678.7 | 2685.7 | 2642.0 | 2486.1 | 2225.1 | 1887.3 | 1660.6 | 1661.8 | 1557.8 |
| 45°   | 2806.2 | 2805.0 | 2823.9 | 2834.6 | 2801.5 | 2644.4 | 2383.4 | 2061.0 | 1807.0 | 1816.5 | 1664.1 |
| 47.5° | 2697.6 | 2707.0 | 2788.5 | 2888.9 | 2931.4 | 2794.4 | 2538.1 | 2228.7 | 2000.7 | 1997.2 | 1795.2 |
| 50°   | 2352.7 | 2391.7 | 2549.9 | 2755.4 | 2931.4 | 2906.6 | 2679.8 | 2418.8 | 2268.8 | 2304.3 | 2025.5 |
| 52.5° | 1898.0 | 1886.2 | 2118.8 | 2442.4 | 2769.6 | 2887.7 | 2810.9 | 2632.6 | 2655.0 | 2682.2 | 2273.5 |
| 55°   | 1482.2 | 1508.2 | 1686.6 | 2046.8 | 2412.9 | 2708.2 | 2867.6 | 2873.5 | 3102.7 | 3135.7 | 2512.1 |
| 57.5° | 1259.0 | 1282.6 | 1420.8 | 1748.0 | 2045.6 | 2371.6 | 2799.1 | 3127.5 | 3558.5 | 3609.3 | 2741.3 |
| 60°   | 909.4  | 921.2  | 1078.3 | 1396.0 | 1797.6 | 1954.7 | 2591.3 | 3275.1 | 3981.4 | 3993.2 | 2946.8 |
| 62.5° | 519.7  | 536.2  | 628.3  | 921.2  | 1381.8 | 1687.7 | 2287.7 | 3255.0 | 4253.0 | 4266.0 | 3133.4 |
| 65°   | 283.5  | 295.3  | 352.0  | 500.8  | 792.5  | 1308.6 | 2000.7 | 3003.4 | 4361.7 | 4388.8 | 3185.3 |
| 66°   | 251.6  | 256.3  | 292.9  | 387.4  | 578.7  | 994.5  | 1919.2 | 2851.1 | 4374.7 | 4414.8 | 3147.5 |
| 67.5° | 242.1  | 242.1  | 262.2  | 313.0  | 383.8  | 661.4  | 1711.4 | 2655.0 | 4349.9 | 4406.6 | 3053.1 |
| 70°   | 235.0  | 236.2  | 252.7  | 265.7  | 249.2  | 227.9  | 1059.4 | 2394.0 | 4055.8 | 4171.5 | 2821.6 |
| 72.5° | 215.0  | 215.0  | 237.4  | 250.4  | 203.1  | 142.9  | 413.4  | 2022.0 | 3323.5 | 3408.6 | 2355.0 |
| 75°   | 178.3  | 180.7  | 203.1  | 223.2  | 187.8  | 116.9  | 124.0  | 1156.3 | 2166.1 | 2190.9 | 1588.5 |
| 77.5° | 138.2  | 141.7  | 167.7  | 176.0  | 170.1  | 107.5  | 100.4  | 448.8  | 1185.8 | 1214.1 | 742.9  |
| 80°   | 99.2   | 102.8  | 127.6  | 139.4  | 135.8  | 103.9  | 86.2   | 140.5  | 379.1  | 357.9  | 227.9  |
| 82.5° | 62.6   | 62.6   | 78.0   | 100.4  | 93.3   | 89.8   | 70.9   | 85.0   | 111.0  | 109.8  | 79.1   |
| 85°   | 22.4   | 24.8   | 35.4   | 44.9   | 42.5   | 47.2   | 41.3   | 47.2   | 52.0   | 49.6   | 30.7   |
| 87.5° | 1.2    | 1.2    | 1.2    | 2.4    | 2.4    | 4.7    | 4.7    | 5.9    | 4.7    | 5.9    | 5.9    |
| 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: P1502869

CATALOG NUMBER: PRV-P-50-722-U-T2RE

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 848.0  | 848.0  | 848.0 | 848.0 | 848.0 | 848.0 | 848.0 | 848.0 | 848.0 | 848.0 | 848.0 |
| 2.5°  | 850.4  | 850.4  | 852.7 | 855.1 | 857.5 | 852.7 | 851.5 | 851.5 | 846.8 | 848.0 | 850.4 |
| 5°    | 857.5  | 857.5  | 859.8 | 857.5 | 849.2 | 836.2 | 827.9 | 823.2 | 812.6 | 813.8 | 813.8 |
| 7.5°  | 870.4  | 870.4  | 865.7 | 849.2 | 830.3 | 806.7 | 791.3 | 783.0 | 768.9 | 771.2 | 771.2 |
| 10°   | 894.1  | 890.5  | 872.8 | 837.4 | 801.9 | 771.2 | 754.7 | 742.9 | 734.6 | 731.1 | 732.3 |
| 12.5° | 928.3  | 922.4  | 879.9 | 818.5 | 767.7 | 738.2 | 725.2 | 716.9 | 712.2 | 709.8 | 711.0 |
| 15°   | 968.5  | 957.8  | 879.9 | 792.5 | 735.8 | 708.6 | 699.2 | 702.7 | 708.6 | 711.0 | 713.4 |
| 17.5° | 1013.4 | 995.6  | 874.0 | 765.3 | 703.9 | 685.0 | 693.3 | 706.3 | 718.1 | 722.8 | 724.0 |
| 20°   | 1061.8 | 1029.9 | 865.7 | 733.4 | 679.1 | 680.3 | 699.2 | 714.5 | 724.0 | 727.5 | 728.7 |
| 22.5° | 1110.2 | 1057.1 | 848.0 | 696.8 | 668.5 | 682.7 | 701.6 | 714.5 | 720.4 | 722.8 | 724.0 |
| 25°   | 1150.4 | 1072.4 | 822.0 | 672.0 | 663.8 | 682.7 | 698.0 | 707.5 | 713.4 | 716.9 | 718.1 |
| 27.5° | 1185.8 | 1075.9 | 796.0 | 653.1 | 660.2 | 679.1 | 690.9 | 700.4 | 707.5 | 709.8 | 711.0 |
| 30°   | 1208.2 | 1066.5 | 758.2 | 637.8 | 654.3 | 670.8 | 682.7 | 690.9 | 696.8 | 700.4 | 701.6 |
| 32.5° | 1225.9 | 1058.2 | 707.5 | 620.1 | 642.5 | 661.4 | 672.0 | 676.7 | 679.1 | 681.5 | 681.5 |
| 35°   | 1243.7 | 1057.1 | 668.5 | 597.6 | 626.0 | 648.4 | 651.9 | 647.2 | 643.7 | 637.8 | 639.0 |
| 37.5° | 1262.6 | 1064.1 | 637.8 | 570.5 | 598.8 | 621.2 | 616.5 | 601.2 | 587.0 | 568.1 | 563.4 |
| 40°   | 1287.4 | 1067.7 | 596.4 | 532.7 | 562.2 | 575.2 | 561.0 | 532.7 | 494.9 | 478.3 | 478.3 |
| 42.5° | 1326.3 | 1088.9 | 542.1 | 489.0 | 506.7 | 518.5 | 504.3 | 455.9 | 422.8 | 408.6 | 409.8 |
| 45°   | 1409.0 | 1140.9 | 489.0 | 441.7 | 448.8 | 460.6 | 432.3 | 385.0 | 362.6 | 353.1 | 348.4 |
| 47.5° | 1550.7 | 1227.1 | 446.4 | 394.5 | 387.4 | 398.0 | 363.8 | 330.7 | 307.1 | 285.8 | 284.6 |
| 50°   | 1808.2 | 1406.6 | 431.1 | 344.9 | 334.2 | 352.0 | 318.9 | 295.3 | 268.1 | 257.5 | 256.3 |
| 52.5° | 2092.8 | 1629.9 | 447.6 | 303.5 | 298.8 | 314.2 | 297.6 | 268.1 | 249.2 | 246.8 | 246.8 |
| 55°   | 2353.9 | 1840.1 | 448.8 | 278.7 | 278.7 | 285.8 | 270.5 | 249.2 | 250.4 | 248.0 | 244.5 |
| 57.5° | 2588.9 | 1951.1 | 442.9 | 265.7 | 259.8 | 262.2 | 253.9 | 239.8 | 261.0 | 232.7 | 225.6 |
| 60°   | 2818.0 | 1957.0 | 445.3 | 253.9 | 233.9 | 231.5 | 238.6 | 227.9 | 249.2 | 215.0 | 211.4 |
| 62.5° | 2949.1 | 1907.4 | 458.3 | 231.5 | 205.5 | 199.6 | 209.0 | 205.5 | 222.0 | 204.3 | 203.1 |
| 65°   | 2959.7 | 1849.5 | 422.8 | 199.6 | 185.4 | 180.7 | 191.3 | 190.2 | 197.2 | 193.7 | 194.9 |
| 66°   | 2934.9 | 1805.8 | 392.1 | 187.8 | 174.8 | 176.0 | 185.4 | 185.4 | 192.5 | 183.1 | 181.9 |
| 67.5° | 2844.0 | 1713.7 | 329.5 | 168.9 | 160.6 | 167.7 | 177.2 | 178.3 | 181.9 | 173.6 | 174.8 |
| 70°   | 2513.3 | 1351.1 | 226.8 | 148.8 | 147.6 | 155.9 | 160.6 | 165.3 | 168.9 | 176.0 | 178.3 |
| 72.5° | 1931.0 | 832.7  | 155.9 | 134.6 | 135.8 | 144.1 | 145.3 | 153.5 | 176.0 | 184.2 | 177.2 |
| 75°   | 1190.5 | 422.8  | 120.5 | 114.6 | 121.6 | 128.7 | 131.1 | 138.2 | 178.3 | 173.6 | 152.4 |
| 77.5° | 576.4  | 193.7  | 95.7  | 95.7  | 100.4 | 108.7 | 109.8 | 115.7 | 160.6 | 126.4 | 111.0 |
| 80°   | 178.3  | 101.6  | 75.6  | 75.6  | 78.0  | 79.1  | 85.0  | 92.1  | 106.3 | 67.3  | 68.5  |
| 82.5° | 73.2   | 68.5   | 57.9  | 54.3  | 48.4  | 48.4  | 48.4  | 60.2  | 54.3  | 28.3  | 10.6  |
| 85°   | 33.1   | 28.3   | 27.2  | 22.4  | 21.3  | 18.9  | 18.9  | 29.5  | 21.3  | 7.1   | 0.0   |
| 87.5° | 3.5    | 3.5    | 3.5   | 3.5   | 2.4   | 1.2   | 1.2   | 1.2   | 1.2   | 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: SP2-2501-321-2

Test Date: 04/09/2025

Luminaire Tested: GKO-PB1E-722-U-T4W

Data in this report applies to families of products including GKO-PB1E-722-U-T4W

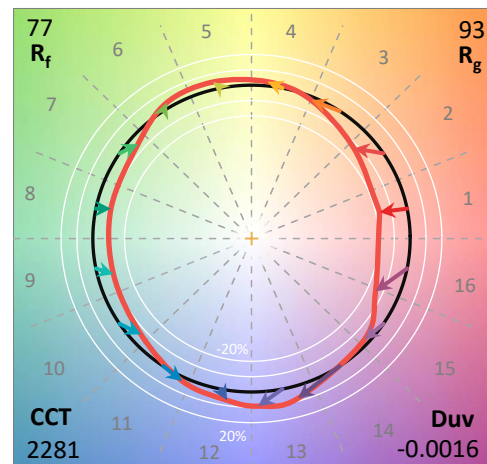
### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-2  
 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-722-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 2281  
 CIE  $u'$ : 0.2851  
 CIE  $v'$ : 0.5324  
 Duv: -0.0016  
 CIE x: 0.4942  
 CIE y: 0.4102  
 CIE z: 0.0956  
 Peak Wavelength (nm): 602  
 Dominant Wavelength (nm): 587  
 Purity: 71.48321  
 R<sub>f</sub>: 76.9  
 R<sub>g</sub>: 92.6

CRI (Ra): 70.6  
 R1: 68.4  
 R2: 88.7  
 R3: 85.7  
 R4: 63.2  
 R5: 69.0  
 R6: 88.6  
 R7: 68.8  
 R8: 32.6  
 R9: -35.1  
 R10: 78.0  
 R11: 60.2  
 R12: 73.8  
 R13: 72.8  
 R14: 92.4  
 R15: 58.4



### Test Conditions

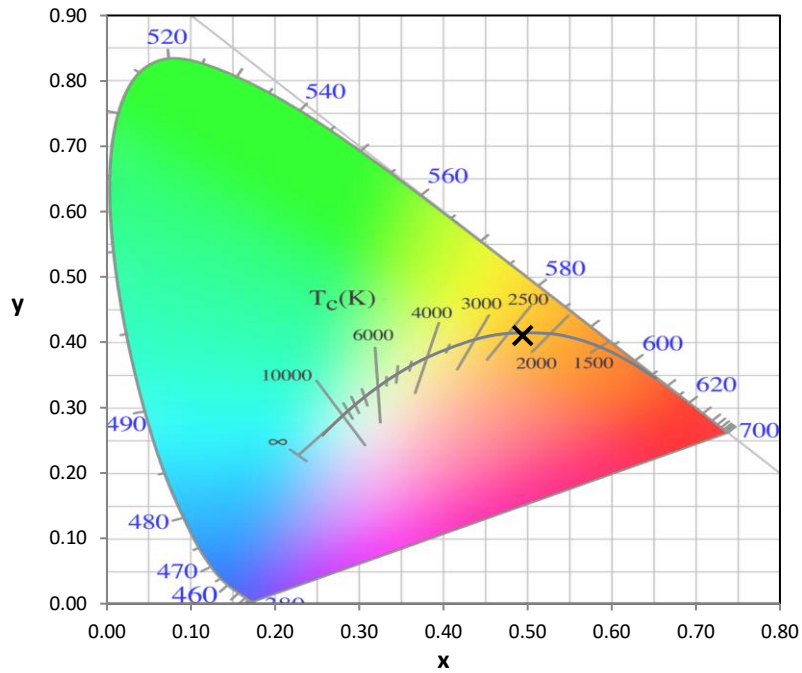
Stabilization Time: 40M  
 Operation Time: 1H 40M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP2-2501-321-2

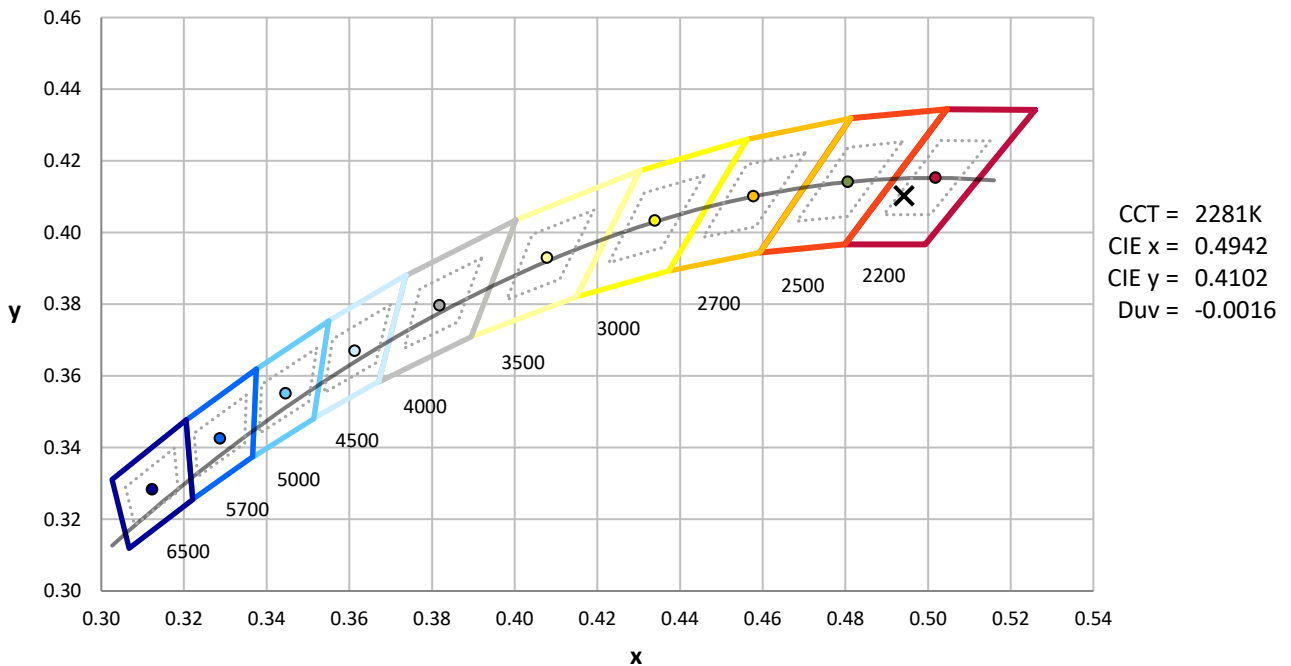
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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: SP2-2501-321-2

**CIE 1931 Chromaticity Diagram**



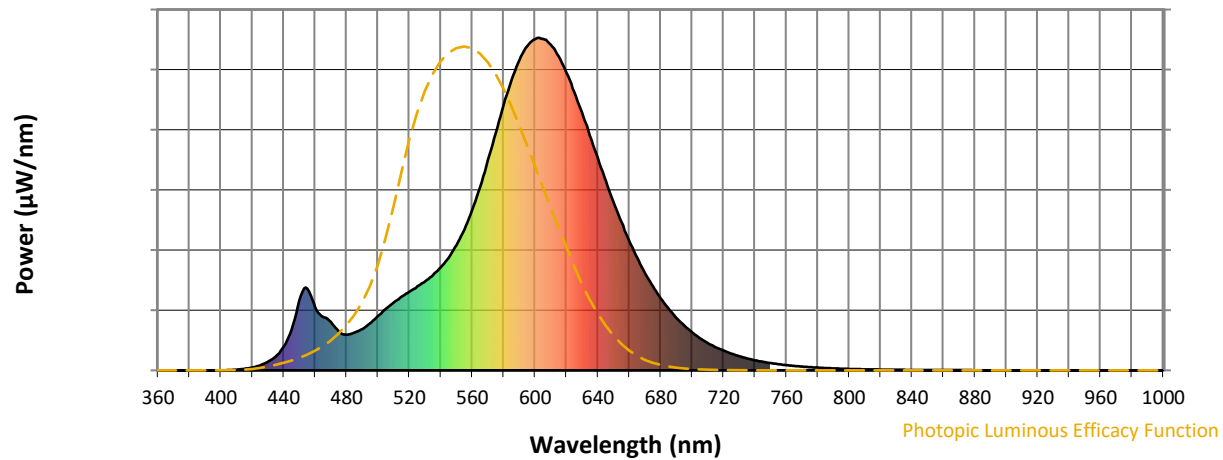
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP2-2501-321-2

### Photopic Flux vs. Wavelength

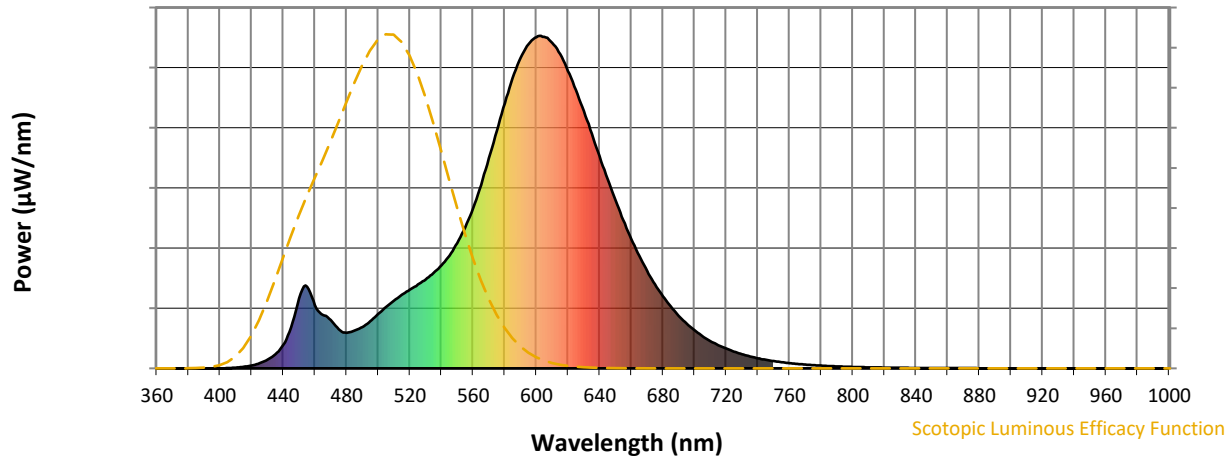


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 124                         | NR               | 620       | 894                         | NR               | 750       | 22                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 141                         | NR               | 625       | 837                         | NR               | 755       | 19                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 163                         | NR               | 630       | 774                         | NR               | 760       | 16                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 184                         | NR               | 635       | 706                         | NR               | 765       | 13                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 204                         | NR               | 640       | 638                         | NR               | 770       | 11                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 221                         | NR               | 645       | 570                         | NR               | 775       | 10                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 237                         | NR               | 650       | 505                         | NR               | 780       | 8                           | NR               | 910       | 0                           | NR               |
| 395       | 0                           | NR               | 525       | 252                         | NR               | 655       | 446                         | NR               | 785       | 7                           | NR               | 915       | 0                           | NR               |
| 400       | 0                           | NR               | 530       | 268                         | NR               | 660       | 389                         | NR               | 790       | 6                           | NR               | 920       | 0                           | NR               |
| 405       | 1                           | NR               | 535       | 287                         | NR               | 665       | 339                         | NR               | 795       | 5                           | NR               | 925       | 0                           | NR               |
| 410       | 2                           | NR               | 540       | 310                         | NR               | 670       | 292                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 5                           | NR               | 545       | 339                         | NR               | 675       | 253                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 9                           | NR               | 550       | 377                         | NR               | 680       | 217                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 15                          | NR               | 555       | 424                         | NR               | 685       | 186                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 26                          | NR               | 560       | 482                         | NR               | 690       | 158                         | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 43                          | NR               | 565       | 551                         | NR               | 695       | 135                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 71                          | NR               | 570       | 632                         | NR               | 700       | 114                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 123                         | NR               | 575       | 714                         | NR               | 705       | 97                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 210                         | NR               | 580       | 797                         | NR               | 710       | 82                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 245                         | NR               | 585       | 873                         | NR               | 715       | 70                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 190                         | NR               | 590       | 934                         | NR               | 720       | 59                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 161                         | NR               | 595       | 975                         | NR               | 725       | 50                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 145                         | NR               | 600       | 996                         | NR               | 730       | 43                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 117                         | NR               | 605       | 997                         | NR               | 735       | 36                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 107                         | NR               | 610       | 978                         | NR               | 740       | 30                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 113                         | NR               | 615       | 945                         | NR               | 745       | 26                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP2-2501-321-2

### Scotopic Flux vs. Wavelength



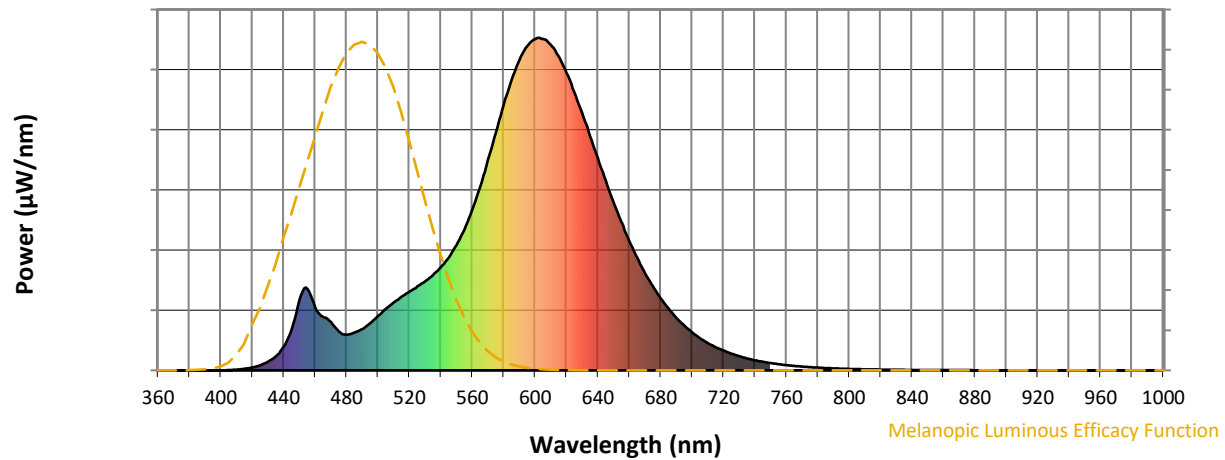
Scotopic Lumens: NR

S/P: 0.98

| $\lambda$<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               | 124                                  | NR                             | 620               | 894                                  | NR                             | 750               | 22                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 141                                  | NR                             | 625               | 837                                  | NR                             | 755               | 19                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 163                                  | NR                             | 630               | 774                                  | NR                             | 760               | 16                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 184                                  | NR                             | 635               | 706                                  | NR                             | 765               | 13                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 204                                  | NR                             | 640               | 638                                  | NR                             | 770               | 11                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 221                                  | NR                             | 645               | 570                                  | NR                             | 775               | 10                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 237                                  | NR                             | 650               | 505                                  | NR                             | 780               | 8                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 252                                  | NR                             | 655               | 446                                  | NR                             | 785               | 7                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 0                                    | NR                             | 530               | 268                                  | NR                             | 660               | 389                                  | NR                             | 790               | 6                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 1                                    | NR                             | 535               | 287                                  | NR                             | 665               | 339                                  | NR                             | 795               | 5                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 2                                    | NR                             | 540               | 310                                  | NR                             | 670               | 292                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 5                                    | NR                             | 545               | 339                                  | NR                             | 675               | 253                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 9                                    | NR                             | 550               | 377                                  | NR                             | 680               | 217                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 15                                   | NR                             | 555               | 424                                  | NR                             | 685               | 186                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 26                                   | NR                             | 560               | 482                                  | NR                             | 690               | 158                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 43                                   | NR                             | 565               | 551                                  | NR                             | 695               | 135                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 71                                   | NR                             | 570               | 632                                  | NR                             | 700               | 114                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 123                                  | NR                             | 575               | 714                                  | NR                             | 705               | 97                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 210                                  | NR                             | 580               | 797                                  | NR                             | 710               | 82                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 245                                  | NR                             | 585               | 873                                  | NR                             | 715               | 70                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 190                                  | NR                             | 590               | 934                                  | NR                             | 720               | 59                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 161                                  | NR                             | 595               | 975                                  | NR                             | 725               | 50                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 145                                  | NR                             | 600               | 996                                  | NR                             | 730               | 43                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 117                                  | NR                             | 605               | 997                                  | NR                             | 735               | 36                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 107                                  | NR                             | 610               | 978                                  | NR                             | 740               | 30                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 113                                  | NR                             | 615               | 945                                  | NR                             | 745               | 26                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP2-2501-321-2

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.75

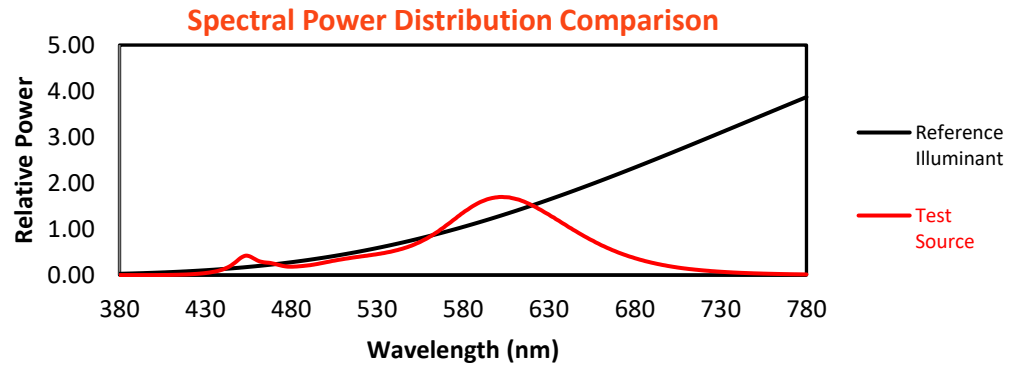
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 124                         | NR               | 620       | 894                         | NR               | 750       | 22                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 141                         | NR               | 625       | 837                         | NR               | 755       | 19                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 163                         | NR               | 630       | 774                         | NR               | 760       | 16                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 184                         | NR               | 635       | 706                         | NR               | 765       | 13                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 204                         | NR               | 640       | 638                         | NR               | 770       | 11                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 221                         | NR               | 645       | 570                         | NR               | 775       | 10                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 237                         | NR               | 650       | 505                         | NR               | 780       | 8                           | NR               | 910       | 0                           | NR               |
| 395       | 0                           | NR               | 525       | 252                         | NR               | 655       | 446                         | NR               | 785       | 7                           | NR               | 915       | 0                           | NR               |
| 400       | 0                           | NR               | 530       | 268                         | NR               | 660       | 389                         | NR               | 790       | 6                           | NR               | 920       | 0                           | NR               |
| 405       | 1                           | NR               | 535       | 287                         | NR               | 665       | 339                         | NR               | 795       | 5                           | NR               | 925       | 0                           | NR               |
| 410       | 2                           | NR               | 540       | 310                         | NR               | 670       | 292                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 5                           | NR               | 545       | 339                         | NR               | 675       | 253                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 9                           | NR               | 550       | 377                         | NR               | 680       | 217                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 15                          | NR               | 555       | 424                         | NR               | 685       | 186                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 26                          | NR               | 560       | 482                         | NR               | 690       | 158                         | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 43                          | NR               | 565       | 551                         | NR               | 695       | 135                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 71                          | NR               | 570       | 632                         | NR               | 700       | 114                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 123                         | NR               | 575       | 714                         | NR               | 705       | 97                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 210                         | NR               | 580       | 797                         | NR               | 710       | 82                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 245                         | NR               | 585       | 873                         | NR               | 715       | 70                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 190                         | NR               | 590       | 934                         | NR               | 720       | 59                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 161                         | NR               | 595       | 975                         | NR               | 725       | 50                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 145                         | NR               | 600       | 996                         | NR               | 730       | 43                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 117                         | NR               | 605       | 997                         | NR               | 735       | 36                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 107                         | NR               | 610       | 978                         | NR               | 740       | 30                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 113                         | NR               | 615       | 945                         | NR               | 745       | 26                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP2-2501-321-2

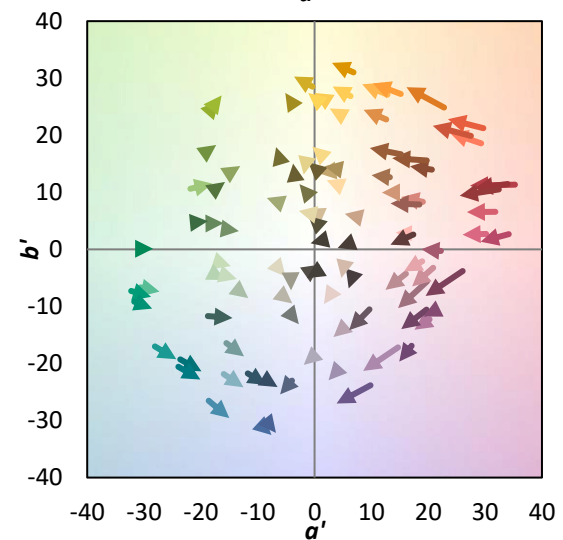
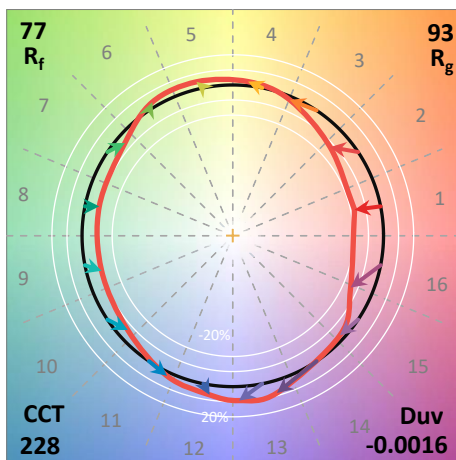
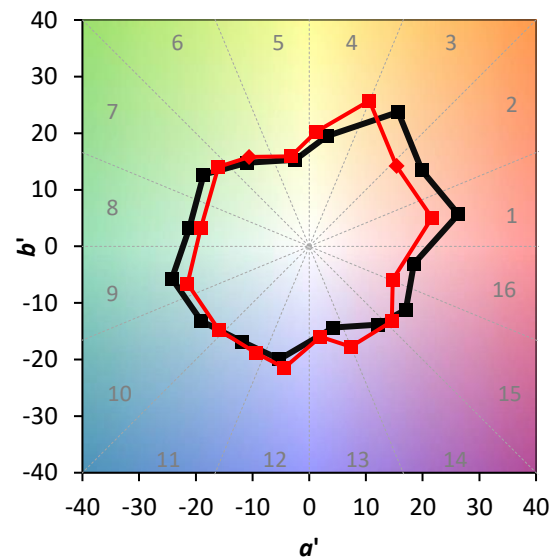
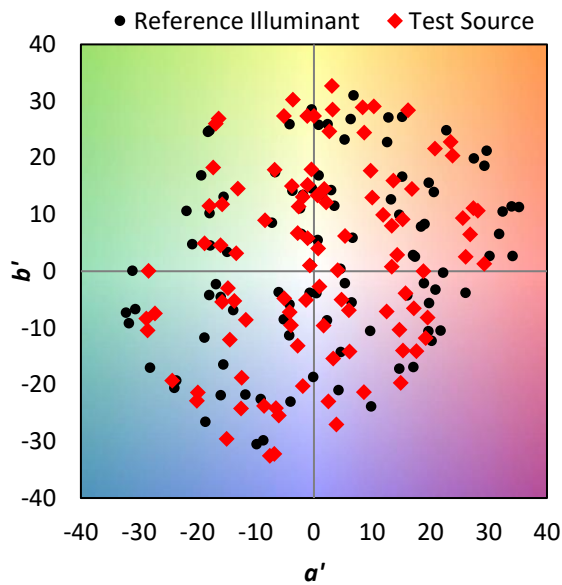
TM-30-18

### Summary

$R_f = 76.9$   
 $R_g = 92.6$   
 $CIE\ R_a = 70.6$   
 $R_g = -35.1$

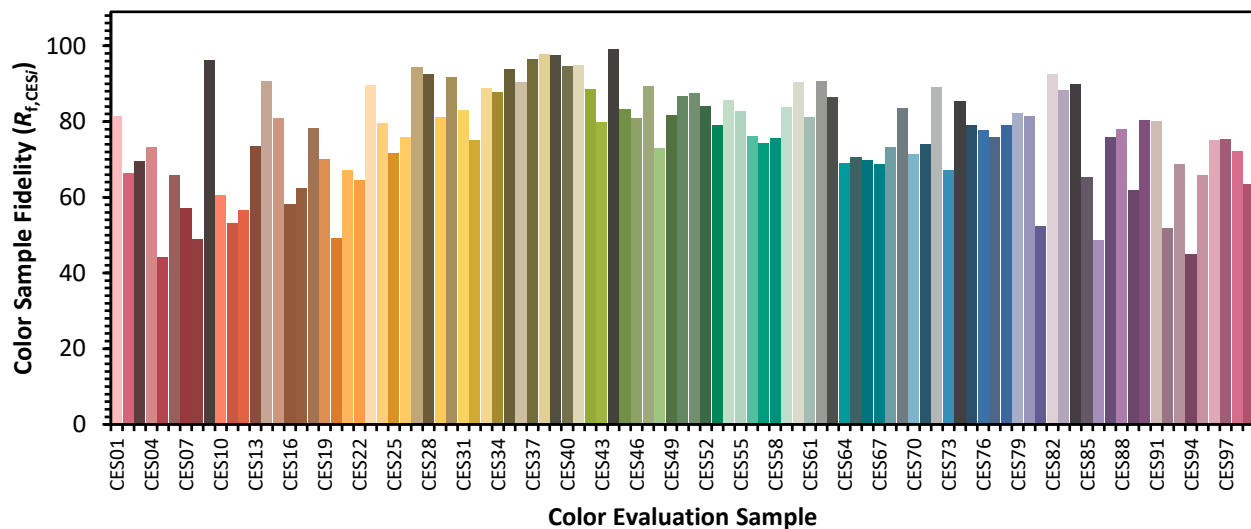


### Color Vector Graphics

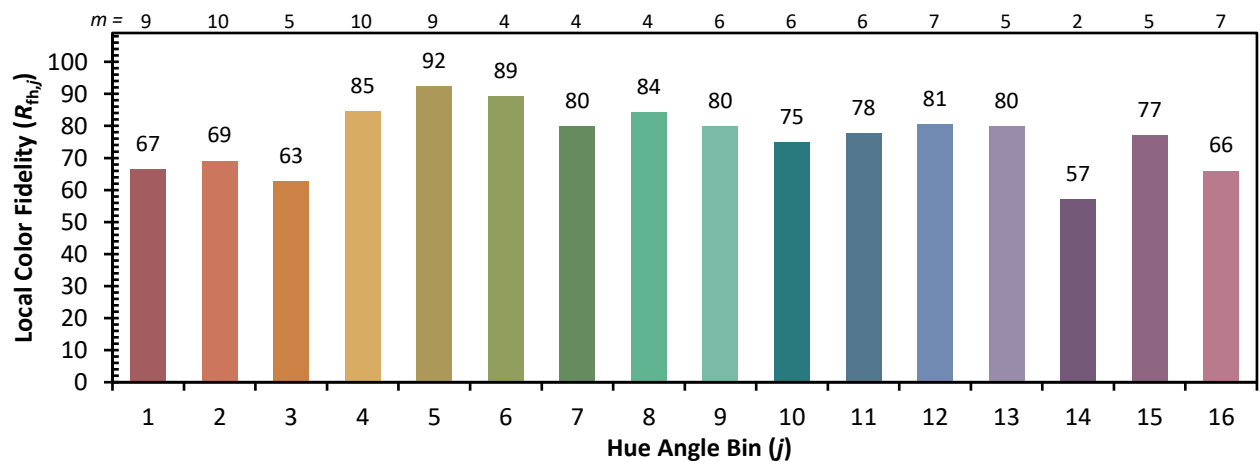
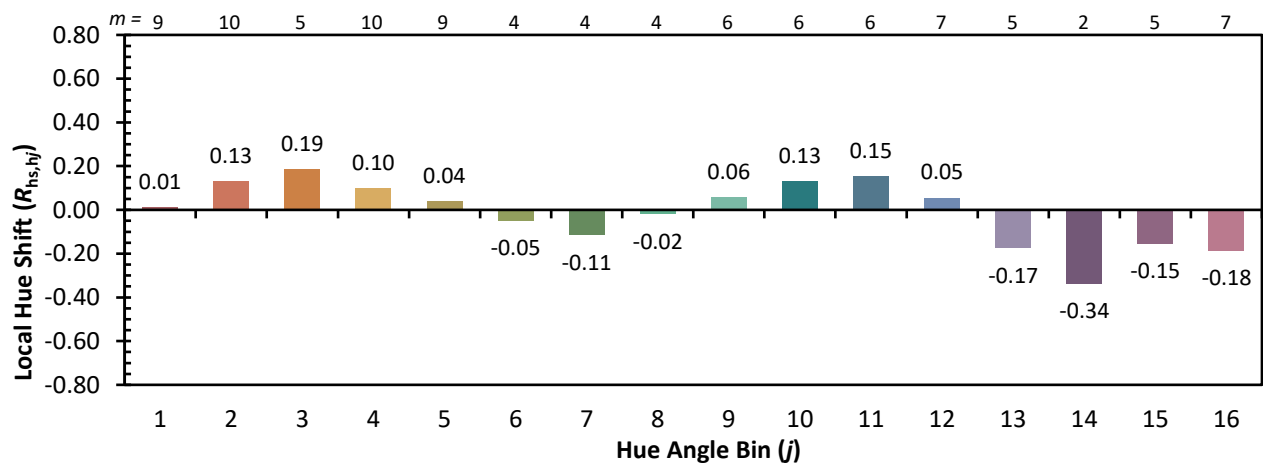
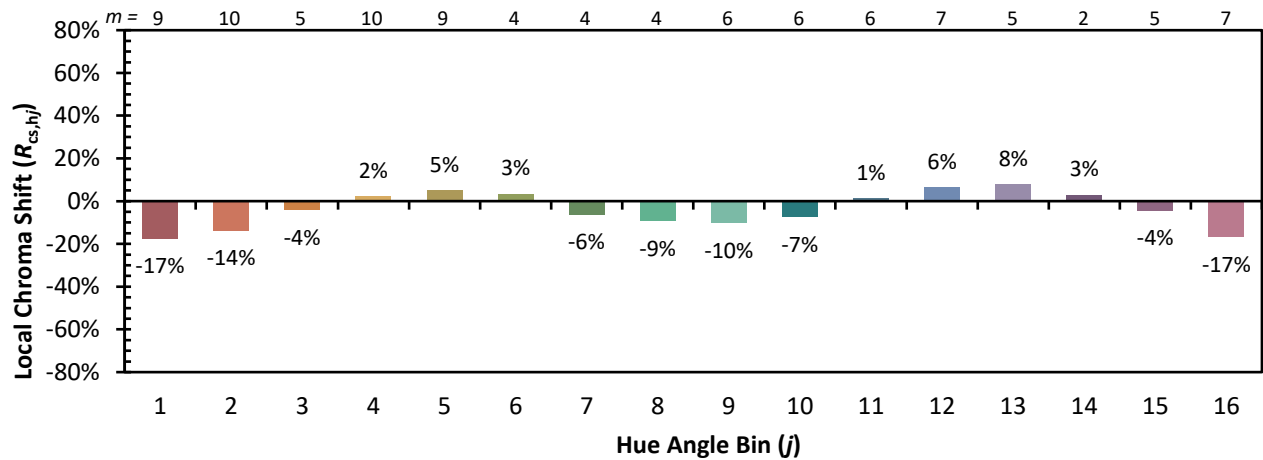


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

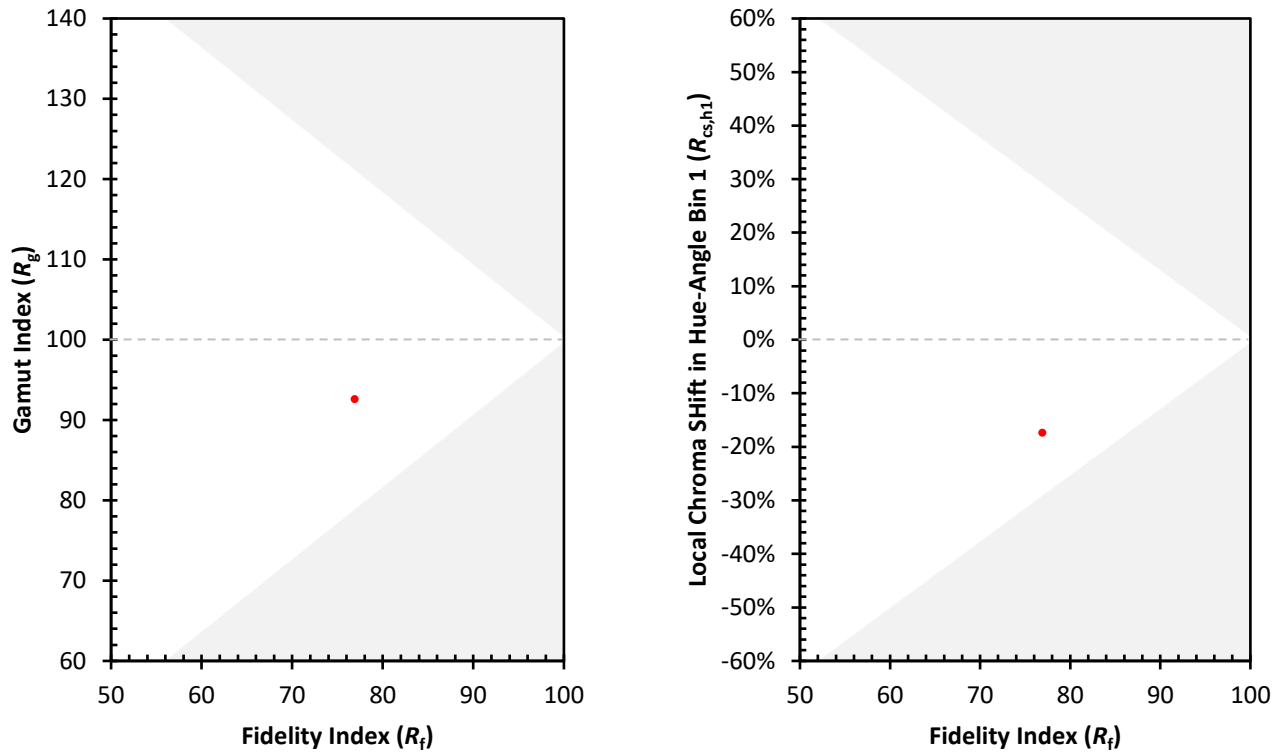
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 76 | CES51 = 88 | CES76 = 78 |
| CES02 = 65 | CES27 = 94 | CES52 = 84 | CES77 = 76 |
| CES03 = 32 | CES28 = 93 | CES53 = 79 | CES78 = 79 |
| CES04 = 72 | CES29 = 81 | CES54 = 86 | CES79 = 82 |
| CES05 = 51 | CES30 = 92 | CES55 = 83 | CES80 = 81 |
| CES06 = 52 | CES31 = 83 | CES56 = 76 | CES81 = 52 |
| CES07 = 44 | CES32 = 75 | CES57 = 74 | CES82 = 92 |
| CES08 = 42 | CES33 = 89 | CES58 = 76 | CES83 = 88 |
| CES09 = 29 | CES34 = 88 | CES59 = 84 | CES84 = 90 |
| CES10 = 79 | CES35 = 94 | CES60 = 91 | CES85 = 65 |
| CES11 = 62 | CES36 = 90 | CES61 = 81 | CES86 = 49 |
| CES12 = 68 | CES37 = 96 | CES62 = 91 | CES87 = 76 |
| CES13 = 44 | CES38 = 98 | CES63 = 86 | CES88 = 78 |
| CES14 = 75 | CES39 = 98 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 95 | CES65 = 71 | CES90 = 80 |
| CES16 = 48 | CES41 = 95 | CES66 = 70 | CES91 = 80 |
| CES17 = 51 | CES42 = 89 | CES67 = 69 | CES92 = 52 |
| CES18 = 57 | CES43 = 80 | CES68 = 73 | CES93 = 69 |
| CES19 = 74 | CES44 = 99 | CES69 = 84 | CES94 = 45 |
| CES20 = 68 | CES45 = 83 | CES70 = 71 | CES95 = 66 |
| CES21 = 88 | CES46 = 81 | CES71 = 74 | CES96 = 75 |
| CES22 = 81 | CES47 = 89 | CES72 = 89 | CES97 = 75 |
| CES23 = 92 | CES48 = 73 | CES73 = 67 | CES98 = 72 |
| CES24 = 92 | CES49 = 82 | CES74 = 85 | CES99 = 64 |
| CES25 = 73 | CES50 = 87 | CES75 = 79 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)