

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: P1502921

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

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1502921  
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-HSS  
Description: PREVAIL PETITE DISCRETE LED 1 SQUARE 50W 70CRI 2200K FIXTURE w/ TYPE II  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD  
Light Source: (10) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4044 lumens  
Efficiency: N/A  
Efficacy: 77.0 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - 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

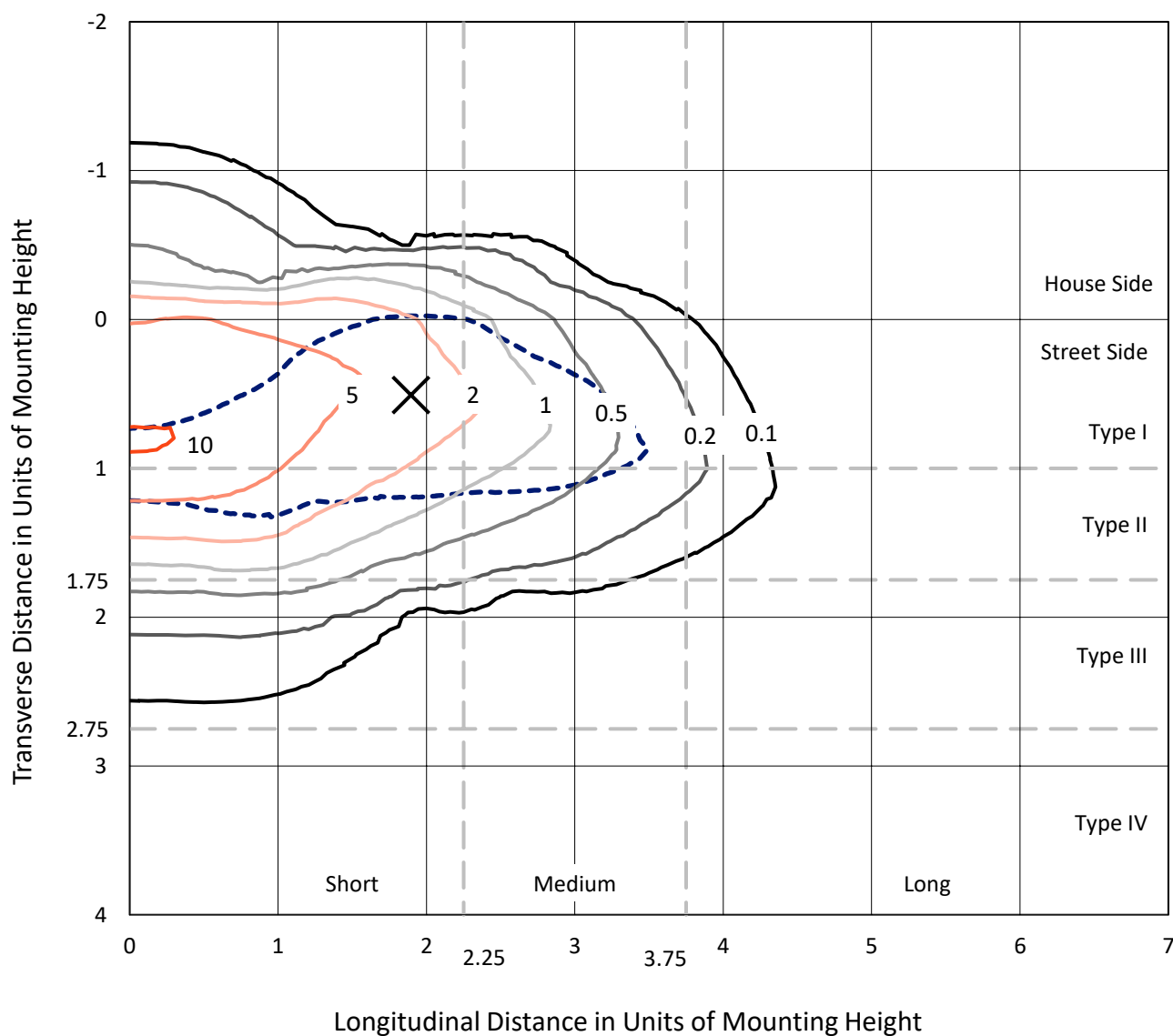
REPORT NUMBER: P1502921

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

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

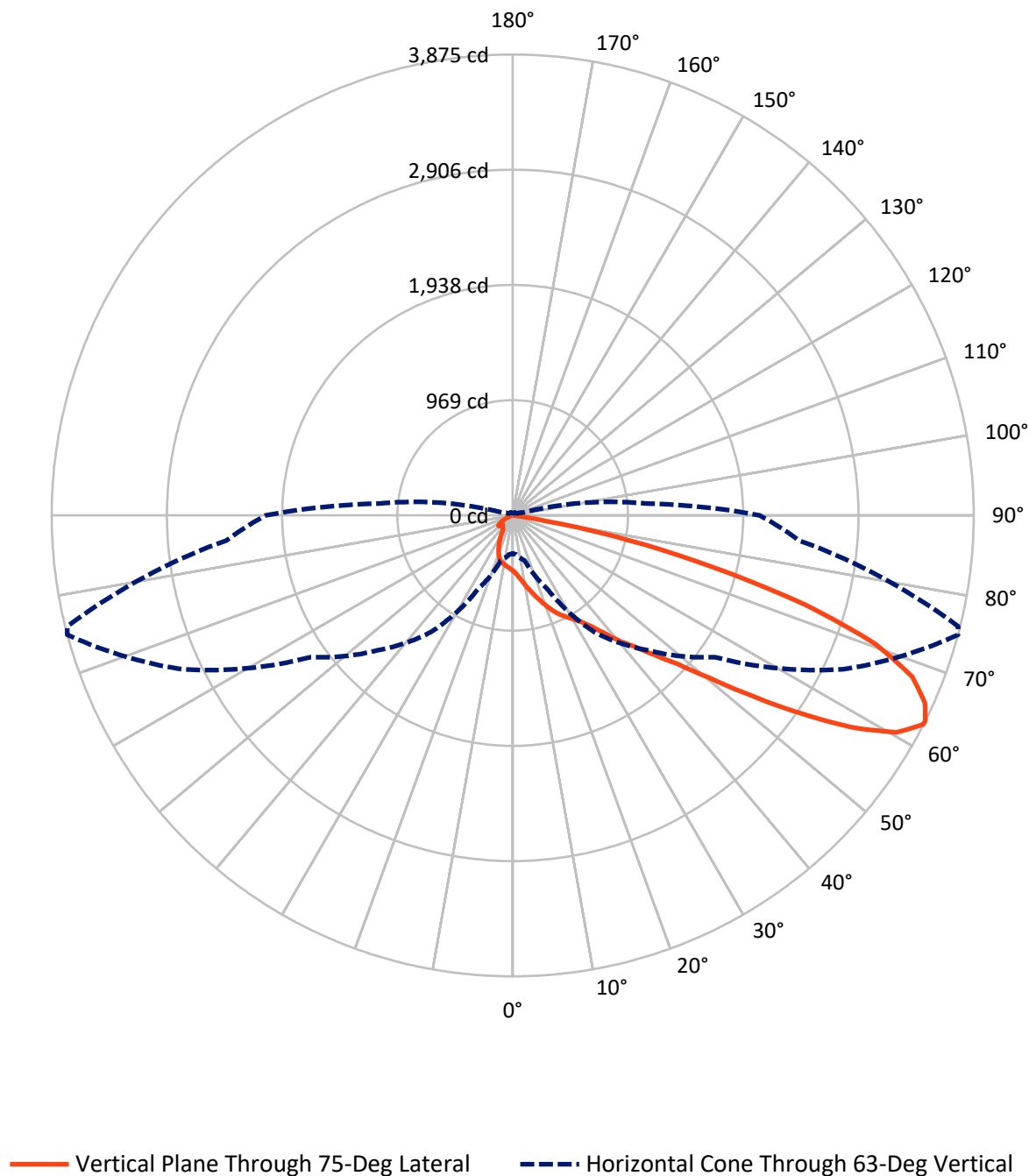


Based on 10 foot mounting height. Maximum calculated value = 10.3 fc  
 Type II - Short - N/A

REPORT NUMBER: P1502921

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

## Luminous Intensity Polar Plot



REPORT NUMBER: P1502921

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

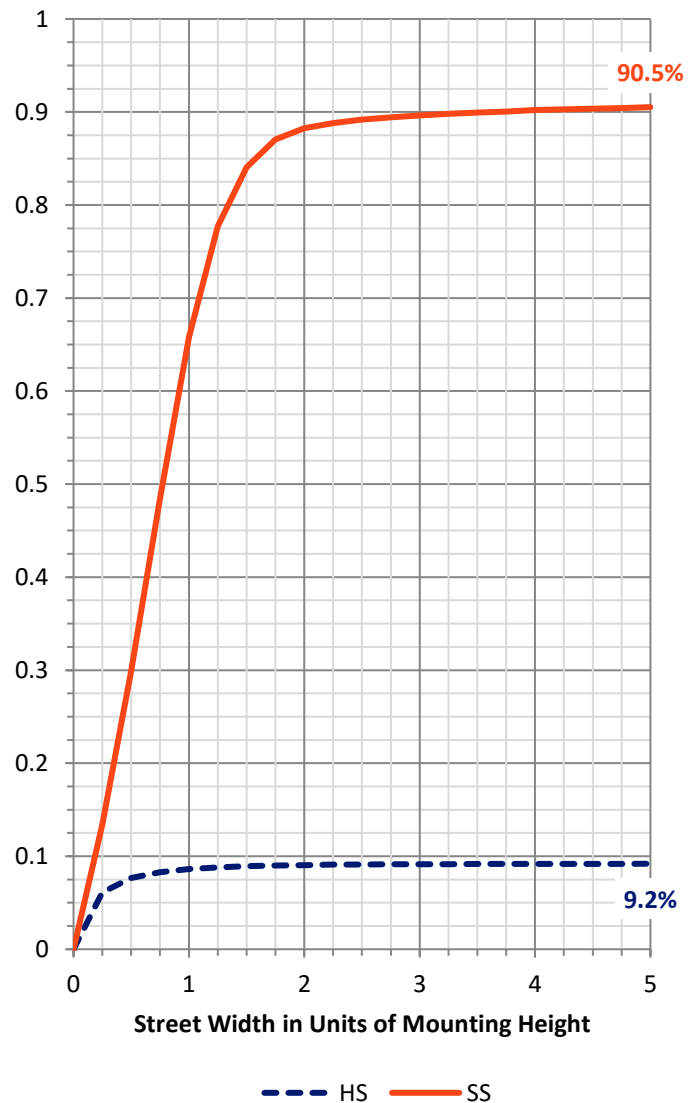
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 374.8    | 0.0    | 374.8  |
|                    | % Fixture | 9.3      | 0.0    | 9.3    |
| <b>Street Side</b> | Lumens    | 3669.2   | 0.0    | 3669.2 |
|                    | % Fixture | 90.7     | 0.0    | 90.7   |
| <b>Total</b>       | Lumens    | 4044.0   | 0.0    | 4044.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 44.5   | 1.1       |
| 10°-20°   | 126.9  | 3.1       |
| 20°-30°   | 242.9  | 6.0       |
| 30°-40°   | 505.7  | 12.5      |
| 40°-50°   | 899.2  | 22.2      |
| 50°-60°   | 1074.4 | 26.6      |
| 60°-70°   | 829.2  | 20.5      |
| 70°-80°   | 298.7  | 7.4       |
| 80°-90°   | 22.4   | 0.6       |
| 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°    | 4044.0 | 100.0     |
| 0°-180°   | 4044.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P1502921

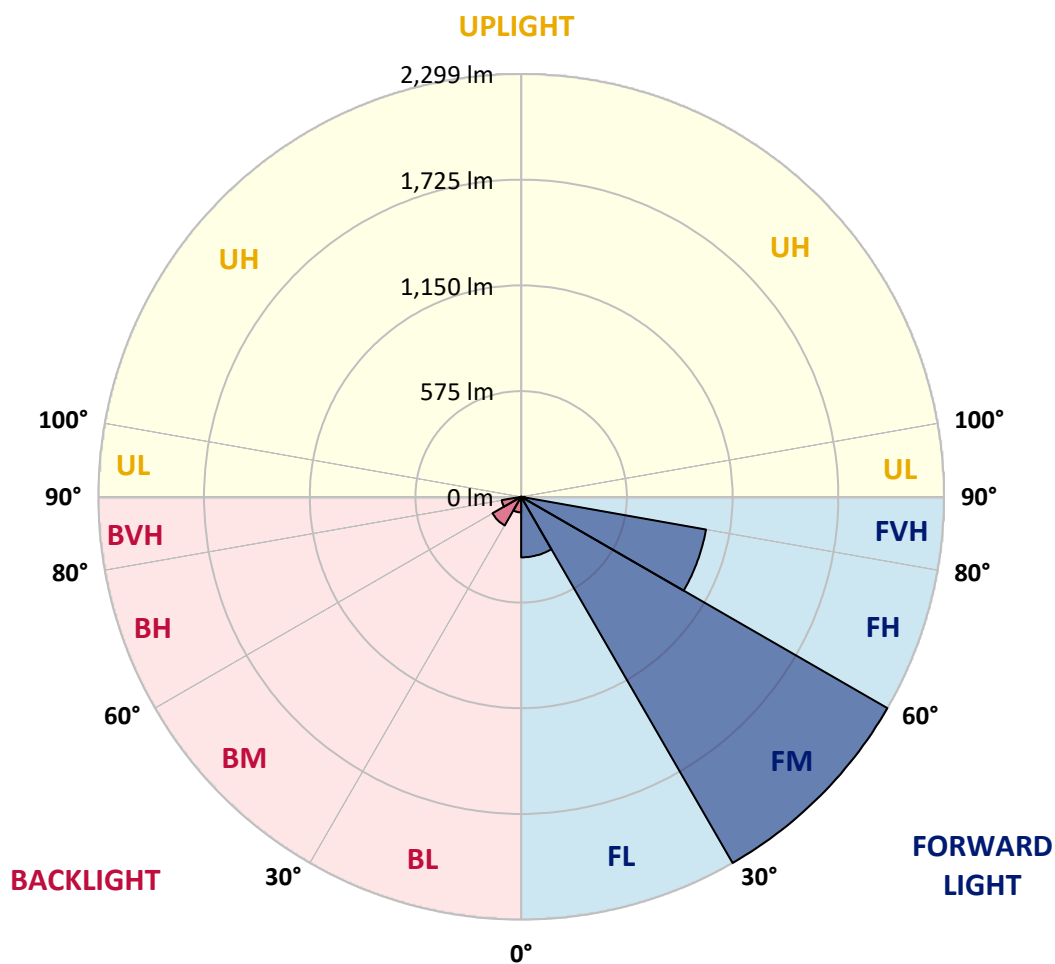
CATALOG NUMBER: PRV-P-50-722-U-T2RE-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 329.3  | 8.1       |                         |      |         |
| FM   | (30°-60°)   | 2299.5 | 56.9      |                         |      |         |
| FH   | (60°-80°)   | 1020.6 | 25.2      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 19.9   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 85.0   | 2.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 179.9  | 4.4       | B0/220                  |      |         |
| BH   | (60°-80°)   | 107.3  | 2.7       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 2.5    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G1**

Type II Short



REPORT NUMBER: P1502921

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

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 76°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  | 465.3  |
| 2.5°  | 545.6  | 545.6  | 548.0  | 543.3  | 536.2  | 522.0  | 513.8  | 498.4  | 486.6  | 485.4  | 474.8  |
| 5°    | 624.8  | 628.3  | 629.5  | 624.8  | 616.5  | 598.8  | 576.3  | 544.5  | 517.3  | 512.6  | 490.1  |
| 7.5°  | 628.3  | 630.7  | 637.8  | 647.2  | 653.1  | 648.4  | 634.2  | 601.1  | 553.9  | 549.2  | 511.4  |
| 10°   | 601.1  | 601.1  | 608.2  | 620.0  | 643.7  | 667.3  | 674.4  | 651.9  | 598.8  | 591.7  | 539.7  |
| 12.5° | 608.2  | 608.2  | 615.3  | 622.4  | 637.8  | 656.7  | 698.0  | 695.6  | 646.0  | 638.9  | 576.3  |
| 15°   | 634.2  | 634.2  | 641.3  | 650.8  | 660.2  | 669.6  | 702.7  | 738.1  | 699.2  | 693.3  | 613.0  |
| 17.5° | 659.0  | 657.8  | 669.6  | 687.4  | 701.5  | 702.7  | 720.4  | 770.0  | 753.5  | 748.8  | 654.3  |
| 20°   | 683.8  | 686.2  | 701.5  | 727.5  | 752.3  | 759.4  | 761.8  | 799.6  | 812.6  | 807.8  | 703.9  |
| 22.5° | 718.1  | 721.6  | 740.5  | 777.1  | 809.0  | 824.4  | 822.0  | 833.8  | 871.6  | 864.5  | 751.1  |
| 25°   | 773.6  | 774.8  | 809.0  | 853.9  | 888.1  | 907.0  | 897.6  | 877.5  | 923.6  | 917.7  | 796.0  |
| 27.5° | 883.4  | 891.7  | 916.5  | 967.3  | 1007.4 | 1009.8 | 993.3  | 937.7  | 967.3  | 964.9  | 833.8  |
| 30°   | 1176.3 | 1158.6 | 1132.6 | 1125.5 | 1148.0 | 1143.2 | 1117.3 | 1016.9 | 1013.3 | 1009.8 | 871.6  |
| 32.5° | 1498.7 | 1501.1 | 1455.0 | 1362.9 | 1332.2 | 1294.4 | 1251.9 | 1126.7 | 1070.0 | 1070.0 | 912.9  |
| 35°   | 1811.7 | 1792.8 | 1776.3 | 1675.9 | 1564.9 | 1481.0 | 1417.2 | 1259.0 | 1148.0 | 1145.6 | 966.1  |
| 37.5° | 2090.4 | 2073.9 | 2056.2 | 1987.7 | 1855.4 | 1697.1 | 1585.0 | 1417.2 | 1259.0 | 1255.4 | 1029.9 |
| 40°   | 2291.2 | 2287.7 | 2277.0 | 2242.8 | 2124.7 | 1941.6 | 1775.1 | 1572.0 | 1390.1 | 1381.8 | 1106.6 |
| 42.5° | 2467.2 | 2469.5 | 2467.2 | 2469.5 | 2394.0 | 2194.4 | 1970.0 | 1730.2 | 1511.7 | 1504.6 | 1196.4 |
| 45°   | 2605.4 | 2606.5 | 2637.3 | 2663.2 | 2626.6 | 2435.3 | 2160.1 | 1919.2 | 1674.7 | 1670.0 | 1313.3 |
| 47.5° | 2473.1 | 2479.0 | 2586.5 | 2754.2 | 2803.8 | 2639.6 | 2359.7 | 2108.2 | 1867.2 | 1868.4 | 1446.8 |
| 50°   | 2076.3 | 2107.0 | 2312.5 | 2643.2 | 2849.8 | 2801.4 | 2539.2 | 2316.0 | 2148.3 | 2153.0 | 1657.0 |
| 52.5° | 1559.0 | 1590.9 | 1817.6 | 2326.6 | 2711.7 | 2819.1 | 2702.2 | 2536.9 | 2522.7 | 2515.6 | 1869.6 |
| 55°   | 1184.6 | 1204.7 | 1427.9 | 1901.5 | 2373.9 | 2642.0 | 2789.6 | 2795.5 | 2938.4 | 2936.1 | 2082.2 |
| 57.5° | 844.4  | 872.8  | 1053.5 | 1616.8 | 2008.9 | 2317.2 | 2737.6 | 3056.5 | 3362.4 | 3351.8 | 2249.9 |
| 60°   | 549.2  | 551.5  | 694.4  | 1238.9 | 1755.0 | 1912.1 | 2515.6 | 3185.3 | 3704.9 | 3704.9 | 2373.9 |
| 62.5° | 351.9  | 362.6  | 431.1  | 762.9  | 1327.5 | 1655.8 | 2177.8 | 3109.7 | 3870.3 | 3853.7 | 2424.7 |
| 63°   | 321.2  | 329.5  | 394.5  | 674.4  | 1196.4 | 1602.7 | 2077.4 | 3061.2 | 3875.0 | 3858.4 | 2416.4 |
| 65°   | 245.7  | 250.4  | 288.2  | 407.5  | 754.7  | 1235.4 | 1831.8 | 2745.9 | 3808.8 | 3817.1 | 2343.2 |
| 67.5° | 214.9  | 216.1  | 237.4  | 283.4  | 361.4  | 622.4  | 1445.6 | 2314.8 | 3622.2 | 3654.1 | 2147.1 |
| 70°   | 198.4  | 200.8  | 224.4  | 243.3  | 232.7  | 204.3  | 877.5  | 1923.9 | 3231.3 | 3318.7 | 1895.6 |
| 72.5° | 170.1  | 174.8  | 199.6  | 227.9  | 189.0  | 124.0  | 324.8  | 1455.0 | 2577.0 | 2662.1 | 1544.8 |
| 75°   | 137.0  | 141.7  | 163.0  | 192.5  | 171.3  | 102.8  | 101.6  | 810.2  | 1744.4 | 1738.5 | 1003.9 |
| 77.5° | 103.9  | 107.5  | 131.1  | 147.6  | 151.2  | 94.5   | 81.5   | 348.4  | 979.1  | 942.5  | 459.4  |
| 80°   | 72.0   | 76.8   | 96.8   | 107.5  | 116.9  | 87.4   | 68.5   | 100.4  | 275.2  | 261.0  | 106.3  |
| 82.5° | 37.8   | 39.0   | 61.4   | 69.7   | 77.9   | 72.0   | 53.1   | 59.1   | 52.0   | 49.6   | 28.3   |
| 85°   | 13.0   | 15.4   | 24.8   | 28.3   | 31.9   | 35.4   | 33.1   | 35.4   | 30.7   | 29.5   | 18.9   |
| 87.5° | 2.4    | 2.4    | 3.5    | 4.7    | 4.7    | 4.7    | 5.9    | 5.9    | 4.7    | 4.7    | 3.5    |
| 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: P1502921

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

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 465.3  | 465.3  | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 |
| 2.5°  | 468.9  | 463.0  | 452.3 | 441.7 | 429.9 | 419.3 | 411.0 | 407.5 | 400.4 | 399.2 | 394.5 |
| 5°    | 478.3  | 465.3  | 439.3 | 412.2 | 387.4 | 363.8 | 346.0 | 328.3 | 317.7 | 314.2 | 315.3 |
| 7.5°  | 491.3  | 472.4  | 428.7 | 383.8 | 340.1 | 302.3 | 271.6 | 244.5 | 230.3 | 224.4 | 223.2 |
| 10°   | 512.6  | 484.2  | 418.1 | 350.8 | 288.2 | 235.0 | 194.9 | 171.3 | 155.9 | 154.7 | 151.2 |
| 12.5° | 542.1  | 501.9  | 408.6 | 313.0 | 231.5 | 174.8 | 142.9 | 126.4 | 120.5 | 118.1 | 118.1 |
| 15°   | 574.0  | 523.2  | 398.0 | 269.3 | 178.3 | 131.1 | 113.4 | 109.8 | 107.5 | 106.3 | 106.3 |
| 17.5° | 609.4  | 543.3  | 376.8 | 223.2 | 137.0 | 108.7 | 102.8 | 100.4 | 98.0  | 96.8  | 96.8  |
| 20°   | 647.2  | 559.8  | 349.6 | 179.5 | 109.8 | 98.0  | 93.3  | 89.8  | 87.4  | 87.4  | 86.2  |
| 22.5° | 680.3  | 570.4  | 315.3 | 138.2 | 99.2  | 90.9  | 86.2  | 82.7  | 81.5  | 80.3  | 80.3  |
| 25°   | 711.0  | 572.8  | 278.7 | 111.0 | 92.1  | 83.9  | 77.9  | 75.6  | 74.4  | 74.4  | 73.2  |
| 27.5° | 734.6  | 568.1  | 242.1 | 98.0  | 85.0  | 77.9  | 72.0  | 69.7  | 69.7  | 68.5  | 68.5  |
| 30°   | 753.5  | 558.6  | 200.8 | 92.1  | 80.3  | 72.0  | 67.3  | 66.1  | 65.0  | 65.0  | 65.0  |
| 32.5° | 774.8  | 549.2  | 164.2 | 89.8  | 76.8  | 68.5  | 65.0  | 63.8  | 62.6  | 61.4  | 61.4  |
| 35°   | 796.0  | 546.8  | 144.1 | 89.8  | 74.4  | 67.3  | 63.8  | 61.4  | 60.2  | 59.1  | 59.1  |
| 37.5° | 820.8  | 548.0  | 137.0 | 92.1  | 74.4  | 66.1  | 62.6  | 60.2  | 59.1  | 56.7  | 56.7  |
| 40°   | 855.1  | 546.8  | 131.1 | 92.1  | 73.2  | 65.0  | 61.4  | 59.1  | 56.7  | 54.3  | 54.3  |
| 42.5° | 899.9  | 558.6  | 124.0 | 89.8  | 72.0  | 63.8  | 60.2  | 56.7  | 53.1  | 50.8  | 50.8  |
| 45°   | 982.6  | 594.1  | 116.9 | 85.0  | 69.7  | 61.4  | 56.7  | 53.1  | 49.6  | 46.1  | 46.1  |
| 47.5° | 1101.9 | 675.6  | 113.4 | 80.3  | 66.1  | 57.9  | 52.0  | 47.2  | 44.9  | 42.5  | 42.5  |
| 50°   | 1306.2 | 822.0  | 125.2 | 73.2  | 61.4  | 53.1  | 47.2  | 42.5  | 39.0  | 36.6  | 36.6  |
| 52.5° | 1516.5 | 987.3  | 145.3 | 68.5  | 56.7  | 47.2  | 41.3  | 36.6  | 33.1  | 30.7  | 30.7  |
| 55°   | 1705.4 | 1122.0 | 146.4 | 62.6  | 50.8  | 42.5  | 36.6  | 31.9  | 27.2  | 26.0  | 26.0  |
| 57.5° | 1871.9 | 1196.4 | 132.3 | 54.3  | 44.9  | 37.8  | 31.9  | 27.2  | 22.4  | 21.3  | 21.3  |
| 60°   | 2017.2 | 1183.4 | 113.4 | 47.2  | 39.0  | 33.1  | 29.5  | 24.8  | 20.1  | 18.9  | 20.1  |
| 62.5° | 2081.0 | 1145.6 | 94.5  | 39.0  | 34.3  | 29.5  | 28.3  | 24.8  | 17.7  | 16.5  | 16.5  |
| 63°   | 2073.9 | 1130.3 | 89.8  | 37.8  | 33.1  | 29.5  | 28.3  | 23.6  | 17.7  | 16.5  | 16.5  |
| 65°   | 2017.2 | 1060.6 | 69.7  | 33.1  | 29.5  | 27.2  | 27.2  | 21.3  | 16.5  | 14.2  | 15.4  |
| 67.5° | 1854.2 | 897.6  | 50.8  | 28.3  | 27.2  | 24.8  | 23.6  | 17.7  | 11.8  | 9.4   | 9.4   |
| 70°   | 1512.9 | 625.9  | 39.0  | 26.0  | 24.8  | 21.3  | 16.5  | 13.0  | 9.4   | 7.1   | 7.1   |
| 72.5° | 1081.8 | 326.0  | 34.3  | 22.4  | 22.4  | 16.5  | 13.0  | 10.6  | 8.3   | 4.7   | 4.7   |
| 75°   | 634.2  | 150.0  | 30.7  | 20.1  | 18.9  | 13.0  | 10.6  | 8.3   | 5.9   | 3.5   | 3.5   |
| 77.5° | 276.4  | 67.3   | 27.2  | 17.7  | 14.2  | 11.8  | 9.4   | 7.1   | 4.7   | 2.4   | 1.2   |
| 80°   | 62.6   | 31.9   | 21.3  | 14.2  | 11.8  | 9.4   | 7.1   | 5.9   | 3.5   | 0.0   | 0.0   |
| 82.5° | 24.8   | 21.3   | 15.4  | 9.4   | 7.1   | 4.7   | 3.5   | 3.5   | 1.2   | 0.0   | 0.0   |
| 85°   | 15.4   | 11.8   | 7.1   | 4.7   | 3.5   | 2.4   | 2.4   | 1.2   | 0.0   | 0.0   | 0.0   |
| 87.5° | 3.5    | 2.4    | 2.4   | 2.4   | 1.2   | 1.2   | 1.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

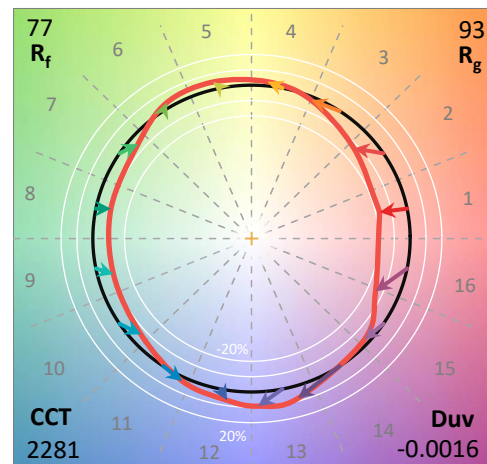
### Test Information

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

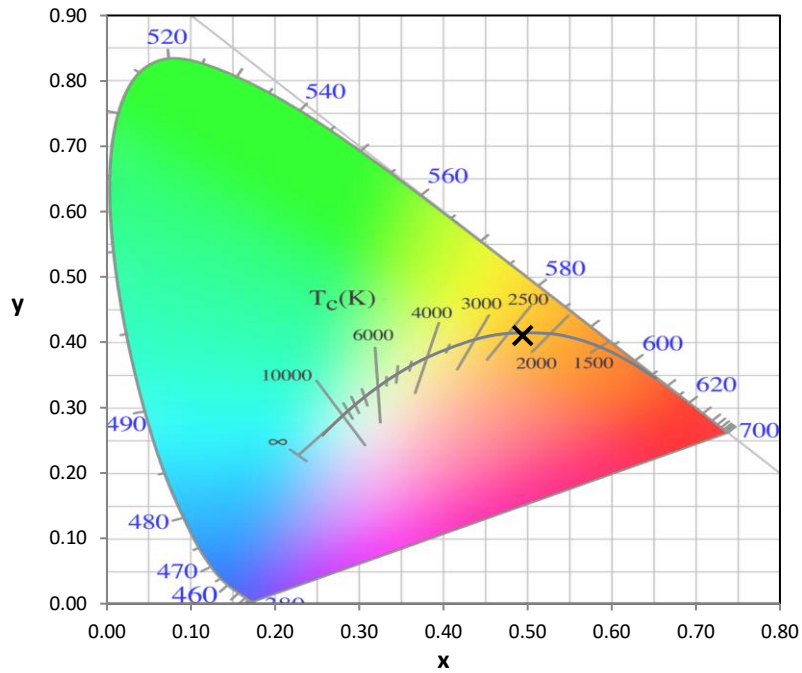
Stabilization Time: 40M  
 Operation Time: 1H 40M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP2-2501-321-2

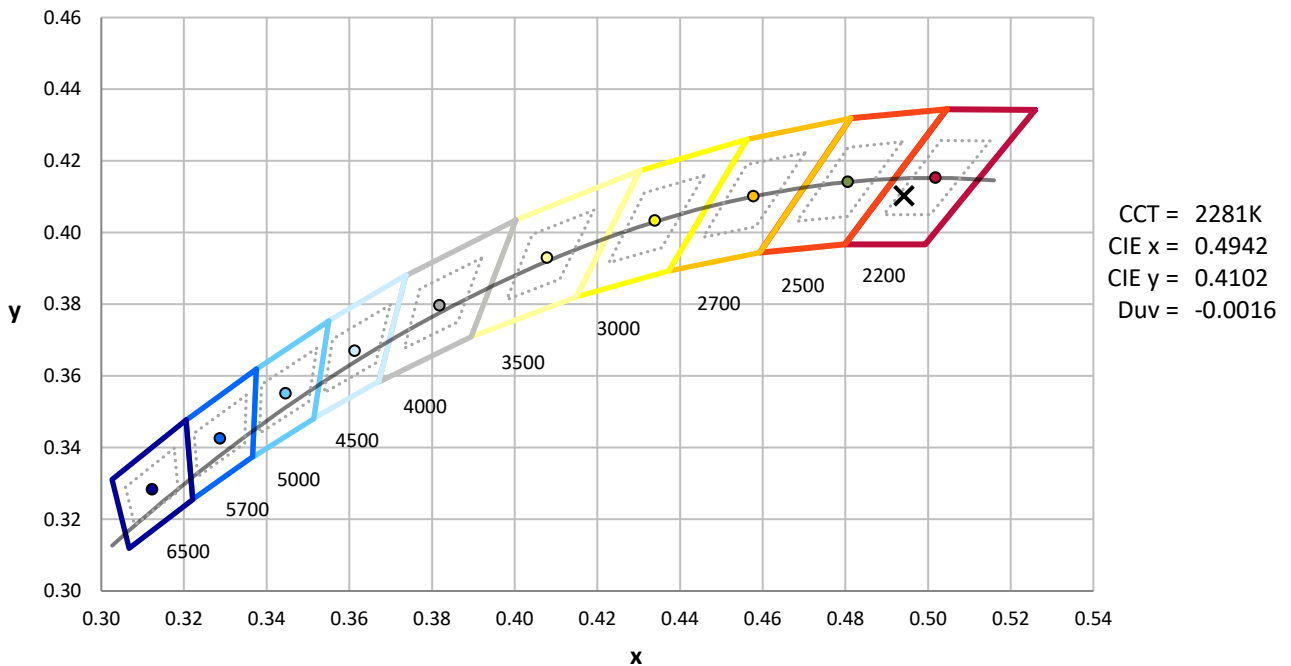
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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**



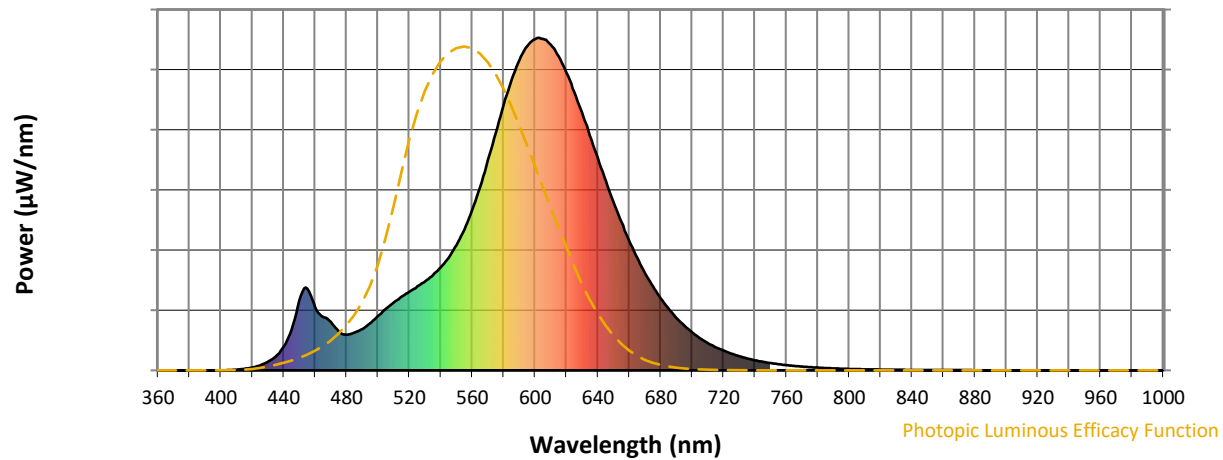
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP2-2501-321-2

### Photopic Flux vs. Wavelength

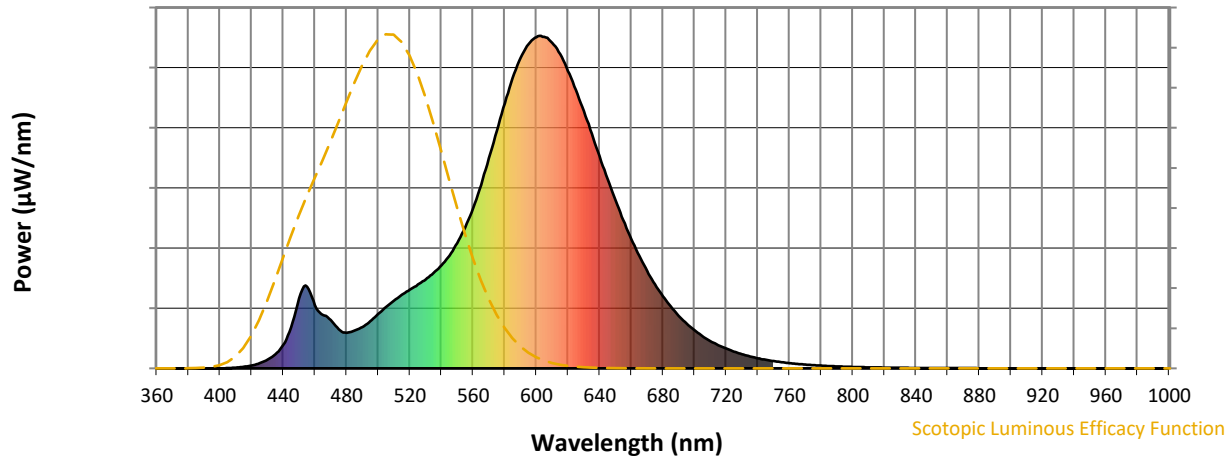


### Photopic Lumens: NR

| 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



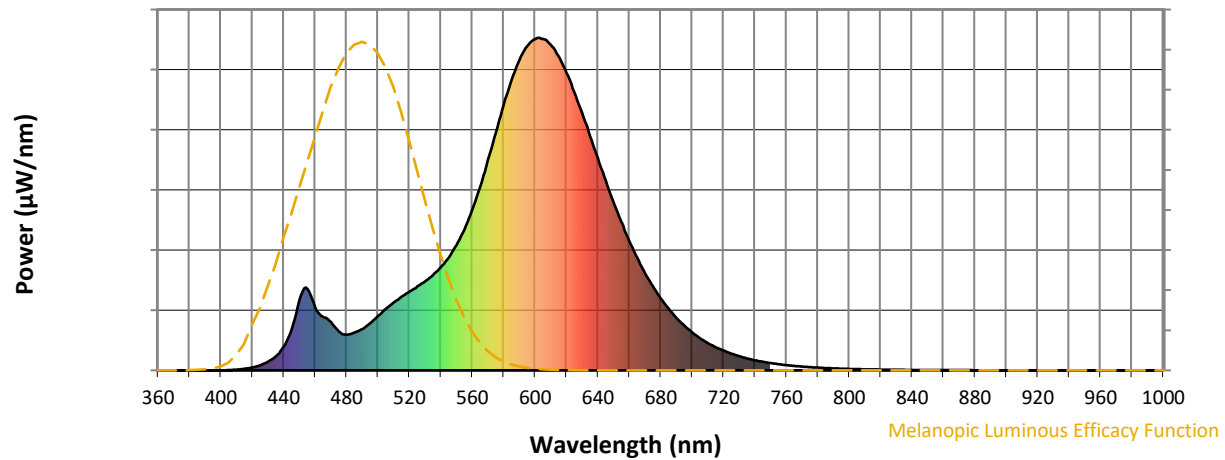
Scotopic Lumens: NR

S/P: 0.98

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</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

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.75

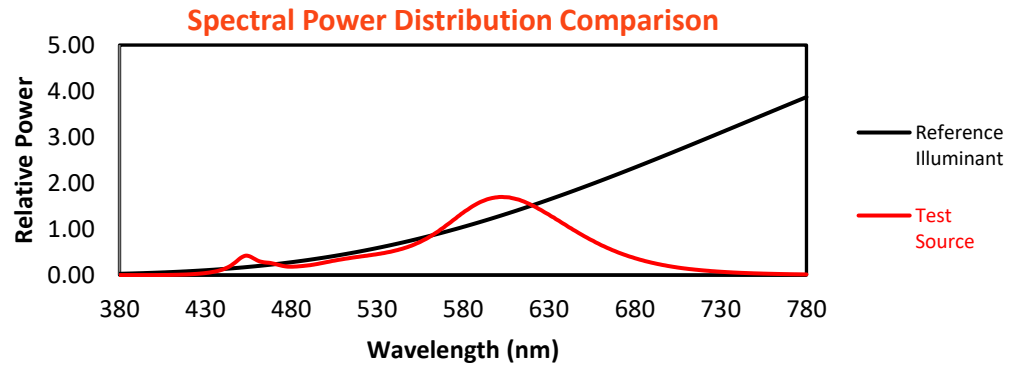
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 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

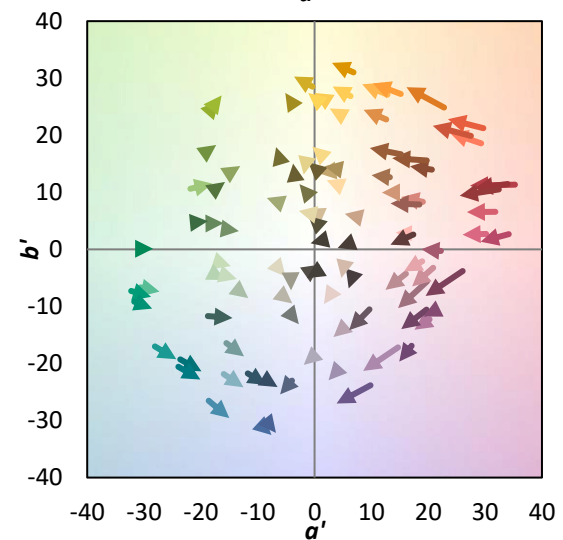
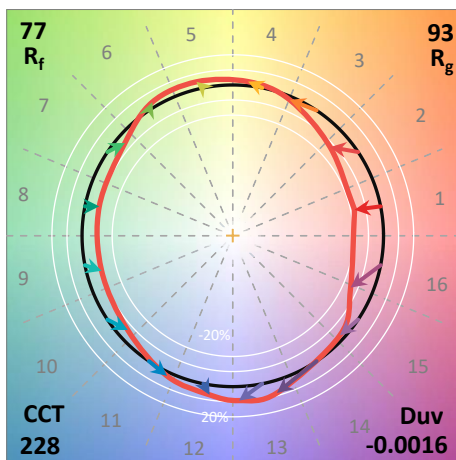
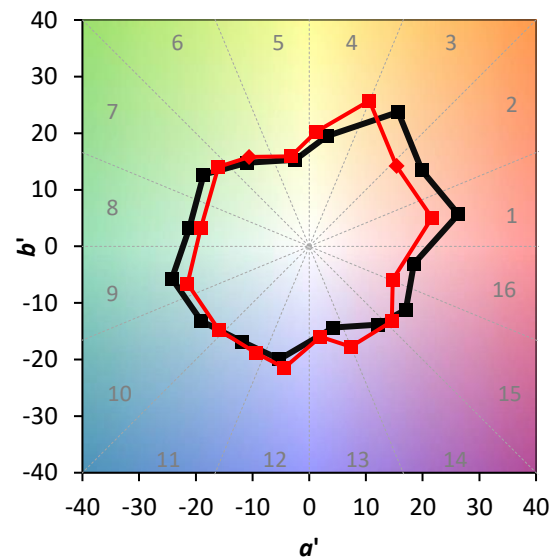
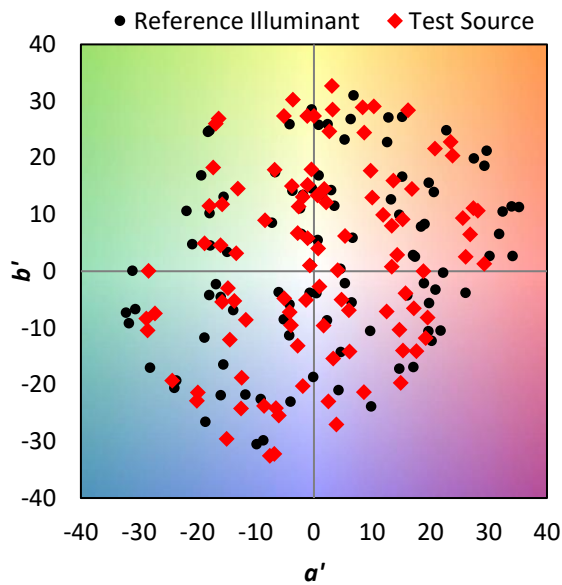
TM-30-18

### Summary

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

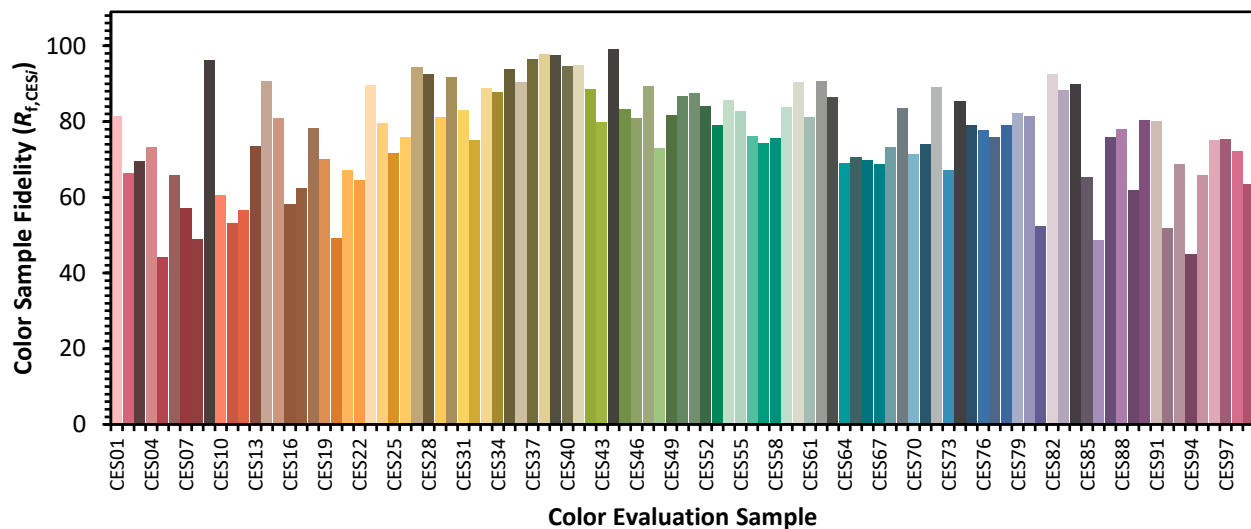


### Color Vector Graphics

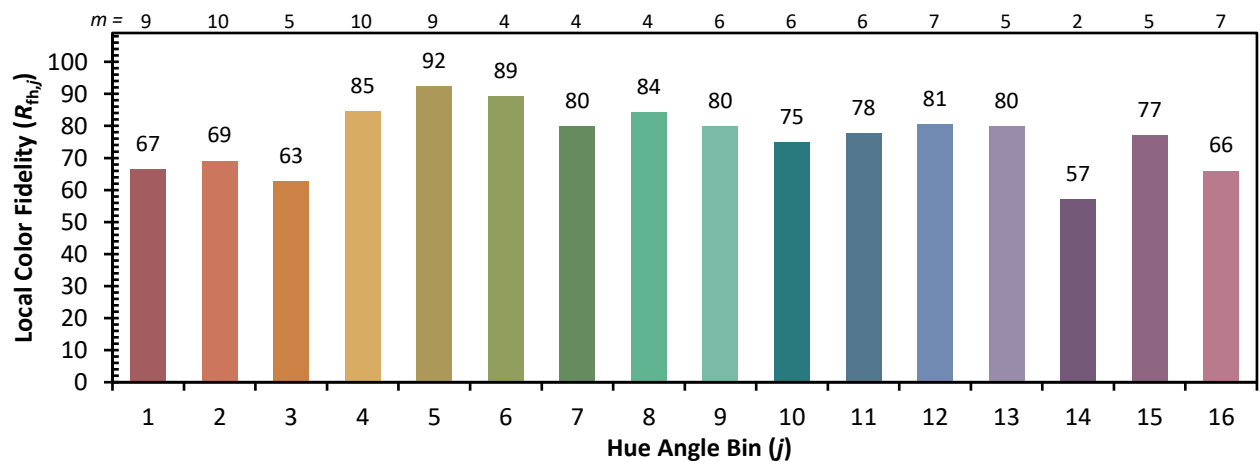
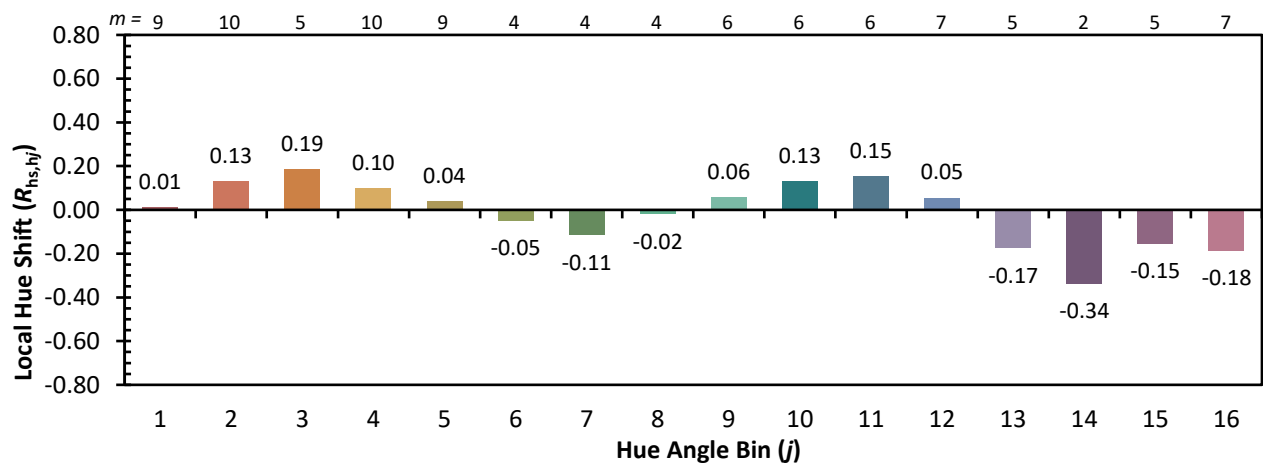
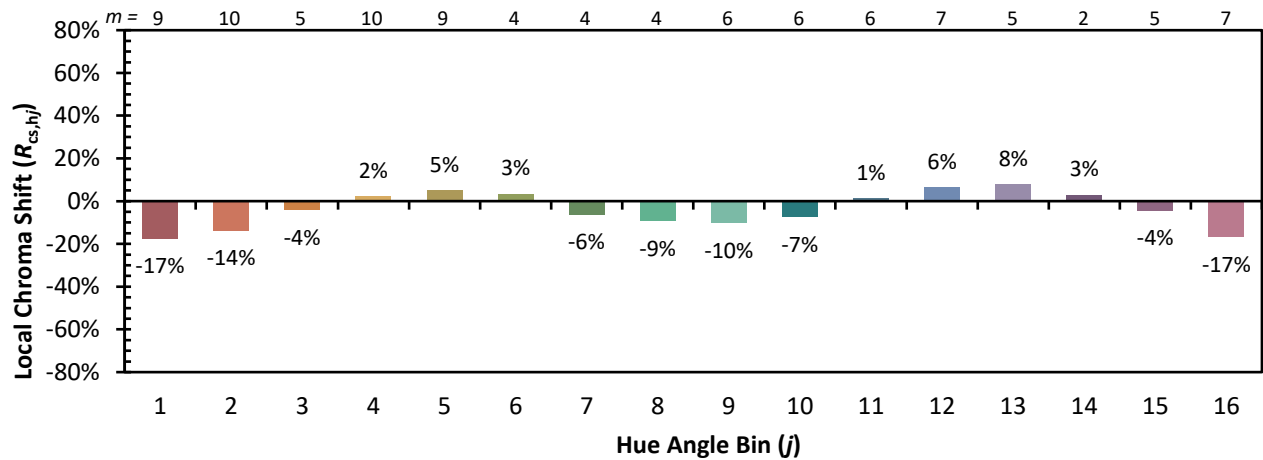


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

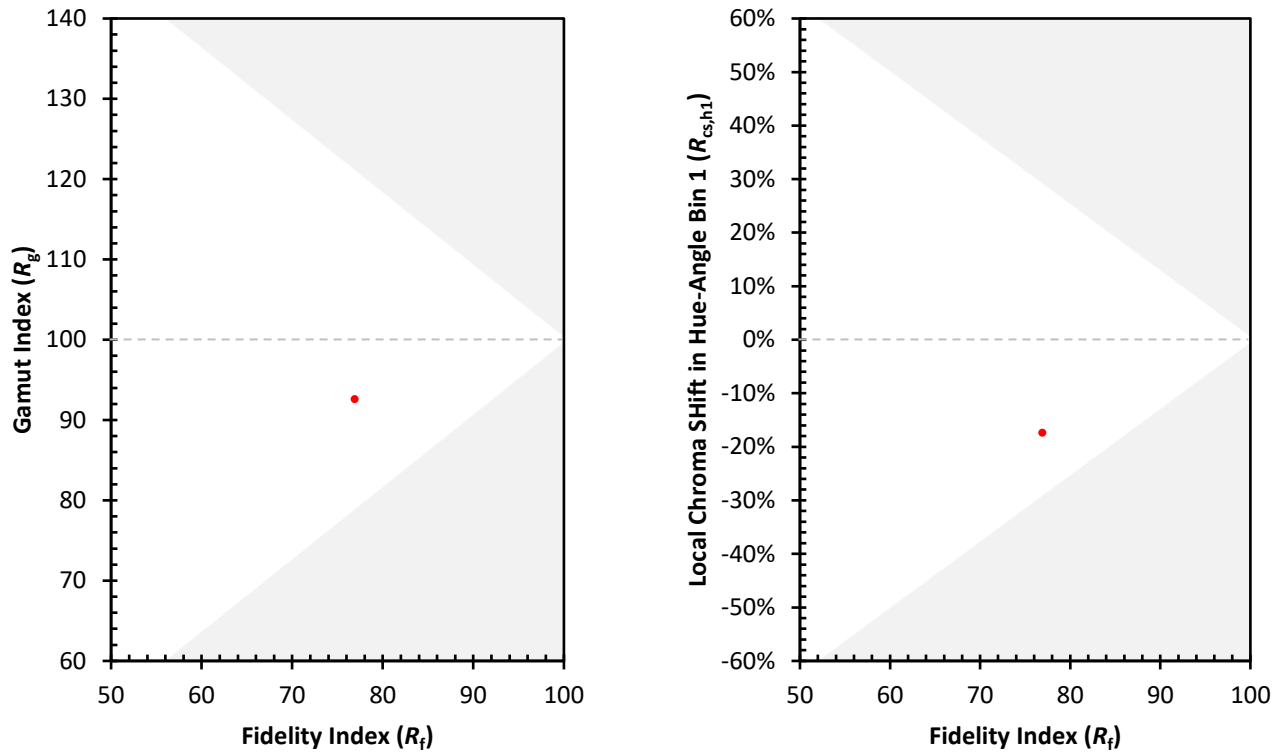
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 76 | CES51 = 88 | CES76 = 78 |
| CES02 = 65 | CES27 = 94 | CES52 = 84 | CES77 = 76 |
| CES03 = 32 | CES28 = 93 | CES53 = 79 | CES78 = 79 |
| CES04 = 72 | CES29 = 81 | CES54 = 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)