

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: P1503083

Luminaire Tested: PRV-P-90-727-U-T4RE

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1503083  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 7/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-90-727-U-T4RE  
Description: PREVAIL PETITE DISCRETE LED 2 SQUARES 90W 70CRI 2700K FIXTURE w/ TYPE IV  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC  
Light Source: (20) 2700K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11500.2 lumens  
Efficiency: N/A  
Efficacy: 121.7 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B2 - U0 - G2

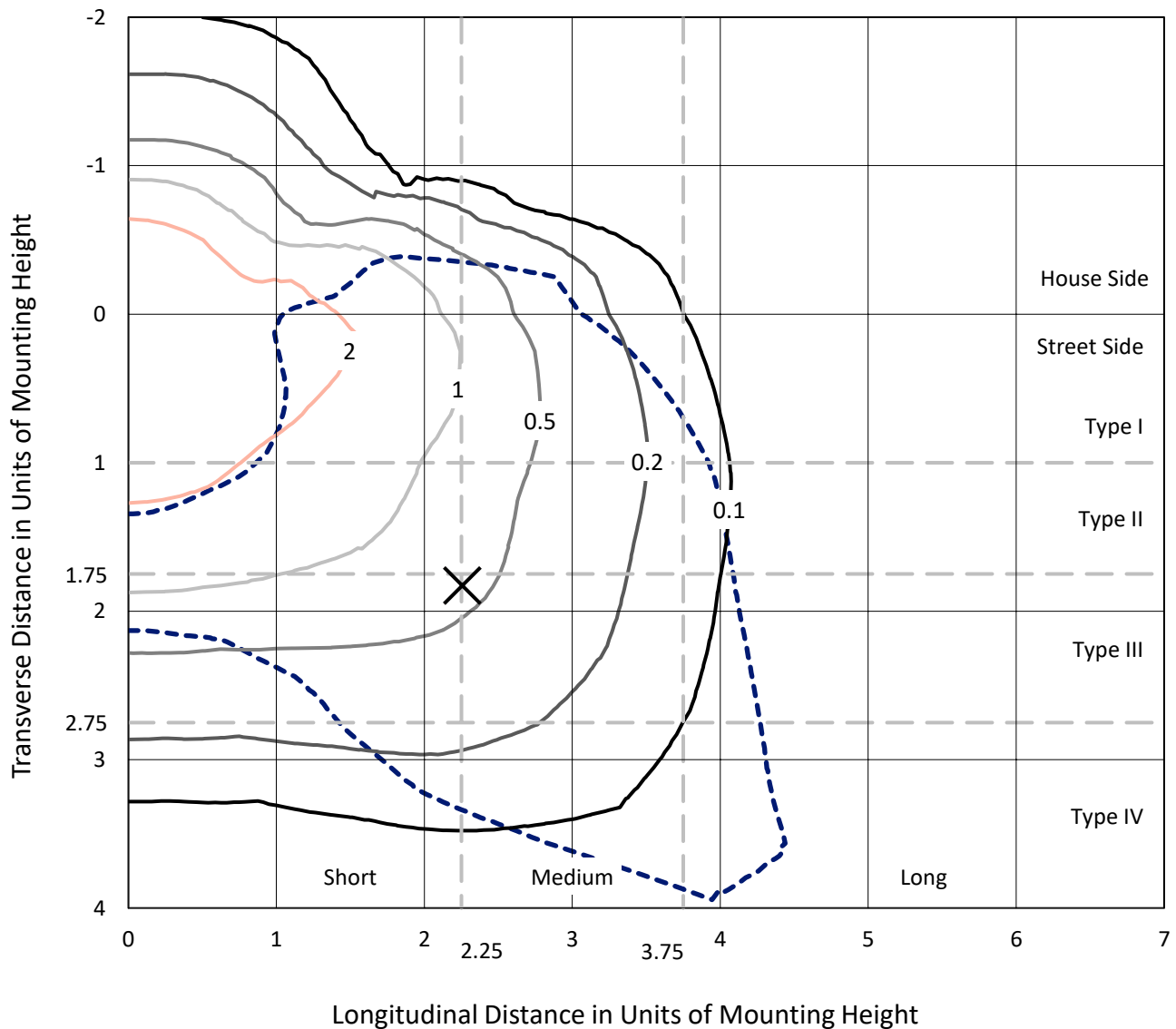
Input Watts (W): 94.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 6.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
- - - 1/2 Max cd

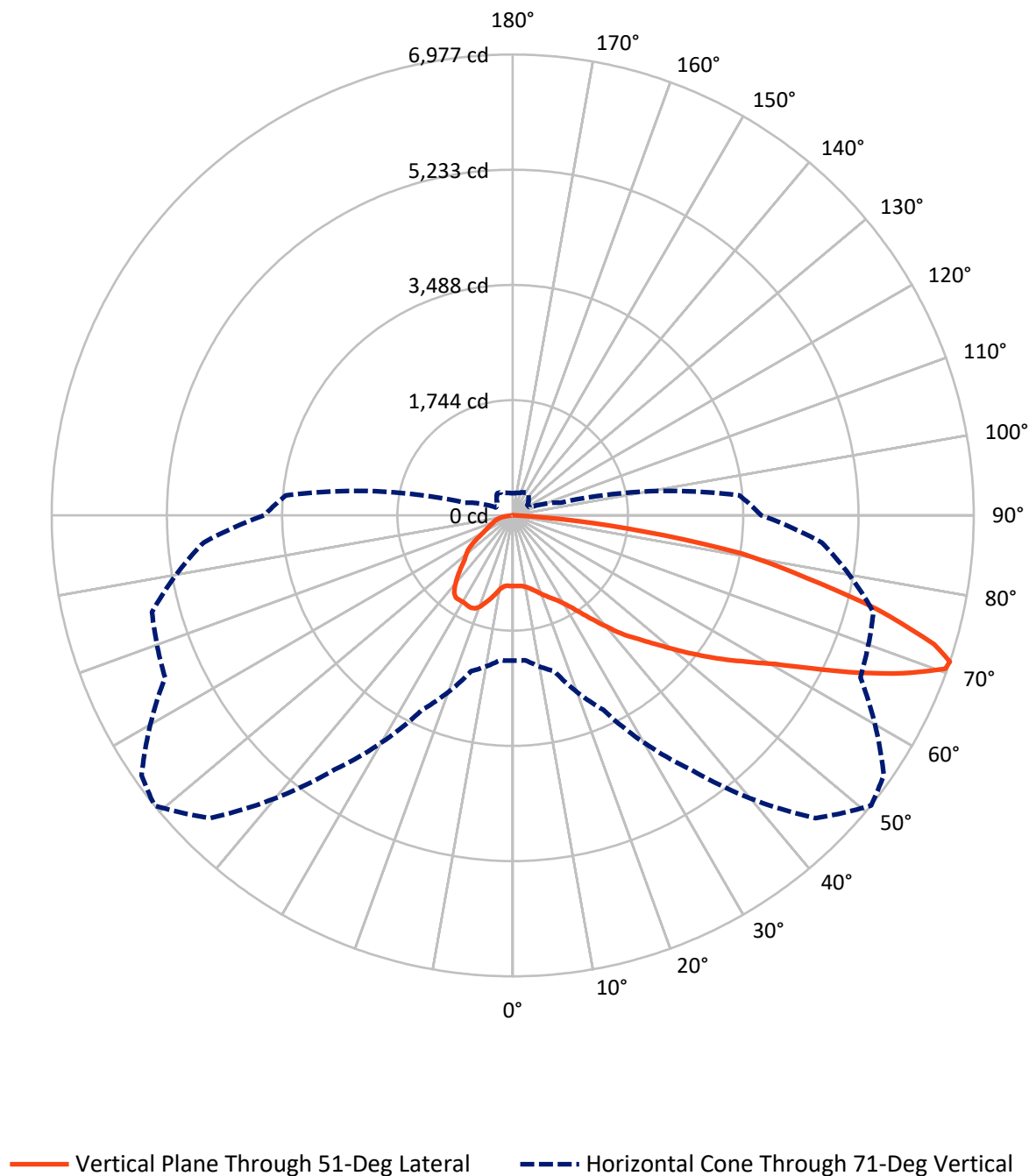


Based on 20 foot mounting height. Maximum calculated value = 3.1 fc  
Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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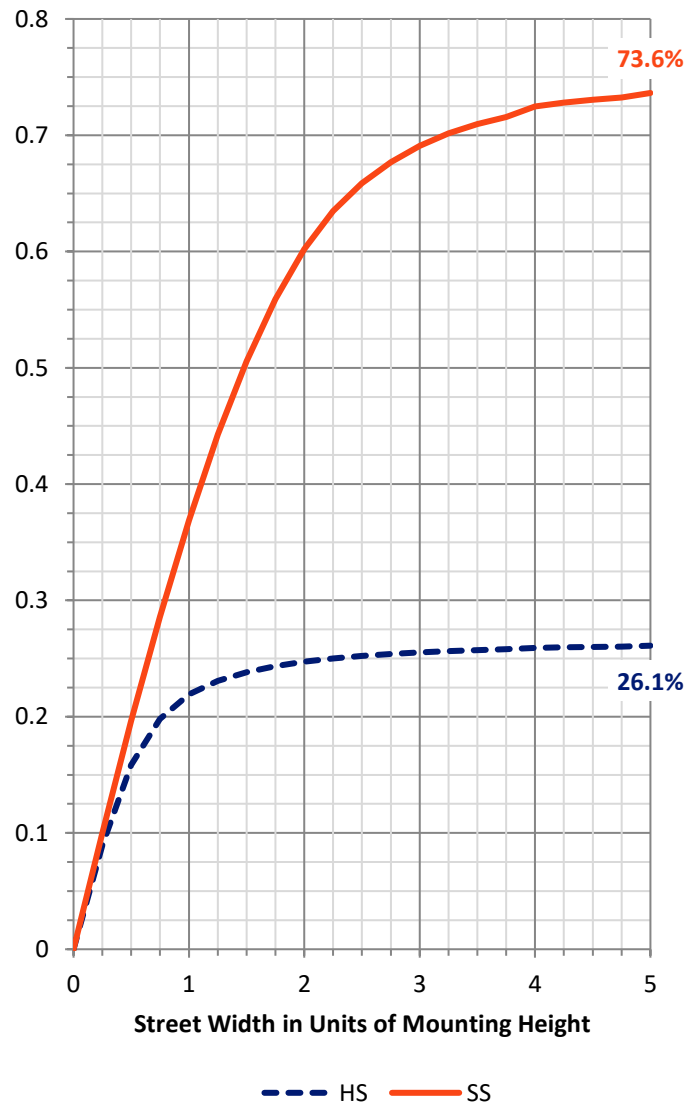
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3019.7   | 0.0    | 3019.7  |
|                    | % Fixture | 26.3     | 0.0    | 26.3    |
| <b>Street Side</b> | Lumens    | 8480.5   | 0.0    | 8480.5  |
|                    | % Fixture | 73.7     | 0.0    | 73.7    |
| <b>Total</b>       | Lumens    | 11500.2  | 0.0    | 11500.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 104.1   | 0.9       |
| 10°-20°   | 355.2   | 3.1       |
| 20°-30°   | 675.3   | 5.9       |
| 30°-40°   | 1076.6  | 9.4       |
| 40°-50°   | 1677.0  | 14.6      |
| 50°-60°   | 2351.2  | 20.4      |
| 60°-70°   | 2979.8  | 25.9      |
| 70°-80°   | 2028.0  | 17.6      |
| 80°-90°   | 252.9   | 2.2       |
| 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°    | 11500.2 | 100.0     |
| 0°-180°   | 11500.2 | 100.0     |

**Coefficient of Utilization**



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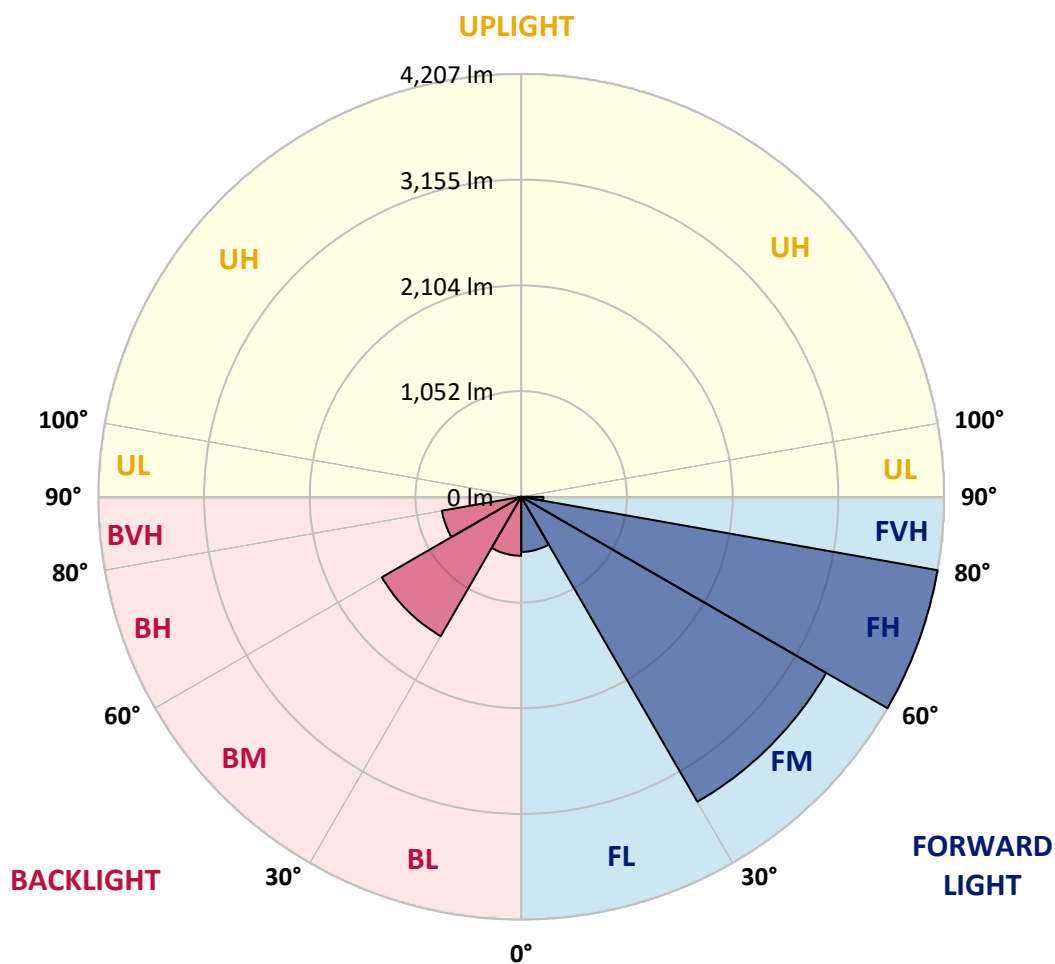
CATALOG NUMBER: PRV-P-90-727-U-T4RE

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 548.0  | 4.8       |                         |      |         |
| FM   | (30°-60°)   | 3504.4 | 30.5      |                         |      |         |
| FH   | (60°-80°)   | 4207.3 | 36.6      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 220.9  | 1.9       |                         |      | G2/225  |
| BL   | (0°-30°)    | 586.7  | 5.1       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1600.5 | 13.9      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 800.5  | 7.0       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 32.1   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type IV Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 51°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 |
| 2.5°  | 1070.7 | 1068.3 | 1070.7 | 1075.6 | 1075.6 | 1070.7 | 1070.7 | 1070.7 | 1068.3 | 1070.7 | 1073.2 |
| 5°    | 1078.1 | 1078.1 | 1078.1 | 1083.0 | 1080.6 | 1073.2 | 1073.2 | 1073.2 | 1070.7 | 1070.7 | 1073.2 |
| 7.5°  | 1107.6 | 1105.1 | 1105.1 | 1100.2 | 1092.8 | 1085.5 | 1080.6 | 1080.6 | 1075.6 | 1075.6 | 1078.1 |
| 10°   | 1156.7 | 1151.8 | 1144.4 | 1137.0 | 1124.8 | 1110.0 | 1100.2 | 1095.3 | 1087.9 | 1085.5 | 1090.4 |
| 12.5° | 1200.9 | 1200.9 | 1191.1 | 1181.2 | 1166.5 | 1146.9 | 1129.7 | 1124.8 | 1110.0 | 1105.1 | 1114.9 |
| 15°   | 1237.7 | 1237.7 | 1232.8 | 1223.0 | 1210.7 | 1191.1 | 1171.4 | 1164.1 | 1146.9 | 1137.0 | 1151.8 |
| 17.5° | 1259.8 | 1259.8 | 1257.4 | 1257.4 | 1252.5 | 1232.8 | 1218.1 | 1210.7 | 1188.6 | 1178.8 | 1200.9 |
| 20°   | 1286.8 | 1289.3 | 1289.3 | 1291.8 | 1291.8 | 1281.9 | 1274.6 | 1267.2 | 1245.1 | 1237.7 | 1259.8 |
| 22.5° | 1328.6 | 1328.6 | 1328.6 | 1336.0 | 1333.5 | 1333.5 | 1331.0 | 1323.7 | 1308.9 | 1296.7 | 1323.7 |
| 25°   | 1380.2 | 1380.2 | 1377.7 | 1390.0 | 1392.4 | 1394.9 | 1394.9 | 1392.4 | 1385.1 | 1365.4 | 1402.3 |
| 27.5° | 1466.1 | 1468.6 | 1461.2 | 1458.7 | 1458.7 | 1468.6 | 1461.2 | 1471.0 | 1466.1 | 1458.7 | 1507.9 |
| 30°   | 1584.0 | 1574.2 | 1566.8 | 1554.5 | 1549.6 | 1557.0 | 1554.5 | 1557.0 | 1557.0 | 1557.0 | 1645.4 |
| 32.5° | 1721.5 | 1714.2 | 1706.8 | 1684.7 | 1669.9 | 1669.9 | 1674.9 | 1677.3 | 1677.3 | 1692.1 | 1800.1 |
| 35°   | 1900.8 | 1893.4 | 1891.0 | 1864.0 | 1832.0 | 1827.1 | 1836.9 | 1841.9 | 1861.5 | 1908.2 | 2018.7 |
| 37.5° | 2092.3 | 2092.3 | 2087.4 | 2067.8 | 2023.6 | 2008.8 | 2021.1 | 2040.8 | 2087.4 | 2210.2 | 2318.3 |
| 40°   | 2342.8 | 2330.6 | 2315.8 | 2288.8 | 2222.5 | 2215.1 | 2232.3 | 2256.9 | 2342.8 | 2578.6 | 2760.3 |
| 42.5° | 2595.8 | 2590.9 | 2586.0 | 2571.2 | 2460.7 | 2438.6 | 2465.6 | 2490.2 | 2640.0 | 2974.0 | 3158.2 |
| 45°   | 2816.8 | 2834.0 | 2807.0 | 2787.3 | 2667.0 | 2635.1 | 2671.9 | 2718.6 | 2949.4 | 3298.1 | 3548.6 |
| 47.5° | 3086.9 | 3074.7 | 3040.3 | 3013.3 | 2902.8 | 2865.9 | 2907.7 | 2978.9 | 3236.8 | 3592.8 | 3877.7 |
| 50°   | 3285.9 | 3285.9 | 3263.8 | 3266.2 | 3153.3 | 3143.4 | 3195.0 | 3281.0 | 3502.0 | 3904.7 | 4204.3 |
| 52.5° | 3418.5 | 3413.6 | 3438.1 | 3475.0 | 3413.6 | 3433.2 | 3504.4 | 3580.6 | 3781.9 | 4165.0 | 4459.7 |
| 55°   | 3560.9 | 3563.4 | 3597.8 | 3666.5 | 3681.3 | 3727.9 | 3838.4 | 3907.2 | 4061.9 | 4447.5 | 4717.6 |
| 57.5° | 3698.4 | 3705.8 | 3791.8 | 3877.7 | 3929.3 | 4054.5 | 4177.3 | 4241.2 | 4341.9 | 4742.2 | 5014.8 |
| 60°   | 3828.6 | 3836.0 | 3931.7 | 4147.9 | 4280.5 | 4479.4 | 4562.9 | 4609.5 | 4646.4 | 5117.9 | 5515.7 |
| 62.5° | 3838.4 | 3840.9 | 4003.0 | 4366.4 | 4670.9 | 5004.9 | 5098.3 | 5103.2 | 5088.4 | 5729.4 | 6075.7 |
| 65°   | 3452.9 | 3462.7 | 3740.2 | 4359.1 | 5046.7 | 5643.4 | 5736.8 | 5685.2 | 5601.7 | 6235.3 | 6137.1 |
| 67.5° | 2748.0 | 2821.7 | 3086.9 | 3948.9 | 5140.0 | 6240.2 | 6377.7 | 6326.2 | 5970.1 | 6235.3 | 5788.3 |
| 70°   | 2323.2 | 2352.7 | 2578.6 | 3379.2 | 4869.9 | 6522.6 | 6947.5 | 6841.9 | 5957.8 | 5918.5 | 5066.3 |
| 71°   | 2197.9 | 2200.4 | 2441.1 | 3246.6 | 4695.5 | 6480.9 | 6976.9 | 6856.6 | 5805.5 | 5650.8 | 4693.0 |
| 72.5° | 1809.9 | 1822.2 | 2126.7 | 3064.8 | 4577.6 | 6220.6 | 6670.0 | 6579.1 | 5449.4 | 5159.6 | 4047.2 |
| 75°   | 920.9  | 945.5  | 1291.8 | 2347.8 | 4167.5 | 5454.3 | 5712.2 | 5746.6 | 4742.2 | 4152.8 | 2978.9 |
| 77.5° | 329.1  | 341.4  | 508.4  | 1262.3 | 2922.4 | 4661.1 | 4543.2 | 4452.4 | 3506.9 | 2804.5 | 1726.4 |
| 80°   | 174.4  | 174.4  | 196.5  | 373.3  | 1458.7 | 3381.6 | 3529.0 | 3042.7 | 2021.1 | 1348.2 | 746.6  |
| 82.5° | 122.8  | 127.7  | 135.1  | 157.2  | 493.6  | 1905.7 | 2003.9 | 1809.9 | 854.6  | 456.8  | 171.9  |
| 85°   | 61.4   | 61.4   | 68.8   | 76.1   | 100.7  | 559.9  | 714.6  | 596.8  | 228.4  | 113.0  | 63.9   |
| 87.5° | 2.5    | 2.5    | 2.5    | 4.9    | 9.8    | 19.6   | 24.6   | 17.2   | 12.3   | 7.4    | 4.9    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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CATALOG NUMBER: PRV-P-90-727-U-T4RE

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 |
| 2.5°  | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1070.7 | 1068.3 | 1068.3 | 1065.8 | 1068.3 | 1073.2 | 1070.7 |
| 5°    | 1070.7 | 1073.2 | 1070.7 | 1070.7 | 1068.3 | 1063.4 | 1060.9 | 1065.8 | 1070.7 | 1070.7 | 1073.2 |
| 7.5°  | 1078.1 | 1080.6 | 1078.1 | 1075.6 | 1080.6 | 1083.0 | 1087.9 | 1100.2 | 1107.6 | 1117.4 | 1117.4 |
| 10°   | 1092.8 | 1095.3 | 1097.7 | 1102.7 | 1117.4 | 1139.5 | 1161.6 | 1178.8 | 1193.5 | 1203.3 | 1196.0 |
| 12.5° | 1117.4 | 1127.2 | 1139.5 | 1159.1 | 1196.0 | 1223.0 | 1240.2 | 1267.2 | 1289.3 | 1286.8 | 1299.1 |
| 15°   | 1164.1 | 1173.9 | 1200.9 | 1240.2 | 1279.5 | 1306.5 | 1336.0 | 1367.9 | 1382.6 | 1392.4 | 1392.4 |
| 17.5° | 1218.1 | 1235.3 | 1284.4 | 1331.0 | 1363.0 | 1394.9 | 1421.9 | 1439.1 | 1444.0 | 1446.5 | 1448.9 |
| 20°   | 1279.5 | 1308.9 | 1380.2 | 1421.9 | 1456.3 | 1475.9 | 1473.5 | 1471.0 | 1461.2 | 1458.7 | 1466.1 |
| 22.5° | 1360.5 | 1404.7 | 1475.9 | 1510.3 | 1522.6 | 1512.8 | 1488.2 | 1468.6 | 1453.8 | 1451.4 | 1453.8 |
| 25°   | 1456.3 | 1515.2 | 1579.1 | 1576.6 | 1549.6 | 1510.3 | 1483.3 | 1471.0 | 1458.7 | 1458.7 | 1463.7 |
| 27.5° | 1569.3 | 1628.2 | 1669.9 | 1608.6 | 1539.8 | 1500.5 | 1493.1 | 1493.1 | 1473.5 | 1466.1 | 1471.0 |
| 30°   | 1701.9 | 1751.0 | 1736.3 | 1596.3 | 1510.3 | 1510.3 | 1507.9 | 1488.2 | 1448.9 | 1429.3 | 1431.7 |
| 32.5° | 1854.1 | 1876.2 | 1770.6 | 1554.5 | 1507.9 | 1520.1 | 1483.3 | 1421.9 | 1365.4 | 1343.3 | 1348.2 |
| 35°   | 2040.8 | 2026.0 | 1778.0 | 1530.0 | 1530.0 | 1490.7 | 1394.9 | 1321.2 | 1267.2 | 1237.7 | 1232.8 |
| 37.5° | 2293.7 | 2190.6 | 1770.6 | 1547.2 | 1525.1 | 1387.5 | 1272.1 | 1208.3 | 1151.8 | 1112.5 | 1114.9 |
| 40°   | 2657.2 | 2394.4 | 1782.9 | 1579.1 | 1441.6 | 1262.3 | 1159.1 | 1105.1 | 1070.7 | 1031.4 | 1033.9 |
| 42.5° | 3032.9 | 2652.3 | 1876.2 | 1584.0 | 1311.4 | 1144.4 | 1075.6 | 1056.0 | 1019.2 | 979.9  | 972.5  |
| 45°   | 3342.4 | 2885.6 | 2116.9 | 1512.8 | 1166.5 | 1046.2 | 1033.9 | 1011.8 | 960.2  | 901.3  | 896.4  |
| 47.5° | 3617.4 | 3059.9 | 2421.4 | 1363.0 | 1004.4 | 997.1  | 989.7  | 947.9  | 881.6  | 812.9  | 808.0  |
| 50°   | 3831.1 | 3199.9 | 2652.3 | 1198.4 | 911.1  | 955.3  | 920.9  | 852.2  | 766.2  | 699.9  | 692.5  |
| 52.5° | 4005.4 | 3325.2 | 2782.4 | 1026.5 | 849.7  | 879.2  | 810.4  | 739.2  | 687.6  | 638.5  | 633.6  |
| 55°   | 4170.0 | 3497.1 | 2865.9 | 898.8  | 758.8  | 753.9  | 692.5  | 665.5  | 638.5  | 594.3  | 584.5  |
| 57.5° | 4391.0 | 3759.8 | 3028.0 | 864.4  | 643.4  | 616.4  | 618.9  | 616.4  | 601.7  | 567.3  | 559.9  |
| 60°   | 4815.8 | 4233.8 | 3195.0 | 800.6  | 523.1  | 518.2  | 579.6  | 586.9  | 564.8  | 525.5  | 518.2  |
| 62.5° | 5169.5 | 4631.7 | 2912.6 | 589.4  | 442.0  | 466.6  | 540.3  | 552.6  | 513.3  | 488.7  | 481.3  |
| 65°   | 5115.4 | 4688.1 | 2180.8 | 407.7  | 383.1  | 427.3  | 503.4  | 503.4  | 466.6  | 454.3  | 444.5  |
| 67.5° | 4717.6 | 4334.5 | 1520.1 | 336.4  | 331.5  | 390.5  | 466.6  | 454.3  | 419.9  | 410.1  | 405.2  |
| 70°   | 4081.6 | 3703.4 | 989.7  | 299.6  | 289.8  | 358.5  | 422.4  | 402.8  | 370.8  | 358.5  | 358.5  |
| 71°   | 3759.8 | 3448.0 | 749.0  | 284.9  | 275.1  | 343.8  | 407.7  | 385.6  | 351.2  | 338.9  | 336.4  |
| 72.5° | 3273.6 | 2890.5 | 510.8  | 265.2  | 260.3  | 324.2  | 380.7  | 361.0  | 324.2  | 304.5  | 297.2  |
| 75°   | 2379.7 | 1986.7 | 252.9  | 225.9  | 233.3  | 294.7  | 324.2  | 314.3  | 302.1  | 260.3  | 255.4  |
| 77.5° | 1382.6 | 1149.3 | 186.6  | 189.1  | 203.8  | 255.4  | 270.1  | 250.5  | 218.6  | 179.3  | 171.9  |
| 80°   | 594.3  | 466.6  | 149.8  | 154.7  | 169.5  | 201.4  | 201.4  | 176.8  | 125.2  | 83.5   | 81.0   |
| 82.5° | 144.9  | 140.0  | 115.4  | 115.4  | 113.0  | 120.3  | 122.8  | 95.8   | 61.4   | 24.6   | 4.9    |
| 85°   | 51.6   | 54.0   | 49.1   | 46.7   | 51.6   | 46.7   | 39.3   | 17.2   | 9.8    | 4.9    | 0.0    |
| 87.5° | 4.9    | 4.9    | 4.9    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 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: SP2-2501-321-3

Test Date: 04/09/2025

Luminaire Tested: GKO-PB1E-727-U-T4W

Data in this report applies to families of products including GKO-PB1E-727-U-T4W

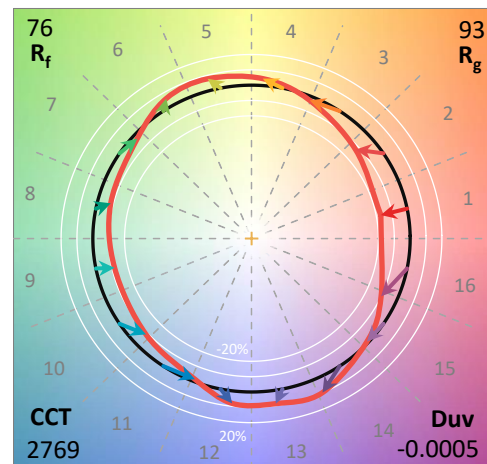
### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-3  
 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-727-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 2769  
 CIE  $u'$ : 0.2596  
 CIE  $v'$ : 0.5253  
 Duv: -0.0005  
 CIE x: 0.4535  
 CIE y: 0.4078  
 CIE z: 0.1387  
 Peak Wavelength (nm): 597  
 Dominant Wavelength (nm): 584  
 Purity: 58.54014  
 R<sub>f</sub>: 75.7  
 R<sub>g</sub>: 93.2

CRI (Ra): 71.7  
 R1: 68.0  
 R2: 84.0  
 R3: 94.6  
 R4: 65.9  
 R5: 67.3  
 R6: 78.7  
 R7: 75.2  
 R8: 39.8  
 R9: -34.5  
 R10: 64.3  
 R11: 60.9  
 R12: 54.4  
 R13: 71.2  
 R14: 97.6  
 R15: 59.5



### Test Conditions

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.0

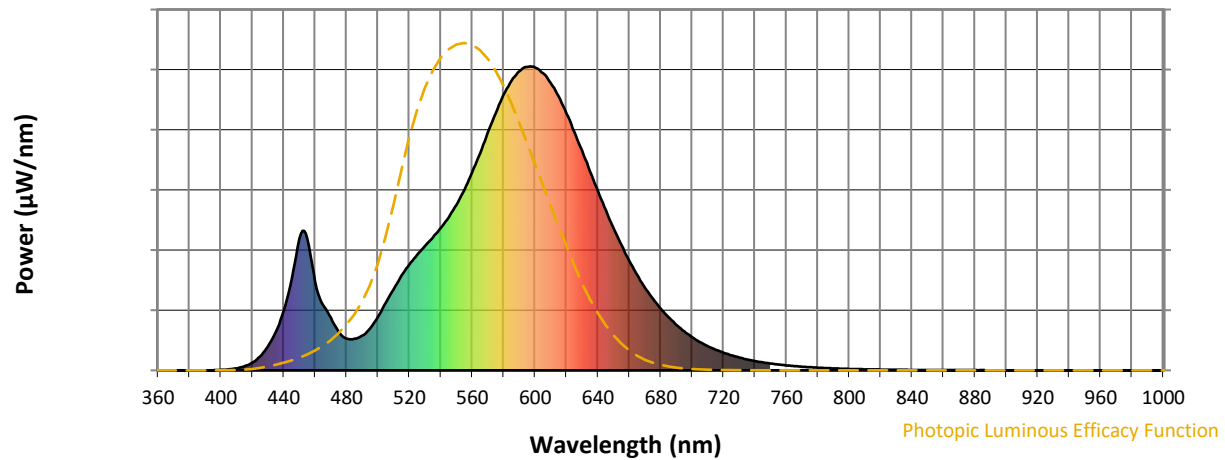
REPORT NUMBER: SP2-2501-321-3

| 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           |



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### Photopic Flux vs. Wavelength

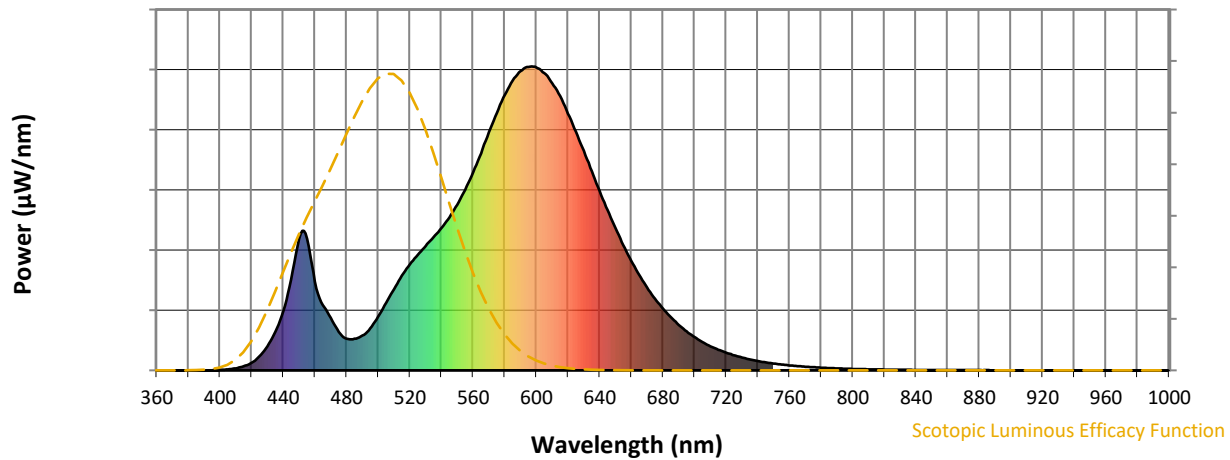


### Photopic Lumens: NR

| $\lambda$<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               | 114                                  | NR                             | 620               | 844                                  | NR                             | 750               | 22                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 138                                  | NR                             | 625               | 785                                  | NR                             | 755               | 19                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 176                                  | NR                             | 630               | 722                                  | NR                             | 760               | 16                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 222                                  | NR                             | 635               | 655                                  | NR                             | 765               | 14                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 268                                  | NR                             | 640               | 591                                  | NR                             | 770               | 12                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 311                                  | NR                             | 645               | 527                                  | NR                             | 775               | 10                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 348                                  | NR                             | 650               | 467                                  | NR                             | 780               | 9                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 381                                  | NR                             | 655               | 412                                  | NR                             | 785               | 8                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 410                                  | NR                             | 660               | 360                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 4                                    | NR                             | 535               | 438                                  | NR                             | 665               | 314                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 7                                    | NR                             | 540               | 469                                  | NR                             | 670               | 272                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 13                                   | NR                             | 545               | 503                                  | NR                             | 675               | 236                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 25                                   | NR                             | 550               | 544                                  | NR                             | 680               | 203                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 46                                   | NR                             | 555               | 594                                  | NR                             | 685               | 175                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 79                                   | NR                             | 560               | 652                                  | NR                             | 690               | 149                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 128                                  | NR                             | 565               | 714                                  | NR                             | 695               | 128                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 196                                  | NR                             | 570               | 783                                  | NR                             | 700               | 109                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 299                                  | NR                             | 575               | 847                                  | NR                             | 705               | 93                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 433                                  | NR                             | 580               | 906                                  | NR                             | 710               | 80                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 433                                  | NR                             | 585               | 953                                  | NR                             | 715               | 68                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 293                                  | NR                             | 590               | 985                                  | NR                             | 720               | 58                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 215                                  | NR                             | 595               | 998                                  | NR                             | 725               | 50                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 173                                  | NR                             | 600               | 997                                  | NR                             | 730               | 42                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 127                                  | NR                             | 605               | 978                                  | NR                             | 735               | 36                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 104                                  | NR                             | 610               | 945                                  | NR                             | 740               | 30                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 104                                  | NR                             | 615               | 902                                  | NR                             | 745               | 26                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP2-2501-321-3

### Scotopic Flux vs. Wavelength



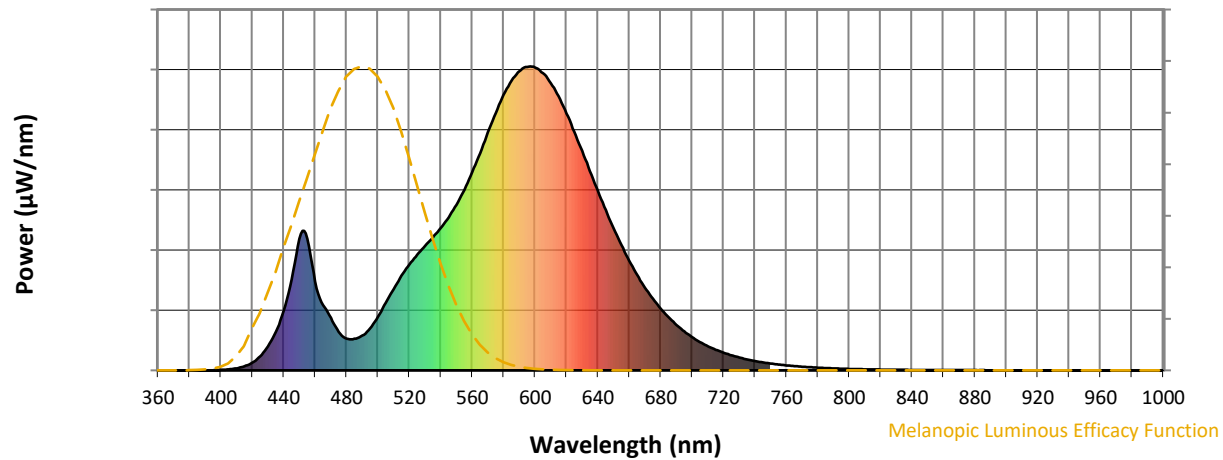
Scotopic Lumens: NR

S/P: 1.14

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 114                      | NR            | 620    | 844                      | NR            | 750    | 22                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 138                      | NR            | 625    | 785                      | NR            | 755    | 19                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 176                      | NR            | 630    | 722                      | NR            | 760    | 16                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 222                      | NR            | 635    | 655                      | NR            | 765    | 14                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 268                      | NR            | 640    | 591                      | NR            | 770    | 12                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 311                      | NR            | 645    | 527                      | NR            | 775    | 10                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 348                      | NR            | 650    | 467                      | NR            | 780    | 9                        | NR            | 910    | 0                        | NR            |
| 395    | 0                        | NR            | 525    | 381                      | NR            | 655    | 412                      | NR            | 785    | 8                        | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 410                      | NR            | 660    | 360                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 4                        | NR            | 535    | 438                      | NR            | 665    | 314                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 7                        | NR            | 540    | 469                      | NR            | 670    | 272                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 13                       | NR            | 545    | 503                      | NR            | 675    | 236                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 25                       | NR            | 550    | 544                      | NR            | 680    | 203                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 46                       | NR            | 555    | 594                      | NR            | 685    | 175                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 79                       | NR            | 560    | 652                      | NR            | 690    | 149                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 128                      | NR            | 565    | 714                      | NR            | 695    | 128                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 196                      | NR            | 570    | 783                      | NR            | 700    | 109                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 299                      | NR            | 575    | 847                      | NR            | 705    | 93                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 433                      | NR            | 580    | 906                      | NR            | 710    | 80                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 433                      | NR            | 585    | 953                      | NR            | 715    | 68                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 293                      | NR            | 590    | 985                      | NR            | 720    | 58                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 215                      | NR            | 595    | 998                      | NR            | 725    | 50                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 173                      | NR            | 600    | 997                      | NR            | 730    | 42                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 127                      | NR            | 605    | 978                      | NR            | 735    | 36                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 104                      | NR            | 610    | 945                      | NR            | 740    | 30                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 104                      | NR            | 615    | 902                      | NR            | 745    | 26                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.08

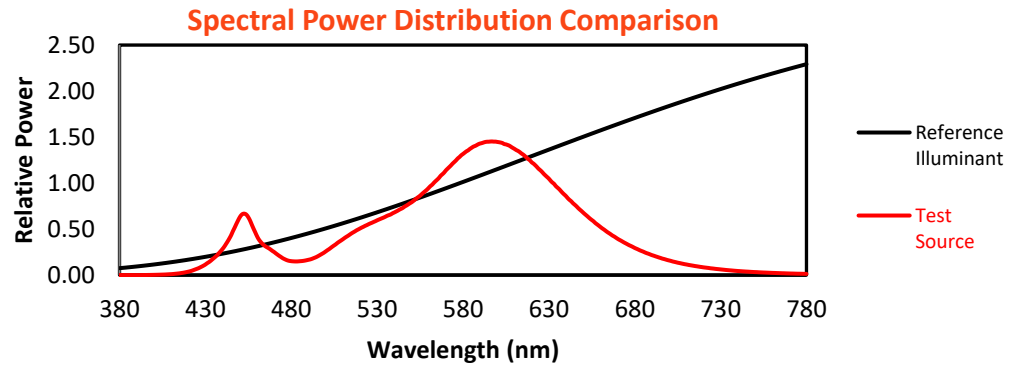
| $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^{\wedge}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | 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               | 114                                    | NR                             | 620               | 844                                    | NR                             | 750               | 22                                     | NR                             | 880               | 1                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 138                                    | NR                             | 625               | 785                                    | NR                             | 755               | 19                                     | NR                             | 885               | 1                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 176                                    | NR                             | 630               | 722                                    | NR                             | 760               | 16                                     | NR                             | 890               | 1                                      | NR                             |
| 375               | 0                                      | NR                             | 505               | 222                                    | NR                             | 635               | 655                                    | NR                             | 765               | 14                                     | NR                             | 895               | 0                                      | NR                             |
| 380               | 0                                      | NR                             | 510               | 268                                    | NR                             | 640               | 591                                    | NR                             | 770               | 12                                     | NR                             | 900               | 0                                      | NR                             |
| 385               | 0                                      | NR                             | 515               | 311                                    | NR                             | 645               | 527                                    | NR                             | 775               | 10                                     | NR                             | 905               | 0                                      | NR                             |
| 390               | 0                                      | NR                             | 520               | 348                                    | NR                             | 650               | 467                                    | NR                             | 780               | 9                                      | NR                             | 910               | 0                                      | NR                             |
| 395               | 0                                      | NR                             | 525               | 381                                    | NR                             | 655               | 412                                    | NR                             | 785               | 8                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 2                                      | NR                             | 530               | 410                                    | NR                             | 660               | 360                                    | NR                             | 790               | 7                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 4                                      | NR                             | 535               | 438                                    | NR                             | 665               | 314                                    | NR                             | 795               | 6                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 7                                      | NR                             | 540               | 469                                    | NR                             | 670               | 272                                    | NR                             | 800               | 5                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 13                                     | NR                             | 545               | 503                                    | NR                             | 675               | 236                                    | NR                             | 805               | 4                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 25                                     | NR                             | 550               | 544                                    | NR                             | 680               | 203                                    | NR                             | 810               | 4                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 46                                     | NR                             | 555               | 594                                    | NR                             | 685               | 175                                    | NR                             | 815               | 3                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 79                                     | NR                             | 560               | 652                                    | NR                             | 690               | 149                                    | NR                             | 820               | 3                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 128                                    | NR                             | 565               | 714                                    | NR                             | 695               | 128                                    | NR                             | 825               | 2                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 196                                    | NR                             | 570               | 783                                    | NR                             | 700               | 109                                    | NR                             | 830               | 2                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 299                                    | NR                             | 575               | 847                                    | NR                             | 705               | 93                                     | NR                             | 835               | 2                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 433                                    | NR                             | 580               | 906                                    | NR                             | 710               | 80                                     | NR                             | 840               | 2                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 433                                    | NR                             | 585               | 953                                    | NR                             | 715               | 68                                     | NR                             | 845               | 1                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 293                                    | NR                             | 590               | 985                                    | NR                             | 720               | 58                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 215                                    | NR                             | 595               | 998                                    | NR                             | 725               | 50                                     | NR                             | 855               | 1                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 173                                    | NR                             | 600               | 997                                    | NR                             | 730               | 42                                     | NR                             | 860               | 1                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 127                                    | NR                             | 605               | 978                                    | NR                             | 735               | 36                                     | NR                             | 865               | 1                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 104                                    | NR                             | 610               | 945                                    | NR                             | 740               | 30                                     | NR                             | 870               | 1                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 104                                    | NR                             | 615               | 902                                    | NR                             | 745               | 26                                     | NR                             | 875               | 1                                      | NR                             |                   |                                        |                                |

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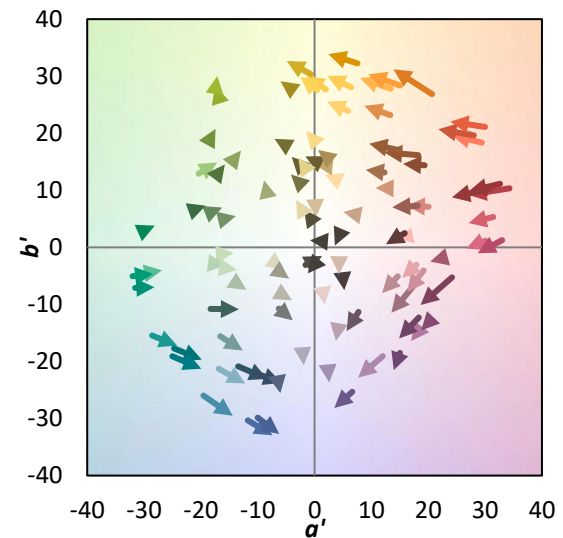
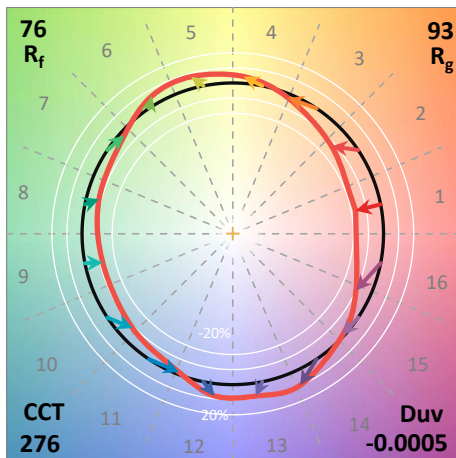
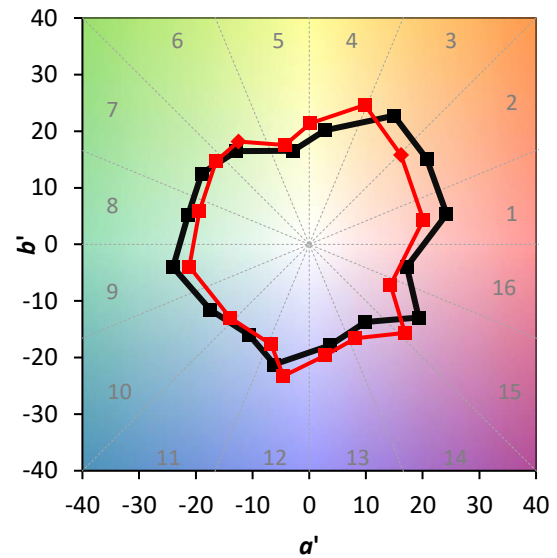
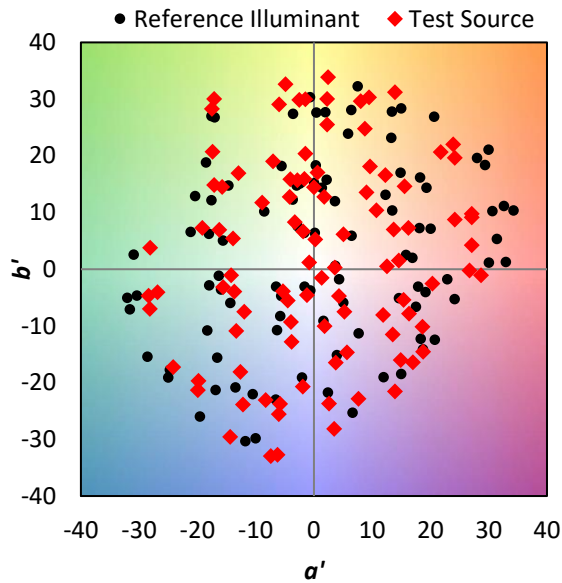
TM-30-18

### Summary

$R_f = 75.7$   
 $R_g = 93.2$   
 $CIE R_a = 71.7$   
 $R_g = -34.5$

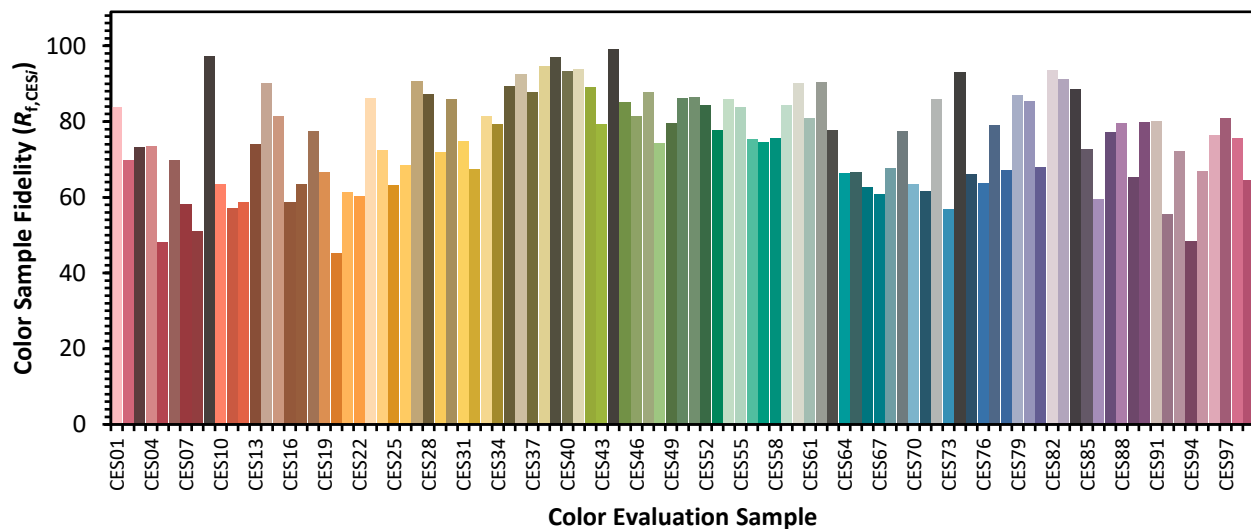


### Color Vector Graphics

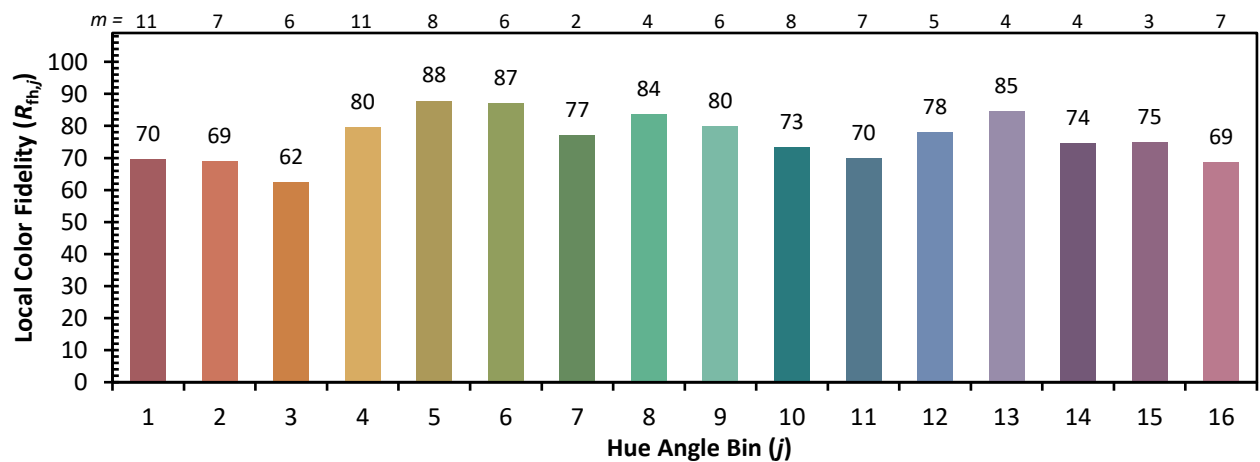
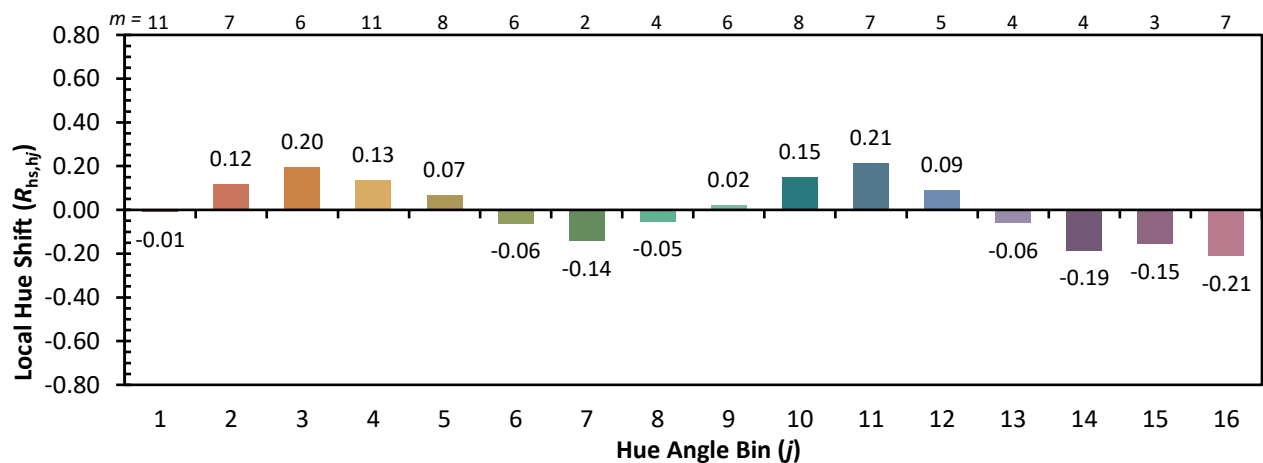
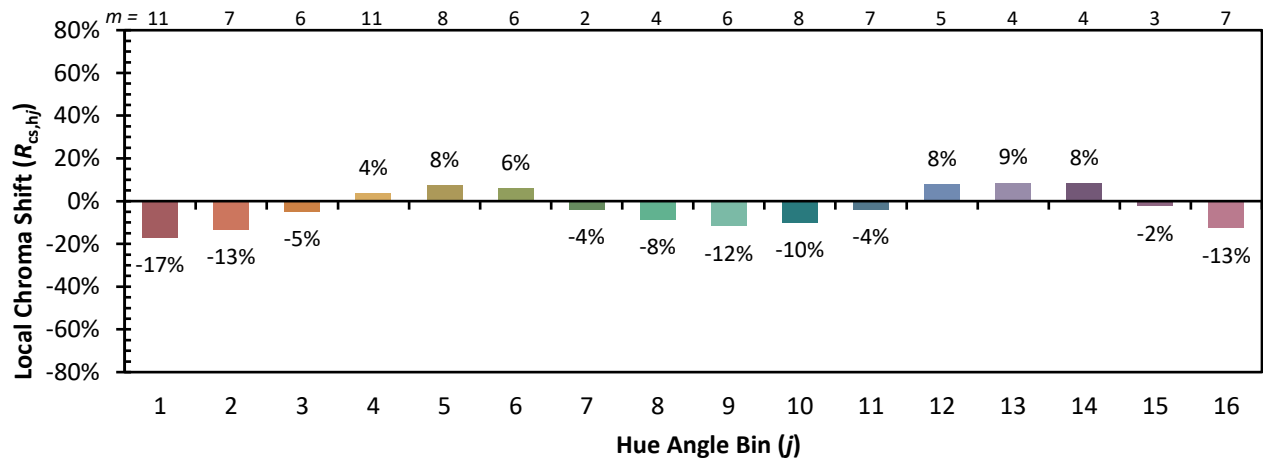


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

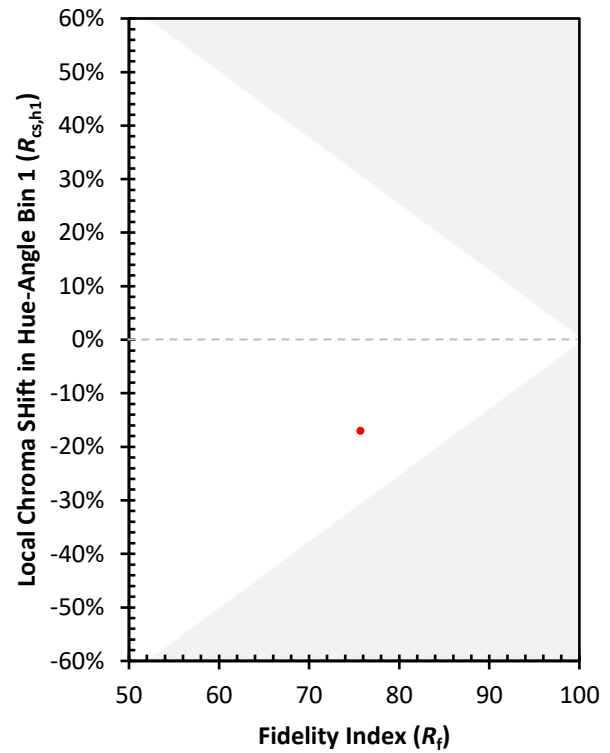
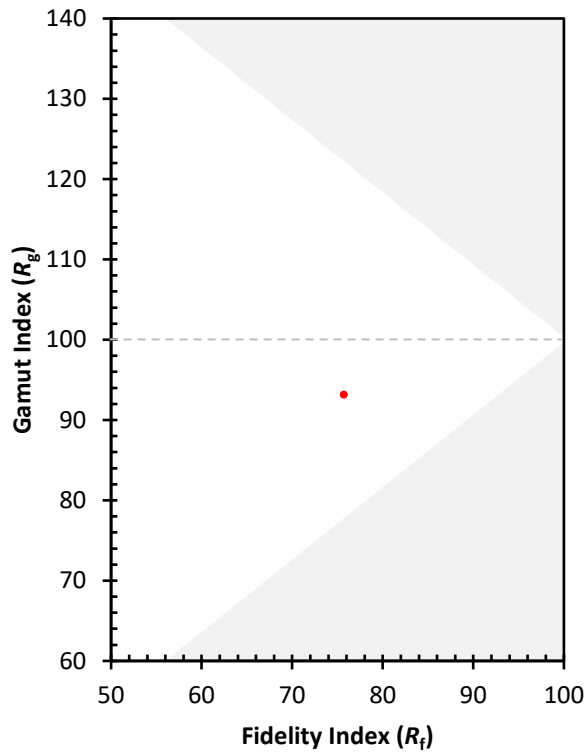
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 87 | CES76 = 64 |
| CES02 = 63 | CES27 = 91 | CES52 = 84 | CES77 = 79 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 72 | CES54 = 86 | CES79 = 87 |
| CES05 = 50 | CES30 = 86 | CES55 = 84 | CES80 = 85 |
| CES06 = 52 | CES31 = 75 | CES56 = 75 | CES81 = 68 |
| CES07 = 42 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 41 | CES33 = 81 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 79 | CES59 = 84 | CES84 = 89 |
| CES10 = 77 | CES35 = 89 | CES60 = 90 | CES85 = 73 |
| CES11 = 60 | CES36 = 92 | CES61 = 81 | CES86 = 59 |
| CES12 = 66 | CES37 = 88 | CES62 = 90 | CES87 = 77 |
| CES13 = 43 | CES38 = 95 | CES63 = 78 | CES88 = 79 |
| CES14 = 74 | CES39 = 97 | CES64 = 66 | CES89 = 65 |
| CES15 = 72 | CES40 = 93 | CES65 = 67 | CES90 = 80 |
| CES16 = 48 | CES41 = 94 | CES66 = 63 | CES91 = 80 |
| CES17 = 50 | CES42 = 89 | CES67 = 61 | CES92 = 55 |
| CES18 = 57 | CES43 = 79 | CES68 = 68 | CES93 = 72 |
| CES19 = 73 | CES44 = 99 | CES69 = 77 | CES94 = 48 |
| CES20 = 67 | CES45 = 85 | CES70 = 63 | CES95 = 67 |
| CES21 = 87 | CES46 = 81 | CES71 = 62 | CES96 = 76 |
| CES22 = 80 | CES47 = 88 | CES72 = 86 | CES97 = 81 |
| CES23 = 92 | CES48 = 74 | CES73 = 57 | CES98 = 76 |
| CES24 = 91 | CES49 = 80 | CES74 = 93 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 66 |            |



### Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)