

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: P1462118

Luminaire Tested: PRV-P-50-730-U-T2U

Issue Date: 06/10/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1462118  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 6/11/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: PRV-P-50-730-U-T2U  
Description: PREVAIL PETITE DISCRETE LED 1 SQUARE 50W 70CRI 3000K FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC  
Light Source: (10) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6164.1 lumens  
Efficiency: N/A  
Efficacy: 117.4 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B2 - U0 - G2

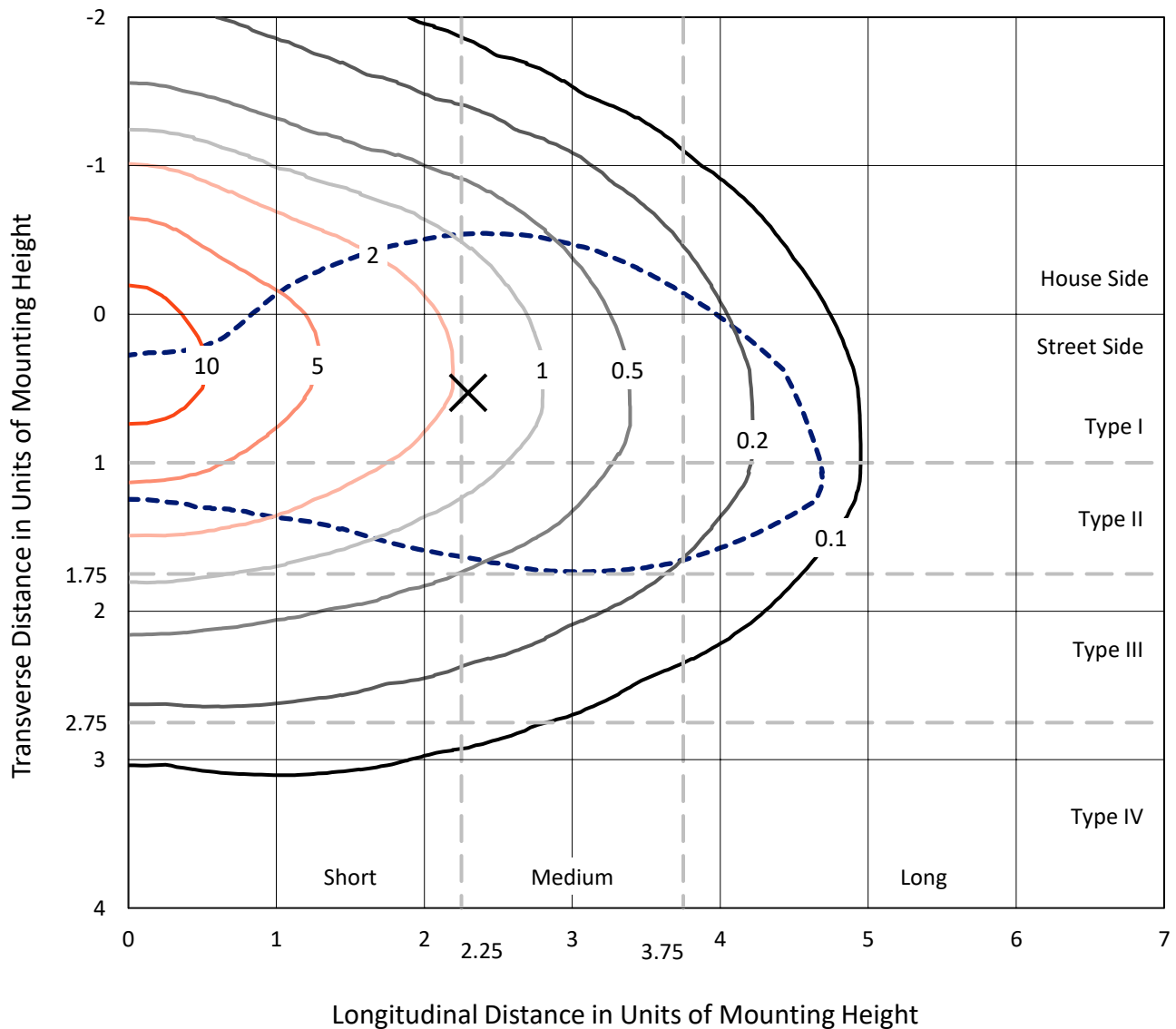
Input Watts (W): 52.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 6.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 --- 1/2 Max cd

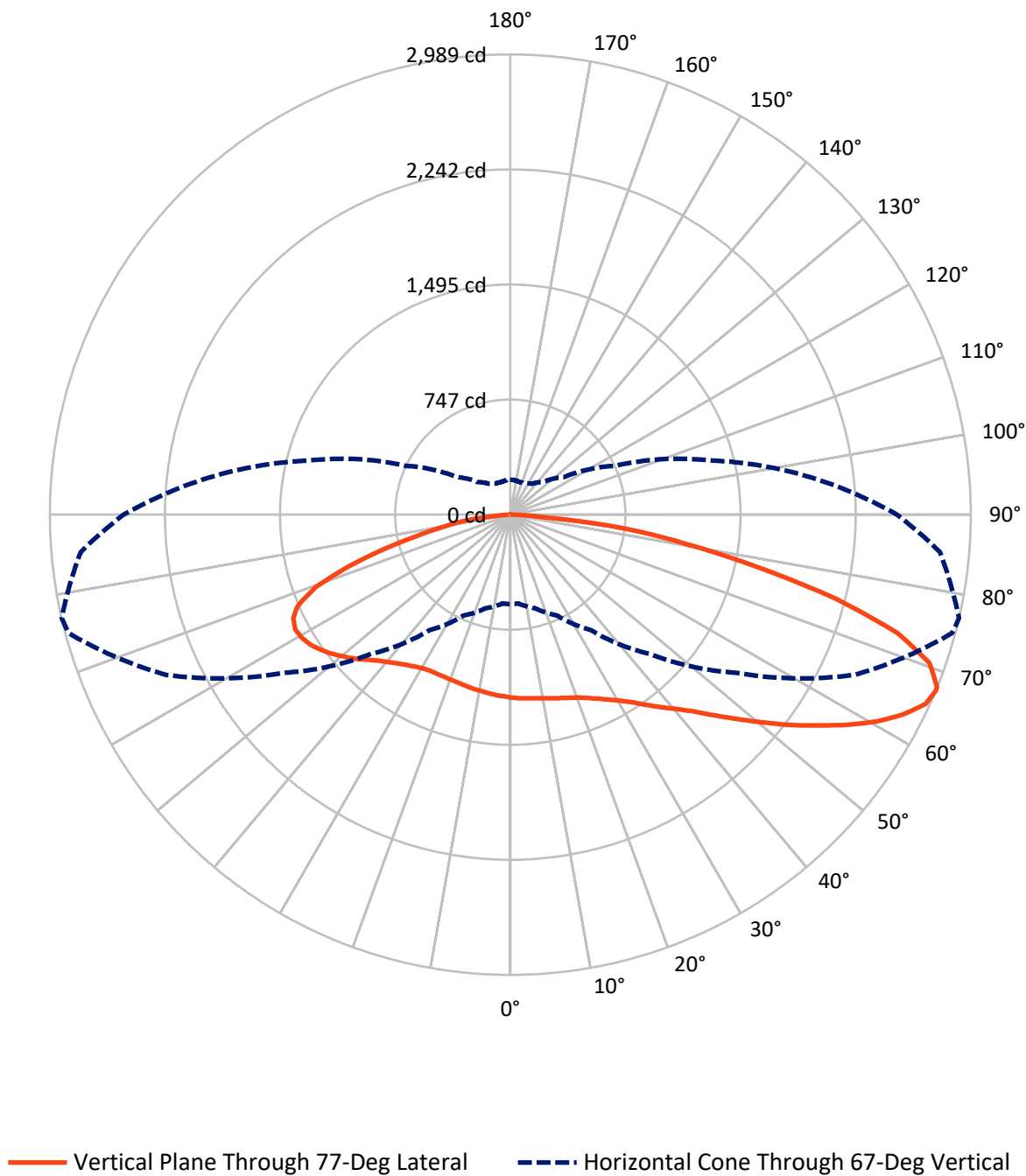


Based on 10 foot mounting height. Maximum calculated value = 13.3 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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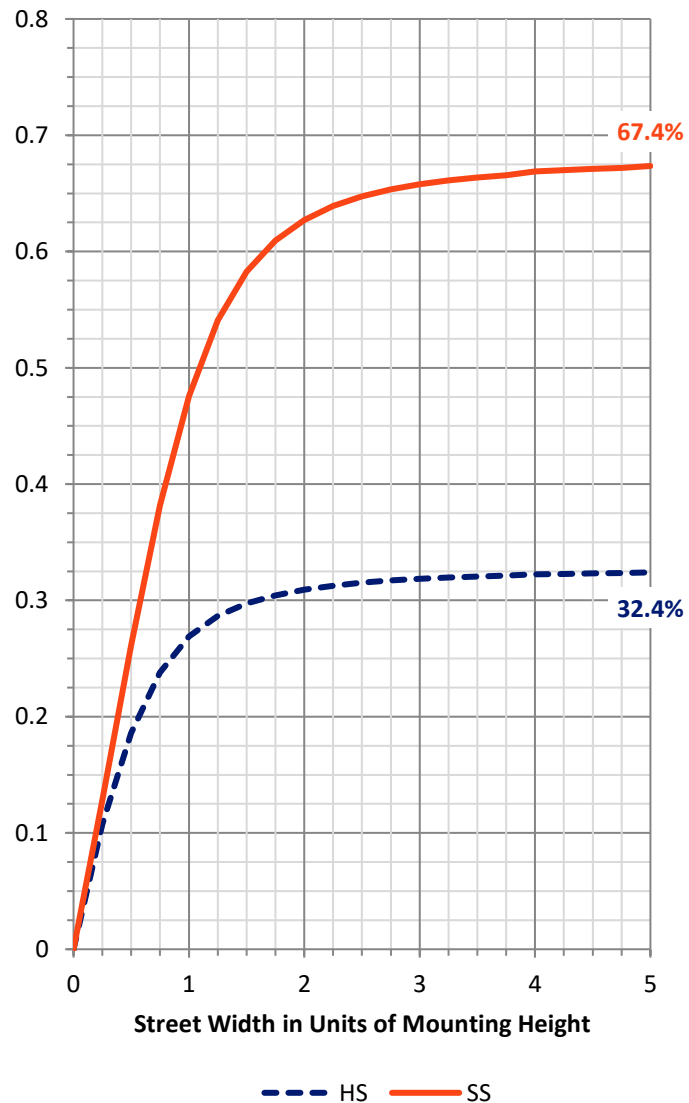
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2008.6   | 0.0    | 2008.6 |
|                    | % Fixture | 32.6     | 0.0    | 32.6   |
| <b>Street Side</b> | Lumens    | 4155.5   | 0.0    | 4155.5 |
|                    | % Fixture | 67.4     | 0.0    | 67.4   |
| <b>Total</b>       | Lumens    | 6164.1   | 0.0    | 6164.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 114.2  | 1.9       |
| 10°-20°   | 347.9  | 5.6       |
| 20°-30°   | 592.0  | 9.6       |
| 30°-40°   | 849.1  | 13.8      |
| 40°-50°   | 1078.2 | 17.5      |
| 50°-60°   | 1186.2 | 19.2      |
| 60°-70°   | 1145.8 | 18.6      |
| 70°-80°   | 720.7  | 11.7      |
| 80°-90°   | 130.0  | 2.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 6164.1 | 100.0     |
| 0°-180°   | 6164.1 | 100.0     |

**Coefficient of Utilization**



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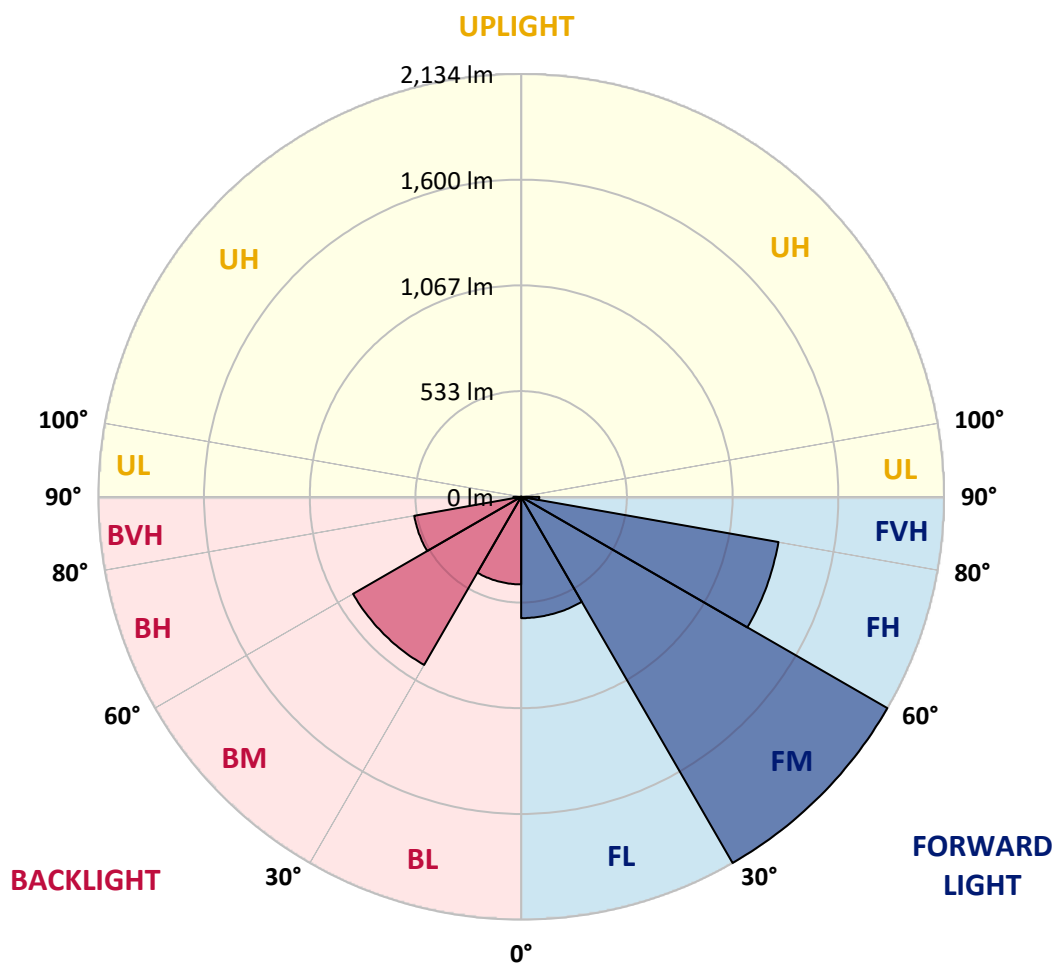
CATALOG NUMBER: PRV-P-50-730-U-T2U

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 612.1  | 9.9       |                         |      |         |
| FM   | (30°-60°)   | 2133.8 | 34.6      |                         |      |         |
| FH   | (60°-80°)   | 1318.5 | 21.4      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 91.0   | 1.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 442.0  | 7.2       | B1/500                  |      |         |
| BM   | (30°-60°)   | 979.7  | 15.9      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 547.9  | 8.9       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 39.0   | 0.6       |                         |      | 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 II Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 77°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 |
| 2.5°  | 1209.0 | 1213.7 | 1215.7 | 1216.6 | 1216.6 | 1209.9 | 1208.0 | 1197.6 | 1195.7 | 1193.8 | 1184.2 |
| 5°    | 1255.6 | 1252.8 | 1257.5 | 1251.8 | 1250.9 | 1236.6 | 1225.2 | 1210.9 | 1197.6 | 1197.6 | 1187.1 |
| 7.5°  | 1307.0 | 1305.1 | 1308.9 | 1303.2 | 1283.2 | 1268.0 | 1252.8 | 1226.1 | 1209.0 | 1204.2 | 1190.9 |
| 10°   | 1372.7 | 1366.1 | 1369.9 | 1348.9 | 1333.7 | 1301.3 | 1275.6 | 1243.3 | 1216.6 | 1212.8 | 1194.7 |
| 12.5° | 1426.0 | 1427.0 | 1429.8 | 1409.9 | 1383.2 | 1348.9 | 1310.8 | 1265.2 | 1234.7 | 1223.3 | 1198.5 |
| 15°   | 1478.4 | 1488.9 | 1484.1 | 1466.0 | 1438.4 | 1391.8 | 1342.3 | 1289.0 | 1245.2 | 1236.6 | 1207.1 |
| 17.5° | 1531.7 | 1529.8 | 1529.8 | 1512.7 | 1479.3 | 1436.5 | 1377.5 | 1312.8 | 1260.4 | 1250.9 | 1215.7 |
| 20°   | 1581.2 | 1576.4 | 1577.4 | 1566.0 | 1532.7 | 1486.0 | 1416.5 | 1347.0 | 1285.1 | 1268.0 | 1227.1 |
| 22.5° | 1622.1 | 1629.8 | 1635.5 | 1619.3 | 1586.0 | 1532.7 | 1467.0 | 1383.2 | 1305.1 | 1293.7 | 1242.3 |
| 25°   | 1671.6 | 1675.5 | 1685.0 | 1677.4 | 1648.8 | 1598.3 | 1520.3 | 1429.8 | 1340.4 | 1324.2 | 1264.2 |
| 27.5° | 1725.0 | 1725.9 | 1739.2 | 1738.3 | 1698.3 | 1651.7 | 1573.6 | 1475.5 | 1379.4 | 1360.4 | 1288.0 |
| 30°   | 1793.5 | 1790.6 | 1804.0 | 1798.3 | 1755.4 | 1705.0 | 1625.9 | 1525.0 | 1418.4 | 1401.3 | 1322.3 |
| 32.5° | 1849.7 | 1855.4 | 1858.2 | 1861.1 | 1818.2 | 1764.9 | 1685.0 | 1586.0 | 1472.7 | 1452.7 | 1367.0 |
| 35°   | 1903.9 | 1903.9 | 1914.4 | 1913.4 | 1876.3 | 1831.6 | 1753.5 | 1650.7 | 1540.3 | 1517.4 | 1427.9 |
| 37.5° | 1942.0 | 1949.6 | 1958.2 | 1961.0 | 1923.0 | 1881.1 | 1820.1 | 1724.0 | 1612.6 | 1586.9 | 1491.7 |
| 40°   | 1948.7 | 1961.0 | 1995.3 | 2003.9 | 1966.8 | 1930.6 | 1885.8 | 1802.1 | 1684.0 | 1660.2 | 1564.1 |
| 42.5° | 1963.9 | 1983.9 | 2009.6 | 2028.6 | 1996.3 | 1963.9 | 1944.9 | 1876.3 | 1769.7 | 1746.8 | 1652.6 |
| 45°   | 1894.4 | 1896.3 | 1941.0 | 1990.5 | 1991.5 | 1982.9 | 2001.0 | 1967.7 | 1876.3 | 1860.1 | 1758.3 |
| 47.5° | 1812.5 | 1797.3 | 1833.5 | 1910.6 | 1958.2 | 1994.4 | 2051.5 | 2058.1 | 1996.3 | 1982.9 | 1876.3 |
| 50°   | 1602.1 | 1614.5 | 1711.6 | 1808.7 | 1894.4 | 1982.9 | 2095.3 | 2167.6 | 2139.1 | 2120.0 | 2003.9 |
| 52.5° | 1375.6 | 1381.3 | 1489.8 | 1694.5 | 1814.4 | 1965.8 | 2122.9 | 2275.2 | 2273.3 | 2269.5 | 2141.0 |
| 55°   | 1229.0 | 1230.9 | 1347.0 | 1512.7 | 1715.4 | 1901.1 | 2138.1 | 2378.0 | 2428.5 | 2416.1 | 2288.5 |
| 57.5° | 1074.8 | 1083.3 | 1174.7 | 1299.4 | 1586.9 | 1812.5 | 2130.5 | 2458.9 | 2583.6 | 2575.1 | 2429.4 |
| 60°   | 924.4  | 946.2  | 996.7  | 1125.2 | 1421.3 | 1698.3 | 2087.6 | 2528.4 | 2732.1 | 2728.3 | 2579.8 |
| 62.5° | 787.3  | 798.7  | 847.2  | 973.9  | 1221.4 | 1570.7 | 2015.3 | 2557.0 | 2855.9 | 2859.7 | 2692.1 |
| 65°   | 677.8  | 680.7  | 724.4  | 832.0  | 1044.3 | 1419.4 | 1901.1 | 2530.3 | 2949.2 | 2963.5 | 2779.7 |
| 67°   | 581.6  | 578.8  | 630.2  | 724.4  | 916.7  | 1278.5 | 1789.7 | 2462.7 | 2969.2 | 2989.2 | 2799.7 |
| 67.5° | 545.5  | 551.2  | 610.2  | 698.7  | 892.0  | 1242.3 | 1752.6 | 2438.0 | 2964.4 | 2987.3 | 2788.3 |
| 70°   | 394.1  | 398.9  | 486.5  | 585.5  | 744.4  | 1054.8 | 1554.6 | 2266.6 | 2864.4 | 2886.3 | 2648.4 |
| 72.5° | 298.9  | 301.8  | 384.6  | 482.6  | 618.8  | 870.1  | 1322.3 | 2036.2 | 2593.1 | 2627.4 | 2370.4 |
| 75°   | 238.9  | 236.1  | 297.0  | 391.3  | 497.9  | 700.6  | 1039.5 | 1636.4 | 2133.3 | 2183.8 | 1924.9 |
| 77.5° | 184.7  | 182.8  | 211.3  | 306.5  | 397.9  | 533.1  | 763.5  | 1241.4 | 1647.8 | 1637.4 | 1458.4 |
| 80°   | 116.1  | 119.0  | 126.6  | 201.8  | 282.7  | 370.3  | 511.2  | 796.8  | 1132.8 | 1161.4 | 1032.9 |
| 82.5° | 60.0   | 65.7   | 70.4   | 109.5  | 150.4  | 205.6  | 323.7  | 502.6  | 750.1  | 766.3  | 694.9  |
| 85°   | 12.4   | 11.4   | 16.2   | 27.6   | 42.8   | 67.6   | 97.1   | 161.8  | 218.0  | 240.8  | 213.2  |
| 87.5° | 1.0    | 1.0    | 1.9    | 1.9    | 1.9    | 2.9    | 5.7    | 5.7    | 4.8    | 4.8    | 4.8    |
| 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-50-730-U-T2U

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 | 1189.0 |
| 2.5°  | 1188.0 | 1183.3 | 1180.4 | 1175.7 | 1174.7 | 1176.6 | 1170.9 | 1169.0 | 1163.3 | 1159.5 | 1160.4 |
| 5°    | 1188.0 | 1182.3 | 1173.8 | 1161.4 | 1158.5 | 1157.6 | 1150.9 | 1142.4 | 1135.7 | 1133.8 | 1129.0 |
| 7.5°  | 1185.2 | 1179.5 | 1165.2 | 1151.9 | 1139.5 | 1132.8 | 1127.1 | 1119.5 | 1106.2 | 1097.6 | 1098.6 |
| 10°   | 1185.2 | 1175.7 | 1156.6 | 1138.5 | 1122.4 | 1108.1 | 1097.6 | 1088.1 | 1078.6 | 1067.1 | 1069.1 |
| 12.5° | 1188.0 | 1176.6 | 1150.9 | 1125.2 | 1103.3 | 1087.1 | 1072.9 | 1061.4 | 1053.8 | 1040.5 | 1040.5 |
| 15°   | 1191.9 | 1174.7 | 1142.4 | 1111.9 | 1086.2 | 1065.2 | 1046.2 | 1035.7 | 1027.2 | 1020.5 | 1019.5 |
| 17.5° | 1194.7 | 1175.7 | 1134.7 | 1095.7 | 1062.4 | 1037.6 | 1021.5 | 1013.8 | 1009.1 | 1004.3 | 1002.4 |
| 20°   | 1201.4 | 1179.5 | 1130.0 | 1082.4 | 1043.3 | 1013.8 | 1000.5 | 995.8  | 996.7  | 991.0  | 990.0  |
| 22.5° | 1216.6 | 1184.2 | 1125.2 | 1068.1 | 1018.6 | 993.8  | 980.5  | 973.9  | 975.8  | 972.0  | 972.0  |
| 25°   | 1228.0 | 1195.7 | 1124.3 | 1055.7 | 1002.4 | 971.0  | 956.7  | 952.0  | 952.0  | 948.2  | 945.3  |
| 27.5° | 1246.1 | 1209.0 | 1121.4 | 1044.3 | 981.5  | 948.2  | 930.1  | 924.4  | 919.6  | 918.6  | 917.7  |
| 30°   | 1278.5 | 1230.9 | 1127.1 | 1027.2 | 959.6  | 919.6  | 896.7  | 889.1  | 887.2  | 887.2  | 885.3  |
| 32.5° | 1312.8 | 1263.3 | 1138.5 | 1021.5 | 938.6  | 886.3  | 862.5  | 853.0  | 853.9  | 849.1  | 849.1  |
| 35°   | 1368.0 | 1302.3 | 1155.7 | 1022.4 | 917.7  | 852.0  | 826.3  | 819.6  | 813.0  | 808.2  | 808.2  |
| 37.5° | 1421.3 | 1350.8 | 1175.7 | 1018.6 | 900.6  | 824.4  | 791.1  | 771.1  | 766.3  | 761.6  | 760.6  |
| 40°   | 1487.0 | 1403.2 | 1200.4 | 1009.1 | 877.7  | 789.2  | 744.4  | 716.8  | 716.8  | 714.9  | 713.0  |
| 42.5° | 1566.9 | 1469.8 | 1227.1 | 1008.1 | 853.0  | 754.0  | 689.2  | 660.7  | 655.9  | 654.9  | 659.7  |
| 45°   | 1660.2 | 1553.6 | 1263.3 | 1007.2 | 831.1  | 714.0  | 635.0  | 594.0  | 591.2  | 581.6  | 583.6  |
| 47.5° | 1767.8 | 1643.1 | 1304.2 | 1003.4 | 803.5  | 666.4  | 573.1  | 528.3  | 514.1  | 508.3  | 504.5  |
| 50°   | 1884.9 | 1737.3 | 1340.4 | 998.6  | 767.3  | 609.3  | 510.3  | 461.7  | 443.6  | 434.1  | 429.3  |
| 52.5° | 2015.3 | 1830.6 | 1377.5 | 989.1  | 723.5  | 554.0  | 453.1  | 404.6  | 383.6  | 375.1  | 372.2  |
| 55°   | 2139.1 | 1925.8 | 1407.0 | 975.8  | 679.7  | 496.0  | 399.8  | 356.0  | 338.9  | 335.1  | 334.1  |
| 57.5° | 2256.1 | 2013.4 | 1432.7 | 953.9  | 630.2  | 447.4  | 358.9  | 321.8  | 308.4  | 312.2  | 311.3  |
| 60°   | 2362.8 | 2089.6 | 1444.1 | 920.5  | 579.7  | 399.8  | 325.6  | 295.1  | 287.5  | 295.1  | 294.2  |
| 62.5° | 2465.6 | 2145.7 | 1441.3 | 878.7  | 527.4  | 362.7  | 295.1  | 271.3  | 269.4  | 285.6  | 286.5  |
| 65°   | 2511.3 | 2157.1 | 1411.8 | 816.8  | 472.2  | 324.6  | 266.5  | 240.8  | 240.8  | 251.3  | 253.2  |
| 67°   | 2509.4 | 2124.8 | 1355.6 | 750.1  | 425.5  | 298.9  | 245.6  | 222.8  | 219.9  | 226.6  | 225.6  |
| 67.5° | 2492.2 | 2105.7 | 1332.7 | 732.1  | 415.1  | 292.3  | 239.9  | 218.0  | 216.1  | 221.8  | 219.9  |
| 70°   | 2338.0 | 1954.4 | 1200.4 | 627.3  | 360.8  | 259.9  | 213.2  | 195.2  | 188.5  | 192.3  | 190.4  |
| 72.5° | 2045.8 | 1687.8 | 985.3  | 510.3  | 312.2  | 224.7  | 186.6  | 166.6  | 159.0  | 153.3  | 149.5  |
| 75°   | 1625.9 | 1328.0 | 754.9  | 404.6  | 255.1  | 189.4  | 156.1  | 132.3  | 115.2  | 117.1  | 115.2  |
| 77.5° | 1221.4 | 975.8  | 543.6  | 309.4  | 197.1  | 151.4  | 118.0  | 95.2   | 82.8   | 89.5   | 86.6   |
| 80°   | 871.0  | 684.5  | 391.3  | 225.6  | 139.9  | 100.9  | 81.9   | 63.8   | 67.6   | 67.6   | 37.1   |
| 82.5° | 604.5  | 480.7  | 278.9  | 148.5  | 82.8   | 59.0   | 43.8   | 40.0   | 51.4   | 20.9   | 1.0    |
| 85°   | 184.7  | 156.1  | 108.5  | 53.3   | 26.7   | 16.2   | 9.5    | 16.2   | 5.7    | 1.0    | 0.0    |
| 87.5° | 4.8    | 4.8    | 3.8    | 3.8    | 1.9    | 1.0    | 1.0    | 1.0    | 1.0    | 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: SP2-2501-321-4

Test Date: 04/10/2025

Luminaire Tested: GKO-PB1E-730-U-T4W

Data in this report applies to families of products including GKO-PB1E-730-U-T4W

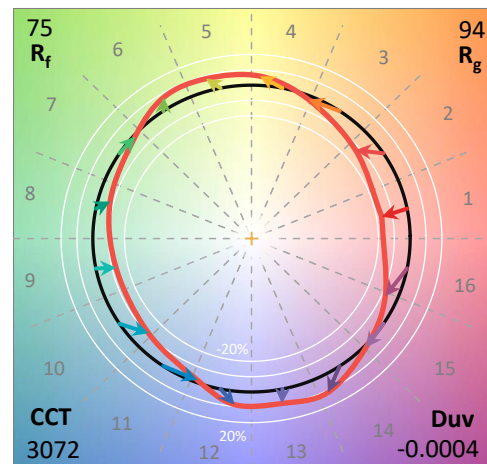
### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-4  
 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-730-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 3072  
 CIE  $u'$ : 0.2482  
 CIE  $v'$ : 0.5193  
 Duv: -0.0004  
 CIE x: 0.4313  
 CIE y: 0.4010  
 CIE z: 0.1677  
 Peak Wavelength (nm): 593  
 Dominant Wavelength (nm): 582  
 Purity: 49.8225  
 R<sub>f</sub>: 74.7  
 R<sub>g</sub>: 94.2

CRI (Ra): 71.7  
 R1: 68.1  
 R2: 82.1  
 R3: 93.4  
 R4: 67.3  
 R5: 67.2  
 R6: 74.9  
 R7: 77.5  
 R8: 43.4  
 R9: -33.9  
 R10: 58.6  
 R11: 62.0  
 R12: 48.5  
 R13: 70.7  
 R14: 96.4  
 R15: 60.2



### Test Conditions

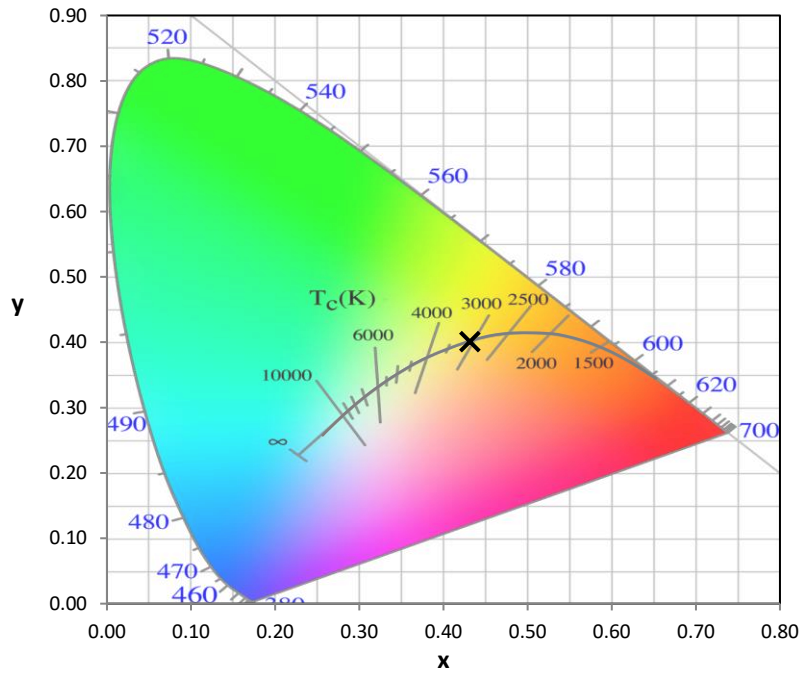
Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP2-2501-321-4

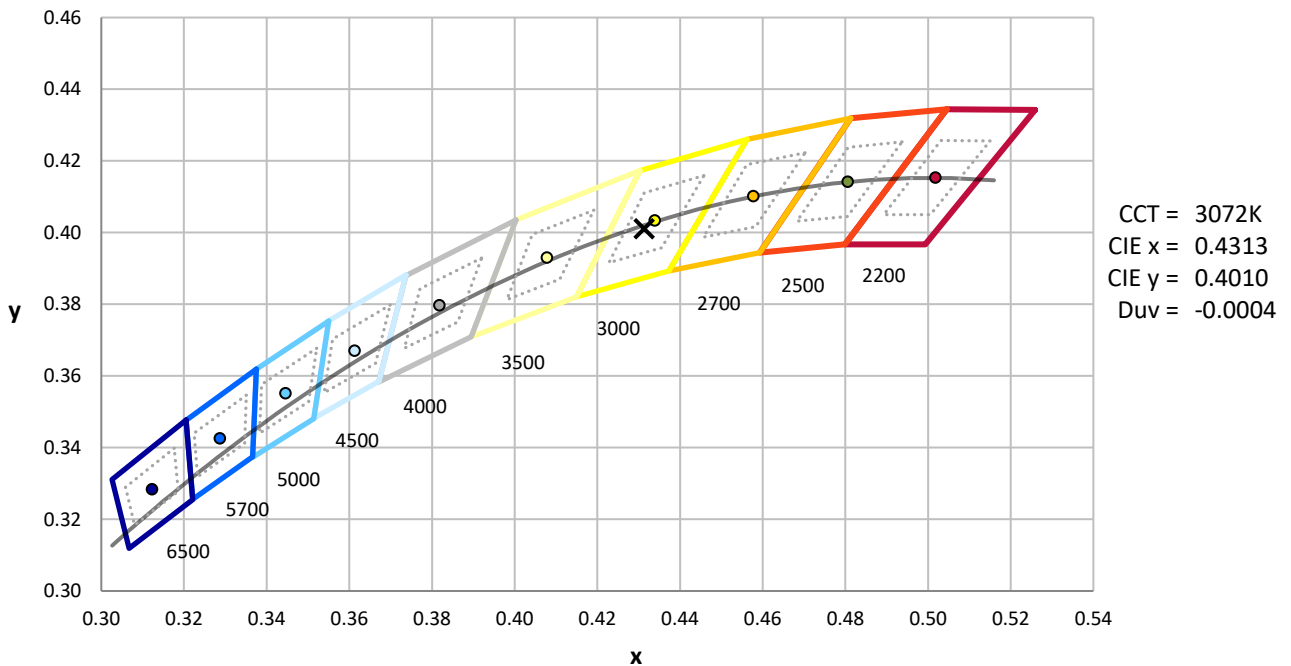
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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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**CIE 1931 Chromaticity Diagram**



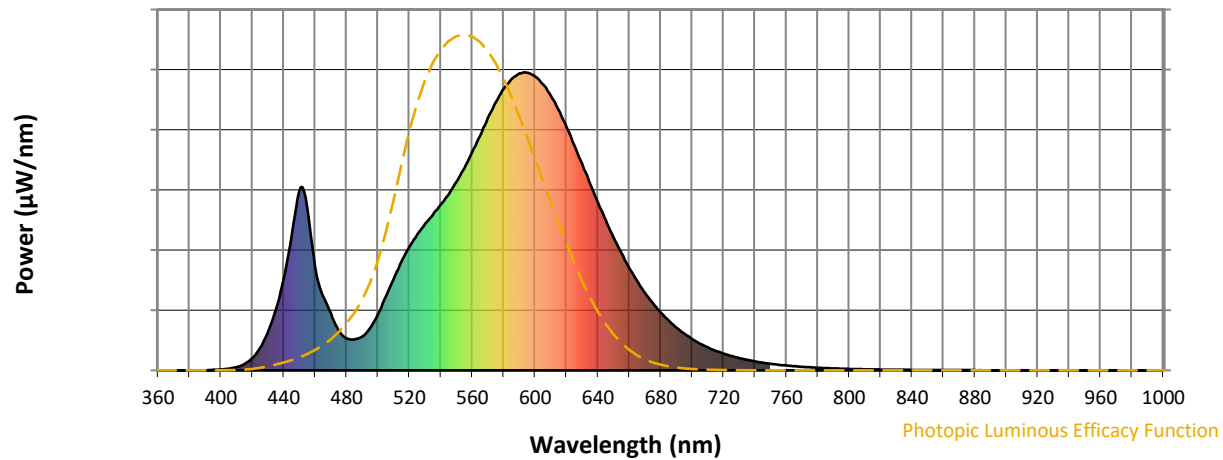
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

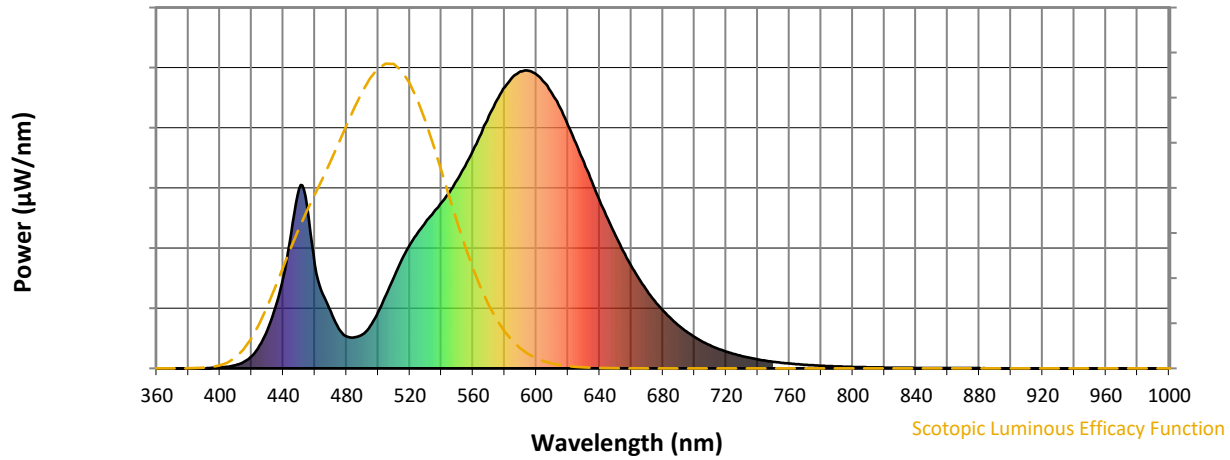


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 0                             | NR                             | 490               | 114                           | NR                             | 620               | 817                           | NR                             | 750               | 22                            | NR                             | 880               | 1                             | NR                             |
| 365               | 0                             | NR                             | 495               | 141                           | NR                             | 625               | 756                           | NR                             | 755               | 19                            | NR                             | 885               | 1                             | NR                             |
| 370               | 0                             | NR                             | 500               | 189                           | NR                             | 630               | 693                           | NR                             | 760               | 16                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 247                           | NR                             | 635               | 628                           | NR                             | 765               | 14                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 307                           | NR                             | 640               | 564                           | NR                             | 770               | 12                            | NR                             | 900               | 0                             | NR                             |
| 385               | 0                             | NR                             | 515               | 366                           | NR                             | 645               | 504                           | NR                             | 775               | 10                            | NR                             | 905               | 0                             | NR                             |
| 390               | 0                             | NR                             | 520               | 415                           | NR                             | 650               | 446                           | NR                             | 780               | 9                             | NR                             | 910               | 0                             | NR                             |
| 395               | 2                             | NR                             | 525               | 455                           | NR                             | 655               | 393                           | NR                             | 785               | 8                             | NR                             | 915               | 0                             | NR                             |
| 400               | 3                             | NR                             | 530               | 491                           | NR                             | 660               | 344                           | NR                             | 790               | 7                             | NR                             | 920               | 0                             | NR                             |
| 405               | 6                             | NR                             | 535               | 523                           | NR                             | 665               | 300                           | NR                             | 795               | 6                             | NR                             | 925               | 0                             | NR                             |
| 410               | 11                            | NR                             | 540               | 556                           | NR                             | 670               | 260                           | NR                             | 800               | 5                             | NR                             | 930               | 0                             | NR                             |
| 415               | 21                            | NR                             | 545               | 591                           | NR                             | 675               | 226                           | NR                             | 805               | 4                             | NR                             | 935               | 0                             | NR                             |
| 420               | 41                            | NR                             | 550               | 632                           | NR                             | 680               | 195                           | NR                             | 810               | 4                             | NR                             | 940               | 0                             | NR                             |
| 425               | 76                            | NR                             | 555               | 679                           | NR                             | 685               | 167                           | NR                             | 815               | 3                             | NR                             | 945               | 0                             | NR                             |
| 430               | 129                           | NR                             | 560               | 732                           | NR                             | 690               | 144                           | NR                             | 820               | 3                             | NR                             | 950               | 0                             | NR                             |
| 435               | 205                           | NR                             | 565               | 787                           | NR                             | 695               | 123                           | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 307                           | NR                             | 570               | 847                           | NR                             | 700               | 105                           | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 451                           | NR                             | 575               | 900                           | NR                             | 705               | 90                            | NR                             | 835               | 2                             | NR                             | 965               | 0                             | NR                             |
| 450               | 603                           | NR                             | 580               | 944                           | NR                             | 710               | 77                            | NR                             | 840               | 2                             | NR                             | 970               | 0                             | NR                             |
| 455               | 544                           | NR                             | 585               | 977                           | NR                             | 715               | 66                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 348                           | NR                             | 590               | 997                           | NR                             | 720               | 56                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 249                           | NR                             | 595               | 998                           | NR                             | 725               | 48                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 191                           | NR                             | 600               | 986                           | NR                             | 730               | 41                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 133                           | NR                             | 605               | 960                           | NR                             | 735               | 35                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 107                           | NR                             | 610               | 921                           | NR                             | 740               | 30                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 104                           | NR                             | 615               | 874                           | NR                             | 745               | 26                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



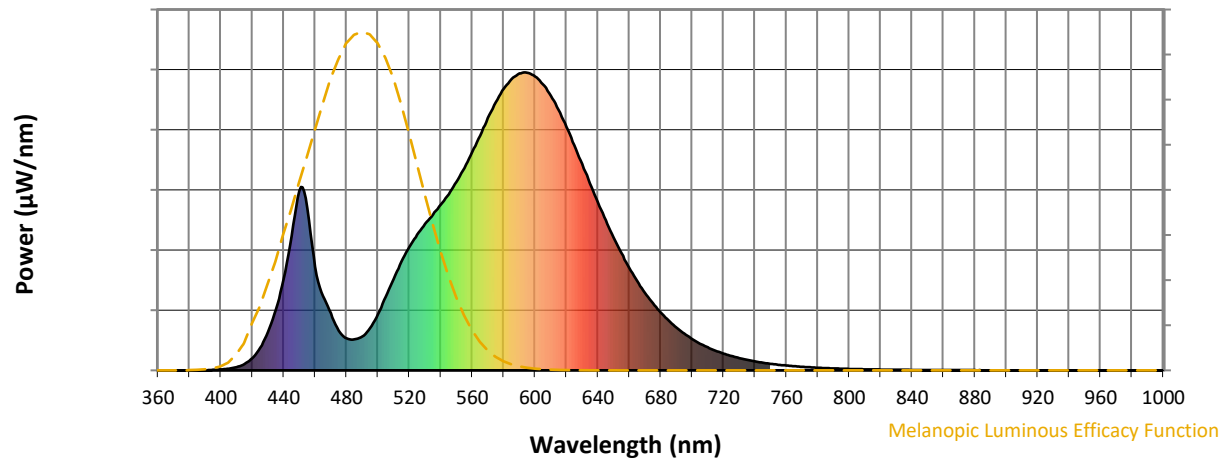
Scotopic Lumens: NR

S/P: 1.24

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 114                      | NR            | 620    | 817                      | NR            | 750    | 22                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 141                      | NR            | 625    | 756                      | NR            | 755    | 19                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 189                      | NR            | 630    | 693                      | NR            | 760    | 16                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 247                      | NR            | 635    | 628                      | NR            | 765    | 14                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 307                      | NR            | 640    | 564                      | NR            | 770    | 12                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 366                      | NR            | 645    | 504                      | NR            | 775    | 10                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 415                      | NR            | 650    | 446                      | NR            | 780    | 9                        | NR            | 910    | 0                        | NR            |
| 395    | 2                        | NR            | 525    | 455                      | NR            | 655    | 393                      | NR            | 785    | 8                        | NR            | 915    | 0                        | NR            |
| 400    | 3                        | NR            | 530    | 491                      | NR            | 660    | 344                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 6                        | NR            | 535    | 523                      | NR            | 665    | 300                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 11                       | NR            | 540    | 556                      | NR            | 670    | 260                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 21                       | NR            | 545    | 591                      | NR            | 675    | 226                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 41                       | NR            | 550    | 632                      | NR            | 680    | 195                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 76                       | NR            | 555    | 679                      | NR            | 685    | 167                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 129                      | NR            | 560    | 732                      | NR            | 690    | 144                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 205                      | NR            | 565    | 787                      | NR            | 695    | 123                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 307                      | NR            | 570    | 847                      | NR            | 700    | 105                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 451                      | NR            | 575    | 900                      | NR            | 705    | 90                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 603                      | NR            | 580    | 944                      | NR            | 710    | 77                       | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 544                      | NR            | 585    | 977                      | NR            | 715    | 66                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 348                      | NR            | 590    | 997                      | NR            | 720    | 56                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 249                      | NR            | 595    | 998                      | NR            | 725    | 48                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 191                      | NR            | 600    | 986                      | NR            | 730    | 41                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 133                      | NR            | 605    | 960                      | NR            | 735    | 35                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 107                      | NR            | 610    | 921                      | NR            | 740    | 30                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 104                      | NR            | 615    | 874                      | NR            | 745    | 26                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.3**

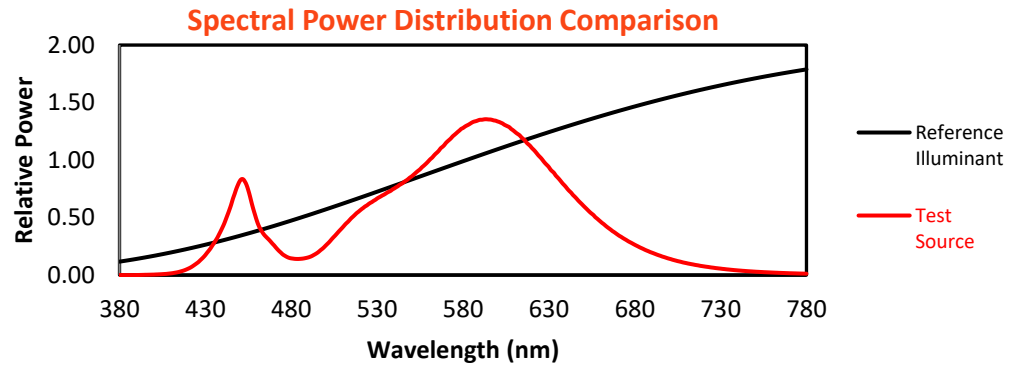
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<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               | 817                                  | NR                             | 750               | 22                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 141                                  | NR                             | 625               | 756                                  | NR                             | 755               | 19                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 189                                  | NR                             | 630               | 693                                  | NR                             | 760               | 16                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 247                                  | NR                             | 635               | 628                                  | NR                             | 765               | 14                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 307                                  | NR                             | 640               | 564                                  | NR                             | 770               | 12                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 366                                  | NR                             | 645               | 504                                  | NR                             | 775               | 10                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 415                                  | NR                             | 650               | 446                                  | NR                             | 780               | 9                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 455                                  | NR                             | 655               | 393                                  | NR                             | 785               | 8                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 491                                  | NR                             | 660               | 344                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 6                                    | NR                             | 535               | 523                                  | NR                             | 665               | 300                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 11                                   | NR                             | 540               | 556                                  | NR                             | 670               | 260                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 21                                   | NR                             | 545               | 591                                  | NR                             | 675               | 226                                  | NR                             | 805               | 4                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 41                                   | NR                             | 550               | 632                                  | NR                             | 680               | 195                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 76                                   | NR                             | 555               | 679                                  | NR                             | 685               | 167                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 129                                  | NR                             | 560               | 732                                  | NR                             | 690               | 144                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 205                                  | NR                             | 565               | 787                                  | NR                             | 695               | 123                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 307                                  | NR                             | 570               | 847                                  | NR                             | 700               | 105                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 451                                  | NR                             | 575               | 900                                  | NR                             | 705               | 90                                   | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 603                                  | NR                             | 580               | 944                                  | NR                             | 710               | 77                                   | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 544                                  | NR                             | 585               | 977                                  | NR                             | 715               | 66                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 348                                  | NR                             | 590               | 997                                  | NR                             | 720               | 56                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 249                                  | NR                             | 595               | 998                                  | NR                             | 725               | 48                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 191                                  | NR                             | 600               | 986                                  | NR                             | 730               | 41                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 133                                  | NR                             | 605               | 960                                  | NR                             | 735               | 35                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 107                                  | NR                             | 610               | 921                                  | NR                             | 740               | 30                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 104                                  | NR                             | 615               | 874                                  | NR                             | 745               | 26                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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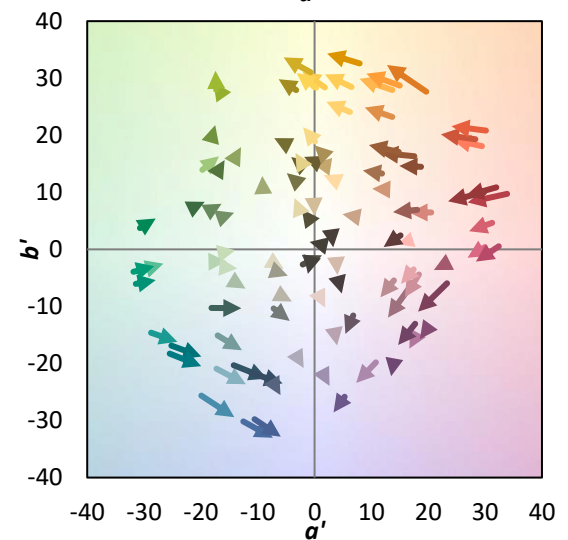
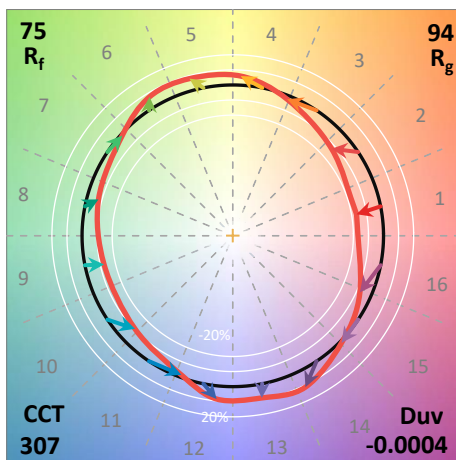
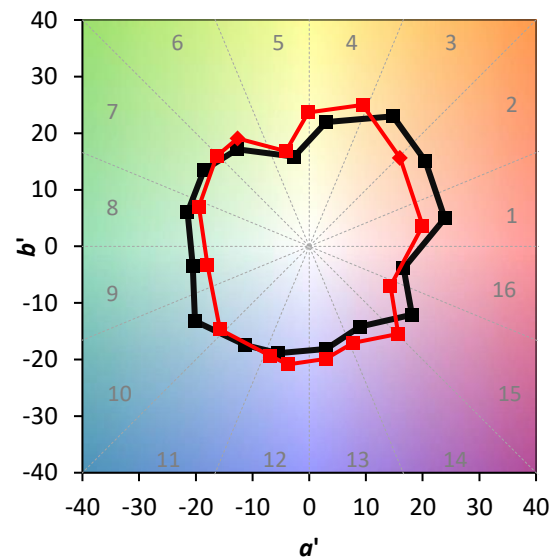
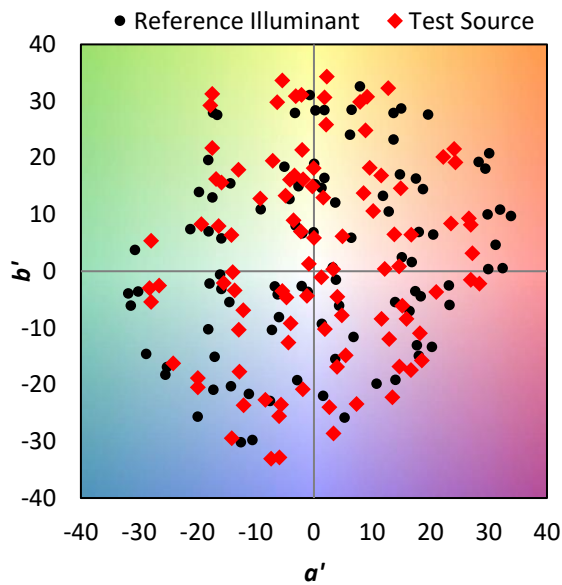
TM-30-18

### Summary

$R_f = 74.7$   
 $R_g = 94.2$   
 $\text{CIE } R_a = 71.7$   
 $R_g = -33.9$

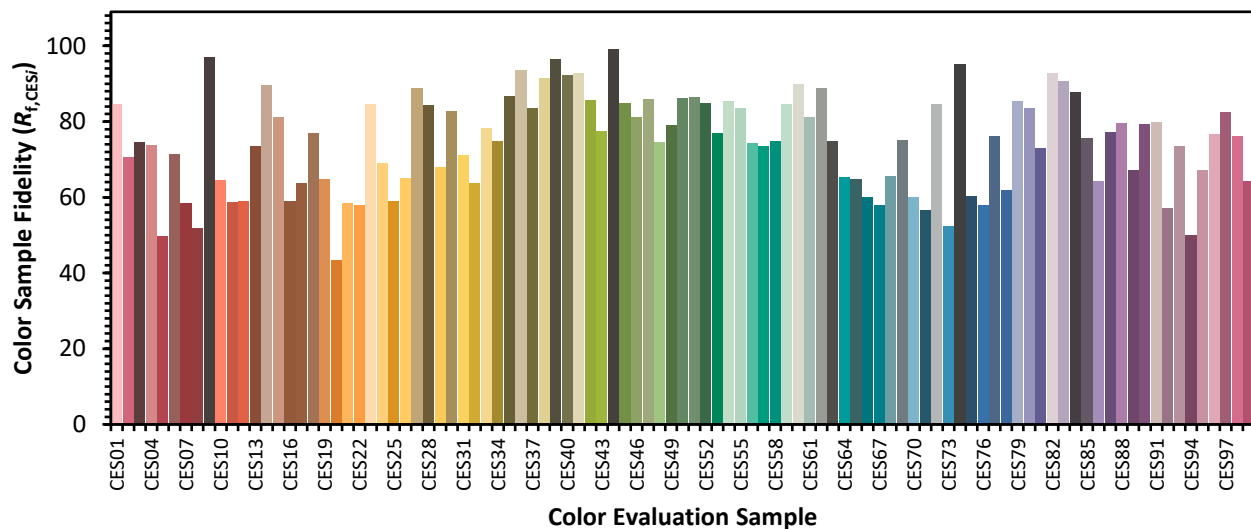


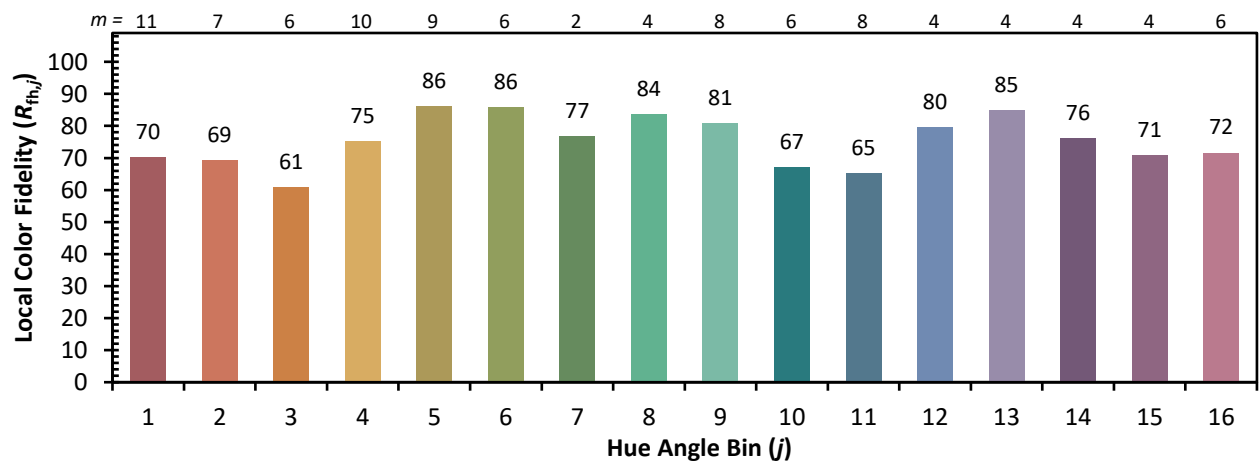
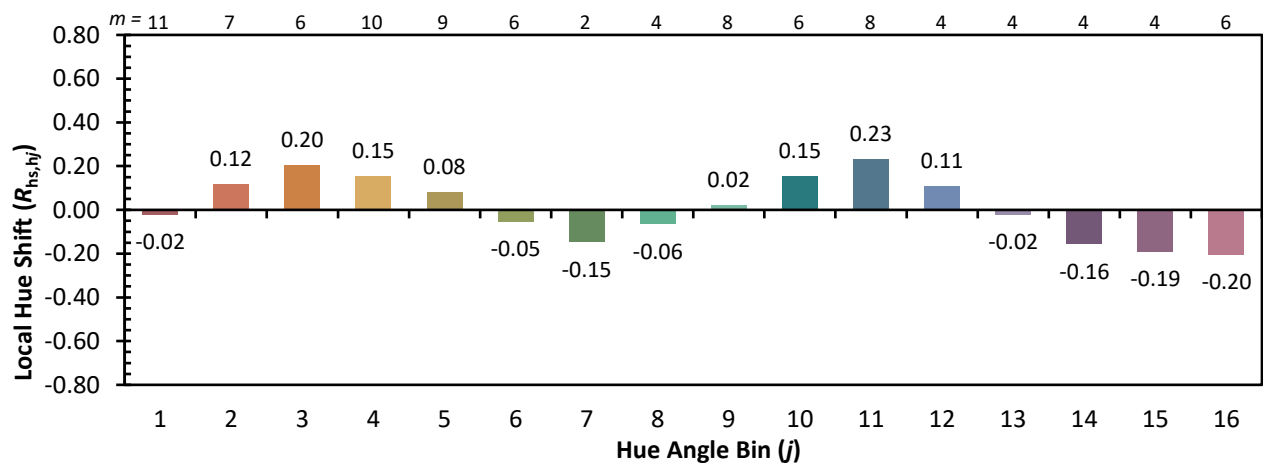
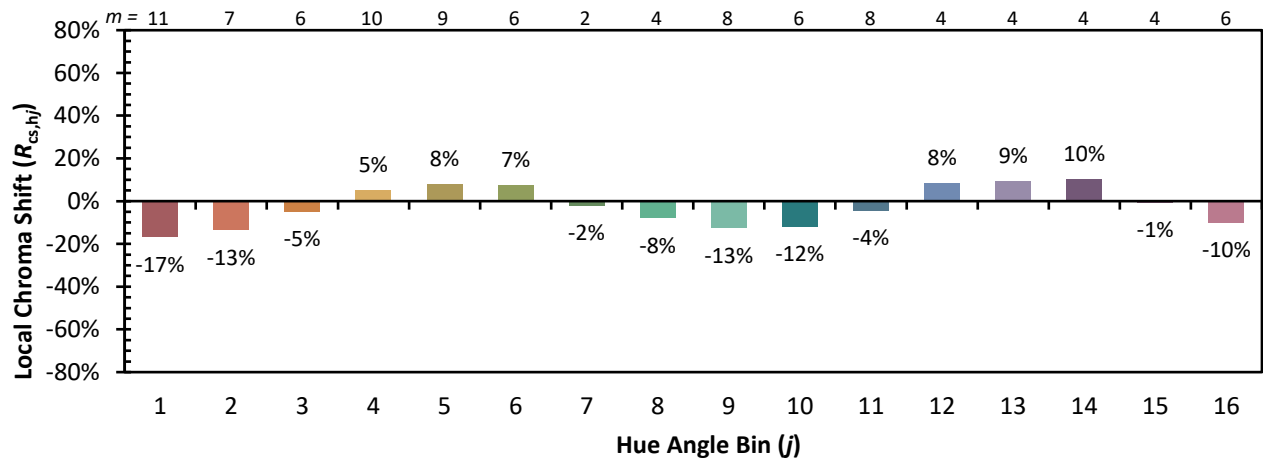
### Color Vector Graphics

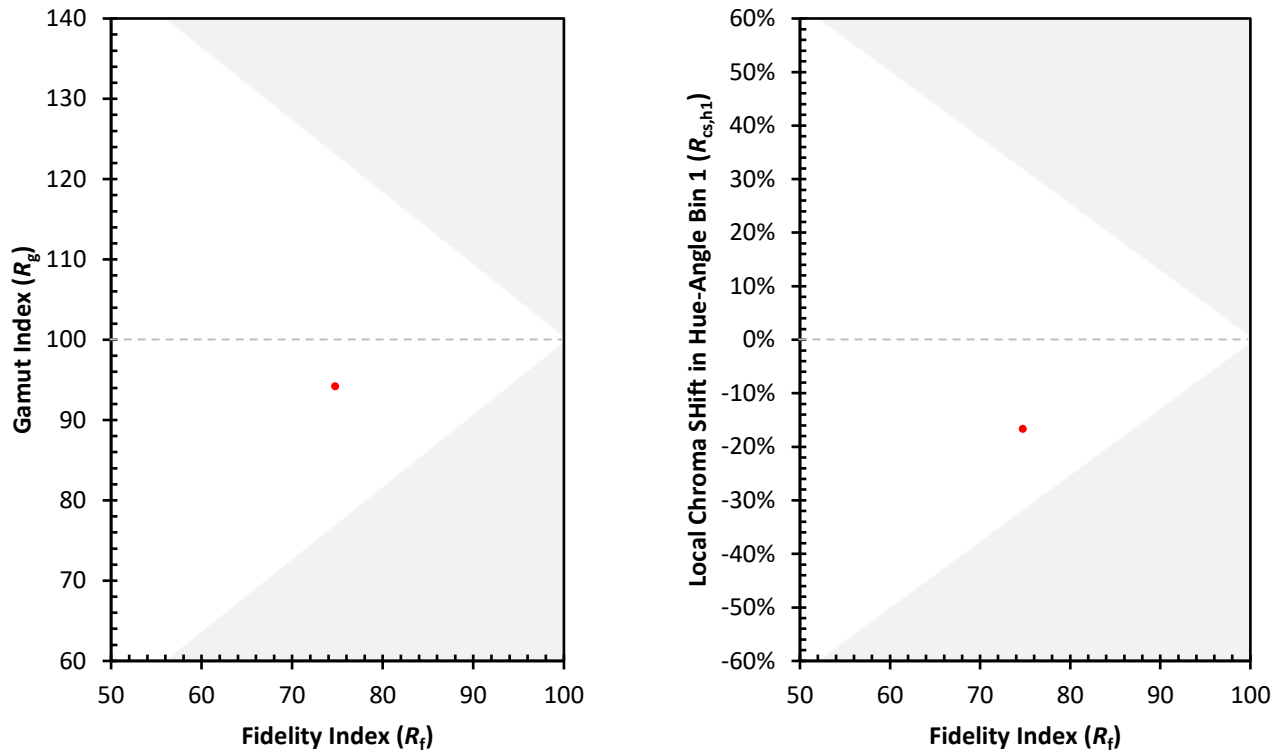


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 86 | CES76 = 58 |
| CES02 = 62 | CES27 = 89 | CES52 = 85 | CES77 = 76 |
| CES03 = 31 | CES28 = 84 | CES53 = 77 | CES78 = 62 |
| CES04 = 71 | CES29 = 68 | CES54 = 85 | CES79 = 85 |
| CES05 = 49 | CES30 = 83 | CES55 = 84 | CES80 = 84 |
| CES06 = 51 | CES31 = 71 | CES56 = 74 | CES81 = 73 |
| CES07 = 41 | CES32 = 64 | CES57 = 74 | CES82 = 93 |
| CES08 = 40 | CES33 = 78 | CES58 = 75 | CES83 = 91 |
| CES09 = 29 | CES34 = 75 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 87 | CES60 = 90 | CES85 = 76 |
| CES11 = 59 | CES36 = 94 | CES61 = 81 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 89 | CES87 = 77 |
| CES13 = 43 | CES38 = 92 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 65 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 65 | CES90 = 79 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 80 |
| CES17 = 50 | CES42 = 86 | CES67 = 58 | CES92 = 57 |
| CES18 = 56 | CES43 = 78 | CES68 = 66 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 50 |
| CES20 = 66 | CES45 = 85 | CES70 = 60 | CES95 = 67 |
| CES21 = 87 | CES46 = 81 | CES71 = 57 | CES96 = 77 |
| CES22 = 79 | CES47 = 86 | CES72 = 85 | CES97 = 83 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 95 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**


(END OF REPORT)