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

Scaled data based on original data using

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

Test Report Prepared for

Cooper Lighting Solutions

Brand: METALUX

Report Number: P976887

Luminaire Tested: 24SR-LD2-C-64-UNV-L840-CD1-PL-U

Issue Date: 03/18/2025

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P976887 |
| Test Lab: | INNOVATION CENTER(P3) |
| Issue Date: | 03/18/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24SR-LD2-C-64-UNV-L840-CD1-PL-U |
| Description: | METALUX SKYRIDGE 2x4 6400LM PACKAGE 80CRI 4000K TROFFER with Pearl SKYTRIM |
| Light Source: | 4000K CCT, 80+ CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6051.0 lumens |
| Efficiency: | N/A |
| Efficacy: | 127.1 lumens/watt |
| Spacing Criteria (0/90/45): | 1.29 / 1.98 / 1.87 |
| Luminous Opening: | Rectangular (W 2' x L: 4' x H: 0') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 47.6 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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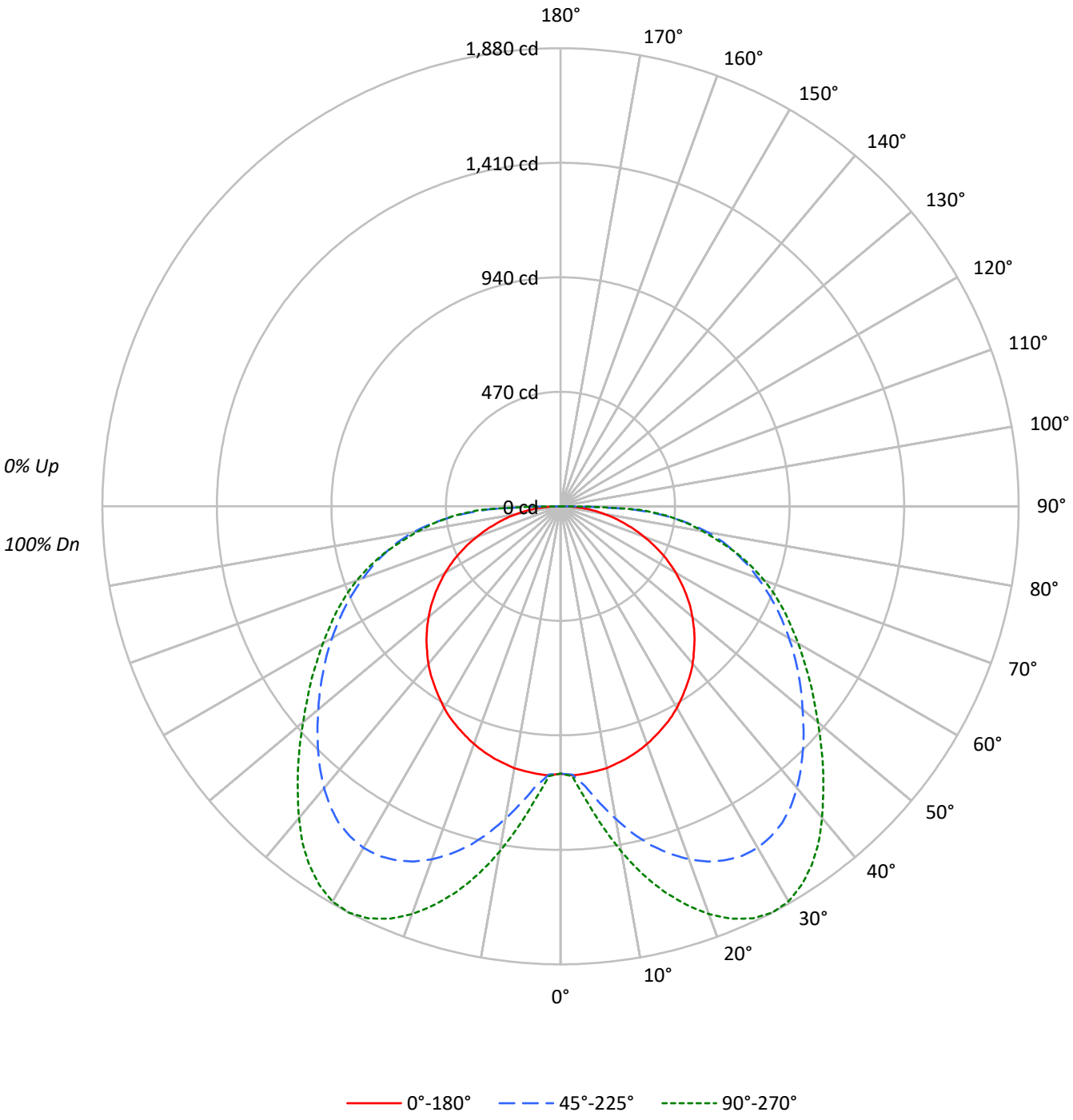
## Luminous Intensity Polar Plot



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## COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| RF | 20 | | | | 20 | | | | 20 | | | 20 | | | 20 | | | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 106 | 100 | 95 | 90 | 103 | 98 | 93 | 88 | 93 | 89 | 85 | 89 | 86 | 83 | 86 | 83 | 80 | 78 |
| 2 | 95 | 85 | 77 | 70 | 92 | 83 | 76 | 70 | 80 | 73 | 68 | 76 | 71 | 66 | 73 | 69 | 65 | 62 |
| 3 | 86 | 74 | 64 | 57 | 83 | 72 | 63 | 56 | 69 | 61 | 55 | 66 | 60 | 54 | 63 | 58 | 53 | 51 |
| 4 | 78 | 64 | 55 | 47 | 75 | 63 | 54 | 47 | 60 | 52 | 46 | 58 | 51 | 45 | 56 | 50 | 45 | 42 |
| 5 | 71 | 57 | 47 | 40 | 69 | 56 | 47 | 40 | 54 | 45 | 39 | 52 | 44 | 39 | 50 | 43 | 38 | 36 |
| 6 | 65 | 51 | 41 | 34 | 63 | 50 | 41 | 34 | 48 | 40 | 34 | 46 | 39 | 33 | 45 | 38 | 33 | 31 |
| 7 | 60 | 46 | 36 | 30 | 59 | 45 | 36 | 30 | 43 | 35 | 29 | 42 | 35 | 29 | 40 | 34 | 29 | 27 |
| 8 | 56 | 42 | 32 | 26 | 54 | 41 | 32 | 26 | 39 | 32 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 23 |
| 9 | 52 | 38 | 29 | 23 | 51 | 37 | 29 | 23 | 36 | 28 | 23 | 35 | 28 | 23 | 34 | 27 | 23 | 21 |
| 10 | 49 | 35 | 26 | 21 | 48 | 34 | 26 | 21 | 33 | 26 | 21 | 32 | 25 | 21 | 31 | 25 | 20 | 19 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 1476 | 1476 | 1476 |
| 5° | 1489 | 1556 | 1635 |
| 10° | 1491 | 1779 | 1966 |
| 15° | 1489 | 2007 | 2279 |
| 20° | 1487 | 2207 | 2550 |
| 25° | 1485 | 2379 | 2770 |
| 30° | 1484 | 2514 | 2909 |
| 35° | 1480 | 2605 | 2952 |
| 40° | 1482 | 2651 | 2932 |
| 45° | 1480 | 2678 | 2900 |
| 50° | 1478 | 2715 | 2885 |
| 55° | 1476 | 2791 | 2930 |
| 60° | 1470 | 2914 | 3031 |
| 65° | 1460 | 3102 | 3219 |
| 70° | 1432 | 3393 | 3500 |
| 75° | 1411 | 3878 | 3903 |
| 80° | 1424 | 4754 | 4603 |
| 85° | 1553 | 6584 | 6706 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 87.5°
Luminance: 10006 cd/sqm

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**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 114.1 | 1.9 |
| 10°-20° | 396.3 | 6.5 |
| 20°-30° | 702.5 | 11.6 |
| 30°-40° | 924.5 | 15.3 |
| 40°-50° | 1002.5 | 16.6 |
| 50°-60° | 975.8 | 16.1 |
| 60°-70° | 876.8 | 14.5 |
| 70°-80° | 694.5 | 11.5 |
| 80°-90° | 364.0 | 6.0 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 1212.9 | 20.0 |
| 0°-40° | 2137.4 | 35.3 |
| 0°-60° | 4115.7 | 68.0 |
| 0°-90° | 6051.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6051.0 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1097 | 1097 | 1097 | 1097 | 1097 | |
| 5° | 1102 | 1102 | 1152 | 1196 | 1211 | 105 |
| 15° | 1069 | 1208 | 1441 | 1585 | 1636 | 302 |
| 25° | 1000 | 1273 | 1602 | 1796 | 1866 | 461 |
| 35° | 901 | 1240 | 1586 | 1747 | 1797 | 564 |
| 45° | 778 | 1125 | 1407 | 1500 | 1524 | 600 |
| 55° | 629 | 978 | 1190 | 1232 | 1249 | 562 |
| 65° | 458 | 820 | 974 | 993 | 1011 | 453 |
| 75° | 272 | 617 | 746 | 747 | 751 | 289 |
| 85° | 101 | 327 | 426 | 427 | 434 | 107 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 |
| 2.5° | 1105.3 | 1103.8 | 1102.3 | 1100.6 | 1099.1 | 1097.3 | 1097.3 | 1097.3 | 1099.1 | 1102.3 | 1107.0 |
| 5° | 1102.3 | 1100.6 | 1099.1 | 1099.1 | 1100.6 | 1103.8 | 1113.5 | 1124.6 | 1135.8 | 1151.7 | 1169.4 |
| 7.5° | 1097.3 | 1095.8 | 1095.8 | 1099.1 | 1111.8 | 1130.9 | 1153.2 | 1177.3 | 1201.2 | 1226.8 | 1250.8 |
| 10° | 1091.1 | 1089.4 | 1091.1 | 1105.3 | 1134.1 | 1166.1 | 1199.7 | 1233.2 | 1265.2 | 1302.0 | 1335.5 |
| 12.5° | 1079.9 | 1079.9 | 1087.9 | 1116.5 | 1158.2 | 1201.2 | 1244.4 | 1289.1 | 1330.6 | 1375.3 | 1413.8 |
| 15° | 1068.8 | 1068.8 | 1086.2 | 1129.4 | 1182.0 | 1233.2 | 1287.6 | 1340.2 | 1389.7 | 1440.8 | 1485.6 |
| 17.5° | 1054.4 | 1054.4 | 1084.7 | 1139.0 | 1199.7 | 1262.0 | 1324.3 | 1383.5 | 1439.3 | 1495.2 | 1543.2 |
| 20° | 1038.2 | 1041.5 | 1081.4 | 1147.0 | 1215.6 | 1285.9 | 1352.9 | 1418.5 | 1480.8 | 1541.4 | 1594.1 |
| 22.5° | 1019.1 | 1025.6 | 1076.7 | 1150.2 | 1228.5 | 1302.0 | 1375.3 | 1445.6 | 1511.1 | 1578.2 | 1630.9 |
| 25° | 1000.0 | 1009.6 | 1070.3 | 1150.2 | 1233.2 | 1313.2 | 1389.7 | 1463.2 | 1533.5 | 1602.3 | 1659.7 |
| 27.5° | *979.1* | *992.0* | *1060.6* | *1145.3* | *1234.7* | *1316.2* | *1396.1* | *1472.9* | *1546.4* | *1616.5* | *1675.6* |
| 30° | 955.3 | 971.2 | 1046.4 | 1135.8 | 1228.5 | 1311.4 | 1394.6 | 1474.4 | 1547.9 | 1618.2 | 1675.6 |
| 32.5° | 928.2 | 948.8 | 1028.8 | 1121.4 | 1215.6 | 1300.3 | 1383.5 | 1463.2 | 1538.2 | 1607.0 | 1661.4 |
| 35° | 900.9 | 926.5 | 1009.6 | 1103.8 | 1197.9 | 1282.6 | 1365.8 | 1447.3 | 1520.8 | 1586.2 | 1634.1 |
| 37.5° | 873.8 | 900.9 | 985.6 | 1079.9 | 1174.1 | 1258.8 | 1343.5 | 1421.7 | 1492.0 | 1552.6 | 1595.8 |
| 40° | 843.5 | 873.8 | 958.5 | 1054.4 | 1147.0 | 1231.7 | 1314.7 | 1389.7 | 1453.7 | 1509.6 | 1549.4 |
| 42.5° | 810.0 | 843.5 | 929.7 | 1025.6 | 1116.5 | 1199.7 | 1279.4 | 1349.7 | 1410.5 | 1460.0 | 1493.5 |
| 45° | 777.9 | 813.2 | 899.4 | 995.2 | 1084.7 | 1166.1 | 1242.9 | 1308.2 | 1362.6 | 1407.3 | 1436.1 |
| 47.5° | 742.9 | 779.4 | 869.1 | 961.7 | 1049.4 | 1129.4 | 1202.9 | 1262.0 | 1314.7 | 1352.9 | 1378.5 |
| 50° | 706.1 | 745.9 | 835.5 | 928.2 | 1014.4 | 1092.6 | 1162.9 | 1217.3 | 1265.2 | 1297.0 | 1321.1 |
| 52.5° | 669.4 | 710.9 | 800.3 | 892.9 | 979.1 | 1054.4 | 1121.4 | 1174.1 | 1215.6 | 1244.4 | 1265.2 |
| 55° | 629.4 | 675.6 | 765.2 | 857.9 | 940.9 | 1015.9 | 1079.9 | 1127.9 | 1166.1 | 1190.0 | 1209.3 |
| 57.5° | 587.9 | 637.3 | 730.0 | 822.6 | 905.8 | 977.6 | 1038.2 | 1082.9 | 1116.5 | 1137.3 | 1151.7 |
| 60° | 546.4 | 599.1 | 691.7 | 784.4 | 865.8 | 937.6 | 995.2 | 1036.7 | 1067.0 | 1082.9 | 1094.1 |
| 62.5° | 503.2 | 559.1 | 653.3 | 745.9 | 829.1 | 896.1 | 950.5 | 988.8 | 1015.9 | 1028.8 | 1040.0 |
| 65° | 458.5 | 517.6 | 613.5 | 706.1 | 789.1 | 851.4 | 904.1 | 939.4 | 963.2 | 974.4 | 980.8 |
| 67.5° | 412.1 | 474.4 | 571.8 | 664.4 | 744.4 | 805.0 | 854.7 | 889.7 | 908.8 | 918.5 | 923.2 |
| 70° | 364.1 | 429.7 | 527.1 | 619.7 | 696.5 | 754.1 | 802.0 | 833.8 | 852.9 | 862.6 | 864.1 |
| 72.5° | 319.4 | 383.5 | 482.4 | 571.8 | 645.3 | 701.2 | 745.9 | 779.4 | 798.8 | 806.7 | 806.7 |
| 75° | 271.5 | 335.5 | 432.9 | 519.1 | 589.4 | 643.8 | 688.5 | 720.5 | 737.9 | 745.9 | 745.9 |
| 77.5° | 230.0 | 289.1 | 380.3 | 463.2 | 528.8 | 581.5 | 624.7 | 658.2 | 677.3 | 685.3 | 685.3 |
| 80° | 183.8 | 241.2 | 325.9 | 402.6 | 463.2 | 511.2 | 555.9 | 591.1 | 610.3 | 613.5 | 608.5 |
| 82.5° | 142.1 | 195.0 | 266.8 | 335.5 | 391.4 | 436.1 | 480.9 | 509.7 | 523.8 | 527.1 | 525.6 |
| 85° | 100.6 | 143.8 | 204.4 | 260.3 | 306.7 | 348.2 | 380.3 | 407.3 | 421.7 | 426.5 | 429.7 |
| 87.5° | 59.1 | 83.0 | 121.4 | 164.4 | 199.7 | 226.8 | 245.9 | 270.0 | 284.4 | 293.8 | 303.5 |
| 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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TEST NUMBER: P976887
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**CANDELA DISTRIBUTION (continued):**

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|
| 0° | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | 1097.3 | *1097.3* |
| 2.5° | 1105.3 | 1107.0 | 1108.5 | 1108.5 | 1108.5 | 1110.2 | 1108.5 | *1108.5* |
| 5° | 1175.6 | 1185.3 | 1193.2 | 1197.9 | 1202.9 | 1210.8 | 1209.3 | *1210.8* |
| 7.5° | 1263.5 | 1279.4 | 1297.0 | 1306.7 | 1313.2 | 1322.6 | 1325.8 | *1325.8* |
| 10° | 1354.7 | 1377.0 | 1397.6 | 1412.0 | 1421.7 | 1436.1 | 1437.6 | *1439.3* |
| 12.5° | 1440.8 | 1467.9 | 1492.0 | 1507.9 | 1522.3 | 1535.0 | 1541.4 | *1543.2* |
| 15° | 1514.4 | 1547.9 | 1575.0 | 1595.8 | 1610.2 | 1624.6 | 1632.6 | *1635.8* |
| 17.5° | 1579.9 | 1615.0 | 1645.3 | 1669.3 | 1686.8 | 1701.2 | 1710.8 | *1714.1* |
| 20° | 1630.9 | 1669.3 | 1702.9 | 1728.5 | 1749.1 | 1765.2 | 1777.9 | *1781.1* |
| 22.5° | 1672.6 | 1712.3 | 1747.6 | 1776.4 | 1797.0 | 1816.2 | 1827.3 | *1832.3* |
| 25° | 1702.9 | 1745.9 | 1782.6 | 1809.9 | 1832.3 | 1849.7 | 1860.9 | *1865.8* |
| 27.5° | *1720.5* | *1763.5* | *1798.7* | *1825.8* | *1848.2* | *1864.1* | *1875.3* | *1880.2* |
| 30° | 1720.5 | 1762.0 | 1797.0 | 1822.6 | 1843.5 | 1859.4 | 1867.3 | *1872.3* |
| 32.5° | 1702.9 | 1742.9 | 1774.7 | 1797.0 | 1816.2 | 1832.3 | 1838.5 | *1841.7* |
| 35° | 1674.1 | 1709.3 | 1737.9 | 1757.0 | 1773.2 | 1787.6 | 1793.8 | *1797.0* |
| 37.5° | 1632.6 | 1664.4 | 1686.8 | 1704.4 | 1717.3 | 1731.7 | 1736.4 | *1739.6* |
| 40° | 1579.9 | 1610.2 | 1626.1 | 1642.0 | 1653.2 | 1666.1 | 1669.3 | *1669.3* |
| 42.5° | 1522.3 | 1547.9 | 1563.8 | 1575.0 | 1582.9 | 1591.1 | 1595.8 | *1595.8* |
| 45° | 1461.7 | 1484.1 | 1495.2 | 1504.7 | 1512.6 | 1519.1 | 1523.8 | *1523.8* |
| 47.5° | 1400.9 | 1418.5 | 1428.2 | 1434.4 | 1440.8 | 1447.3 | 1450.5 | *1450.5* |
| 50° | 1340.2 | 1352.9 | 1360.9 | 1365.8 | 1372.3 | 1377.0 | 1380.2 | *1378.5* |
| 52.5° | 1279.4 | 1289.1 | 1295.5 | 1300.3 | 1303.5 | 1308.2 | 1309.9 | *1311.4* |
| 55° | 1218.8 | 1225.2 | 1230.0 | 1233.2 | 1239.6 | 1244.4 | 1245.9 | *1249.1* |
| 57.5° | 1159.7 | 1162.9 | 1169.4 | 1170.9 | 1177.3 | 1182.0 | 1183.8 | *1185.3* |
| 60° | 1099.1 | 1102.3 | 1107.0 | 1110.2 | 1118.2 | 1121.4 | 1122.9 | *1126.2* |
| 62.5° | 1040.0 | 1041.5 | 1047.9 | 1054.4 | 1060.6 | 1063.8 | 1065.5 | *1067.0* |
| 65° | 980.8 | 985.6 | 990.3 | 995.2 | 1001.5 | 1006.4 | 1007.9 | *1011.2* |
| 67.5° | 923.2 | 926.5 | 932.9 | 937.6 | 942.4 | 947.3 | 950.5 | *952.0* |
| 70° | 864.1 | 867.3 | 872.3 | 875.3 | 880.2 | 885.0 | 889.7 | *889.7* |
| 72.5° | 806.7 | 806.7 | 810.0 | 813.2 | 817.9 | 821.1 | 822.6 | *822.6* |
| 75° | 744.4 | 742.9 | 745.9 | 747.6 | 747.6 | 747.6 | 749.1 | *750.8* |
| 77.5° | 677.3 | 670.9 | 667.7 | 667.7 | 669.4 | 666.1 | 667.7 | *669.4* |
| 80° | 600.6 | 594.1 | 592.6 | 592.6 | 594.1 | 592.6 | 594.1 | *594.1* |
| 82.5° | 519.1 | 519.1 | 514.4 | 515.9 | 517.6 | 514.4 | 517.6 | *520.8* |
| 85° | 425.0 | 426.5 | 425.0 | 429.7 | 429.7 | 429.7 | 431.2 | *434.4* |
| 87.5° | 305.0 | 314.7 | 311.5 | 317.9 | 316.2 | 317.9 | 319.4 | *324.4* |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* |

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**CIE UGR TABLE:**

| Reflectances: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ceiling | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| | Wall | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| | Reference plane | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room Dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 14.3 | 16.1 | 14.7 | 16.4 | 16.7 | 16.3 | 18.1 | 16.7 | 18.4 | 18.7 |
| | 3H | 16.3 | 17.9 | 16.7 | 18.2 | 18.6 | 18.9 | 20.5 | 19.3 | 20.8 | 21.2 |
| | 4H | 17.0 | 18.6 | 17.4 | 18.9 | 19.3 | 20.1 | 21.7 | 20.5 | 22.0 | 22.4 |
| | 6H | 17.6 | 19.1 | 18.0 | 19.4 | 19.8 | 21.3 | 22.7 | 21.7 | 23.1 | 23.5 |
| | 8H | 17.9 | 19.2 | 18.3 | 19.6 | 20.0 | 21.9 | 23.3 | 22.3 | 23.6 | 24.0 |
| | 12H | 18.0 | 19.4 | 18.5 | 19.7 | 20.2 | 22.4 | 23.8 | 22.9 | 24.2 | 24.6 |
| 4H | 2H | 15.7 | 17.3 | 16.1 | 17.6 | 18.0 | 17.1 | 18.6 | 17.5 | 19.0 | 19.4 |
| | 3H | 18.2 | 19.5 | 18.6 | 19.9 | 20.3 | 20.0 | 21.3 | 20.4 | 21.7 | 22.1 |
| | 4H | 19.3 | 20.5 | 19.7 | 20.9 | 21.3 | 21.4 | 22.6 | 21.8 | 23.0 | 23.4 |
| | 6H | 20.2 | 21.3 | 20.6 | 21.7 | 22.1 | 22.7 | 23.8 | 23.2 | 24.2 | 24.7 |
| | 8H | 20.5 | 21.5 | 21.0 | 22.0 | 22.4 | 23.4 | 24.4 | 23.8 | 24.8 | 25.3 |
| | 12H | 20.8 | 21.7 | 21.2 | 22.1 | 22.6 | 24.1 | 25.0 | 24.6 | 25.5 | 25.9 |
| 8H | 4H | 20.3 | 21.3 | 20.8 | 21.8 | 22.2 | 21.9 | 22.9 | 22.4 | 23.4 | 23.8 |
| | 6H | 21.6 | 22.5 | 22.1 | 23.0 | 23.5 | 23.5 | 24.4 | 24.0 | 24.9 | 25.3 |
| | 8H | 22.2 | 23.0 | 22.7 | 23.5 | 24.0 | 24.3 | 25.1 | 24.8 | 25.6 | 26.1 |
| | 12H | 22.7 | 23.4 | 23.2 | 23.9 | 24.4 | 25.2 | 25.9 | 25.7 | 26.4 | 27.0 |
| 12H | 4H | 20.5 | 21.5 | 21.0 | 21.9 | 22.4 | 22.0 | 23.0 | 22.5 | 23.4 | 23.9 |
| | 6H | 22.0 | 22.8 | 22.5 | 23.3 | 23.8 | 23.7 | 24.5 | 24.2 | 25.0 | 25.5 |
| | 8H | 22.8 | 23.5 | 23.3 | 24.0 | 24.5 | 24.7 | 25.4 | 25.2 | 25.8 | 26.4 |

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1121 Highway 74 South
Peachtree City, GA 30269

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-7

Test Date: 07/02/2025

Luminaire Tested: 24SR-LD2-64-C-UNV-L940-CD1-U

Data in this report applies to families of products including 24SR-LD2-64-C-UNV-L940-CD1-U

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

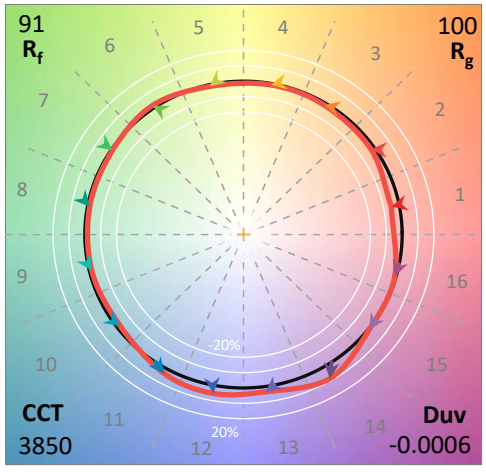
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2506-457-7 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 07/02/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Metalux |
| Catalog Number: | **24SR-LD2-64-C-UNV-L940-CD1-U** |
| Description: | 2X4 SKYRIDGE 6400LM Fixture with new LTN chip |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3850 |
| CIE u': | 0.2283 |
| CIE v': | 0.5037 |
| Duv: | -0.0006 |
| CIE x: | 0.3868 |
| CIE y: | 0.3794 |
| CIE z: | 0.2338 |
| Peak Wavelength (nm): | 630 |
| Dominant Wavelength (nm): | 579 |
| Purity: | 29.94798 |
| Rf: | 91.3 |
| Rg: | 99.8 |

| | |
|---|---|
| CRI (Ra): | 94.0 |
| R1: | 95.3 |
| R2: | 96.3 |
| R3: | 95.7 |
| R4: | 95.2 |
| R5: | 94.4 |
| R6: | 94.3 |
| R7: | 94.1 |
| R8: | 86.7 |
| R9: | 65.3 |
| R10: | 89.6 |
| R11: | 95.5 |
| R12: | 76.1 |
| R13: | 95.5 |
| R14: | 96.8 |
| R15: | 92.3 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 38M |
| Operation Time: | 1H 38M |
| Sphere Temperature (°C): | 24.4 |

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| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | AGILENT E3634A IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | ONSET IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | ONSET IN0046 | 10/22/2024 | 10/22/2025 |

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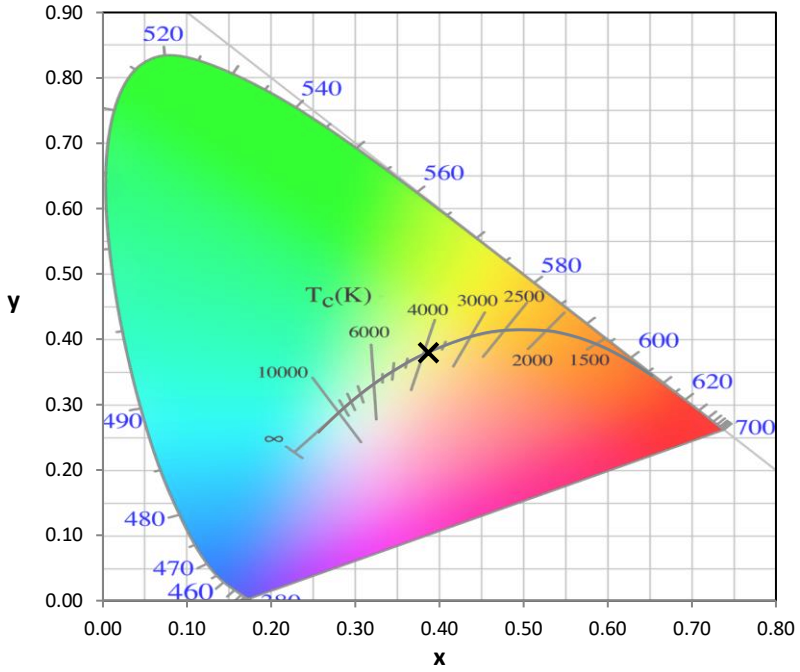
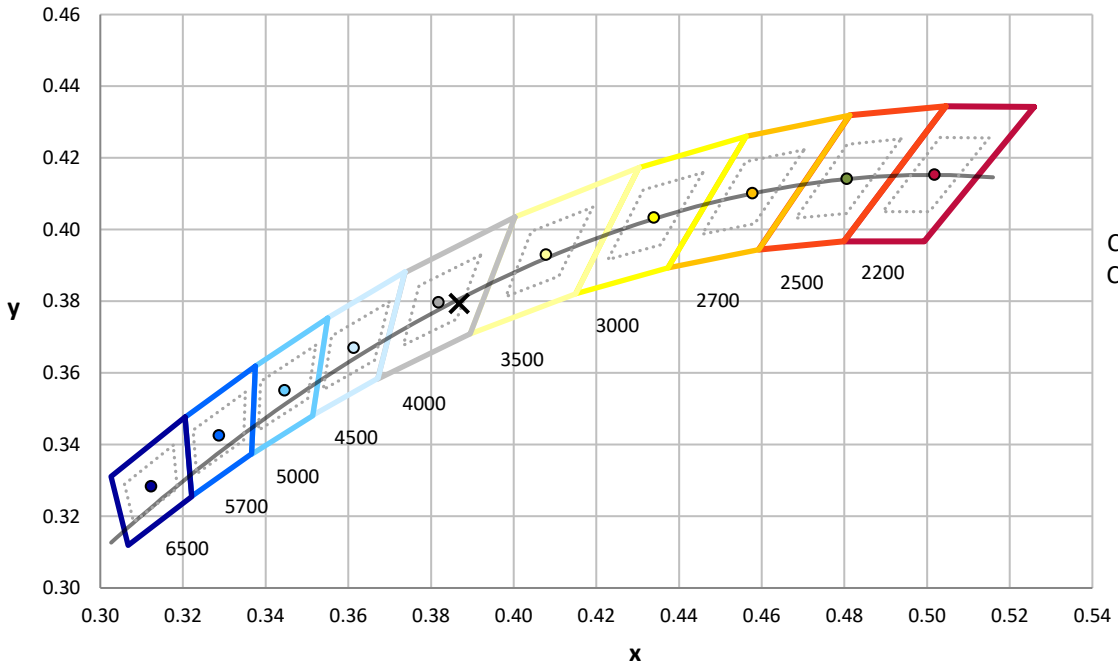
## CIE 1931 Chromaticity Diagram




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




CCT = 3850K
CIE x = 0.3868
CIE y = 0.3794
Duv = -0.0006

Point lies inside the ANSI 4000K 4-step quadrangle

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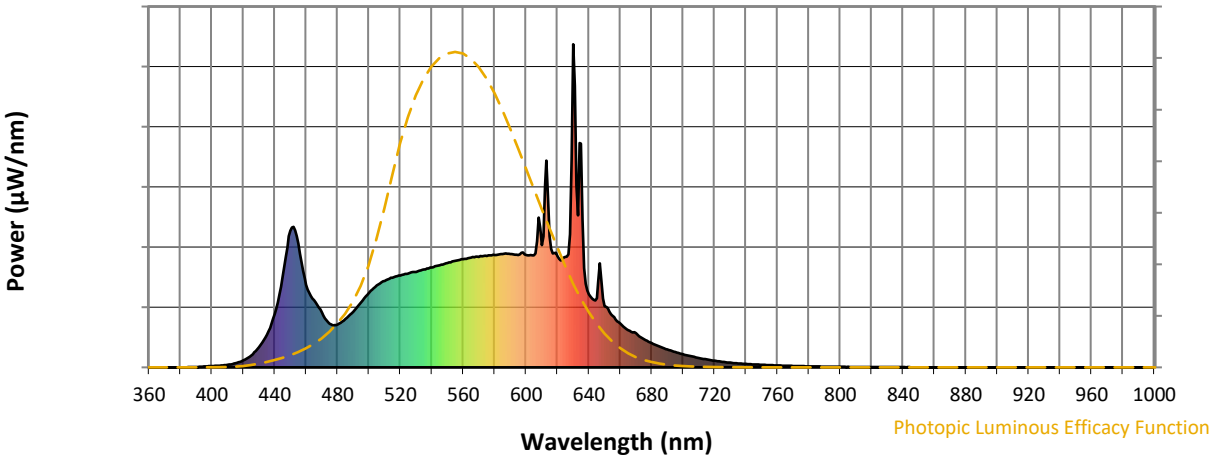
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 173 | NR | 620 | 343 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 201 | NR | 625 | 342 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 231 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 253 | NR | 635 | 692 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 226 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 284 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 290 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 296 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 303 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 310 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 13 | NR | 545 | 316 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 22 | NR | 550 | 323 | NR | 680 | 75 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 330 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 335 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 102 | NR | 565 | 340 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 164 | NR | 570 | 342 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 281 | NR | 575 | 345 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 423 | NR | 580 | 348 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 384 | NR | 585 | 350 | NR | 715 | 25 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 256 | NR | 590 | 351 | NR | 720 | 21 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 208 | NR | 595 | 348 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 169 | NR | 600 | 348 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 135 | NR | 605 | 347 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 149 | NR | 615 | 406 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

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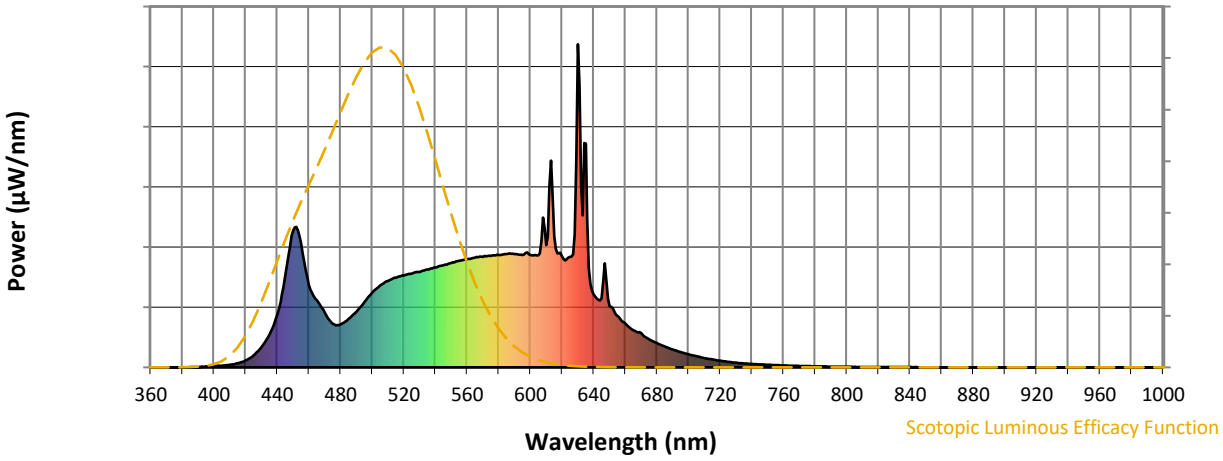
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.74**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 173 | NR | 620 | 343 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 201 | NR | 625 | 342 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 231 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 253 | NR | 635 | 692 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 226 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 284 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 290 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 296 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 303 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 310 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 13 | NR | 545 | 316 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 22 | NR | 550 | 323 | NR | 680 | 75 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 330 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 335 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 102 | NR | 565 | 340 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 164 | NR | 570 | 342 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 281 | NR | 575 | 345 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 423 | NR | 580 | 348 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 384 | NR | 585 | 350 | NR | 715 | 25 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 256 | NR | 590 | 351 | NR | 720 | 21 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 208 | NR | 595 | 348 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 169 | NR | 600 | 348 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 135 | NR | 605 | 347 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 149 | NR | 615 | 406 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

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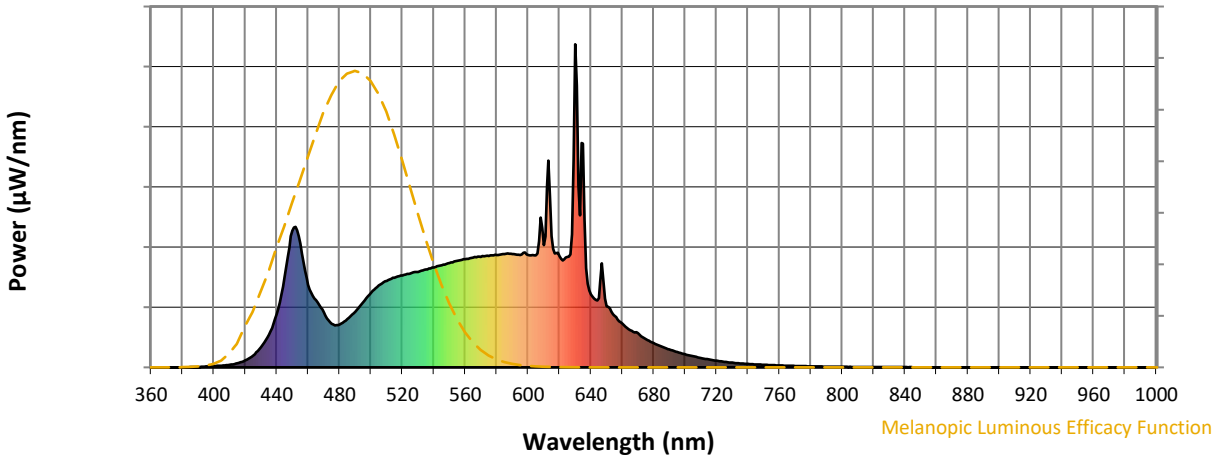
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.6**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 173 | NR | 620 | 343 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 201 | NR | 625 | 342 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 231 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 253 | NR | 635 | 692 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 268 | NR | 640 | 226 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 284 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 290 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 296 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 303 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 8 | NR | 540 | 310 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 13 | NR | 545 | 316 | NR | 675 | 87 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 22 | NR | 550 | 323 | NR | 680 | 75 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 37 | NR | 555 | 330 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 335 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 102 | NR | 565 | 340 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 164 | NR | 570 | 342 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 281 | NR | 575 | 345 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 423 | NR | 580 | 348 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 384 | NR | 585 | 350 | NR | 715 | 25 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 256 | NR | 590 | 351 | NR | 720 | 21 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 208 | NR | 595 | 348 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 169 | NR | 600 | 348 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 135 | NR | 605 | 347 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 133 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 149 | NR | 615 | 406 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

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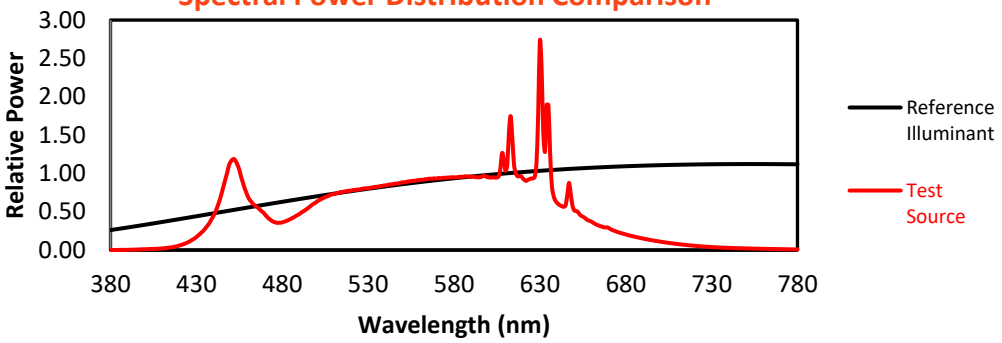
**TM-30-18**

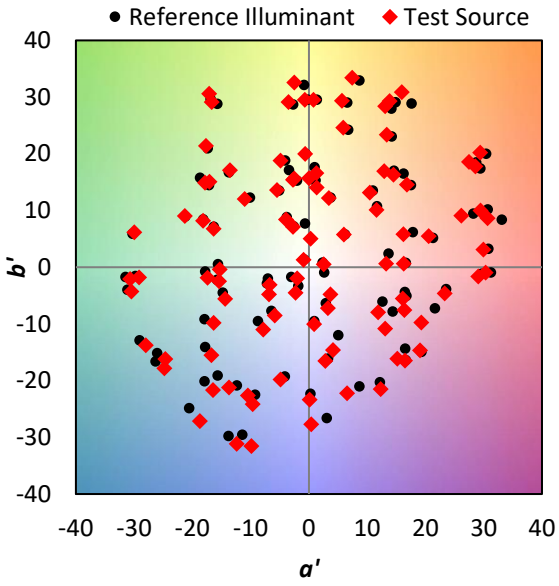
## Summary

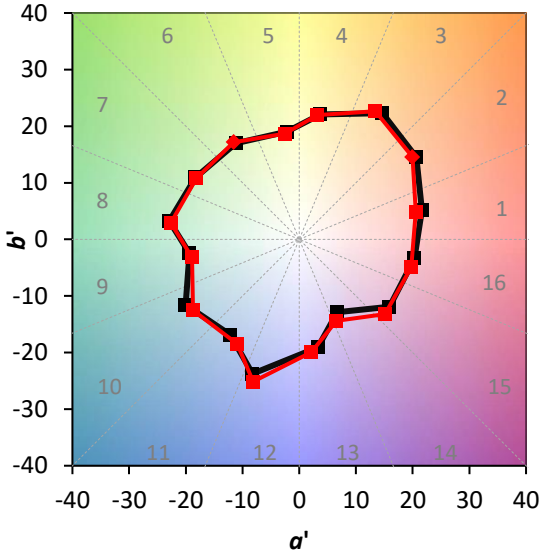
$R_f$ = 91.3
$R_g$ = 99.8
CIE $R_a$ = 94.0
$R_9$ = 65.3

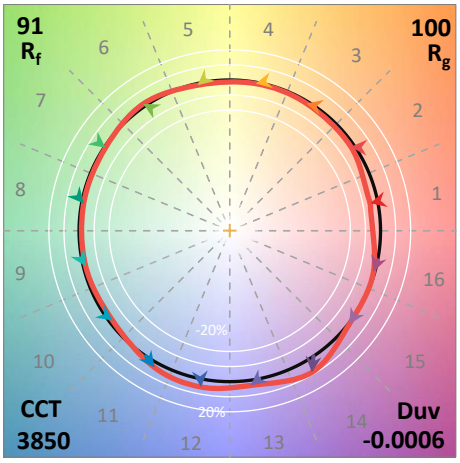
## Spectral Power Distribution Comparison

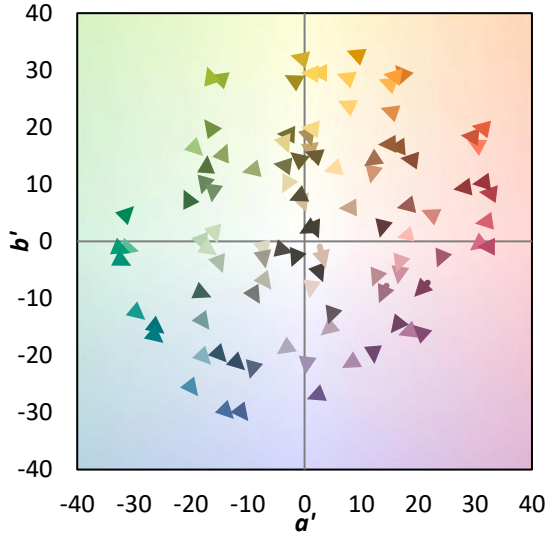



## Color Vector Graphics



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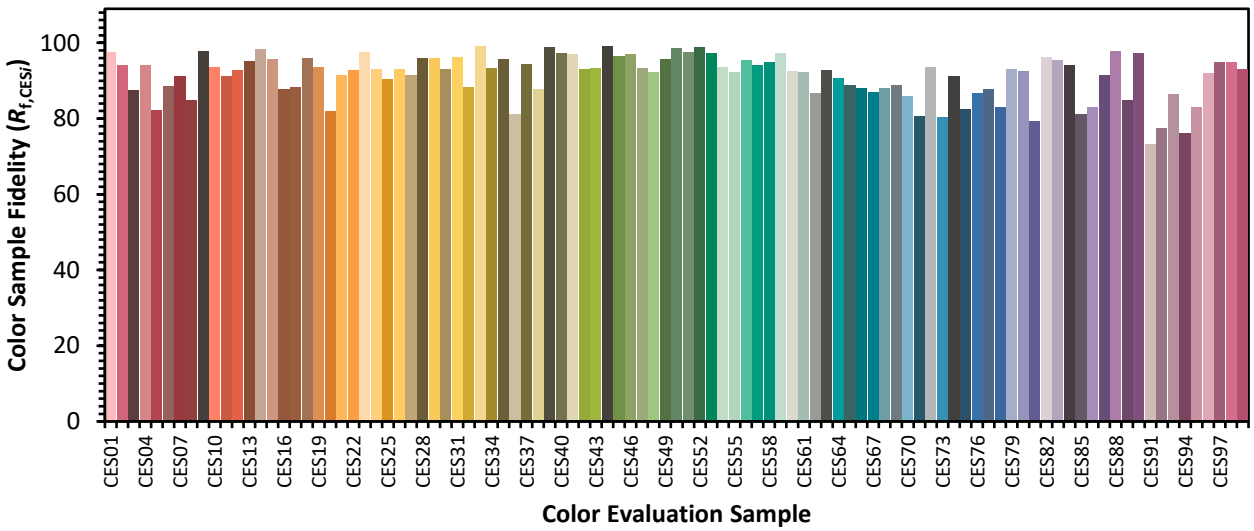
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 93 | CES51 = 98 | CES76 = 87 |
| CES02 = 62 | CES27 = 91 | CES52 = 99 | CES77 = 88 |
| CES03 = 31 | CES28 = 96 | CES53 = 97 | CES78 = 83 |
| CES04 = 69 | CES29 = 96 | CES54 = 94 | CES79 = 93 |
| CES05 = 49 | CES30 = 93 | CES55 = 92 | CES80 = 92 |
| CES06 = 50 | CES31 = 96 | CES56 = 95 | CES81 = 79 |
| CES07 = 42 | CES32 = 88 | CES57 = 94 | CES82 = 96 |
| CES08 = 41 | CES33 = 99 | CES58 = 95 | CES83 = 95 |
| CES09 = 29 | CES34 = 93 | CES59 = 97 | CES84 = 94 |
| CES10 = 74 | CES35 = 96 | CES60 = 93 | CES85 = 81 |
| CES11 = 57 | CES36 = 81 | CES61 = 92 | CES86 = 83 |
| CES12 = 63 | CES37 = 94 | CES62 = 87 | CES87 = 92 |
| CES13 = 43 | CES38 = 88 | CES63 = 93 | CES88 = 98 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 85 |
| CES15 = 71 | CES40 = 97 | CES65 = 89 | CES90 = 97 |
| CES16 = 47 | CES41 = 97 | CES66 = 88 | CES91 = 73 |
| CES17 = 49 | CES42 = 93 | CES67 = 87 | CES92 = 77 |
| CES18 = 56 | CES43 = 93 | CES68 = 88 | CES93 = 86 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 76 |
| CES20 = 66 | CES45 = 96 | CES70 = 86 | CES95 = 83 |
| CES21 = 85 | CES46 = 97 | CES71 = 81 | CES96 = 92 |
| CES22 = 78 | CES47 = 93 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 92 | CES73 = 80 | CES98 = 95 |
| CES24 = 90 | CES49 = 96 | CES74 = 91 | CES99 = 93 |
| CES25 = 71 | CES50 = 98 | CES75 = 83 | |



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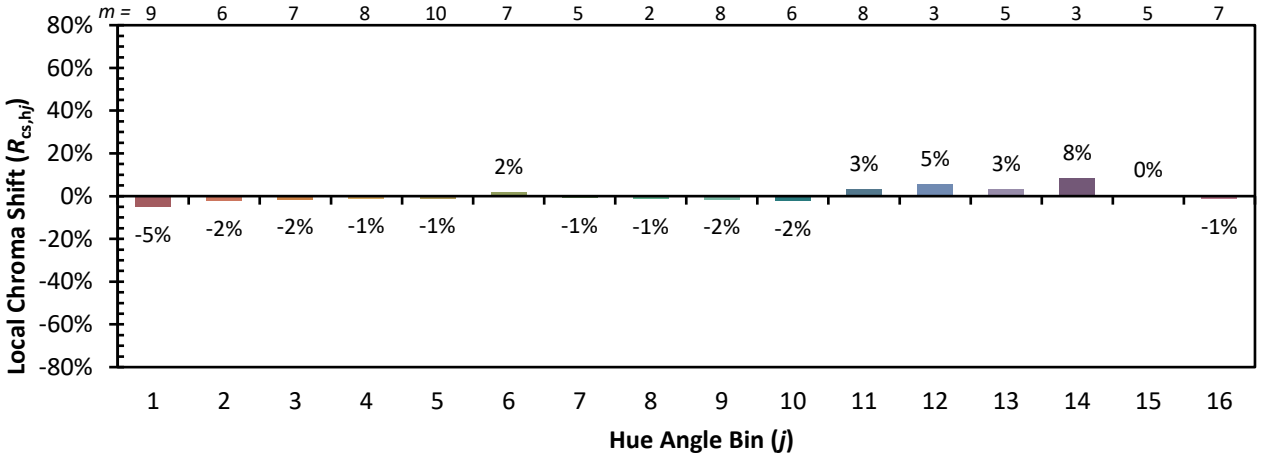
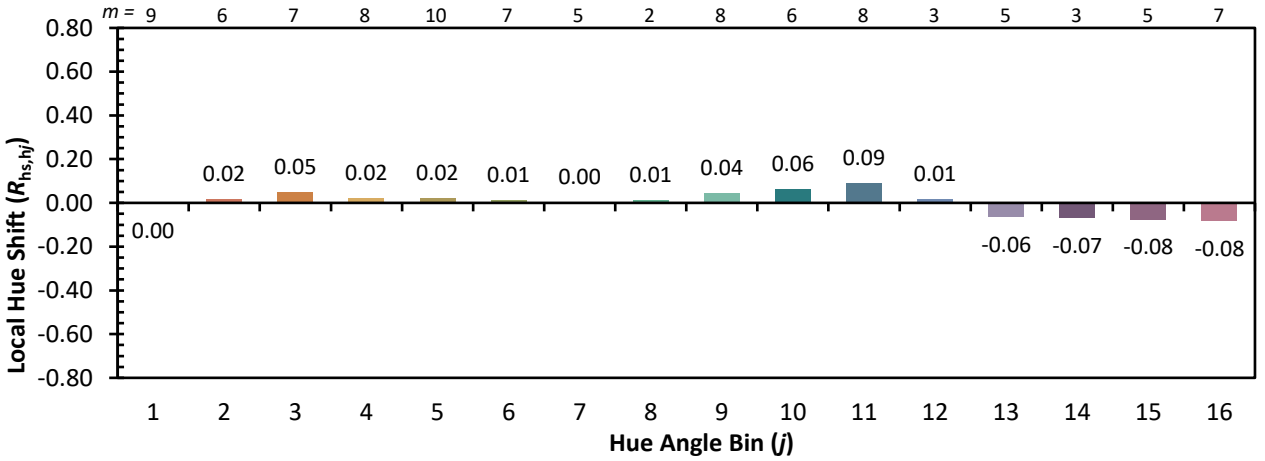
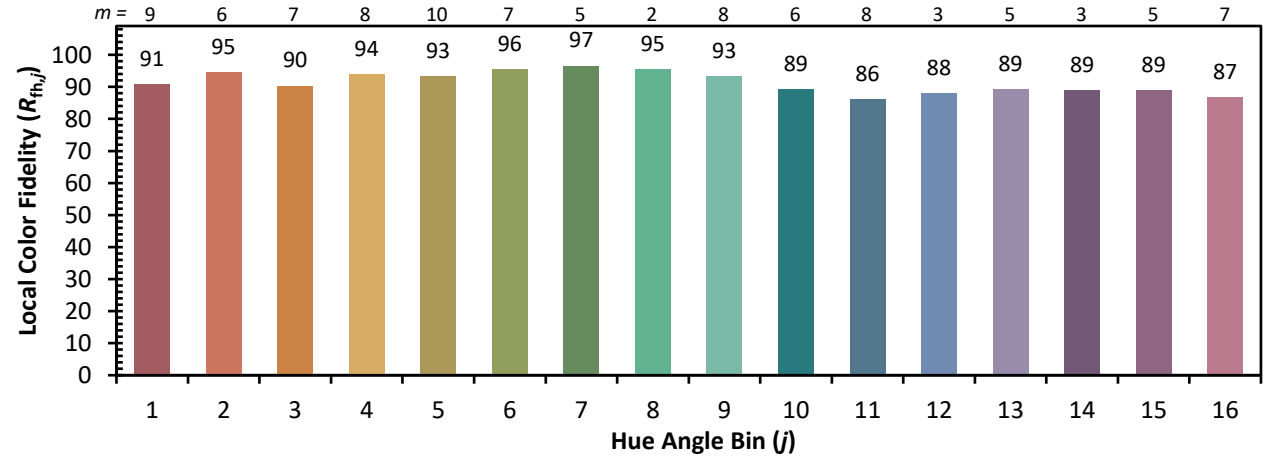
## Color Rendition by Hue-Angle Bin



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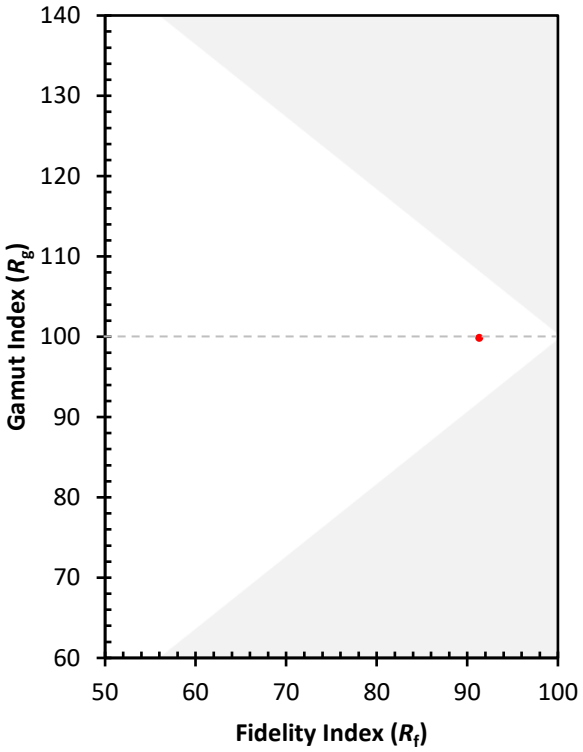
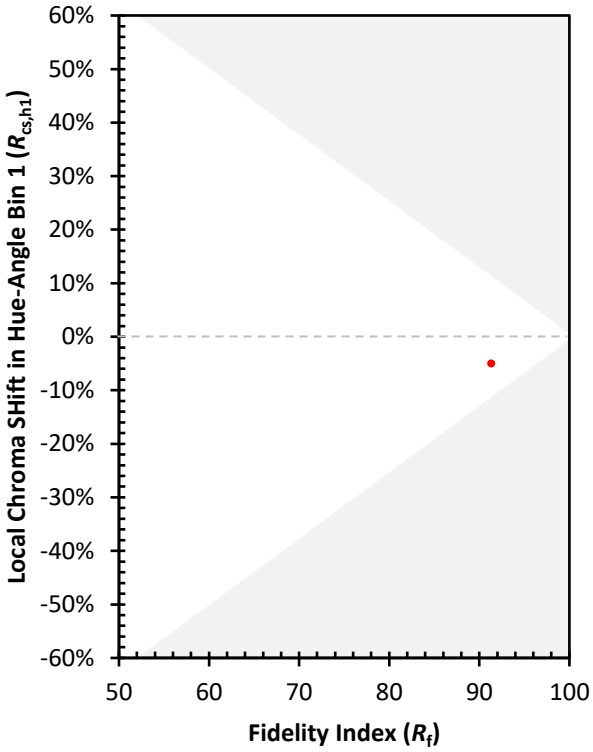
## Measure Comparisons

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