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

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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: McGRAW-EDISON

Report Number: P1202561

Luminaire Tested: GWC-SB2A-722-U-SL3

Issue Date: 10/30/2025

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1202561 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-289-12) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/14/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWC-SB2A-722-U-SL3 |
| Description: | GALLEON WALL LUMINAIRE |
| | (2) 70 CRI, 2200K, 350mA LIGHTSQUARES WITH 26 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 7242 lumens |
| Efficiency: | N/A |
| Efficacy: | 126.4 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Medium |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 57.3 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.484 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.994 |
| Total Harmonic Distortion (THDi): | 9.038 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

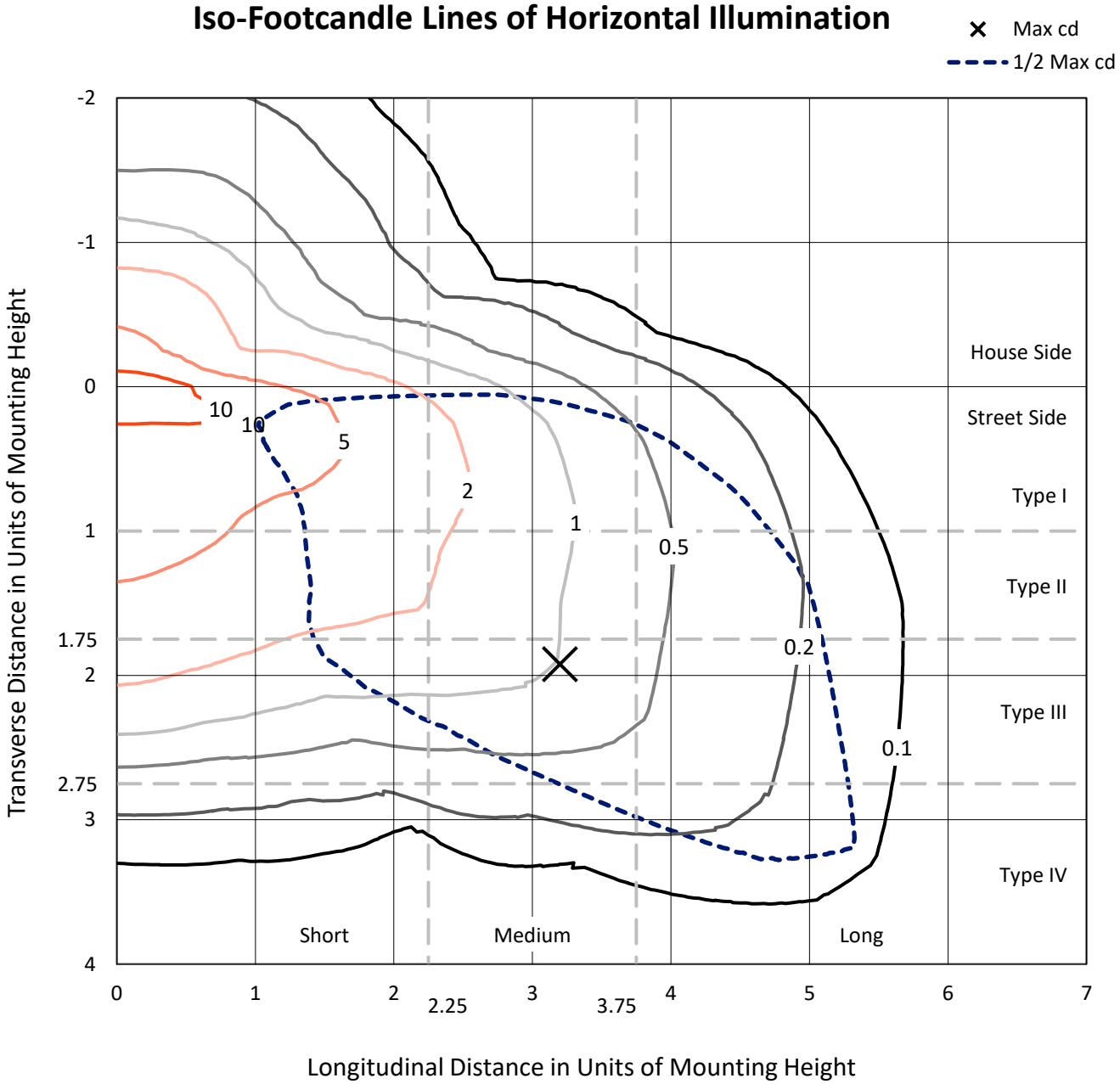


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REPORT NUMBER: P1202561
CATALOG NUMBER: GWC-SB2A-722-U-SL3

## Iso-Footcandle Lines of Horizontal Illumination



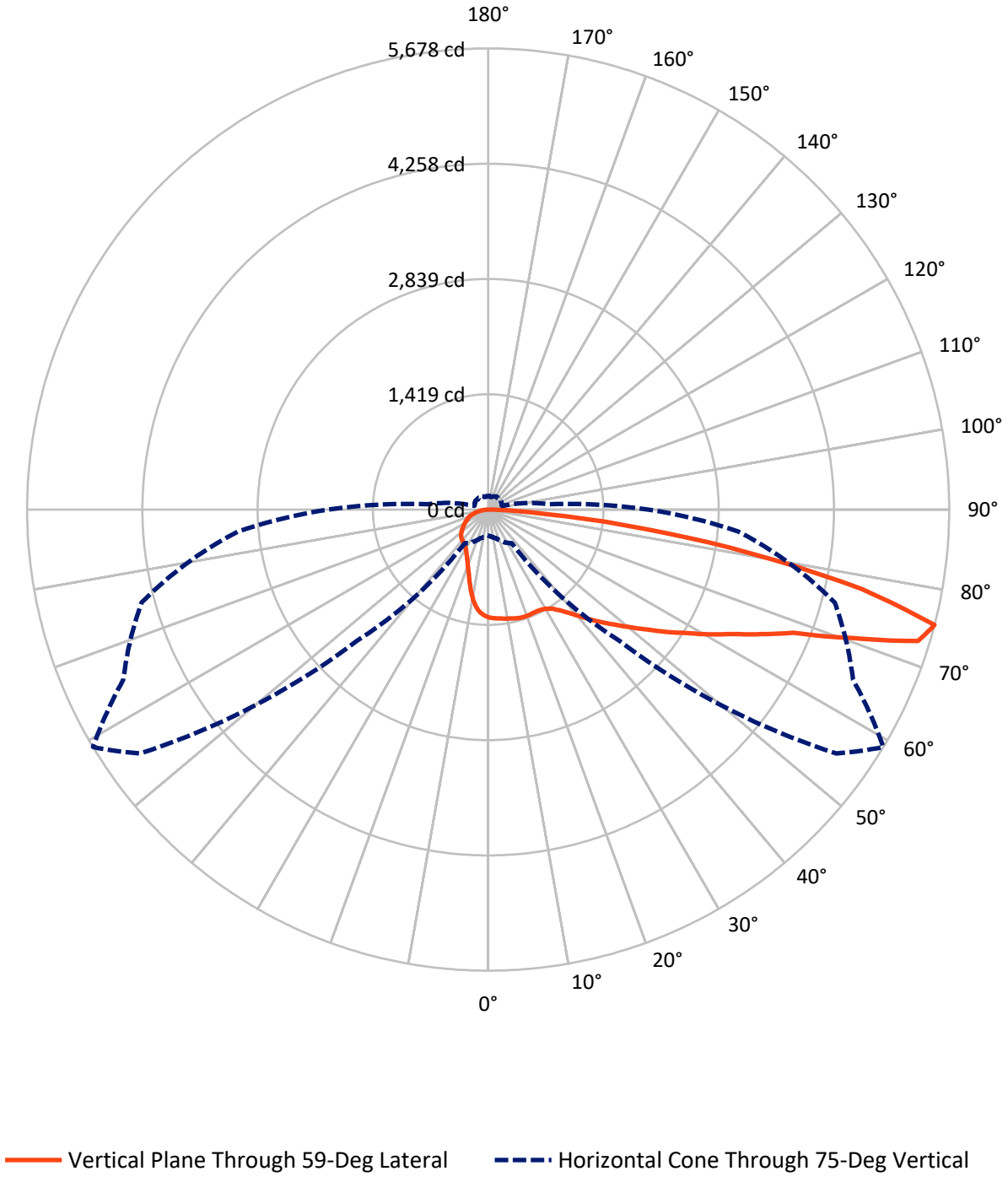

Based on 10 foot mounting height. Maximum calculated value = 13.3 fc
Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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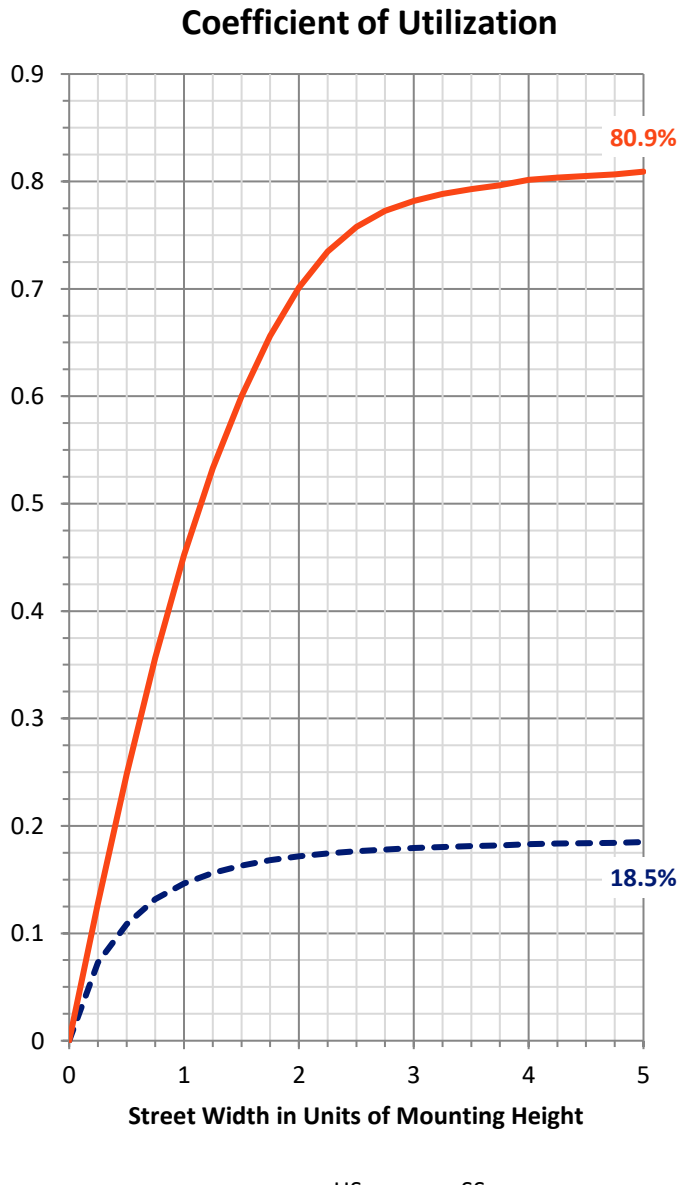
REPORT NUMBER: P1202561
CATALOG NUMBER: GWC-SB2A-722-U-SL3

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1358.3 | 0.0 | 1358.3 |
| | % Fixture | 18.8 | 0.0 | 18.8 |
| **Street Side** | Lumens | 5883.7 | 0.0 | 5883.7 |
| | % Fixture | 81.2 | 0.0 | 81.2 |
| **Total** | Lumens | 7242.0 | 0.0 | 7242.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 119.2 | 1.6 |
| 10°-20° | 304.7 | 4.2 |
| 20°-30° | 462.7 | 6.4 |
| 30°-40° | 687.9 | 9.5 |
| 40°-50° | 1023.0 | 14.1 |
| 50°-60° | 1388.6 | 19.2 |
| 60°-70° | 1695.2 | 23.4 |
| 70°-80° | 1330.4 | 18.4 |
| 80°-90° | 230.5 | 3.2 |
| 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° | 7242.0 | 100.0 |
| 0°-180° | 7242.0 | 100.0 |



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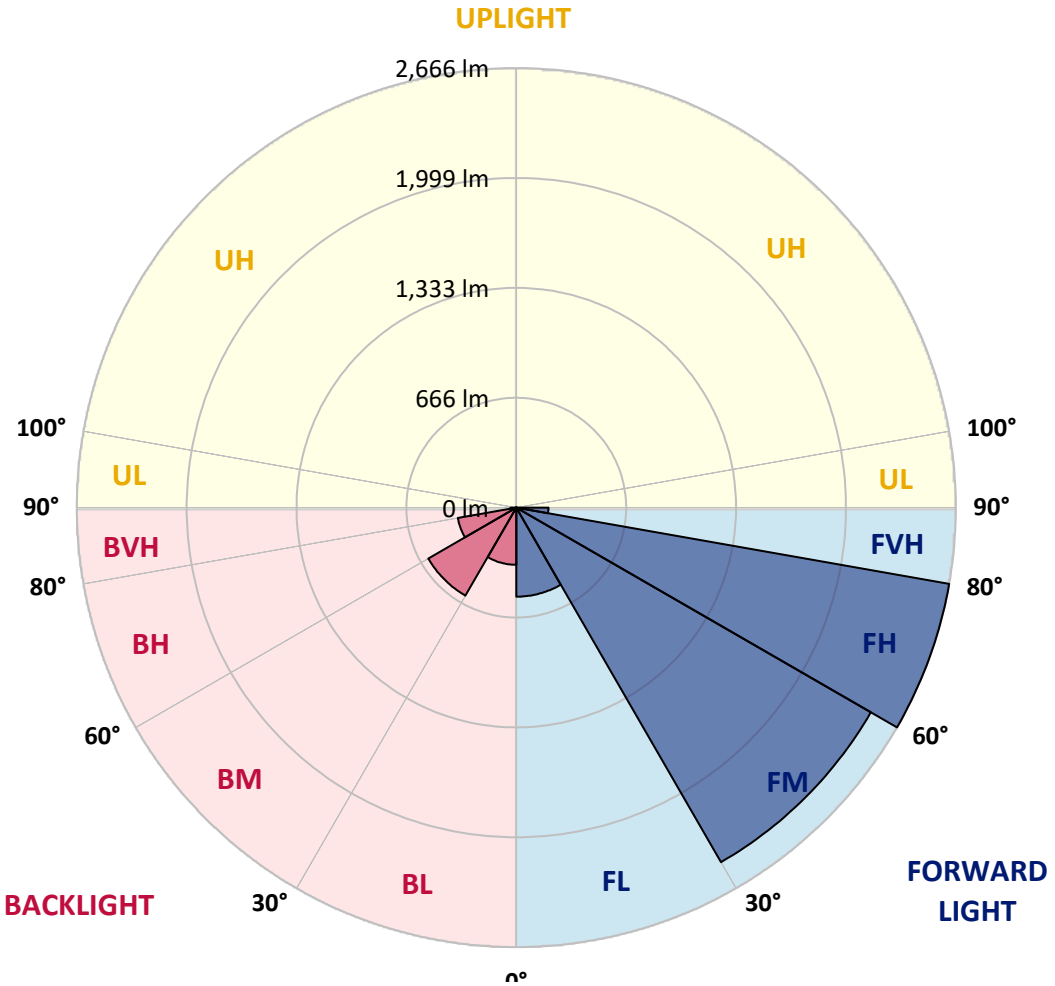
Scaled Data Report

REPORT NUMBER: P1202561
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## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 540.0 | 7.5 | | | |
| FM | (30°-60°) | 2482.9 | 34.3 | | | |
| FH | (60°-80°) | 2665.7 | 36.8 | | | G2/5000 |
| FVH | (80°-90°) | 195.2 | 2.7 | | | G2/225 |
| BL | (0°-30°) | 346.6 | 4.8 | B1/500 | | |
| BM | (30°-60°) | 616.5 | 8.5 | B1/1000 | | |
| BH | (60°-80°) | 359.9 | 5.0 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 35.3 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G2**
Type IV Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | *1329.3* | 1329.3 | 1329.3 | 1329.3 |
| 2.5° | 1340.6 | 1335.9 | 1340.6 | 1338.6 | 1337.8 | 1336.3 | 1336.7 | *1339.4* | 1337.8 | 1339.8 | 1333.1 |
| 5° | 1331.6 | 1328.9 | 1333.5 | 1332.4 | 1337.4 | 1338.2 | 1343.3 | *1346.4* | 1348.3 | 1348.7 | 1343.7 |
| 7.5° | 1316.8 | 1314.1 | 1320.7 | 1326.1 | 1337.0 | 1340.2 | 1350.7 | *1355.7* | 1358.5 | 1363.1 | 1355.7 |
| 10° | 1262.6 | 1261.5 | 1277.8 | 1298.5 | 1324.2 | 1340.2 | 1356.1 | *1364.7* | 1369.0 | 1381.5 | 1372.9 |
| 12.5° | 1166.8 | 1168.4 | 1189.8 | 1229.5 | 1280.9 | 1332.4 | 1362.4 | *1374.8* | 1381.5 | 1397.0 | 1393.1 |
| 15° | 1075.2 | 1074.9 | 1098.2 | 1140.7 | 1212.8 | 1298.1 | 1365.5 | *1386.9* | 1398.2 | 1421.2 | 1418.1 |
| 17.5° | 1022.3 | 1020.7 | 1037.1 | 1069.4 | 1136.4 | 1245.5 | 1357.7 | *1393.5* | 1417.7 | 1446.5 | 1443.8 |
| 20° | 1012.5 | 1009.4 | 1018.0 | 1033.9 | 1081.5 | 1187.8 | 1337.4 | *1393.5* | 1433.3 | 1470.7 | 1469.1 |
| 22.5° | 1048.0 | 1042.9 | 1039.4 | 1037.5 | 1058.5 | 1140.3 | 1314.4 | *1388.9* | 1456.3 | 1505.3 | 1502.6 |
| 25° | 1119.3 | 1111.5 | 1093.6 | 1076.0 | 1069.8 | 1118.9 | 1294.2 | *1387.7* | 1490.5 | 1552.1 | 1542.0 |
| 27.5° | 1234.6 | 1224.8 | 1188.6 | 1146.5 | 1108.7 | 1129.8 | 1285.2 | *1394.7* | 1528.3 | 1601.6 | 1581.3 |
| 30° | 1377.6 | 1367.0 | 1321.5 | 1256.8 | 1189.0 | 1170.3 | 1296.5 | *1415.4* | 1576.6 | 1667.4 | 1627.7 |
| 32.5° | 1505.7 | 1494.0 | 1455.1 | 1389.2 | 1297.7 | 1240.4 | 1332.4 | *1454.7* | 1652.6 | 1759.0 | 1697.4 |
| 35° | 1619.5 | 1605.9 | 1570.8 | 1510.0 | 1430.9 | 1339.0 | 1397.0 | *1524.4* | 1760.5 | 1907.8 | 1792.1 |
| 37.5° | 1730.9 | 1714.9 | 1676.8 | 1612.5 | 1557.2 | 1470.3 | 1486.3 | *1614.0* | 1903.9 | 2088.5 | 1917.5 |
| 40° | 1855.6 | 1832.6 | 1786.2 | 1722.7 | 1669.0 | 1624.2 | 1603.5 | *1723.9* | 2049.6 | 2290.4 | 2074.1 |
| 42.5° | 1976.3 | 1954.5 | 1899.2 | 1845.1 | 1777.7 | 1764.8 | 1739.5 | *1852.5* | 2208.9 | 2512.0 | 2233.1 |
| 45° | 2106.5 | 2080.4 | 2013.4 | 1944.8 | 1902.3 | 1858.3 | 1871.2 | *1981.0* | 2365.2 | 2738.0 | 2399.8 |
| 47.5° | 2228.4 | 2199.2 | 2120.1 | 2043.7 | 2020.4 | 1937.0 | 1991.9 | *2122.4* | 2527.6 | 2967.1 | 2565.0 |
| 50° | 2294.2 | 2265.4 | 2199.6 | 2130.6 | 2112.3 | 2034.0 | 2122.8 | *2277.9* | 2697.9 | 3195.3 | 2723.6 |
| 52.5° | 2349.2 | 2318.0 | 2231.9 | 2193.7 | 2188.3 | 2139.6 | 2284.1 | *2455.5* | 2868.1 | 3397.2 | 2876.7 |
| 55° | 2407.6 | 2372.9 | 2263.1 | 2228.8 | 2253.7 | 2258.0 | 2475.4 | *2656.9* | 3048.1 | 3593.9 | 3021.2 |
| 57.5° | 2475.0 | 2431.0 | 2293.1 | 2258.4 | 2317.6 | 2396.7 | 2695.1 | *2865.8* | 3225.0 | 3776.2 | 3149.8 |
| 60° | 2538.5 | 2494.1 | 2350.7 | 2305.5 | 2386.6 | 2557.6 | 2947.2 | *3118.6* | 3425.2 | 3938.7 | 3271.3 |
| 62.5° | 2551.0 | 2514.4 | 2396.7 | 2396.3 | 2480.1 | 2745.4 | 3245.6 | *3373.8* | 3600.1 | 4099.2 | 3380.4 |
| 65° | 2335.2 | 2312.2 | 2242.4 | 2392.8 | 2614.1 | 3015.8 | 3577.9 | *3700.2* | 3822.6 | 4239.4 | 3476.2 |
| 67.5° | 1777.3 | 1780.4 | 1775.3 | 2065.6 | 2505.8 | 3404.2 | 4059.1 | *4049.7* | 4097.2 | 4396.8 | 3586.5 |
| 70° | 812.7 | 831.0 | 950.2 | 1425.9 | 2007.5 | 3449.0 | 4854.6 | *4733.4* | 4442.0 | 4600.6 | 3681.9 |
| 72.5° | 439.1 | 453.1 | 501.8 | 690.7 | 1206.9 | 3066.4 | 5449.1 | *5535.2* | 4900.5 | 4737.7 | 3577.1 |
| 75° | *322.2* | *330.0* | *363.9* | *439.1* | *506.8* | *2279.1* | *5236.0* | *5677.8* | *4957.8* | *4417.9* | *3089.0* |
| 77.5° | 241.2 | 244.7 | 272.3 | 347.9 | 259.5 | 1201.5 | 4183.7 | *4702.3* | 4244.1 | 3629.7 | 2281.8 |
| 80° | 174.9 | 178.8 | 199.5 | 261.0 | 181.9 | 439.4 | 2872.8 | *3300.5* | 2906.7 | 2313.7 | 1137.2 |
| 82.5° | 120.8 | 122.3 | 131.3 | 177.6 | 127.0 | 170.6 | 1630.0 | *1935.4* | 1622.6 | 811.9 | 307.0 |
| 85° | 72.9 | 74.8 | 78.7 | 103.6 | 72.1 | 81.0 | 703.6 | *727.7* | 485.0 | 194.0 | 95.4 |
| 87.5° | 30.0 | 31.9 | 35.1 | 43.6 | 28.4 | 22.6 | 116.1 | *145.7* | 90.8 | 56.9 | 29.6 |
| 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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Scaled Data Report

REPORT NUMBER: P1202561
CATALOG NUMBER: GWC-SB2A-722-U-SL3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 | 1329.3 |
| 2.5° | 1331.2 | 1328.5 | 1321.1 | 1310.9 | 1301.6 | 1289.9 | 1284.8 | 1280.6 | 1276.7 | 1269.3 | 1265.8 |
| 5° | 1339.4 | 1332.0 | 1312.1 | 1286.4 | 1257.2 | 1225.2 | 1194.1 | 1172.6 | 1154.3 | 1140.7 | 1129.4 |
| 7.5° | 1351.8 | 1337.8 | 1301.6 | 1249.0 | 1182.0 | 1113.4 | 1051.5 | 1007.5 | 974.3 | 962.3 | 941.2 |
| 10° | 1364.7 | 1348.0 | 1284.8 | 1192.1 | 1076.4 | 970.8 | 888.6 | 843.4 | 817.0 | 808.4 | 795.1 |
| 12.5° | 1379.9 | 1355.4 | 1258.7 | 1113.0 | 958.4 | 842.7 | 771.0 | 744.5 | 730.9 | 726.2 | 727.3 |
| 15° | 1402.1 | 1361.6 | 1219.4 | 1014.1 | 845.8 | 749.2 | 702.8 | 684.5 | 677.5 | 677.1 | 678.7 |
| 17.5° | 1418.9 | 1362.8 | 1158.2 | 908.1 | 759.3 | 692.7 | 654.5 | 647.5 | 652.2 | 659.2 | 661.9 |
| 20° | 1437.6 | 1352.2 | 1078.0 | 811.5 | 698.5 | 643.2 | 627.2 | 631.9 | 643.2 | 653.3 | 656.8 |
| 22.5° | 1450.8 | 1333.1 | 981.0 | 736.3 | 645.9 | 614.8 | 614.0 | 623.7 | 630.0 | 635.0 | 637.7 |
| 25° | 1462.5 | 1300.8 | 878.1 | 673.2 | 602.7 | 597.6 | 606.2 | 603.1 | 598.8 | 603.1 | 605.8 |
| 27.5° | 1471.1 | 1249.8 | 786.2 | 617.9 | 572.3 | 585.9 | 580.9 | 573.9 | 573.5 | 575.8 | 579.7 |
| 30° | 1468.3 | 1181.6 | 710.6 | 565.3 | 550.9 | 564.1 | 552.0 | 550.9 | 549.7 | 550.9 | 555.2 |
| 32.5° | 1468.3 | 1104.1 | 652.5 | 529.1 | 537.2 | 532.2 | 531.0 | 528.3 | 523.6 | 523.2 | 528.3 |
| 35° | 1476.5 | 1026.5 | 602.7 | 509.6 | 525.9 | 513.9 | 514.6 | 508.0 | 498.3 | 493.6 | 498.3 |
| 37.5° | 1493.3 | 964.2 | 553.2 | 500.2 | 506.1 | 505.7 | 502.6 | 491.3 | 474.1 | 459.3 | 464.4 |
| 40° | 1533.8 | 945.9 | 519.3 | 495.9 | 496.7 | 501.4 | 493.2 | 471.4 | 432.4 | 408.3 | 411.4 |
| 42.5° | 1597.3 | 976.7 | 511.9 | 485.4 | 490.5 | 495.2 | 479.2 | 428.5 | 400.9 | 386.5 | 386.5 |
| 45° | 1677.9 | 1030.4 | 527.9 | 470.2 | 475.7 | 483.9 | 436.3 | 412.2 | 399.7 | 400.1 | 402.0 |
| 47.5° | 1780.0 | 1086.9 | 557.5 | 457.0 | 454.3 | 458.9 | 407.9 | 393.1 | 375.9 | 380.2 | 391.1 |
| 50° | 1898.0 | 1144.2 | 585.5 | 439.1 | 430.5 | 415.3 | 389.6 | 375.6 | 353.7 | 343.6 | 346.3 |
| 52.5° | 2025.8 | 1199.5 | 596.8 | 417.2 | 404.8 | 387.2 | 377.1 | 360.0 | 333.5 | 316.7 | 316.3 |
| 55° | 2147.0 | 1249.8 | 584.4 | 391.1 | 379.1 | 365.4 | 363.9 | 353.4 | 324.9 | 301.5 | 301.5 |
| 57.5° | 2261.5 | 1291.9 | 553.2 | 364.6 | 353.0 | 344.8 | 355.3 | 350.2 | 314.4 | 284.4 | 282.8 |
| 60° | 2358.5 | 1320.7 | 508.0 | 337.8 | 329.6 | 325.3 | 341.3 | 339.7 | 299.6 | 266.1 | 264.9 |
| 62.5° | 2435.7 | 1332.0 | 458.1 | 312.1 | 310.1 | 302.3 | 321.8 | 321.8 | 280.9 | 248.2 | 247.0 |
| 65° | 2496.1 | 1321.1 | 407.5 | 286.7 | 290.6 | 278.9 | 298.0 | 295.7 | 261.0 | 232.2 | 230.6 |
| 67.5° | 2549.4 | 1285.2 | 351.4 | 261.8 | 270.8 | 256.0 | 273.1 | 267.6 | 239.2 | 216.2 | 214.7 |
| 70° | 2573.2 | 1201.9 | 287.5 | 236.9 | 247.8 | 233.4 | 248.2 | 238.0 | 214.7 | 199.1 | 196.0 |
| 72.5° | 2382.3 | 998.9 | 226.3 | 210.8 | 220.1 | 208.4 | 221.3 | 209.6 | 188.2 | 181.2 | 175.3 |
| 75° | *1970.9* | *749.6* | *174.1* | *182.3* | *189.3* | *180.4* | *188.9* | *180.4* | *160.9* | *166.0* | *151.5* |
| 77.5° | 1431.3 | 506.1 | 133.2 | 152.3 | 155.4 | 150.8 | 158.2 | 148.4 | 130.9 | 129.7 | 123.9 |
| 80° | 711.8 | 296.5 | 104.4 | 120.4 | 119.2 | 116.1 | 124.7 | 120.0 | 105.2 | 111.4 | 110.3 |
| 82.5° | 206.1 | 127.0 | 76.0 | 84.5 | 82.2 | 83.0 | 89.2 | 91.6 | 137.1 | 136.0 | 139.1 |
| 85° | 64.7 | 49.9 | 45.6 | 47.1 | 44.8 | 46.0 | 52.6 | 104.4 | 96.6 | 56.5 | 61.2 |
| 87.5° | 16.8 | 17.1 | 11.3 | 12.1 | 12.5 | 14.8 | 16.8 | 63.5 | 30.4 | 19.9 | 21.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

0

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Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

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## Test Information

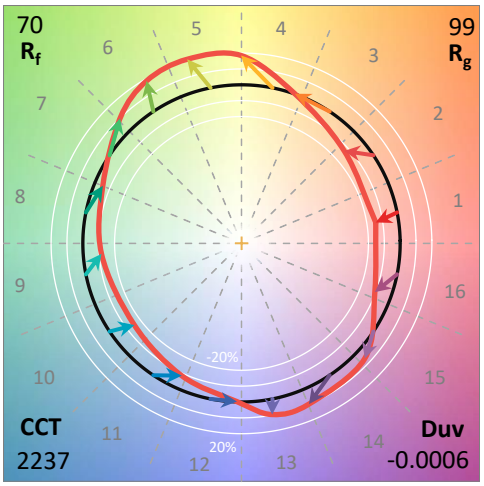
| | |
|---|---|
| Test Method: | LM-79-2008 Report |
| Number: | SP1-1908-441-10-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | **SA1C-722-U-5WQ** |
| Description: | McGRAW EDISON ROADWAY AND AREA LUMINAIRE |

***THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.***TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 2237 | CRI (Ra): | 72.0 | | |
| CIE u': | 0.2876 | R1: | 68.9 | R9: | -17.4 |
| CIE v': | 0.5346 | R2: | 83.0 | R10: | 61.3 |
| Duv: | -0.0006 | R3: | 95.2 | R11: | 59.8 |
| CIE x: | 0.5005 | R4: | 66.2 | R12: | 50.5 |
| CIE y: | 0.4134 | R5: | 65.9 | R13: | 71.1 |
| CIE z: | 0.0860 | R6: | 76.3 | R14: | 96.9 |
| Peak Wavelength (nm): | 603 | R7: | 76.7 | | |
| Dominant Wavelength (nm): | 587 | R8: | 43.8 | | |
| Purity: | 74.5 | | | | |

| | |
|---|---|
| Rf: | 69.8 |
| Rg: | 99.2 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 71M |
| Operation Time: | 12H |
| Room Temperature (°C) / RH%: | 24.7/41% |
| Sphere Temperature (°C): | 25.6 |

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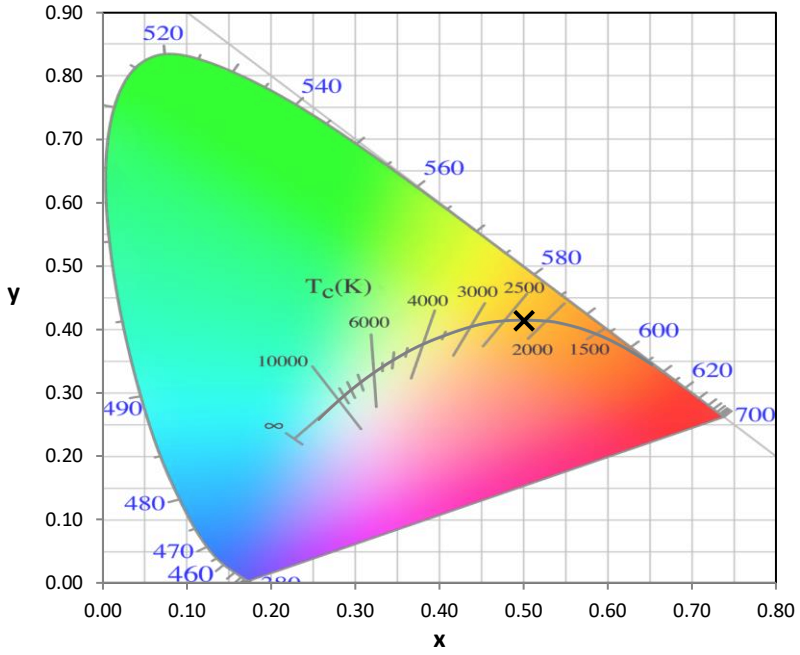
REPORT NUMBER: SP1-1908-441-10-R4

| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

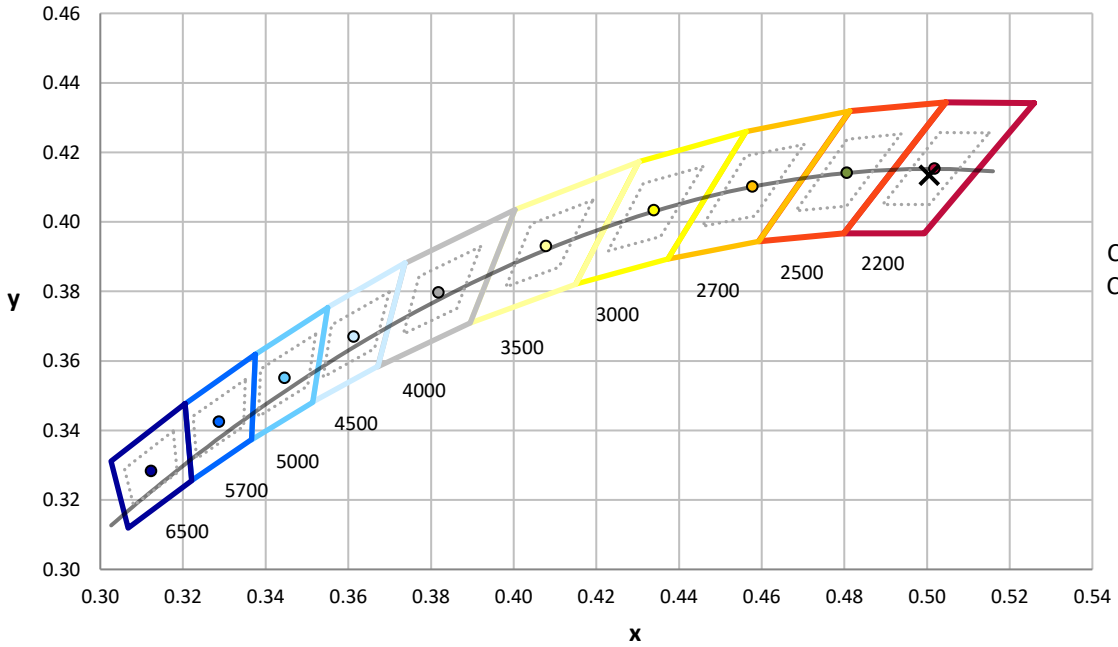
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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## CIE 1931 Chromaticity Diagram




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



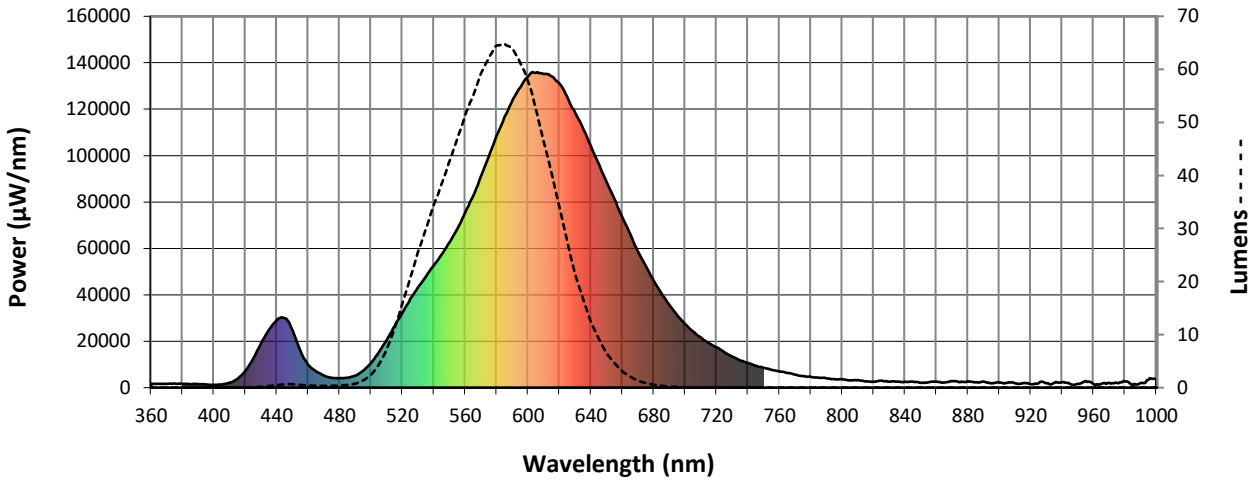

CCT = 2237K
CIE x = 0.5005
CIE y = 0.4134
Duv = -0.0006

Point lies inside the ANSI 2200K 4-step quadrangle

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## Photopic Flux vs. Wavelength



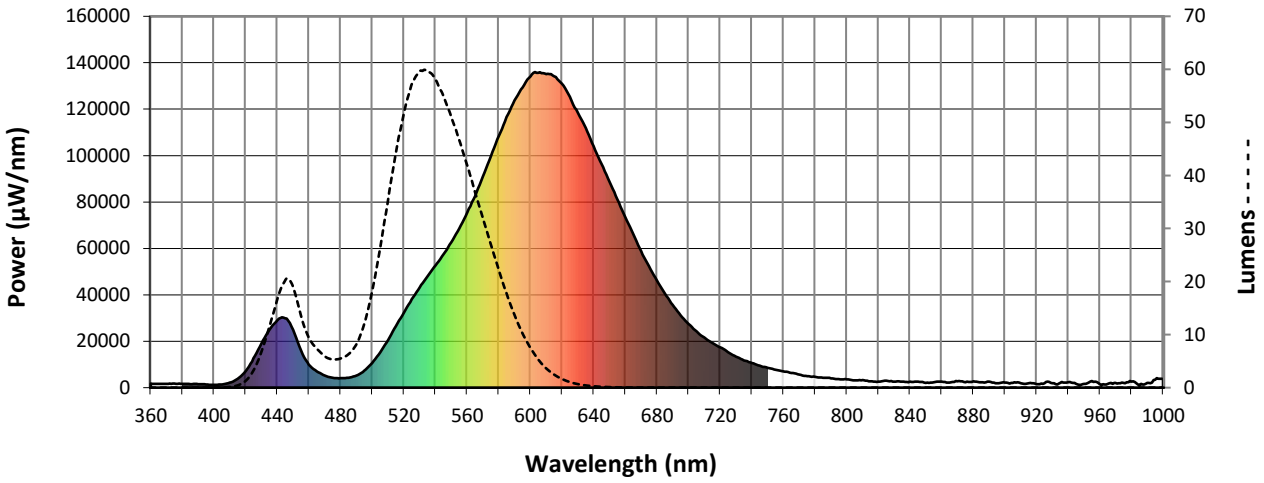

**Photopic Lumens: 5530.5**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 1768 | 0.0 | 490 | 5206 | 0.7 | 620 | 130919 | 34.1 | 750 | 8553 | 0.0 | 880 | 2713 | 0.0 |
| 365 | 1569 | 0.0 | 495 | 7286 | 1.3 | 625 | 125335 | 27.7 | 755 | 7696 | 0.0 | 885 | 2316 | 0.0 |
| 370 | 1594 | 0.0 | 500 | 10654 | 2.4 | 630 | 118388 | 21.4 | 760 | 6978 | 0.0 | 890 | 2539 | 0.0 |
| 375 | 1744 | 0.0 | 505 | 15189 | 4.2 | 635 | 111855 | 16.8 | 765 | 6377 | 0.0 | 895 | 1933 | 0.0 |
| 380 | 1659 | 0.0 | 510 | 20541 | 7.1 | 640 | 104062 | 12.4 | 770 | 5600 | 0.0 | 900 | 2216 | 0.0 |
| 385 | 1504 | 0.0 | 515 | 26492 | 11.0 | 645 | 96365 | 9.3 | 775 | 5000 | 0.0 | 905 | 2067 | 0.0 |
| 390 | 1541 | 0.0 | 520 | 32294 | 15.7 | 650 | 88651 | 6.5 | 780 | 4709 | 0.0 | 910 | 1959 | 0.0 |
| 395 | 1355 | 0.0 | 525 | 38123 | 20.5 | 655 | 81152 | 4.7 | 785 | 4305 | 0.0 | 915 | 1874 | 0.0 |
| 400 | 1243 | 0.0 | 530 | 43232 | 25.5 | 660 | 73523 | 3.1 | 790 | 4040 | 0.0 | 920 | 1484 | 0.0 |
| 405 | 1417 | 0.0 | 535 | 48012 | 29.8 | 665 | 66123 | 2.1 | 795 | 3642 | 0.0 | 925 | 1914 | 0.0 |
| 410 | 2147 | 0.0 | 540 | 52623 | 34.3 | 670 | 58677 | 1.3 | 800 | 3594 | 0.0 | 930 | 1948 | 0.0 |
| 415 | 3837 | 0.0 | 545 | 57516 | 38.3 | 675 | 52349 | 0.9 | 805 | 3190 | 0.0 | 935 | 2079 | 0.0 |
| 420 | 7159 | 0.0 | 550 | 62613 | 42.5 | 680 | 46159 | 0.5 | 810 | 3241 | 0.0 | 940 | 2263 | 0.0 |
| 425 | 12599 | 0.1 | 555 | 68554 | 46.8 | 685 | 40525 | 0.3 | 815 | 2732 | 0.0 | 945 | 1688 | 0.0 |
| 430 | 19019 | 0.2 | 560 | 75325 | 51.2 | 690 | 35615 | 0.2 | 820 | 2612 | 0.0 | 950 | 1560 | 0.0 |
| 435 | 24875 | 0.3 | 565 | 82533 | 54.9 | 695 | 31158 | 0.1 | 825 | 2966 | 0.0 | 955 | 2826 | 0.0 |
| 440 | 29103 | 0.5 | 570 | 90909 | 59.1 | 700 | 27409 | 0.1 | 830 | 2574 | 0.0 | 960 | 1477 | 0.0 |
| 445 | 29901 | 0.6 | 575 | 99621 | 62.0 | 705 | 24204 | 0.1 | 835 | 2633 | 0.0 | 965 | 1568 | 0.0 |
| 450 | 24862 | 0.6 | 580 | 108484 | 64.5 | 710 | 21558 | 0.0 | 840 | 2526 | 0.0 | 970 | 2030 | 0.0 |
| 455 | 15942 | 0.5 | 585 | 116679 | 64.8 | 715 | 19222 | 0.0 | 845 | 2631 | 0.0 | 975 | 1986 | 0.0 |
| 460 | 9916 | 0.4 | 590 | 123752 | 64.0 | 720 | 17310 | 0.0 | 850 | 2079 | 0.0 | 980 | 2540 | 0.0 |
| 465 | 7051 | 0.4 | 595 | 129324 | 61.3 | 725 | 15280 | 0.0 | 855 | 2309 | 0.0 | 985 | 1139 | 0.0 |
| 470 | 5227 | 0.3 | 600 | 134082 | 57.8 | 730 | 13282 | 0.0 | 860 | 2528 | 0.0 | 990 | 2018 | 0.0 |
| 475 | 4257 | 0.3 | 605 | 135698 | 52.6 | 735 | 11753 | 0.0 | 865 | 2121 | 0.0 | 995 | 3445 | 0.0 |
| 480 | 4052 | 0.4 | 610 | 135144 | 46.4 | 740 | 10654 | 0.0 | 870 | 2751 | 0.0 | 1000 | 3704 | 0.0 |
| 485 | 4298 | 0.5 | 615 | 134180 | 40.5 | 745 | 9451 | 0.0 | 875 | 2317 | 0.0 | | | |

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## Scotopic Flux vs. Wavelength



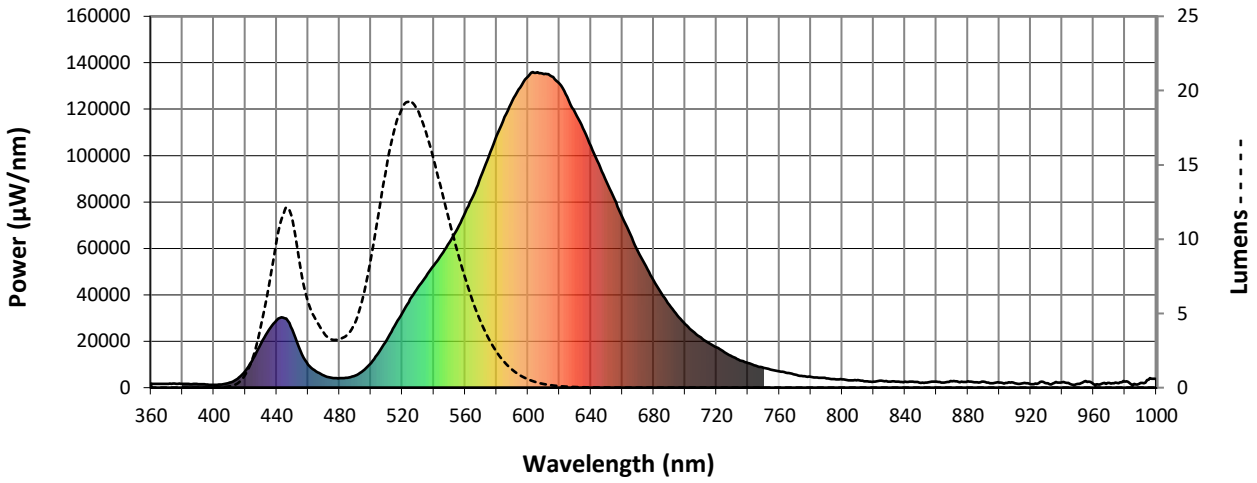

**Scotopic Lumens: 4696.9** **S/P: 0.85**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 1768 | 0.0 | 490 | 5206 | 4.3 | 620 | 130919 | 0.1 | 750 | 8553 | 0.0 | 880 | 2713 | 0.0 |
| 365 | 1569 | 0.0 | 495 | 7286 | 6.0 | 625 | 125335 | 0.1 | 755 | 7696 | 0.0 | 885 | 2316 | 0.0 |
| 370 | 1594 | 0.0 | 500 | 10654 | 8.6 | 630 | 118388 | 0.0 | 760 | 6978 | 0.0 | 890 | 2539 | 0.0 |
| 375 | 1744 | 0.0 | 505 | 15189 | 11.7 | 635 | 111855 | 0.0 | 765 | 6377 | 0.0 | 895 | 1933 | 0.0 |
| 380 | 1659 | 0.0 | 510 | 20541 | 14.7 | 640 | 104062 | 0.0 | 770 | 5600 | 0.0 | 900 | 2216 | 0.0 |
| 385 | 1504 | 0.0 | 515 | 26492 | 17.3 | 645 | 96365 | 0.0 | 775 | 5000 | 0.0 | 905 | 2067 | 0.0 |
| 390 | 1541 | 0.0 | 520 | 32294 | 18.8 | 650 | 88651 | 0.0 | 780 | 4709 | 0.0 | 910 | 1959 | 0.0 |
| 395 | 1355 | 0.0 | 525 | 38123 | 19.3 | 655 | 81152 | 0.0 | 785 | 4305 | 0.0 | 915 | 1874 | 0.0 |
| 400 | 1243 | 0.0 | 530 | 43232 | 18.7 | 660 | 73523 | 0.0 | 790 | 4040 | 0.0 | 920 | 1484 | 0.0 |
| 405 | 1417 | 0.0 | 535 | 48012 | 17.3 | 665 | 66123 | 0.0 | 795 | 3642 | 0.0 | 925 | 1914 | 0.0 |
| 410 | 2147 | 0.1 | 540 | 52623 | 15.4 | 670 | 58677 | 0.0 | 800 | 3594 | 0.0 | 930 | 1948 | 0.0 |
| 415 | 3837 | 0.3 | 545 | 57516 | 13.4 | 675 | 52349 | 0.0 | 805 | 3190 | 0.0 | 935 | 2079 | 0.0 |
| 420 | 7159 | 0.8 | 550 | 62613 | 11.2 | 680 | 46159 | 0.0 | 810 | 3241 | 0.0 | 940 | 2263 | 0.0 |
| 425 | 12599 | 2.0 | 555 | 68554 | 9.2 | 685 | 40525 | 0.0 | 815 | 2732 | 0.0 | 945 | 1688 | 0.0 |
| 430 | 19019 | 4.0 | 560 | 75325 | 7.4 | 690 | 35615 | 0.0 | 820 | 2612 | 0.0 | 950 | 1560 | 0.0 |
| 435 | 24875 | 6.6 | 565 | 82533 | 5.8 | 695 | 31158 | 0.0 | 825 | 2966 | 0.0 | 955 | 2826 | 0.0 |
| 440 | 29103 | 9.7 | 570 | 90909 | 4.4 | 700 | 27409 | 0.0 | 830 | 2574 | 0.0 | 960 | 1477 | 0.0 |
| 445 | 29901 | 11.8 | 575 | 99621 | 3.3 | 705 | 24204 | 0.0 | 835 | 2633 | 0.0 | 965 | 1568 | 0.0 |
| 450 | 24862 | 11.5 | 580 | 108484 | 2.4 | 710 | 21558 | 0.0 | 840 | 2526 | 0.0 | 970 | 2030 | 0.0 |
| 455 | 15942 | 8.4 | 585 | 116679 | 1.7 | 715 | 19222 | 0.0 | 845 | 2631 | 0.0 | 975 | 1986 | 0.0 |
| 460 | 9916 | 5.8 | 590 | 123752 | 1.2 | 720 | 17310 | 0.0 | 850 | 2079 | 0.0 | 980 | 2540 | 0.0 |
| 465 | 7051 | 4.6 | 595 | 129324 | 0.8 | 725 | 15280 | 0.0 | 855 | 2309 | 0.0 | 985 | 1139 | 0.0 |
| 470 | 5227 | 3.7 | 600 | 134082 | 0.6 | 730 | 13282 | 0.0 | 860 | 2528 | 0.0 | 990 | 2018 | 0.0 |
| 475 | 4257 | 3.3 | 605 | 135698 | 0.4 | 735 | 11753 | 0.0 | 865 | 2121 | 0.0 | 995 | 3445 | 0.0 |
| 480 | 4052 | 3.3 | 610 | 135144 | 0.2 | 740 | 10654 | 0.0 | 870 | 2751 | 0.0 | 1000 | 3704 | 0.0 |
| 485 | 4298 | 3.5 | 615 | 134180 | 0.2 | 745 | 9451 | 0.0 | 875 | 2317 | 0.0 | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: 1470.8** **M/P: 0.27**

| λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) | λ (nm) | Power (µW/nm) | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 1768 | 0.0 | 490 | 5206 | 8.0 | 620 | 130919 | 1.6 | 750 | 8553 | 0.0 | 880 | 2713 | 0.0 |
| 365 | 1569 | 0.0 | 495 | 7286 | 11.8 | 625 | 125335 | 1.1 | 755 | 7696 | 0.0 | 885 | 2316 | 0.0 |
| 370 | 1594 | 0.0 | 500 | 10654 | 17.8 | 630 | 118388 | 0.7 | 760 | 6978 | 0.0 | 890 | 2539 | 0.0 |
| 375 | 1744 | 0.0 | 505 | 15189 | 25.8 | 635 | 111855 | 0.4 | 765 | 6377 | 0.0 | 895 | 1933 | 0.0 |
| 380 | 1659 | 0.0 | 510 | 20541 | 34.8 | 640 | 104062 | 0.3 | 770 | 5600 | 0.0 | 900 | 2216 | 0.0 |
| 385 | 1504 | 0.0 | 515 | 26492 | 43.9 | 645 | 96365 | 0.2 | 775 | 5000 | 0.0 | 905 | 2067 | 0.0 |
| 390 | 1541 | 0.0 | 520 | 32294 | 51.3 | 650 | 88651 | 0.1 | 780 | 4709 | 0.0 | 910 | 1959 | 0.0 |
| 395 | 1355 | 0.0 | 525 | 38123 | 57.0 | 655 | 81152 | 0.1 | 785 | 4305 | 0.0 | 915 | 1874 | 0.0 |
| 400 | 1243 | 0.0 | 530 | 43232 | 59.6 | 660 | 73523 | 0.0 | 790 | 4040 | 0.0 | 920 | 1484 | 0.0 |
| 405 | 1417 | 0.0 | 535 | 48012 | 59.8 | 665 | 66123 | 0.0 | 795 | 3642 | 0.0 | 925 | 1914 | 0.0 |
| 410 | 2147 | 0.1 | 540 | 52623 | 58.1 | 670 | 58677 | 0.0 | 800 | 3594 | 0.0 | 930 | 1948 | 0.0 |
| 415 | 3837 | 0.4 | 545 | 57516 | 55.1 | 675 | 52349 | 0.0 | 805 | 3190 | 0.0 | 935 | 2079 | 0.0 |
| 420 | 7159 | 1.2 | 550 | 62613 | 51.2 | 680 | 46159 | 0.0 | 810 | 3241 | 0.0 | 940 | 2263 | 0.0 |
| 425 | 12599 | 3.1 | 555 | 68554 | 46.9 | 685 | 40525 | 0.0 | 815 | 2732 | 0.0 | 945 | 1688 | 0.0 |
| 430 | 19019 | 6.5 | 560 | 75325 | 42.1 | 690 | 35615 | 0.0 | 820 | 2612 | 0.0 | 950 | 1560 | 0.0 |
| 435 | 24875 | 11.1 | 565 | 82533 | 37.0 | 695 | 31158 | 0.0 | 825 | 2966 | 0.0 | 955 | 2826 | 0.0 |
| 440 | 29103 | 16.3 | 570 | 90909 | 32.1 | 700 | 27409 | 0.0 | 830 | 2574 | 0.0 | 960 | 1477 | 0.0 |
| 445 | 29901 | 20.0 | 575 | 99621 | 27.1 | 705 | 24204 | 0.0 | 835 | 2633 | 0.0 | 965 | 1568 | 0.0 |
| 450 | 24862 | 19.3 | 580 | 108484 | 22.4 | 710 | 21558 | 0.0 | 840 | 2526 | 0.0 | 970 | 2030 | 0.0 |
| 455 | 15942 | 13.9 | 585 | 116679 | 17.8 | 715 | 19222 | 0.0 | 845 | 2631 | 0.0 | 975 | 1986 | 0.0 |
| 460 | 9916 | 9.6 | 590 | 123752 | 13.8 | 720 | 17310 | 0.0 | 850 | 2079 | 0.0 | 980 | 2540 | 0.0 |
| 465 | 7051 | 7.4 | 595 | 129324 | 10.3 | 725 | 15280 | 0.0 | 855 | 2309 | 0.0 | 985 | 1139 | 0.0 |
| 470 | 5227 | 6.0 | 600 | 134082 | 7.6 | 730 | 13282 | 0.0 | 860 | 2528 | 0.0 | 990 | 2018 | 0.0 |
| 475 | 4257 | 5.3 | 605 | 135698 | 5.3 | 735 | 11753 | 0.0 | 865 | 2121 | 0.0 | 995 | 3445 | 0.0 |
| 480 | 4052 | 5.5 | 610 | 135144 | 3.7 | 740 | 10654 | 0.0 | 870 | 2751 | 0.0 | 1000 | 3704 | 0.0 |
| 485 | 4298 | 6.2 | 615 | 134180 | 2.5 | 745 | 9451 | 0.0 | 875 | 2317 | 0.0 | | | |

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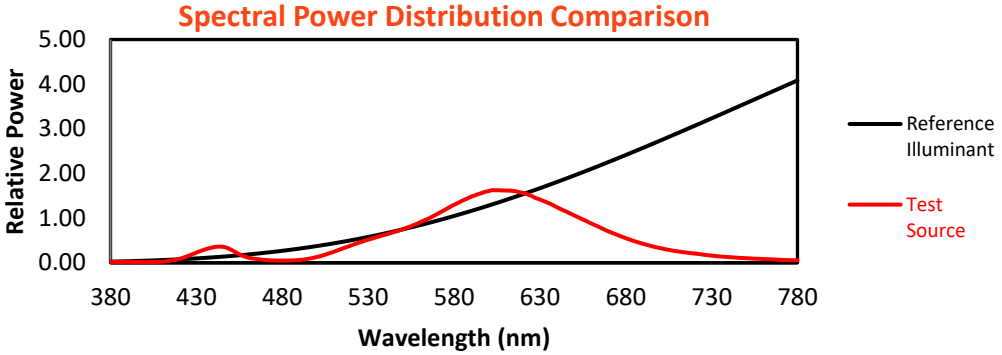
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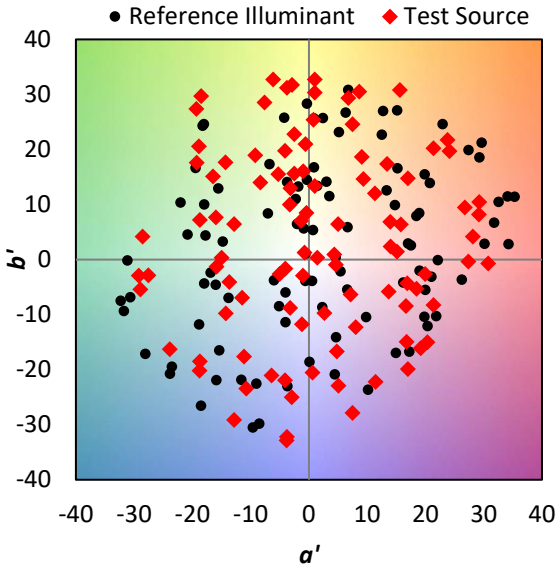
## Summary

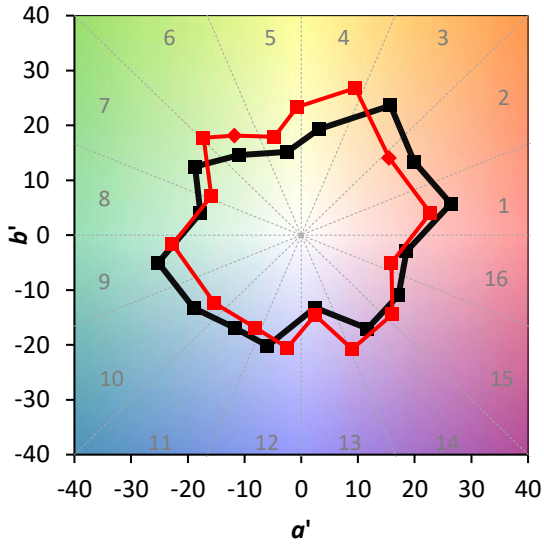
$R_f$ = 69.8
$R_g$ = 99.2
CIE $R_a$ = 72.0
$R_9$ = -17.4

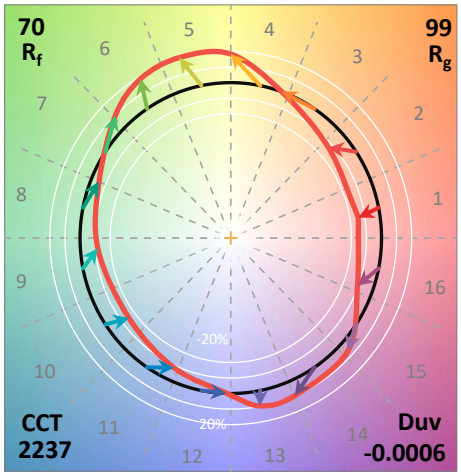
## Spectral Power Distribution Comparison

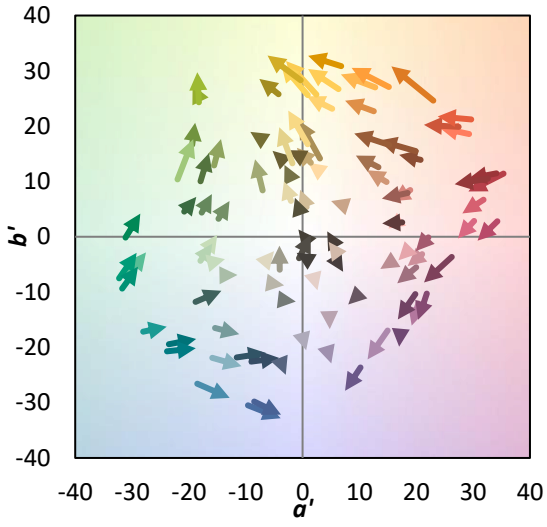



## Color Vector Graphics



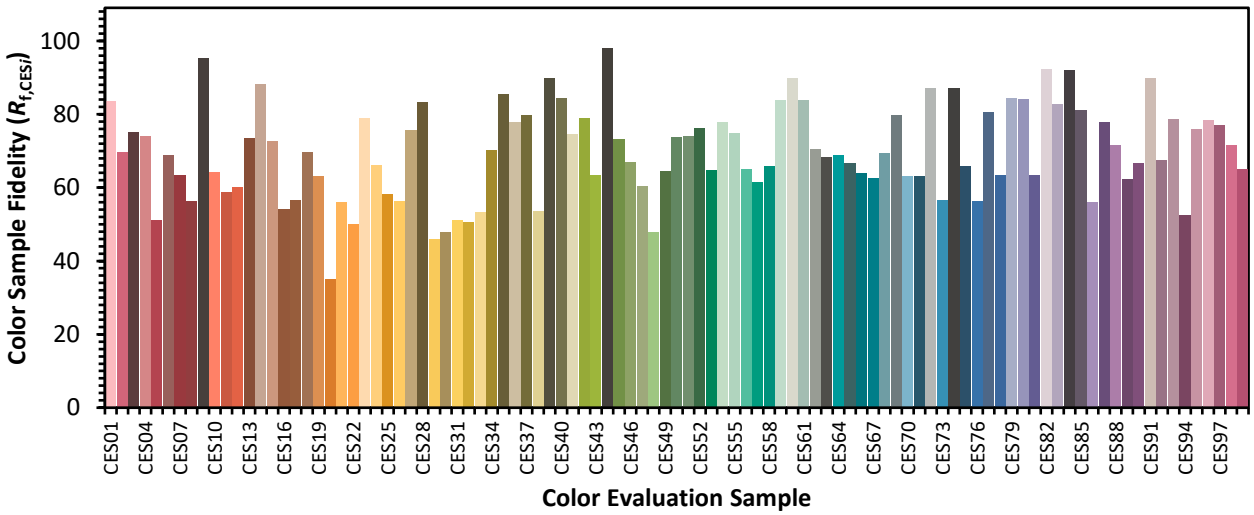
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Peachtree City, GA 30269

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

| | | | |
|---|---|---|---|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |

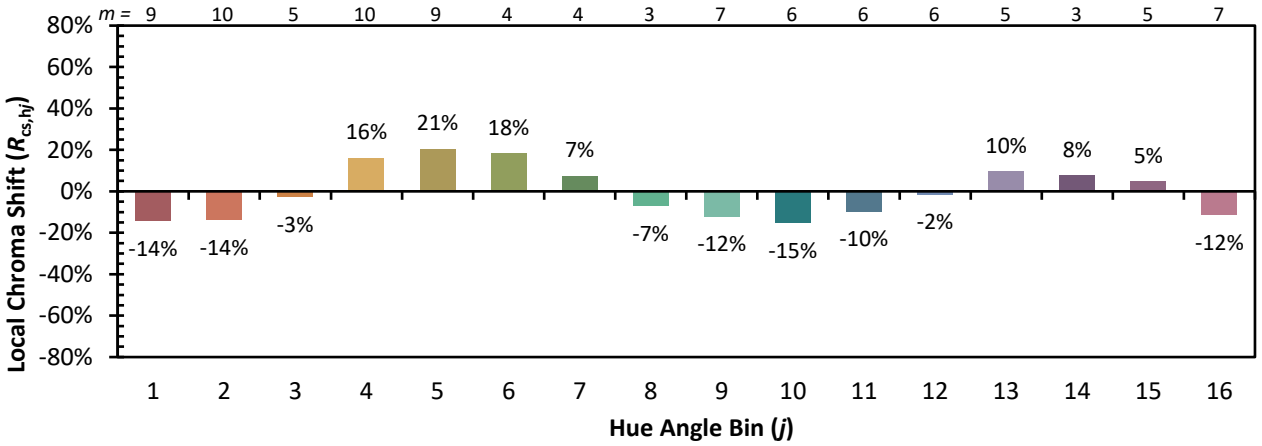


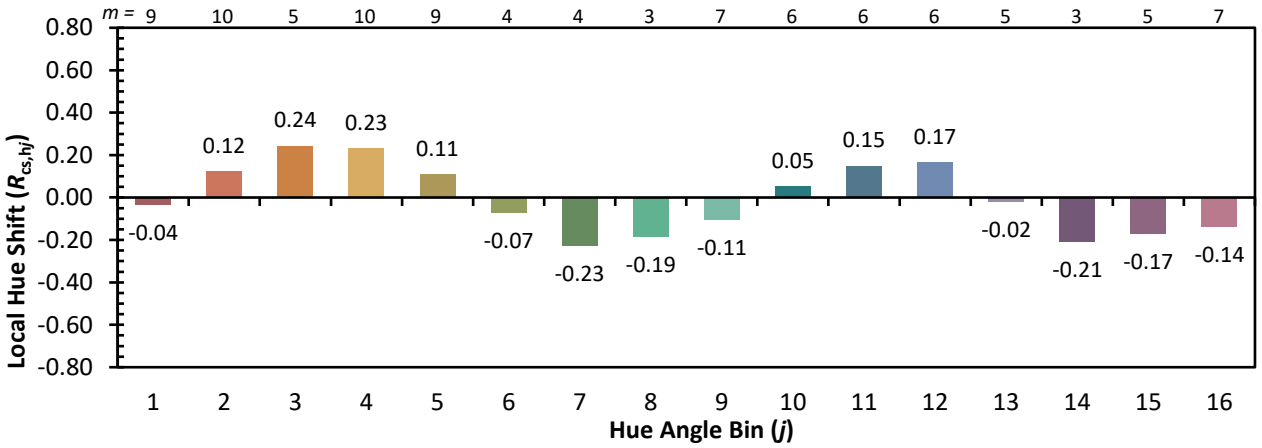
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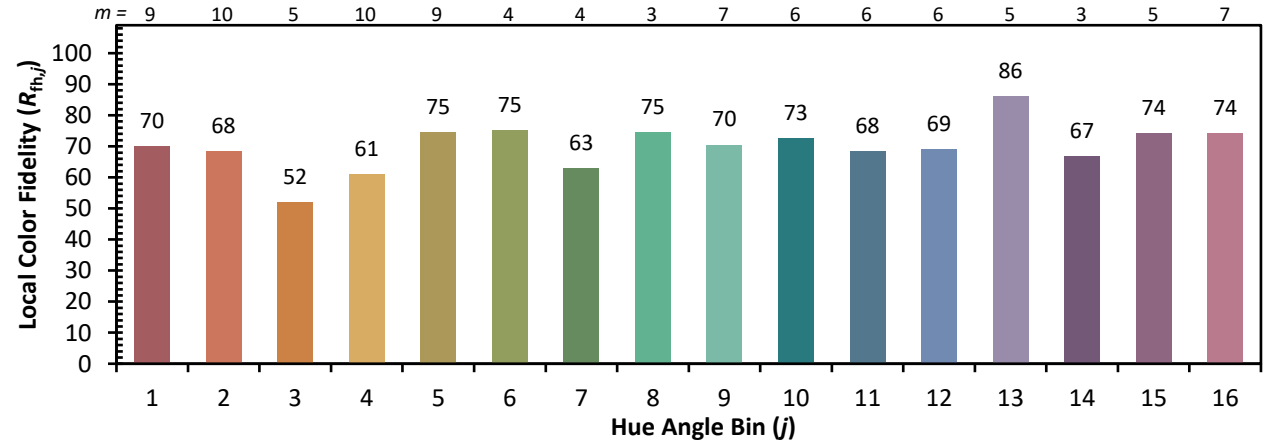
REPORT NUMBER: SP1-1908-441-10-R4

## TM-30-18

### Color Rendition by Hue-Angle Bin



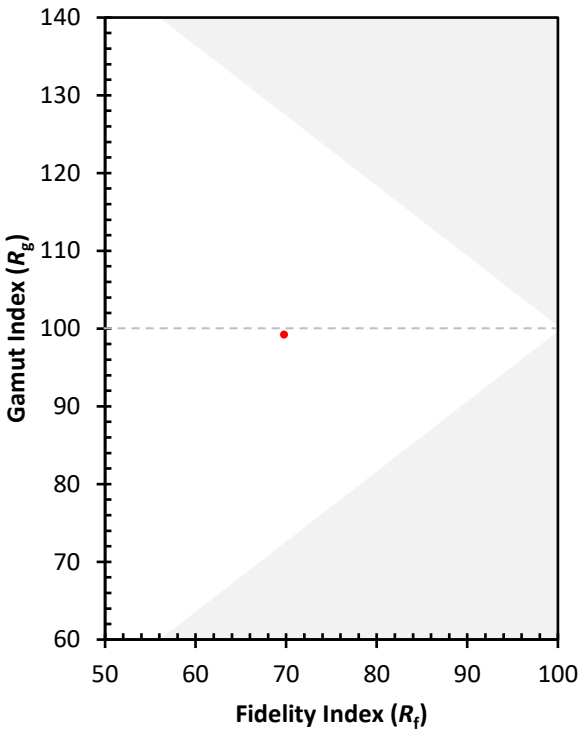



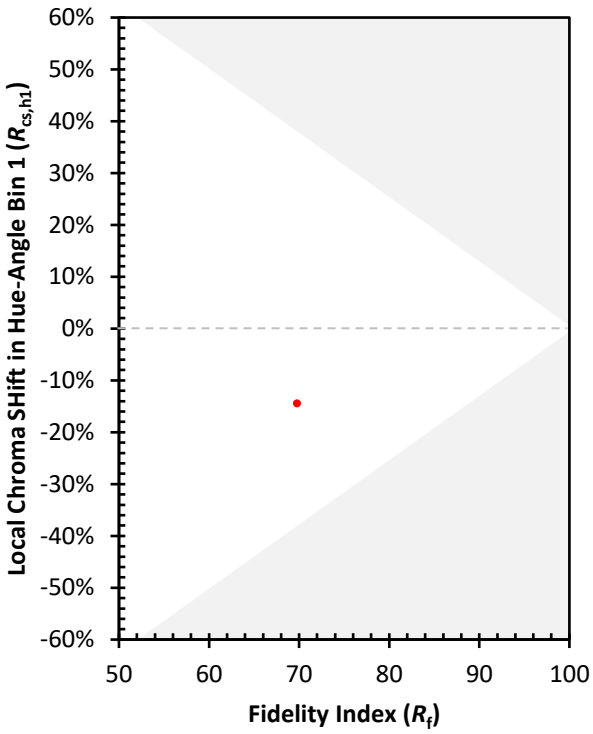
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### Measure Comparisons




(END OF REPORT)