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: P1202558

Luminaire Tested: GWC-SB2A-722-U-SL2-HSS

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: | P1202558 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-289-11) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/14/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWC-SB2A-722-U-SL2-HSS |
| Description: | GALLEON WALL LUMINAIRE |
| | (2) 70 CRI, 2200K, 350mA LIGHTSQUARES WITH 26 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6005 lumens |
| Efficiency: | N/A |
| Efficacy: | 104.8 lumens/watt |
| Luminous Opening: | Rectangular (W 1' x L: 0.5' x H: 0') |
| IES Classification: | Type II - 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 |

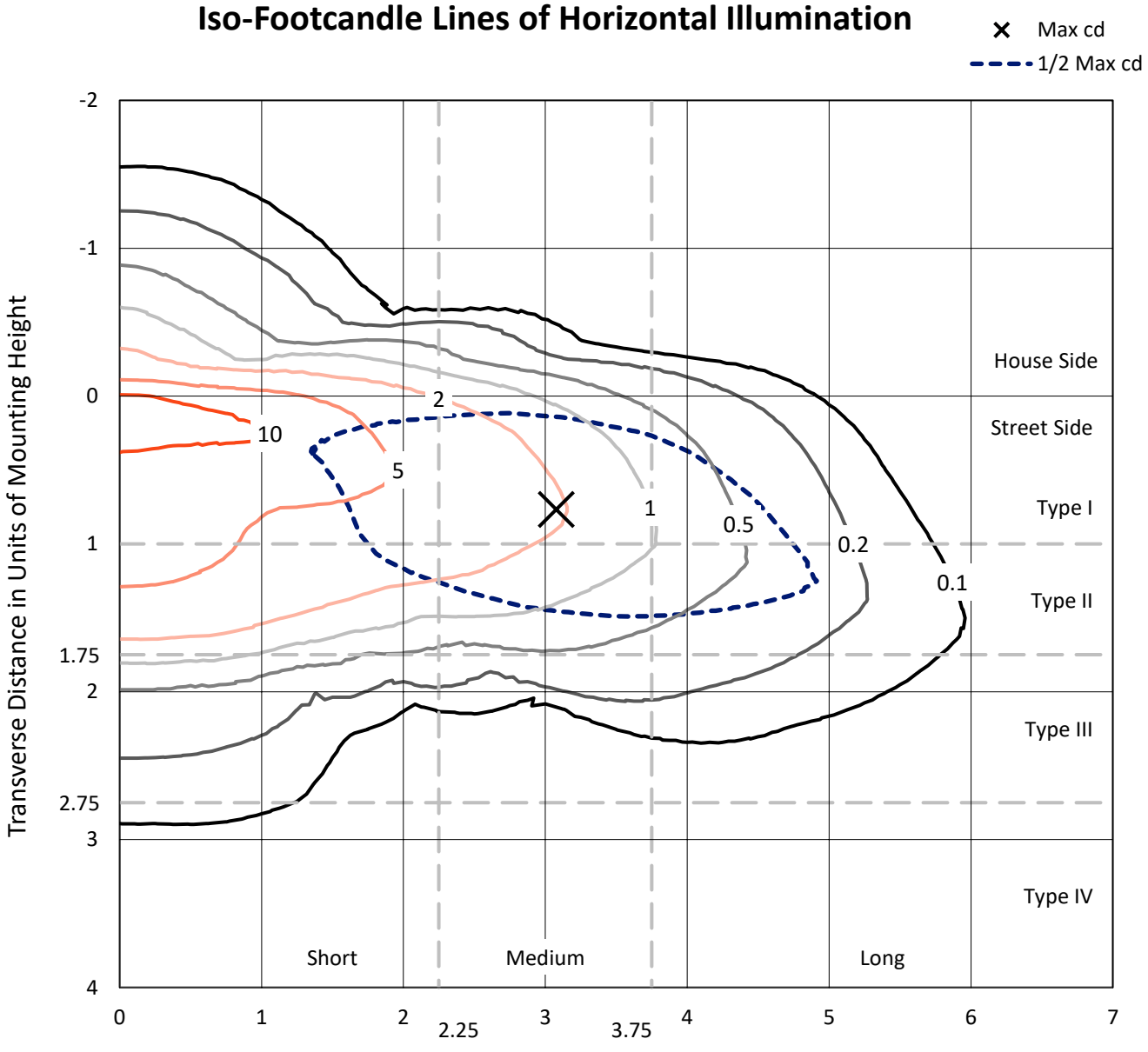


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REPORT NUMBER: P1202558
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## Iso-Footcandle Lines of Horizontal Illumination



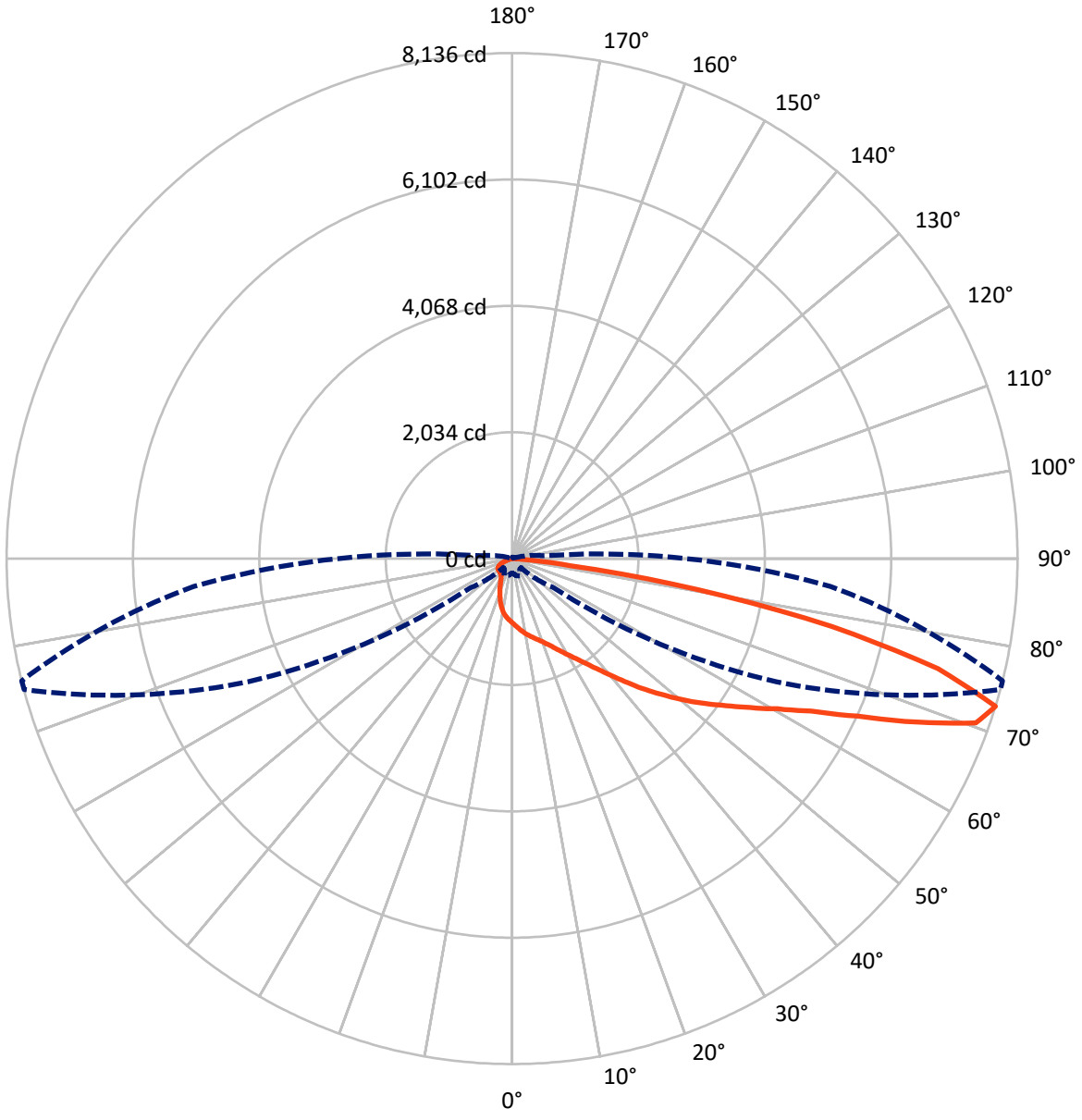

Based on 10 foot mounting height. Maximum calculated value = 13.7 fc
Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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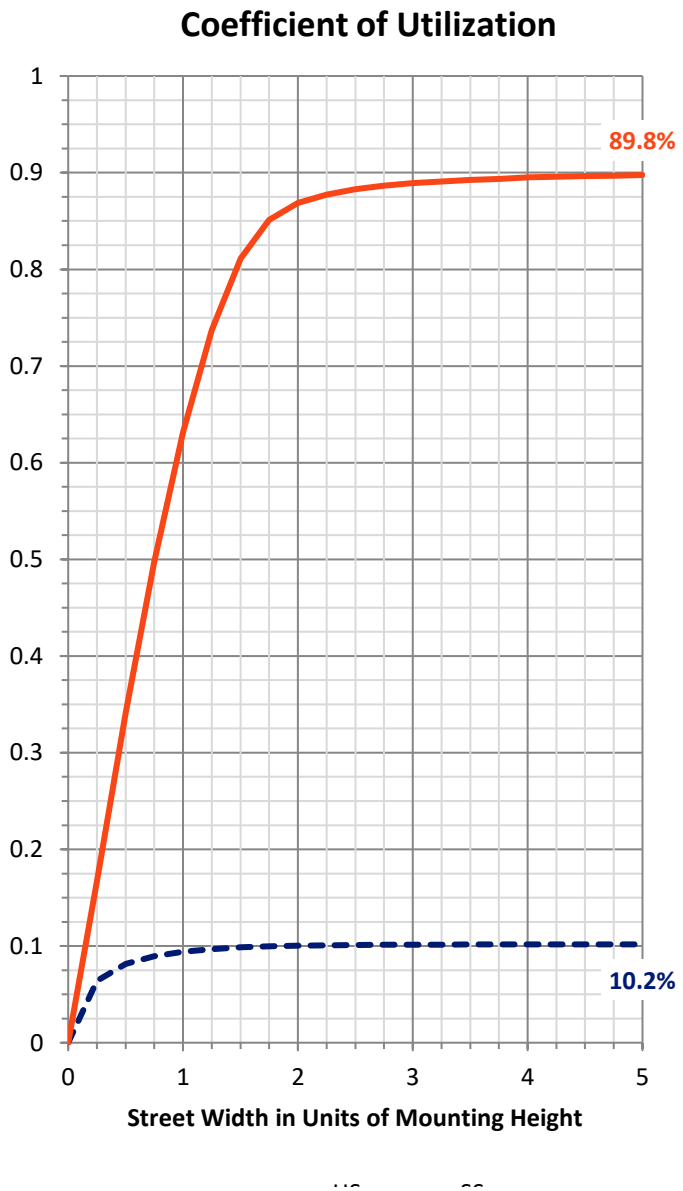
REPORT NUMBER: P1202558
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**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 614.6 | 0.0 | 614.6 |
| | % Fixture | 10.2 | 0.0 | 10.2 |
| **Street Side** | Lumens | 5390.4 | 0.0 | 5390.4 |
| | % Fixture | 89.8 | 0.0 | 89.8 |
| **Total** | Lumens | 6005.0 | 0.0 | 6005.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 94.4 | 1.6 |
| 10°-20° | 253.1 | 4.2 |
| 20°-30° | 400.5 | 6.7 |
| 30°-40° | 619.7 | 10.3 |
| 40°-50° | 941.2 | 15.7 |
| 50°-60° | 1297.5 | 21.6 |
| 60°-70° | 1370.8 | 22.8 |
| 70°-80° | 940.4 | 15.7 |
| 80°-90° | 87.5 | 1.5 |
| 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° | 6005.0 | 100.0 |
| 0°-180° | 6005.0 | 100.0 |



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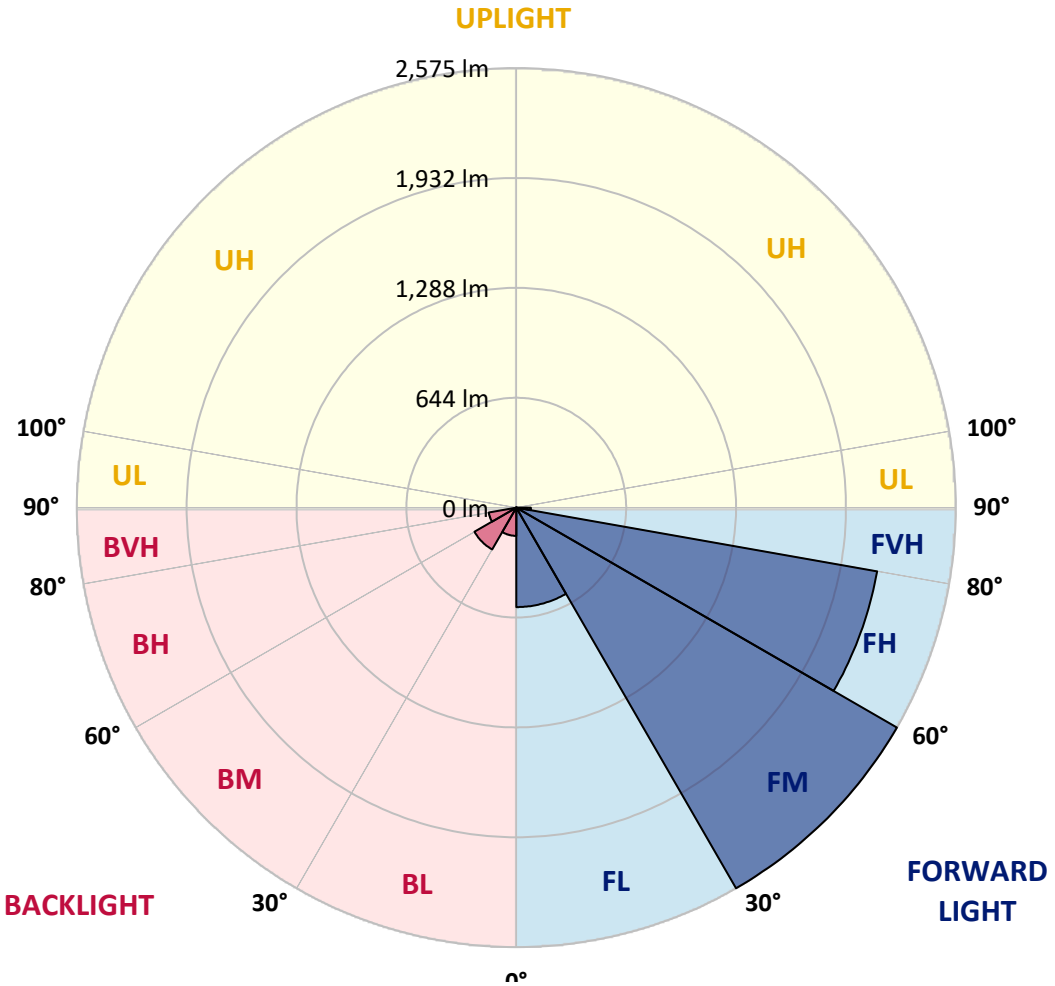
Scaled Data Report

REPORT NUMBER: P1202558
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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°) | 582.8 | 9.7 | | | |
| FM | (30°-60°) | 2575.4 | 42.9 | | | |
| FH | (60°-80°) | 2147.0 | 35.8 | | | G2/5000 |
| FVH | (80°-90°) | 85.2 | 1.4 | | | G1/100 |
| BL | (0°-30°) | 165.2 | 2.8 | B1/500 | | |
| BM | (30°-60°) | 283.0 | 4.7 | B1/1000 | | |
| BH | (60°-80°) | 164.1 | 2.7 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 2.4 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | *1037.7* | 1037.7 |
| 2.5° | 1206.4 | 1190.4 | 1193.5 | 1177.6 | 1170.2 | 1152.2 | 1133.5 | 1109.0 | 1081.7 | *1081.7* | 1055.2 |
| 5° | 1333.4 | 1323.2 | 1323.2 | 1304.5 | 1290.1 | 1262.1 | 1228.6 | 1185.3 | 1133.9 | *1128.9* | 1078.6 |
| 7.5° | 1411.3 | 1405.0 | 1408.9 | 1398.0 | 1386.3 | 1357.1 | 1317.4 | 1260.9 | 1188.1 | *1181.8* | 1106.3 |
| 10° | 1426.5 | 1426.1 | 1437.0 | 1440.1 | 1447.9 | 1433.1 | 1397.6 | 1332.6 | 1241.4 | *1232.5* | 1130.0 |
| 12.5° | 1367.7 | 1360.2 | 1387.1 | 1418.7 | 1463.1 | 1483.0 | 1464.6 | 1398.0 | 1290.1 | *1277.7* | 1152.2 |
| 15° | 1271.0 | 1272.6 | 1298.3 | 1347.0 | 1421.0 | 1491.9 | 1515.7 | 1461.9 | 1339.6 | *1324.8* | 1173.3 |
| 17.5° | 1215.7 | 1209.9 | 1232.1 | 1275.7 | 1357.5 | 1457.6 | 1539.4 | 1521.5 | 1392.2 | *1375.4* | 1194.7 |
| 20° | 1209.1 | 1208.7 | 1213.8 | 1233.7 | 1296.0 | 1408.6 | 1536.7 | 1579.6 | 1454.1 | *1434.7* | 1225.5 |
| 22.5° | 1255.1 | 1254.3 | 1250.0 | 1246.1 | 1263.3 | 1360.6 | 1525.0 | 1634.9 | 1528.1 | *1507.1* | 1269.1 |
| 25° | 1325.6 | 1324.4 | 1317.8 | 1294.0 | 1277.3 | 1334.9 | 1514.1 | 1686.3 | 1615.8 | *1592.4* | 1322.1 |
| 27.5° | 1411.7 | 1410.9 | 1398.8 | 1363.0 | 1319.7 | 1337.3 | 1508.7 | 1739.3 | 1717.1 | *1694.1* | 1383.2 |
| 30° | 1517.2 | 1515.7 | 1490.7 | 1440.1 | 1383.6 | 1374.3 | 1516.1 | 1798.9 | 1822.6 | *1805.1* | 1453.7 |
| 32.5° | 1649.7 | 1645.4 | 1612.7 | 1536.3 | 1457.2 | 1423.7 | 1530.1 | 1860.0 | 1947.7 | *1931.3* | 1548.0 |
| 35° | 1752.1 | 1745.5 | 1726.4 | 1659.0 | 1542.6 | 1484.5 | 1562.8 | 1932.5 | 2098.0 | *2083.6* | 1668.4 |
| 37.5° | 1840.2 | 1833.5 | 1818.0 | 1762.6 | 1664.9 | 1562.0 | 1615.4 | 2029.1 | 2275.7 | *2268.6* | 1815.2 |
| 40° | 1935.2 | 1924.3 | 1916.9 | 1857.7 | 1769.3 | 1673.8 | 1690.6 | 2142.0 | 2480.2 | *2480.9* | 1991.7 |
| 42.5° | 2008.4 | 2004.1 | 2004.9 | 1959.4 | 1870.1 | 1806.3 | 1790.3 | 2269.4 | 2725.2 | *2732.6* | 2204.0 |
| 45° | 2071.1 | 2067.6 | 2082.1 | 2050.1 | 1971.8 | 1893.1 | 1907.2 | 2413.5 | 2993.2 | *3008.4* | 2441.6 |
| 47.5° | 2119.4 | 2123.3 | 2144.0 | 2123.3 | 2077.4 | 1954.3 | 2010.8 | 2569.0 | 3274.8 | *3276.8* | 2687.0 |
| 50° | 2167.8 | 2169.3 | 2203.6 | 2193.5 | 2174.8 | 2031.8 | 2106.2 | 2742.7 | 3571.6 | *3575.1* | 2916.4 |
| 52.5° | 2182.9 | 2180.6 | 2235.1 | 2260.1 | 2260.9 | 2127.6 | 2229.7 | 2932.0 | 3862.6 | *3873.9* | 3152.5 |
| 55° | 2105.0 | 2111.7 | 2199.7 | 2301.0 | 2341.1 | 2260.1 | 2396.4 | 3171.6 | 4172.7 | *4177.4* | 3386.2 |
| 57.5° | 1724.1 | 1760.7 | 1955.5 | 2190.3 | 2392.9 | 2449.8 | 2636.0 | 3451.7 | 4530.7 | *4526.4* | 3623.0 |
| 60° | 1046.3 | 1089.9 | 1322.9 | 1837.0 | 2223.8 | 2640.3 | 2988.9 | 3885.6 | 4921.8 | *4909.7* | 3862.6 |
| 62.5° | 585.1 | 598.3 | 672.7 | 1099.7 | 1691.4 | 2519.1 | 3333.6 | 4443.0 | 5446.8 | *5405.9* | 4098.3 |
| 65° | 431.2 | 435.5 | 453.0 | 538.7 | 831.3 | 1937.5 | 3258.1 | 5109.5 | 6184.6 | *6111.8* | 4380.7 |
| 67.5° | 374.7 | 379.0 | 396.2 | 407.8 | 371.2 | 1017.9 | 2684.3 | 5479.2 | 7121.4 | *7026.0* | 4762.8 |
| 70° | 315.5 | 317.9 | 345.5 | 353.3 | 265.7 | 387.2 | 1724.5 | 5365.0 | 7988.5 | *7920.4* | 5173.0 |
| 72.5° | *235.3* | *244.6* | *284.7* | *303.4* | *213.1* | *205.7* | *811.8* | *4690.8* | *8135.4* | *8136.2* | *5145.3* |
| 75° | 159.7 | 168.3 | 214.2 | 249.7 | 164.4 | 144.1 | 327.6 | 3502.7 | 7084.0 | *7084.0* | 4510.4 |
| 77.5° | 109.1 | 116.1 | 149.2 | 195.9 | 124.7 | 98.9 | 169.8 | 2223.1 | 5082.2 | *5261.0* | 3214.8 |
| 80° | 48.3 | 52.6 | 96.2 | 142.2 | 94.7 | 63.9 | 96.2 | 1217.3 | 3073.4 | *3035.6* | 1260.1 |
| 82.5° | 23.8 | 27.3 | 61.5 | 88.8 | 61.2 | 39.3 | 50.6 | 578.8 | 996.0 | *946.6* | 196.7 |
| 85° | 4.7 | 6.2 | 33.1 | 37.8 | 28.4 | 17.5 | 19.1 | 178.0 | 120.0 | *137.1* | 41.7 |
| 87.5° | 0.0 | 0.0 | 10.1 | 7.0 | 3.1 | 3.9 | 3.9 | 16.0 | 9.3 | *10.9* | 10.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1202558
CATALOG NUMBER: GWC-SB2A-722-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 | 1037.7 |
| 2.5° | 1041.2 | 1026.8 | 995.3 | 964.1 | 932.2 | 902.9 | 882.7 | 862.4 | 850.0 | 844.5 | 845.3 |
| 5° | 1049.4 | 1020.2 | 954.0 | 884.6 | 816.1 | 749.1 | 698.8 | 651.7 | 636.9 | 612.3 | 613.9 |
| 7.5° | 1062.3 | 1014.7 | 910.3 | 793.5 | 682.1 | 583.9 | 513.0 | 456.5 | 433.9 | 412.1 | 411.7 |
| 10° | 1070.8 | 1004.6 | 852.7 | 696.5 | 545.7 | 435.5 | 367.7 | 326.8 | 312.0 | 298.8 | 298.4 |
| 12.5° | 1074.3 | 985.9 | 786.5 | 587.8 | 424.6 | 331.9 | 291.4 | 272.3 | 267.2 | 262.5 | 262.5 |
| 15° | 1077.4 | 967.6 | 712.5 | 483.0 | 335.4 | 277.7 | 261.8 | 255.5 | 252.0 | 248.9 | 248.9 |
| 17.5° | 1080.2 | 944.2 | 627.9 | 392.6 | 283.2 | 255.9 | 248.1 | 241.5 | 238.8 | 235.3 | 235.3 |
| 20° | 1089.5 | 921.6 | 552.4 | 324.1 | 254.8 | 240.3 | 231.8 | 224.8 | 222.4 | 220.1 | 220.5 |
| 22.5° | 1107.1 | 903.3 | 479.1 | 277.7 | 237.6 | 224.4 | 213.5 | 205.7 | 204.1 | 202.6 | 201.4 |
| 25° | 1128.1 | 880.7 | 410.2 | 247.7 | 220.9 | 206.1 | 194.0 | 187.4 | 185.8 | 186.2 | 185.4 |
| 27.5° | 1155.0 | 855.8 | 351.0 | 228.7 | 206.1 | 188.9 | 175.3 | 170.2 | 171.0 | 172.6 | 171.8 |
| 30° | 1184.6 | 832.8 | 304.6 | 215.4 | 192.8 | 173.7 | 160.1 | 156.6 | 159.3 | 161.7 | 160.9 |
| 32.5° | 1228.6 | 812.6 | 272.3 | 204.9 | 181.1 | 161.3 | 150.4 | 146.1 | 149.2 | 152.3 | 151.5 |
| 35° | 1288.6 | 802.4 | 254.0 | 195.9 | 171.0 | 151.5 | 140.6 | 137.5 | 140.6 | 141.4 | 141.0 |
| 37.5° | 1362.2 | 801.7 | 246.2 | 188.5 | 161.7 | 143.3 | 131.3 | 130.1 | 132.4 | 132.8 | 132.1 |
| 40° | 1457.2 | 806.7 | 240.3 | 183.1 | 151.9 | 134.0 | 122.7 | 121.5 | 122.3 | 125.0 | 124.7 |
| 42.5° | 1577.6 | 827.8 | 232.2 | 176.1 | 141.4 | 124.7 | 115.7 | 113.0 | 112.6 | 115.7 | 115.3 |
| 45° | 1728.7 | 874.1 | 221.3 | 164.8 | 132.1 | 116.9 | 107.9 | 104.8 | 103.6 | 104.4 | 105.6 |
| 47.5° | 1893.5 | 931.0 | 210.3 | 154.3 | 125.4 | 110.6 | 101.7 | 97.8 | 95.8 | 95.8 | 95.8 |
| 50° | 2053.2 | 995.3 | 202.9 | 143.3 | 120.8 | 104.8 | 95.0 | 91.2 | 88.0 | 87.3 | 86.9 |
| 52.5° | 2211.4 | 1058.4 | 197.1 | 132.4 | 115.3 | 97.4 | 88.8 | 84.5 | 81.0 | 79.5 | 78.7 |
| 55° | 2355.5 | 1118.3 | 187.0 | 121.9 | 108.3 | 89.6 | 82.6 | 78.3 | 74.0 | 71.3 | 70.1 |
| 57.5° | 2493.8 | 1168.2 | 168.3 | 111.0 | 97.4 | 82.2 | 76.0 | 71.3 | 66.2 | 62.7 | 61.2 |
| 60° | 2619.6 | 1193.9 | 144.9 | 99.3 | 86.5 | 74.4 | 68.6 | 64.3 | 57.7 | 51.8 | 50.2 |
| 62.5° | 2715.4 | 1183.8 | 119.6 | 86.1 | 75.2 | 67.4 | 60.0 | 55.7 | 47.9 | 40.9 | 38.2 |
| 65° | 2813.6 | 1128.5 | 95.4 | 72.1 | 65.8 | 58.0 | 50.2 | 46.0 | 37.0 | 29.6 | 27.7 |
| 67.5° | 2941.0 | 1010.4 | 75.2 | 60.0 | 56.9 | 46.0 | 39.3 | 36.6 | 30.4 | 23.4 | 21.8 |
| 70° | 3022.8 | 784.9 | 58.4 | 48.7 | 46.7 | 33.5 | 30.4 | 30.0 | 24.2 | 17.9 | 16.0 |
| 72.5° | *2798.4* | *514.6* | *44.8* | *37.0* | *33.5* | *21.8* | *23.4* | *23.4* | *17.5* | *12.1* | *10.5* |
| 75° | 2336.0 | 301.1 | 32.3 | 26.5 | 19.1 | 14.0 | 16.0 | 16.0 | 10.9 | 5.8 | 4.7 |
| 77.5° | 1668.4 | 160.5 | 21.4 | 16.4 | 9.7 | 6.2 | 8.6 | 8.2 | 3.5 | 0.4 | 0.0 |
| 80° | 638.1 | 55.3 | 10.1 | 6.6 | 2.7 | 1.2 | 0.8 | 0.4 | 0.4 | 0.0 | 0.0 |
| 82.5° | 97.4 | 14.4 | 1.9 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 17.5 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

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Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

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## Test Information

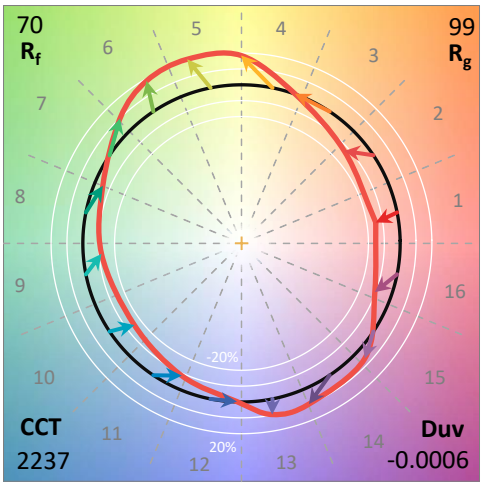
| | |
|---|---|
| Test Method: | LM-79-2008 Report |
| Number: | SP1-1908-441-10-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| 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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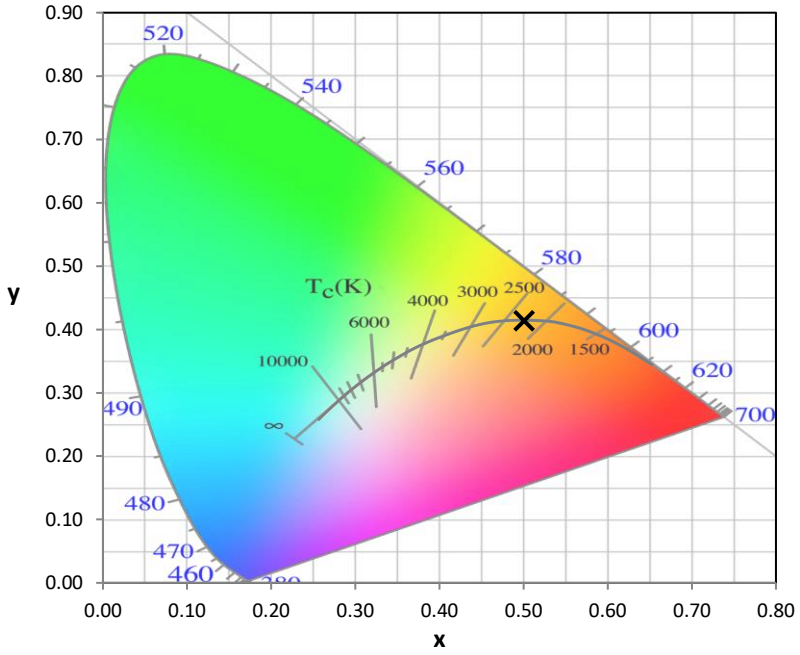
REPORT NUMBER: SP1-1908-441-10-R4

| 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 |

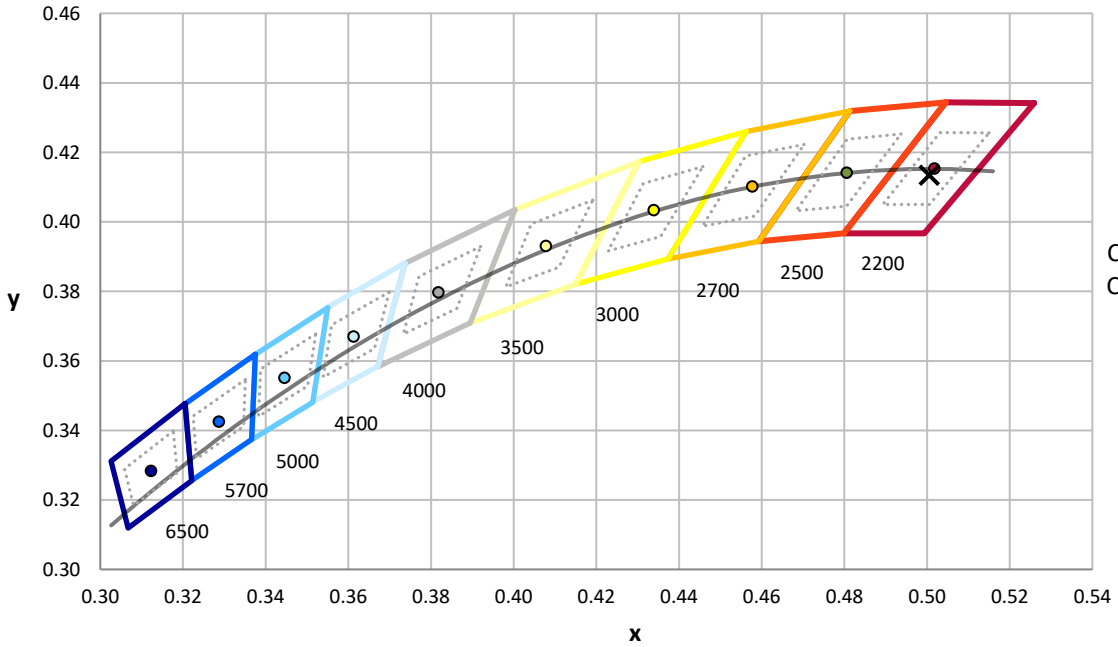
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

## CIE 1931 Chromaticity Diagram




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



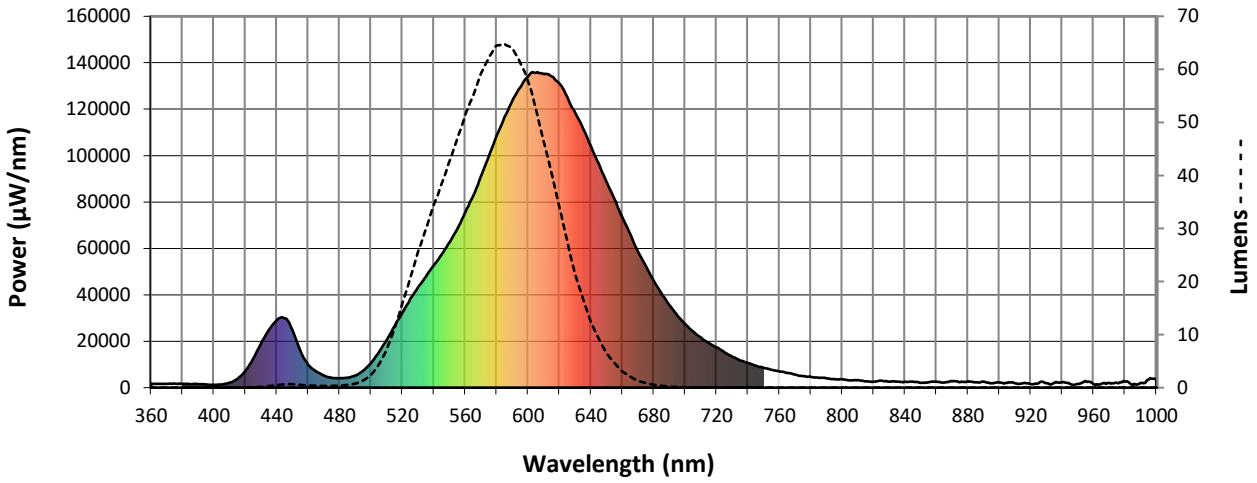

CCT = 2237K
CIE x = 0.5005
CIE y = 0.4134
Duv = -0.0006

Point lies inside the ANSI 2200K 4-step quadrangle

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## Photopic Flux vs. Wavelength



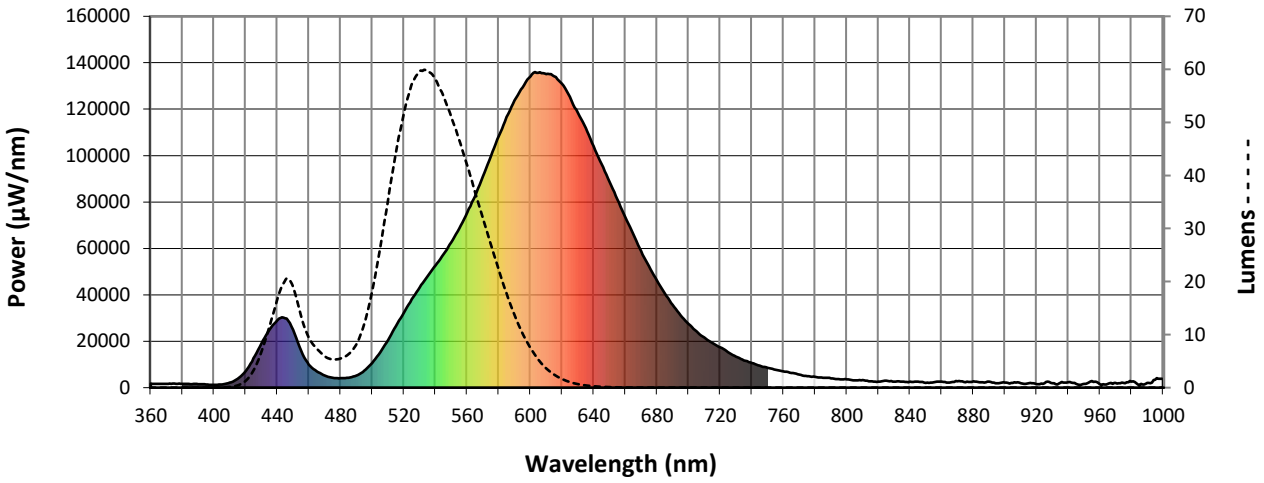

**Photopic Lumens: 5530.5**

| 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



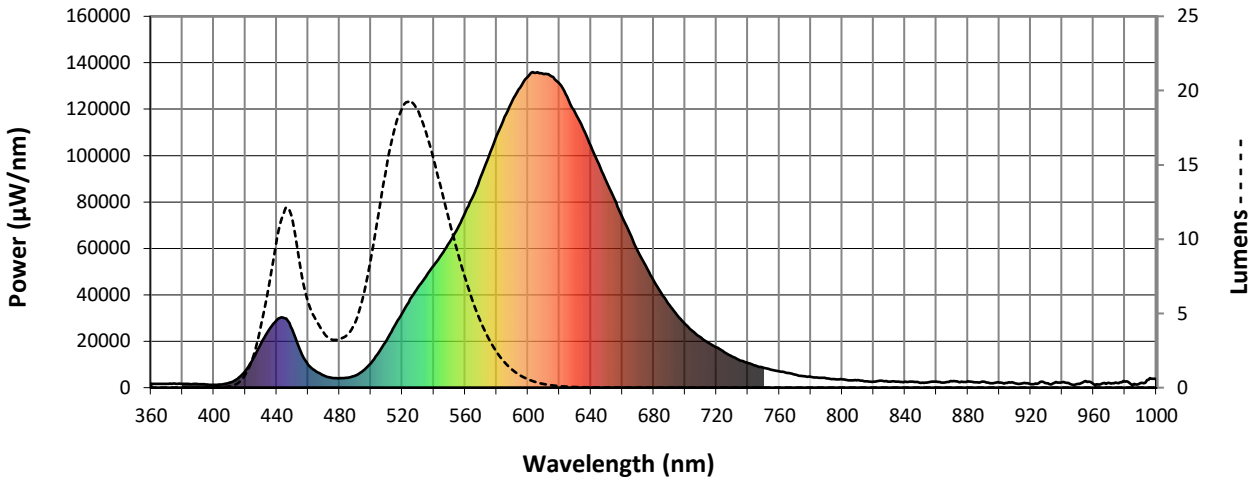

**Scotopic Lumens: 4696.9** **S/P: 0.85**

| 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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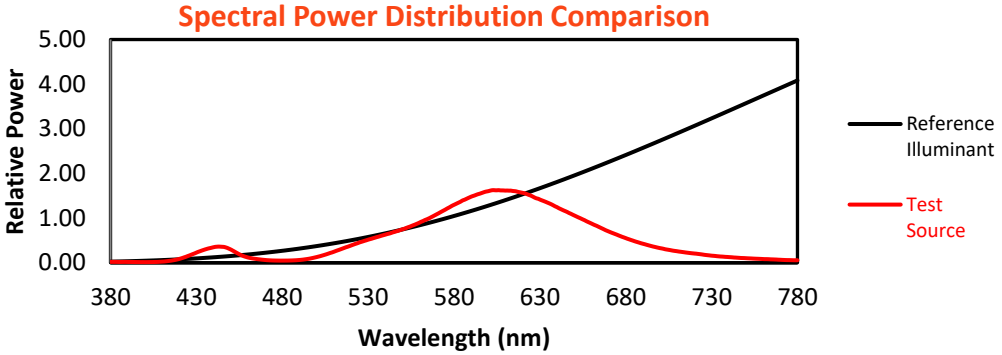
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# TM-30-18

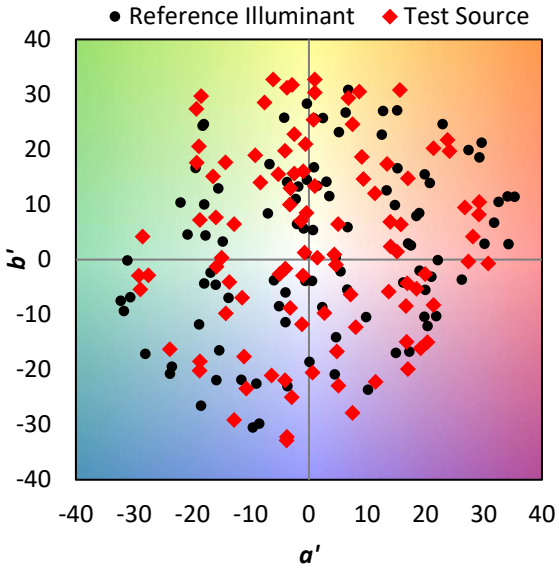
## Summary

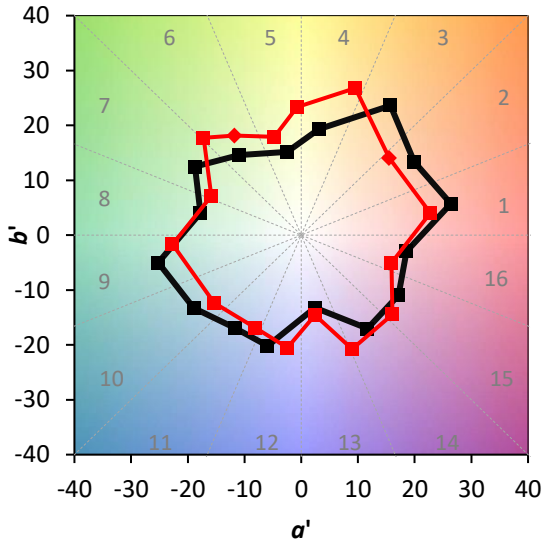
$R_f$ = 69.8
$R_g$ = 99.2
CIE $R_a$ = 72.0
$R_9$ = -17.4

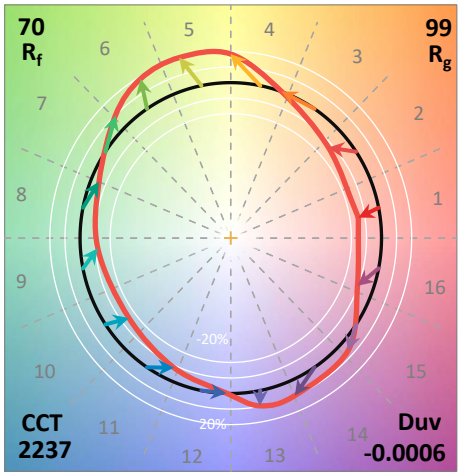
## Spectral Power Distribution Comparison

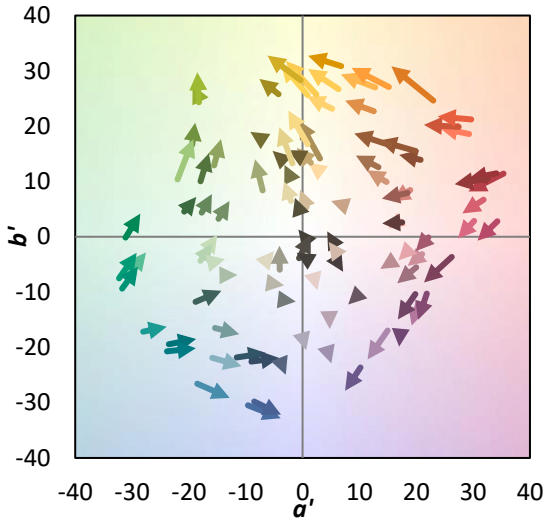



## Color Vector Graphics



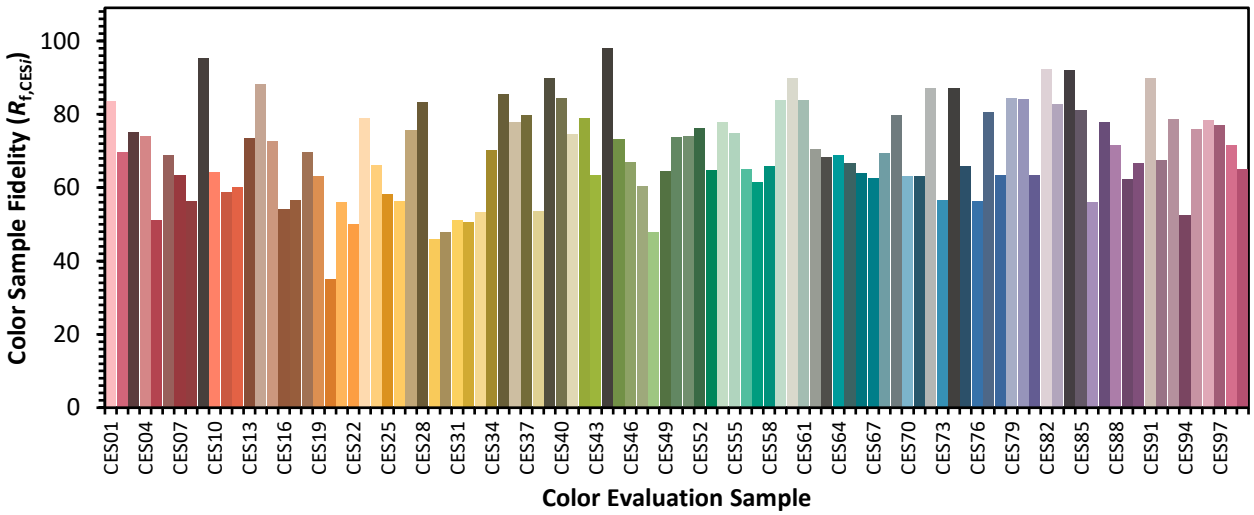
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Peachtree City, GA 30269

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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 | |

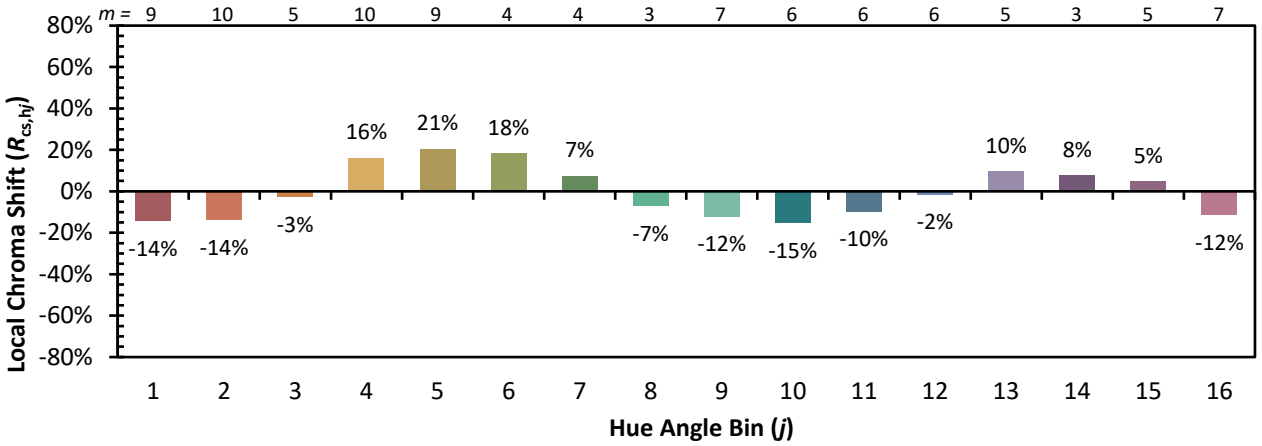


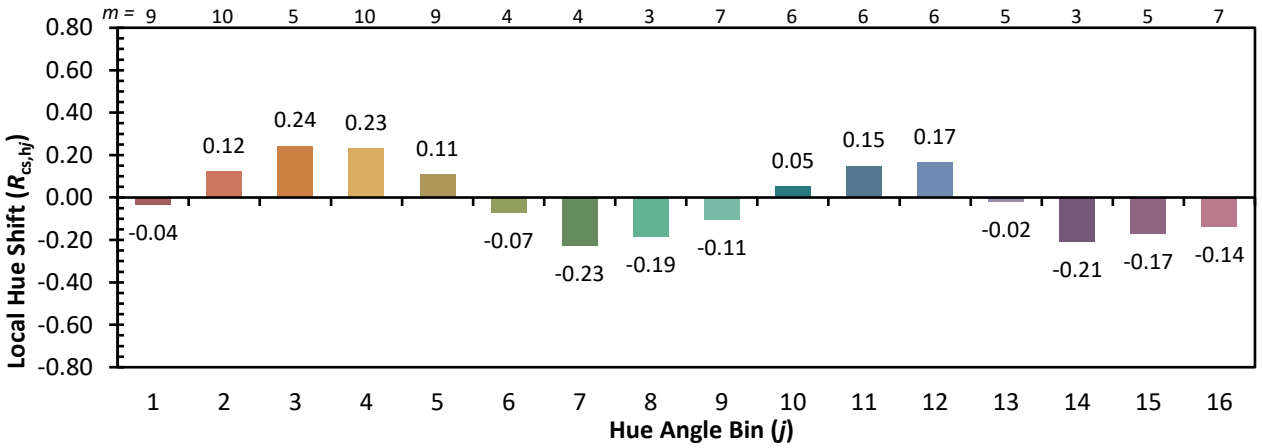
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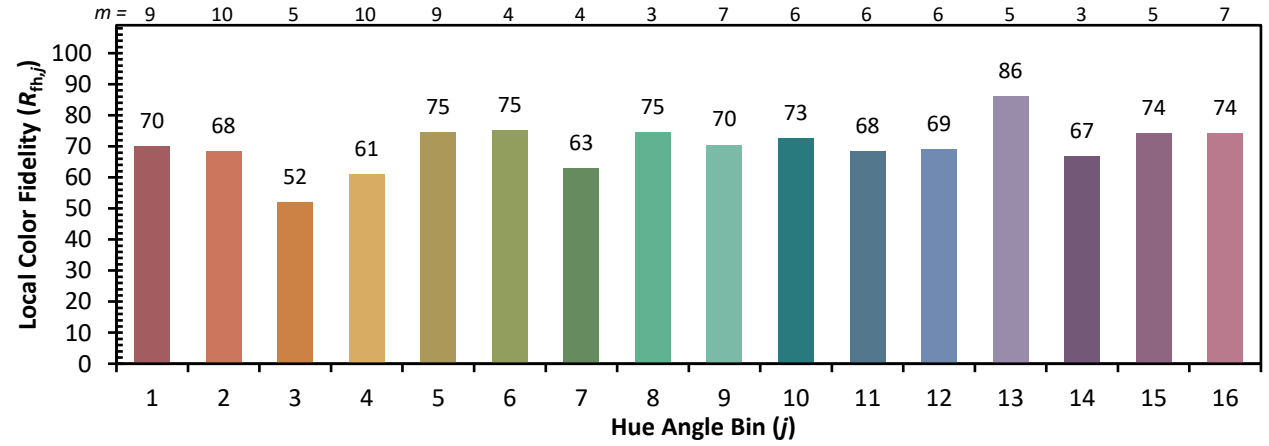
REPORT NUMBER: SP1-1908-441-10-R4

## TM-30-18

### Color Rendition by Hue-Angle Bin



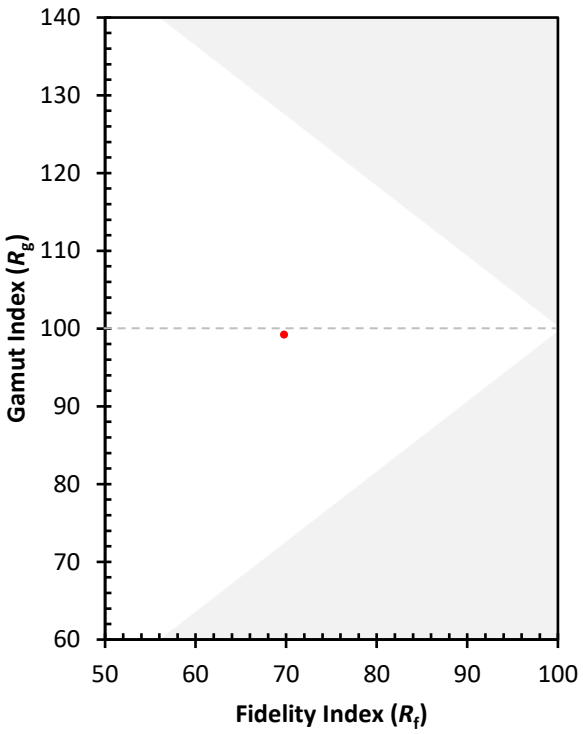



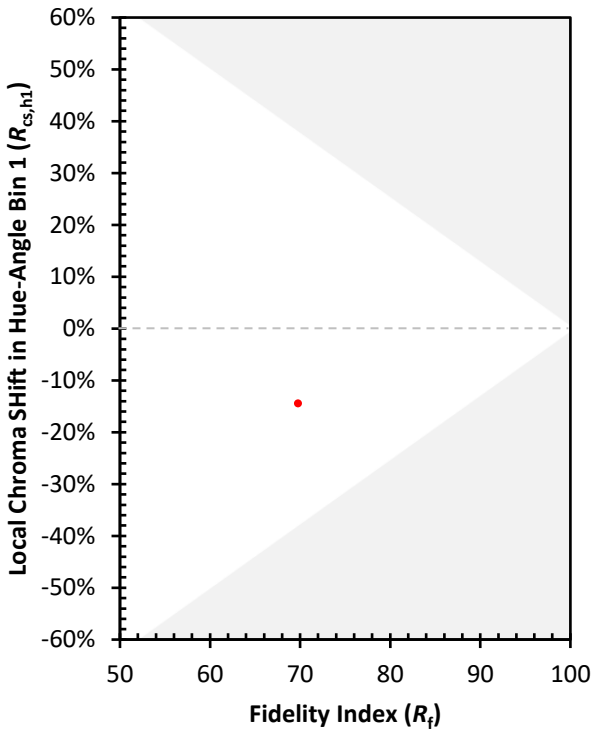
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### Measure Comparisons




(END OF REPORT)