

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P1211740

Luminaire Tested: **GKO-PB1F-830-U-T3**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1211740  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB1F-830-U-T3  
Description: GEKKO WALL PACK 6500LM PACKAGE 80CRI 3000K FIXTURE w/ TYPE III DISTRIBUTION OPTIC  
Light Source: (10) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

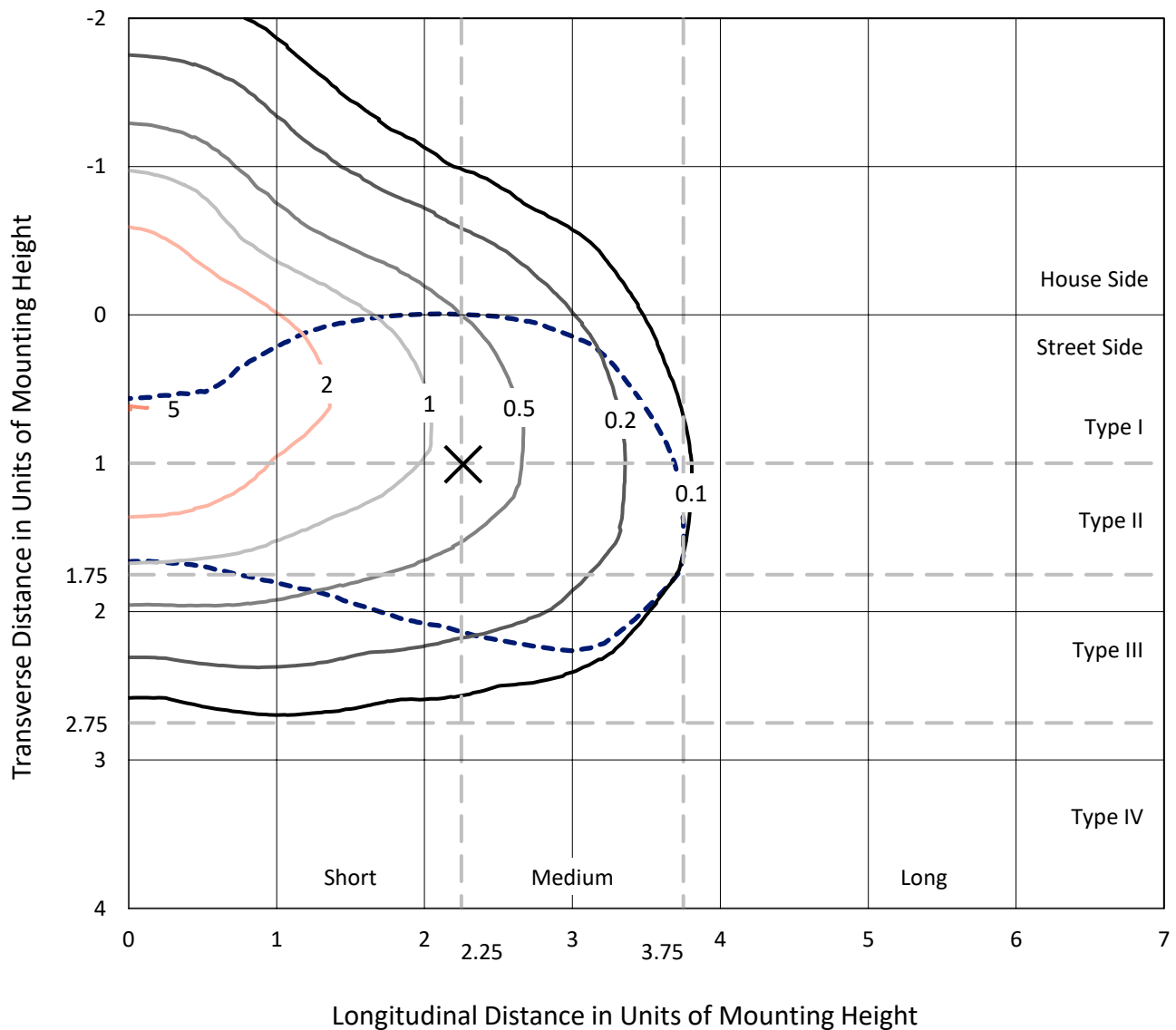
Lumens per Lamp: N/A  
Luminaire Lumens: 5859 lumens  
Efficiency: N/A  
Efficacy: 107.5 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G1

Input Watts (W): 54.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 5.7%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

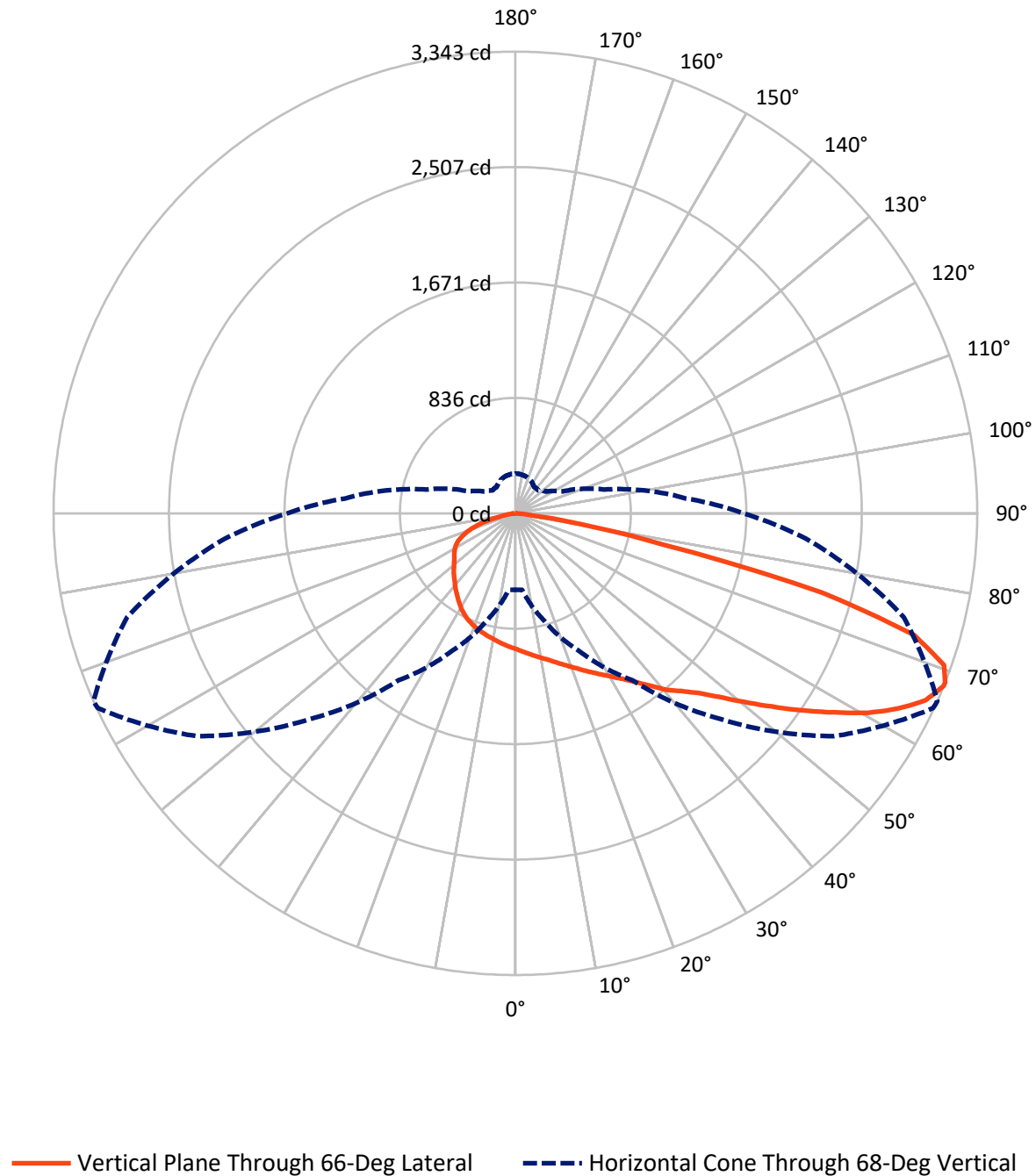
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 5 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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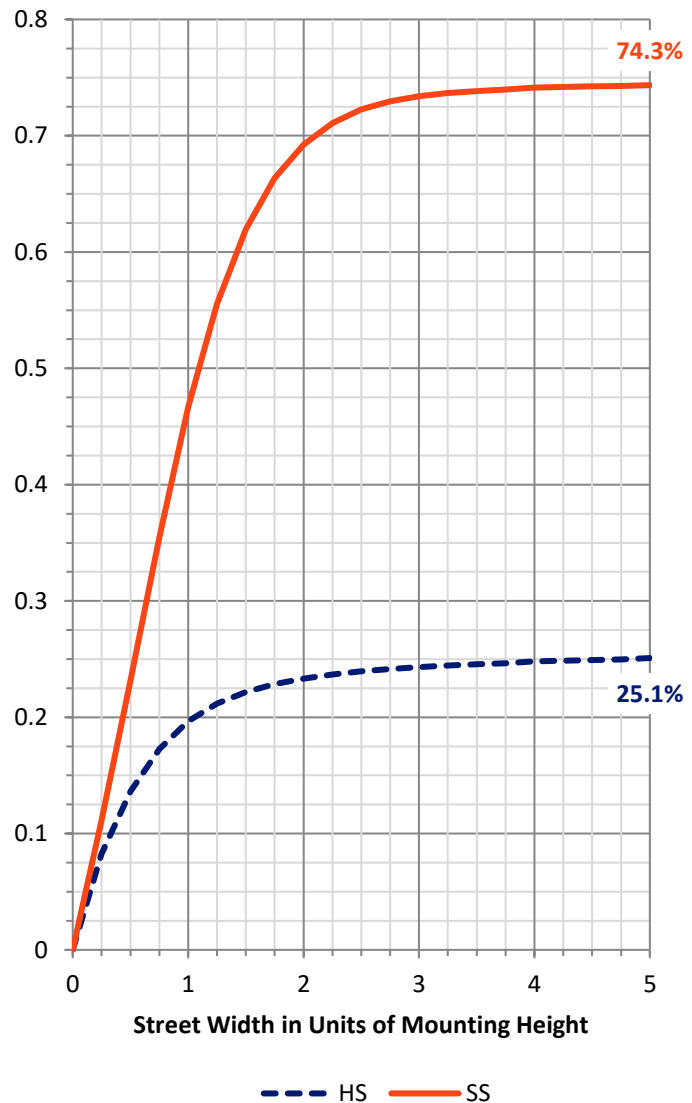
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1500.0   | 0.0    | 1500.0 |
|                    | % Fixture | 25.6     | 0.0    | 25.6   |
| <b>Street Side</b> | Lumens    | 4359.0   | 0.0    | 4359.0 |
|                    | % Fixture | 74.4     | 0.0    | 74.4   |
| <b>Total</b>       | Lumens    | 5859.0   | 0.0    | 5859.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 94.3   | 1.6       |
| 10°-20°   | 283.4  | 4.8       |
| 20°-30°   | 488.3  | 8.3       |
| 30°-40°   | 757.5  | 12.9      |
| 40°-50°   | 1037.7 | 17.7      |
| 50°-60°   | 1237.8 | 21.1      |
| 60°-70°   | 1240.4 | 21.2      |
| 70°-80°   | 656.4  | 11.2      |
| 80°-90°   | 63.3   | 1.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 5859.0 | 100.0     |
| 0°-180°   | 5859.0 | 100.0     |



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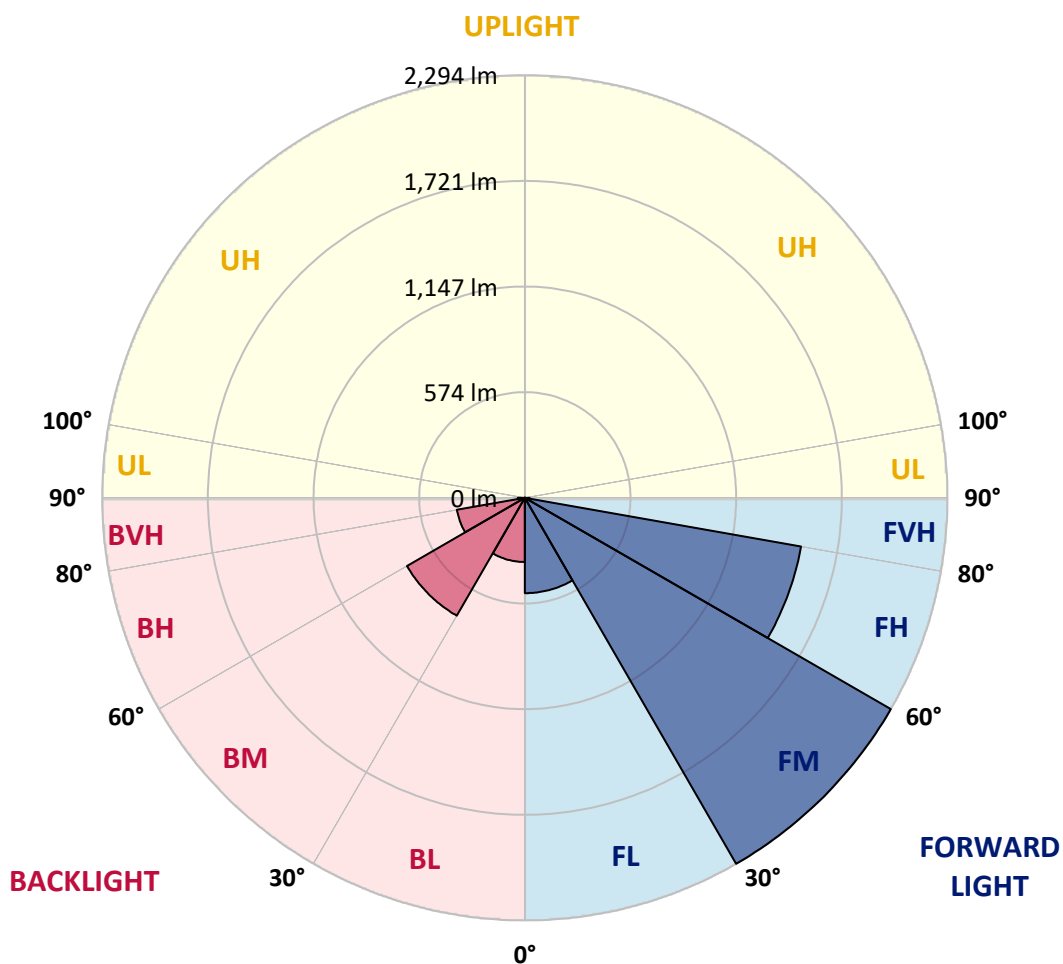
CATALOG NUMBER: GKO-PB1F-830-U-T3

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 517.5  | 8.8       |                         |      |         |
| FM   | (30°-60°)   | 2294.1 | 39.2      |                         |      |         |
| FH   | (60°-80°)   | 1522.5 | 26.0      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 24.9   | 0.4       |                         |      | G1/100  |
| BL   | (0°-30°)    | 348.4  | 5.9       | B1/500                  |      |         |
| BM   | (30°-60°)   | 738.9  | 12.6      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 374.3  | 6.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 38.5   | 0.7       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type III Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  | 982.7  |
| 2.5°  | 1023.6 | 1023.6 | 1021.4 | 1020.2 | 1019.1 | 1012.3 | 1007.7 | 1002.0 | 1002.0 | 992.9  | 985.0  |
| 5°    | 1058.9 | 1060.0 | 1055.5 | 1055.5 | 1050.9 | 1041.8 | 1032.7 | 1021.4 | 1021.4 | 1007.7 | 991.8  |
| 7.5°  | 1089.6 | 1093.0 | 1088.5 | 1088.5 | 1083.9 | 1073.7 | 1058.9 | 1043.0 | 1043.0 | 1023.6 | 1000.9 |
| 10°   | 1119.2 | 1121.4 | 1119.2 | 1121.4 | 1114.6 | 1105.5 | 1088.5 | 1066.9 | 1065.7 | 1041.8 | 1010.0 |
| 12.5° | 1143.1 | 1145.3 | 1146.5 | 1149.9 | 1144.2 | 1137.4 | 1121.4 | 1094.2 | 1090.7 | 1062.3 | 1021.4 |
| 15°   | 1165.8 | 1168.1 | 1171.5 | 1176.0 | 1174.9 | 1169.2 | 1154.4 | 1123.7 | 1121.4 | 1085.1 | 1036.1 |
| 17.5° | 1184.0 | 1185.1 | 1192.0 | 1201.1 | 1203.3 | 1204.5 | 1188.6 | 1156.7 | 1154.4 | 1111.2 | 1052.1 |
| 20°   | 1210.2 | 1212.4 | 1219.3 | 1228.4 | 1235.2 | 1239.7 | 1227.2 | 1192.0 | 1189.7 | 1141.9 | 1072.5 |
| 22.5° | 1269.3 | 1265.9 | 1269.3 | 1269.3 | 1272.7 | 1279.5 | 1270.4 | 1235.2 | 1230.6 | 1178.3 | 1097.6 |
| 25°   | 1380.8 | 1377.4 | 1368.3 | 1347.8 | 1325.0 | 1323.9 | 1313.7 | 1279.5 | 1273.9 | 1215.9 | 1121.4 |
| 27.5° | 1536.6 | 1528.6 | 1511.6 | 1468.3 | 1413.8 | 1378.5 | 1362.6 | 1327.3 | 1320.5 | 1253.4 | 1144.2 |
| 30°   | 1701.5 | 1710.6 | 1682.2 | 1623.0 | 1522.9 | 1447.9 | 1417.2 | 1377.4 | 1371.7 | 1295.5 | 1171.5 |
| 32.5° | 1893.7 | 1894.9 | 1866.4 | 1784.5 | 1654.9 | 1535.5 | 1483.1 | 1434.2 | 1429.7 | 1344.4 | 1207.9 |
| 35°   | 2005.2 | 2009.7 | 1997.2 | 1921.0 | 1773.2 | 1632.1 | 1562.7 | 1503.6 | 1500.2 | 1405.8 | 1253.4 |
| 37.5° | 2121.2 | 2131.4 | 2112.1 | 2027.9 | 1863.0 | 1722.0 | 1651.5 | 1586.6 | 1583.2 | 1476.3 | 1310.3 |
| 40°   | 2292.9 | 2288.4 | 2267.9 | 2143.9 | 1947.2 | 1797.0 | 1739.0 | 1687.9 | 1679.9 | 1562.7 | 1368.3 |
| 42.5° | 2416.9 | 2428.3 | 2383.9 | 2244.0 | 2039.3 | 1872.1 | 1826.6 | 1768.6 | 1758.4 | 1615.1 | 1402.4 |
| 45°   | 2459.0 | 2448.8 | 2399.9 | 2297.5 | 2159.9 | 1940.4 | 1909.6 | 1865.3 | 1855.1 | 1707.2 | 1469.5 |
| 47.5° | 2468.1 | 2449.9 | 2406.7 | 2329.3 | 2262.2 | 2029.1 | 2010.9 | 2000.6 | 1985.9 | 1823.2 | 1550.2 |
| 50°   | 2412.4 | 2399.9 | 2379.4 | 2340.7 | 2328.2 | 2112.1 | 2121.2 | 2158.7 | 2146.2 | 1948.3 | 1640.1 |
| 52.5° | 2286.1 | 2280.4 | 2298.6 | 2323.7 | 2290.7 | 2183.8 | 2252.0 | 2328.2 | 2323.7 | 2085.9 | 1736.8 |
| 55°   | 2048.4 | 2048.4 | 2150.8 | 2238.3 | 2257.7 | 2230.4 | 2393.0 | 2523.8 | 2518.1 | 2240.6 | 1828.9 |
| 57.5° | 1831.2 | 1834.6 | 1919.9 | 2116.7 | 2198.5 | 2280.4 | 2550.0 | 2728.6 | 2719.5 | 2414.6 | 1925.6 |
| 60°   | 1557.1 | 1557.1 | 1686.7 | 1933.5 | 2113.2 | 2319.1 | 2688.7 | 2926.5 | 2932.1 | 2583.0 | 2021.1 |
| 62.5° | 1232.9 | 1236.3 | 1416.0 | 1706.1 | 1990.4 | 2325.9 | 2799.1 | 3113.0 | 3111.9 | 2735.4 | 2095.0 |
| 65°   | 908.8  | 909.9  | 1154.4 | 1453.6 | 1806.1 | 2278.2 | 2859.4 | 3256.3 | 3263.1 | 2855.9 | 2138.3 |
| 67.5° | 590.3  | 601.7  | 849.6  | 1179.5 | 1545.7 | 2142.8 | 2827.5 | 3332.5 | 3340.5 | 2911.7 | 2124.6 |
| 68°   | 552.8  | 555.0  | 804.1  | 1104.4 | 1475.2 | 2108.7 | 2812.7 | 3335.9 | 3342.7 | 2910.5 | 2111.0 |
| 70°   | 358.3  | 358.3  | 575.5  | 862.1  | 1177.2 | 1896.0 | 2684.2 | 3282.5 | 3290.4 | 2860.5 | 2012.0 |
| 72.5° | 193.4  | 196.8  | 328.7  | 522.1  | 804.1  | 1467.2 | 2422.6 | 3003.8 | 3017.4 | 2586.4 | 1759.5 |
| 75°   | 135.3  | 137.6  | 191.1  | 292.3  | 437.9  | 955.4  | 1893.7 | 2295.2 | 2292.9 | 1786.8 | 1102.1 |
| 77.5° | 97.8   | 97.8   | 109.2  | 182.0  | 229.7  | 436.8  | 937.2  | 1105.5 | 1093.0 | 872.4  | 556.2  |
| 80°   | 63.7   | 63.7   | 68.2   | 95.5   | 110.3  | 133.1  | 286.6  | 478.8  | 487.9  | 425.4  | 277.5  |
| 82.5° | 26.2   | 27.3   | 29.6   | 38.7   | 39.8   | 55.7   | 81.9   | 137.6  | 133.1  | 108.1  | 78.5   |
| 85°   | 3.4    | 3.4    | 4.5    | 5.7    | 6.8    | 12.5   | 11.4   | 11.4   | 11.4   | 13.6   | 12.5   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.1    | 2.3    | 3.4    | 3.4    | 4.5    | 3.4    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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CATALOG NUMBER: GKO-PB1F-830-U-T3

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 982.7  | 982.7  | 982.7 | 982.7 | 982.7 | 982.7 | 982.7 | 982.7 | 982.7 | 982.7 | 982.7 |
| 2.5°  | 982.7  | 982.7  | 975.9 | 969.0 | 962.2 | 956.5 | 948.6 | 942.9 | 944.0 | 947.4 | 946.3 |
| 5°    | 988.4  | 982.7  | 969.0 | 954.3 | 942.9 | 932.6 | 917.9 | 909.9 | 908.8 | 911.0 | 909.9 |
| 7.5°  | 991.8  | 982.7  | 962.2 | 939.5 | 921.3 | 907.6 | 887.2 | 879.2 | 875.8 | 876.9 | 876.9 |
| 10°   | 998.6  | 983.8  | 955.4 | 923.5 | 900.8 | 881.5 | 859.9 | 848.5 | 845.1 | 845.1 | 843.9 |
| 12.5° | 1006.6 | 986.1  | 948.6 | 909.9 | 880.3 | 857.6 | 832.6 | 820.0 | 816.6 | 816.6 | 815.5 |
| 15°   | 1014.5 | 989.5  | 941.7 | 895.1 | 861.0 | 833.7 | 809.8 | 795.0 | 790.5 | 790.5 | 792.7 |
| 17.5° | 1024.8 | 992.9  | 934.9 | 881.5 | 840.5 | 809.8 | 784.8 | 770.0 | 764.3 | 767.7 | 770.0 |
| 20°   | 1035.0 | 999.8  | 928.1 | 866.7 | 820.0 | 788.2 | 763.2 | 748.4 | 742.7 | 748.4 | 749.5 |
| 22.5° | 1049.8 | 1005.4 | 920.1 | 849.6 | 799.6 | 764.3 | 741.6 | 727.9 | 724.5 | 730.2 | 734.7 |
| 25°   | 1064.6 | 1012.3 | 909.9 | 831.4 | 773.4 | 739.3 | 721.1 | 710.9 | 712.0 | 720.0 | 724.5 |
| 27.5° | 1080.5 | 1017.9 | 899.7 | 808.7 | 745.0 | 713.1 | 699.5 | 697.2 | 701.8 | 710.9 | 716.5 |
| 30°   | 1099.8 | 1025.9 | 886.0 | 782.5 | 713.1 | 684.7 | 679.0 | 685.8 | 693.8 | 702.9 | 708.6 |
| 32.5° | 1124.9 | 1036.1 | 872.4 | 752.9 | 680.1 | 654.0 | 663.1 | 677.9 | 687.0 | 696.1 | 701.8 |
| 35°   | 1160.1 | 1056.6 | 864.4 | 723.4 | 644.9 | 627.8 | 648.3 | 672.2 | 679.0 | 684.7 | 691.5 |
| 37.5° | 1201.1 | 1083.9 | 861.0 | 696.1 | 613.0 | 605.1 | 633.5 | 662.0 | 664.2 | 666.5 | 673.3 |
| 40°   | 1240.9 | 1104.4 | 851.9 | 666.5 | 580.1 | 580.1 | 615.3 | 642.6 | 641.5 | 638.1 | 642.6 |
| 42.5° | 1256.8 | 1102.1 | 825.7 | 638.1 | 553.9 | 555.0 | 586.9 | 613.0 | 606.2 | 606.2 | 613.0 |
| 45°   | 1302.3 | 1120.3 | 806.4 | 615.3 | 530.0 | 525.5 | 550.5 | 571.0 | 582.3 | 597.1 | 603.9 |
| 47.5° | 1360.3 | 1145.3 | 791.6 | 589.2 | 507.3 | 492.5 | 506.1 | 540.3 | 559.6 | 575.5 | 581.2 |
| 50°   | 1420.6 | 1173.8 | 778.0 | 561.9 | 484.5 | 454.9 | 461.8 | 499.3 | 516.4 | 524.3 | 527.7 |
| 52.5° | 1482.0 | 1199.9 | 767.7 | 539.1 | 458.4 | 410.6 | 425.4 | 460.6 | 473.1 | 477.7 | 480.0 |
| 55°   | 1536.6 | 1221.5 | 758.6 | 519.8 | 428.8 | 375.3 | 386.7 | 423.1 | 432.2 | 436.8 | 440.2 |
| 57.5° | 1594.6 | 1245.4 | 752.9 | 501.6 | 395.8 | 344.6 | 352.6 | 385.6 | 398.1 | 402.6 | 406.0 |
| 60°   | 1645.8 | 1268.2 | 748.4 | 482.2 | 365.1 | 317.3 | 321.9 | 353.7 | 367.4 | 369.6 | 373.1 |
| 62.5° | 1679.9 | 1283.0 | 741.6 | 458.4 | 336.7 | 291.2 | 292.3 | 323.0 | 337.8 | 340.1 | 342.3 |
| 65°   | 1689.0 | 1279.5 | 721.1 | 426.5 | 308.2 | 265.0 | 265.0 | 294.6 | 310.5 | 318.5 | 321.9 |
| 67.5° | 1661.7 | 1251.1 | 677.9 | 385.6 | 280.9 | 241.1 | 241.1 | 267.3 | 284.3 | 293.4 | 296.9 |
| 68°   | 1652.6 | 1238.6 | 664.2 | 375.3 | 274.1 | 235.4 | 235.4 | 262.7 | 278.7 | 286.6 | 288.9 |
| 70°   | 1575.3 | 1177.2 | 601.7 | 336.7 | 252.5 | 218.4 | 218.4 | 242.3 | 259.3 | 259.3 | 258.2 |
| 72.5° | 1368.3 | 1020.2 | 494.8 | 282.1 | 220.7 | 193.4 | 196.8 | 219.5 | 225.2 | 230.9 | 229.7 |
| 75°   | 847.3  | 610.8  | 332.1 | 222.9 | 185.4 | 169.5 | 176.3 | 196.8 | 200.2 | 212.7 | 209.3 |
| 77.5° | 424.2  | 299.1  | 176.3 | 129.7 | 143.3 | 145.6 | 158.1 | 172.9 | 183.1 | 196.8 | 187.7 |
| 80°   | 209.3  | 145.6  | 103.5 | 80.8  | 84.2  | 106.9 | 137.6 | 149.0 | 167.2 | 176.3 | 168.3 |
| 82.5° | 58.0   | 44.4   | 42.1  | 44.4  | 62.6  | 83.0  | 108.1 | 131.9 | 155.8 | 163.8 | 152.4 |
| 85°   | 10.2   | 8.0    | 6.8   | 21.6  | 43.2  | 61.4  | 87.6  | 117.1 | 139.9 | 134.2 | 126.2 |
| 87.5° | 3.4    | 2.3    | 2.3   | 13.6  | 31.8  | 50.0  | 75.1  | 104.6 | 119.4 | 108.1 | 96.7  |
| 90°   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP3-2511-595-4

Test Date: 11/12/2025

Luminaire Tested: GKO-PB1C-830-U-T4W

Data in this report applies to families of products including GKO-PB1C-830\*

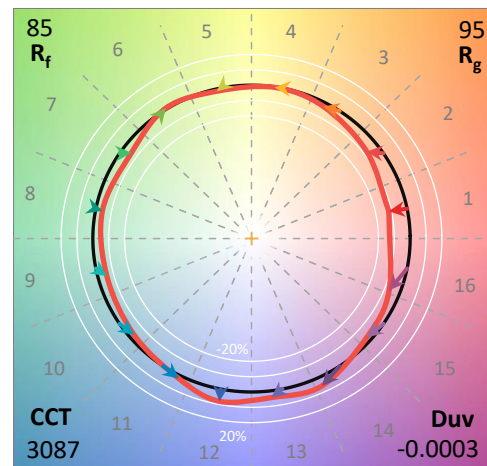
### Test Information

Test Method: LM-79-2019  
 Report Number: SP3-2511-595-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP3 - 3M SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/27/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1C-830-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 3087  
 CIE  $u'$ : 0.2477  
 CIE  $v'$ : 0.5192  
 Duv: -0.0003  
 CIE x: 0.4305  
 CIE y: 0.4010  
 CIE z: 0.1685  
 Peak Wavelength (nm): 601  
 Dominant Wavelength (nm): 582  
 Purity: 49.5752  
 Rf: 84.7  
 Rg: 94.9

CRI (Ra): 82.7  
 R1: 81.5  
 R2: 92.1  
 R3: 95.2  
 R4: 80.4  
 R5: 81.9  
 R6: 90.5  
 R7: 82.0  
 R8: 58.3  
 R9: 5.8  
 R10: 82.0  
 R11: 80.1  
 R12: 71.1  
 R13: 84.2  
 R14: 98.1  
 R15: 73.7



### Test Conditions

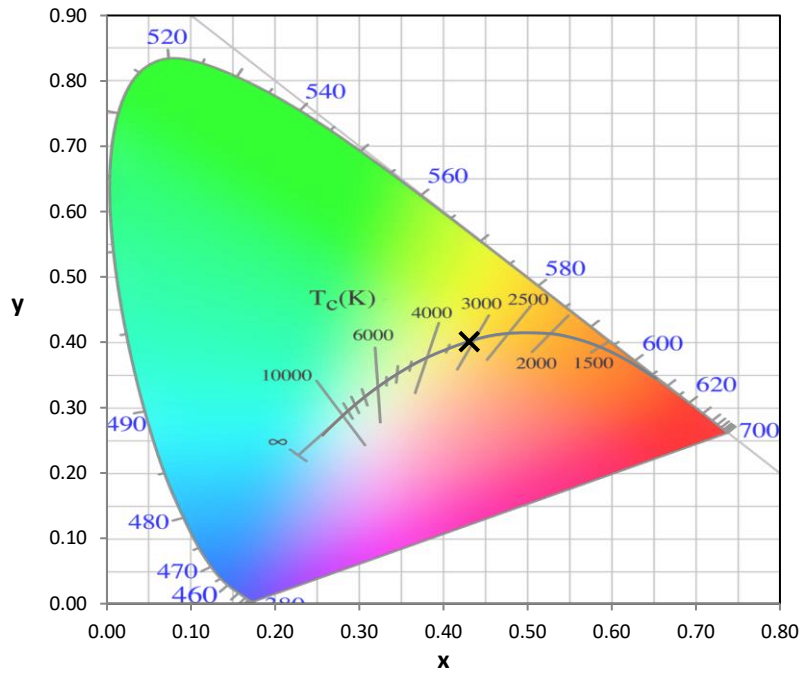
Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP3-2511-595-4

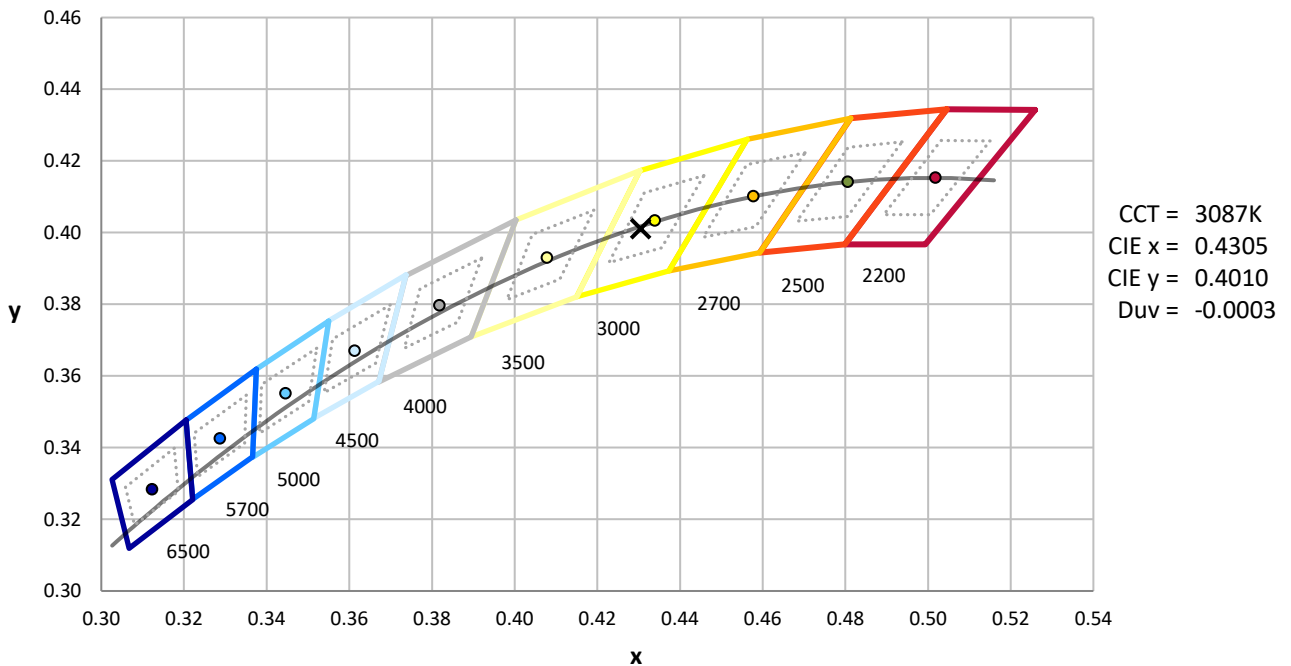
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 3M SPHERE IN02505     | 7/1/2025         | 1/1/2026             |
| Power Meter                    | XITRON INXT2011006    | 10/21/2025       | 10/21/2026           |
| AC Power Source                | CHROMA 61604 IN6064A  | 10/20/2025       | 10/20/2026           |
| DC Power Source                | EYSIGHT N5770A IN0534 | 10/20/2025       | 10/20/2026           |
| Sphere Thermometer             | TANDD IN4036E         | 10/21/2025       | 10/21/2026           |
|                                |                       |                  |                      |

REPORT NUMBER: SP3-2511-595-4

**CIE 1931 Chromaticity Diagram**



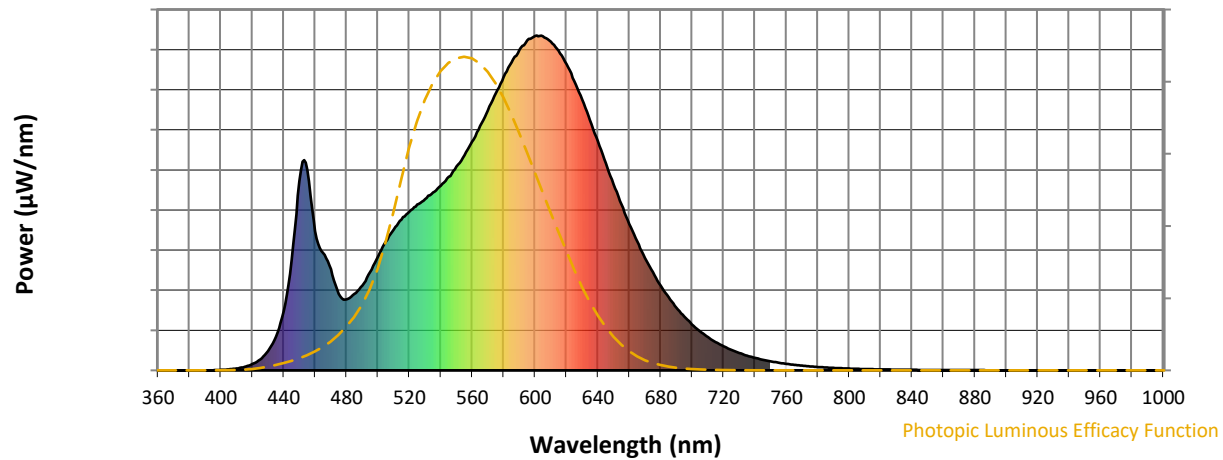
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

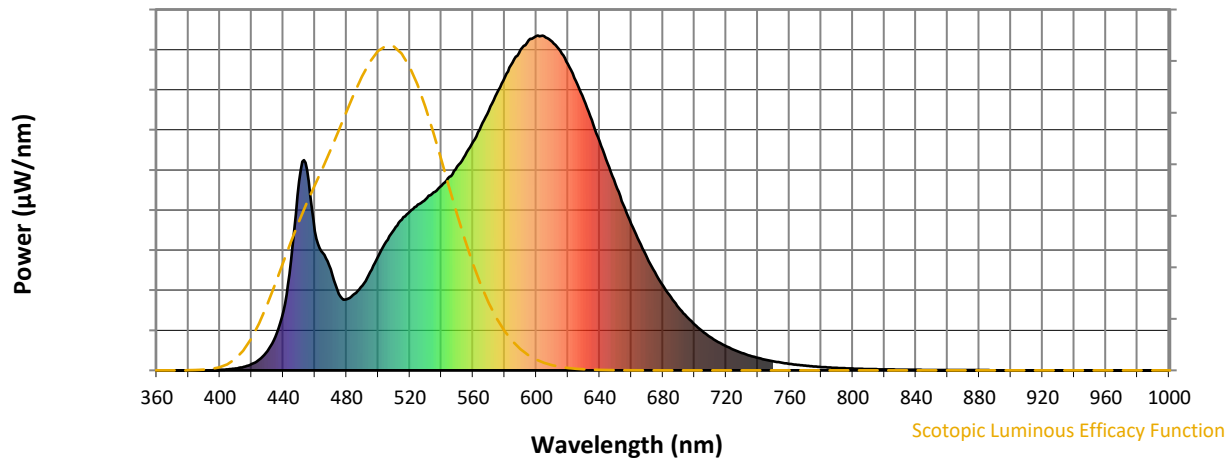


### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 253                                  | NR                             | 620               | 915                                  | NR                             | 750               | 27                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 293                                  | NR                             | 625               | 864                                  | NR                             | 755               | 23                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 340                                  | NR                             | 630               | 809                                  | NR                             | 760               | 19                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 384                                  | NR                             | 635               | 748                                  | NR                             | 765               | 16                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 420                                  | NR                             | 640               | 684                                  | NR                             | 770               | 14                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 450                                  | NR                             | 645               | 619                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 474                                  | NR                             | 650               | 556                                  | NR                             | 780               | 10                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 495                                  | NR                             | 655               | 495                                  | NR                             | 785               | 9                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 511                                  | NR                             | 660               | 437                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 531                                  | NR                             | 665               | 385                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 551                                  | NR                             | 670               | 336                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 578                                  | NR                             | 675               | 293                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 19                                   | NR                             | 550               | 609                                  | NR                             | 680               | 253                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 33                                   | NR                             | 555               | 642                                  | NR                             | 685               | 219                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 58                                   | NR                             | 560               | 683                                  | NR                             | 690               | 187                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 101                                  | NR                             | 565               | 730                                  | NR                             | 695               | 161                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 176                                  | NR                             | 570               | 776                                  | NR                             | 700               | 137                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 329                                  | NR                             | 575               | 827                                  | NR                             | 705               | 117                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 565                                  | NR                             | 580               | 876                                  | NR                             | 710               | 100                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 599                                  | NR                             | 585               | 919                                  | NR                             | 715               | 84                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 416                                  | NR                             | 590               | 958                                  | NR                             | 720               | 72                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 350                                  | NR                             | 595               | 985                                  | NR                             | 725               | 61                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 998                                  | NR                             | 730               | 52                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 229                                  | NR                             | 605               | 998                                  | NR                             | 735               | 44                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 212                                  | NR                             | 610               | 982                                  | NR                             | 740               | 37                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 228                                  | NR                             | 615               | 955                                  | NR                             | 745               | 32                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength

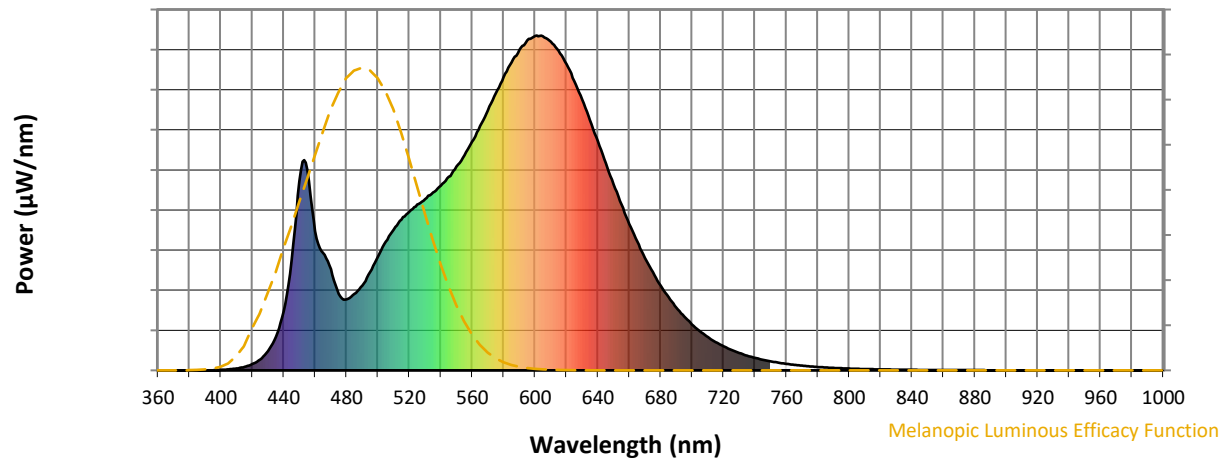


Scotopic Lumens: NR

S/P: 1.4

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 253                      | NR            | 620    | 915                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 293                      | NR            | 625    | 864                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 340                      | NR            | 630    | 809                      | NR            | 760    | 19                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 384                      | NR            | 635    | 748                      | NR            | 765    | 16                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 420                      | NR            | 640    | 684                      | NR            | 770    | 14                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 450                      | NR            | 645    | 619                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 474                      | NR            | 650    | 556                      | NR            | 780    | 10                       | NR            | 910    | 0                        | NR            |
| 395    | 0                        | NR            | 525    | 495                      | NR            | 655    | 495                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 511                      | NR            | 660    | 437                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 3                        | NR            | 535    | 531                      | NR            | 665    | 385                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 551                      | NR            | 670    | 336                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 10                       | NR            | 545    | 578                      | NR            | 675    | 293                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 609                      | NR            | 680    | 253                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 33                       | NR            | 555    | 642                      | NR            | 685    | 219                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 58                       | NR            | 560    | 683                      | NR            | 690    | 187                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 101                      | NR            | 565    | 730                      | NR            | 695    | 161                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 176                      | NR            | 570    | 776                      | NR            | 700    | 137                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 329                      | NR            | 575    | 827                      | NR            | 705    | 117                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 565                      | NR            | 580    | 876                      | NR            | 710    | 100                      | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 599                      | NR            | 585    | 919                      | NR            | 715    | 84                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 416                      | NR            | 590    | 958                      | NR            | 720    | 72                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 350                      | NR            | 595    | 985                      | NR            | 725    | 61                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 302                      | NR            | 600    | 998                      | NR            | 730    | 52                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 229                      | NR            | 605    | 998                      | NR            | 735    | 44                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 212                      | NR            | 610    | 982                      | NR            | 740    | 37                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 228                      | NR            | 615    | 955                      | NR            | 745    | 32                       | NR            | 875    | 1                        | NR            |        |                          |               |

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**Melanopic Flux vs. Wavelength**

**Melanopic Lumens: NR**
**M/P: 2.74**

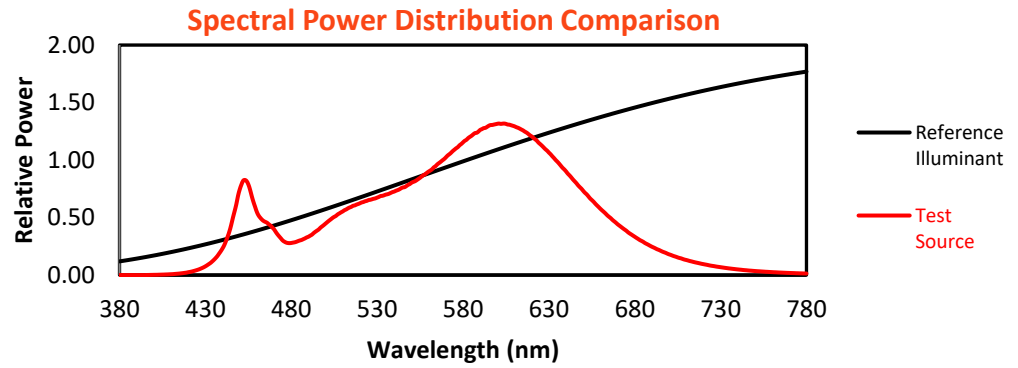
| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 253                                  | NR                             | 620               | 915                                  | NR                             | 750               | 27                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 293                                  | NR                             | 625               | 864                                  | NR                             | 755               | 23                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 340                                  | NR                             | 630               | 809                                  | NR                             | 760               | 19                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 384                                  | NR                             | 635               | 748                                  | NR                             | 765               | 16                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 420                                  | NR                             | 640               | 684                                  | NR                             | 770               | 14                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 450                                  | NR                             | 645               | 619                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 474                                  | NR                             | 650               | 556                                  | NR                             | 780               | 10                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 495                                  | NR                             | 655               | 495                                  | NR                             | 785               | 9                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 511                                  | NR                             | 660               | 437                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 531                                  | NR                             | 665               | 385                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 551                                  | NR                             | 670               | 336                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 578                                  | NR                             | 675               | 293                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 19                                   | NR                             | 550               | 609                                  | NR                             | 680               | 253                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 33                                   | NR                             | 555               | 642                                  | NR                             | 685               | 219                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 58                                   | NR                             | 560               | 683                                  | NR                             | 690               | 187                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 101                                  | NR                             | 565               | 730                                  | NR                             | 695               | 161                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 176                                  | NR                             | 570               | 776                                  | NR                             | 700               | 137                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 329                                  | NR                             | 575               | 827                                  | NR                             | 705               | 117                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 565                                  | NR                             | 580               | 876                                  | NR                             | 710               | 100                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 599                                  | NR                             | 585               | 919                                  | NR                             | 715               | 84                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 416                                  | NR                             | 590               | 958                                  | NR                             | 720               | 72                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 350                                  | NR                             | 595               | 985                                  | NR                             | 725               | 61                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 998                                  | NR                             | 730               | 52                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 229                                  | NR                             | 605               | 998                                  | NR                             | 735               | 44                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 212                                  | NR                             | 610               | 982                                  | NR                             | 740               | 37                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 228                                  | NR                             | 615               | 955                                  | NR                             | 745               | 32                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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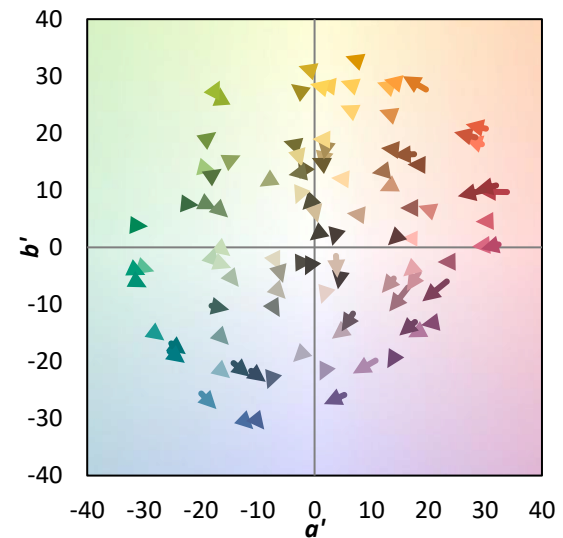
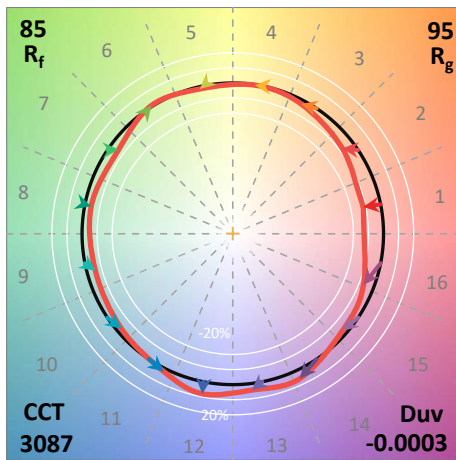
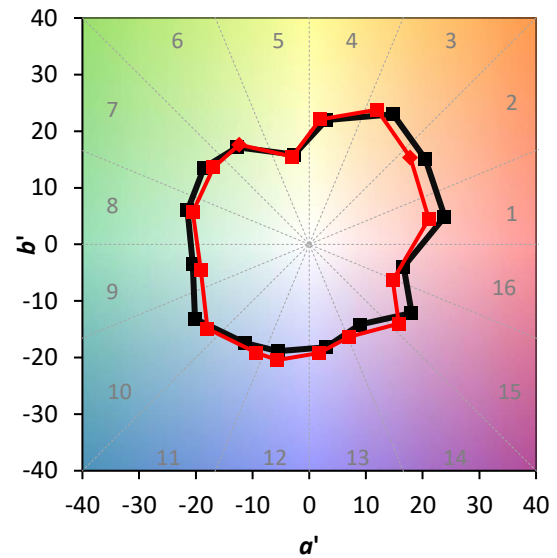
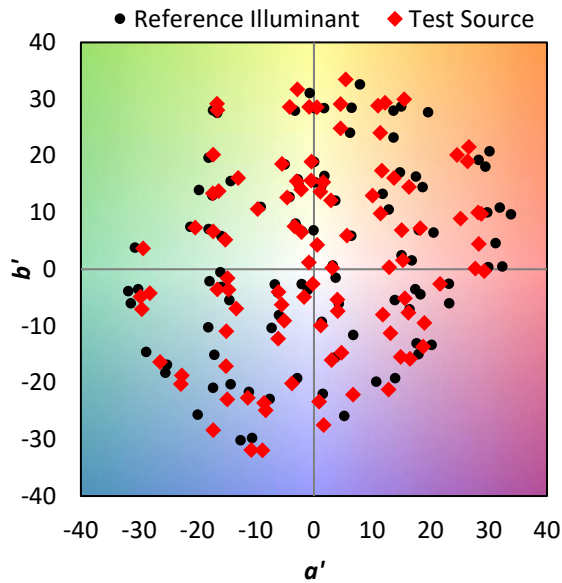
TM-30-18

### Summary

$R_f = 84.7$   
 $R_g = 94.9$   
 $CIE R_a = 82.7$   
 $R_9 = 5.8$

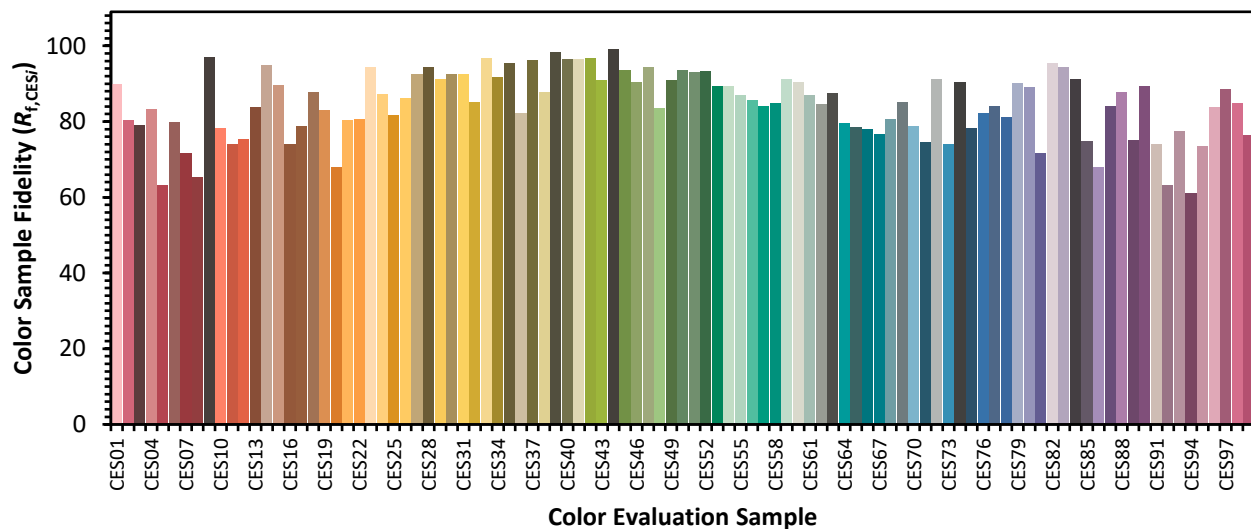


### Color Vector Graphics

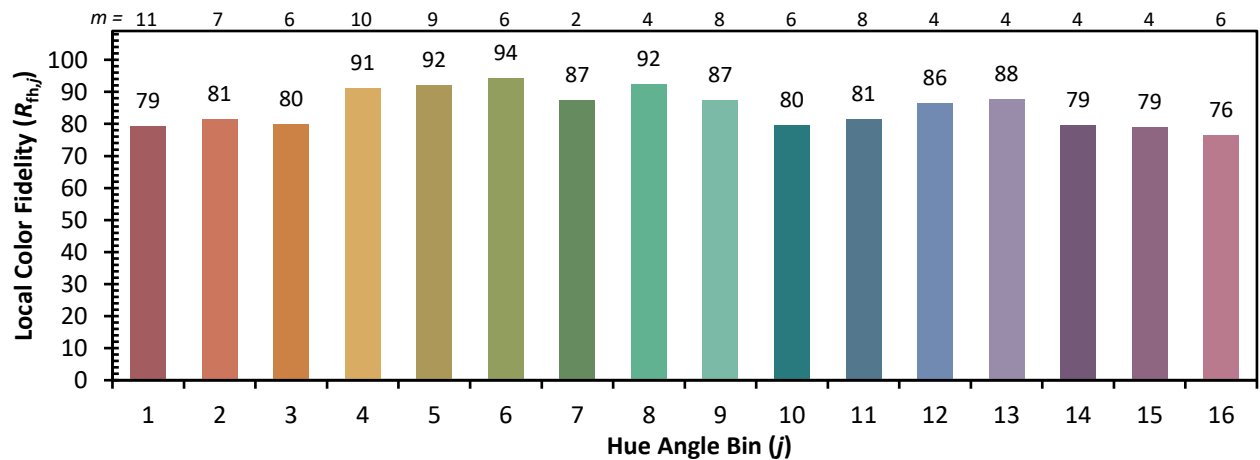
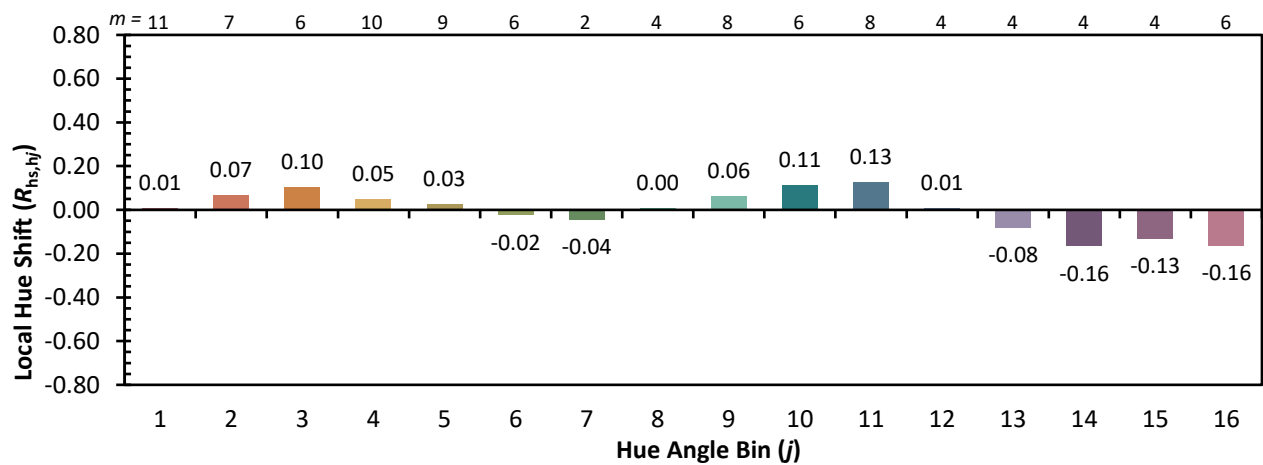
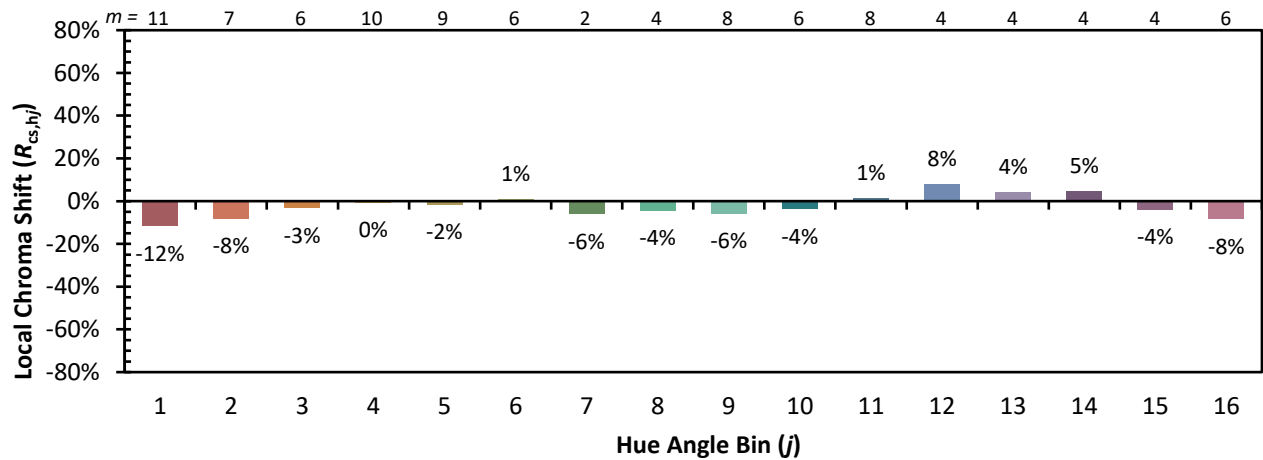


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

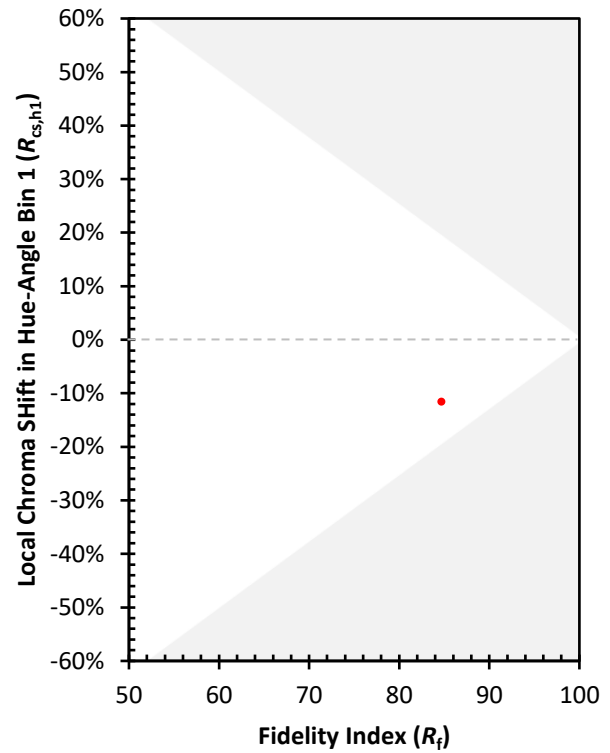
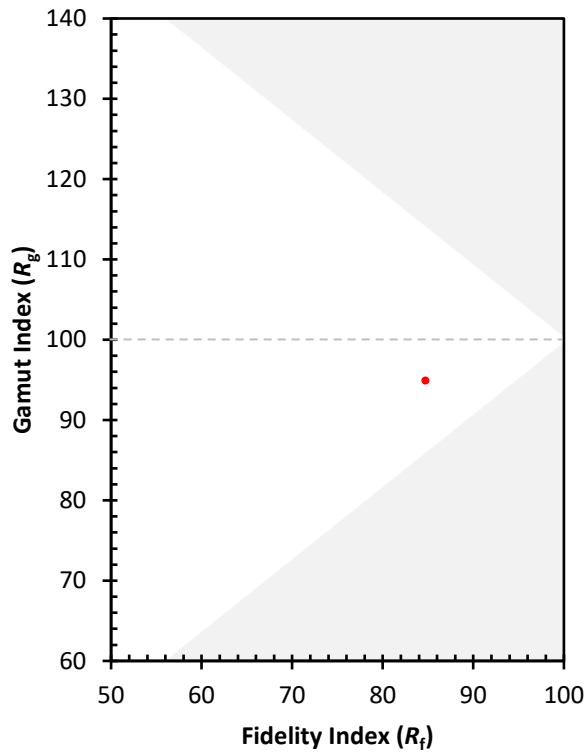
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 86 | CES51 = 93 | CES76 = 82 |
| CES02 = 63 | CES27 = 93 | CES52 = 93 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 70 | CES29 = 91 | CES54 = 89 | CES79 = 90 |
| CES05 = 49 | CES30 = 93 | CES55 = 87 | CES80 = 89 |
| CES06 = 51 | CES31 = 93 | CES56 = 86 | CES81 = 72 |
| CES07 = 42 | CES32 = 85 | CES57 = 84 | CES82 = 95 |
| CES08 = 41 | CES33 = 97 | CES58 = 85 | CES83 = 94 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 91 |
| CES10 = 76 | CES35 = 95 | CES60 = 90 | CES85 = 75 |
| CES11 = 59 | CES36 = 82 | CES61 = 87 | CES86 = 68 |
| CES12 = 65 | CES37 = 96 | CES62 = 85 | CES87 = 84 |
| CES13 = 43 | CES38 = 88 | CES63 = 87 | CES88 = 88 |
| CES14 = 74 | CES39 = 98 | CES64 = 80 | CES89 = 75 |
| CES15 = 72 | CES40 = 96 | CES65 = 79 | CES90 = 89 |
| CES16 = 47 | CES41 = 96 | CES66 = 78 | CES91 = 74 |
| CES17 = 50 | CES42 = 97 | CES67 = 77 | CES92 = 63 |
| CES18 = 56 | CES43 = 91 | CES68 = 81 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 85 | CES94 = 61 |
| CES20 = 66 | CES45 = 93 | CES70 = 79 | CES95 = 74 |
| CES21 = 87 | CES46 = 90 | CES71 = 75 | CES96 = 84 |
| CES22 = 79 | CES47 = 94 | CES72 = 91 | CES97 = 89 |
| CES23 = 92 | CES48 = 84 | CES73 = 74 | CES98 = 85 |
| CES24 = 91 | CES49 = 91 | CES74 = 90 | CES99 = 77 |
| CES25 = 72 | CES50 = 93 | CES75 = 78 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)