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: P1211858

Luminaire Tested: **GKO-PB2D-835-U-T3**

Issue Date: 11/5/2025

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1211858 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 11/5/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GKO-PB2D-835-U-T3 |
| Description: | GEKKO WALL PACK 10000LM PACKAGE 80CRI 3500K FIXTURE w/ TYPE III DISTRIBUTION OPTIC |
| Light Source: | (20) 3500K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 9274.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 121.7 lumens/watt |
| Luminous Opening: | Rectangular (W 0.67' x L: 0.33' x H: 0') |
| IES Classification: | Type III - Medium |
| BUG Rating: | B2 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 76.2 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | 0.97 |
| Total Harmonic Distortion (THDi): | 8% |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

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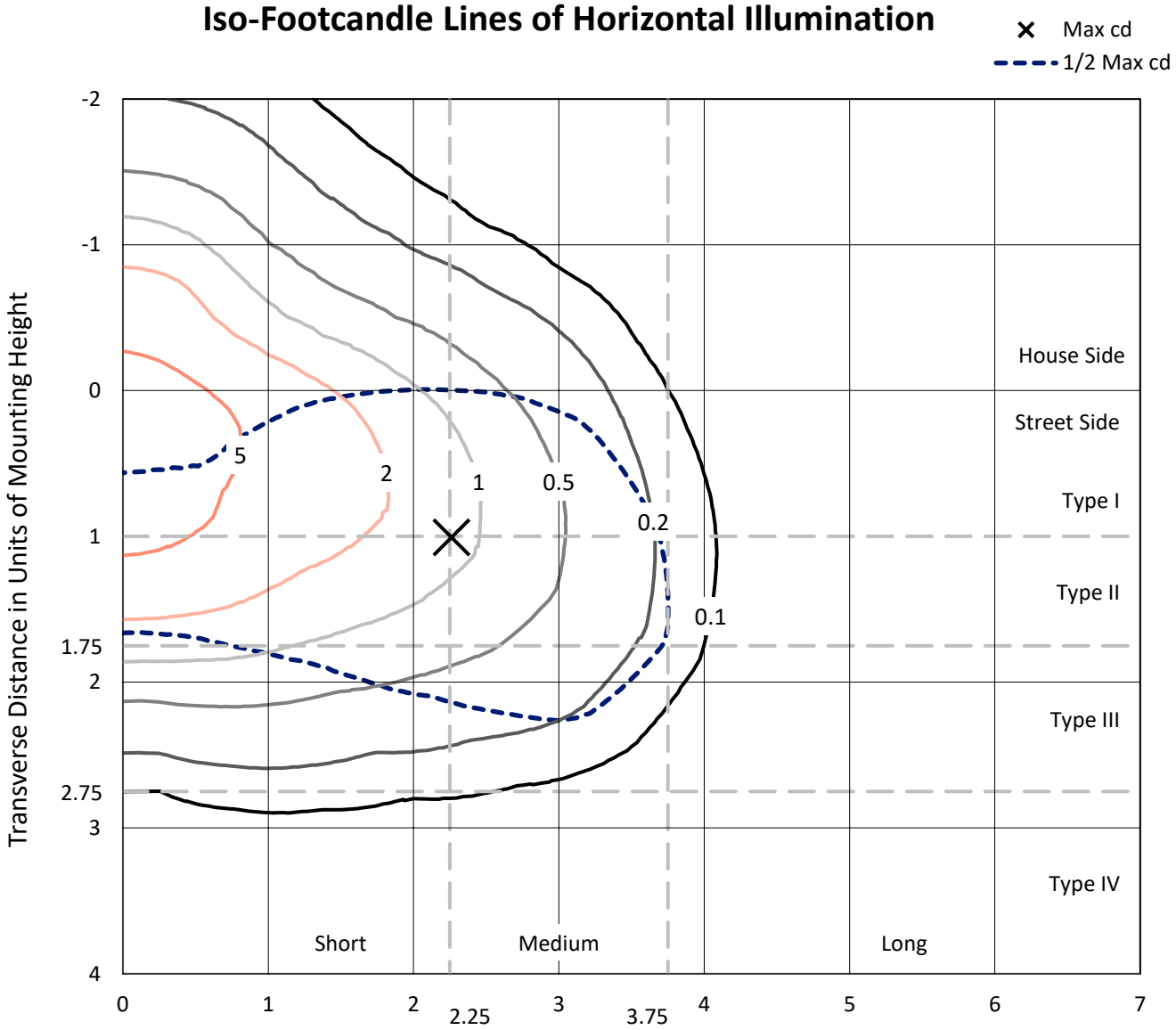
Scaled Data Report

REPORT NUMBER: P1211858
CATALOG NUMBER: GKO-PB2D-835-U-T3

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 8 fc
Type III - Medium - N/A

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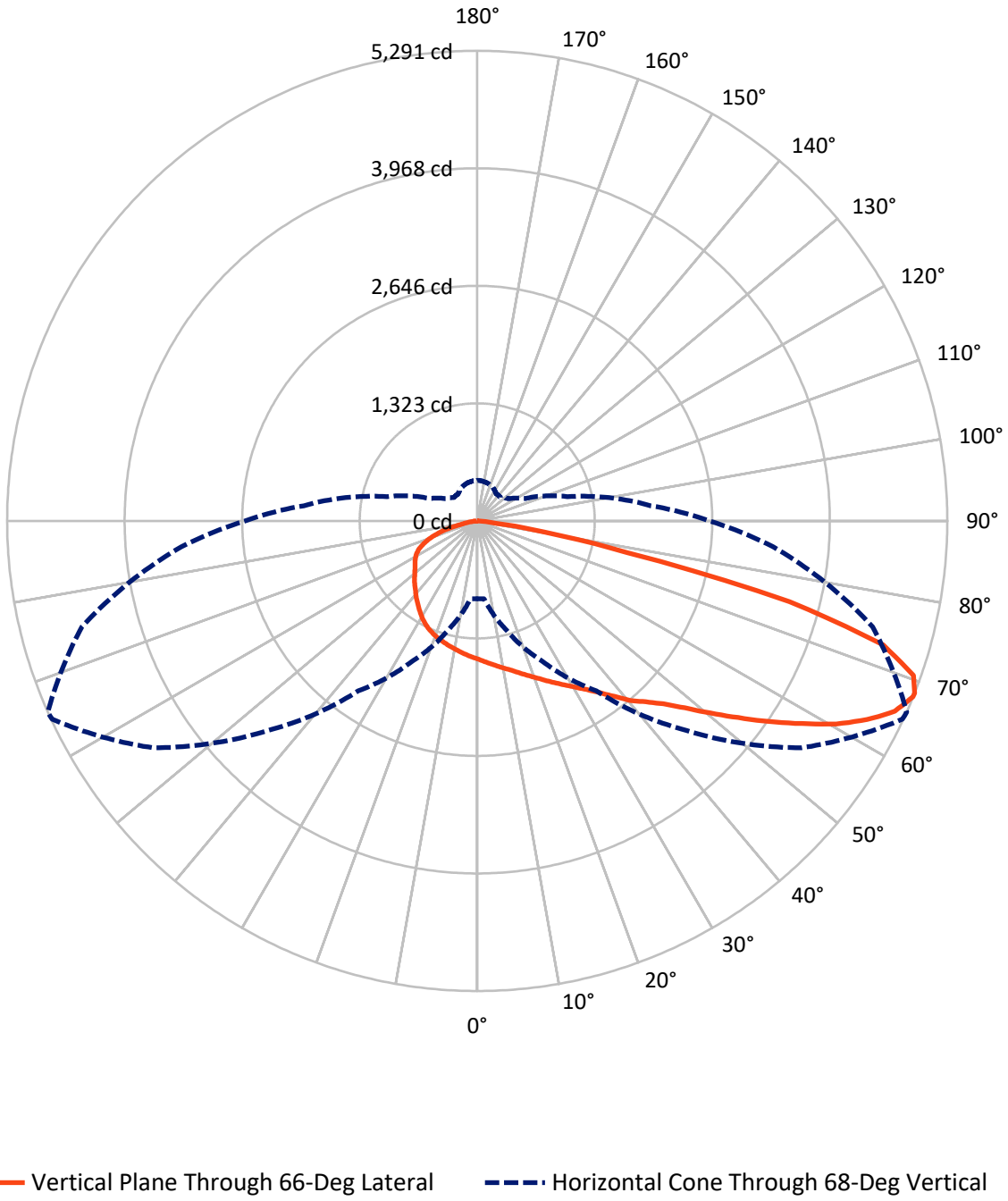
## Luminous Intensity Polar Plot



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REPORT NUMBER: P1211858
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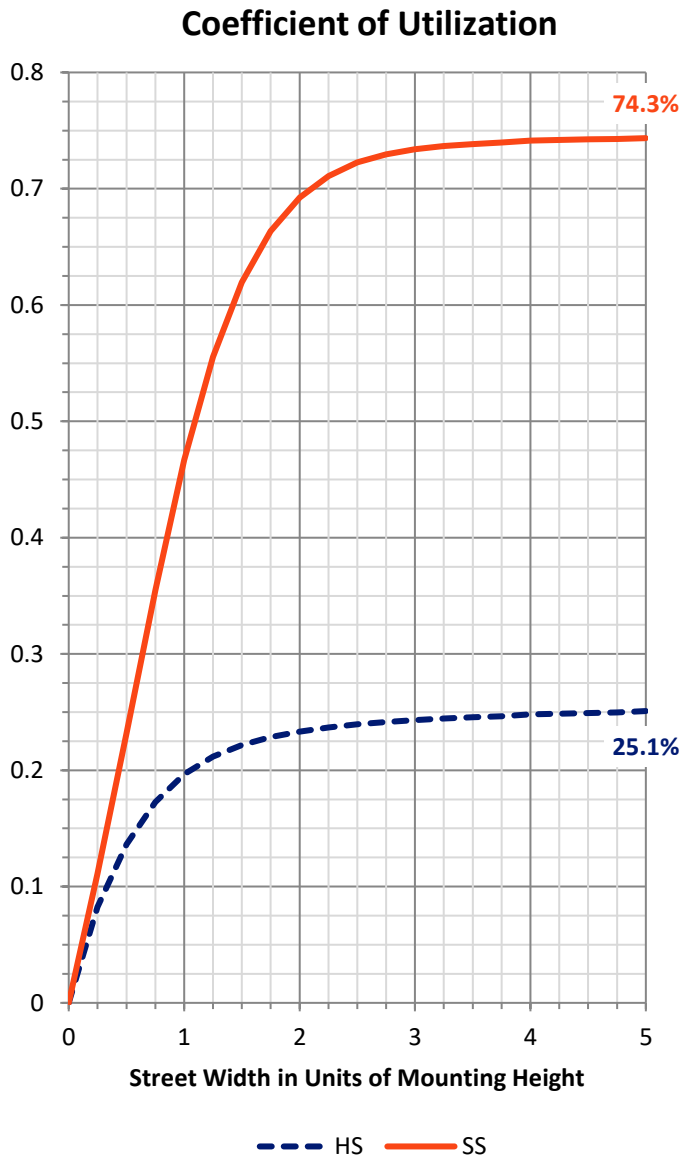
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2374.4 | 0.0 | 2374.4 |
| | % Fixture | 25.6 | 0.0 | 25.6 |
| **Street Side** | Lumens | 6899.9 | 0.0 | 6899.9 |
| | % Fixture | 74.4 | 0.0 | 74.4 |
| **Total** | Lumens | 9274.3 | 0.0 | 9274.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 149.2 | 1.6 |
| 10°-20° | 448.5 | 4.8 |
| 20°-30° | 772.9 | 8.3 |
| 30°-40° | 1199.0 | 12.9 |
| 40°-50° | 1642.6 | 17.7 |
| 50°-60° | 1959.4 | 21.1 |
| 60°-70° | 1963.4 | 21.2 |
| 70°-80° | 1039.0 | 11.2 |
| 80°-90° | 100.3 | 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° | 9274.3 | 100.0 |
| 0°-180° | 9274.3 | 100.0 |



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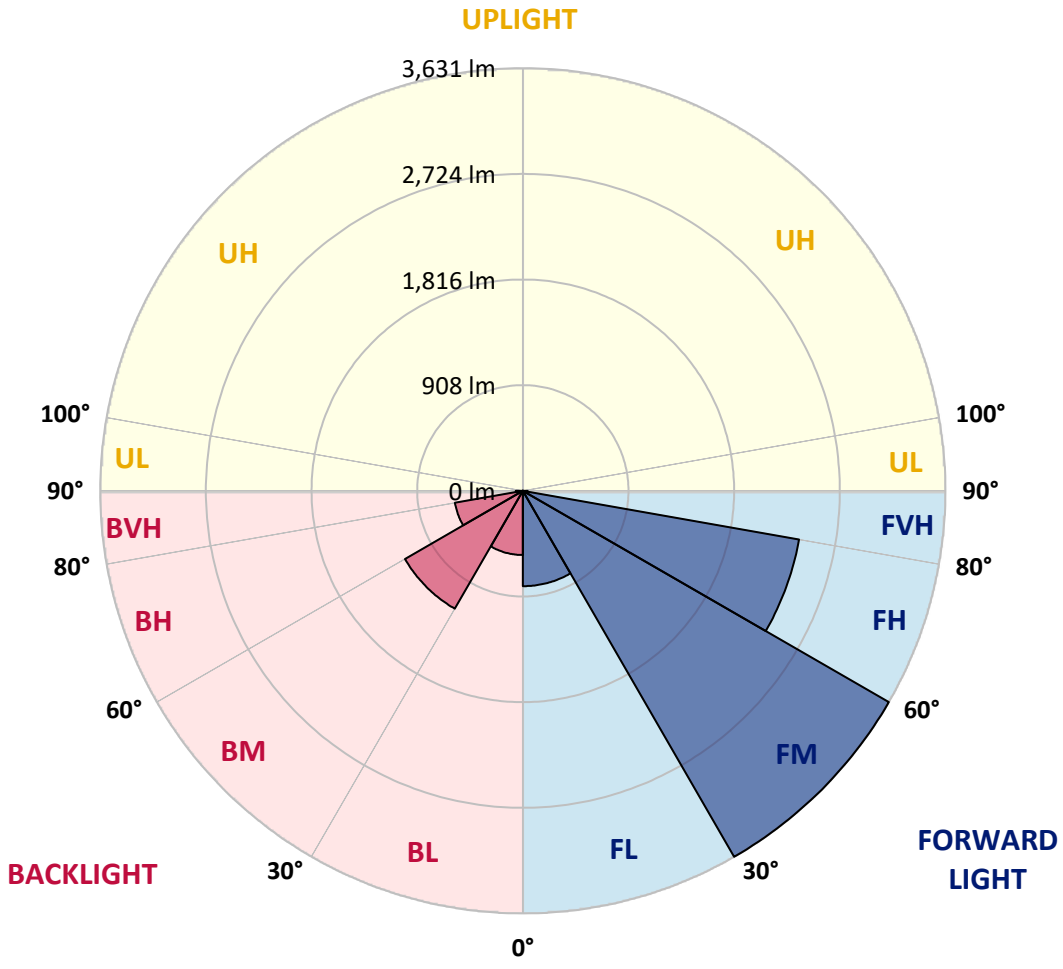
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 819.2 | 8.8 | | | |
| FM | (30°-60°) | 3631.3 | 39.2 | | | |
| FH | (60°-80°) | 2410.0 | 26.0 | | | G2/5000 |
| FVH | (80°-90°) | 39.4 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 551.5 | 5.9 | B2/1000 | | |
| BM | (30°-60°) | 1169.6 | 12.6 | B2/2500 | | |
| BH | (60°-80°) | 592.4 | 6.4 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 60.9 | 0.7 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B2-U0-G2**
Type III Medium



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REPORT NUMBER: P1211858
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | *1555.5* | 1555.5 | 1555.5 |
| 2.5° | 1620.3 | 1620.3 | 1616.7 | 1614.9 | 1613.1 | 1602.3 | 1595.1 | 1586.1 | *1586.1* | 1571.7 | 1559.1 |
| 5° | 1676.1 | 1677.9 | 1670.7 | 1670.7 | 1663.5 | 1649.1 | 1634.7 | 1616.7 | *1616.7* | 1595.1 | 1569.9 |
| 7.5° | 1724.7 | 1730.1 | 1722.9 | 1722.9 | 1715.7 | 1699.5 | 1676.1 | 1650.9 | *1650.9* | 1620.3 | 1584.3 |
| 10° | 1771.5 | 1775.1 | 1771.5 | 1775.1 | 1764.3 | 1749.9 | 1722.9 | 1688.7 | *1686.9* | 1649.1 | 1598.7 |
| 12.5° | 1809.3 | 1812.9 | 1814.7 | 1820.2 | 1811.1 | 1800.3 | 1775.1 | 1731.9 | *1726.5* | 1681.5 | 1616.7 |
| 15° | 1845.4 | 1849.0 | 1854.4 | 1861.6 | 1859.8 | 1850.8 | 1827.4 | 1778.7 | *1775.1* | 1717.5 | 1640.1 |
| 17.5° | 1874.2 | 1876.0 | 1886.8 | 1901.2 | 1904.8 | 1906.6 | 1881.4 | 1831.0 | *1827.4* | 1758.9 | 1665.3 |
| 20° | 1915.6 | 1919.2 | 1930.0 | 1944.4 | 1955.2 | 1962.4 | 1942.6 | 1886.8 | *1883.2* | 1807.5 | 1697.7 |
| 22.5° | 2009.2 | 2003.8 | 2009.2 | 2009.2 | 2014.6 | 2025.4 | 2011.0 | 1955.2 | *1948.0* | 1865.2 | 1737.3 |
| 25° | 2185.6 | 2180.2 | 2165.8 | 2133.4 | 2097.4 | 2095.6 | 2079.4 | 2025.4 | *2016.4* | 1924.6 | 1775.1 |
| 27.5° | 2432.3 | 2419.7 | 2392.7 | 2324.2 | 2237.8 | 2182.0 | 2156.8 | 2101.0 | *2090.2* | 1984.0 | 1811.1 |
| 30° | 2693.3 | 2707.7 | 2662.7 | 2569.1 | 2410.7 | 2291.8 | 2243.2 | 2180.2 | *2171.2* | 2050.6 | 1854.4 |
| 32.5° | 2997.6 | 2999.4 | 2954.4 | 2824.7 | 2619.5 | 2430.5 | 2347.7 | 2270.2 | *2263.0* | 2128.0 | 1912.0 |
| 35° | 3174.0 | 3181.2 | 3161.4 | 3040.8 | 2806.7 | 2583.5 | 2473.7 | 2380.1 | *2374.7* | 2225.2 | 1984.0 |
| 37.5° | 3357.6 | 3373.9 | 3343.2 | 3210.0 | 2949.0 | 2725.7 | 2614.1 | 2511.5 | *2506.1* | 2336.9 | 2074.0 |
| 40° | 3629.5 | 3622.3 | 3589.9 | 3393.7 | 3082.2 | 2844.5 | 2752.7 | 2671.7 | *2659.1* | 2473.7 | 2165.8 |
| 42.5° | 3825.7 | 3843.7 | 3773.5 | 3552.1 | 3228.0 | 2963.4 | 2891.4 | 2799.5 | *2783.3* | 2556.5 | 2219.8 |
| 45° | 3892.4 | 3876.1 | 3798.7 | 3636.7 | 3418.9 | 3071.4 | 3022.8 | 2952.6 | *2936.4* | 2702.3 | 2326.0 |
| 47.5° | 3906.8 | 3877.9 | 3809.5 | 3687.1 | 3580.9 | 3211.8 | 3183.0 | 3166.8 | *3143.4* | 2886.0 | 2453.9 |
| 50° | 3818.5 | 3798.7 | 3766.3 | 3705.1 | 3685.3 | 3343.2 | 3357.6 | 3417.1 | *3397.3* | 3084.0 | 2596.1 |
| 52.5° | 3618.7 | 3609.7 | 3638.5 | 3678.1 | 3625.9 | 3456.7 | 3564.7 | 3685.3 | *3678.1* | 3301.8 | 2749.1 |
| 55° | 3242.4 | 3242.4 | 3404.5 | 3543.1 | 3573.7 | 3530.5 | 3787.9 | 3995.0 | *3986.0* | 3546.7 | 2895.0 |
| 57.5° | 2898.6 | 2904.0 | 3039.0 | 3350.4 | 3480.1 | 3609.7 | 4036.4 | 4319.0 | *4304.6* | 3822.1 | 3048.0 |
| 60° | 2464.7 | 2464.7 | 2669.9 | 3060.6 | 3345.0 | 3670.9 | 4256.0 | 4632.3 | *4641.3* | 4088.6 | 3199.2 |
| 62.5° | 1951.6 | 1957.0 | 2241.4 | 2700.5 | 3150.6 | 3681.7 | 4430.7 | 4927.5 | *4925.7* | 4329.8 | 3316.2 |
| 65° | 1438.5 | 1440.3 | 1827.4 | 2300.8 | 2859.0 | 3606.1 | 4526.1 | 5154.4 | *5165.2* | 4520.7 | 3384.7 |
| 67.5° | 934.4 | 952.4 | 1344.9 | 1867.0 | 2446.7 | 3391.9 | 4475.7 | 5275.0 | *5287.6* | 4608.9 | 3363.0 |
| 68° | *875.0* | *878.6* | *1272.8* | *1748.1* | *2335.1* | *3337.8* | *4452.3* | *5280.4* | *5291.2* | *4607.1* | *3341.4* |
| 70° | 567.1 | 567.1 | 911.0 | 1364.7 | 1863.4 | 3001.2 | 4248.8 | 5195.8 | *5208.4* | 4527.9 | 3184.8 |
| 72.5° | 306.1 | 311.5 | 520.3 | 826.4 | 1272.8 | 2322.4 | 3834.7 | 4754.7 | *4776.3* | 4094.0 | 2785.1 |
| 75° | 214.2 | 217.8 | 302.5 | 462.7 | 693.1 | 1512.3 | 2997.6 | 3633.1 | *3629.5* | 2828.3 | 1744.5 |
| 77.5° | 154.8 | 154.8 | 172.8 | 288.1 | 363.7 | 691.3 | 1483.5 | 1749.9 | *1730.1* | 1380.9 | 880.4 |
| 80° | 100.8 | 100.8 | 108.0 | 151.2 | 174.6 | 210.6 | 453.7 | 757.9 | *772.3* | 673.3 | 439.3 |
| 82.5° | 41.4 | 43.2 | 46.8 | 61.2 | 63.0 | 88.2 | 129.6 | 217.8 | *210.6* | 171.0 | 124.2 |
| 85° | 5.4 | 5.4 | 7.2 | 9.0 | 10.8 | 19.8 | 18.0 | 18.0 | *18.0* | 21.6 | 19.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 3.6 | 5.4 | *5.4* | 7.2 | 5.4 |
| 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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Scaled Data Report

REPORT NUMBER: P1211858
CATALOG NUMBER: GKO-PB2D-835-U-T3

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 | 1555.5 |
| 2.5° | 1555.5 | 1555.5 | 1544.7 | 1533.9 | 1523.1 | 1514.1 | 1501.5 | 1492.5 | 1494.3 | 1499.7 | 1497.9 |
| 5° | 1564.5 | 1555.5 | 1533.9 | 1510.5 | 1492.5 | 1476.3 | 1452.9 | 1440.3 | 1438.5 | 1442.1 | 1440.3 |
| 7.5° | 1569.9 | 1555.5 | 1523.1 | 1487.1 | 1458.3 | 1436.7 | 1404.3 | 1391.7 | 1386.3 | 1388.1 | 1388.1 |
| 10° | 1580.7 | 1557.3 | 1512.3 | 1461.9 | 1425.9 | 1395.3 | 1361.1 | 1343.1 | 1337.7 | 1337.7 | 1335.9 |
| 12.5° | 1593.3 | 1560.9 | 1501.5 | 1440.3 | 1393.5 | 1357.5 | 1317.9 | 1298.1 | 1292.6 | 1292.6 | 1290.8 |
| 15° | 1605.9 | 1566.3 | 1490.7 | 1416.9 | 1362.9 | 1319.7 | 1281.8 | 1258.4 | 1251.2 | 1251.2 | 1254.8 |
| 17.5° | 1622.1 | 1571.7 | 1479.9 | 1395.3 | 1330.5 | 1281.8 | 1242.2 | 1218.8 | 1209.8 | 1215.2 | 1218.8 |
| 20° | 1638.3 | 1582.5 | 1469.1 | 1371.9 | 1298.1 | 1247.6 | 1208.0 | 1184.6 | 1175.6 | 1184.6 | 1186.4 |
| 22.5° | 1661.7 | 1591.5 | 1456.5 | 1344.9 | 1265.6 | 1209.8 | 1173.8 | 1152.2 | 1146.8 | 1155.8 | 1163.0 |
| 25° | 1685.1 | 1602.3 | 1440.3 | 1316.1 | 1224.2 | 1170.2 | 1141.4 | 1125.2 | 1127.0 | 1139.6 | 1146.8 |
| 27.5° | 1710.3 | 1611.3 | 1424.1 | 1280.0 | 1179.2 | 1128.8 | 1107.2 | 1103.6 | 1110.8 | 1125.2 | 1134.2 |
| 30° | 1740.9 | 1623.9 | 1402.5 | 1238.6 | 1128.8 | 1083.8 | 1074.8 | 1085.6 | 1098.2 | 1112.6 | 1121.6 |
| 32.5° | 1780.5 | 1640.1 | 1380.9 | 1191.8 | 1076.6 | 1035.2 | 1049.6 | 1073.0 | 1087.4 | 1101.8 | 1110.8 |
| 35° | 1836.4 | 1672.5 | 1368.3 | 1145.0 | 1020.8 | 993.8 | 1026.2 | 1064.0 | 1074.8 | 1083.8 | 1094.6 |
| 37.5° | 1901.2 | 1715.7 | 1362.9 | 1101.8 | 970.4 | 957.8 | 1002.8 | 1047.8 | 1051.4 | 1055.0 | 1065.8 |
| 40° | 1964.2 | 1748.1 | 1348.5 | 1055.0 | 918.2 | 918.2 | 974.0 | 1017.2 | 1015.4 | 1010.0 | 1017.2 |
| 42.5° | 1989.4 | 1744.5 | 1307.1 | 1010.0 | 876.8 | 878.6 | 929.0 | 970.4 | 959.6 | 959.6 | 970.4 |
| 45° | 2061.4 | 1773.3 | 1276.4 | 974.0 | 839.0 | 831.8 | 871.4 | 903.8 | 921.8 | 945.2 | 956.0 |
| 47.5° | 2153.2 | 1812.9 | 1253.0 | 932.6 | 803.0 | 779.6 | 801.2 | 855.2 | 885.8 | 911.0 | 920.0 |
| 50° | 2248.6 | 1858.0 | 1231.4 | 889.4 | 766.9 | 720.1 | 730.9 | 790.4 | 817.4 | 830.0 | 835.4 |
| 52.5° | 2345.9 | 1899.4 | 1215.2 | 853.4 | 725.5 | 649.9 | 673.3 | 729.1 | 748.9 | 756.1 | 759.7 |
| 55° | 2432.3 | 1933.6 | 1200.8 | 822.8 | 678.7 | 594.1 | 612.1 | 669.7 | 684.1 | 691.3 | 696.7 |
| 57.5° | 2524.1 | 1971.4 | 1191.8 | 794.0 | 626.5 | 545.5 | 558.1 | 610.3 | 630.1 | 637.3 | 642.7 |
| 60° | 2605.1 | 2007.4 | 1184.6 | 763.3 | 577.9 | 502.3 | 509.5 | 559.9 | 581.5 | 585.1 | 590.5 |
| 62.5° | 2659.1 | 2030.8 | 1173.8 | 725.5 | 532.9 | 460.9 | 462.7 | 511.3 | 534.7 | 538.3 | 541.9 |
| 65° | 2673.5 | 2025.4 | 1141.4 | 675.1 | 487.9 | 419.5 | 419.5 | 466.3 | 491.5 | 504.1 | 509.5 |
| 67.5° | 2630.3 | 1980.4 | 1073.0 | 610.3 | 444.7 | 381.7 | 381.7 | 423.1 | 450.1 | 464.5 | 469.9 |
| 68° | *2615.9* | *1960.6* | *1051.4* | *594.1* | *433.9* | *372.7* | *372.7* | *415.9* | *441.1* | *453.7* | *457.3* |
| 70° | 2493.5 | 1863.4 | 952.4 | 532.9 | 399.7 | 345.7 | 345.7 | 383.5 | 410.5 | 410.5 | 408.7 |
| 72.5° | 2165.8 | 1614.9 | 783.2 | 446.5 | 349.3 | 306.1 | 311.5 | 347.5 | 356.5 | 365.5 | 363.7 |
| 75° | 1341.3 | 966.8 | 525.7 | 352.9 | 293.5 | 268.3 | 279.1 | 311.5 | 316.9 | 336.7 | 331.3 |
| 77.5° | 671.5 | 473.5 | 279.1 | 205.2 | 226.8 | 230.4 | 250.2 | 273.7 | 289.9 | 311.5 | 297.1 |
| 80° | 331.3 | 230.4 | 163.8 | 127.8 | 133.2 | 169.2 | 217.8 | 235.8 | 264.7 | 279.1 | 266.5 |
| 82.5° | 91.8 | 70.2 | 66.6 | 70.2 | 99.0 | 131.4 | 171.0 | 208.8 | 246.6 | 259.2 | 241.2 |
| 85° | 16.2 | 12.6 | 10.8 | 34.2 | 68.4 | 97.2 | 138.6 | 185.4 | 221.4 | 212.4 | 199.8 |
| 87.5° | 5.4 | 3.6 | 3.6 | 21.6 | 50.4 | 79.2 | 118.8 | 165.6 | 189.0 | 171.0 | 153.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2511-595-3

Test Date: 01/09/2026

Luminaire Tested: GKO-PB1C-835-U-T4W

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

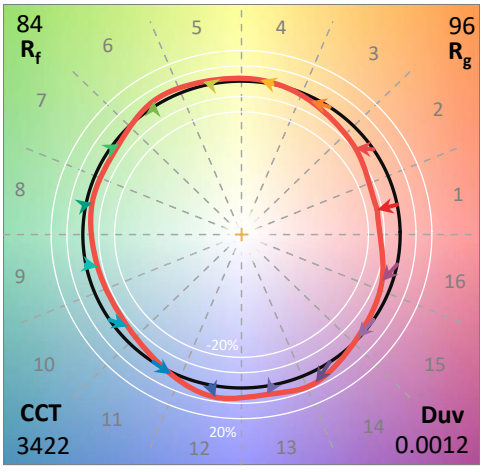
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2511-595-3 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 01/09/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGraw-Edison |
| Catalog Number: | **GKO-PB1C-835-U-T4W** |
| Description: | Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3422 |
| CIE u': | 0.2372 |
| CIE v': | 0.5144 |
| Duv: | 0.0012 |
| CIE x: | 0.4111 |
| CIE y: | 0.3962 |
| CIE z: | 0.1928 |
| Peak Wavelength (nm): | 598 |
| Dominant Wavelength (nm): | 580 |
| Purity: | 42.28884 |
| Rf: | 83.9 |
| Rg: | 95.8 |

| | |
|---|---|
| CRI (Ra): | 81.5 |
| R1: | 79.2 |
| R2: | 88.7 |
| R3: | 96.3 |
| R4: | 80.3 |
| R5: | 79.7 |
| R6: | 85.6 |
| R7: | 83.5 |
| R8: | 58.4 |
| R9: | -1.4 |
| R10: | 74.4 |
| R11: | 79.7 |
| R12: | 66.0 |
| R13: | 81.3 |
| R14: | 98.3 |
| R15: | 71.2 |




## Test Conditions

| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.1 |

REPORT NUMBER: SP1-2511-595-3

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

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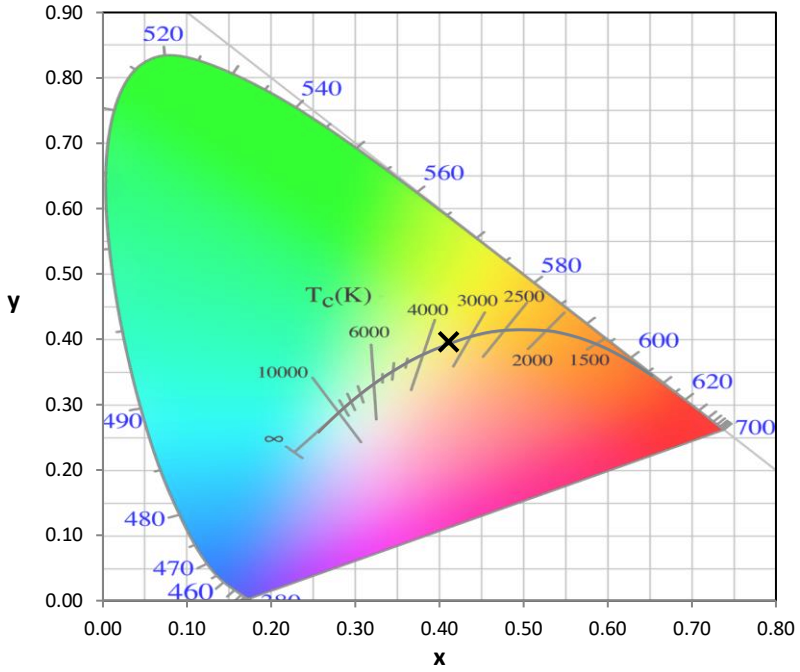
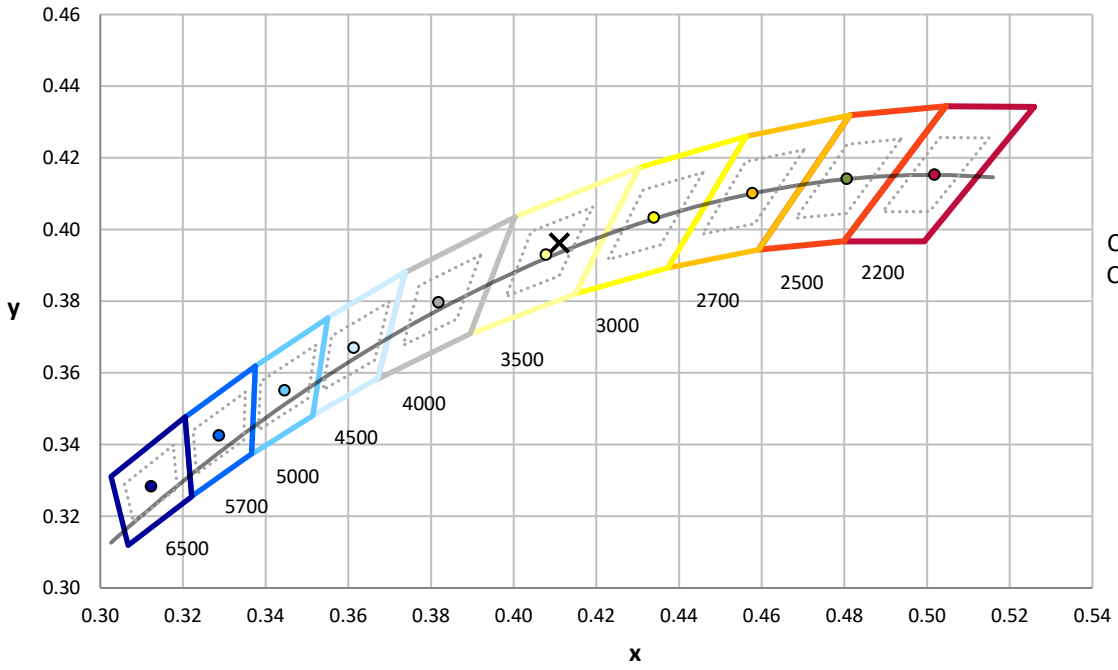
## CIE 1931 Chromaticity Diagram




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




CCT = 3422K
CIE x = 0.4111
CIE y = 0.3962
Duv = 0.0012

Point lies inside the ANSI 3500K 4-step quadrangle

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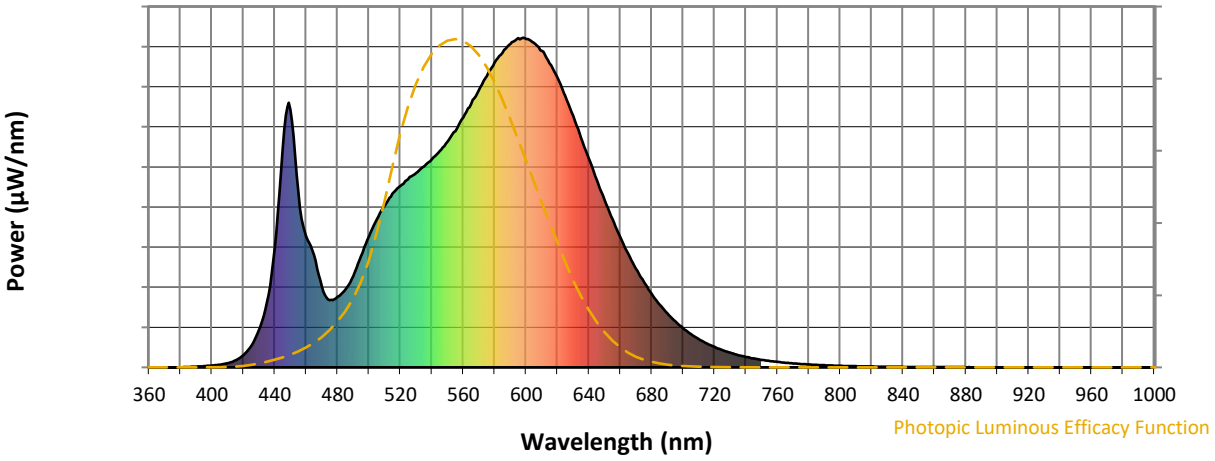
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 278 | NR | 620 | 878 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 823 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 398 | NR | 630 | 763 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 448 | NR | 635 | 697 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 490 | NR | 640 | 633 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 527 | NR | 645 | 568 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 550 | NR | 650 | 508 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 571 | NR | 655 | 450 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 589 | NR | 660 | 395 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 610 | NR | 665 | 345 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 631 | NR | 670 | 299 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 656 | NR | 675 | 259 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 685 | NR | 680 | 223 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 65 | NR | 555 | 717 | NR | 685 | 191 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 758 | NR | 690 | 164 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 198 | NR | 565 | 799 | NR | 695 | 139 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 359 | NR | 570 | 841 | NR | 700 | 118 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 663 | NR | 575 | 883 | NR | 705 | 101 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 782 | NR | 580 | 924 | NR | 710 | 86 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 533 | NR | 585 | 954 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 398 | NR | 590 | 982 | NR | 720 | 62 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 341 | NR | 595 | 999 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 244 | NR | 600 | 996 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 204 | NR | 605 | 984 | NR | 735 | 37 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 214 | NR | 610 | 960 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 236 | NR | 615 | 923 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

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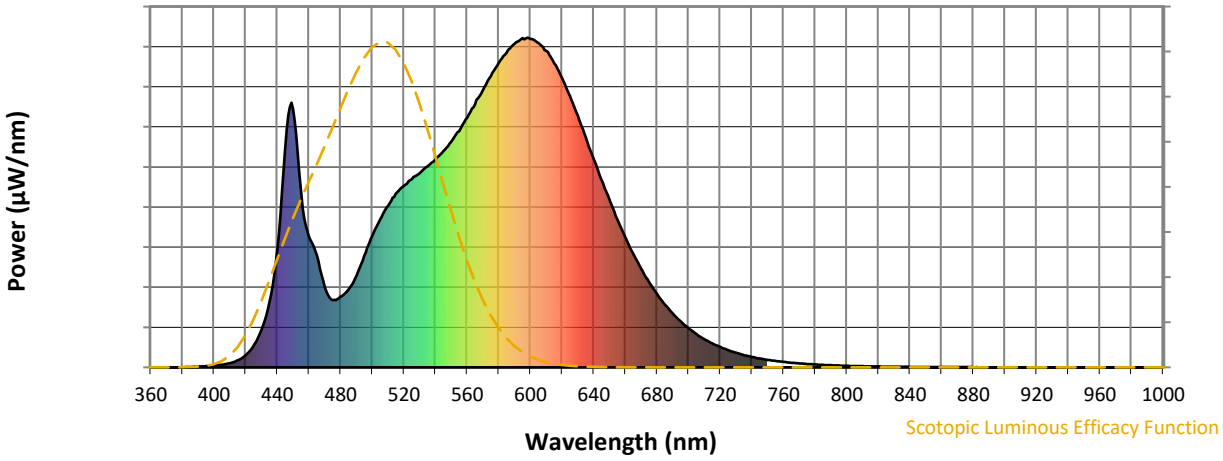
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.48**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 278 | NR | 620 | 878 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 823 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 398 | NR | 630 | 763 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 448 | NR | 635 | 697 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 490 | NR | 640 | 633 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 527 | NR | 645 | 568 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 550 | NR | 650 | 508 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 571 | NR | 655 | 450 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 589 | NR | 660 | 395 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 610 | NR | 665 | 345 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 631 | NR | 670 | 299 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 656 | NR | 675 | 259 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 685 | NR | 680 | 223 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 65 | NR | 555 | 717 | NR | 685 | 191 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 758 | NR | 690 | 164 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 198 | NR | 565 | 799 | NR | 695 | 139 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 359 | NR | 570 | 841 | NR | 700 | 118 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 663 | NR | 575 | 883 | NR | 705 | 101 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 782 | NR | 580 | 924 | NR | 710 | 86 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 533 | NR | 585 | 954 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 398 | NR | 590 | 982 | NR | 720 | 62 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 341 | NR | 595 | 999 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 244 | NR | 600 | 996 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 204 | NR | 605 | 984 | NR | 735 | 37 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 214 | NR | 610 | 960 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 236 | NR | 615 | 923 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

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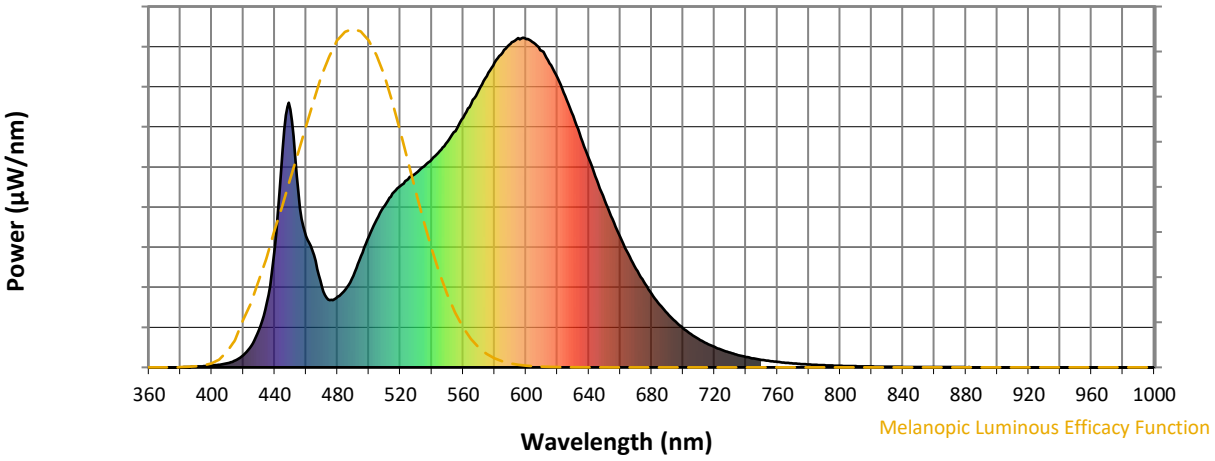
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.92**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 278 | NR | 620 | 878 | NR | 750 | 23 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 338 | NR | 625 | 823 | NR | 755 | 20 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 398 | NR | 630 | 763 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 448 | NR | 635 | 697 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 490 | NR | 640 | 633 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 527 | NR | 645 | 568 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 550 | NR | 650 | 508 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 571 | NR | 655 | 450 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 589 | NR | 660 | 395 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 610 | NR | 665 | 345 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 13 | NR | 540 | 631 | NR | 670 | 299 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 656 | NR | 675 | 259 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 685 | NR | 680 | 223 | NR | 810 | 4 | NR | 940 | 0 | NR |
| 425 | 65 | NR | 555 | 717 | NR | 685 | 191 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 114 | NR | 560 | 758 | NR | 690 | 164 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 198 | NR | 565 | 799 | NR | 695 | 139 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 359 | NR | 570 | 841 | NR | 700 | 118 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 663 | NR | 575 | 883 | NR | 705 | 101 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 782 | NR | 580 | 924 | NR | 710 | 86 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 533 | NR | 585 | 954 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 398 | NR | 590 | 982 | NR | 720 | 62 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 341 | NR | 595 | 999 | NR | 725 | 52 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 244 | NR | 600 | 996 | NR | 730 | 44 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 204 | NR | 605 | 984 | NR | 735 | 37 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 214 | NR | 610 | 960 | NR | 740 | 32 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 236 | NR | 615 | 923 | NR | 745 | 27 | NR | 875 | 1 | NR | | | |

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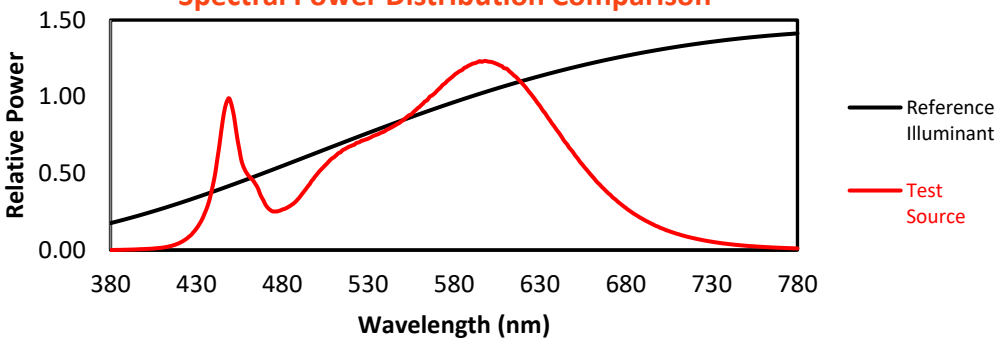
# TM-30-18

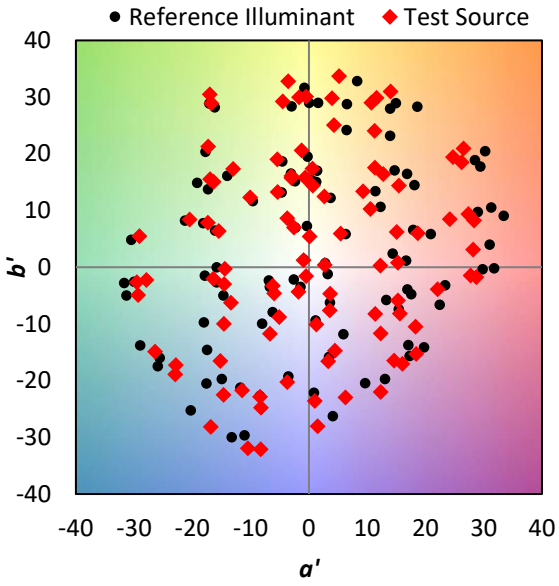
## Summary

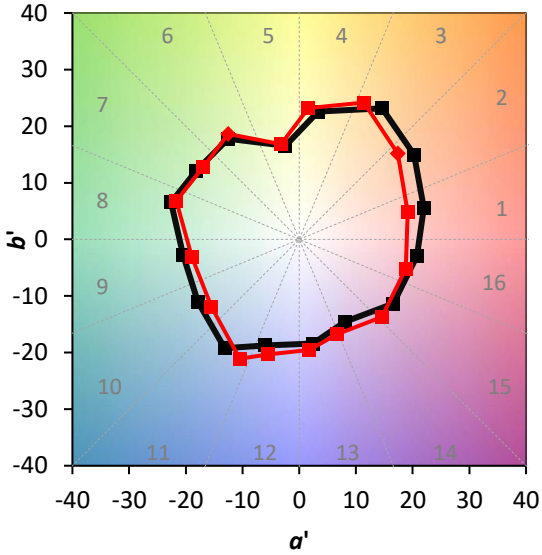
$R_f$ = 83.9
$R_g$ = 95.8
CIE $R_a$ = 81.5
$R_9$ = -1.4

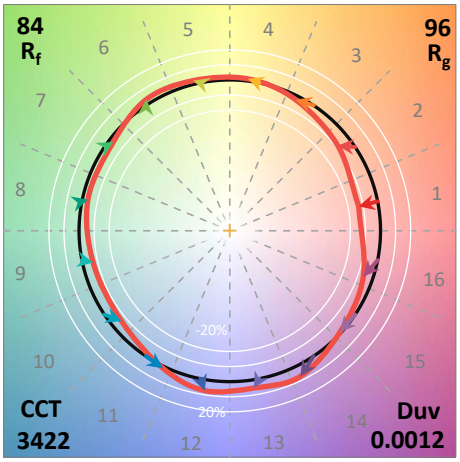
## Spectral Power Distribution Comparison

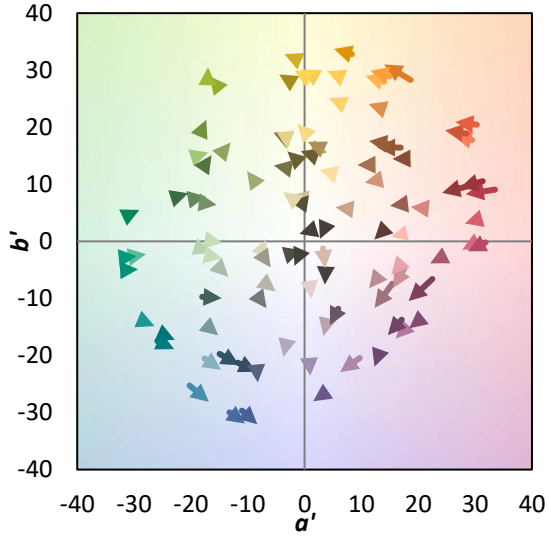



## Color Vector Graphics



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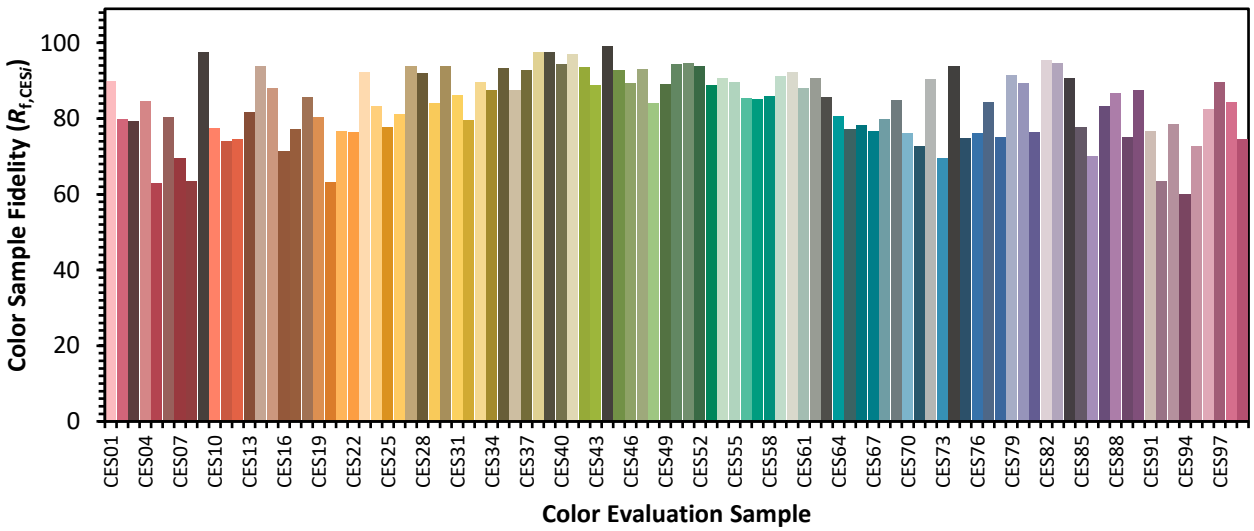
# TM-30-18

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

| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 81 | CES51 = 95 | CES76 = 76 |
| CES02 = 62 | CES27 = 94 | CES52 = 94 | CES77 = 84 |
| CES03 = 31 | CES28 = 92 | CES53 = 89 | CES78 = 75 |
| CES04 = 70 | CES29 = 84 | CES54 = 91 | CES79 = 91 |
| CES05 = 49 | CES30 = 94 | CES55 = 90 | CES80 = 89 |
| CES06 = 51 | CES31 = 86 | CES56 = 85 | CES81 = 76 |
| CES07 = 41 | CES32 = 80 | CES57 = 85 | CES82 = 95 |
| CES08 = 40 | CES33 = 90 | CES58 = 86 | CES83 = 95 |
| CES09 = 29 | CES34 = 87 | CES59 = 91 | CES84 = 91 |
| CES10 = 75 | CES35 = 93 | CES60 = 92 | CES85 = 78 |
| CES11 = 58 | CES36 = 87 | CES61 = 88 | CES86 = 70 |
| CES12 = 64 | CES37 = 93 | CES62 = 91 | CES87 = 83 |
| CES13 = 43 | CES38 = 98 | CES63 = 86 | CES88 = 87 |
| CES14 = 74 | CES39 = 98 | CES64 = 81 | CES89 = 75 |
| CES15 = 71 | CES40 = 94 | CES65 = 77 | CES90 = 88 |
| CES16 = 47 | CES41 = 97 | CES66 = 78 | CES91 = 77 |
| CES17 = 50 | CES42 = 94 | CES67 = 77 | CES92 = 63 |
| CES18 = 56 | CES43 = 89 | CES68 = 80 | CES93 = 78 |
| CES19 = 72 | CES44 = 99 | CES69 = 85 | CES94 = 60 |
| CES20 = 66 | CES45 = 93 | CES70 = 76 | CES95 = 73 |
| CES21 = 86 | CES46 = 89 | CES71 = 73 | CES96 = 83 |
| CES22 = 78 | CES47 = 93 | CES72 = 90 | CES97 = 90 |
| CES23 = 92 | CES48 = 84 | CES73 = 70 | CES98 = 84 |
| CES24 = 91 | CES49 = 89 | CES74 = 94 | CES99 = 74 |
| CES25 = 72 | CES50 = 94 | CES75 = 75 | |



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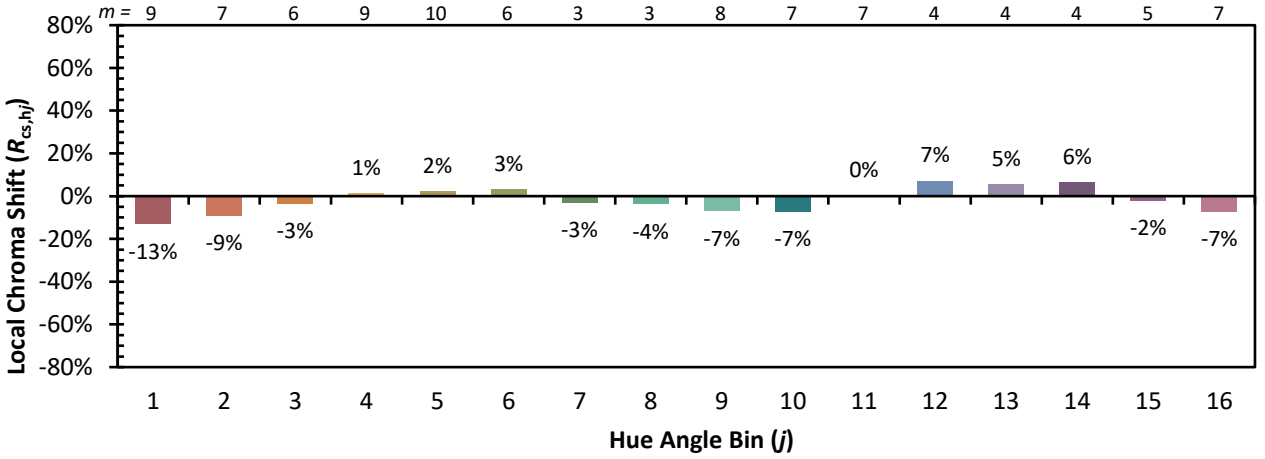
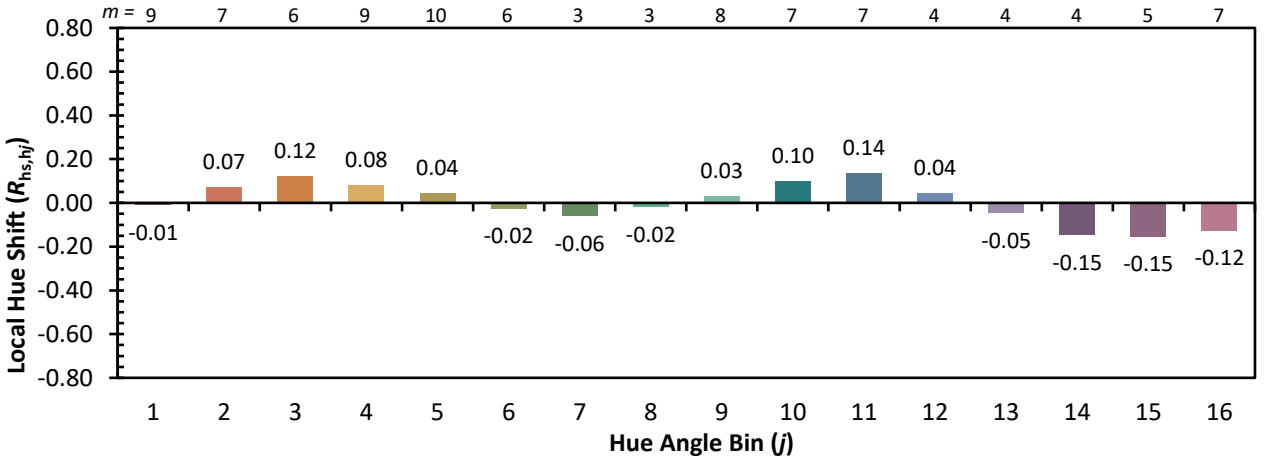
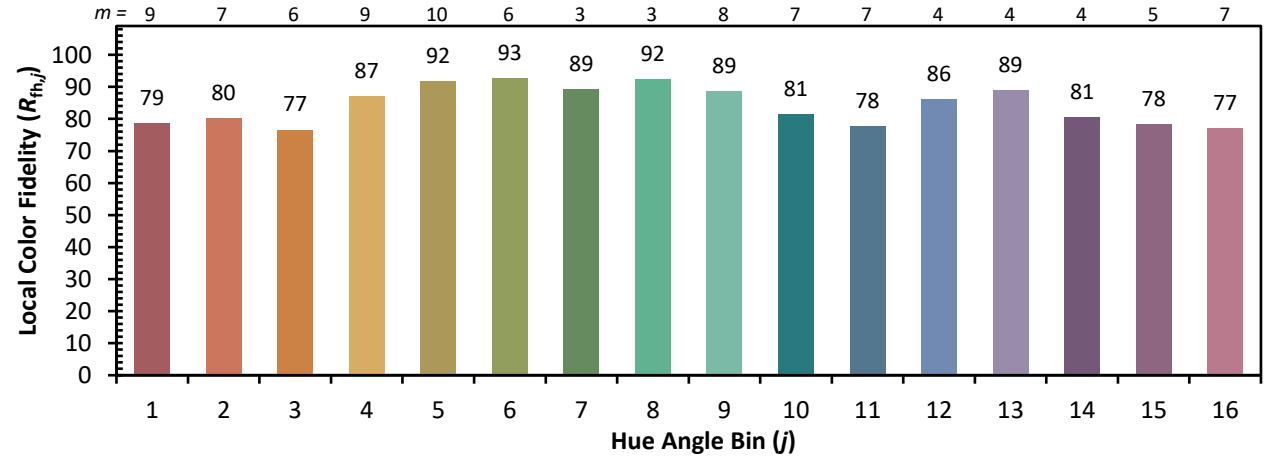
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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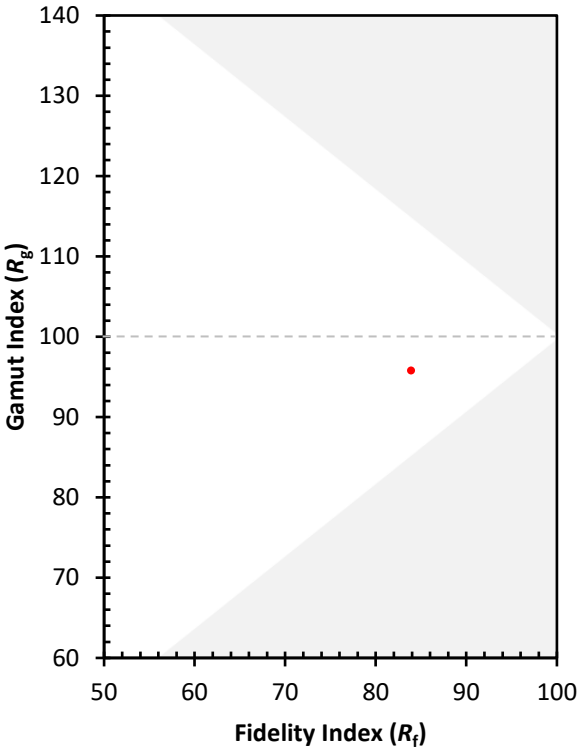
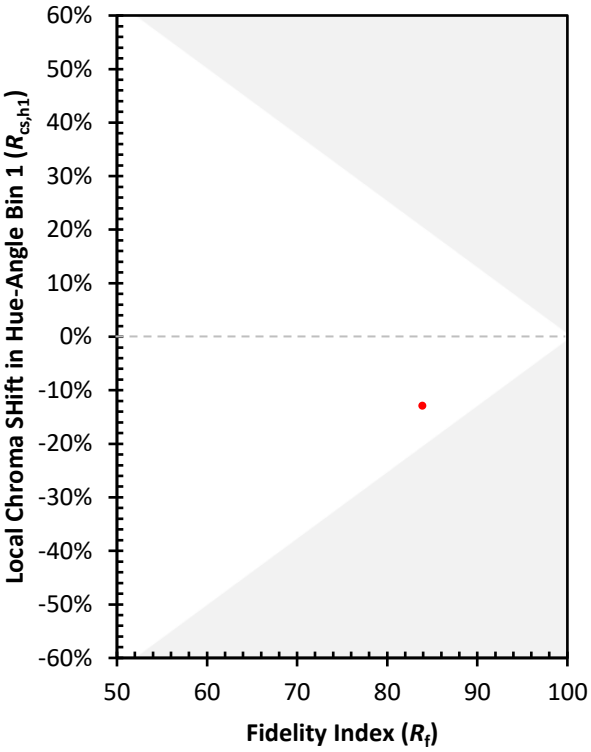
## TM-30-18

### Measure Comparisons




(END OF REPORT)