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: P1211968

Luminaire Tested: **GKO-PB2D-830-U-T2U**

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: | P1211968 |
| Test Lab: | INNOVATION CENTER(G1) |
| Issue Date: | 11/5/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GKO-PB2D-830-U-T2U |
| Description: | GEKKO WALL PACK 10000LM PACKAGE 80CRI 3000K FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC |
| Light Source: | (20) 3000K CCT, 80 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 9164 lumens |
| Efficiency: | N/A |
| Efficacy: | 120.3 lumens/watt |
| Luminous Opening: | Rectangular (W 0.67' x L: 0.33' x H: 0') |
| IES Classification: | Type II - 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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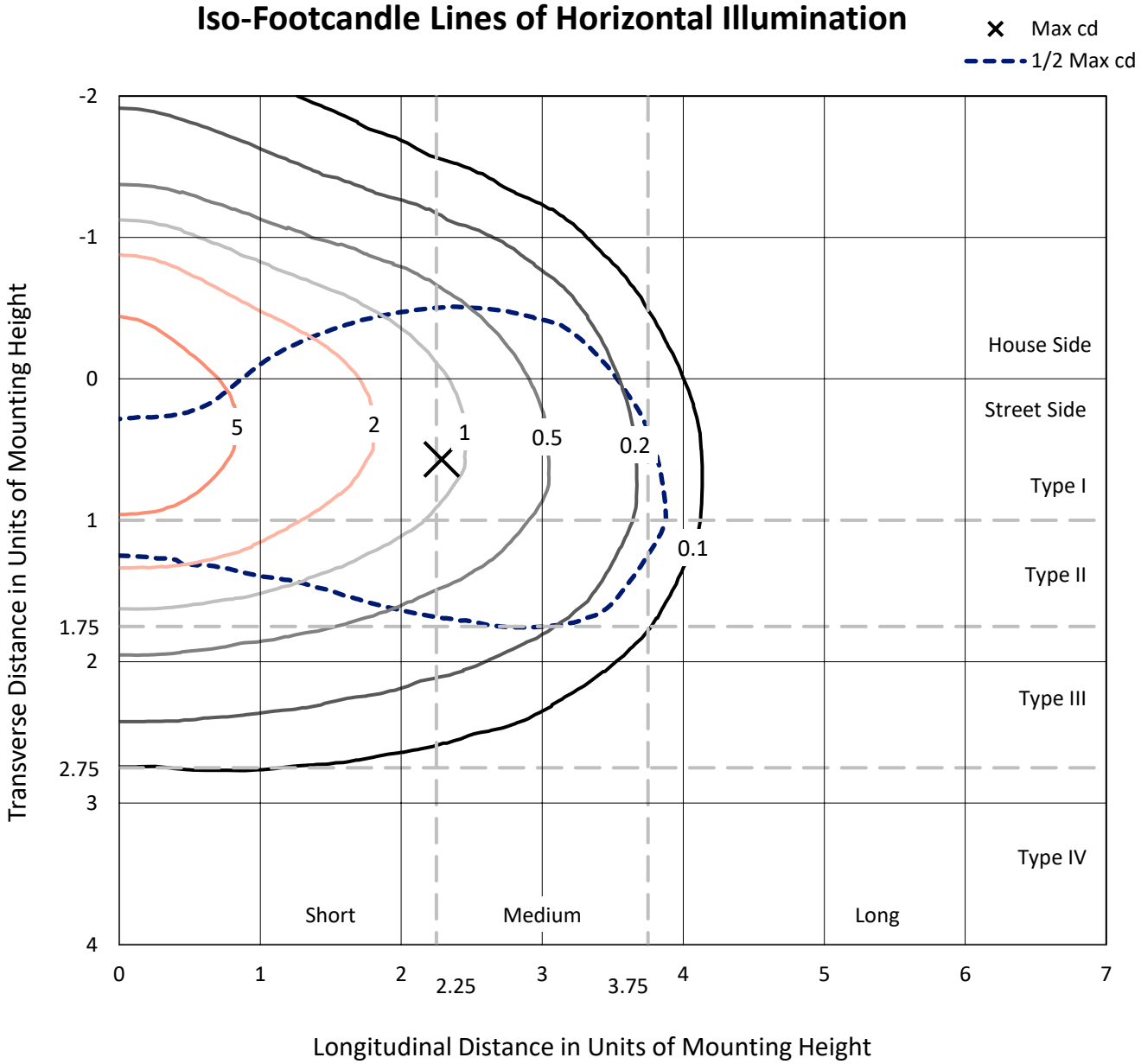
Scaled Data Report

REPORT NUMBER: P1211968
CATALOG NUMBER: GKO-PB2D-830-U-T2U

## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 8.9 fc
Type II - Medium - N/A

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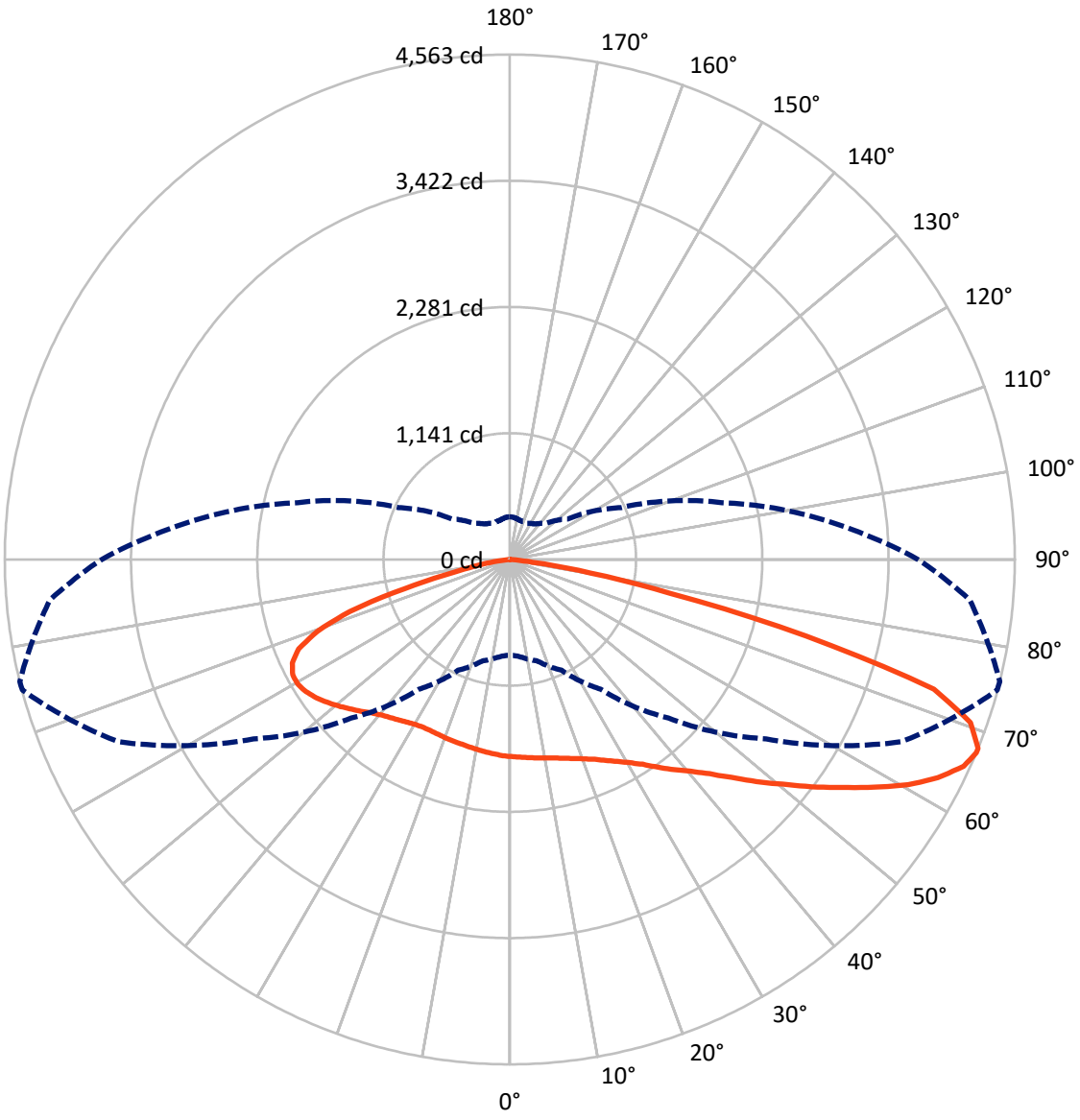
## Luminous Intensity Polar Plot



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REPORT NUMBER: P1211968
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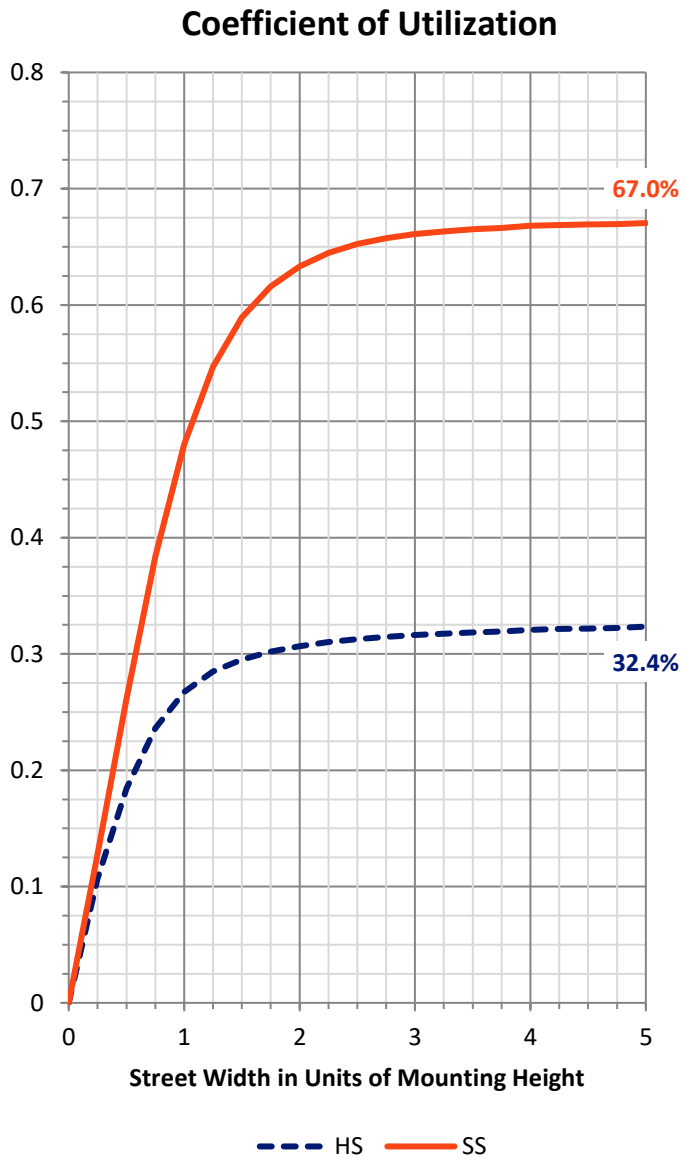
**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 3023.4 | 0.0 | 3023.4 |
| | % Fixture | 33.0 | 0.0 | 33.0 |
| **Street Side** | Lumens | 6140.7 | 0.0 | 6140.7 |
| | % Fixture | 67.0 | 0.0 | 67.0 |
| **Total** | Lumens | 9164.0 | 0.0 | 9164.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 171.2 | 1.9 |
| 10°-20° | 523.9 | 5.7 |
| 20°-30° | 901.2 | 9.8 |
| 30°-40° | 1295.1 | 14.1 |
| 40°-50° | 1642.4 | 17.9 |
| 50°-60° | 1803.5 | 19.7 |
| 60°-70° | 1749.1 | 19.1 |
| 70°-80° | 965.7 | 10.5 |
| 80°-90° | 112.0 | 1.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 9164.0 | 100.0 |
| 0°-180° | 9164.0 | 100.0 |



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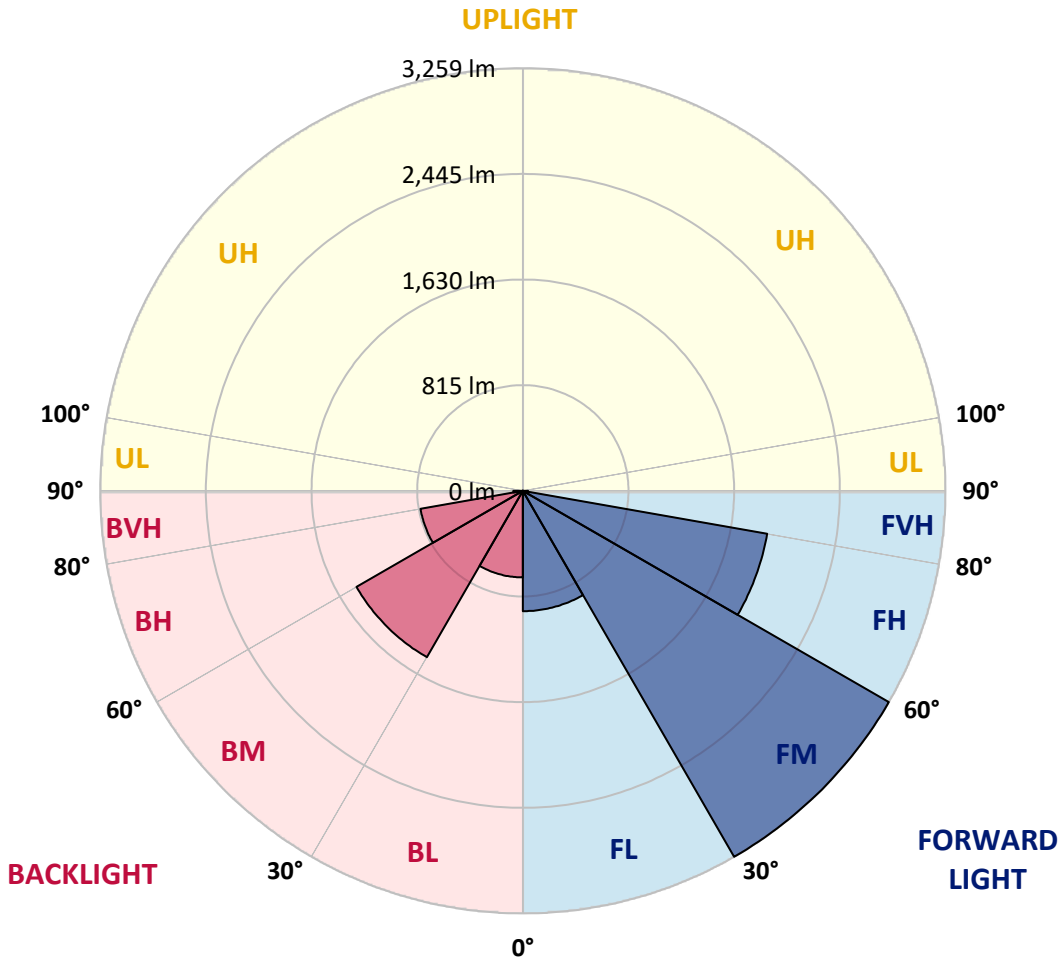
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 928.3 | 10.1 | | | |
| FM | (30°-60°) | 3259.4 | 35.6 | | | |
| FH | (60°-80°) | 1913.4 | 20.9 | | | G2/5000 |
| FVH | (80°-90°) | 39.6 | 0.4 | | | G1/100 |
| BL | (0°-30°) | 668.0 | 7.3 | B2/1000 | | |
| BM | (30°-60°) | 1481.5 | 16.2 | B2/2500 | | |
| BH | (60°-80°) | 801.4 | 8.7 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 72.4 | 0.8 | | | 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 II Medium



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Scaled Data Report

REPORT NUMBER: P1211968
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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 76° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | *1781.4* | 1781.4 |
| 2.5° | 1834.6 | 1832.8 | 1831.0 | 1831.0 | 1823.9 | 1816.8 | 1809.7 | 1804.4 | 1790.2 | *1788.5* | 1781.4 |
| 5° | 1889.5 | 1889.5 | 1884.2 | 1882.4 | 1871.8 | 1854.1 | 1838.1 | 1822.2 | 1802.7 | *1799.1* | 1783.2 |
| 7.5° | 1960.4 | 1960.4 | 1951.5 | 1944.5 | 1928.5 | 1900.1 | 1871.8 | 1843.4 | 1815.1 | *1811.5* | 1786.7 |
| 10° | 2050.8 | 2050.8 | 2043.7 | 2027.8 | 1994.1 | 1956.9 | 1910.8 | 1866.5 | 1829.2 | *1825.7* | 1790.2 |
| 12.5° | 2144.8 | 2146.5 | 2135.9 | 2112.8 | 2072.1 | 2015.4 | 1958.6 | 1894.8 | 1847.0 | *1841.7* | 1797.3 |
| 15° | 2240.5 | 2242.2 | 2235.2 | 2210.3 | 2155.4 | 2086.3 | 2010.0 | 1933.8 | 1870.0 | *1864.7* | 1808.0 |
| 17.5° | 2334.4 | 2338.0 | 2330.9 | 2302.5 | 2238.7 | 2164.3 | 2070.3 | 1974.6 | 1898.4 | *1891.3* | 1825.7 |
| 20° | 2423.0 | 2423.0 | 2423.0 | 2391.1 | 2329.1 | 2244.0 | 2135.9 | 2024.2 | 1930.3 | *1923.2* | 1847.0 |
| 22.5° | 2502.8 | 2506.3 | 2511.7 | 2493.9 | 2423.0 | 2329.1 | 2212.1 | 2079.2 | 1971.0 | *1962.2* | 1873.6 |
| 25° | 2582.6 | 2584.3 | 2598.5 | 2586.1 | 2517.0 | 2419.5 | 2293.6 | 2148.3 | 2020.7 | *2011.8* | 1905.5 |
| 27.5° | 2674.7 | 2680.1 | 2688.9 | 2683.6 | 2605.6 | 2509.9 | 2384.0 | 2224.5 | 2075.6 | *2066.8* | 1944.5 |
| 30° | 2782.9 | 2782.9 | 2788.2 | 2779.3 | 2701.3 | 2605.6 | 2474.4 | 2304.3 | 2144.8 | *2130.6* | 1992.3 |
| 32.5° | 2871.5 | 2880.3 | 2876.8 | 2873.3 | 2791.7 | 2696.0 | 2566.6 | 2392.9 | 2224.5 | *2206.8* | 2057.9 |
| 35° | 2954.8 | 2956.6 | 2954.8 | 2958.3 | 2876.8 | 2786.4 | 2664.1 | 2495.7 | 2313.1 | *2306.1* | 2141.2 |
| 37.5° | 3002.7 | 3006.2 | 3015.1 | 3025.7 | 2953.0 | 2867.9 | 2761.6 | 2609.2 | 2423.0 | *2410.6* | 2240.5 |
| 40° | 3025.7 | 3031.0 | 3078.9 | 3094.8 | 3016.8 | 2945.9 | 2864.4 | 2712.0 | 2529.4 | *2515.2* | 2339.7 |
| 42.5° | 3061.1 | 3103.7 | 3128.5 | 3132.0 | 3064.7 | 3002.7 | 2953.0 | 2828.9 | 2660.6 | *2648.1* | 2472.7 |
| 45° | 2944.2 | 2928.2 | 2993.8 | 3070.0 | 3066.5 | 3039.9 | 3038.1 | 2960.1 | 2821.9 | *2809.4* | 2623.3 |
| 47.5° | 2797.0 | 2784.6 | 2820.1 | 2931.8 | 3011.5 | 3055.8 | 3121.4 | 3114.3 | 3016.8 | *2999.1* | 2798.8 |
| 50° | 2446.1 | 2467.4 | 2641.1 | 2793.5 | 2931.8 | 3061.1 | 3192.3 | 3275.6 | 3206.5 | *3192.3* | 2984.9 |
| 52.5° | 2118.2 | 2132.3 | 2251.1 | 2614.5 | 2828.9 | 3045.2 | 3254.4 | 3445.8 | 3428.1 | *3412.1* | 3188.8 |
| 55° | 1887.7 | 1901.9 | 2091.6 | 2323.8 | 2676.5 | 2963.7 | 3295.1 | 3607.1 | 3653.2 | *3637.2* | 3405.0 |
| 57.5° | 1646.7 | 1669.7 | 1799.1 | 2003.0 | 2472.7 | 2828.9 | 3309.3 | 3770.2 | 3897.8 | *3883.6* | 3612.4 |
| 60° | 1414.5 | 1446.4 | 1522.6 | 1744.2 | 2221.0 | 2669.4 | 3272.1 | 3901.3 | 4133.5 | *4133.5* | 3826.9 |
| 62.5° | 1200.0 | 1217.7 | 1297.5 | 1497.8 | 1901.9 | 2465.6 | 3178.1 | 3984.6 | 4349.8 | *4340.9* | 4014.8 |
| 65° | 1022.7 | 1031.6 | 1095.4 | 1267.4 | 1634.3 | 2240.5 | 3015.1 | 3979.3 | 4504.0 | *4505.8* | 4138.8 |
| 67° | *863.2* | *877.4* | *948.3* | *1104.3* | *1430.4* | *2027.8* | *2827.2* | *3899.5* | *4558.9* | *4562.5* | *4169.0* |
| 67.5° | 808.3 | 824.2 | 902.2 | 1063.5 | 1387.9 | 1969.3 | 2782.9 | 3865.9 | 4555.4 | *4562.5* | 4160.1 |
| 70° | 556.6 | 560.1 | 691.3 | 875.6 | 1141.5 | 1659.1 | 2476.2 | 3631.9 | 4420.7 | *4415.4* | 3966.9 |
| 72.5° | 354.5 | 349.2 | 475.0 | 639.9 | 918.2 | 1343.6 | 2089.8 | 3222.4 | 4011.2 | *4005.9* | 3497.2 |
| 75° | 235.7 | 241.1 | 320.8 | 457.3 | 645.2 | 1038.7 | 1628.9 | 2431.9 | 2786.4 | *2765.1* | 2307.8 |
| 77.5° | 168.4 | 164.8 | 198.5 | 329.7 | 432.5 | 631.0 | 884.5 | 1293.9 | 1480.1 | *1480.1* | 1267.4 |
| 80° | 92.2 | 93.9 | 108.1 | 182.6 | 244.6 | 246.4 | 331.5 | 648.7 | 723.2 | *739.1* | 615.1 |
| 82.5° | 26.6 | 28.4 | 39.0 | 62.0 | 67.4 | 74.4 | 115.2 | 186.1 | 195.0 | *205.6* | 166.6 |
| 85° | 0.0 | 0.0 | 0.0 | 1.8 | 7.1 | 8.9 | 8.9 | 10.6 | 17.7 | *17.7* | 19.5 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 1.8 | 3.5 | 7.1 | *7.1* | 8.9 |
| 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: P1211968
CATALOG NUMBER: GKO-PB2D-830-U-T2U

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 | 1781.4 |
| 2.5° | 1779.6 | 1781.4 | 1774.3 | 1765.4 | 1758.3 | 1754.8 | 1744.2 | 1735.3 | 1740.6 | 1745.9 | 1745.9 |
| 5° | 1777.8 | 1776.1 | 1761.9 | 1745.9 | 1735.3 | 1728.2 | 1710.5 | 1698.1 | 1699.8 | 1705.2 | 1703.4 |
| 7.5° | 1777.8 | 1770.8 | 1751.3 | 1728.2 | 1710.5 | 1696.3 | 1673.3 | 1659.1 | 1657.3 | 1660.9 | 1657.3 |
| 10° | 1779.6 | 1767.2 | 1740.6 | 1708.7 | 1683.9 | 1662.6 | 1634.3 | 1618.3 | 1613.0 | 1614.8 | 1611.2 |
| 12.5° | 1783.2 | 1763.7 | 1730.0 | 1689.2 | 1657.3 | 1628.9 | 1597.0 | 1577.5 | 1574.0 | 1577.5 | 1577.5 |
| 15° | 1788.5 | 1763.7 | 1721.1 | 1671.5 | 1628.9 | 1597.0 | 1565.1 | 1547.4 | 1547.4 | 1549.2 | 1549.2 |
| 17.5° | 1799.1 | 1769.0 | 1714.0 | 1652.0 | 1600.6 | 1565.1 | 1536.8 | 1524.4 | 1526.1 | 1531.5 | 1531.5 |
| 20° | 1809.7 | 1776.1 | 1706.9 | 1632.5 | 1575.8 | 1535.0 | 1512.0 | 1503.1 | 1510.2 | 1517.3 | 1517.3 |
| 22.5° | 1825.7 | 1784.9 | 1699.8 | 1614.8 | 1547.4 | 1506.6 | 1487.1 | 1480.1 | 1487.1 | 1496.0 | 1492.5 |
| 25° | 1850.5 | 1800.9 | 1694.5 | 1598.8 | 1520.8 | 1476.5 | 1457.0 | 1449.9 | 1453.5 | 1460.6 | 1460.6 |
| 27.5° | 1878.9 | 1820.4 | 1692.8 | 1579.3 | 1488.9 | 1441.1 | 1418.0 | 1407.4 | 1407.4 | 1409.2 | 1410.9 |
| 30° | 1926.7 | 1854.1 | 1699.8 | 1565.1 | 1460.6 | 1403.8 | 1373.7 | 1357.8 | 1356.0 | 1363.1 | 1363.1 |
| 32.5° | 1983.5 | 1900.1 | 1717.6 | 1552.7 | 1432.2 | 1359.5 | 1318.8 | 1306.3 | 1302.8 | 1308.1 | 1302.8 |
| 35° | 2047.3 | 1951.5 | 1740.6 | 1551.0 | 1403.8 | 1311.7 | 1265.6 | 1251.4 | 1240.8 | 1237.2 | 1233.7 |
| 37.5° | 2137.7 | 2022.4 | 1763.7 | 1542.1 | 1375.5 | 1260.3 | 1210.6 | 1180.5 | 1168.1 | 1164.5 | 1164.5 |
| 40° | 2226.3 | 2091.6 | 1792.0 | 1527.9 | 1341.8 | 1208.9 | 1138.0 | 1104.3 | 1099.0 | 1099.0 | 1099.0 |
| 42.5° | 2338.0 | 2182.0 | 1831.0 | 1519.1 | 1301.0 | 1157.5 | 1060.0 | 1021.0 | 1021.0 | 1021.0 | 1019.2 |
| 45° | 2476.2 | 2300.7 | 1880.6 | 1515.5 | 1262.0 | 1095.4 | 976.7 | 925.3 | 923.5 | 921.7 | 919.9 |
| 47.5° | 2637.5 | 2424.8 | 1928.5 | 1506.6 | 1216.0 | 1021.0 | 880.9 | 824.2 | 811.8 | 808.3 | 803.0 |
| 50° | 2804.1 | 2559.5 | 1979.9 | 1494.2 | 1161.0 | 934.1 | 790.5 | 725.0 | 698.4 | 689.5 | 693.1 |
| 52.5° | 2981.4 | 2690.7 | 2029.5 | 1476.5 | 1095.4 | 847.3 | 698.4 | 629.2 | 602.7 | 592.0 | 590.3 |
| 55° | 3155.1 | 2823.6 | 2075.6 | 1453.5 | 1024.5 | 758.6 | 620.4 | 553.0 | 530.0 | 526.4 | 526.4 |
| 57.5° | 3330.6 | 2951.3 | 2111.1 | 1419.8 | 946.5 | 680.6 | 553.0 | 498.1 | 482.1 | 489.2 | 489.2 |
| 60° | 3490.1 | 3062.9 | 2128.8 | 1373.7 | 868.5 | 609.7 | 499.9 | 459.1 | 452.0 | 469.7 | 467.9 |
| 62.5° | 3633.7 | 3137.4 | 2119.9 | 1306.3 | 792.3 | 549.5 | 459.1 | 429.0 | 430.7 | 452.0 | 453.8 |
| 65° | 3702.8 | 3149.8 | 2068.5 | 1214.2 | 707.2 | 498.1 | 416.5 | 388.2 | 391.7 | 414.8 | 420.1 |
| 67° | *3686.8* | *3101.9* | *1983.5* | *1109.6* | *638.1* | *459.1* | *390.0* | *361.6* | *363.4* | *382.9* | *384.6* |
| 67.5° | 3669.1 | 3078.9 | 1960.4 | 1077.7 | 620.4 | 452.0 | 382.9 | 356.3 | 359.8 | 377.5 | 377.5 |
| 70° | 3433.4 | 2844.9 | 1747.7 | 914.6 | 537.1 | 402.4 | 349.2 | 331.5 | 335.0 | 345.6 | 345.6 |
| 72.5° | 3000.9 | 2463.8 | 1414.5 | 733.8 | 455.5 | 356.3 | 315.5 | 304.9 | 304.9 | 304.9 | 296.0 |
| 75° | 1914.3 | 1543.9 | 925.3 | 561.9 | 375.8 | 304.9 | 283.6 | 271.2 | 264.1 | 274.7 | 271.2 |
| 77.5° | 1058.2 | 806.5 | 482.1 | 322.6 | 271.2 | 253.5 | 246.4 | 241.1 | 239.3 | 264.1 | 257.0 |
| 80° | 501.6 | 398.8 | 271.2 | 184.3 | 156.0 | 187.9 | 212.7 | 209.2 | 249.9 | 342.1 | 343.9 |
| 82.5° | 159.5 | 131.2 | 109.9 | 101.0 | 104.6 | 134.7 | 164.8 | 189.7 | 324.4 | 366.9 | 361.6 |
| 85° | 19.5 | 17.7 | 12.4 | 40.8 | 69.1 | 99.3 | 127.6 | 246.4 | 297.8 | 248.2 | 234.0 |
| 87.5° | 7.1 | 7.1 | 7.1 | 28.4 | 53.2 | 76.2 | 115.2 | 248.2 | 182.6 | 166.6 | 152.4 |
| 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: 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*

Report Generated By FNC07603 / LDUCLS01DT01661
Version: v7.05

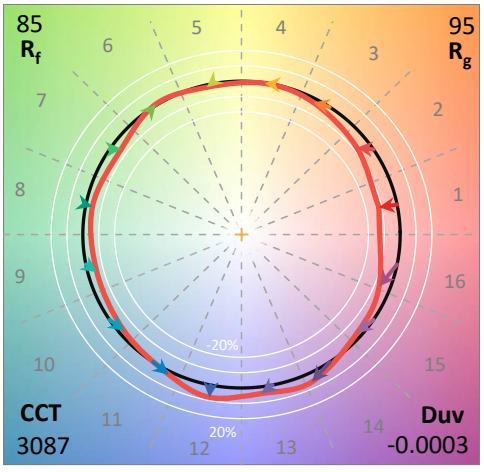
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP3-2511-595-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP3 - 3M SPHERE |
| Measurement Geometry: | 4π |
| 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 |
| | | | |

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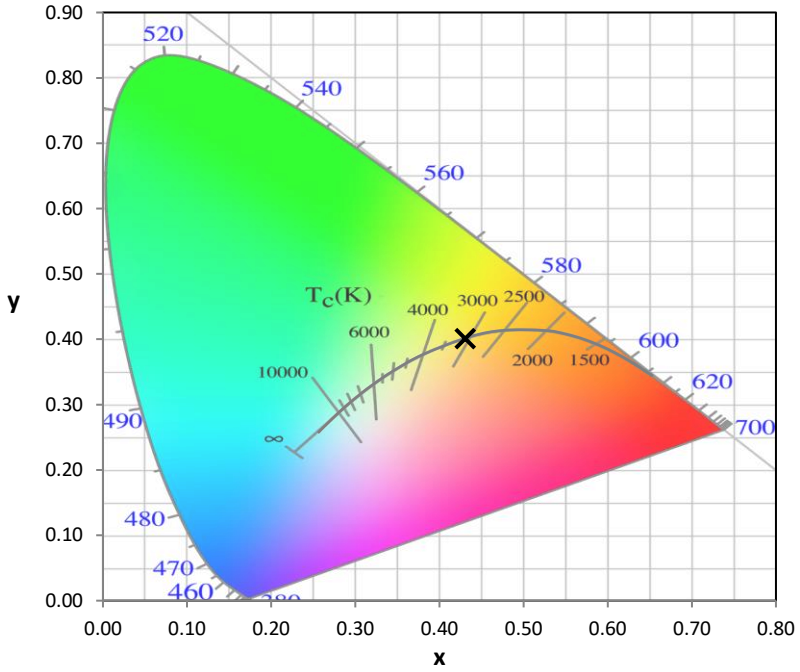
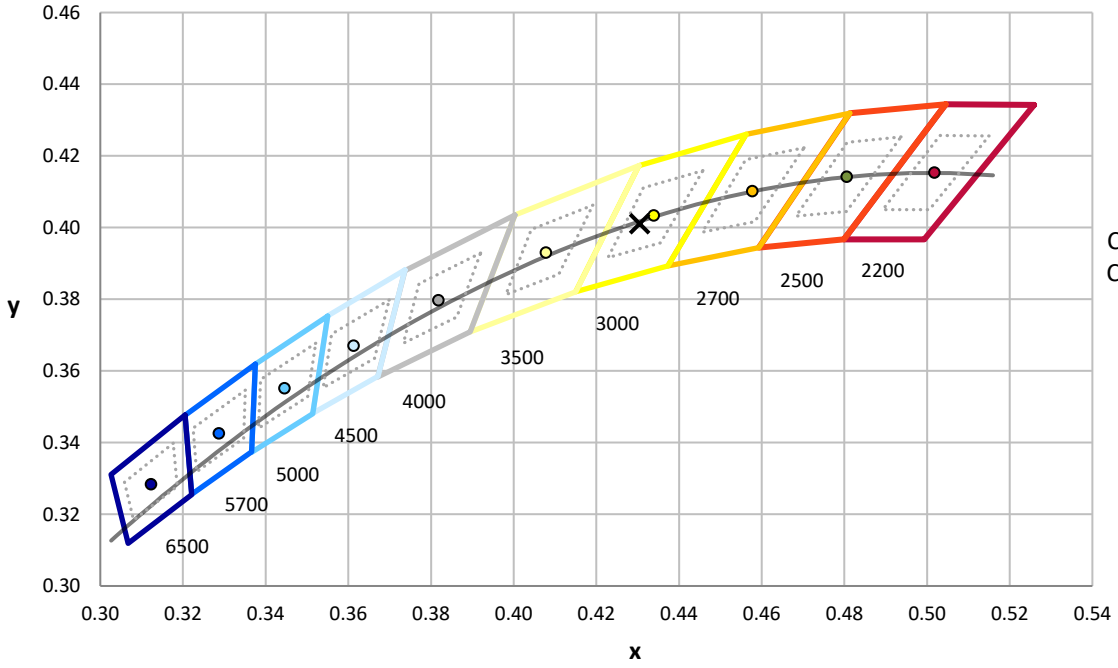
## CIE 1931 Chromaticity Diagram




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




CCT = 3087K
CIE x = 0.4305
CIE y = 0.4010
Duv = -0.0003

Point lies inside the ANSI 3000K 4-step quadrangle

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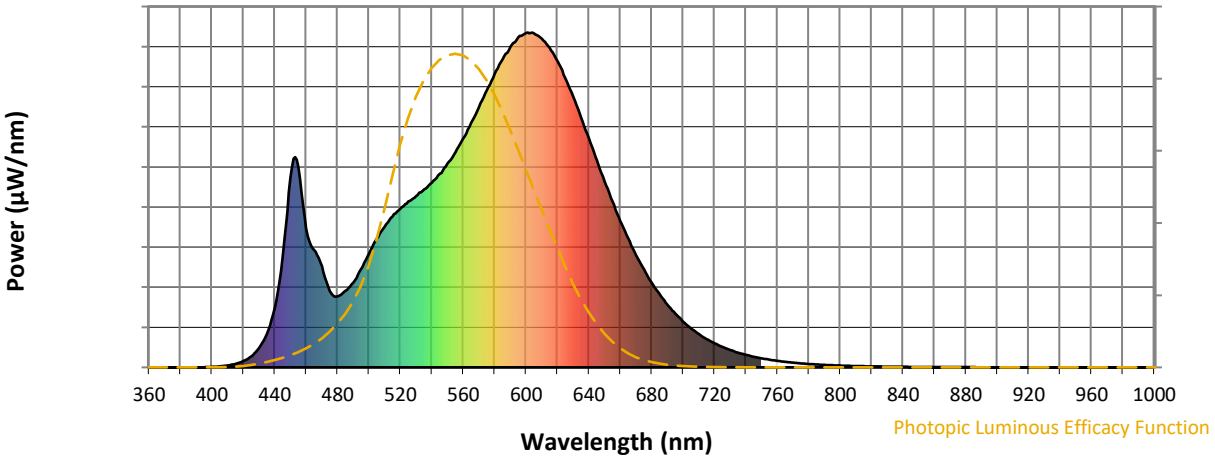
## Photopic Flux vs. Wavelength




## 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 | 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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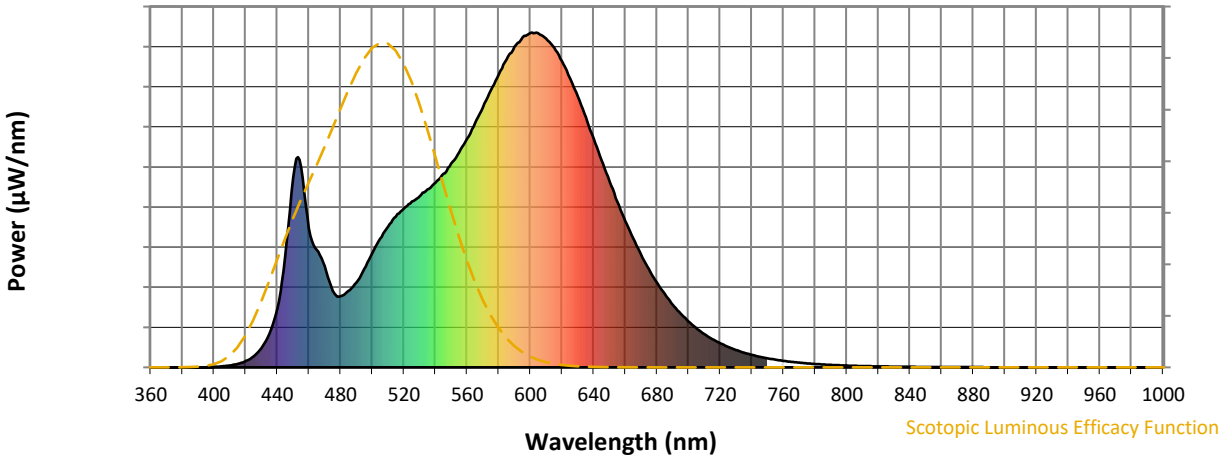
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 1.4**

| λ (nm) | Power W^/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 | 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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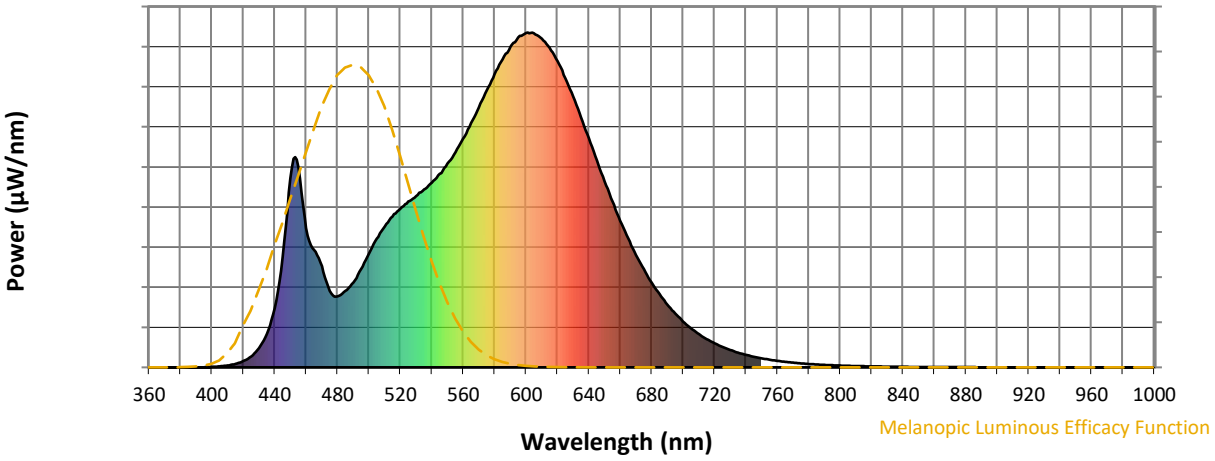
## Melanopic Flux vs. Wavelength




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

| 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 | 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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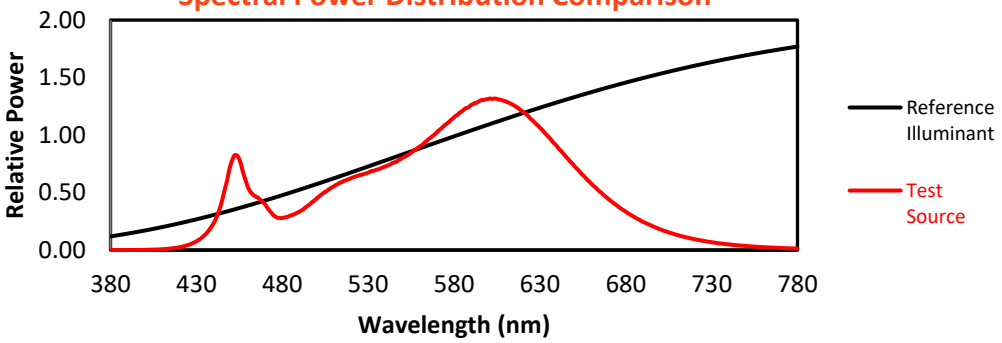
# TM-30-18

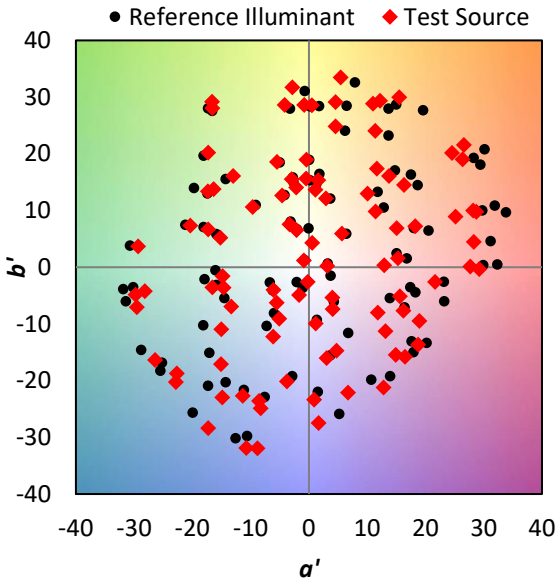
## Summary

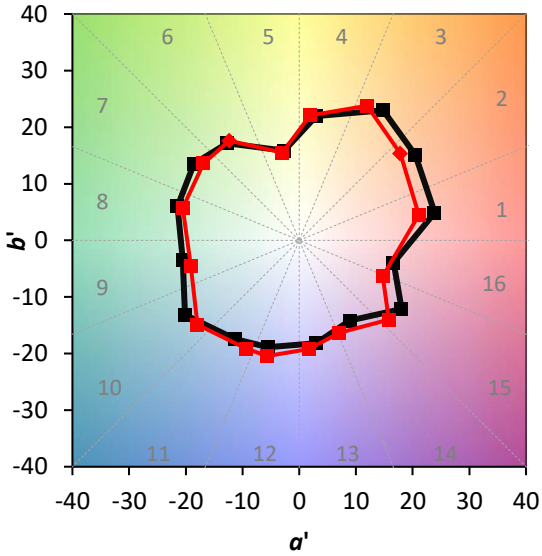
$R_f$ = 84.7
$R_g$ = 94.9
CIE $R_a$ = 82.7
$R_9$ = 5.8

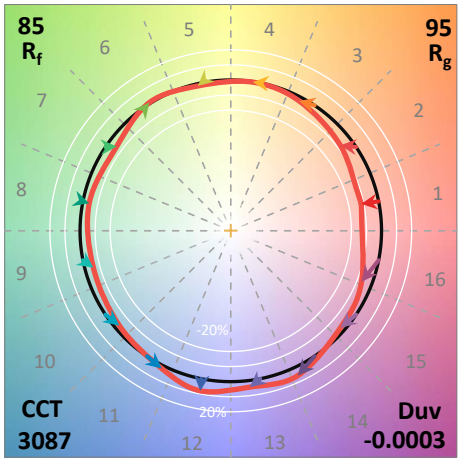
## Spectral Power Distribution Comparison

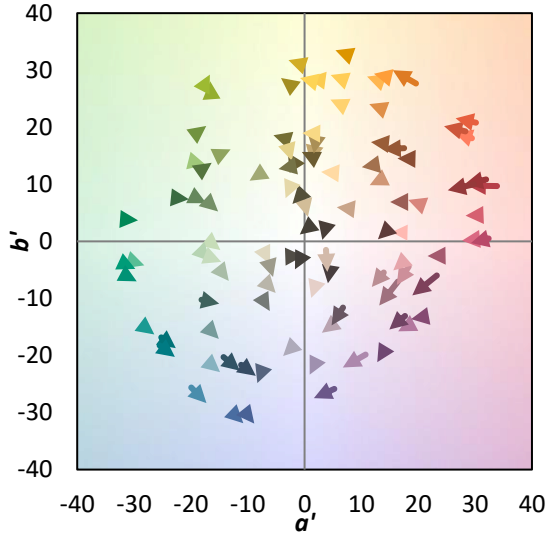



## Color Vector Graphics



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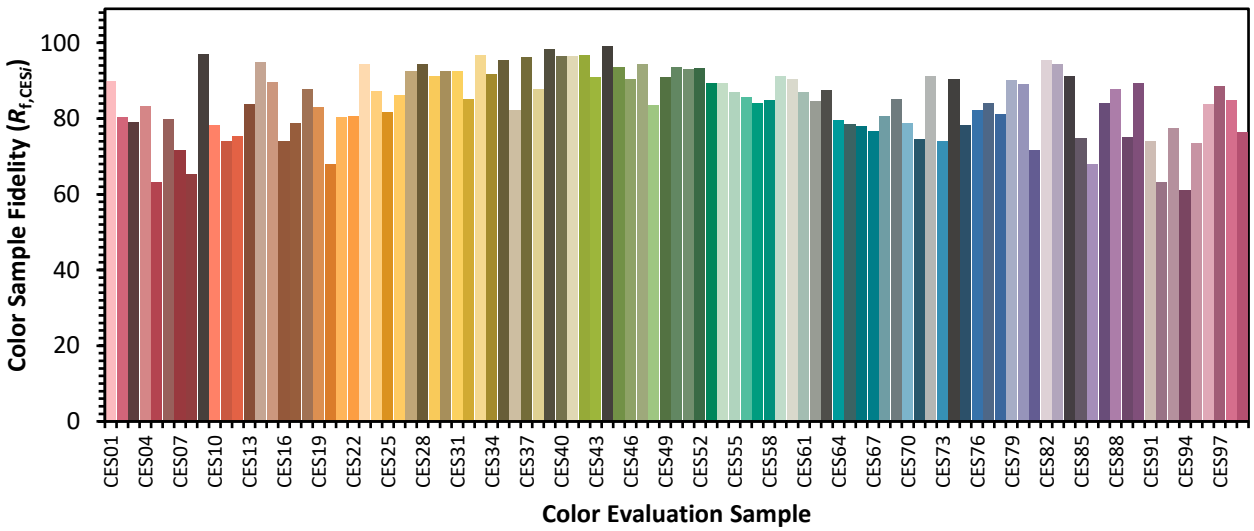
# TM-30-18

**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 | |



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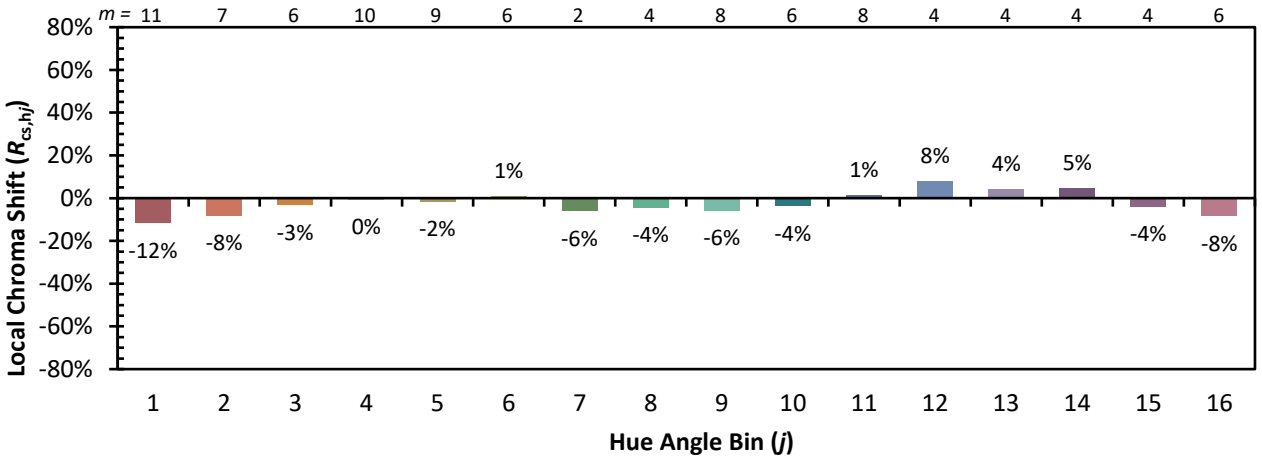
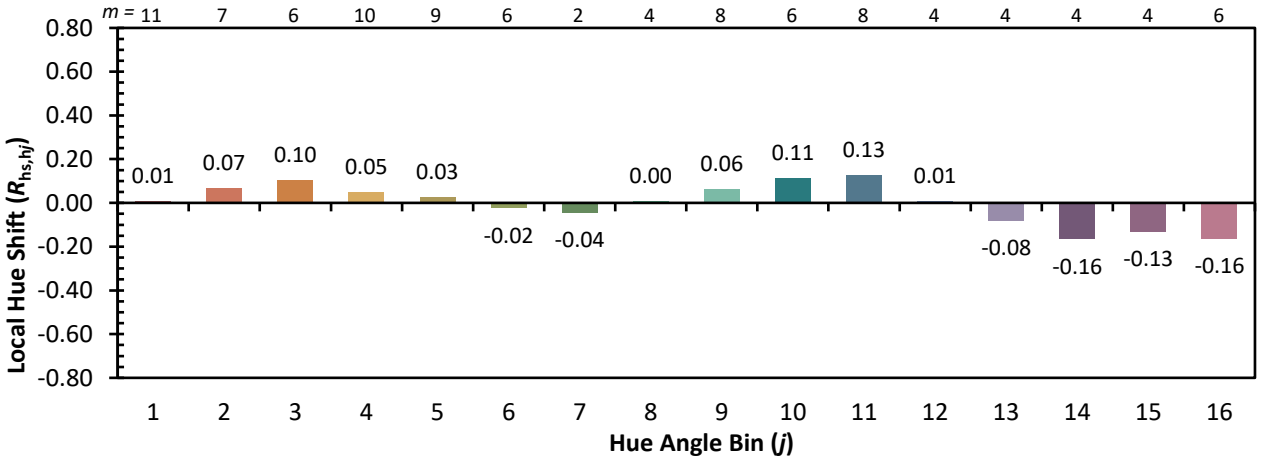
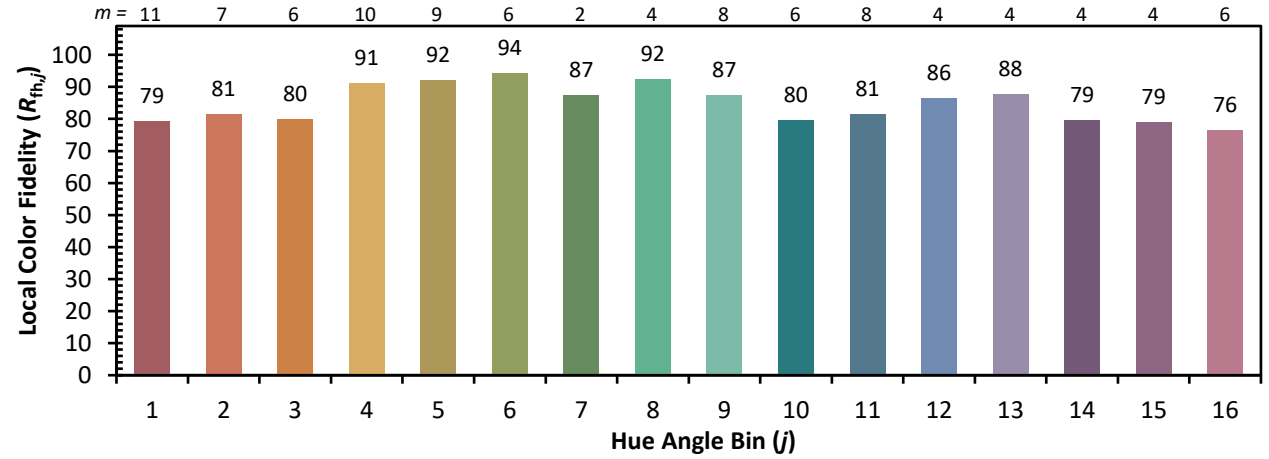
# TM-30-18

## Color Rendition by Hue-Angle Bin



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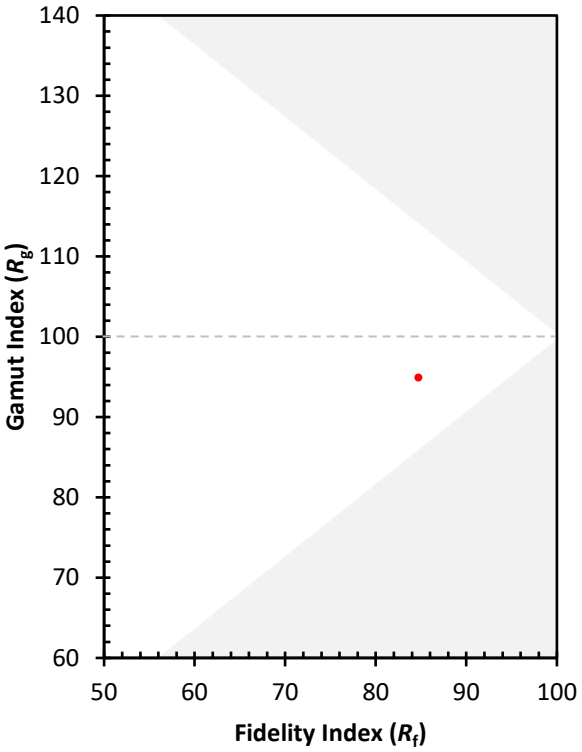
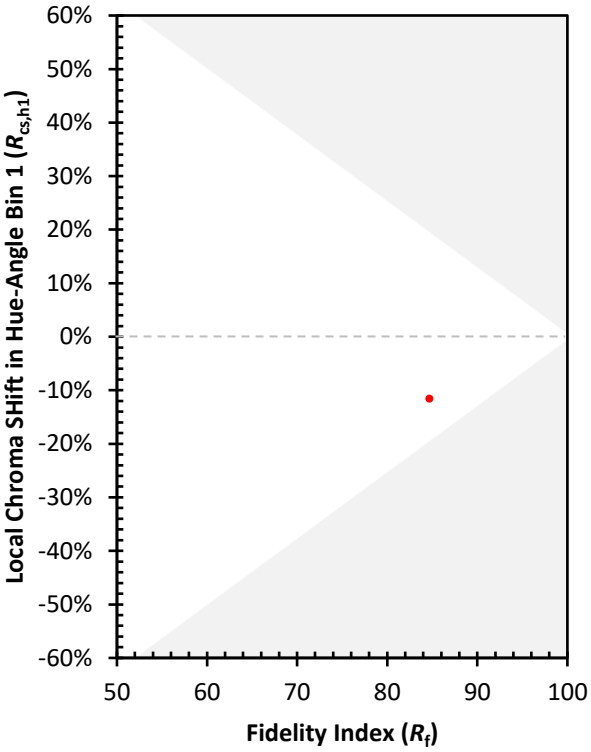
# TM-30-18

## Measure Comparisons




(END OF REPORT)