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

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Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1201824

Luminaire Tested: GWC-SB1C-722-U-T4FT-HSS

Issue Date: 10/30/2025

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1201824 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-25) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/14/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GWC-SB1C-722-U-T4FT-HSS |
| Description: | GALLEON WALL LUMINAIRE |
| | (1) 70 CRI, 2200K, 615mA LIGHTSQUARE WITH 26 LEDS AND TYPE IV FORWARD THROW OPT WITH HOUSE SIDE SHIELD |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4709 lumens |
| Efficiency: | N/A |
| Efficacy: | 86.6 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U0 - G2 |

| | |
|---|---|
| Input Watts (W): | 54.4 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.437 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.993 |
| Total Harmonic Distortion (THDi): | 9.314 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

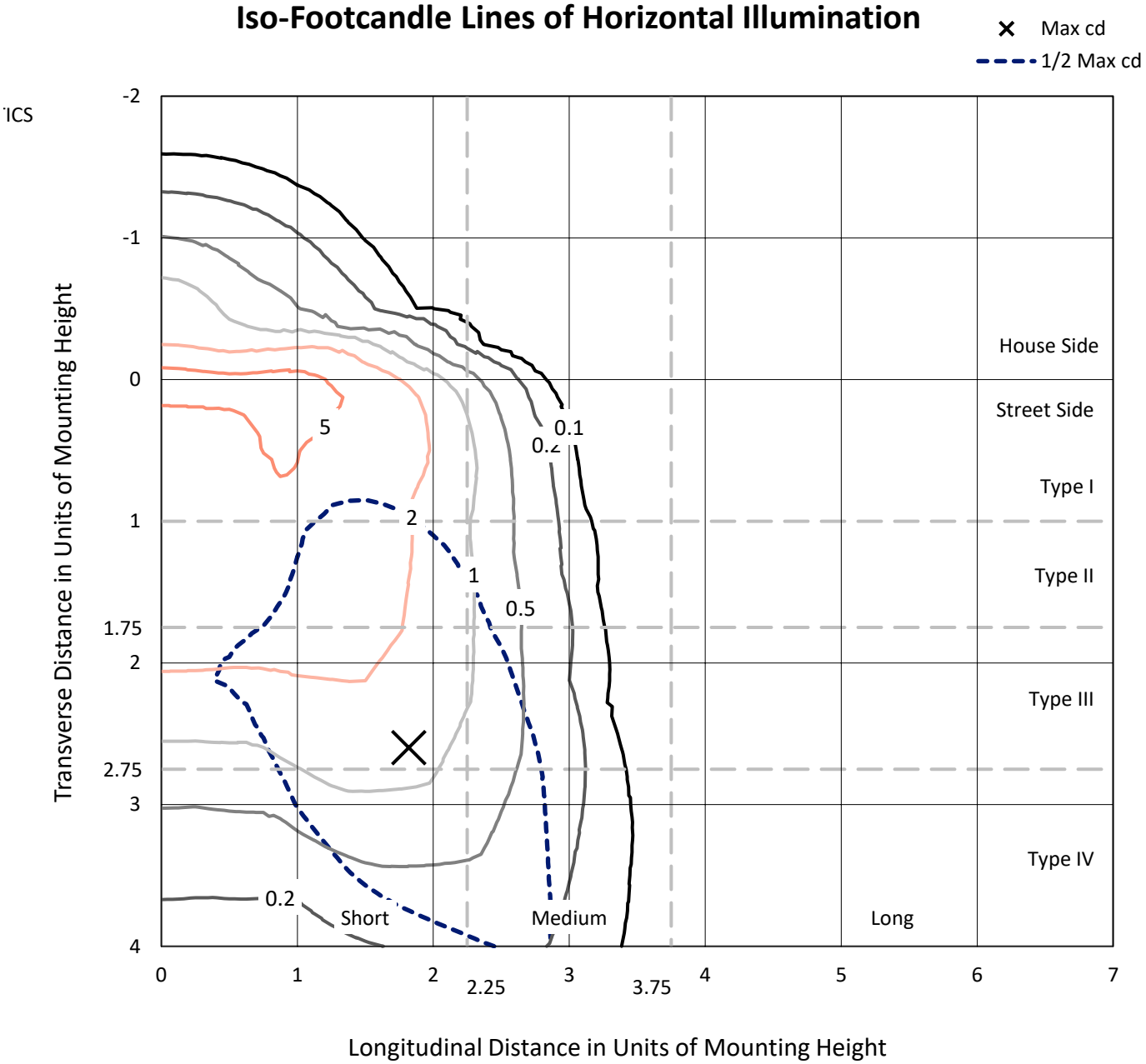


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REPORT NUMBER: P1201824
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## Iso-Footcandle Lines of Horizontal Illumination



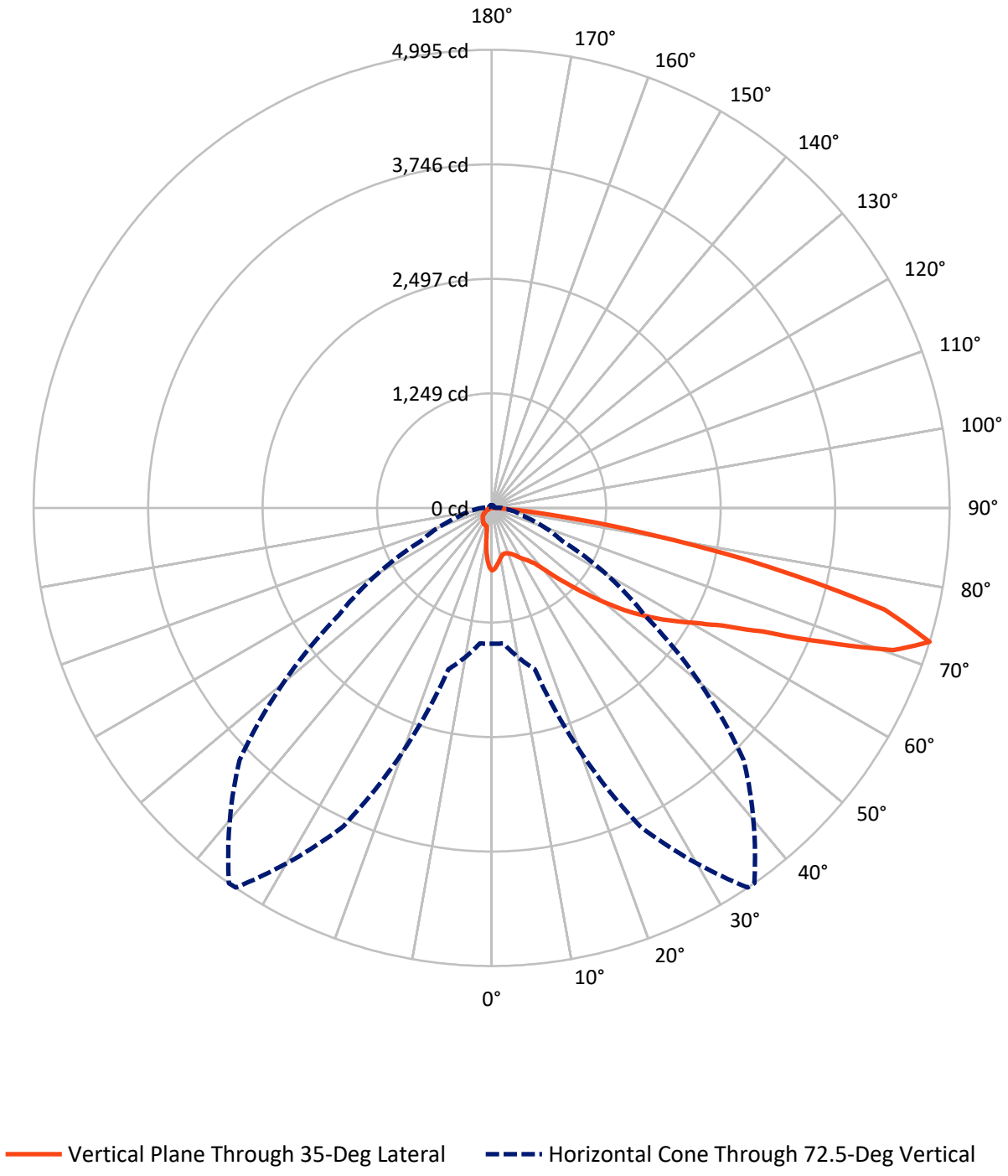

Based on 10 foot mounting height. Maximum calculated value = 6.8 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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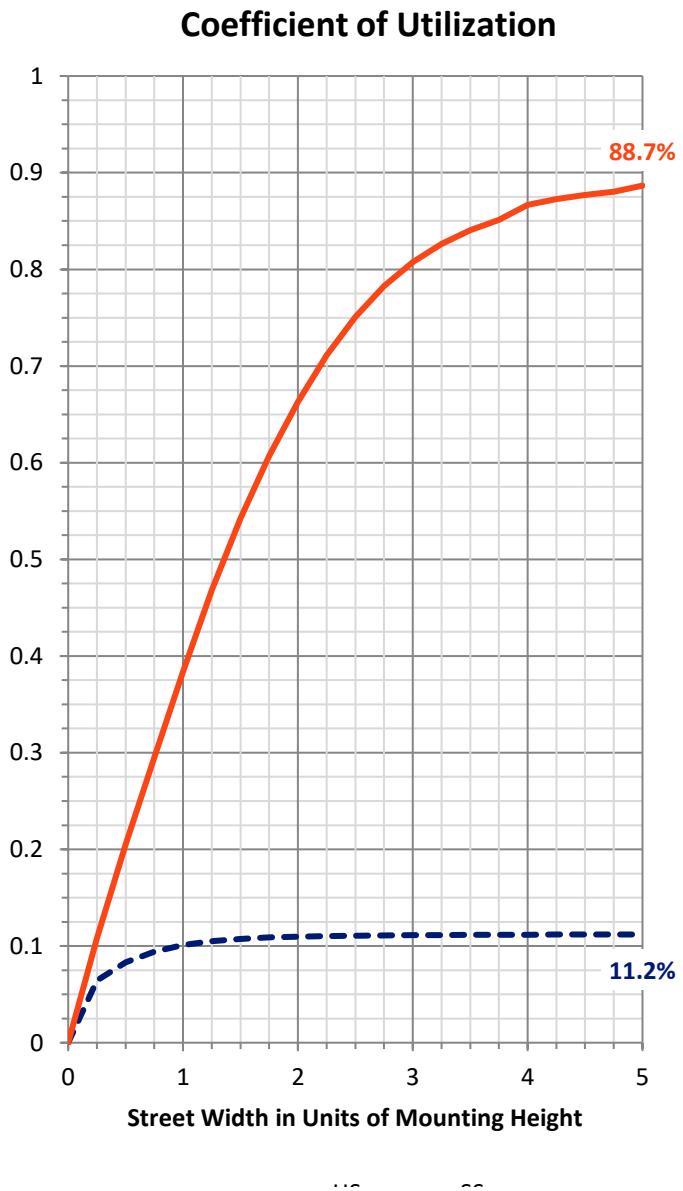
REPORT NUMBER: P1201824
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**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 530.0 | 0.0 | 530.0 |
| | % Fixture | 11.3 | 0.0 | 11.3 |
| **Street Side** | Lumens | 4179.0 | 0.0 | 4179.0 |
| | % Fixture | 88.7 | 0.0 | 88.7 |
| **Total** | Lumens | 4709.0 | 0.0 | 4709.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 56.1 | 1.2 |
| 10°-20° | 131.2 | 2.8 |
| 20°-30° | 213.1 | 4.5 |
| 30°-40° | 355.6 | 7.6 |
| 40°-50° | 672.8 | 14.3 |
| 50°-60° | 1069.1 | 22.7 |
| 60°-70° | 1322.5 | 28.1 |
| 70°-80° | 822.1 | 17.5 |
| 80°-90° | 66.4 | 1.4 |
| 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° | 4709.0 | 100.0 |
| 0°-180° | 4709.0 | 100.0 |



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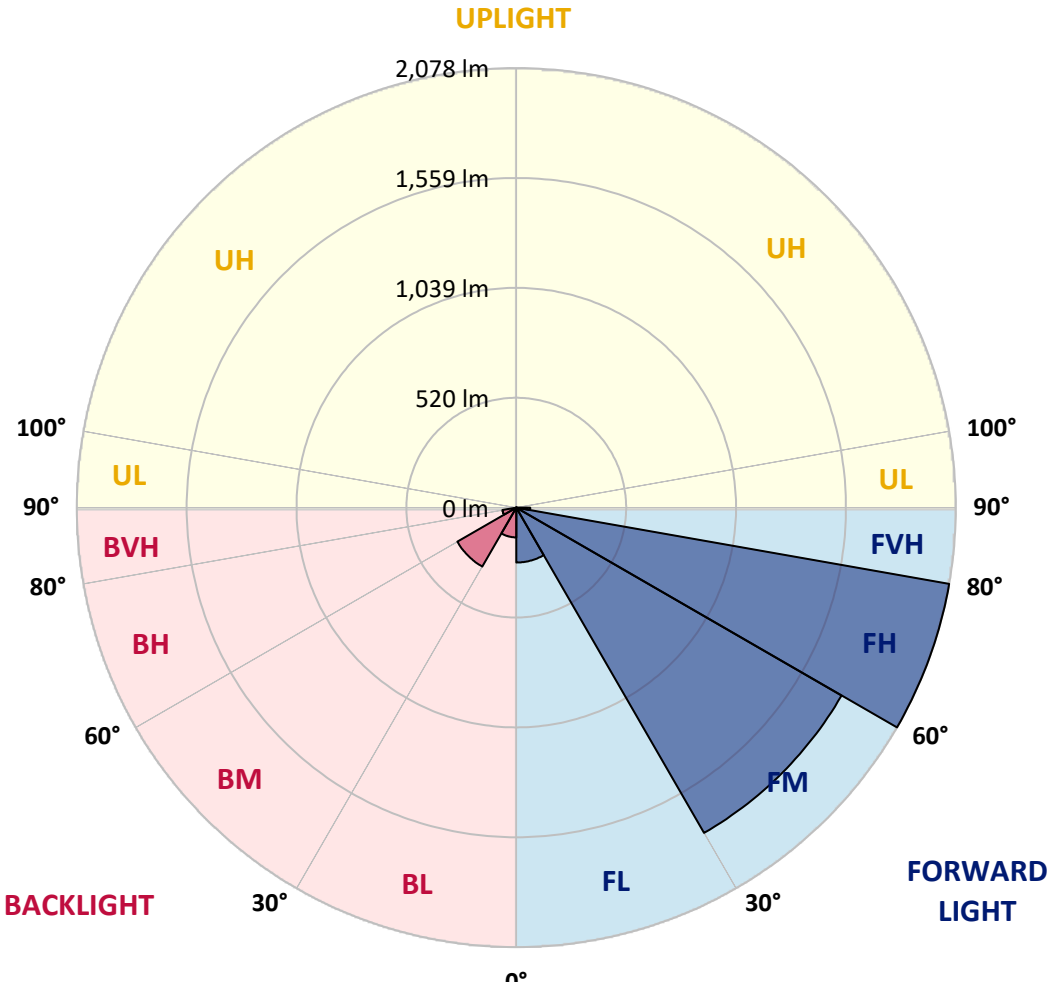
Scaled Data Report

REPORT NUMBER: P1201824
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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°) | 259.6 | 5.5 | | | |
| FM | (30°-60°) | 1775.8 | 37.7 | | | |
| FH | (60°-80°) | 2078.1 | 44.1 | | | G2/5000 |
| FVH | (80°-90°) | 65.5 | 1.4 | | | G1/100 |
| BL | (0°-30°) | 140.8 | 3.0 | B1/500 | | |
| BM | (30°-60°) | 321.7 | 6.8 | B1/1000 | | |
| BH | (60°-80°) | 66.5 | 1.4 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 0.9 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

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



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 |
| 2.5° | 652.1 | 657.6 | 658.7 | 660.4 | 660.4 | 662.5 | 665.9 | 670.8 | 678.7 | 682.8 | 685.6 |
| 5° | 601.1 | 605.2 | 610.4 | 614.5 | 622.5 | 623.5 | 636.9 | 650.1 | 668.3 | 682.1 | 691.8 |
| 7.5° | 549.7 | 554.5 | 561.4 | 571.4 | 581.7 | 584.8 | 605.2 | 627.3 | 656.3 | 682.1 | 698.4 |
| 10° | 513.4 | 513.8 | 520.0 | 530.0 | 546.5 | 550.3 | 575.2 | 606.6 | 642.8 | 678.0 | 704.6 |
| 12.5° | 493.1 | 495.5 | 498.2 | 505.8 | 521.7 | 524.1 | 550.7 | 587.6 | 629.4 | 675.6 | 711.8 |
| 15° | 493.1 | 494.8 | 496.5 | 500.3 | 513.1 | 515.1 | 538.6 | 575.5 | 622.5 | 676.6 | 723.6 |
| 17.5° | 498.2 | 501.0 | 499.6 | 504.1 | 517.6 | 518.9 | 539.6 | 572.1 | 622.1 | 683.2 | 741.5 |
| 20° | 510.7 | 512.7 | 510.0 | 512.7 | 526.2 | 528.9 | 550.3 | 578.6 | 628.0 | 694.6 | 763.9 |
| 22.5° | 530.3 | 531.4 | 524.8 | 526.9 | 540.7 | 544.1 | 569.0 | 597.3 | 642.1 | 712.9 | 793.9 |
| 25° | 555.2 | 557.2 | 547.2 | 549.7 | 562.8 | 566.9 | 595.5 | 625.2 | 664.5 | 738.0 | 832.2 |
| 27.5° | 583.8 | 584.8 | 576.2 | 575.9 | 592.8 | 598.6 | 627.6 | 659.7 | 694.6 | 769.8 | 880.5 |
| 30° | 616.6 | 619.7 | 611.4 | 610.0 | 631.4 | 636.3 | 664.9 | 702.2 | 738.7 | 817.4 | 949.2 |
| 32.5° | 642.5 | 644.9 | 640.1 | 643.5 | 665.2 | 669.0 | 710.1 | 762.2 | 808.1 | 885.0 | 1042.7 |
| 35° | 679.7 | 681.1 | 670.1 | 676.3 | 701.1 | 710.8 | 771.9 | 846.4 | 895.4 | 969.9 | 1164.9 |
| 37.5° | 814.6 | 814.6 | 767.7 | 737.0 | 760.8 | 769.4 | 856.4 | 952.3 | 1003.0 | 1083.8 | 1318.7 |
| 40° | 1001.3 | 998.2 | 929.5 | 866.7 | 863.6 | 880.5 | 976.8 | 1085.8 | 1142.1 | 1220.4 | 1492.0 |
| 42.5° | 1200.4 | 1195.6 | 1102.1 | 1040.0 | 1029.6 | 1035.5 | 1115.9 | 1250.4 | 1307.7 | 1387.1 | 1678.3 |
| 45° | 1377.1 | 1375.7 | 1290.1 | 1206.6 | 1188.0 | 1206.6 | 1289.4 | 1443.0 | 1484.0 | 1567.5 | 1864.3 |
| 47.5° | 1525.1 | 1525.1 | 1462.6 | 1408.1 | 1398.5 | 1409.5 | 1524.4 | 1656.5 | 1652.7 | 1759.7 | 2045.4 |
| 50° | 1695.5 | 1694.2 | 1634.8 | 1611.3 | 1621.3 | 1636.9 | 1794.9 | 1881.5 | 1827.3 | 1948.4 | 2207.2 |
| 52.5° | 1814.9 | 1823.2 | 1802.8 | 1799.0 | 1850.1 | 1877.0 | 2069.6 | 2101.6 | 1983.6 | 2127.5 | 2328.3 |
| 55° | 1909.5 | 1919.1 | 1942.6 | 1969.2 | 2067.5 | 2102.7 | 2335.6 | 2310.4 | 2114.4 | 2282.8 | 2398.0 |
| 57.5° | 2043.3 | 2029.5 | 2065.8 | 2118.2 | 2277.3 | 2319.7 | 2593.3 | 2507.4 | 2219.7 | 2408.7 | 2405.6 |
| 60° | 2205.8 | 2207.9 | 2214.1 | 2280.4 | 2486.7 | 2541.2 | 2847.3 | 2693.7 | 2287.3 | 2486.0 | 2321.4 |
| 62.5° | 2401.1 | 2404.2 | 2417.0 | 2518.8 | 2767.9 | 2819.3 | 3117.8 | 2846.2 | 2318.3 | 2464.3 | 2104.1 |
| 65° | 2387.7 | 2400.8 | 2543.3 | 2891.4 | 3195.4 | 3246.1 | 3433.5 | 2953.2 | 2271.4 | 2265.5 | 1713.1 |
| 67.5° | 2175.1 | 2196.5 | 2435.0 | 3336.6 | 3840.0 | 3896.6 | 3815.1 | 2974.3 | 2068.9 | 1761.8 | 1117.6 |
| 70° | 1896.3 | 1903.9 | 2190.7 | 3736.8 | 4586.3 | 4643.6 | 4156.7 | 2742.7 | 1569.9 | 982.7 | 500.7 |
| 72.5° | 1480.9 | 1482.6 | 1819.1 | 3829.6 | 4991.4 | 4994.5 | 3888.6 | 2036.1 | 844.3 | 377.5 | 173.9 |
| 75° | 1057.9 | 1047.5 | 1218.3 | 3105.7 | 4391.3 | 4426.5 | 2915.3 | 955.1 | 322.6 | 178.4 | 86.6 |
| 77.5° | 567.2 | 578.6 | 689.4 | 1841.8 | 3033.6 | 3093.6 | 1590.6 | 275.3 | 164.2 | 121.5 | 57.3 |
| 80° | 175.3 | 184.9 | 282.6 | 843.3 | 1718.3 | 1754.5 | 589.7 | 122.5 | 114.6 | 86.6 | 37.6 |
| 82.5° | 55.2 | 57.3 | 131.8 | 354.4 | 713.2 | 729.8 | 170.8 | 69.4 | 78.3 | 57.3 | 22.1 |
| 85° | 15.9 | 16.2 | 58.7 | 132.2 | 176.3 | 179.8 | 48.0 | 26.9 | 44.9 | 35.5 | 11.4 |
| 87.5° | 1.7 | 5.5 | 22.1 | 22.1 | 15.5 | 15.2 | 5.2 | 5.9 | 12.8 | 4.5 | 2.1 |
| 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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REPORT NUMBER: P1201824
CATALOG NUMBER: GWC-SB1C-722-U-T4FT-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 | 682.5 |
| 2.5° | 683.9 | 684.2 | 679.7 | 672.1 | 663.9 | 657.0 | 648.3 | 641.4 | 636.6 | 635.2 | 637.6 |
| 5° | 688.7 | 686.3 | 673.5 | 650.4 | 622.8 | 599.0 | 572.4 | 551.4 | 537.6 | 531.7 | 533.8 |
| 7.5° | 695.9 | 689.0 | 661.1 | 615.6 | 562.8 | 515.8 | 468.2 | 431.3 | 407.8 | 396.1 | 397.8 |
| 10° | 702.2 | 688.4 | 640.4 | 565.2 | 484.4 | 413.4 | 349.2 | 304.7 | 279.8 | 268.1 | 268.4 |
| 12.5° | 708.0 | 688.0 | 613.5 | 505.5 | 396.1 | 309.2 | 249.5 | 227.4 | 220.5 | 218.1 | 217.4 |
| 15° | 719.1 | 689.0 | 579.7 | 437.2 | 308.1 | 233.6 | 211.9 | 211.5 | 212.9 | 212.2 | 211.9 |
| 17.5° | 734.2 | 690.1 | 541.4 | 364.7 | 237.7 | 206.0 | 205.0 | 208.1 | 210.1 | 209.1 | 208.8 |
| 20° | 753.9 | 694.2 | 500.7 | 292.9 | 204.3 | 199.1 | 201.5 | 204.3 | 206.0 | 204.3 | 203.9 |
| 22.5° | 781.5 | 701.5 | 456.1 | 235.3 | 193.6 | 194.9 | 197.0 | 200.1 | 201.8 | 199.4 | 199.1 |
| 25° | 815.3 | 712.9 | 412.3 | 204.6 | 188.4 | 190.1 | 193.2 | 196.7 | 198.7 | 196.3 | 196.0 |
| 27.5° | 859.2 | 731.1 | 372.0 | 197.7 | 183.2 | 184.3 | 188.7 | 193.9 | 196.7 | 193.6 | 193.6 |
| 30° | 922.6 | 761.2 | 337.1 | 200.8 | 180.1 | 177.7 | 183.9 | 191.2 | 194.3 | 191.5 | 191.2 |
| 32.5° | 1006.8 | 803.6 | 315.7 | 205.6 | 178.7 | 170.1 | 176.0 | 185.3 | 190.5 | 188.7 | 188.7 |
| 35° | 1117.2 | 868.1 | 307.4 | 211.2 | 177.7 | 162.2 | 166.3 | 176.3 | 185.3 | 187.0 | 187.0 |
| 37.5° | 1251.1 | 957.8 | 309.8 | 213.6 | 174.6 | 155.6 | 157.7 | 166.3 | 178.0 | 183.6 | 184.9 |
| 40° | 1403.3 | 1062.4 | 323.6 | 211.2 | 171.1 | 150.1 | 150.4 | 157.0 | 167.3 | 175.6 | 178.4 |
| 42.5° | 1560.3 | 1184.5 | 349.2 | 202.2 | 168.0 | 145.3 | 144.2 | 148.7 | 155.6 | 161.5 | 163.9 |
| 45° | 1709.7 | 1310.1 | 374.4 | 189.8 | 164.2 | 140.4 | 138.0 | 139.7 | 141.1 | 143.5 | 144.9 |
| 47.5° | 1840.1 | 1398.5 | 367.1 | 178.4 | 159.1 | 134.9 | 130.8 | 130.1 | 125.9 | 125.6 | 125.3 |
| 50° | 1930.2 | 1417.8 | 326.1 | 167.0 | 151.5 | 128.7 | 122.1 | 118.0 | 110.8 | 107.3 | 107.7 |
| 52.5° | 1958.8 | 1341.5 | 266.4 | 155.6 | 139.1 | 120.4 | 111.1 | 104.5 | 95.6 | 92.5 | 92.1 |
| 55° | 1920.8 | 1192.1 | 212.9 | 141.8 | 121.8 | 109.4 | 99.0 | 90.4 | 83.2 | 79.4 | 79.4 |
| 57.5° | 1828.0 | 1002.0 | 168.4 | 125.6 | 103.5 | 97.0 | 86.6 | 78.0 | 71.8 | 68.0 | 67.3 |
| 60° | 1674.1 | 795.7 | 133.2 | 106.3 | 88.3 | 83.5 | 72.8 | 67.3 | 61.8 | 57.3 | 56.2 |
| 62.5° | 1440.5 | 567.9 | 104.5 | 84.2 | 73.8 | 68.3 | 62.1 | 58.0 | 51.4 | 45.2 | 44.2 |
| 65° | 1124.1 | 347.5 | 80.7 | 61.8 | 59.3 | 56.6 | 52.8 | 49.0 | 41.1 | 34.8 | 33.8 |
| 67.5° | 709.1 | 164.6 | 57.6 | 46.6 | 46.9 | 45.5 | 43.8 | 40.7 | 34.8 | 29.3 | 28.6 |
| 70° | 312.3 | 79.7 | 38.0 | 35.5 | 34.8 | 34.8 | 36.2 | 35.2 | 29.7 | 24.5 | 23.5 |
| 72.5° | *106.3* | *42.8* | *28.3* | *26.9* | *25.2* | *24.8* | *30.4* | *29.3* | *23.8* | *19.0* | *17.9* |
| 75° | 55.6 | 28.6 | 20.7 | 19.3 | 15.2 | 18.3 | 24.2 | 22.8 | 16.9 | 12.4 | 11.4 |
| 77.5° | 36.2 | 20.4 | 14.1 | 12.4 | 8.6 | 12.1 | 17.9 | 15.9 | 10.0 | 6.2 | 5.5 |
| 80° | 22.8 | 13.5 | 8.3 | 5.9 | 4.1 | 6.6 | 9.7 | 6.9 | 3.8 | 1.4 | 1.0 |
| 82.5° | 12.1 | 6.9 | 3.1 | 2.1 | 1.7 | 2.1 | 2.4 | 1.7 | 0.7 | 0.0 | 0.0 |
| 85° | 4.8 | 2.4 | 1.0 | 0.7 | 0.3 | 0.0 | 0.7 | 0.3 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.7 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
SS

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Report Generated By FNC07603 / LDUCLS01DT446
Version: v6.13

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## Test Information

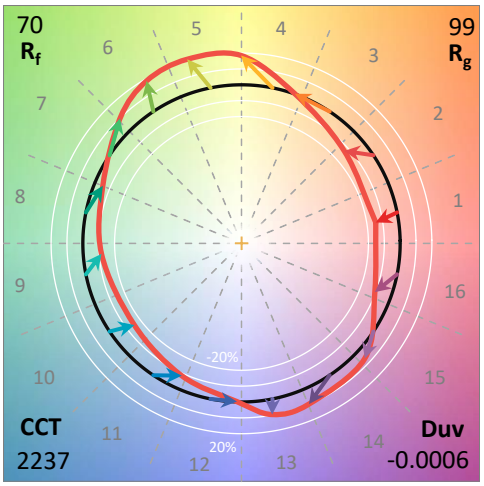
| | |
|---|---|
| Test Method: | LM-79-2008 Report |
| Number: | SP1-1908-441-10-R4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 10/28/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON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

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

## Spectral Parameters

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

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




## Test Conditions

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

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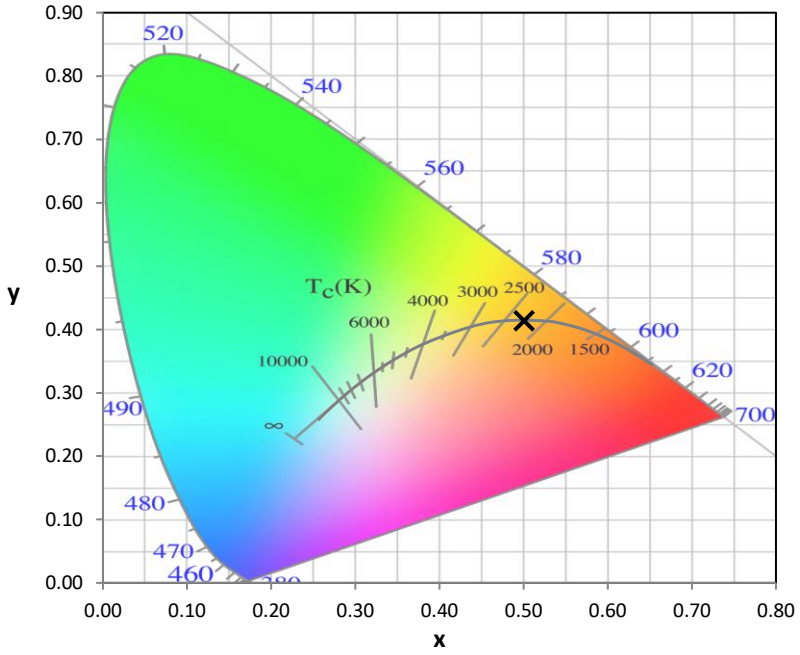
REPORT NUMBER: SP1-1908-441-10-R4

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

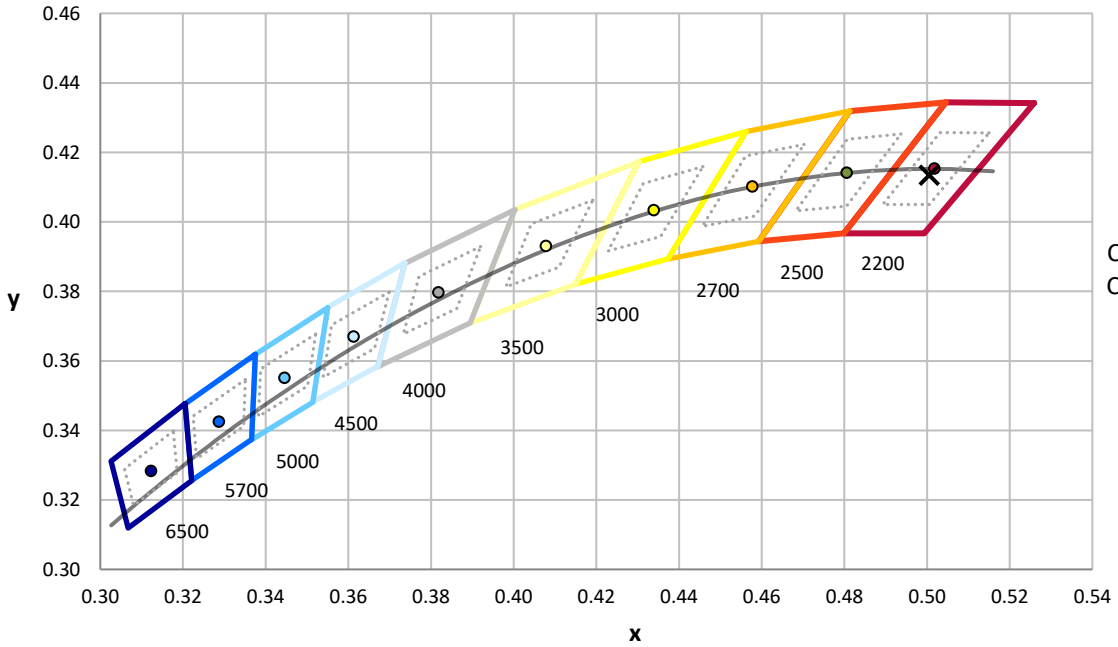
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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

## CIE 1931 Chromaticity Diagram




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



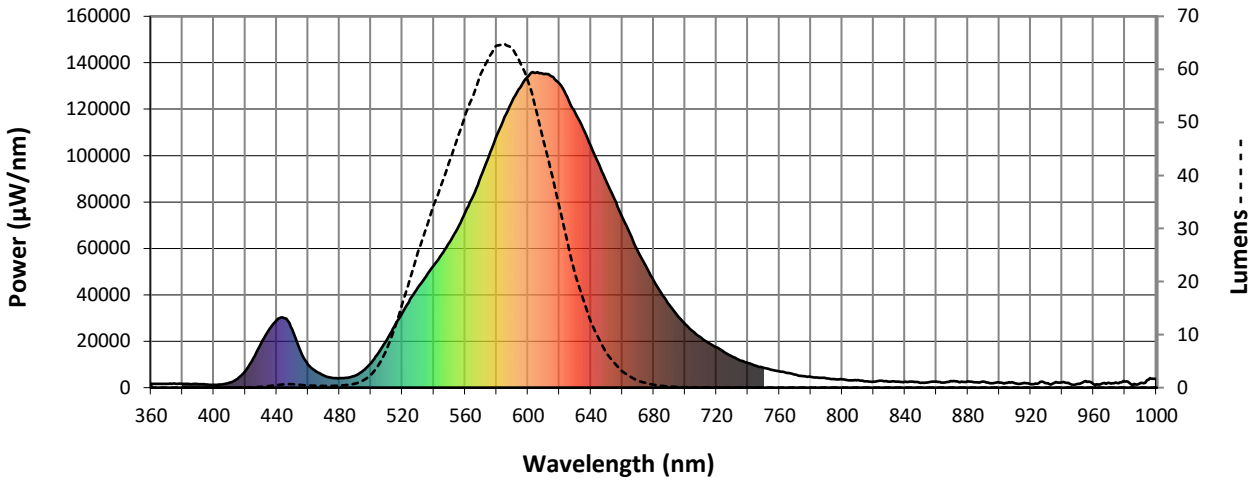

CCT = 2237K
CIE x = 0.5005
CIE y = 0.4134
Duv = -0.0006

Point lies inside the ANSI 2200K 4-step quadrangle

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## Photopic Flux vs. Wavelength



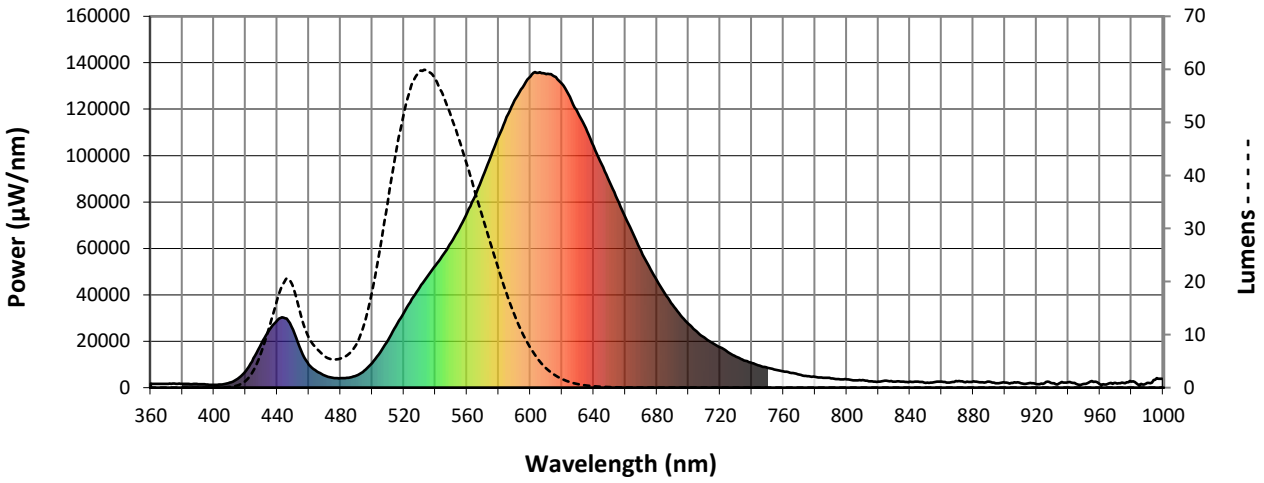

**Photopic Lumens: 5530.5**

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

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## Scotopic Flux vs. Wavelength



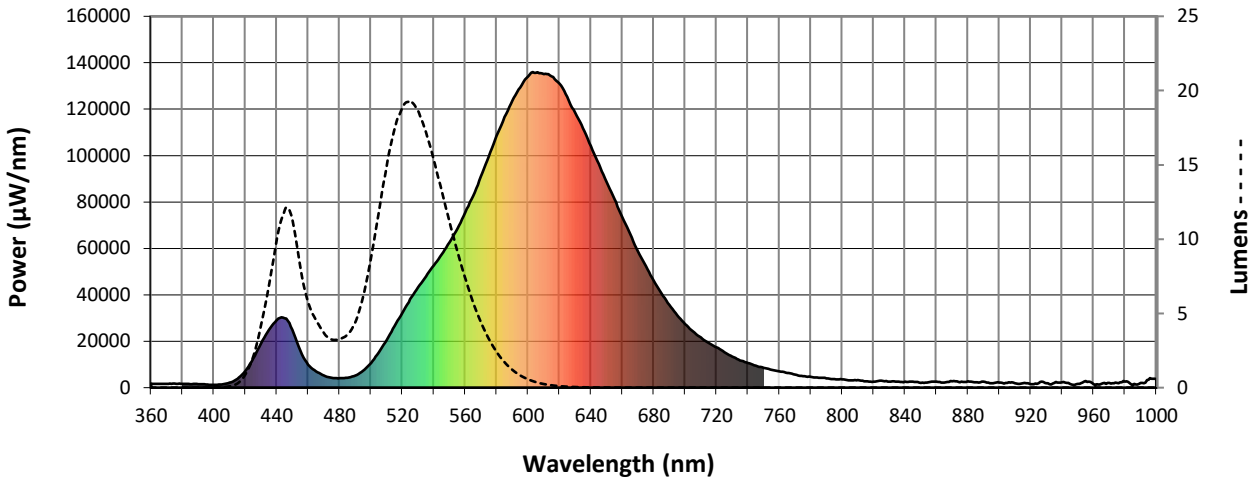

**Scotopic Lumens: 4696.9** **S/P: 0.85**

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

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## Melanopic Flux vs. Wavelength




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

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

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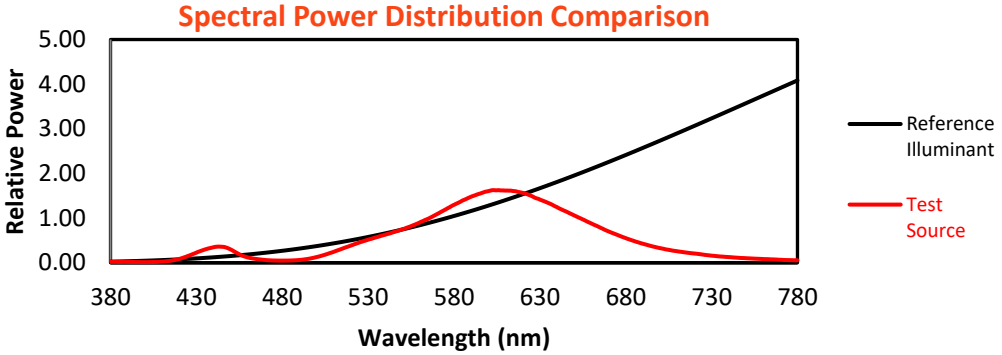
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# TM-30-18

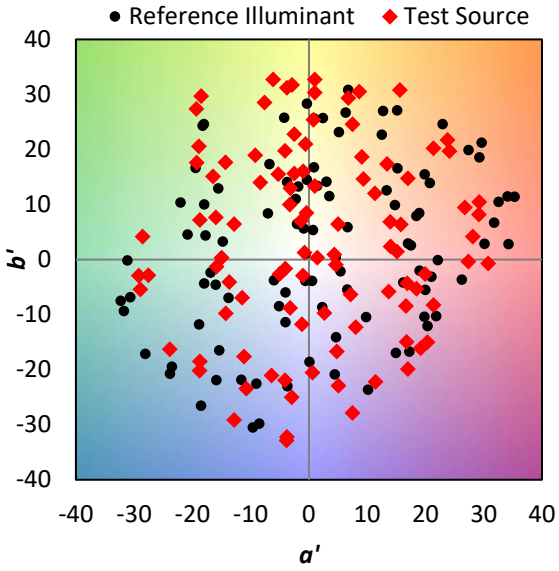
## Summary

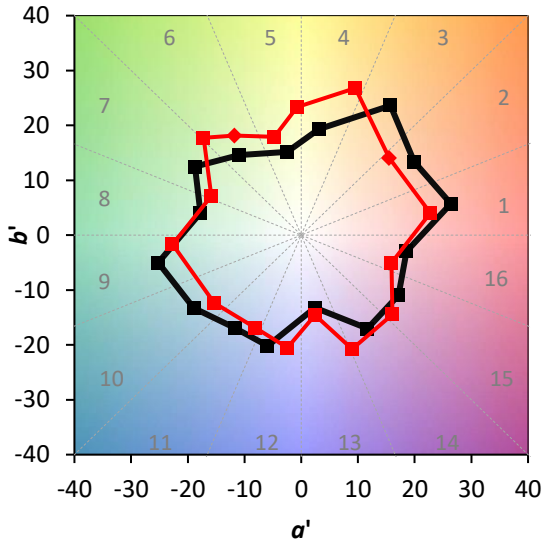
$R_f$ = 69.8
$R_g$ = 99.2
CIE $R_a$ = 72.0
$R_9$ = -17.4

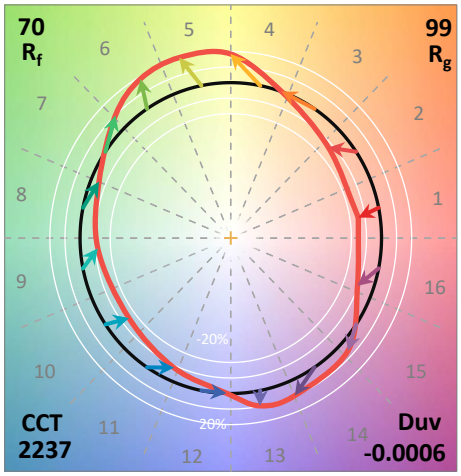
## Spectral Power Distribution Comparison

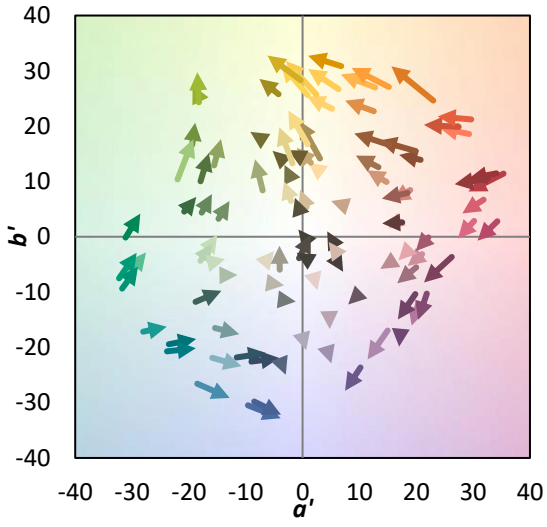



## Color Vector Graphics



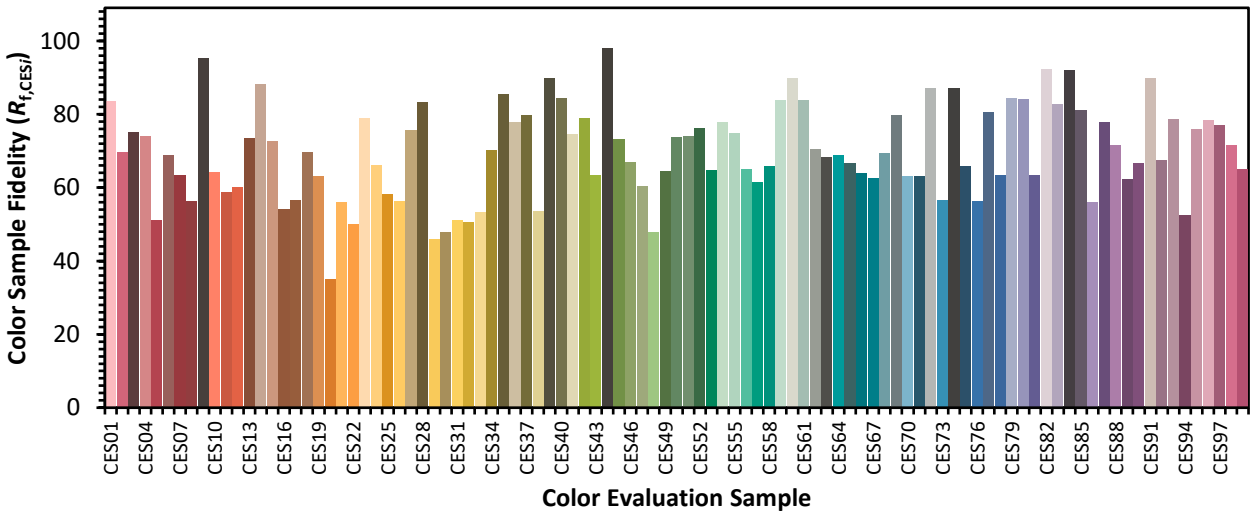
Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

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## TM-30-18

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

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

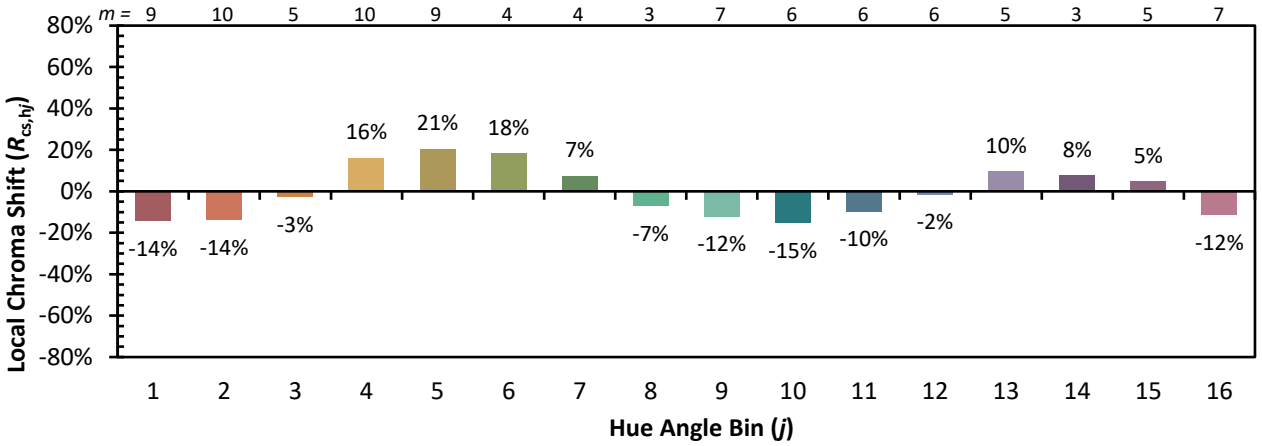


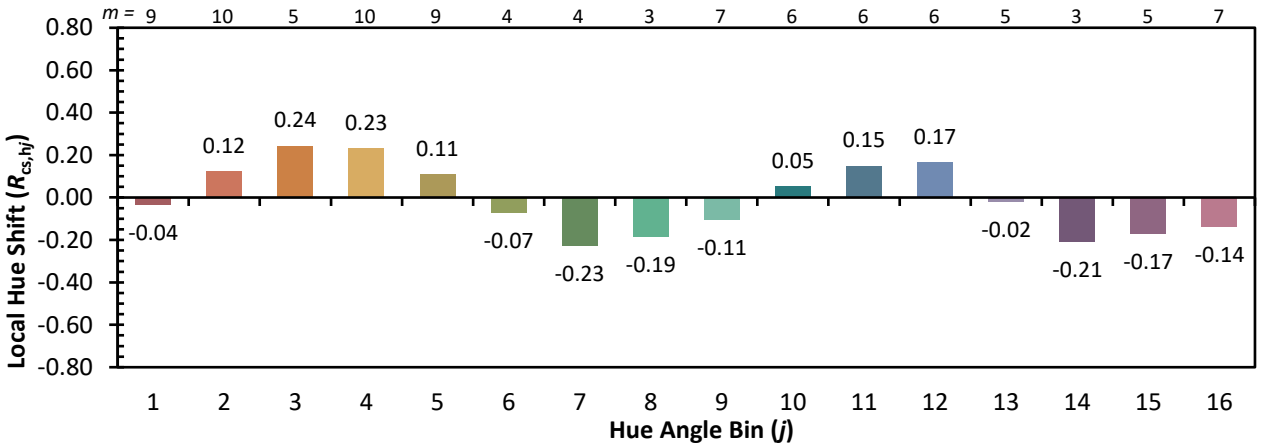
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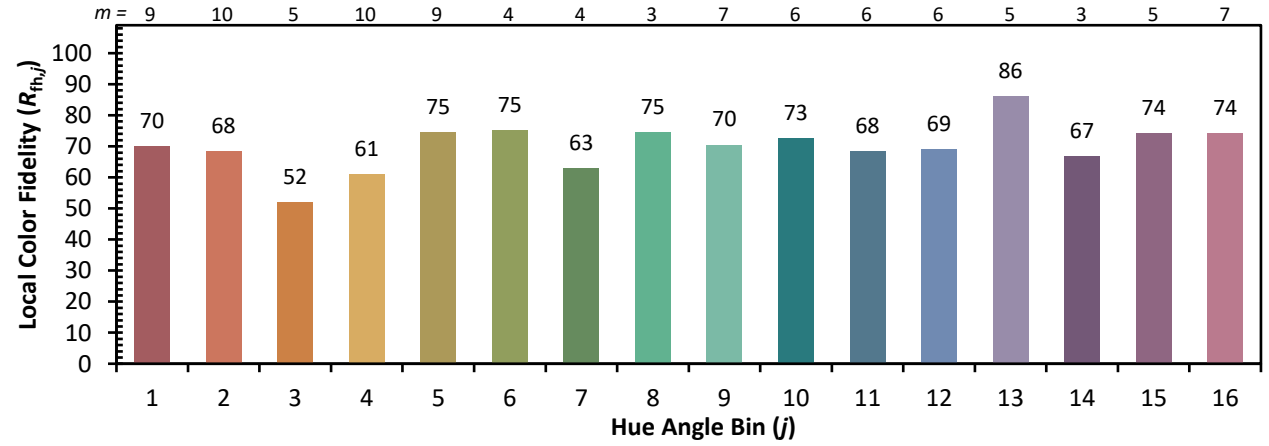
REPORT NUMBER: SP1-1908-441-10-R4

## TM-30-18

### Color Rendition by Hue-Angle Bin



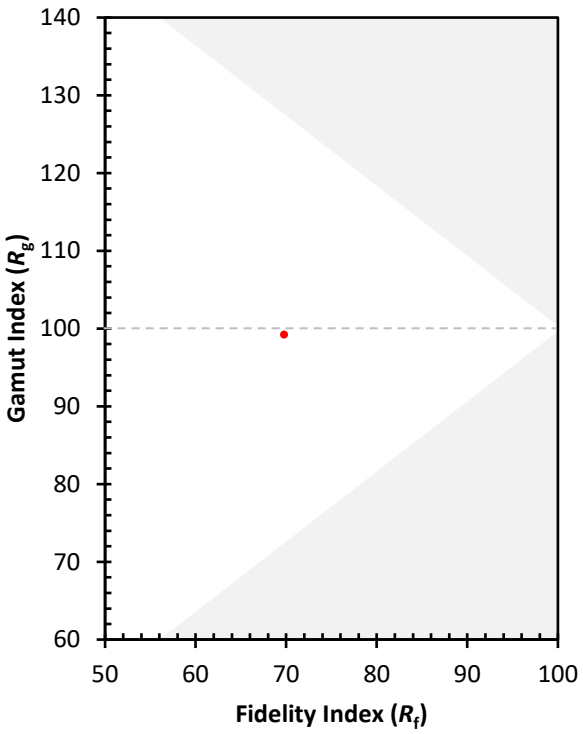



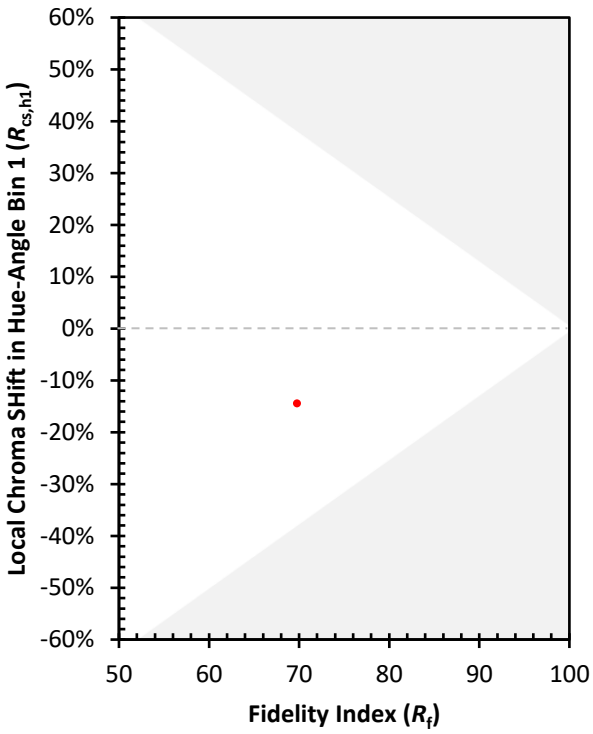
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### Measure Comparisons




(END OF REPORT)