

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



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: METALUX

Report Number: P981629

Luminaire Tested: 4PWM-2060C5-850-LOW

Issue Date: 01/28/2026

Test Information

Test Method: LM-79-2019
Report Number: P981629
Test Lab: INNOVATION CENTER(P3)
Issue Date: 01/28/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4PWM-2060C5-850-LOW
Description: METALUX 8.75 INCH PROWRAP 80CRI 5000K FIXTURE LOW OUTPUT SETTING
Light Source: 5000K CCT, 80+ CRI LEDS
Ballast/Driver: -

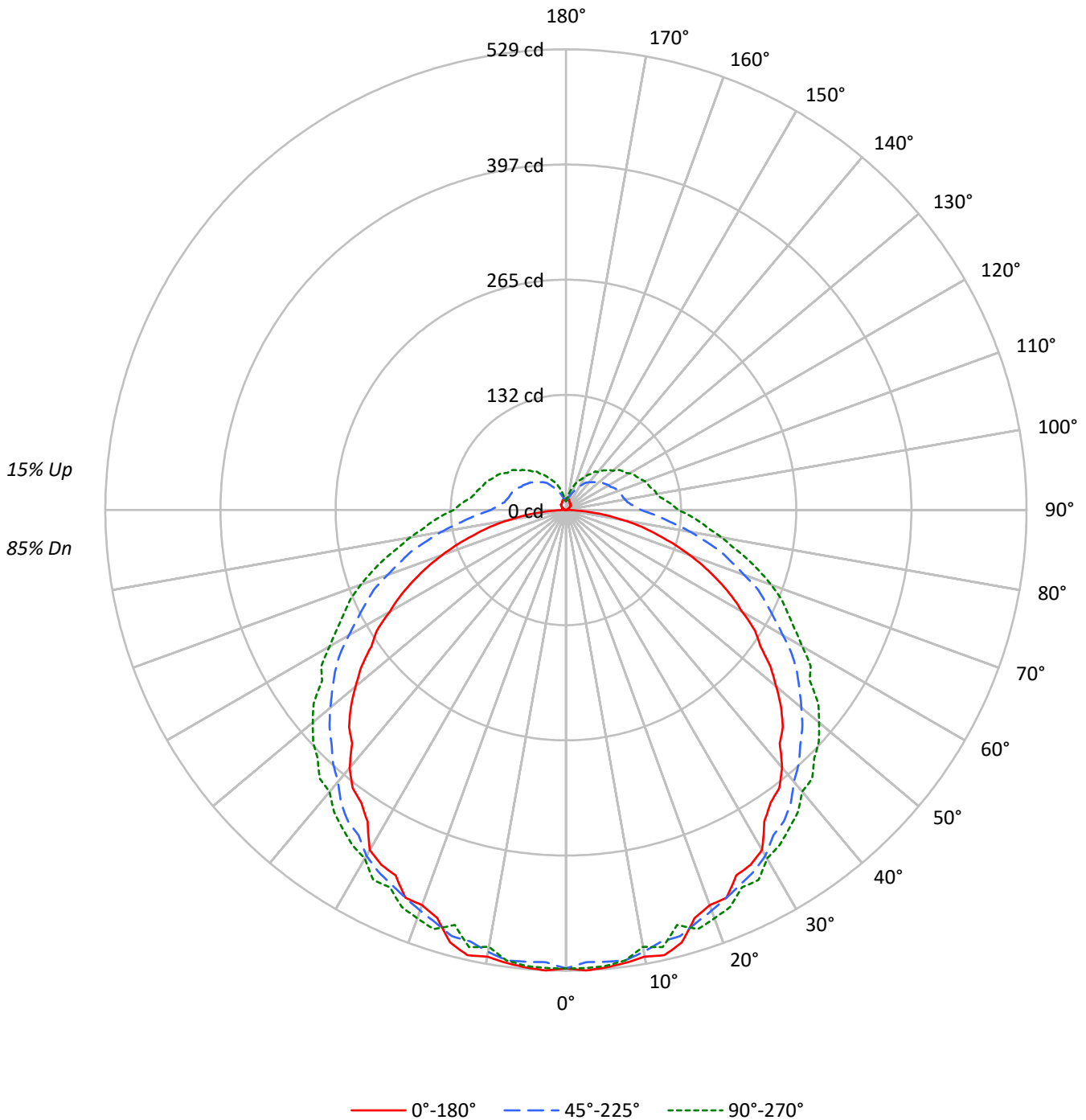
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2113.9 lumens
Efficiency: N/A
Efficacy: 139.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.32 / 1.44
Luminous Opening: Rectangular w/ Sides (W: 0.73' x L: 3.76' x H: 0.19')
CIE Type: Semi-Direct

Input Watts (W): 15.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

TEST NUMBER: P981629
CATALOG NUMBER: 4PWM-2060C5-850-LOW

Luminous Intensity Polar Plot





TEST NUMBER: P981629

CATALOG NUMBER: 4PWM-2060C5-850-LOW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 20 | | | | |
| RC | 80 | | | | 70 | | | | 50 | | | | 30 | | | | 10 | | | 0 | |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 111 | 103 | 103 | 103 | 96 | 96 | 96 | 89 | 89 | 89 | 89 | 89 | 89 | 85 |
| 1 | 103 | 98 | 93 | 88 | 99 | 94 | 90 | 85 | 87 | 83 | 80 | 81 | 78 | 75 | 75 | 72 | 70 | 75 | 72 | 70 | 67 |
| 2 | 93 | 84 | 77 | 70 | 89 | 81 | 74 | 68 | 75 | 69 | 64 | 69 | 65 | 61 | 64 | 61 | 57 | 64 | 61 | 57 | 54 |
| 3 | 84 | 73 | 64 | 57 | 81 | 70 | 62 | 56 | 65 | 59 | 53 | 61 | 55 | 50 | 56 | 52 | 48 | 56 | 52 | 48 | 45 |
| 4 | 77 | 64 | 55 | 48 | 73 | 62 | 54 | 47 | 58 | 50 | 45 | 54 | 47 | 43 | 50 | 45 | 40 | 50 | 45 | 40 | 38 |
| 5 | 71 | 57 | 48 | 41 | 67 | 55 | 47 | 40 | 51 | 44 | 38 | 48 | 42 | 37 | 45 | 39 | 35 | 45 | 39 | 35 | 32 |
| 6 | 65 | 51 | 42 | 35 | 62 | 50 | 41 | 35 | 46 | 39 | 33 | 43 | 37 | 32 | 40 | 35 | 30 | 40 | 35 | 30 | 28 |
| 7 | 60 | 46 | 37 | 31 | 57 | 45 | 36 | 30 | 42 | 35 | 29 | 39 | 33 | 28 | 37 | 31 | 27 | 37 | 31 | 27 | 25 |
| 8 | 56 | 42 | 33 | 27 | 53 | 41 | 33 | 27 | 38 | 31 | 26 | 36 | 30 | 25 | 34 | 28 | 24 | 34 | 28 | 24 | 22 |
| 9 | 52 | 39 | 30 | 25 | 50 | 37 | 29 | 24 | 35 | 28 | 23 | 33 | 27 | 22 | 31 | 26 | 21 | 31 | 26 | 21 | 19 |
| 10 | 49 | 35 | 27 | 22 | 47 | 34 | 27 | 22 | 32 | 26 | 21 | 31 | 24 | 20 | 29 | 23 | 19 | 29 | 23 | 19 | 18 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2064 | 2064 | 2064 |
| 5° | 2067 | 2012 | 2023 |
| 10° | 2055 | 1975 | 1940 |
| 15° | 2060 | 1943 | 1873 |
| 20° | 1979 | 1893 | 1904 |
| 25° | 1957 | 1864 | 1847 |
| 30° | 1983 | 1844 | 1822 |
| 35° | 1896 | 1814 | 1813 |
| 40° | 1898 | 1763 | 1778 |
| 45° | 1860 | 1735 | 1780 |
| 50° | 1816 | 1712 | 1773 |
| 55° | 1741 | 1690 | 1710 |
| 60° | 1688 | 1641 | 1701 |
| 65° | 1627 | 1607 | 1683 |
| 70° | 1528 | 1564 | 1687 |
| 75° | 1378 | 1538 | 1662 |
| 80° | 1183 | 1477 | 1671 |
| 85° | 814 | 1445 | 1764 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1967 cd/sqm



TEST NUMBER: P981629
 CATALOG NUMBER: 4PWM-2060C5-850-LOW

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 50.0 | 2.4 |
| 10°-20° | 143.1 | 6.8 |
| 20°-30° | 220.5 | 10.4 |
| 30°-40° | 271.8 | 12.9 |
| 40°-50° | 293.5 | 13.9 |
| 50°-60° | 284.0 | 13.4 |
| 60°-70° | 245.1 | 11.6 |
| 70°-80° | 183.2 | 8.7 |
| 80°-90° | 114.3 | 5.4 |
| 90°-100° | 75.2 | 3.6 |
| 100°-110° | 63.6 | 3.0 |
| 110°-120° | 54.4 | 2.6 |
| 120°-130° | 43.5 | 2.1 |
| 130°-140° | 32.2 | 1.5 |
| 140°-150° | 21.3 | 1.0 |
| 150°-160° | 11.8 | 0.6 |
| 160°-170° | 5.1 | 0.2 |
| 170°-180° | 1.2 | 0.1 |
| <hr/> | | |
| 0°-30° | 413.6 | 19.6 |
| 0°-40° | 685.4 | 32.4 |
| 0°-60° | 1262.9 | 59.7 |
| 0°-90° | 1805.5 | 85.4 |
| 90°-120° | 193.3 | 9.1 |
| 90°-150° | 290.3 | 13.7 |
| 90°-180° | 308.0 | 14.6 |
| 0°-180° | 2113.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0° | 526 | 526 | 526 | 526 | 526 | |
| 5° | 527 | 531 | 521 | 525 | 525 | 50 |
| 15° | 514 | 507 | 506 | 510 | 493 | 143 |
| 25° | 463 | 474 | 474 | 495 | 478 | 216 |
| 35° | 410 | 420 | 436 | 452 | 447 | 259 |
| 45° | 352 | 359 | 381 | 403 | 403 | 271 |
| 55° | 273 | 291 | 324 | 346 | 342 | 246 |
| 65° | 194 | 218 | 254 | 284 | 281 | 192 |
| 75° | 108 | 140 | 184 | 210 | 215 | 115 |
| 85° | 28 | 65 | 112 | 146 | 154 | 31 |
| 90° | 0 | 40 | 86 | 122 | 129 | 2 |
| 95° | 0 | 32 | 75 | 109 | 116 | 0 |
| 105° | 1 | 31 | 66 | 92 | 100 | 1 |
| 115° | 3 | 29 | 61 | 82 | 90 | 3 |
| 125° | 5 | 28 | 53 | 71 | 79 | 5 |
| 135° | 8 | 26 | 45 | 60 | 64 | 6 |
| 145° | 8 | 20 | 38 | 47 | 50 | 5 |
| 155° | 10 | 16 | 26 | 35 | 38 | 5 |
| 165° | 12 | 13 | 17 | 22 | 25 | 3 |
| 175° | 13 | 13 | 12 | 10 | 13 | 1 |
| 180° | 10 | 10 | 10 | 10 | 10 | |



TEST NUMBER: P981629

CATALOG NUMBER: 4PWM-2060C5-850-LOW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 0° | 526.4 | 526.4 | 526.4 | 526.4 | 526.4 |
| 2.5° | 529.2 | 532.1 | 519.7 | 526.4 | 526.4 |
| 5° | 527.3 | 531.1 | 520.7 | 525.4 | 525.4 |
| 7.5° | 524.5 | 519.7 | 521.6 | 531.1 | 521.6 |
| 10° | 520.7 | 518.8 | 515.0 | 527.3 | 509.3 |
| 12.5° | 523.5 | 508.4 | 507.4 | 519.7 | 514.1 |
| 15° | 514.1 | 507.4 | 506.5 | 510.3 | 493.2 |
| 17.5° | 491.3 | 495.1 | 497.0 | 504.6 | 504.6 |
| 20° | 482.8 | 490.4 | 489.4 | 498.9 | 498.9 |
| 22.5° | 481.9 | 480.9 | 481.9 | 493.2 | 493.2 |
| 25° | 462.9 | 474.3 | 474.3 | 495.1 | 478.1 |
| 27.5° | 459.2 | 462.9 | 467.7 | 480.9 | 479.0 |
| 30° | 450.6 | 445.9 | 458.2 | 469.6 | 462.0 |
| 32.5° | 424.1 | 430.8 | 443.1 | 462.0 | 456.3 |
| 35° | 409.9 | 420.3 | 436.4 | 452.5 | 446.8 |
| 37.5° | 402.4 | 407.1 | 424.1 | 444.0 | 437.4 |
| 40° | 386.3 | 390.0 | 407.1 | 427.0 | 422.2 |
| 42.5° | 363.5 | 376.8 | 395.7 | 415.6 | 418.4 |
| 45° | 352.2 | 358.8 | 380.6 | 403.3 | 403.3 |
| 47.5° | 335.1 | 338.0 | 368.3 | 391.0 | 393.8 |
| 50° | 315.3 | 325.7 | 353.1 | 376.8 | 379.6 |
| 52.5° | 296.3 | 304.8 | 338.0 | 360.7 | 365.4 |
| 55° | 272.7 | 290.6 | 323.8 | 345.5 | 341.8 |
| 57.5° | 257.5 | 269.8 | 307.7 | 333.2 | 333.2 |
| 60° | 233.8 | 253.7 | 287.8 | 315.3 | 313.4 |
| 62.5° | 214.9 | 232.9 | 269.8 | 300.1 | 296.3 |
| 65° | 194.1 | 217.7 | 253.7 | 284.0 | 281.2 |
| 67.5° | 173.2 | 196.0 | 238.6 | 264.1 | 267.9 |
| 70° | 151.5 | 178.0 | 217.7 | 246.1 | 250.9 |
| 72.5° | 129.7 | 157.2 | 199.8 | 230.1 | 232.9 |
| 75° | 107.9 | 140.1 | 183.7 | 210.2 | 214.9 |
| 77.5° | 89.0 | 120.2 | 162.8 | 190.3 | 196.0 |
| 80° | 67.2 | 100.4 | 145.8 | 176.1 | 181.8 |
| 82.5° | 47.3 | 83.3 | 126.9 | 157.2 | 165.7 |
| 85° | 28.4 | 65.3 | 111.7 | 145.8 | 154.3 |
| 87.5° | 11.4 | 50.2 | 98.5 | 134.4 | 142.0 |
| 90° | 0.0 | 39.8 | 86.2 | 122.1 | 128.8 |
| 92.5° | 0.0 | 34.1 | 80.5 | 112.7 | 123.1 |
| 95° | 0.0 | 32.2 | 74.8 | 108.9 | 116.4 |
| 97.5° | 0.0 | 31.2 | 71.0 | 101.3 | 109.8 |
| 100° | 0.9 | 31.2 | 69.1 | 96.6 | 106.0 |
| 102.5° | 0.9 | 31.2 | 67.2 | 94.7 | 104.1 |
| 105° | 0.9 | 31.2 | 66.3 | 91.8 | 100.4 |
| 107.5° | 0.9 | 30.3 | 65.3 | 89.9 | 98.5 |
| 110° | 1.9 | 31.2 | 64.4 | 88.0 | 96.6 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 112.5° | 1.9 | 30.3 | 62.5 | 85.2 | 92.8 |
| 115° | 2.8 | 29.3 | 60.6 | 82.4 | 89.9 |
| 117.5° | 2.8 | 29.3 | 57.7 | 80.5 | 88.0 |
| 120° | 3.8 | 28.4 | 56.8 | 76.7 | 84.3 |
| 122.5° | 4.7 | 29.3 | 54.9 | 73.8 | 79.5 |
| 125° | 4.7 | 27.5 | 53.0 | 71.0 | 78.6 |
| 127.5° | 5.7 | 27.5 | 52.1 | 68.2 | 75.7 |
| 130° | 6.6 | 26.5 | 49.2 | 66.3 | 70.1 |
| 132.5° | 7.6 | 25.6 | 47.3 | 62.5 | 68.2 |
| 135° | 7.6 | 25.6 | 45.4 | 59.6 | 64.4 |
| 137.5° | 8.5 | 23.7 | 43.5 | 56.8 | 61.5 |
| 140° | 8.5 | 22.7 | 41.7 | 53.0 | 56.8 |
| 142.5° | 8.5 | 21.8 | 39.8 | 51.1 | 55.9 |
| 145° | 8.5 | 19.9 | 37.9 | 47.3 | 50.2 |
| 147.5° | 8.5 | 18.9 | 34.1 | 44.5 | 48.3 |
| 150° | 9.5 | 18.0 | 31.2 | 41.7 | 44.5 |
| 152.5° | 9.5 | 17.0 | 28.4 | 37.9 | 40.7 |
| 155° | 10.4 | 16.1 | 26.5 | 35.0 | 37.9 |
| 157.5° | 10.4 | 15.1 | 22.7 | 33.1 | 35.0 |
| 160° | 11.4 | 14.2 | 20.8 | 29.3 | 32.2 |
| 162.5° | 12.3 | 14.2 | 18.9 | 25.6 | 28.4 |
| 165° | 12.3 | 13.3 | 17.0 | 21.8 | 24.6 |
| 167.5° | 12.3 | 13.3 | 15.1 | 18.0 | 21.8 |
| 170° | 12.3 | 13.3 | 13.3 | 15.1 | 18.0 |
| 172.5° | 12.3 | 12.3 | 13.3 | 12.3 | 15.1 |
| 175° | 13.3 | 13.3 | 12.3 | 10.4 | 13.3 |
| 177.5° | 13.3 | 12.3 | 11.4 | 9.5 | 10.4 |
| 180° | 10.4 | 10.4 | 10.4 | 10.4 | 10.4 |



TEST NUMBER: P981629
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CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|------|------|------|------|----------------|------|------|------|------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room Dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 11.8 | 13.2 | 12.4 | 13.8 | 14.5 | 13.9 | 15.3 | 14.5 | 15.9 | 16.5 |
| | 3H | 13.5 | 14.8 | 14.1 | 15.4 | 16.1 | 16.4 | 17.6 | 16.9 | 18.2 | 18.9 |
| | 4H | 14.1 | 15.3 | 14.7 | 16.0 | 16.7 | 17.5 | 18.7 | 18.1 | 19.3 | 20.0 |
| | 6H | 14.5 | 15.7 | 15.2 | 16.3 | 17.0 | 18.7 | 19.8 | 19.3 | 20.4 | 21.1 |
| | 8H | 14.6 | 15.7 | 15.3 | 16.4 | 17.1 | 19.3 | 20.3 | 19.9 | 21.0 | 21.7 |
| | 12H | 14.7 | 15.7 | 15.3 | 16.4 | 17.1 | 19.9 | 20.9 | 20.5 | 21.6 | 22.3 |
| 4H | 2H | 12.8 | 14.0 | 13.4 | 14.6 | 15.3 | 14.4 | 15.6 | 15.0 | 16.2 | 16.9 |
| | 3H | 14.7 | 15.8 | 15.4 | 16.4 | 17.2 | 17.1 | 18.1 | 17.7 | 18.8 | 19.5 |
| | 4H | 15.5 | 16.4 | 16.1 | 17.1 | 17.8 | 18.4 | 19.4 | 19.1 | 20.0 | 20.8 |
| | 6H | 16.0 | 16.9 | 16.7 | 17.5 | 18.3 | 19.8 | 20.6 | 20.4 | 21.3 | 22.1 |
| | 8H | 16.2 | 17.0 | 16.8 | 17.7 | 18.4 | 20.5 | 21.2 | 21.1 | 21.9 | 22.7 |
| | 12H | 16.3 | 17.0 | 17.0 | 17.7 | 18.5 | 21.2 | 21.9 | 21.9 | 22.6 | 23.4 |
| 8H | 4H | 16.2 | 17.0 | 16.9 | 17.7 | 18.5 | 18.7 | 19.5 | 19.3 | 20.2 | 20.9 |
| | 6H | 16.9 | 17.6 | 17.6 | 18.3 | 19.1 | 20.2 | 20.9 | 20.9 | 21.6 | 22.4 |
| | 8H | 17.2 | 17.8 | 17.9 | 18.5 | 19.3 | 21.1 | 21.7 | 21.8 | 22.4 | 23.2 |
| | 12H | 17.4 | 17.9 | 18.1 | 18.6 | 19.5 | 22.0 | 22.5 | 22.7 | 23.2 | 24.1 |
| 12H | 4H | 16.4 | 17.1 | 17.1 | 17.8 | 18.6 | 18.7 | 19.4 | 19.4 | 20.1 | 20.9 |
| | 6H | 17.2 | 17.8 | 17.9 | 18.5 | 19.4 | 20.3 | 20.9 | 21.0 | 21.6 | 22.4 |
| | 8H | 17.6 | 18.1 | 18.3 | 18.8 | 19.7 | 21.2 | 21.7 | 21.9 | 22.4 | 23.3 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP3-2511-615-15

Test Date: 01/15/2026

Luminaire Tested: PW-S-6K-850-2nd

Data in this report applies to families of products including PW-S-6K*

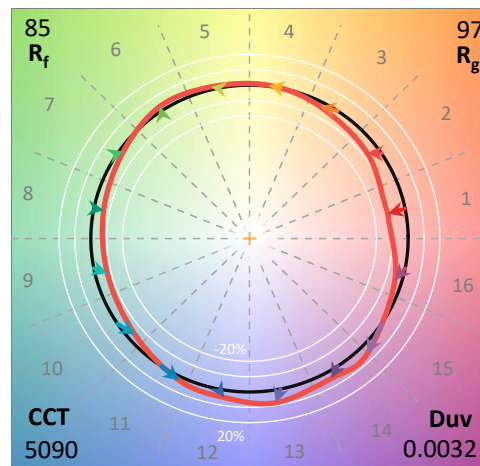
Test Information

Test Method: LM-79-2019
 Report Number: SP3-2511-615-15
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP3 - 3M SPHERE
 Measurement Geometry: 4π
 Issue Date: 01/20/2026
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **PW-S-6K-850-2nd**
 Description: 8.75" Wrap 5 CCT 5 lumen select @6000lms (switch) @5000K 2nd Round

Spectral Parameters

CCT (K): 5090
 CIE u': 0.2083
 CIE v': 0.4867
 Duv: 0.0032
 CIE x: 0.3431
 CIE y: 0.3563
 CIE z: 0.3006
 Peak Wavelength (nm): 450
 Dominant Wavelength (nm): 568
 Purity: 9.863329
 Rf: 84.8
 Rg: 96.7

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 84.2 | | |
| R1: | 82.7 | R9: | 12.9 |
| R2: | 88.6 | R10: | 73.0 |
| R3: | 92.8 | R11: | 84.5 |
| R4: | 84.6 | R12: | 62.9 |
| R5: | 83.4 | R13: | 84.2 |
| R6: | 84.2 | R14: | 96.2 |
| R7: | 87.9 | R15: | 77.0 |
| R8: | 69.4 | | |



Test Conditions

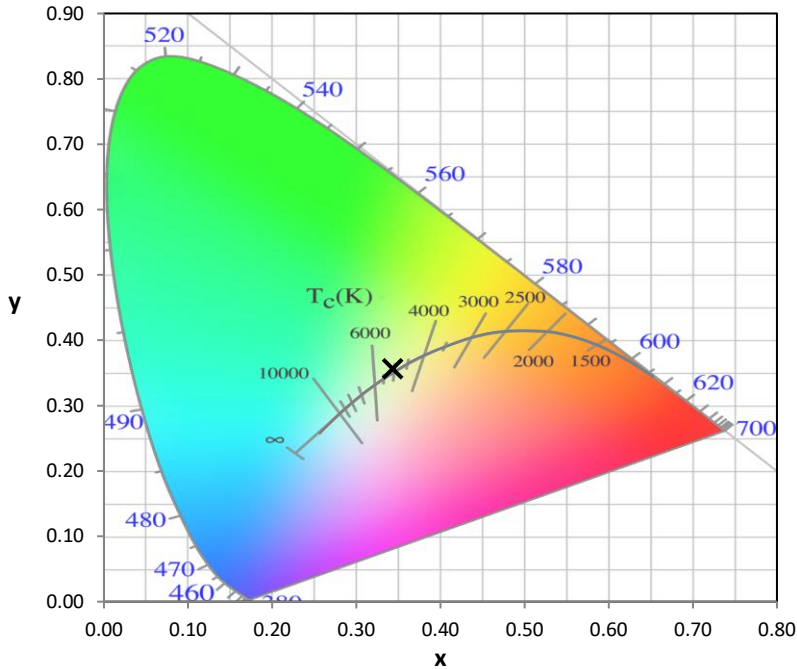
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP3-2511-615-15

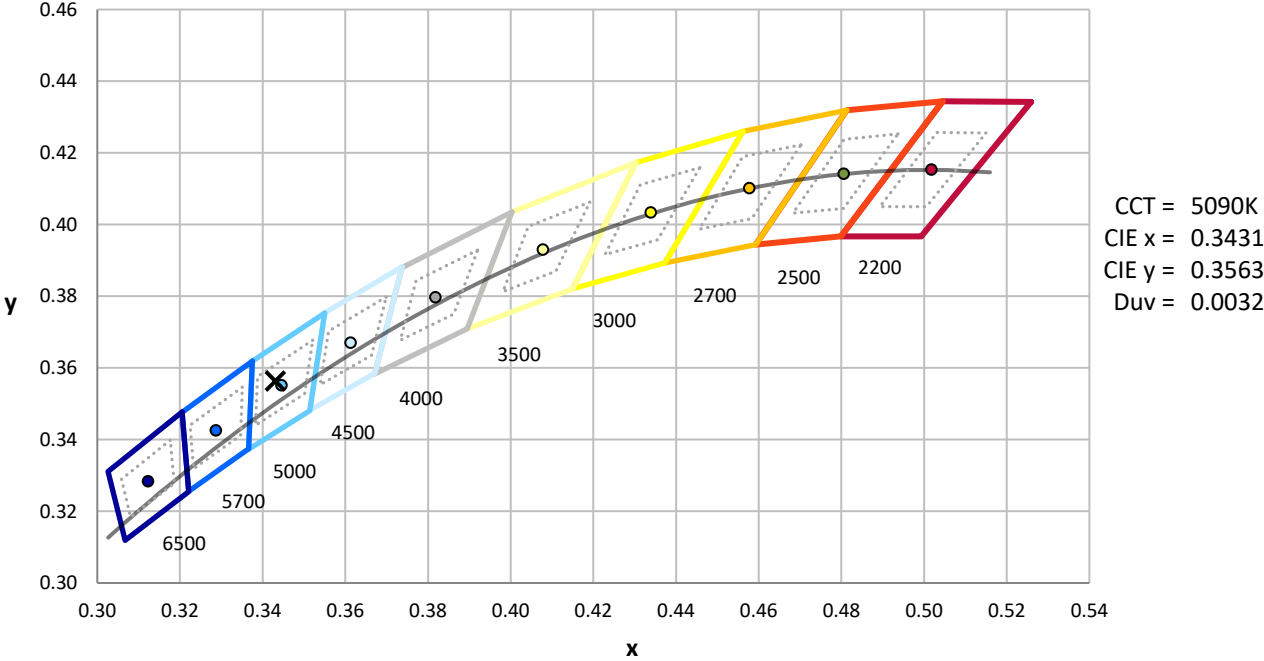
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 1/10/2026 | 7/10/2026 |
| Power Meter | XITRON 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



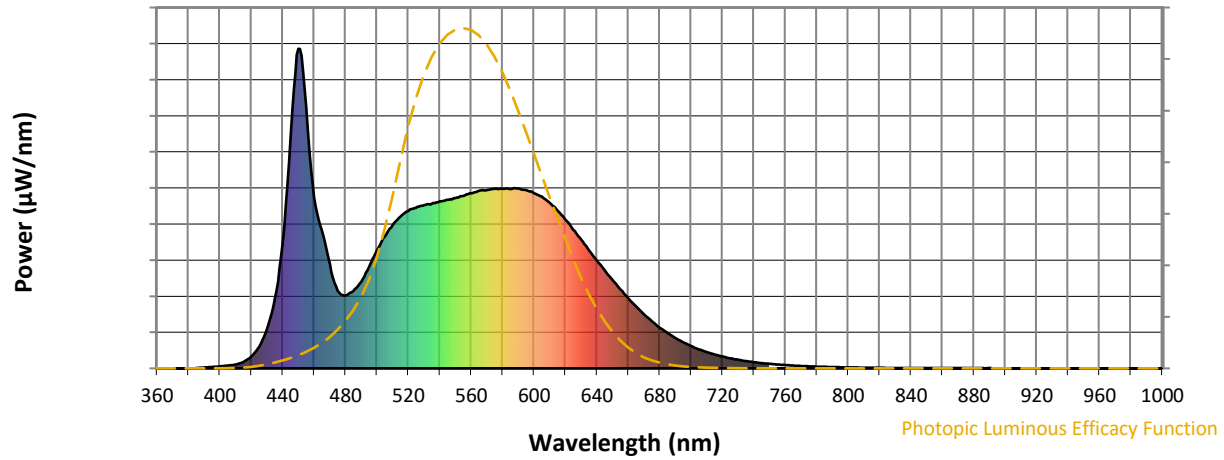
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

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Photopic Flux vs. Wavelength

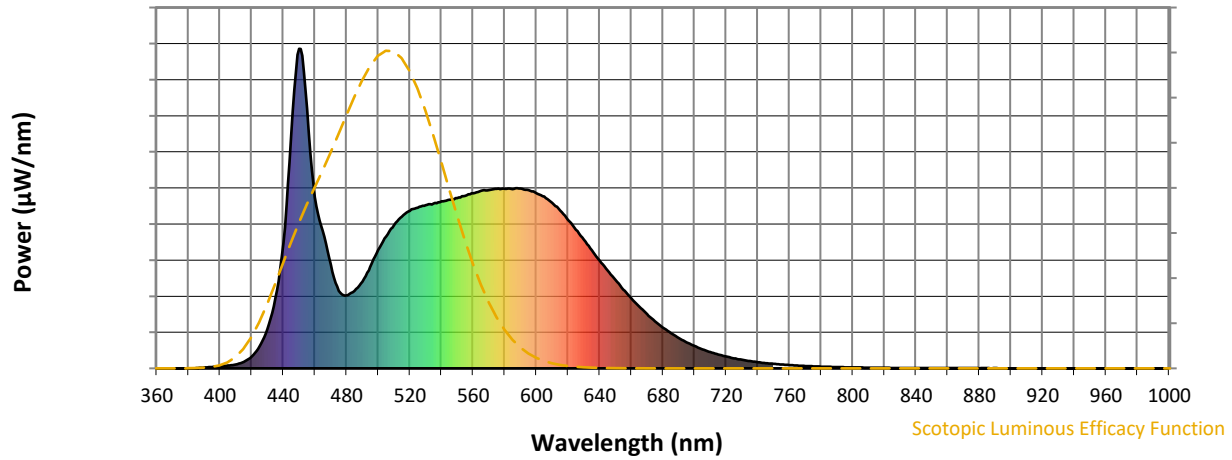


Photopic Lumens: NR

| 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 | 272 | NR | 620 | 465 | NR | 750 | 14 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 317 | NR | 625 | 434 | NR | 755 | 12 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 371 | NR | 630 | 402 | NR | 760 | 10 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 370 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 448 | NR | 640 | 338 | NR | 770 | 7 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 474 | NR | 645 | 306 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 493 | NR | 650 | 277 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 503 | NR | 655 | 247 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 510 | NR | 660 | 219 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 515 | NR | 665 | 193 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 523 | NR | 670 | 169 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 20 | NR | 545 | 527 | NR | 675 | 148 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 532 | NR | 680 | 128 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 540 | NR | 685 | 110 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 123 | NR | 560 | 548 | NR | 690 | 95 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 220 | NR | 565 | 555 | NR | 695 | 82 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 558 | NR | 700 | 70 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 726 | NR | 575 | 561 | NR | 705 | 59 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 562 | NR | 710 | 51 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 812 | NR | 585 | 561 | NR | 715 | 43 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 536 | NR | 590 | 563 | NR | 720 | 37 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 429 | NR | 595 | 558 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 325 | NR | 600 | 548 | NR | 730 | 27 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 242 | NR | 605 | 538 | NR | 735 | 23 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 228 | NR | 610 | 518 | NR | 740 | 19 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 242 | NR | 615 | 494 | NR | 745 | 16 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP3-2511-615-15

Scotopic Flux vs. Wavelength



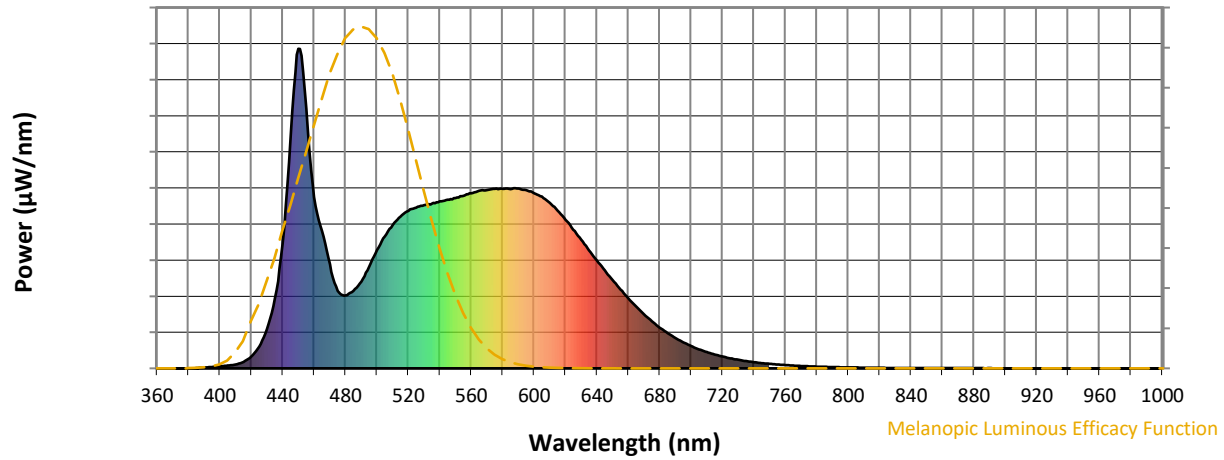
Scotopic Lumens: NR

S/P: 1.99

| 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 | 272 | NR | 620 | 465 | NR | 750 | 14 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 317 | NR | 625 | 434 | NR | 755 | 12 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 371 | NR | 630 | 402 | NR | 760 | 10 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 370 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 448 | NR | 640 | 338 | NR | 770 | 7 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 474 | NR | 645 | 306 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 493 | NR | 650 | 277 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 503 | NR | 655 | 247 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 510 | NR | 660 | 219 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 515 | NR | 665 | 193 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 523 | NR | 670 | 169 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 20 | NR | 545 | 527 | NR | 675 | 148 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 532 | NR | 680 | 128 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 540 | NR | 685 | 110 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 123 | NR | 560 | 548 | NR | 690 | 95 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 220 | NR | 565 | 555 | NR | 695 | 82 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 558 | NR | 700 | 70 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 726 | NR | 575 | 561 | NR | 705 | 59 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 562 | NR | 710 | 51 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 812 | NR | 585 | 561 | NR | 715 | 43 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 536 | NR | 590 | 563 | NR | 720 | 37 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 429 | NR | 595 | 558 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 325 | NR | 600 | 548 | NR | 730 | 27 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 242 | NR | 605 | 538 | NR | 735 | 23 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 228 | NR | 610 | 518 | NR | 740 | 19 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 242 | NR | 615 | 494 | NR | 745 | 16 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP3-2511-615-15

Melanopic Flux vs. Wavelength



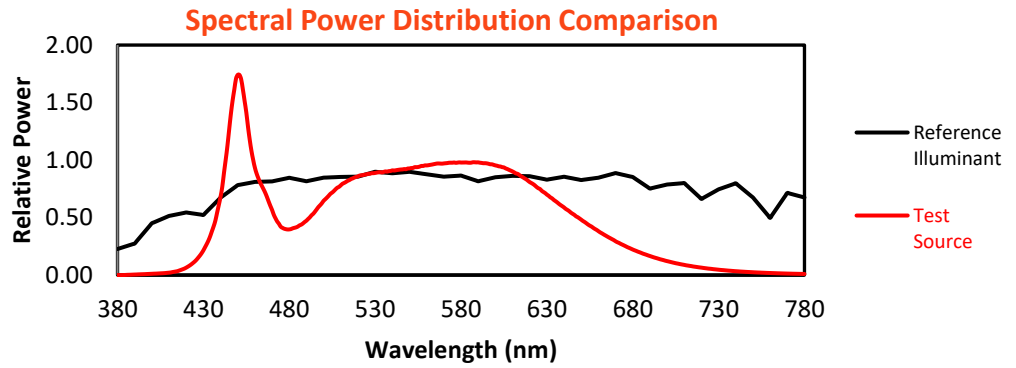
Melanopic Lumens: NR

M/P: 4.23

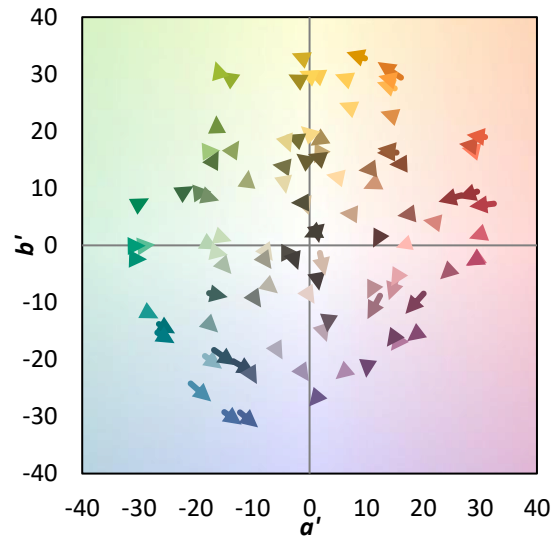
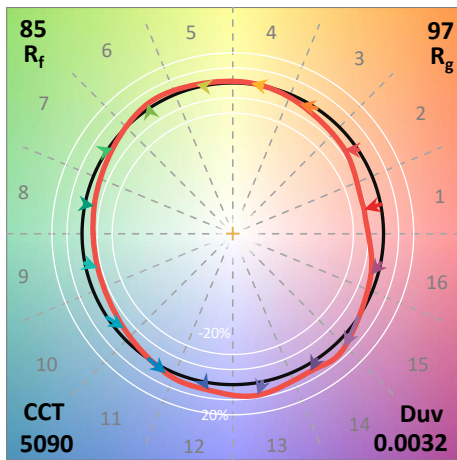
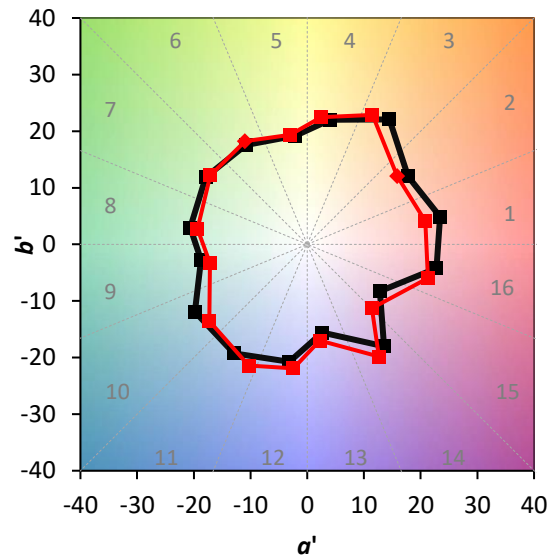
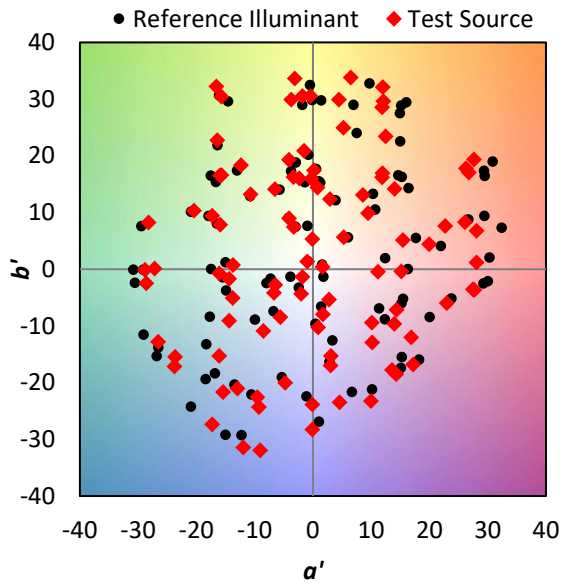
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 272 | NR | 620 | 465 | NR | 750 | 14 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 317 | NR | 625 | 434 | NR | 755 | 12 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 371 | NR | 630 | 402 | NR | 760 | 10 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 412 | NR | 635 | 370 | NR | 765 | 9 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 448 | NR | 640 | 338 | NR | 770 | 7 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 474 | NR | 645 | 306 | NR | 775 | 6 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 493 | NR | 650 | 277 | NR | 780 | 5 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 503 | NR | 655 | 247 | NR | 785 | 5 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 510 | NR | 660 | 219 | NR | 790 | 4 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 515 | NR | 665 | 193 | NR | 795 | 3 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 523 | NR | 670 | 169 | NR | 800 | 3 | NR | 930 | 0 | NR |
| 415 | 20 | NR | 545 | 527 | NR | 675 | 148 | NR | 805 | 3 | NR | 935 | 0 | NR |
| 420 | 37 | NR | 550 | 532 | NR | 680 | 128 | NR | 810 | 2 | NR | 940 | 0 | NR |
| 425 | 68 | NR | 555 | 540 | NR | 685 | 110 | NR | 815 | 2 | NR | 945 | 0 | NR |
| 430 | 123 | NR | 560 | 548 | NR | 690 | 95 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 220 | NR | 565 | 555 | NR | 695 | 82 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 391 | NR | 570 | 558 | NR | 700 | 70 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 726 | NR | 575 | 561 | NR | 705 | 59 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 1000 | NR | 580 | 562 | NR | 710 | 51 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 812 | NR | 585 | 561 | NR | 715 | 43 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 536 | NR | 590 | 563 | NR | 720 | 37 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 429 | NR | 595 | 558 | NR | 725 | 32 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 325 | NR | 600 | 548 | NR | 730 | 27 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 242 | NR | 605 | 538 | NR | 735 | 23 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 228 | NR | 610 | 518 | NR | 740 | 19 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 242 | NR | 615 | 494 | NR | 745 | 16 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 84.8$
 $R_g = 96.7$
 CIE $R_a = 84.2$
 $R_9 = 12.9$

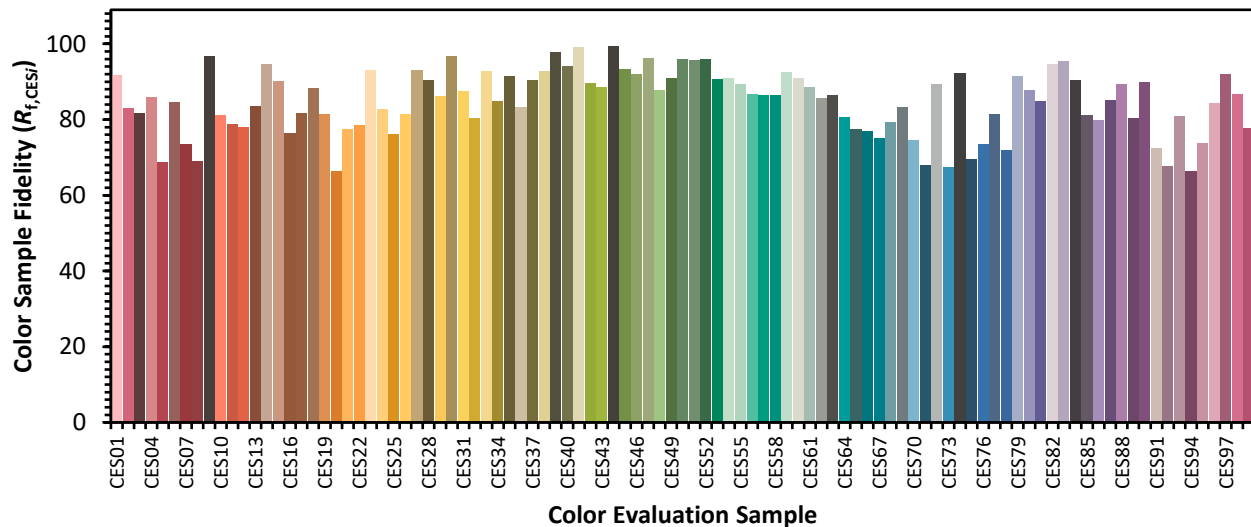


Color Vector Graphics

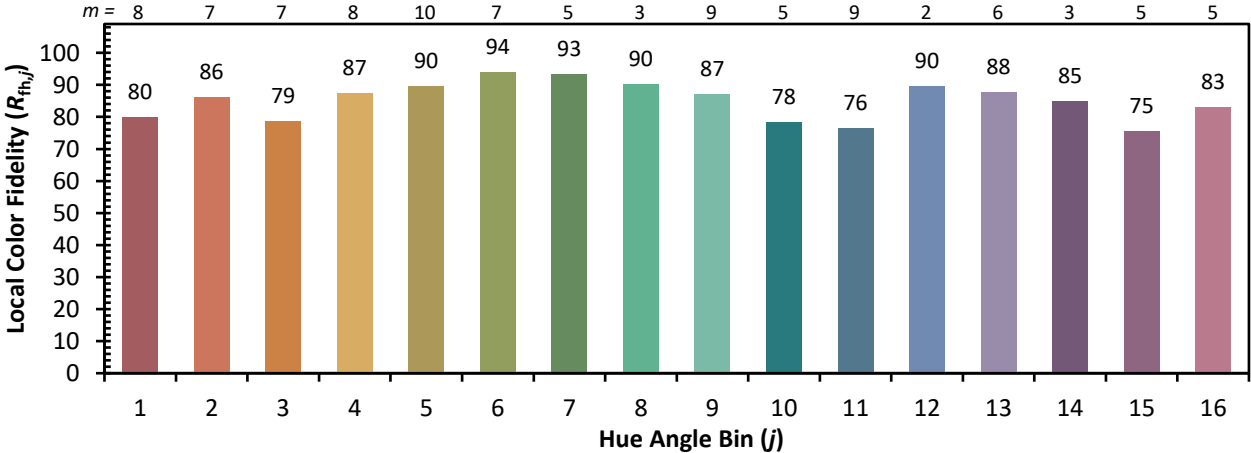
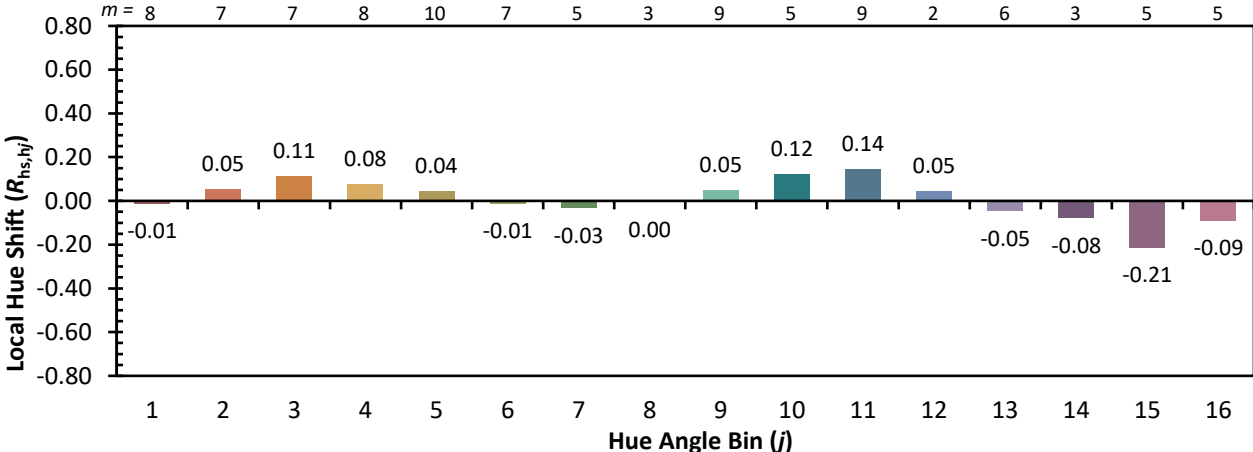
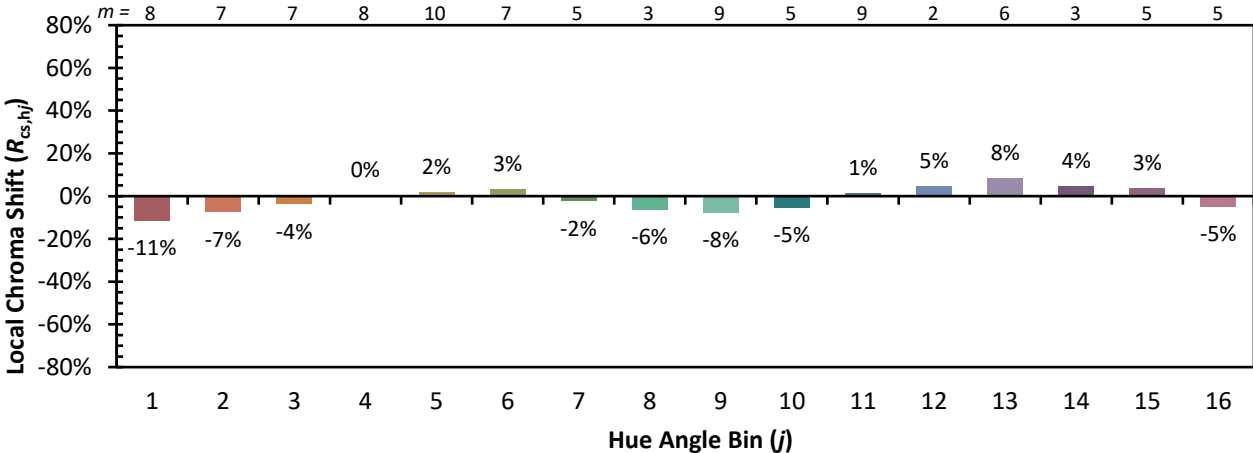


Individual Sample Fidelity Index ($R_{f,i}$)

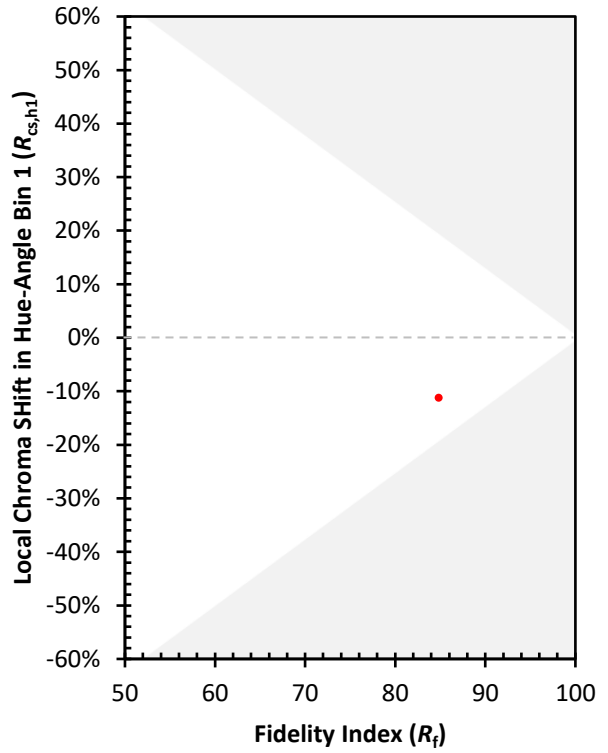
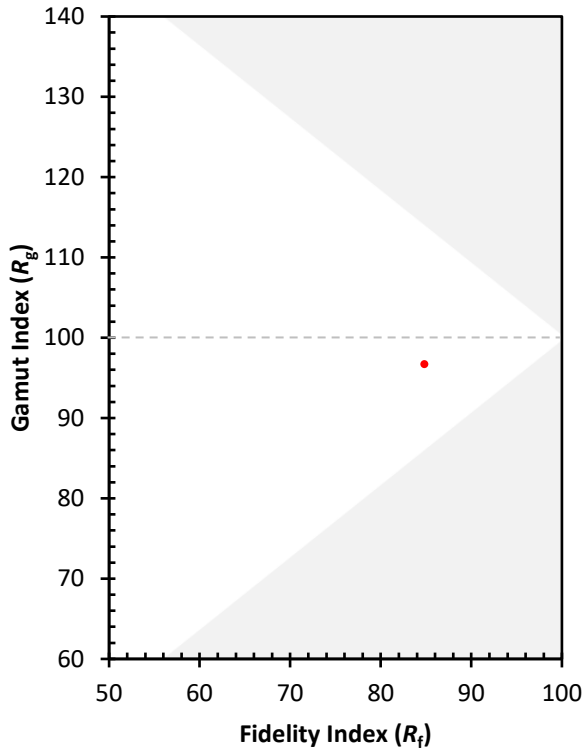
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 81 | CES51 = 96 | CES76 = 74 |
| CES02 = 60 | CES27 = 93 | CES52 = 96 | CES77 = 81 |
| CES03 = 30 | CES28 = 90 | CES53 = 91 | CES78 = 72 |
| CES04 = 69 | CES29 = 86 | CES54 = 91 | CES79 = 91 |
| CES05 = 47 | CES30 = 97 | CES55 = 89 | CES80 = 88 |
| CES06 = 50 | CES31 = 88 | CES56 = 87 | CES81 = 85 |
| CES07 = 40 | CES32 = 80 | CES57 = 86 | CES82 = 95 |
| CES08 = 39 | CES33 = 93 | CES58 = 87 | CES83 = 95 |
| CES09 = 29 | CES34 = 85 | CES59 = 93 | CES84 = 90 |
| CES10 = 73 | CES35 = 91 | CES60 = 91 | CES85 = 81 |
| CES11 = 56 | CES36 = 83 | CES61 = 89 | CES86 = 80 |
| CES12 = 61 | CES37 = 90 | CES62 = 86 | CES87 = 85 |
| CES13 = 42 | CES38 = 93 | CES63 = 86 | CES88 = 89 |
| CES14 = 74 | CES39 = 98 | CES64 = 81 | CES89 = 80 |
| CES15 = 71 | CES40 = 94 | CES65 = 77 | CES90 = 90 |
| CES16 = 46 | CES41 = 99 | CES66 = 77 | CES91 = 72 |
| CES17 = 48 | CES42 = 90 | CES67 = 75 | CES92 = 68 |
| CES18 = 55 | CES43 = 88 | CES68 = 79 | CES93 = 81 |
| CES19 = 70 | CES44 = 99 | CES69 = 83 | CES94 = 66 |
| CES20 = 64 | CES45 = 93 | CES70 = 75 | CES95 = 74 |
| CES21 = 85 | CES46 = 92 | CES71 = 68 | CES96 = 84 |
| CES22 = 77 | CES47 = 96 | CES72 = 89 | CES97 = 92 |
| CES23 = 91 | CES48 = 88 | CES73 = 67 | CES98 = 87 |
| CES24 = 90 | CES49 = 91 | CES74 = 92 | CES99 = 78 |
| CES25 = 70 | CES50 = 96 | CES75 = 70 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)