

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: P1311239

Luminaire Tested: 4PWW-4080C5-845-LOW

Issue Date: 02/11/2026

Test Information

Test Method: LM-79-2019
Report Number: P1311239
Test Lab: INNOVATION CENTER(P3)
Issue Date: 02/11/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4PWW-4080C5-845-LOW
Description: METALUX 14.75 INCH PROWRAP 80CRI 4500K FIXTURE LOW OUTPUT SETTING
Light Source: 4500K CCT, 80+ CRI LEDS
Ballast/Driver: -

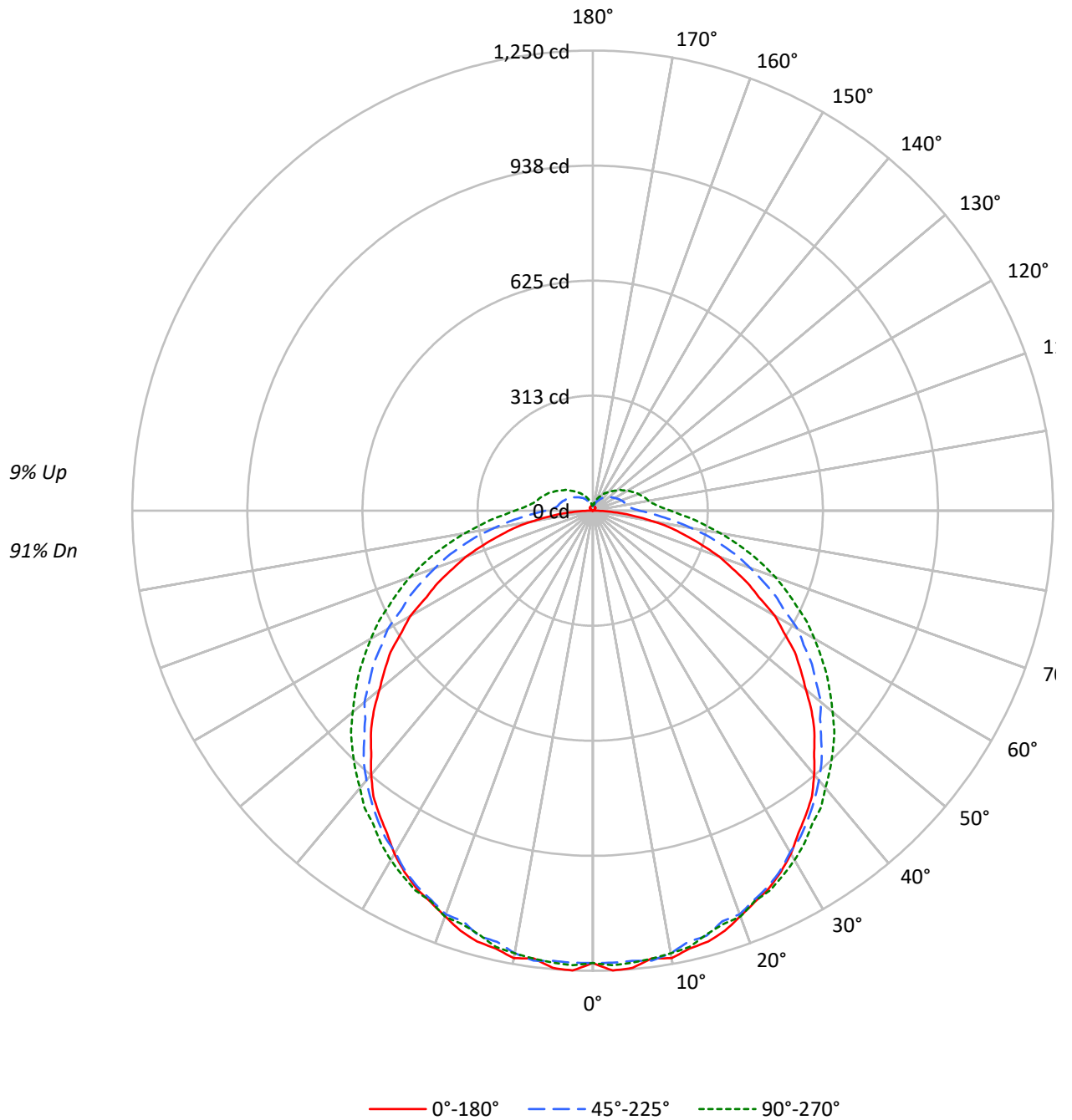
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4456.9 lumens
Efficiency: N/A
Efficacy: 141.9 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 1.23' x L: 3.76' x H: 0.19')
CIE Type: Direct

Input Watts (W): 31.4
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: P1311239
CATALOG NUMBER: 4PWW-4080C5-845-LOW

Luminous Intensity Polar Plot





TEST NUMBER: P1311239
 CATALOG NUMBER: 4PWW-4080C5-845-LOW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | 20 | | | 20 | | |
| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR | | | | | | | | | | | | | | | | | |
| 0 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 |
| 1 | 105 | 100 | 95 | 91 | 101 | 97 | 92 | 88 | 91 | 87 | 84 | 85 | 82 | 80 | 80 | 78 | 76 |
| 2 | 95 | 86 | 79 | 72 | 91 | 83 | 77 | 71 | 78 | 73 | 68 | 74 | 69 | 65 | 69 | 66 | 62 |
| 3 | 86 | 75 | 66 | 59 | 83 | 73 | 65 | 58 | 68 | 62 | 56 | 64 | 59 | 54 | 61 | 56 | 52 |
| 4 | 79 | 66 | 57 | 50 | 76 | 64 | 56 | 49 | 60 | 53 | 47 | 57 | 51 | 46 | 54 | 49 | 44 |
| 5 | 72 | 59 | 49 | 43 | 69 | 57 | 48 | 42 | 54 | 46 | 41 | 51 | 44 | 39 | 48 | 43 | 38 |
| 6 | 66 | 53 | 44 | 37 | 64 | 51 | 43 | 36 | 49 | 41 | 35 | 46 | 39 | 34 | 44 | 38 | 33 |
| 7 | 62 | 48 | 39 | 32 | 59 | 46 | 38 | 32 | 44 | 37 | 31 | 42 | 35 | 30 | 40 | 34 | 29 |
| 8 | 57 | 43 | 35 | 29 | 55 | 42 | 34 | 28 | 40 | 33 | 28 | 38 | 32 | 27 | 36 | 31 | 26 |
| 9 | 53 | 40 | 31 | 26 | 51 | 39 | 31 | 25 | 37 | 30 | 25 | 35 | 29 | 24 | 34 | 28 | 24 |
| 10 | 50 | 37 | 29 | 23 | 48 | 36 | 28 | 23 | 34 | 27 | 22 | 33 | 26 | 22 | 31 | 26 | 21 |

10°

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|------|------|------|------|
| 100° | 2860 | 2860 | 2860 |
| 90° | 2900 | 2833 | 2841 |
| 80° | 2891 | 2813 | 2810 |
| 70° | 2881 | 2774 | 2758 |
| 60° | 2852 | 2747 | 2753 |
| 50° | 2841 | 2712 | 2730 |
| 40° | 2812 | 2661 | 2707 |
| 30° | 2770 | 2636 | 2667 |
| 20° | 2728 | 2592 | 2648 |
| 10° | 2670 | 2527 | 2634 |
| 0° | 2582 | 2502 | 2605 |
| | 2539 | 2448 | 2584 |
| | 2450 | 2397 | 2559 |
| | 2307 | 2308 | 2531 |
| | 2190 | 2223 | 2530 |
| | 1980 | 2142 | 2519 |
| | 1731 | 2010 | 2527 |
| | 1262 | 1912 | 2678 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 3232 cd/sqm



TEST NUMBER: P1311239
 CATALOG NUMBER: 4PWW-4080C5-845-LOW

ZONAL LUMENS:

| | Zone | Lumens | % Fixture |
|----|-----------|--------|-----------|
| 20 | 0°-10° | 117.2 | 2.6 |
| 0 | 10°-20° | 337.6 | 7.6 |
| | 20°-30° | 519.6 | 11.7 |
| 91 | 30°-40° | 639.7 | 14.4 |
| 73 | 40°-50° | 681.9 | 15.3 |
| 59 | 50°-60° | 644.1 | 14.5 |
| 49 | 60°-70° | 535.9 | 12.0 |
| 42 | 70°-80° | 379.5 | 8.5 |
| 36 | 80°-90° | 203.3 | 4.6 |
| 31 | 90°-100° | 107.6 | 2.4 |
| 27 | 100°-110° | 86.8 | 1.9 |
| 24 | 110°-120° | 70.1 | 1.6 |
| 22 | 120°-130° | 52.9 | 1.2 |
| 20 | 130°-140° | 37.1 | 0.8 |
| | 140°-150° | 23.7 | 0.5 |
| | 150°-160° | 13.0 | 0.3 |
| | 160°-170° | 5.6 | 0.1 |
| | 170°-180° | 1.4 | 0.0 |
| | 0°-30° | 974.4 | 21.9 |
| | 0°-40° | 1614.1 | 36.2 |
| | 0°-60° | 2940.1 | 66.0 |
| | 0°-90° | 4058.8 | 91.1 |
| | 90°-120° | 264.5 | 5.9 |
| | 90°-150° | 378.2 | 8.5 |
| | 90°-180° | 398.0 | 8.9 |
| | 0°-180° | 4456.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° |
|------|------|-------|------|-------|------|
| 0° | 1229 | 1229 | 1229 | 1229 | 1229 |
| 5° | 1247 | 1228 | 1228 | 1239 | 1232 |
| 15° | 1212 | 1186 | 1196 | 1197 | 1192 |
| 25° | 1132 | 1105 | 1126 | 1133 | 1139 |
| 35° | 1009 | 995 | 1021 | 1043 | 1039 |
| 45° | 852 | 853 | 877 | 922 | 922 |
| 55° | 670 | 668 | 727 | 769 | 776 |
| 65° | 464 | 488 | 548 | 591 | 610 |
| 75° | 261 | 303 | 365 | 419 | 440 |
| 85° | 74 | 117 | 189 | 251 | 275 |
| 90° | 1 | 53 | 128 | 188 | 212 |
| 95° | 1 | 41 | 101 | 154 | 174 |
| 105° | 2 | 38 | 88 | 129 | 144 |
| 115° | 5 | 34 | 76 | 109 | 120 |
| 125° | 8 | 32 | 63 | 88 | 97 |
| 135° | 10 | 28 | 51 | 69 | 75 |
| 145° | 12 | 22 | 40 | 53 | 58 |
| 155° | 13 | 17 | 29 | 38 | 41 |
| 165° | 14 | 15 | 18 | 25 | 25 |
| 175° | 15 | 14 | 14 | 13 | 16 |
| 180° | 14 | 14 | 14 | 14 | 14 |

TEST NUMBER: P1311239
 CATALOG NUMBER: 4PWW-4080C5-845-LOW

CANDELA DISTRIBUTION (FULL):

| Flux | | 0° | 22.5° | 45° | 67.5° | 90° |
|------|--------|--------|--------|--------|--------|--------|
| | 0° | 1228.9 | 1228.9 | 1228.9 | 1228.9 | 1228.9 |
| 118 | 2.5° | 1250.2 | 1230.0 | 1228.9 | 1239.8 | 1235.8 |
| 341 | 5° | 1246.7 | 1227.7 | 1227.7 | 1238.7 | 1232.3 |
| 521 | 7.5° | 1226.6 | 1229.5 | 1232.9 | 1220.3 | 1227.7 |
| 632 | 10° | 1234.1 | 1201.3 | 1220.3 | 1213.9 | 1220.8 |
| 655 | 12.5° | 1218.0 | 1204.7 | 1199.5 | 1208.7 | 1213.9 |
| 595 | 15° | 1211.6 | 1186.3 | 1195.5 | 1196.7 | 1191.5 |
| 458 | 17.5° | 1196.1 | 1178.3 | 1169.6 | 1179.4 | 1177.7 |
| 280 | 20° | 1172.5 | 1167.9 | 1166.7 | 1178.3 | 1173.1 |
| 80 | 22.5° | 1150.6 | 1139.7 | 1144.9 | 1158.1 | 1148.3 |
| 5 | 25° | 1132.2 | 1105.2 | 1126.5 | 1132.8 | 1138.6 |
| 1 | 27.5° | 1106.3 | 1085.1 | 1102.9 | 1111.5 | 1117.8 |
| 2 | 30° | 1076.4 | 1068.9 | 1071.8 | 1088.5 | 1096.0 |
| 4 | 32.5° | 1039.0 | 1039.0 | 1050.5 | 1069.5 | 1070.7 |
| 7 | 35° | 1009.1 | 995.3 | 1020.6 | 1043.1 | 1039.0 |
| 8 | 37.5° | 978.0 | 966.0 | 989.5 | 1013.7 | 1017.2 |
| 7 | 40° | 935.5 | 928.6 | 955.6 | 976.9 | 983.2 |
| 6 | 42.5° | 890.0 | 894.0 | 920.5 | 956.8 | 953.9 |
| 4 | 45° | 851.5 | 853.2 | 877.4 | 921.7 | 922.2 |
| 1 | 47.5° | 806.6 | 807.7 | 837.7 | 879.7 | 890.0 |
| | 50° | 755.4 | 760.0 | 808.9 | 838.2 | 850.3 |
| | 52.5° | 711.7 | 722.0 | 764.0 | 798.5 | 812.4 |
| | 55° | 670.2 | 667.9 | 726.6 | 768.6 | 775.5 |
| | 57.5° | 614.4 | 631.7 | 679.5 | 722.6 | 734.7 |
| | 60° | 571.9 | 581.6 | 642.6 | 676.0 | 695.0 |
| | 62.5° | 508.6 | 536.2 | 586.8 | 644.9 | 656.4 |
| | 65° | 463.7 | 487.9 | 547.7 | 591.4 | 609.8 |
| | 67.5° | 410.2 | 441.3 | 500.0 | 546.6 | 569.0 |
| | 70° | 365.9 | 392.9 | 455.1 | 503.4 | 527.6 |
| | 72.5° | 313.0 | 346.9 | 413.1 | 462.0 | 483.3 |
| | 75° | 261.2 | 302.6 | 365.3 | 418.8 | 439.5 |
| | 77.5° | 219.8 | 255.4 | 321.6 | 374.5 | 395.2 |
| | 80° | 165.7 | 207.7 | 271.6 | 331.4 | 351.5 |
| | 82.5° | 119.1 | 161.7 | 229.0 | 287.7 | 310.1 |
| | 85° | 74.2 | 117.4 | 188.7 | 250.8 | 275.0 |
| | 87.5° | 33.9 | 79.4 | 154.2 | 218.0 | 237.6 |
| | 90° | 1.2 | 52.9 | 127.7 | 188.1 | 211.7 |
| | 92.5° | 0.6 | 43.7 | 111.0 | 167.4 | 189.3 |
| | 95° | 0.6 | 41.4 | 101.3 | 154.2 | 173.7 |
| | 97.5° | 1.2 | 40.3 | 96.1 | 145.0 | 162.2 |
| | 100° | 1.2 | 39.7 | 93.8 | 139.8 | 154.2 |
| | 102.5° | 1.7 | 39.1 | 90.9 | 132.9 | 149.6 |
| | 105° | 1.7 | 38.5 | 88.0 | 128.9 | 144.4 |
| | 107.5° | 2.3 | 37.4 | 85.7 | 123.7 | 137.5 |
| | 110° | 2.9 | 36.8 | 81.7 | 119.7 | 132.9 |



TEST NUMBER: P1311239
 CATALOG NUMBER: 4PWW-4080C5-845-LOW

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|-------|
| 112.5° | 4.0 | 35.7 | 79.4 | 113.9 | 127.7 |
| 115° | 4.6 | 34.5 | 75.9 | 108.7 | 120.2 |
| 117.5° | 5.2 | 33.9 | 72.5 | 104.7 | 114.5 |
| 120° | 5.8 | 33.4 | 69.0 | 97.8 | 108.7 |
| 122.5° | 6.3 | 32.8 | 66.2 | 93.2 | 102.4 |
| 125° | 7.5 | 31.6 | 63.3 | 88.0 | 96.7 |
| 127.5° | 8.1 | 30.5 | 59.8 | 83.4 | 93.2 |
| 130° | 9.2 | 29.3 | 57.0 | 78.8 | 85.7 |
| 132.5° | 9.2 | 28.8 | 54.1 | 74.2 | 80.5 |
| 135° | 10.4 | 27.6 | 51.2 | 69.0 | 75.4 |
| 137.5° | 10.4 | 26.5 | 48.3 | 65.0 | 70.8 |
| 140° | 10.9 | 25.3 | 45.5 | 60.4 | 66.7 |
| 142.5° | 10.9 | 23.6 | 43.7 | 57.0 | 61.6 |
| 145° | 11.5 | 22.4 | 40.3 | 52.9 | 58.1 |
| 147.5° | 11.5 | 20.7 | 38.0 | 48.3 | 52.4 |
| 150° | 11.5 | 19.6 | 34.5 | 45.5 | 48.3 |
| 152.5° | 12.1 | 18.4 | 31.6 | 42.0 | 44.3 |
| 155° | 12.7 | 17.3 | 28.8 | 38.5 | 41.4 |
| 157.5° | 13.2 | 16.7 | 25.9 | 34.5 | 36.8 |
| 160° | 13.2 | 15.5 | 23.0 | 31.1 | 33.4 |
| 162.5° | 13.8 | 15.0 | 20.7 | 28.2 | 29.3 |
| 165° | 13.8 | 15.0 | 17.8 | 25.3 | 25.3 |
| 167.5° | 14.4 | 14.4 | 16.1 | 20.7 | 22.4 |
| 170° | 14.4 | 15.0 | 15.0 | 17.3 | 19.0 |
| 172.5° | 14.4 | 14.4 | 13.8 | 15.0 | 16.1 |
| 175° | 15.0 | 14.4 | 13.8 | 13.2 | 15.5 |
| 177.5° | 15.0 | 14.4 | 13.2 | 12.1 | 15.0 |
| 180° | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP3-2511-615-19

Test Date: 01/15/2026

Luminaire Tested: PW-L-8K-845-2nd

Data in this report applies to families of products including PW-L-8K*

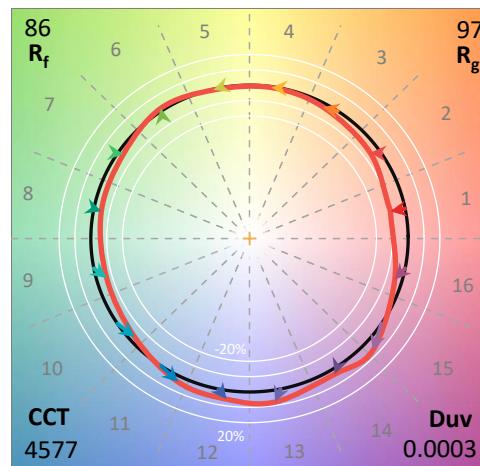
Test Information

Test Method: LM-79-2019
 Report Number: SP3-2511-615-19
 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-L-8K-845-2nd**
 Description: 14.75" Wrap 5 CCT 5 lumen select @8000lms (switch) @4500K 2nd Round

Spectral Parameters

CCT (K): 4577
 CIE u': 0.2161
 CIE v': 0.4917
 Duv: 0.0003
 CIE x: 0.3583
 CIE y: 0.3623
 CIE z: 0.2794
 Peak Wavelength (nm): 452
 Dominant Wavelength (nm): 576
 Purity: 16.22065
 Rf: 85.8
 Rg: 97.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 87.1 | | |
| R1: | 86.9 | R9: | 32.1 |
| R2: | 91.8 | R10: | 78.8 |
| R3: | 93.9 | R11: | 86.1 |
| R4: | 86.7 | R12: | 58.9 |
| R5: | 85.8 | R13: | 88.5 |
| R6: | 86.9 | R14: | 96.6 |
| R7: | 90.2 | R15: | 82.5 |
| R8: | 74.8 | | |



Test Conditions

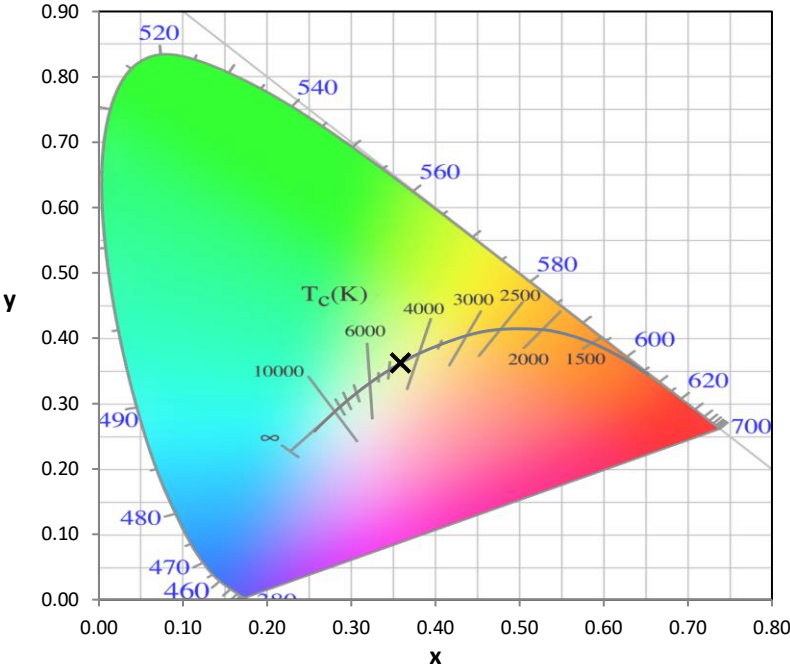
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP3-2511-615-19

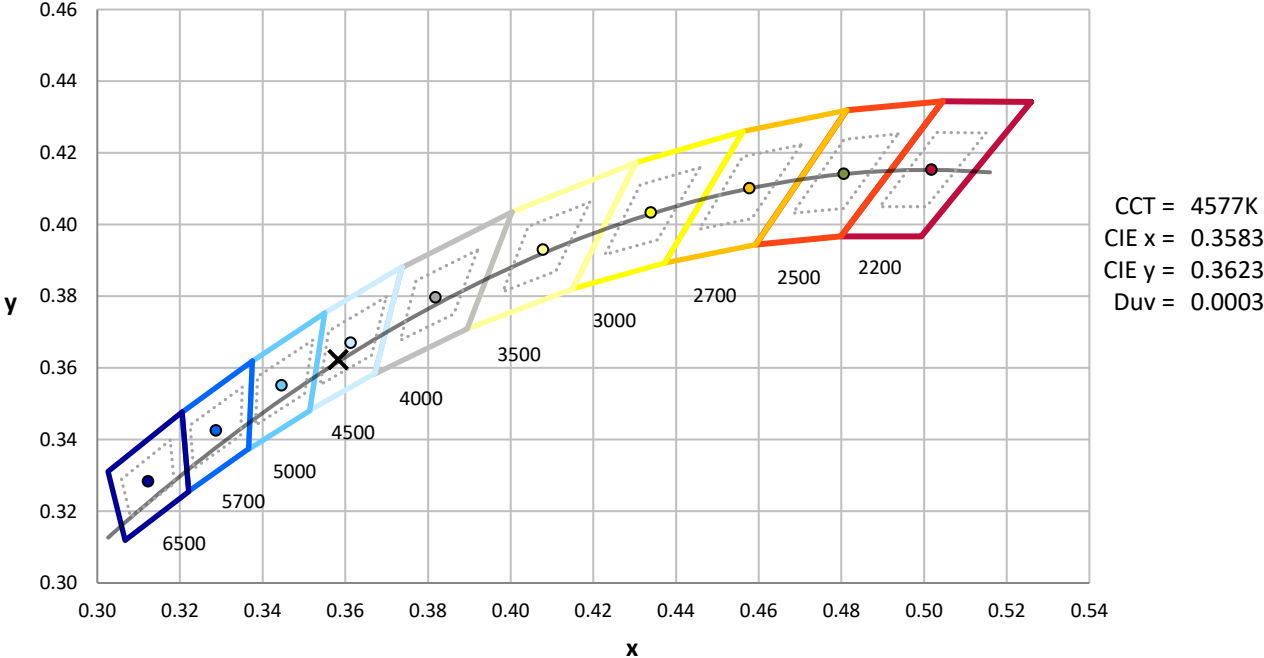
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 3M SPHERE IN02505 | 1/10/2026 | 7/10/2026 |
| Power Meter | XITRON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

REPORT NUMBER: SP3-2511-615-19

CIE 1931 Chromaticity Diagram



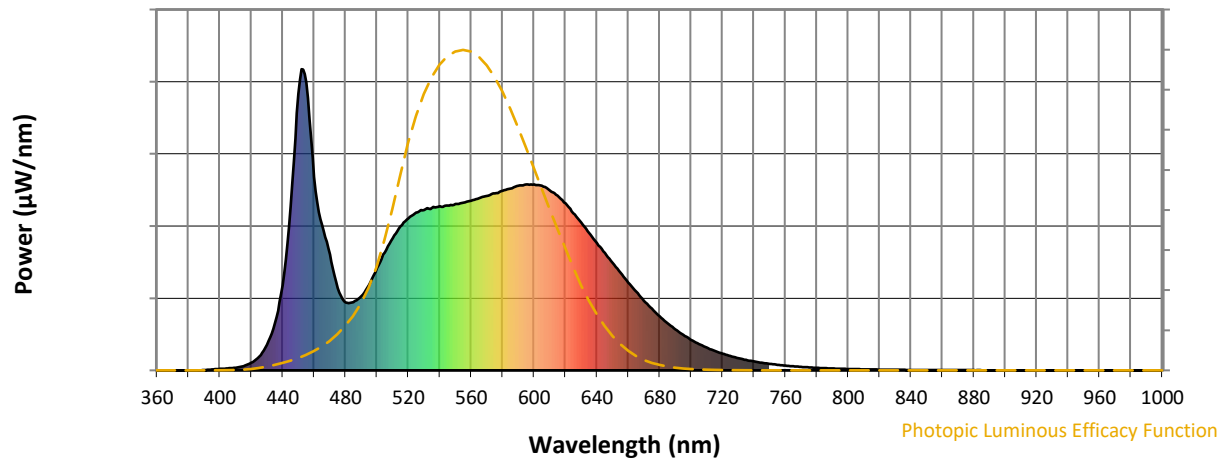
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4500K 4-step quadrangle

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Photopic Flux vs. Wavelength

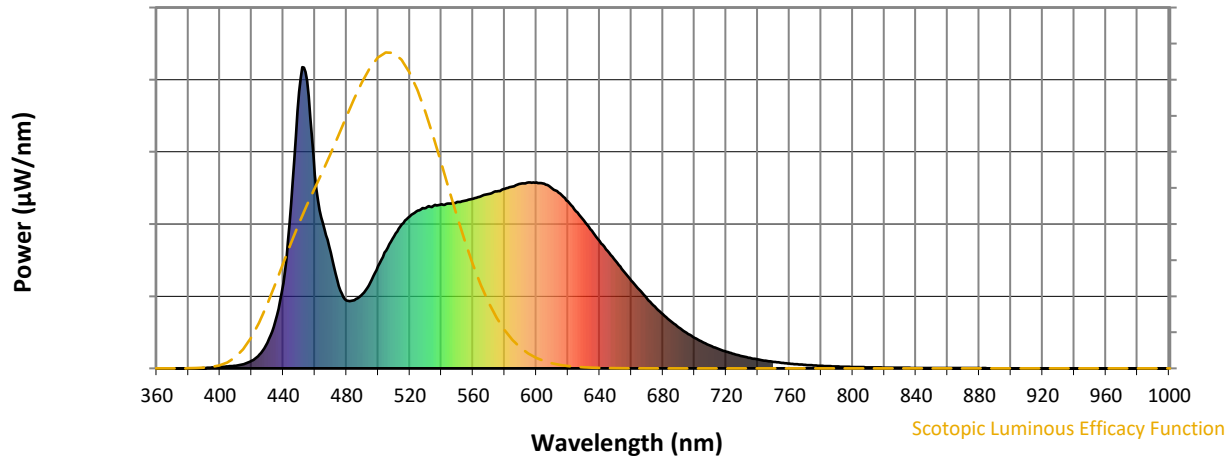


Photopic Lumens: NR

| 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 | 246 | NR | 620 | 554 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 284 | NR | 625 | 522 | NR | 755 | 18 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 340 | NR | 630 | 491 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 457 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 439 | NR | 640 | 423 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 478 | NR | 645 | 390 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 505 | NR | 650 | 357 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 524 | NR | 655 | 324 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 533 | NR | 660 | 292 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 539 | NR | 665 | 262 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 545 | NR | 670 | 231 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 548 | NR | 675 | 205 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 552 | NR | 680 | 179 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 46 | NR | 555 | 557 | NR | 685 | 157 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 85 | NR | 560 | 563 | NR | 690 | 136 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 158 | NR | 565 | 572 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 283 | NR | 570 | 579 | NR | 700 | 101 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 545 | NR | 575 | 588 | NR | 705 | 87 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 918 | NR | 580 | 596 | NR | 710 | 75 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 955 | NR | 585 | 603 | NR | 715 | 65 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 642 | NR | 590 | 613 | NR | 720 | 56 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 484 | NR | 595 | 617 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 385 | NR | 600 | 618 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 273 | NR | 605 | 613 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 225 | NR | 610 | 598 | NR | 740 | 29 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 227 | NR | 615 | 580 | NR | 745 | 25 | NR | 875 | 1 | NR | | | |

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Scotopic Flux vs. Wavelength



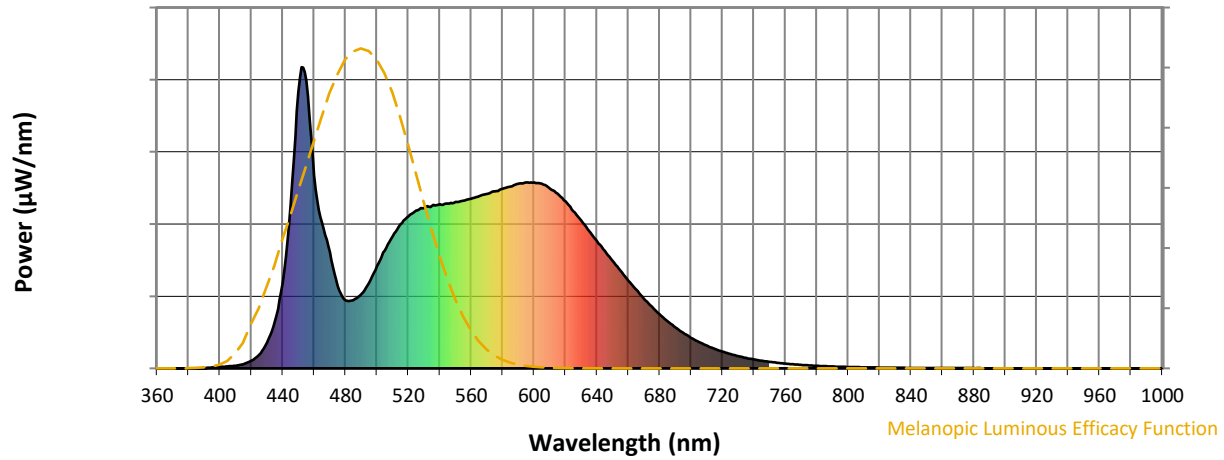
Scotopic Lumens: NR

S/P: 1.89

| 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 | 246 | NR | 620 | 554 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 284 | NR | 625 | 522 | NR | 755 | 18 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 340 | NR | 630 | 491 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 457 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 439 | NR | 640 | 423 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 478 | NR | 645 | 390 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 505 | NR | 650 | 357 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 524 | NR | 655 | 324 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 533 | NR | 660 | 292 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 539 | NR | 665 | 262 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 545 | NR | 670 | 231 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 548 | NR | 675 | 205 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 552 | NR | 680 | 179 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 46 | NR | 555 | 557 | NR | 685 | 157 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 85 | NR | 560 | 563 | NR | 690 | 136 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 158 | NR | 565 | 572 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 283 | NR | 570 | 579 | NR | 700 | 101 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 545 | NR | 575 | 588 | NR | 705 | 87 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 918 | NR | 580 | 596 | NR | 710 | 75 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 955 | NR | 585 | 603 | NR | 715 | 65 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 642 | NR | 590 | 613 | NR | 720 | 56 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 484 | NR | 595 | 617 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 385 | NR | 600 | 618 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 273 | NR | 605 | 613 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 225 | NR | 610 | 598 | NR | 740 | 29 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 227 | NR | 615 | 580 | NR | 745 | 25 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP3-2511-615-19

Melanopic Flux vs. Wavelength



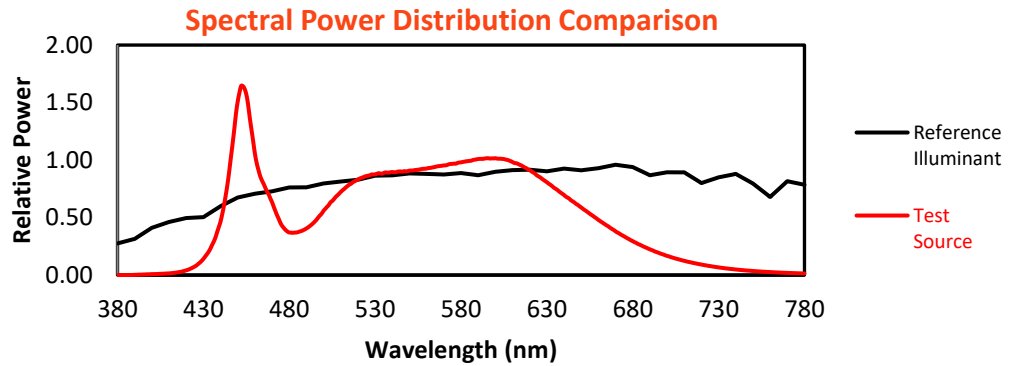
Melanopic Lumens: NR

M/P: 3.99

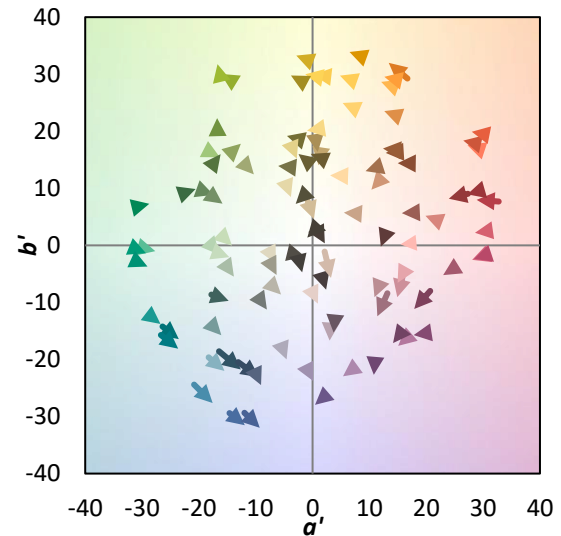
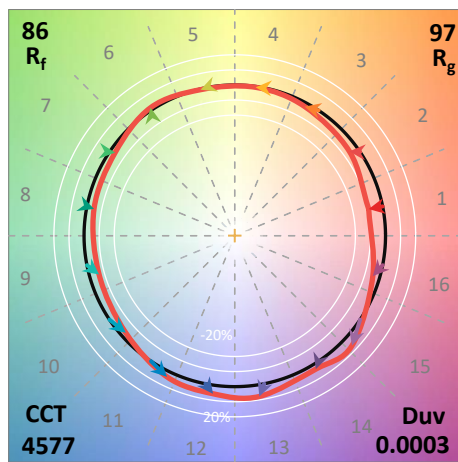
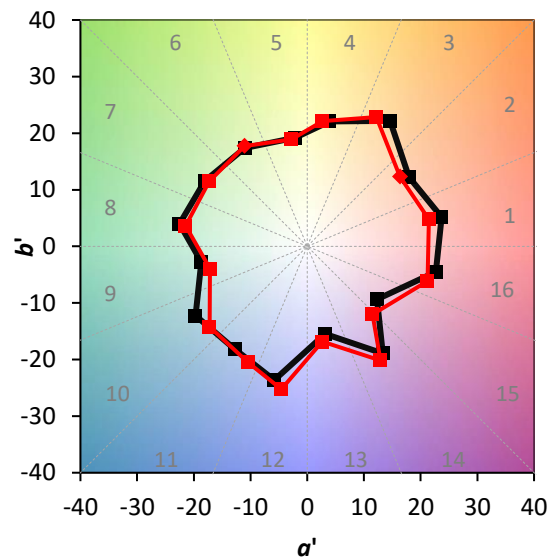
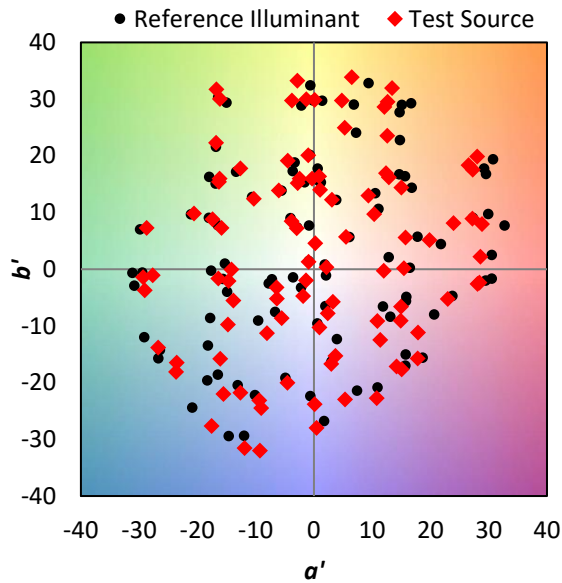
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 246 | NR | 620 | 554 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 284 | NR | 625 | 522 | NR | 755 | 18 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 340 | NR | 630 | 491 | NR | 760 | 16 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 391 | NR | 635 | 457 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 439 | NR | 640 | 423 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 478 | NR | 645 | 390 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 505 | NR | 650 | 357 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 3 | NR | 525 | 524 | NR | 655 | 324 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 533 | NR | 660 | 292 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 539 | NR | 665 | 262 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 9 | NR | 540 | 545 | NR | 670 | 231 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 14 | NR | 545 | 548 | NR | 675 | 205 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 552 | NR | 680 | 179 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 46 | NR | 555 | 557 | NR | 685 | 157 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 85 | NR | 560 | 563 | NR | 690 | 136 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 158 | NR | 565 | 572 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 283 | NR | 570 | 579 | NR | 700 | 101 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 545 | NR | 575 | 588 | NR | 705 | 87 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 918 | NR | 580 | 596 | NR | 710 | 75 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 955 | NR | 585 | 603 | NR | 715 | 65 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 642 | NR | 590 | 613 | NR | 720 | 56 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 484 | NR | 595 | 617 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 385 | NR | 600 | 618 | NR | 730 | 41 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 273 | NR | 605 | 613 | NR | 735 | 35 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 225 | NR | 610 | 598 | NR | 740 | 29 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 227 | NR | 615 | 580 | NR | 745 | 25 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 85.8$
 $R_g = 97.2$
 $CIE R_a = 87.1$
 $R_9 = 32.1$

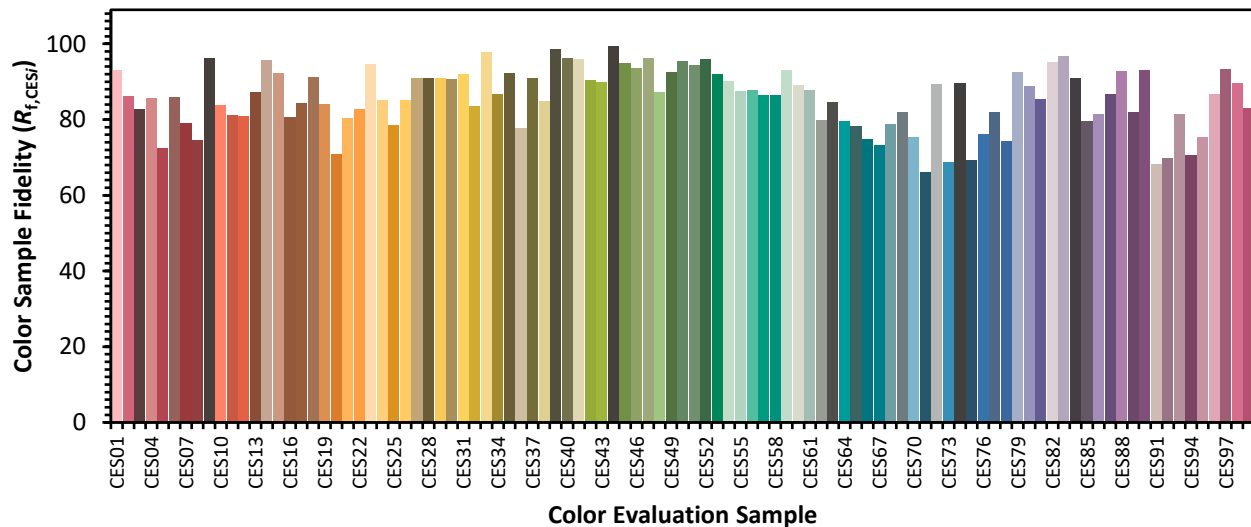


Color Vector Graphics

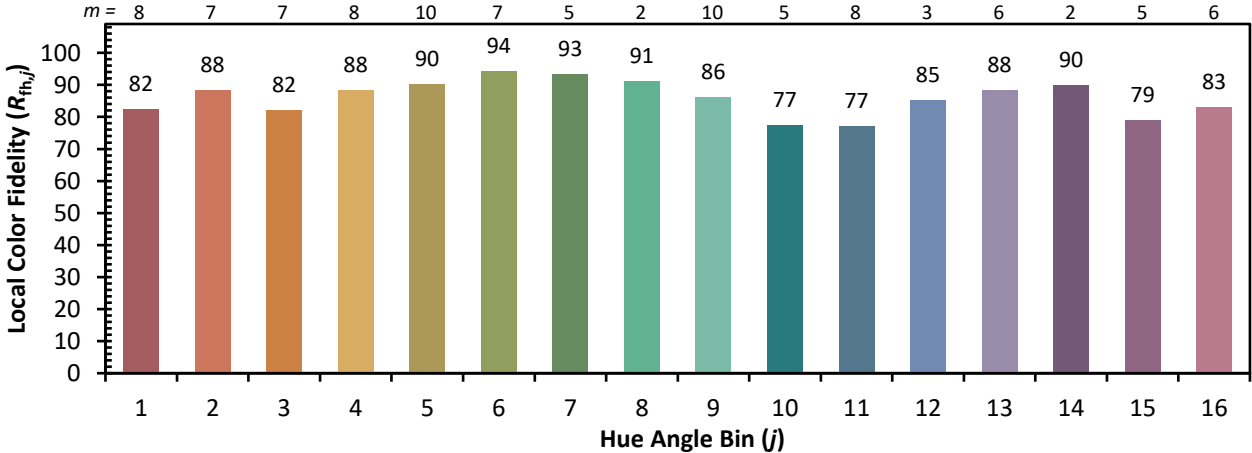
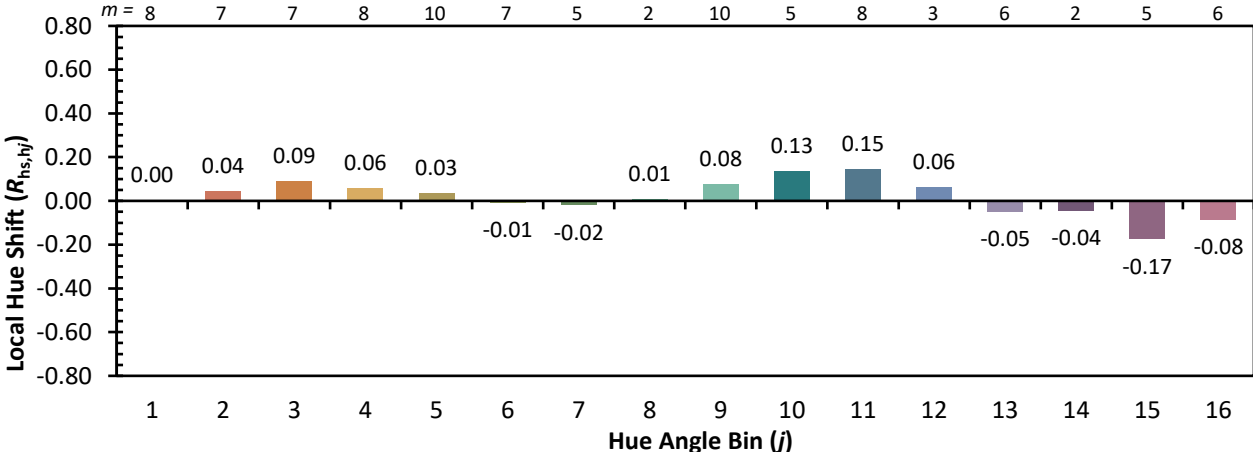
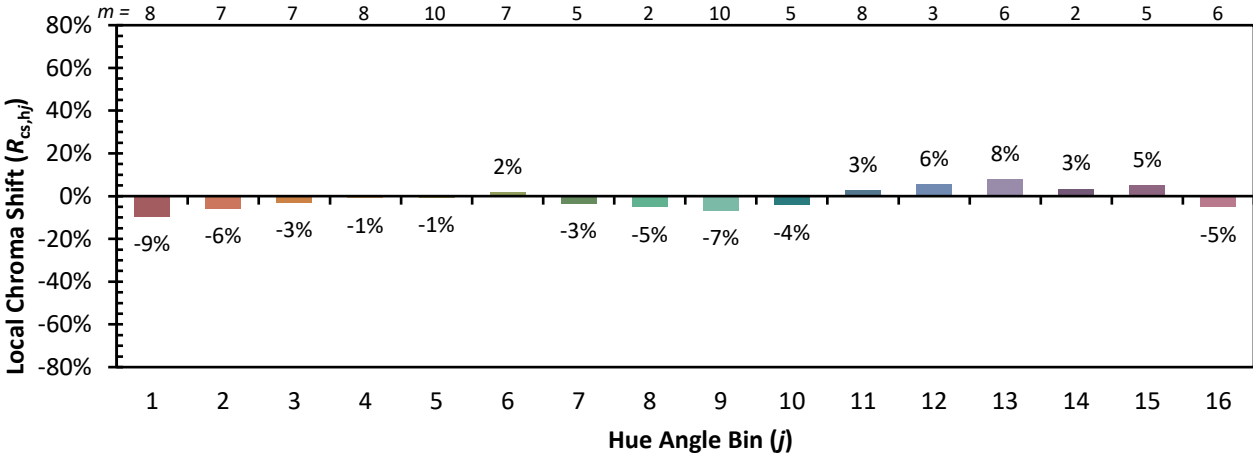


Individual Sample Fidelity Index ($R_{f,i}$)

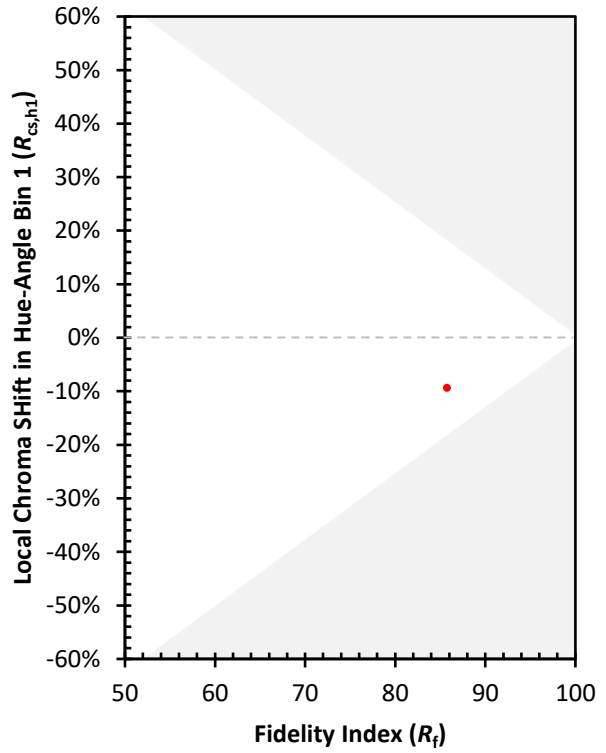
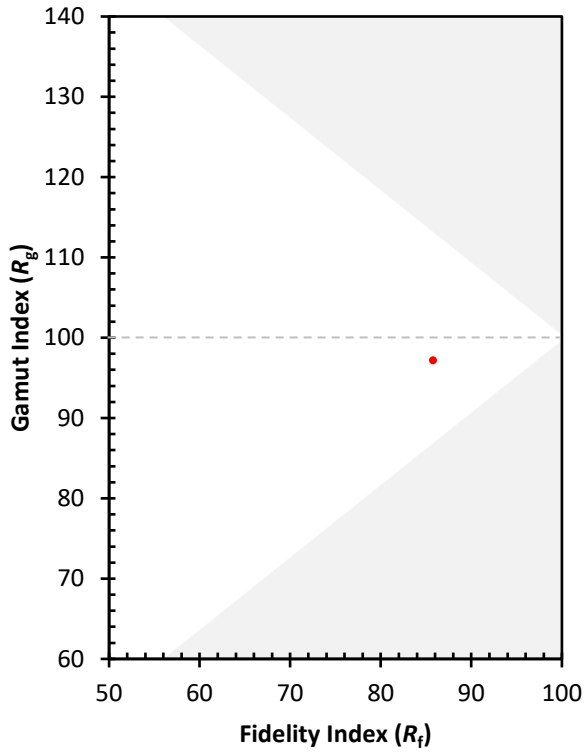
| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 85 | CES51 = 95 | CES76 = 76 |
| CES02 = 61 | CES27 = 91 | CES52 = 96 | CES77 = 82 |
| CES03 = 31 | CES28 = 91 | CES53 = 92 | CES78 = 74 |
| CES04 = 69 | CES29 = 91 | CES54 = 90 | CES79 = 93 |
| CES05 = 48 | CES30 = 91 | CES55 = 87 | CES80 = 89 |
| CES06 = 50 | CES31 = 92 | CES56 = 88 | CES81 = 85 |
| CES07 = 40 | CES32 = 84 | CES57 = 86 | CES82 = 95 |
| CES08 = 39 | CES33 = 98 | CES58 = 86 | CES83 = 97 |
| CES09 = 29 | CES34 = 87 | CES59 = 93 | CES84 = 91 |
| CES10 = 73 | CES35 = 92 | CES60 = 89 | CES85 = 80 |
| CES11 = 56 | CES36 = 78 | CES61 = 88 | CES86 = 81 |
| CES12 = 62 | CES37 = 91 | CES62 = 80 | CES87 = 87 |
| CES13 = 42 | CES38 = 85 | CES63 = 85 | CES88 = 93 |
| CES14 = 74 | CES39 = 99 | CES64 = 79 | CES89 = 82 |
| CES15 = 71 | CES40 = 96 | CES65 = 78 | CES90 = 93 |
| CES16 = 46 | CES41 = 96 | CES66 = 75 | CES91 = 68 |
| CES17 = 49 | CES42 = 90 | CES67 = 73 | CES92 = 70 |
| CES18 = 56 | CES43 = 90 | CES68 = 79 | CES93 = 82 |
| CES19 = 71 | CES44 = 99 | CES69 = 82 | CES94 = 70 |
| CES20 = 65 | CES45 = 95 | CES70 = 75 | CES95 = 75 |
| CES21 = 85 | CES46 = 94 | CES71 = 66 | CES96 = 87 |
| CES22 = 77 | CES47 = 96 | CES72 = 89 | CES97 = 93 |
| CES23 = 91 | CES48 = 87 | CES73 = 69 | CES98 = 90 |
| CES24 = 90 | CES49 = 92 | CES74 = 90 | CES99 = 83 |
| CES25 = 71 | CES50 = 96 | CES75 = 69 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)