Signify Classified - Internal

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: P1559280

Luminaire Tested: 24CGTX-30-B2750-W2D-2700K

Issue Date: 8/31/2026

Report Generated By 670265710 / DESKTOP-98SHLC4

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

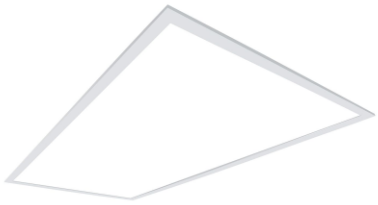
Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1559280 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 8/31/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24CGTX-30-B2750-W2D-2700K |
| Description: | 2X4 3000 LUMEN CGTX TROFFER WITH BIO UP LEDS AT 2700K CCT WITH FROSTED SMOOTH L |
| Light Source: | 2700K CCT, 80 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3085.3 lumens |
| Efficiency: | N/A |
| Efficacy: | 115.1 lumens/watt |
| Spacing Criteria (0/90/45): | 1.27 / 1.27 / 1.39 |
| Luminous Opening: | Rectangular (W 1.81' x L: 3.83' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 26.8 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | 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: | 24 FT |

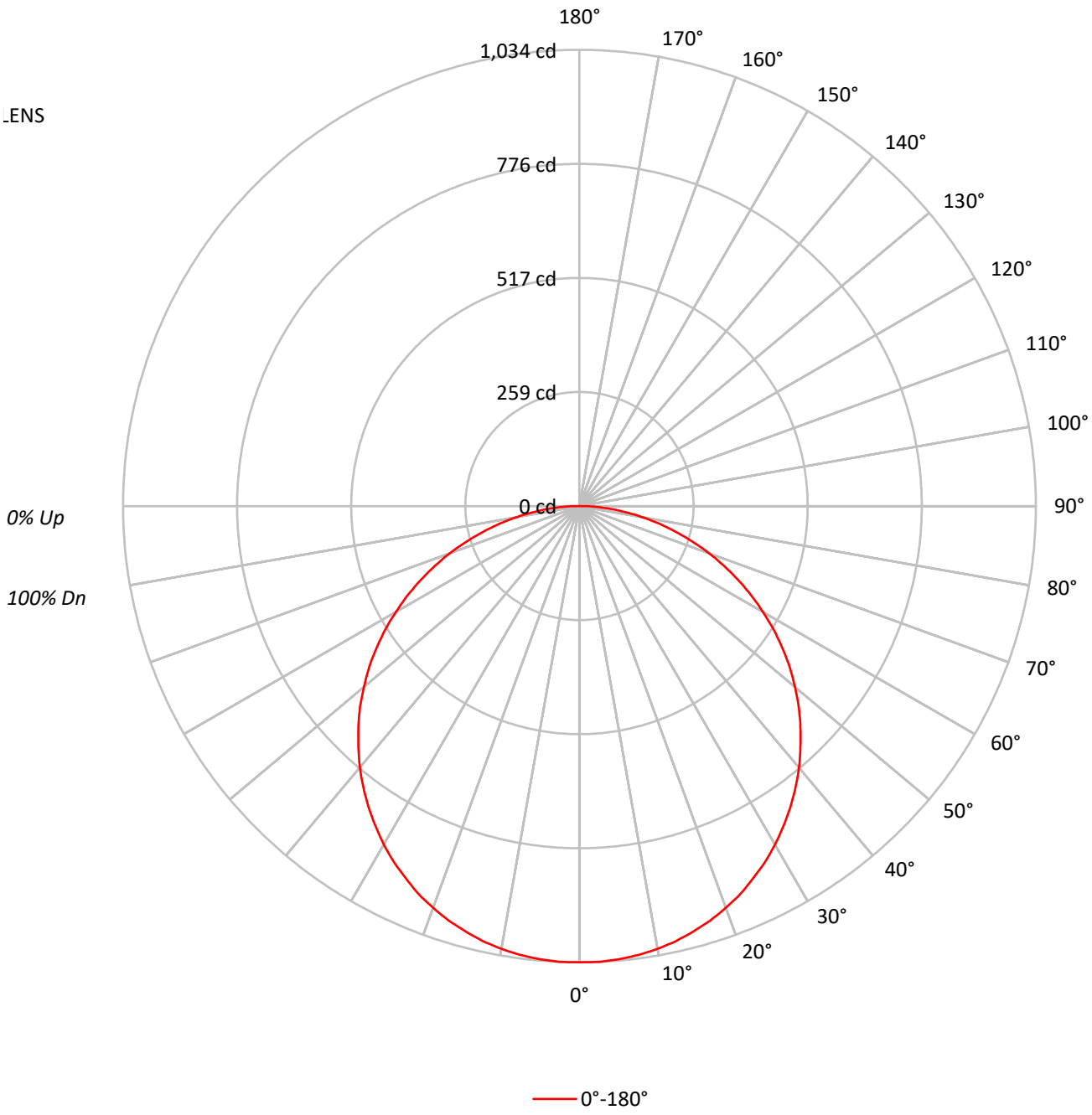


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1559280
CATALOG NUMBER: 24CGTX-30-B2750-W2D-2700K

## Luminous Intensity Polar Plot




LENS

*0% Up*

*100% Dn*

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1559280
CATALOG NUMBER: 24CGTX-30-B2750-W2D-2700K

## COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| RF | 20 | | | | 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 108 | 103 | 99 | 95 | 106 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 68 |
| 3 | 89 | 78 | 70 | 63 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 65 | 61 | 68 | 64 | 60 | 57 |
| 4 | 82 | 69 | 60 | 53 | 79 | 68 | 60 | 53 | 65 | 58 | 52 | 63 | 57 | 52 | 61 | 55 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 39 | 37 |
| 7 | 64 | 50 | 41 | 35 | 62 | 50 | 41 | 35 | 48 | 40 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 44 | 36 | 31 | 43 | 36 | 31 | 41 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° |
|---|---|
| 0° | 1602 |
| 5° | 1603 |
| 10° | 1603 |
| 15° | 1601 |
| 20° | 1598 |
| 25° | 1591 |
| 30° | 1585 |
| 35° | 1575 |
| 40° | 1565 |
| 45° | 1551 |
| 50° | 1535 |
| 55° | 1515 |
| 60° | 1487 |
| 65° | 1455 |
| 70° | 1413 |
| 75° | 1353 |
| 80° | 1285 |
| 85° | 1173 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1551 cd/sqm

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

Scaled Data Report

TEST NUMBER: P1559280
CATALOG NUMBER: 24CGTX-30-B2750-W2D-2700K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 98.0 | 3.2 |
| 10°-20° | 281.8 | 9.1 |
| 20°-30° | 429.4 | 13.9 |
| 30°-40° | 521.1 | 16.9 |
| 40°-50° | 546.2 | 17.7 |
| 50°-60° | 501.6 | 16.3 |
| 60°-70° | 392.5 | 12.7 |
| 70°-80° | 239.5 | 7.8 |
| 80°-90° | 75.1 | 2.4 |
| 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°-30° | 809.2 | 26.2 |
| 0°-40° | 1330.4 | 43.1 |
| 0°-60° | 2378.2 | 77.1 |
| 0°-90° | 3085.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3085.3 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | Flux |
|---|---|---|
| 0° | 1034 | |
| 5° | 1031 | 98 |
| 15° | 998 | 282 |
| 25° | 931 | 429 |
| 35° | 833 | 521 |
| 45° | 708 | 546 |
| 55° | 561 | 502 |
| 65° | 397 | 393 |
| 75° | 226 | 239 |
| 85° | 66 | 75 |
| 90° | 0 | |

Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1559280
CATALOG NUMBER: 24CGTX-30-B2750-W2D-2700K

**CANDELA DISTRIBUTION (FULL):**

| | 0° |
|---|---|
| 0° | 1034 |
| 2.5° | 1034 |
| 5° | 1031 |
| 7.5° | 1026 |
| 10° | 1019 |
| 12.5° | 1010 |
| 15° | 998 |
| 17.5° | 985 |
| 20° | 969 |
| 22.5° | 952 |
| 25° | 931 |
| 27.5° | 910 |
| 30° | 886 |
| 32.5° | 860 |
| 35° | 833 |
| 37.5° | 804 |
| 40° | 774 |
| 42.5° | 741 |
| 45° | 708 |
| 47.5° | 674 |
| 50° | 637 |
| 52.5° | 601 |
| 55° | 561 |
| 57.5° | 522 |
| 60° | 480 |
| 62.5° | 439 |
| 65° | 397 |
| 67.5° | 354 |
| 70° | 312 |
| 72.5° | 269 |
| 75° | 226 |
| 77.5° | 185 |
| 80° | 144 |
| 82.5° | 104 |
| 85° | 66 |
| 87.5° | 34 |
| 90° | 0 |

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Peachtree City, GA 30269

TEST NUMBER: P1559280
CATALOG NUMBER: 24CGTX-30-B2750-W2D-2700K

**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 | 13.64 | 15.30 | 14.00 | 15.62 | 15.93 | 13.64 | 15.30 | 14.00 | 15.62 | 15.93 |
| | 3H | 15.56 | 17.07 | 15.94 | 17.40 | 17.76 | 15.56 | 17.07 | 15.94 | 17.40 | 17.76 |
| | 4H | 16.32 | 17.74 | 16.72 | 18.09 | 18.47 | 16.32 | 17.74 | 16.72 | 18.09 | 18.47 |
| | 6H | 16.92 | 18.24 | 17.33 | 18.60 | 18.99 | 16.92 | 18.24 | 17.33 | 18.60 | 18.99 |
| | 8H | 17.12 | 18.39 | 17.55 | 18.78 | 19.18 | 17.12 | 18.39 | 17.55 | 18.78 | 19.18 |
| | 12H | 17.27 | 18.49 | 17.70 | 18.87 | 19.30 | 17.27 | 18.49 | 17.70 | 18.87 | 19.30 |
| 4H | 2H | 14.31 | 15.73 | 14.71 | 16.08 | 16.46 | 14.31 | 15.73 | 14.71 | 16.08 | 16.46 |
| | 3H | 16.46 | 17.66 | 16.87 | 18.06 | 18.46 | 16.46 | 17.66 | 16.87 | 18.06 | 18.46 |
| | 4H | 17.36 | 18.44 | 17.79 | 18.86 | 19.29 | 17.36 | 18.44 | 17.79 | 18.86 | 19.29 |
| | 6H | 18.09 | 19.05 | 18.55 | 19.49 | 19.94 | 18.09 | 19.05 | 18.55 | 19.49 | 19.94 |
| | 8H | 18.36 | 19.25 | 18.82 | 19.69 | 20.16 | 18.36 | 19.25 | 18.82 | 19.69 | 20.16 |
| | 12H | 18.56 | 19.37 | 19.04 | 19.84 | 20.31 | 18.56 | 19.37 | 19.04 | 19.84 | 20.31 |
| 8H | 4H | 17.72 | 18.61 | 18.17 | 19.05 | 19.51 | 17.72 | 18.61 | 18.17 | 19.05 | 19.51 |
| | 6H | 18.59 | 19.34 | 19.08 | 19.83 | 20.30 | 18.59 | 19.34 | 19.08 | 19.83 | 20.30 |
| | 8H | 18.94 | 19.61 | 19.45 | 20.12 | 20.60 | 18.94 | 19.61 | 19.45 | 20.12 | 20.60 |
| | 12H | 19.23 | 19.83 | 19.74 | 20.32 | 20.88 | 19.23 | 19.83 | 19.74 | 20.32 | 20.88 |
| 12H | 4H | 17.76 | 18.57 | 18.24 | 19.04 | 19.51 | 17.76 | 18.57 | 18.24 | 19.04 | 19.51 |
| | 6H | 18.67 | 19.34 | 19.18 | 19.85 | 20.33 | 18.67 | 19.34 | 19.18 | 19.85 | 20.33 |
| | 8H | 19.09 | 19.68 | 19.59 | 20.17 | 20.73 | 19.09 | 19.68 | 19.59 | 20.17 | 20.73 |

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

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2505-441-28-R2

Test Date: 07/10/2025

Luminaire Tested: 24CGTX-45-B2750-W2D-2700K

Data in this report applies to families of products including 24CGTX

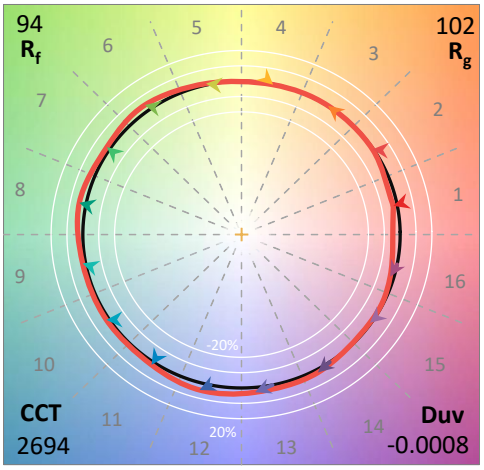
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2505-441-28-R2 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 07/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Metalux |
| Catalog Number: | **24CGTX-45-B2750-W2D-2700K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2504-441-28-R2 TO UPDATE THE CATALOG INFORMATION* 2X4 4500 LUMEN CGTX. Using WaveLinx PRO F1 sensor. |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 2694 | CRI (Ra): | 95.4 | | |
| CIE u': | 0.2630 | R1: | 96.8 | R9: | 80.8 |
| CIE v': | 0.5264 | R2: | 98.3 | R10: | 98.3 |
| Duv: | -0.0008 | R3: | 97.9 | R11: | 89.1 |
| CIE x: | 0.4590 | R4: | 94.6 | R12: | 93.4 |
| CIE y: | 0.4084 | R5: | 96.4 | R13: | 96.9 |
| CIE z: | 0.1326 | R6: | 92.3 | R14: | 97.1 |
| Peak Wavelength (nm): | 630 | R7: | 94.8 | R15: | 98.2 |
| Dominant Wavelength (nm): | 584 | R8: | 92.1 | | |
| Purity: | 60.36523 | | | | |
| Rf: | 93.8 | | | | |
| Rg: | 102 | | | | |



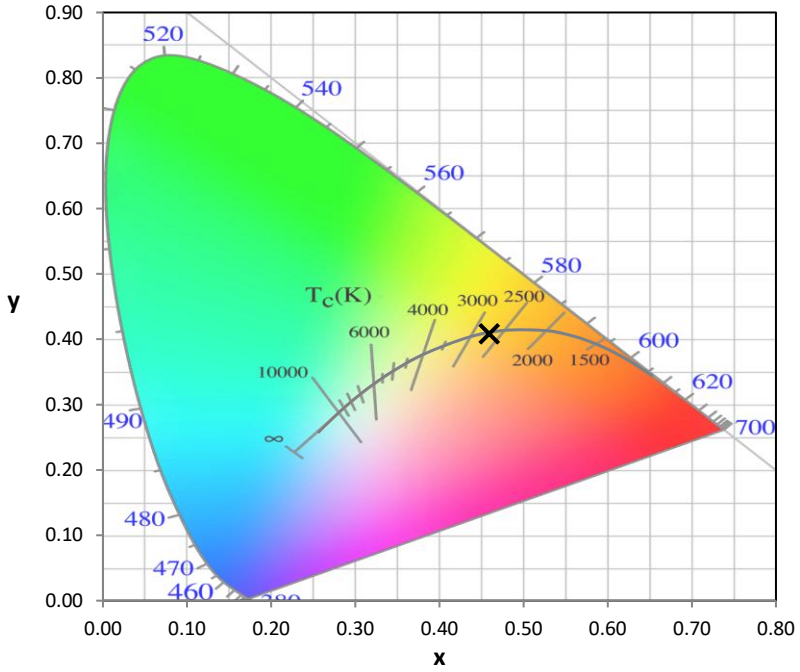

## Test Conditions

| | |
|---|---|
| Stabilization Time: | 24M |
| Operation Time: | 1H 24M |
| Sphere Temperature (°C): | 24.0 |

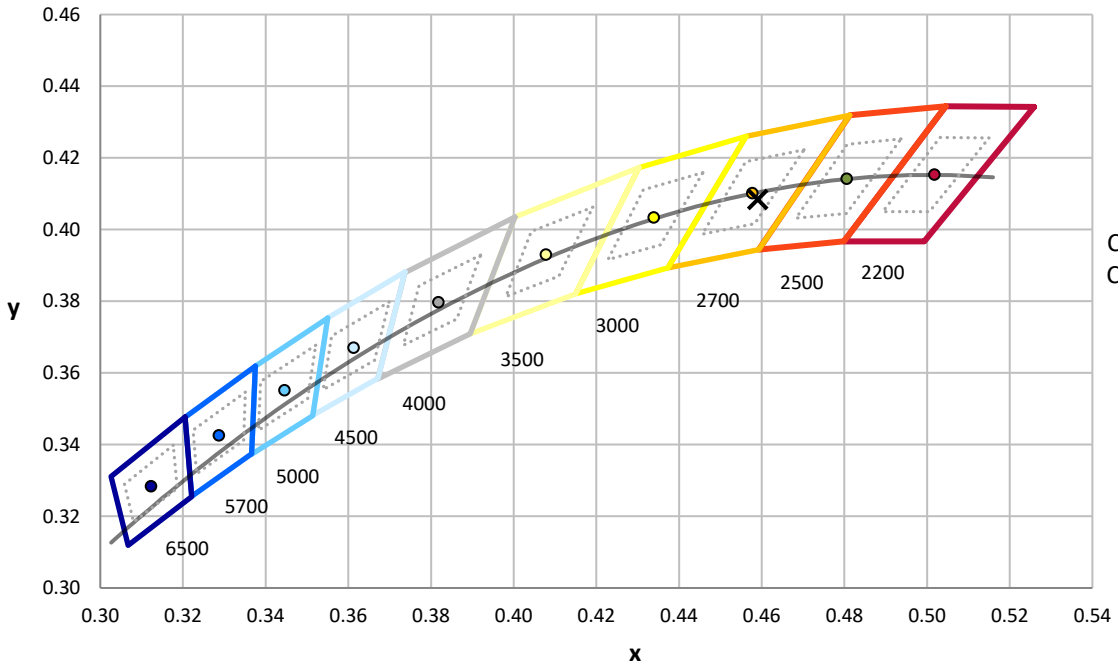
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/22/2024 | 10/22/2025 |
| DC Power Source | AGILENT E3634A IN0208 | 10/22/2024 | 10/22/2025 |
| Sphere Thermometer | ONSET IN0085 | 10/22/2024 | 10/22/2025 |
| Room Thermometer | ONSET IN0046 | 10/22/2024 | 10/22/2025 |

REPORT NUMBER: SP1-2505-441-28-R2

## CIE 1931 Chromaticity Diagram




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

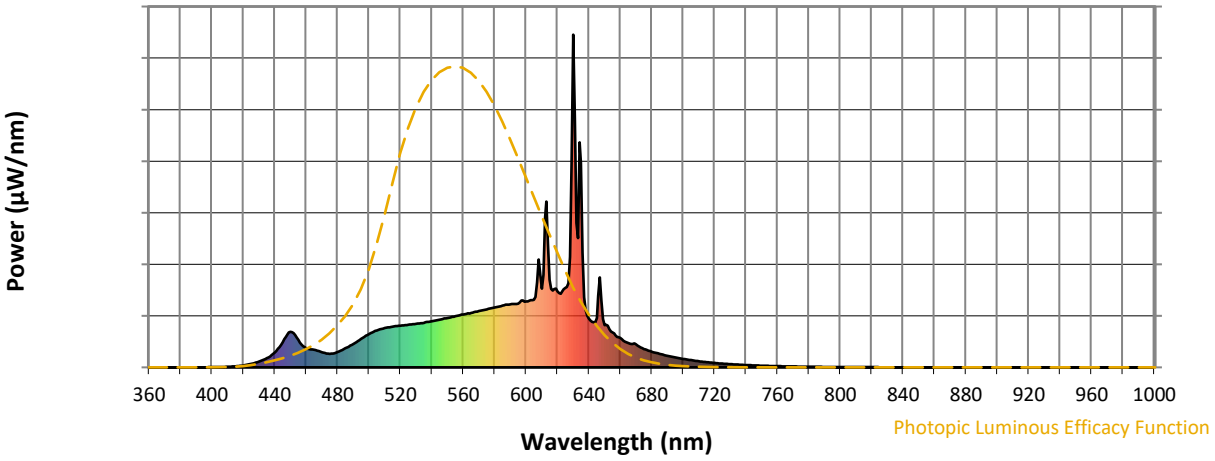



CCT = 2694K
CIE x = 0.4590
CIE y = 0.4084
Duv = -0.0008

Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2505-441-28-R2

## Photopic Flux vs. Wavelength

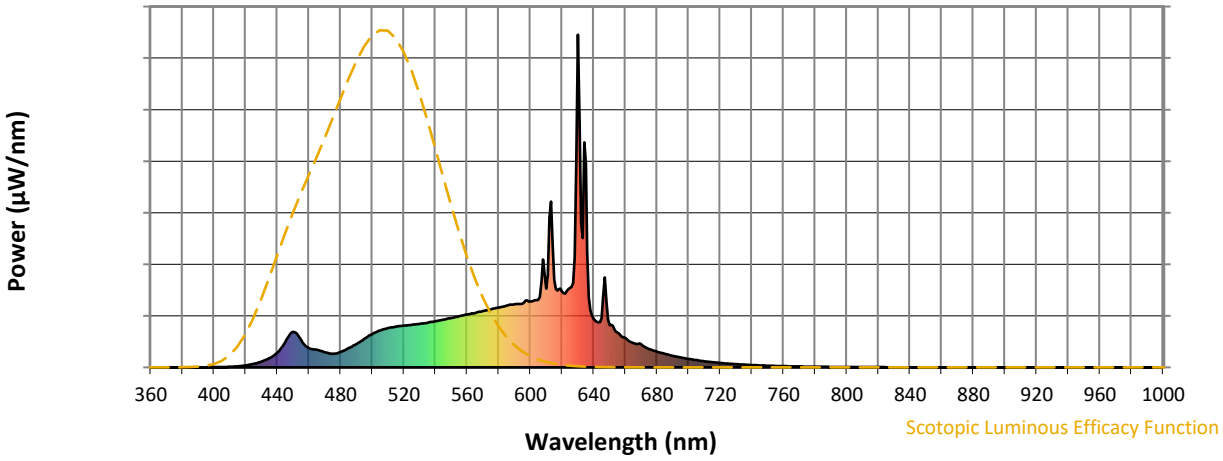



## Photopic Lumens: NR

| 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 | 70 | NR | 620 | 228 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 86 | NR | 625 | 239 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 100 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 111 | NR | 635 | 614 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 118 | NR | 640 | 147 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 122 | NR | 645 | 148 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 126 | NR | 650 | 127 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 128 | NR | 655 | 105 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 130 | NR | 660 | 88 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 134 | NR | 665 | 73 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 139 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 143 | NR | 675 | 55 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 148 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 10 | NR | 555 | 154 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 18 | NR | 560 | 159 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 28 | NR | 565 | 164 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 44 | NR | 570 | 169 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 75 | NR | 575 | 175 | NR | 705 | 22 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 107 | NR | 580 | 179 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 82 | NR | 585 | 186 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 58 | NR | 590 | 190 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 53 | NR | 595 | 192 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 45 | NR | 600 | 198 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 41 | NR | 605 | 203 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 237 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 57 | NR | 615 | 264 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2505-441-28-R2

## Scotopic Flux vs. Wavelength

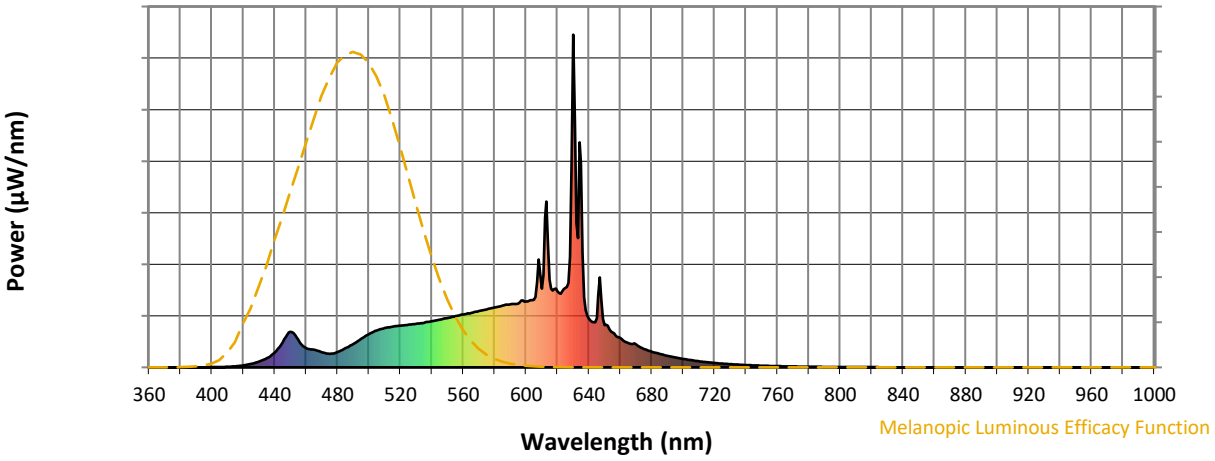



**Scotopic Lumens: NR** **S/P: 1.34**

| 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 | 70 | NR | 620 | 228 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 86 | NR | 625 | 239 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 100 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 111 | NR | 635 | 614 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 118 | NR | 640 | 147 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 122 | NR | 645 | 148 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 126 | NR | 650 | 127 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 128 | NR | 655 | 105 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 130 | NR | 660 | 88 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 134 | NR | 665 | 73 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 139 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 143 | NR | 675 | 55 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 148 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 10 | NR | 555 | 154 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 18 | NR | 560 | 159 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 28 | NR | 565 | 164 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 44 | NR | 570 | 169 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 75 | NR | 575 | 175 | NR | 705 | 22 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 107 | NR | 580 | 179 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 82 | NR | 585 | 186 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 58 | NR | 590 | 190 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 53 | NR | 595 | 192 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 45 | NR | 600 | 198 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 41 | NR | 605 | 203 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 237 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 57 | NR | 615 | 264 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.58**

| 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 | 70 | NR | 620 | 228 | NR | 750 | 5 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 86 | NR | 625 | 239 | NR | 755 | 4 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 100 | NR | 630 | 1000 | NR | 760 | 4 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 111 | NR | 635 | 614 | NR | 765 | 3 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 118 | NR | 640 | 147 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 122 | NR | 645 | 148 | NR | 775 | 2 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 126 | NR | 650 | 127 | NR | 780 | 2 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 128 | NR | 655 | 105 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 130 | NR | 660 | 88 | NR | 790 | 1 | NR | 920 | 0 | NR |
| 405 | 1 | NR | 535 | 134 | NR | 665 | 73 | NR | 795 | 1 | NR | 925 | 0 | NR |
| 410 | 2 | NR | 540 | 139 | NR | 670 | 70 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 3 | NR | 545 | 143 | NR | 675 | 55 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 6 | NR | 550 | 148 | NR | 680 | 47 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 10 | NR | 555 | 154 | NR | 685 | 41 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 18 | NR | 560 | 159 | NR | 690 | 35 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 28 | NR | 565 | 164 | NR | 695 | 30 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 44 | NR | 570 | 169 | NR | 700 | 25 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 75 | NR | 575 | 175 | NR | 705 | 22 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 107 | NR | 580 | 179 | NR | 710 | 18 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 82 | NR | 585 | 186 | NR | 715 | 16 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 58 | NR | 590 | 190 | NR | 720 | 13 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 53 | NR | 595 | 192 | NR | 725 | 11 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 45 | NR | 600 | 198 | NR | 730 | 10 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 41 | NR | 605 | 203 | NR | 735 | 8 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 46 | NR | 610 | 237 | NR | 740 | 7 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 57 | NR | 615 | 264 | NR | 745 | 6 | NR | 875 | 0 | NR | | | |

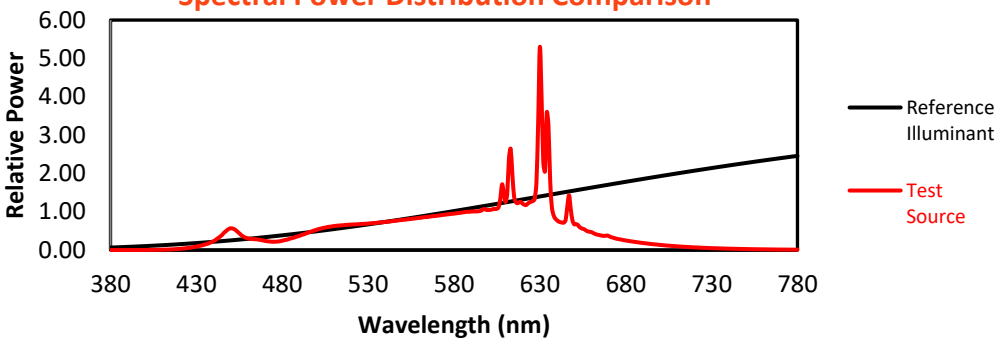
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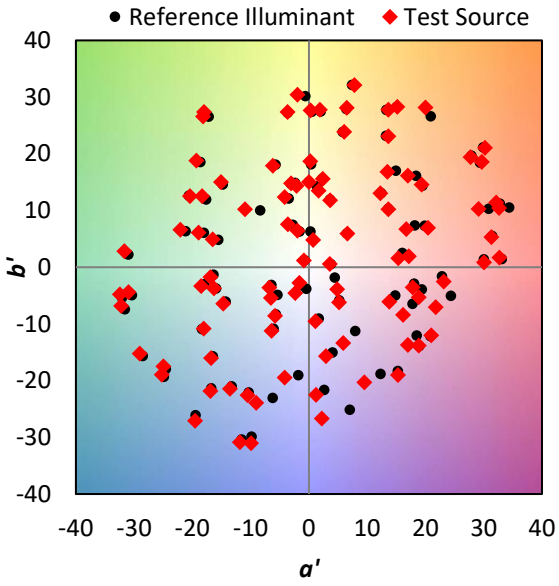
## Summary

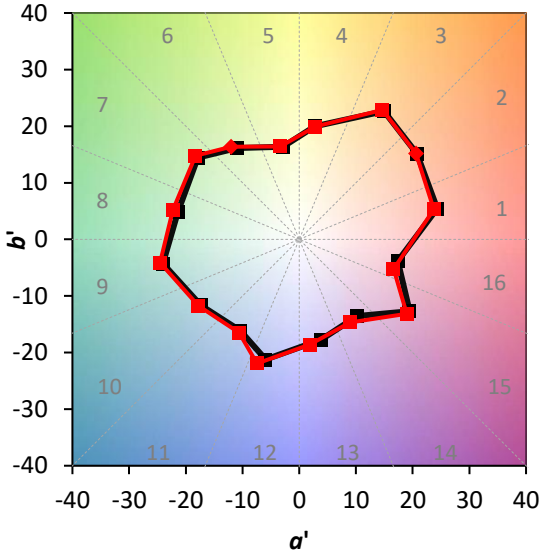
$R_f$ = 93.8
$R_g$ = 102
CIE $R_a$ = 95.4
$R_9$ = 80.8

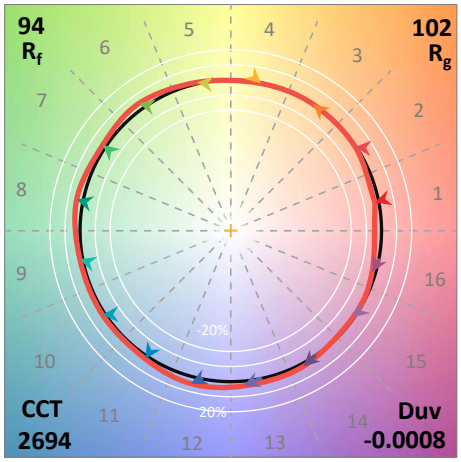
## Spectral Power Distribution Comparison

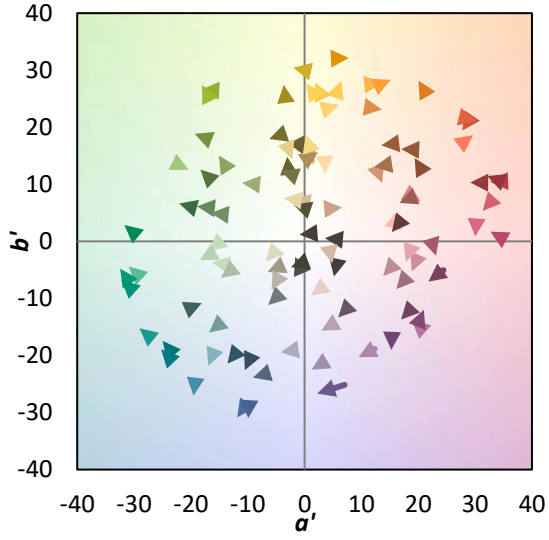



## Color Vector Graphics



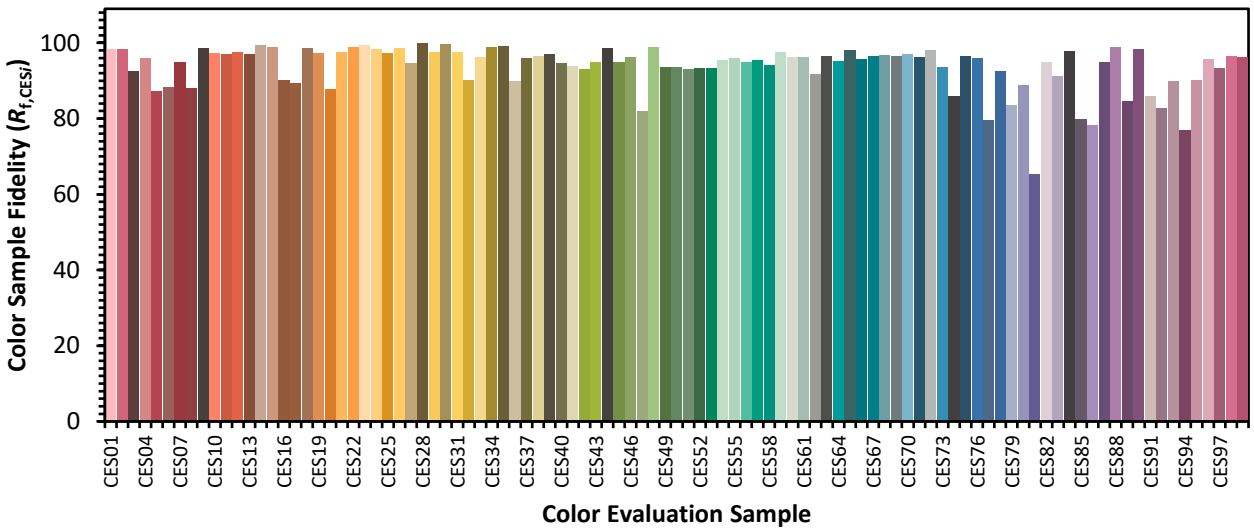



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**Individual Sample Fidelity Index ($R_{f,i}$)**

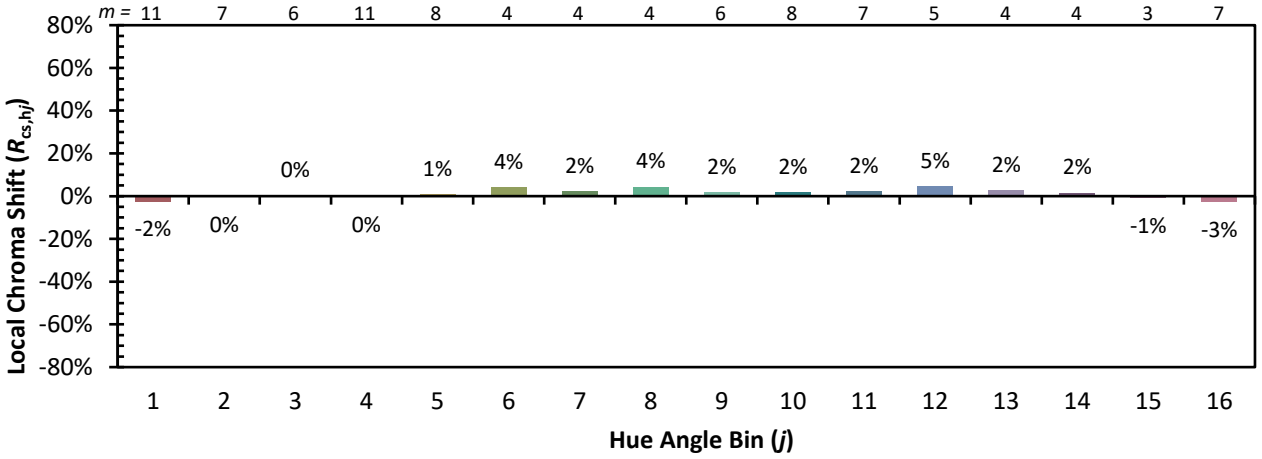
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 99 | CES51 = 93 | CES76 = 96 |
| CES02 = 64 | CES27 = 95 | CES52 = 93 | CES77 = 79 |
| CES03 = 32 | CES28 = 100 | CES53 = 93 | CES78 = 92 |
| CES04 = 70 | CES29 = 97 | CES54 = 96 | CES79 = 84 |
| CES05 = 52 | CES30 = 100 | CES55 = 96 | CES80 = 89 |
| CES06 = 51 | CES31 = 98 | CES56 = 95 | CES81 = 65 |
| CES07 = 45 | CES32 = 90 | CES57 = 95 | CES82 = 95 |
| CES08 = 43 | CES33 = 96 | CES58 = 94 | CES83 = 91 |
| CES09 = 29 | CES34 = 99 | CES59 = 97 | CES84 = 98 |
| CES10 = 77 | CES35 = 99 | CES60 = 96 | CES85 = 80 |
| CES11 = 59 | CES36 = 90 | CES61 = 96 | CES86 = 78 |
| CES12 = 66 | CES37 = 96 | CES62 = 92 | CES87 = 95 |
| CES13 = 45 | CES38 = 96 | CES63 = 97 | CES88 = 99 |
| CES14 = 74 | CES39 = 97 | CES64 = 95 | CES89 = 85 |
| CES15 = 72 | CES40 = 95 | CES65 = 98 | CES90 = 98 |
| CES16 = 49 | CES41 = 94 | CES66 = 96 | CES91 = 86 |
| CES17 = 50 | CES42 = 93 | CES67 = 96 | CES92 = 83 |
| CES18 = 57 | CES43 = 95 | CES68 = 97 | CES93 = 90 |
| CES19 = 72 | CES44 = 99 | CES69 = 97 | CES94 = 77 |
| CES20 = 68 | CES45 = 95 | CES70 = 97 | CES95 = 90 |
| CES21 = 87 | CES46 = 96 | CES71 = 96 | CES96 = 96 |
| CES22 = 79 | CES47 = 82 | CES72 = 98 | CES97 = 93 |
| CES23 = 92 | CES48 = 99 | CES73 = 94 | CES98 = 97 |
| CES24 = 91 | CES49 = 94 | CES74 = 86 | CES99 = 96 |
| CES25 = 72 | CES50 = 94 | CES75 = 96 | |

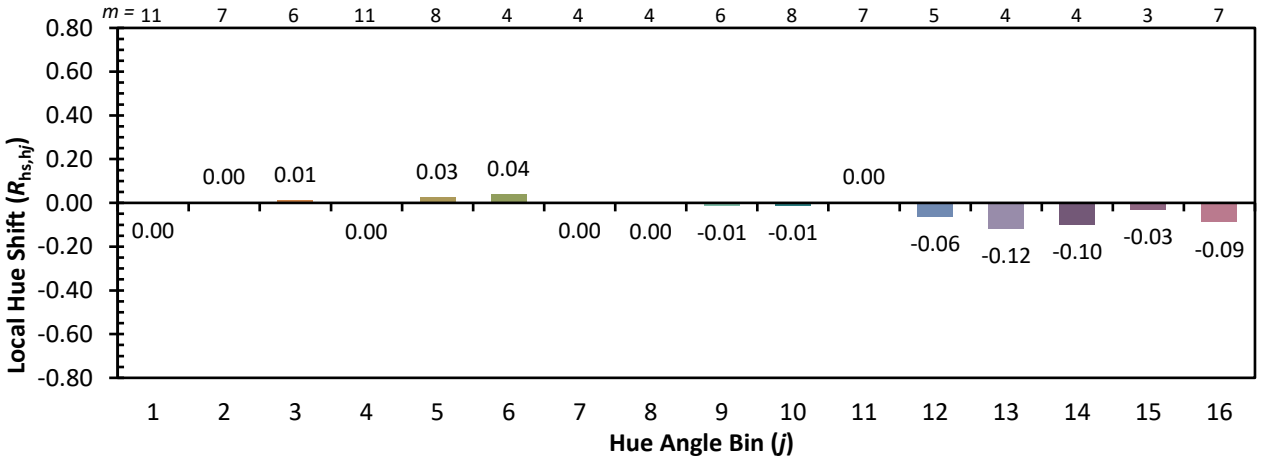


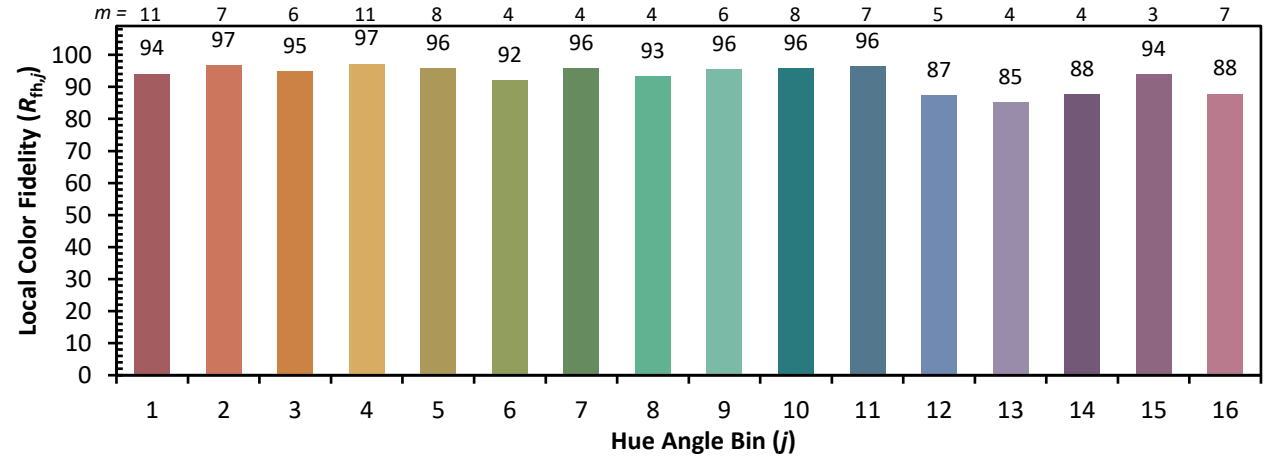
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## Color Rendition by Hue-Angle Bin



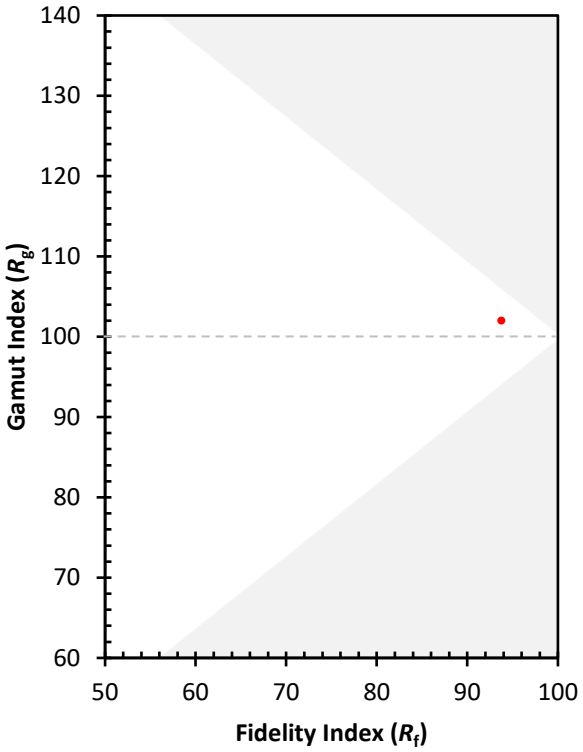



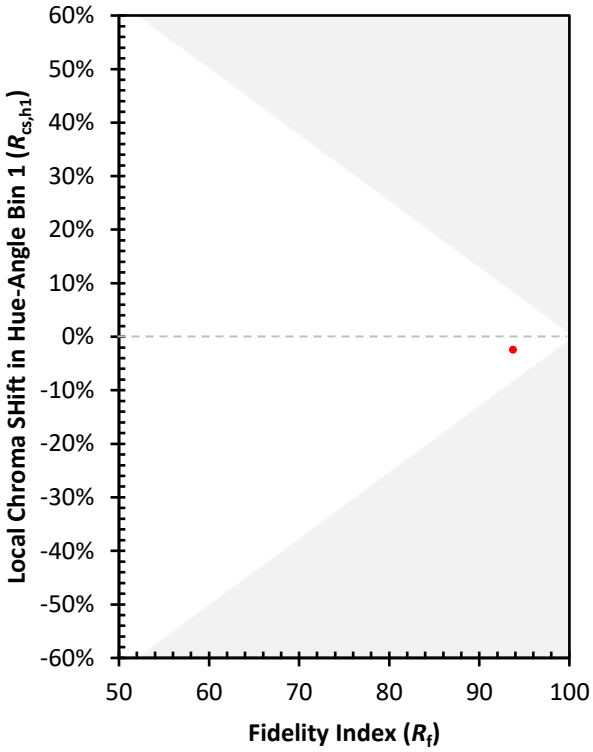



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### Measure Comparisons




(END OF REPORT)