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: P1590903

Luminaire Tested: 14CGTX-42-L93050-W2A-4000K

Issue Date: 9/7/2026

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: | P1590903 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2512-631-13) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 14CGTX-42-L93050-W2A-4000K |
| Description: | 1X4 4200 LUMEN CGTX TROFFER WITH VividTune LEDS AT 4000K CCT |
| Light Source: | 4000K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4135.1 lumens |
| Efficiency: | N/A |
| Efficacy: | 104.2 lumens/watt |
| Spacing Criteria (0/90/45): | 1.27 / 1.26 / 1.38 |
| Luminous Opening: | Rectangular (W 1' x L: 4' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 39.7 |
| 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 |

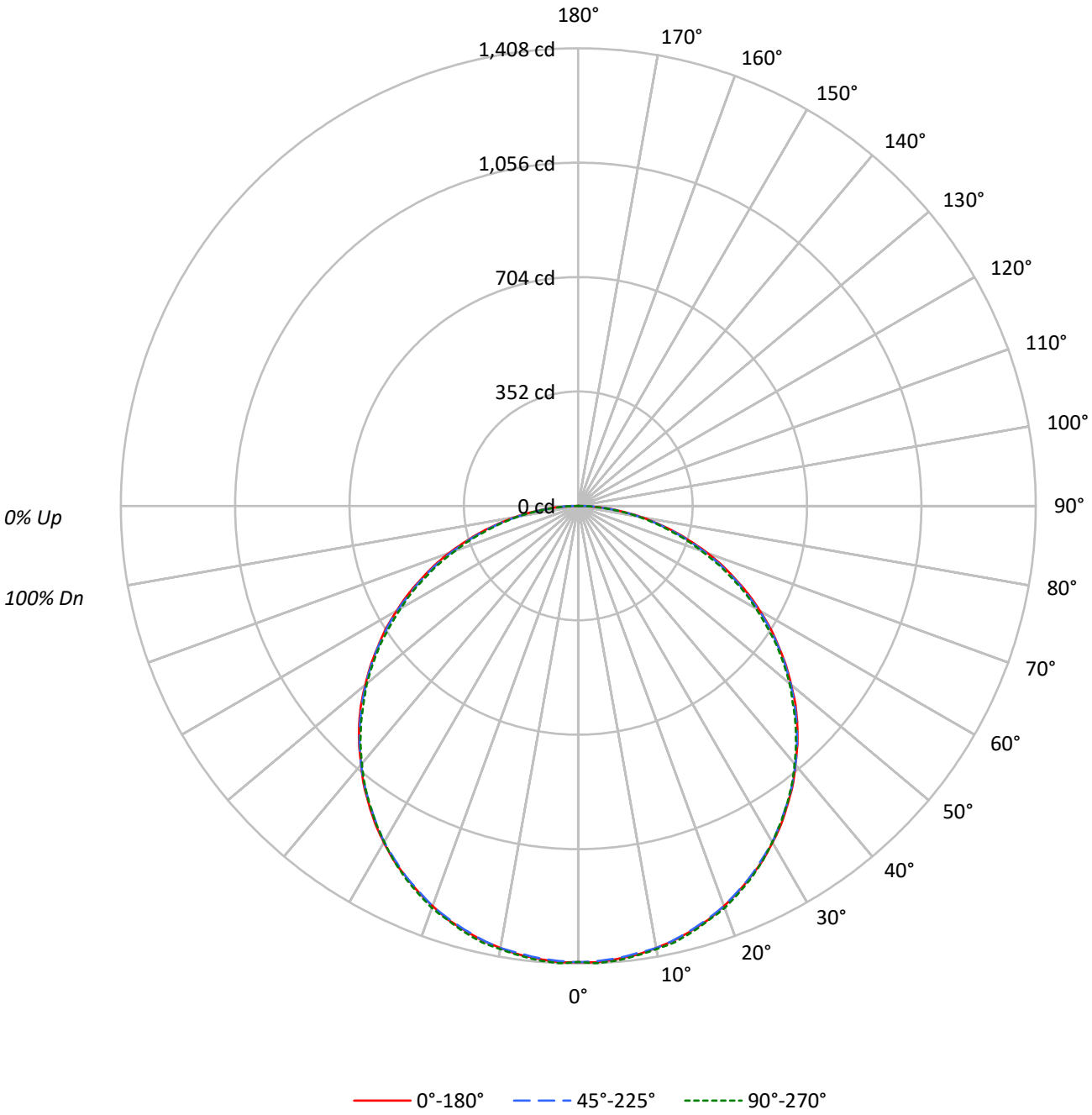


Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1590903
CATALOG NUMBER: 14CGTX-42-L93050-W2A-4000K

## Luminous Intensity Polar Plot



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

Scaled Data Report

TEST NUMBER: P1590903
CATALOG NUMBER: 14CGTX-42-L93050-W2A-4000K

## 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 | 94 | 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 | 69 |
| 3 | 89 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 79 | 68 | 60 | 53 | 66 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 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 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 35 | 63 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 32 | 58 | 45 | 37 | 31 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 41 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 23 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 3778 | 3778 | 3778 |
| 5° | 3778 | 3773 | 3792 |
| 10° | 3774 | 3774 | 3785 |
| 15° | 3767 | 3761 | 3781 |
| 20° | 3753 | 3753 | 3771 |
| 25° | 3734 | 3731 | 3746 |
| 30° | 3718 | 3711 | 3711 |
| 35° | 3688 | 3678 | 3678 |
| 40° | 3652 | 3652 | 3638 |
| 45° | 3629 | 3617 | 3597 |
| 50° | 3579 | 3575 | 3553 |
| 55° | 3529 | 3520 | 3491 |
| 60° | 3474 | 3457 | 3395 |
| 65° | 3403 | 3370 | 3297 |
| 70° | 3323 | 3249 | 3160 |
| 75° | 3193 | 3118 | 3010 |
| 80° | 3039 | 2926 | 2862 |
| 85° | 2754 | 2628 | 2467 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
Vertical Angle: 45°
Luminance: 3633 cd/sqm

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Scaled Data Report

TEST NUMBER: P1590903
CATALOG NUMBER: 14CGTX-42-L93050-W2A-4000K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 133.1 | 3.2 |
| 10°-20° | 382.0 | 9.2 |
| 20°-30° | 580.1 | 14.0 |
| 30°-40° | 701.7 | 17.0 |
| 40°-50° | 733.1 | 17.7 |
| 50°-60° | 670.2 | 16.2 |
| 60°-70° | 522.6 | 12.6 |
| 70°-80° | 316.6 | 7.7 |
| 80°-90° | 95.6 | 2.3 |
| 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° | 1095.3 | 26.5 |
| 0°-40° | 1797.0 | 43.5 |
| 0°-60° | 3200.3 | 77.4 |
| 0°-90° | 4135.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4135.1 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1404 | 1404 | 1404 | 1404 | 1404 | |
| 5° | 1399 | 1400 | 1397 | 1402 | 1404 | 133 |
| 15° | 1352 | 1352 | 1350 | 1356 | 1357 | 382 |
| 25° | 1258 | 1259 | 1257 | 1260 | 1262 | 580 |
| 35° | 1123 | 1124 | 1120 | 1122 | 1120 | 703 |
| 45° | 954 | 955 | 950 | 948 | 945 | 735 |
| 55° | 752 | 756 | 750 | 746 | 744 | 673 |
| 65° | 534 | 535 | 529 | 523 | 518 | 529 |
| 75° | 307 | 307 | 300 | 294 | 290 | 324 |
| 85° | 89 | 88 | 85 | 81 | 80 | 100 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590903
CATALOG NUMBER: 14CGTX-42-L93050-W2A-4000K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 1403.9 | 1403.9 | 1403.9 | 1403.9 | *1403.9* |
| 2.5° | *1405.0* | *1403.9* | *1401.8* | *1406.0* | *1408.1* |
| 5° | 1398.7 | 1399.8 | 1396.7 | 1401.8 | *1403.9* |
| 7.5° | 1392.5 | 1392.5 | 1388.4 | 1396.7 | *1394.6* |
| 10° | 1381.1 | 1383.2 | 1381.1 | 1385.2 | *1385.2* |
| 12.5° | 1368.6 | 1369.7 | 1367.6 | 1372.8 | *1374.9* |
| 15° | 1352.0 | 1352.0 | 1350.0 | 1356.2 | *1357.2* |
| 17.5° | 1334.4 | 1333.4 | 1331.3 | 1336.5 | *1336.5* |
| 20° | 1310.5 | 1311.6 | 1310.5 | 1312.6 | *1316.8* |
| 22.5° | 1285.6 | 1286.7 | 1283.6 | 1287.7 | *1289.8* |
| 25° | 1257.6 | 1258.6 | 1256.6 | 1259.7 | *1261.8* |
| 27.5° | 1229.6 | 1228.6 | 1225.4 | 1229.6 | *1229.6* |
| 30° | 1196.4 | 1196.4 | 1194.3 | 1195.4 | *1194.3* |
| 32.5° | 1162.1 | 1160.1 | 1157.0 | 1159.0 | *1158.0* |
| 35° | 1122.7 | 1123.8 | 1119.6 | 1121.7 | *1119.6* |
| 37.5° | 1084.3 | 1083.3 | 1081.2 | 1081.2 | *1080.2* |
| 40° | 1039.7 | 1042.8 | 1039.7 | 1038.7 | *1035.6* |
| 42.5° | 998.2 | 1000.3 | 996.1 | 994.1 | *992.0* |
| 45° | 953.6 | 954.6 | 950.5 | 948.4 | *945.3* |
| 47.5° | 906.9 | 907.9 | 902.7 | 900.7 | *895.5* |
| 50° | 855.0 | 858.1 | 854.0 | 849.8 | *848.8* |
| 52.5° | 805.2 | 807.3 | 802.1 | 800.0 | *795.9* |
| 55° | 752.3 | 756.4 | 750.2 | 746.1 | *744.0* |
| 57.5° | 701.4 | 703.5 | 697.3 | 690.0 | *685.9* |
| 60° | 645.4 | 648.5 | 642.3 | 635.0 | *630.9* |
| 62.5° | 591.5 | 592.5 | 583.2 | 579.0 | *578.0* |
| 65° | 534.4 | 535.4 | 529.2 | 523.0 | *517.8* |
| 67.5° | 479.4 | 478.3 | 472.1 | 463.8 | *462.8* |
| 70° | 422.3 | 419.2 | 413.0 | 407.8 | *401.6* |
| 72.5° | 362.1 | 363.2 | 355.9 | 349.7 | *347.6* |
| 75° | 307.1 | 307.1 | 299.9 | 293.7 | *289.5* |
| 77.5° | 250.1 | 250.1 | 243.8 | 237.6 | *235.5* |
| 80° | 196.1 | 195.1 | 188.8 | 183.7 | *184.7* |
| 82.5° | 141.1 | 140.1 | 134.9 | 131.8 | *130.7* |
| 85° | 89.2 | 88.2 | 85.1 | 80.9 | *79.9* |
| 87.5° | 38.4 | 38.4 | 36.3 | 35.3 | *33.2* |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* |

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TEST NUMBER: P1590903
CATALOG NUMBER: 14CGTX-42-L93050-W2A-4000K

**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 | 16.62 | 18.28 | 16.98 | 18.59 | 18.91 | 16.48 | 18.14 | 16.84 | 18.45 | 18.77 |
| | 3H | 18.55 | 20.06 | 18.93 | 20.38 | 20.74 | 18.36 | 19.87 | 18.74 | 20.20 | 20.56 |
| | 4H | 19.31 | 20.73 | 19.71 | 21.08 | 21.45 | 19.09 | 20.51 | 19.49 | 20.86 | 21.24 |
| | 6H | 19.91 | 21.23 | 20.32 | 21.60 | 21.99 | 19.66 | 20.98 | 20.07 | 21.35 | 21.74 |
| | 8H | 20.12 | 21.38 | 20.55 | 21.77 | 22.17 | 19.86 | 21.12 | 20.28 | 21.51 | 21.91 |
| | 12H | 20.27 | 21.48 | 20.70 | 21.86 | 22.29 | 19.99 | 21.20 | 20.42 | 21.58 | 22.01 |
| 4H | 2H | 17.27 | 18.69 | 17.67 | 19.04 | 19.41 | 17.16 | 18.58 | 17.56 | 18.93 | 19.30 |
| | 3H | 19.43 | 20.63 | 19.84 | 21.02 | 21.42 | 19.27 | 20.47 | 19.68 | 20.87 | 21.27 |
| | 4H | 20.34 | 21.42 | 20.77 | 21.83 | 22.27 | 20.14 | 21.22 | 20.57 | 21.63 | 22.07 |
| | 6H | 21.08 | 22.03 | 21.53 | 22.47 | 22.92 | 20.84 | 21.79 | 21.30 | 22.23 | 22.69 |
| | 8H | 21.35 | 22.24 | 21.81 | 22.68 | 23.14 | 21.09 | 21.98 | 21.55 | 22.42 | 22.89 |
| | 12H | 21.55 | 22.35 | 22.03 | 22.83 | 23.29 | 21.27 | 22.07 | 21.75 | 22.55 | 23.01 |
| 8H | 4H | 20.68 | 21.57 | 21.14 | 22.01 | 22.47 | 20.51 | 21.40 | 20.97 | 21.84 | 22.30 |
| | 6H | 21.56 | 22.31 | 22.06 | 22.79 | 23.27 | 21.34 | 22.09 | 21.84 | 22.57 | 23.05 |
| | 8H | 21.92 | 22.58 | 22.42 | 23.09 | 23.57 | 21.67 | 22.34 | 22.18 | 22.85 | 23.33 |
| | 12H | 22.21 | 22.80 | 22.71 | 23.29 | 23.85 | 21.94 | 22.53 | 22.44 | 23.01 | 23.57 |
| 12H | 4H | 20.72 | 21.52 | 21.20 | 22.00 | 22.47 | 20.56 | 21.36 | 21.04 | 21.83 | 22.30 |
| | 6H | 21.63 | 22.30 | 22.14 | 22.81 | 23.29 | 21.42 | 22.09 | 21.93 | 22.60 | 23.08 |
| | 8H | 22.05 | 22.64 | 22.55 | 23.13 | 23.69 | 21.82 | 22.41 | 22.32 | 22.90 | 23.46 |

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: SP1-2512-631-31-R2

Test Date: 02/05/2026

Luminaire Tested: 22CGTX-50-L93050-W2A-4000K

Data in this report applies to families of products including 22CGTX

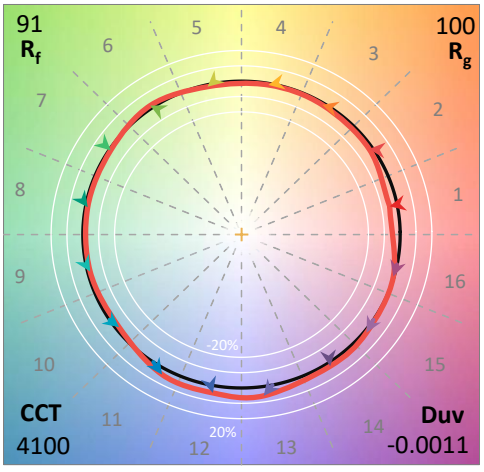
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2512-631-31-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: | **22CGTX-50-L93050-W2A-4000K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-631-31-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 5000 LUMEN HE CGTX TUNABLE WHITE FROM 3000K TO 5000K - 4.5 Volt |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 4100 | CRI (Ra): | 94.2 | | |
| CIE u': | 0.2240 | R1: | 95.8 | R9: | 68.3 |
| CIE v': | 0.4984 | R2: | 96.4 | R10: | 89.3 |
| Duv: | -0.0011 | R3: | 94.9 | R11: | 95.3 |
| CIE x: | 0.3754 | R4: | 95.5 | R12: | 73.6 |
| CIE y: | 0.3712 | R5: | 94.7 | R13: | 96.1 |
| CIE z: | 0.2534 | R6: | 93.8 | R14: | 96.4 |
| Peak Wavelength (nm): | 630 | R7: | 94.6 | R15: | 93.4 |
| Dominant Wavelength (nm): | 579 | R8: | 88.1 | | |
| Purity: | 24.05581 | | | | |
| Rf: | 90.9 | | | | |
| Rg: | 99.8 | | | | |



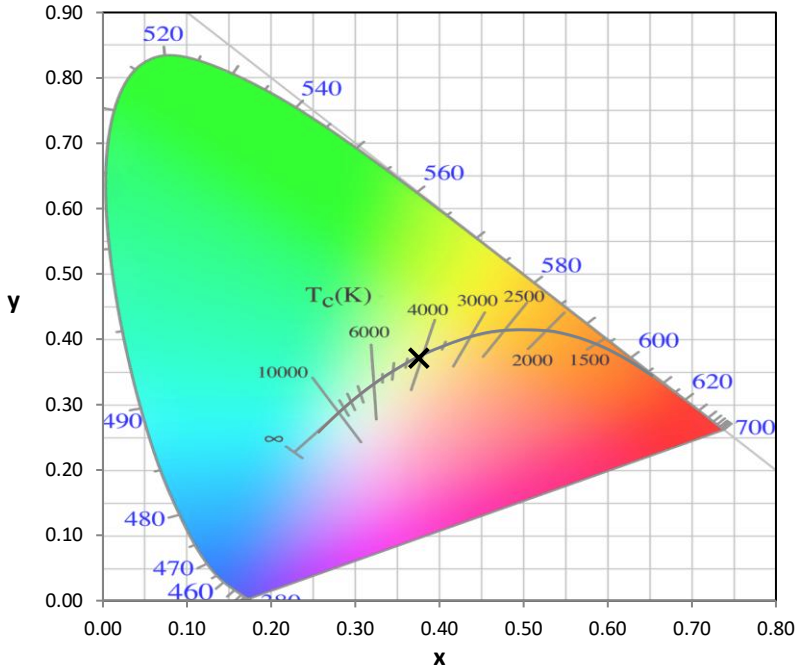

## Test Conditions

| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.1 |

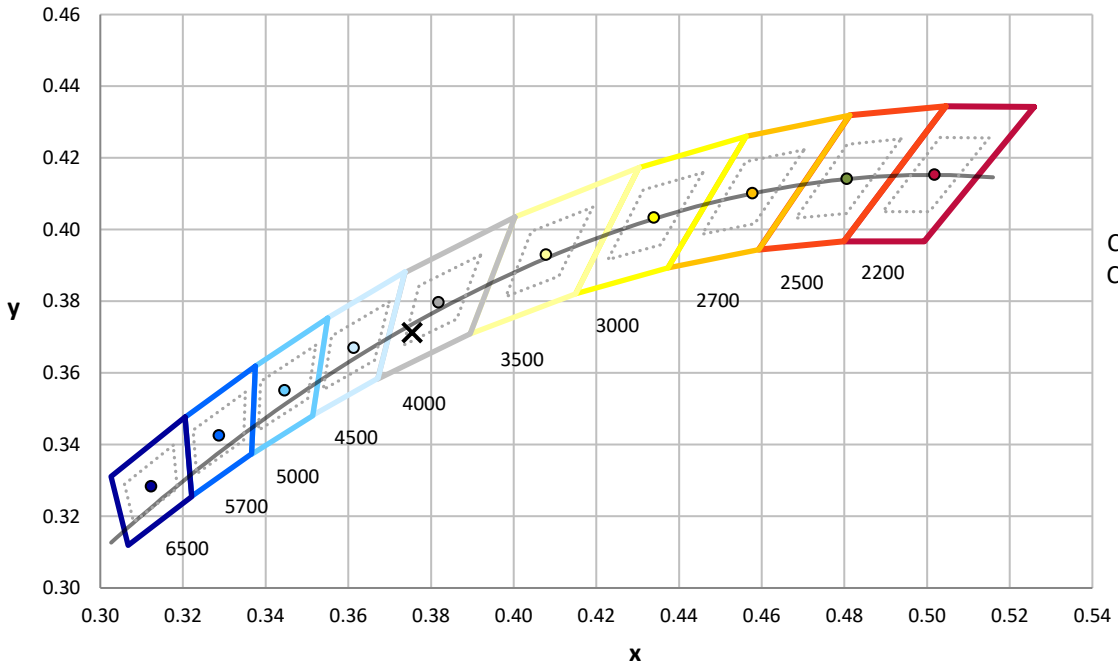
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 12/16/2025 | 6/16/2026 |
| Power Meter | XITRON INXT2011004 | 10/21/2025 | 10/21/2026 |
| AC Power Source | CHROMA 61603 IN0063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

REPORT NUMBER: SP1-2512-631-31-R2

## CIE 1931 Chromaticity Diagram




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

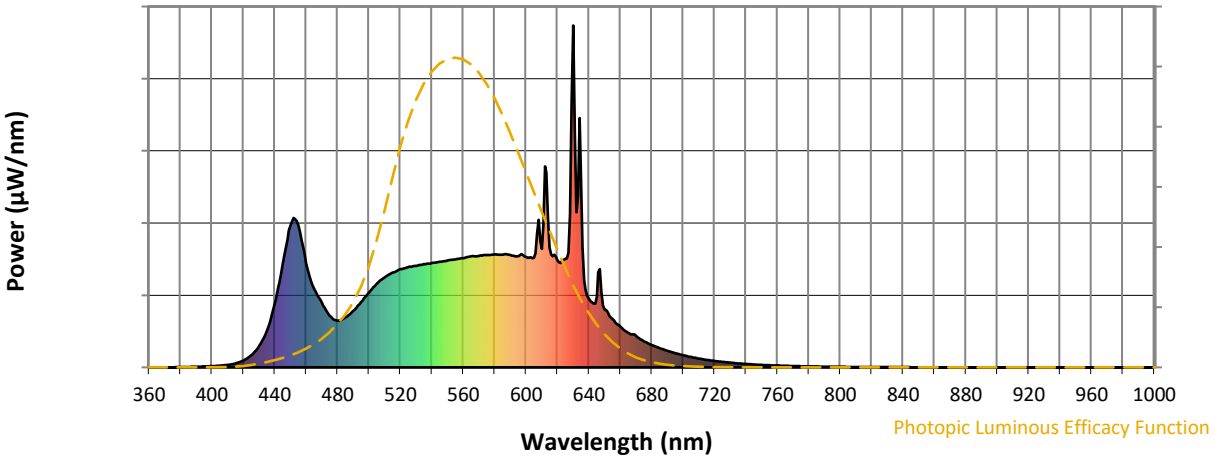



CCT = 4100K
CIE x = 0.3754
CIE y = 0.3712
Duv = -0.0011

Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2512-631-31-R2

## Photopic Flux vs. Wavelength

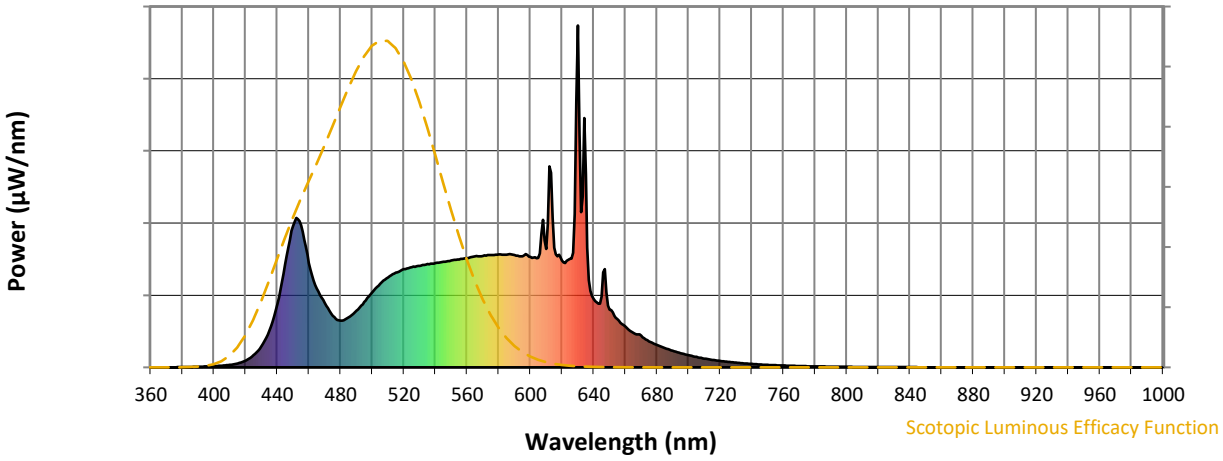



## Photopic Lumens: NR

| 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 | 165 | NR | 620 | 313 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 191 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 219 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 245 | NR | 635 | 564 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 263 | NR | 640 | 200 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 207 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 287 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 293 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 297 | NR | 660 | 120 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 302 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 305 | NR | 670 | 93 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 12 | NR | 545 | 309 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 313 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 36 | NR | 555 | 316 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 320 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 325 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 185 | NR | 570 | 326 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 301 | NR | 575 | 329 | NR | 705 | 31 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 413 | NR | 580 | 330 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 415 | NR | 585 | 329 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 305 | NR | 590 | 329 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 231 | NR | 595 | 325 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 188 | NR | 600 | 323 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 151 | NR | 605 | 320 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 137 | NR | 610 | 346 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 146 | NR | 615 | 351 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2512-631-31-R2

## Scotopic Flux vs. Wavelength

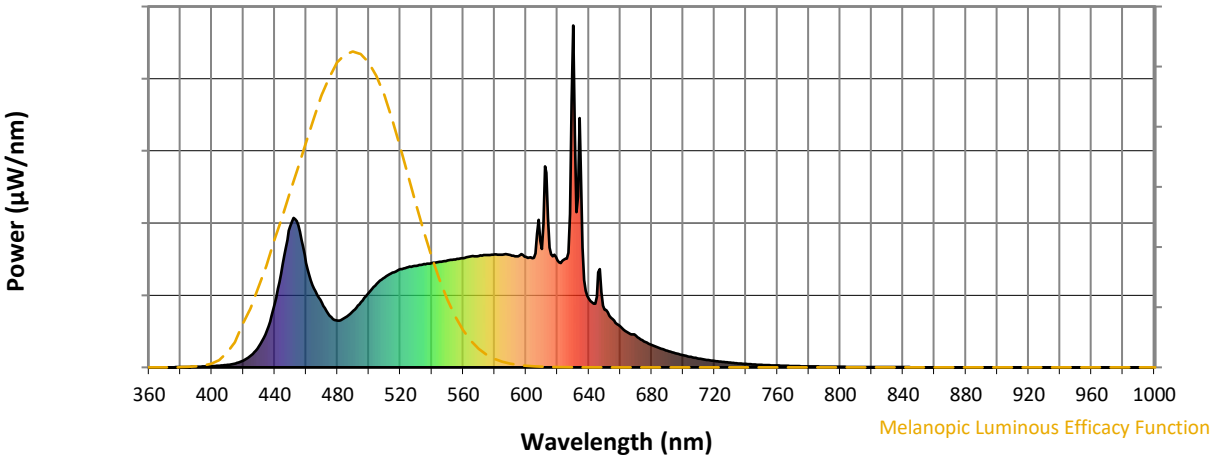



**Scotopic Lumens: NR** **S/P: 1.82**

| 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 | 165 | NR | 620 | 313 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 191 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 219 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 245 | NR | 635 | 564 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 263 | NR | 640 | 200 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 207 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 287 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 293 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 297 | NR | 660 | 120 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 302 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 305 | NR | 670 | 93 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 12 | NR | 545 | 309 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 313 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 36 | NR | 555 | 316 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 320 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 325 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 185 | NR | 570 | 326 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 301 | NR | 575 | 329 | NR | 705 | 31 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 413 | NR | 580 | 330 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 415 | NR | 585 | 329 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 305 | NR | 590 | 329 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 231 | NR | 595 | 325 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 188 | NR | 600 | 323 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 151 | NR | 605 | 320 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 137 | NR | 610 | 346 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 146 | NR | 615 | 351 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.81**

| 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 | 165 | NR | 620 | 313 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 191 | NR | 625 | 318 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 219 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 245 | NR | 635 | 564 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 263 | NR | 640 | 200 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 277 | NR | 645 | 207 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 2 | NR | 520 | 287 | NR | 650 | 169 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 293 | NR | 655 | 141 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 297 | NR | 660 | 120 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 302 | NR | 665 | 102 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 305 | NR | 670 | 93 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 12 | NR | 545 | 309 | NR | 675 | 76 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 20 | NR | 550 | 313 | NR | 680 | 65 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 36 | NR | 555 | 316 | NR | 685 | 56 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 62 | NR | 560 | 320 | NR | 690 | 49 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 108 | NR | 565 | 325 | NR | 695 | 42 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 185 | NR | 570 | 326 | NR | 700 | 36 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 301 | NR | 575 | 329 | NR | 705 | 31 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 413 | NR | 580 | 330 | NR | 710 | 26 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 415 | NR | 585 | 329 | NR | 715 | 22 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 305 | NR | 590 | 329 | NR | 720 | 19 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 231 | NR | 595 | 325 | NR | 725 | 16 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 188 | NR | 600 | 323 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 151 | NR | 605 | 320 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 137 | NR | 610 | 346 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 146 | NR | 615 | 351 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

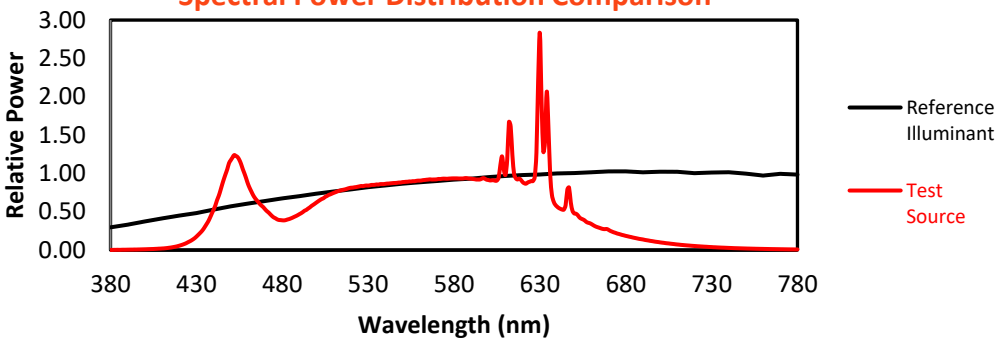
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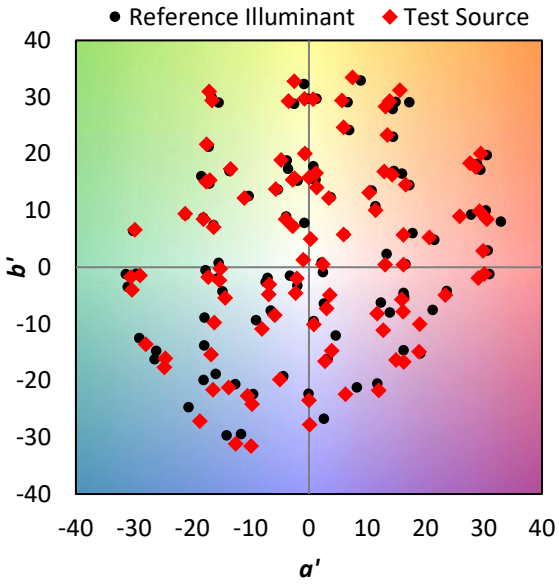
## Summary

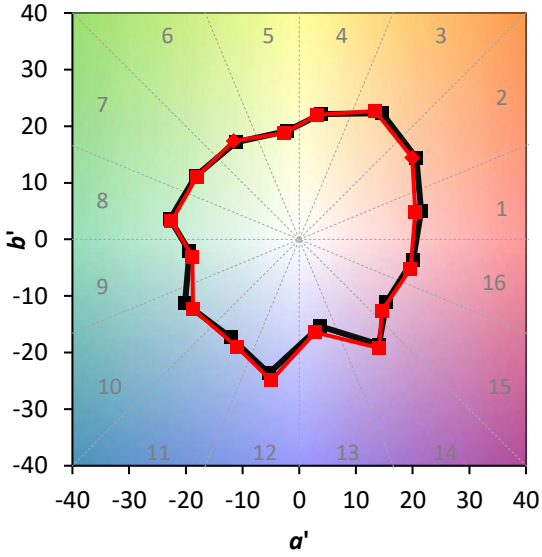
$R_f$ = 90.9
$R_g$ = 99.8
CIE $R_a$ = 94.2
$R_9$ = 68.3

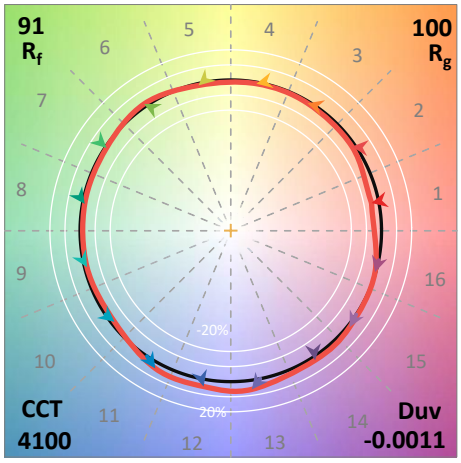
## Spectral Power Distribution Comparison

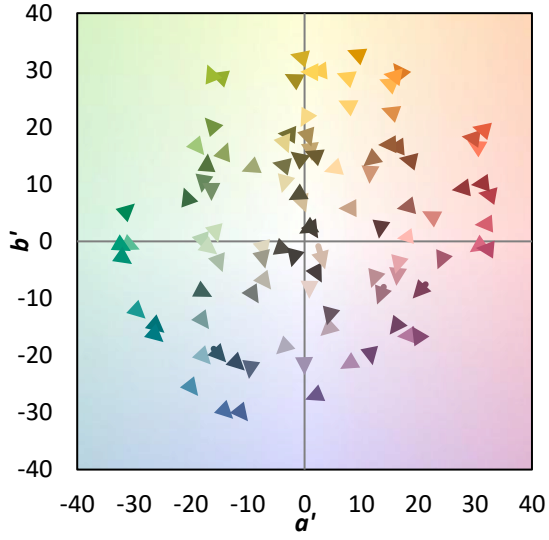



## Color Vector Graphics



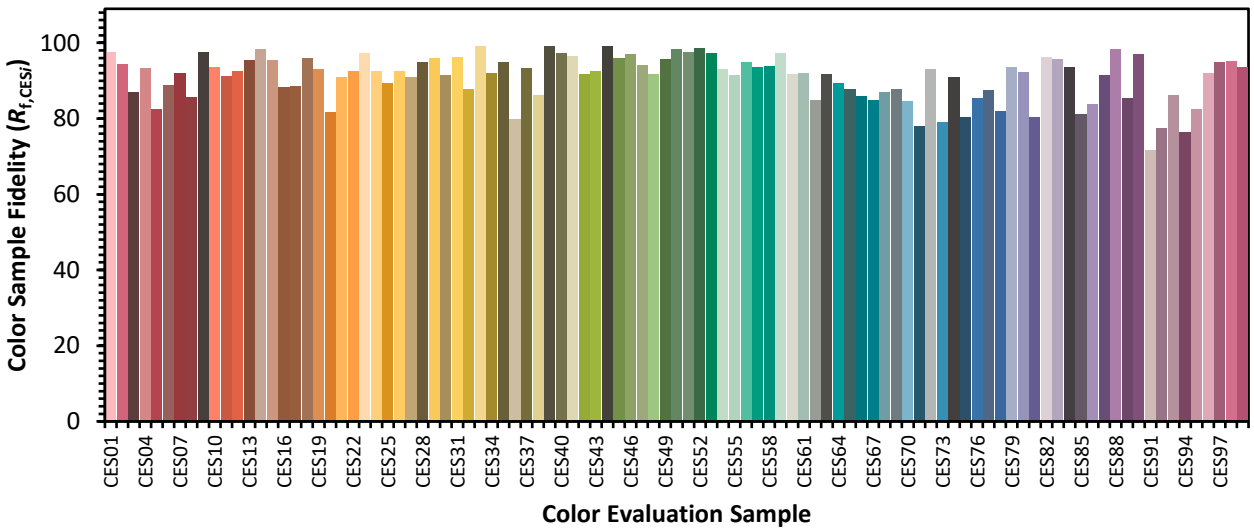



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**Individual Sample Fidelity Index ($R_{f,i}$)**

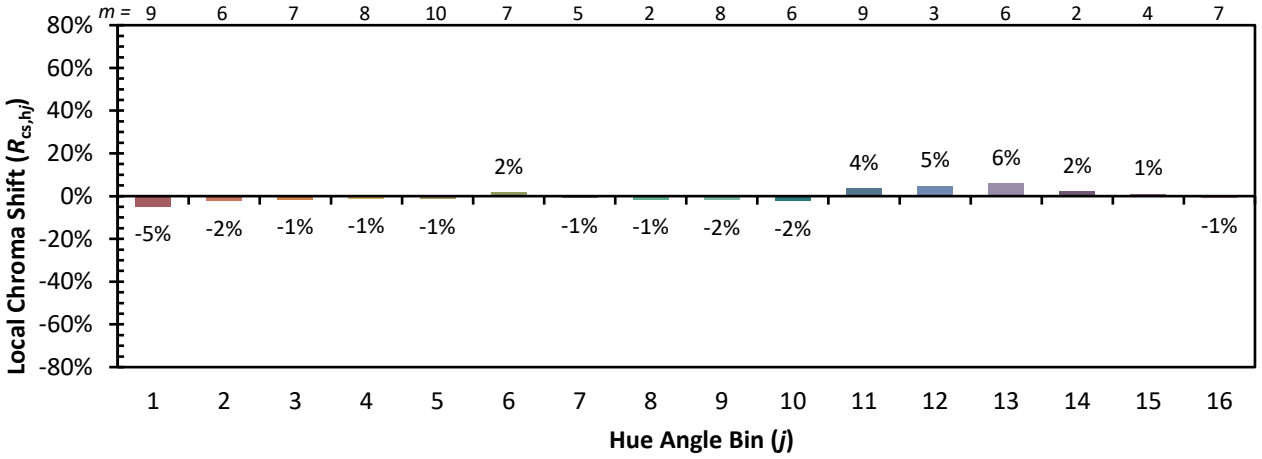
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 93 | CES51 = 97 | CES76 = 85 |
| CES02 = 62 | CES27 = 91 | CES52 = 99 | CES77 = 87 |
| CES03 = 31 | CES28 = 95 | CES53 = 97 | CES78 = 82 |
| CES04 = 69 | CES29 = 96 | CES54 = 93 | CES79 = 94 |
| CES05 = 49 | CES30 = 92 | CES55 = 91 | CES80 = 92 |
| CES06 = 50 | CES31 = 96 | CES56 = 95 | CES81 = 80 |
| CES07 = 42 | CES32 = 88 | CES57 = 93 | CES82 = 96 |
| CES08 = 41 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 92 | CES59 = 97 | CES84 = 94 |
| CES10 = 74 | CES35 = 95 | CES60 = 92 | CES85 = 81 |
| CES11 = 57 | CES36 = 80 | CES61 = 92 | CES86 = 84 |
| CES12 = 63 | CES37 = 93 | CES62 = 85 | CES87 = 91 |
| CES13 = 43 | CES38 = 86 | CES63 = 92 | CES88 = 98 |
| CES14 = 74 | CES39 = 99 | CES64 = 89 | CES89 = 85 |
| CES15 = 71 | CES40 = 97 | CES65 = 88 | CES90 = 97 |
| CES16 = 47 | CES41 = 97 | CES66 = 86 | CES91 = 72 |
| CES17 = 49 | CES42 = 92 | CES67 = 85 | CES92 = 77 |
| CES18 = 56 | CES43 = 93 | CES68 = 87 | CES93 = 86 |
| CES19 = 71 | CES44 = 99 | CES69 = 88 | CES94 = 77 |
| CES20 = 66 | CES45 = 96 | CES70 = 85 | CES95 = 82 |
| CES21 = 85 | CES46 = 97 | CES71 = 78 | CES96 = 92 |
| CES22 = 78 | CES47 = 94 | CES72 = 93 | CES97 = 95 |
| CES23 = 91 | CES48 = 92 | CES73 = 79 | CES98 = 95 |
| CES24 = 90 | CES49 = 96 | CES74 = 91 | CES99 = 94 |
| CES25 = 71 | CES50 = 98 | CES75 = 80 | |

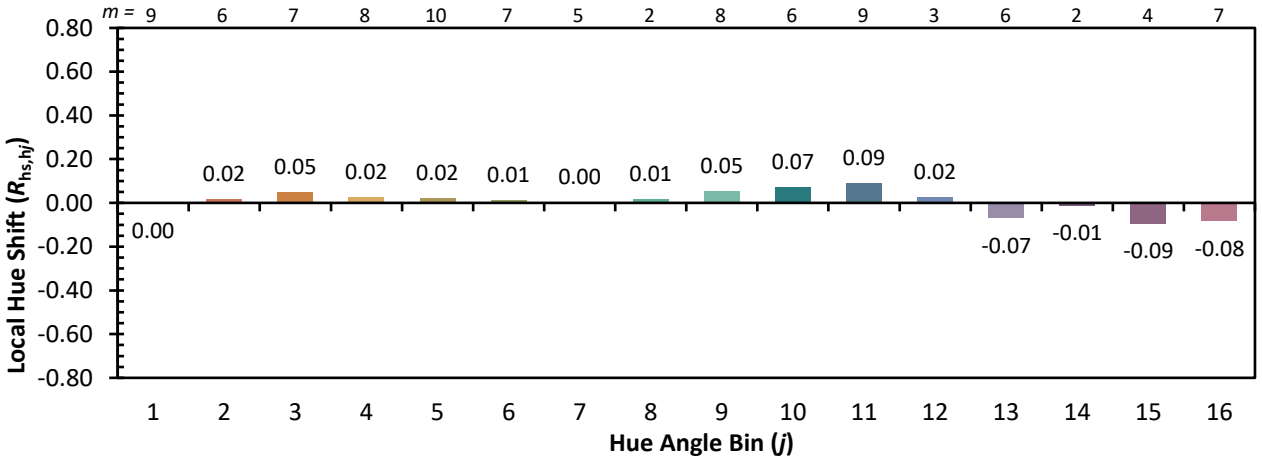


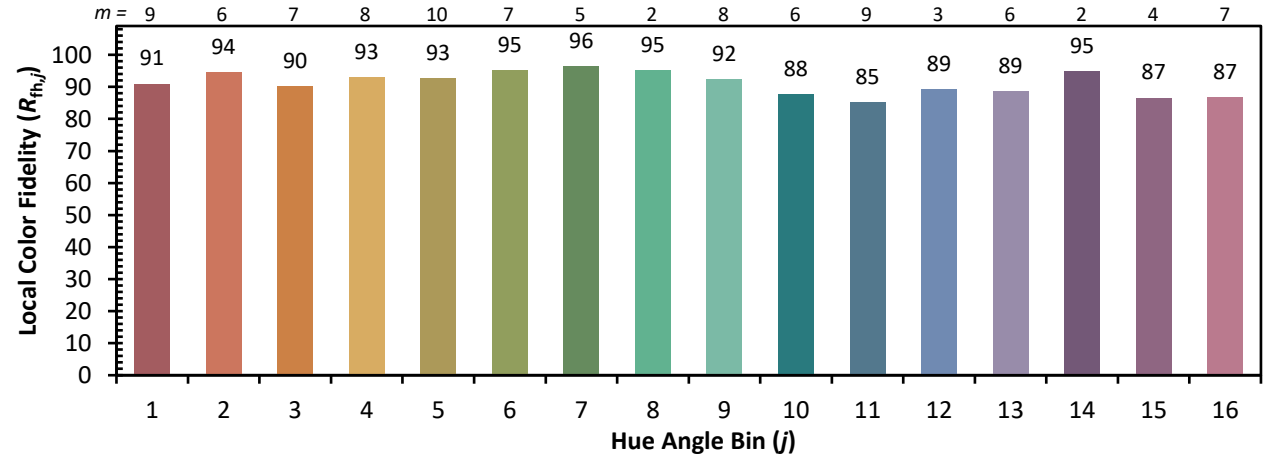
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## Color Rendition by Hue-Angle Bin



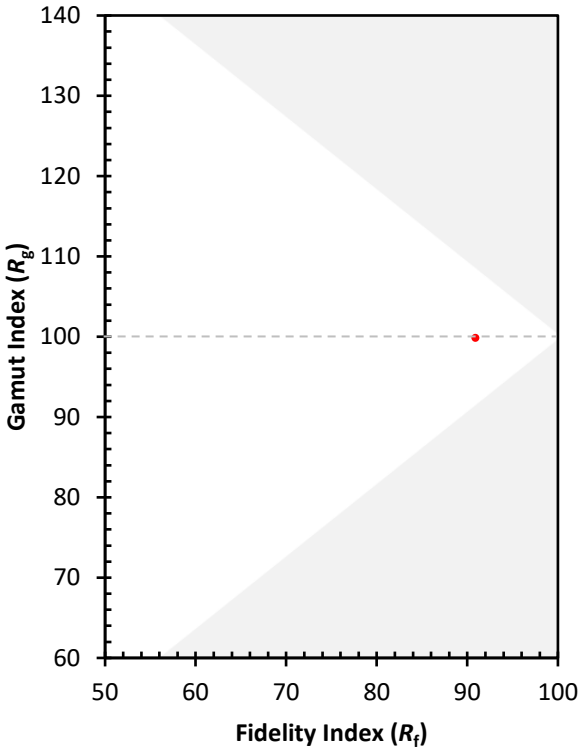



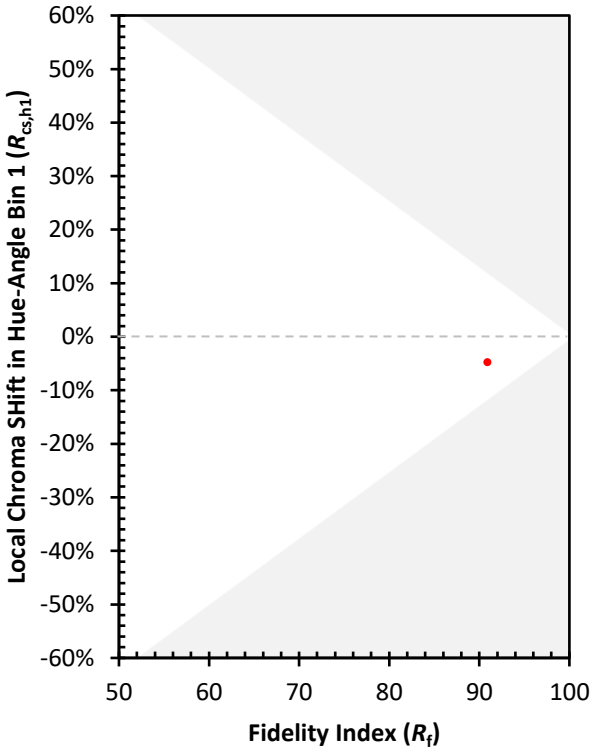



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## Measure Comparisons




(END OF REPORT)