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: P1590706

Luminaire Tested: 14CGTX-30-L92765-W2A-3500K

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: | P1590706 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2510-586-2) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 14CGTX-30-L92765-W2A-3500K |
| Description: | 1X4 3000 LUMEN CGTX TROFFER WITH VividTune LEDS AT 3500K CCT WITH FROSTED SMOOTH LENS |
| Light Source: | 3500K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3061.7 lumens |
| Efficiency: | N/A |
| Efficacy: | 103.8 lumens/watt |
| Spacing Criteria (0/90/45): | 1.27 / 1.27 / 1.39 |
| Luminous Opening: | Rectangular (W 1' x L: 4' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 29.5 |
| 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 |

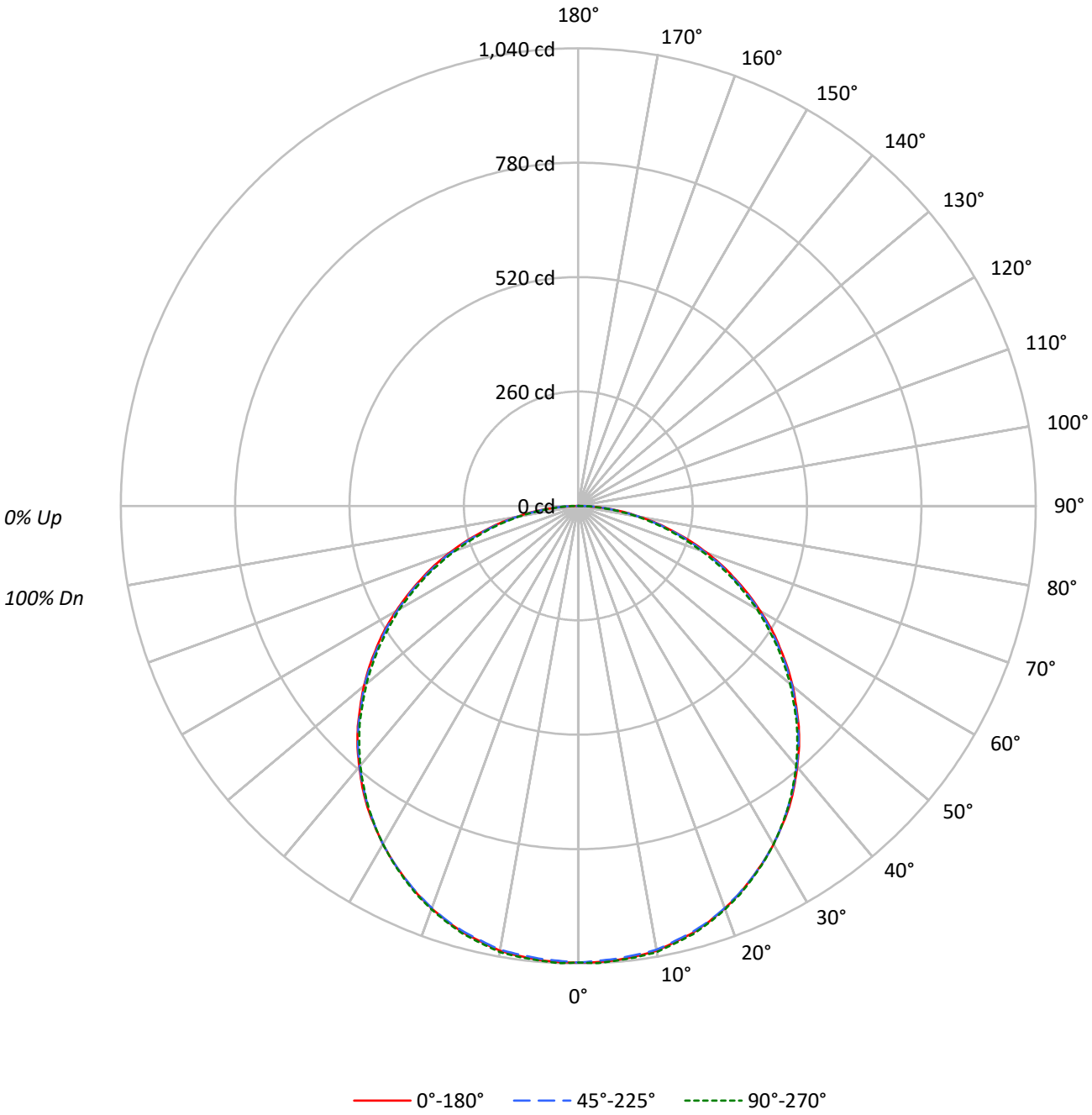


Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590706
CATALOG NUMBER: 14CGTX-30-L92765-W2A-3500K

## Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590706
CATALOG NUMBER: 14CGTX-30-L92765-W2A-3500K

## 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 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 84 | 79 | 74 | 81 | 77 | 73 | 78 | 74 | 71 | 69 |
| 3 | 90 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 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 | 45 | 39 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 36 | 63 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 35 | 33 |
| 8 | 60 | 46 | 38 | 32 | 58 | 45 | 37 | 32 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 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 | 39 | 31 | 26 | 38 | 30 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 24 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 2793 | 2793 | 2793 |
| 5° | 2798 | 2789 | 2801 |
| 10° | 2805 | 2799 | 2813 |
| 15° | 2799 | 2793 | 2808 |
| 20° | 2788 | 2785 | 2794 |
| 25° | 2771 | 2771 | 2777 |
| 30° | 2759 | 2759 | 2759 |
| 35° | 2746 | 2736 | 2736 |
| 40° | 2719 | 2715 | 2708 |
| 45° | 2697 | 2689 | 2674 |
| 50° | 2664 | 2655 | 2629 |
| 55° | 2621 | 2602 | 2578 |
| 60° | 2573 | 2551 | 2523 |
| 65° | 2510 | 2477 | 2444 |
| 70° | 2442 | 2393 | 2328 |
| 75° | 2324 | 2281 | 2205 |
| 80° | 2180 | 2148 | 2052 |
| 85° | 1948 | 1883 | 1757 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2697 cd/sqm

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590706
CATALOG NUMBER: 14CGTX-30-L92765-W2A-3500K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 98.5 | 3.2 |
| 10°-20° | 283.6 | 9.3 |
| 20°-30° | 430.9 | 14.1 |
| 30°-40° | 521.6 | 17.0 |
| 40°-50° | 544.3 | 17.8 |
| 50°-60° | 496.5 | 16.2 |
| 60°-70° | 385.5 | 12.6 |
| 70°-80° | 231.7 | 7.6 |
| 80°-90° | 69.1 | 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° | 813.0 | 26.6 |
| 0°-40° | 1334.6 | 43.6 |
| 0°-60° | 2375.4 | 77.6 |
| 0°-90° | 3061.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3061.7 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1038 | 1038 | 1038 | 1038 | 1038 | |
| 5° | 1036 | 1036 | 1033 | 1037 | 1037 | 99 |
| 15° | 1005 | 1005 | 1003 | 1007 | 1008 | 283 |
| 25° | 933 | 935 | 933 | 935 | 935 | 431 |
| 35° | 836 | 836 | 833 | 834 | 833 | 522 |
| 45° | 709 | 709 | 707 | 704 | 703 | 546 |
| 55° | 559 | 560 | 555 | 554 | 549 | 500 |
| 65° | 394 | 394 | 389 | 386 | 384 | 391 |
| 75° | 224 | 224 | 219 | 213 | 212 | 238 |
| 85° | 63 | 63 | 61 | 59 | 57 | 72 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Scaled Data Report

TEST NUMBER: P1590706
CATALOG NUMBER: 14CGTX-30-L92765-W2A-3500K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 1037.8 | 1037.8 | 1037.8 | 1037.8 | *1037.8* |
| 2.5° | *1037.8* | *1037.8* | *1034.7* | *1038.8* | *1039.9* |
| 5° | 1035.7 | 1035.7 | 1032.6 | 1036.8 | *1036.8* |
| 7.5° | 1031.6 | 1031.6 | 1028.5 | 1032.6 | *1033.7* |
| 10° | 1026.4 | 1026.4 | 1024.3 | 1028.5 | *1029.5* |
| 12.5° | 1015.0 | 1016.1 | 1013.0 | 1017.1 | *1018.1* |
| 15° | 1004.7 | 1004.7 | 1002.6 | 1006.8 | *1007.8* |
| 17.5° | 990.2 | 990.2 | 989.2 | 992.3 | *992.3* |
| 20° | 973.6 | 973.6 | 972.6 | 975.7 | *975.7* |
| 22.5° | 955.0 | 955.0 | 954.0 | 957.1 | *957.1* |
| 25° | 933.3 | 935.4 | 933.3 | 935.4 | *935.4* |
| 27.5° | 911.6 | 912.6 | 911.6 | 913.6 | *912.6* |
| 30° | 887.8 | 887.8 | 887.8 | 887.8 | *887.8* |
| 32.5° | 861.9 | 862.9 | 860.9 | 860.9 | *860.9* |
| 35° | 836.0 | 836.0 | 832.9 | 834.0 | *832.9* |
| 37.5° | 806.0 | 805.0 | 804.0 | 804.0 | *801.9* |
| 40° | 774.0 | 774.0 | 772.9 | 770.8 | *770.8* |
| 42.5° | 742.9 | 742.9 | 740.8 | 737.7 | *736.7* |
| 45° | 708.8 | 708.8 | 706.7 | 703.6 | *702.6* |
| 47.5° | 671.5 | 674.6 | 668.4 | 667.4 | *664.3* |
| 50° | 636.3 | 637.4 | 634.3 | 630.1 | *628.1* |
| 52.5° | 598.1 | 599.1 | 594.9 | 591.8 | *588.7* |
| 55° | 558.7 | 559.8 | 554.6 | 553.6 | *549.4* |
| 57.5° | 520.5 | 520.5 | 516.3 | 512.2 | *508.0* |
| 60° | 478.0 | 478.0 | 473.9 | 468.7 | *468.7* |
| 62.5° | 436.6 | 436.6 | 432.5 | 427.3 | *425.3* |
| 65° | 394.2 | 394.2 | 389.0 | 385.9 | *383.9* |
| 67.5° | 353.9 | 351.8 | 348.7 | 342.5 | *340.4* |
| 70° | 310.4 | 309.4 | 304.2 | 299.0 | *295.9* |
| 72.5° | 269.0 | 265.9 | 261.8 | 256.6 | *253.5* |
| 75° | 223.5 | 223.5 | 219.4 | 213.1 | *212.1* |
| 77.5° | 184.2 | 182.1 | 179.0 | 172.8 | *172.8* |
| 80° | 140.7 | 140.7 | 138.6 | 133.5 | *132.4* |
| 82.5° | 104.5 | 102.4 | 98.3 | 96.2 | *93.1* |
| 85° | 63.1 | 63.1 | 61.0 | 59.0 | *56.9* |
| 87.5° | 27.9 | 26.9 | 24.8 | 24.8 | *24.8* |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* |

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TEST NUMBER: P1590706
CATALOG NUMBER: 14CGTX-30-L92765-W2A-3500K

**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 | 15.57 | 17.23 | 15.94 | 17.55 | 17.86 | 15.45 | 17.11 | 15.81 | 17.42 | 17.74 |
| | 3H | 17.49 | 19.00 | 17.87 | 19.32 | 19.68 | 17.31 | 18.82 | 17.69 | 19.14 | 19.50 |
| | 4H | 18.24 | 19.66 | 18.64 | 20.01 | 20.38 | 18.03 | 19.44 | 18.42 | 19.79 | 20.17 |
| | 6H | 18.83 | 20.14 | 19.24 | 20.51 | 20.90 | 18.58 | 19.90 | 18.99 | 20.26 | 20.65 |
| | 8H | 19.03 | 20.29 | 19.46 | 20.68 | 21.08 | 18.76 | 20.02 | 19.19 | 20.41 | 20.81 |
| | 12H | 19.18 | 20.38 | 19.61 | 20.77 | 21.19 | 18.89 | 20.09 | 19.32 | 20.47 | 20.90 |
| 4H | 2H | 16.22 | 17.63 | 16.61 | 17.98 | 18.36 | 16.12 | 17.54 | 16.52 | 17.89 | 18.26 |
| | 3H | 18.37 | 19.56 | 18.78 | 19.96 | 20.36 | 18.21 | 19.40 | 18.62 | 19.80 | 20.20 |
| | 4H | 19.25 | 20.34 | 19.68 | 20.75 | 21.18 | 19.06 | 20.14 | 19.49 | 20.55 | 20.98 |
| | 6H | 19.98 | 20.93 | 20.43 | 21.37 | 21.82 | 19.74 | 20.69 | 20.20 | 21.13 | 21.58 |
| | 8H | 20.25 | 21.13 | 20.70 | 21.57 | 22.04 | 19.98 | 20.87 | 20.44 | 21.31 | 21.77 |
| | 12H | 20.44 | 21.24 | 20.92 | 21.71 | 22.18 | 20.15 | 20.95 | 20.63 | 21.42 | 21.89 |
| 8H | 4H | 19.59 | 20.48 | 20.05 | 20.92 | 21.39 | 19.42 | 20.31 | 19.88 | 20.75 | 21.21 |
| | 6H | 20.46 | 21.20 | 20.95 | 21.68 | 22.16 | 20.24 | 20.98 | 20.73 | 21.47 | 21.94 |
| | 8H | 20.81 | 21.47 | 21.31 | 21.98 | 22.46 | 20.56 | 21.22 | 21.07 | 21.73 | 22.21 |
| | 12H | 21.09 | 21.68 | 21.59 | 22.17 | 22.72 | 20.81 | 21.40 | 21.32 | 21.89 | 22.45 |
| 12H | 4H | 19.63 | 20.43 | 20.11 | 20.91 | 21.38 | 19.47 | 20.27 | 19.95 | 20.74 | 21.21 |
| | 6H | 20.52 | 21.19 | 21.03 | 21.70 | 22.18 | 20.32 | 20.98 | 20.83 | 21.49 | 21.97 |
| | 8H | 20.94 | 21.53 | 21.44 | 22.02 | 22.57 | 20.70 | 21.29 | 21.21 | 21.78 | 22.34 |

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: SP1-2510-566-8-R2

Test Date: 10/14/2025

Luminaire Tested: 22CGTX-50-L92765-W2A-3500K

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

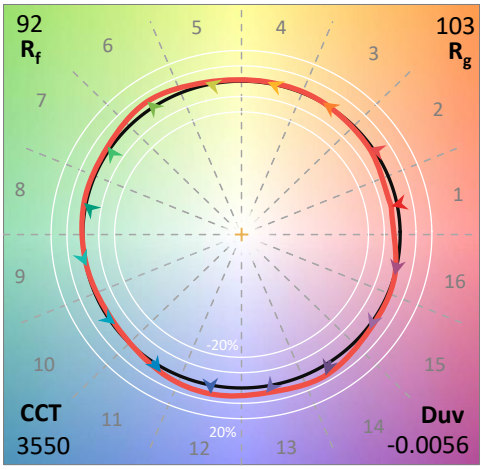
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2510-566-8-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-L92765-W2A-3500K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-566-8-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 50000 Lumen CGTX TUNABLE WHITE FROM 2700K TO 6500K - 6.5 V |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3550 | CRI (Ra): | 95.7 | | |
| CIE u': | 0.2372 | R1: | 98.8 | R9: | 76.3 |
| CIE v': | 0.5029 | R2: | 98.1 | R10: | 94.9 |
| Duv: | -0.0056 | R3: | 95.8 | R11: | 94.0 |
| CIE x: | 0.3970 | R4: | 95.8 | R12: | 83.5 |
| CIE y: | 0.3741 | R5: | 98.9 | R13: | 98.8 |
| CIE z: | 0.2289 | R6: | 94.8 | R14: | 96.6 |
| Peak Wavelength (nm): | 630 | R7: | 93.6 | R15: | 97.6 |
| Dominant Wavelength (nm): | 583 | R8: | 90.3 | | |
| Purity: | 31.40196 | | | | |
| Rf: | 91.7 | | | | |
| Rg: | 102.7 | | | | |




## Test Conditions

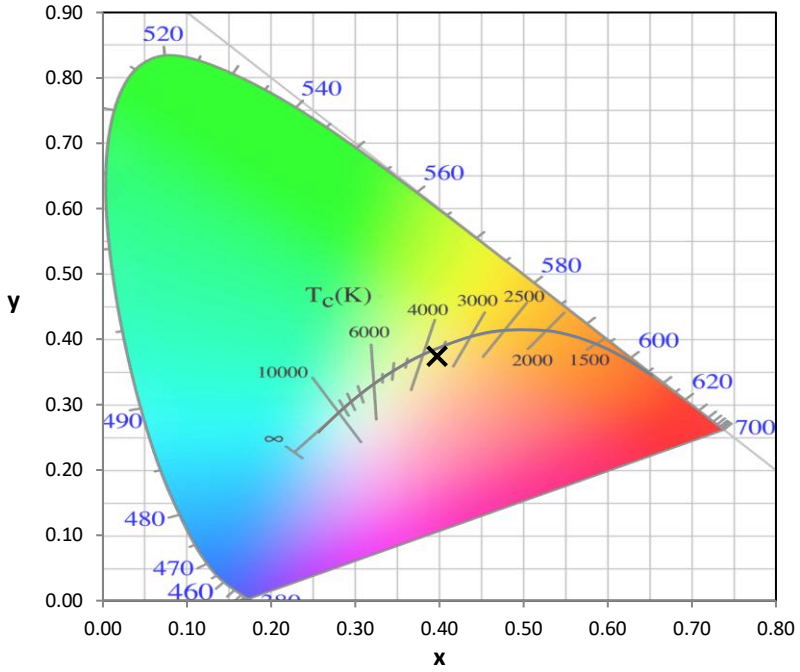
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP1-2510-566-8-R2

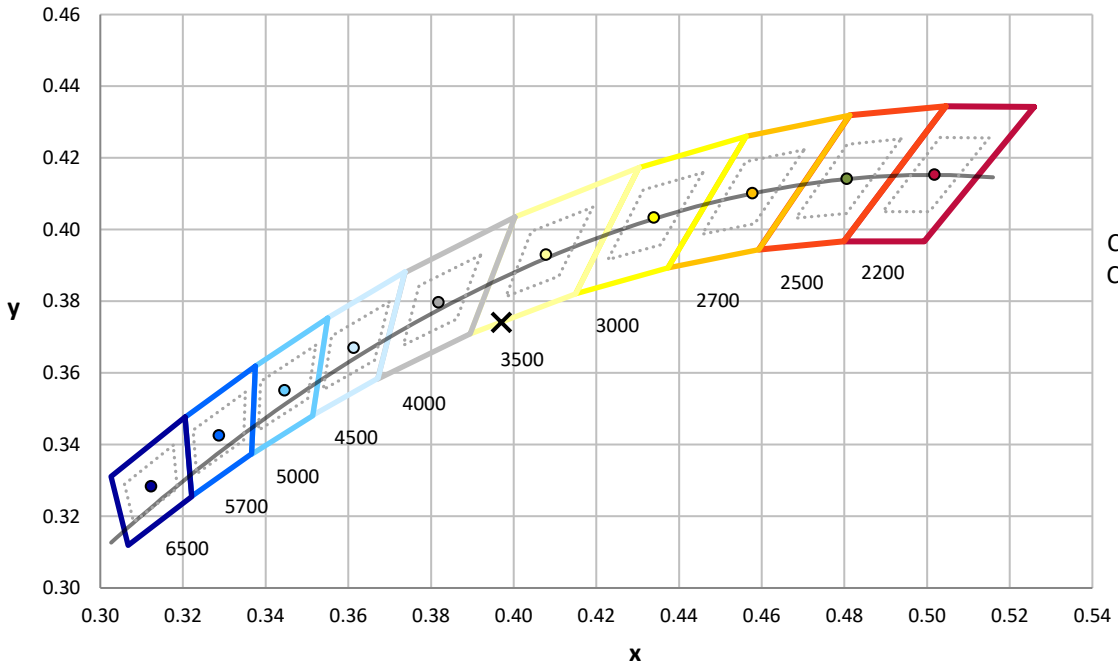
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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: SP1-2510-566-8-R2

## CIE 1931 Chromaticity Diagram




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

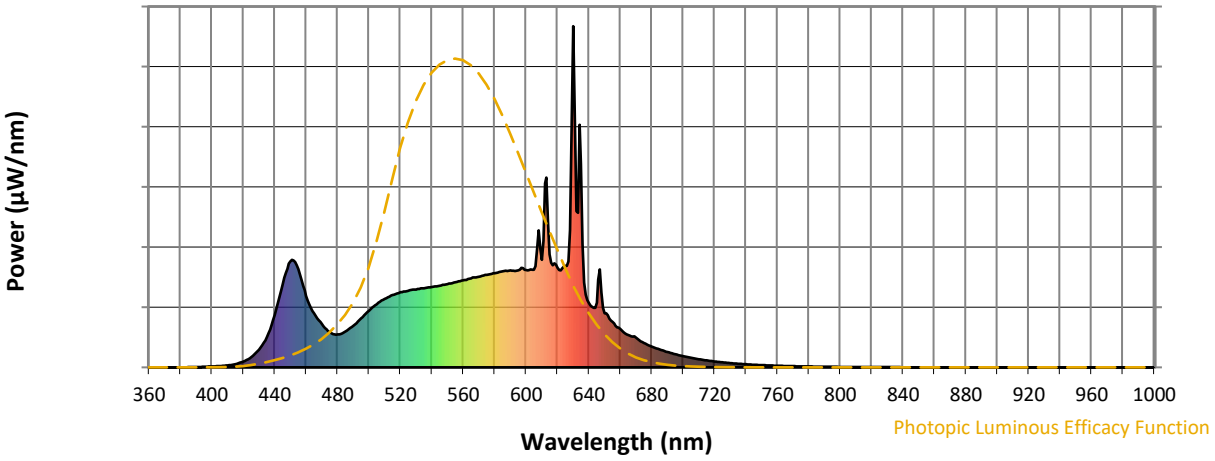



CCT = 3550K
CIE x = 0.3970
CIE y = 0.3741
Duv = -0.0056

Point lies outside the range

REPORT NUMBER: SP1-2510-566-8-R2

## Photopic Flux vs. Wavelength

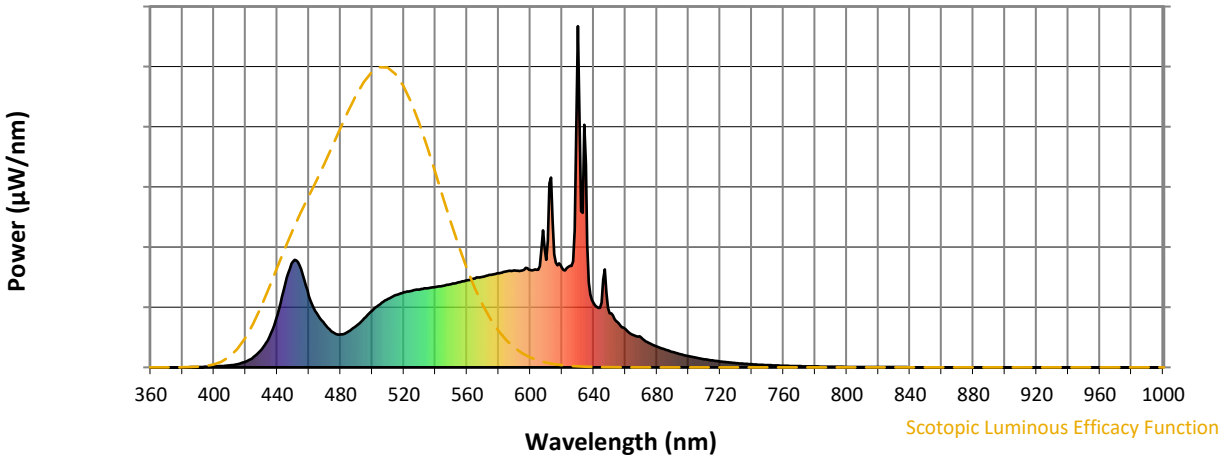



## Photopic Lumens: NR

| 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 | 122 | NR | 620 | 291 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 143 | NR | 625 | 297 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 166 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 185 | NR | 635 | 596 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 201 | NR | 640 | 188 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 212 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 220 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 224 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 228 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 232 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 236 | NR | 670 | 87 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 239 | NR | 675 | 71 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 17 | NR | 550 | 244 | NR | 680 | 61 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 30 | NR | 555 | 250 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 255 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 89 | NR | 565 | 261 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 153 | NR | 570 | 265 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 243 | NR | 575 | 271 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 276 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 288 | NR | 585 | 281 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 209 | NR | 590 | 285 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 158 | NR | 595 | 284 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 127 | NR | 600 | 285 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 286 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 315 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 332 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2510-566-8-R2

## Scotopic Flux vs. Wavelength

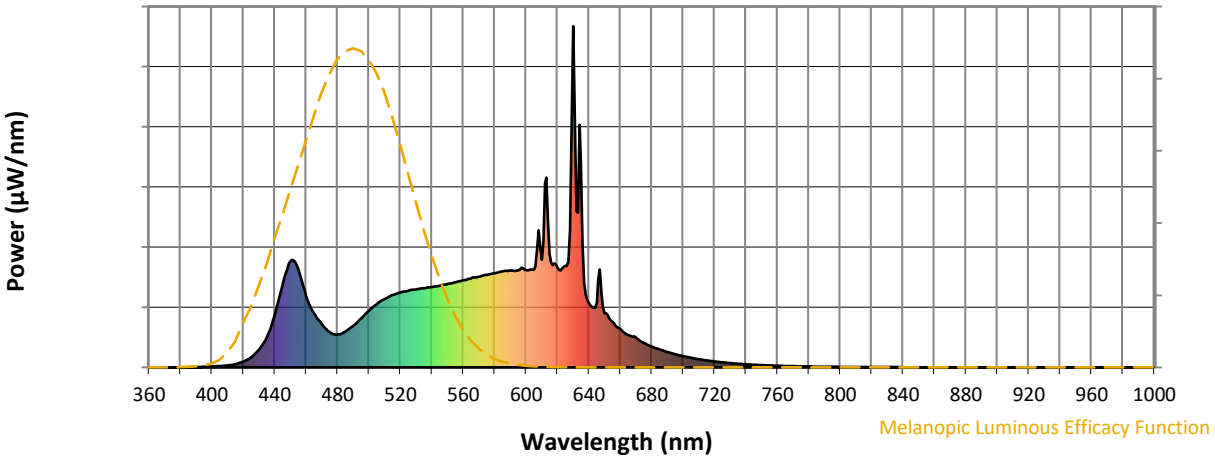



**Scotopic Lumens: NR** **S/P: 1.67**

| 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 | 122 | NR | 620 | 291 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 143 | NR | 625 | 297 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 166 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 185 | NR | 635 | 596 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 201 | NR | 640 | 188 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 212 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 220 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 224 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 228 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 232 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 236 | NR | 670 | 87 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 239 | NR | 675 | 71 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 17 | NR | 550 | 244 | NR | 680 | 61 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 30 | NR | 555 | 250 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 255 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 89 | NR | 565 | 261 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 153 | NR | 570 | 265 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 243 | NR | 575 | 271 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 276 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 288 | NR | 585 | 281 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 209 | NR | 590 | 285 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 158 | NR | 595 | 284 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 127 | NR | 600 | 285 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 286 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 315 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 332 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 3.45**

| 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 | 122 | NR | 620 | 291 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 143 | NR | 625 | 297 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 166 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 185 | NR | 635 | 596 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 201 | NR | 640 | 188 | NR | 770 | 3 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 212 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 220 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 224 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 228 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 232 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 236 | NR | 670 | 87 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 10 | NR | 545 | 239 | NR | 675 | 71 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 17 | NR | 550 | 244 | NR | 680 | 61 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 30 | NR | 555 | 250 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 52 | NR | 560 | 255 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 89 | NR | 565 | 261 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 153 | NR | 570 | 265 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 243 | NR | 575 | 271 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 276 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 288 | NR | 585 | 281 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 209 | NR | 590 | 285 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 158 | NR | 595 | 284 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 127 | NR | 600 | 285 | NR | 730 | 12 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 286 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 315 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 105 | NR | 615 | 332 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

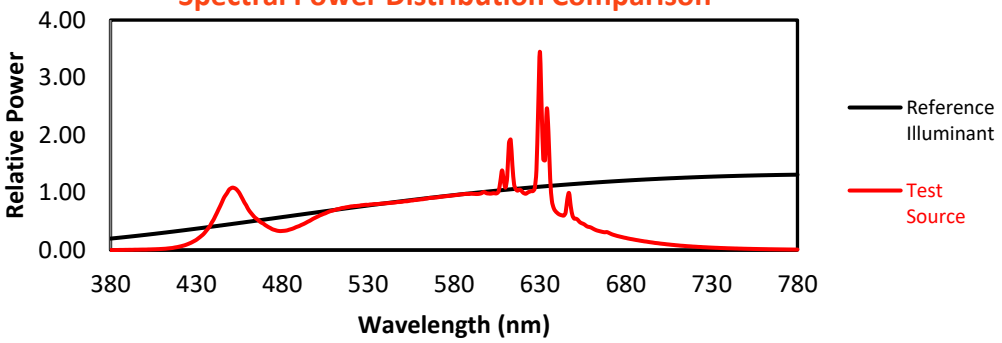
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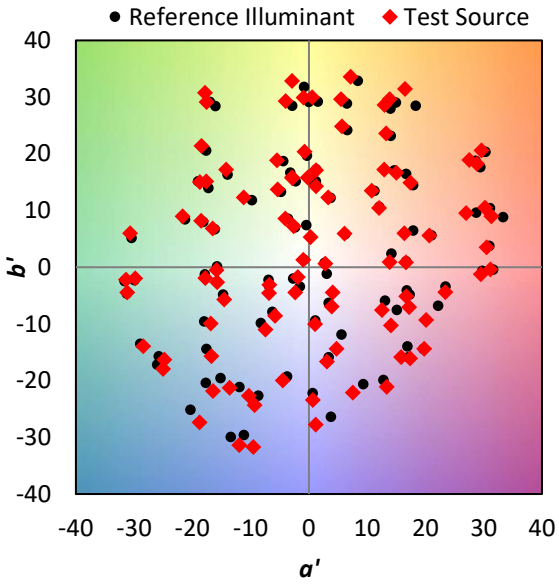
## Summary

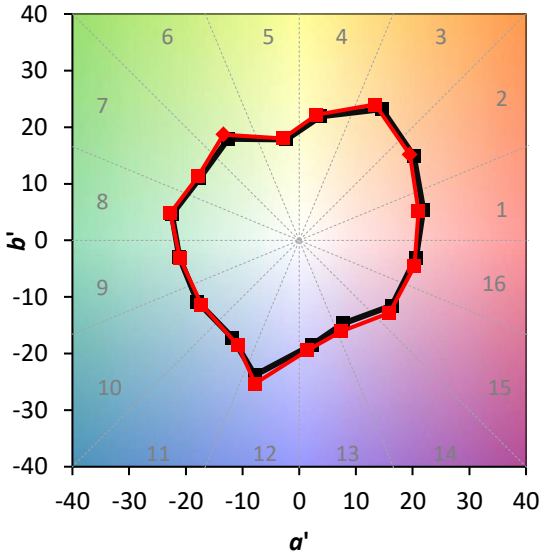
$R_f$ = 91.7
$R_g$ = 102.7
CIE $R_a$ = 95.7
$R_9$ = 76.3

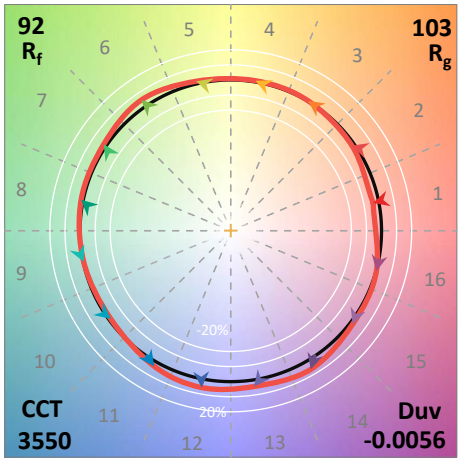
## Spectral Power Distribution Comparison

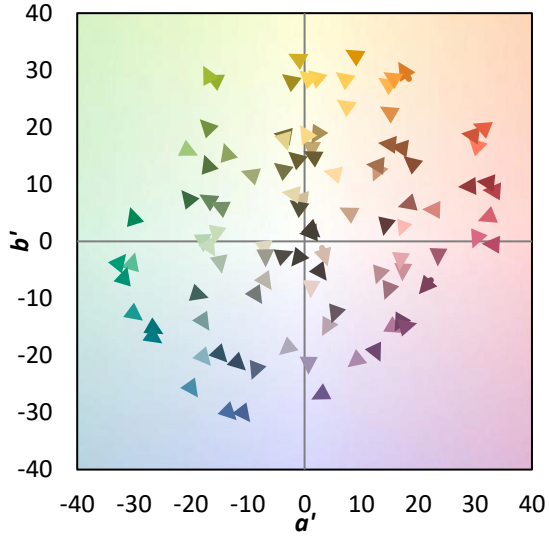



## Color Vector Graphics



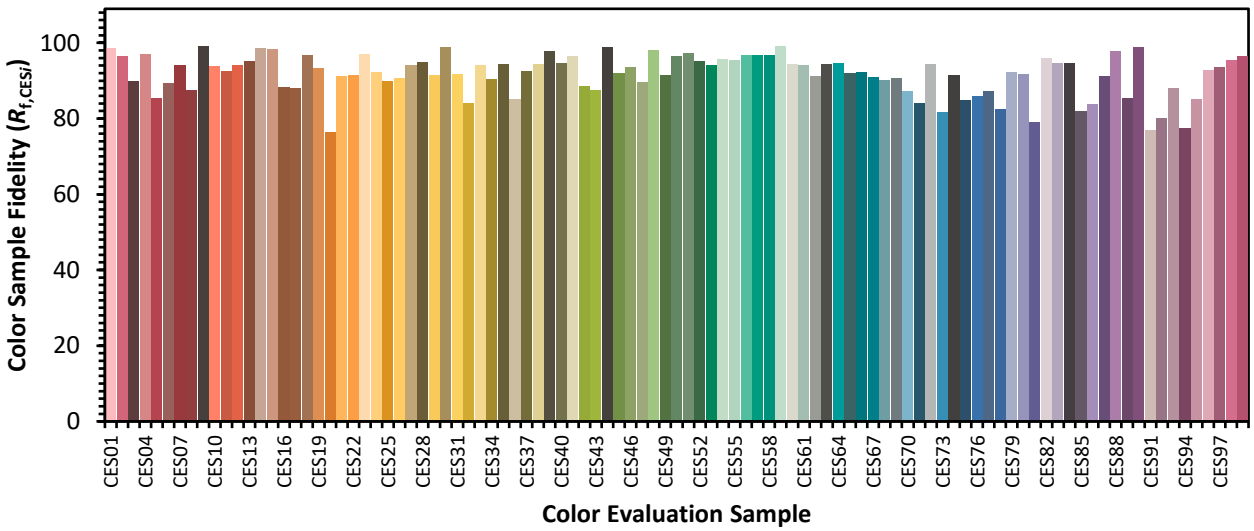



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**Individual Sample Fidelity Index ($R_{f,i}$)**

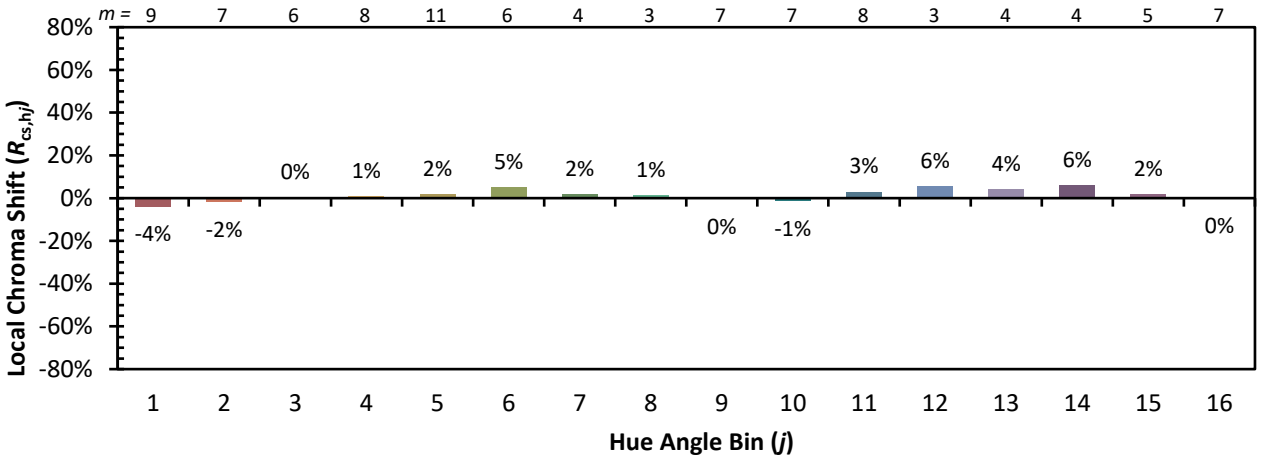
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 91 | CES51 = 97 | CES76 = 86 |
| CES02 = 62 | CES27 = 94 | CES52 = 95 | CES77 = 87 |
| CES03 = 31 | CES28 = 95 | CES53 = 94 | CES78 = 82 |
| CES04 = 70 | CES29 = 92 | CES54 = 96 | CES79 = 92 |
| CES05 = 50 | CES30 = 99 | CES55 = 95 | CES80 = 92 |
| CES06 = 51 | CES31 = 92 | CES56 = 97 | CES81 = 79 |
| CES07 = 43 | CES32 = 84 | CES57 = 97 | CES82 = 96 |
| CES08 = 42 | CES33 = 94 | CES58 = 97 | CES83 = 95 |
| CES09 = 29 | CES34 = 90 | CES59 = 99 | CES84 = 95 |
| CES10 = 75 | CES35 = 94 | CES60 = 94 | CES85 = 82 |
| CES11 = 58 | CES36 = 85 | CES61 = 94 | CES86 = 84 |
| CES12 = 64 | CES37 = 92 | CES62 = 91 | CES87 = 91 |
| CES13 = 44 | CES38 = 94 | CES63 = 94 | CES88 = 98 |
| CES14 = 74 | CES39 = 98 | CES64 = 95 | CES89 = 85 |
| CES15 = 72 | CES40 = 95 | CES65 = 92 | CES90 = 99 |
| CES16 = 48 | CES41 = 96 | CES66 = 92 | CES91 = 77 |
| CES17 = 49 | CES42 = 89 | CES67 = 91 | CES92 = 80 |
| CES18 = 56 | CES43 = 87 | CES68 = 90 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 78 |
| CES20 = 67 | CES45 = 92 | CES70 = 87 | CES95 = 85 |
| CES21 = 86 | CES46 = 94 | CES71 = 84 | CES96 = 93 |
| CES22 = 78 | CES47 = 90 | CES72 = 94 | CES97 = 93 |
| CES23 = 91 | CES48 = 98 | CES73 = 82 | CES98 = 95 |
| CES24 = 90 | CES49 = 91 | CES74 = 91 | CES99 = 97 |
| CES25 = 71 | CES50 = 97 | CES75 = 85 | |

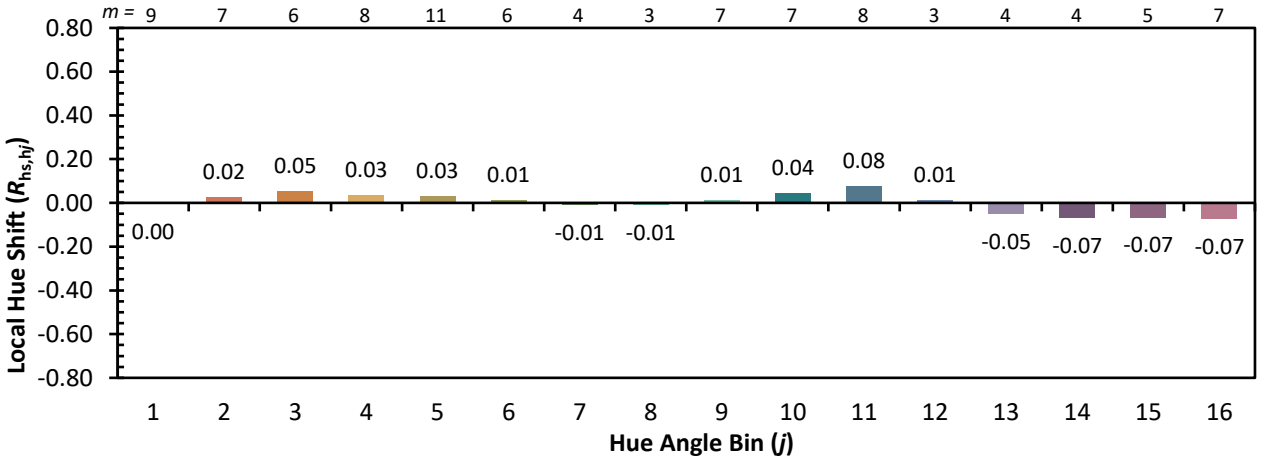


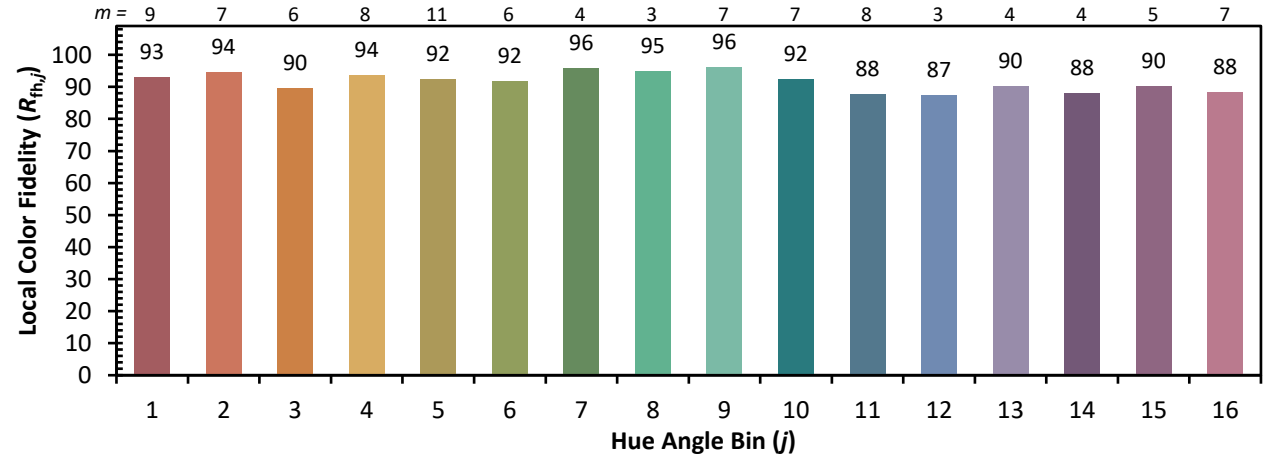
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## Color Rendition by Hue-Angle Bin



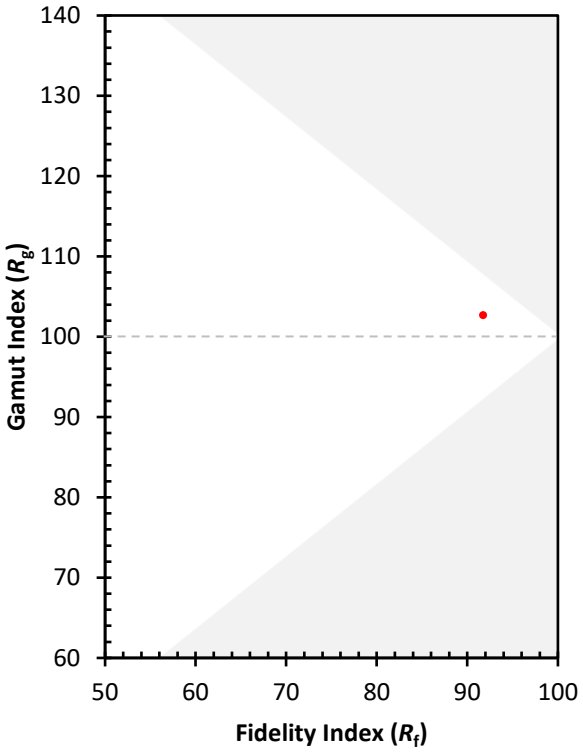



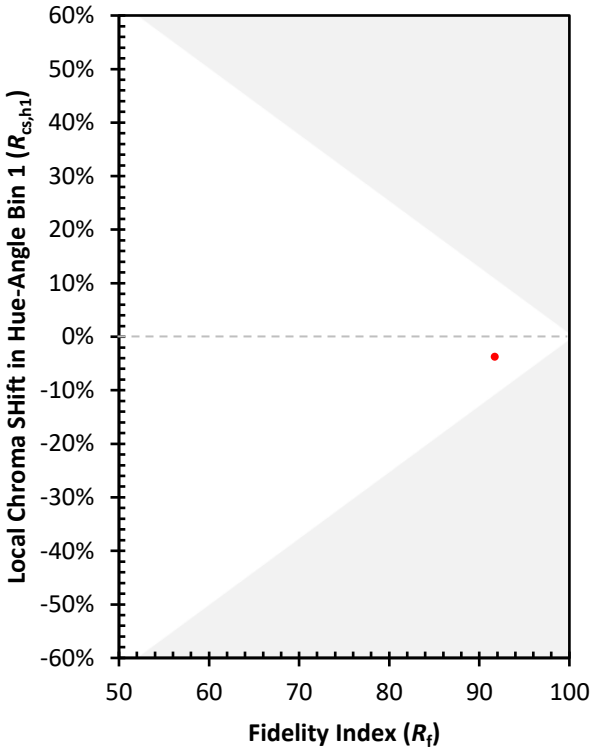



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## Measure Comparisons




(END OF REPORT)