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: P1527729

Luminaire Tested: 22CGTX-35-B2750-W2A-3500K

Issue Date: 8/26/2026

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: | P1527729 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2510-581-6) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 8/26/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 22CGTX-35-B2750-W2A-3500K |
| Description: | 2X2 3500 LUMEN CGTX TROFFER WITH BIO UP LEDS AT 3500K CCT WITH FROSTED SMOOTH L |
| Light Source: | 3500K CCT, 80 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3533.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 108.4 lumens/watt |
| Spacing Criteria (0/90/45): | 1.26 / 1.27 / 1.38 |
| Luminous Opening: | Rectangular (W 2' x L: 2' x H: 0') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 32.6 |
| 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 |

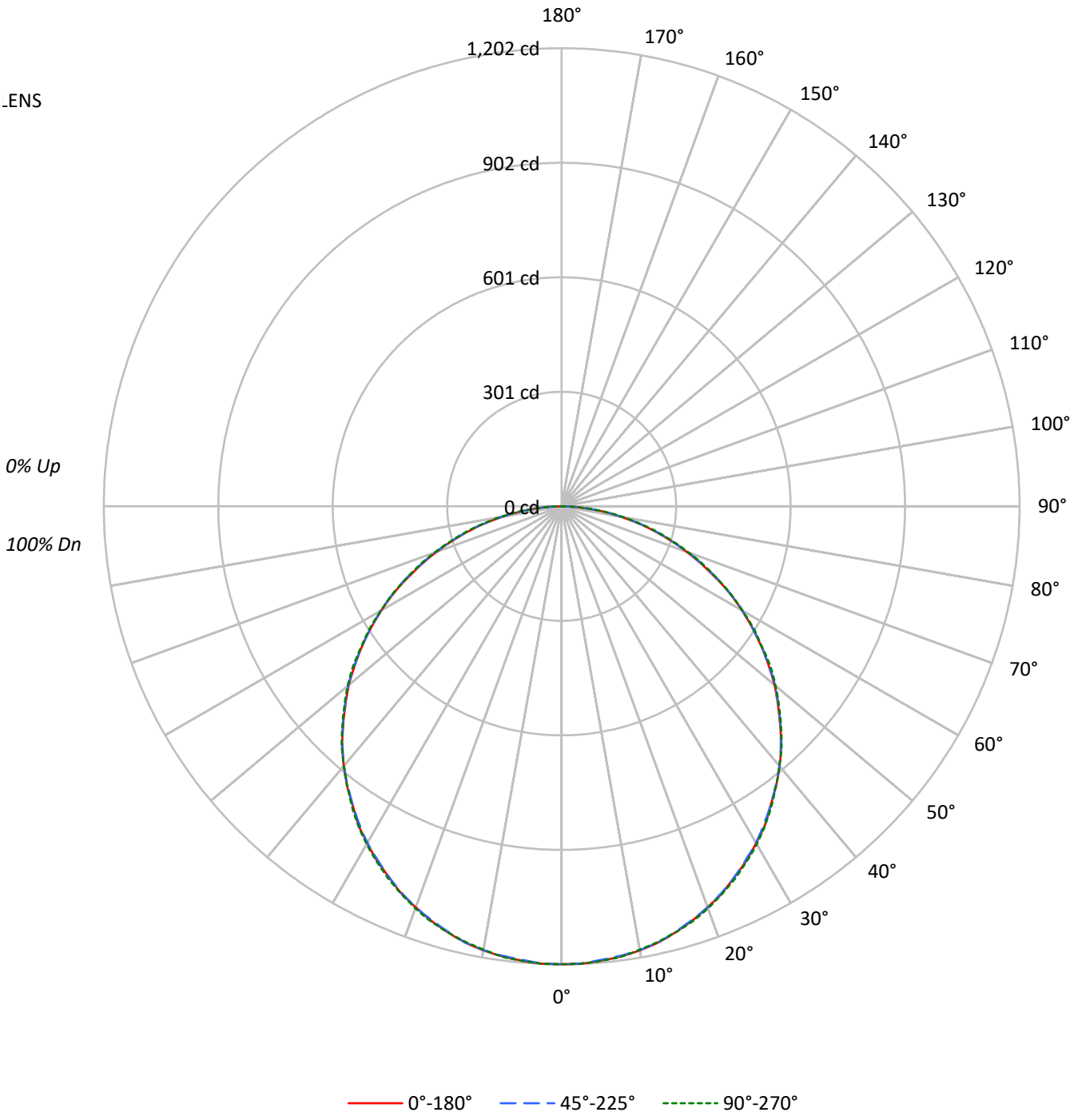


Cooper Lighting Solutions Photometric Lab
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Scaled Data Report

TEST NUMBER: P1527729
CATALOG NUMBER: 22CGTX-35-B2750-W2A-3500K

## Luminous Intensity Polar Plot



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

Scaled Data Report

TEST NUMBER: P1527729
CATALOG NUMBER: 22CGTX-35-B2750-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 | 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° | 3233 | 3233 | 3233 |
| 5° | 3232 | 3227 | 3235 |
| 10° | 3234 | 3231 | 3228 |
| 15° | 3224 | 3218 | 3224 |
| 20° | 3207 | 3207 | 3216 |
| 25° | 3187 | 3187 | 3199 |
| 30° | 3173 | 3169 | 3182 |
| 35° | 3142 | 3142 | 3155 |
| 40° | 3126 | 3123 | 3126 |
| 45° | 3087 | 3091 | 3099 |
| 50° | 3054 | 3062 | 3071 |
| 55° | 3001 | 3006 | 3011 |
| 60° | 2943 | 2954 | 2948 |
| 65° | 2853 | 2878 | 2878 |
| 70° | 2747 | 2778 | 2794 |
| 75° | 2622 | 2665 | 2696 |
| 80° | 2455 | 2501 | 2532 |
| 85° | 2180 | 2242 | 2276 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 45°
Luminance: 3099 cd/sqm

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Scaled Data Report

TEST NUMBER: P1527729
CATALOG NUMBER: 22CGTX-35-B2750-W2A-3500K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 113.8 | 3.2 |
| 10°-20° | 326.4 | 9.2 |
| 20°-30° | 495.4 | 14.0 |
| 30°-40° | 599.5 | 17.0 |
| 40°-50° | 626.7 | 17.7 |
| 50°-60° | 572.8 | 16.2 |
| 60°-70° | 446.5 | 12.6 |
| 70°-80° | 270.5 | 7.7 |
| 80°-90° | 82.0 | 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° | 935.6 | 26.5 |
| 0°-40° | 1535.1 | 43.4 |
| 0°-60° | 2734.6 | 77.4 |
| 0°-90° | 3533.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3533.6 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1202 | 1202 | 1202 | 1202 | 1202 | |
| 5° | 1197 | 1195 | 1195 | 1199 | 1198 | 114 |
| 15° | 1157 | 1156 | 1155 | 1157 | 1157 | 327 |
| 25° | 1074 | 1074 | 1074 | 1076 | 1078 | 495 |
| 35° | 956 | 958 | 956 | 958 | 960 | 600 |
| 45° | 811 | 812 | 812 | 813 | 814 | 626 |
| 55° | 640 | 640 | 641 | 644 | 642 | 572 |
| 65° | 448 | 449 | 452 | 454 | 452 | 444 |
| 75° | 252 | 254 | 256 | 258 | 259 | 267 |
| 85° | 71 | 71 | 73 | 74 | 74 | 80 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1527729
CATALOG NUMBER: 22CGTX-35-B2750-W2A-3500K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | *1201.6* | *1201.6* | *1201.6* | *1201.6* | *1201.6* |
| 2.5° | *1201.6* | 1200.6 | 1200.6 | 1201.6 | 1201.6 |
| 5° | *1196.6* | 1194.6 | 1194.6 | 1198.6 | 1197.6 |
| 7.5° | *1191.5* | 1190.5 | 1189.5 | 1191.5 | 1192.5 |
| 10° | *1183.5* | 1183.5 | 1182.5 | 1182.5 | 1181.4 |
| 12.5° | *1172.4* | 1170.3 | 1172.4 | 1171.4 | 1170.3 |
| 15° | *1157.2* | 1156.2 | 1155.2 | 1157.2 | 1157.2 |
| 17.5° | *1140.1* | 1138.1 | 1138.1 | 1141.1 | 1142.1 |
| 20° | *1119.9* | 1119.9 | 1119.9 | 1120.9 | 1122.9 |
| 22.5° | *1099.7* | 1098.7 | 1097.7 | 1099.7 | 1100.7 |
| 25° | *1073.5* | 1073.5 | 1073.5 | 1075.5 | 1077.5 |
| 27.5° | *1049.3* | 1047.3 | 1046.3 | 1049.3 | 1051.3 |
| 30° | *1021.0* | 1020.0 | 1020.0 | 1021.0 | 1024.1 |
| 32.5° | *992.8* | 990.8 | 988.7 | 991.8 | 993.8 |
| 35° | *956.5* | 957.5 | 956.5 | 958.5 | 960.5 |
| 37.5° | *925.2* | 924.2 | 923.2 | 924.2 | 924.2 |
| 40° | *889.9* | 886.8 | 888.9 | 889.9 | 889.9 |
| 42.5° | *853.5* | 849.5 | 851.5 | 852.5 | 854.6 |
| 45° | *811.2* | 812.2 | 812.2 | 813.2 | 814.2 |
| 47.5° | *769.8* | 771.8 | 771.8 | 770.8 | 773.8 |
| 50° | *729.4* | 728.4 | 731.5 | 729.4 | 733.5 |
| 52.5° | *684.0* | 684.0 | 685.1 | 688.1 | 691.1 |
| 55° | *639.7* | 639.7 | 640.7 | 643.7 | 641.7 |
| 57.5° | *593.2* | 592.2 | 593.2 | 596.3 | 598.3 |
| 60° | *546.8* | 545.8 | 548.9 | 548.9 | 547.8 |
| 62.5° | *499.4* | 498.4 | 501.4 | 501.4 | 502.4 |
| 65° | *448.0* | 449.0 | 452.0 | 454.0 | 452.0 |
| 67.5° | *398.5* | 401.6 | 401.6 | 403.6 | 404.6 |
| 70° | *349.1* | 351.1 | 353.1 | 355.1 | 355.1 |
| 72.5° | *300.7* | 300.7 | 302.7 | 306.7 | 306.7 |
| 75° | *252.2* | 254.2 | 256.3 | 258.3 | 259.3 |
| 77.5° | *205.8* | 204.8 | 208.8 | 210.9 | 212.9 |
| 80° | *158.4* | 160.4 | 161.4 | 165.5 | 163.4 |
| 82.5° | *115.0* | 114.0 | 116.0 | 119.1 | 119.1 |
| 85° | *70.6* | 70.6 | 72.6 | 73.7 | 73.7 |
| 87.5° | *30.3* | 30.3 | 32.3 | 32.3 | 33.3 |
| 90° | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |

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TEST NUMBER: P1527729
CATALOG NUMBER: 22CGTX-35-B2750-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 | 15.97 | 17.63 | 16.34 | 17.95 | 18.26 | 16.02 | 17.68 | 16.39 | 18.00 | 18.31 |
| | 3H | 17.88 | 19.38 | 18.25 | 19.71 | 20.07 | 17.94 | 19.44 | 18.32 | 19.77 | 20.13 |
| | 4H | 18.61 | 20.03 | 19.01 | 20.38 | 20.76 | 18.70 | 20.12 | 19.09 | 20.46 | 20.84 |
| | 6H | 19.19 | 20.51 | 19.60 | 20.87 | 21.26 | 19.30 | 20.61 | 19.71 | 20.98 | 21.37 |
| | 8H | 19.39 | 20.65 | 19.81 | 21.04 | 21.44 | 19.50 | 20.76 | 19.93 | 21.15 | 21.55 |
| | 12H | 19.53 | 20.73 | 19.95 | 21.12 | 21.54 | 19.65 | 20.86 | 20.08 | 21.24 | 21.67 |
| 4H | 2H | 16.65 | 18.07 | 17.05 | 18.41 | 18.79 | 16.69 | 18.11 | 17.08 | 18.45 | 18.83 |
| | 3H | 18.77 | 19.97 | 19.18 | 20.37 | 20.76 | 18.83 | 20.03 | 19.24 | 20.42 | 20.82 |
| | 4H | 19.65 | 20.73 | 20.08 | 21.15 | 21.58 | 19.73 | 20.81 | 20.16 | 21.22 | 21.66 |
| | 6H | 20.36 | 21.31 | 20.81 | 21.75 | 22.21 | 20.47 | 21.42 | 20.92 | 21.86 | 22.31 |
| | 8H | 20.61 | 21.50 | 21.07 | 21.95 | 22.41 | 20.73 | 21.62 | 21.19 | 22.06 | 22.53 |
| | 12H | 20.80 | 21.60 | 21.28 | 22.08 | 22.55 | 20.93 | 21.73 | 21.41 | 22.20 | 22.67 |
| 8H | 4H | 20.01 | 20.90 | 20.47 | 21.34 | 21.80 | 20.08 | 20.97 | 20.54 | 21.41 | 21.87 |
| | 6H | 20.86 | 21.60 | 21.35 | 22.09 | 22.56 | 20.96 | 21.70 | 21.45 | 22.19 | 22.66 |
| | 8H | 21.19 | 21.86 | 21.70 | 22.37 | 22.85 | 21.31 | 21.97 | 21.82 | 22.48 | 22.96 |
| | 12H | 21.46 | 22.05 | 21.97 | 22.54 | 23.10 | 21.59 | 22.18 | 22.10 | 22.67 | 23.23 |
| 12H | 4H | 20.06 | 20.86 | 20.54 | 21.33 | 21.80 | 20.12 | 20.92 | 20.60 | 21.40 | 21.87 |
| | 6H | 20.94 | 21.60 | 21.44 | 22.11 | 22.59 | 21.03 | 21.70 | 21.54 | 22.20 | 22.69 |
| | 8H | 21.34 | 21.93 | 21.84 | 22.42 | 22.97 | 21.45 | 22.04 | 21.95 | 22.53 | 23.08 |

Cooper Lighting Solutions Photometric Lab
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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: SP1-2505-441-12-R2

Test Date: 06/12/2025

Luminaire Tested: 24CGTX-55-B2750-W2A-3500K

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

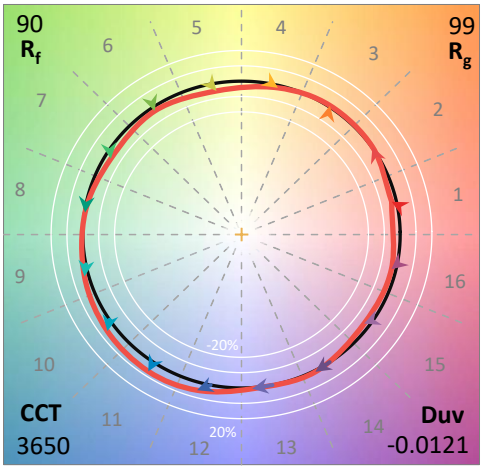
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2505-441-12-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-55-B2750-W2A-3500K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2504-441-12-R2 TO UPDATE THE CATALOG INFORMATION* 2X4 5500 LUMEN CGTX AT 5.5V |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 3650 |
| CIE u': | 0.2383 |
| CIE v': | 0.4926 |
| Duv: | -0.0121 |
| CIE x: | 0.3865 |
| CIE y: | 0.3551 |
| CIE z: | 0.2584 |
| Peak Wavelength (nm): | 630 |
| Dominant Wavelength (nm): | 589 |
| Purity: | 22.5096 |
| Rf: | 90.1 |
| Rg: | 98.9 |

| | |
|---|---|
| CRI (Ra): | 89.7 |
| R1: | 92.7 |
| R2: | 89.2 |
| R3: | 88.9 |
| R4: | 95.4 |
| R5: | 91.4 |
| R6: | 82.4 |
| R7: | 87.5 |
| R8: | 90.4 |
| R9: | 89.7 |
| R10: | 79.6 |
| R11: | 95.6 |
| R12: | 73.0 |
| R13: | 90.9 |
| R14: | 95.5 |
| R15: | 93.8 |



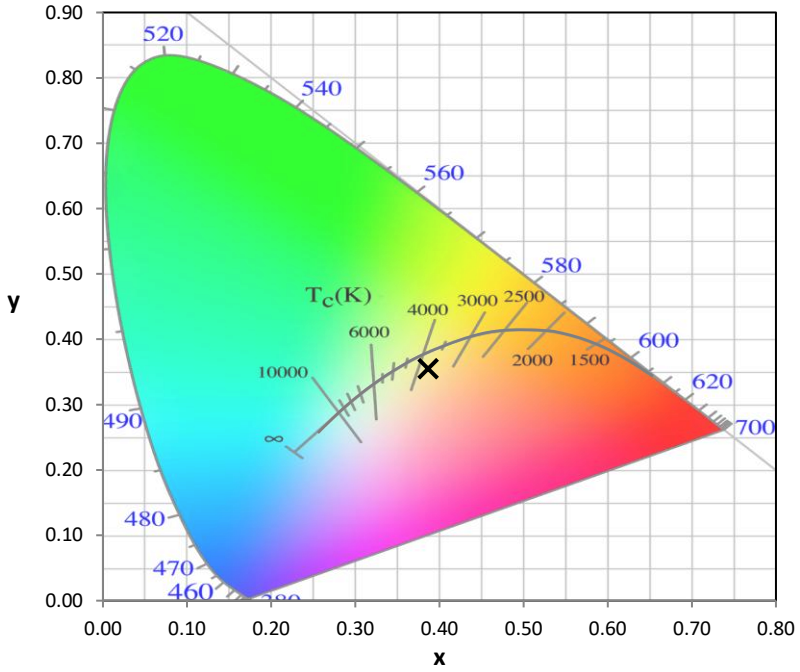

## Test Conditions

| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.0 |

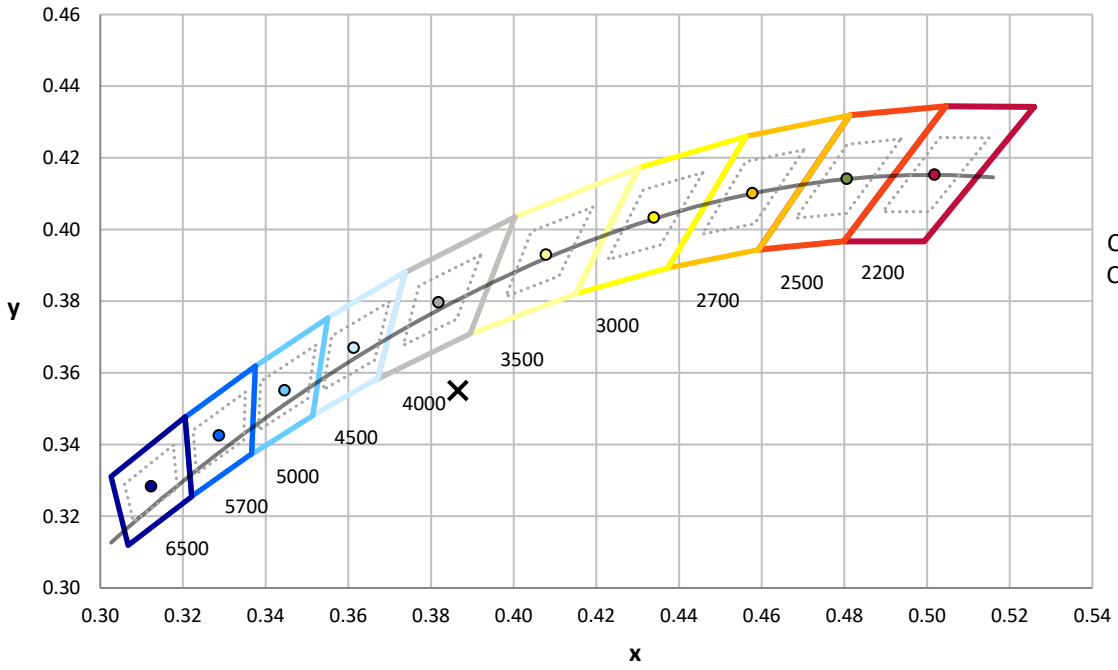
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 12/16/2024 | 6/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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: SP1-2505-441-12-R2

## CIE 1931 Chromaticity Diagram




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

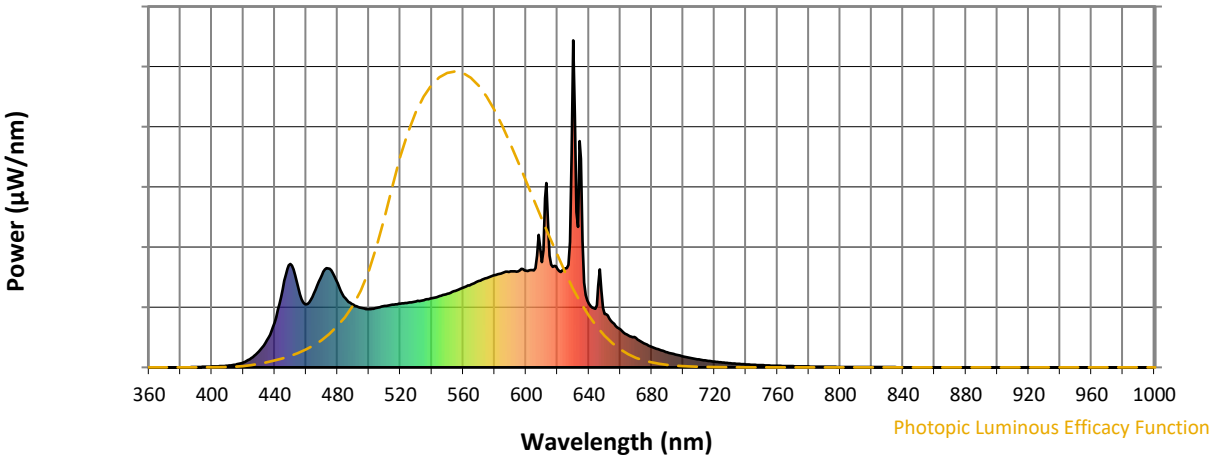



CCT = 3650K
CIE x = 0.3865
CIE y = 0.3551
Duv = -0.0121

Point lies outside the range

REPORT NUMBER: SP1-2505-441-12-R2

## Photopic Flux vs. Wavelength

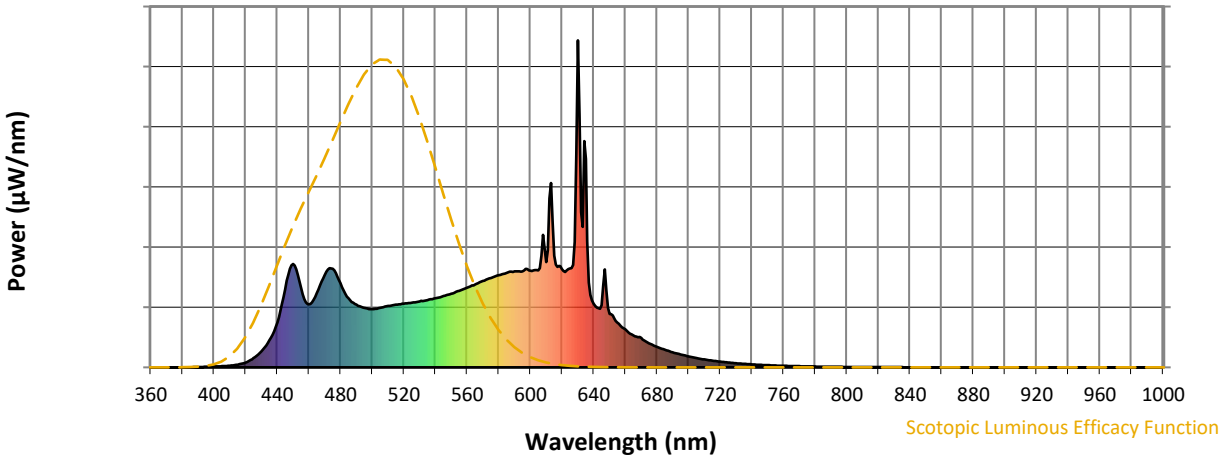



## Photopic Lumens: NR

| 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 | 191 | NR | 620 | 301 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 182 | NR | 625 | 303 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 178 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 182 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 188 | NR | 640 | 195 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 191 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 195 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 198 | NR | 655 | 137 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 202 | NR | 660 | 117 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 206 | NR | 665 | 98 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 212 | NR | 670 | 90 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 218 | NR | 675 | 74 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 225 | NR | 680 | 63 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 234 | NR | 685 | 54 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 49 | NR | 560 | 244 | NR | 690 | 46 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 83 | NR | 565 | 254 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 137 | NR | 570 | 264 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 238 | NR | 575 | 273 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 316 | NR | 580 | 282 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 243 | NR | 585 | 289 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 193 | NR | 590 | 293 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 227 | NR | 595 | 294 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 282 | NR | 600 | 296 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 302 | NR | 605 | 297 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 258 | NR | 610 | 322 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 211 | NR | 615 | 341 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2505-441-12-R2

## Scotopic Flux vs. Wavelength

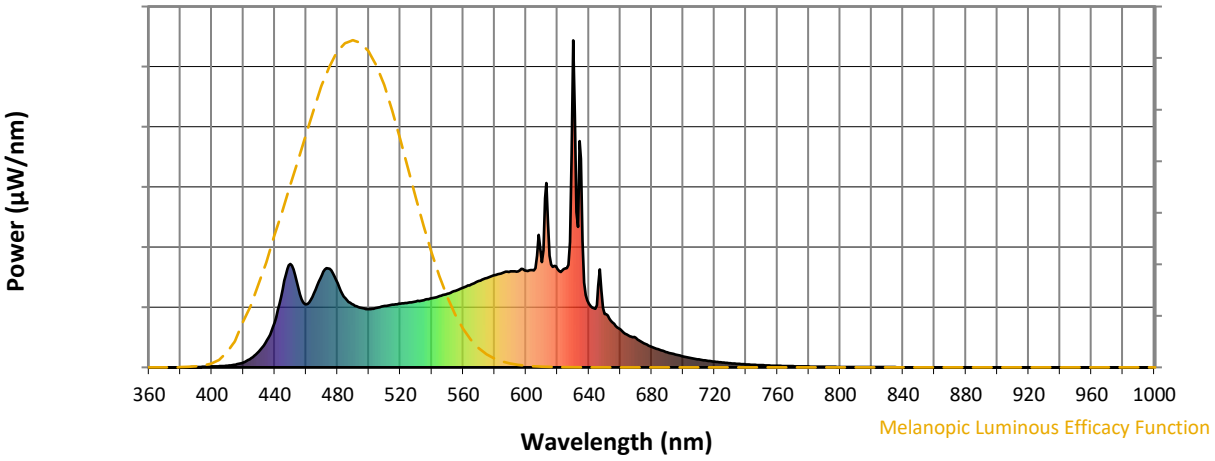



**Scotopic Lumens: NR** **S/P: 1.88**

| 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 | 191 | NR | 620 | 301 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 182 | NR | 625 | 303 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 178 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 182 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 188 | NR | 640 | 195 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 191 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 195 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 198 | NR | 655 | 137 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 202 | NR | 660 | 117 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 206 | NR | 665 | 98 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 212 | NR | 670 | 90 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 218 | NR | 675 | 74 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 225 | NR | 680 | 63 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 234 | NR | 685 | 54 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 49 | NR | 560 | 244 | NR | 690 | 46 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 83 | NR | 565 | 254 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 137 | NR | 570 | 264 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 238 | NR | 575 | 273 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 316 | NR | 580 | 282 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 243 | NR | 585 | 289 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 193 | NR | 590 | 293 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 227 | NR | 595 | 294 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 282 | NR | 600 | 296 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 302 | NR | 605 | 297 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 258 | NR | 610 | 322 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 211 | NR | 615 | 341 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 4.15**

| 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 | 191 | NR | 620 | 301 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 182 | NR | 625 | 303 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 178 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 182 | NR | 635 | 637 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 188 | NR | 640 | 195 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 191 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 195 | NR | 650 | 163 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 198 | NR | 655 | 137 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 202 | NR | 660 | 117 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 206 | NR | 665 | 98 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 212 | NR | 670 | 90 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 218 | NR | 675 | 74 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 225 | NR | 680 | 63 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 234 | NR | 685 | 54 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 49 | NR | 560 | 244 | NR | 690 | 46 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 83 | NR | 565 | 254 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 137 | NR | 570 | 264 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 238 | NR | 575 | 273 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 316 | NR | 580 | 282 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 243 | NR | 585 | 289 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 193 | NR | 590 | 293 | NR | 720 | 18 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 227 | NR | 595 | 294 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 282 | NR | 600 | 296 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 302 | NR | 605 | 297 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 258 | NR | 610 | 322 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 211 | NR | 615 | 341 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

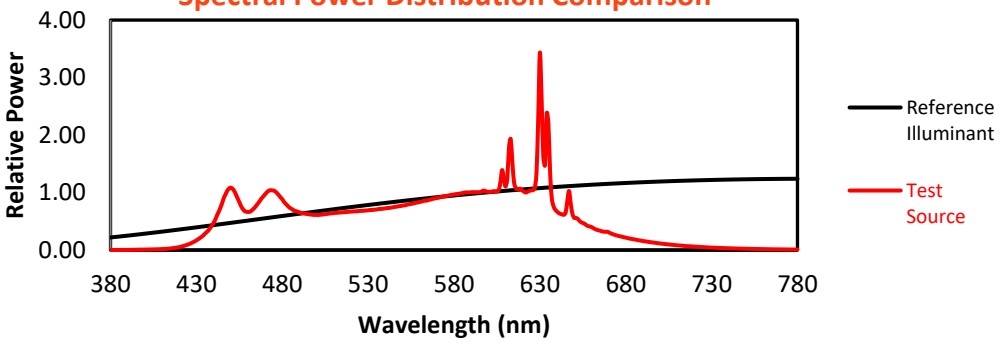
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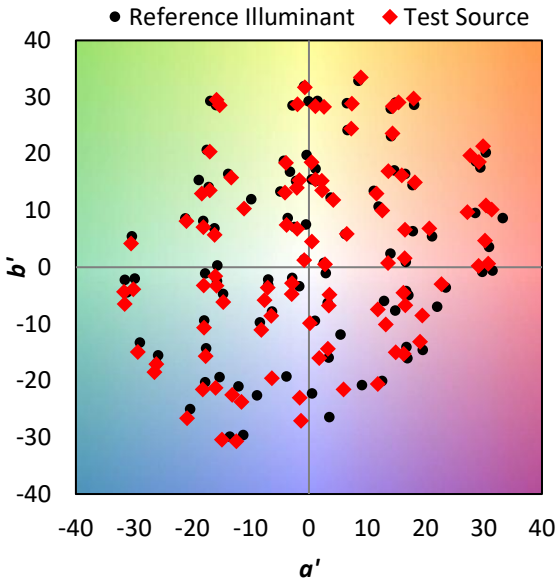
## Summary

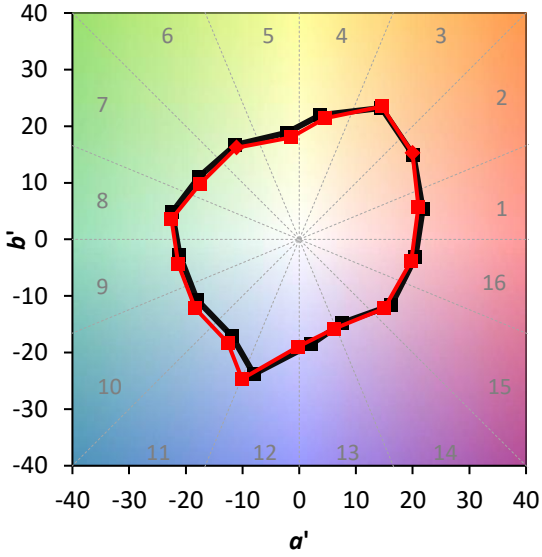
$R_f$ = 90.1
$R_g$ = 98.9
CIE $R_a$ = 89.7
$R_9$ = 89.7

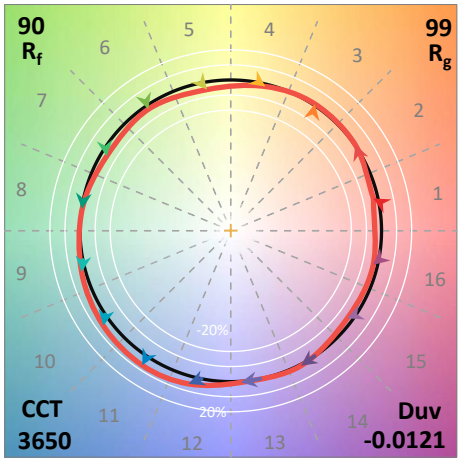
## Spectral Power Distribution Comparison

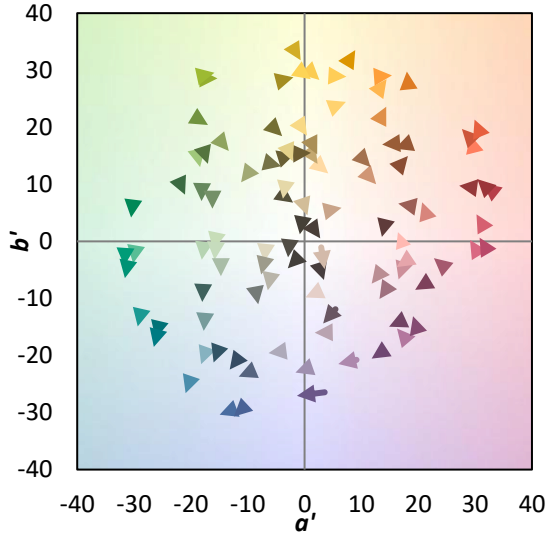



## Color Vector Graphics



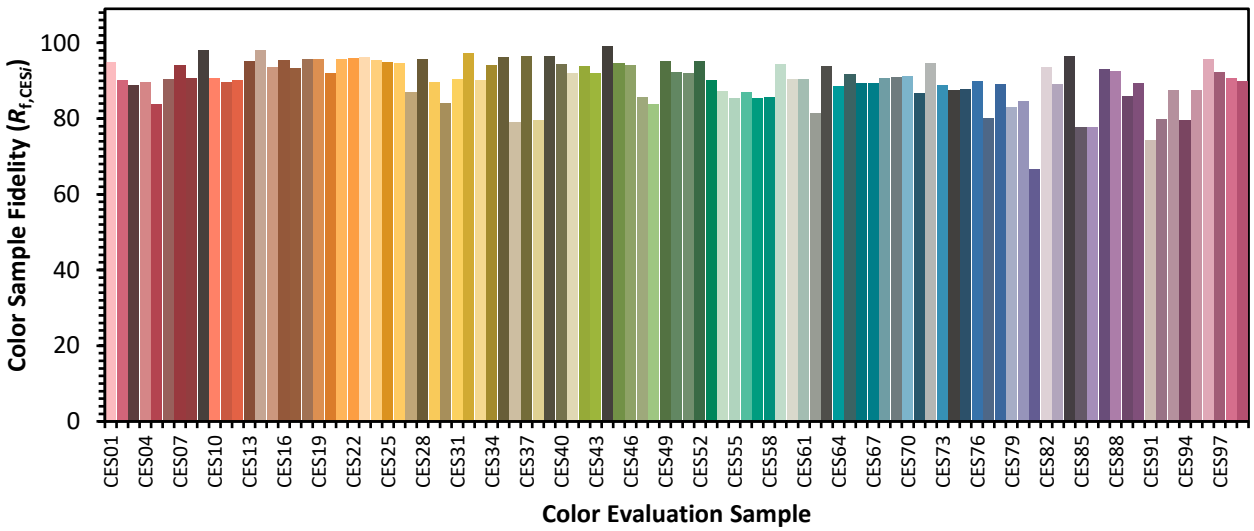



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**Individual Sample Fidelity Index ($R_{f,i}$)**

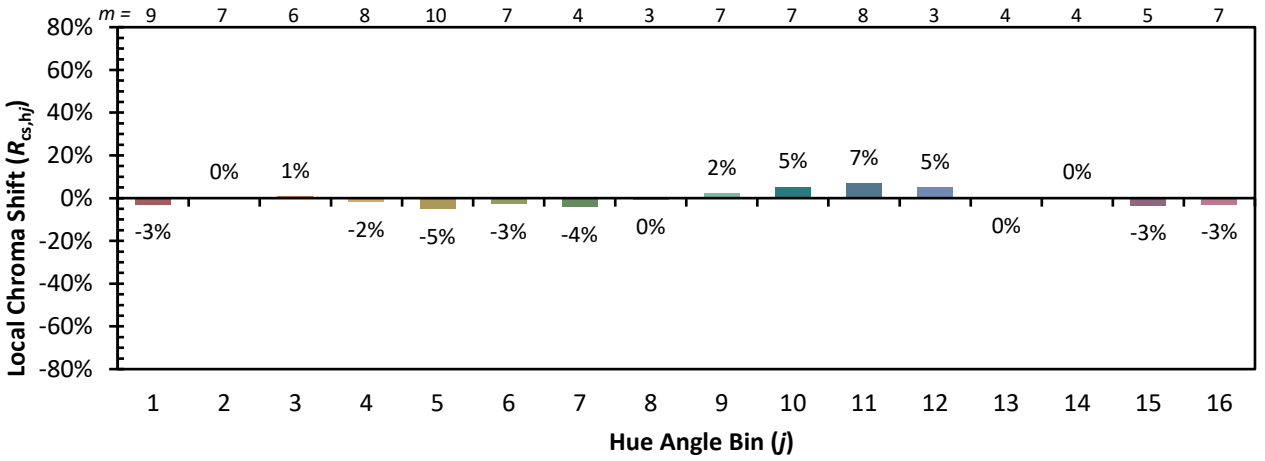
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 95 | CES51 = 92 | CES76 = 90 |
| CES02 = 63 | CES27 = 87 | CES52 = 95 | CES77 = 80 |
| CES03 = 32 | CES28 = 96 | CES53 = 90 | CES78 = 89 |
| CES04 = 70 | CES29 = 90 | CES54 = 87 | CES79 = 83 |
| CES05 = 50 | CES30 = 84 | CES55 = 85 | CES80 = 85 |
| CES06 = 51 | CES31 = 90 | CES56 = 87 | CES81 = 67 |
| CES07 = 43 | CES32 = 97 | CES57 = 85 | CES82 = 94 |
| CES08 = 42 | CES33 = 90 | CES58 = 86 | CES83 = 89 |
| CES09 = 29 | CES34 = 94 | CES59 = 94 | CES84 = 97 |
| CES10 = 75 | CES35 = 96 | CES60 = 90 | CES85 = 78 |
| CES11 = 58 | CES36 = 79 | CES61 = 91 | CES86 = 78 |
| CES12 = 64 | CES37 = 97 | CES62 = 81 | CES87 = 93 |
| CES13 = 44 | CES38 = 80 | CES63 = 94 | CES88 = 92 |
| CES14 = 74 | CES39 = 96 | CES64 = 89 | CES89 = 86 |
| CES15 = 72 | CES40 = 94 | CES65 = 92 | CES90 = 89 |
| CES16 = 48 | CES41 = 92 | CES66 = 89 | CES91 = 74 |
| CES17 = 49 | CES42 = 94 | CES67 = 89 | CES92 = 80 |
| CES18 = 56 | CES43 = 92 | CES68 = 91 | CES93 = 88 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 80 |
| CES20 = 67 | CES45 = 95 | CES70 = 91 | CES95 = 87 |
| CES21 = 86 | CES46 = 94 | CES71 = 87 | CES96 = 96 |
| CES22 = 78 | CES47 = 86 | CES72 = 95 | CES97 = 92 |
| CES23 = 91 | CES48 = 84 | CES73 = 89 | CES98 = 91 |
| CES24 = 90 | CES49 = 95 | CES74 = 87 | CES99 = 90 |
| CES25 = 71 | CES50 = 92 | CES75 = 88 | |

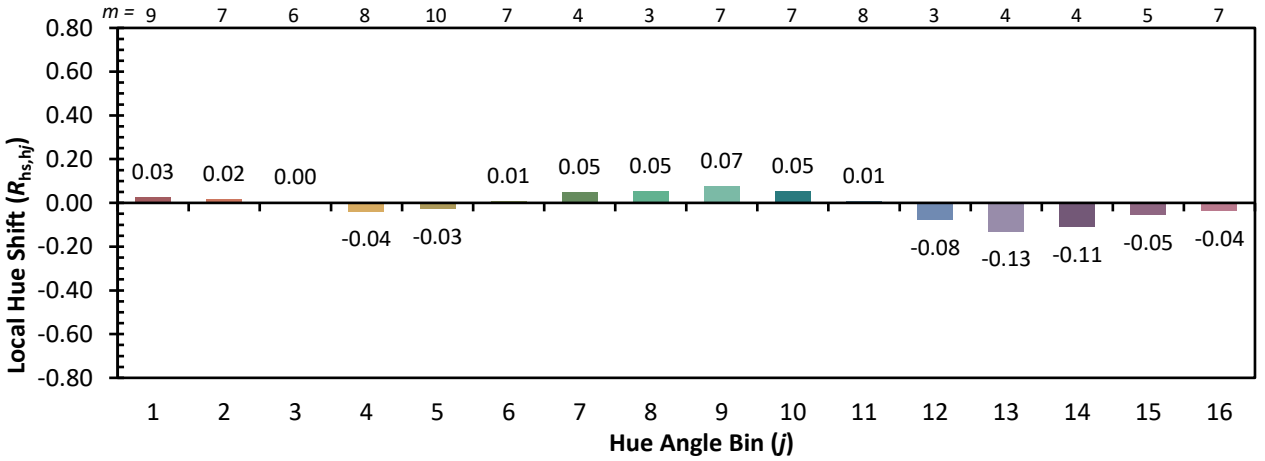


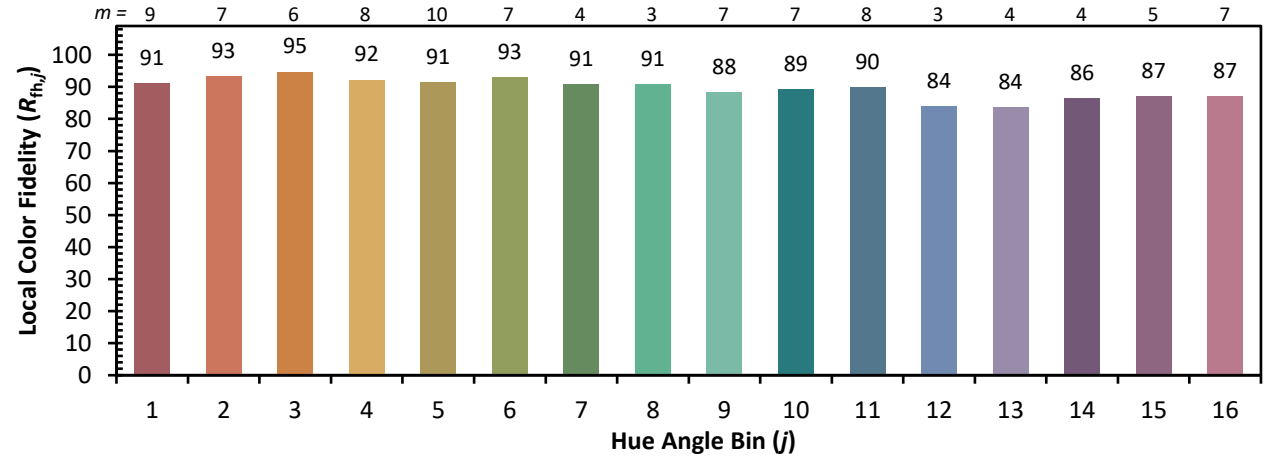
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## Color Rendition by Hue-Angle Bin



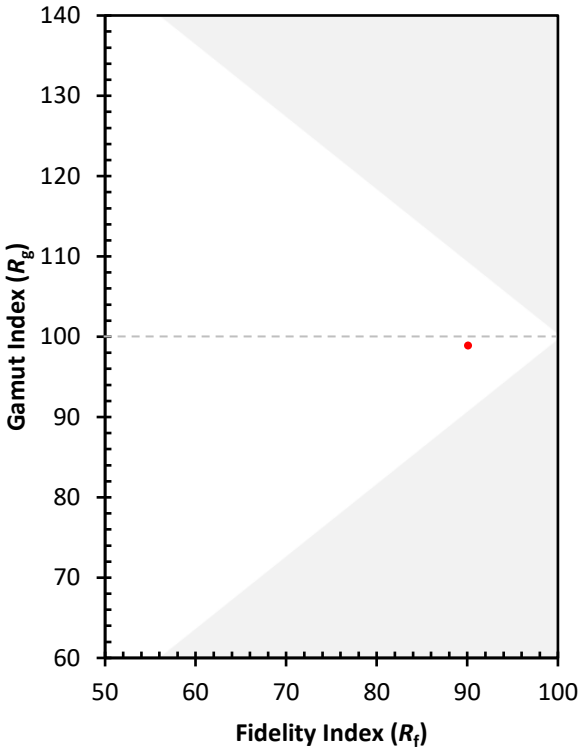



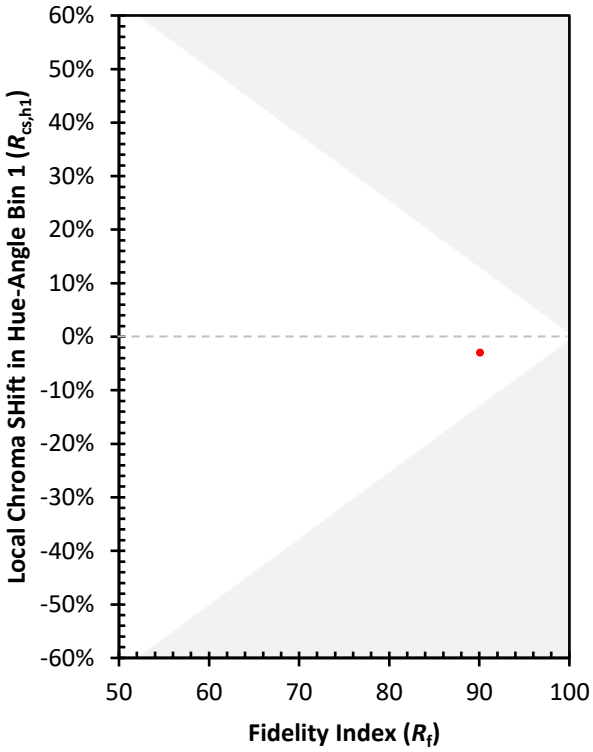



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## Measure Comparisons




(END OF REPORT)