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: P1590745

Luminaire Tested: 22CGTX-45-L92765-W2A-3000K

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: | P1590745 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2510-566-16) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 22CGTX-45-L92765-W2A-3000K |
| Description: | 2X2 4500 LUMEN CGTX TROFFER WITH VividTune LEDS AT 3000K CCT WITH FROSTED SMOOTH LENS |
| Light Source: | 3000K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 4491.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 95.0 lumens/watt |
| Spacing Criteria (0/90/45): | 1.25 / 1.26 / 1.38 |
| Luminous Opening: | Rectangular (W 2' x L: 2' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 47.3 |
| 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 |

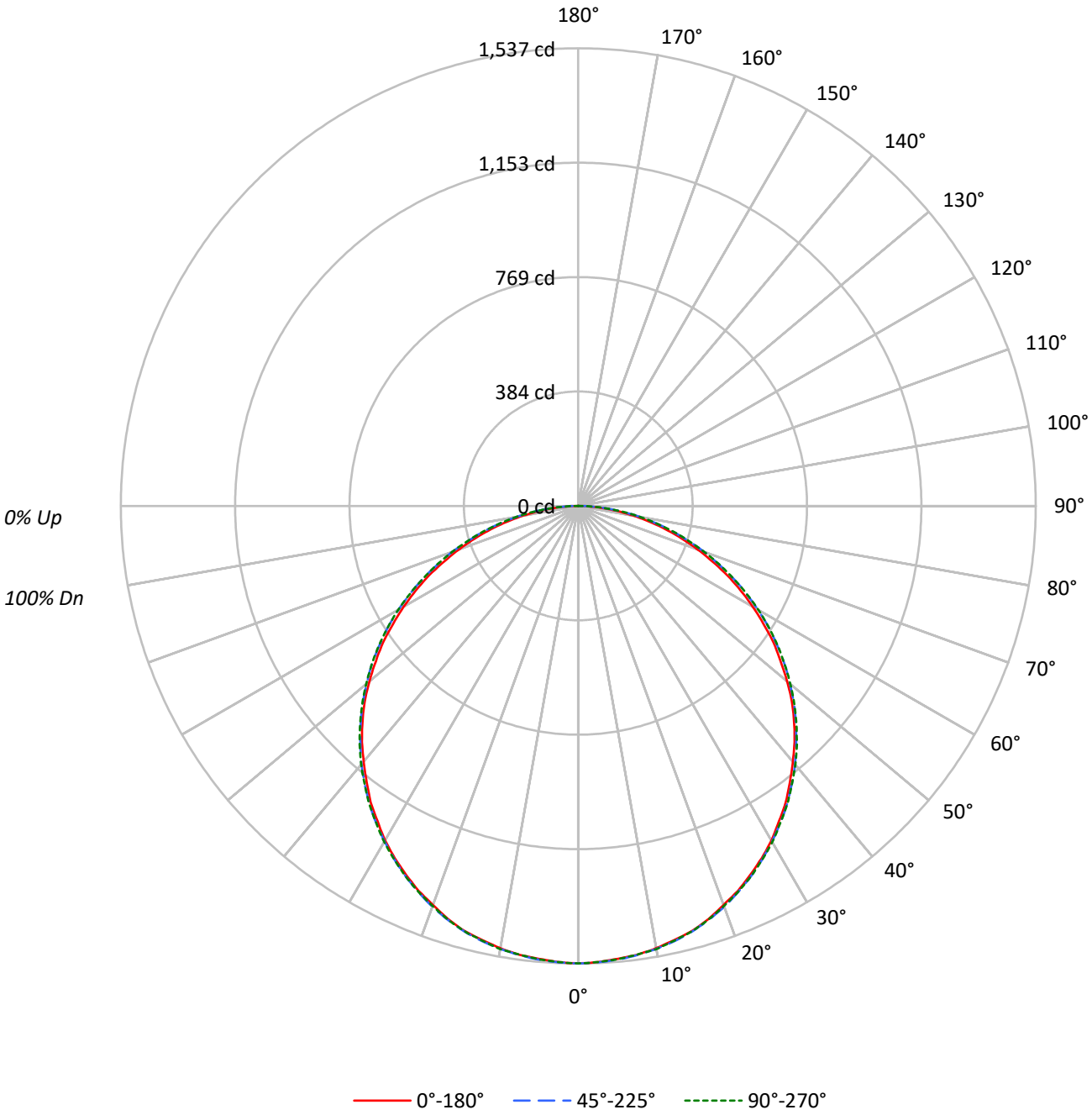


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590745
CATALOG NUMBER: 22CGTX-45-L92765-W2A-3000K

## Luminous Intensity Polar Plot



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

Scaled Data Report

TEST NUMBER: P1590745
CATALOG NUMBER: 22CGTX-45-L92765-W2A-3000K

## 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 | 77 | 73 | 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 | 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 | 40 | 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° | 4135 | 4135 | 4135 |
| 5° | 4124 | 4132 | 4129 |
| 10° | 4122 | 4127 | 4130 |
| 15° | 4118 | 4123 | 4120 |
| 20° | 4084 | 4105 | 4096 |
| 25° | 4061 | 4076 | 4076 |
| 30° | 4032 | 4045 | 4051 |
| 35° | 3993 | 4017 | 4020 |
| 40° | 3939 | 3982 | 3986 |
| 45° | 3902 | 3936 | 3944 |
| 50° | 3834 | 3885 | 3893 |
| 55° | 3759 | 3826 | 3835 |
| 60° | 3642 | 3751 | 3762 |
| 65° | 3522 | 3651 | 3651 |
| 70° | 3348 | 3531 | 3539 |
| 75° | 3149 | 3381 | 3402 |
| 80° | 2889 | 3203 | 3219 |
| 85° | 2408 | 2939 | 2939 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 45°
Luminance: 3944 cd/sqm

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590745
CATALOG NUMBER: 22CGTX-45-L92765-W2A-3000K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 145.4 | 3.2 |
| 10°-20° | 417.2 | 9.3 |
| 20°-30° | 632.5 | 14.1 |
| 30°-40° | 763.6 | 17.0 |
| 40°-50° | 796.4 | 17.7 |
| 50°-60° | 726.1 | 16.2 |
| 60°-70° | 563.9 | 12.6 |
| 70°-80° | 341.7 | 7.6 |
| 80°-90° | 105.1 | 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° | 1195.1 | 26.6 |
| 0°-40° | 1958.7 | 43.6 |
| 0°-60° | 3481.2 | 77.5 |
| 0°-90° | 4491.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4491.9 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1537 | 1537 | 1537 | 1537 | 1537 | |
| 5° | 1527 | 1530 | 1530 | 1530 | 1529 | 145 |
| 15° | 1478 | 1479 | 1480 | 1479 | 1479 | 416 |
| 25° | 1368 | 1373 | 1373 | 1374 | 1373 | 630 |
| 35° | 1216 | 1220 | 1223 | 1222 | 1224 | 759 |
| 45° | 1025 | 1030 | 1034 | 1035 | 1036 | 790 |
| 55° | 801 | 809 | 816 | 816 | 818 | 714 |
| 65° | 553 | 566 | 573 | 576 | 573 | 546 |
| 75° | 303 | 321 | 325 | 329 | 327 | 321 |
| 85° | 78 | 94 | 95 | 98 | 95 | 90 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590745
CATALOG NUMBER: 22CGTX-45-L92765-W2A-3000K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | *1536.8* | *1536.8* | *1536.8* | *1536.8* | *1536.8* |
| 2.5° | *1533.7* | 1534.7 | 1534.7 | 1533.7 | 1533.7 |
| 5° | *1526.6* | 1529.7 | 1529.7 | 1529.7 | 1528.7 |
| 7.5° | *1520.6* | 1522.6 | 1521.6 | 1522.6 | 1519.5 |
| 10° | *1508.4* | 1510.4 | 1510.4 | 1511.4 | 1511.4 |
| 12.5° | *1493.2* | 1496.2 | 1497.3 | 1497.3 | 1495.2 |
| 15° | *1478.0* | 1479.0 | 1480.0 | 1479.0 | 1479.0 |
| 17.5° | *1454.7* | 1457.8 | 1457.8 | 1457.8 | 1456.7 |
| 20° | *1426.3* | 1432.4 | 1433.4 | 1432.4 | 1430.4 |
| 22.5° | *1400.0* | 1405.1 | 1404.1 | 1406.1 | 1403.0 |
| 25° | *1367.6* | 1372.7 | 1372.7 | 1373.7 | 1372.7 |
| 27.5° | *1334.2* | 1338.2 | 1338.2 | 1339.2 | 1339.2 |
| 30° | *1297.7* | 1300.7 | 1301.7 | 1301.7 | 1303.8 |
| 32.5° | *1255.1* | 1261.2 | 1263.3 | 1264.3 | 1263.3 |
| 35° | *1215.6* | 1219.7 | 1222.7 | 1221.7 | 1223.7 |
| 37.5° | *1168.0* | 1175.1 | 1178.2 | 1179.2 | 1179.2 |
| 40° | *1121.4* | 1128.5 | 1133.6 | 1133.6 | 1134.6 |
| 42.5° | *1075.8* | 1079.9 | 1083.9 | 1086.0 | 1087.0 |
| 45° | *1025.2* | 1030.3 | 1034.3 | 1035.3 | 1036.3 |
| 47.5° | *973.5* | 978.6 | 982.6 | 983.7 | 984.7 |
| 50° | *915.8* | 922.9 | 927.9 | 929.0 | 930.0 |
| 52.5° | *857.0* | 868.2 | 874.2 | 873.2 | 874.2 |
| 55° | *801.3* | 809.4 | 815.5 | 815.5 | 817.5 |
| 57.5° | *737.5* | 750.7 | 757.7 | 758.8 | 758.8 |
| 60° | *676.7* | 690.9 | 697.0 | 697.0 | 699.0 |
| 62.5° | *614.9* | 630.1 | 636.2 | 639.2 | 636.2 |
| 65° | *553.1* | 566.3 | 573.4 | 576.4 | 573.4 |
| 67.5° | *487.3* | 504.5 | 509.6 | 513.6 | 511.6 |
| 70° | *425.5* | 442.7 | 448.8 | 452.8 | 449.8 |
| 72.5° | *363.7* | 381.9 | 386.0 | 392.0 | 388.0 |
| 75° | *302.9* | 321.1 | 325.2 | 329.2 | 327.2 |
| 77.5° | *244.1* | 264.4 | 265.4 | 269.5 | 266.4 |
| 80° | *186.4* | 205.6 | 206.7 | 210.7 | 207.7 |
| 82.5° | *130.7* | 148.9 | 149.9 | 154.0 | 149.9 |
| 85° | *78.0* | 94.2 | 95.2 | 98.3 | 95.2 |
| 87.5° | *29.4* | 42.5 | 43.6 | 45.6 | 43.6 |
| 90° | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |

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Peachtree City, GA 30269

TEST NUMBER: P1590745
CATALOG NUMBER: 22CGTX-45-L92765-W2A-3000K

**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 | 16.76 | 18.42 | 17.13 | 18.74 | 19.05 | 16.86 | 18.52 | 17.23 | 18.83 | 19.15 |
| | 3H | 18.61 | 20.11 | 18.99 | 20.44 | 20.80 | 18.77 | 20.28 | 19.15 | 20.60 | 20.96 |
| | 4H | 19.32 | 20.74 | 19.72 | 21.08 | 21.46 | 19.53 | 20.94 | 19.92 | 21.29 | 21.67 |
| | 6H | 19.86 | 21.18 | 20.27 | 21.54 | 21.93 | 20.12 | 21.44 | 20.53 | 21.80 | 22.19 |
| | 8H | 20.04 | 21.29 | 20.46 | 21.68 | 22.08 | 20.33 | 21.58 | 20.75 | 21.97 | 22.37 |
| | 12H | 20.15 | 21.36 | 20.58 | 21.74 | 22.17 | 20.47 | 21.68 | 20.90 | 22.06 | 22.49 |
| 4H | 2H | 17.45 | 18.86 | 17.84 | 19.21 | 19.59 | 17.52 | 18.94 | 17.92 | 19.29 | 19.66 |
| | 3H | 19.53 | 20.72 | 19.94 | 21.12 | 21.52 | 19.66 | 20.86 | 20.07 | 21.26 | 21.65 |
| | 4H | 20.39 | 21.47 | 20.82 | 21.88 | 22.32 | 20.56 | 21.64 | 20.99 | 22.05 | 22.49 |
| | 6H | 21.08 | 22.02 | 21.53 | 22.46 | 22.92 | 21.30 | 22.24 | 21.75 | 22.68 | 23.14 |
| | 8H | 21.31 | 22.20 | 21.77 | 22.64 | 23.10 | 21.56 | 22.45 | 22.02 | 22.89 | 23.36 |
| | 12H | 21.47 | 22.27 | 21.95 | 22.75 | 23.22 | 21.76 | 22.56 | 22.24 | 23.04 | 23.51 |
| 8H | 4H | 20.76 | 21.65 | 21.22 | 22.09 | 22.55 | 20.91 | 21.80 | 21.37 | 22.24 | 22.70 |
| | 6H | 21.60 | 22.34 | 22.09 | 22.83 | 23.30 | 21.79 | 22.53 | 22.28 | 23.02 | 23.49 |
| | 8H | 21.92 | 22.59 | 22.43 | 23.09 | 23.58 | 22.15 | 22.81 | 22.65 | 23.32 | 23.80 |
| | 12H | 22.18 | 22.77 | 22.68 | 23.26 | 23.81 | 22.44 | 23.03 | 22.95 | 23.52 | 24.08 |
| 12H | 4H | 20.81 | 21.61 | 21.29 | 22.09 | 22.55 | 20.96 | 21.76 | 21.44 | 22.23 | 22.70 |
| | 6H | 21.68 | 22.35 | 22.19 | 22.85 | 23.34 | 21.87 | 22.53 | 22.37 | 23.04 | 23.52 |
| | 8H | 22.07 | 22.66 | 22.58 | 23.15 | 23.71 | 22.29 | 22.88 | 22.79 | 23.37 | 23.92 |

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: SP1-2510-566-5-R2

Test Date: 10/14/2025

Luminaire Tested: 22CGTX-50-L92765-W2A-3000K

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

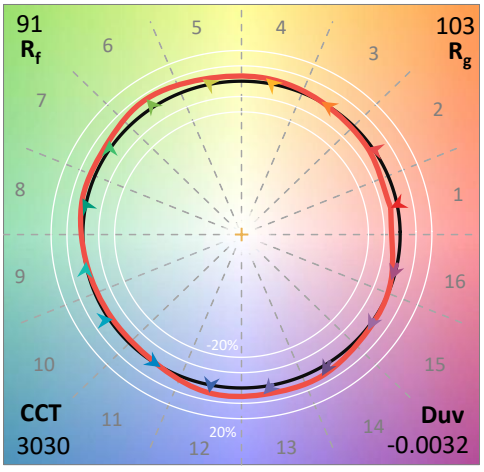
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2510-566-5-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-3000K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-566-5-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 50000 Lumen CGTX TUNABLE WHITE FROM 2700K TO 6500K - 8 V |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3030 | CRI (Ra): | 94.5 | | |
| CIE u': | 0.2507 | R1: | 97.4 | R9: | 65.0 |
| CIE v': | 0.5162 | R2: | 97.5 | R10: | 92.8 |
| Duv: | -0.0032 | R3: | 96.3 | R11: | 94.3 |
| CIE x: | 0.4302 | R4: | 95.0 | R12: | 89.2 |
| CIE y: | 0.3938 | R5: | 97.0 | R13: | 97.4 |
| CIE z: | 0.1760 | R6: | 96.2 | R14: | 96.7 |
| Peak Wavelength (nm): | 630 | R7: | 91.9 | R15: | 93.2 |
| Dominant Wavelength (nm): | 583 | R8: | 85.1 | | |
| Purity: | 47.31087 | | | | |
| Rf: | 90.9 | | | | |
| Rg: | 103.1 | | | | |




## Test Conditions

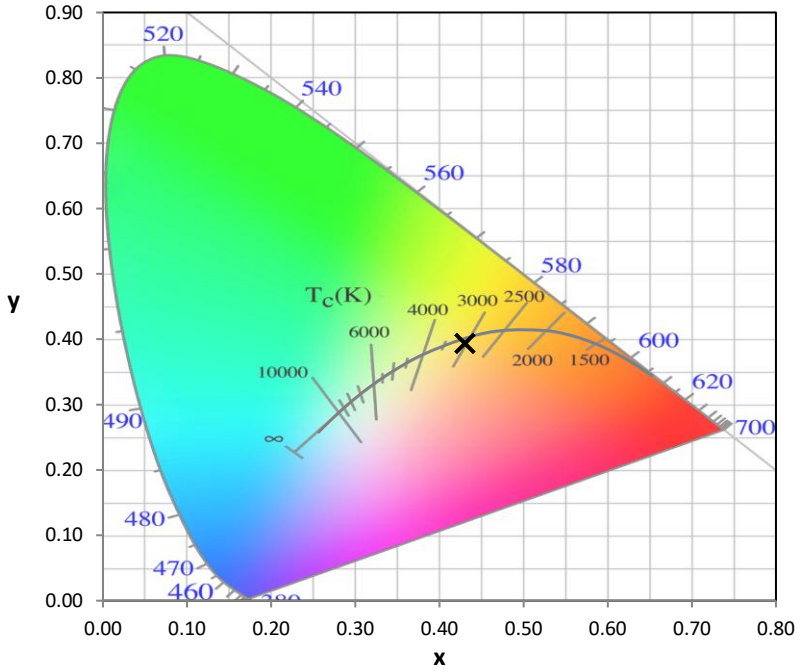
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 25.0 |

REPORT NUMBER: SP1-2510-566-5-R2

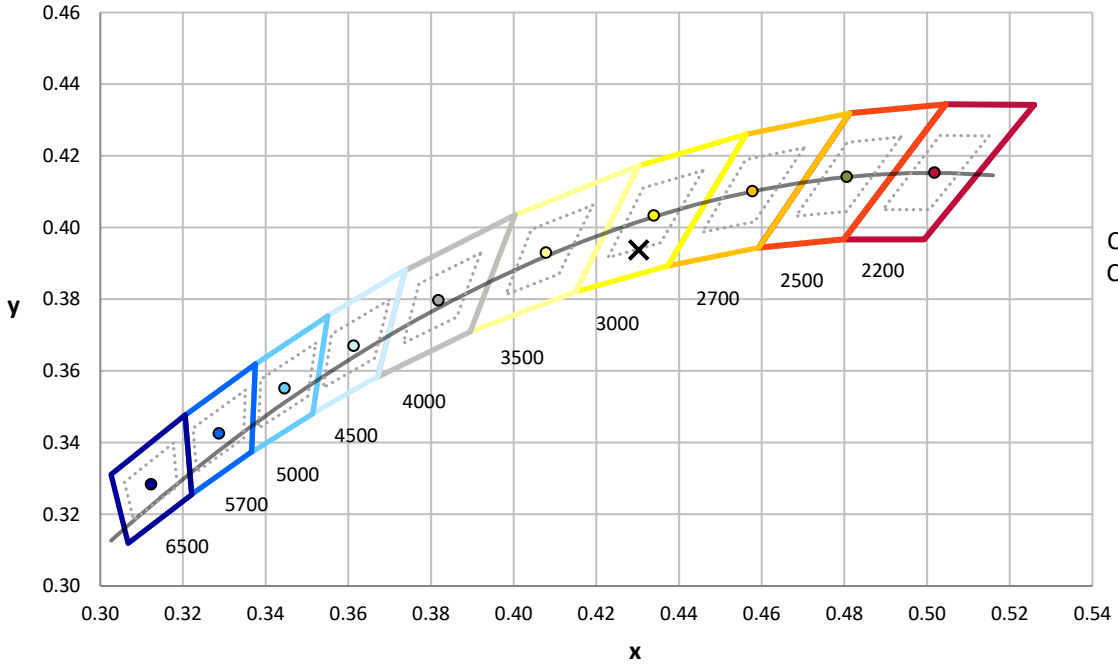
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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: SP1-2510-566-5-R2

## CIE 1931 Chromaticity Diagram




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

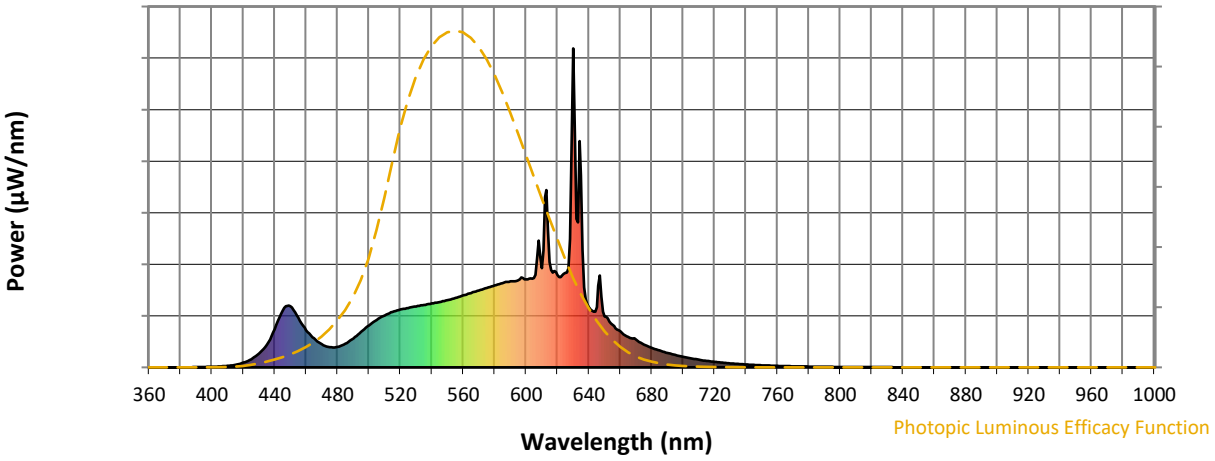



CCT = 3030K
CIE x = 0.4302
CIE y = 0.3938
Duv = -0.0032

Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2510-566-5-R2

## Photopic Flux vs. Wavelength

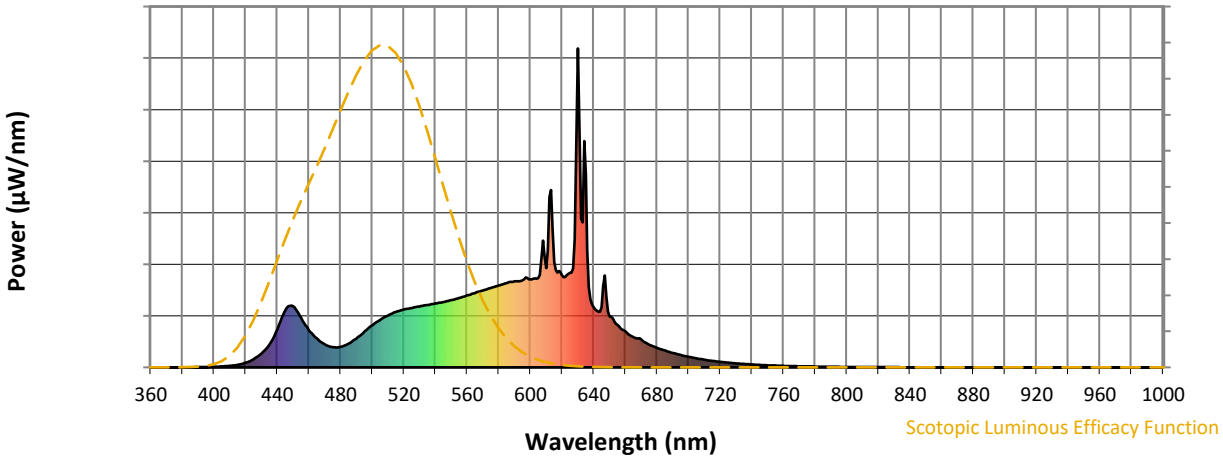



## Photopic Lumens: NR

| 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 | 91 | NR | 620 | 289 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 111 | NR | 625 | 296 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 132 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 149 | NR | 635 | 601 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 163 | NR | 640 | 189 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 174 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 181 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 186 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 191 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 195 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 200 | NR | 670 | 88 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 205 | NR | 675 | 72 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 210 | NR | 680 | 62 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 26 | NR | 555 | 218 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 43 | NR | 560 | 226 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 72 | NR | 565 | 233 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 241 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 178 | NR | 575 | 249 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 191 | NR | 580 | 257 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 156 | NR | 585 | 264 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 270 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 91 | NR | 595 | 273 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 72 | NR | 600 | 276 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 63 | NR | 605 | 280 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 64 | NR | 610 | 311 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 74 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2510-566-5-R2

## Scotopic Flux vs. Wavelength

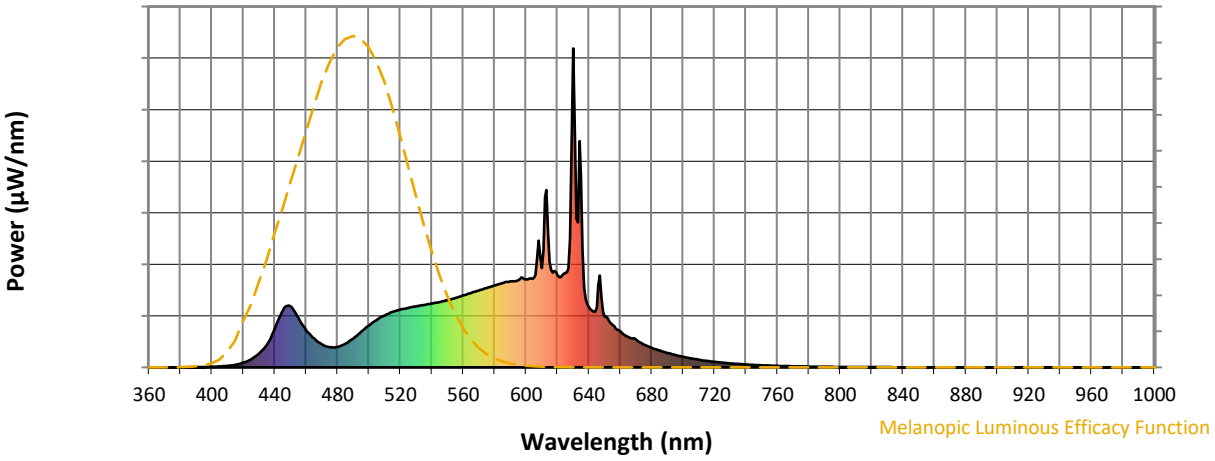



**Scotopic Lumens: NR** **S/P: 1.45**

| 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 | 91 | NR | 620 | 289 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 111 | NR | 625 | 296 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 132 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 149 | NR | 635 | 601 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 163 | NR | 640 | 189 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 174 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 181 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 186 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 191 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 195 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 200 | NR | 670 | 88 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 205 | NR | 675 | 72 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 210 | NR | 680 | 62 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 26 | NR | 555 | 218 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 43 | NR | 560 | 226 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 72 | NR | 565 | 233 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 241 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 178 | NR | 575 | 249 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 191 | NR | 580 | 257 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 156 | NR | 585 | 264 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 270 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 91 | NR | 595 | 273 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 72 | NR | 600 | 276 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 63 | NR | 605 | 280 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 64 | NR | 610 | 311 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 74 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.84**

| 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 | 91 | NR | 620 | 289 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 111 | NR | 625 | 296 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 132 | NR | 630 | 1000 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 149 | NR | 635 | 601 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 163 | NR | 640 | 189 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 174 | NR | 645 | 189 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 181 | NR | 650 | 159 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 186 | NR | 655 | 133 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 191 | NR | 660 | 113 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 195 | NR | 665 | 95 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 200 | NR | 670 | 88 | NR | 800 | 1 | NR | 930 | 0 | NR |
| 415 | 8 | NR | 545 | 205 | NR | 675 | 72 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 15 | NR | 550 | 210 | NR | 680 | 62 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 26 | NR | 555 | 218 | NR | 685 | 53 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 43 | NR | 560 | 226 | NR | 690 | 45 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 72 | NR | 565 | 233 | NR | 695 | 39 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 241 | NR | 700 | 33 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 178 | NR | 575 | 249 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 191 | NR | 580 | 257 | NR | 710 | 24 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 156 | NR | 585 | 264 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 270 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 91 | NR | 595 | 273 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 72 | NR | 600 | 276 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 63 | NR | 605 | 280 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 64 | NR | 610 | 311 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 74 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

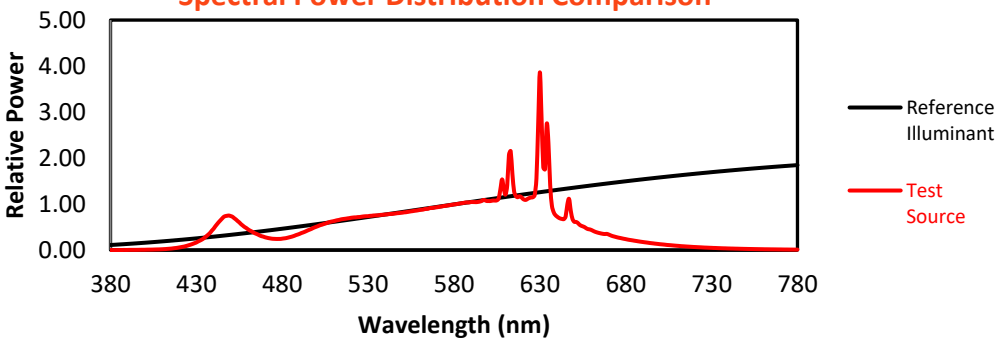
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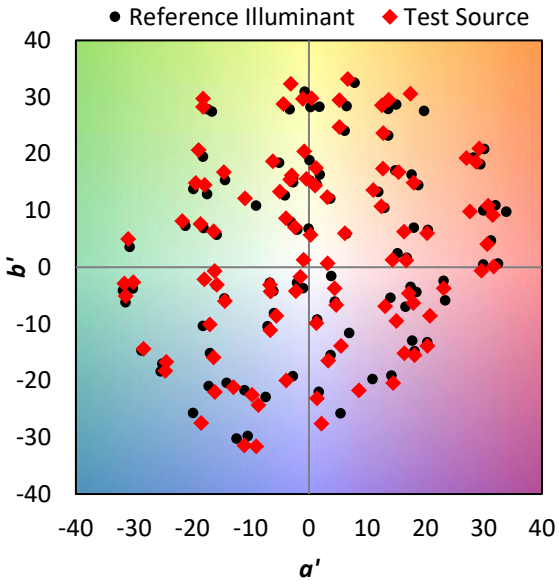
## Summary

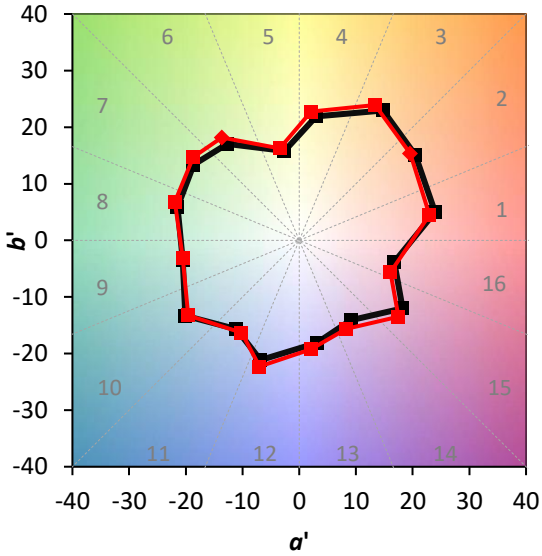
$R_f$ = 90.9
$R_g$ = 103.1
CIE $R_a$ = 94.5
$R_9$ = 65.0

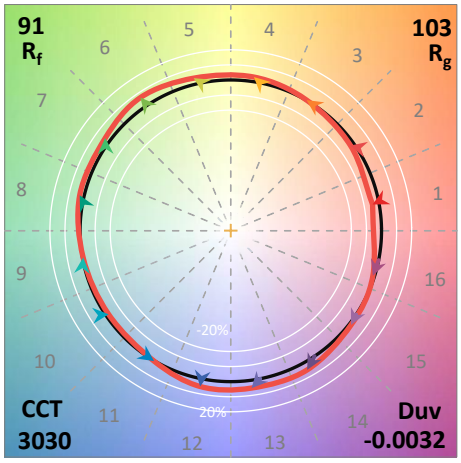
## Spectral Power Distribution Comparison

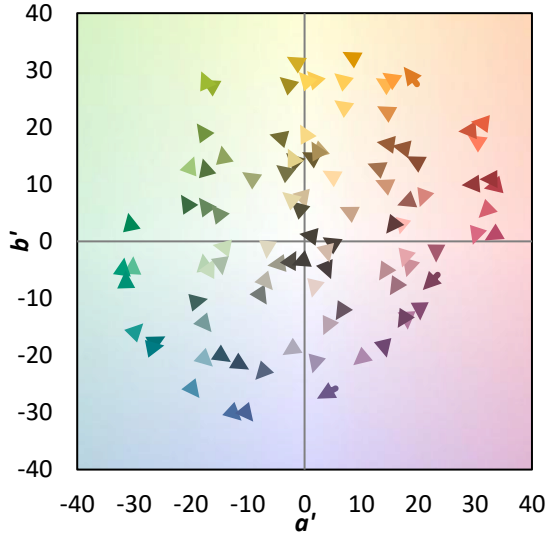



## Color Vector Graphics



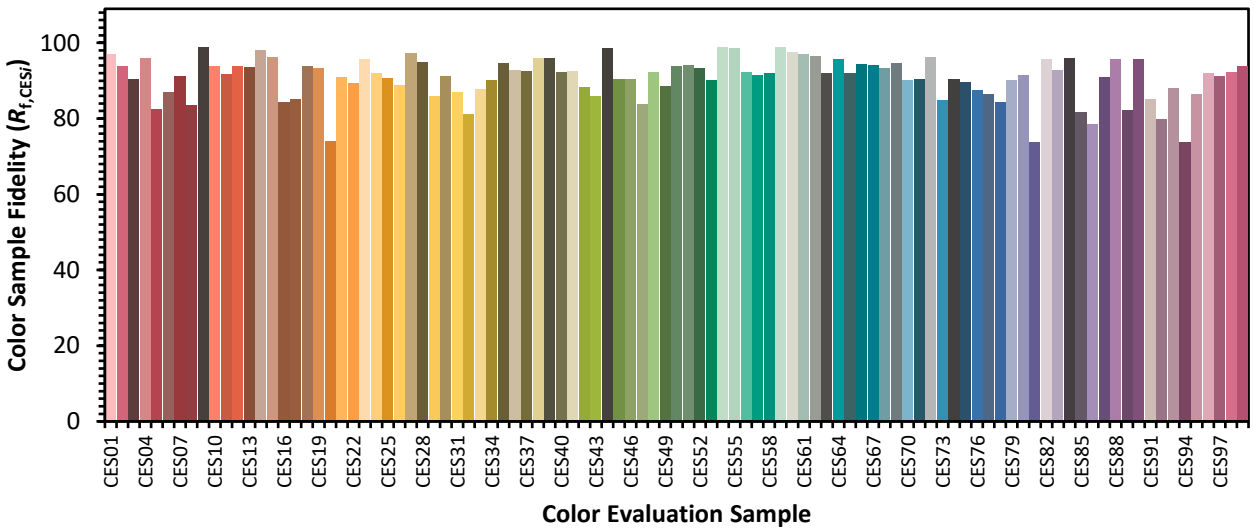



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**Individual Sample Fidelity Index ($R_{f,i}$)**

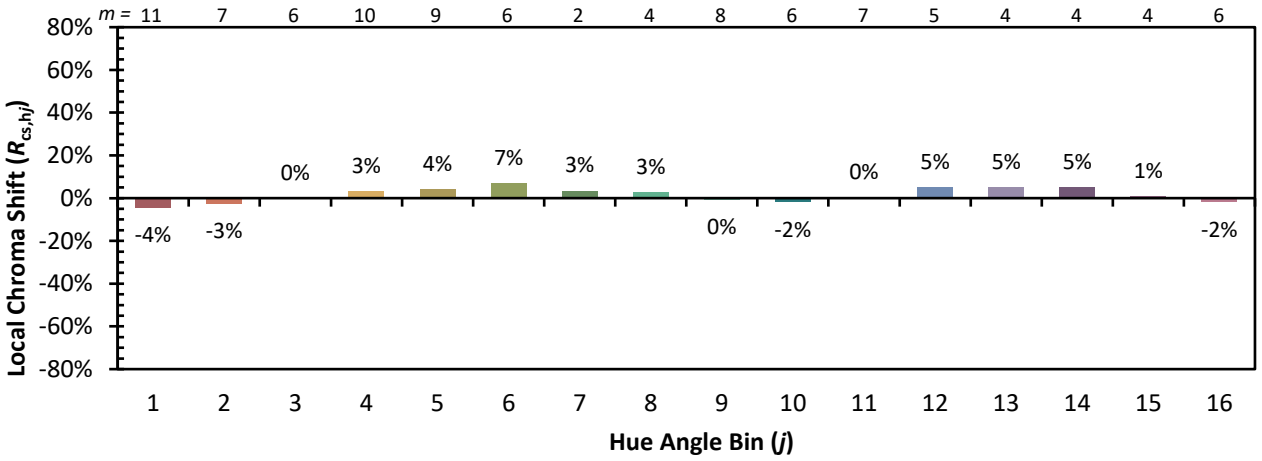
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 89 | CES51 = 94 | CES76 = 87 |
| CES02 = 63 | CES27 = 97 | CES52 = 93 | CES77 = 86 |
| CES03 = 32 | CES28 = 95 | CES53 = 90 | CES78 = 84 |
| CES04 = 70 | CES29 = 86 | CES54 = 99 | CES79 = 90 |
| CES05 = 51 | CES30 = 91 | CES55 = 99 | CES80 = 91 |
| CES06 = 51 | CES31 = 87 | CES56 = 92 | CES81 = 74 |
| CES07 = 44 | CES32 = 81 | CES57 = 91 | CES82 = 96 |
| CES08 = 42 | CES33 = 88 | CES58 = 92 | CES83 = 93 |
| CES09 = 29 | CES34 = 90 | CES59 = 99 | CES84 = 96 |
| CES10 = 76 | CES35 = 95 | CES60 = 98 | CES85 = 82 |
| CES11 = 59 | CES36 = 93 | CES61 = 97 | CES86 = 79 |
| CES12 = 65 | CES37 = 92 | CES62 = 96 | CES87 = 91 |
| CES13 = 44 | CES38 = 96 | CES63 = 92 | CES88 = 96 |
| CES14 = 74 | CES39 = 96 | CES64 = 96 | CES89 = 82 |
| CES15 = 72 | CES40 = 92 | CES65 = 92 | CES90 = 96 |
| CES16 = 48 | CES41 = 93 | CES66 = 94 | CES91 = 85 |
| CES17 = 50 | CES42 = 88 | CES67 = 94 | CES92 = 80 |
| CES18 = 57 | CES43 = 86 | CES68 = 93 | CES93 = 88 |
| CES19 = 72 | CES44 = 99 | CES69 = 95 | CES94 = 74 |
| CES20 = 67 | CES45 = 90 | CES70 = 90 | CES95 = 86 |
| CES21 = 86 | CES46 = 90 | CES71 = 90 | CES96 = 92 |
| CES22 = 79 | CES47 = 84 | CES72 = 96 | CES97 = 91 |
| CES23 = 92 | CES48 = 92 | CES73 = 85 | CES98 = 92 |
| CES24 = 90 | CES49 = 89 | CES74 = 90 | CES99 = 94 |
| CES25 = 72 | CES50 = 94 | CES75 = 90 | |

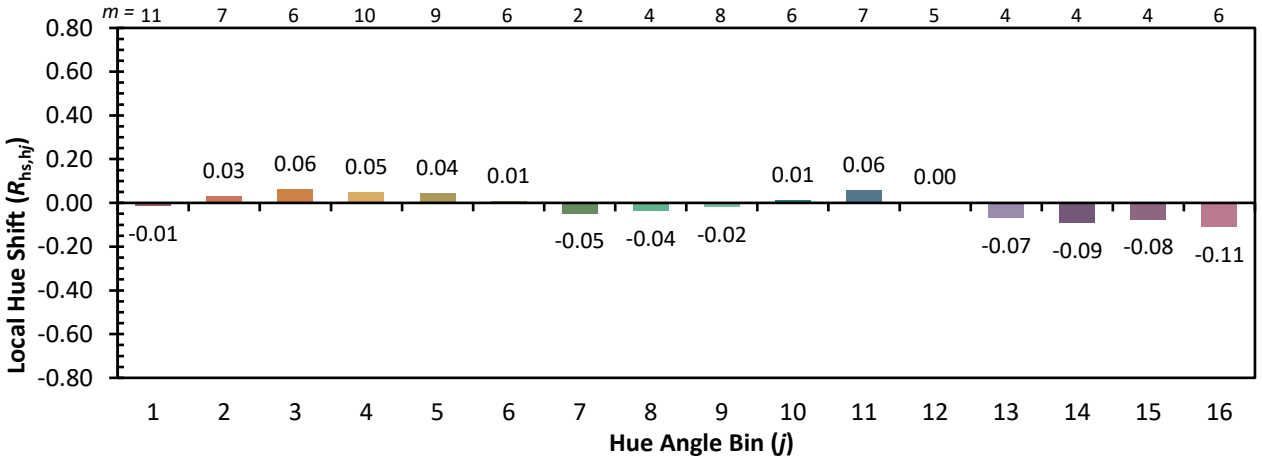


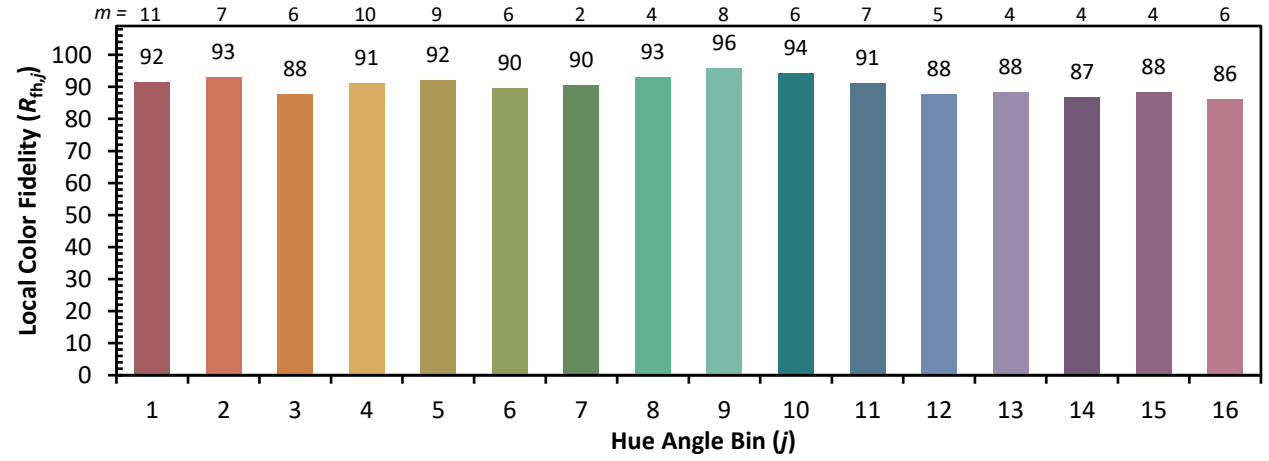
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## Color Rendition by Hue-Angle Bin



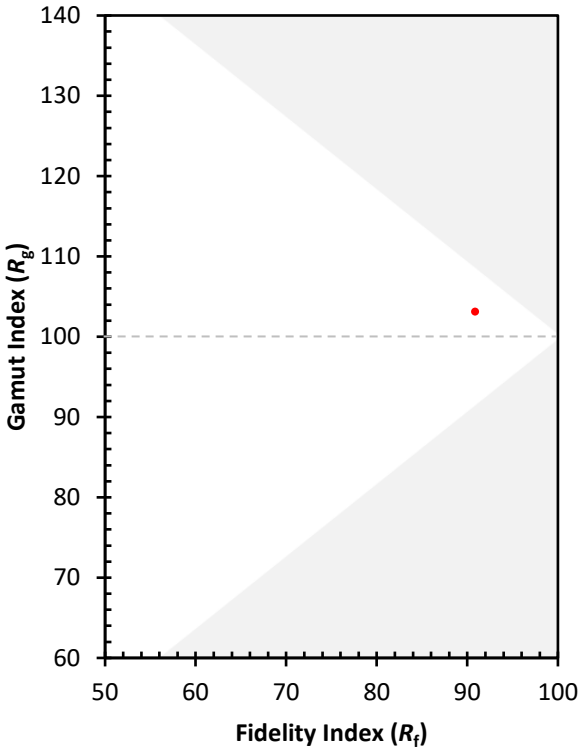



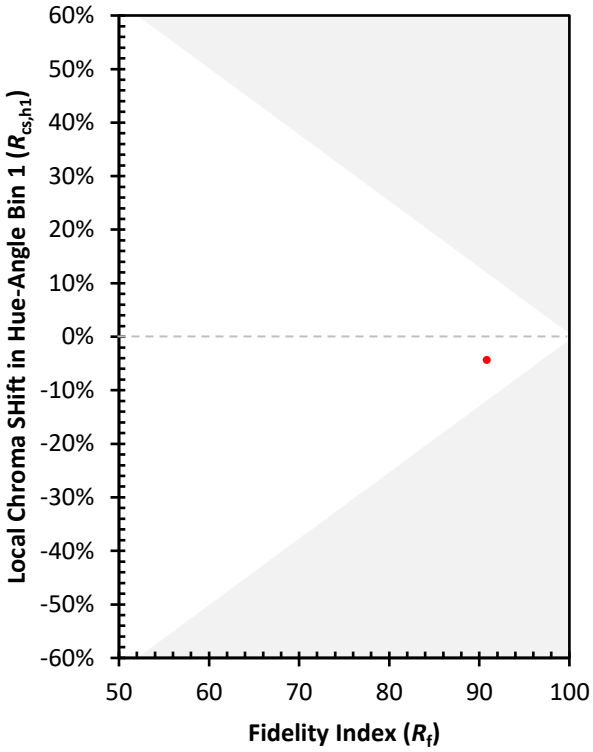



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### Measure Comparisons




(END OF REPORT)