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: P1590775

Luminaire Tested: 24CGTX-30-L92765-W2A-6500K

Issue Date: 9/7/2026

Report Generated By 670265710 / DESKTOP-98SHLC4

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

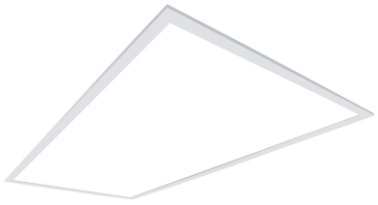
Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1590775 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2510-586-5) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24CGTX-30-L92765-W2A-6500K |
| Description: | 2X4 3000 LUMEN CGTX TROFFER WITH VividTune LEDS AT 6500K CCT WITH FROSTED SMOOTH LENS |
| Light Source: | 6500K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3177.8 lumens |
| Efficiency: | N/A |
| Efficacy: | 122.7 lumens/watt |
| Spacing Criteria (0/90/45): | 1.27 / 1.27 / 1.39 |
| Luminous Opening: | Rectangular (W 2' x L: 4' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 25.9 |
| 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 |

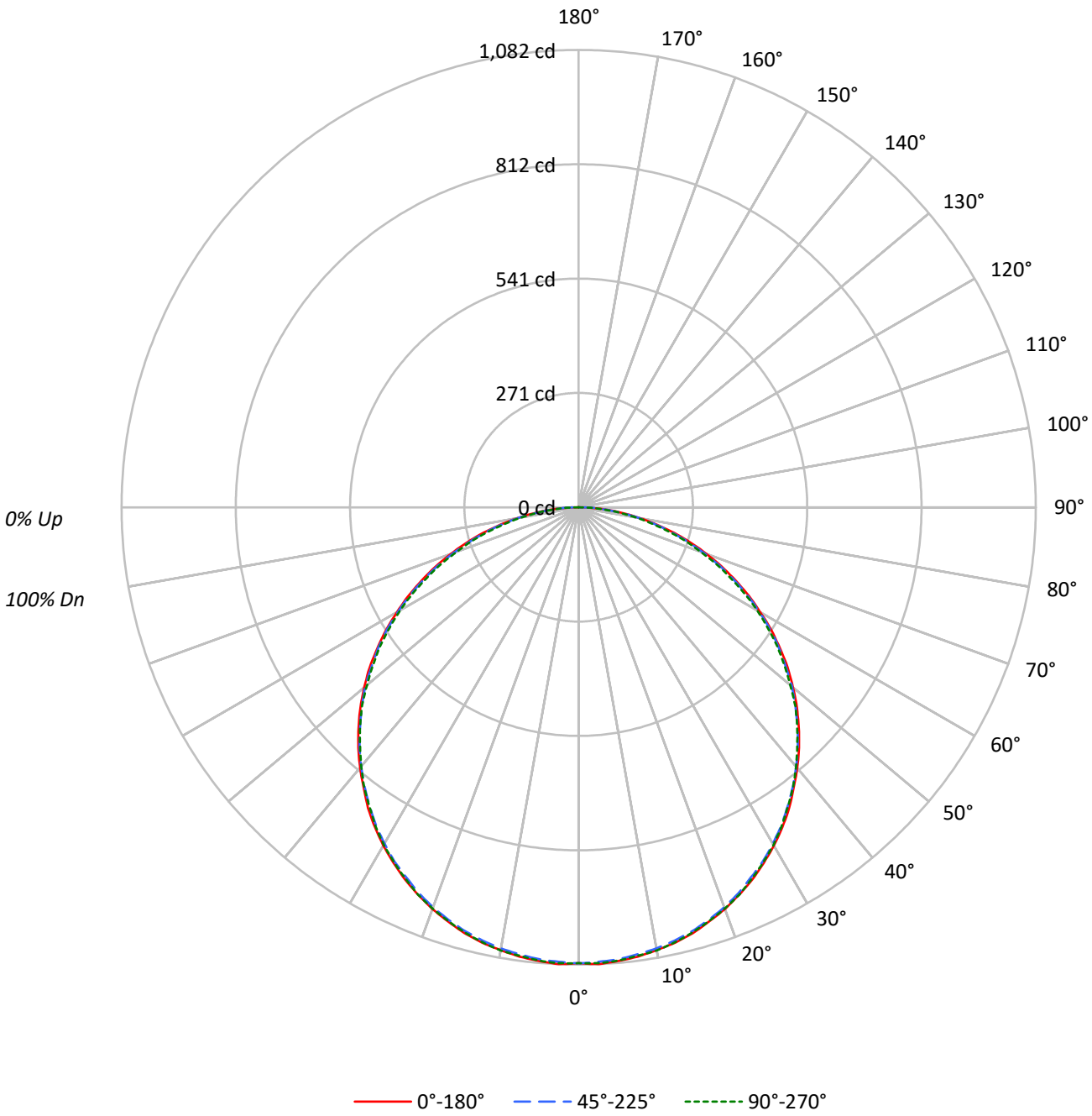


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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590775
CATALOG NUMBER: 24CGTX-30-L92765-W2A-6500K

## Luminous Intensity Polar Plot



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## 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 | 35 | 63 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 35 | 33 |
| 8 | 60 | 46 | 38 | 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 | 39 | 31 | 26 | 38 | 30 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 24 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 1451 | 1451 | 1451 |
| 5° | 1455 | 1450 | 1454 |
| 10° | 1453 | 1448 | 1455 |
| 15° | 1454 | 1446 | 1451 |
| 20° | 1448 | 1442 | 1447 |
| 25° | 1443 | 1434 | 1440 |
| 30° | 1436 | 1428 | 1433 |
| 35° | 1427 | 1417 | 1418 |
| 40° | 1414 | 1406 | 1406 |
| 45° | 1402 | 1392 | 1392 |
| 50° | 1386 | 1380 | 1369 |
| 55° | 1364 | 1356 | 1346 |
| 60° | 1335 | 1327 | 1312 |
| 65° | 1305 | 1288 | 1265 |
| 70° | 1265 | 1236 | 1202 |
| 75° | 1212 | 1173 | 1135 |
| 80° | 1138 | 1106 | 1056 |
| 85° | 1051 | 986 | 920 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1402 cd/sqm

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TEST NUMBER: P1590775
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**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 102.2 | 3.2 |
| 10°-20° | 293.6 | 9.2 |
| 20°-30° | 446.7 | 14.1 |
| 30°-40° | 541.0 | 17.0 |
| 40°-50° | 565.5 | 17.8 |
| 50°-60° | 516.3 | 16.2 |
| 60°-70° | 400.2 | 12.6 |
| 70°-80° | 239.7 | 7.5 |
| 80°-90° | 72.6 | 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° | 842.4 | 26.5 |
| 0°-40° | 1383.5 | 43.5 |
| 0°-60° | 2465.3 | 77.6 |
| 0°-90° | 3177.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3177.8 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1079 | 1079 | 1079 | 1079 | 1079 | |
| 5° | 1078 | 1076 | 1073 | 1073 | 1076 | 102 |
| 15° | 1044 | 1041 | 1038 | 1039 | 1041 | 294 |
| 25° | 972 | 970 | 966 | 967 | 970 | 448 |
| 35° | 869 | 867 | 862 | 862 | 864 | 543 |
| 45° | 737 | 737 | 732 | 732 | 732 | 568 |
| 55° | 581 | 581 | 578 | 574 | 574 | 520 |
| 65° | 410 | 410 | 405 | 399 | 397 | 406 |
| 75° | 233 | 232 | 226 | 222 | 218 | 247 |
| 85° | 68 | 67 | 64 | 62 | 60 | 76 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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TEST NUMBER: P1590775
CATALOG NUMBER: 24CGTX-30-L92765-W2A-6500K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | *1078.7* | 1078.7 | 1078.7 | 1078.7 | 1078.7 |
| 2.5° | *1081.9* | *1079.7* | *1076.5* | *1076.5* | *1079.7* |
| 5° | *1077.6* | 1076.5 | 1073.3 | 1073.3 | 1076.5 |
| 7.5° | *1072.3* | 1071.2 | 1067.0 | 1068.0 | 1070.1 |
| 10° | *1063.8* | 1062.7 | 1059.5 | 1060.6 | 1064.8 |
| 12.5° | *1055.2* | 1053.1 | 1049.9 | 1051.0 | 1054.2 |
| 15° | *1043.5* | 1041.4 | 1038.2 | 1039.3 | 1041.4 |
| 17.5° | *1027.6* | 1026.5 | 1023.3 | 1024.4 | 1026.5 |
| 20° | *1011.6* | 1010.5 | 1007.3 | 1008.4 | 1010.5 |
| 22.5° | *992.4* | 991.3 | 988.2 | 989.2 | 992.4 |
| 25° | *972.2* | 970.1 | 965.8 | 966.9 | 970.1 |
| 27.5° | *948.8* | 947.7 | 944.5 | 945.6 | 946.6 |
| 30° | *924.3* | 923.2 | 918.9 | 918.9 | 922.1 |
| 32.5° | *897.6* | 896.6 | 892.3 | 892.3 | 894.5 |
| 35° | *868.9* | 866.8 | 862.5 | 862.5 | 863.6 |
| 37.5° | *835.9* | 835.9 | 832.7 | 831.6 | 833.8 |
| 40° | *805.0* | 805.0 | 800.7 | 800.7 | 800.7 |
| 42.5° | *772.0* | 770.9 | 767.7 | 765.6 | 765.6 |
| 45° | *736.9* | 736.9 | 731.5 | 731.5 | 731.5 |
| 47.5° | *700.7* | 699.6 | 695.3 | 693.2 | 695.3 |
| 50° | *662.3* | 661.3 | 659.1 | 655.9 | 653.8 |
| 52.5° | *624.0* | 621.9 | 617.6 | 616.5 | 613.3 |
| 55° | *581.4* | 581.4 | 578.2 | 573.9 | 573.9 |
| 57.5° | *540.9* | 539.9 | 536.7 | 532.4 | 530.3 |
| 60° | *496.2* | 497.3 | 493.0 | 488.8 | 487.7 |
| 62.5° | *454.7* | 454.7 | 449.4 | 444.0 | 443.0 |
| 65° | *410.0* | 410.0 | 404.6 | 399.3 | 397.2 |
| 67.5° | *366.3* | 365.2 | 361.0 | 354.6 | 353.5 |
| 70° | *321.6* | 319.4 | 314.1 | 309.9 | 305.6 |
| 72.5° | *277.9* | 275.8 | 269.4 | 265.1 | 265.1 |
| 75° | *233.2* | 232.1 | 225.7 | 221.5 | 218.3 |
| 77.5° | *189.5* | 189.5 | 184.2 | 178.9 | 176.8 |
| 80° | *146.9* | 148.0 | 142.7 | 137.4 | 136.3 |
| 82.5° | *107.5* | 106.5 | 102.2 | 99.0 | 95.8 |
| 85° | *68.1* | 67.1 | 63.9 | 61.8 | 59.6 |
| 87.5° | *29.8* | 29.8 | 28.8 | 28.8 | 27.7 |
| 90° | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |

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TEST NUMBER: P1590775
CATALOG NUMBER: 24CGTX-30-L92765-W2A-6500K

**CIE UGR TABLE:**

| Reflectances: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ceiling | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| | Wall | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| | Reference plane | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 13.29 | 14.95 | 13.66 | 15.27 | 15.58 | 13.19 | 14.85 | 13.55 | 15.16 | 15.47 |
| | 3H | 15.21 | 16.71 | 15.58 | 17.04 | 17.39 | 15.04 | 16.54 | 15.41 | 16.87 | 17.23 |
| | 4H | 15.96 | 17.38 | 16.35 | 17.72 | 18.10 | 15.75 | 17.16 | 16.14 | 17.51 | 17.89 |
| | 6H | 16.54 | 17.86 | 16.95 | 18.22 | 18.61 | 16.29 | 17.61 | 16.70 | 17.97 | 18.36 |
| | 8H | 16.75 | 18.01 | 17.17 | 18.40 | 18.79 | 16.47 | 17.73 | 16.89 | 18.12 | 18.51 |
| | 12H | 16.90 | 18.11 | 17.33 | 18.49 | 18.92 | 16.59 | 17.80 | 17.02 | 18.18 | 18.61 |
| 4H | 2H | 13.94 | 15.36 | 14.34 | 15.71 | 16.08 | 13.86 | 15.28 | 14.25 | 15.62 | 16.00 |
| | 3H | 16.08 | 17.27 | 16.49 | 17.67 | 18.07 | 15.93 | 17.13 | 16.34 | 17.52 | 17.92 |
| | 4H | 16.97 | 18.05 | 17.40 | 18.46 | 18.90 | 16.77 | 17.86 | 17.21 | 18.27 | 18.70 |
| | 6H | 17.70 | 18.65 | 18.15 | 19.09 | 19.54 | 17.45 | 18.40 | 17.90 | 18.84 | 19.29 |
| | 8H | 17.96 | 18.85 | 18.42 | 19.29 | 19.76 | 17.68 | 18.57 | 18.14 | 19.01 | 19.48 |
| | 12H | 18.17 | 18.97 | 18.65 | 19.44 | 19.91 | 17.86 | 18.66 | 18.34 | 19.13 | 19.60 |
| 8H | 4H | 17.30 | 18.19 | 17.76 | 18.63 | 19.10 | 17.13 | 18.02 | 17.59 | 18.46 | 18.93 |
| | 6H | 18.17 | 18.91 | 18.67 | 19.40 | 19.88 | 17.94 | 18.68 | 18.43 | 19.17 | 19.64 |
| | 8H | 18.53 | 19.19 | 19.03 | 19.69 | 20.18 | 18.26 | 18.92 | 18.76 | 19.43 | 19.91 |
| | 12H | 18.82 | 19.40 | 19.32 | 19.89 | 20.45 | 18.51 | 19.10 | 19.02 | 19.59 | 20.15 |
| 12H | 4H | 17.35 | 18.14 | 17.82 | 18.62 | 19.09 | 17.18 | 17.98 | 17.66 | 18.46 | 18.92 |
| | 6H | 18.24 | 18.91 | 18.75 | 19.41 | 19.90 | 18.02 | 18.69 | 18.53 | 19.19 | 19.68 |
| | 8H | 18.66 | 19.24 | 19.16 | 19.73 | 20.29 | 18.40 | 18.99 | 18.91 | 19.48 | 20.04 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2510-566-18-R2

Test Date: 10/15/2025

Luminaire Tested: 22CGTX-50-L92765-W2A-6500K

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

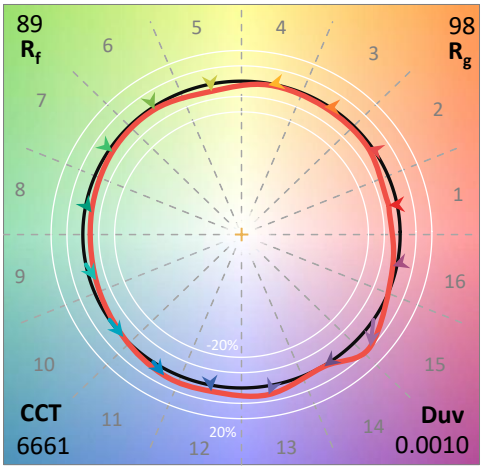
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2510-566-18-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-6500K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-566-18-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 50000 Lumen CGTX TUNABLE WHITE FROM 2700K TO 6500K - 1.5 V |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 6661 |
| CIE u': | 0.1988 |
| CIE v': | 0.4648 |
| Duv: | 0.0010 |
| CIE x: | 0.3108 |
| CIE y: | 0.3230 |
| CIE z: | 0.3662 |
| Peak Wavelength (nm): | 453 |
| Dominant Wavelength (nm): | 485 |
| Purity: | 8.426951 |
| Rf: | 88.9 |
| Rg: | 97.8 |

| | | | | | |
|---|---|---|---|---|---|
| CRI (Ra): | 93.3 | | | | |
| R1: | 94.6 | R9: | 71.5 | | |
| R2: | 96.1 | R10: | 88.2 | | |
| R3: | 93.9 | R11: | 93.9 | | |
| R4: | 93.7 | R12: | 65.1 | | |
| R5: | 92.6 | R13: | 96.0 | | |
| R6: | 90.7 | R14: | 96.5 | | |
| R7: | 95.1 | R15: | 93.4 | | |
| R8: | 90.0 | | | | |



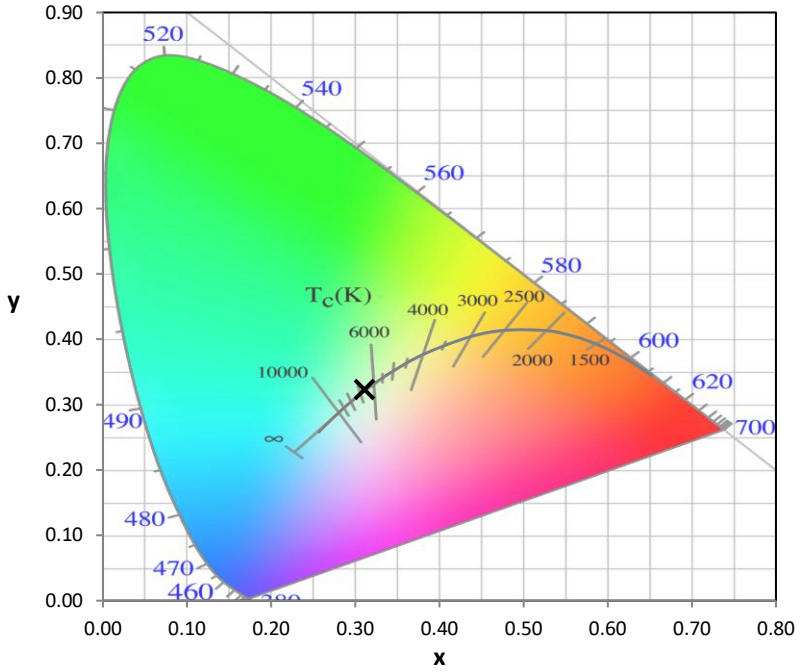

## Test Conditions

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

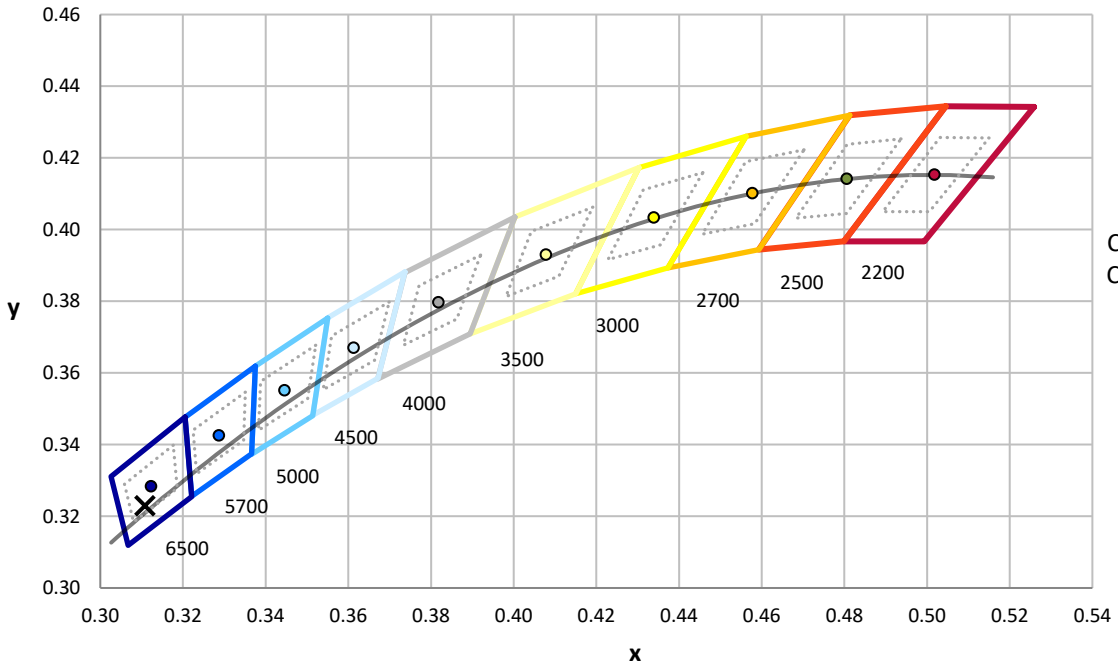
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 6/16/2025 | 12/16/2025 |
| Power Meter | XITRON INXT2011004 | 1/21/2025 | 1/21/2026 |
| AC Power Source | CHROMA 61603 IN0063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

REPORT NUMBER: SP1-2510-566-18-R2

## CIE 1931 Chromaticity Diagram




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

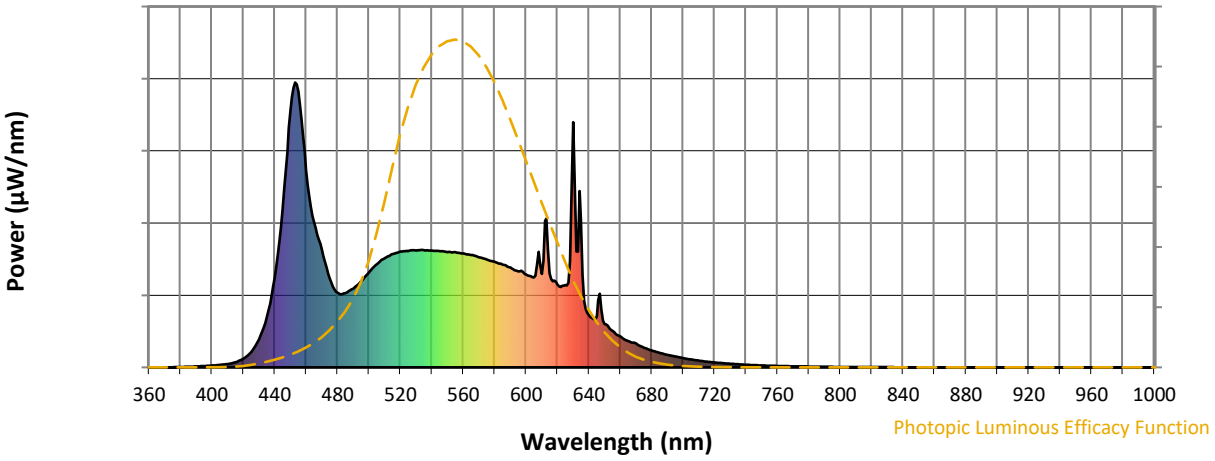



CCT = 6661K
CIE x = 0.3108
CIE y = 0.3230
Duv = 0.0010

Point lies inside the ANSI 6500K 4-step quadrangle

REPORT NUMBER: SP1-2510-566-18-R2

## Photopic Flux vs. Wavelength

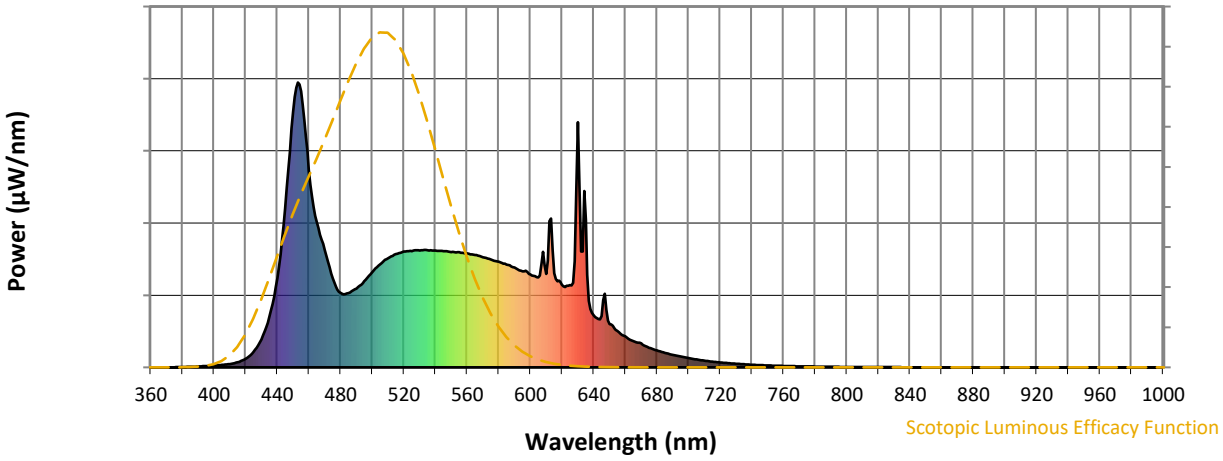



## Photopic Lumens: NR

| 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 | 277 | NR | 620 | 290 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 302 | NR | 625 | 288 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 334 | NR | 630 | 861 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 361 | NR | 635 | 516 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 383 | NR | 640 | 183 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 398 | NR | 645 | 180 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 406 | NR | 650 | 151 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 408 | NR | 655 | 128 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 410 | NR | 660 | 109 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 411 | NR | 665 | 92 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 411 | NR | 670 | 84 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 408 | NR | 675 | 69 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 405 | NR | 680 | 59 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 54 | NR | 555 | 404 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 98 | NR | 560 | 400 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 179 | NR | 565 | 394 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 314 | NR | 570 | 386 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 557 | NR | 575 | 378 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 898 | NR | 580 | 370 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 970 | NR | 585 | 361 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 692 | NR | 590 | 351 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 510 | NR | 595 | 337 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 411 | NR | 600 | 326 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 313 | NR | 605 | 316 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 262 | NR | 610 | 328 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 261 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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## Scotopic Flux vs. Wavelength

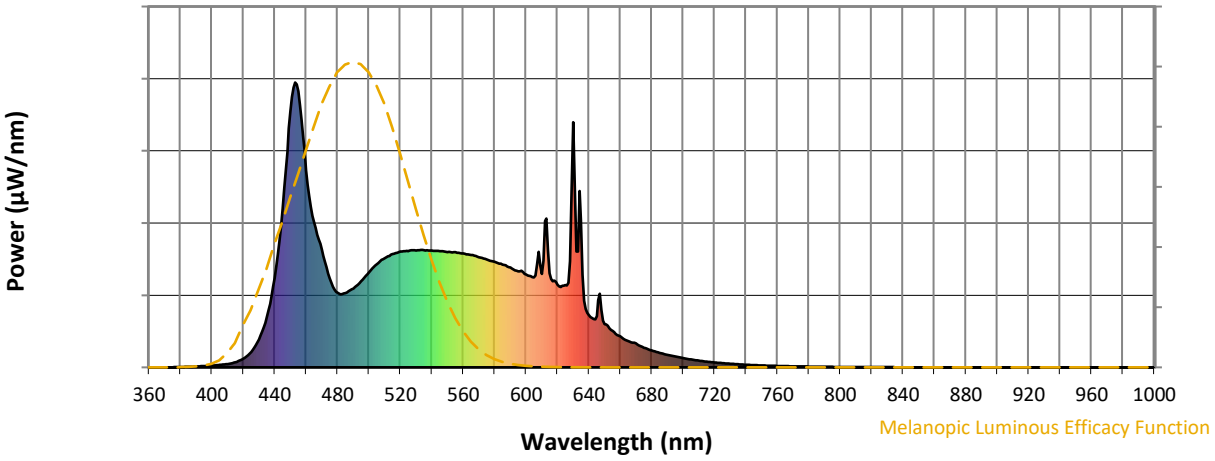



**Scotopic Lumens: NR** **S/P: 2.39**

| 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 | 277 | NR | 620 | 290 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 302 | NR | 625 | 288 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 334 | NR | 630 | 861 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 361 | NR | 635 | 516 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 383 | NR | 640 | 183 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 398 | NR | 645 | 180 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 406 | NR | 650 | 151 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 408 | NR | 655 | 128 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 410 | NR | 660 | 109 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 411 | NR | 665 | 92 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 411 | NR | 670 | 84 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 408 | NR | 675 | 69 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 405 | NR | 680 | 59 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 54 | NR | 555 | 404 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 98 | NR | 560 | 400 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 179 | NR | 565 | 394 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 314 | NR | 570 | 386 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 557 | NR | 575 | 378 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 898 | NR | 580 | 370 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 970 | NR | 585 | 361 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 692 | NR | 590 | 351 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 510 | NR | 595 | 337 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 411 | NR | 600 | 326 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 313 | NR | 605 | 316 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 262 | NR | 610 | 328 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 261 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 5.37**

| 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 | 277 | NR | 620 | 290 | NR | 750 | 7 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 302 | NR | 625 | 288 | NR | 755 | 6 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 334 | NR | 630 | 861 | NR | 760 | 5 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 361 | NR | 635 | 516 | NR | 765 | 4 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 383 | NR | 640 | 183 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 398 | NR | 645 | 180 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 406 | NR | 650 | 151 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 5 | NR | 525 | 408 | NR | 655 | 128 | NR | 785 | 2 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 410 | NR | 660 | 109 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 9 | NR | 535 | 411 | NR | 665 | 92 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 12 | NR | 540 | 411 | NR | 670 | 84 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 408 | NR | 675 | 69 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 405 | NR | 680 | 59 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 54 | NR | 555 | 404 | NR | 685 | 51 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 98 | NR | 560 | 400 | NR | 690 | 44 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 179 | NR | 565 | 394 | NR | 695 | 38 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 314 | NR | 570 | 386 | NR | 700 | 32 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 557 | NR | 575 | 378 | NR | 705 | 28 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 898 | NR | 580 | 370 | NR | 710 | 24 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 970 | NR | 585 | 361 | NR | 715 | 20 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 692 | NR | 590 | 351 | NR | 720 | 17 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 510 | NR | 595 | 337 | NR | 725 | 15 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 411 | NR | 600 | 326 | NR | 730 | 13 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 313 | NR | 605 | 316 | NR | 735 | 11 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 262 | NR | 610 | 328 | NR | 740 | 9 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 261 | NR | 615 | 331 | NR | 745 | 8 | NR | 875 | 0 | NR | | | |

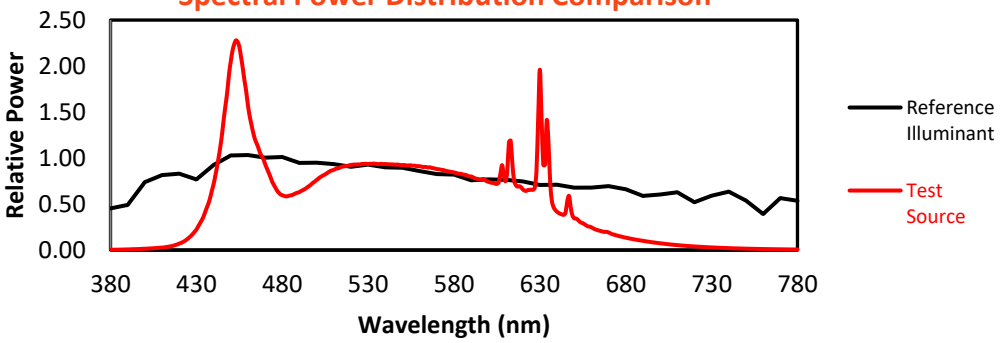
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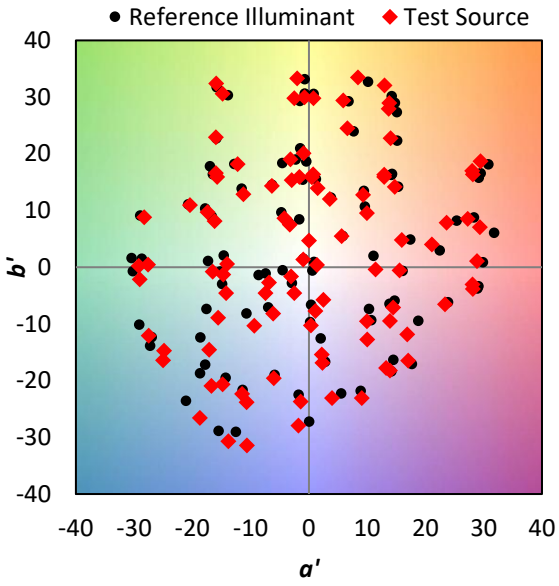
## Summary

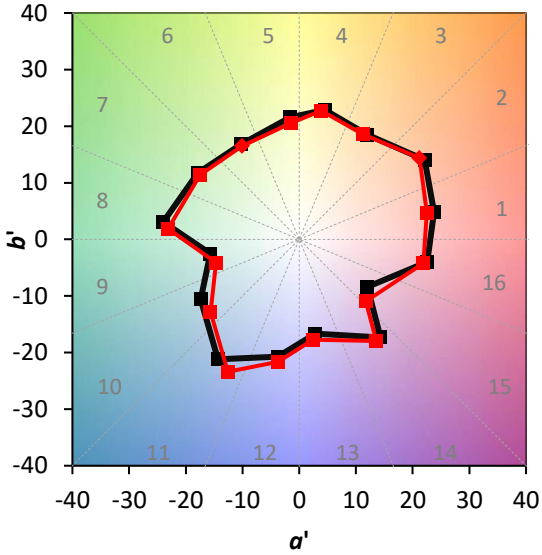
$R_f$ = 88.9
$R_g$ = 97.8
CIE $R_a$ = 93.3
$R_9$ = 71.5

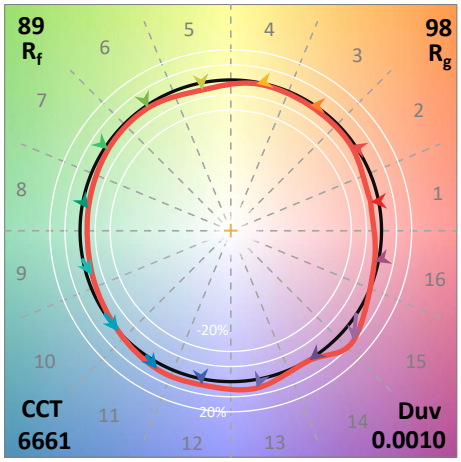
## Spectral Power Distribution Comparison

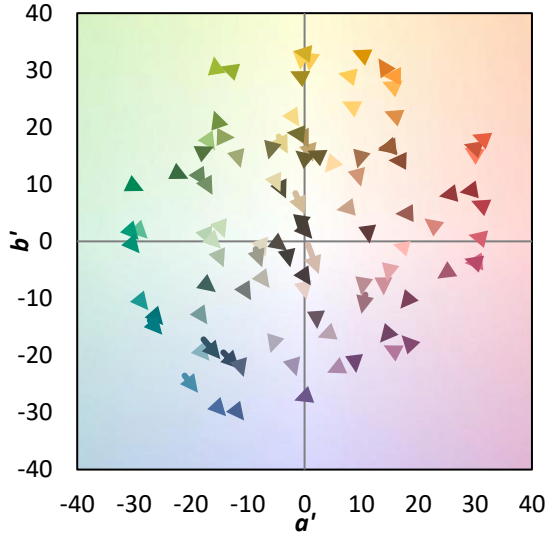



## Color Vector Graphics



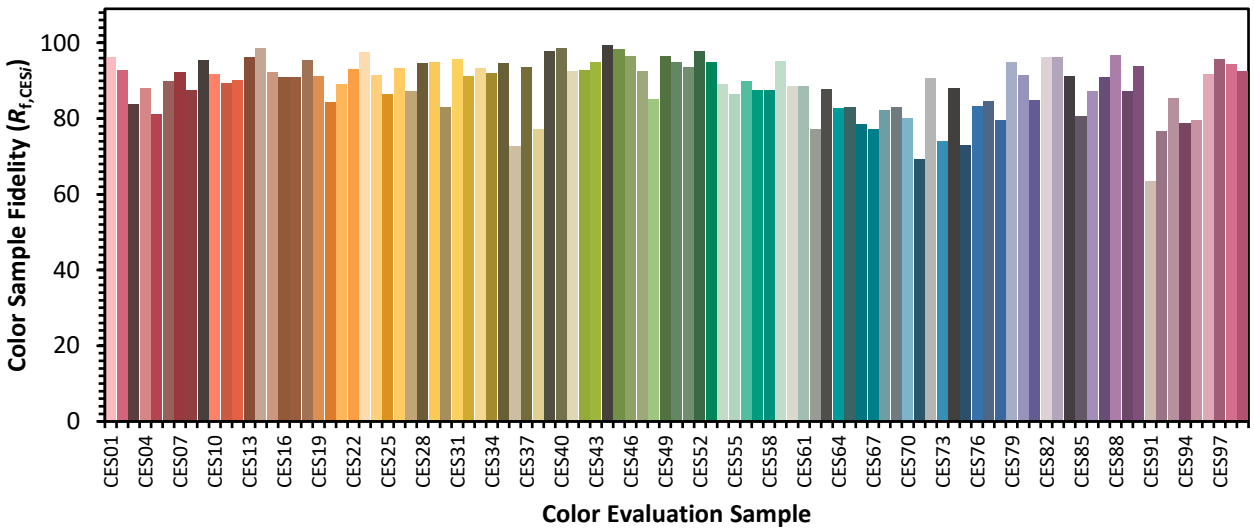



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**Individual Sample Fidelity Index ($R_{f,i}$)**

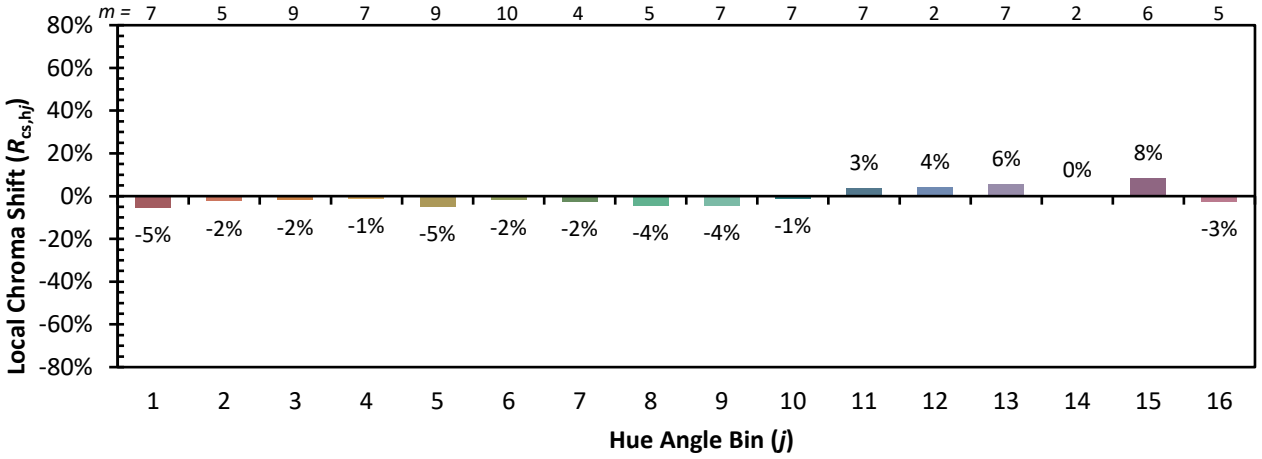
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 93 | CES51 = 94 | CES76 = 83 |
| CES02 = 60 | CES27 = 87 | CES52 = 98 | CES77 = 85 |
| CES03 = 31 | CES28 = 95 | CES53 = 95 | CES78 = 80 |
| CES04 = 68 | CES29 = 95 | CES54 = 89 | CES79 = 95 |
| CES05 = 47 | CES30 = 83 | CES55 = 86 | CES80 = 91 |
| CES06 = 49 | CES31 = 96 | CES56 = 90 | CES81 = 85 |
| CES07 = 40 | CES32 = 91 | CES57 = 87 | CES82 = 96 |
| CES08 = 39 | CES33 = 93 | CES58 = 88 | CES83 = 96 |
| CES09 = 29 | CES34 = 92 | CES59 = 95 | CES84 = 91 |
| CES10 = 72 | CES35 = 95 | CES60 = 89 | CES85 = 81 |
| CES11 = 55 | CES36 = 73 | CES61 = 89 | CES86 = 87 |
| CES12 = 61 | CES37 = 94 | CES62 = 77 | CES87 = 91 |
| CES13 = 42 | CES38 = 77 | CES63 = 88 | CES88 = 97 |
| CES14 = 74 | CES39 = 98 | CES64 = 83 | CES89 = 87 |
| CES15 = 70 | CES40 = 99 | CES65 = 83 | CES90 = 94 |
| CES16 = 46 | CES41 = 92 | CES66 = 78 | CES91 = 63 |
| CES17 = 48 | CES42 = 93 | CES67 = 77 | CES92 = 77 |
| CES18 = 55 | CES43 = 95 | CES68 = 82 | CES93 = 85 |
| CES19 = 70 | CES44 = 99 | CES69 = 83 | CES94 = 79 |
| CES20 = 64 | CES45 = 98 | CES70 = 80 | CES95 = 80 |
| CES21 = 84 | CES46 = 96 | CES71 = 69 | CES96 = 92 |
| CES22 = 76 | CES47 = 93 | CES72 = 91 | CES97 = 96 |
| CES23 = 91 | CES48 = 85 | CES73 = 74 | CES98 = 94 |
| CES24 = 89 | CES49 = 96 | CES74 = 88 | CES99 = 92 |
| CES25 = 70 | CES50 = 95 | CES75 = 73 | |

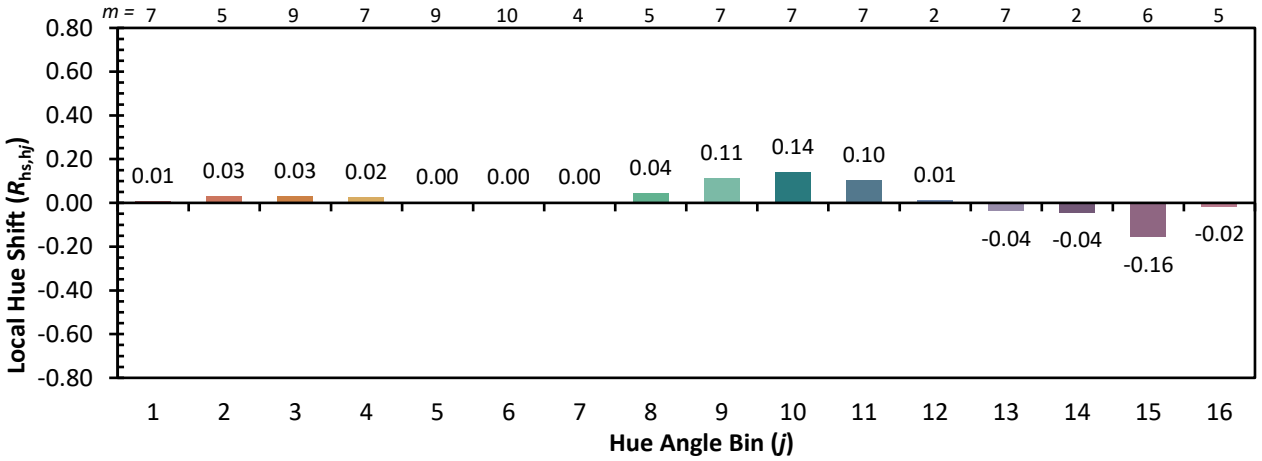


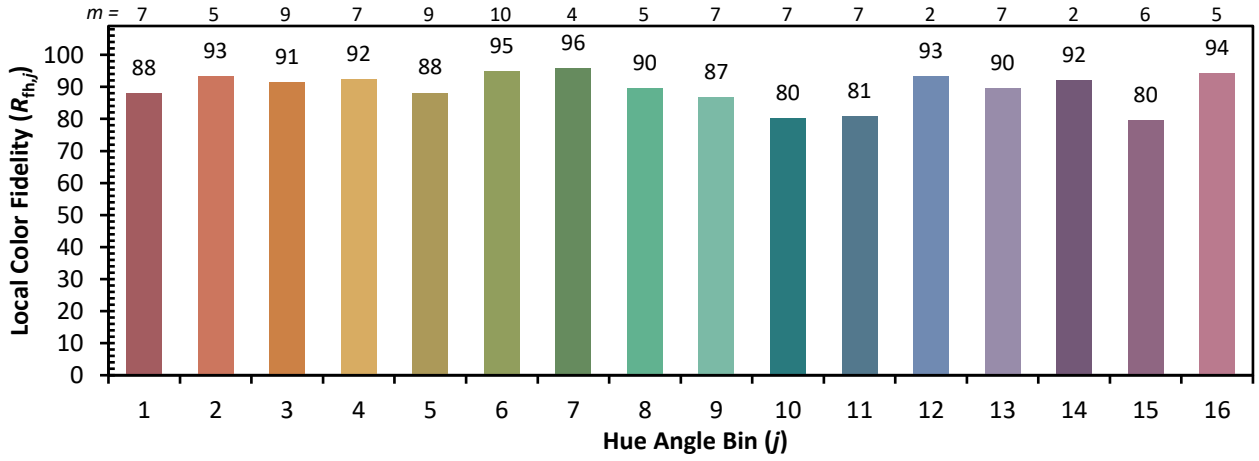
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## Color Rendition by Hue-Angle Bin



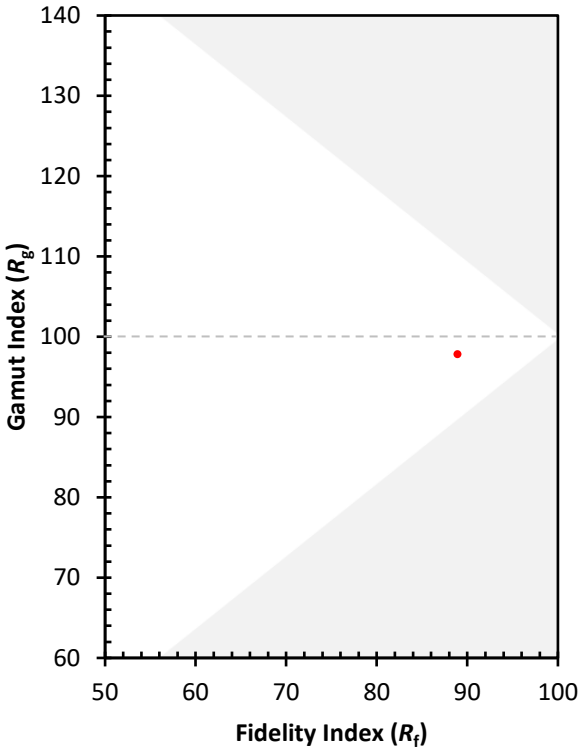



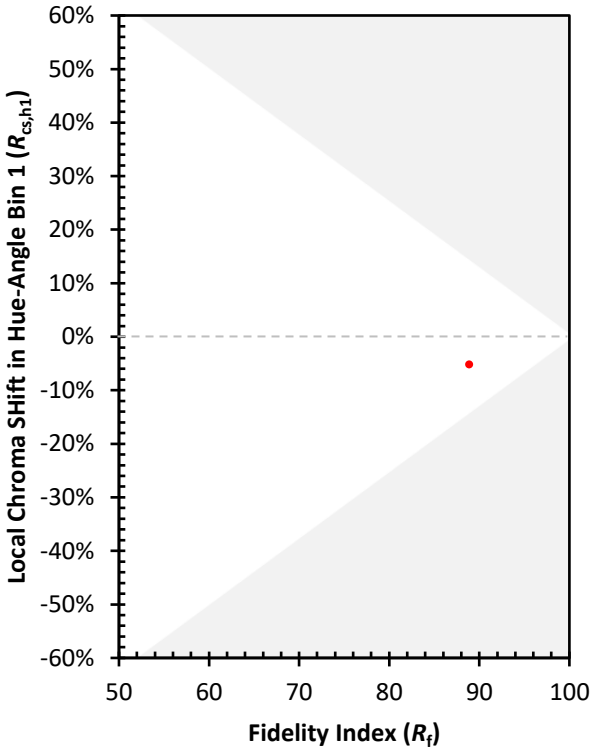



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## Measure Comparisons




(END OF REPORT)