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: P1590940

Luminaire Tested: 24CGTX-30-L93050-W2A-5000K

Issue Date: 9/7/2026

Report Generated By 670265710 / DESKTOP-98SHLC4

Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

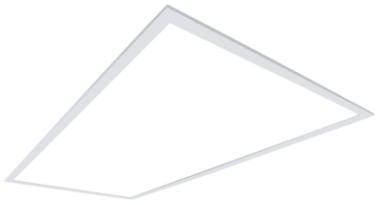
Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1590940 |
| | TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2512-631-15) |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24CGTX-30-L93050-W2A-5000K |
| Description: | 2X4 3000 LUMEN CGTX TROFFER WITH VividTune LEDS AT 5000K CCT |
| Light Source: | 5000K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 3220.6 lumens |
| Efficiency: | N/A |
| Efficacy: | 125.3 lumens/watt |
| Spacing Criteria (0/90/45): | 1.28 / 1.27 / 1.39 |
| Luminous Opening: | Rectangular (W 2' x L: 4' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 25.7 |
| Input Voltage (V): | 120 |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 24 FT |

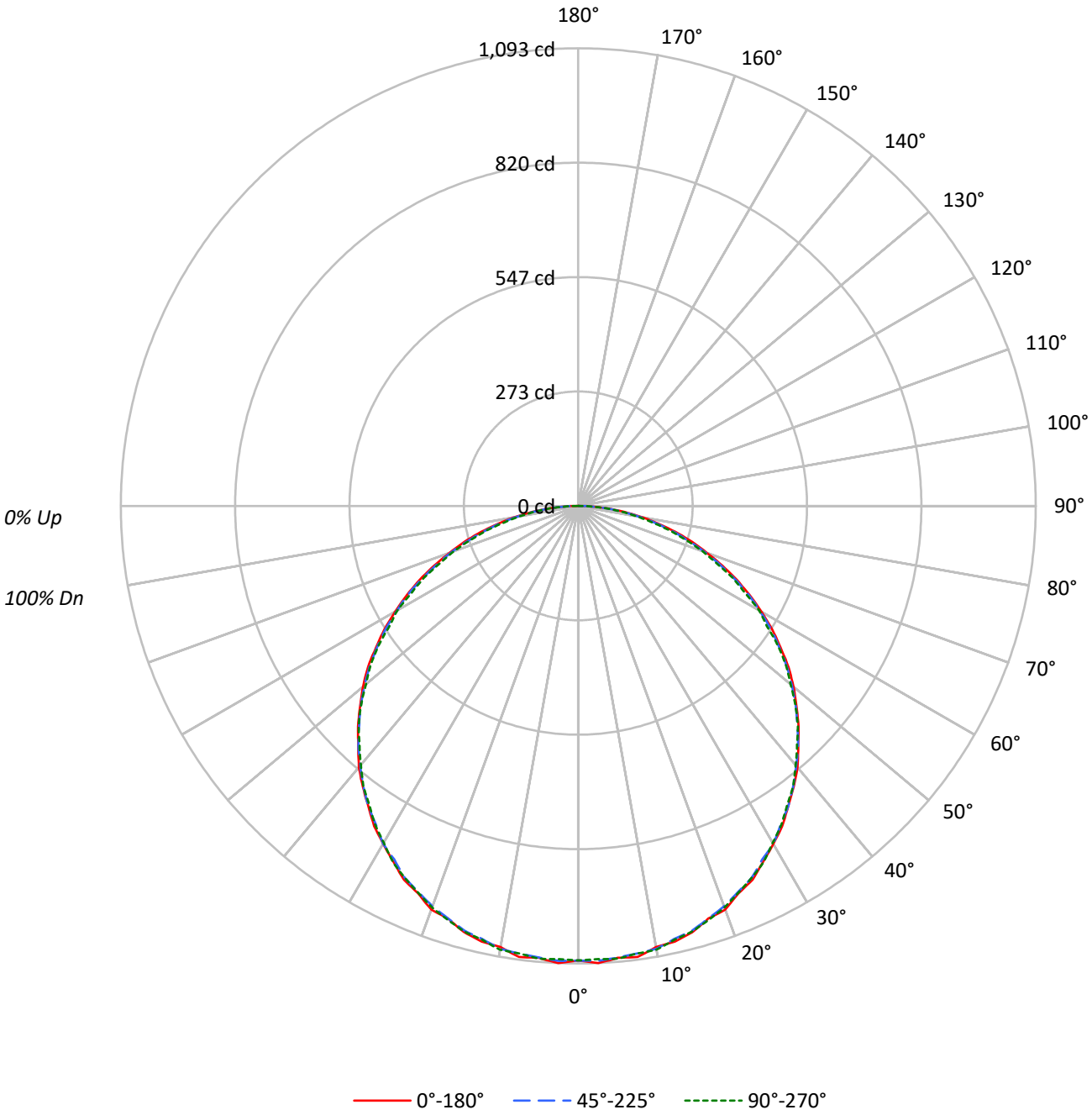


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590940
CATALOG NUMBER: 24CGTX-30-L93050-W2A-5000K

## Luminous Intensity Polar Plot



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Scaled Data Report

TEST NUMBER: P1590940
CATALOG NUMBER: 24CGTX-30-L93050-W2A-5000K

## 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 | 93 | 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 | 57 |
| 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 | 62 | 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 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 36 | 30 | 25 | 23 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|---|---|---|---|
| 0° | 1461 | 1461 | 1461 |
| 5° | 1464 | 1462 | 1466 |
| 10° | 1462 | 1468 | 1470 |
| 15° | 1469 | 1463 | 1466 |
| 20° | 1469 | 1457 | 1462 |
| 25° | 1463 | 1455 | 1455 |
| 30° | 1448 | 1448 | 1443 |
| 35° | 1437 | 1437 | 1430 |
| 40° | 1432 | 1423 | 1419 |
| 45° | 1416 | 1408 | 1412 |
| 50° | 1405 | 1394 | 1385 |
| 55° | 1384 | 1374 | 1366 |
| 60° | 1359 | 1345 | 1343 |
| 65° | 1330 | 1313 | 1296 |
| 70° | 1285 | 1261 | 1240 |
| 75° | 1248 | 1205 | 1172 |
| 80° | 1189 | 1132 | 1084 |
| 85° | 1079 | 1048 | 999 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1416 cd/sqm

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TEST NUMBER: P1590940
CATALOG NUMBER: 24CGTX-30-L93050-W2A-5000K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 103.1 | 3.2 |
| 10°-20° | 296.3 | 9.2 |
| 20°-30° | 451.1 | 14.0 |
| 30°-40° | 546.9 | 17.0 |
| 40°-50° | 571.9 | 17.8 |
| 50°-60° | 523.2 | 16.2 |
| 60°-70° | 406.8 | 12.6 |
| 70°-80° | 244.9 | 7.6 |
| 80°-90° | 76.3 | 2.4 |
| 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° | 850.5 | 26.4 |
| 0°-40° | 1397.4 | 43.4 |
| 0°-60° | 2492.5 | 77.4 |
| 0°-90° | 3220.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3220.6 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 1086 | 1086 | 1086 | 1086 | 1086 | |
| 5° | 1084 | 1086 | 1082 | 1078 | 1086 | 103 |
| 15° | 1054 | 1048 | 1050 | 1045 | 1052 | 297 |
| 25° | 985 | 980 | 980 | 975 | 980 | 453 |
| 35° | 875 | 873 | 875 | 873 | 871 | 548 |
| 45° | 744 | 744 | 740 | 740 | 742 | 574 |
| 55° | 590 | 589 | 586 | 582 | 582 | 528 |
| 65° | 418 | 413 | 412 | 407 | 407 | 413 |
| 75° | 240 | 236 | 232 | 226 | 226 | 253 |
| 85° | 70 | 72 | 68 | 67 | 65 | 79 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Scaled Data Report

TEST NUMBER: P1590940
CATALOG NUMBER: 24CGTX-30-L93050-W2A-5000K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | *1085.6* | 1085.6 | 1085.6 | 1085.6 | 1085.6 |
| 2.5° | *1093.0* | *1088.8* | *1087.7* | *1088.8* | *1083.6* |
| 5° | *1083.6* | 1085.6 | 1082.5 | 1078.3 | 1085.6 |
| 7.5° | *1086.7* | 1076.3 | 1078.3 | 1081.5 | 1078.3 |
| 10° | *1070.0* | 1074.2 | 1074.2 | 1064.8 | 1076.3 |
| 12.5° | *1065.8* | 1061.6 | 1059.5 | 1064.8 | 1061.6 |
| 15° | *1054.3* | 1048.1 | 1050.2 | 1044.9 | 1052.2 |
| 17.5° | *1033.5* | 1036.6 | 1033.5 | 1037.6 | 1036.6 |
| 20° | *1026.1* | 1017.8 | 1017.8 | 1013.6 | 1020.9 |
| 22.5° | *1001.1* | 999.0 | 998.0 | 1002.1 | 1000.0 |
| 25° | *985.4* | 980.2 | 980.2 | 975.0 | 980.2 |
| 27.5° | *957.2* | 955.2 | 952.0 | 957.2 | 959.3 |
| 30° | *932.2* | 930.1 | 932.2 | 925.9 | 929.1 |
| 32.5° | *907.1* | 906.1 | 900.9 | 901.9 | 903.0 |
| 35° | *874.8* | 872.7 | 874.8 | 872.7 | 870.6 |
| 37.5° | *845.6* | 845.6 | 843.5 | 843.5 | 843.5 |
| 40° | *815.3* | 814.2 | 810.1 | 808.0 | 808.0 |
| 42.5° | *777.7* | 777.7 | 777.7 | 775.6 | 773.5 |
| 45° | *744.3* | 744.3 | 740.1 | 740.1 | 742.2 |
| 47.5° | *706.7* | 707.8 | 704.6 | 701.5 | 703.6 |
| 50° | *671.2* | 666.0 | 666.0 | 663.9 | 661.8 |
| 52.5° | *633.6* | 628.4 | 627.4 | 623.2 | 625.3 |
| 55° | *589.8* | 588.8 | 585.6 | 582.5 | 582.5 |
| 57.5° | *549.1* | 544.9 | 544.9 | 539.7 | 534.5 |
| 60° | *505.2* | 505.2 | 500.0 | 496.9 | 499.0 |
| 62.5° | *461.4* | 461.4 | 458.3 | 451.0 | 447.8 |
| 65° | *417.6* | 413.4 | 412.3 | 407.1 | 407.1 |
| 67.5° | *372.7* | 372.7 | 365.4 | 360.1 | 357.0 |
| 70° | *326.7* | 323.6 | 320.5 | 316.3 | 315.3 |
| 72.5° | *285.0* | 281.9 | 274.5 | 269.3 | 268.3 |
| 75° | *240.1* | 235.9 | 231.7 | 225.5 | 225.5 |
| 77.5° | *195.2* | 192.1 | 190.0 | 182.7 | 179.5 |
| 80° | *153.5* | 152.4 | 146.1 | 142.0 | 139.9 |
| 82.5° | *111.7* | 109.6 | 106.5 | 103.3 | 103.3 |
| 85° | *69.9* | 72.0 | 67.9 | 66.8 | 64.7 |
| 87.5° | *33.4* | 32.4 | 31.3 | 31.3 | 31.3 |
| 90° | *0.0* | 0.0 | 0.0 | 0.0 | 0.0 |

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TEST NUMBER: P1590940
CATALOG NUMBER: 24CGTX-30-L93050-W2A-5000K

**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 | 13.32 | 14.98 | 13.68 | 15.29 | 15.61 | 13.23 | 14.89 | 13.59 | 15.20 | 15.52 |
| | 3H | 15.25 | 16.76 | 15.63 | 17.08 | 17.44 | 15.09 | 16.60 | 15.47 | 16.92 | 17.28 |
| | 4H | 16.02 | 17.44 | 16.42 | 17.79 | 18.16 | 15.81 | 17.23 | 16.21 | 17.58 | 17.95 |
| | 6H | 16.62 | 17.94 | 17.03 | 18.30 | 18.69 | 16.36 | 17.68 | 16.77 | 18.04 | 18.43 |
| | 8H | 16.84 | 18.10 | 17.26 | 18.49 | 18.88 | 16.56 | 17.82 | 16.98 | 18.20 | 18.60 |
| | 12H | 16.99 | 18.20 | 17.42 | 18.58 | 19.01 | 16.70 | 17.91 | 17.13 | 18.29 | 18.72 |
| 4H | 2H | 13.98 | 15.40 | 14.37 | 15.74 | 16.12 | 13.91 | 15.33 | 14.30 | 15.67 | 16.05 |
| | 3H | 16.13 | 17.33 | 16.54 | 17.72 | 18.12 | 15.99 | 17.19 | 16.40 | 17.59 | 17.99 |
| | 4H | 17.03 | 18.12 | 17.46 | 18.53 | 18.96 | 16.84 | 17.93 | 17.28 | 18.34 | 18.78 |
| | 6H | 17.78 | 18.73 | 18.23 | 19.17 | 19.62 | 17.53 | 18.48 | 17.98 | 18.92 | 19.37 |
| | 8H | 18.06 | 18.95 | 18.51 | 19.39 | 19.85 | 17.78 | 18.67 | 18.24 | 19.11 | 19.57 |
| | 12H | 18.27 | 19.07 | 18.74 | 19.54 | 20.01 | 17.97 | 18.78 | 18.45 | 19.25 | 19.72 |
| 8H | 4H | 17.37 | 18.26 | 17.83 | 18.71 | 19.17 | 17.21 | 18.10 | 17.67 | 18.54 | 19.00 |
| | 6H | 18.26 | 19.00 | 18.75 | 19.49 | 19.97 | 18.03 | 18.77 | 18.52 | 19.26 | 19.73 |
| | 8H | 18.62 | 19.29 | 19.13 | 19.80 | 20.28 | 18.36 | 19.03 | 18.87 | 19.54 | 20.02 |
| | 12H | 18.93 | 19.52 | 19.43 | 20.01 | 20.57 | 18.65 | 19.24 | 19.15 | 19.73 | 20.29 |
| 12H | 4H | 17.42 | 18.22 | 17.90 | 18.69 | 19.16 | 17.26 | 18.06 | 17.74 | 18.54 | 19.00 |
| | 6H | 18.33 | 19.00 | 18.84 | 19.51 | 19.99 | 18.11 | 18.78 | 18.62 | 19.28 | 19.77 |
| | 8H | 18.76 | 19.35 | 19.26 | 19.84 | 20.40 | 18.51 | 19.10 | 19.02 | 19.59 | 20.15 |

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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: SP1-2512-631-24-R2

Test Date: 02/04/2026

Luminaire Tested: 22CGTX-50-L93050-W2A-5000K

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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

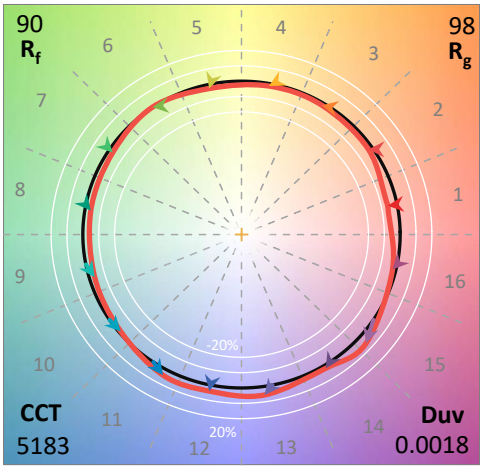
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2512-631-24-R2 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 07/28/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Metalux |
| Catalog Number: | **22CGTX-50-L93050-W2A-5000K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-631-24-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 5000 LUMEN HE CGTX TUNABLE WHITE FROM 3000K TO 5000K - 1 Volt |

## Spectral Parameters

| | |
|---|---|
| CCT (K): | 5183 |
| CIE u': | 0.2084 |
| CIE v': | 0.4838 |
| Duv: | 0.0018 |
| CIE x: | 0.3404 |
| CIE y: | 0.3513 |
| CIE z: | 0.3084 |
| Peak Wavelength (nm): | 630 |
| Dominant Wavelength (nm): | 567 |
| Purity: | 7.523728 |
| Rf: | 89.8 |
| Rg: | 98.4 |

| | |
|---|---|
| CRI (Ra): | 93.0 |
| R1: | 94.0 |
| R2: | 95.9 |
| R3: | 95.1 |
| R4: | 93.5 |
| R5: | 92.7 |
| R6: | 92.2 |
| R7: | 94.0 |
| R8: | 86.9 |
| R9: | 64.0 |
| R10: | 88.2 |
| R11: | 93.7 |
| R12: | 69.8 |
| R13: | 94.9 |
| R14: | 97.0 |
| R15: | 92.0 |



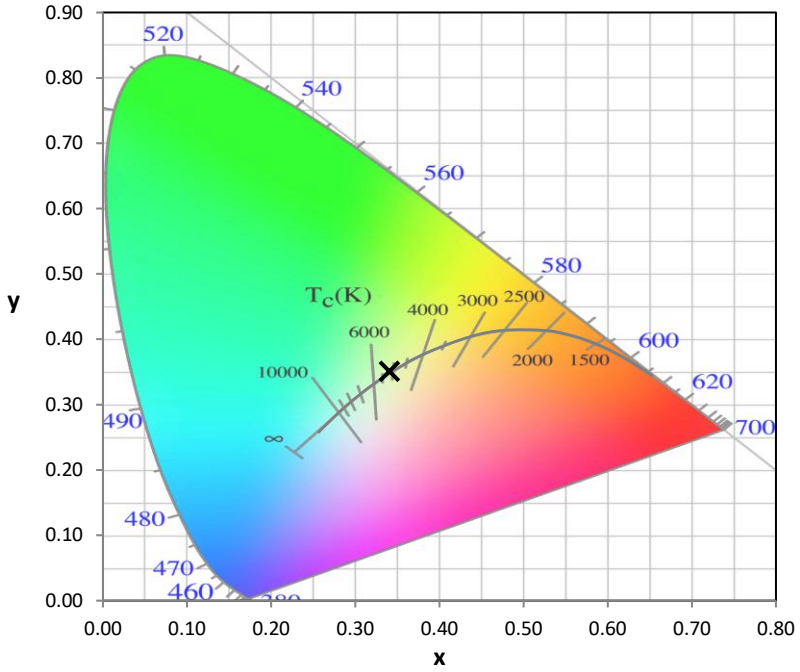

## Test Conditions

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

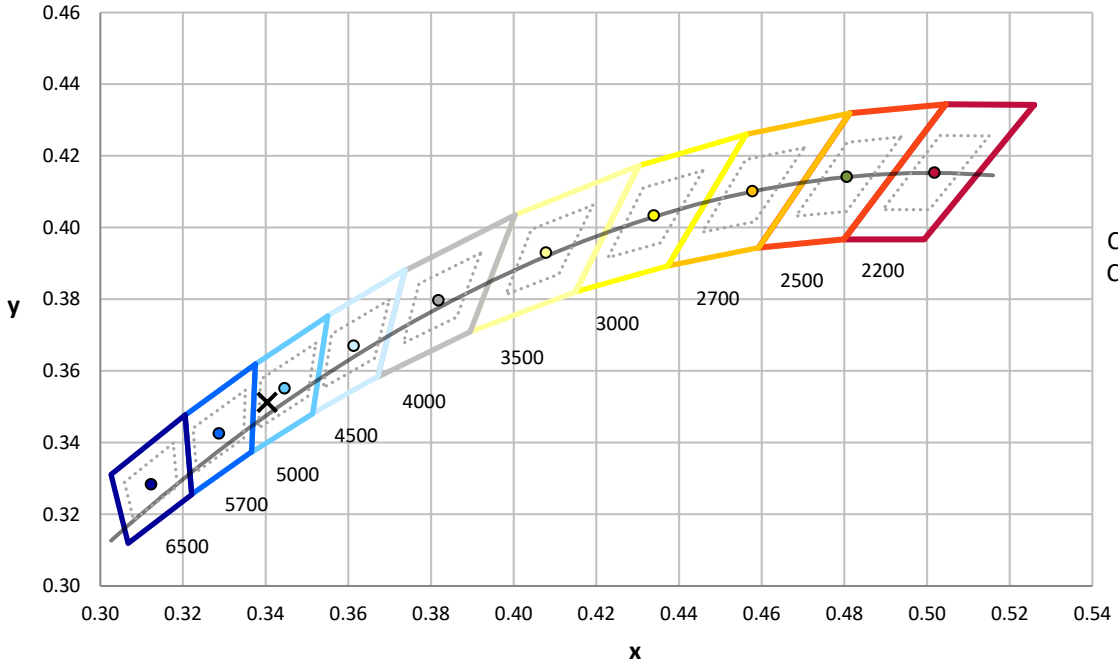
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 12/16/2025 | 6/16/2026 |
| Power Meter | XITRON INXT2011004 | 10/21/2025 | 10/21/2026 |
| AC Power Source | CHROMA 61603 IN0063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

REPORT NUMBER: SP1-2512-631-24-R2

## CIE 1931 Chromaticity Diagram




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

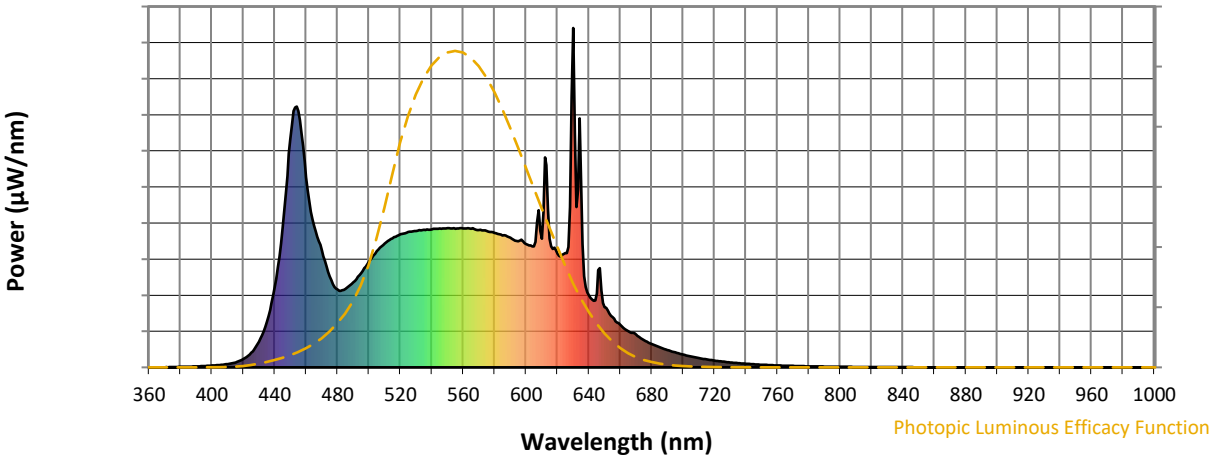



CCT = 5183K
CIE x = 0.3404
CIE y = 0.3513
Duv = 0.0018

Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-2512-631-24-R2

## Photopic Flux vs. Wavelength

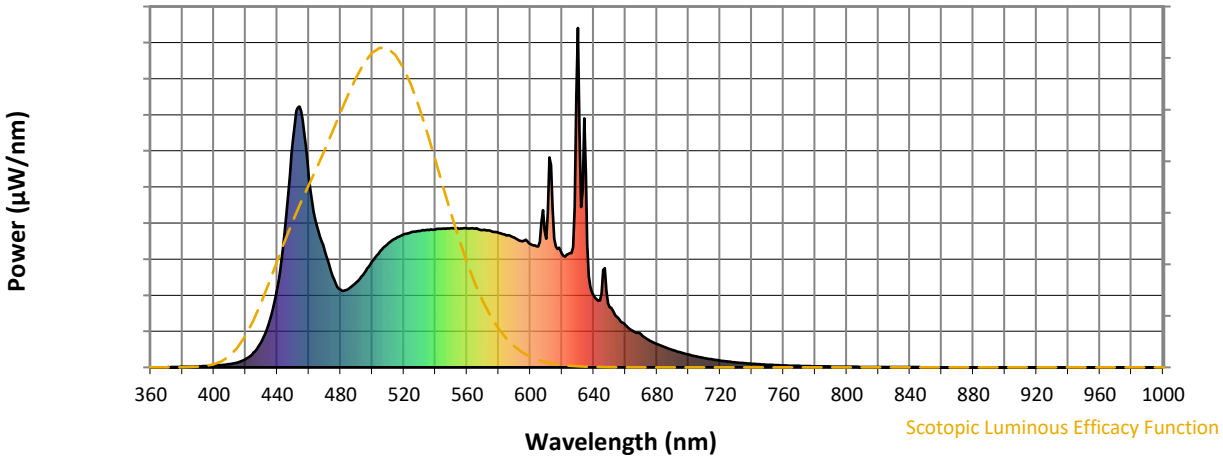



## Photopic Lumens: NR

| 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 | 251 | NR | 620 | 335 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 277 | NR | 625 | 337 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 312 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 1 | NR | 505 | 342 | NR | 635 | 569 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 365 | NR | 640 | 212 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 380 | NR | 645 | 218 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 392 | NR | 650 | 177 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 399 | NR | 655 | 148 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 402 | NR | 660 | 126 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 406 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 407 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 409 | NR | 675 | 80 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 410 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 43 | NR | 555 | 409 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 76 | NR | 560 | 409 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 135 | NR | 565 | 409 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 235 | NR | 570 | 405 | NR | 700 | 38 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 412 | NR | 575 | 402 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 396 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 756 | NR | 585 | 389 | NR | 715 | 23 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 560 | NR | 590 | 382 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 371 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 344 | NR | 600 | 363 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 268 | NR | 605 | 356 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 231 | NR | 615 | 379 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2512-631-24-R2

## Scotopic Flux vs. Wavelength

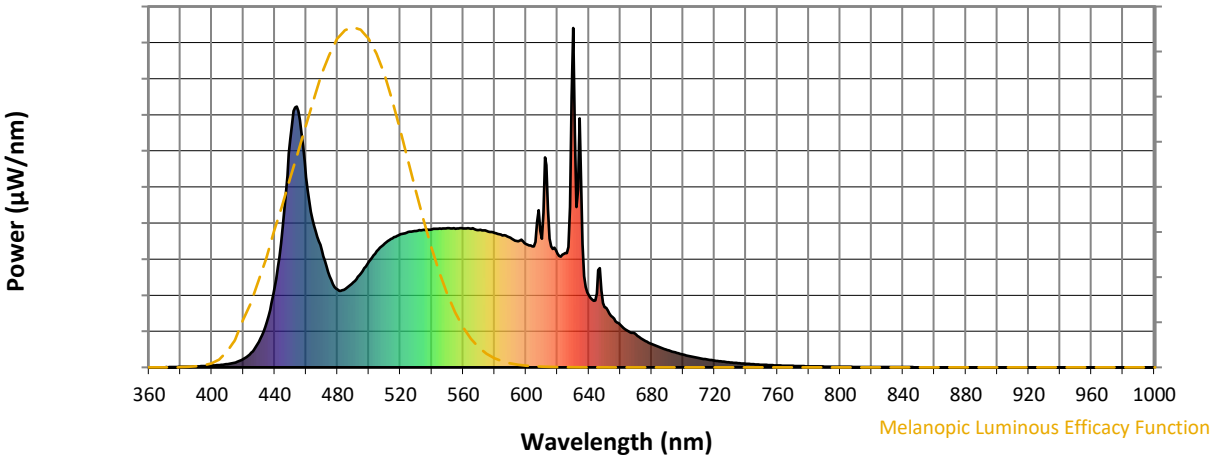



**Scotopic Lumens: NR** **S/P: 2.11**

| 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 | 251 | NR | 620 | 335 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 277 | NR | 625 | 337 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 312 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 1 | NR | 505 | 342 | NR | 635 | 569 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 365 | NR | 640 | 212 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 380 | NR | 645 | 218 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 392 | NR | 650 | 177 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 399 | NR | 655 | 148 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 402 | NR | 660 | 126 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 406 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 407 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 409 | NR | 675 | 80 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 410 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 43 | NR | 555 | 409 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 76 | NR | 560 | 409 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 135 | NR | 565 | 409 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 235 | NR | 570 | 405 | NR | 700 | 38 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 412 | NR | 575 | 402 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 396 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 756 | NR | 585 | 389 | NR | 715 | 23 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 560 | NR | 590 | 382 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 371 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 344 | NR | 600 | 363 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 268 | NR | 605 | 356 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 231 | NR | 615 | 379 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

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## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 4.6**

| 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 | 251 | NR | 620 | 335 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 277 | NR | 625 | 337 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 312 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 1 | NR | 505 | 342 | NR | 635 | 569 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 2 | NR | 510 | 365 | NR | 640 | 212 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 2 | NR | 515 | 380 | NR | 645 | 218 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 392 | NR | 650 | 177 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 399 | NR | 655 | 148 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 5 | NR | 530 | 402 | NR | 660 | 126 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 406 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 407 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 409 | NR | 675 | 80 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 25 | NR | 550 | 410 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 43 | NR | 555 | 409 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 76 | NR | 560 | 409 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 135 | NR | 565 | 409 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 235 | NR | 570 | 405 | NR | 700 | 38 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 412 | NR | 575 | 402 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 675 | NR | 580 | 396 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 756 | NR | 585 | 389 | NR | 715 | 23 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 560 | NR | 590 | 382 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 418 | NR | 595 | 371 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 344 | NR | 600 | 363 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 268 | NR | 605 | 356 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 229 | NR | 610 | 379 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 231 | NR | 615 | 379 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

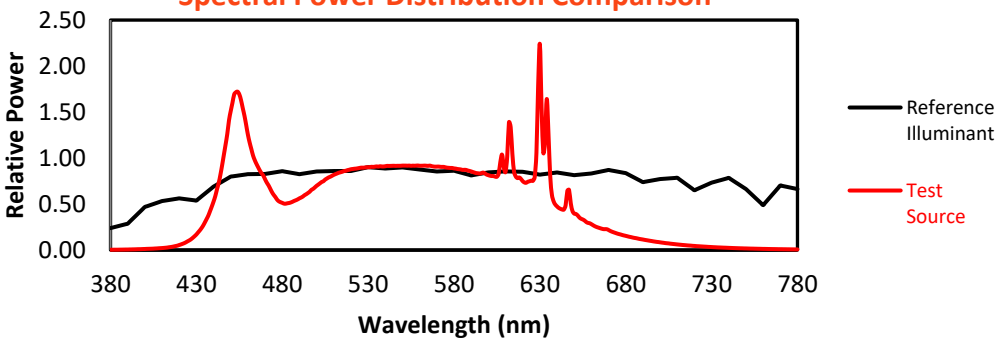
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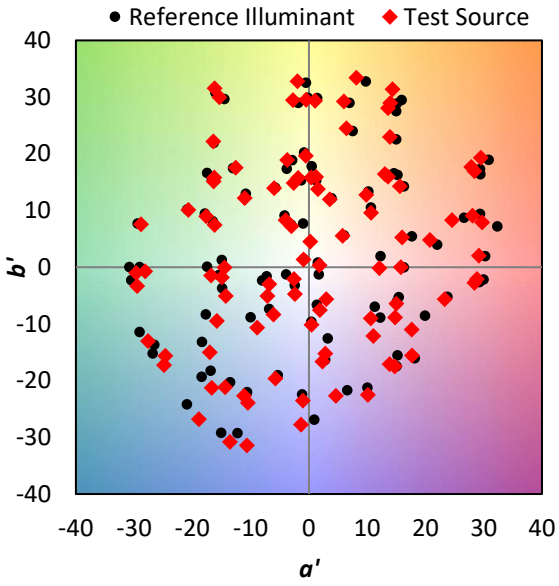
## Summary

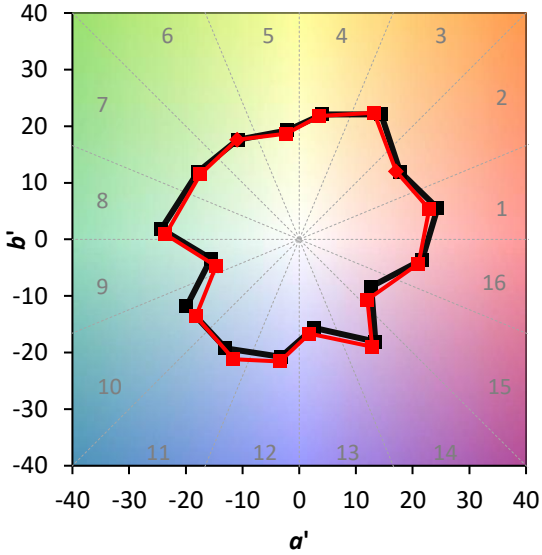
$R_f$ = 89.8
$R_g$ = 98.4
CIE $R_a$ = 93.0
$R_9$ = 64.0

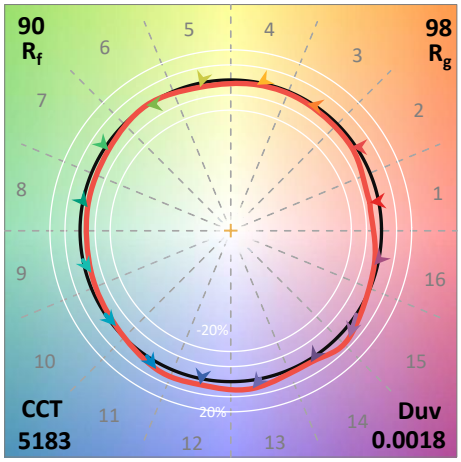
## Spectral Power Distribution Comparison

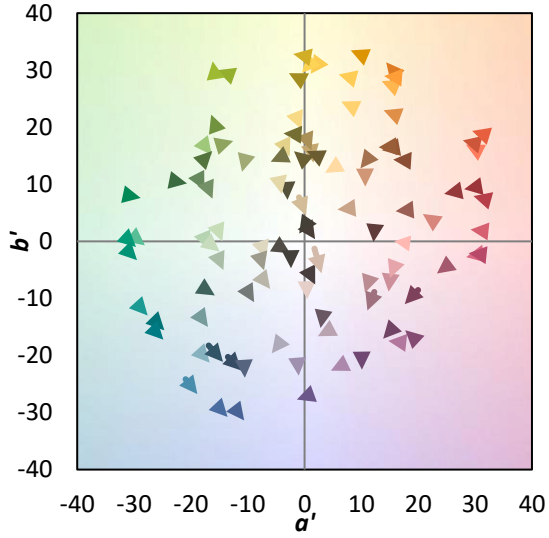



## Color Vector Graphics



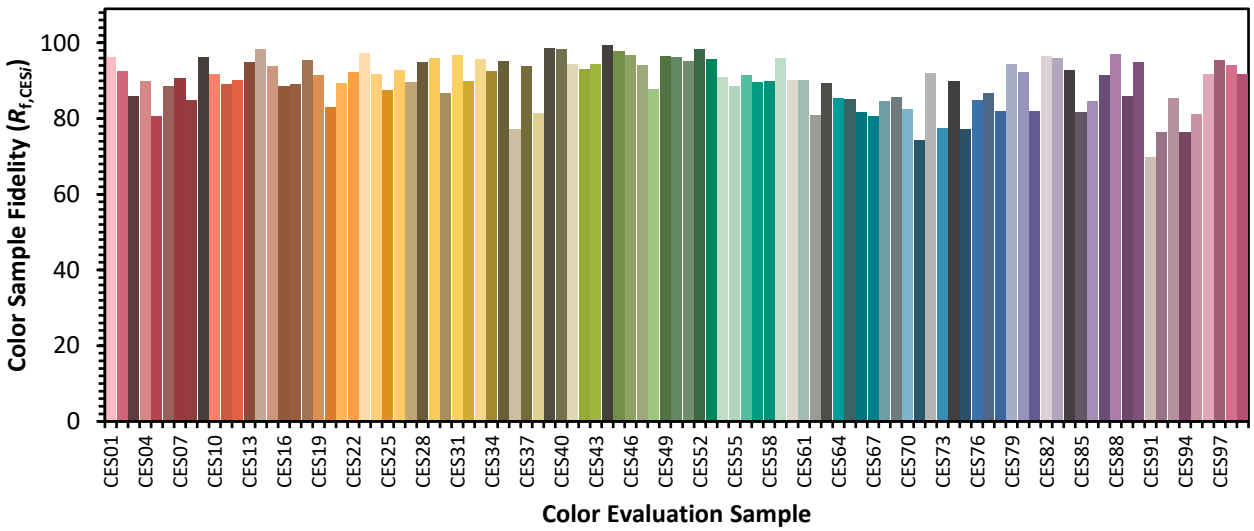



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**Individual Sample Fidelity Index ($R_{f,i}$)**

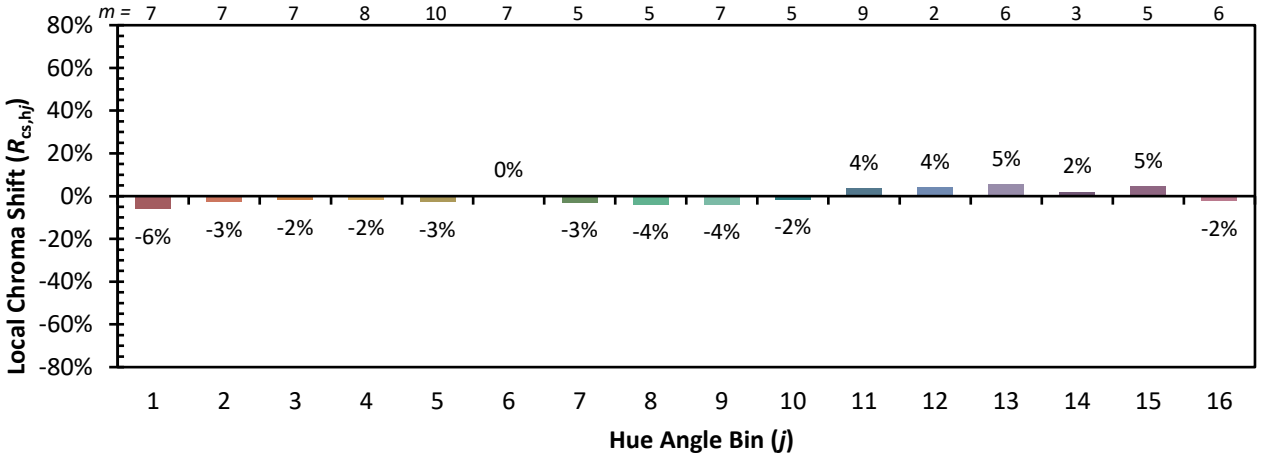
| | | | |
|---|---|---|---|
| CES01 = 85 | CES26 = 93 | CES51 = 95 | CES76 = 85 |
| CES02 = 60 | CES27 = 90 | CES52 = 98 | CES77 = 87 |
| CES03 = 31 | CES28 = 95 | CES53 = 96 | CES78 = 82 |
| CES04 = 68 | CES29 = 96 | CES54 = 91 | CES79 = 94 |
| CES05 = 47 | CES30 = 87 | CES55 = 89 | CES80 = 92 |
| CES06 = 50 | CES31 = 97 | CES56 = 92 | CES81 = 82 |
| CES07 = 41 | CES32 = 90 | CES57 = 90 | CES82 = 96 |
| CES08 = 40 | CES33 = 96 | CES58 = 90 | CES83 = 96 |
| CES09 = 29 | CES34 = 92 | CES59 = 96 | CES84 = 93 |
| CES10 = 73 | CES35 = 95 | CES60 = 90 | CES85 = 82 |
| CES11 = 55 | CES36 = 77 | CES61 = 90 | CES86 = 85 |
| CES12 = 62 | CES37 = 94 | CES62 = 81 | CES87 = 91 |
| CES13 = 42 | CES38 = 82 | CES63 = 89 | CES88 = 97 |
| CES14 = 74 | CES39 = 99 | CES64 = 85 | CES89 = 86 |
| CES15 = 71 | CES40 = 98 | CES65 = 85 | CES90 = 95 |
| CES16 = 46 | CES41 = 94 | CES66 = 82 | CES91 = 70 |
| CES17 = 48 | CES42 = 93 | CES67 = 81 | CES92 = 76 |
| CES18 = 56 | CES43 = 94 | CES68 = 85 | CES93 = 85 |
| CES19 = 70 | CES44 = 99 | CES69 = 86 | CES94 = 76 |
| CES20 = 65 | CES45 = 98 | CES70 = 83 | CES95 = 81 |
| CES21 = 84 | CES46 = 97 | CES71 = 74 | CES96 = 92 |
| CES22 = 77 | CES47 = 94 | CES72 = 92 | CES97 = 96 |
| CES23 = 91 | CES48 = 88 | CES73 = 78 | CES98 = 94 |
| CES24 = 90 | CES49 = 97 | CES74 = 90 | CES99 = 92 |
| CES25 = 70 | CES50 = 96 | CES75 = 77 | |

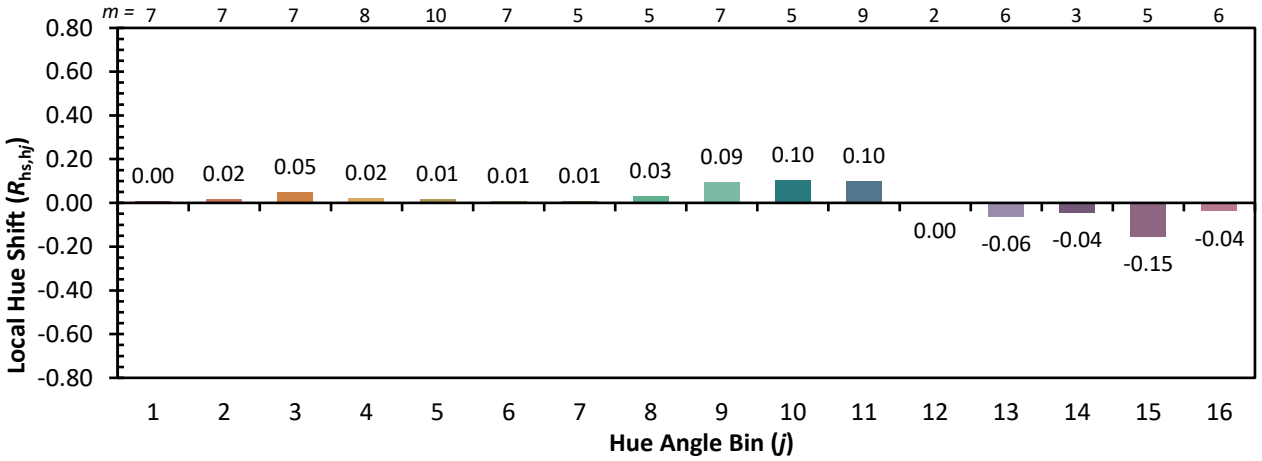


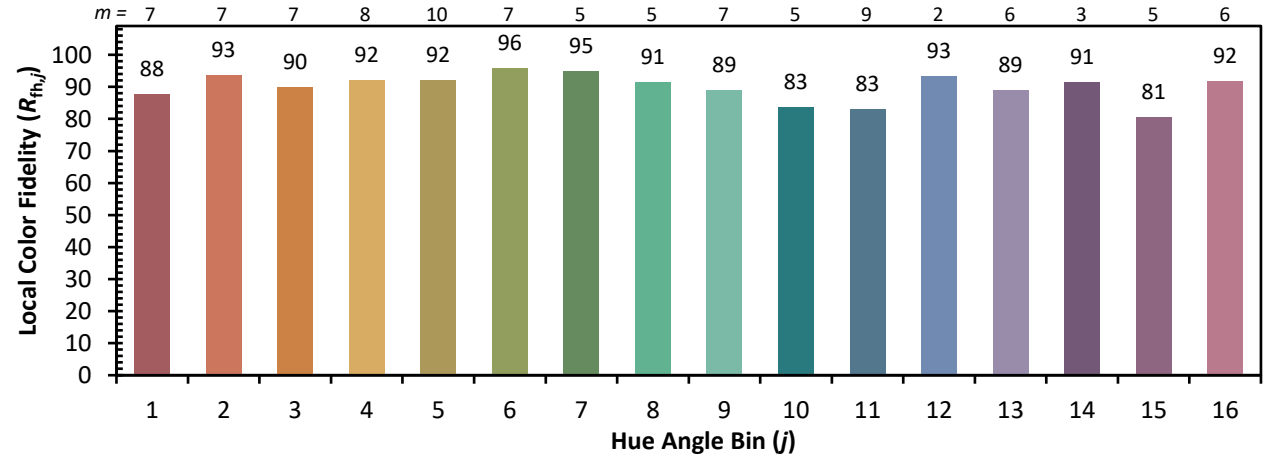
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## Color Rendition by Hue-Angle Bin



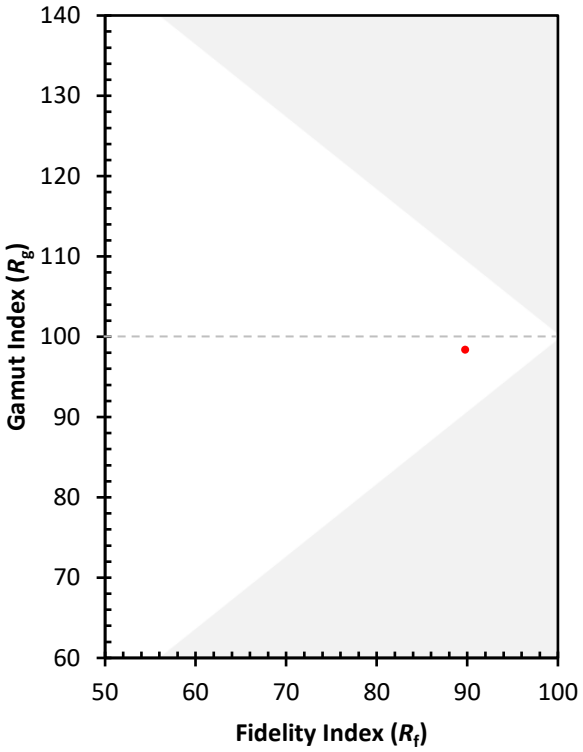



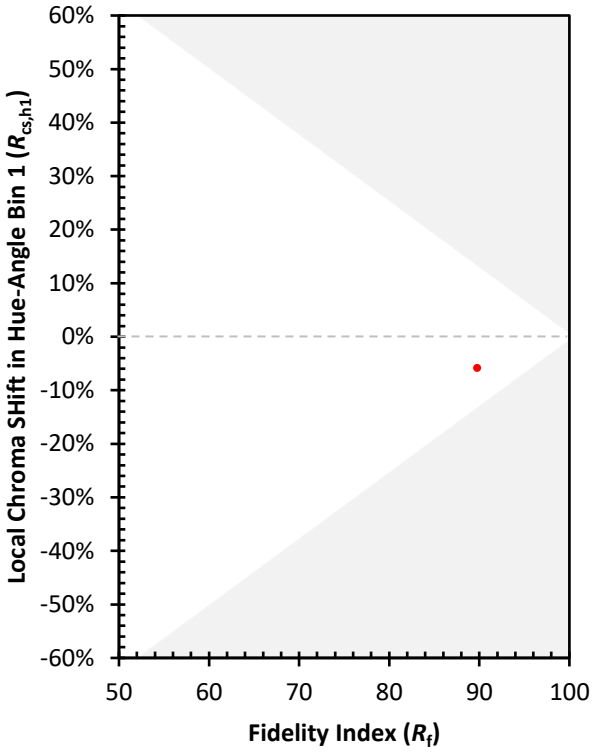



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## Measure Comparisons




(END OF REPORT)