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: P1590956

Luminaire Tested: 24CGTX-55-L93050-W2A2-3000K

Issue Date: 9/7/2026

Report Generated By 670265710 / DESKTOP-98SHLC4

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

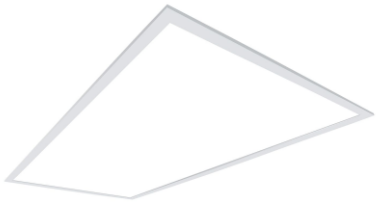
Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | P1590956 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Issue Date: | 9/7/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | METALUX |
| Catalog Number: | 24CGTX-55-L93050-W2A2-3000K |
| Description: | 2X4 5500 LUMEN CGTX TROFFER WITH VividTune LEDS AT 3000K CCT |
| Light Source: | 3000K CCT, 90 CRI LEDS |
| Ballast/Driver: | - |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 6223.8 lumens |
| Efficiency: | N/A |
| Efficacy: | 110.9 lumens/watt |
| Spacing Criteria (0/90/45): | 1.28 / 1.27 / 1.39 |
| Luminous Opening: | Rectangular (W 1.81' x L: 3.83' x H: 0') |
| CIE Type: | Direct |
| Input Watts (W): | 56.1 |
| 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 |

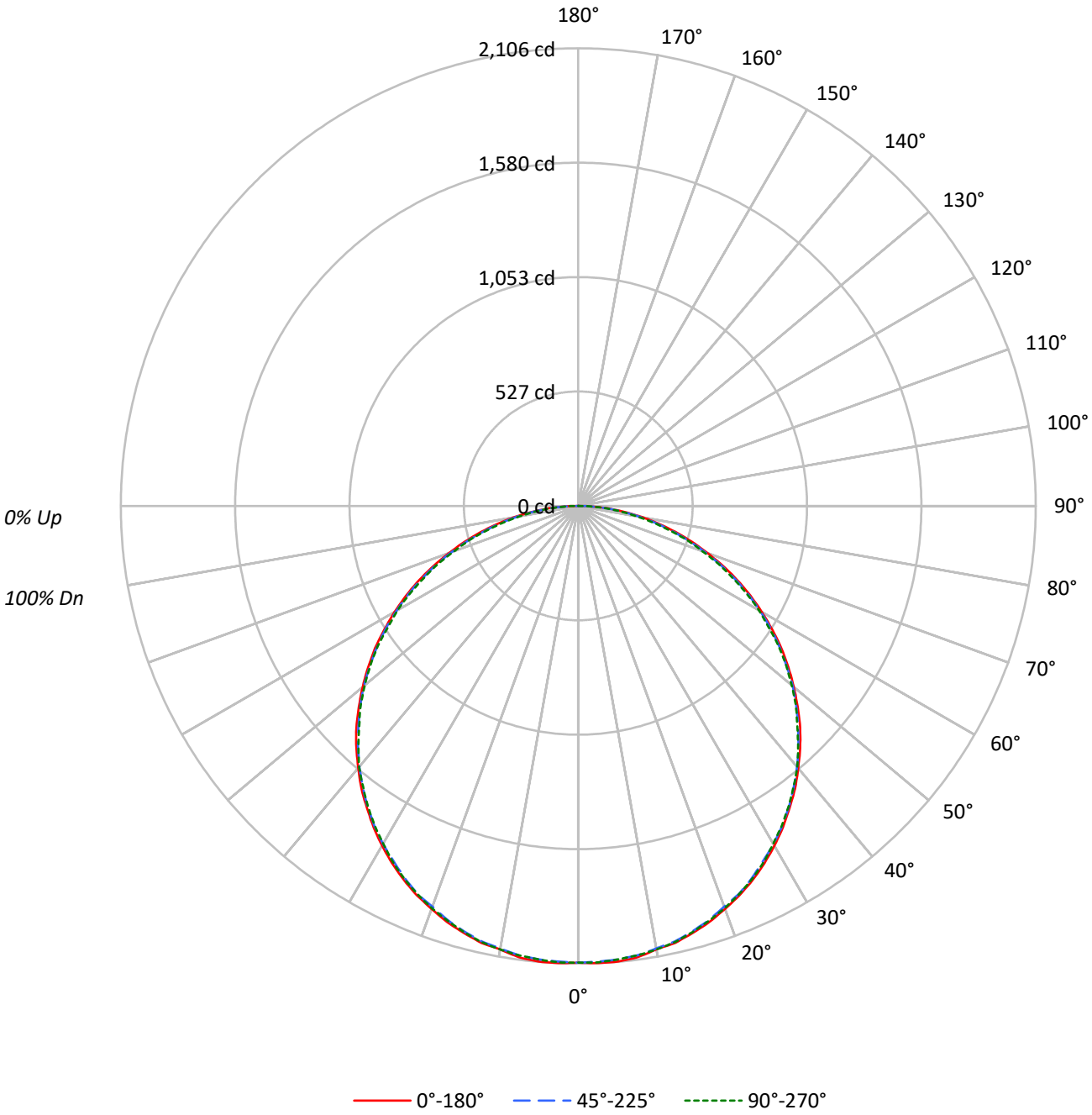


Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590956
CATALOG NUMBER: 24CGTX-55-L93050-W2A2-3000K

## Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
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Scaled Data Report

TEST NUMBER: P1590956
CATALOG NUMBER: 24CGTX-55-L93050-W2A2-3000K

## 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 | 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 | 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° | 3256 | 3256 | 3256 |
| 5° | 3274 | 3258 | 3258 |
| 10° | 3260 | 3253 | 3261 |
| 15° | 3264 | 3251 | 3257 |
| 20° | 3254 | 3236 | 3248 |
| 25° | 3248 | 3231 | 3238 |
| 30° | 3231 | 3215 | 3211 |
| 35° | 3208 | 3196 | 3192 |
| 40° | 3185 | 3169 | 3173 |
| 45° | 3166 | 3135 | 3122 |
| 50° | 3121 | 3104 | 3090 |
| 55° | 3085 | 3055 | 3044 |
| 60° | 3024 | 2993 | 2975 |
| 65° | 2958 | 2922 | 2870 |
| 70° | 2858 | 2808 | 2740 |
| 75° | 2771 | 2664 | 2598 |
| 80° | 2659 | 2534 | 2409 |
| 85° | 2506 | 2346 | 2222 |

## MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3166 cd/sqm

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TEST NUMBER: P1590956
CATALOG NUMBER: 24CGTX-55-L93050-W2A2-3000K

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 199.2 | 3.2 |
| 10°-20° | 572.7 | 9.2 |
| 20°-30° | 871.8 | 14.0 |
| 30°-40° | 1057.4 | 17.0 |
| 40°-50° | 1105.7 | 17.8 |
| 50°-60° | 1010.6 | 16.2 |
| 60°-70° | 786.1 | 12.6 |
| 70°-80° | 473.5 | 7.6 |
| 80°-90° | 146.9 | 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° | 1643.8 | 26.4 |
| 0°-40° | 2701.1 | 43.4 |
| 0°-60° | 4817.4 | 77.4 |
| 0°-90° | 6223.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6223.8 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 2102 | 2102 | 2102 | 2102 | 2102 | |
| 5° | 2105 | 2094 | 2095 | 2091 | 2095 | 200 |
| 15° | 2035 | 2029 | 2027 | 2026 | 2031 | 574 |
| 25° | 1900 | 1890 | 1890 | 1891 | 1894 | 875 |
| 35° | 1696 | 1690 | 1690 | 1689 | 1688 | 1062 |
| 45° | 1445 | 1437 | 1431 | 1431 | 1425 | 1113 |
| 55° | 1142 | 1136 | 1131 | 1127 | 1127 | 1019 |
| 65° | 807 | 799 | 797 | 784 | 783 | 798 |
| 75° | 463 | 457 | 445 | 436 | 434 | 488 |
| 85° | 141 | 135 | 132 | 127 | 125 | 155 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P1590956
CATALOG NUMBER: 24CGTX-55-L93050-W2A2-3000K

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 2102 | 2102 | 2102 | 2102 | 2102 |
| 2.5° | 2106 | 2102 | 2099 | 2099 | 2103 |
| 5° | 2105 | 2094 | 2095 | 2091 | 2095 |
| 7.5° | 2095 | 2085 | 2086 | 2081 | 2086 |
| 10° | 2072 | 2073 | 2068 | 2069 | 2073 |
| 12.5° | 2060 | 2052 | 2053 | 2053 | 2056 |
| 15° | 2035 | 2029 | 2027 | 2026 | 2031 |
| 17.5° | 2008 | 2001 | 1999 | 2000 | 2001 |
| 20° | 1974 | 1968 | 1963 | 1967 | 1970 |
| 22.5° | 1940 | 1934 | 1933 | 1929 | 1934 |
| 25° | 1900 | 1890 | 1890 | 1891 | 1894 |
| 27.5° | 1855 | 1846 | 1842 | 1846 | 1848 |
| 30° | 1806 | 1800 | 1797 | 1794 | 1795 |
| 32.5° | 1754 | 1746 | 1746 | 1745 | 1744 |
| 35° | 1696 | 1690 | 1690 | 1689 | 1688 |
| 37.5° | 1640 | 1634 | 1630 | 1626 | 1628 |
| 40° | 1575 | 1569 | 1567 | 1563 | 1569 |
| 42.5° | 1512 | 1507 | 1500 | 1502 | 1498 |
| 45° | 1445 | 1437 | 1431 | 1431 | 1425 |
| 47.5° | 1370 | 1364 | 1360 | 1358 | 1359 |
| 50° | 1295 | 1290 | 1288 | 1282 | 1282 |
| 52.5° | 1219 | 1214 | 1208 | 1207 | 1206 |
| 55° | 1142 | 1136 | 1131 | 1127 | 1127 |
| 57.5° | 1058 | 1055 | 1050 | 1042 | 1038 |
| 60° | 976 | 971 | 966 | 961 | 960 |
| 62.5° | 893 | 890 | 882 | 874 | 874 |
| 65° | 807 | 799 | 797 | 784 | 783 |
| 67.5° | 720 | 715 | 707 | 698 | 700 |
| 70° | 631 | 628 | 620 | 611 | 605 |
| 72.5° | 547 | 542 | 532 | 525 | 526 |
| 75° | 463 | 457 | 445 | 436 | 434 |
| 77.5° | 377 | 372 | 364 | 354 | 351 |
| 80° | 298 | 290 | 284 | 274 | 270 |
| 82.5° | 214 | 209 | 206 | 200 | 195 |
| 85° | 141 | 135 | 132 | 127 | 125 |
| 87.5° | 64 | 63 | 62 | 60 | 61 |
| 90° | 0 | 0 | 0 | 0 | 0 |

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TEST NUMBER: P1590956
CATALOG NUMBER: 24CGTX-55-L93050-W2A2-3000K

**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 | 16.10 | 17.76 | 16.47 | 18.08 | 18.39 | 16.01 | 17.67 | 16.37 | 17.98 | 18.30 |
| | 3H | 18.03 | 19.53 | 18.40 | 19.86 | 20.22 | 17.88 | 19.39 | 18.26 | 19.72 | 20.08 |
| | 4H | 18.79 | 20.21 | 19.19 | 20.56 | 20.93 | 18.60 | 20.02 | 19.00 | 20.37 | 20.75 |
| | 6H | 19.40 | 20.71 | 19.81 | 21.08 | 21.47 | 19.16 | 20.47 | 19.57 | 20.84 | 21.23 |
| | 8H | 19.61 | 20.87 | 20.03 | 21.26 | 21.66 | 19.35 | 20.61 | 19.77 | 20.99 | 21.39 |
| | 12H | 19.77 | 20.98 | 20.20 | 21.36 | 21.79 | 19.48 | 20.69 | 19.91 | 21.07 | 21.50 |
| 4H | 2H | 16.76 | 18.18 | 17.16 | 18.53 | 18.90 | 16.69 | 18.11 | 17.08 | 18.45 | 18.83 |
| | 3H | 18.91 | 20.10 | 19.32 | 20.50 | 20.90 | 18.79 | 19.98 | 19.19 | 20.38 | 20.78 |
| | 4H | 19.81 | 20.89 | 20.24 | 21.31 | 21.74 | 19.64 | 20.72 | 20.07 | 21.13 | 21.57 |
| | 6H | 20.56 | 21.51 | 21.01 | 21.95 | 22.40 | 20.32 | 21.27 | 20.77 | 21.71 | 22.16 |
| | 8H | 20.83 | 21.72 | 21.28 | 22.16 | 22.62 | 20.57 | 21.46 | 21.02 | 21.90 | 22.36 |
| | 12H | 21.04 | 21.84 | 21.52 | 22.32 | 22.78 | 20.76 | 21.56 | 21.24 | 22.03 | 22.50 |
| 8H | 4H | 20.15 | 21.04 | 20.61 | 21.48 | 21.94 | 20.00 | 20.89 | 20.45 | 21.33 | 21.79 |
| | 6H | 21.03 | 21.78 | 21.52 | 22.26 | 22.74 | 20.82 | 21.56 | 21.31 | 22.05 | 22.52 |
| | 8H | 21.39 | 22.06 | 21.90 | 22.56 | 23.04 | 21.15 | 21.82 | 21.66 | 22.32 | 22.80 |
| | 12H | 21.69 | 22.28 | 22.20 | 22.77 | 23.33 | 21.42 | 22.02 | 21.93 | 22.51 | 23.06 |
| 12H | 4H | 20.19 | 20.99 | 20.67 | 21.47 | 21.94 | 20.05 | 20.85 | 20.52 | 21.32 | 21.79 |
| | 6H | 21.10 | 21.77 | 21.61 | 22.28 | 22.76 | 20.90 | 21.57 | 21.41 | 22.07 | 22.56 |
| | 8H | 21.52 | 22.11 | 22.03 | 22.60 | 23.16 | 21.30 | 21.89 | 21.80 | 22.38 | 22.93 |

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: SP1-2512-631-41-R2

Test Date: 02/05/2026

Luminaire Tested: 22CGTX-50-L93050-W2A-3000K

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

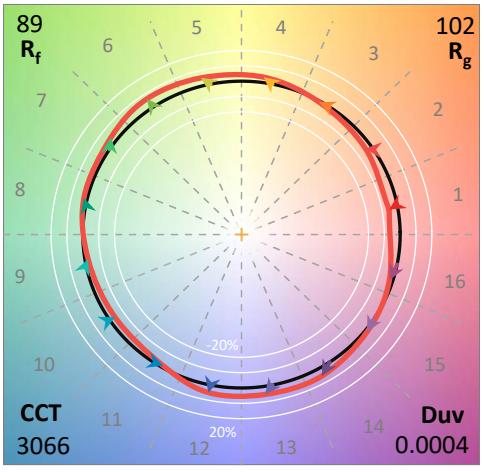
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.05

## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2512-631-41-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-3000K** |
| Description: | *THIS IS A REVISION OF REPORT SP1-2512-631-41-R2 TO UPDATE THE CATALOG INFORMATION* 2X2 5000 LUMEN HE CGTX TUNABLE WHITE FROM 3000K TO 5000K - 9.5 Volt |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3066 | CRI (Ra): | 91.7 | | |
| CIE u': | 0.2482 | R1: | 93.0 | R9: | 52.5 |
| CIE v': | 0.5206 | R2: | 94.0 | R10: | 85.0 |
| Duv: | 0.0004 | R3: | 94.3 | R11: | 94.8 |
| CIE x: | 0.4328 | R4: | 93.4 | R12: | 82.8 |
| CIE y: | 0.4036 | R5: | 92.4 | R13: | 92.9 |
| CIE z: | 0.1636 | R6: | 94.1 | R14: | 95.7 |
| Peak Wavelength (nm): | 630 | R7: | 91.5 | R15: | 87.8 |
| Dominant Wavelength (nm): | 582 | R8: | 80.7 | | |
| Purity: | 51.0461 | | | | |
| Rf: | 89.5 | | | | |
| Rg: | 102 | | | | |



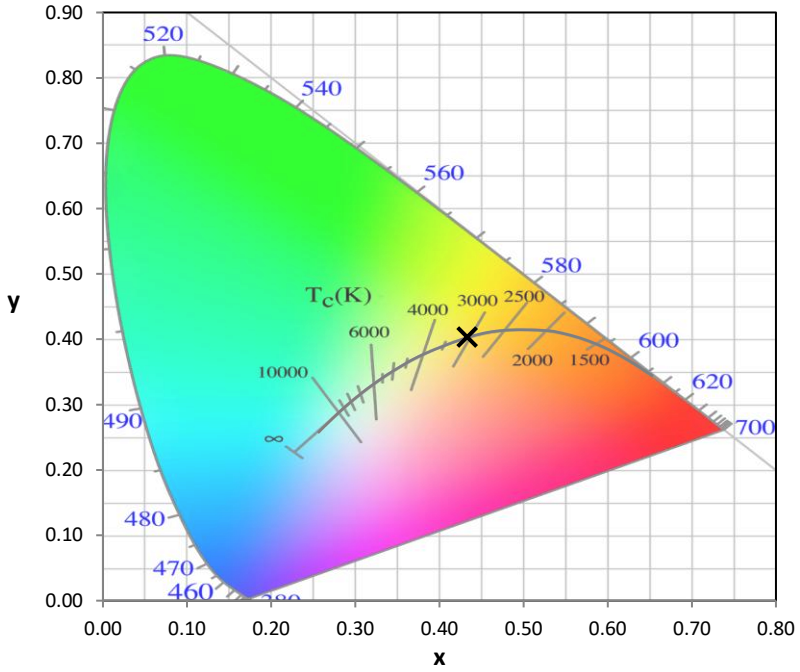

## Test Conditions

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

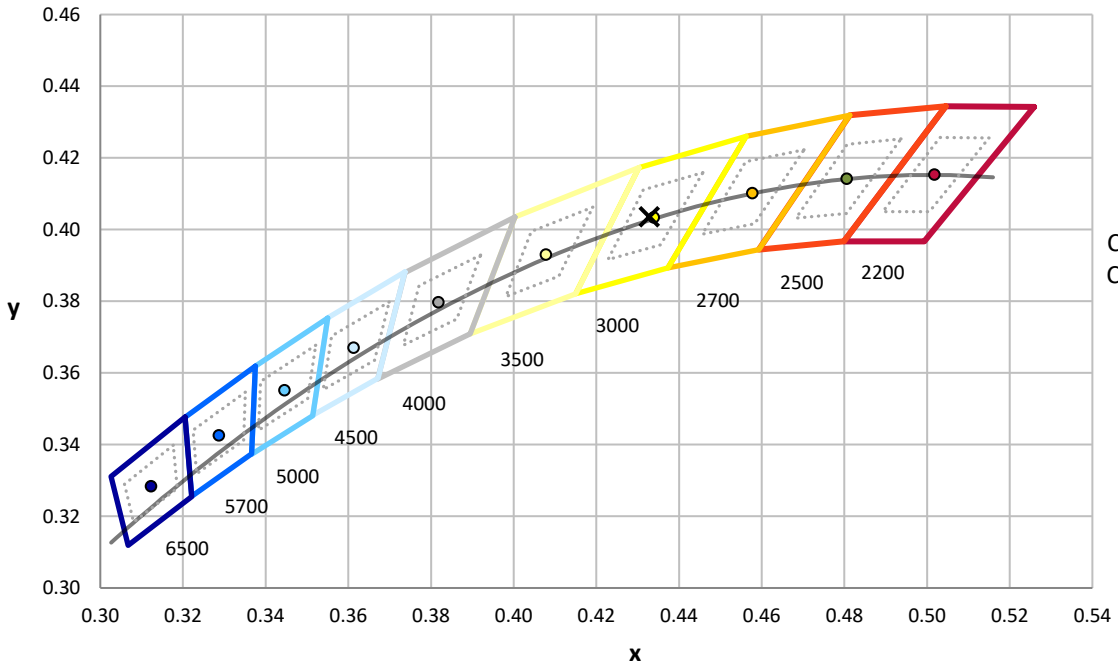
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 12/16/2025 | 6/16/2026 |
| Power Meter | XITRON INXT2011004 | 10/21/2025 | 10/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 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: SP1-2512-631-41-R2

## CIE 1931 Chromaticity Diagram




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

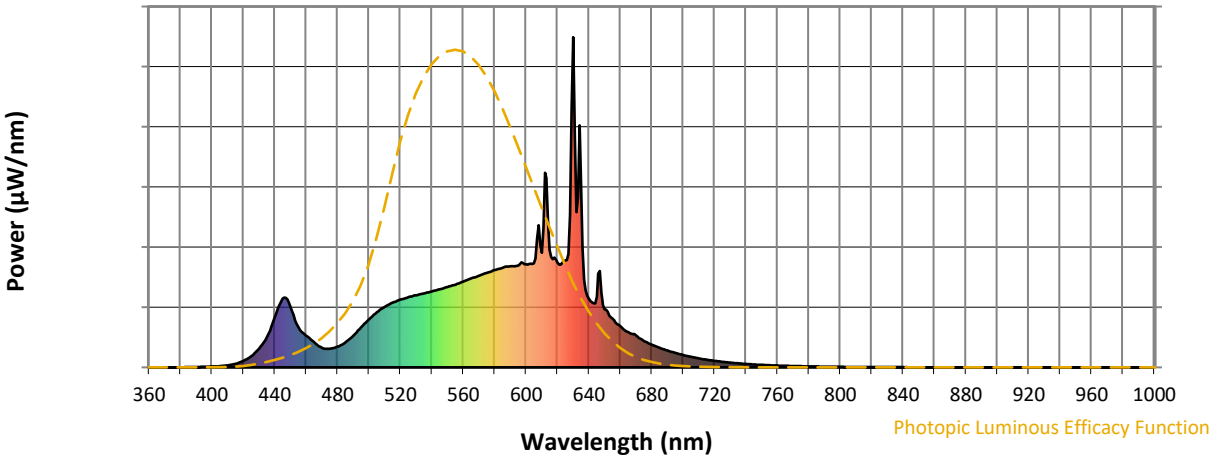



CCT = 3066K
CIE x = 0.4328
CIE y = 0.4036
Duv = 0.0004

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2512-631-41-R2

## Photopic Flux vs. Wavelength

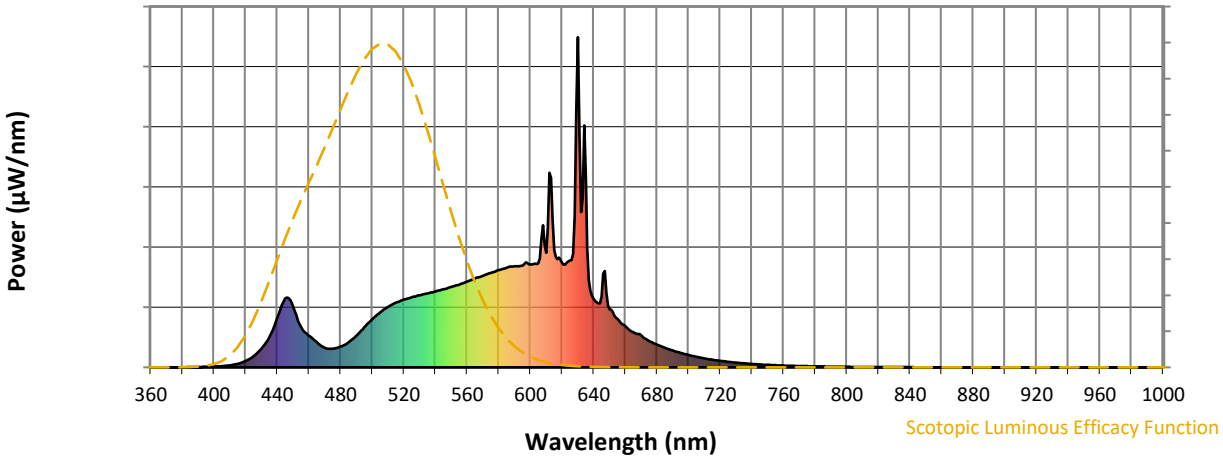



## Photopic Lumens: NR

| 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 | 96 | NR | 620 | 317 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 324 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 146 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 167 | NR | 635 | 572 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 183 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 196 | NR | 645 | 215 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 205 | NR | 650 | 175 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 212 | NR | 655 | 147 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 218 | NR | 660 | 125 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 224 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 230 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 236 | NR | 675 | 80 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 244 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 250 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 57 | NR | 560 | 260 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 92 | NR | 565 | 269 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 151 | NR | 570 | 277 | NR | 700 | 37 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 208 | NR | 575 | 286 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 184 | NR | 580 | 294 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 122 | NR | 585 | 301 | NR | 715 | 23 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 96 | NR | 590 | 307 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 308 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 59 | NR | 600 | 312 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 315 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 63 | NR | 610 | 347 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 76 | NR | 615 | 356 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2512-631-41-R2

## Scotopic Flux vs. Wavelength

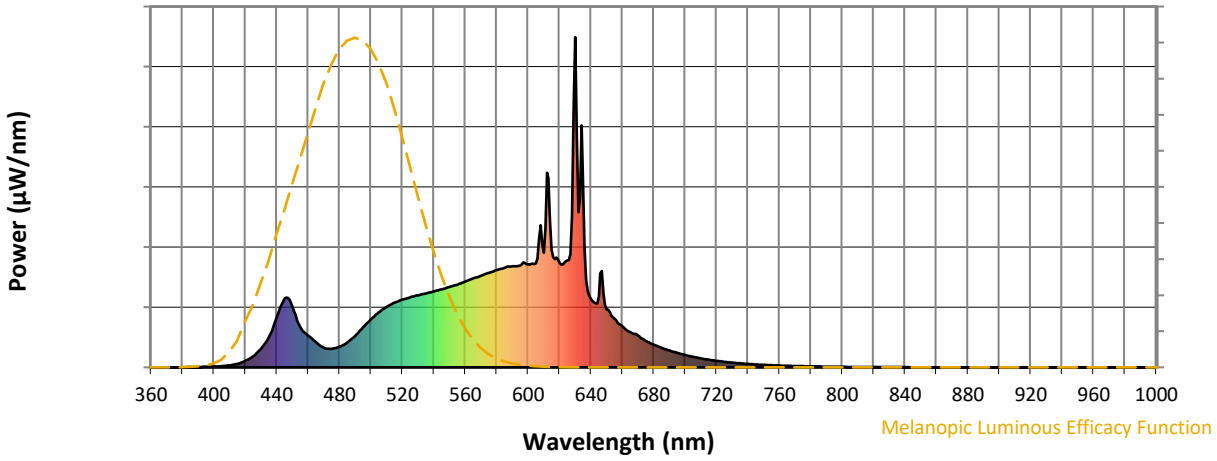



**Scotopic Lumens: NR** **S/P: 1.41**

| 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 | 96 | NR | 620 | 317 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 324 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 146 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 167 | NR | 635 | 572 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 183 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 196 | NR | 645 | 215 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 205 | NR | 650 | 175 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 212 | NR | 655 | 147 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 218 | NR | 660 | 125 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 224 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 230 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 236 | NR | 675 | 80 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 244 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 250 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 57 | NR | 560 | 260 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 92 | NR | 565 | 269 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 151 | NR | 570 | 277 | NR | 700 | 37 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 208 | NR | 575 | 286 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 184 | NR | 580 | 294 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 122 | NR | 585 | 301 | NR | 715 | 23 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 96 | NR | 590 | 307 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 308 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 59 | NR | 600 | 312 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 315 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 63 | NR | 610 | 347 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 76 | NR | 615 | 356 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2512-631-41-R2

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.7**

| 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 | 96 | NR | 620 | 317 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 121 | NR | 625 | 324 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 146 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 167 | NR | 635 | 572 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 183 | NR | 640 | 207 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 196 | NR | 645 | 215 | NR | 775 | 3 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 205 | NR | 650 | 175 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 212 | NR | 655 | 147 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 218 | NR | 660 | 125 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 224 | NR | 665 | 106 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 230 | NR | 670 | 97 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 236 | NR | 675 | 80 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 19 | NR | 550 | 244 | NR | 680 | 69 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 34 | NR | 555 | 250 | NR | 685 | 59 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 57 | NR | 560 | 260 | NR | 690 | 51 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 92 | NR | 565 | 269 | NR | 695 | 44 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 151 | NR | 570 | 277 | NR | 700 | 37 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 208 | NR | 575 | 286 | NR | 705 | 32 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 184 | NR | 580 | 294 | NR | 710 | 27 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 122 | NR | 585 | 301 | NR | 715 | 23 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 96 | NR | 590 | 307 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 76 | NR | 595 | 308 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 59 | NR | 600 | 312 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 57 | NR | 605 | 315 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 63 | NR | 610 | 347 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 76 | NR | 615 | 356 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

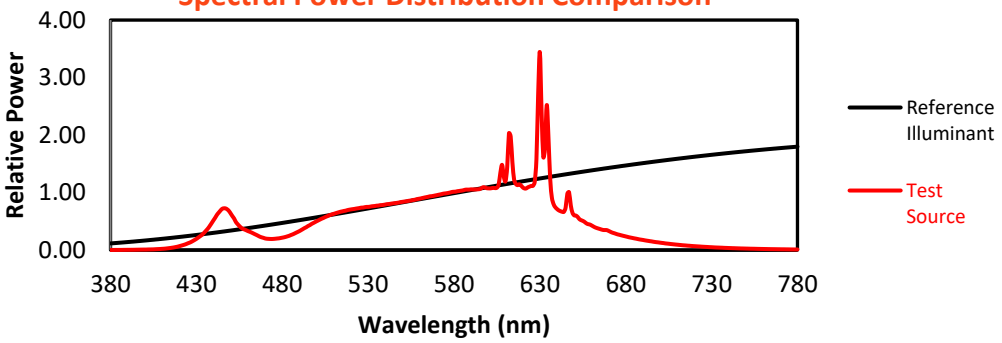
REPORT NUMBER: SP1-2512-631-41-R2

# TM-30-18

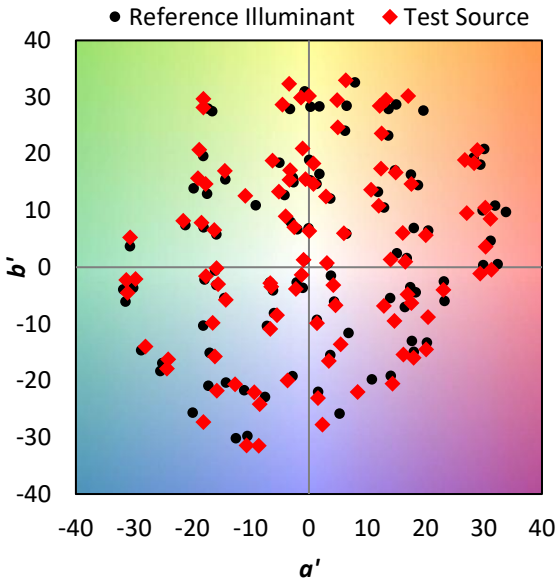
## Summary

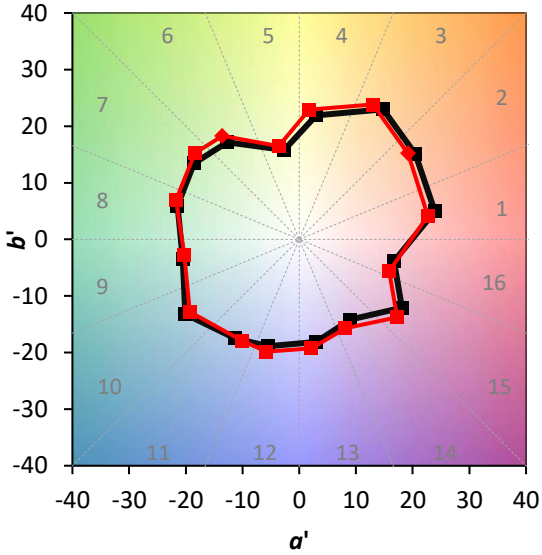
$R_f$ = 89.5
$R_g$ = 102
CIE $R_a$ = 91.7
$R_9$ = 52.5

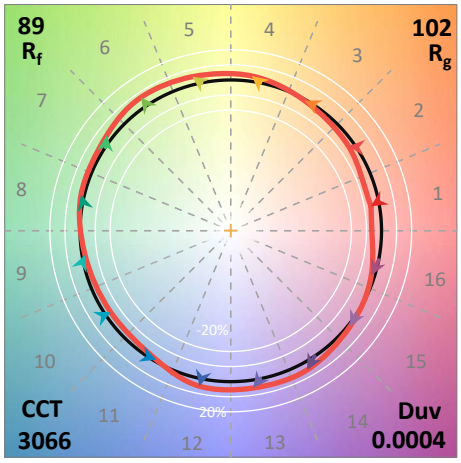
## Spectral Power Distribution Comparison

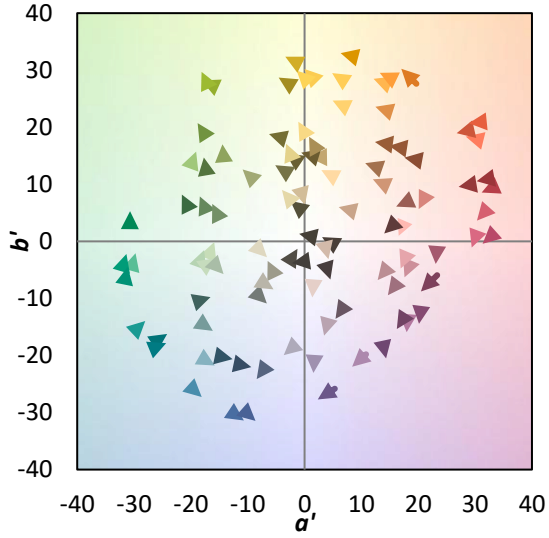



## Color Vector Graphics



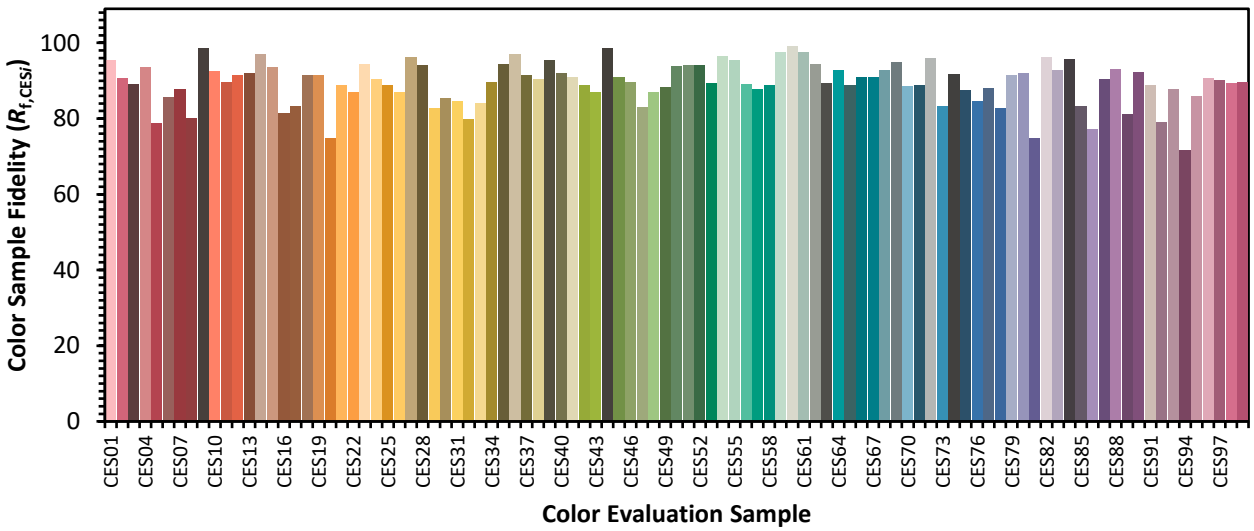



REPORT NUMBER: SP1-2512-631-41-R2

# TM-30-18

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

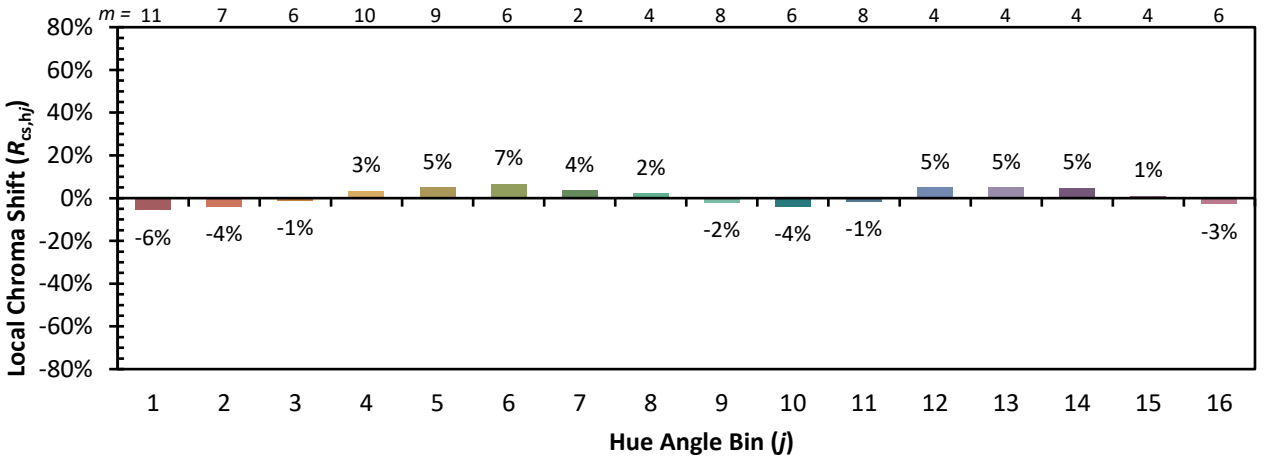
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 87 | CES51 = 94 | CES76 = 85 |
| CES02 = 63 | CES27 = 96 | CES52 = 94 | CES77 = 88 |
| CES03 = 32 | CES28 = 94 | CES53 = 89 | CES78 = 83 |
| CES04 = 70 | CES29 = 83 | CES54 = 97 | CES79 = 92 |
| CES05 = 50 | CES30 = 85 | CES55 = 95 | CES80 = 92 |
| CES06 = 51 | CES31 = 85 | CES56 = 89 | CES81 = 75 |
| CES07 = 43 | CES32 = 80 | CES57 = 88 | CES82 = 96 |
| CES08 = 42 | CES33 = 84 | CES58 = 89 | CES83 = 93 |
| CES09 = 29 | CES34 = 90 | CES59 = 98 | CES84 = 96 |
| CES10 = 76 | CES35 = 94 | CES60 = 99 | CES85 = 83 |
| CES11 = 58 | CES36 = 97 | CES61 = 97 | CES86 = 77 |
| CES12 = 65 | CES37 = 91 | CES62 = 94 | CES87 = 91 |
| CES13 = 44 | CES38 = 90 | CES63 = 89 | CES88 = 93 |
| CES14 = 74 | CES39 = 95 | CES64 = 93 | CES89 = 81 |
| CES15 = 72 | CES40 = 92 | CES65 = 89 | CES90 = 92 |
| CES16 = 48 | CES41 = 91 | CES66 = 91 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 91 | CES92 = 79 |
| CES18 = 57 | CES43 = 87 | CES68 = 93 | CES93 = 88 |
| CES19 = 72 | CES44 = 99 | CES69 = 95 | CES94 = 72 |
| CES20 = 67 | CES45 = 91 | CES70 = 89 | CES95 = 86 |
| CES21 = 86 | CES46 = 90 | CES71 = 89 | CES96 = 91 |
| CES22 = 79 | CES47 = 83 | CES72 = 96 | CES97 = 90 |
| CES23 = 92 | CES48 = 87 | CES73 = 83 | CES98 = 89 |
| CES24 = 91 | CES49 = 88 | CES74 = 92 | CES99 = 90 |
| CES25 = 72 | CES50 = 94 | CES75 = 87 | |

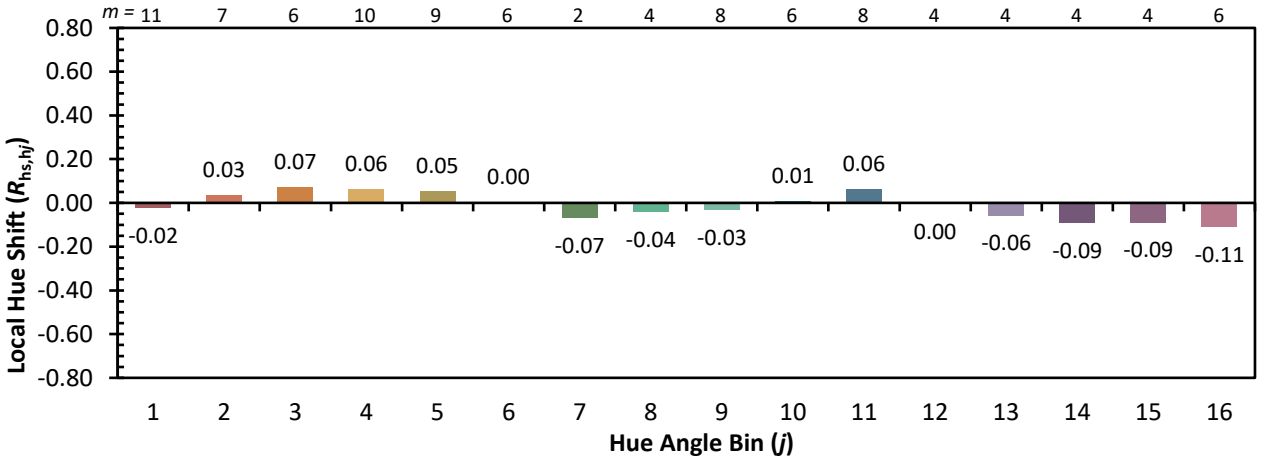


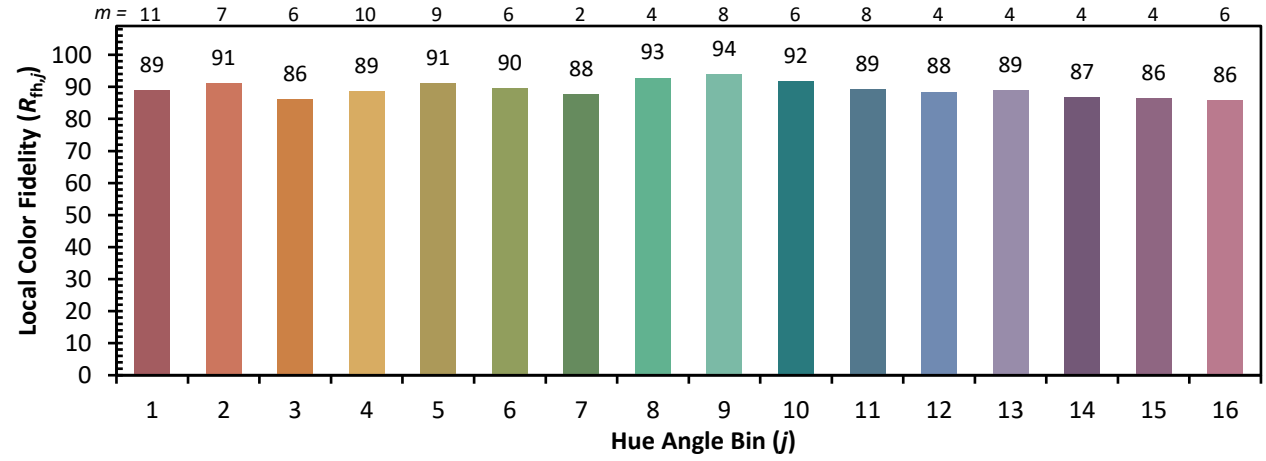
REPORT NUMBER: SP1-2512-631-41-R2

**TM-30-18**

## Color Rendition by Hue-Angle Bin



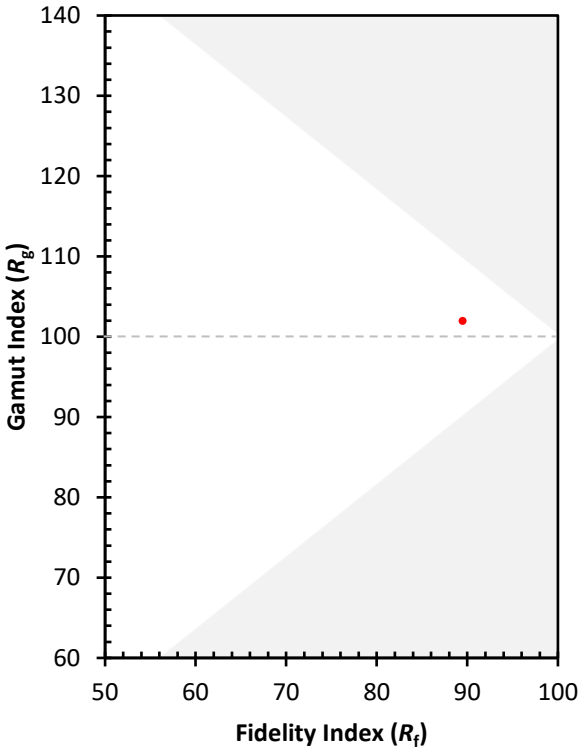



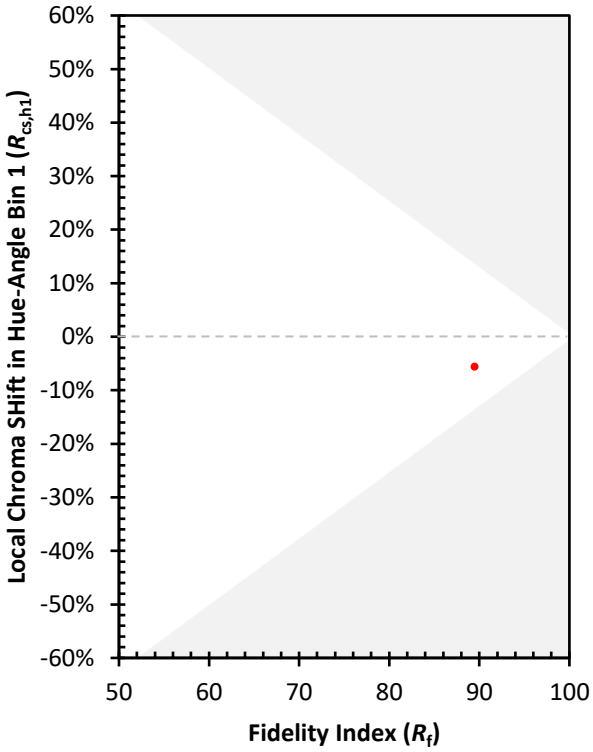



REPORT NUMBER: SP1-2512-631-41-R2

# TM-30-18

## Measure Comparisons




(END OF REPORT)