

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: P976286

Luminaire Tested: 14SR-LD2-45-S-UNV-L830-CD1-U

Issue Date: 03/18/2025

Test Information

Test Method: LM-79-2019
Report Number: P976286
Test Lab: INNOVATION CENTER(P3)
Issue Date: 03/18/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 14SR-LD2-45-S-UNV-L830-CD1-U
Description: METALUX SKYRIDGE 1x4 4500LM PACKAGE 80CRI 3000K STANDARD TROFFER
Light Source: 3000K CCT, 80+ CRI LEDS
Ballast/Driver: -

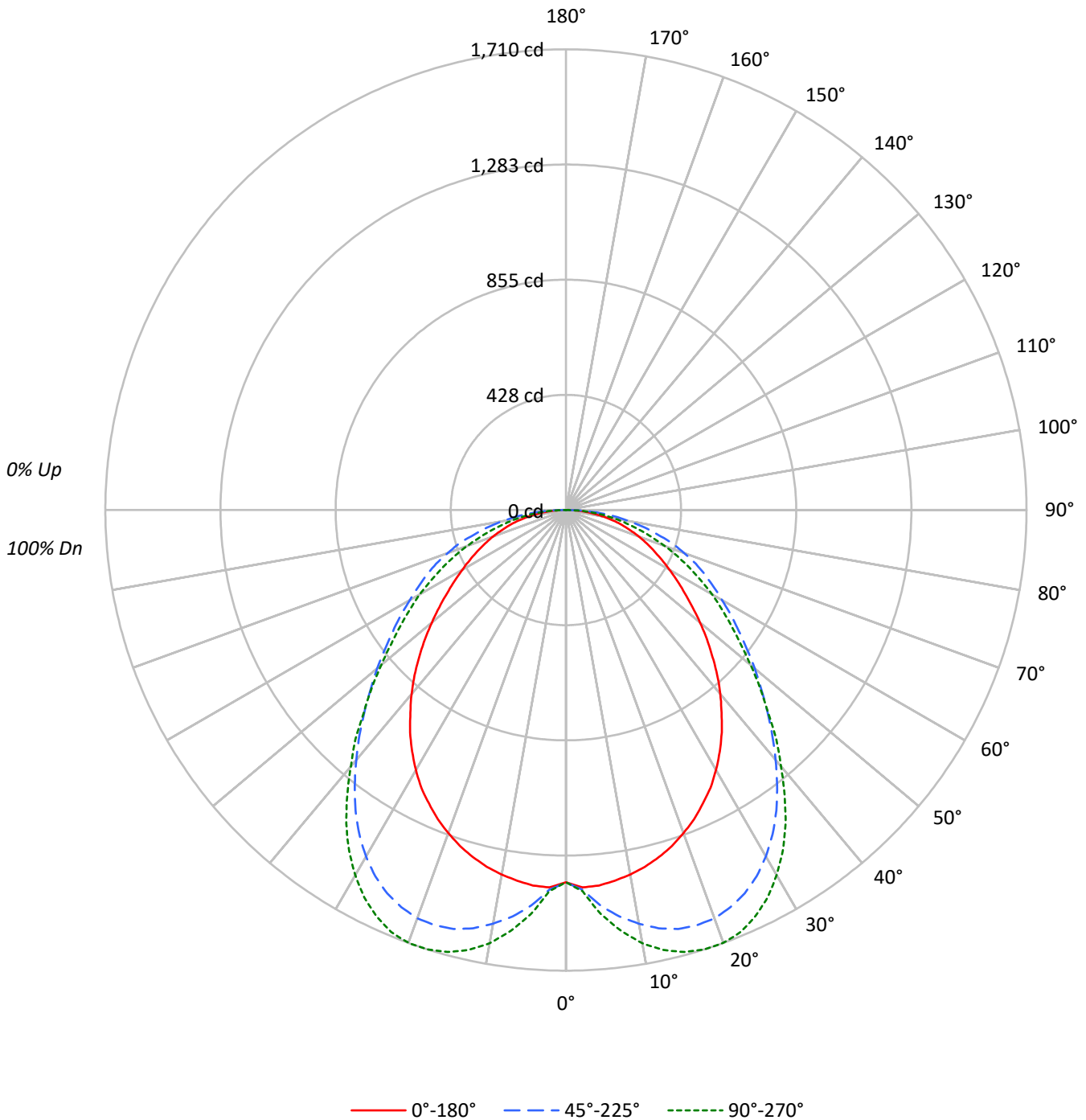
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4465.8 lumens
Efficiency: N/A
Efficacy: 134.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.5 / 1.46
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
Input Voltage (V): 120
Input Current (A_{in}): 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: 28.75 FT

TEST NUMBER: P976286
CATALOG NUMBER: 14SR-LD2-45-S-UNV-L830-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P976286
 CATALOG NUMBER: 14SR-LD2-45-S-UNV-L830-CD1-U

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|
| RF | 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 | 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 | 104 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 | | | |
| 2 | 99 | 90 | 83 | 78 | 96 | 88 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 73 | 79 | 75 | 72 | 69 | | | |
| 3 | 90 | 79 | 71 | 65 | 88 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 67 | 62 | 70 | 65 | 61 | 59 | | | |
| 4 | 83 | 71 | 62 | 55 | 80 | 69 | 61 | 55 | 67 | 60 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 | | | |
| 5 | 76 | 63 | 54 | 48 | 74 | 62 | 54 | 47 | 60 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 44 | | | |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 41 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 40 | 38 | | | |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 49 | 42 | 36 | 48 | 41 | 36 | 47 | 41 | 36 | 34 | | | |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 | | | |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 27 | | | |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3719 | 3719 | 3719 |
| 5° | 3779 | 3980 | 4071 |
| 10° | 3753 | 4259 | 4462 |
| 15° | 3715 | 4486 | 4731 |
| 20° | 3655 | 4619 | 4896 |
| 25° | 3570 | 4662 | 4941 |
| 30° | 3462 | 4614 | 4861 |
| 35° | 3313 | 4474 | 4671 |
| 40° | 3133 | 4254 | 4364 |
| 45° | 2928 | 4023 | 4035 |
| 50° | 2720 | 3830 | 3746 |
| 55° | 2527 | 3677 | 3515 |
| 60° | 2392 | 3603 | 3374 |
| 65° | 2304 | 3629 | 3212 |
| 70° | 2265 | 3677 | 3070 |
| 75° | 2252 | 3673 | 2935 |
| 80° | 2210 | 3708 | 2872 |
| 85° | 2115 | 3869 | 2902 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 87.5°
 Luminance: 4929 cd/sqm



TEST NUMBER: P976286
 CATALOG NUMBER: 14SR-LD2-45-S-UNV-L830-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 141.4 | 3.2 |
| 10°-20° | 442.5 | 9.9 |
| 20°-30° | 694.3 | 15.5 |
| 30°-40° | 809.6 | 18.1 |
| 40°-50° | 770.3 | 17.2 |
| 50°-60° | 650.3 | 14.6 |
| 60°-70° | 506.7 | 11.3 |
| 70°-80° | 330.4 | 7.4 |
| 80°-90° | 120.3 | 2.7 |
| 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° | 1278.3 | 28.6 |
| 0°-40° | 2087.8 | 46.8 |
| 0°-60° | 3508.4 | 78.6 |
| 0°-90° | 4465.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4465.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1382 | 1382 | 1382 | 1382 | 1382 | |
| 5° | 1399 | 1405 | 1473 | 1507 | 1507 | 133 |
| 15° | 1334 | 1465 | 1610 | 1681 | 1698 | 376 |
| 25° | 1202 | 1399 | 1570 | 1644 | 1664 | 554 |
| 35° | 1009 | 1208 | 1362 | 1410 | 1422 | 629 |
| 45° | 769 | 943 | 1057 | 1068 | 1060 | 594 |
| 55° | 539 | 707 | 784 | 761 | 749 | 485 |
| 65° | 362 | 519 | 570 | 524 | 504 | 360 |
| 75° | 217 | 348 | 353 | 296 | 282 | 227 |
| 85° | 68 | 148 | 125 | 97 | 94 | 76 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P976286

CATALOG NUMBER: 14SR-LD2-45-S-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1381.9 | 1381.9 | 1381.9 | 1381.9 | 1381.9 |
| 2.5° | 1401.9 | 1385.0 | 1410.5 | 1427.7 | 1416.3 |
| 5° | 1399.1 | 1404.9 | 1473.4 | 1507.2 | 1507.2 |
| 7.5° | 1387.7 | 1427.7 | 1521.7 | 1567.1 | 1575.7 |
| 10° | 1373.6 | 1447.6 | 1558.8 | 1618.7 | 1632.9 |
| 12.5° | 1356.4 | 1461.8 | 1590.2 | 1655.6 | 1672.8 |
| 15° | 1333.6 | 1464.8 | 1610.1 | 1681.1 | 1698.3 |
| 17.5° | 1307.8 | 1459.0 | 1615.7 | 1692.8 | 1709.7 |
| 20° | 1276.5 | 1447.6 | 1612.9 | 1689.7 | 1709.7 |
| 22.5° | 1242.4 | 1427.7 | 1595.7 | 1672.8 | 1695.6 |
| 25° | 1202.5 | 1399.1 | 1570.2 | 1644.2 | 1664.2 |
| 27.5° | 1162.5 | 1359.5 | 1533.0 | 1601.2 | 1621.2 |
| 30° | 1114.3 | 1316.4 | 1484.8 | 1550.2 | 1564.4 |
| 32.5° | 1062.7 | 1265.1 | 1427.7 | 1487.3 | 1498.9 |
| 35° | 1008.6 | 1208.0 | 1361.9 | 1410.5 | 1421.8 |
| 37.5° | 948.7 | 1142.6 | 1287.9 | 1330.9 | 1333.6 |
| 40° | 891.9 | 1077.1 | 1211.1 | 1245.2 | 1242.4 |
| 42.5° | 832.0 | 1011.7 | 1134.3 | 1157.0 | 1157.0 |
| 45° | 769.3 | 943.2 | 1057.1 | 1068.5 | 1060.2 |
| 47.5° | 709.4 | 880.5 | 983.1 | 985.9 | 977.3 |
| 50° | 649.8 | 817.8 | 914.9 | 906.3 | 894.9 |
| 52.5° | 592.6 | 757.9 | 846.4 | 829.2 | 817.8 |
| 55° | 538.6 | 706.6 | 783.7 | 761.0 | 749.3 |
| 57.5° | 490.0 | 655.6 | 726.6 | 698.0 | 686.6 |
| 60° | 444.5 | 607.1 | 669.4 | 638.4 | 627.0 |
| 62.5° | 401.8 | 561.6 | 618.4 | 581.3 | 564.1 |
| 65° | 361.9 | 518.6 | 569.9 | 524.4 | 504.5 |
| 67.5° | 324.7 | 475.9 | 521.7 | 464.5 | 447.3 |
| 70° | 287.9 | 433.2 | 467.3 | 407.7 | 390.2 |
| 72.5° | 250.7 | 390.2 | 416.0 | 350.5 | 333.3 |
| 75° | 216.6 | 347.8 | 353.3 | 296.2 | 282.3 |
| 77.5° | 179.4 | 310.6 | 299.2 | 245.2 | 230.7 |
| 80° | 142.6 | 262.4 | 239.3 | 193.9 | 185.3 |
| 82.5° | 105.4 | 205.2 | 182.5 | 145.3 | 139.5 |
| 85° | 68.5 | 148.4 | 125.3 | 96.8 | 94.0 |
| 87.5° | 34.1 | 79.9 | 62.7 | 48.5 | 45.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P976286
 CATALOG NUMBER: 14SR-LD2-45-S-UNV-L830-CD1-U

CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|------|------|------|------|----------------|------|------|------|------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room Dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 15.6 | 17.2 | 16.0 | 17.5 | 17.8 | 16.3 | 17.9 | 16.7 | 18.3 | 18.6 |
| | 3H | 17.4 | 18.8 | 17.7 | 19.2 | 19.5 | 18.1 | 19.6 | 18.5 | 19.9 | 20.3 |
| | 4H | 18.1 | 19.5 | 18.5 | 19.8 | 20.2 | 18.8 | 20.2 | 19.2 | 20.6 | 20.9 |
| | 6H | 18.7 | 20.0 | 19.1 | 20.3 | 20.7 | 19.4 | 20.7 | 19.8 | 21.1 | 21.5 |
| | 8H | 18.9 | 20.1 | 19.3 | 20.5 | 20.9 | 19.6 | 20.9 | 20.1 | 21.2 | 21.6 |
| | 12H | 19.0 | 20.2 | 19.5 | 20.6 | 21.0 | 19.8 | 21.0 | 20.2 | 21.4 | 21.8 |
| 4H | 2H | 16.6 | 17.9 | 17.0 | 18.3 | 18.7 | 17.1 | 18.5 | 17.5 | 18.8 | 19.2 |
| | 3H | 18.7 | 19.9 | 19.1 | 20.3 | 20.7 | 19.2 | 20.3 | 19.6 | 20.7 | 21.1 |
| | 4H | 19.7 | 20.7 | 20.1 | 21.2 | 21.6 | 20.0 | 21.0 | 20.4 | 21.5 | 21.9 |
| | 6H | 20.5 | 21.4 | 21.0 | 21.9 | 22.3 | 20.7 | 21.6 | 21.1 | 22.1 | 22.5 |
| | 8H | 20.8 | 21.7 | 21.3 | 22.1 | 22.6 | 21.0 | 21.8 | 21.4 | 22.3 | 22.7 |
| | 12H | 21.0 | 21.8 | 21.5 | 22.3 | 22.7 | 21.2 | 22.0 | 21.7 | 22.4 | 22.9 |
| 8H | 4H | 20.2 | 21.1 | 20.7 | 21.5 | 22.0 | 20.5 | 21.3 | 20.9 | 21.8 | 22.3 |
| | 6H | 21.3 | 22.1 | 21.8 | 22.5 | 23.0 | 21.3 | 22.1 | 21.8 | 22.6 | 23.0 |
| | 8H | 21.8 | 22.5 | 22.3 | 23.0 | 23.4 | 21.7 | 22.3 | 22.2 | 22.9 | 23.3 |
| | 12H | 22.2 | 22.8 | 22.7 | 23.3 | 23.8 | 22.0 | 22.6 | 22.5 | 23.1 | 23.6 |
| 12H | 4H | 20.3 | 21.1 | 20.8 | 21.5 | 22.0 | 20.6 | 21.3 | 21.0 | 21.8 | 22.3 |
| | 6H | 21.5 | 22.1 | 22.0 | 22.6 | 23.1 | 21.5 | 22.2 | 22.0 | 22.6 | 23.2 |
| | 8H | 22.0 | 22.6 | 22.5 | 23.1 | 23.7 | 21.9 | 22.5 | 22.4 | 23.0 | 23.6 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-5

Test Date: 07/02/2025

Luminaire Tested: 24SR-LD2-64-C-UNV-L930-CD1-U

Data in this report applies to families of products including 24SR-LD2-64-C-UNV-L930-CD1-U

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-457-5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 07/02/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Metalux
 Catalog Number: **24SR-LD2-64-C-UNV-L930-CD1-U**
 Description: 2X4 SKYRIDGE 6400LM Fixture with new LTN chip

Spectral Parameters

CCT (K): 2935
 CIE u': 0.2530
 CIE v': 0.5224
 Duv: -0.0002
 CIE x: 0.4413
 CIE y: 0.4049
 CIE z: 0.1538
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 583
 Purity: 53.99297
 Rf: 91.8
 Rg: 99.6

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 93.5 | | |
| R1: | 94.7 | R9: | 55.1 |
| R2: | 97.2 | R10: | 92.3 |
| R3: | 98.6 | R11: | 97.0 |
| R4: | 95.2 | R12: | 86.4 |
| R5: | 94.7 | R13: | 95.3 |
| R6: | 96.8 | R14: | 98.2 |
| R7: | 90.9 | R15: | 89.3 |
| R8: | 80.4 | | |



Test Conditions

Stabilization Time: 40M
 Operation Time: 1H 40M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-457-5

| 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: SP1-2506-457-5

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 7-step quadrangle

REPORT NUMBER: SP1-2506-457-5

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 | 108 | NR | 620 | 338 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 129 | NR | 625 | 339 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 151 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 695 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 179 | NR | 640 | 225 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 187 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 194 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 199 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 205 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 213 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 219 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 228 | NR | 675 | 87 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 12 | NR | 550 | 236 | NR | 680 | 74 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 20 | NR | 555 | 247 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 32 | NR | 560 | 257 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 50 | NR | 565 | 267 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 79 | NR | 570 | 277 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 133 | NR | 575 | 287 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 194 | NR | 580 | 297 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 168 | NR | 585 | 308 | NR | 715 | 24 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 315 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 101 | NR | 595 | 320 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 327 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 331 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 367 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 91 | NR | 615 | 398 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-457-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.4

| 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 | 108 | NR | 620 | 338 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 129 | NR | 625 | 339 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 151 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 695 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 179 | NR | 640 | 225 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 187 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 194 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 199 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 205 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 213 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 219 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 228 | NR | 675 | 87 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 12 | NR | 550 | 236 | NR | 680 | 74 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 20 | NR | 555 | 247 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 32 | NR | 560 | 257 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 50 | NR | 565 | 267 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 79 | NR | 570 | 277 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 133 | NR | 575 | 287 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 194 | NR | 580 | 297 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 168 | NR | 585 | 308 | NR | 715 | 24 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 315 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 101 | NR | 595 | 320 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 327 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 331 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 367 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 91 | NR | 615 | 398 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-457-5

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.72

| 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 | 108 | NR | 620 | 338 | NR | 750 | 8 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 129 | NR | 625 | 339 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 151 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 168 | NR | 635 | 695 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 179 | NR | 640 | 225 | NR | 770 | 4 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 187 | NR | 645 | 214 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 194 | NR | 650 | 190 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 199 | NR | 655 | 160 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 2 | NR | 530 | 205 | NR | 660 | 136 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 213 | NR | 665 | 115 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 4 | NR | 540 | 219 | NR | 670 | 106 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 7 | NR | 545 | 228 | NR | 675 | 87 | NR | 805 | 1 | NR | 935 | 0 | NR |
| 420 | 12 | NR | 550 | 236 | NR | 680 | 74 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 20 | NR | 555 | 247 | NR | 685 | 64 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 32 | NR | 560 | 257 | NR | 690 | 55 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 50 | NR | 565 | 267 | NR | 695 | 47 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 79 | NR | 570 | 277 | NR | 700 | 40 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 133 | NR | 575 | 287 | NR | 705 | 34 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 194 | NR | 580 | 297 | NR | 710 | 29 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 168 | NR | 585 | 308 | NR | 715 | 24 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 117 | NR | 590 | 315 | NR | 720 | 20 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 101 | NR | 595 | 320 | NR | 725 | 17 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 327 | NR | 730 | 14 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 73 | NR | 605 | 331 | NR | 735 | 12 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 77 | NR | 610 | 367 | NR | 740 | 10 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 91 | NR | 615 | 398 | NR | 745 | 9 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 91.8$
 $R_g = 99.6$
 $CIE R_a = 93.5$
 $R_9 = 55.1$

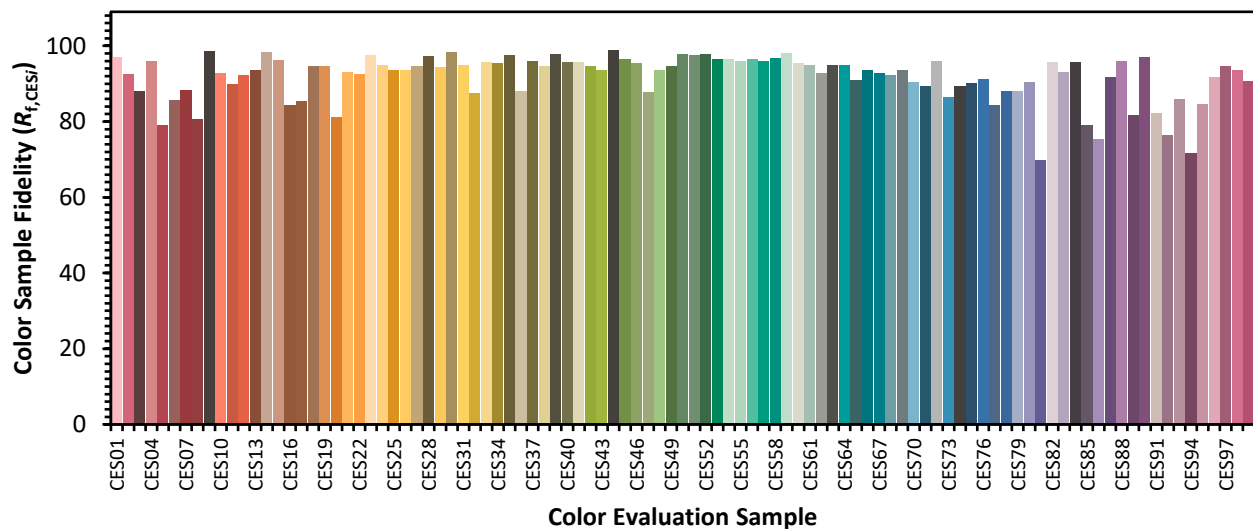


Color Vector Graphics



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

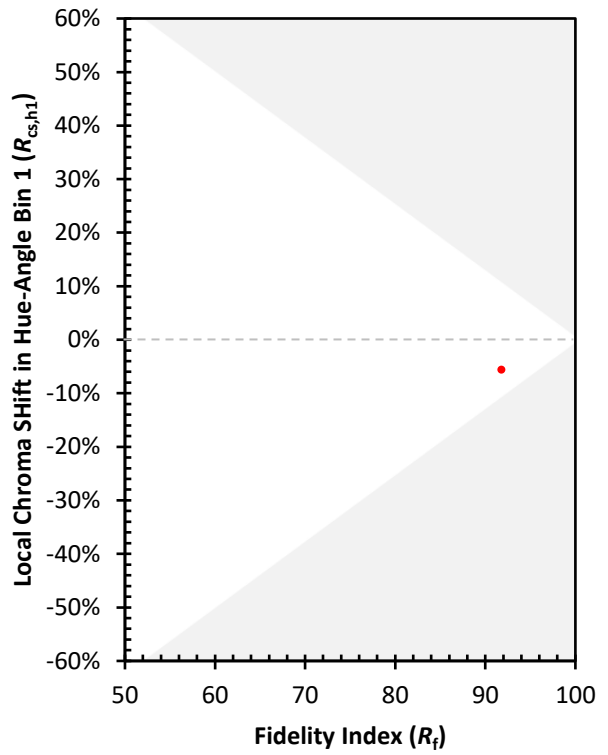
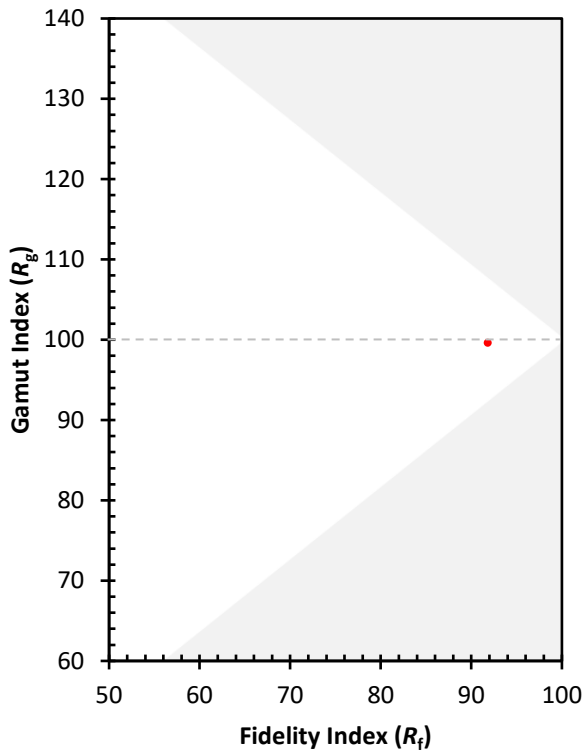
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 97 | CES76 = 91 |
| CES02 = 63 | CES27 = 95 | CES52 = 98 | CES77 = 84 |
| CES03 = 32 | CES28 = 97 | CES53 = 97 | CES78 = 88 |
| CES04 = 70 | CES29 = 94 | CES54 = 96 | CES79 = 88 |
| CES05 = 51 | CES30 = 98 | CES55 = 96 | CES80 = 90 |
| CES06 = 51 | CES31 = 95 | CES56 = 97 | CES81 = 70 |
| CES07 = 44 | CES32 = 87 | CES57 = 96 | CES82 = 96 |
| CES08 = 42 | CES33 = 96 | CES58 = 97 | CES83 = 93 |
| CES09 = 29 | CES34 = 95 | CES59 = 98 | CES84 = 96 |
| CES10 = 76 | CES35 = 97 | CES60 = 95 | CES85 = 79 |
| CES11 = 59 | CES36 = 88 | CES61 = 95 | CES86 = 75 |
| CES12 = 65 | CES37 = 96 | CES62 = 93 | CES87 = 92 |
| CES13 = 44 | CES38 = 95 | CES63 = 95 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 95 | CES89 = 82 |
| CES15 = 72 | CES40 = 96 | CES65 = 91 | CES90 = 97 |
| CES16 = 48 | CES41 = 96 | CES66 = 94 | CES91 = 82 |
| CES17 = 50 | CES42 = 95 | CES67 = 93 | CES92 = 77 |
| CES18 = 57 | CES43 = 94 | CES68 = 92 | CES93 = 86 |
| CES19 = 72 | CES44 = 99 | CES69 = 93 | CES94 = 72 |
| CES20 = 67 | CES45 = 97 | CES70 = 91 | CES95 = 85 |
| CES21 = 86 | CES46 = 95 | CES71 = 89 | CES96 = 92 |
| CES22 = 79 | CES47 = 88 | CES72 = 96 | CES97 = 95 |
| CES23 = 92 | CES48 = 94 | CES73 = 86 | CES98 = 94 |
| CES24 = 91 | CES49 = 95 | CES74 = 89 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 90 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)