

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: P976752

Luminaire Tested: 24SR-LD2-C-45-UNV-L835-CD1-MR-U

Issue Date: 03/18/2025

Test Information

Test Method: LM-79-2019
Report Number: P976752
Test Lab: INNOVATION CENTER(P3)
Issue Date: 03/18/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 24SR-LD2-C-45-UNV-L835-CD1-MR-U
Description: METALUX SKYRIDGE 2x4 4500LM PACKAGE 80CRI 3500K TROFFER with Medium Red SKYTRIM
Light Source: 3500K CCT, 80+ CRI LEDS
Ballast/Driver: -

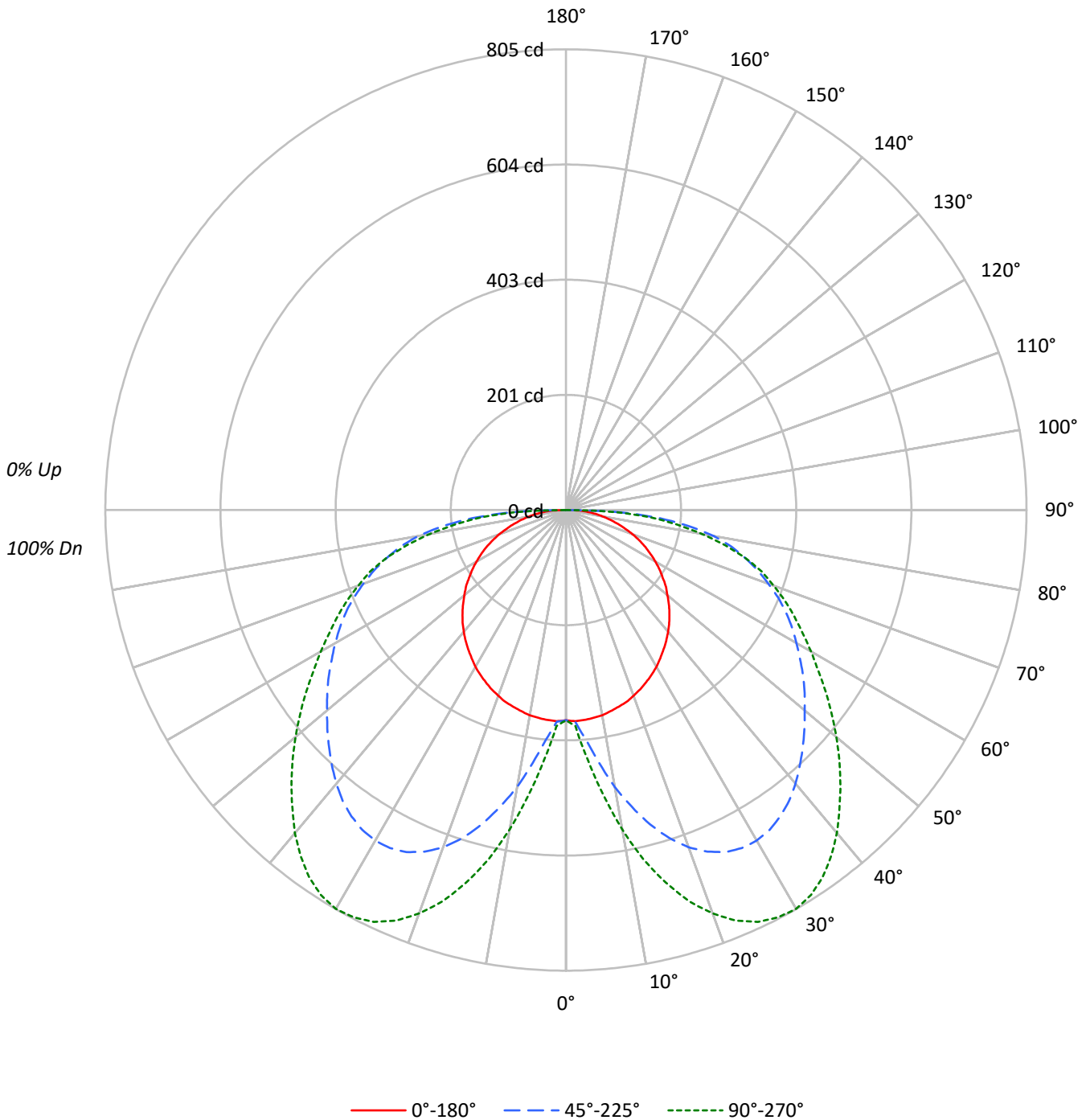
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2485.0 lumens
Efficiency: N/A
Efficacy: 77.9 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.27 / 2.06
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 31.9
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: P976752
CATALOG NUMBER: 24SR-LD2-C-45-UNV-L835-CD1-MR-U

Luminous Intensity Polar Plot





TEST NUMBER: P976752

CATALOG NUMBER: 24SR-LD2-C-45-UNV-L835-CD1-MR-U

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 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1 | 106 | 100 | 95 | 90 | 103 | 98 | 93 | 88 | 93 | 89 | 85 | 89 | 86 | 83 | 86 | 83 | 80 | 86 | 83 | 80 | 78 |
| 2 | 95 | 85 | 77 | 70 | 92 | 83 | 76 | 69 | 79 | 73 | 68 | 76 | 71 | 66 | 73 | 68 | 64 | 73 | 68 | 64 | 62 |
| 3 | 85 | 73 | 64 | 56 | 83 | 72 | 63 | 56 | 69 | 61 | 55 | 66 | 59 | 54 | 63 | 58 | 53 | 63 | 58 | 53 | 50 |
| 4 | 78 | 64 | 54 | 47 | 75 | 63 | 53 | 46 | 60 | 52 | 46 | 58 | 51 | 45 | 55 | 49 | 44 | 55 | 49 | 44 | 42 |
| 5 | 71 | 57 | 47 | 39 | 69 | 55 | 46 | 39 | 53 | 45 | 39 | 51 | 44 | 38 | 49 | 43 | 38 | 49 | 43 | 38 | 35 |
| 6 | 65 | 50 | 41 | 34 | 63 | 49 | 40 | 33 | 48 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 32 | 44 | 38 | 32 | 30 |
| 7 | 60 | 45 | 36 | 29 | 58 | 45 | 35 | 29 | 43 | 35 | 29 | 41 | 34 | 29 | 40 | 33 | 28 | 40 | 33 | 28 | 26 |
| 8 | 56 | 41 | 32 | 26 | 54 | 40 | 32 | 26 | 39 | 31 | 25 | 38 | 30 | 25 | 36 | 30 | 25 | 36 | 30 | 25 | 23 |
| 9 | 52 | 38 | 29 | 23 | 50 | 37 | 28 | 23 | 36 | 28 | 23 | 35 | 27 | 22 | 33 | 27 | 22 | 33 | 27 | 22 | 20 |
| 10 | 48 | 34 | 26 | 20 | 47 | 34 | 26 | 20 | 33 | 25 | 20 | 32 | 25 | 20 | 31 | 25 | 20 | 31 | 25 | 20 | 18 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-----|------|------|
| 0° | 494 | 494 | 494 |
| 5° | 497 | 544 | 592 |
| 10° | 498 | 672 | 774 |
| 15° | 496 | 792 | 939 |
| 20° | 495 | 898 | 1074 |
| 25° | 493 | 979 | 1179 |
| 30° | 491 | 1036 | 1250 |
| 35° | 488 | 1073 | 1286 |
| 40° | 488 | 1096 | 1294 |
| 45° | 487 | 1114 | 1291 |
| 50° | 485 | 1140 | 1291 |
| 55° | 485 | 1187 | 1300 |
| 60° | 486 | 1252 | 1331 |
| 65° | 488 | 1352 | 1402 |
| 70° | 489 | 1482 | 1519 |
| 75° | 489 | 1687 | 1693 |
| 80° | 509 | 2030 | 1868 |
| 85° | 596 | 2546 | 2303 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 87.5°
 Luminance: 3125 cd/sqm



TEST NUMBER: P976752

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 40.7 | 1.6 |
| 10°-20° | 154.4 | 6.2 |
| 20°-30° | 284.0 | 11.4 |
| 30°-40° | 378.6 | 15.2 |
| 40°-50° | 414.8 | 16.7 |
| 50°-60° | 407.9 | 16.4 |
| 60°-70° | 370.2 | 14.9 |
| 70°-80° | 294.7 | 11.9 |
| 80°-90° | 139.7 | 5.6 |
| 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° | 479.2 | 19.3 |
| 0°-40° | 857.8 | 34.5 |
| 0°-60° | 1680.5 | 67.6 |
| 0°-90° | 2485.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2485.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 367 | 367 | 367 | 367 | 367 | |
| 5° | 368 | 372 | 403 | 429 | 438 | 35 |
| 15° | 356 | 441 | 569 | 648 | 674 | 101 |
| 25° | 332 | 488 | 660 | 758 | 794 | 153 |
| 35° | 297 | 481 | 653 | 750 | 783 | 186 |
| 45° | 256 | 433 | 586 | 656 | 678 | 197 |
| 55° | 207 | 382 | 506 | 544 | 554 | 185 |
| 65° | 153 | 331 | 425 | 434 | 440 | 151 |
| 75° | 94 | 258 | 324 | 322 | 326 | 99 |
| 85° | 39 | 139 | 165 | 149 | 149 | 40 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P976752

CATALOG NUMBER: 24SR-LD2-C-45-UNV-L835-CD1-MR-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 |
| 2.5° | 369.4 | 369.4 | 368.3 | 368.3 | 368.3 | 367.3 | 367.3 | 368.3 | 369.4 | 370.4 | 371.6 |
| 5° | 368.3 | 368.3 | 368.3 | 368.3 | 369.4 | 373.7 | 378.9 | 386.2 | 392.3 | 402.9 | 408.1 |
| 7.5° | 366.4 | 366.4 | 367.3 | 370.4 | 378.9 | 390.2 | 403.9 | 419.5 | 432.1 | 445.6 | 458.1 |
| 10° | 364.3 | 364.3 | 366.4 | 376.8 | 393.5 | 413.3 | 433.1 | 452.9 | 470.6 | 491.5 | 507.1 |
| 12.5° | 360.0 | 360.0 | 366.4 | 385.0 | 410.2 | 435.2 | 460.2 | 486.3 | 509.2 | 531.1 | 553.0 |
| 15° | 355.8 | 355.8 | 368.3 | 394.5 | 425.8 | 456.0 | 485.2 | 515.5 | 542.7 | 568.8 | 591.7 |
| 17.5° | 351.7 | 352.7 | 371.6 | 404.8 | 439.4 | 474.8 | 509.2 | 541.7 | 571.9 | 601.1 | 627.2 |
| 20° | 345.4 | 347.5 | 373.7 | 412.2 | 450.8 | 490.5 | 527.1 | 562.5 | 595.9 | 627.2 | 654.3 |
| 22.5° | 339.1 | 343.3 | 374.6 | 417.5 | 460.2 | 503.0 | 541.7 | 578.2 | 613.6 | 646.0 | 674.1 |
| 25° | 331.8 | 337.1 | 375.6 | 420.6 | 466.5 | 510.3 | 550.9 | 589.6 | 626.1 | 659.5 | 687.8 |
| 27.5° | 324.5 | 331.8 | 373.7 | 420.6 | 468.6 | 514.4 | 555.2 | 594.9 | 633.4 | 665.9 | 696.1 |
| 30° | 316.2 | 325.6 | 370.4 | 419.5 | 468.6 | 513.4 | 555.2 | 595.9 | 633.4 | 666.8 | 696.1 |
| 32.5° | 306.8 | 319.3 | 365.2 | 415.4 | 464.4 | 510.3 | 552.1 | 591.7 | 629.3 | 662.6 | 690.9 |
| 35° | 297.4 | 311.0 | 359.1 | 409.1 | 458.1 | 503.0 | 543.6 | 583.4 | 619.9 | 653.3 | 681.4 |
| 37.5° | 288.0 | 303.7 | 351.7 | 401.8 | 448.7 | 492.5 | 533.2 | 573.0 | 608.4 | 640.7 | 666.8 |
| 40° | 277.6 | 294.3 | 342.3 | 391.4 | 438.3 | 480.0 | 520.7 | 558.2 | 592.8 | 624.1 | 649.1 |
| 42.5° | 267.2 | 284.9 | 331.8 | 381.0 | 425.8 | 467.5 | 507.1 | 543.6 | 577.1 | 605.3 | 628.2 |
| 45° | 255.7 | 274.5 | 321.4 | 368.3 | 412.2 | 454.0 | 492.5 | 527.1 | 559.4 | 585.5 | 606.3 |
| 47.5° | 244.1 | 264.1 | 309.9 | 356.9 | 399.7 | 440.4 | 477.9 | 511.3 | 540.5 | 565.6 | 585.5 |
| 50° | 231.6 | 252.6 | 298.5 | 344.4 | 387.1 | 426.8 | 463.3 | 494.6 | 522.8 | 544.8 | 563.6 |
| 52.5° | 220.3 | 242.2 | 287.0 | 332.9 | 374.6 | 414.3 | 449.8 | 479.0 | 505.1 | 525.9 | 541.7 |
| 55° | 206.6 | 230.7 | 276.6 | 321.4 | 363.1 | 401.8 | 435.2 | 463.3 | 487.3 | 506.1 | 519.8 |
| 57.5° | 194.1 | 219.1 | 265.1 | 309.9 | 350.6 | 389.3 | 420.6 | 447.7 | 468.6 | 485.2 | 497.8 |
| 60° | 180.5 | 207.6 | 253.6 | 298.5 | 339.1 | 376.8 | 407.0 | 432.1 | 451.9 | 465.4 | 475.9 |
| 62.5° | 167.0 | 195.1 | 243.2 | 287.0 | 326.6 | 362.1 | 391.4 | 414.3 | 432.1 | 445.6 | 451.9 |
| 65° | 153.4 | 182.6 | 230.7 | 275.5 | 314.1 | 347.5 | 375.6 | 397.5 | 413.3 | 424.8 | 428.9 |
| 67.5° | 138.8 | 170.1 | 218.2 | 260.9 | 299.5 | 331.8 | 357.9 | 378.9 | 392.3 | 401.8 | 403.9 |
| 70° | 124.2 | 155.5 | 203.5 | 246.3 | 282.8 | 313.1 | 339.1 | 356.9 | 370.4 | 376.8 | 378.9 |
| 72.5° | 108.6 | 140.9 | 188.9 | 229.5 | 264.1 | 294.3 | 317.2 | 336.0 | 347.5 | 351.7 | 351.7 |
| 75° | 94.0 | 125.2 | 172.2 | 210.9 | 244.1 | 272.4 | 294.3 | 311.0 | 321.4 | 324.5 | 323.5 |
| 77.5° | 79.4 | 110.6 | 154.4 | 191.0 | 221.2 | 247.4 | 268.2 | 283.9 | 293.3 | 296.4 | 295.3 |
| 80° | 65.7 | 95.0 | 133.6 | 168.0 | 195.1 | 219.1 | 238.0 | 254.7 | 263.0 | 262.0 | 255.7 |
| 82.5° | 52.1 | 77.3 | 111.7 | 141.9 | 165.9 | 187.8 | 206.6 | 217.0 | 220.3 | 217.0 | 210.9 |
| 85° | 38.6 | 58.4 | 86.7 | 110.6 | 130.5 | 148.2 | 159.7 | 167.0 | 168.0 | 164.9 | 159.7 |
| 87.5° | 22.9 | 34.4 | 51.1 | 65.7 | 80.4 | 88.6 | 95.0 | 100.2 | 101.3 | 98.1 | 95.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P976752

CATALOG NUMBER: 24SR-LD2-C-45-UNV-L835-CD1-MR-U

CANDELA DISTRIBUTION (continued):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 | 367.3 |
| 2.5° | 372.5 | 373.7 | 374.6 | 376.8 | 375.6 | 376.8 | 376.8 | 377.7 |
| 5° | 415.4 | 421.6 | 425.8 | 432.1 | 432.1 | 435.2 | 436.2 | 438.3 |
| 7.5° | 467.5 | 475.9 | 485.2 | 494.6 | 495.7 | 500.9 | 503.0 | 503.0 |
| 10° | 520.7 | 532.3 | 543.6 | 554.2 | 557.3 | 563.6 | 566.7 | 566.7 |
| 12.5° | 568.8 | 581.3 | 596.9 | 608.4 | 612.6 | 619.9 | 624.1 | 625.1 |
| 15° | 610.5 | 626.1 | 641.8 | 654.3 | 661.6 | 668.9 | 673.2 | 674.1 |
| 17.5° | 646.0 | 664.7 | 681.4 | 693.9 | 702.4 | 710.7 | 715.9 | 717.0 |
| 20° | 674.1 | 695.1 | 711.8 | 725.3 | 734.7 | 745.1 | 749.3 | 750.3 |
| 22.5° | 696.1 | 715.9 | 734.7 | 749.3 | 759.7 | 770.2 | 775.4 | 776.4 |
| 25° | 710.7 | 731.6 | 750.3 | 766.0 | 777.5 | 786.8 | 792.1 | 794.1 |
| 27.5° | 719.1 | 741.0 | 759.7 | 774.3 | 785.8 | 796.2 | 801.4 | 802.5 |
| 30° | 720.1 | 742.0 | 760.8 | 775.4 | 786.8 | 797.3 | 802.5 | 804.6 |
| 32.5° | 714.9 | 736.8 | 754.5 | 769.1 | 780.6 | 790.0 | 795.2 | 797.3 |
| 35° | 704.5 | 725.3 | 743.0 | 756.6 | 767.0 | 775.4 | 781.6 | 782.7 |
| 37.5° | 689.9 | 709.7 | 725.3 | 737.8 | 748.3 | 756.6 | 761.8 | 761.8 |
| 40° | 669.9 | 688.7 | 702.4 | 713.8 | 724.3 | 730.5 | 736.8 | 736.8 |
| 42.5° | 648.0 | 665.9 | 678.4 | 688.7 | 696.1 | 703.4 | 707.6 | 707.6 |
| 45° | 625.1 | 639.7 | 652.2 | 660.7 | 668.0 | 673.2 | 678.4 | 678.4 |
| 47.5° | 602.2 | 614.7 | 624.1 | 632.4 | 638.7 | 643.9 | 648.0 | 648.0 |
| 50° | 578.2 | 589.6 | 596.9 | 604.2 | 609.5 | 613.6 | 616.8 | 616.8 |
| 52.5° | 554.2 | 563.6 | 568.8 | 575.0 | 579.2 | 583.4 | 585.5 | 585.5 |
| 55° | 531.1 | 537.5 | 541.7 | 546.9 | 550.0 | 552.1 | 554.2 | 554.2 |
| 57.5° | 506.1 | 510.3 | 514.4 | 517.6 | 519.8 | 521.7 | 523.8 | 522.8 |
| 60° | 481.1 | 484.2 | 487.3 | 489.4 | 491.5 | 493.6 | 494.6 | 494.6 |
| 62.5° | 456.0 | 457.1 | 458.1 | 462.3 | 464.4 | 465.4 | 466.5 | 466.5 |
| 65° | 431.0 | 431.0 | 432.1 | 435.2 | 437.3 | 439.4 | 440.4 | 440.4 |
| 67.5° | 403.9 | 404.8 | 406.0 | 409.1 | 410.2 | 412.2 | 414.3 | 414.3 |
| 70° | 376.8 | 377.7 | 377.7 | 381.0 | 382.0 | 384.1 | 386.2 | 386.2 |
| 72.5° | 350.6 | 350.6 | 350.6 | 352.7 | 354.8 | 356.9 | 359.1 | 359.1 |
| 75° | 321.4 | 321.4 | 321.4 | 323.5 | 323.5 | 324.5 | 326.6 | 325.6 |
| 77.5° | 290.1 | 287.0 | 283.9 | 282.8 | 282.8 | 283.9 | 284.9 | 284.9 |
| 80° | 249.5 | 245.3 | 243.2 | 241.1 | 240.1 | 241.1 | 242.2 | 241.1 |
| 82.5° | 206.6 | 201.4 | 198.4 | 197.2 | 197.2 | 197.2 | 198.4 | 196.2 |
| 85° | 156.5 | 151.3 | 149.2 | 149.2 | 148.2 | 148.2 | 148.2 | 149.2 |
| 87.5° | 94.0 | 90.7 | 87.7 | 88.6 | 87.7 | 86.7 | 87.7 | 89.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P976752
 CATALOG NUMBER: 24SR-LD2-C-45-UNV-L835-CD1-MR-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 | 10.7 | 12.5 | 11.1 | 12.8 | 13.2 | 13.7 | 15.5 | 14.1 | 15.8 | 16.1 |
| | 3H | 12.7 | 14.4 | 13.1 | 14.7 | 15.1 | 16.2 | 17.9 | 16.6 | 18.2 | 18.6 |
| | 4H | 13.5 | 15.1 | 13.9 | 15.4 | 15.8 | 17.4 | 19.0 | 17.8 | 19.3 | 19.7 |
| | 6H | 14.1 | 15.6 | 14.5 | 15.9 | 16.3 | 18.5 | 20.0 | 18.9 | 20.4 | 20.7 |
| | 8H | 14.3 | 15.7 | 14.8 | 16.1 | 16.5 | 19.0 | 20.4 | 19.4 | 20.8 | 21.2 |
| | 12H | 14.5 | 15.9 | 15.0 | 16.2 | 16.7 | 19.4 | 20.8 | 19.9 | 21.1 | 21.6 |
| 4H | 2H | 12.5 | 14.1 | 12.9 | 14.4 | 14.8 | 14.5 | 16.0 | 14.9 | 16.4 | 16.8 |
| | 3H | 15.0 | 16.4 | 15.4 | 16.7 | 17.1 | 17.3 | 18.6 | 17.7 | 19.0 | 19.4 |
| | 4H | 16.1 | 17.3 | 16.6 | 17.8 | 18.2 | 18.7 | 19.9 | 19.1 | 20.3 | 20.7 |
| | 6H | 17.0 | 18.1 | 17.5 | 18.5 | 19.0 | 19.9 | 21.0 | 20.4 | 21.5 | 21.9 |
| | 8H | 17.4 | 18.4 | 17.8 | 18.8 | 19.3 | 20.5 | 21.5 | 20.9 | 21.9 | 22.4 |
| | 12H | 17.6 | 18.5 | 18.1 | 19.0 | 19.5 | 21.0 | 21.9 | 21.5 | 22.4 | 22.9 |
| 8H | 4H | 17.3 | 18.3 | 17.7 | 18.7 | 19.2 | 19.2 | 20.2 | 19.7 | 20.7 | 21.1 |
| | 6H | 18.6 | 19.5 | 19.1 | 20.0 | 20.5 | 20.7 | 21.6 | 21.2 | 22.0 | 22.5 |
| | 8H | 19.2 | 20.0 | 19.7 | 20.5 | 21.0 | 21.4 | 22.2 | 21.9 | 22.7 | 23.1 |
| | 12H | 19.7 | 20.4 | 20.2 | 20.9 | 21.4 | 22.0 | 22.7 | 22.5 | 23.2 | 23.8 |
| 12H | 4H | 17.5 | 18.4 | 18.0 | 18.9 | 19.4 | 19.3 | 20.3 | 19.8 | 20.7 | 21.2 |
| | 6H | 19.0 | 19.8 | 19.5 | 20.3 | 20.8 | 20.9 | 21.7 | 21.4 | 22.1 | 22.7 |
| | 8H | 19.8 | 20.5 | 20.3 | 21.0 | 21.5 | 21.7 | 22.4 | 22.2 | 22.9 | 23.4 |

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-6

Test Date: 07/01/2025

Luminaire Tested: 24SR-LD2-64-C-UNV-L935-CD1-U

Data in this report applies to families of products including 24SR-LD2-64-C-UNV-L935-CD1-U

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2506-457-6
 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-L935-CD1-U**
 Description: 2X4 SKYRIDGE 6400LM Fixture with new LTN chip

Spectral Parameters

CCT (K): 3329
 CIE u': 0.2411
 CIE v': 0.5118
 Duv: -0.0021
 CIE x: 0.4128
 CIE y: 0.3894
 CIE z: 0.1979
 Peak Wavelength (nm): 630
 Dominant Wavelength (nm): 582
 Purity: 40.74075
 Rf: 91.4
 Rg: 100.2

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 93.9 | | |
| R1: | 95.4 | R9: | 60.5 |
| R2: | 97.4 | R10: | 92.5 |
| R3: | 97.7 | R11: | 95.9 |
| R4: | 94.9 | R12: | 82.0 |
| R5: | 95.1 | R13: | 96.0 |
| R6: | 95.7 | R14: | 98.0 |
| R7: | 91.7 | R15: | 91.5 |
| R8: | 83.2 | | |



Test Conditions

Stabilization Time: 48M
 Operation Time: 1H 48M
 Sphere Temperature (°C): 24.0

REPORT NUMBER: SP1-2506-457-6

| 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: SP1-2506-457-6

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 7-step quadrangle

REPORT NUMBER: SP1-2506-457-6

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 | 143 | NR | 620 | 358 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 166 | NR | 625 | 357 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 191 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 210 | NR | 635 | 705 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 223 | NR | 640 | 239 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 233 | NR | 645 | 226 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 240 | NR | 650 | 201 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 246 | NR | 655 | 170 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 251 | NR | 660 | 145 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 260 | NR | 665 | 123 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 267 | NR | 670 | 113 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 276 | NR | 675 | 93 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 284 | NR | 680 | 80 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 294 | NR | 685 | 69 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 46 | NR | 560 | 303 | NR | 690 | 59 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 75 | NR | 565 | 313 | NR | 695 | 51 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 319 | NR | 700 | 43 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 203 | NR | 575 | 327 | NR | 705 | 37 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 336 | NR | 710 | 31 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 290 | NR | 585 | 344 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 197 | NR | 590 | 349 | NR | 720 | 22 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 163 | NR | 595 | 350 | NR | 725 | 18 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 135 | NR | 600 | 355 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 110 | NR | 605 | 357 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 108 | NR | 610 | 391 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 123 | NR | 615 | 421 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-457-6

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.57

| 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 | 143 | NR | 620 | 358 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 166 | NR | 625 | 357 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 191 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 210 | NR | 635 | 705 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 223 | NR | 640 | 239 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 233 | NR | 645 | 226 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 240 | NR | 650 | 201 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 246 | NR | 655 | 170 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 251 | NR | 660 | 145 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 260 | NR | 665 | 123 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 267 | NR | 670 | 113 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 276 | NR | 675 | 93 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 284 | NR | 680 | 80 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 294 | NR | 685 | 69 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 46 | NR | 560 | 303 | NR | 690 | 59 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 75 | NR | 565 | 313 | NR | 695 | 51 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 319 | NR | 700 | 43 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 203 | NR | 575 | 327 | NR | 705 | 37 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 336 | NR | 710 | 31 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 290 | NR | 585 | 344 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 197 | NR | 590 | 349 | NR | 720 | 22 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 163 | NR | 595 | 350 | NR | 725 | 18 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 135 | NR | 600 | 355 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 110 | NR | 605 | 357 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 108 | NR | 610 | 391 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 123 | NR | 615 | 421 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2506-457-6

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.17

| 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 | 143 | NR | 620 | 358 | NR | 750 | 9 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 166 | NR | 625 | 357 | NR | 755 | 7 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 191 | NR | 630 | 1000 | NR | 760 | 6 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 210 | NR | 635 | 705 | NR | 765 | 5 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 223 | NR | 640 | 239 | NR | 770 | 5 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 233 | NR | 645 | 226 | NR | 775 | 4 | NR | 905 | 0 | NR |
| 390 | 1 | NR | 520 | 240 | NR | 650 | 201 | NR | 780 | 3 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 246 | NR | 655 | 170 | NR | 785 | 3 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 251 | NR | 660 | 145 | NR | 790 | 2 | NR | 920 | 0 | NR |
| 405 | 4 | NR | 535 | 260 | NR | 665 | 123 | NR | 795 | 2 | NR | 925 | 0 | NR |
| 410 | 6 | NR | 540 | 267 | NR | 670 | 113 | NR | 800 | 2 | NR | 930 | 0 | NR |
| 415 | 9 | NR | 545 | 276 | NR | 675 | 93 | NR | 805 | 2 | NR | 935 | 0 | NR |
| 420 | 16 | NR | 550 | 284 | NR | 680 | 80 | NR | 810 | 1 | NR | 940 | 0 | NR |
| 425 | 28 | NR | 555 | 294 | NR | 685 | 69 | NR | 815 | 1 | NR | 945 | 0 | NR |
| 430 | 46 | NR | 560 | 303 | NR | 690 | 59 | NR | 820 | 1 | NR | 950 | 0 | NR |
| 435 | 75 | NR | 565 | 313 | NR | 695 | 51 | NR | 825 | 1 | NR | 955 | 0 | NR |
| 440 | 120 | NR | 570 | 319 | NR | 700 | 43 | NR | 830 | 1 | NR | 960 | 0 | NR |
| 445 | 203 | NR | 575 | 327 | NR | 705 | 37 | NR | 835 | 1 | NR | 965 | 0 | NR |
| 450 | 311 | NR | 580 | 336 | NR | 710 | 31 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 290 | NR | 585 | 344 | NR | 715 | 26 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 197 | NR | 590 | 349 | NR | 720 | 22 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 163 | NR | 595 | 350 | NR | 725 | 18 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 135 | NR | 600 | 355 | NR | 730 | 15 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 110 | NR | 605 | 357 | NR | 735 | 13 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 108 | NR | 610 | 391 | NR | 740 | 11 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 123 | NR | 615 | 421 | NR | 745 | 10 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 91.4$
 $R_g = 100.2$
 $CIE R_a = 93.9$
 $R_9 = 60.5$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 93 | CES51 = 98 | CES76 = 88 |
| CES02 = 63 | CES27 = 93 | CES52 = 98 | CES77 = 87 |
| CES03 = 31 | CES28 = 96 | CES53 = 97 | CES78 = 85 |
| CES04 = 70 | CES29 = 95 | CES54 = 95 | CES79 = 91 |
| CES05 = 50 | CES30 = 96 | CES55 = 94 | CES80 = 92 |
| CES06 = 51 | CES31 = 95 | CES56 = 96 | CES81 = 75 |
| CES07 = 43 | CES32 = 87 | CES57 = 95 | CES82 = 96 |
| CES08 = 42 | CES33 = 97 | CES58 = 96 | CES83 = 94 |
| CES09 = 29 | CES34 = 94 | CES59 = 98 | CES84 = 95 |
| CES10 = 75 | CES35 = 96 | CES60 = 94 | CES85 = 80 |
| CES11 = 58 | CES36 = 84 | CES61 = 93 | CES86 = 79 |
| CES12 = 64 | CES37 = 95 | CES62 = 89 | CES87 = 91 |
| CES13 = 44 | CES38 = 91 | CES63 = 94 | CES88 = 97 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 83 |
| CES15 = 72 | CES40 = 97 | CES65 = 90 | CES90 = 98 |
| CES16 = 48 | CES41 = 97 | CES66 = 90 | CES91 = 77 |
| CES17 = 49 | CES42 = 93 | CES67 = 89 | CES92 = 77 |
| CES18 = 56 | CES43 = 92 | CES68 = 89 | CES93 = 86 |
| CES19 = 71 | CES44 = 99 | CES69 = 91 | CES94 = 74 |
| CES20 = 67 | CES45 = 96 | CES70 = 88 | CES95 = 84 |
| CES21 = 86 | CES46 = 96 | CES71 = 84 | CES96 = 92 |
| CES22 = 78 | CES47 = 91 | CES72 = 94 | CES97 = 95 |
| CES23 = 91 | CES48 = 94 | CES73 = 83 | CES98 = 94 |
| CES24 = 90 | CES49 = 94 | CES74 = 91 | CES99 = 92 |
| CES25 = 71 | CES50 = 98 | CES75 = 86 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)