

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



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1055633

Luminaire Tested: S123R3DR-S560D835-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055633
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-6)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-S560D835-X4F0-XX-UDD-F-S
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
CORE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

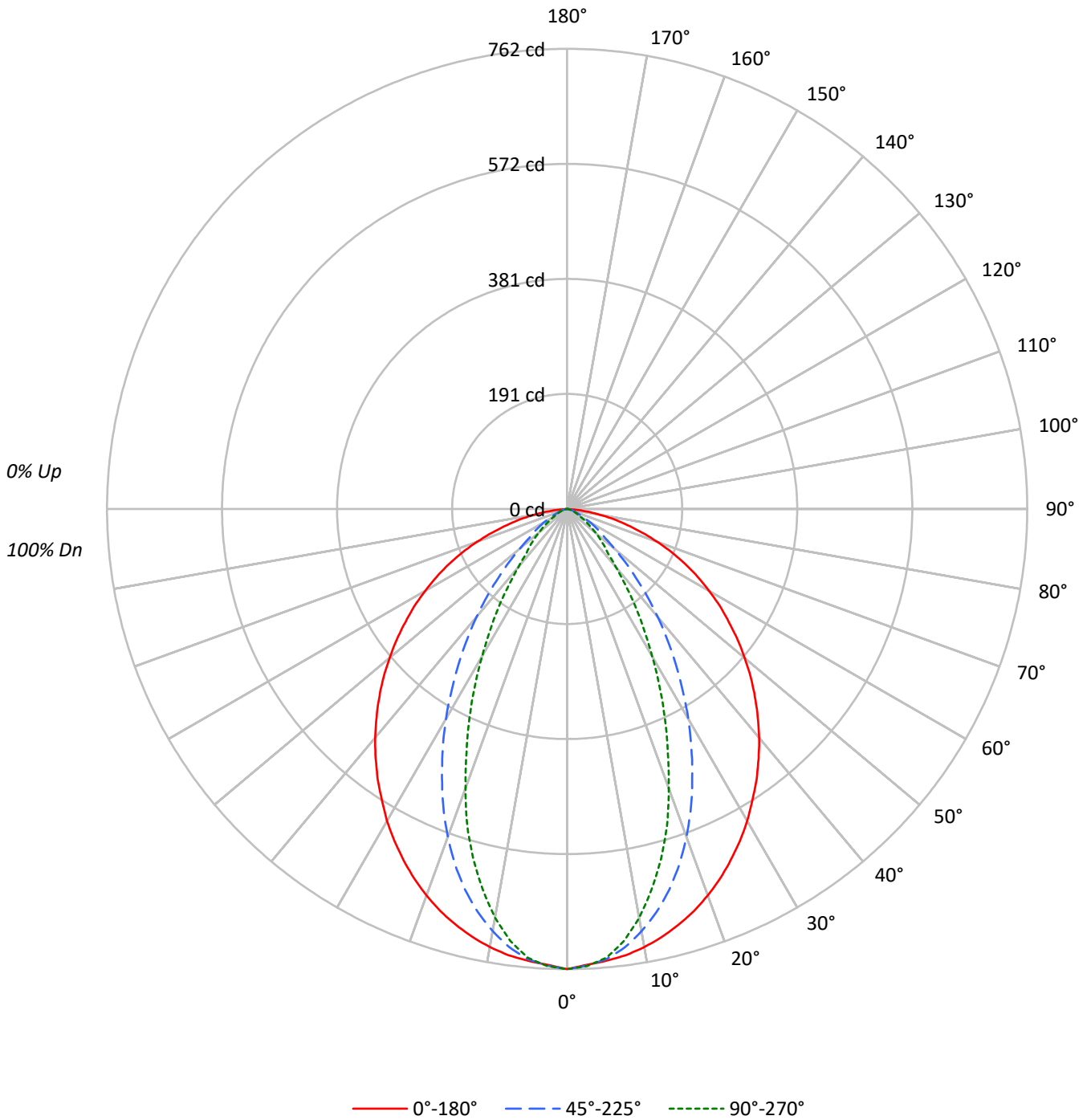
Lumens per Lamp: N/A
Luminaire Lumens: 1059.5 lumens
Efficiency: N/A
Efficacy: 55.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.77 / 0.94
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 19.1
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

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Luminous Intensity Polar Plot





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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 111 | 108 | 104 | 102 | 109 | 106 | 103 | 100 | 101 | 99 | 97 | 98 | 96 | 94 | 94 | 93 | 91 | 89 |
| 2 | 104 | 97 | 92 | 87 | 101 | 95 | 90 | 86 | 92 | 88 | 84 | 89 | 85 | 82 | 86 | 83 | 81 | 79 |
| 3 | 96 | 88 | 81 | 76 | 94 | 86 | 80 | 76 | 84 | 78 | 74 | 81 | 77 | 73 | 79 | 75 | 72 | 70 |
| 4 | 90 | 80 | 73 | 67 | 88 | 79 | 72 | 67 | 76 | 71 | 66 | 74 | 69 | 65 | 72 | 68 | 64 | 62 |
| 5 | 84 | 73 | 66 | 60 | 82 | 72 | 65 | 60 | 70 | 64 | 59 | 68 | 63 | 59 | 67 | 62 | 58 | 56 |
| 6 | 78 | 67 | 60 | 54 | 77 | 66 | 59 | 54 | 65 | 58 | 53 | 63 | 57 | 53 | 62 | 57 | 53 | 51 |
| 7 | 73 | 62 | 54 | 49 | 72 | 61 | 54 | 49 | 60 | 53 | 49 | 58 | 53 | 48 | 57 | 52 | 48 | 46 |
| 8 | 69 | 57 | 50 | 45 | 68 | 57 | 50 | 45 | 56 | 49 | 45 | 54 | 49 | 44 | 53 | 48 | 44 | 42 |
| 9 | 65 | 53 | 46 | 41 | 64 | 53 | 46 | 41 | 52 | 45 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 39 |
| 10 | 62 | 50 | 43 | 38 | 60 | 49 | 43 | 38 | 48 | 42 | 38 | 48 | 42 | 38 | 47 | 42 | 38 | 36 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9186 | 9186 | 9186 |
| 5° | 9089 | 9054 | 9028 |
| 10° | 9018 | 8691 | 8417 |
| 15° | 8897 | 8148 | 7490 |
| 20° | 8737 | 7412 | 6310 |
| 25° | 8531 | 6522 | 5091 |
| 30° | 8304 | 5589 | 3920 |
| 35° | 8046 | 4613 | 2901 |
| 40° | 7786 | 3672 | 1978 |
| 45° | 7499 | 2745 | 1490 |
| 50° | 7193 | 1909 | 1165 |
| 55° | 6876 | 1396 | 849 |
| 60° | 6547 | 1044 | 610 |
| 65° | 6159 | 702 | 474 |
| 70° | 5573 | 508 | 381 |
| 75° | 4812 | 368 | 303 |
| 80° | 3860 | 299 | 250 |
| 85° | 1992 | 304 | 194 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7499 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 70.4 | 6.6 |
| 10°-20° | 183.3 | 17.3 |
| 20°-30° | 230.3 | 21.7 |
| 30°-40° | 214.5 | 20.2 |
| 40°-50° | 164.2 | 15.5 |
| 50°-60° | 109.1 | 10.3 |
| 60°-70° | 58.8 | 5.6 |
| 70°-80° | 24.1 | 2.3 |
| 80°-90° | 4.6 | 0.4 |
| 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° | 484.1 | 45.7 |
| 0°-40° | 698.6 | 65.9 |
| 0°-60° | 971.9 | 91.7 |
| 0°-90° | 1059.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1059.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 762 | 762 | 762 | 762 | 762 | |
| 5° | 751 | 759 | 748 | 745 | 746 | 71 |
| 15° | 713 | 701 | 653 | 614 | 600 | 201 |
| 25° | 641 | 598 | 490 | 409 | 383 | 295 |
| 35° | 547 | 466 | 313 | 222 | 197 | 342 |
| 45° | 440 | 325 | 161 | 95 | 87 | 339 |
| 55° | 327 | 189 | 66 | 46 | 40 | 293 |
| 65° | 216 | 73 | 25 | 18 | 17 | 213 |
| 75° | 103 | 17 | 8 | 7 | 6 | 111 |
| 85° | 14 | 2 | 2 | 2 | 1 | 21 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 761.9 | 761.9 | 761.9 | 761.9 | 761.9 |
| 2.5° | 755.4 | 764.7 | 756.8 | 757.5 | 757.5 |
| 5° | 751.0 | 759.0 | 748.1 | 745.3 | 746.0 |
| 7.5° | 745.3 | 750.3 | 732.3 | 722.9 | 721.4 |
| 10° | 736.6 | 738.0 | 709.9 | 693.3 | 687.5 |
| 12.5° | 725.8 | 720.7 | 683.9 | 656.4 | 645.6 |
| 15° | 712.8 | 701.2 | 652.8 | 614.5 | 600.1 |
| 17.5° | 698.3 | 678.8 | 617.4 | 567.6 | 550.3 |
| 20° | 681.0 | 653.5 | 577.7 | 515.6 | 491.8 |
| 22.5° | 662.2 | 626.8 | 535.8 | 462.2 | 435.5 |
| 25° | 641.3 | 597.9 | 490.3 | 408.7 | 382.7 |
| 27.5° | 619.6 | 566.9 | 445.6 | 358.2 | 331.5 |
| 30° | 596.5 | 535.1 | 401.5 | 309.1 | 281.6 |
| 32.5° | 571.2 | 500.4 | 356.0 | 263.6 | 236.1 |
| 35° | 546.7 | 465.8 | 313.4 | 221.7 | 197.1 |
| 37.5° | 520.7 | 431.1 | 272.2 | 184.9 | 157.4 |
| 40° | 494.7 | 395.7 | 233.3 | 148.8 | 125.7 |
| 42.5° | 467.2 | 360.3 | 196.4 | 118.4 | 100.4 |
| 45° | 439.8 | 325.0 | 161.0 | 94.6 | 87.4 |
| 47.5° | 412.3 | 289.6 | 130.0 | 81.6 | 74.4 |
| 50° | 383.5 | 255.6 | 101.8 | 69.3 | 62.1 |
| 52.5° | 356.0 | 221.7 | 79.4 | 57.0 | 50.5 |
| 55° | 327.1 | 189.2 | 66.4 | 46.2 | 40.4 |
| 57.5° | 300.4 | 156.0 | 54.9 | 36.1 | 31.8 |
| 60° | 271.5 | 126.4 | 43.3 | 28.2 | 25.3 |
| 62.5° | 244.1 | 98.9 | 33.2 | 22.4 | 20.2 |
| 65° | 215.9 | 72.9 | 24.6 | 18.1 | 16.6 |
| 67.5° | 187.8 | 52.7 | 18.8 | 14.4 | 13.7 |
| 70° | 158.1 | 39.7 | 14.4 | 11.6 | 10.8 |
| 72.5° | 130.0 | 28.2 | 10.8 | 9.4 | 8.7 |
| 75° | 103.3 | 17.3 | 7.9 | 7.2 | 6.5 |
| 77.5° | 79.4 | 10.1 | 5.8 | 5.8 | 5.1 |
| 80° | 55.6 | 5.8 | 4.3 | 4.3 | 3.6 |
| 82.5° | 33.9 | 3.6 | 2.9 | 2.9 | 2.9 |
| 85° | 14.4 | 2.2 | 2.2 | 2.2 | 1.4 |
| 87.5° | 2.2 | 0.7 | 0.7 | 0.7 | 0.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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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 | 17.52 | 18.87 | 17.88 | 19.19 | 19.50 | 6.09 | 7.45 | 6.46 | 7.76 | 8.08 |
| | 3H | 19.27 | 20.48 | 19.65 | 20.81 | 21.17 | 6.75 | 7.96 | 7.13 | 8.29 | 8.65 |
| | 4H | 19.97 | 21.10 | 20.37 | 21.45 | 21.83 | 6.95 | 8.07 | 7.35 | 8.42 | 8.81 |
| | 6H | 20.48 | 21.52 | 20.90 | 21.89 | 22.28 | 7.07 | 8.11 | 7.49 | 8.48 | 8.87 |
| | 8H | 20.62 | 21.60 | 21.05 | 21.99 | 22.40 | 7.11 | 8.09 | 7.54 | 8.48 | 8.88 |
| | 12H | 20.67 | 21.61 | 21.11 | 21.99 | 22.42 | 7.12 | 8.05 | 7.55 | 8.44 | 8.87 |
| 4H | 2H | 17.33 | 18.45 | 17.73 | 18.80 | 19.18 | 6.65 | 7.77 | 7.05 | 8.12 | 8.51 |
| | 3H | 19.12 | 20.04 | 19.53 | 20.44 | 20.85 | 7.45 | 8.37 | 7.86 | 8.77 | 9.17 |
| | 4H | 19.81 | 20.64 | 20.25 | 21.06 | 21.50 | 7.70 | 8.53 | 8.14 | 8.95 | 9.39 |
| | 6H | 20.38 | 21.09 | 20.85 | 21.54 | 22.00 | 7.90 | 8.61 | 8.37 | 9.06 | 9.52 |
| | 8H | 20.56 | 21.22 | 21.03 | 21.67 | 22.14 | 7.96 | 8.62 | 8.43 | 9.07 | 9.54 |
| | 12H | 20.64 | 21.23 | 21.13 | 21.71 | 22.19 | 7.99 | 8.57 | 8.47 | 9.06 | 9.53 |
| 8H | 4H | 19.69 | 20.35 | 20.16 | 20.80 | 21.27 | 8.02 | 8.68 | 8.49 | 9.13 | 9.60 |
| | 6H | 20.24 | 20.79 | 20.75 | 21.28 | 21.76 | 8.27 | 8.81 | 8.77 | 9.30 | 9.78 |
| | 8H | 20.42 | 20.91 | 20.94 | 21.42 | 21.91 | 8.35 | 8.84 | 8.87 | 9.35 | 9.85 |
| | 12H | 20.52 | 20.95 | 21.04 | 21.45 | 22.02 | 8.43 | 8.86 | 8.95 | 9.36 | 9.93 |
| 12H | 4H | 19.65 | 20.23 | 20.13 | 20.72 | 21.19 | 8.06 | 8.65 | 8.55 | 9.13 | 9.60 |
| | 6H | 20.19 | 20.67 | 20.71 | 21.19 | 21.68 | 8.31 | 8.80 | 8.83 | 9.31 | 9.80 |
| | 8H | 20.38 | 20.81 | 20.89 | 21.30 | 21.87 | 8.44 | 8.87 | 8.95 | 9.36 | 9.93 |