

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: P1055773

Luminaire Tested: S123R3DR-H560D850-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055773
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-H560D850-X4F0-XX-UDD-F-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

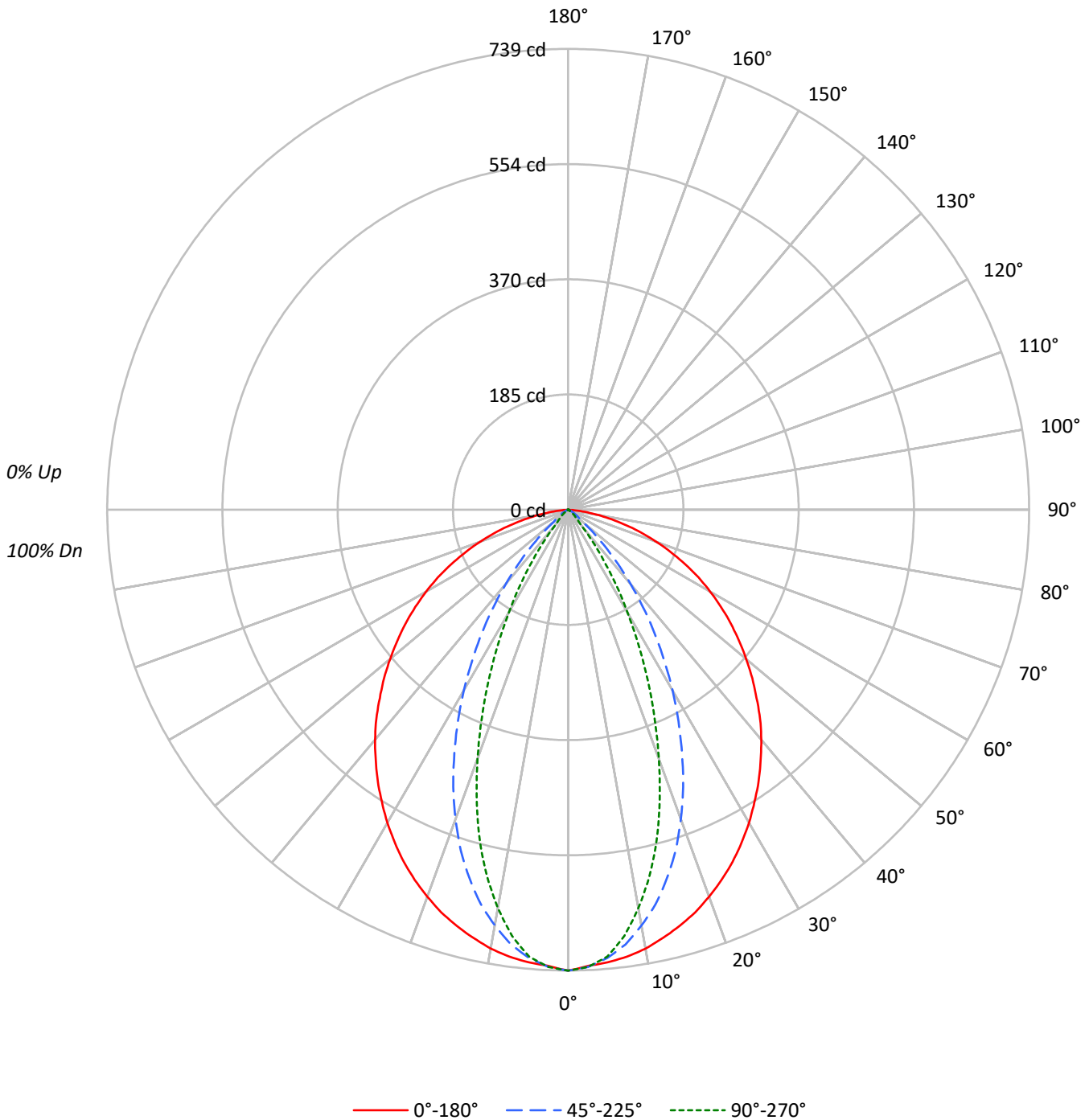
Lumens per Lamp: N/A
Luminaire Lumens: 865.2 lumens
Efficiency: N/A
Efficacy: 50.0 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 17.3
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 | 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 | 112 | 108 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98 | 98 | 97 | 95 | 95 | 93 | 92 | 90 | | | | |
| 2 | 105 | 99 | 94 | 89 | 102 | 97 | 92 | 88 | 93 | 90 | 86 | 90 | 87 | 84 | 87 | 85 | 83 | 81 | | | | |
| 3 | 98 | 90 | 84 | 79 | 96 | 88 | 83 | 78 | 86 | 81 | 77 | 83 | 79 | 76 | 81 | 77 | 74 | 73 | | | | |
| 4 | 92 | 82 | 75 | 70 | 90 | 81 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 68 | 75 | 71 | 67 | 65 | | | | |
| 5 | 86 | 76 | 69 | 63 | 84 | 75 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | | |
| 6 | 81 | 70 | 63 | 57 | 79 | 69 | 62 | 57 | 67 | 61 | 57 | 66 | 61 | 56 | 64 | 60 | 56 | 54 | | | | |
| 7 | 76 | 65 | 58 | 53 | 74 | 64 | 57 | 52 | 63 | 57 | 52 | 61 | 56 | 52 | 60 | 55 | 52 | 50 | | | | |
| 8 | 71 | 60 | 53 | 48 | 70 | 60 | 53 | 48 | 58 | 52 | 48 | 57 | 52 | 48 | 56 | 51 | 48 | 46 | | | | |
| 9 | 68 | 56 | 49 | 45 | 66 | 56 | 49 | 45 | 55 | 49 | 45 | 54 | 48 | 44 | 53 | 48 | 44 | 43 | | | | |
| 10 | 64 | 53 | 46 | 42 | 63 | 52 | 46 | 42 | 51 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 40 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 8912 | 8912 | 8912 |
| 5° | 8817 | 8733 | 8705 |
| 10° | 8750 | 8289 | 7942 |
| 15° | 8624 | 7638 | 6844 |
| 20° | 8470 | 6778 | 5450 |
| 25° | 8293 | 5743 | 4019 |
| 30° | 8070 | 4654 | 2637 |
| 35° | 7833 | 3544 | 1445 |
| 40° | 7580 | 2450 | 494 |
| 45° | 7282 | 1425 | 288 |
| 50° | 6991 | 561 | 173 |
| 55° | 6688 | 355 | 80 |
| 60° | 6342 | 222 | 36 |
| 65° | 5905 | 108 | 23 |
| 70° | 5298 | 53 | 28 |
| 75° | 4500 | 37 | 37 |
| 80° | 3353 | 56 | 0 |
| 85° | 1273 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7282 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 67.8 | 7.8 |
| 10°-20° | 172.0 | 19.9 |
| 20°-30° | 205.2 | 23.7 |
| 30°-40° | 174.0 | 20.1 |
| 40°-50° | 118.3 | 13.7 |
| 50°-60° | 73.3 | 8.5 |
| 60°-70° | 37.1 | 4.3 |
| 70°-80° | 15.2 | 1.8 |
| 80°-90° | 2.3 | 0.3 |
| 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° | 444.9 | 51.4 |
| 0°-40° | 619.0 | 71.5 |
| 0°-60° | 810.5 | 93.7 |
| 0°-90° | 865.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 865.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 739 | 739 | 739 | 739 | 739 | |
| 5° | 728 | 735 | 722 | 716 | 719 | 69 |
| 15° | 691 | 673 | 612 | 564 | 548 | 195 |
| 25° | 623 | 565 | 432 | 334 | 302 | 287 |
| 35° | 532 | 427 | 241 | 130 | 98 | 333 |
| 45° | 427 | 280 | 84 | 21 | 17 | 330 |
| 55° | 318 | 141 | 17 | 6 | 4 | 284 |
| 65° | 207 | 34 | 4 | 1 | 1 | 204 |
| 75° | 97 | 6 | 1 | 1 | 1 | 103 |
| 85° | 9 | 0 | 0 | 1 | 0 | 16 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055773

CATALOG NUMBER: S123R3DR-H560D850-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 739.2 | 739.2 | 739.2 | 739.2 | 739.2 |
| 2.5° | 732.3 | 742.3 | 733.8 | 733.1 | 733.8 |
| 5° | 728.5 | 735.4 | 721.6 | 716.2 | 719.3 |
| 7.5° | 723.1 | 726.2 | 703.2 | 689.4 | 689.4 |
| 10° | 714.7 | 712.4 | 677.1 | 654.1 | 648.7 |
| 12.5° | 703.2 | 694.0 | 648.0 | 611.9 | 602.0 |
| 15° | 690.9 | 673.3 | 611.9 | 563.6 | 548.3 |
| 17.5° | 677.1 | 650.3 | 572.8 | 509.9 | 487.7 |
| 20° | 660.2 | 624.2 | 528.3 | 451.7 | 424.8 |
| 22.5° | 642.6 | 595.8 | 481.6 | 391.8 | 361.9 |
| 25° | 623.4 | 565.1 | 431.7 | 333.6 | 302.1 |
| 27.5° | 602.0 | 532.9 | 382.6 | 277.6 | 243.1 |
| 30° | 579.7 | 499.2 | 334.3 | 223.9 | 189.4 |
| 32.5° | 555.9 | 463.9 | 286.0 | 174.8 | 142.6 |
| 35° | 532.2 | 427.1 | 240.8 | 129.6 | 98.2 |
| 37.5° | 506.9 | 390.3 | 197.1 | 89.7 | 62.1 |
| 40° | 481.6 | 354.3 | 155.7 | 56.7 | 31.4 |
| 42.5° | 455.5 | 316.7 | 118.1 | 28.4 | 21.5 |
| 45° | 427.1 | 279.9 | 83.6 | 20.7 | 16.9 |
| 47.5° | 400.3 | 244.6 | 55.2 | 16.9 | 13.0 |
| 50° | 372.7 | 209.3 | 29.9 | 12.3 | 9.2 |
| 52.5° | 345.1 | 175.6 | 21.5 | 9.2 | 6.1 |
| 55° | 318.2 | 141.1 | 16.9 | 6.1 | 3.8 |
| 57.5° | 290.6 | 111.2 | 13.0 | 3.8 | 2.3 |
| 60° | 263.0 | 82.0 | 9.2 | 2.3 | 1.5 |
| 62.5° | 235.4 | 56.7 | 6.1 | 1.5 | 0.8 |
| 65° | 207.0 | 34.5 | 3.8 | 0.8 | 0.8 |
| 67.5° | 177.9 | 23.8 | 2.3 | 0.8 | 0.8 |
| 70° | 150.3 | 16.9 | 1.5 | 0.8 | 0.8 |
| 72.5° | 122.7 | 10.7 | 0.8 | 0.8 | 0.0 |
| 75° | 96.6 | 6.1 | 0.8 | 0.8 | 0.8 |
| 77.5° | 71.3 | 2.3 | 0.8 | 0.8 | 0.0 |
| 80° | 48.3 | 0.8 | 0.8 | 0.8 | 0.0 |
| 82.5° | 26.8 | 0.0 | 0.8 | 0.8 | 0.0 |
| 85° | 9.2 | 0.0 | 0.0 | 0.8 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 |
| 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 | 16.65 | 17.93 | 17.01 | 18.24 | 18.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 18.59 | 19.73 | 18.97 | 20.06 | 20.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 19.42 | 20.48 | 19.82 | 20.83 | 21.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.97 | 20.94 | 20.39 | 21.31 | 21.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 20.10 | 21.02 | 20.53 | 21.41 | 21.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 20.12 | 21.00 | 20.56 | 21.38 | 21.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 16.41 | 17.47 | 16.81 | 17.82 | 18.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 18.36 | 19.23 | 18.78 | 19.63 | 20.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 19.18 | 19.95 | 19.61 | 20.37 | 20.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.78 | 20.44 | 20.24 | 20.89 | 21.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.93 | 20.55 | 20.40 | 21.00 | 21.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.98 | 20.52 | 20.46 | 21.01 | 21.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 19.04 | 19.65 | 19.51 | 20.10 | 20.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.62 | 20.12 | 20.12 | 20.62 | 21.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.77 | 20.22 | 20.29 | 20.73 | 21.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.82 | 20.22 | 20.34 | 20.71 | 21.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 18.99 | 19.53 | 19.47 | 20.01 | 20.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.55 | 20.00 | 20.08 | 20.52 | 21.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.72 | 20.12 | 20.24 | 20.61 | 21.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |