

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: NEO-RAY

Report Number: P1055789

Luminaire Tested: S123R3DR-H560D950-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1055789
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-H560D950-X4F0-XX-UDD-FLL-S
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

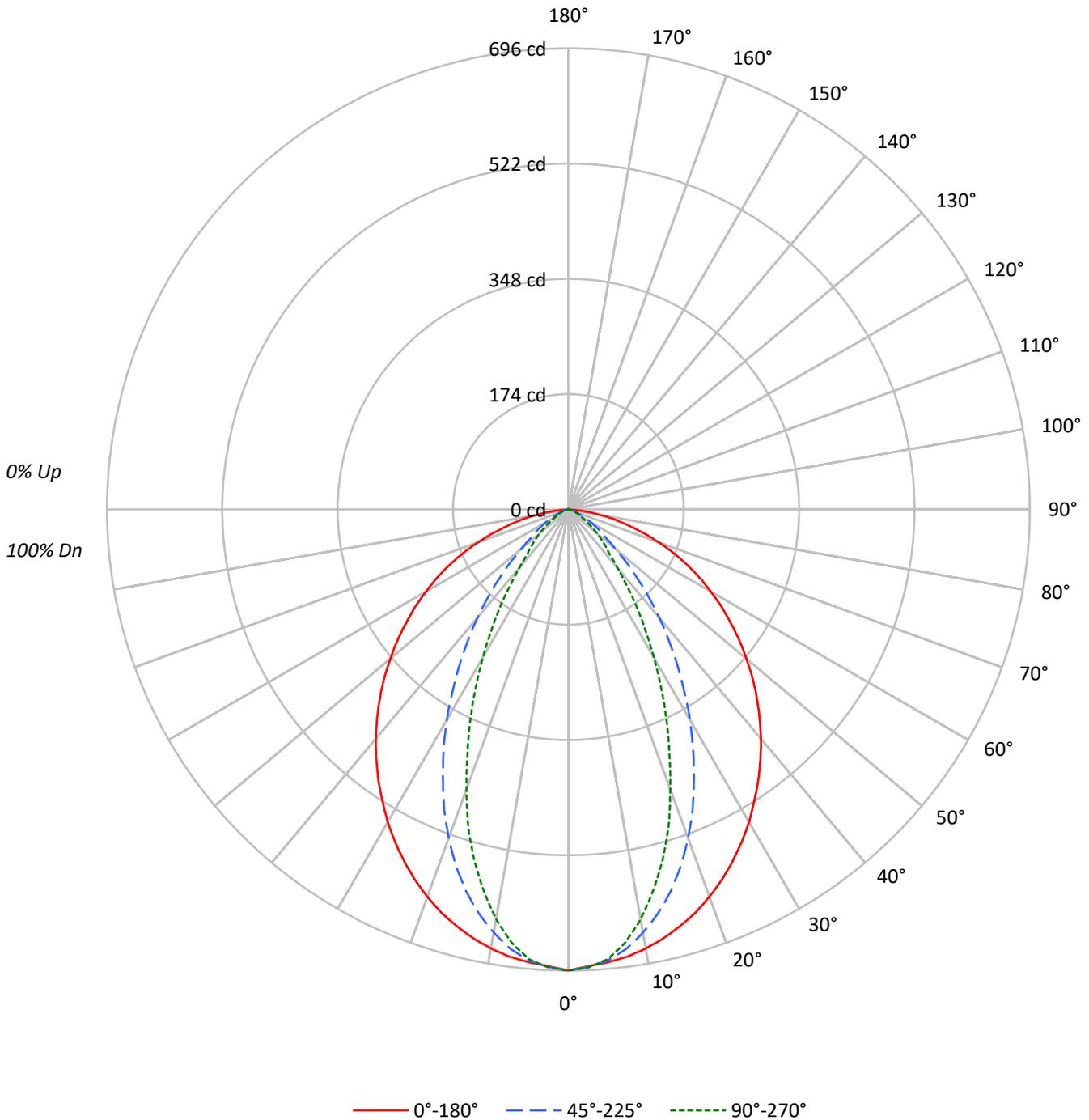
Lumens per Lamp: N/A
Luminaire Lumens: 967.8 lumens
Efficiency: N/A
Efficacy: 55.9 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.77 / 0.94
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 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 | 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° | 8390 | 8390 | 8390 |
| 5° | 8302 | 8271 | 8247 |
| 10° | 8237 | 7938 | 7688 |
| 15° | 8127 | 7443 | 6842 |
| 20° | 7980 | 6770 | 5763 |
| 25° | 7793 | 5958 | 4651 |
| 30° | 7586 | 5106 | 3582 |
| 35° | 7349 | 4214 | 2651 |
| 40° | 7112 | 3354 | 1807 |
| 45° | 6849 | 2508 | 1361 |
| 50° | 6570 | 1744 | 1063 |
| 55° | 6281 | 1276 | 776 |
| 60° | 5980 | 955 | 557 |
| 65° | 5626 | 639 | 434 |
| 70° | 5094 | 465 | 349 |
| 75° | 4393 | 340 | 275 |
| 80° | 3527 | 278 | 229 |
| 85° | 1826 | 277 | 180 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6849 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 64.3 | 6.6 |
| 10°-20° | 167.5 | 17.3 |
| 20°-30° | 210.4 | 21.7 |
| 30°-40° | 196.0 | 20.2 |
| 40°-50° | 150.0 | 15.5 |
| 50°-60° | 99.7 | 10.3 |
| 60°-70° | 53.7 | 5.6 |
| 70°-80° | 22.0 | 2.3 |
| 80°-90° | 4.2 | 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° | 442.2 | 45.7 |
| 0°-40° | 638.1 | 65.9 |
| 0°-60° | 887.8 | 91.7 |
| 0°-90° | 967.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 967.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 696 | 696 | 696 | 696 | 696 | |
| 5° | 686 | 693 | 683 | 681 | 681 | 65 |
| 15° | 651 | 640 | 596 | 561 | 548 | 183 |
| 25° | 586 | 546 | 448 | 373 | 350 | 270 |
| 35° | 499 | 426 | 286 | 202 | 180 | 312 |
| 45° | 402 | 297 | 147 | 86 | 80 | 310 |
| 55° | 299 | 173 | 61 | 42 | 37 | 268 |
| 65° | 197 | 67 | 22 | 16 | 15 | 195 |
| 75° | 94 | 16 | 7 | 7 | 6 | 101 |
| 85° | 13 | 2 | 2 | 2 | 1 | 19 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 695.9 | 695.9 | 695.9 | 695.9 | 695.9 |
| 2.5° | 690.0 | 698.6 | 691.3 | 692.0 | 692.0 |
| 5° | 686.0 | 693.3 | 683.4 | 680.8 | 681.4 |
| 7.5° | 680.8 | 685.4 | 668.9 | 660.3 | 659.0 |
| 10° | 672.8 | 674.2 | 648.4 | 633.3 | 628.0 |
| 12.5° | 662.9 | 658.3 | 624.7 | 599.6 | 589.7 |
| 15° | 651.1 | 640.5 | 596.3 | 561.4 | 548.2 |
| 17.5° | 637.9 | 620.1 | 564.0 | 518.5 | 502.6 |
| 20° | 622.0 | 597.0 | 527.7 | 471.0 | 449.2 |
| 22.5° | 604.9 | 572.6 | 489.5 | 422.2 | 397.8 |
| 25° | 585.8 | 546.2 | 447.9 | 373.4 | 349.6 |
| 27.5° | 566.0 | 517.8 | 407.0 | 327.2 | 302.8 |
| 30° | 544.9 | 488.8 | 366.8 | 282.3 | 257.3 |
| 32.5° | 521.8 | 457.1 | 325.2 | 240.8 | 215.7 |
| 35° | 499.3 | 425.5 | 286.3 | 202.5 | 180.1 |
| 37.5° | 475.6 | 393.8 | 248.7 | 168.9 | 143.8 |
| 40° | 451.9 | 361.5 | 213.1 | 135.9 | 114.8 |
| 42.5° | 426.8 | 329.2 | 179.4 | 108.2 | 91.7 |
| 45° | 401.7 | 296.8 | 147.1 | 86.4 | 79.8 |
| 47.5° | 376.7 | 264.5 | 118.7 | 74.5 | 67.9 |
| 50° | 350.3 | 233.5 | 93.0 | 63.3 | 56.7 |
| 52.5° | 325.2 | 202.5 | 72.6 | 52.1 | 46.2 |
| 55° | 298.8 | 172.8 | 60.7 | 42.2 | 36.9 |
| 57.5° | 274.4 | 142.5 | 50.1 | 33.0 | 29.0 |
| 60° | 248.0 | 115.4 | 39.6 | 25.7 | 23.1 |
| 62.5° | 223.0 | 90.4 | 30.3 | 20.4 | 18.5 |
| 65° | 197.2 | 66.6 | 22.4 | 16.5 | 15.2 |
| 67.5° | 171.5 | 48.2 | 17.2 | 13.2 | 12.5 |
| 70° | 144.5 | 36.3 | 13.2 | 10.6 | 9.9 |
| 72.5° | 118.7 | 25.7 | 9.9 | 8.6 | 7.9 |
| 75° | 94.3 | 15.8 | 7.3 | 6.6 | 5.9 |
| 77.5° | 72.6 | 9.2 | 5.3 | 5.3 | 4.6 |
| 80° | 50.8 | 5.3 | 4.0 | 4.0 | 3.3 |
| 82.5° | 31.0 | 3.3 | 2.6 | 2.6 | 2.6 |
| 85° | 13.2 | 2.0 | 2.0 | 2.0 | 1.3 |
| 87.5° | 2.0 | 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 | 17.20 | 18.56 | 17.57 | 18.87 | 19.19 | 5.78 | 7.14 | 6.14 | 7.45 | 7.76 |
| | 3H | 18.96 | 20.16 | 19.34 | 20.49 | 20.86 | 6.44 | 7.65 | 6.82 | 7.98 | 8.34 |
| | 4H | 19.66 | 20.78 | 20.06 | 21.13 | 21.51 | 6.64 | 7.76 | 7.04 | 8.11 | 8.49 |
| | 6H | 20.17 | 21.20 | 20.58 | 21.57 | 21.97 | 6.76 | 7.79 | 7.17 | 8.16 | 8.55 |
| | 8H | 20.31 | 21.29 | 20.74 | 21.68 | 22.08 | 6.79 | 7.77 | 7.22 | 8.16 | 8.57 |
| | 12H | 20.36 | 21.30 | 20.79 | 21.68 | 22.11 | 6.80 | 7.74 | 7.23 | 8.12 | 8.55 |
| 4H | 2H | 17.01 | 18.14 | 17.41 | 18.49 | 18.87 | 6.33 | 7.46 | 6.73 | 7.81 | 8.19 |
| | 3H | 18.80 | 19.73 | 19.22 | 20.13 | 20.53 | 7.13 | 8.05 | 7.55 | 8.46 | 8.86 |
| | 4H | 19.50 | 20.32 | 19.93 | 20.74 | 21.18 | 7.39 | 8.21 | 7.83 | 8.63 | 9.07 |
| | 6H | 20.07 | 20.78 | 20.53 | 21.23 | 21.69 | 7.59 | 8.30 | 8.05 | 8.75 | 9.21 |
| | 8H | 20.24 | 20.91 | 20.71 | 21.35 | 21.82 | 7.64 | 8.30 | 8.11 | 8.75 | 9.22 |
| | 12H | 20.33 | 20.92 | 20.82 | 21.40 | 21.87 | 7.67 | 8.26 | 8.16 | 8.74 | 9.21 |
| 8H | 4H | 19.37 | 20.04 | 19.84 | 20.48 | 20.96 | 7.71 | 8.37 | 8.17 | 8.81 | 9.29 |
| | 6H | 19.93 | 20.47 | 20.43 | 20.97 | 21.45 | 7.96 | 8.50 | 8.46 | 8.99 | 9.47 |
| | 8H | 20.11 | 20.59 | 20.63 | 21.11 | 21.60 | 8.04 | 8.53 | 8.56 | 9.04 | 9.53 |
| | 12H | 20.21 | 20.64 | 20.72 | 21.13 | 21.70 | 8.12 | 8.55 | 8.63 | 9.04 | 9.61 |
| 12H | 4H | 19.33 | 19.92 | 19.82 | 20.40 | 20.87 | 7.75 | 8.34 | 8.24 | 8.82 | 9.29 |
| | 6H | 19.87 | 20.36 | 20.39 | 20.87 | 21.36 | 8.00 | 8.49 | 8.52 | 9.00 | 9.49 |
| | 8H | 20.07 | 20.49 | 20.58 | 20.99 | 21.56 | 8.12 | 8.55 | 8.64 | 9.05 | 9.62 |