

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: P1059478

Luminaire Tested: S123RDR-H1000D940-X4F0-XX-UDD-WVL-B

Issue Date: 8/7/2025

Test Information

Test Method: LM-79-2019
Report Number: P1059478
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2406-143-28)
Test Lab: INNOVATION CENTER
Issue Date: 8/7/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDR-H1000D940-X4F0-XX-UDD-WVL-B
Description: DEFINE 3 BLACK REGRESSED DIRECT RECESSED HOUSING WITH WHITE STRAIGHT BLADE LOUVER WITH DIFFUSER
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

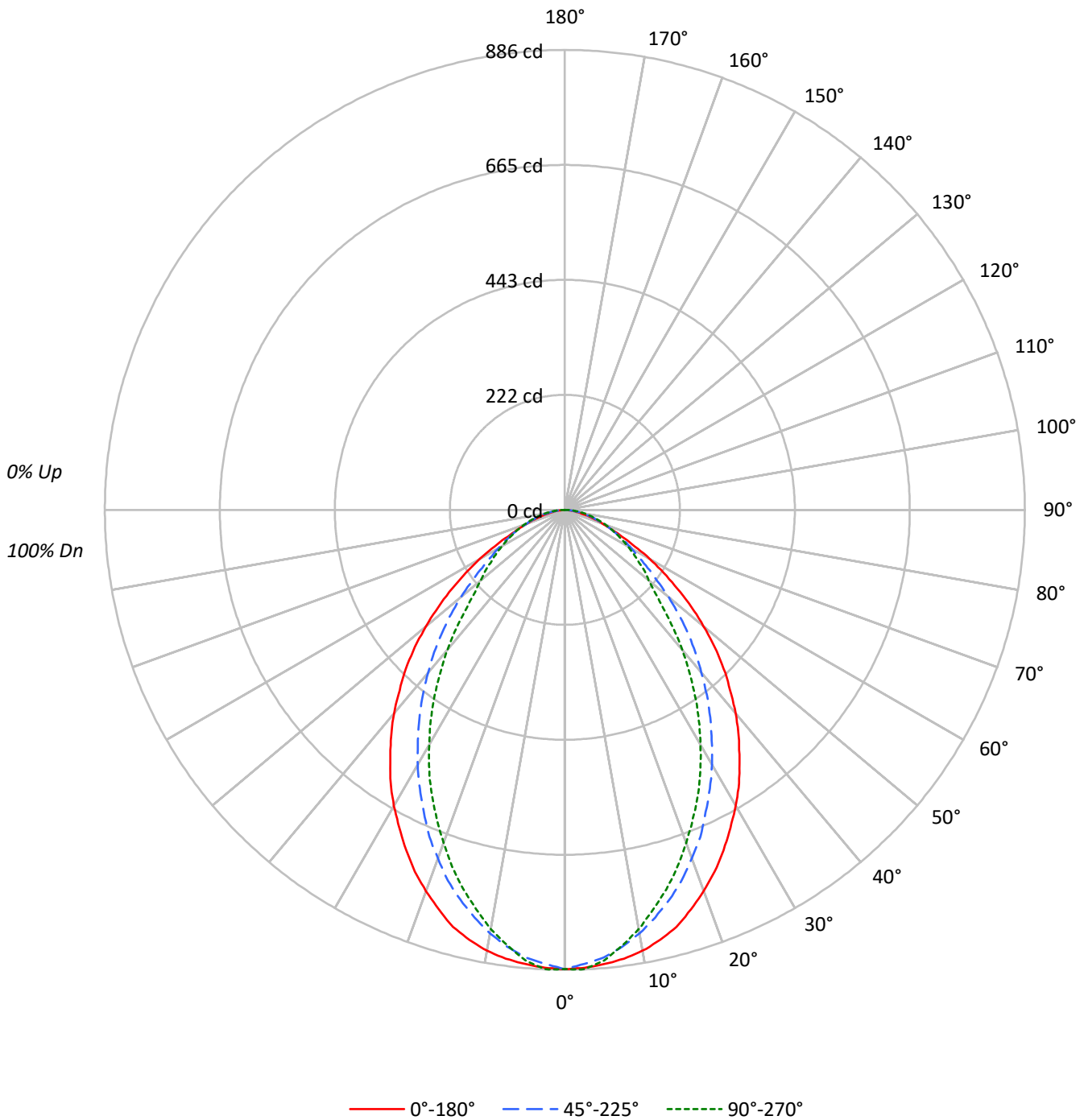
Lumens per Lamp: N/A
Luminaire Lumens: 1547.6 lumens
Efficiency: N/A
Efficacy: 49.6 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 0.95 / 1.09
Luminous Opening: Rectangular (W 0.23' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 31.2
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 | 107 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 98 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 88 |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | 76 |
| 3 | 94 | 85 | 78 | 73 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 53 | 48 | 47 |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 |
| 10 | 58 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 10391 | 10391 | 10391 |
| 5° | 10355 | 10204 | 10268 |
| 10° | 10285 | 9879 | 9777 |
| 15° | 10111 | 9452 | 9193 |
| 20° | 9768 | 8931 | 8532 |
| 25° | 9370 | 8323 | 7854 |
| 30° | 8926 | 7687 | 7081 |
| 35° | 8400 | 6998 | 6266 |
| 40° | 7842 | 6277 | 5396 |
| 45° | 7189 | 5547 | 4434 |
| 50° | 6372 | 4761 | 3847 |
| 55° | 5421 | 3984 | 3527 |
| 60° | 4422 | 3471 | 3271 |
| 65° | 3368 | 3073 | 3042 |
| 70° | 2630 | 2740 | 2850 |
| 75° | 2123 | 2459 | 2654 |
| 80° | 1582 | 2015 | 2448 |
| 85° | 862 | 1293 | 2156 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7189 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 82.1 | 5.3 |
| 10°-20° | 221.0 | 14.3 |
| 20°-30° | 300.4 | 19.4 |
| 30°-40° | 311.4 | 20.1 |
| 40°-50° | 262.7 | 17.0 |
| 50°-60° | 186.5 | 12.0 |
| 60°-70° | 114.0 | 7.4 |
| 70°-80° | 56.7 | 3.7 |
| 80°-90° | 12.9 | 0.8 |
| 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° | 603.6 | 39.0 |
| 0°-40° | 915.0 | 59.1 |
| 0°-60° | 1364.1 | 88.1 |
| 0°-90° | 1547.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1547.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 885 | 885 | 885 | 885 | 885 | |
| 5° | 878 | 878 | 866 | 871 | 871 | 83 |
| 15° | 832 | 816 | 778 | 764 | 756 | 233 |
| 25° | 723 | 691 | 642 | 619 | 606 | 332 |
| 35° | 586 | 541 | 488 | 454 | 437 | 366 |
| 45° | 433 | 387 | 334 | 288 | 267 | 332 |
| 55° | 265 | 237 | 195 | 178 | 172 | 238 |
| 65° | 121 | 117 | 111 | 111 | 110 | 124 |
| 75° | 47 | 50 | 54 | 56 | 58 | 50 |
| 85° | 6 | 7 | 10 | 14 | 16 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 884.9 | 884.9 | 884.9 | 884.9 | 884.9 |
| 2.5° | 882.8 | 883.8 | 875.3 | 884.9 | 885.9 |
| 5° | 878.5 | 878.5 | 865.7 | 871.1 | 871.1 |
| 7.5° | 872.1 | 870.0 | 848.7 | 848.7 | 846.6 |
| 10° | 862.6 | 856.2 | 828.5 | 823.2 | 820.0 |
| 12.5° | 848.7 | 838.1 | 804.1 | 794.5 | 788.1 |
| 15° | 831.7 | 815.8 | 777.5 | 763.6 | 756.2 |
| 17.5° | 807.2 | 791.3 | 748.7 | 729.6 | 721.1 |
| 20° | 781.7 | 758.3 | 714.7 | 695.6 | 682.8 |
| 22.5° | 754.1 | 724.3 | 681.7 | 658.3 | 644.5 |
| 25° | 723.2 | 691.3 | 642.4 | 619.0 | 606.2 |
| 27.5° | 690.3 | 655.2 | 605.2 | 578.6 | 565.8 |
| 30° | 658.3 | 617.9 | 566.9 | 537.1 | 522.2 |
| 32.5° | 624.3 | 578.6 | 526.5 | 495.6 | 480.7 |
| 35° | 586.0 | 541.4 | 488.2 | 454.1 | 437.1 |
| 37.5° | 549.9 | 504.1 | 448.8 | 412.7 | 393.5 |
| 40° | 511.6 | 465.8 | 409.5 | 372.2 | 352.0 |
| 42.5° | 471.2 | 427.6 | 372.2 | 328.6 | 309.5 |
| 45° | 432.9 | 387.1 | 334.0 | 288.2 | 267.0 |
| 47.5° | 391.4 | 348.8 | 296.7 | 249.9 | 235.0 |
| 50° | 348.8 | 309.5 | 260.6 | 218.0 | 210.6 |
| 52.5° | 307.4 | 274.4 | 224.4 | 196.8 | 193.6 |
| 55° | 264.8 | 237.2 | 194.6 | 177.6 | 172.3 |
| 57.5° | 225.5 | 205.3 | 167.0 | 158.5 | 156.3 |
| 60° | 188.3 | 171.2 | 147.8 | 142.5 | 139.3 |
| 62.5° | 152.1 | 142.5 | 128.7 | 126.6 | 124.4 |
| 65° | 121.2 | 117.0 | 110.6 | 110.6 | 109.5 |
| 67.5° | 95.7 | 95.7 | 94.7 | 96.8 | 95.7 |
| 70° | 76.6 | 77.6 | 79.8 | 81.9 | 83.0 |
| 72.5° | 60.6 | 63.8 | 65.9 | 69.1 | 70.2 |
| 75° | 46.8 | 50.0 | 54.2 | 56.4 | 58.5 |
| 77.5° | 34.0 | 37.2 | 41.5 | 44.7 | 46.8 |
| 80° | 23.4 | 25.5 | 29.8 | 34.0 | 36.2 |
| 82.5° | 14.9 | 16.0 | 19.1 | 23.4 | 25.5 |
| 85° | 6.4 | 7.4 | 9.6 | 13.8 | 16.0 |
| 87.5° | 0.0 | 0.0 | 1.1 | 4.3 | 7.4 |
| 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 | 16.94 | 18.39 | 17.31 | 18.71 | 19.02 | 15.04 | 16.49 | 15.40 | 16.80 | 17.12 |
| | 3H | 17.84 | 19.14 | 18.22 | 19.46 | 19.83 | 16.61 | 17.91 | 16.99 | 18.24 | 18.60 |
| | 4H | 18.12 | 19.33 | 18.52 | 19.68 | 20.06 | 17.21 | 18.42 | 17.61 | 18.77 | 19.15 |
| | 6H | 18.27 | 19.39 | 18.68 | 19.76 | 20.15 | 17.66 | 18.78 | 18.07 | 19.14 | 19.54 |
| | 8H | 18.29 | 19.36 | 18.72 | 19.75 | 20.15 | 17.81 | 18.87 | 18.24 | 19.26 | 19.66 |
| | 12H | 18.29 | 19.30 | 18.72 | 19.69 | 20.12 | 17.91 | 18.92 | 18.34 | 19.31 | 19.74 |
| 4H | 2H | 17.19 | 18.40 | 17.59 | 18.75 | 19.13 | 15.58 | 16.79 | 15.98 | 17.14 | 17.52 |
| | 3H | 18.30 | 19.30 | 18.71 | 19.70 | 20.10 | 17.35 | 18.36 | 17.77 | 18.76 | 19.16 |
| | 4H | 18.69 | 19.59 | 19.12 | 20.01 | 20.45 | 18.07 | 18.96 | 18.50 | 19.38 | 19.82 |
| | 6H | 18.93 | 19.71 | 19.39 | 20.15 | 20.62 | 18.64 | 19.42 | 19.10 | 19.86 | 20.32 |
| | 8H | 18.97 | 19.70 | 19.44 | 20.15 | 20.62 | 18.83 | 19.56 | 19.30 | 20.00 | 20.47 |
| | 12H | 18.98 | 19.63 | 19.47 | 20.11 | 20.58 | 18.97 | 19.62 | 19.45 | 20.10 | 20.57 |
| 8H | 4H | 18.85 | 19.57 | 19.31 | 20.02 | 20.49 | 18.28 | 19.00 | 18.74 | 19.45 | 19.92 |
| | 6H | 19.16 | 19.76 | 19.66 | 20.25 | 20.73 | 18.95 | 19.55 | 19.45 | 20.04 | 20.52 |
| | 8H | 19.24 | 19.77 | 19.75 | 20.28 | 20.77 | 19.21 | 19.75 | 19.73 | 20.26 | 20.75 |
| | 12H | 19.27 | 19.75 | 19.78 | 20.24 | 20.81 | 19.42 | 19.89 | 19.93 | 20.38 | 20.95 |
| 12H | 4H | 18.85 | 19.50 | 19.34 | 19.98 | 20.45 | 18.27 | 18.92 | 18.76 | 19.40 | 19.87 |
| | 6H | 19.17 | 19.71 | 19.69 | 20.22 | 20.71 | 18.96 | 19.50 | 19.48 | 20.01 | 20.50 |
| | 8H | 19.29 | 19.76 | 19.80 | 20.26 | 20.82 | 19.26 | 19.74 | 19.77 | 20.23 | 20.80 |