

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: P1059559

Luminaire Tested: S123RDR-H1165D940-X4F0-XX-UDD-WVL-B

Issue Date: 8/7/2025

Test Information

Test Method: LM-79-2019
Report Number: P1059559
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-H1165D940-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

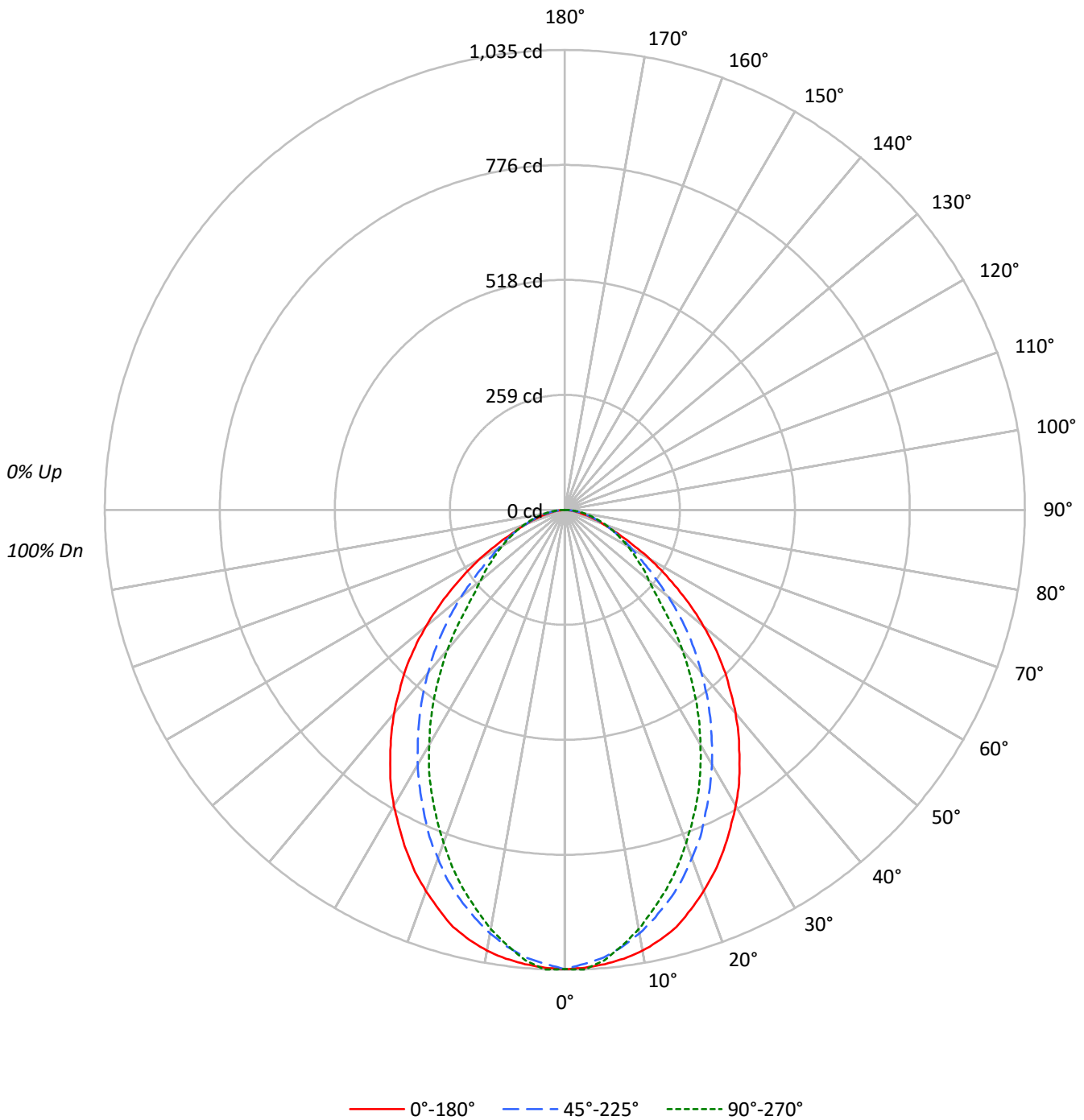
Lumens per Lamp: N/A
Luminaire Lumens: 1808.0 lumens
Efficiency: N/A
Efficacy: 49.5 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 0.95 / 1.09
Luminous Opening: Rectangular (W 0.23' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 36.5
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° | 12138 | 12138 | 12138 |
| 5° | 12097 | 11920 | 11995 |
| 10° | 12014 | 11541 | 11422 |
| 15° | 11811 | 11041 | 10739 |
| 20° | 11411 | 10433 | 9967 |
| 25° | 10947 | 9722 | 9176 |
| 30° | 10428 | 8979 | 8271 |
| 35° | 9814 | 8175 | 7319 |
| 40° | 9160 | 7332 | 6303 |
| 45° | 8398 | 6478 | 5180 |
| 50° | 7444 | 5561 | 4494 |
| 55° | 6334 | 4655 | 4121 |
| 60° | 5164 | 4056 | 3823 |
| 65° | 3934 | 3590 | 3556 |
| 70° | 3073 | 3200 | 3327 |
| 75° | 2482 | 2876 | 3099 |
| 80° | 1846 | 2353 | 2854 |
| 85° | 1010 | 1509 | 2506 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8398 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 96.0 | 5.3 |
| 10°-20° | 258.2 | 14.3 |
| 20°-30° | 351.0 | 19.4 |
| 30°-40° | 363.8 | 20.1 |
| 40°-50° | 306.8 | 17.0 |
| 50°-60° | 217.8 | 12.0 |
| 60°-70° | 133.1 | 7.4 |
| 70°-80° | 66.2 | 3.7 |
| 80°-90° | 15.0 | 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° | 705.1 | 39.0 |
| 0°-40° | 1068.9 | 59.1 |
| 0°-60° | 1593.6 | 88.1 |
| 0°-90° | 1808.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1808.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1034 | 1034 | 1034 | 1034 | 1034 | |
| 5° | 1026 | 1026 | 1011 | 1018 | 1018 | 97 |
| 15° | 972 | 953 | 908 | 892 | 883 | 273 |
| 25° | 845 | 808 | 750 | 723 | 708 | 388 |
| 35° | 685 | 632 | 570 | 530 | 511 | 428 |
| 45° | 506 | 452 | 390 | 337 | 312 | 388 |
| 55° | 309 | 277 | 227 | 208 | 201 | 278 |
| 65° | 142 | 137 | 129 | 129 | 128 | 145 |
| 75° | 55 | 58 | 63 | 66 | 68 | 59 |
| 85° | 8 | 9 | 11 | 16 | 19 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1033.7 | 1033.7 | 1033.7 | 1033.7 | 1033.7 |
| 2.5° | 1031.2 | 1032.5 | 1022.5 | 1033.7 | 1035.0 |
| 5° | 1026.3 | 1026.3 | 1011.3 | 1017.6 | 1017.6 |
| 7.5° | 1018.8 | 1016.3 | 991.5 | 991.5 | 989.0 |
| 10° | 1007.6 | 1000.2 | 967.9 | 961.6 | 957.9 |
| 12.5° | 991.5 | 979.0 | 939.3 | 928.1 | 920.6 |
| 15° | 971.6 | 953.0 | 908.2 | 892.1 | 883.4 |
| 17.5° | 943.0 | 924.4 | 874.7 | 852.3 | 842.4 |
| 20° | 913.2 | 885.9 | 834.9 | 812.6 | 797.6 |
| 22.5° | 880.9 | 846.1 | 796.4 | 769.1 | 752.9 |
| 25° | 844.9 | 807.6 | 750.4 | 723.1 | 708.2 |
| 27.5° | 806.3 | 765.3 | 706.9 | 675.9 | 661.0 |
| 30° | 769.1 | 721.9 | 662.2 | 627.4 | 610.0 |
| 32.5° | 729.3 | 675.9 | 615.0 | 579.0 | 561.6 |
| 35° | 684.6 | 632.4 | 570.3 | 530.5 | 510.6 |
| 37.5° | 642.3 | 588.9 | 524.3 | 482.1 | 459.7 |
| 40° | 597.6 | 544.2 | 478.3 | 434.9 | 411.2 |
| 42.5° | 550.4 | 499.5 | 434.9 | 383.9 | 361.6 |
| 45° | 505.7 | 452.2 | 390.1 | 336.7 | 311.9 |
| 47.5° | 457.2 | 407.5 | 346.6 | 292.0 | 274.6 |
| 50° | 407.5 | 361.6 | 304.4 | 254.7 | 246.0 |
| 52.5° | 359.1 | 320.5 | 262.2 | 229.9 | 226.1 |
| 55° | 309.4 | 277.1 | 227.4 | 207.5 | 201.3 |
| 57.5° | 263.4 | 239.8 | 195.1 | 185.1 | 182.6 |
| 60° | 219.9 | 200.0 | 172.7 | 166.5 | 162.8 |
| 62.5° | 177.7 | 166.5 | 150.3 | 147.9 | 145.4 |
| 65° | 141.6 | 136.7 | 129.2 | 129.2 | 128.0 |
| 67.5° | 111.8 | 111.8 | 110.6 | 113.1 | 111.8 |
| 70° | 89.5 | 90.7 | 93.2 | 95.7 | 96.9 |
| 72.5° | 70.8 | 74.5 | 77.0 | 80.8 | 82.0 |
| 75° | 54.7 | 58.4 | 63.4 | 65.8 | 68.3 |
| 77.5° | 39.8 | 43.5 | 48.5 | 52.2 | 54.7 |
| 80° | 27.3 | 29.8 | 34.8 | 39.8 | 42.2 |
| 82.5° | 17.4 | 18.6 | 22.4 | 27.3 | 29.8 |
| 85° | 7.5 | 8.7 | 11.2 | 16.2 | 18.6 |
| 87.5° | 0.0 | 0.0 | 1.2 | 5.0 | 8.7 |
| 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 | 17.48 | 18.93 | 17.85 | 19.25 | 19.56 | 15.58 | 17.03 | 15.94 | 17.34 | 17.66 |
| | 3H | 18.38 | 19.67 | 18.76 | 20.00 | 20.37 | 17.15 | 18.45 | 17.53 | 18.78 | 19.14 |
| | 4H | 18.66 | 19.87 | 19.06 | 20.22 | 20.60 | 17.75 | 18.96 | 18.15 | 19.31 | 19.69 |
| | 6H | 18.81 | 19.93 | 19.22 | 20.30 | 20.69 | 18.20 | 19.32 | 18.61 | 19.68 | 20.08 |
| | 8H | 18.83 | 19.90 | 19.26 | 20.29 | 20.69 | 18.35 | 19.41 | 18.77 | 19.80 | 20.20 |
| | 12H | 18.83 | 19.84 | 19.26 | 20.23 | 20.66 | 18.45 | 19.46 | 18.88 | 19.84 | 20.27 |
| 4H | 2H | 17.73 | 18.94 | 18.13 | 19.29 | 19.67 | 16.12 | 17.33 | 16.52 | 17.68 | 18.06 |
| | 3H | 18.84 | 19.84 | 19.25 | 20.24 | 20.64 | 17.89 | 18.89 | 18.31 | 19.30 | 19.70 |
| | 4H | 19.23 | 20.13 | 19.66 | 20.54 | 20.99 | 18.61 | 19.50 | 19.04 | 19.92 | 20.36 |
| | 6H | 19.47 | 20.25 | 19.93 | 20.69 | 21.16 | 19.18 | 19.96 | 19.64 | 20.40 | 20.86 |
| | 8H | 19.51 | 20.24 | 19.98 | 20.69 | 21.16 | 19.37 | 20.10 | 19.83 | 20.54 | 21.01 |
| | 12H | 19.52 | 20.17 | 20.01 | 20.65 | 21.12 | 19.51 | 20.15 | 19.99 | 20.63 | 21.11 |
| 8H | 4H | 19.39 | 20.11 | 19.85 | 20.56 | 21.03 | 18.81 | 19.54 | 19.28 | 19.99 | 20.46 |
| | 6H | 19.70 | 20.30 | 20.20 | 20.79 | 21.27 | 19.49 | 20.09 | 19.99 | 20.58 | 21.06 |
| | 8H | 19.78 | 20.31 | 20.29 | 20.82 | 21.31 | 19.75 | 20.29 | 20.27 | 20.80 | 21.29 |
| | 12H | 19.81 | 20.29 | 20.32 | 20.78 | 21.35 | 19.96 | 20.43 | 20.47 | 20.92 | 21.49 |
| 12H | 4H | 19.39 | 20.04 | 19.88 | 20.52 | 20.99 | 18.81 | 19.46 | 19.30 | 19.94 | 20.41 |
| | 6H | 19.71 | 20.25 | 20.23 | 20.76 | 21.25 | 19.50 | 20.04 | 20.02 | 20.55 | 21.04 |
| | 8H | 19.83 | 20.30 | 20.34 | 20.80 | 21.36 | 19.80 | 20.28 | 20.31 | 20.77 | 21.34 |