

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: P1056218

Luminaire Tested: S124R3DR-H795D940-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056218
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-9)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124R3DR-H795D940-X4F0-XX-UDD-F-S
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

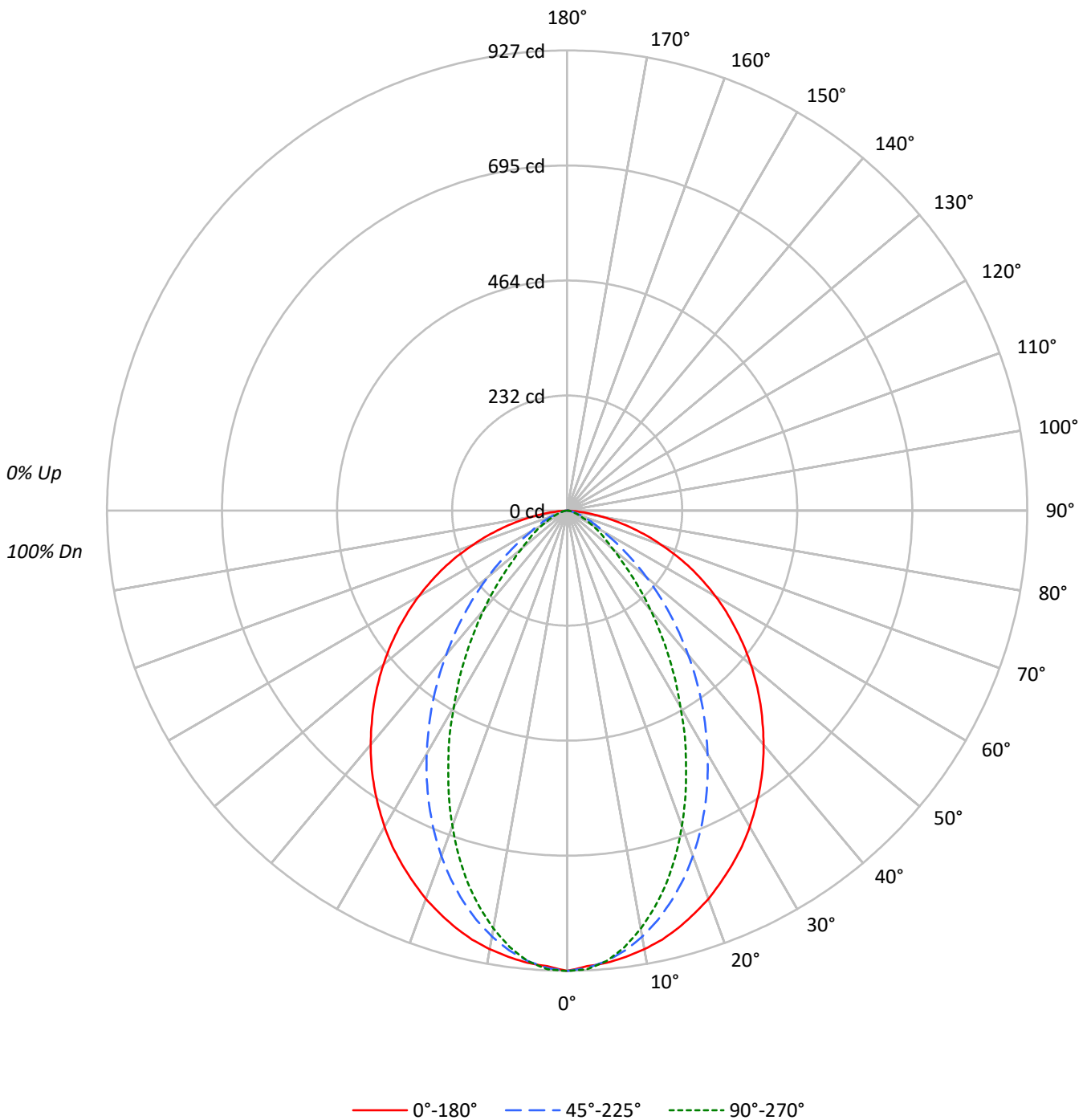
Lumens per Lamp: N/A
Luminaire Lumens: 1499.6 lumens
Efficiency: N/A
Efficacy: 63.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 23.8
Input Voltage (V): 120
Input Current (A_{in}): 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 | 104 | 101 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 94 | 92 | 90 | 89 |
| 2 | 103 | 96 | 91 | 86 | 101 | 94 | 89 | 85 | 91 | 87 | 83 | 88 | 84 | 81 | 85 | 82 | 79 | 78 |
| 3 | 95 | 87 | 80 | 74 | 93 | 85 | 79 | 74 | 82 | 77 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 68 |
| 4 | 89 | 78 | 71 | 65 | 86 | 77 | 70 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 71 | 66 | 62 | 60 |
| 5 | 82 | 71 | 64 | 58 | 80 | 70 | 63 | 58 | 68 | 62 | 57 | 66 | 61 | 56 | 65 | 60 | 56 | 54 |
| 6 | 77 | 65 | 57 | 52 | 75 | 64 | 57 | 52 | 63 | 56 | 51 | 61 | 55 | 51 | 60 | 54 | 50 | 48 |
| 7 | 72 | 60 | 52 | 47 | 70 | 59 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | 44 |
| 8 | 67 | 55 | 48 | 42 | 66 | 55 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 51 | 46 | 42 | 40 |
| 9 | 63 | 51 | 44 | 39 | 62 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 37 |
| 10 | 60 | 48 | 41 | 36 | 59 | 47 | 40 | 36 | 46 | 40 | 36 | 45 | 40 | 35 | 45 | 39 | 35 | 34 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 8199 | 8199 | 8199 |
| 5° | 8116 | 8085 | 8085 |
| 10° | 8055 | 7822 | 7675 |
| 15° | 7960 | 7445 | 7097 |
| 20° | 7832 | 6971 | 6361 |
| 25° | 7675 | 6410 | 5526 |
| 30° | 7511 | 5774 | 4654 |
| 35° | 7317 | 5098 | 3831 |
| 40° | 7106 | 4375 | 3019 |
| 45° | 6888 | 3639 | 2257 |
| 50° | 6652 | 2862 | 1651 |
| 55° | 6389 | 2116 | 1318 |
| 60° | 6108 | 1466 | 1008 |
| 65° | 5745 | 1138 | 741 |
| 70° | 5201 | 804 | 582 |
| 75° | 4543 | 560 | 444 |
| 80° | 3651 | 438 | 397 |
| 85° | 2019 | 355 | 355 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6888 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 86.0 | 5.7 |
| 10°-20° | 229.8 | 15.3 |
| 20°-30° | 306.6 | 20.4 |
| 30°-40° | 308.7 | 20.6 |
| 40°-50° | 253.1 | 16.9 |
| 50°-60° | 173.0 | 11.5 |
| 60°-70° | 96.7 | 6.4 |
| 70°-80° | 38.3 | 2.6 |
| 80°-90° | 7.3 | 0.5 |
| 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° | 622.4 | 41.5 |
| 0°-40° | 931.1 | 62.1 |
| 0°-60° | 1357.3 | 90.5 |
| 0°-90° | 1499.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1499.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 927 | 927 | 927 | 927 | 927 | |
| 5° | 914 | 925 | 911 | 907 | 911 | 87 |
| 15° | 870 | 860 | 813 | 785 | 775 | 245 |
| 25° | 787 | 748 | 657 | 591 | 566 | 362 |
| 35° | 678 | 606 | 472 | 382 | 355 | 424 |
| 45° | 551 | 450 | 291 | 205 | 180 | 425 |
| 55° | 414 | 291 | 137 | 92 | 86 | 371 |
| 65° | 275 | 138 | 54 | 39 | 35 | 271 |
| 75° | 133 | 36 | 16 | 14 | 13 | 142 |
| 85° | 20 | 4 | 4 | 4 | 4 | 28 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1056218

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 927.4 | 927.4 | 927.4 | 927.4 | 927.4 |
| 2.5° | 918.8 | 930.0 | 922.2 | 923.1 | 924.8 |
| 5° | 914.5 | 924.8 | 911.0 | 906.7 | 911.0 |
| 7.5° | 906.7 | 914.5 | 893.7 | 885.1 | 886.8 |
| 10° | 897.2 | 899.8 | 871.3 | 856.6 | 854.9 |
| 12.5° | 885.1 | 881.6 | 844.5 | 822.9 | 817.7 |
| 15° | 869.6 | 860.1 | 813.4 | 784.9 | 775.4 |
| 17.5° | 851.4 | 835.0 | 778.9 | 741.8 | 727.9 |
| 20° | 832.4 | 808.2 | 740.9 | 693.4 | 676.1 |
| 22.5° | 810.0 | 779.7 | 700.3 | 642.4 | 622.6 |
| 25° | 786.7 | 747.8 | 657.1 | 590.6 | 566.5 |
| 27.5° | 762.5 | 715.0 | 612.2 | 538.0 | 513.8 |
| 30° | 735.7 | 679.6 | 565.6 | 485.3 | 455.9 |
| 32.5° | 707.2 | 643.3 | 519.0 | 433.5 | 405.8 |
| 35° | 677.9 | 606.2 | 472.3 | 382.5 | 354.9 |
| 37.5° | 647.6 | 568.2 | 425.7 | 334.2 | 306.5 |
| 40° | 615.7 | 529.3 | 379.1 | 288.4 | 261.6 |
| 42.5° | 582.9 | 489.6 | 334.2 | 245.2 | 220.2 |
| 45° | 550.9 | 449.9 | 291.0 | 204.7 | 180.5 |
| 47.5° | 517.2 | 410.2 | 248.7 | 166.7 | 145.9 |
| 50° | 483.6 | 370.4 | 208.1 | 133.8 | 120.0 |
| 52.5° | 449.0 | 330.7 | 171.0 | 109.7 | 100.2 |
| 55° | 414.5 | 291.0 | 137.3 | 91.5 | 85.5 |
| 57.5° | 379.9 | 251.3 | 106.2 | 77.7 | 70.8 |
| 60° | 345.4 | 212.4 | 82.9 | 63.0 | 57.0 |
| 62.5° | 310.0 | 173.6 | 68.2 | 50.1 | 44.9 |
| 65° | 274.6 | 138.2 | 54.4 | 38.9 | 35.4 |
| 67.5° | 239.2 | 105.3 | 41.4 | 30.2 | 27.6 |
| 70° | 201.2 | 75.1 | 31.1 | 23.3 | 22.5 |
| 72.5° | 168.4 | 50.9 | 22.5 | 18.1 | 17.3 |
| 75° | 133.0 | 36.3 | 16.4 | 13.8 | 13.0 |
| 77.5° | 102.8 | 23.3 | 12.1 | 11.2 | 10.4 |
| 80° | 71.7 | 13.0 | 8.6 | 7.8 | 7.8 |
| 82.5° | 44.0 | 6.9 | 6.0 | 5.2 | 5.2 |
| 85° | 19.9 | 3.5 | 3.5 | 3.5 | 3.5 |
| 87.5° | 3.5 | 1.7 | 1.7 | 1.7 | 1.7 |
| 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 | 18.03 | 19.44 | 18.40 | 19.75 | 20.07 | 9.12 | 10.53 | 9.49 | 10.84 | 11.16 |
| | 3H | 19.62 | 20.87 | 20.00 | 21.20 | 21.56 | 9.71 | 10.97 | 10.09 | 11.30 | 11.66 |
| | 4H | 20.22 | 21.38 | 20.62 | 21.73 | 22.12 | 9.87 | 11.04 | 10.27 | 11.39 | 11.77 |
| | 6H | 20.65 | 21.72 | 21.06 | 22.09 | 22.48 | 9.98 | 11.06 | 10.39 | 11.42 | 11.82 |
| | 8H | 20.76 | 21.78 | 21.19 | 22.17 | 22.57 | 10.00 | 11.02 | 10.43 | 11.41 | 11.82 |
| | 12H | 20.80 | 21.78 | 21.23 | 22.16 | 22.59 | 10.01 | 10.99 | 10.44 | 11.37 | 11.80 |
| 4H | 2H | 17.89 | 19.06 | 18.29 | 19.41 | 19.79 | 9.71 | 10.87 | 10.11 | 11.22 | 11.61 |
| | 3H | 19.54 | 20.49 | 19.95 | 20.90 | 21.30 | 10.42 | 11.38 | 10.83 | 11.78 | 12.18 |
| | 4H | 20.14 | 21.00 | 20.58 | 21.42 | 21.86 | 10.62 | 11.48 | 11.06 | 11.90 | 12.34 |
| | 6H | 20.63 | 21.38 | 21.10 | 21.82 | 22.29 | 10.79 | 11.53 | 11.25 | 11.98 | 12.44 |
| | 8H | 20.78 | 21.47 | 21.24 | 21.91 | 22.38 | 10.82 | 11.52 | 11.29 | 11.96 | 12.43 |
| | 12H | 20.85 | 21.46 | 21.34 | 21.95 | 22.42 | 10.85 | 11.46 | 11.33 | 11.94 | 12.42 |
| 8H | 4H | 20.03 | 20.73 | 20.50 | 21.17 | 21.64 | 10.89 | 11.59 | 11.36 | 12.03 | 12.50 |
| | 6H | 20.52 | 21.08 | 21.02 | 21.58 | 22.06 | 11.10 | 11.67 | 11.60 | 12.16 | 12.64 |
| | 8H | 20.66 | 21.17 | 21.18 | 21.68 | 22.17 | 11.16 | 11.67 | 11.68 | 12.18 | 12.67 |
| | 12H | 20.75 | 21.20 | 21.26 | 21.69 | 22.26 | 11.22 | 11.67 | 11.73 | 12.16 | 12.73 |
| 12H | 4H | 20.00 | 20.61 | 20.48 | 21.09 | 21.56 | 10.92 | 11.54 | 11.41 | 12.02 | 12.49 |
| | 6H | 20.46 | 20.97 | 20.98 | 21.48 | 21.97 | 11.13 | 11.64 | 11.65 | 12.15 | 12.64 |
| | 8H | 20.63 | 21.07 | 21.14 | 21.57 | 22.14 | 11.22 | 11.67 | 11.73 | 12.16 | 12.73 |