

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: P1056025

Luminaire Tested: S124R3DR-S350D935-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056025  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-S350D935-X4F0-XX-UDD-F-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
CORE LIGHT ENGINE  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

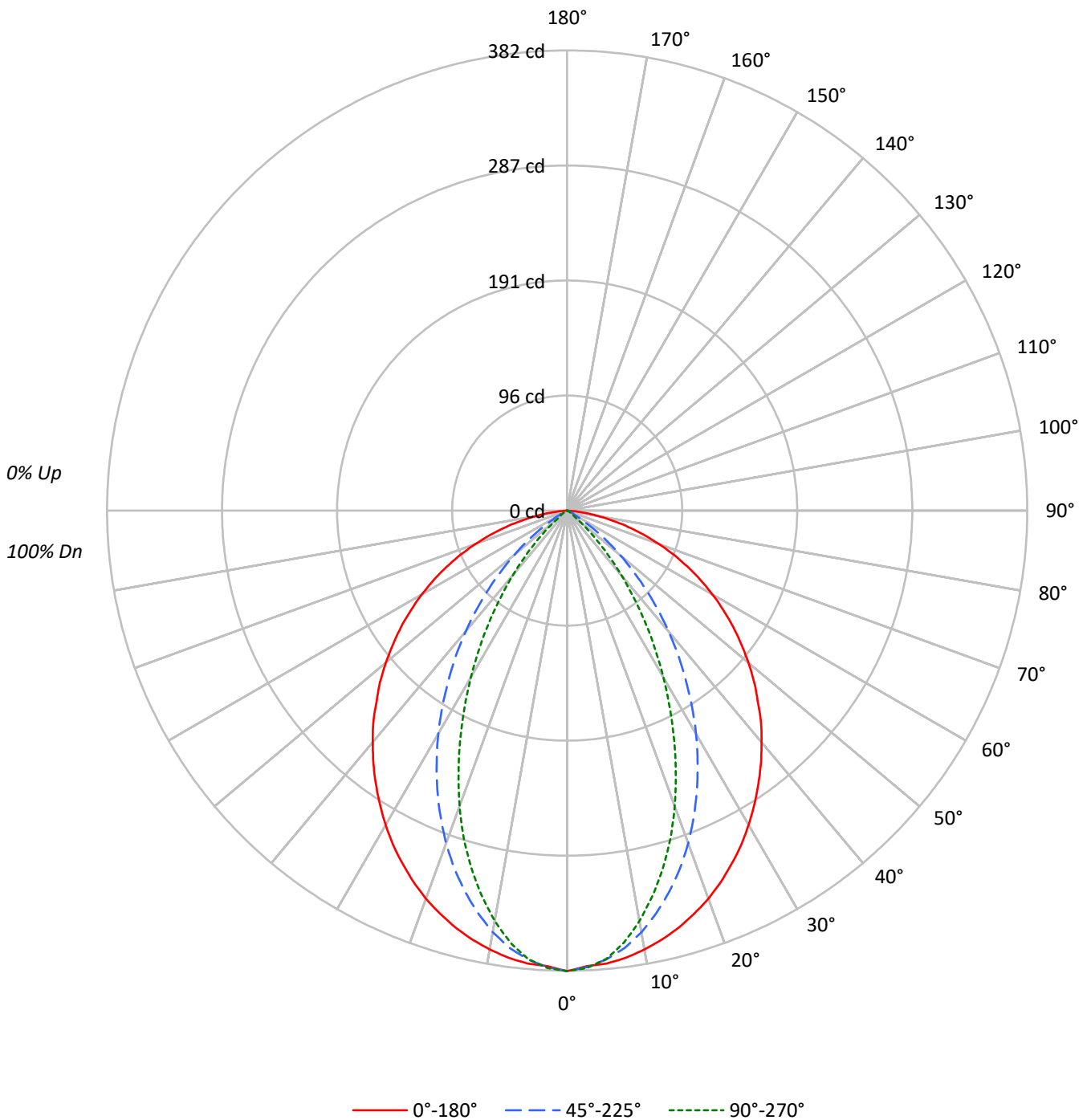
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 534.3 lumens  
Efficiency: N/A  
Efficacy: 42.4 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 0.81 / 0.97  
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 12.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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   | 112 | 108 | 105 | 102 | 109 | 106 | 103 | 100 | 102 | 99  | 97  | 98  | 96  | 94  | 95  | 93  | 92  | 90  |
| 2   | 104 | 98  | 93  | 88  | 102 | 96  | 91  | 87  | 93  | 89  | 85  | 90  | 86  | 83  | 87  | 84  | 82  | 80  |
| 3   | 97  | 89  | 82  | 77  | 95  | 87  | 81  | 77  | 84  | 79  | 75  | 82  | 78  | 74  | 79  | 76  | 73  | 71  |
| 4   | 90  | 81  | 74  | 68  | 88  | 80  | 73  | 68  | 77  | 72  | 67  | 75  | 70  | 66  | 73  | 69  | 65  | 64  |
| 5   | 84  | 74  | 66  | 61  | 83  | 73  | 66  | 61  | 71  | 65  | 60  | 69  | 64  | 60  | 67  | 63  | 59  | 57  |
| 6   | 79  | 68  | 60  | 55  | 77  | 67  | 60  | 55  | 65  | 59  | 54  | 64  | 58  | 54  | 62  | 57  | 54  | 52  |
| 7   | 74  | 63  | 55  | 50  | 73  | 62  | 55  | 50  | 60  | 54  | 50  | 59  | 53  | 49  | 58  | 53  | 49  | 47  |
| 8   | 70  | 58  | 51  | 46  | 68  | 57  | 50  | 46  | 56  | 50  | 45  | 55  | 49  | 45  | 54  | 49  | 45  | 43  |
| 9   | 66  | 54  | 47  | 42  | 64  | 53  | 47  | 42  | 52  | 46  | 42  | 51  | 46  | 42  | 50  | 45  | 41  | 40  |
| 10  | 62  | 50  | 43  | 39  | 61  | 50  | 43  | 39  | 49  | 43  | 39  | 48  | 42  | 39  | 47  | 42  | 38  | 37  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3380 | 3380 | 3380 |
| 5°  | 3349 | 3319 | 3316 |
| 10° | 3321 | 3190 | 3105 |
| 15° | 3280 | 2998 | 2813 |
| 20° | 3226 | 2764 | 2458 |
| 25° | 3155 | 2490 | 2051 |
| 30° | 3076 | 2185 | 1629 |
| 35° | 2989 | 1852 | 1213 |
| 40° | 2898 | 1510 | 809  |
| 45° | 2797 | 1153 | 445  |
| 50° | 2701 | 788  | 124  |
| 55° | 2594 | 427  | 80   |
| 60° | 2465 | 133  | 46   |
| 65° | 2305 | 86   | 23   |
| 70° | 2084 | 39   | 10   |
| 75° | 1793 | 14   | 0    |
| 80° | 1354 | 0    | 0    |
| 85° | 568  | 0    | 0    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2797 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 35.3   | 6.6       |
| 10°-20°   | 92.6   | 17.3      |
| 20°-30°   | 119.6  | 22.4      |
| 30°-40°   | 114.3  | 21.4      |
| 40°-50°   | 85.5   | 16.0      |
| 50°-60°   | 50.9   | 9.5       |
| 60°-70°   | 25.8   | 4.8       |
| 70°-80°   | 9.0    | 1.7       |
| 80°-90°   | 1.2    | 0.2       |
| 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°    | 247.5  | 46.3      |
| 0°-40°    | 361.8  | 67.7      |
| 0°-60°    | 498.2  | 93.3      |
| 0°-90°    | 534.3  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 534.3  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 382 | 382   | 382 | 382   | 382 |      |
| 5°  | 377 | 380   | 374 | 372   | 374 | 36   |
| 15° | 358 | 351   | 328 | 312   | 307 | 101  |
| 25° | 323 | 301   | 255 | 222   | 210 | 149  |
| 35° | 277 | 239   | 172 | 128   | 112 | 173  |
| 45° | 224 | 172   | 92  | 49    | 36  | 173  |
| 55° | 168 | 105   | 28  | 6     | 5   | 150  |
| 65° | 110 | 42    | 4   | 2     | 1   | 109  |
| 75° | 52  | 6     | 0   | 0     | 0   | 56   |
| 85° | 6   | 0     | 0   | 0     | 0   | 9    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 382.3 | 382.3 | 382.3 | 382.3 | 382.3 |
| 2.5°  | 378.5 | 383.0 | 379.3 | 379.6 | 380.0 |
| 5°    | 377.4 | 380.4 | 374.0 | 372.1 | 373.6 |
| 7.5°  | 374.4 | 375.5 | 366.1 | 361.3 | 361.6 |
| 10°   | 369.9 | 368.8 | 355.3 | 347.0 | 345.9 |
| 12.5° | 364.6 | 360.9 | 342.2 | 330.2 | 327.5 |
| 15°   | 358.3 | 350.8 | 327.5 | 312.2 | 307.3 |
| 17.5° | 350.8 | 339.9 | 311.4 | 291.2 | 285.2 |
| 20°   | 342.9 | 327.9 | 293.8 | 268.7 | 261.2 |
| 22.5° | 333.5 | 314.4 | 274.7 | 245.1 | 235.7 |
| 25°   | 323.4 | 300.9 | 255.2 | 221.5 | 210.2 |
| 27.5° | 312.9 | 286.3 | 234.6 | 197.5 | 184.4 |
| 30°   | 301.3 | 270.9 | 214.0 | 173.1 | 159.6 |
| 32.5° | 289.3 | 255.2 | 192.6 | 150.7 | 135.7 |
| 35°   | 276.9 | 238.7 | 171.6 | 127.8 | 112.4 |
| 37.5° | 264.2 | 222.2 | 151.4 | 106.1 | 90.3  |
| 40°   | 251.1 | 205.4 | 130.8 | 85.4  | 70.1  |
| 42.5° | 238.3 | 188.5 | 111.3 | 66.0  | 51.7  |
| 45°   | 223.7 | 171.6 | 92.2  | 49.1  | 35.6  |
| 47.5° | 210.6 | 155.1 | 73.8  | 33.4  | 21.0  |
| 50°   | 196.4 | 137.5 | 57.3  | 19.5  | 9.0   |
| 52.5° | 182.1 | 121.0 | 42.0  | 8.6   | 6.7   |
| 55°   | 168.3 | 104.6 | 27.7  | 6.4   | 5.2   |
| 57.5° | 153.7 | 88.1  | 15.0  | 4.9   | 3.7   |
| 60°   | 139.4 | 72.0  | 7.5   | 3.7   | 2.6   |
| 62.5° | 124.8 | 56.6  | 6.0   | 2.2   | 1.5   |
| 65°   | 110.2 | 42.3  | 4.1   | 1.5   | 1.1   |
| 67.5° | 95.6  | 28.9  | 2.6   | 0.7   | 0.4   |
| 70°   | 80.6  | 17.6  | 1.5   | 0.4   | 0.4   |
| 72.5° | 66.3  | 9.0   | 0.7   | 0.4   | 0.4   |
| 75°   | 52.5  | 5.6   | 0.4   | 0.4   | 0.0   |
| 77.5° | 39.0  | 3.0   | 0.4   | 0.4   | 0.0   |
| 80°   | 26.6  | 1.1   | 0.0   | 0.0   | 0.0   |
| 82.5° | 15.4  | 0.4   | 0.0   | 0.0   | 0.0   |
| 85°   | 5.6   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 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 | 14.69            | 16.02 | 15.05 | 16.33 | 16.64 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.23            | 17.41 | 16.61 | 17.74 | 18.10 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 16.82            | 17.92 | 17.23 | 18.27 | 18.65 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.24            | 18.25 | 17.66 | 18.62 | 19.01 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.34            | 18.29 | 17.77 | 18.68 | 19.09 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.36            | 18.27 | 17.79 | 18.65 | 19.08 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 14.47            | 15.56 | 14.87 | 15.91 | 16.30 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.03            | 16.92 | 16.44 | 17.33 | 17.73 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 16.61            | 17.41 | 17.05 | 17.83 | 18.27 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.07            | 17.76 | 17.54 | 18.21 | 18.67 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.19            | 17.83 | 17.66 | 18.28 | 18.75 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.23            | 17.80 | 17.72 | 18.28 | 18.76 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 16.48            | 17.12 | 16.95 | 17.56 | 18.04 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 16.92            | 17.44 | 17.42 | 17.94 | 18.42 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.03            | 17.50 | 17.56 | 18.02 | 18.51 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.08            | 17.50 | 17.60 | 17.99 | 18.56 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 16.43            | 17.00 | 16.92 | 17.48 | 17.95 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 16.86            | 17.32 | 17.38 | 17.84 | 18.33 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 16.99            | 17.40 | 17.51 | 17.90 | 18.47 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |