

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: P1056163

Luminaire Tested: S124R3DRP-H350D940-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056163  
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: S124R3DRP-H350D940-X4F0-XX-UDD-F-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

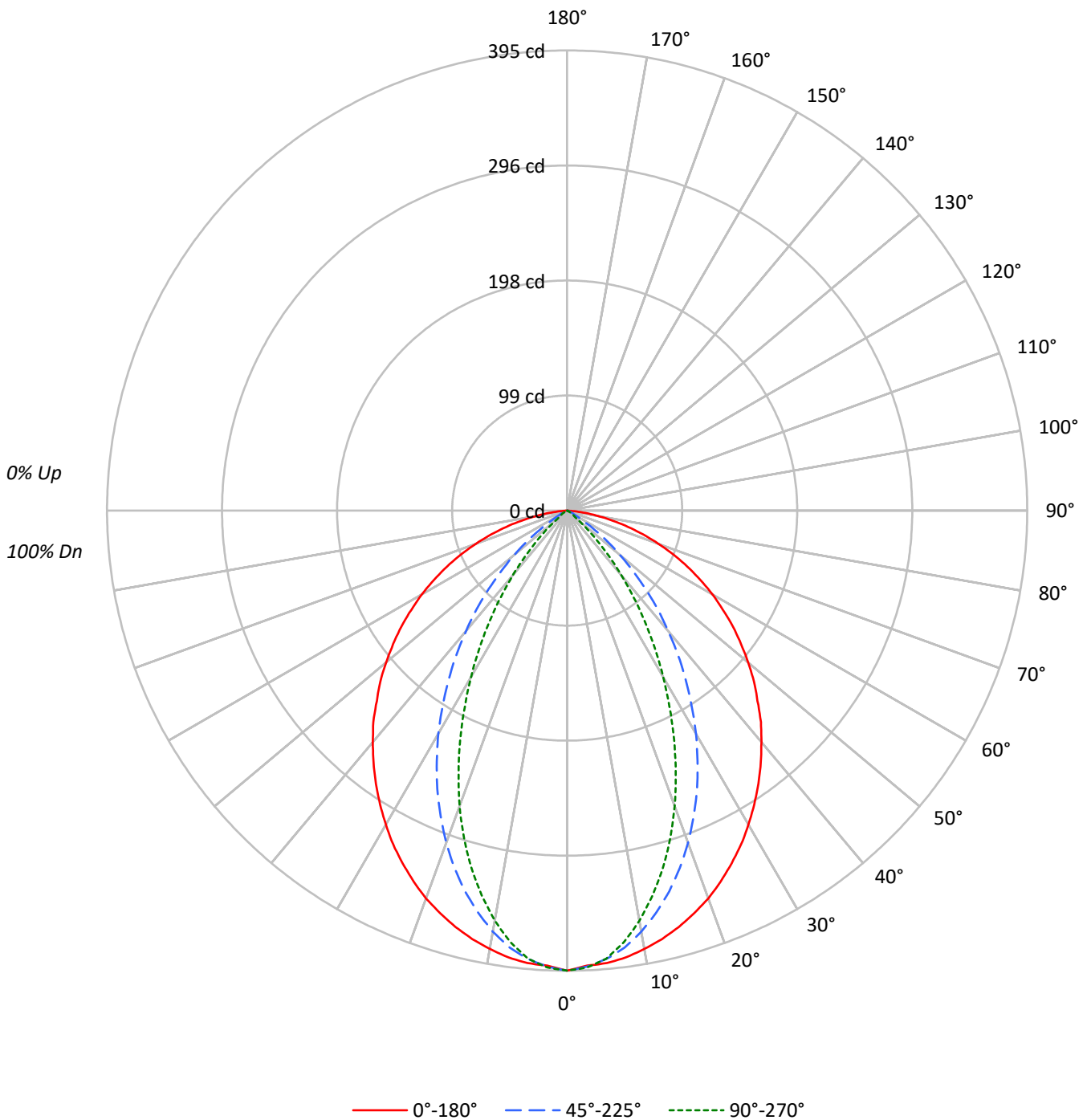
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 552.0 lumens  
Efficiency: N/A  
Efficacy: 47.2 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): 11.7  
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°  | 3491 | 3491 | 3491 |
| 5°  | 3460 | 3429 | 3426 |
| 10° | 3430 | 3295 | 3209 |
| 15° | 3388 | 3097 | 2906 |
| 20° | 3334 | 2856 | 2539 |
| 25° | 3259 | 2572 | 2119 |
| 30° | 3178 | 2257 | 1683 |
| 35° | 3088 | 1914 | 1254 |
| 40° | 2994 | 1559 | 836  |
| 45° | 2890 | 1190 | 460  |
| 50° | 2791 | 814  | 128  |
| 55° | 2679 | 442  | 83   |
| 60° | 2546 | 136  | 48   |
| 65° | 2381 | 90   | 25   |
| 70° | 2151 | 39   | 10   |
| 75° | 1851 | 14   | 0    |
| 80° | 1400 | 0    | 0    |
| 85° | 588  | 0    | 0    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2890 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 36.4   | 6.6       |
| 10°-20°   | 95.6   | 17.3      |
| 20°-30°   | 123.6  | 22.4      |
| 30°-40°   | 118.1  | 21.4      |
| 40°-50°   | 88.3   | 16.0      |
| 50°-60°   | 52.6   | 9.5       |
| 60°-70°   | 26.7   | 4.8       |
| 70°-80°   | 9.3    | 1.7       |
| 80°-90°   | 1.3    | 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°    | 255.7  | 46.3      |
| 0°-40°    | 373.8  | 67.7      |
| 0°-60°    | 514.7  | 93.3      |
| 0°-90°    | 552.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 552.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 395 | 395   | 395 | 395   | 395 |      |
| 5°  | 390 | 393   | 386 | 384   | 386 | 37   |
| 15° | 370 | 362   | 338 | 322   | 318 | 104  |
| 25° | 334 | 311   | 264 | 229   | 217 | 154  |
| 35° | 286 | 247   | 177 | 132   | 116 | 179  |
| 45° | 231 | 177   | 95  | 51    | 37  | 179  |
| 55° | 174 | 108   | 29  | 7     | 5   | 155  |
| 65° | 114 | 44    | 4   | 2     | 1   | 113  |
| 75° | 54  | 6     | 0   | 0     | 0   | 58   |
| 85° | 6   | 0     | 0   | 0     | 0   | 10   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 394.9 | 394.9 | 394.9 | 394.9 | 394.9 |
| 2.5°  | 391.0 | 395.7 | 391.8 | 392.2 | 392.6 |
| 5°    | 389.9 | 393.0 | 386.4 | 384.5 | 386.0 |
| 7.5°  | 386.8 | 387.9 | 378.3 | 373.2 | 373.6 |
| 10°   | 382.1 | 381.0 | 367.0 | 358.5 | 357.4 |
| 12.5° | 376.7 | 372.8 | 353.5 | 341.1 | 338.4 |
| 15°   | 370.1 | 362.4 | 338.4 | 322.5 | 317.5 |
| 17.5° | 362.4 | 351.2 | 321.7 | 300.8 | 294.6 |
| 20°   | 354.3 | 338.8 | 303.5 | 277.6 | 269.9 |
| 22.5° | 344.6 | 324.8 | 283.8 | 253.2 | 243.5 |
| 25°   | 334.1 | 310.9 | 263.7 | 228.8 | 217.2 |
| 27.5° | 323.3 | 295.8 | 242.4 | 204.0 | 190.5 |
| 30°   | 311.3 | 279.9 | 221.1 | 178.9 | 164.9 |
| 32.5° | 298.9 | 263.7 | 199.0 | 155.6 | 140.2 |
| 35°   | 286.1 | 246.6 | 177.3 | 132.0 | 116.2 |
| 37.5° | 273.0 | 229.6 | 156.4 | 109.6 | 93.3  |
| 40°   | 259.4 | 212.2 | 135.1 | 88.3  | 72.4  |
| 42.5° | 246.2 | 194.7 | 115.0 | 68.1  | 53.4  |
| 45°   | 231.1 | 177.3 | 95.2  | 50.7  | 36.8  |
| 47.5° | 217.6 | 160.3 | 76.3  | 34.5  | 21.7  |
| 50°   | 202.9 | 142.1 | 59.2  | 20.1  | 9.3   |
| 52.5° | 188.2 | 125.1 | 43.4  | 8.9   | 7.0   |
| 55°   | 173.8 | 108.0 | 28.7  | 6.6   | 5.4   |
| 57.5° | 158.7 | 91.0  | 15.5  | 5.0   | 3.9   |
| 60°   | 144.0 | 74.3  | 7.7   | 3.9   | 2.7   |
| 62.5° | 128.9 | 58.5  | 6.2   | 2.3   | 1.5   |
| 65°   | 113.8 | 43.8  | 4.3   | 1.5   | 1.2   |
| 67.5° | 98.7  | 29.8  | 2.7   | 0.8   | 0.4   |
| 70°   | 83.2  | 18.2  | 1.5   | 0.4   | 0.4   |
| 72.5° | 68.5  | 9.3   | 0.8   | 0.4   | 0.4   |
| 75°   | 54.2  | 5.8   | 0.4   | 0.4   | 0.0   |
| 77.5° | 40.3  | 3.1   | 0.4   | 0.4   | 0.0   |
| 80°   | 27.5  | 1.2   | 0.0   | 0.0   | 0.0   |
| 82.5° | 15.9  | 0.4   | 0.0   | 0.0   | 0.0   |
| 85°   | 5.8   | 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 | 14.80            | 16.13 | 15.16 | 16.44 | 16.76 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.34            | 17.52 | 16.72 | 17.85 | 18.21 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 16.93            | 18.03 | 17.34 | 18.38 | 18.76 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.35            | 18.36 | 17.77 | 18.73 | 19.12 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.45            | 18.40 | 17.88 | 18.80 | 19.20 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.47            | 18.38 | 17.90 | 18.76 | 19.19 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 14.58            | 15.67 | 14.98 | 16.02 | 16.41 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.14            | 17.03 | 16.55 | 17.44 | 17.84 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 16.72            | 17.52 | 17.16 | 17.94 | 18.38 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.18            | 17.87 | 17.65 | 18.32 | 18.78 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.30            | 17.95 | 17.77 | 18.39 | 18.86 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.34            | 17.91 | 17.83 | 18.39 | 18.87 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 16.59            | 17.23 | 17.06 | 17.67 | 18.15 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.03            | 17.55 | 17.53 | 18.05 | 18.53 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.15            | 17.61 | 17.67 | 18.13 | 18.62 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.20            | 17.61 | 17.71 | 18.10 | 18.67 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 16.54            | 17.11 | 17.03 | 17.59 | 18.06 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 16.97            | 17.43 | 17.49 | 17.95 | 18.44 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.10            | 17.51 | 17.62 | 18.01 | 18.58 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |