

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: P1060696

Luminaire Tested: S124RDR-H1020D950-X4F0-XX-UDD-BVL-B

Issue Date: 8/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1060696  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2406-143-39)  
Test Lab: INNOVATION CENTER  
Issue Date: 8/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124RDR-H1020D950-X4F0-XX-UDD-BVL-B  
Description: DEFINE 4 BLACK REGRESSED DIRECT RECESSED HOUSING WITH BLACK STRAIGHT BLADE LOUVER WITH DIFFUSER  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: -

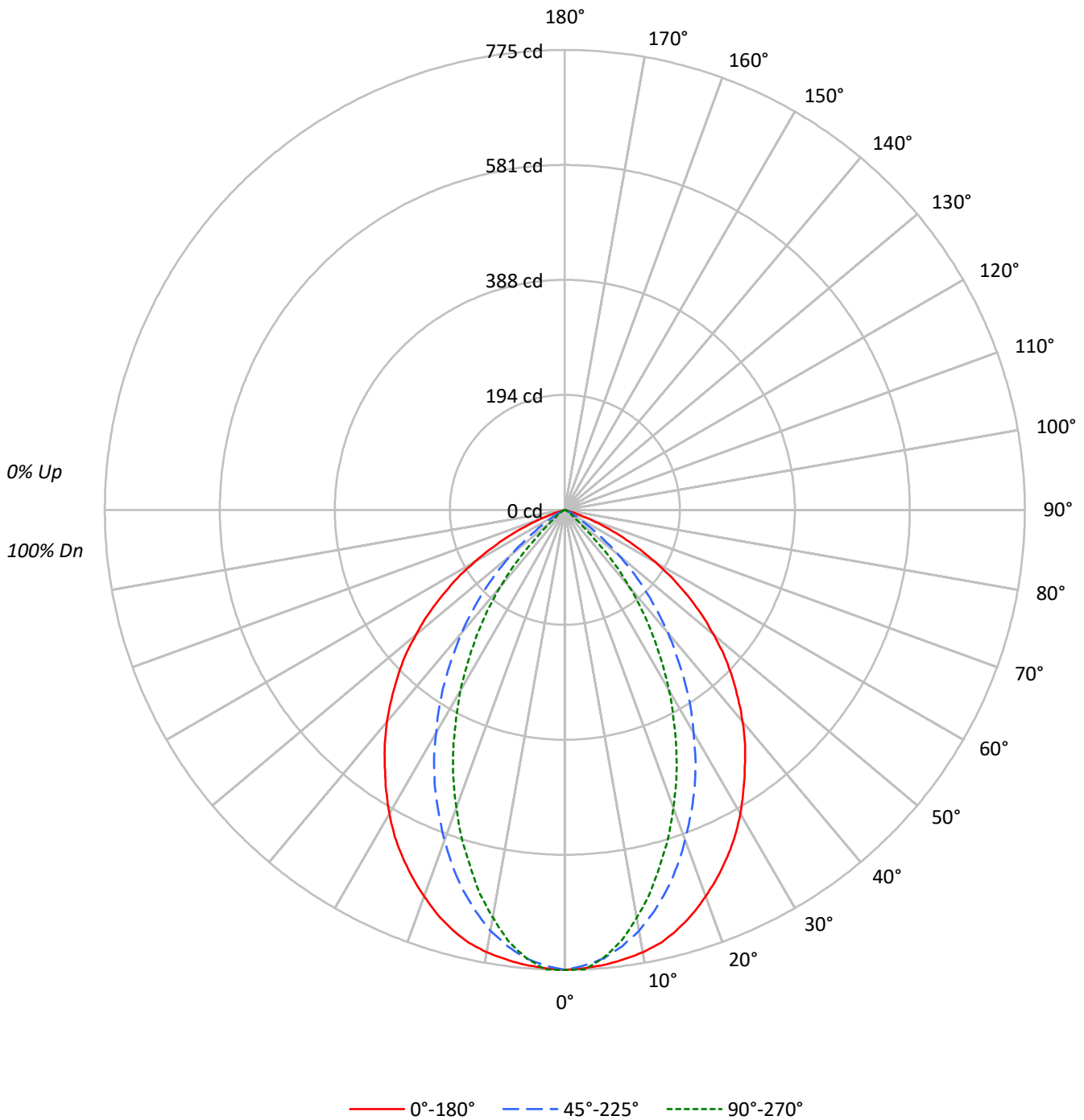
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1012.1 lumens  
Efficiency: N/A  
Efficacy: 32.4 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 0.83 / 0.98  
Luminous Opening: Rectangular (W 0.31' 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   | 112 | 109 | 106 | 103 | 110 | 107 | 104 | 102 | 103 | 101 | 99  | 99  | 97  | 96  | 96  | 94  | 93  | 91  |
| 2   | 105 | 99  | 95  | 90  | 103 | 98  | 93  | 89  | 94  | 91  | 87  | 91  | 88  | 86  | 88  | 86  | 84  | 82  |
| 3   | 98  | 91  | 85  | 80  | 96  | 89  | 84  | 79  | 86  | 82  | 78  | 84  | 80  | 77  | 82  | 78  | 75  | 74  |
| 4   | 92  | 83  | 76  | 71  | 90  | 82  | 76  | 71  | 79  | 74  | 70  | 77  | 73  | 69  | 75  | 71  | 68  | 66  |
| 5   | 86  | 76  | 69  | 64  | 84  | 75  | 69  | 64  | 73  | 67  | 63  | 71  | 66  | 62  | 70  | 65  | 62  | 60  |
| 6   | 81  | 70  | 63  | 58  | 79  | 69  | 63  | 58  | 68  | 62  | 57  | 66  | 61  | 57  | 65  | 60  | 56  | 55  |
| 7   | 76  | 65  | 58  | 53  | 74  | 64  | 57  | 53  | 63  | 57  | 52  | 61  | 56  | 52  | 60  | 55  | 52  | 50  |
| 8   | 71  | 60  | 53  | 48  | 70  | 60  | 53  | 48  | 58  | 52  | 48  | 57  | 52  | 48  | 56  | 51  | 47  | 46  |
| 9   | 67  | 56  | 49  | 44  | 66  | 56  | 49  | 44  | 54  | 48  | 44  | 54  | 48  | 44  | 53  | 48  | 44  | 42  |
| 10  | 64  | 52  | 46  | 41  | 63  | 52  | 45  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 49  | 44  | 41  | 39  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6674 | 6674 | 6674 |
| 5°  | 6652 | 6555 | 6545 |
| 10° | 6621 | 6297 | 6102 |
| 15° | 6530 | 5911 | 5522 |
| 20° | 6353 | 5430 | 4896 |
| 25° | 6141 | 4917 | 4225 |
| 30° | 5880 | 4310 | 3497 |
| 35° | 5558 | 3697 | 2720 |
| 40° | 5238 | 3034 | 1901 |
| 45° | 4857 | 2332 | 941  |
| 50° | 4382 | 1575 | 315  |
| 55° | 3783 | 808  | 219  |
| 60° | 3029 | 289  | 155  |
| 65° | 2076 | 159  | 69   |
| 70° | 932  | 86   | 55   |
| 75° | 0    | 37   | 37   |
| 80° | 0    | 0    | 0    |
| 85° | 0    | 0    | 0    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4857 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 71.6   | 7.1       |
| 10°-20°   | 187.6  | 18.5      |
| 20°-30°   | 242.9  | 24.0      |
| 30°-40°   | 230.8  | 22.8      |
| 40°-50°   | 163.4  | 16.1      |
| 50°-60°   | 83.9   | 8.3       |
| 60°-70°   | 29.3   | 2.9       |
| 70°-80°   | 2.5    | 0.2       |
| 80°-90°   | 0.0    | 0.0       |
| 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°    | 502.1  | 49.6      |
| 0°-40°    | 732.9  | 72.4      |
| 0°-60°    | 980.2  | 96.9      |
| 0°-90°    | 1012.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1012.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 775 | 775   | 775 | 775   | 775 |      |
| 5°  | 770 | 771   | 758 | 758   | 757 | 73   |
| 15° | 732 | 710   | 663 | 632   | 619 | 206  |
| 25° | 646 | 596   | 518 | 463   | 445 | 297  |
| 35° | 529 | 451   | 352 | 283   | 259 | 331  |
| 45° | 399 | 307   | 192 | 110   | 77  | 307  |
| 55° | 252 | 166   | 54  | 16    | 15  | 225  |
| 65° | 102 | 49    | 8   | 4     | 3   | 101  |
| 75° | 0   | 1     | 1   | 1     | 1   | 8    |
| 85° | 0   | 0     | 0   | 0     | 0   | 0    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 775.1 | 775.1 | 775.1 | 775.1 | 775.1 |
| 2.5°  | 772.9 | 775.1 | 768.4 | 774.0 | 775.1 |
| 5°    | 769.5 | 770.6 | 758.3 | 758.3 | 757.2 |
| 7.5°  | 763.9 | 761.7 | 741.5 | 733.7 | 732.5 |
| 10°   | 757.2 | 749.3 | 720.2 | 703.4 | 697.8 |
| 12.5° | 747.1 | 732.5 | 693.3 | 668.7 | 662.0 |
| 15°   | 732.5 | 710.1 | 663.1 | 631.7 | 619.4 |
| 17.5° | 714.6 | 685.5 | 629.5 | 591.4 | 579.1 |
| 20°   | 693.3 | 656.4 | 592.5 | 550.0 | 534.3 |
| 22.5° | 670.9 | 628.4 | 554.5 | 506.3 | 490.6 |
| 25°   | 646.3 | 595.9 | 517.5 | 462.6 | 444.7 |
| 27.5° | 620.5 | 561.2 | 477.2 | 420.0 | 396.5 |
| 30°   | 591.4 | 526.4 | 433.5 | 374.1 | 351.7 |
| 32.5° | 560.1 | 488.4 | 394.3 | 330.4 | 303.5 |
| 35°   | 528.7 | 451.4 | 351.7 | 283.4 | 258.7 |
| 37.5° | 498.4 | 416.7 | 309.1 | 237.5 | 213.9 |
| 40°   | 466.0 | 378.6 | 269.9 | 196.0 | 169.1 |
| 42.5° | 432.4 | 341.6 | 229.6 | 153.5 | 124.3 |
| 45°   | 398.8 | 306.9 | 191.5 | 109.8 | 77.3  |
| 47.5° | 365.2 | 269.9 | 154.6 | 69.4  | 41.4  |
| 50°   | 327.1 | 234.1 | 117.6 | 37.0  | 23.5  |
| 52.5° | 291.2 | 200.5 | 84.0  | 21.3  | 17.9  |
| 55°   | 252.0 | 165.8 | 53.8  | 15.7  | 14.6  |
| 57.5° | 215.1 | 132.2 | 30.2  | 12.3  | 11.2  |
| 60°   | 175.9 | 101.9 | 16.8  | 10.1  | 9.0   |
| 62.5° | 136.7 | 73.9  | 11.2  | 6.7   | 5.6   |
| 65°   | 101.9 | 49.3  | 7.8   | 4.5   | 3.4   |
| 67.5° | 67.2  | 28.0  | 5.6   | 2.2   | 2.2   |
| 70°   | 37.0  | 13.4  | 3.4   | 2.2   | 2.2   |
| 72.5° | 13.4  | 4.5   | 2.2   | 1.1   | 1.1   |
| 75°   | 0.0   | 1.1   | 1.1   | 1.1   | 1.1   |
| 77.5° | 0.0   | 0.0   | 0.0   | 0.0   | 1.1   |
| 80°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 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 | 15.13            | 16.38 | 15.49 | 16.69 | 17.01 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 15.40            | 16.51 | 15.78 | 16.84 | 17.20 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 15.33            | 16.35 | 15.73 | 16.70 | 17.09 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 15.24            | 16.18 | 15.66 | 16.55 | 16.94 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 15.19            | 16.08 | 15.63 | 16.47 | 16.88 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 15.15            | 15.99 | 15.58 | 16.38 | 16.81 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 14.90            | 15.92 | 15.30 | 16.28 | 16.66 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 15.18            | 16.01 | 15.60 | 16.42 | 16.82 | 0.00           | 0.00 | 0.00 | 0.00 | 0.01 |
|                 | 4H   | 15.09            | 15.82 | 15.53 | 16.25 | 16.69 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 15.00            | 15.63 | 15.47 | 16.08 | 16.55 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 14.94            | 15.53 | 15.41 | 15.98 | 16.45 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 14.89            | 15.40 | 15.38 | 15.89 | 16.37 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 14.94            | 15.53 | 15.41 | 15.98 | 16.45 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 14.83            | 15.31 | 15.34 | 15.81 | 16.29 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 14.76            | 15.19 | 15.29 | 15.71 | 16.20 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 14.71            | 15.09 | 15.23 | 15.59 | 16.16 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 14.89            | 15.41 | 15.38 | 15.89 | 16.37 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 14.76            | 15.19 | 15.29 | 15.71 | 16.20 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 14.71            | 15.09 | 15.23 | 15.59 | 16.16 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |