

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: P1059715

Luminaire Tested: S123RDR-H560D940-X4F0-XX-UDD-BVL-B

Issue Date: 8/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1059715  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2406-143-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 8/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDR-H560D940-X4F0-XX-UDD-BVL-B  
Description: DEFINE 3 BLACK REGRESSED DIRECT RECESSED HOUSING WITH BLACK STRAIGHT BLADE LOUVER WITH DIFFUSER  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

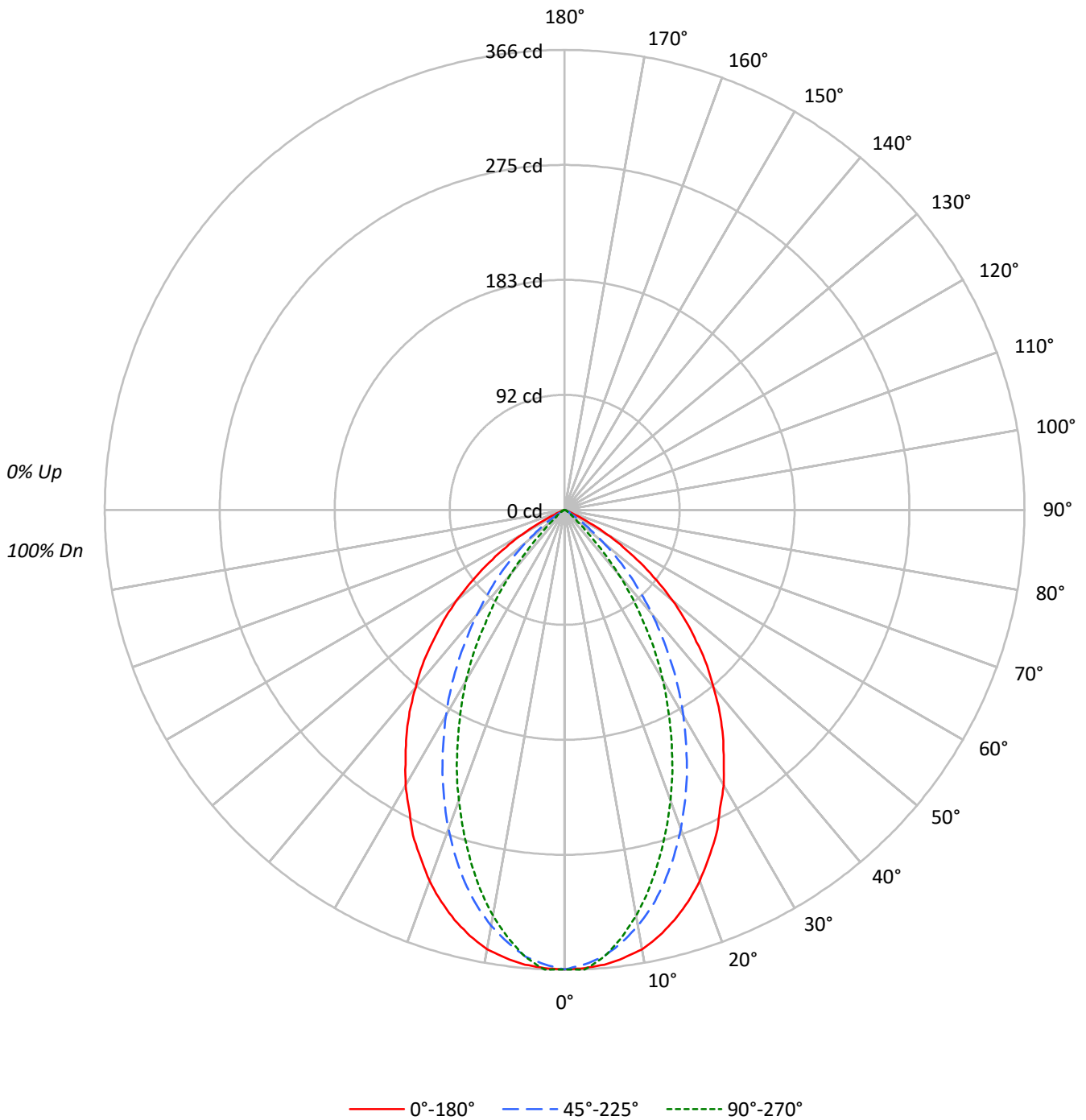
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 417.3 lumens  
Efficiency: N/A  
Efficacy: 24.0 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 0.81 / 0.94  
Luminous Opening: Rectangular (W 0.23' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.4  
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   | 113 | 110 | 107 | 104 | 110 | 107 | 105 | 103 | 103 | 101 | 100 | 100 | 98  | 97  | 96  | 95  | 94  | 92  |
| 2   | 106 | 101 | 96  | 92  | 104 | 99  | 95  | 91  | 96  | 92  | 89  | 93  | 90  | 87  | 90  | 87  | 85  | 84  |
| 3   | 100 | 92  | 87  | 82  | 98  | 91  | 86  | 82  | 88  | 84  | 80  | 86  | 82  | 79  | 83  | 80  | 78  | 76  |
| 4   | 94  | 85  | 79  | 74  | 92  | 84  | 78  | 74  | 82  | 77  | 73  | 80  | 75  | 72  | 78  | 74  | 71  | 69  |
| 5   | 88  | 79  | 72  | 67  | 86  | 78  | 71  | 67  | 76  | 70  | 66  | 74  | 69  | 65  | 72  | 68  | 65  | 63  |
| 6   | 83  | 73  | 66  | 61  | 81  | 72  | 66  | 61  | 70  | 65  | 60  | 69  | 64  | 60  | 67  | 63  | 60  | 58  |
| 7   | 78  | 68  | 61  | 56  | 77  | 67  | 60  | 56  | 66  | 60  | 56  | 64  | 59  | 55  | 63  | 58  | 55  | 53  |
| 8   | 74  | 63  | 56  | 52  | 72  | 62  | 56  | 51  | 61  | 55  | 51  | 60  | 55  | 51  | 59  | 54  | 51  | 49  |
| 9   | 70  | 59  | 52  | 48  | 68  | 58  | 52  | 48  | 57  | 52  | 47  | 56  | 51  | 47  | 55  | 51  | 47  | 46  |
| 10  | 66  | 55  | 49  | 44  | 65  | 55  | 48  | 44  | 54  | 48  | 44  | 53  | 48  | 44  | 52  | 47  | 44  | 42  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4294 | 4294 | 4294 |
| 5°  | 4282 | 4206 | 4213 |
| 10° | 4234 | 4009 | 3911 |
| 15° | 4109 | 3730 | 3514 |
| 20° | 3929 | 3378 | 3075 |
| 25° | 3700 | 2983 | 2602 |
| 30° | 3433 | 2563 | 2123 |
| 35° | 3148 | 2119 | 1578 |
| 40° | 2825 | 1660 | 1010 |
| 45° | 2464 | 1212 | 420  |
| 50° | 2044 | 722  | 161  |
| 55° | 1507 | 301  | 121  |
| 60° | 914  | 110  | 68   |
| 65° | 245  | 67   | 33   |
| 70° | 0    | 21   | 21   |
| 75° | 0    | 0    | 27   |
| 80° | 0    | 0    | 0    |
| 85° | 0    | 0    | 0    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2464 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 33.7   | 8.1       |
| 10°-20°   | 86.9   | 20.8      |
| 20°-30°   | 108.3  | 25.9      |
| 30°-40°   | 96.8   | 23.2      |
| 40°-50°   | 61.1   | 14.6      |
| 50°-60°   | 25.6   | 6.1       |
| 60°-70°   | 4.8    | 1.2       |
| 70°-80°   | 0.2    | 0.0       |
| 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°    | 228.8  | 54.8      |
| 0°-40°    | 325.6  | 78.0      |
| 0°-60°    | 412.3  | 98.8      |
| 0°-90°    | 417.3  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 417.3  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 366 | 366   | 366 | 366   | 366 |      |
| 5°  | 363 | 363   | 357 | 358   | 357 | 34   |
| 15° | 338 | 330   | 307 | 294   | 289 | 95   |
| 25° | 286 | 263   | 230 | 210   | 201 | 131  |
| 35° | 220 | 188   | 148 | 121   | 110 | 137  |
| 45° | 148 | 115   | 73  | 39    | 25  | 114  |
| 55° | 74  | 51    | 15  | 6     | 6   | 66   |
| 65° | 9   | 6     | 2   | 1     | 1   | 12   |
| 75° | 0   | 0     | 0   | 0     | 1   | 0    |
| 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°    | 365.7 | 365.7 | 365.7 | 365.7 | 365.7 |
| 2.5°  | 365.1 | 365.7 | 362.1 | 365.7 | 366.3 |
| 5°    | 363.3 | 362.7 | 356.8 | 358.0 | 357.4 |
| 7.5°  | 359.8 | 358.0 | 347.4 | 345.1 | 343.9 |
| 10°   | 355.1 | 350.4 | 336.2 | 330.3 | 328.0 |
| 12.5° | 347.4 | 340.9 | 322.7 | 313.3 | 309.7 |
| 15°   | 338.0 | 329.7 | 306.8 | 293.8 | 289.1 |
| 17.5° | 326.8 | 315.0 | 289.1 | 275.0 | 267.9 |
| 20°   | 314.4 | 297.9 | 270.3 | 253.2 | 246.1 |
| 22.5° | 299.7 | 281.5 | 250.3 | 232.0 | 224.3 |
| 25°   | 285.6 | 262.6 | 230.2 | 210.2 | 200.8 |
| 27.5° | 267.9 | 243.8 | 209.0 | 188.4 | 178.4 |
| 30°   | 253.2 | 225.5 | 189.0 | 166.1 | 156.6 |
| 32.5° | 235.5 | 206.7 | 168.4 | 143.1 | 134.3 |
| 35°   | 219.6 | 187.8 | 147.8 | 121.3 | 110.1 |
| 37.5° | 202.6 | 169.6 | 127.2 | 99.5  | 88.9  |
| 40°   | 184.3 | 151.3 | 108.3 | 77.7  | 65.9  |
| 42.5° | 167.8 | 133.1 | 89.5  | 57.7  | 45.9  |
| 45°   | 148.4 | 115.4 | 73.0  | 38.9  | 25.3  |
| 47.5° | 130.7 | 98.9  | 55.4  | 21.8  | 13.5  |
| 50°   | 111.9 | 81.8  | 39.5  | 11.2  | 8.8   |
| 52.5° | 92.4  | 65.4  | 25.9  | 7.7   | 7.1   |
| 55°   | 73.6  | 50.6  | 14.7  | 5.9   | 5.9   |
| 57.5° | 55.4  | 36.5  | 7.7   | 4.7   | 4.1   |
| 60°   | 38.9  | 24.1  | 4.7   | 3.5   | 2.9   |
| 62.5° | 22.4  | 14.1  | 3.5   | 2.4   | 2.4   |
| 65°   | 8.8   | 6.5   | 2.4   | 1.2   | 1.2   |
| 67.5° | 0.6   | 1.8   | 1.2   | 0.6   | 0.6   |
| 70°   | 0.0   | 0.0   | 0.6   | 0.6   | 0.6   |
| 72.5° | 0.0   | 0.0   | 0.6   | 0.6   | 0.6   |
| 75°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.6   |
| 77.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 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 | 10.25            | 11.43 | 10.62 | 11.74 | 12.06 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 10.09            | 11.13 | 10.47 | 11.46 | 11.82 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 10.01            | 10.96 | 10.41 | 11.31 | 11.70 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 9.91             | 10.79 | 10.33 | 11.16 | 11.56 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 9.87             | 10.69 | 10.30 | 11.08 | 11.49 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 9.81             | 10.60 | 10.25 | 10.98 | 11.41 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 10.01            | 10.97 | 10.42 | 11.32 | 11.71 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 9.85             | 10.62 | 10.26 | 11.02 | 11.43 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 9.74             | 10.42 | 10.18 | 10.85 | 11.29 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 9.65             | 10.23 | 10.11 | 10.68 | 11.15 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 9.58             | 10.13 | 10.05 | 10.58 | 11.05 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 9.52             | 10.00 | 10.01 | 10.49 | 10.96 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 9.58             | 10.13 | 10.05 | 10.58 | 11.05 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 9.46             | 9.91  | 9.97  | 10.41 | 10.89 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 9.39             | 9.79  | 9.92  | 10.31 | 10.80 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 9.34             | 9.69  | 9.86  | 10.19 | 10.76 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 9.52             | 10.00 | 10.01 | 10.49 | 10.96 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 9.39             | 9.79  | 9.92  | 10.31 | 10.80 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 9.34             | 9.69  | 9.86  | 10.19 | 10.76 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |