

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: P1055761

Luminaire Tested: S123R3DR-H340D950-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055761  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123R3DR-H340D950-X4F0-XX-UDD-FLL-B  
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: -

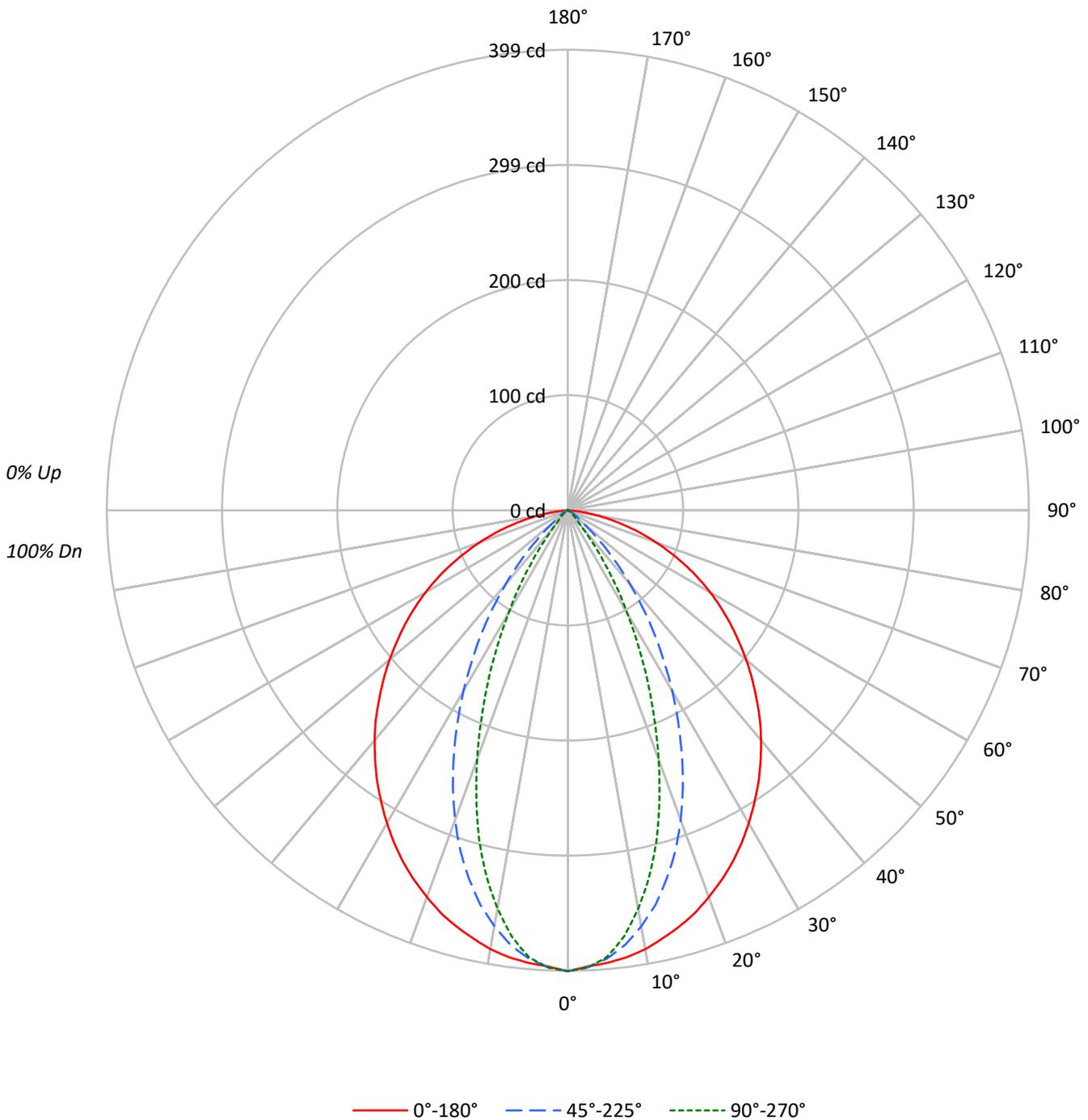
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 467.3 lumens  
Efficiency: N/A  
Efficacy: 39.9 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
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 | 108 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98  | 98  | 97  | 95  | 95  | 93  | 92  | 90  |
| 2   | 105 | 99  | 94  | 89  | 102 | 97  | 92  | 88  | 93  | 90  | 86  | 90  | 87  | 84  | 87  | 85  | 83  | 81  |
| 3   | 98  | 90  | 84  | 79  | 96  | 88  | 83  | 78  | 86  | 81  | 77  | 83  | 79  | 76  | 81  | 77  | 74  | 73  |
| 4   | 92  | 82  | 75  | 70  | 90  | 81  | 75  | 70  | 79  | 73  | 69  | 77  | 72  | 68  | 75  | 71  | 67  | 65  |
| 5   | 86  | 76  | 69  | 63  | 84  | 75  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 62  | 69  | 65  | 61  | 59  |
| 6   | 81  | 70  | 63  | 58  | 79  | 69  | 62  | 57  | 67  | 61  | 57  | 66  | 61  | 56  | 64  | 60  | 56  | 54  |
| 7   | 76  | 65  | 58  | 53  | 74  | 64  | 57  | 52  | 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  | 48  | 46  |
| 9   | 68  | 56  | 49  | 45  | 66  | 56  | 49  | 45  | 55  | 49  | 45  | 54  | 48  | 44  | 53  | 48  | 44  | 43  |
| 10  | 64  | 53  | 46  | 42  | 63  | 52  | 46  | 42  | 51  | 46  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 40  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4814 | 4814 | 4814 |
| 5°  | 4762 | 4718 | 4702 |
| 10° | 4727 | 4478 | 4290 |
| 15° | 4658 | 4125 | 3697 |
| 20° | 4575 | 3662 | 2945 |
| 25° | 4480 | 3102 | 2171 |
| 30° | 4359 | 2514 | 1424 |
| 35° | 4231 | 1915 | 780  |
| 40° | 4094 | 1324 | 268  |
| 45° | 3934 | 769  | 155  |
| 50° | 3776 | 304  | 94   |
| 55° | 3613 | 191  | 44   |
| 60° | 3426 | 121  | 19   |
| 65° | 3189 | 60   | 11   |
| 70° | 2862 | 28   | 14   |
| 75° | 2432 | 19   | 19   |
| 80° | 1812 | 28   | 0    |
| 85° | 692  | 0    | 0    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3934 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 36.6   | 7.8       |
| 10°-20°   | 92.9   | 19.9      |
| 20°-30°   | 110.8  | 23.7      |
| 30°-40°   | 94.0   | 20.1      |
| 40°-50°   | 63.9   | 13.7      |
| 50°-60°   | 39.6   | 8.5       |
| 60°-70°   | 20.0   | 4.3       |
| 70°-80°   | 8.2    | 1.7       |
| 80°-90°   | 1.3    | 0.3       |
| 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°    | 240.3  | 51.4      |
| 0°-40°    | 334.4  | 71.5      |
| 0°-60°    | 437.8  | 93.7      |
| 0°-90°    | 467.3  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 467.3  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 399 | 399   | 399 | 399   | 399 |      |
| 5°  | 394 | 397   | 390 | 387   | 388 | 37   |
| 15° | 373 | 364   | 330 | 304   | 296 | 105  |
| 25° | 337 | 305   | 233 | 180   | 163 | 155  |
| 35° | 288 | 231   | 130 | 70    | 53  | 180  |
| 45° | 231 | 151   | 45  | 11    | 9   | 178  |
| 55° | 172 | 76    | 9   | 3     | 2   | 154  |
| 65° | 112 | 19    | 2   | 0     | 0   | 110  |
| 75° | 52  | 3     | 0   | 0     | 0   | 55   |
| 85° | 5   | 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°    | 399.3 | 399.3 | 399.3 | 399.3 | 399.3 |
| 2.5°  | 395.6 | 401.0 | 396.4 | 396.0 | 396.4 |
| 5°    | 393.5 | 397.2 | 389.8 | 386.9 | 388.5 |
| 7.5°  | 390.6 | 392.3 | 379.8 | 372.4 | 372.4 |
| 10°   | 386.1 | 384.8 | 365.8 | 353.3 | 350.4 |
| 12.5° | 379.8 | 374.9 | 350.0 | 330.5 | 325.2 |
| 15°   | 373.2 | 363.7 | 330.5 | 304.5 | 296.2 |
| 17.5° | 365.8 | 351.3 | 309.4 | 275.5 | 263.4 |
| 20°   | 356.6 | 337.2 | 285.4 | 244.0 | 229.5 |
| 22.5° | 347.1 | 321.8 | 260.1 | 211.7 | 195.5 |
| 25°   | 336.8 | 305.3 | 233.2 | 180.2 | 163.2 |
| 27.5° | 325.2 | 287.9 | 206.7 | 149.9 | 131.3 |
| 30°   | 313.1 | 269.7 | 180.6 | 121.0 | 102.3 |
| 32.5° | 300.3 | 250.6 | 154.5 | 94.4  | 77.0  |
| 35°   | 287.5 | 230.7 | 130.1 | 70.0  | 53.0  |
| 37.5° | 273.8 | 210.8 | 106.5 | 48.5  | 33.6  |
| 40°   | 260.1 | 191.4 | 84.1  | 30.7  | 17.0  |
| 42.5° | 246.0 | 171.1 | 63.8  | 15.3  | 11.6  |
| 45°   | 230.7 | 151.2 | 45.1  | 11.2  | 9.1   |
| 47.5° | 216.2 | 132.1 | 29.8  | 9.1   | 7.0   |
| 50°   | 201.3 | 113.1 | 16.2  | 6.6   | 5.0   |
| 52.5° | 186.4 | 94.9  | 11.6  | 5.0   | 3.3   |
| 55°   | 171.9 | 76.2  | 9.1   | 3.3   | 2.1   |
| 57.5° | 157.0 | 60.1  | 7.0   | 2.1   | 1.2   |
| 60°   | 142.1 | 44.3  | 5.0   | 1.2   | 0.8   |
| 62.5° | 127.2 | 30.7  | 3.3   | 0.8   | 0.4   |
| 65°   | 111.8 | 18.6  | 2.1   | 0.4   | 0.4   |
| 67.5° | 96.1  | 12.8  | 1.2   | 0.4   | 0.4   |
| 70°   | 81.2  | 9.1   | 0.8   | 0.4   | 0.4   |
| 72.5° | 66.3  | 5.8   | 0.4   | 0.4   | 0.0   |
| 75°   | 52.2  | 3.3   | 0.4   | 0.4   | 0.4   |
| 77.5° | 38.5  | 1.2   | 0.4   | 0.4   | 0.0   |
| 80°   | 26.1  | 0.4   | 0.4   | 0.4   | 0.0   |
| 82.5° | 14.5  | 0.0   | 0.4   | 0.4   | 0.0   |
| 85°   | 5.0   | 0.0   | 0.0   | 0.4   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.4   | 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 | 14.51            | 15.79 | 14.88 | 16.10 | 16.42 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.45            | 17.59 | 16.83 | 17.92 | 18.28 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 17.28            | 18.34 | 17.68 | 18.69 | 19.07 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.83            | 18.80 | 18.25 | 19.17 | 19.57 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.96            | 18.88 | 18.39 | 19.27 | 19.67 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.98            | 18.86 | 18.42 | 19.24 | 19.67 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 14.27            | 15.33 | 14.68 | 15.68 | 16.07 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 16.23            | 17.09 | 16.64 | 17.49 | 17.90 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 17.04            | 17.81 | 17.47 | 18.23 | 18.67 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.64            | 18.30 | 18.10 | 18.75 | 19.22 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.79            | 18.41 | 18.26 | 18.86 | 19.33 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.84            | 18.38 | 18.33 | 18.87 | 19.34 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 16.90            | 17.51 | 17.37 | 17.96 | 18.43 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.48            | 17.98 | 17.98 | 18.48 | 18.96 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.63            | 18.08 | 18.15 | 18.59 | 19.09 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 17.68            | 18.08 | 18.20 | 18.58 | 19.15 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 16.85            | 17.39 | 17.34 | 17.88 | 18.35 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 17.41            | 17.86 | 17.94 | 18.38 | 18.87 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 17.58            | 17.98 | 18.10 | 18.47 | 19.05 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |