

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: P1055327

Luminaire Tested: S122R3DR-H290D940-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055327  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122R3DR-H290D940-X4F0-XX-UDD-FLL-S  
Description: DEFINE 2, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

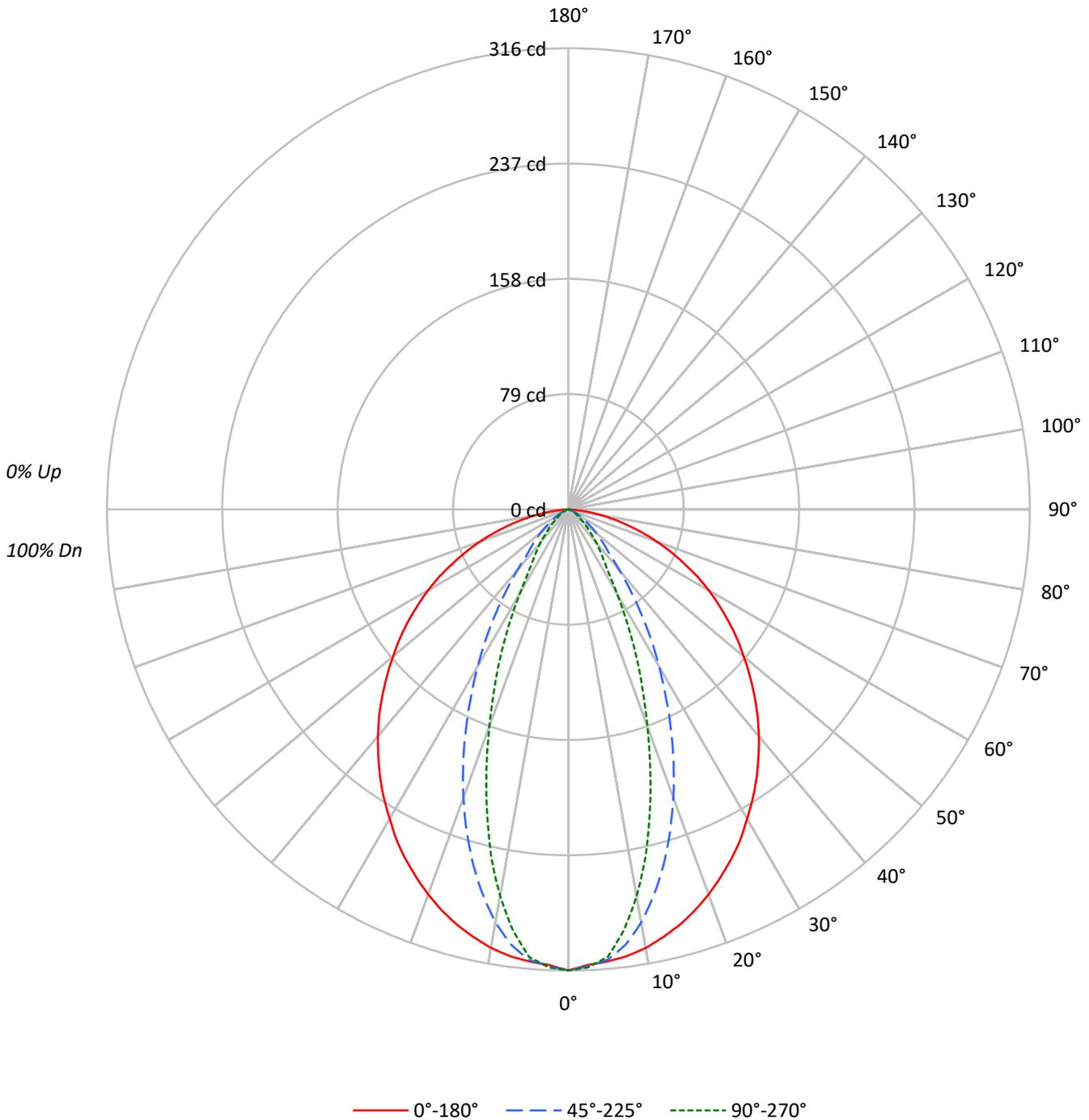
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 362.1 lumens  
Efficiency: N/A  
Efficacy: 30.9 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 0.64 / 0.81  
Luminous Opening: Rectangular (W 0.15' 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  | 94  | 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  | 83  | 78  | 95  | 88  | 82  | 77  | 85  | 80  | 76  | 82  | 78  | 74  | 80  | 76  | 73  | 71  |
| 4   | 91  | 81  | 74  | 69  | 89  | 80  | 74  | 69  | 78  | 72  | 68  | 76  | 71  | 67  | 74  | 70  | 66  | 64  |
| 5   | 85  | 75  | 67  | 62  | 83  | 74  | 67  | 62  | 72  | 66  | 61  | 70  | 65  | 61  | 68  | 64  | 60  | 58  |
| 6   | 80  | 69  | 62  | 56  | 78  | 68  | 61  | 56  | 66  | 60  | 56  | 65  | 59  | 55  | 63  | 59  | 55  | 53  |
| 7   | 75  | 64  | 57  | 52  | 74  | 63  | 56  | 51  | 62  | 56  | 51  | 60  | 55  | 51  | 59  | 54  | 50  | 49  |
| 8   | 71  | 59  | 52  | 47  | 69  | 59  | 52  | 47  | 58  | 51  | 47  | 56  | 51  | 47  | 55  | 50  | 47  | 45  |
| 9   | 67  | 56  | 49  | 44  | 66  | 55  | 48  | 44  | 54  | 48  | 44  | 53  | 47  | 43  | 52  | 47  | 43  | 42  |
| 10  | 63  | 52  | 45  | 41  | 62  | 52  | 45  | 41  | 51  | 45  | 41  | 50  | 44  | 40  | 49  | 44  | 40  | 39  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5985 | 5985 | 5985 |
| 5°  | 5913 | 5890 | 5854 |
| 10° | 5870 | 5527 | 5177 |
| 15° | 5778 | 4943 | 4223 |
| 20° | 5659 | 4238 | 3186 |
| 25° | 5521 | 3472 | 2274 |
| 30° | 5353 | 2711 | 1448 |
| 35° | 5195 | 1989 | 967  |
| 40° | 5018 | 1340 | 727  |
| 45° | 4823 | 943  | 520  |
| 50° | 4622 | 719  | 365  |
| 55° | 4426 | 499  | 268  |
| 60° | 4210 | 337  | 220  |
| 65° | 3905 | 242  | 175  |
| 70° | 3562 | 194  | 150  |
| 75° | 3089 | 168  | 110  |
| 80° | 2455 | 131  | 131  |
| 85° | 1348 | 174  | 87   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4823 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 28.9   | 8.0       |
| 10°-20°   | 70.9   | 19.6      |
| 20°-30°   | 81.0   | 22.4      |
| 30°-40°   | 68.7   | 19.0      |
| 40°-50°   | 51.2   | 14.2      |
| 50°-60°   | 33.1   | 9.1       |
| 60°-70°   | 18.5   | 5.1       |
| 70°-80°   | 8.1    | 2.2       |
| 80°-90°   | 1.7    | 0.5       |
| 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°    | 180.8  | 49.9      |
| 0°-40°    | 249.4  | 68.9      |
| 0°-60°    | 333.8  | 92.2      |
| 0°-90°    | 362.1  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 362.1  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 316 | 316   | 316 | 316   | 316 |      |
| 5°  | 311 | 315   | 310 | 307   | 308 | 30   |
| 15° | 295 | 287   | 252 | 225   | 215 | 83   |
| 25° | 264 | 233   | 166 | 122   | 109 | 122  |
| 35° | 225 | 169   | 86  | 47    | 42  | 140  |
| 45° | 180 | 107   | 35  | 23    | 19  | 139  |
| 55° | 134 | 51    | 15  | 9     | 8   | 120  |
| 65° | 87  | 19    | 5   | 4     | 4   | 87   |
| 75° | 42  | 4     | 2   | 2     | 2   | 45   |
| 85° | 6   | 0     | 1   | 0     | 0   | 9    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 315.9 | 315.9 | 315.9 | 315.9 | 315.9 |
| 2.5°  | 312.4 | 317.1 | 313.2 | 313.2 | 314.0 |
| 5°    | 310.9 | 314.8 | 309.7 | 306.6 | 307.8 |
| 7.5°  | 308.6 | 311.3 | 300.8 | 291.5 | 290.8 |
| 10°   | 305.1 | 306.3 | 287.3 | 273.0 | 269.1 |
| 12.5° | 300.1 | 297.3 | 270.6 | 250.5 | 243.9 |
| 15°   | 294.6 | 287.3 | 252.0 | 225.3 | 215.3 |
| 17.5° | 288.1 | 274.9 | 231.5 | 199.0 | 186.6 |
| 20°   | 280.7 | 262.1 | 210.2 | 171.5 | 158.0 |
| 22.5° | 272.6 | 247.8 | 188.2 | 145.6 | 132.0 |
| 25°   | 264.1 | 233.1 | 166.1 | 121.6 | 108.8 |
| 27.5° | 255.1 | 217.6 | 144.4 | 99.9  | 86.0  |
| 30°   | 244.7 | 201.7 | 123.9 | 79.0  | 66.2  |
| 32.5° | 235.0 | 185.1 | 104.9 | 61.2  | 50.3  |
| 35°   | 224.6 | 169.2 | 86.0  | 46.8  | 41.8  |
| 37.5° | 213.7 | 153.3 | 69.3  | 39.5  | 35.2  |
| 40°   | 202.9 | 137.4 | 54.2  | 33.3  | 29.4  |
| 42.5° | 191.7 | 122.0 | 41.8  | 27.9  | 24.0  |
| 45°   | 180.0 | 106.9 | 35.2  | 22.8  | 19.4  |
| 47.5° | 168.4 | 91.8  | 29.4  | 18.2  | 15.5  |
| 50°   | 156.8 | 77.4  | 24.4  | 14.3  | 12.4  |
| 52.5° | 145.6 | 63.9  | 19.4  | 11.6  | 10.1  |
| 55°   | 134.0 | 50.7  | 15.1  | 9.3   | 8.1   |
| 57.5° | 122.3 | 39.5  | 11.6  | 7.7   | 7.0   |
| 60°   | 111.1 | 29.8  | 8.9   | 6.2   | 5.8   |
| 62.5° | 99.5  | 24.0  | 7.0   | 5.0   | 4.6   |
| 65°   | 87.1  | 18.6  | 5.4   | 4.3   | 3.9   |
| 67.5° | 75.9  | 13.6  | 4.3   | 3.5   | 3.1   |
| 70°   | 64.3  | 9.3   | 3.5   | 3.1   | 2.7   |
| 72.5° | 53.0  | 5.8   | 2.7   | 2.3   | 2.3   |
| 75°   | 42.2  | 3.9   | 2.3   | 1.9   | 1.5   |
| 77.5° | 32.1  | 2.3   | 1.5   | 1.5   | 1.2   |
| 80°   | 22.5  | 1.5   | 1.2   | 1.2   | 1.2   |
| 82.5° | 13.9  | 1.2   | 0.8   | 0.8   | 0.8   |
| 85°   | 6.2   | 0.4   | 0.8   | 0.4   | 0.4   |
| 87.5° | 1.2   | 0.4   | 0.4   | 0.4   | 0.4   |
| 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 | 14.47            | 15.79 | 14.83 | 16.10 | 16.42 | 0.75           | 2.07 | 1.12 | 2.39 | 2.70 |
|                 | 3H   | 16.94            | 18.11 | 17.32 | 18.44 | 18.81 | 1.61           | 2.78 | 1.99 | 3.11 | 3.48 |
|                 | 4H   | 17.90            | 18.99 | 18.30 | 19.34 | 19.72 | 1.87           | 2.97 | 2.28 | 3.32 | 3.70 |
|                 | 6H   | 18.58            | 19.59 | 19.00 | 19.96 | 20.35 | 2.08           | 3.08 | 2.49 | 3.45 | 3.85 |
|                 | 8H   | 18.78            | 19.73 | 19.21 | 20.12 | 20.52 | 2.16           | 3.11 | 2.59 | 3.50 | 3.91 |
|                 | 12H  | 18.86            | 19.77 | 19.29 | 20.15 | 20.58 | 2.19           | 3.10 | 2.62 | 3.48 | 3.91 |
| 4H              | 2H   | 14.25            | 15.34 | 14.66 | 15.70 | 16.08 | 1.33           | 2.42 | 1.73 | 2.77 | 3.15 |
|                 | 3H   | 16.74            | 17.63 | 17.15 | 18.04 | 18.44 | 2.37           | 3.26 | 2.78 | 3.66 | 4.07 |
|                 | 4H   | 17.68            | 18.48 | 18.12 | 18.90 | 19.34 | 2.72           | 3.52 | 3.15 | 3.94 | 4.38 |
|                 | 6H   | 18.44            | 19.13 | 18.90 | 19.57 | 20.04 | 3.02           | 3.71 | 3.49 | 4.16 | 4.63 |
|                 | 8H   | 18.68            | 19.32 | 19.15 | 19.77 | 20.24 | 3.13           | 3.78 | 3.60 | 4.23 | 4.70 |
|                 | 12H  | 18.81            | 19.38 | 19.29 | 19.86 | 20.33 | 3.19           | 3.75 | 3.67 | 4.24 | 4.71 |
| 8H              | 4H   | 17.55            | 18.19 | 18.02 | 18.64 | 19.11 | 3.09           | 3.73 | 3.56 | 4.18 | 4.65 |
|                 | 6H   | 18.29            | 18.81 | 18.79 | 19.31 | 19.79 | 3.47           | 3.99 | 3.97 | 4.49 | 4.97 |
|                 | 8H   | 18.53            | 19.00 | 19.05 | 19.52 | 20.01 | 3.62           | 4.09 | 4.14 | 4.61 | 5.10 |
|                 | 12H  | 18.68            | 19.10 | 19.20 | 19.59 | 20.16 | 3.71           | 4.13 | 4.23 | 4.62 | 5.19 |
| 12H             | 4H   | 17.50            | 18.07 | 17.99 | 18.56 | 19.03 | 3.21           | 3.78 | 3.70 | 4.26 | 4.74 |
|                 | 6H   | 18.23            | 18.70 | 18.75 | 19.21 | 19.70 | 3.59           | 4.06 | 4.11 | 4.57 | 5.07 |
|                 | 8H   | 18.49            | 18.90 | 19.01 | 19.40 | 19.97 | 3.78           | 4.20 | 4.30 | 4.69 | 5.26 |