

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: P1055725

Luminaire Tested: S123R3DR-H1165D930-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055725  
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-H1165D930-X4F0-XX-UDD-F-B  
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

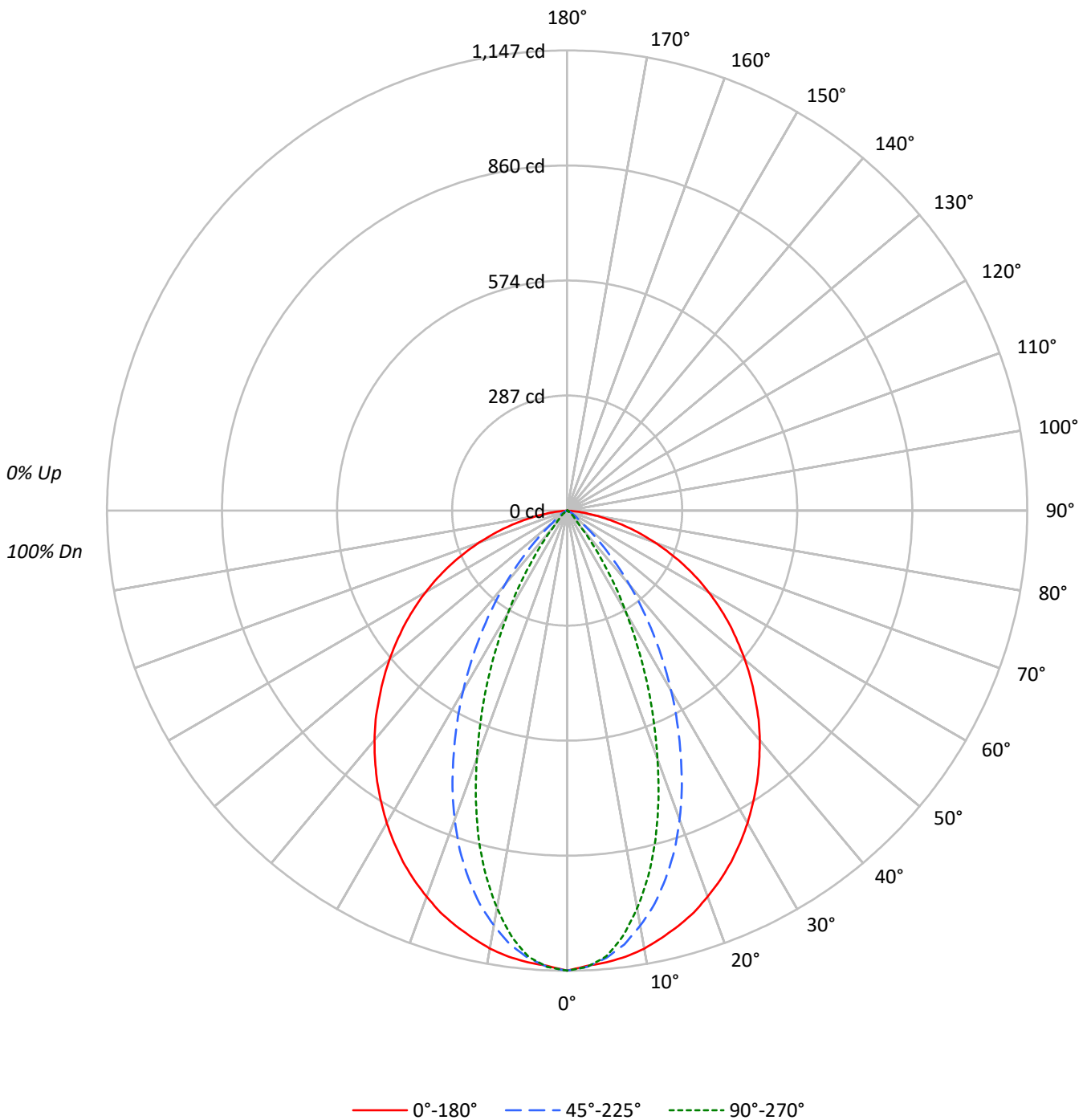
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1342.0 lumens  
Efficiency: N/A  
Efficacy: 36.7 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): 36.6  
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  | 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 |    |    |    |    | 100 |   |  |   |
| 1   | 112 | 108 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98  | 98  | 97  | 95  | 95  | 93  | 92  | 90  |    |    |    |    | 90  |   |  |   |
| 2   | 105 | 99  | 94  | 89  | 102 | 97  | 92  | 88  | 93  | 90  | 86  | 90  | 87  | 84  | 87  | 85  | 83  | 81  |    |    |    |    | 81  |   |  |   |
| 3   | 98  | 90  | 84  | 79  | 96  | 88  | 83  | 78  | 86  | 81  | 77  | 83  | 79  | 76  | 81  | 77  | 74  | 73  |    |    |    |    | 73  |   |  |   |
| 4   | 92  | 82  | 75  | 70  | 90  | 81  | 75  | 70  | 79  | 73  | 69  | 77  | 72  | 68  | 75  | 71  | 67  | 65  |    |    |    |    | 65  |   |  |   |
| 5   | 86  | 76  | 69  | 63  | 84  | 75  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 62  | 69  | 65  | 61  | 59  |    |    |    |    | 59  |   |  |   |
| 6   | 81  | 70  | 63  | 57  | 79  | 69  | 62  | 57  | 67  | 61  | 57  | 66  | 61  | 56  | 64  | 60  | 56  | 54  |    |    |    |    | 54  |   |  |   |
| 7   | 76  | 65  | 58  | 53  | 74  | 64  | 57  | 52  | 63  | 57  | 52  | 61  | 56  | 52  | 60  | 55  | 52  | 50  |    |    |    |    | 50  |   |  |   |
| 8   | 71  | 60  | 53  | 48  | 70  | 60  | 53  | 48  | 58  | 52  | 48  | 57  | 52  | 48  | 56  | 51  | 48  | 46  |    |    |    |    | 46  |   |  |   |
| 9   | 68  | 56  | 49  | 45  | 66  | 56  | 49  | 45  | 55  | 49  | 45  | 54  | 48  | 44  | 53  | 48  | 44  | 43  |    |    |    |    | 43  |   |  |   |
| 10  | 64  | 53  | 46  | 42  | 63  | 52  | 46  | 42  | 51  | 46  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 40  |    |    |    |    | 40  |   |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13824 | 13824 | 13824 |
| 5°  | 13676 | 13545 | 13503 |
| 10° | 13571 | 12858 | 12320 |
| 15° | 13377 | 11848 | 10614 |
| 20° | 13139 | 10514 | 8454  |
| 25° | 12864 | 8908  | 6234  |
| 30° | 12518 | 7220  | 4090  |
| 35° | 12150 | 5497  | 2240  |
| 40° | 11757 | 3801  | 768   |
| 45° | 11296 | 2210  | 447   |
| 50° | 10843 | 870   | 268   |
| 55° | 10375 | 551   | 124   |
| 60° | 9838  | 345   | 58    |
| 65° | 9160  | 168   | 34    |
| 70° | 8217  | 85    | 42    |
| 75° | 6983  | 56    | 56    |
| 80° | 5200  | 83    | 0     |
| 85° | 1978  | 0     | 0     |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11296 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 105.1  | 7.8       |
| 10°-20°   | 266.8  | 19.9      |
| 20°-30°   | 318.2  | 23.7      |
| 30°-40°   | 269.9  | 20.1      |
| 40°-50°   | 183.5  | 13.7      |
| 50°-60°   | 113.7  | 8.5       |
| 60°-70°   | 57.6   | 4.3       |
| 70°-80°   | 23.5   | 1.8       |
| 80°-90°   | 3.6    | 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°    | 690.1  | 51.4      |
| 0°-40°    | 960.1  | 71.5      |
| 0°-60°    | 1257.3 | 93.7      |
| 0°-90°    | 1342.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1342.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1147 | 1147  | 1147 | 1147  | 1147 |      |
| 5°  | 1130 | 1141  | 1119 | 1111  | 1116 | 107  |
| 15° | 1072 | 1044  | 949  | 874   | 850  | 302  |
| 25° | 967  | 877   | 670  | 517   | 469  | 445  |
| 35° | 826  | 662   | 374  | 201   | 152  | 516  |
| 45° | 662  | 434   | 130  | 32    | 26   | 512  |
| 55° | 494  | 219   | 26   | 10    | 6    | 441  |
| 65° | 321  | 54    | 6    | 1     | 1    | 317  |
| 75° | 150  | 10    | 1    | 1     | 1    | 159  |
| 85° | 14   | 0     | 0    | 1     | 0    | 25   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1146.6 | 1146.6 | 1146.6 | 1146.6 | 1146.6 |
| 2.5°  | 1135.9 | 1151.4 | 1138.3 | 1137.1 | 1138.3 |
| 5°    | 1130.0 | 1140.7 | 1119.2 | 1110.9 | 1115.7 |
| 7.5°  | 1121.6 | 1126.4 | 1090.7 | 1069.3 | 1069.3 |
| 10°   | 1108.5 | 1105.0 | 1050.3 | 1014.6 | 1006.3 |
| 12.5° | 1090.7 | 1076.4 | 1005.1 | 949.2  | 933.7  |
| 15°   | 1071.7 | 1044.3 | 949.2  | 874.2  | 850.4  |
| 17.5° | 1050.3 | 1008.6 | 888.5  | 791.0  | 756.5  |
| 20°   | 1024.1 | 968.2  | 819.5  | 700.6  | 658.9  |
| 22.5° | 996.7  | 924.2  | 747.0  | 607.8  | 561.4  |
| 25°   | 967.0  | 876.6  | 669.6  | 517.4  | 468.6  |
| 27.5° | 933.7  | 826.6  | 593.5  | 430.6  | 377.0  |
| 30°   | 899.2  | 774.3  | 518.6  | 347.3  | 293.8  |
| 32.5° | 862.3  | 719.6  | 443.7  | 271.2  | 221.2  |
| 35°   | 825.5  | 662.5  | 373.5  | 201.0  | 152.2  |
| 37.5° | 786.2  | 605.4  | 305.7  | 139.2  | 96.3   |
| 40°   | 747.0  | 549.5  | 241.5  | 88.0   | 48.8   |
| 42.5° | 706.5  | 491.2  | 183.2  | 44.0   | 33.3   |
| 45°   | 662.5  | 434.1  | 129.6  | 32.1   | 26.2   |
| 47.5° | 620.9  | 379.4  | 85.6   | 26.2   | 20.2   |
| 50°   | 578.1  | 324.7  | 46.4   | 19.0   | 14.3   |
| 52.5° | 535.2  | 272.4  | 33.3   | 14.3   | 9.5    |
| 55°   | 493.6  | 218.9  | 26.2   | 9.5    | 5.9    |
| 57.5° | 450.8  | 172.5  | 20.2   | 5.9    | 3.6    |
| 60°   | 408.0  | 127.3  | 14.3   | 3.6    | 2.4    |
| 62.5° | 365.2  | 88.0   | 9.5    | 2.4    | 1.2    |
| 65°   | 321.1  | 53.5   | 5.9    | 1.2    | 1.2    |
| 67.5° | 275.9  | 36.9   | 3.6    | 1.2    | 1.2    |
| 70°   | 233.1  | 26.2   | 2.4    | 1.2    | 1.2    |
| 72.5° | 190.3  | 16.7   | 1.2    | 1.2    | 0.0    |
| 75°   | 149.9  | 9.5    | 1.2    | 1.2    | 1.2    |
| 77.5° | 110.6  | 3.6    | 1.2    | 1.2    | 0.0    |
| 80°   | 74.9   | 1.2    | 1.2    | 1.2    | 0.0    |
| 82.5° | 41.6   | 0.0    | 1.2    | 1.2    | 0.0    |
| 85°   | 14.3   | 0.0    | 0.0    | 1.2    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 1.2    | 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 | 18.17            | 19.45 | 18.54 | 19.77 | 20.08 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 20.12            | 21.25 | 20.50 | 21.58 | 21.95 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 20.95            | 22.00 | 21.35 | 22.35 | 22.74 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 21.50            | 22.47 | 21.91 | 22.84 | 23.23 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 21.62            | 22.54 | 22.06 | 22.93 | 23.34 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 21.65            | 22.53 | 22.08 | 22.91 | 23.34 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H              | 2H   | 17.94            | 18.99 | 18.34 | 19.34 | 19.73 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 3H   | 19.89            | 20.75 | 20.30 | 21.16 | 21.56 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 4H   | 20.70            | 21.47 | 21.14 | 21.89 | 22.34 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 21.30            | 21.97 | 21.77 | 22.41 | 22.88 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 21.46            | 22.07 | 21.93 | 22.52 | 22.99 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 21.50            | 22.05 | 21.99 | 22.53 | 23.01 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H              | 4H   | 20.56            | 21.18 | 21.03 | 21.63 | 22.10 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 21.14            | 21.64 | 21.65 | 22.14 | 22.62 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 21.29            | 21.74 | 21.82 | 22.26 | 22.75 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 12H  | 21.35            | 21.74 | 21.87 | 22.24 | 22.81 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H             | 4H   | 20.51            | 21.06 | 21.00 | 21.54 | 22.02 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 6H   | 21.08            | 21.53 | 21.60 | 22.05 | 22.54 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |
|                 | 8H   | 21.25            | 21.64 | 21.76 | 22.14 | 22.71 | 0.00           | 0.00 | 0.00 | 0.00 | 0.00 |