

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: P1059561

Luminaire Tested: S123RDR-H1165D940-X4F0-XX-UDD-WVL-W

Issue Date: 8/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1059561  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2406-143-64)  
Test Lab: INNOVATION CENTER  
Issue Date: 8/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDR-H1165D940-X4F0-XX-UDD-WVL-W  
Description: DEFINE 3 WHITE REGRESSED DIRECT RECESSED HOUSING WITH WHITE STRAIGHT BLADE  
LOUVER WITH DIFFUSER  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

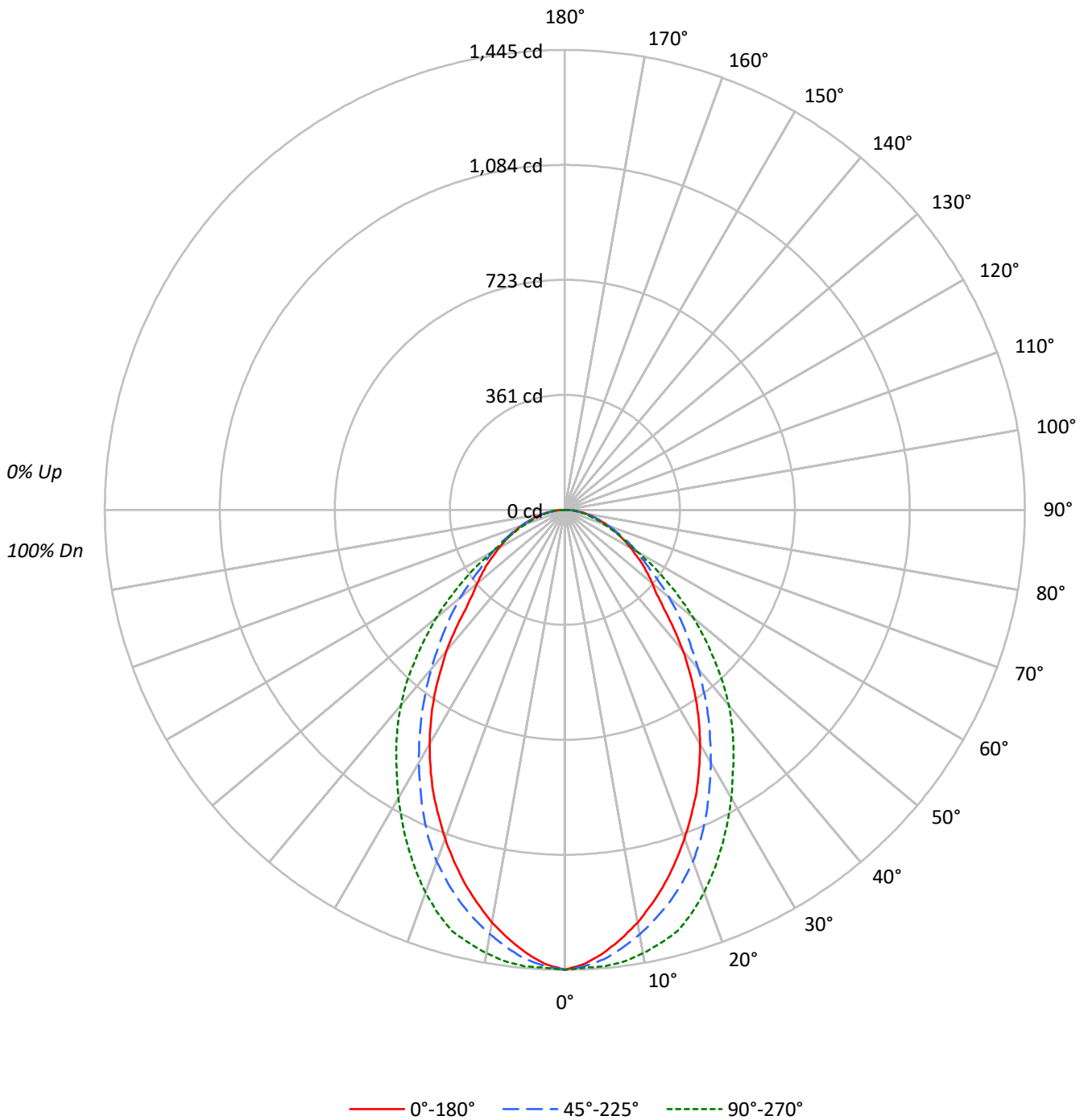
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2538.6 lumens  
Efficiency: N/A  
Efficacy: 69.6 lumens/watt  
Spacing Criteria (0/90/45): 0.94 / 1.1 / 1.09  
Luminous Opening: Rectangular (W 0.23' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 36.5  
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 | 0  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |   |
| 1   | 110 | 106 | 102 | 99  | 108 | 104 | 101 | 97  | 100 | 97  | 94  | 96  | 94  | 92  | 92  | 91  | 89  | 87  |    |    |    |   |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 75  |    |    |    |   |
| 3   | 94  | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |    |    |    |   |
| 4   | 87  | 76  | 69  | 63  | 85  | 75  | 68  | 62  | 73  | 66  | 61  | 70  | 65  | 61  | 68  | 64  | 60  | 58  |    |    |    |   |
| 5   | 81  | 69  | 61  | 55  | 79  | 68  | 61  | 55  | 66  | 59  | 54  | 64  | 58  | 54  | 62  | 57  | 53  | 51  |    |    |    |   |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 57  | 52  | 48  | 46  |    |    |    |   |
| 7   | 70  | 58  | 50  | 44  | 69  | 57  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 53  | 48  | 43  | 41  |    |    |    |   |
| 8   | 66  | 53  | 46  | 40  | 64  | 53  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 39  | 38  |    |    |    |   |
| 9   | 62  | 49  | 42  | 37  | 60  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 34  |    |    |    |   |
| 10  | 58  | 46  | 39  | 34  | 57  | 45  | 38  | 34  | 45  | 38  | 34  | 44  | 38  | 33  | 43  | 37  | 33  | 32  |    |    |    |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16964 | 16964 | 16964 |
| 5°  | 16473 | 16706 | 16970 |
| 10° | 15699 | 16143 | 16871 |
| 15° | 14767 | 15492 | 16656 |
| 20° | 13734 | 14698 | 15986 |
| 25° | 12678 | 13627 | 15110 |
| 30° | 11514 | 12440 | 14177 |
| 35° | 10248 | 11229 | 13243 |
| 40° | 8843  | 10005 | 12274 |
| 45° | 7308  | 8858  | 11005 |
| 50° | 6564  | 7813  | 9607  |
| 55° | 6082  | 6668  | 7966  |
| 60° | 5606  | 6073  | 6101  |
| 65° | 5215  | 5493  | 5112  |
| 70° | 4910  | 4995  | 4480  |
| 75° | 4623  | 4455  | 3947  |
| 80° | 4375  | 4037  | 3699  |
| 85° | 4190  | 4527  | 4190  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 11005 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 133.8  | 5.3       |
| 10°-20°   | 360.5  | 14.2      |
| 20°-30°   | 487.7  | 19.2      |
| 30°-40°   | 501.1  | 19.7      |
| 40°-50°   | 420.9  | 16.6      |
| 50°-60°   | 301.7  | 11.9      |
| 60°-70°   | 192.1  | 7.6       |
| 70°-80°   | 105.6  | 4.2       |
| 80°-90°   | 35.2   | 1.4       |
| 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°    | 982.0  | 38.7      |
| 0°-40°    | 1483.1 | 58.4      |
| 0°-60°    | 2205.7 | 86.9      |
| 0°-90°    | 2538.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2538.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1445 | 1445  | 1445 | 1445  | 1445 |      |
| 5°  | 1398 | 1422  | 1417 | 1427  | 1440 | 131  |
| 15° | 1215 | 1248  | 1274 | 1329  | 1370 | 340  |
| 25° | 978  | 1016  | 1052 | 1109  | 1166 | 448  |
| 35° | 715  | 753   | 783  | 853   | 924  | 445  |
| 45° | 440  | 479   | 533  | 610   | 663  | 348  |
| 55° | 297  | 303   | 326  | 369   | 389  | 265  |
| 65° | 188  | 199   | 198  | 186   | 184  | 187  |
| 75° | 102  | 112   | 98   | 91    | 87   | 108  |
| 85° | 31   | 32    | 34   | 35    | 31   | 34   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1444.7 | 1444.7 | 1444.7 | 1444.7 | 1444.7 |
| 2.5°  | 1428.5 | 1448.4 | 1434.8 | 1436.0 | 1439.7 |
| 5°    | 1397.5 | 1422.3 | 1417.3 | 1427.3 | 1439.7 |
| 7.5°  | 1358.9 | 1386.3 | 1387.5 | 1411.1 | 1431.0 |
| 10°   | 1316.6 | 1345.2 | 1353.9 | 1390.0 | 1414.9 |
| 12.5° | 1266.9 | 1298.0 | 1316.6 | 1361.4 | 1393.7 |
| 15°   | 1214.7 | 1248.3 | 1274.4 | 1329.1 | 1370.1 |
| 17.5° | 1157.5 | 1193.6 | 1227.1 | 1285.6 | 1327.8 |
| 20°   | 1099.1 | 1137.6 | 1176.2 | 1230.9 | 1279.3 |
| 22.5° | 1038.1 | 1077.9 | 1117.7 | 1171.2 | 1224.6 |
| 25°   | 978.5  | 1015.8 | 1051.8 | 1109.0 | 1166.2 |
| 27.5° | 913.8  | 952.4  | 983.4  | 1046.8 | 1106.5 |
| 30°   | 849.2  | 887.7  | 917.5  | 983.4  | 1045.6 |
| 32.5° | 782.0  | 821.8  | 849.2  | 917.5  | 982.2  |
| 35°   | 714.9  | 753.4  | 783.3  | 852.9  | 923.8  |
| 37.5° | 644.0  | 686.3  | 716.1  | 794.5  | 864.1  |
| 40°   | 576.9  | 616.7  | 652.7  | 734.8  | 800.7  |
| 42.5° | 507.3  | 548.3  | 589.3  | 673.9  | 734.8  |
| 45°   | 440.1  | 478.7  | 533.4  | 610.5  | 662.7  |
| 47.5° | 391.6  | 416.5  | 479.9  | 544.6  | 594.3  |
| 50°   | 359.3  | 369.3  | 427.7  | 484.9  | 525.9  |
| 52.5° | 327.0  | 334.4  | 374.2  | 426.4  | 457.5  |
| 55°   | 297.1  | 303.4  | 325.7  | 369.3  | 389.1  |
| 57.5° | 264.8  | 271.0  | 289.7  | 314.6  | 325.7  |
| 60°   | 238.7  | 243.7  | 258.6  | 262.3  | 259.8  |
| 62.5° | 212.6  | 220.1  | 227.5  | 218.8  | 215.1  |
| 65°   | 187.7  | 198.9  | 197.7  | 186.5  | 184.0  |
| 67.5° | 165.4  | 176.5  | 170.3  | 159.1  | 155.4  |
| 70°   | 143.0  | 154.2  | 145.5  | 134.3  | 130.5  |
| 72.5° | 121.8  | 134.3  | 120.6  | 110.7  | 108.2  |
| 75°   | 101.9  | 111.9  | 98.2   | 90.8   | 87.0   |
| 77.5° | 83.3   | 90.8   | 78.3   | 72.1   | 69.6   |
| 80°   | 64.7   | 69.6   | 59.7   | 55.9   | 54.7   |
| 82.5° | 47.2   | 49.7   | 43.5   | 46.0   | 44.8   |
| 85°   | 31.1   | 32.3   | 33.6   | 34.8   | 31.1   |
| 87.5° | 14.9   | 21.1   | 21.1   | 19.9   | 16.2   |
| 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 | 17.02            | 18.48 | 17.39 | 18.80 | 19.11 | 18.09          | 19.55 | 18.46 | 19.87 | 20.18 |
|                 | 3H   | 18.72            | 20.03 | 19.10 | 20.36 | 20.72 | 19.18          | 20.49 | 19.55 | 20.81 | 21.18 |
|                 | 4H   | 19.37            | 20.60 | 19.77 | 20.95 | 21.33 | 19.58          | 20.80 | 19.98 | 21.15 | 21.53 |
|                 | 6H   | 19.88            | 21.01 | 20.29 | 21.38 | 21.77 | 19.89          | 21.02 | 20.30 | 21.39 | 21.78 |
|                 | 8H   | 20.05            | 21.13 | 20.48 | 21.52 | 21.92 | 20.02          | 21.10 | 20.45 | 21.49 | 21.89 |
|                 | 12H  | 20.17            | 21.21 | 20.60 | 21.59 | 22.02 | 20.14          | 21.17 | 20.57 | 21.56 | 21.99 |
| 4H              | 2H   | 17.62            | 18.85 | 18.02 | 19.20 | 19.58 | 18.49          | 19.72 | 18.90 | 20.07 | 20.45 |
|                 | 3H   | 19.55            | 20.57 | 19.96 | 20.97 | 21.37 | 19.81          | 20.83 | 20.22 | 21.23 | 21.63 |
|                 | 4H   | 20.36            | 21.28 | 20.79 | 21.69 | 22.13 | 20.33          | 21.25 | 20.76 | 21.66 | 22.10 |
|                 | 6H   | 21.01            | 21.81 | 21.47 | 22.25 | 22.71 | 20.76          | 21.56 | 21.22 | 22.00 | 22.47 |
|                 | 8H   | 21.23            | 21.98 | 21.70 | 22.42 | 22.89 | 20.95          | 21.70 | 21.42 | 22.14 | 22.61 |
|                 | 12H  | 21.40            | 22.07 | 21.89 | 22.55 | 23.02 | 21.14          | 21.80 | 21.62 | 22.28 | 22.75 |
| 8H              | 4H   | 20.60            | 21.34 | 21.06 | 21.79 | 22.26 | 20.58          | 21.32 | 21.04 | 21.77 | 22.23 |
|                 | 6H   | 21.39            | 22.00 | 21.89 | 22.49 | 22.97 | 21.12          | 21.74 | 21.62 | 22.23 | 22.71 |
|                 | 8H   | 21.70            | 22.25 | 22.22 | 22.76 | 23.25 | 21.40          | 21.95 | 21.92 | 22.47 | 22.95 |
|                 | 12H  | 21.97            | 22.46 | 22.48 | 22.95 | 23.52 | 21.69          | 22.18 | 22.20 | 22.68 | 23.24 |
| 12H             | 4H   | 20.61            | 21.27 | 21.09 | 21.75 | 22.23 | 20.60          | 21.27 | 21.09 | 21.75 | 22.22 |
|                 | 6H   | 21.42            | 21.97 | 21.94 | 22.49 | 22.97 | 21.18          | 21.73 | 21.69 | 22.24 | 22.73 |
|                 | 8H   | 21.80            | 22.29 | 22.31 | 22.78 | 23.34 | 21.52          | 22.01 | 22.03 | 22.50 | 23.07 |