

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: P1439895

Luminaire Tested: S124DR-H1005D830-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439895  
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-563-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/2/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DR-H1005D830-X4F0-XX-UDD-FLB-W  
Description: DEFINE 4, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

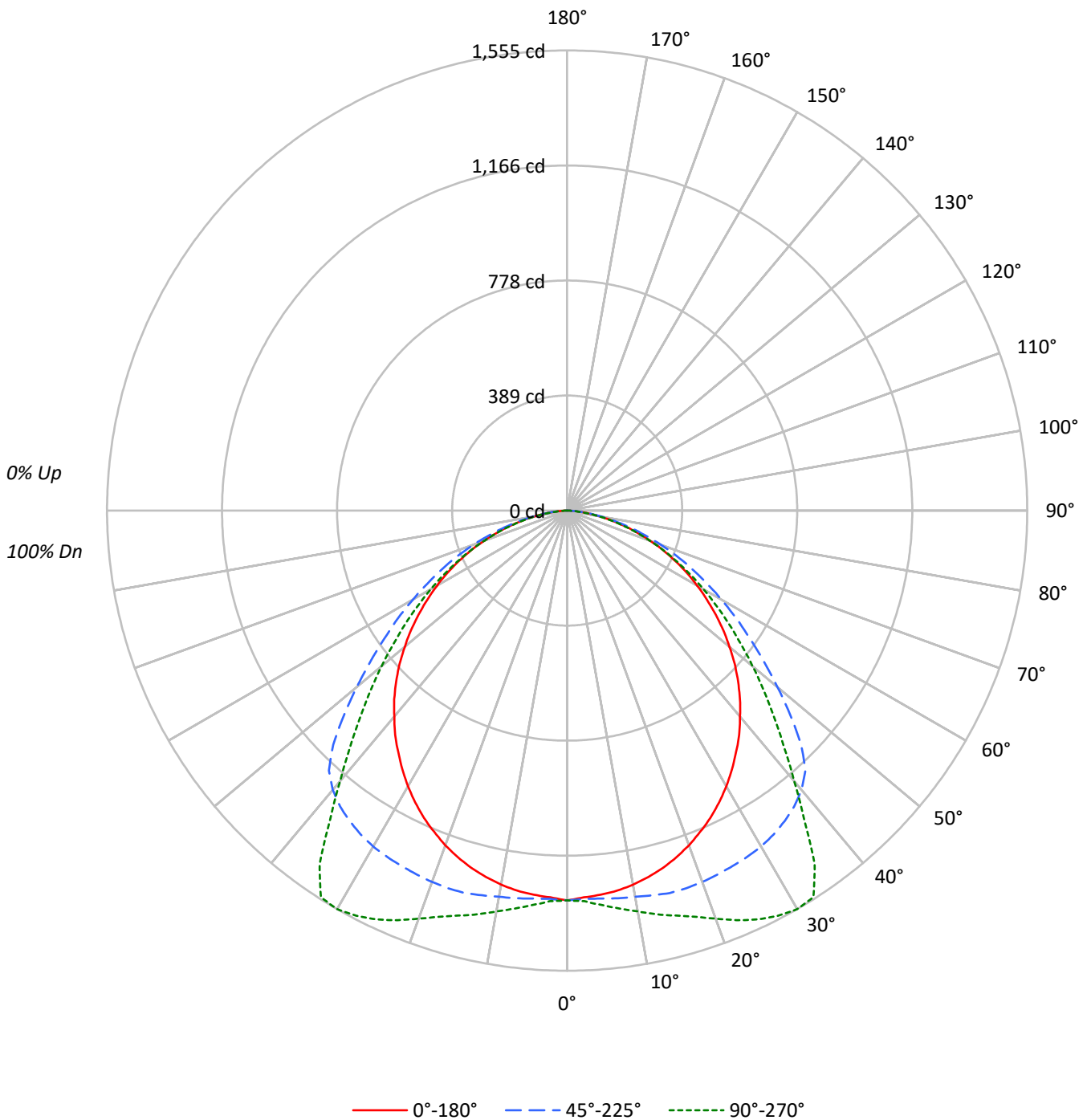
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4003.5 lumens  
Efficiency: N/A  
Efficacy: 109.4 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.53 / 1.51  
Luminous Opening: Rectangular (W 0.31' 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  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 95  | 98  | 95  | 92  | 94  | 92  | 90  | 91  | 89  | 87  | 85  |
| 2   | 100 | 92  | 85  | 80  | 97  | 90  | 84  | 79  | 86  | 81  | 77  | 83  | 79  | 75  | 80  | 77  | 73  | 71  |
| 3   | 91  | 81  | 73  | 67  | 89  | 79  | 72  | 66  | 76  | 70  | 65  | 74  | 68  | 64  | 71  | 66  | 63  | 60  |
| 4   | 83  | 72  | 63  | 57  | 81  | 70  | 62  | 56  | 68  | 61  | 55  | 66  | 60  | 55  | 63  | 58  | 54  | 52  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 55  | 49  | 61  | 54  | 48  | 59  | 53  | 47  | 57  | 52  | 47  | 45  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 48  | 42  | 55  | 48  | 42  | 53  | 47  | 42  | 52  | 46  | 41  | 39  |
| 7   | 66  | 52  | 44  | 38  | 64  | 52  | 43  | 37  | 50  | 43  | 37  | 49  | 42  | 37  | 47  | 41  | 37  | 35  |
| 8   | 61  | 48  | 39  | 34  | 60  | 47  | 39  | 33  | 46  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 31  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 35  | 30  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 30  | 28  |
| 10  | 53  | 40  | 32  | 27  | 52  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 27  | 25  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11647 | 11647 | 11647 |
| 5°  | 11565 | 11680 | 11875 |
| 10° | 11525 | 11896 | 12349 |
| 15° | 11442 | 12247 | 12969 |
| 20° | 11324 | 12565 | 13806 |
| 25° | 11174 | 12927 | 14869 |
| 30° | 10981 | 13383 | 15877 |
| 35° | 10744 | 13827 | 15739 |
| 40° | 10489 | 14219 | 13771 |
| 45° | 10215 | 13982 | 12382 |
| 50° | 9851  | 12767 | 11256 |
| 55° | 9446  | 11618 | 10283 |
| 60° | 8985  | 10652 | 9418  |
| 65° | 8437  | 9709  | 8600  |
| 70° | 7719  | 8688  | 7685  |
| 75° | 6801  | 7464  | 6668  |
| 80° | 5596  | 5988  | 5397  |
| 85° | 3936  | 4068  | 3672  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 13982 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 126.4  | 3.2       |
| 10°-20°   | 378.8  | 9.5       |
| 20°-30°   | 616.6  | 15.4      |
| 30°-40°   | 783.0  | 19.6      |
| 40°-50°   | 763.0  | 19.1      |
| 50°-60°   | 625.6  | 15.6      |
| 60°-70°   | 436.5  | 10.9      |
| 70°-80°   | 224.0  | 5.6       |
| 80°-90°   | 49.7   | 1.2       |
| 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°    | 1121.8 | 28.0      |
| 0°-40°    | 1904.8 | 47.6      |
| 0°-60°    | 3293.3 | 82.3      |
| 0°-90°    | 4003.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4003.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1317 | 1317  | 1317 | 1317  | 1317 |      |
| 5°  | 1303 | 1322  | 1316 | 1325  | 1338 | 124  |
| 15° | 1250 | 1289  | 1338 | 1391  | 1417 | 352  |
| 25° | 1145 | 1219  | 1325 | 1462  | 1524 | 527  |
| 35° | 995  | 1092  | 1281 | 1467  | 1458 | 623  |
| 45° | 817  | 918   | 1118 | 1025  | 990  | 630  |
| 55° | 613  | 707   | 754  | 690   | 667  | 548  |
| 65° | 403  | 462   | 464  | 427   | 411  | 399  |
| 75° | 199  | 221   | 218  | 203   | 195  | 212  |
| 85° | 39   | 40    | 40   | 38    | 36   | 49   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1317.3 | 1317.3 | 1317.3 | 1317.3 | 1317.3 |
| 2.5°  | 1308.3 | 1325.1 | 1313.5 | 1318.6 | 1321.2 |
| 5°    | 1303.1 | 1322.5 | 1316.0 | 1325.1 | 1338.0 |
| 7.5°  | 1295.4 | 1317.3 | 1321.2 | 1339.3 | 1356.1 |
| 10°   | 1283.7 | 1309.6 | 1325.1 | 1356.1 | 1375.5 |
| 12.5° | 1268.2 | 1300.5 | 1331.6 | 1374.2 | 1397.5 |
| 15°   | 1250.1 | 1288.9 | 1338.0 | 1391.0 | 1416.9 |
| 17.5° | 1228.1 | 1274.7 | 1338.0 | 1403.9 | 1438.9 |
| 20°   | 1203.6 | 1257.9 | 1335.4 | 1420.8 | 1467.3 |
| 22.5° | 1175.1 | 1239.8 | 1330.3 | 1440.1 | 1498.3 |
| 25°   | 1145.4 | 1219.1 | 1325.1 | 1462.1 | 1524.2 |
| 27.5° | 1111.8 | 1194.5 | 1318.6 | 1478.9 | 1543.6 |
| 30°   | 1075.6 | 1164.8 | 1310.9 | 1486.7 | 1555.2 |
| 32.5° | 1036.8 | 1129.9 | 1297.9 | 1486.7 | 1548.7 |
| 35°   | 995.4  | 1092.4 | 1281.1 | 1467.3 | 1458.2 |
| 37.5° | 955.4  | 1052.3 | 1260.4 | 1372.9 | 1316.0 |
| 40°   | 908.8  | 1009.7 | 1232.0 | 1239.8 | 1193.2 |
| 42.5° | 864.9  | 964.4  | 1191.9 | 1127.3 | 1085.9 |
| 45°   | 817.0  | 917.9  | 1118.2 | 1025.2 | 990.3  |
| 47.5° | 767.9  | 867.4  | 1022.6 | 933.4  | 901.1  |
| 50°   | 716.2  | 817.0  | 928.2  | 846.8  | 818.3  |
| 52.5° | 665.8  | 762.7  | 837.7  | 766.6  | 739.5  |
| 55°   | 612.8  | 707.1  | 753.7  | 690.3  | 667.1  |
| 57.5° | 559.8  | 650.3  | 677.4  | 619.2  | 597.3  |
| 60°   | 508.1  | 589.5  | 602.4  | 552.0  | 532.6  |
| 62.5° | 456.3  | 526.2  | 531.3  | 487.4  | 470.6  |
| 65°   | 403.3  | 461.5  | 464.1  | 426.6  | 411.1  |
| 67.5° | 351.6  | 399.5  | 399.5  | 367.1  | 354.2  |
| 70°   | 298.6  | 338.7  | 336.1  | 310.3  | 297.3  |
| 72.5° | 248.2  | 276.7  | 274.1  | 254.7  | 245.6  |
| 75°   | 199.1  | 221.1  | 218.5  | 203.0  | 195.2  |
| 77.5° | 152.5  | 168.1  | 165.5  | 155.1  | 148.7  |
| 80°   | 109.9  | 118.9  | 117.6  | 109.9  | 106.0  |
| 82.5° | 72.4   | 77.6   | 75.0   | 69.8   | 67.2   |
| 85°   | 38.8   | 40.1   | 40.1   | 37.5   | 36.2   |
| 87.5° | 14.2   | 14.2   | 14.2   | 14.2   | 12.9   |
| 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 | 20.21            | 21.81 | 20.58 | 22.13 | 22.44 | 20.00          | 21.60 | 20.36 | 21.91 | 22.23 |
|                 | 3H   | 21.72            | 23.16 | 22.09 | 23.48 | 23.84 | 21.47          | 22.91 | 21.85 | 23.24 | 23.60 |
|                 | 4H   | 22.22            | 23.57 | 22.62 | 23.92 | 24.30 | 21.97          | 23.32 | 22.36 | 23.67 | 24.04 |
|                 | 6H   | 22.54            | 23.79 | 22.95 | 24.16 | 24.55 | 22.28          | 23.53 | 22.69 | 23.90 | 24.29 |
|                 | 8H   | 22.62            | 23.82 | 23.05 | 24.21 | 24.61 | 22.36          | 23.55 | 22.78 | 23.94 | 24.34 |
|                 | 12H  | 22.66            | 23.81 | 23.09 | 24.19 | 24.62 | 22.39          | 23.54 | 22.82 | 23.92 | 24.35 |
| 4H              | 2H   | 20.84            | 22.19 | 21.23 | 22.54 | 22.91 | 20.67          | 22.02 | 21.06 | 22.37 | 22.74 |
|                 | 3H   | 22.57            | 23.69 | 22.98 | 24.09 | 24.49 | 22.33          | 23.46 | 22.74 | 23.86 | 24.26 |
|                 | 4H   | 23.19            | 24.21 | 23.63 | 24.62 | 25.06 | 22.93          | 23.95 | 23.36 | 24.36 | 24.80 |
|                 | 6H   | 23.62            | 24.51 | 24.08 | 24.95 | 25.41 | 23.34          | 24.23 | 23.80 | 24.67 | 25.13 |
|                 | 8H   | 23.73            | 24.56 | 24.20 | 25.00 | 25.47 | 23.45          | 24.27 | 23.91 | 24.72 | 25.18 |
|                 | 12H  | 23.80            | 24.54 | 24.28 | 25.02 | 25.49 | 23.51          | 24.25 | 23.99 | 24.72 | 25.19 |
| 8H              | 4H   | 23.44            | 24.26 | 23.90 | 24.71 | 25.17 | 23.20          | 24.03 | 23.66 | 24.47 | 24.94 |
|                 | 6H   | 23.96            | 24.64 | 24.45 | 25.13 | 25.61 | 23.70          | 24.39 | 24.20 | 24.88 | 25.35 |
|                 | 8H   | 24.12            | 24.74 | 24.63 | 25.25 | 25.73 | 23.85          | 24.47 | 24.36 | 24.97 | 25.46 |
|                 | 12H  | 24.23            | 24.78 | 24.74 | 25.27 | 25.83 | 23.95          | 24.49 | 24.46 | 24.99 | 25.55 |
| 12H             | 4H   | 23.45            | 24.19 | 23.93 | 24.67 | 25.14 | 23.22          | 23.96 | 23.70 | 24.44 | 24.91 |
|                 | 6H   | 23.98            | 24.60 | 24.49 | 25.10 | 25.59 | 23.73          | 24.35 | 24.24 | 24.86 | 25.34 |
|                 | 8H   | 24.19            | 24.73 | 24.70 | 25.23 | 25.79 | 23.93          | 24.47 | 24.43 | 24.96 | 25.52 |