

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: P1056141

Luminaire Tested: S124R3DR-H1195D950-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056141  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1195D950-X4F0-XX-UDD-FLL-W  
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: -

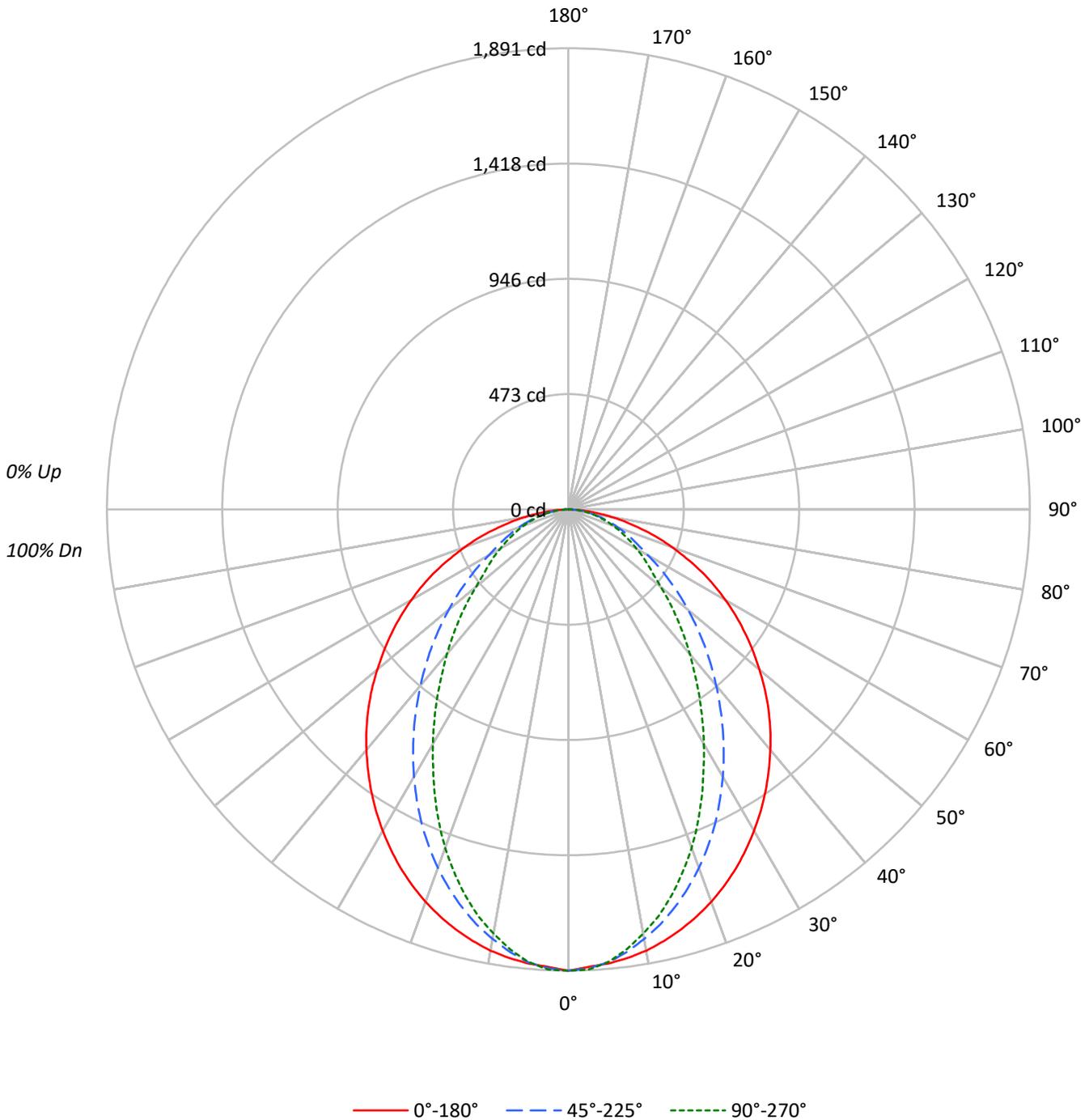
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3767.2 lumens  
Efficiency: N/A  
Efficacy: 102.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12  
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  | 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   | 110 | 105 | 102 | 98  | 107 | 103 | 100 | 97  | 99  | 96  | 93  | 95  | 93  | 91  | 92  | 90  | 88  |     |    |    |    | 86 |     |   |  |   |
| 2   | 101 | 93  | 87  | 82  | 98  | 91  | 86  | 81  | 88  | 83  | 79  | 85  | 81  | 77  | 82  | 78  | 76  |     |    |    |    | 73 |     |   |  |   |
| 3   | 93  | 83  | 75  | 69  | 90  | 81  | 74  | 69  | 79  | 73  | 68  | 76  | 71  | 67  | 73  | 69  | 65  |     |    |    |    | 63 |     |   |  |   |
| 4   | 85  | 74  | 66  | 60  | 83  | 73  | 65  | 60  | 71  | 64  | 59  | 68  | 63  | 58  | 66  | 61  | 57  |     |    |    |    | 55 |     |   |  |   |
| 5   | 79  | 67  | 59  | 53  | 77  | 66  | 58  | 52  | 64  | 57  | 52  | 62  | 56  | 51  | 60  | 55  | 51  |     |    |    |    | 49 |     |   |  |   |
| 6   | 73  | 61  | 53  | 47  | 72  | 60  | 52  | 46  | 58  | 51  | 46  | 57  | 50  | 46  | 55  | 50  | 45  |     |    |    |    | 43 |     |   |  |   |
| 7   | 68  | 56  | 47  | 42  | 67  | 55  | 47  | 42  | 53  | 46  | 41  | 52  | 46  | 41  | 51  | 45  | 41  |     |    |    |    | 39 |     |   |  |   |
| 8   | 64  | 51  | 43  | 38  | 62  | 51  | 43  | 38  | 49  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 37  |     |    |    |    | 35 |     |   |  |   |
| 9   | 60  | 47  | 39  | 34  | 59  | 47  | 39  | 34  | 46  | 39  | 34  | 45  | 38  | 34  | 44  | 38  | 34  |     |    |    |    | 32 |     |   |  |   |
| 10  | 56  | 44  | 36  | 31  | 55  | 43  | 36  | 31  | 42  | 36  | 31  | 41  | 35  | 31  | 41  | 35  | 31  |     |    |    |    | 29 |     |   |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16723 | 16723 | 16723 |
| 5°  | 16589 | 16552 | 16540 |
| 10° | 16493 | 16056 | 15857 |
| 15° | 16319 | 15453 | 14981 |
| 20° | 16107 | 14719 | 13894 |
| 25° | 15845 | 13876 | 12627 |
| 30° | 15530 | 12916 | 11338 |
| 35° | 15202 | 11913 | 10095 |
| 40° | 14859 | 10874 | 8931  |
| 45° | 14495 | 9867  | 7849  |
| 50° | 14052 | 8806  | 6777  |
| 55° | 13623 | 7744  | 6157  |
| 60° | 13142 | 6645  | 5710  |
| 65° | 12550 | 6027  | 5328  |
| 70° | 11656 | 5576  | 5036  |
| 75° | 10556 | 5134  | 4755  |
| 80° | 9211  | 4745  | 4465  |
| 85° | 7060  | 4372  | 4098  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14495 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 176.1  | 4.7       |
| 10°-20°   | 477.7  | 12.7      |
| 20°-30°   | 661.4  | 17.6      |
| 30°-40°   | 709.9  | 18.8      |
| 40°-50°   | 645.6  | 17.1      |
| 50°-60°   | 508.4  | 13.5      |
| 60°-70°   | 348.0  | 9.2       |
| 70°-80°   | 187.3  | 5.0       |
| 80°-90°   | 53.0   | 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°    | 1315.1 | 34.9      |
| 0°-40°    | 2025.0 | 53.8      |
| 0°-60°    | 3178.9 | 84.4      |
| 0°-90°    | 3767.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3767.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1891 | 1891  | 1891 | 1891  | 1891 |      |
| 5°  | 1869 | 1890  | 1865 | 1855  | 1864 | 177  |
| 15° | 1783 | 1763  | 1688 | 1642  | 1637 | 503  |
| 25° | 1624 | 1557  | 1422 | 1319  | 1294 | 748  |
| 35° | 1408 | 1298  | 1104 | 970   | 935  | 881  |
| 45° | 1159 | 1012  | 789  | 653   | 628  | 894  |
| 55° | 884  | 715   | 502  | 405   | 399  | 790  |
| 65° | 600  | 429   | 288  | 256   | 255  | 592  |
| 75° | 309  | 188   | 150  | 138   | 139  | 330  |
| 85° | 70   | 47    | 43   | 40    | 40   | 84   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1891.4 | 1891.4 | 1891.4 | 1891.4 | 1891.4 |
| 2.5°  | 1877.5 | 1899.8 | 1883.1 | 1885.9 | 1888.6 |
| 5°    | 1869.2 | 1890.0 | 1865.0 | 1855.2 | 1863.6 |
| 7.5°  | 1855.2 | 1869.2 | 1830.2 | 1812.1 | 1820.4 |
| 10°   | 1837.1 | 1839.9 | 1788.4 | 1762.0 | 1766.2 |
| 12.5° | 1812.1 | 1805.1 | 1742.5 | 1704.9 | 1707.7 |
| 15°   | 1782.9 | 1763.4 | 1688.2 | 1642.3 | 1636.7 |
| 17.5° | 1749.5 | 1717.5 | 1628.4 | 1569.9 | 1558.8 |
| 20°   | 1711.9 | 1668.7 | 1564.4 | 1489.2 | 1476.7 |
| 22.5° | 1670.1 | 1614.5 | 1494.8 | 1405.7 | 1387.6 |
| 25°   | 1624.2 | 1557.4 | 1422.4 | 1319.4 | 1294.4 |
| 27.5° | 1574.1 | 1496.2 | 1344.5 | 1231.7 | 1199.7 |
| 30°   | 1521.2 | 1432.1 | 1265.1 | 1144.0 | 1110.6 |
| 32.5° | 1466.9 | 1366.7 | 1184.4 | 1056.4 | 1021.6 |
| 35°   | 1408.5 | 1298.5 | 1103.7 | 970.1  | 935.3  |
| 37.5° | 1348.6 | 1227.5 | 1021.6 | 886.6  | 850.4  |
| 40°   | 1287.4 | 1156.6 | 942.2  | 803.1  | 773.8  |
| 42.5° | 1224.8 | 1084.2 | 864.3  | 725.1  | 698.7  |
| 45°   | 1159.3 | 1011.8 | 789.1  | 652.7  | 627.7  |
| 47.5° | 1092.5 | 938.1  | 712.6  | 584.5  | 560.9  |
| 50°   | 1021.6 | 864.3  | 640.2  | 517.7  | 492.7  |
| 52.5° | 953.4  | 789.1  | 570.6  | 452.3  | 439.8  |
| 55°   | 883.8  | 715.4  | 502.4  | 405.0  | 399.4  |
| 57.5° | 814.2  | 641.6  | 439.8  | 367.4  | 361.9  |
| 60°   | 743.2  | 569.2  | 375.8  | 328.5  | 322.9  |
| 62.5° | 672.2  | 498.3  | 328.5  | 290.9  | 288.1  |
| 65°   | 599.9  | 428.7  | 288.1  | 256.1  | 254.7  |
| 67.5° | 523.3  | 361.9  | 251.9  | 225.5  | 224.1  |
| 70°   | 450.9  | 295.1  | 215.7  | 194.8  | 194.8  |
| 72.5° | 382.7  | 233.8  | 182.3  | 165.6  | 165.6  |
| 75°   | 309.0  | 187.9  | 150.3  | 137.8  | 139.2  |
| 77.5° | 243.6  | 147.5  | 121.1  | 112.7  | 112.7  |
| 80°   | 180.9  | 110.0  | 93.2   | 86.3   | 87.7   |
| 82.5° | 122.5  | 76.5   | 66.8   | 62.6   | 62.6   |
| 85°   | 69.6   | 47.3   | 43.1   | 40.4   | 40.4   |
| 87.5° | 25.1   | 22.3   | 20.9   | 18.1   | 19.5   |
| 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 | 20.93            | 22.45 | 21.29 | 22.77 | 23.08 | 16.71          | 18.23 | 17.07 | 18.54 | 18.86 |
|                 | 3H   | 22.70            | 24.07 | 23.08 | 24.40 | 24.76 | 18.32          | 19.69 | 18.69 | 20.01 | 20.38 |
|                 | 4H   | 23.37            | 24.66 | 23.77 | 25.01 | 25.39 | 18.95          | 20.23 | 19.35 | 20.58 | 20.96 |
|                 | 6H   | 23.88            | 25.07 | 24.30 | 25.44 | 25.83 | 19.45          | 20.64 | 19.86 | 21.00 | 21.39 |
|                 | 8H   | 24.05            | 25.18 | 24.47 | 25.57 | 25.97 | 19.62          | 20.75 | 20.04 | 21.14 | 21.54 |
|                 | 12H  | 24.15            | 25.23 | 24.58 | 25.61 | 26.04 | 19.74          | 20.82 | 20.17 | 21.21 | 21.64 |
| 4H              | 2H   | 21.02            | 22.31 | 21.42 | 22.66 | 23.04 | 17.42          | 18.71 | 17.82 | 19.06 | 19.44 |
|                 | 3H   | 22.97            | 24.04 | 23.38 | 24.44 | 24.84 | 19.23          | 20.30 | 19.64 | 20.70 | 21.10 |
|                 | 4H   | 23.72            | 24.69 | 24.16 | 25.10 | 25.54 | 19.97          | 20.93 | 20.40 | 21.35 | 21.79 |
|                 | 6H   | 24.36            | 25.20 | 24.82 | 25.64 | 26.10 | 20.58          | 21.42 | 21.04 | 21.87 | 22.33 |
|                 | 8H   | 24.58            | 25.36 | 25.04 | 25.81 | 26.27 | 20.80          | 21.59 | 21.26 | 22.03 | 22.50 |
|                 | 12H  | 24.73            | 25.43 | 25.21 | 25.91 | 26.38 | 20.97          | 21.67 | 21.45 | 22.15 | 22.62 |
| 8H              | 4H   | 23.78            | 24.57 | 24.24 | 25.01 | 25.48 | 20.36          | 21.14 | 20.82 | 21.59 | 22.05 |
|                 | 6H   | 24.48            | 25.13 | 24.98 | 25.62 | 26.10 | 21.09          | 21.74 | 21.58 | 22.23 | 22.71 |
|                 | 8H   | 24.75            | 25.33 | 25.26 | 25.84 | 26.33 | 21.38          | 21.96 | 21.89 | 22.47 | 22.96 |
|                 | 12H  | 24.97            | 25.48 | 25.48 | 25.97 | 26.54 | 21.62          | 22.14 | 22.13 | 22.63 | 23.19 |
| 12H             | 4H   | 23.77            | 24.47 | 24.25 | 24.95 | 25.42 | 20.41          | 21.11 | 20.89 | 21.59 | 22.06 |
|                 | 6H   | 24.47            | 25.06 | 24.99 | 25.57 | 26.05 | 21.17          | 21.75 | 21.68 | 22.26 | 22.75 |
|                 | 8H   | 24.78            | 25.30 | 25.29 | 25.79 | 26.35 | 21.52          | 22.04 | 22.03 | 22.53 | 23.09 |