

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: P1056213

Luminaire Tested: S124R3DR-H795D930-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056213  
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-H795D930-X4F0-XX-UDD-FLL-W  
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

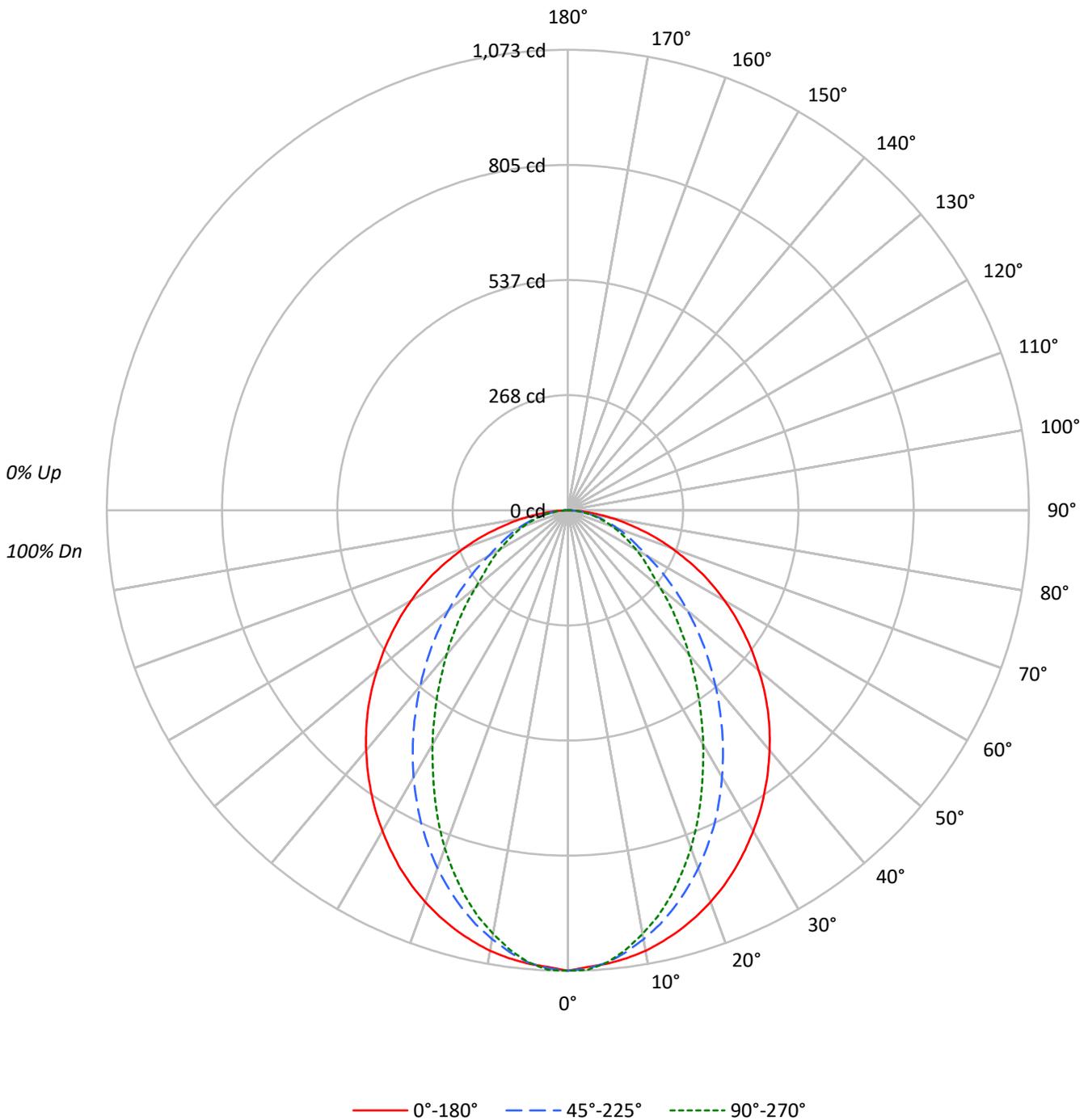
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2137.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 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): 23.8  
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   | 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°  | 9486 | 9486 | 9486 |
| 5°  | 9410 | 9389 | 9383 |
| 10° | 9357 | 9108 | 8995 |
| 15° | 9258 | 8766 | 8499 |
| 20° | 9137 | 8349 | 7882 |
| 25° | 8989 | 7872 | 7162 |
| 30° | 8809 | 7327 | 6432 |
| 35° | 8624 | 6758 | 5727 |
| 40° | 8429 | 6169 | 5067 |
| 45° | 8224 | 5598 | 4453 |
| 50° | 7971 | 4996 | 3844 |
| 55° | 7727 | 4393 | 3493 |
| 60° | 7455 | 3770 | 3239 |
| 65° | 7119 | 3418 | 3023 |
| 70° | 6613 | 3164 | 2856 |
| 75° | 5988 | 2914 | 2699 |
| 80° | 5224 | 2693 | 2530 |
| 85° | 4007 | 2485 | 2323 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8224 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.9   | 4.7       |
| 10°-20°   | 271.0  | 12.7      |
| 20°-30°   | 375.2  | 17.6      |
| 30°-40°   | 402.7  | 18.8      |
| 40°-50°   | 366.2  | 17.1      |
| 50°-60°   | 288.4  | 13.5      |
| 60°-70°   | 197.4  | 9.2       |
| 70°-80°   | 106.3  | 5.0       |
| 80°-90°   | 30.1   | 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°    | 746.0  | 34.9      |
| 0°-40°    | 1148.7 | 53.8      |
| 0°-60°    | 1803.3 | 84.4      |
| 0°-90°    | 2137.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2137.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1073 | 1073  | 1073 | 1073  | 1073 |      |
| 5°  | 1060 | 1072  | 1058 | 1052  | 1057 | 101  |
| 15° | 1011 | 1000  | 958  | 932   | 928  | 285  |
| 25° | 921  | 884   | 807  | 748   | 734  | 424  |
| 35° | 799  | 737   | 626  | 550   | 531  | 500  |
| 45° | 658  | 574   | 448  | 370   | 356  | 507  |
| 55° | 501  | 406   | 285  | 230   | 227  | 448  |
| 65° | 340  | 243   | 163  | 145   | 144  | 336  |
| 75° | 175  | 107   | 85   | 78    | 79   | 187  |
| 85° | 40   | 27    | 24   | 23    | 23   | 47   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1072.9 | 1072.9 | 1072.9 | 1072.9 | 1072.9 |
| 2.5°  | 1065.1 | 1077.7 | 1068.2 | 1069.8 | 1071.4 |
| 5°    | 1060.3 | 1072.2 | 1057.9 | 1052.4 | 1057.2 |
| 7.5°  | 1052.4 | 1060.3 | 1038.2 | 1027.9 | 1032.7 |
| 10°   | 1042.2 | 1043.7 | 1014.5 | 999.5  | 1001.9 |
| 12.5° | 1027.9 | 1024.0 | 988.5  | 967.2  | 968.7  |
| 15°   | 1011.4 | 1000.3 | 957.7  | 931.6  | 928.5  |
| 17.5° | 992.4  | 974.3  | 923.7  | 890.6  | 884.3  |
| 20°   | 971.1  | 946.6  | 887.4  | 844.8  | 837.7  |
| 22.5° | 947.4  | 915.8  | 847.9  | 797.4  | 787.1  |
| 25°   | 921.4  | 883.5  | 806.9  | 748.5  | 734.2  |
| 27.5° | 892.9  | 848.7  | 762.7  | 698.7  | 680.6  |
| 30°   | 862.9  | 812.4  | 717.7  | 649.0  | 630.0  |
| 32.5° | 832.1  | 775.3  | 671.9  | 599.2  | 579.5  |
| 35°   | 799.0  | 736.6  | 626.1  | 550.3  | 530.6  |
| 37.5° | 765.0  | 696.3  | 579.5  | 502.9  | 482.4  |
| 40°   | 730.3  | 656.1  | 534.5  | 455.5  | 439.0  |
| 42.5° | 694.8  | 615.0  | 490.3  | 411.3  | 396.3  |
| 45°   | 657.7  | 574.0  | 447.7  | 370.3  | 356.1  |
| 47.5° | 619.8  | 532.1  | 404.2  | 331.6  | 318.2  |
| 50°   | 579.5  | 490.3  | 363.2  | 293.7  | 279.5  |
| 52.5° | 540.8  | 447.7  | 323.7  | 256.6  | 249.5  |
| 55°   | 501.3  | 405.8  | 285.0  | 229.7  | 226.6  |
| 57.5° | 461.9  | 364.0  | 249.5  | 208.4  | 205.3  |
| 60°   | 421.6  | 322.9  | 213.2  | 186.3  | 183.2  |
| 62.5° | 381.3  | 282.6  | 186.3  | 165.0  | 163.4  |
| 65°   | 340.3  | 243.2  | 163.4  | 145.3  | 144.5  |
| 67.5° | 296.9  | 205.3  | 142.9  | 127.9  | 127.1  |
| 70°   | 255.8  | 167.4  | 122.4  | 110.5  | 110.5  |
| 72.5° | 217.1  | 132.6  | 103.4  | 94.0   | 94.0   |
| 75°   | 175.3  | 106.6  | 85.3   | 78.2   | 79.0   |
| 77.5° | 138.2  | 83.7   | 68.7   | 64.0   | 64.0   |
| 80°   | 102.6  | 62.4   | 52.9   | 48.9   | 49.7   |
| 82.5° | 69.5   | 43.4   | 37.9   | 35.5   | 35.5   |
| 85°   | 39.5   | 26.8   | 24.5   | 22.9   | 22.9   |
| 87.5° | 14.2   | 12.6   | 11.8   | 10.3   | 11.1   |
| 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 | 18.96            | 20.48 | 19.32 | 20.80 | 21.11 | 14.74          | 16.26 | 15.10 | 16.57 | 16.89 |
|                 | 3H   | 20.73            | 22.10 | 21.11 | 22.43 | 22.79 | 16.35          | 17.72 | 16.72 | 18.04 | 18.41 |
|                 | 4H   | 21.41            | 22.69 | 21.81 | 23.04 | 23.42 | 16.98          | 18.26 | 17.38 | 18.61 | 18.99 |
|                 | 6H   | 21.92            | 23.10 | 22.33 | 23.47 | 23.86 | 17.48          | 18.67 | 17.89 | 19.03 | 19.42 |
|                 | 8H   | 22.08            | 23.21 | 22.50 | 23.60 | 24.00 | 17.65          | 18.78 | 18.07 | 19.17 | 19.57 |
|                 | 12H  | 22.18            | 23.26 | 22.61 | 23.64 | 24.07 | 17.77          | 18.85 | 18.20 | 19.24 | 19.67 |
| 4H              | 2H   | 19.05            | 20.34 | 19.45 | 20.69 | 21.07 | 15.45          | 16.74 | 15.85 | 17.09 | 17.47 |
|                 | 3H   | 21.00            | 22.07 | 21.41 | 22.47 | 22.87 | 17.26          | 18.33 | 17.67 | 18.73 | 19.13 |
|                 | 4H   | 21.75            | 22.72 | 22.19 | 23.13 | 23.57 | 18.00          | 18.96 | 18.43 | 19.38 | 19.82 |
|                 | 6H   | 22.39            | 23.23 | 22.85 | 23.67 | 24.13 | 18.62          | 19.45 | 19.07 | 19.90 | 20.36 |
|                 | 8H   | 22.61            | 23.39 | 23.07 | 23.84 | 24.30 | 18.83          | 19.62 | 19.29 | 20.06 | 20.53 |
|                 | 12H  | 22.76            | 23.47 | 23.25 | 23.94 | 24.41 | 19.00          | 19.70 | 19.48 | 20.18 | 20.65 |
| 8H              | 4H   | 21.81            | 22.60 | 22.28 | 23.04 | 23.51 | 18.39          | 19.17 | 18.85 | 19.62 | 20.08 |
|                 | 6H   | 22.51            | 23.16 | 23.01 | 23.65 | 24.13 | 19.12          | 19.77 | 19.62 | 20.26 | 20.74 |
|                 | 8H   | 22.78            | 23.36 | 23.29 | 23.87 | 24.36 | 19.41          | 19.99 | 19.92 | 20.50 | 20.99 |
|                 | 12H  | 23.00            | 23.51 | 23.51 | 24.00 | 24.57 | 19.65          | 20.17 | 20.16 | 20.66 | 21.22 |
| 12H             | 4H   | 21.80            | 22.50 | 22.29 | 22.98 | 23.45 | 18.44          | 19.15 | 18.93 | 19.62 | 20.09 |
|                 | 6H   | 22.50            | 23.09 | 23.02 | 23.60 | 24.08 | 19.20          | 19.79 | 19.72 | 20.29 | 20.78 |
|                 | 8H   | 22.81            | 23.33 | 23.32 | 23.82 | 24.38 | 19.55          | 20.07 | 20.06 | 20.56 | 21.12 |