

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: P1439845

Luminaire Tested: S123DR-S865D927-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439845  
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2603-719-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/2/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DR-S865D927-X4F0-XX-UDD-FLB-W  
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
CORE LIGHT ENGINE  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

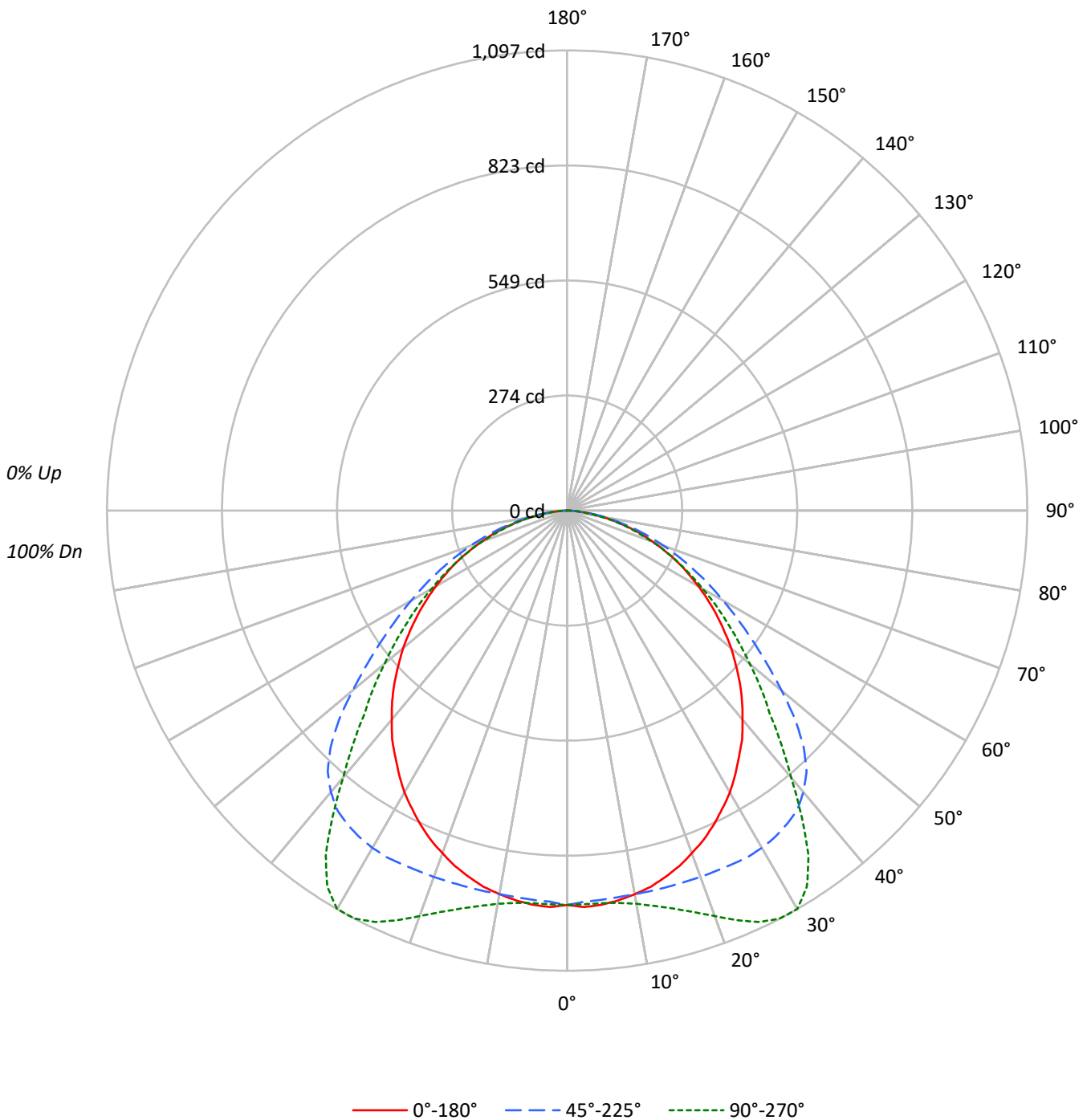
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2843.6 lumens  
Efficiency: N/A  
Efficacy: 81.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.7  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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 | 100 | 97  | 106 | 102 | 99  | 95  | 98  | 95  | 92  | 94  | 92  | 89  | 91  | 89  | 87  | 85  |
| 2   | 100 | 92  | 85  | 79  | 97  | 90  | 84  | 78  | 86  | 81  | 77  | 83  | 79  | 75  | 80  | 76  | 73  | 71  |
| 3   | 91  | 81  | 73  | 66  | 88  | 79  | 72  | 66  | 76  | 70  | 65  | 73  | 68  | 63  | 71  | 66  | 62  | 60  |
| 4   | 83  | 72  | 63  | 56  | 81  | 70  | 62  | 56  | 68  | 61  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 54  | 48  | 61  | 53  | 48  | 59  | 52  | 47  | 57  | 51  | 47  | 45  |
| 6   | 71  | 58  | 49  | 42  | 69  | 57  | 48  | 42  | 55  | 47  | 42  | 53  | 47  | 41  | 52  | 46  | 41  | 39  |
| 7   | 66  | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 50  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 36  | 34  |
| 8   | 61  | 48  | 39  | 33  | 59  | 47  | 39  | 33  | 46  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 31  |
| 9   | 57  | 44  | 35  | 30  | 56  | 43  | 35  | 30  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 29  | 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°  | 11334 | 11334 | 11334 |
| 5°  | 11414 | 11272 | 11367 |
| 10° | 11367 | 11367 | 11652 |
| 15° | 11286 | 11589 | 12257 |
| 20° | 11152 | 11926 | 13197 |
| 25° | 10993 | 12377 | 14395 |
| 30° | 10800 | 12926 | 15268 |
| 35° | 10518 | 13436 | 14767 |
| 40° | 10236 | 13787 | 13068 |
| 45° | 9930  | 13593 | 11637 |
| 50° | 9573  | 12511 | 10650 |
| 55° | 9156  | 11321 | 9789  |
| 60° | 8722  | 10361 | 9001  |
| 65° | 8293  | 9486  | 8322  |
| 70° | 7678  | 8601  | 7540  |
| 75° | 6931  | 7653  | 6750  |
| 80° | 5804  | 6415  | 5534  |
| 85° | 4440  | 4703  | 4164  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 13593 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 89.5   | 3.1       |
| 10°-20°   | 266.0  | 9.4       |
| 20°-30°   | 436.0  | 15.3      |
| 30°-40°   | 551.5  | 19.4      |
| 40°-50°   | 538.8  | 18.9      |
| 50°-60°   | 442.6  | 15.6      |
| 60°-70°   | 312.2  | 11.0      |
| 70°-80°   | 166.4  | 5.9       |
| 80°-90°   | 40.6   | 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°    | 791.5  | 27.8      |
| 0°-40°    | 1343.0 | 47.2      |
| 0°-60°    | 2324.4 | 81.7      |
| 0°-90°    | 2843.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2843.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90°  | Flux |
|-----|-----|-------|-----|-------|------|------|
| 0°  | 940 | 940   | 940 | 940   | 940  |      |
| 5°  | 943 | 939   | 931 | 941   | 939  | 90   |
| 15° | 904 | 909   | 928 | 970   | 982  | 255  |
| 25° | 826 | 851   | 930 | 1043  | 1082 | 381  |
| 35° | 715 | 764   | 913 | 1019  | 1003 | 447  |
| 45° | 582 | 648   | 797 | 720   | 682  | 449  |
| 55° | 436 | 501   | 539 | 484   | 466  | 390  |
| 65° | 291 | 332   | 332 | 303   | 292  | 287  |
| 75° | 149 | 167   | 164 | 149   | 145  | 158  |
| 85° | 32  | 35    | 34  | 31    | 30   | 39   |
| 90° | 0   | 0     | 0   | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5°  | 90°    |
|-------|-------|-------|-------|--------|--------|
| 0°    | 940.1 | 940.1 | 940.1 | 940.1  | 940.1  |
| 2.5°  | 946.0 | 943.1 | 933.3 | 942.1  | 939.2  |
| 5°    | 943.1 | 939.2 | 931.4 | 941.1  | 939.2  |
| 7.5°  | 937.2 | 935.3 | 929.5 | 944.0  | 943.1  |
| 10°   | 928.5 | 927.5 | 928.5 | 949.9  | 951.8  |
| 12.5° | 918.8 | 919.7 | 928.5 | 958.6  | 965.4  |
| 15°   | 904.2 | 909.0 | 928.5 | 970.3  | 982.0  |
| 17.5° | 888.6 | 896.4 | 928.5 | 985.8  | 1003.3 |
| 20°   | 869.2 | 882.8 | 929.5 | 1002.4 | 1028.6 |
| 22.5° | 849.7 | 866.3 | 929.5 | 1024.7 | 1056.8 |
| 25°   | 826.4 | 850.7 | 930.4 | 1043.2 | 1082.1 |
| 27.5° | 801.1 | 830.3 | 931.4 | 1057.8 | 1096.7 |
| 30°   | 775.8 | 810.8 | 928.5 | 1063.6 | 1096.7 |
| 32.5° | 745.7 | 788.5 | 922.6 | 1053.9 | 1063.6 |
| 35°   | 714.6 | 764.2 | 912.9 | 1018.9 | 1003.3 |
| 37.5° | 685.4 | 737.9 | 900.3 | 954.7  | 917.8  |
| 40°   | 650.4 | 709.7 | 876.0 | 873.1  | 830.3  |
| 42.5° | 617.4 | 679.6 | 844.9 | 790.4  | 755.4  |
| 45°   | 582.4 | 648.5 | 797.2 | 719.5  | 682.5  |
| 47.5° | 545.4 | 614.5 | 737.0 | 652.4  | 626.1  |
| 50°   | 510.4 | 579.5 | 667.0 | 591.1  | 567.8  |
| 52.5° | 472.5 | 542.5 | 599.9 | 536.7  | 516.3  |
| 55°   | 435.6 | 500.7 | 538.6 | 484.2  | 465.7  |
| 57.5° | 398.6 | 459.9 | 482.2 | 434.6  | 420.0  |
| 60°   | 361.7 | 417.1 | 429.7 | 388.9  | 373.3  |
| 62.5° | 325.7 | 377.2 | 381.1 | 345.1  | 331.5  |
| 65°   | 290.7 | 332.5 | 332.5 | 303.3  | 291.7  |
| 67.5° | 253.8 | 289.7 | 287.8 | 260.6  | 253.8  |
| 70°   | 217.8 | 247.9 | 244.0 | 221.7  | 213.9  |
| 72.5° | 183.8 | 206.1 | 203.2 | 185.7  | 176.9  |
| 75°   | 148.8 | 167.2 | 164.3 | 148.8  | 144.9  |
| 77.5° | 115.7 | 128.3 | 125.4 | 114.7  | 111.8  |
| 80°   | 83.6  | 93.3  | 92.4  | 84.6   | 79.7   |
| 82.5° | 56.4  | 61.3  | 60.3  | 55.4   | 52.5   |
| 85°   | 32.1  | 35.0  | 34.0  | 31.1   | 30.1   |
| 87.5° | 12.6  | 14.6  | 15.6  | 14.6   | 13.6   |
| 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 | 20.07            | 21.68 | 20.44 | 21.99 | 22.31 | 19.80          | 21.41 | 20.17 | 21.72 | 22.03 |
|                 | 3H   | 21.64            | 23.09 | 22.02 | 23.42 | 23.78 | 21.32          | 22.76 | 21.69 | 23.09 | 23.45 |
|                 | 4H   | 22.20            | 23.56 | 22.59 | 23.90 | 24.28 | 21.85          | 23.21 | 22.25 | 23.56 | 23.94 |
|                 | 6H   | 22.56            | 23.82 | 22.97 | 24.18 | 24.57 | 22.21          | 23.47 | 22.62 | 23.83 | 24.22 |
|                 | 8H   | 22.66            | 23.86 | 23.08 | 24.25 | 24.65 | 22.30          | 23.50 | 22.73 | 23.89 | 24.29 |
|                 | 12H  | 22.71            | 23.86 | 23.14 | 24.25 | 24.67 | 22.35          | 23.50 | 22.78 | 23.89 | 24.32 |
| 4H              | 2H   | 20.71            | 22.07 | 21.11 | 22.42 | 22.80 | 20.50          | 21.86 | 20.90 | 22.21 | 22.58 |
|                 | 3H   | 22.52            | 23.65 | 22.93 | 24.05 | 24.45 | 22.22          | 23.35 | 22.62 | 23.75 | 24.15 |
|                 | 4H   | 23.21            | 24.23 | 23.64 | 24.65 | 25.08 | 22.85          | 23.88 | 23.28 | 24.29 | 24.73 |
|                 | 6H   | 23.69            | 24.58 | 24.14 | 25.02 | 25.48 | 23.31          | 24.20 | 23.77 | 24.65 | 25.10 |
|                 | 8H   | 23.82            | 24.66 | 24.28 | 25.10 | 25.57 | 23.44          | 24.27 | 23.90 | 24.72 | 25.18 |
|                 | 12H  | 23.91            | 24.66 | 24.39 | 25.13 | 25.60 | 23.52          | 24.27 | 24.00 | 24.74 | 25.21 |
| 8H              | 4H   | 23.47            | 24.31 | 23.93 | 24.75 | 25.22 | 23.16          | 23.99 | 23.62 | 24.44 | 24.90 |
|                 | 6H   | 24.06            | 24.76 | 24.56 | 25.24 | 25.72 | 23.72          | 24.41 | 24.21 | 24.90 | 25.38 |
|                 | 8H   | 24.26            | 24.88 | 24.77 | 25.39 | 25.87 | 23.90          | 24.52 | 24.41 | 25.03 | 25.51 |
|                 | 12H  | 24.40            | 24.95 | 24.91 | 25.44 | 26.00 | 24.03          | 24.58 | 24.54 | 25.07 | 25.63 |
| 12H             | 4H   | 23.49            | 24.24 | 23.97 | 24.71 | 25.18 | 23.19          | 23.94 | 23.67 | 24.41 | 24.88 |
|                 | 6H   | 24.09            | 24.72 | 24.61 | 25.22 | 25.71 | 23.76          | 24.39 | 24.27 | 24.89 | 25.38 |
|                 | 8H   | 24.34            | 24.89 | 24.85 | 25.38 | 25.94 | 23.99          | 24.54 | 24.50 | 25.03 | 25.60 |