

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: P1059506

Luminaire Tested: S123RDR-H1165D835-X4F0-XX-UDD-WVL-S

Issue Date: 8/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1059506  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2406-143-67 )  
Test Lab: INNOVATION CENTER  
Issue Date: 8/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDR-H1165D835-X4F0-XX-UDD-WVL-S  
Description: DEFINE 3 SILVER REGRESSED DIRECT RECESSED HOUSING WITH WHITE STRAIGHT BLADE  
LOUVER WITH DIFFUSER  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

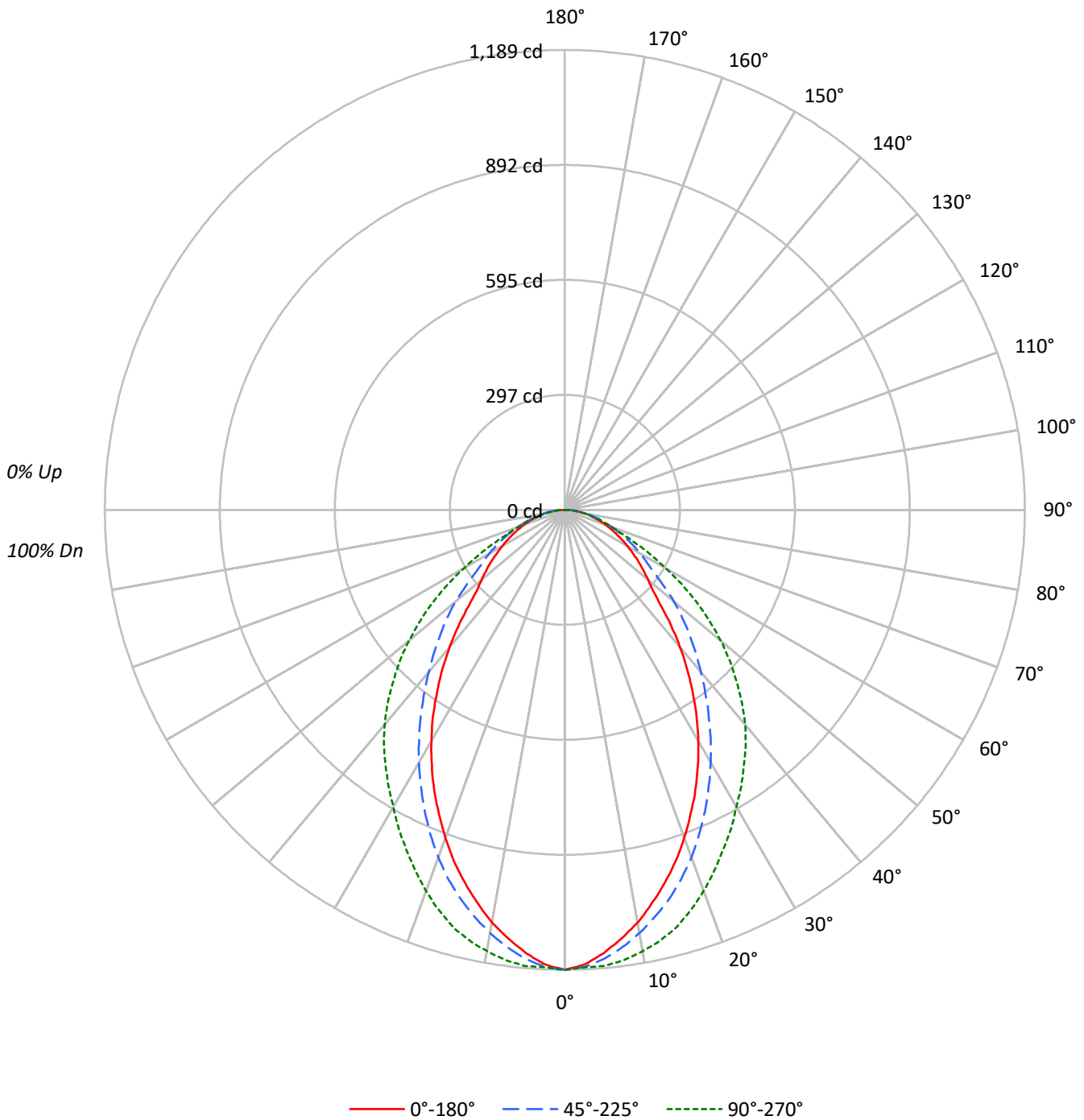
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2148.2 lumens  
Efficiency: N/A  
Efficacy: 58.9 lumens/watt  
Spacing Criteria (0/90/45): 0.93 / 1.12 / 1.1  
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 | 100 | 97  | 100 | 97  | 94  | 96  | 93  | 91  | 92  | 90  | 89  | 87  |    |    |    |   |
| 2   | 102 | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 86  | 82  | 78  | 83  | 80  | 77  | 75  |    |    |    |   |
| 3   | 94  | 84  | 77  | 71  | 91  | 83  | 76  | 71  | 80  | 74  | 69  | 77  | 72  | 68  | 75  | 71  | 67  | 65  |    |    |    |   |
| 4   | 87  | 76  | 68  | 62  | 84  | 74  | 67  | 61  | 72  | 66  | 61  | 70  | 64  | 60  | 68  | 63  | 59  | 57  |    |    |    |   |
| 5   | 80  | 69  | 60  | 54  | 78  | 68  | 60  | 54  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 51  |    |    |    |   |
| 6   | 75  | 63  | 54  | 48  | 73  | 62  | 54  | 48  | 60  | 53  | 48  | 58  | 52  | 47  | 57  | 51  | 47  | 45  |    |    |    |   |
| 7   | 70  | 57  | 49  | 44  | 68  | 56  | 49  | 43  | 55  | 48  | 43  | 54  | 47  | 43  | 52  | 47  | 43  | 41  |    |    |    |   |
| 8   | 65  | 53  | 45  | 39  | 64  | 52  | 45  | 39  | 51  | 44  | 39  | 50  | 43  | 39  | 48  | 43  | 39  | 37  |    |    |    |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 36  | 45  | 39  | 35  | 34  |    |    |    |   |
| 10  | 58  | 45  | 38  | 33  | 56  | 45  | 38  | 33  | 44  | 37  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13964 | 13964 | 13964 |
| 5°  | 13558 | 13738 | 13951 |
| 10° | 12917 | 13249 | 13815 |
| 15° | 12135 | 12660 | 13575 |
| 20° | 11271 | 11951 | 13101 |
| 25° | 10351 | 11109 | 12553 |
| 30° | 9357  | 10226 | 12023 |
| 35° | 8254  | 9293  | 11571 |
| 40° | 7096  | 8377  | 11113 |
| 45° | 5834  | 7548  | 10419 |
| 50° | 5119  | 6724  | 9602  |
| 55° | 4737  | 5736  | 8506  |
| 60° | 4354  | 5272  | 7038  |
| 65° | 4068  | 4843  | 5540  |
| 70° | 3828  | 4405  | 4405  |
| 75° | 3607  | 4047  | 3797  |
| 80° | 3395  | 3679  | 3205  |
| 85° | 3193  | 3570  | 2439  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 10419 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 110.0  | 5.1       |
| 10°-20°   | 294.8  | 13.7      |
| 20°-30°   | 399.7  | 18.6      |
| 30°-40°   | 417.9  | 19.5      |
| 40°-50°   | 362.4  | 16.9      |
| 50°-60°   | 269.6  | 12.6      |
| 60°-70°   | 173.0  | 8.1       |
| 70°-80°   | 92.8   | 4.3       |
| 80°-90°   | 28.0   | 1.3       |
| 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°    | 804.4  | 37.4      |
| 0°-40°    | 1222.3 | 56.9      |
| 0°-60°    | 1854.4 | 86.3      |
| 0°-90°    | 2148.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2148.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1189 | 1189  | 1189 | 1189  | 1189 |      |
| 5°  | 1150 | 1170  | 1166 | 1174  | 1184 | 108  |
| 15° | 998  | 1022  | 1041 | 1083  | 1117 | 280  |
| 25° | 799  | 824   | 857  | 915   | 969  | 366  |
| 35° | 576  | 604   | 648  | 730   | 807  | 359  |
| 45° | 351  | 378   | 454  | 552   | 627  | 276  |
| 55° | 231  | 237   | 280  | 360   | 416  | 207  |
| 65° | 146  | 159   | 174  | 185   | 199  | 146  |
| 75° | 80   | 92    | 89   | 85    | 84   | 84   |
| 85° | 24   | 29    | 26   | 22    | 18   | 27   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1189.2 | 1189.2 | 1189.2 | 1189.2 | 1189.2 |
| 2.5°  | 1176.7 | 1193.4 | 1182.3 | 1182.3 | 1183.6 |
| 5°    | 1150.2 | 1169.7 | 1165.5 | 1173.9 | 1183.6 |
| 7.5°  | 1118.1 | 1139.0 | 1140.4 | 1159.9 | 1173.9 |
| 10°   | 1083.3 | 1104.2 | 1111.2 | 1139.0 | 1158.6 |
| 12.5° | 1041.4 | 1065.1 | 1077.7 | 1112.5 | 1140.4 |
| 15°   | 998.2  | 1021.9 | 1041.4 | 1083.3 | 1116.7 |
| 17.5° | 952.2  | 975.9  | 1001.0 | 1048.4 | 1084.7 |
| 20°   | 902.0  | 927.1  | 956.4  | 1003.8 | 1048.4 |
| 22.5° | 850.4  | 876.9  | 907.6  | 959.2  | 1009.4 |
| 25°   | 798.9  | 824.0  | 857.4  | 914.6  | 968.9  |
| 27.5° | 744.5  | 771.0  | 805.8  | 868.6  | 929.9  |
| 30°   | 690.1  | 716.6  | 754.2  | 821.2  | 886.7  |
| 32.5° | 634.3  | 660.8  | 701.3  | 776.6  | 847.7  |
| 35°   | 575.8  | 603.7  | 648.3  | 730.5  | 807.2  |
| 37.5° | 520.0  | 546.5  | 596.7  | 687.3  | 768.2  |
| 40°   | 462.9  | 490.7  | 546.5  | 644.1  | 725.0  |
| 42.5° | 407.1  | 435.0  | 500.5  | 598.1  | 677.6  |
| 45°   | 351.3  | 377.8  | 454.5  | 552.1  | 627.4  |
| 47.5° | 308.1  | 327.6  | 411.3  | 503.3  | 578.6  |
| 50°   | 280.2  | 287.2  | 368.1  | 455.9  | 525.6  |
| 52.5° | 255.1  | 260.7  | 320.7  | 408.5  | 471.2  |
| 55°   | 231.4  | 237.0  | 280.2  | 359.7  | 415.5  |
| 57.5° | 207.7  | 214.7  | 249.6  | 309.5  | 359.7  |
| 60°   | 185.4  | 193.8  | 224.5  | 264.9  | 299.7  |
| 62.5° | 165.9  | 175.7  | 199.4  | 224.5  | 248.2  |
| 65°   | 146.4  | 158.9  | 174.3  | 185.4  | 199.4  |
| 67.5° | 128.3  | 142.2  | 150.6  | 153.4  | 154.8  |
| 70°   | 111.5  | 125.5  | 128.3  | 128.3  | 128.3  |
| 72.5° | 94.8   | 110.1  | 107.4  | 106.0  | 104.6  |
| 75°   | 79.5   | 92.0   | 89.2   | 85.0   | 83.7   |
| 77.5° | 64.1   | 75.3   | 71.1   | 68.3   | 64.1   |
| 80°   | 50.2   | 58.6   | 54.4   | 51.6   | 47.4   |
| 82.5° | 37.6   | 43.2   | 39.0   | 36.2   | 32.1   |
| 85°   | 23.7   | 29.3   | 26.5   | 22.3   | 18.1   |
| 87.5° | 12.5   | 16.7   | 13.9   | 12.5   | 7.0    |
| 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 | 15.95            | 17.43 | 16.31 | 17.74 | 18.06 | 18.70          | 20.19 | 19.07 | 20.50 | 20.81 |
|                 | 3H   | 17.66            | 18.98 | 18.03 | 19.31 | 19.68 | 19.72          | 21.05 | 20.10 | 21.38 | 21.74 |
|                 | 4H   | 18.32            | 19.56 | 18.72 | 19.91 | 20.29 | 20.09          | 21.33 | 20.49 | 21.68 | 22.06 |
|                 | 6H   | 18.82            | 19.97 | 19.23 | 20.33 | 20.73 | 20.34          | 21.49 | 20.76 | 21.86 | 22.25 |
|                 | 8H   | 19.00            | 20.09 | 19.42 | 20.48 | 20.88 | 20.41          | 21.51 | 20.84 | 21.90 | 22.30 |
|                 | 12H  | 19.12            | 20.17 | 19.55 | 20.55 | 20.98 | 20.45          | 21.50 | 20.88 | 21.88 | 22.31 |
| 4H              | 2H   | 16.72            | 17.97 | 17.12 | 18.32 | 18.70 | 18.97          | 20.22 | 19.37 | 20.57 | 20.95 |
|                 | 3H   | 18.65            | 19.68 | 19.06 | 20.08 | 20.48 | 20.23          | 21.26 | 20.64 | 21.66 | 22.06 |
|                 | 4H   | 19.46            | 20.39 | 19.89 | 20.80 | 21.24 | 20.72          | 21.64 | 21.15 | 22.06 | 22.50 |
|                 | 6H   | 20.10            | 20.91 | 20.56 | 21.35 | 21.81 | 21.10          | 21.90 | 21.55 | 22.35 | 22.81 |
|                 | 8H   | 20.33            | 21.08 | 20.79 | 21.53 | 21.99 | 21.21          | 21.96 | 21.67 | 22.41 | 22.88 |
|                 | 12H  | 20.50            | 21.17 | 20.98 | 21.65 | 22.12 | 21.28          | 21.95 | 21.76 | 22.43 | 22.90 |
| 8H              | 4H   | 19.78            | 20.53 | 20.24 | 20.98 | 21.44 | 20.91          | 21.66 | 21.37 | 22.11 | 22.57 |
|                 | 6H   | 20.57            | 21.19 | 21.07 | 21.69 | 22.16 | 21.39          | 22.02 | 21.89 | 22.51 | 22.99 |
|                 | 8H   | 20.90            | 21.46 | 21.41 | 21.97 | 22.46 | 21.57          | 22.13 | 22.08 | 22.64 | 23.13 |
|                 | 12H  | 21.18            | 21.67 | 21.69 | 22.16 | 22.73 | 21.70          | 22.20 | 22.21 | 22.69 | 23.26 |
| 12H             | 4H   | 19.80            | 20.48 | 20.28 | 20.95 | 21.43 | 20.92          | 21.60 | 21.40 | 22.07 | 22.55 |
|                 | 6H   | 20.62            | 21.19 | 21.14 | 21.70 | 22.18 | 21.43          | 21.99 | 21.95 | 22.50 | 22.99 |
|                 | 8H   | 21.02            | 21.51 | 21.53 | 22.01 | 22.57 | 21.66          | 22.16 | 22.17 | 22.65 | 23.21 |