

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: P992328

Luminaire Tested: S123DR-B1000DB2750-4F0-XX-W2A-D\_3000K

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P992328  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/2/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DR-B1000DB2750-4F0-XX-W2A-D\_3000K  
Description: Define 3 Direct Recessed with 3000K BioUP LEDs {m-DER=0.589} {m-EER=0.647}  
Light Source: -  
Ballast/Driver: -

**Summary**

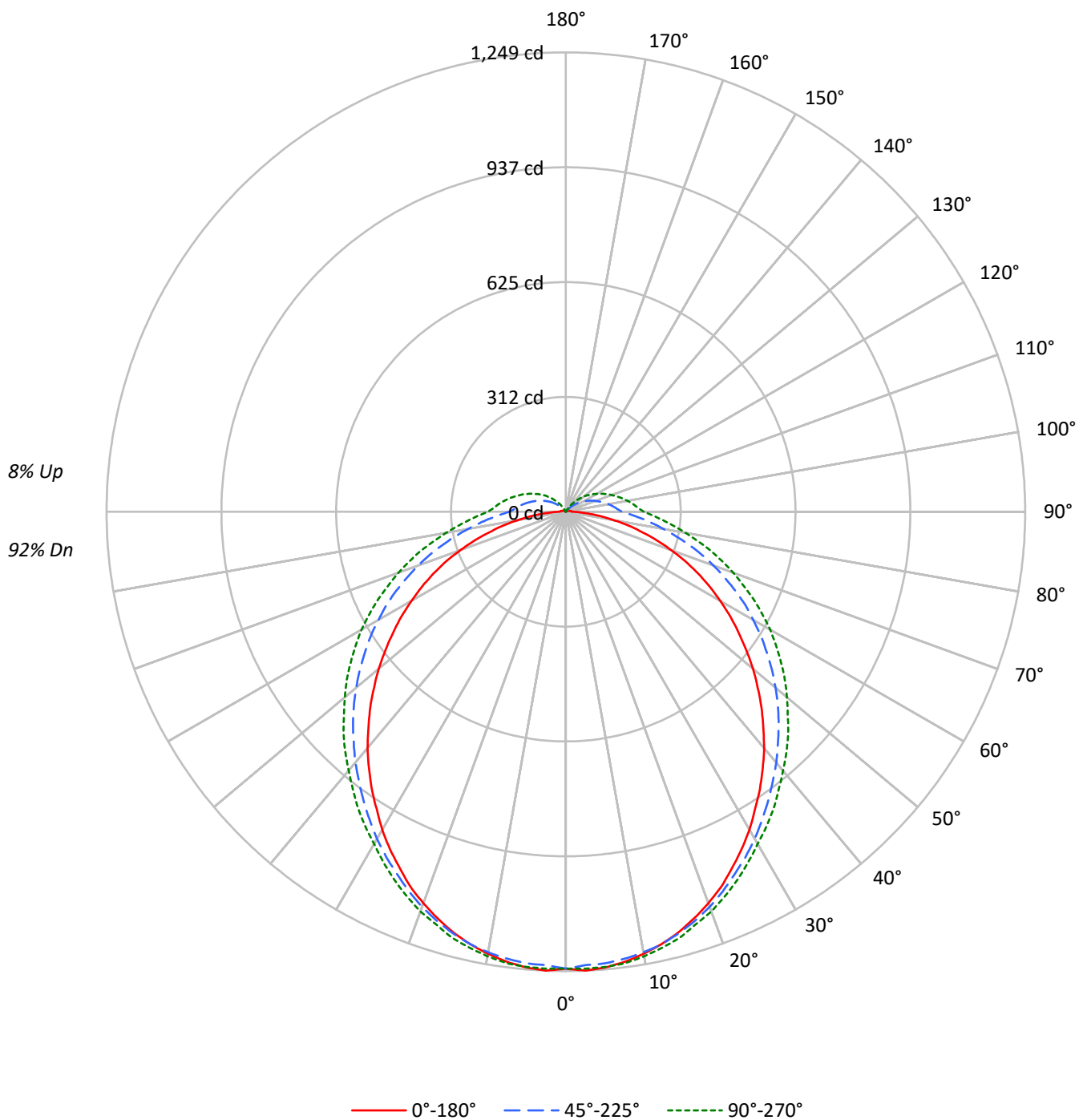
Lumens per Lamp: N/A  
Luminaire Lumens: 4174.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
Input Voltage (V):  
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 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
| 0   | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 |
| 1   | 105 | 100 | 95  | 90  | 102 | 97  | 92  | 88  | 91  | 87  | 84  | 85  | 82  | 80  | 80 | 78 | 76 |
| 2   | 95  | 86  | 79  | 72  | 92  | 83  | 77  | 71  | 79  | 73  | 68  | 74  | 69  | 65  | 70 | 66 | 63 |
| 3   | 86  | 75  | 67  | 60  | 83  | 73  | 65  | 59  | 69  | 62  | 56  | 65  | 59  | 54  | 61 | 56 | 52 |
| 4   | 79  | 66  | 57  | 50  | 76  | 64  | 56  | 49  | 61  | 54  | 48  | 57  | 51  | 46  | 54 | 49 | 45 |
| 5   | 72  | 59  | 50  | 43  | 70  | 58  | 49  | 42  | 54  | 47  | 41  | 52  | 45  | 40  | 49 | 43 | 39 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 42  | 36  | 47  | 40  | 35  | 44 | 38 | 34 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 42  | 36  | 31  | 40 | 35 | 30 |
| 8   | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  | 41  | 33  | 28  | 39  | 32  | 28  | 37 | 31 | 27 |
| 9   | 54  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 37  | 30  | 25  | 36  | 29  | 25  | 34 | 28 | 24 |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 24  | 35  | 28  | 23  | 33  | 27  | 23  | 32 | 26 | 22 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13369 | 13369 | 13369 |
| 5°  | 13434 | 13317 | 13420 |
| 10° | 13338 | 13294 | 13412 |
| 15° | 13192 | 13222 | 13358 |
| 20° | 12971 | 13095 | 13250 |
| 25° | 12694 | 12903 | 13112 |
| 30° | 12409 | 12763 | 12965 |
| 35° | 12089 | 12604 | 12942 |
| 40° | 11786 | 12508 | 12908 |
| 45° | 11450 | 12460 | 13015 |
| 50° | 11124 | 12460 | 13140 |
| 55° | 10764 | 12517 | 13405 |
| 60° | 10426 | 12669 | 13806 |
| 65° | 10096 | 12956 | 14334 |
| 70° | 9580  | 13454 | 15242 |
| 75° | 8946  | 14402 | 16935 |
| 80° | 8300  | 16774 | 20462 |
| 85° | 8188  | 25392 | 32753 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 87.5°

Luminance: 58435 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 117.8  | 2.8       |
| 10°-20°   | 335.9  | 8.0       |
| 20°-30°   | 502.3  | 12.0      |
| 30°-40°   | 599.7  | 14.4      |
| 40°-50°   | 627.4  | 15.0      |
| 50°-60°   | 588.8  | 14.1      |
| 60°-70°   | 491.8  | 11.8      |
| 70°-80°   | 351.7  | 8.4       |
| 80°-90°   | 209.2  | 5.0       |
| 90°-100°  | 131.5  | 3.1       |
| 100°-110° | 96.7   | 2.3       |
| 110°-120° | 64.6   | 1.5       |
| 120°-130° | 36.8   | 0.9       |
| 130°-140° | 16.5   | 0.4       |
| 140°-150° | 3.5    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 955.9  | 22.9      |
| 0°-40°    | 1555.6 | 37.3      |
| 0°-60°    | 2771.8 | 66.4      |
| 0°-90°    | 3824.5 | 91.6      |
| 90°-120°  | 292.7  | 7.0       |
| 90°-150°  | 349.5  | 8.4       |
| 90°-180°  | 350.0  | 8.4       |
| 0°-180°   | 4174.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1242 | 1242  | 1242 | 1242  | 1242 |      |
| 5°   | 1243 | 1241  | 1232 | 1243  | 1242 | 118  |
| 15°  | 1184 | 1188  | 1186 | 1200  | 1199 | 333  |
| 25°  | 1069 | 1082  | 1086 | 1104  | 1104 | 493  |
| 35°  | 920  | 942   | 959  | 980   | 985  | 575  |
| 45°  | 752  | 785   | 818  | 844   | 855  | 580  |
| 55°  | 574  | 618   | 667  | 704   | 714  | 514  |
| 65°  | 396  | 449   | 509  | 549   | 563  | 392  |
| 75°  | 215  | 279   | 346  | 391   | 407  | 230  |
| 85°  | 66   | 134   | 206  | 252   | 265  | 68   |
| 90°  | 18   | 84    | 153  | 199   | 212  | 13   |
| 95°  | 15   | 68    | 134  | 176   | 189  | 12   |
| 105° | 11   | 43    | 102  | 139   | 152  | 11   |
| 115° | 7    | 23    | 72   | 104   | 115  | 7    |
| 125° | 4    | 4     | 43   | 72    | 81   | 4    |
| 135° | 3    | 1     | 16   | 41    | 47   | 2    |
| 145° | 1    | 0     | 0    | 11    | 16   | 1    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1242.0 | 1242.0 | 1242.0 | 1242.0 | 1242.0 |
| 2.5°   | 1248.7 | 1244.7 | 1233.9 | 1244.7 | 1243.3 |
| 5°     | 1243.3 | 1240.6 | 1232.5 | 1243.3 | 1242.0 |
| 7.5°   | 1233.9 | 1233.9 | 1225.7 | 1239.3 | 1237.9 |
| 10°    | 1220.3 | 1223.0 | 1216.3 | 1229.8 | 1227.1 |
| 12.5°  | 1204.1 | 1208.1 | 1204.1 | 1216.3 | 1213.6 |
| 15°    | 1183.8 | 1187.9 | 1186.5 | 1200.0 | 1198.7 |
| 17.5°  | 1159.4 | 1167.6 | 1166.2 | 1178.4 | 1175.7 |
| 20°    | 1132.4 | 1140.5 | 1143.2 | 1155.4 | 1156.7 |
| 22.5°  | 1104.0 | 1112.1 | 1116.2 | 1132.4 | 1131.0 |
| 25°    | 1068.8 | 1082.3 | 1086.4 | 1104.0 | 1104.0 |
| 27.5°  | 1035.0 | 1049.9 | 1058.0 | 1072.9 | 1074.2 |
| 30°    | 998.4  | 1016.0 | 1026.9 | 1043.1 | 1043.1 |
| 32.5°  | 957.9  | 978.2  | 993.0  | 1010.6 | 1014.7 |
| 35°    | 920.0  | 941.6  | 959.2  | 979.5  | 984.9  |
| 37.5°  | 879.4  | 903.7  | 924.0  | 947.0  | 951.1  |
| 40°    | 838.8  | 863.2  | 890.2  | 913.2  | 918.6  |
| 42.5°  | 794.2  | 825.3  | 853.7  | 879.4  | 887.5  |
| 45°    | 752.2  | 784.7  | 818.5  | 844.2  | 855.0  |
| 47.5°  | 707.6  | 744.1  | 782.0  | 810.4  | 818.5  |
| 50°    | 664.3  | 702.2  | 744.1  | 775.2  | 784.7  |
| 52.5°  | 618.3  | 658.9  | 706.2  | 738.7  | 750.9  |
| 55°    | 573.6  | 618.3  | 667.0  | 703.5  | 714.3  |
| 57.5°  | 530.3  | 576.3  | 629.1  | 665.6  | 677.8  |
| 60°    | 484.3  | 533.0  | 588.5  | 626.4  | 641.3  |
| 62.5°  | 441.0  | 491.1  | 550.6  | 588.5  | 602.0  |
| 65°    | 396.4  | 449.2  | 508.7  | 549.3  | 562.8  |
| 67.5°  | 351.8  | 407.2  | 466.8  | 511.4  | 522.2  |
| 70°    | 304.4  | 362.6  | 427.5  | 470.8  | 484.3  |
| 72.5°  | 261.1  | 319.3  | 386.9  | 431.6  | 445.1  |
| 75°    | 215.1  | 278.7  | 346.3  | 391.0  | 407.2  |
| 77.5°  | 175.9  | 239.5  | 307.1  | 354.5  | 366.6  |
| 80°    | 133.9  | 200.2  | 270.6  | 316.6  | 330.1  |
| 82.5°  | 97.4   | 165.1  | 236.8  | 282.8  | 296.3  |
| 85°    | 66.3   | 133.9  | 205.6  | 251.6  | 265.2  |
| 87.5°  | 40.6   | 108.2  | 177.2  | 223.2  | 236.8  |
| 90°    | 17.6   | 83.9   | 152.9  | 198.9  | 212.4  |
| 92.5°  | 16.2   | 74.4   | 142.1  | 186.7  | 198.9  |
| 95°    | 14.9   | 67.6   | 133.9  | 175.9  | 189.4  |
| 97.5°  | 13.5   | 62.2   | 125.8  | 166.4  | 179.9  |
| 100°   | 12.2   | 55.5   | 117.7  | 156.9  | 170.5  |
| 102.5° | 10.8   | 48.7   | 109.6  | 147.5  | 161.0  |
| 105°   | 10.8   | 43.3   | 101.5  | 139.3  | 151.5  |
| 107.5° | 9.5    | 37.9   | 93.4   | 129.9  | 142.1  |
| 110°   | 8.1    | 32.5   | 86.6   | 121.8  | 132.6  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°   |
|--------|-----|-------|------|-------|-------|
| 112.5° | 8.1 | 27.1  | 78.5 | 112.3 | 124.5 |
| 115°   | 6.8 | 23.0  | 71.7 | 104.2 | 115.0 |
| 117.5° | 6.8 | 17.6  | 63.6 | 96.1  | 106.9 |
| 120°   | 5.4 | 12.2  | 56.8 | 87.9  | 97.4  |
| 122.5° | 5.4 | 8.1   | 50.1 | 79.8  | 89.3  |
| 125°   | 4.1 | 4.1   | 43.3 | 71.7  | 81.2  |
| 127.5° | 4.1 | 2.7   | 36.5 | 63.6  | 73.1  |
| 130°   | 4.1 | 2.7   | 29.8 | 55.5  | 63.6  |
| 132.5° | 2.7 | 2.7   | 23.0 | 47.4  | 56.8  |
| 135°   | 2.7 | 1.4   | 16.2 | 40.6  | 47.4  |
| 137.5° | 2.7 | 1.4   | 10.8 | 32.5  | 39.2  |
| 140°   | 1.4 | 1.4   | 5.4  | 25.7  | 32.5  |
| 142.5° | 1.4 | 0.0   | 0.0  | 17.6  | 24.4  |
| 145°   | 1.4 | 0.0   | 0.0  | 10.8  | 16.2  |
| 147.5° | 0.0 | 0.0   | 0.0  | 4.1   | 9.5   |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 2.7   |
| 152.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 155°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 157.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 160°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 162.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 165°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 167.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 170°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 172.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 175°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 177.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 180°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |

(END OF REPORT)