

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: P998445

Luminaire Tested: S124DR-B1020DB40-4F0-XX-W2A-F

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998445  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/2/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DR-B1020DB40-4F0-XX-W2A-F  
Description: Define 4 Direct Recessed with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

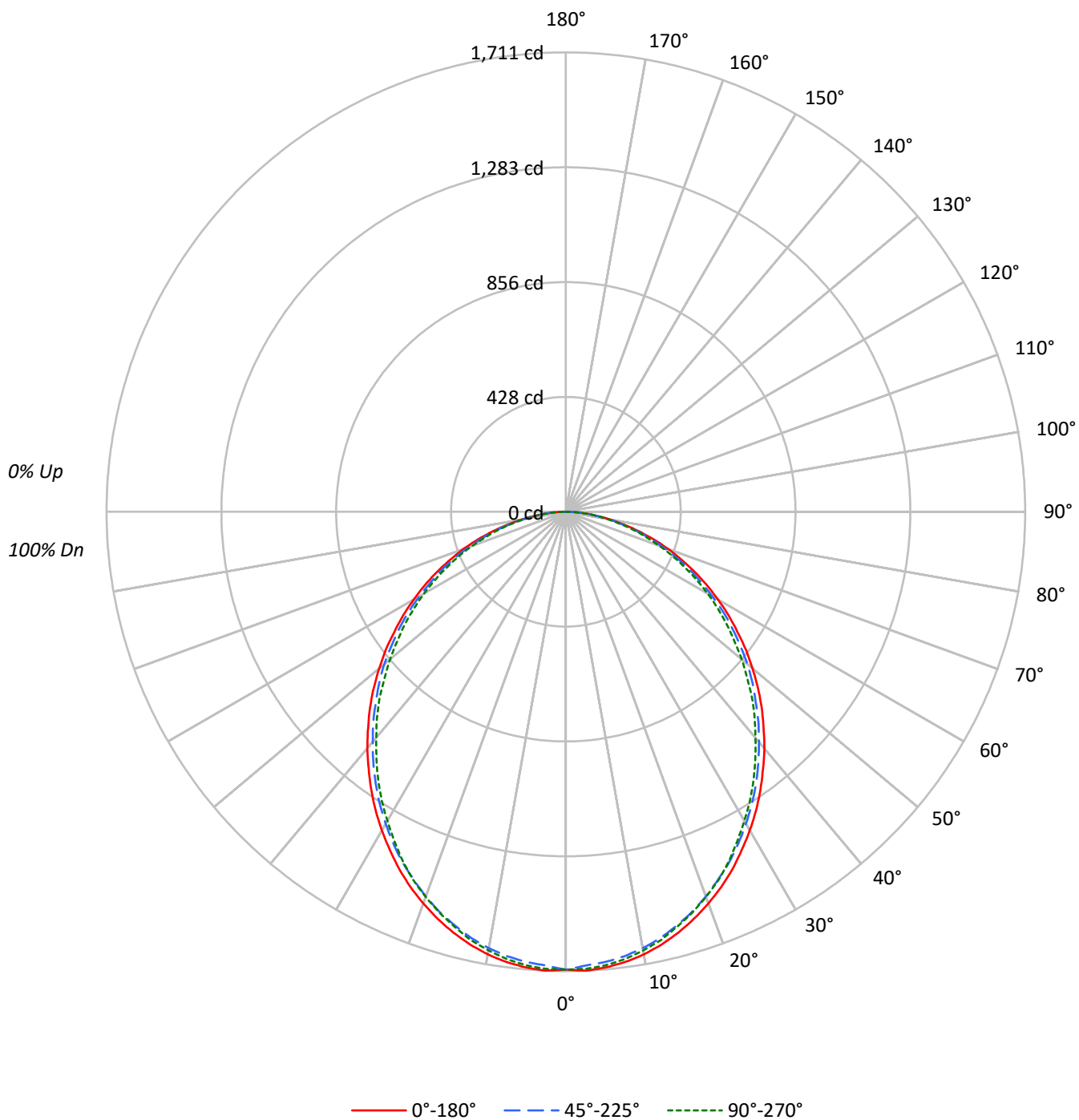
Lumens per Lamp: N/A  
Luminaire Lumens: 4377.0 lumens  
Efficiency: N/A  
Efficacy: 93.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.29  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Direct

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  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 92  |  | 94  | 91  | 89  |  | 90  |
| 2   | 99  | 91  | 84  | 79  | 97  | 89  | 83  | 78  | 86  | 80  | 76  |  | 82  | 78  | 74  |  | 79  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  |  | 73  | 67  | 63  |  | 70  |
| 4   | 83  | 71  | 63  | 56  | 81  | 70  | 62  | 56  | 67  | 60  | 55  |  | 65  | 59  | 54  |  | 63  |
| 5   | 77  | 64  | 55  | 48  | 74  | 63  | 54  | 48  | 61  | 53  | 48  |  | 59  | 52  | 47  |  | 57  |
| 6   | 71  | 58  | 49  | 42  | 69  | 57  | 48  | 42  | 55  | 47  | 42  |  | 53  | 47  | 41  |  | 52  |
| 7   | 66  | 52  | 44  | 38  | 64  | 52  | 43  | 37  | 50  | 43  | 37  |  | 49  | 42  | 37  |  | 47  |
| 8   | 61  | 48  | 39  | 34  | 60  | 47  | 39  | 34  | 46  | 39  | 33  |  | 45  | 38  | 33  |  | 43  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 36  | 30  | 42  | 35  | 30  |  | 41  | 35  | 30  |  | 40  |
| 10  | 54  | 41  | 33  | 28  | 52  | 40  | 33  | 28  | 39  | 32  | 27  |  | 38  | 32  | 27  |  | 37  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13906 | 13906 | 13906 |
| 5°  | 13947 | 13780 | 13880 |
| 10° | 13860 | 13667 | 13735 |
| 15° | 13693 | 13474 | 13508 |
| 20° | 13471 | 13233 | 13245 |
| 25° | 13216 | 12958 | 12921 |
| 30° | 12905 | 12634 | 12519 |
| 35° | 12582 | 12297 | 12134 |
| 40° | 12247 | 11913 | 11695 |
| 45° | 11898 | 11534 | 11314 |
| 50° | 11510 | 11198 | 10852 |
| 55° | 11092 | 10762 | 10412 |
| 60° | 10674 | 10273 | 9962  |
| 65° | 10203 | 9808  | 9412  |
| 70° | 9675  | 9186  | 8829  |
| 75° | 8869  | 8437  | 8223  |
| 80° | 7894  | 7570  | 7377  |
| 85° | 6905  | 6652  | 6521  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 11898 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 160.7  | 3.7       |
| 10°-20°   | 452.8  | 10.3      |
| 20°-30°   | 666.4  | 15.2      |
| 30°-40°   | 774.7  | 17.7      |
| 40°-50°   | 774.6  | 17.7      |
| 50°-60°   | 677.5  | 15.5      |
| 60°-70°   | 503.0  | 11.5      |
| 70°-80°   | 285.4  | 6.5       |
| 80°-90°   | 81.7   | 1.9       |
| 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°    | 1280.0 | 29.2      |
| 0°-40°    | 2054.7 | 46.9      |
| 0°-60°    | 3506.8 | 80.1      |
| 0°-90°    | 4377.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4377.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1705 | 1705  | 1705 | 1705  | 1705 |      |
| 5°  | 1704 | 1698  | 1683 | 1698  | 1696 | 162  |
| 15° | 1622 | 1616  | 1596 | 1604  | 1600 | 457  |
| 25° | 1469 | 1459  | 1440 | 1442  | 1436 | 676  |
| 35° | 1264 | 1254  | 1235 | 1226  | 1219 | 790  |
| 45° | 1032 | 1022  | 1000 | 985   | 981  | 795  |
| 55° | 780  | 776   | 757  | 741   | 732  | 699  |
| 65° | 529  | 522   | 508  | 495   | 488  | 523  |
| 75° | 282  | 275   | 268  | 262   | 261  | 299  |
| 85° | 74   | 74    | 71   | 71    | 70   | 84   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1705.3 | 1705.3 | 1705.3 | 1705.3 | 1705.3 |
| 2.5°  | 1710.8 | 1706.7 | 1691.6 | 1705.3 | 1703.9 |
| 5°    | 1703.9 | 1698.5 | 1683.4 | 1698.5 | 1695.7 |
| 7.5°  | 1691.6 | 1686.2 | 1669.8 | 1682.1 | 1680.7 |
| 10°   | 1673.9 | 1668.4 | 1650.6 | 1661.6 | 1658.8 |
| 12.5° | 1650.6 | 1645.2 | 1626.1 | 1638.4 | 1634.3 |
| 15°   | 1622.0 | 1616.5 | 1596.0 | 1604.2 | 1600.1 |
| 17.5° | 1589.2 | 1582.3 | 1563.2 | 1568.7 | 1565.9 |
| 20°   | 1552.3 | 1545.4 | 1524.9 | 1529.0 | 1526.3 |
| 22.5° | 1512.6 | 1503.1 | 1482.6 | 1490.8 | 1485.3 |
| 25°   | 1468.9 | 1459.3 | 1440.2 | 1441.6 | 1436.1 |
| 27.5° | 1419.7 | 1410.2 | 1392.4 | 1389.7 | 1382.8 |
| 30°   | 1370.5 | 1359.6 | 1341.8 | 1336.4 | 1329.5 |
| 32.5° | 1318.6 | 1309.0 | 1289.9 | 1283.1 | 1276.2 |
| 35°   | 1263.9 | 1254.4 | 1235.3 | 1225.7 | 1218.9 |
| 37.5° | 1206.6 | 1198.4 | 1177.9 | 1168.3 | 1158.7 |
| 40°   | 1150.5 | 1139.6 | 1119.1 | 1105.4 | 1098.6 |
| 42.5° | 1090.4 | 1084.9 | 1061.7 | 1045.3 | 1041.2 |
| 45°   | 1031.7 | 1022.1 | 1000.2 | 985.2  | 981.1  |
| 47.5° | 970.2  | 963.3  | 942.8  | 926.4  | 915.5  |
| 50°   | 907.3  | 901.8  | 882.7  | 863.6  | 855.4  |
| 52.5° | 845.8  | 839.0  | 818.5  | 802.1  | 791.2  |
| 55°   | 780.2  | 776.1  | 757.0  | 740.6  | 732.4  |
| 57.5° | 718.7  | 714.6  | 695.5  | 679.1  | 670.9  |
| 60°   | 654.5  | 647.7  | 629.9  | 617.6  | 610.8  |
| 62.5° | 591.7  | 586.2  | 567.1  | 556.1  | 549.3  |
| 65°   | 528.8  | 522.0  | 508.3  | 494.6  | 487.8  |
| 67.5° | 464.6  | 459.1  | 445.5  | 431.8  | 430.4  |
| 70°   | 405.8  | 396.3  | 385.3  | 374.4  | 370.3  |
| 72.5° | 343.0  | 333.4  | 325.2  | 317.0  | 312.9  |
| 75°   | 281.5  | 274.7  | 267.8  | 262.4  | 261.0  |
| 77.5° | 221.4  | 218.6  | 211.8  | 210.4  | 206.3  |
| 80°   | 168.1  | 164.0  | 161.2  | 158.5  | 157.1  |
| 82.5° | 116.1  | 114.8  | 114.8  | 113.4  | 112.0  |
| 85°   | 73.8   | 73.8   | 71.1   | 71.1   | 69.7   |
| 87.5° | 35.5   | 34.2   | 32.8   | 32.8   | 32.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)