

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: P998460

Luminaire Tested: S124DR-B1195DB2750-4F0-XX-W2A-D\_4000K

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998460  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/2/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DR-B1195DB2750-4F0-XX-W2A-D\_4000K  
Description: Define 4 Direct Recessed with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

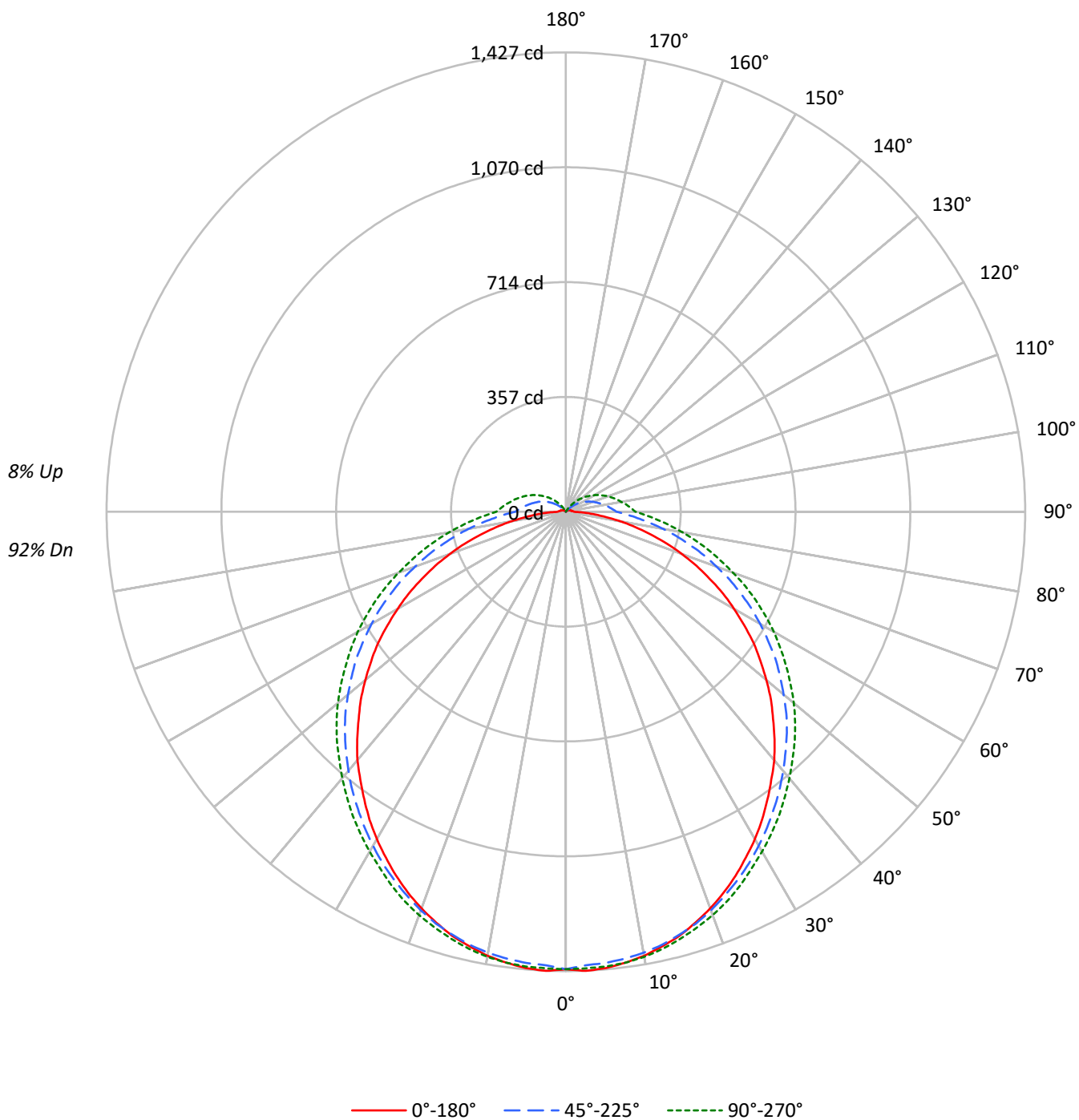
Lumens per Lamp: N/A  
Luminaire Lumens: 4845.0 lumens  
Efficiency: N/A  
Efficacy: 79.0 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 61.3  
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 |    |    |    | 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   | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 95 | 95 | 95 | 95 | 95 | 95 | 92 |
| 1   | 105 | 100 | 95  | 91  | 102 | 97  | 93  | 89  | 91  | 88  | 84  | 86  | 83  | 80  | 81 | 79 | 77 | 77 | 77 | 77 | 74 |
| 2   | 95  | 86  | 79  | 73  | 92  | 84  | 77  | 71  | 79  | 73  | 68  | 74  | 70  | 66  | 70 | 67 | 63 | 63 | 63 | 63 | 60 |
| 3   | 87  | 75  | 67  | 60  | 83  | 73  | 65  | 59  | 69  | 62  | 57  | 65  | 60  | 55  | 62 | 57 | 53 | 53 | 53 | 53 | 50 |
| 4   | 79  | 66  | 57  | 50  | 76  | 65  | 56  | 49  | 61  | 54  | 48  | 58  | 52  | 47  | 55 | 49 | 45 | 45 | 45 | 45 | 43 |
| 5   | 73  | 59  | 50  | 43  | 70  | 58  | 49  | 42  | 55  | 47  | 41  | 52  | 45  | 40  | 49 | 44 | 39 | 39 | 39 | 39 | 37 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 42  | 36  | 47  | 40  | 35  | 45 | 39 | 34 | 34 | 34 | 34 | 32 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 43  | 36  | 31  | 41 | 35 | 30 | 30 | 30 | 30 | 28 |
| 8   | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  | 41  | 33  | 28  | 39  | 32  | 28  | 37 | 31 | 27 | 27 | 27 | 27 | 25 |
| 9   | 54  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 38  | 30  | 25  | 36  | 29  | 25  | 34 | 29 | 24 | 24 | 24 | 24 | 22 |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 23  | 35  | 28  | 23  | 33  | 27  | 23  | 32 | 26 | 22 | 22 | 22 | 22 | 20 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11588 | 11588 | 11588 |
| 5°  | 11646 | 11515 | 11606 |
| 10° | 11596 | 11516 | 11622 |
| 15° | 11513 | 11486 | 11594 |
| 20° | 11379 | 11434 | 11572 |
| 25° | 11225 | 11354 | 11526 |
| 30° | 11058 | 11283 | 11478 |
| 35° | 10868 | 11216 | 11485 |
| 40° | 10723 | 11180 | 11502 |
| 45° | 10497 | 11194 | 11598 |
| 50° | 10316 | 11204 | 11730 |
| 55° | 10135 | 11290 | 11878 |
| 60° | 9836  | 11367 | 12171 |
| 65° | 9518  | 11544 | 12559 |
| 70° | 9143  | 11876 | 13166 |
| 75° | 8623  | 12584 | 14439 |
| 80° | 8148  | 14421 | 17262 |
| 85° | 7887  | 20846 | 26796 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 87.5°

Luminance: 46400 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 134.6  | 2.8       |
| 10°-20°   | 385.8  | 8.0       |
| 20°-30°   | 583.3  | 12.0      |
| 30°-40°   | 705.7  | 14.6      |
| 40°-50°   | 746.0  | 15.4      |
| 50°-60°   | 702.1  | 14.5      |
| 60°-70°   | 582.6  | 12.0      |
| 70°-80°   | 408.9  | 8.4       |
| 80°-90°   | 230.5  | 4.8       |
| 90°-100°  | 137.2  | 2.8       |
| 100°-110° | 101.6  | 2.1       |
| 110°-120° | 68.2   | 1.4       |
| 120°-130° | 38.4   | 0.8       |
| 130°-140° | 16.6   | 0.3       |
| 140°-150° | 3.3    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1103.7 | 22.8      |
| 0°-40°    | 1809.5 | 37.3      |
| 0°-60°    | 3257.6 | 67.2      |
| 0°-90°    | 4479.6 | 92.5      |
| 90°-120°  | 307.0  | 6.3       |
| 90°-150°  | 365.3  | 7.5       |
| 90°-180°  | 365.0  | 7.5       |
| 0°-180°   | 4845.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1421 | 1421  | 1421 | 1421  | 1421 |      |
| 5°   | 1423 | 1418  | 1407 | 1420  | 1418 | 135  |
| 15°  | 1364 | 1365  | 1361 | 1375  | 1373 | 384  |
| 25°  | 1248 | 1257  | 1262 | 1279  | 1281 | 575  |
| 35°  | 1092 | 1111  | 1127 | 1149  | 1154 | 684  |
| 45°  | 910  | 940   | 971  | 998   | 1006 | 704  |
| 55°  | 713  | 746   | 794  | 826   | 836  | 635  |
| 65°  | 493  | 544   | 598  | 638   | 651  | 489  |
| 75°  | 274  | 333   | 399  | 444   | 458  | 291  |
| 85°  | 84   | 151   | 223  | 270   | 286  | 88   |
| 90°  | 26   | 89    | 158  | 204   | 216  | 17   |
| 95°  | 21   | 73    | 138  | 181   | 196  | 16   |
| 105° | 14   | 46    | 105  | 145   | 158  | 16   |
| 115° | 10   | 24    | 75   | 110   | 121  | 10   |
| 125° | 6    | 5     | 45   | 75    | 84   | 6    |
| 135° | 3    | 3     | 14   | 40    | 49   | 3    |
| 145° | 2    | 0     | 0    | 10    | 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    |

TEST NUMBER: P998460

CATALOG NUMBER: S124DR-B1195DB2750-4F0-XX-W2A-D\_4000K

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1421.1 | 1421.1 | 1421.1 | 1421.1 | 1421.1 |
| 2.5°   | 1427.4 | 1422.7 | 1409.9 | 1421.1 | 1419.5 |
| 5°     | 1422.7 | 1417.9 | 1406.7 | 1419.5 | 1417.9 |
| 7.5°   | 1413.1 | 1409.9 | 1400.4 | 1414.7 | 1413.1 |
| 10°    | 1400.4 | 1398.8 | 1390.8 | 1405.2 | 1403.6 |
| 12.5°  | 1382.9 | 1382.9 | 1378.1 | 1390.8 | 1390.8 |
| 15°    | 1363.8 | 1365.4 | 1360.6 | 1374.9 | 1373.3 |
| 17.5°  | 1338.3 | 1343.1 | 1341.5 | 1355.8 | 1354.2 |
| 20°    | 1311.3 | 1316.0 | 1317.6 | 1333.5 | 1333.5 |
| 22.5°  | 1281.0 | 1287.4 | 1290.6 | 1306.5 | 1309.7 |
| 25°    | 1247.6 | 1257.2 | 1261.9 | 1279.4 | 1281.0 |
| 27.5°  | 1211.0 | 1225.3 | 1231.7 | 1247.6 | 1249.2 |
| 30°    | 1174.4 | 1187.1 | 1198.3 | 1215.8 | 1219.0 |
| 32.5°  | 1134.6 | 1150.5 | 1163.3 | 1184.0 | 1187.1 |
| 35°    | 1091.7 | 1110.8 | 1126.7 | 1148.9 | 1153.7 |
| 37.5°  | 1048.7 | 1071.0 | 1090.1 | 1112.3 | 1117.1 |
| 40°    | 1007.3 | 1028.0 | 1050.3 | 1074.2 | 1080.5 |
| 42.5°  | 959.6  | 983.4  | 1010.5 | 1037.6 | 1042.3 |
| 45°    | 910.2  | 940.5  | 970.7  | 997.8  | 1005.7 |
| 47.5°  | 864.1  | 894.3  | 929.3  | 956.4  | 965.9  |
| 50°    | 813.2  | 848.2  | 883.2  | 915.0  | 924.6  |
| 52.5°  | 762.3  | 797.3  | 838.6  | 870.5  | 880.0  |
| 55°    | 712.9  | 746.3  | 794.1  | 825.9  | 835.5  |
| 57.5°  | 657.2  | 698.6  | 744.7  | 782.9  | 790.9  |
| 60°    | 603.1  | 644.5  | 697.0  | 733.6  | 746.3  |
| 62.5°  | 550.6  | 596.8  | 649.3  | 685.9  | 698.6  |
| 65°    | 493.3  | 544.2  | 598.3  | 638.1  | 650.9  |
| 67.5°  | 439.2  | 493.3  | 550.6  | 590.4  | 603.1  |
| 70°    | 383.5  | 437.6  | 498.1  | 541.1  | 552.2  |
| 72.5°  | 329.4  | 385.1  | 450.3  | 491.7  | 504.5  |
| 75°    | 273.7  | 332.6  | 399.4  | 444.0  | 458.3  |
| 77.5°  | 221.2  | 283.3  | 353.3  | 397.8  | 413.7  |
| 80°    | 173.5  | 237.1  | 307.1  | 354.9  | 367.6  |
| 82.5°  | 125.7  | 192.6  | 262.6  | 311.9  | 326.2  |
| 85°    | 84.3   | 151.2  | 222.8  | 270.5  | 286.4  |
| 87.5°  | 52.5   | 117.8  | 187.8  | 233.9  | 248.2  |
| 90°    | 25.5   | 89.1   | 157.5  | 203.7  | 216.4  |
| 92.5°  | 23.9   | 79.6   | 148.0  | 192.6  | 205.3  |
| 95°    | 20.7   | 73.2   | 138.4  | 181.4  | 195.7  |
| 97.5°  | 19.1   | 65.2   | 130.5  | 171.9  | 186.2  |
| 100°   | 17.5   | 58.9   | 120.9  | 163.9  | 175.0  |
| 102.5° | 17.5   | 52.5   | 113.0  | 154.4  | 167.1  |
| 105°   | 14.3   | 46.1   | 105.0  | 144.8  | 157.5  |
| 107.5° | 14.3   | 41.4   | 97.1   | 136.9  | 148.0  |
| 110°   | 12.7   | 35.0   | 90.7   | 127.3  | 140.0  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°   | 22.5° | 45°  | 67.5° | 90°   |
|--------|------|-------|------|-------|-------|
| 112.5° | 11.1 | 30.2  | 82.7 | 117.8 | 130.5 |
| 115°   | 9.5  | 23.9  | 74.8 | 109.8 | 120.9 |
| 117.5° | 9.5  | 19.1  | 66.8 | 100.3 | 113.0 |
| 120°   | 8.0  | 12.7  | 58.9 | 90.7  | 103.4 |
| 122.5° | 8.0  | 8.0   | 50.9 | 82.7  | 93.9  |
| 125°   | 6.4  | 4.8   | 44.6 | 74.8  | 84.3  |
| 127.5° | 6.4  | 4.8   | 36.6 | 65.2  | 76.4  |
| 130°   | 4.8  | 3.2   | 28.6 | 57.3  | 66.8  |
| 132.5° | 4.8  | 3.2   | 22.3 | 49.3  | 58.9  |
| 135°   | 3.2  | 3.2   | 14.3 | 39.8  | 49.3  |
| 137.5° | 3.2  | 1.6   | 8.0  | 31.8  | 39.8  |
| 140°   | 3.2  | 1.6   | 3.2  | 23.9  | 31.8  |
| 142.5° | 1.6  | 1.6   | 0.0  | 17.5  | 23.9  |
| 145°   | 1.6  | 0.0   | 0.0  | 9.5   | 15.9  |
| 147.5° | 1.6  | 0.0   | 0.0  | 1.6   | 8.0   |
| 150°   | 1.6  | 0.0   | 0.0  | 0.0   | 0.0   |
| 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)