

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: P998471

Luminaire Tested: S124DR-B1195DB35-4F0-XX-W2A-D

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998471  
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-B1195DB35-4F0-XX-W2A-D  
Description: Define 4 Direct Recessed with 3500K BioUP LEDs {m-DER=0.721} {m-EER=0.792}  
Light Source: -  
Ballast/Driver: -

**Summary**

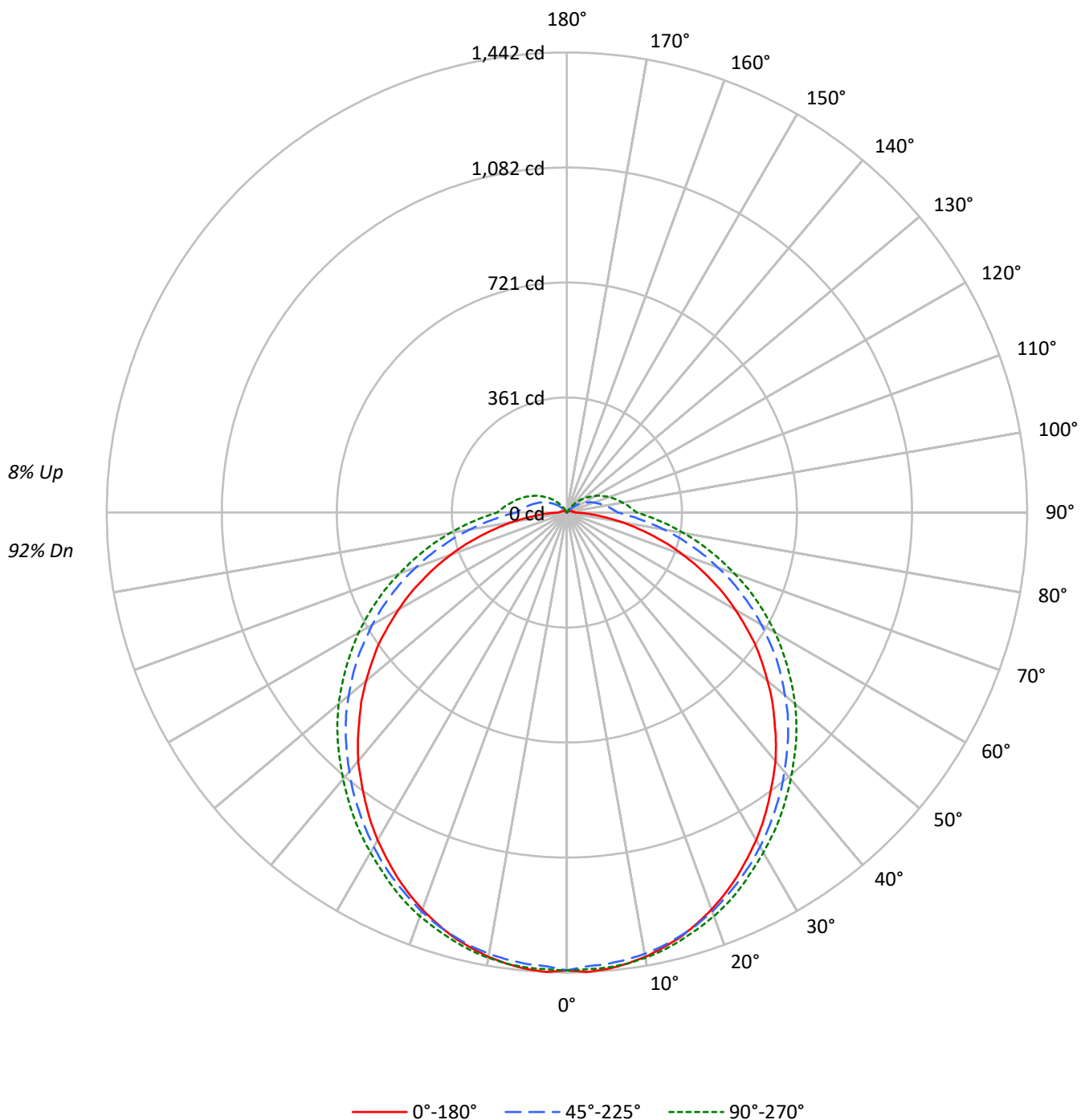
Lumens per Lamp: N/A  
Luminaire Lumens: 4893.0 lumens  
Efficiency: N/A  
Efficacy: 79.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Direct

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

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11702 | 11702 | 11702 |
| 5°  | 11761 | 11629 | 11721 |
| 10° | 11711 | 11630 | 11737 |
| 15° | 11627 | 11600 | 11708 |
| 20° | 11492 | 11548 | 11687 |
| 25° | 11337 | 11466 | 11640 |
| 30° | 11167 | 11395 | 11591 |
| 35° | 10975 | 11327 | 11599 |
| 40° | 10829 | 11291 | 11616 |
| 45° | 10602 | 11305 | 11713 |
| 50° | 10418 | 11315 | 11845 |
| 55° | 10236 | 11401 | 11995 |
| 60° | 9934  | 11480 | 12292 |
| 65° | 9613  | 11660 | 12683 |
| 70° | 9234  | 11993 | 13297 |
| 75° | 8708  | 12710 | 14581 |
| 80° | 8227  | 14567 | 17431 |
| 85° | 7971  | 21051 | 27068 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 87.5°

Luminance: 46867 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 136.0  | 2.8       |
| 10°-20°   | 389.6  | 8.0       |
| 20°-30°   | 589.1  | 12.0      |
| 30°-40°   | 712.7  | 14.6      |
| 40°-50°   | 753.4  | 15.4      |
| 50°-60°   | 709.1  | 14.5      |
| 60°-70°   | 588.4  | 12.0      |
| 70°-80°   | 412.9  | 8.4       |
| 80°-90°   | 232.8  | 4.8       |
| 90°-100°  | 138.6  | 2.8       |
| 100°-110° | 102.6  | 2.1       |
| 110°-120° | 68.9   | 1.4       |
| 120°-130° | 38.8   | 0.8       |
| 130°-140° | 16.8   | 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°    | 1114.7 | 22.8      |
| 0°-40°    | 1827.4 | 37.3      |
| 0°-60°    | 3289.9 | 67.2      |
| 0°-90°    | 4524.0 | 92.5      |
| 90°-120°  | 310.1  | 6.3       |
| 90°-150°  | 369.0  | 7.5       |
| 90°-180°  | 369.0  | 7.5       |
| 0°-180°   | 4893.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1435 | 1435  | 1435 | 1435  | 1435 |      |
| 5°   | 1437 | 1432  | 1421 | 1434  | 1432 | 136  |
| 15°  | 1377 | 1379  | 1374 | 1388  | 1387 | 388  |
| 25°  | 1260 | 1270  | 1274 | 1292  | 1294 | 580  |
| 35°  | 1102 | 1122  | 1138 | 1160  | 1165 | 690  |
| 45°  | 919  | 950   | 980  | 1008  | 1016 | 710  |
| 55°  | 720  | 754   | 802  | 834   | 844  | 642  |
| 65°  | 498  | 550   | 604  | 644   | 657  | 494  |
| 75°  | 276  | 336   | 403  | 448   | 463  | 294  |
| 85°  | 85   | 153   | 225  | 273   | 289  | 89   |
| 90°  | 26   | 90    | 159  | 206   | 219  | 18   |
| 95°  | 21   | 74    | 140  | 183   | 198  | 17   |
| 105° | 14   | 47    | 106  | 146   | 159  | 16   |
| 115° | 10   | 24    | 76   | 111   | 122  | 10   |
| 125° | 6    | 5     | 45   | 76    | 85   | 6    |
| 135° | 3    | 3     | 14   | 40    | 50   | 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    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1435.1 | 1435.1 | 1435.1 | 1435.1 | 1435.1 |
| 2.5°   | 1441.6 | 1436.8 | 1423.9 | 1435.1 | 1433.5 |
| 5°     | 1436.8 | 1431.9 | 1420.7 | 1433.5 | 1431.9 |
| 7.5°   | 1427.1 | 1423.9 | 1414.3 | 1428.7 | 1427.1 |
| 10°    | 1414.3 | 1412.6 | 1404.6 | 1419.1 | 1417.5 |
| 12.5°  | 1396.6 | 1396.6 | 1391.8 | 1404.6 | 1404.6 |
| 15°    | 1377.3 | 1378.9 | 1374.1 | 1388.5 | 1386.9 |
| 17.5°  | 1351.6 | 1356.4 | 1354.8 | 1369.3 | 1367.6 |
| 20°    | 1324.3 | 1329.1 | 1330.7 | 1346.8 | 1346.8 |
| 22.5°  | 1293.7 | 1300.1 | 1303.4 | 1319.4 | 1322.6 |
| 25°    | 1260.0 | 1269.6 | 1274.4 | 1292.1 | 1293.7 |
| 27.5°  | 1223.0 | 1237.5 | 1243.9 | 1260.0 | 1261.6 |
| 30°    | 1186.0 | 1198.9 | 1210.2 | 1227.8 | 1231.0 |
| 32.5°  | 1145.9 | 1161.9 | 1174.8 | 1195.7 | 1198.9 |
| 35°    | 1102.5 | 1121.8 | 1137.8 | 1160.3 | 1165.2 |
| 37.5°  | 1059.1 | 1081.6 | 1100.9 | 1123.4 | 1128.2 |
| 40°    | 1017.3 | 1038.2 | 1060.7 | 1084.8 | 1091.2 |
| 42.5°  | 969.1  | 993.2  | 1020.5 | 1047.8 | 1052.7 |
| 45°    | 919.3  | 949.8  | 980.3  | 1007.7 | 1015.7 |
| 47.5°  | 872.7  | 903.2  | 938.5  | 965.9  | 975.5  |
| 50°    | 821.2  | 856.6  | 891.9  | 924.1  | 933.7  |
| 52.5°  | 769.8  | 805.2  | 846.9  | 879.1  | 888.7  |
| 55°    | 720.0  | 753.7  | 801.9  | 834.1  | 843.7  |
| 57.5°  | 663.7  | 705.5  | 752.1  | 790.7  | 798.7  |
| 60°    | 609.1  | 650.9  | 703.9  | 740.9  | 753.7  |
| 62.5°  | 556.1  | 602.7  | 655.7  | 692.7  | 705.5  |
| 65°    | 498.2  | 549.6  | 604.3  | 644.4  | 657.3  |
| 67.5°  | 443.6  | 498.2  | 556.1  | 596.2  | 609.1  |
| 70°    | 387.3  | 442.0  | 503.0  | 546.4  | 557.7  |
| 72.5°  | 332.7  | 388.9  | 454.8  | 496.6  | 509.5  |
| 75°    | 276.4  | 335.9  | 403.4  | 448.4  | 462.8  |
| 77.5°  | 223.4  | 286.1  | 356.8  | 401.8  | 417.8  |
| 80°    | 175.2  | 239.5  | 310.2  | 358.4  | 371.2  |
| 82.5°  | 127.0  | 194.5  | 265.2  | 315.0  | 329.5  |
| 85°    | 85.2   | 152.7  | 225.0  | 273.2  | 289.3  |
| 87.5°  | 53.0   | 118.9  | 189.6  | 236.2  | 250.7  |
| 90°    | 25.7   | 90.0   | 159.1  | 205.7  | 218.6  |
| 92.5°  | 24.1   | 80.4   | 149.5  | 194.5  | 207.3  |
| 95°    | 20.9   | 73.9   | 139.8  | 183.2  | 197.7  |
| 97.5°  | 19.3   | 65.9   | 131.8  | 173.6  | 188.0  |
| 100°   | 17.7   | 59.5   | 122.1  | 165.5  | 176.8  |
| 102.5° | 17.7   | 53.0   | 114.1  | 155.9  | 168.7  |
| 105°   | 14.5   | 46.6   | 106.1  | 146.2  | 159.1  |
| 107.5° | 14.5   | 41.8   | 98.0   | 138.2  | 149.5  |
| 110°   | 12.9   | 35.4   | 91.6   | 128.6  | 141.4  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°   | 22.5° | 45°  | 67.5° | 90°   |
|--------|------|-------|------|-------|-------|
| 112.5° | 11.2 | 30.5  | 83.6 | 118.9 | 131.8 |
| 115°   | 9.6  | 24.1  | 75.5 | 110.9 | 122.1 |
| 117.5° | 9.6  | 19.3  | 67.5 | 101.2 | 114.1 |
| 120°   | 8.0  | 12.9  | 59.5 | 91.6  | 104.5 |
| 122.5° | 8.0  | 8.0   | 51.4 | 83.6  | 94.8  |
| 125°   | 6.4  | 4.8   | 45.0 | 75.5  | 85.2  |
| 127.5° | 6.4  | 4.8   | 37.0 | 65.9  | 77.1  |
| 130°   | 4.8  | 3.2   | 28.9 | 57.9  | 67.5  |
| 132.5° | 4.8  | 3.2   | 22.5 | 49.8  | 59.5  |
| 135°   | 3.2  | 3.2   | 14.5 | 40.2  | 49.8  |
| 137.5° | 3.2  | 1.6   | 8.0  | 32.1  | 40.2  |
| 140°   | 3.2  | 1.6   | 3.2  | 24.1  | 32.1  |
| 142.5° | 1.6  | 1.6   | 0.0  | 17.7  | 24.1  |
| 145°   | 1.6  | 0.0   | 0.0  | 9.6   | 16.1  |
| 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)