

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: P998534

Luminaire Tested: S124DR-B575DB40-4F0-XX-W2A-D

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998534  
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-B575DB40-4F0-XX-W2A-D  
Description: Define 4 Direct Recessed with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

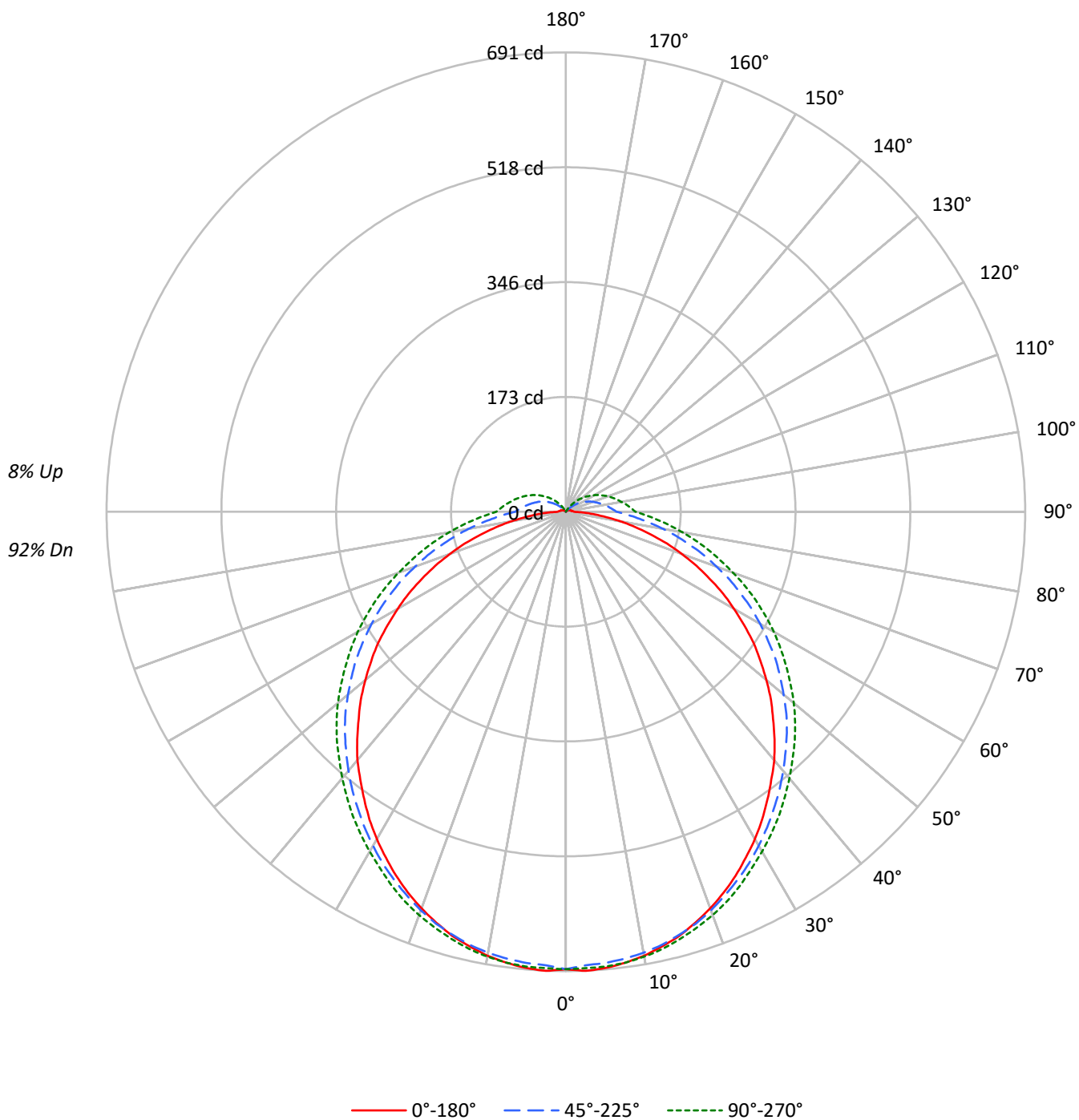
Lumens per Lamp: N/A  
Luminaire Lumens: 2346.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 24  
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°  | 5611 | 5611  | 5611  |
| 5°  | 5639 | 5576  | 5620  |
| 10° | 5615 | 5577  | 5627  |
| 15° | 5575 | 5562  | 5614  |
| 20° | 5510 | 5536  | 5603  |
| 25° | 5435 | 5497  | 5581  |
| 30° | 5355 | 5463  | 5557  |
| 35° | 5262 | 5430  | 5561  |
| 40° | 5193 | 5414  | 5569  |
| 45° | 5083 | 5420  | 5616  |
| 50° | 4995 | 5426  | 5680  |
| 55° | 4908 | 5466  | 5751  |
| 60° | 4762 | 5504  | 5894  |
| 65° | 4610 | 5590  | 6082  |
| 70° | 4427 | 5751  | 6375  |
| 75° | 4175 | 6093  | 6991  |
| 80° | 3945 | 6983  | 8359  |
| 85° | 3817 | 10095 | 12977 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 87.5°

Luminance: 22471 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 65.2   | 2.8       |
| 10°-20°   | 186.8  | 8.0       |
| 20°-30°   | 282.4  | 12.0      |
| 30°-40°   | 341.7  | 14.6      |
| 40°-50°   | 361.2  | 15.4      |
| 50°-60°   | 340.0  | 14.5      |
| 60°-70°   | 282.1  | 12.0      |
| 70°-80°   | 198.0  | 8.4       |
| 80°-90°   | 111.6  | 4.8       |
| 90°-100°  | 66.4   | 2.8       |
| 100°-110° | 49.2   | 2.1       |
| 110°-120° | 33.0   | 1.4       |
| 120°-130° | 18.6   | 0.8       |
| 130°-140° | 8.0    | 0.3       |
| 140°-150° | 1.6    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| <hr/>     |        |           |
| 0°-30°    | 534.4  | 22.8      |
| 0°-40°    | 876.2  | 37.3      |
| 0°-60°    | 1577.4 | 67.2      |
| 0°-90°    | 2169.1 | 92.5      |
| 90°-120°  | 148.7  | 6.3       |
| 90°-150°  | 176.9  | 7.5       |
| 90°-180°  | 177.0  | 7.5       |
| 0°-180°   | 2346.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 688 | 688   | 688 | 688   | 688 |      |
| 5°   | 689 | 687   | 681 | 687   | 687 | 65   |
| 15°  | 660 | 661   | 659 | 666   | 665 | 186  |
| 25°  | 604 | 609   | 611 | 620   | 620 | 278  |
| 35°  | 529 | 538   | 546 | 556   | 559 | 331  |
| 45°  | 441 | 455   | 470 | 483   | 487 | 341  |
| 55°  | 345 | 361   | 384 | 400   | 404 | 308  |
| 65°  | 239 | 264   | 290 | 309   | 315 | 237  |
| 75°  | 132 | 161   | 193 | 215   | 222 | 141  |
| 85°  | 41  | 73    | 108 | 131   | 139 | 43   |
| 90°  | 12  | 43    | 76  | 99    | 105 | 8    |
| 95°  | 10  | 35    | 67  | 88    | 95  | 8    |
| 105° | 7   | 22    | 51  | 70    | 76  | 8    |
| 115° | 5   | 12    | 36  | 53    | 59  | 5    |
| 125° | 3   | 2     | 22  | 36    | 41  | 3    |
| 135° | 2   | 2     | 7   | 19    | 24  | 1    |
| 145° | 1   | 0     | 0   | 5     | 8   | 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°     | 688.1 | 688.1 | 688.1 | 688.1 | 688.1 |
| 2.5°   | 691.2 | 688.9 | 682.7 | 688.1 | 687.3 |
| 5°     | 688.9 | 686.6 | 681.2 | 687.3 | 686.6 |
| 7.5°   | 684.2 | 682.7 | 678.1 | 685.0 | 684.2 |
| 10°    | 678.1 | 677.3 | 673.5 | 680.4 | 679.6 |
| 12.5°  | 669.6 | 669.6 | 667.3 | 673.5 | 673.5 |
| 15°    | 660.4 | 661.1 | 658.8 | 665.7 | 665.0 |
| 17.5°  | 648.0 | 650.3 | 649.6 | 656.5 | 655.7 |
| 20°    | 634.9 | 637.2 | 638.0 | 645.7 | 645.7 |
| 22.5°  | 620.3 | 623.4 | 624.9 | 632.6 | 634.2 |
| 25°    | 604.1 | 608.7 | 611.0 | 619.5 | 620.3 |
| 27.5°  | 586.4 | 593.3 | 596.4 | 604.1 | 604.9 |
| 30°    | 568.7 | 574.8 | 580.2 | 588.7 | 590.2 |
| 32.5°  | 549.4 | 557.1 | 563.3 | 573.3 | 574.8 |
| 35°    | 528.6 | 537.8 | 545.5 | 556.3 | 558.6 |
| 37.5°  | 507.8 | 518.6 | 527.8 | 538.6 | 540.9 |
| 40°    | 487.8 | 497.8 | 508.6 | 520.1 | 523.2 |
| 42.5°  | 464.6 | 476.2 | 489.3 | 502.4 | 504.7 |
| 45°    | 440.8 | 455.4 | 470.0 | 483.1 | 487.0 |
| 47.5°  | 418.4 | 433.0 | 450.0 | 463.1 | 467.7 |
| 50°    | 393.7 | 410.7 | 427.7 | 443.1 | 447.7 |
| 52.5°  | 369.1 | 386.0 | 406.1 | 421.5 | 426.1 |
| 55°    | 345.2 | 361.4 | 384.5 | 399.9 | 404.5 |
| 57.5°  | 318.2 | 338.3 | 360.6 | 379.1 | 383.0 |
| 60°    | 292.0 | 312.1 | 337.5 | 355.2 | 361.4 |
| 62.5°  | 266.6 | 289.0 | 314.4 | 332.1 | 338.3 |
| 65°    | 238.9 | 263.5 | 289.7 | 309.0 | 315.2 |
| 67.5°  | 212.7 | 238.9 | 266.6 | 285.9 | 292.0 |
| 70°    | 185.7 | 211.9 | 241.2 | 262.0 | 267.4 |
| 72.5°  | 159.5 | 186.5 | 218.1 | 238.1 | 244.3 |
| 75°    | 132.5 | 161.0 | 193.4 | 215.0 | 221.9 |
| 77.5°  | 107.1 | 137.2 | 171.1 | 192.6 | 200.3 |
| 80°    | 84.0  | 114.8 | 148.7 | 171.8 | 178.0 |
| 82.5°  | 60.9  | 93.2  | 127.1 | 151.0 | 158.0 |
| 85°    | 40.8  | 73.2  | 107.9 | 131.0 | 138.7 |
| 87.5°  | 25.4  | 57.0  | 90.9  | 113.3 | 120.2 |
| 90°    | 12.3  | 43.2  | 76.3  | 98.6  | 104.8 |
| 92.5°  | 11.6  | 38.5  | 71.7  | 93.2  | 99.4  |
| 95°    | 10.0  | 35.4  | 67.0  | 87.8  | 94.8  |
| 97.5°  | 9.2   | 31.6  | 63.2  | 83.2  | 90.2  |
| 100°   | 8.5   | 28.5  | 58.6  | 79.4  | 84.8  |
| 102.5° | 8.5   | 25.4  | 54.7  | 74.7  | 80.9  |
| 105°   | 6.9   | 22.3  | 50.9  | 70.1  | 76.3  |
| 107.5° | 6.9   | 20.0  | 47.0  | 66.3  | 71.7  |
| 110°   | 6.2   | 17.0  | 43.9  | 61.6  | 67.8  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 5.4 | 14.6  | 40.1 | 57.0  | 63.2 |
| 115°   | 4.6 | 11.6  | 36.2 | 53.2  | 58.6 |
| 117.5° | 4.6 | 9.2   | 32.4 | 48.5  | 54.7 |
| 120°   | 3.9 | 6.2   | 28.5 | 43.9  | 50.1 |
| 122.5° | 3.9 | 3.9   | 24.7 | 40.1  | 45.5 |
| 125°   | 3.1 | 2.3   | 21.6 | 36.2  | 40.8 |
| 127.5° | 3.1 | 2.3   | 17.7 | 31.6  | 37.0 |
| 130°   | 2.3 | 1.5   | 13.9 | 27.7  | 32.4 |
| 132.5° | 2.3 | 1.5   | 10.8 | 23.9  | 28.5 |
| 135°   | 1.5 | 1.5   | 6.9  | 19.3  | 23.9 |
| 137.5° | 1.5 | 0.8   | 3.9  | 15.4  | 19.3 |
| 140°   | 1.5 | 0.8   | 1.5  | 11.6  | 15.4 |
| 142.5° | 0.8 | 0.8   | 0.0  | 8.5   | 11.6 |
| 145°   | 0.8 | 0.0   | 0.0  | 4.6   | 7.7  |
| 147.5° | 0.8 | 0.0   | 0.0  | 0.8   | 3.9  |
| 150°   | 0.8 | 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)