

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: P998501

Luminaire Tested: S124DR-B350DB35-4F0-XX-W2A-D

Issue Date: 5/2/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998501  
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-B350DB35-4F0-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**

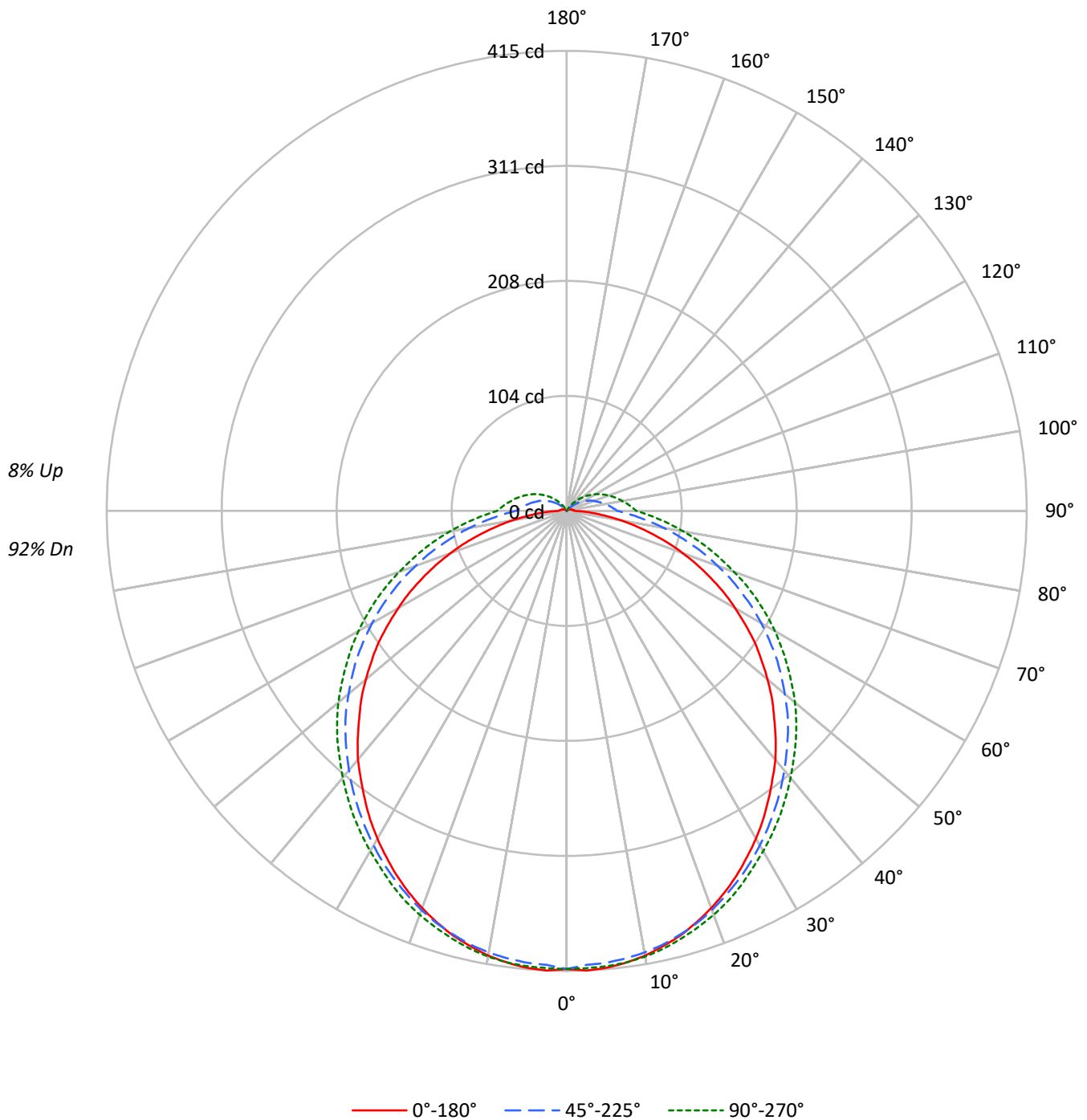
Lumens per Lamp: N/A  
Luminaire Lumens: 1409.0 lumens  
Efficiency: N/A  
Efficacy: 108.4 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 13  
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°  | 3370 | 3370 | 3370 |
| 5°  | 3386 | 3349 | 3375 |
| 10° | 3373 | 3349 | 3380 |
| 15° | 3348 | 3341 | 3372 |
| 20° | 3309 | 3325 | 3365 |
| 25° | 3264 | 3302 | 3352 |
| 30° | 3216 | 3281 | 3338 |
| 35° | 3161 | 3262 | 3340 |
| 40° | 3118 | 3251 | 3345 |
| 45° | 3053 | 3256 | 3373 |
| 50° | 3000 | 3258 | 3411 |
| 55° | 2947 | 3283 | 3455 |
| 60° | 2861 | 3306 | 3539 |
| 65° | 2769 | 3357 | 3653 |
| 70° | 2658 | 3455 | 3829 |
| 75° | 2508 | 3661 | 4200 |
| 80° | 2367 | 4194 | 5020 |
| 85° | 2292 | 6063 | 7794 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 87.5°

Luminance: 13498 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 39.2   | 2.8       |
| 10°-20°   | 112.2  | 8.0       |
| 20°-30°   | 169.6  | 12.0      |
| 30°-40°   | 205.2  | 14.6      |
| 40°-50°   | 217.0  | 15.4      |
| 50°-60°   | 204.2  | 14.5      |
| 60°-70°   | 169.4  | 12.0      |
| 70°-80°   | 118.9  | 8.4       |
| 80°-90°   | 67.0   | 4.8       |
| 90°-100°  | 39.9   | 2.8       |
| 100°-110° | 29.6   | 2.1       |
| 110°-120° | 19.8   | 1.4       |
| 120°-130° | 11.2   | 0.8       |
| 130°-140° | 4.8    | 0.3       |
| 140°-150° | 1.0    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 321.0  | 22.8      |
| 0°-40°    | 526.2  | 37.3      |
| 0°-60°    | 947.4  | 67.2      |
| 0°-90°    | 1302.8 | 92.5      |
| 90°-120°  | 89.3   | 6.3       |
| 90°-150°  | 106.3  | 7.5       |
| 90°-180°  | 106.0  | 7.5       |
| 0°-180°   | 1409.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 413 | 413   | 413 | 413   | 413 |      |
| 5°   | 414 | 412   | 409 | 413   | 412 | 39   |
| 15°  | 397 | 397   | 396 | 400   | 399 | 112  |
| 25°  | 363 | 366   | 367 | 372   | 372 | 167  |
| 35°  | 318 | 323   | 328 | 334   | 336 | 199  |
| 45°  | 265 | 274   | 282 | 290   | 292 | 205  |
| 55°  | 207 | 217   | 231 | 240   | 243 | 185  |
| 65°  | 144 | 158   | 174 | 186   | 189 | 142  |
| 75°  | 80  | 97    | 116 | 129   | 133 | 85   |
| 85°  | 24  | 44    | 65  | 79    | 83  | 26   |
| 90°  | 7   | 26    | 46  | 59    | 63  | 5    |
| 95°  | 6   | 21    | 40  | 53    | 57  | 5    |
| 105° | 4   | 13    | 30  | 42    | 46  | 5    |
| 115° | 3   | 7     | 22  | 32    | 35  | 3    |
| 125° | 2   | 1     | 13  | 22    | 24  | 2    |
| 135° | 1   | 1     | 4   | 12    | 14  | 1    |
| 145° | 0   | 0     | 0   | 3     | 5   | 0    |
| 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°     | 413.3 | 413.3 | 413.3 | 413.3 | 413.3 |
| 2.5°   | 415.1 | 413.7 | 410.0 | 413.3 | 412.8 |
| 5°     | 413.7 | 412.3 | 409.1 | 412.8 | 412.3 |
| 7.5°   | 411.0 | 410.0 | 407.3 | 411.4 | 411.0 |
| 10°    | 407.3 | 406.8 | 404.5 | 408.6 | 408.2 |
| 12.5°  | 402.2 | 402.2 | 400.8 | 404.5 | 404.5 |
| 15°    | 396.6 | 397.1 | 395.7 | 399.8 | 399.4 |
| 17.5°  | 389.2 | 390.6 | 390.1 | 394.3 | 393.8 |
| 20°    | 381.3 | 382.7 | 383.2 | 387.8 | 387.8 |
| 22.5°  | 372.5 | 374.4 | 375.3 | 379.9 | 380.9 |
| 25°    | 362.8 | 365.6 | 367.0 | 372.1 | 372.5 |
| 27.5°  | 352.2 | 356.3 | 358.2 | 362.8 | 363.3 |
| 30°    | 341.5 | 345.2 | 348.5 | 353.6 | 354.5 |
| 32.5°  | 330.0 | 334.6 | 338.3 | 344.3 | 345.2 |
| 35°    | 317.5 | 323.0 | 327.7 | 334.1 | 335.5 |
| 37.5°  | 305.0 | 311.5 | 317.0 | 323.5 | 324.9 |
| 40°    | 292.9 | 299.0 | 305.4 | 312.4 | 314.2 |
| 42.5°  | 279.1 | 286.0 | 293.9 | 301.7 | 303.1 |
| 45°    | 264.7 | 273.5 | 282.3 | 290.2 | 292.5 |
| 47.5°  | 251.3 | 260.1 | 270.3 | 278.1 | 280.9 |
| 50°    | 236.5 | 246.7 | 256.8 | 266.1 | 268.9 |
| 52.5°  | 221.7 | 231.9 | 243.9 | 253.1 | 255.9 |
| 55°    | 207.3 | 217.0 | 230.9 | 240.2 | 243.0 |
| 57.5°  | 191.1 | 203.2 | 216.6 | 227.7 | 230.0 |
| 60°    | 175.4 | 187.4 | 202.7 | 213.3 | 217.0 |
| 62.5°  | 160.1 | 173.5 | 188.8 | 199.5 | 203.2 |
| 65°    | 143.5 | 158.3 | 174.0 | 185.6 | 189.3 |
| 67.5°  | 127.7 | 143.5 | 160.1 | 171.7 | 175.4 |
| 70°    | 111.5 | 127.3 | 144.9 | 157.3 | 160.6 |
| 72.5°  | 95.8  | 112.0 | 131.0 | 143.0 | 146.7 |
| 75°    | 79.6  | 96.7  | 116.2 | 129.1 | 133.3 |
| 77.5°  | 64.3  | 82.4  | 102.7 | 115.7 | 120.3 |
| 80°    | 50.4  | 69.0  | 89.3  | 103.2 | 106.9 |
| 82.5°  | 36.6  | 56.0  | 76.4  | 90.7  | 94.9  |
| 85°    | 24.5  | 44.0  | 64.8  | 78.7  | 83.3  |
| 87.5°  | 15.3  | 34.2  | 54.6  | 68.0  | 72.2  |
| 90°    | 7.4   | 25.9  | 45.8  | 59.2  | 62.9  |
| 92.5°  | 6.9   | 23.1  | 43.0  | 56.0  | 59.7  |
| 95°    | 6.0   | 21.3  | 40.3  | 52.8  | 56.9  |
| 97.5°  | 5.6   | 19.0  | 37.9  | 50.0  | 54.1  |
| 100°   | 5.1   | 17.1  | 35.2  | 47.7  | 50.9  |
| 102.5° | 5.1   | 15.3  | 32.9  | 44.9  | 48.6  |
| 105°   | 4.2   | 13.4  | 30.5  | 42.1  | 45.8  |
| 107.5° | 4.2   | 12.0  | 28.2  | 39.8  | 43.0  |
| 110°   | 3.7   | 10.2  | 26.4  | 37.0  | 40.7  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 3.2 | 8.8   | 24.1 | 34.2  | 37.9 |
| 115°   | 2.8 | 6.9   | 21.8 | 31.9  | 35.2 |
| 117.5° | 2.8 | 5.6   | 19.4 | 29.2  | 32.9 |
| 120°   | 2.3 | 3.7   | 17.1 | 26.4  | 30.1 |
| 122.5° | 2.3 | 2.3   | 14.8 | 24.1  | 27.3 |
| 125°   | 1.9 | 1.4   | 13.0 | 21.8  | 24.5 |
| 127.5° | 1.9 | 1.4   | 10.6 | 19.0  | 22.2 |
| 130°   | 1.4 | 0.9   | 8.3  | 16.7  | 19.4 |
| 132.5° | 1.4 | 0.9   | 6.5  | 14.3  | 17.1 |
| 135°   | 0.9 | 0.9   | 4.2  | 11.6  | 14.3 |
| 137.5° | 0.9 | 0.5   | 2.3  | 9.3   | 11.6 |
| 140°   | 0.9 | 0.5   | 0.9  | 6.9   | 9.3  |
| 142.5° | 0.5 | 0.5   | 0.0  | 5.1   | 6.9  |
| 145°   | 0.5 | 0.0   | 0.0  | 2.8   | 4.6  |
| 147.5° | 0.5 | 0.0   | 0.0  | 0.5   | 2.3  |
| 150°   | 0.5 | 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)