

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1055611

Luminaire Tested: S123R3DR-S340D850-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055611
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-S340D850-X4F0-XX-UDD-F-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
CORE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

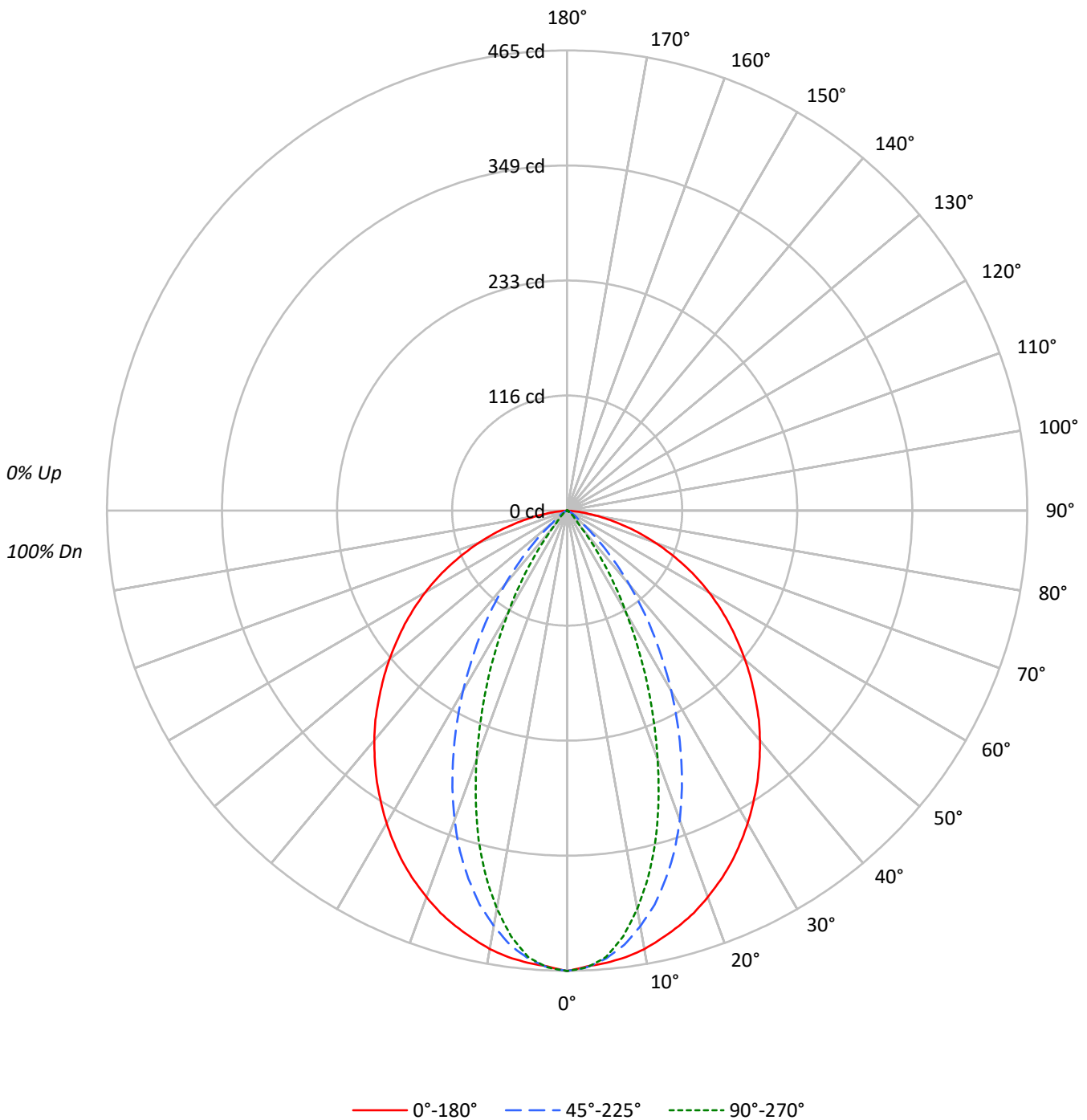
Lumens per Lamp: N/A
Luminaire Lumens: 544.6 lumens
Efficiency: N/A
Efficacy: 43.2 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 12.6
Input Voltage (V): 120
Input Current (A_{in}): 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 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 112 | 108 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98 | 98 | 97 | 95 | 95 | 93 | 92 | 90 |
| 2 | 105 | 99 | 94 | 89 | 102 | 97 | 92 | 88 | 93 | 90 | 86 | 90 | 87 | 84 | 87 | 85 | 83 | 81 |
| 3 | 98 | 90 | 84 | 79 | 96 | 88 | 83 | 78 | 86 | 81 | 77 | 83 | 79 | 76 | 81 | 77 | 74 | 73 |
| 4 | 92 | 82 | 75 | 70 | 90 | 81 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 68 | 75 | 71 | 67 | 65 |
| 5 | 86 | 76 | 69 | 63 | 84 | 75 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 |
| 6 | 81 | 70 | 63 | 57 | 79 | 69 | 62 | 57 | 67 | 61 | 57 | 66 | 61 | 56 | 64 | 60 | 56 | 54 |
| 7 | 76 | 65 | 58 | 53 | 74 | 64 | 57 | 52 | 63 | 57 | 52 | 61 | 56 | 52 | 60 | 55 | 52 | 50 |
| 8 | 71 | 60 | 53 | 48 | 70 | 60 | 53 | 48 | 58 | 52 | 48 | 57 | 52 | 48 | 56 | 51 | 48 | 46 |
| 9 | 68 | 56 | 49 | 45 | 66 | 56 | 49 | 45 | 55 | 49 | 45 | 54 | 48 | 44 | 53 | 48 | 44 | 43 |
| 10 | 64 | 53 | 46 | 42 | 63 | 52 | 46 | 42 | 51 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 40 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5610 | 5610 | 5610 |
| 5° | 5550 | 5497 | 5480 |
| 10° | 5508 | 5218 | 5000 |
| 15° | 5428 | 4808 | 4307 |
| 20° | 5332 | 4267 | 3431 |
| 25° | 5220 | 3616 | 2530 |
| 30° | 5080 | 2930 | 1659 |
| 35° | 4931 | 2231 | 910 |
| 40° | 4770 | 1542 | 312 |
| 45° | 4585 | 897 | 181 |
| 50° | 4400 | 353 | 109 |
| 55° | 4210 | 223 | 50 |
| 60° | 3993 | 140 | 24 |
| 65° | 3717 | 68 | 14 |
| 70° | 3335 | 35 | 18 |
| 75° | 2832 | 23 | 23 |
| 80° | 2111 | 35 | 0 |
| 85° | 802 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4585 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 42.7 | 7.8 |
| 10°-20° | 108.3 | 19.9 |
| 20°-30° | 129.1 | 23.7 |
| 30°-40° | 109.6 | 20.1 |
| 40°-50° | 74.5 | 13.7 |
| 50°-60° | 46.1 | 8.5 |
| 60°-70° | 23.4 | 4.3 |
| 70°-80° | 9.5 | 1.8 |
| 80°-90° | 1.5 | 0.3 |
| 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° | 280.1 | 51.4 |
| 0°-40° | 389.6 | 71.5 |
| 0°-60° | 510.2 | 93.7 |
| 0°-90° | 544.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 544.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 465 | 465 | 465 | 465 | 465 | |
| 5° | 459 | 463 | 454 | 451 | 453 | 44 |
| 15° | 435 | 424 | 385 | 355 | 345 | 123 |
| 25° | 392 | 356 | 272 | 210 | 190 | 181 |
| 35° | 335 | 269 | 152 | 82 | 62 | 209 |
| 45° | 269 | 176 | 53 | 13 | 11 | 208 |
| 55° | 200 | 89 | 11 | 4 | 2 | 179 |
| 65° | 130 | 22 | 2 | 0 | 0 | 129 |
| 75° | 61 | 4 | 0 | 0 | 0 | 65 |
| 85° | 6 | 0 | 0 | 0 | 0 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055611

CATALOG NUMBER: S123R3DR-S340D850-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 465.3 | 465.3 | 465.3 | 465.3 | 465.3 |
| 2.5° | 461.0 | 467.3 | 461.9 | 461.5 | 461.9 |
| 5° | 458.6 | 462.9 | 454.2 | 450.8 | 452.8 |
| 7.5° | 455.2 | 457.1 | 442.6 | 433.9 | 433.9 |
| 10° | 449.9 | 448.4 | 426.2 | 411.7 | 408.4 |
| 12.5° | 442.6 | 436.8 | 407.9 | 385.2 | 378.9 |
| 15° | 434.9 | 423.8 | 385.2 | 354.8 | 345.1 |
| 17.5° | 426.2 | 409.3 | 360.6 | 321.0 | 307.0 |
| 20° | 415.6 | 392.9 | 332.6 | 284.3 | 267.4 |
| 22.5° | 404.5 | 375.1 | 303.1 | 246.7 | 227.8 |
| 25° | 392.4 | 355.8 | 271.8 | 210.0 | 190.2 |
| 27.5° | 378.9 | 335.5 | 240.9 | 174.7 | 153.0 |
| 30° | 364.9 | 314.2 | 210.5 | 140.9 | 119.2 |
| 32.5° | 350.0 | 292.0 | 180.0 | 110.1 | 89.8 |
| 35° | 335.0 | 268.9 | 151.6 | 81.6 | 61.8 |
| 37.5° | 319.1 | 245.7 | 124.1 | 56.5 | 39.1 |
| 40° | 303.1 | 223.0 | 98.0 | 35.7 | 19.8 |
| 42.5° | 286.7 | 199.4 | 74.3 | 17.9 | 13.5 |
| 45° | 268.9 | 176.2 | 52.6 | 13.0 | 10.6 |
| 47.5° | 252.0 | 154.0 | 34.8 | 10.6 | 8.2 |
| 50° | 234.6 | 131.8 | 18.8 | 7.7 | 5.8 |
| 52.5° | 217.2 | 110.5 | 13.5 | 5.8 | 3.9 |
| 55° | 200.3 | 88.8 | 10.6 | 3.9 | 2.4 |
| 57.5° | 182.9 | 70.0 | 8.2 | 2.4 | 1.4 |
| 60° | 165.6 | 51.6 | 5.8 | 1.4 | 1.0 |
| 62.5° | 148.2 | 35.7 | 3.9 | 1.0 | 0.5 |
| 65° | 130.3 | 21.7 | 2.4 | 0.5 | 0.5 |
| 67.5° | 112.0 | 15.0 | 1.4 | 0.5 | 0.5 |
| 70° | 94.6 | 10.6 | 1.0 | 0.5 | 0.5 |
| 72.5° | 77.2 | 6.8 | 0.5 | 0.5 | 0.0 |
| 75° | 60.8 | 3.9 | 0.5 | 0.5 | 0.5 |
| 77.5° | 44.9 | 1.4 | 0.5 | 0.5 | 0.0 |
| 80° | 30.4 | 0.5 | 0.5 | 0.5 | 0.0 |
| 82.5° | 16.9 | 0.0 | 0.5 | 0.5 | 0.0 |
| 85° | 5.8 | 0.0 | 0.0 | 0.5 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CIE UGR TABLE:

| Reflectances: | | | | | | | | | | | |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|------|------|------|------|
| Ceiling | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
| Wall | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Reference plane | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| X=2H | Y=2H | 15.04 | 16.32 | 15.40 | 16.63 | 16.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.98 | 18.12 | 17.36 | 18.45 | 18.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.81 | 18.87 | 18.22 | 19.22 | 19.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.37 | 19.33 | 18.78 | 19.71 | 20.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.49 | 19.41 | 18.92 | 19.80 | 20.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 18.52 | 19.39 | 18.95 | 19.77 | 20.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 14.80 | 15.86 | 15.21 | 16.21 | 16.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.76 | 17.62 | 17.17 | 18.02 | 18.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.57 | 18.34 | 18.01 | 18.76 | 19.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.17 | 18.83 | 18.63 | 19.28 | 19.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.32 | 18.94 | 18.79 | 19.39 | 19.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 18.37 | 18.91 | 18.86 | 19.40 | 19.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 17.43 | 18.05 | 17.90 | 18.49 | 18.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.01 | 18.51 | 18.51 | 19.01 | 19.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.16 | 18.61 | 18.68 | 19.12 | 19.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 18.22 | 18.61 | 18.73 | 19.11 | 19.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 17.38 | 17.92 | 17.87 | 18.41 | 18.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.95 | 18.40 | 18.47 | 18.91 | 19.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.11 | 18.51 | 18.63 | 19.00 | 19.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |