

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



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: P1055322

Luminaire Tested: S122R3DR-H290D930-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1055322
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-1)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122R3DR-H290D930-X4F0-XX-UDD-FLL-W
Description: DEFINE 2, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

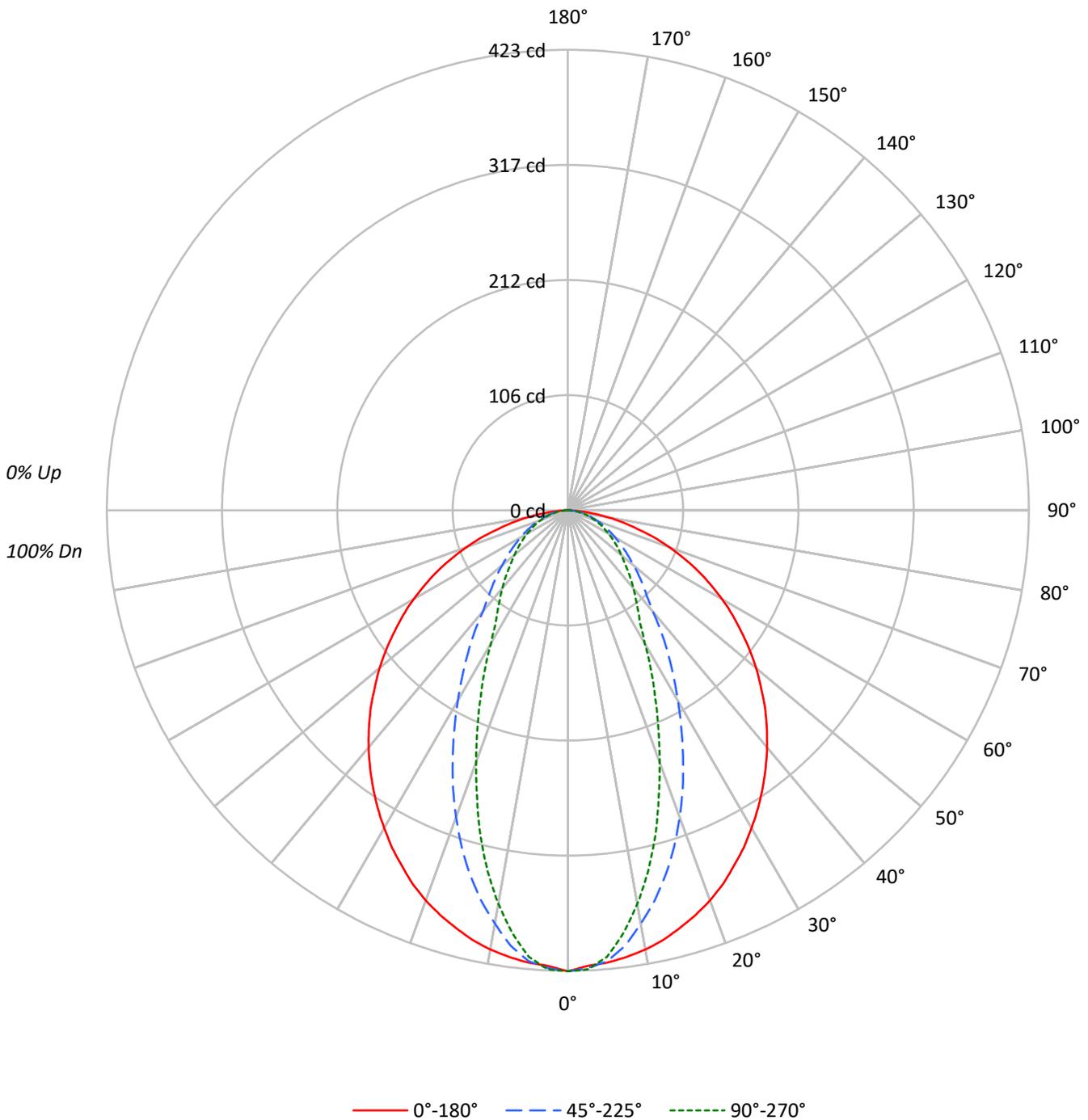
Lumens per Lamp: N/A
Luminaire Lumens: 640.4 lumens
Efficiency: N/A
Efficacy: 54.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 0.71 / 0.9
Luminous Opening: Rectangular (W 0.15' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
Input Voltage (V): 120
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 | 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 | 110 | 106 | 102 | 99 | 108 | 104 | 101 | 97 | 100 | 97 | 94 | 96 | 94 | 92 | 92 | 91 | 89 | 87 |
| 2 | 102 | 95 | 89 | 84 | 99 | 93 | 87 | 83 | 89 | 85 | 81 | 86 | 82 | 79 | 83 | 80 | 77 | 75 |
| 3 | 94 | 85 | 78 | 72 | 92 | 83 | 77 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 |
| 4 | 87 | 76 | 69 | 63 | 85 | 75 | 68 | 62 | 73 | 66 | 61 | 71 | 65 | 61 | 68 | 64 | 60 | 58 |
| 5 | 81 | 69 | 61 | 55 | 79 | 68 | 61 | 55 | 66 | 60 | 55 | 64 | 59 | 54 | 63 | 58 | 54 | 52 |
| 6 | 75 | 63 | 55 | 50 | 74 | 63 | 55 | 49 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 52 | 48 | 46 |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 |
| 9 | 62 | 50 | 43 | 37 | 61 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 |
| 10 | 59 | 47 | 39 | 35 | 58 | 46 | 39 | 34 | 45 | 39 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 8022 | 8022 | 8022 |
| 5° | 7931 | 7904 | 7830 |
| 10° | 7880 | 7416 | 7062 |
| 15° | 7791 | 6798 | 6075 |
| 20° | 7688 | 6044 | 4960 |
| 25° | 7534 | 5224 | 3959 |
| 30° | 7372 | 4415 | 3089 |
| 35° | 7205 | 3694 | 2595 |
| 40° | 7031 | 2995 | 2312 |
| 45° | 6848 | 2618 | 2068 |
| 50° | 6647 | 2317 | 1889 |
| 55° | 6418 | 2094 | 1754 |
| 60° | 6195 | 1906 | 1637 |
| 65° | 5904 | 1744 | 1538 |
| 70° | 5473 | 1629 | 1451 |
| 75° | 4846 | 1479 | 1376 |
| 80° | 4135 | 1386 | 1277 |
| 85° | 2848 | 1239 | 1152 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6848 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 38.8 | 6.1 |
| 10°-20° | 97.9 | 15.3 |
| 20°-30° | 120.7 | 18.8 |
| 30°-40° | 115.8 | 18.1 |
| 40°-50° | 99.9 | 15.6 |
| 50°-60° | 77.5 | 12.1 |
| 60°-70° | 53.1 | 8.3 |
| 70°-80° | 28.8 | 4.5 |
| 80°-90° | 7.9 | 1.2 |
| 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° | 257.4 | 40.2 |
| 0°-40° | 373.3 | 58.3 |
| 0°-60° | 550.6 | 86.0 |
| 0°-90° | 640.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 640.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 423 | 423 | 423 | 423 | 423 | |
| 5° | 417 | 423 | 416 | 410 | 412 | 40 |
| 15° | 397 | 385 | 347 | 318 | 310 | 112 |
| 25° | 360 | 322 | 250 | 204 | 189 | 166 |
| 35° | 312 | 247 | 160 | 119 | 112 | 195 |
| 45° | 256 | 172 | 98 | 81 | 77 | 197 |
| 55° | 194 | 103 | 63 | 55 | 53 | 174 |
| 65° | 132 | 56 | 39 | 35 | 34 | 130 |
| 75° | 66 | 26 | 20 | 19 | 19 | 71 |
| 85° | 13 | 6 | 6 | 6 | 5 | 17 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055322

CATALOG NUMBER: S122R3DR-H290D930-X4F0-XX-UDD-FLL-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 423.4 | 423.4 | 423.4 | 423.4 | 423.4 |
| 2.5° | 418.8 | 425.9 | 420.9 | 420.9 | 422.0 |
| 5° | 417.0 | 423.0 | 415.6 | 410.3 | 411.7 |
| 7.5° | 413.8 | 418.1 | 403.2 | 391.9 | 391.5 |
| 10° | 409.6 | 409.9 | 385.5 | 370.6 | 367.1 |
| 12.5° | 404.3 | 398.6 | 367.4 | 345.1 | 339.8 |
| 15° | 397.2 | 385.1 | 346.6 | 318.2 | 309.7 |
| 17.5° | 389.7 | 371.3 | 324.3 | 288.9 | 277.2 |
| 20° | 381.3 | 354.7 | 299.8 | 259.5 | 246.0 |
| 22.5° | 371.7 | 338.8 | 275.4 | 231.2 | 217.0 |
| 25° | 360.4 | 321.8 | 249.9 | 203.9 | 189.4 |
| 27.5° | 349.4 | 304.4 | 225.5 | 179.8 | 165.0 |
| 30° | 337.0 | 285.7 | 201.8 | 156.8 | 141.2 |
| 32.5° | 324.6 | 266.6 | 179.8 | 134.9 | 123.2 |
| 35° | 311.5 | 247.1 | 159.7 | 118.9 | 112.2 |
| 37.5° | 298.1 | 228.0 | 140.5 | 108.3 | 102.3 |
| 40° | 284.3 | 208.9 | 121.1 | 98.1 | 93.5 |
| 42.5° | 270.1 | 190.1 | 107.6 | 89.6 | 85.3 |
| 45° | 255.6 | 172.0 | 97.7 | 80.7 | 77.2 |
| 47.5° | 240.0 | 154.0 | 88.1 | 73.3 | 70.1 |
| 50° | 225.5 | 136.6 | 78.6 | 66.6 | 64.1 |
| 52.5° | 209.9 | 119.7 | 70.8 | 60.5 | 58.4 |
| 55° | 194.3 | 103.4 | 63.4 | 54.9 | 53.1 |
| 57.5° | 179.1 | 87.8 | 56.3 | 49.6 | 48.1 |
| 60° | 163.5 | 75.4 | 50.3 | 44.6 | 43.2 |
| 62.5° | 147.6 | 65.5 | 44.6 | 40.0 | 38.6 |
| 65° | 131.7 | 56.3 | 38.9 | 35.4 | 34.3 |
| 67.5° | 115.0 | 47.4 | 34.0 | 31.2 | 30.4 |
| 70° | 98.8 | 39.6 | 29.4 | 26.9 | 26.2 |
| 72.5° | 82.8 | 32.2 | 24.8 | 23.0 | 22.3 |
| 75° | 66.2 | 25.8 | 20.2 | 19.1 | 18.8 |
| 77.5° | 51.7 | 20.2 | 16.3 | 15.6 | 15.2 |
| 80° | 37.9 | 14.9 | 12.7 | 12.0 | 11.7 |
| 82.5° | 25.1 | 10.3 | 9.2 | 8.8 | 8.5 |
| 85° | 13.1 | 6.4 | 5.7 | 5.7 | 5.3 |
| 87.5° | 4.2 | 2.8 | 2.8 | 2.8 | 2.5 |
| 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 | 16.84 | 18.31 | 17.21 | 18.62 | 18.94 | 11.65 | 13.12 | 12.02 | 13.43 | 13.75 |
| | 3H | 19.17 | 20.49 | 19.55 | 20.82 | 21.18 | 13.30 | 14.61 | 13.68 | 14.94 | 15.31 |
| | 4H | 20.07 | 21.30 | 20.47 | 21.65 | 22.03 | 13.93 | 15.17 | 14.33 | 15.52 | 15.90 |
| | 6H | 20.73 | 21.87 | 21.14 | 22.24 | 22.63 | 14.43 | 15.57 | 14.84 | 15.93 | 16.33 |
| | 8H | 20.94 | 22.02 | 21.36 | 22.41 | 22.81 | 14.60 | 15.68 | 15.02 | 16.07 | 16.47 |
| | 12H | 21.05 | 22.09 | 21.48 | 22.47 | 22.90 | 14.71 | 15.75 | 15.14 | 16.13 | 16.56 |
| 4H | 2H | 16.86 | 18.09 | 17.26 | 18.44 | 18.82 | 12.36 | 13.60 | 12.77 | 13.95 | 14.33 |
| | 3H | 19.27 | 20.29 | 19.68 | 20.70 | 21.10 | 14.21 | 15.24 | 14.62 | 15.64 | 16.04 |
| | 4H | 20.20 | 21.12 | 20.63 | 21.54 | 21.98 | 14.96 | 15.88 | 15.39 | 16.30 | 16.74 |
| | 6H | 20.98 | 21.78 | 21.44 | 22.22 | 22.68 | 15.57 | 16.38 | 16.03 | 16.82 | 17.28 |
| | 8H | 21.25 | 22.00 | 21.71 | 22.44 | 22.91 | 15.79 | 16.54 | 16.25 | 16.98 | 17.45 |
| | 12H | 21.43 | 22.09 | 21.91 | 22.57 | 23.04 | 15.95 | 16.62 | 16.43 | 17.10 | 17.57 |
| 8H | 4H | 20.19 | 20.94 | 20.66 | 21.39 | 21.85 | 15.34 | 16.09 | 15.80 | 16.53 | 17.00 |
| | 6H | 21.00 | 21.62 | 21.50 | 22.11 | 22.59 | 16.08 | 16.69 | 16.57 | 17.19 | 17.66 |
| | 8H | 21.30 | 21.86 | 21.82 | 22.37 | 22.86 | 16.37 | 16.92 | 16.88 | 17.43 | 17.92 |
| | 12H | 21.53 | 22.02 | 22.04 | 22.52 | 23.08 | 16.61 | 17.10 | 17.12 | 17.59 | 18.16 |
| 12H | 4H | 20.17 | 20.84 | 20.66 | 21.32 | 21.79 | 15.40 | 16.06 | 15.88 | 16.54 | 17.02 |
| | 6H | 20.98 | 21.53 | 21.49 | 22.04 | 22.53 | 16.16 | 16.72 | 16.68 | 17.23 | 17.72 |
| | 8H | 21.31 | 21.80 | 21.82 | 22.29 | 22.86 | 16.52 | 17.00 | 17.03 | 17.50 | 18.06 |