

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: P1055311

Luminaire Tested: S122R3DR-H290D840-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055311
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-2)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122R3DR-H290D840-X4F0-XX-UDD-F-B
Description: DEFINE 2, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

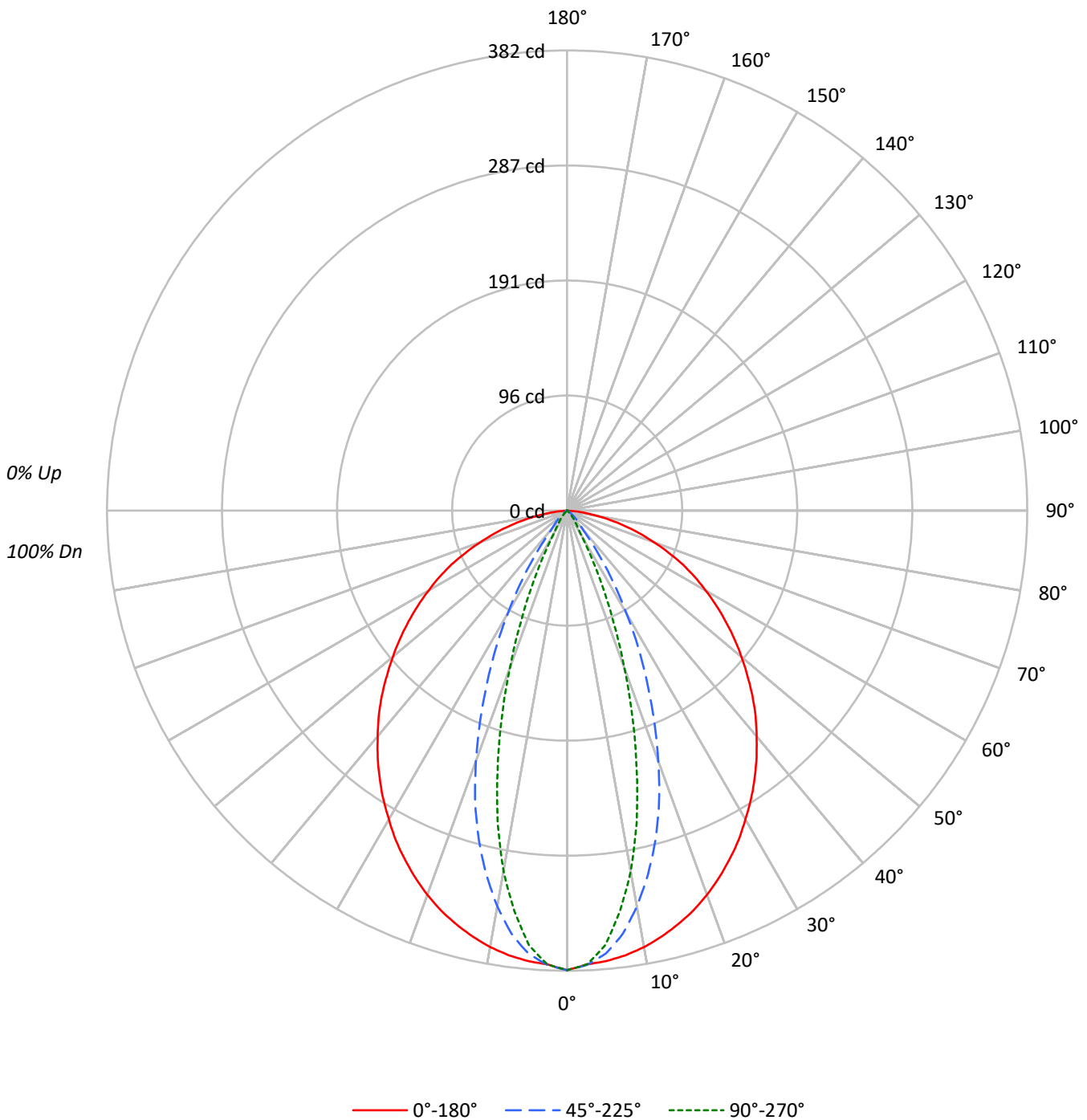
Lumens per Lamp: N/A
Luminaire Lumens: 347.0 lumens
Efficiency: N/A
Efficacy: 29.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 0.56 / 0.7
Luminous Opening: Rectangular (W 0.15' x L: 3.9' x H: 0')
CIE Type: Direct

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 | 112 | 109 | 106 | 103 | 110 | 106 | 104 | 101 | 102 | 100 | 98 | 99 | 97 | 95 | 95 | 94 | 92 | 91 |
| 2 | 105 | 99 | 94 | 90 | 103 | 97 | 93 | 89 | 94 | 90 | 87 | 91 | 88 | 85 | 88 | 86 | 83 | 81 |
| 3 | 98 | 91 | 85 | 80 | 96 | 89 | 84 | 79 | 86 | 82 | 78 | 84 | 80 | 77 | 82 | 78 | 75 | 74 |
| 4 | 92 | 83 | 77 | 72 | 90 | 82 | 76 | 71 | 80 | 75 | 70 | 78 | 73 | 70 | 76 | 72 | 69 | 67 |
| 5 | 87 | 77 | 70 | 65 | 85 | 76 | 70 | 65 | 74 | 69 | 64 | 72 | 68 | 64 | 71 | 67 | 63 | 61 |
| 6 | 82 | 72 | 65 | 60 | 80 | 71 | 64 | 59 | 69 | 63 | 59 | 68 | 63 | 59 | 66 | 62 | 58 | 57 |
| 7 | 77 | 67 | 60 | 55 | 76 | 66 | 59 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 62 | 57 | 54 | 52 |
| 8 | 73 | 62 | 56 | 51 | 72 | 62 | 55 | 51 | 61 | 55 | 51 | 60 | 54 | 50 | 59 | 54 | 50 | 49 |
| 9 | 70 | 59 | 52 | 48 | 68 | 58 | 52 | 47 | 57 | 51 | 47 | 56 | 51 | 47 | 55 | 50 | 47 | 45 |
| 10 | 66 | 55 | 49 | 45 | 65 | 55 | 49 | 44 | 54 | 48 | 44 | 53 | 48 | 44 | 52 | 48 | 44 | 43 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 7228 | 7228 | 7228 |
| 5° | 7138 | 7022 | 6888 |
| 10° | 7078 | 6420 | 5846 |
| 15° | 6975 | 5557 | 4378 |
| 20° | 6843 | 4464 | 2802 |
| 25° | 6673 | 3272 | 1438 |
| 30° | 6476 | 2140 | 470 |
| 35° | 6277 | 1186 | 273 |
| 40° | 6052 | 477 | 151 |
| 45° | 5828 | 316 | 59 |
| 50° | 5571 | 180 | 27 |
| 55° | 5315 | 86 | 13 |
| 60° | 5036 | 34 | 0 |
| 65° | 4738 | 18 | 0 |
| 70° | 4249 | 22 | 0 |
| 75° | 3660 | 29 | 0 |
| 80° | 2771 | 0 | 0 |
| 85° | 1152 | 87 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5828 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 34.2 | 9.9 |
| 10°-20° | 79.5 | 22.9 |
| 20°-30° | 80.7 | 23.2 |
| 30°-40° | 60.5 | 17.4 |
| 40°-50° | 42.4 | 12.2 |
| 50°-60° | 25.9 | 7.5 |
| 60°-70° | 15.4 | 4.5 |
| 70°-80° | 7.1 | 2.0 |
| 80°-90° | 1.3 | 0.4 |
| 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° | 194.3 | 56.0 |
| 0°-40° | 254.9 | 73.4 |
| 0°-60° | 323.2 | 93.1 |
| 0°-90° | 347.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 347.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 382 | 382 | 382 | 382 | 382 | |
| 5° | 375 | 379 | 369 | 362 | 362 | 36 |
| 15° | 356 | 336 | 283 | 240 | 223 | 100 |
| 25° | 319 | 263 | 156 | 89 | 69 | 147 |
| 35° | 271 | 177 | 51 | 15 | 12 | 170 |
| 45° | 218 | 93 | 12 | 4 | 2 | 168 |
| 55° | 161 | 28 | 3 | 1 | 0 | 144 |
| 65° | 106 | 8 | 0 | 0 | 0 | 104 |
| 75° | 50 | 1 | 0 | 0 | 0 | 53 |
| 85° | 5 | 0 | 0 | 0 | 0 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CATALOG NUMBER: S122R3DR-H290D840-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 381.5 | 381.5 | 381.5 | 381.5 | 381.5 |
| 2.5° | 377.1 | 382.8 | 377.5 | 376.7 | 377.1 |
| 5° | 375.3 | 378.8 | 369.2 | 362.2 | 362.2 |
| 7.5° | 372.3 | 372.3 | 354.3 | 339.8 | 335.4 |
| 10° | 367.9 | 363.1 | 333.7 | 310.4 | 303.9 |
| 12.5° | 362.2 | 350.8 | 309.6 | 276.7 | 266.2 |
| 15° | 355.6 | 336.3 | 283.3 | 239.8 | 223.2 |
| 17.5° | 348.2 | 320.1 | 253.9 | 199.9 | 180.7 |
| 20° | 339.4 | 302.6 | 221.4 | 159.2 | 139.0 |
| 22.5° | 329.7 | 283.3 | 188.5 | 122.8 | 101.3 |
| 25° | 319.2 | 263.1 | 156.5 | 89.4 | 68.8 |
| 27.5° | 308.3 | 242.0 | 127.2 | 61.4 | 42.1 |
| 30° | 296.0 | 220.1 | 97.8 | 36.4 | 21.5 |
| 32.5° | 284.1 | 199.1 | 73.2 | 19.7 | 15.8 |
| 35° | 271.4 | 176.7 | 51.3 | 15.3 | 11.8 |
| 37.5° | 258.3 | 155.7 | 31.6 | 11.4 | 8.8 |
| 40° | 244.7 | 134.2 | 19.3 | 8.3 | 6.1 |
| 42.5° | 231.5 | 114.0 | 15.3 | 5.7 | 3.9 |
| 45° | 217.5 | 93.4 | 11.8 | 3.5 | 2.2 |
| 47.5° | 203.0 | 74.5 | 8.8 | 2.2 | 1.3 |
| 50° | 189.0 | 57.9 | 6.1 | 1.3 | 0.9 |
| 52.5° | 175.0 | 42.5 | 3.9 | 0.9 | 0.4 |
| 55° | 160.9 | 28.5 | 2.6 | 0.9 | 0.4 |
| 57.5° | 146.9 | 20.2 | 1.8 | 0.4 | 0.4 |
| 60° | 132.9 | 15.8 | 0.9 | 0.4 | 0.0 |
| 62.5° | 119.7 | 12.3 | 0.9 | 0.4 | 0.4 |
| 65° | 105.7 | 8.3 | 0.4 | 0.4 | 0.0 |
| 67.5° | 90.8 | 5.3 | 0.4 | 0.4 | 0.0 |
| 70° | 76.7 | 3.1 | 0.4 | 0.4 | 0.0 |
| 72.5° | 63.1 | 1.8 | 0.4 | 0.4 | 0.0 |
| 75° | 50.0 | 0.9 | 0.4 | 0.4 | 0.0 |
| 77.5° | 37.3 | 0.4 | 0.0 | 0.4 | 0.0 |
| 80° | 25.4 | 0.0 | 0.0 | 0.4 | 0.0 |
| 82.5° | 14.9 | 0.0 | 0.0 | 0.4 | 0.0 |
| 85° | 5.3 | 0.0 | 0.4 | 0.4 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.4 | 0.4 | 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 | 13.09 | 14.35 | 13.45 | 14.66 | 14.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.83 | 17.95 | 17.21 | 18.28 | 18.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 18.14 | 19.18 | 18.54 | 19.53 | 19.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.99 | 19.95 | 19.41 | 20.32 | 20.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.21 | 20.11 | 19.64 | 20.50 | 20.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.27 | 20.13 | 19.70 | 20.52 | 20.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 12.84 | 13.88 | 13.25 | 14.23 | 14.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.58 | 17.44 | 17.00 | 17.84 | 18.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.88 | 18.64 | 18.31 | 19.06 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.80 | 19.45 | 19.26 | 19.90 | 20.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.05 | 19.67 | 19.52 | 20.11 | 20.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.16 | 19.69 | 19.64 | 20.18 | 20.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 17.73 | 18.34 | 18.20 | 18.79 | 19.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.63 | 19.13 | 19.14 | 19.63 | 20.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.89 | 19.33 | 19.41 | 19.85 | 20.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.01 | 19.40 | 19.52 | 19.89 | 20.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 17.68 | 18.22 | 18.17 | 18.71 | 19.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.57 | 19.01 | 19.09 | 19.53 | 20.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.85 | 19.23 | 19.36 | 19.73 | 20.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |