

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: P1055308

Luminaire Tested: S122R3DR-H290D835-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1055308
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-H290D835-X4F0-XX-UDD-FLL-B
Description: DEFINE 2, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

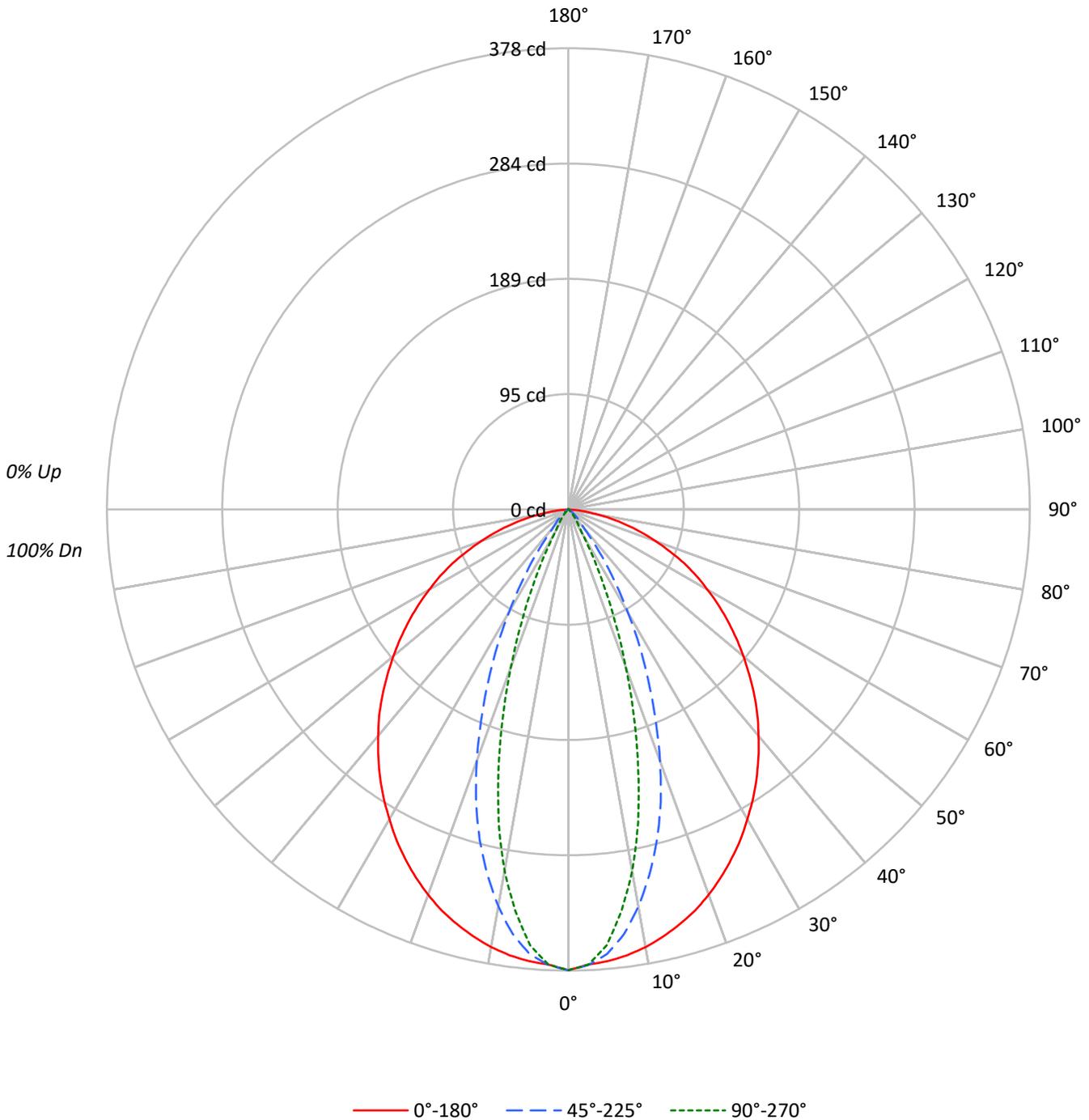
Lumens per Lamp: N/A
Luminaire Lumens: 343.6 lumens
Efficiency: N/A
Efficacy: 29.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 0.56 / 0.7
Luminous Opening: Rectangular (W 0.15' x L: 3.9' x H: 0')
CIE Type: Direct

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 | 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° | 7156 | 7156 | 7156 |
| 5° | 7069 | 6953 | 6820 |
| 10° | 7008 | 6356 | 5789 |
| 15° | 6906 | 5502 | 4335 |
| 20° | 6776 | 4421 | 2774 |
| 25° | 6608 | 3240 | 1426 |
| 30° | 6412 | 2118 | 466 |
| 35° | 6217 | 1175 | 271 |
| 40° | 5993 | 472 | 151 |
| 45° | 5771 | 313 | 59 |
| 50° | 5515 | 180 | 27 |
| 55° | 5262 | 86 | 13 |
| 60° | 4987 | 34 | 0 |
| 65° | 4689 | 18 | 0 |
| 70° | 4210 | 22 | 0 |
| 75° | 3623 | 29 | 0 |
| 80° | 2749 | 0 | 0 |
| 85° | 1130 | 87 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5771 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 33.9 | 9.9 |
| 10°-20° | 78.7 | 22.9 |
| 20°-30° | 79.9 | 23.2 |
| 30°-40° | 59.9 | 17.4 |
| 40°-50° | 42.0 | 12.2 |
| 50°-60° | 25.7 | 7.5 |
| 60°-70° | 15.3 | 4.4 |
| 70°-80° | 7.0 | 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° | 192.4 | 56.0 |
| 0°-40° | 252.4 | 73.4 |
| 0°-60° | 320.0 | 93.1 |
| 0°-90° | 343.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 343.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 378 | 378 | 378 | 378 | 378 | |
| 5° | 372 | 375 | 366 | 359 | 359 | 35 |
| 15° | 352 | 333 | 280 | 238 | 221 | 99 |
| 25° | 316 | 260 | 155 | 89 | 68 | 146 |
| 35° | 269 | 175 | 51 | 15 | 12 | 168 |
| 45° | 215 | 92 | 12 | 4 | 2 | 166 |
| 55° | 159 | 28 | 3 | 1 | 0 | 142 |
| 65° | 105 | 8 | 0 | 0 | 0 | 103 |
| 75° | 50 | 1 | 0 | 0 | 0 | 53 |
| 85° | 5 | 0 | 0 | 0 | 0 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055308

CATALOG NUMBER: S122R3DR-H290D835-X4F0-XX-UDD-FLL-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 377.7 | 377.7 | 377.7 | 377.7 | 377.7 |
| 2.5° | 373.4 | 379.1 | 373.8 | 373.0 | 373.4 |
| 5° | 371.7 | 375.1 | 365.6 | 358.6 | 358.6 |
| 7.5° | 368.6 | 368.6 | 350.8 | 336.5 | 332.2 |
| 10° | 364.3 | 359.5 | 330.4 | 307.4 | 300.9 |
| 12.5° | 358.6 | 347.4 | 306.5 | 274.0 | 263.6 |
| 15° | 352.1 | 333.0 | 280.5 | 237.5 | 221.0 |
| 17.5° | 344.8 | 317.0 | 251.4 | 198.0 | 178.9 |
| 20° | 336.1 | 299.6 | 219.3 | 157.6 | 137.6 |
| 22.5° | 326.5 | 280.5 | 186.7 | 121.6 | 100.3 |
| 25° | 316.1 | 260.5 | 155.0 | 88.6 | 68.2 |
| 27.5° | 305.2 | 239.7 | 125.9 | 60.8 | 41.7 |
| 30° | 293.1 | 218.0 | 96.8 | 36.0 | 21.3 |
| 32.5° | 281.4 | 197.1 | 72.5 | 19.5 | 15.6 |
| 35° | 268.8 | 175.0 | 50.8 | 15.2 | 11.7 |
| 37.5° | 255.7 | 154.1 | 31.3 | 11.3 | 8.7 |
| 40° | 242.3 | 132.9 | 19.1 | 8.2 | 6.1 |
| 42.5° | 229.3 | 112.9 | 15.2 | 5.6 | 3.9 |
| 45° | 215.4 | 92.5 | 11.7 | 3.5 | 2.2 |
| 47.5° | 201.0 | 73.8 | 8.7 | 2.2 | 1.3 |
| 50° | 187.1 | 57.3 | 6.1 | 1.3 | 0.9 |
| 52.5° | 173.2 | 42.1 | 3.9 | 0.9 | 0.4 |
| 55° | 159.3 | 28.2 | 2.6 | 0.9 | 0.4 |
| 57.5° | 145.5 | 20.0 | 1.7 | 0.4 | 0.4 |
| 60° | 131.6 | 15.6 | 0.9 | 0.4 | 0.0 |
| 62.5° | 118.5 | 12.2 | 0.9 | 0.4 | 0.4 |
| 65° | 104.6 | 8.2 | 0.4 | 0.4 | 0.0 |
| 67.5° | 89.9 | 5.2 | 0.4 | 0.4 | 0.0 |
| 70° | 76.0 | 3.0 | 0.4 | 0.4 | 0.0 |
| 72.5° | 62.5 | 1.7 | 0.4 | 0.4 | 0.0 |
| 75° | 49.5 | 0.9 | 0.4 | 0.4 | 0.0 |
| 77.5° | 36.9 | 0.4 | 0.0 | 0.4 | 0.0 |
| 80° | 25.2 | 0.0 | 0.0 | 0.4 | 0.0 |
| 82.5° | 14.8 | 0.0 | 0.0 | 0.4 | 0.0 |
| 85° | 5.2 | 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 | 13.05 | 14.31 | 13.42 | 14.63 | 14.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.79 | 17.91 | 17.17 | 18.24 | 18.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 18.10 | 19.14 | 18.51 | 19.49 | 19.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.96 | 19.91 | 19.37 | 20.28 | 20.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.17 | 20.08 | 19.60 | 20.47 | 20.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.24 | 20.10 | 19.67 | 20.48 | 20.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 12.81 | 13.85 | 13.21 | 14.20 | 14.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.55 | 17.40 | 16.96 | 17.80 | 18.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.84 | 18.60 | 18.28 | 19.02 | 19.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.76 | 19.42 | 19.22 | 19.86 | 20.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.02 | 19.63 | 19.49 | 20.08 | 20.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.12 | 19.66 | 19.61 | 20.14 | 20.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 17.70 | 18.31 | 18.17 | 18.76 | 19.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.60 | 19.09 | 19.10 | 19.59 | 20.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.86 | 19.30 | 19.38 | 19.82 | 20.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 18.97 | 19.36 | 19.49 | 19.86 | 20.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 17.65 | 18.19 | 18.14 | 18.67 | 19.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.53 | 18.98 | 19.06 | 19.49 | 19.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.81 | 19.20 | 19.33 | 19.70 | 20.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |