

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: P1055716

Luminaire Tested: S123R3DRP-H1165D840-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055716
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: S123R3DRP-H1165D840-X4F0-XX-UDD-F-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

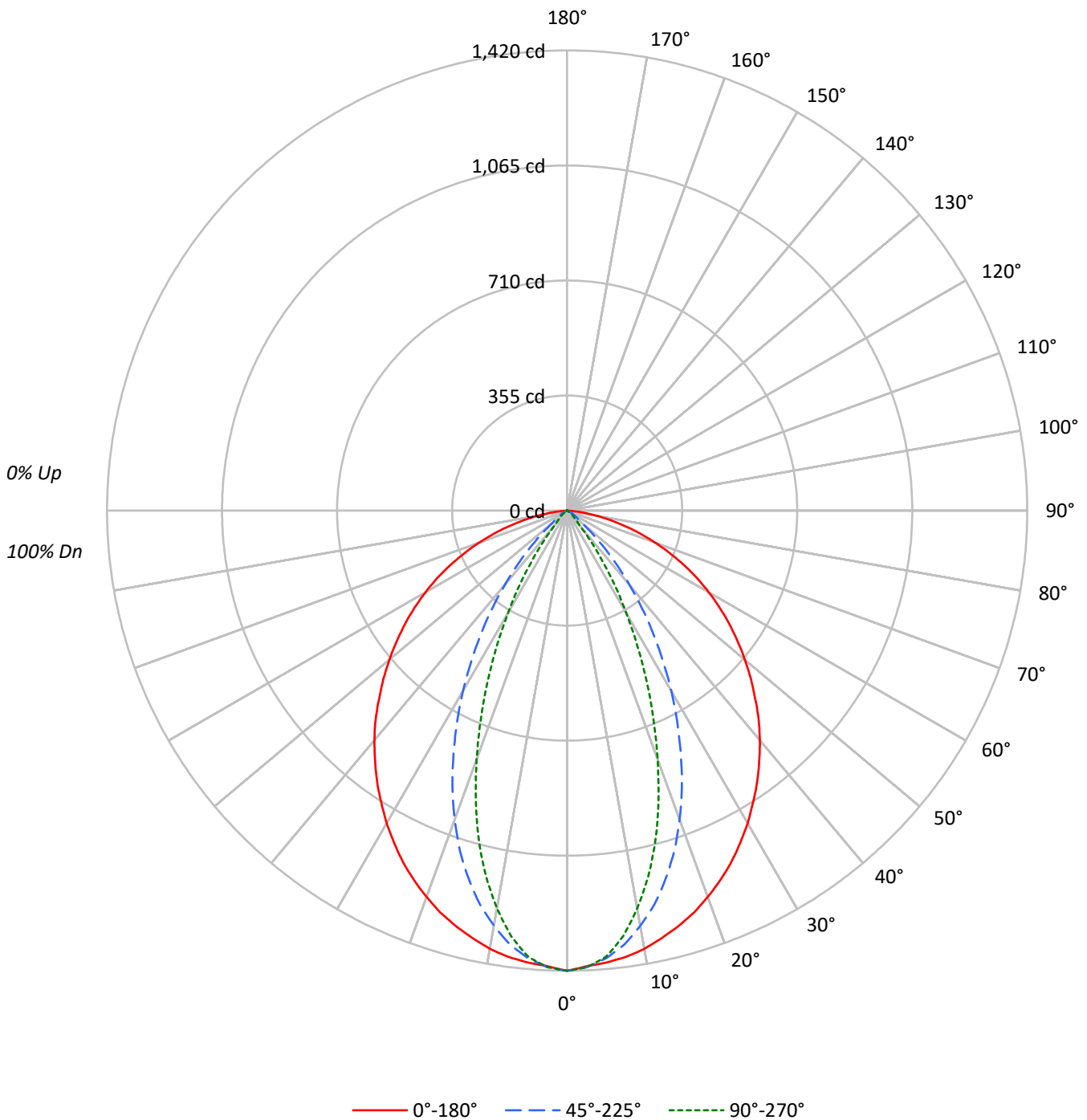
Lumens per Lamp: N/A
Luminaire Lumens: 1662.3 lumens
Efficiency: N/A
Efficacy: 45.4 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 36.6
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 | | | | | | | | | | | | | | | | | | |
| 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 | 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° | 17123 | 17123 | 17123 |
| 5° | 16939 | 16778 | 16724 |
| 10° | 16810 | 15926 | 15259 |
| 15° | 16568 | 14675 | 13148 |
| 20° | 16275 | 13024 | 10472 |
| 25° | 15934 | 11035 | 7722 |
| 30° | 15506 | 8942 | 5066 |
| 35° | 15049 | 6809 | 2776 |
| 40° | 14561 | 4707 | 951 |
| 45° | 13992 | 2738 | 552 |
| 50° | 13430 | 1078 | 332 |
| 55° | 12851 | 681 | 156 |
| 60° | 12184 | 427 | 70 |
| 65° | 11348 | 211 | 43 |
| 70° | 10180 | 102 | 53 |
| 75° | 8646 | 70 | 70 |
| 80° | 6443 | 104 | 0 |
| 85° | 2448 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13992 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 130.2 | 7.8 |
| 10°-20° | 330.5 | 19.9 |
| 20°-30° | 394.2 | 23.7 |
| 30°-40° | 334.4 | 20.1 |
| 40°-50° | 227.3 | 13.7 |
| 50°-60° | 140.9 | 8.5 |
| 60°-70° | 71.4 | 4.3 |
| 70°-80° | 29.1 | 1.8 |
| 80°-90° | 4.5 | 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° | 854.8 | 51.4 |
| 0°-40° | 1189.2 | 71.5 |
| 0°-60° | 1557.3 | 93.7 |
| 0°-90° | 1662.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1662.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1420 | 1420 | 1420 | 1420 | 1420 | |
| 5° | 1400 | 1413 | 1386 | 1376 | 1382 | 133 |
| 15° | 1327 | 1294 | 1176 | 1083 | 1053 | 374 |
| 25° | 1198 | 1086 | 830 | 641 | 580 | 551 |
| 35° | 1022 | 821 | 463 | 249 | 189 | 639 |
| 45° | 821 | 538 | 161 | 40 | 32 | 634 |
| 55° | 611 | 271 | 32 | 12 | 7 | 546 |
| 65° | 398 | 66 | 7 | 2 | 2 | 393 |
| 75° | 186 | 12 | 2 | 2 | 2 | 197 |
| 85° | 18 | 0 | 0 | 2 | 0 | 31 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1420.2 | 1420.2 | 1420.2 | 1420.2 | 1420.2 |
| 2.5° | 1407.0 | 1426.1 | 1409.9 | 1408.4 | 1409.9 |
| 5° | 1399.6 | 1412.9 | 1386.3 | 1376.0 | 1381.9 |
| 7.5° | 1389.3 | 1395.2 | 1351.0 | 1324.5 | 1324.5 |
| 10° | 1373.1 | 1368.7 | 1300.9 | 1256.7 | 1246.4 |
| 12.5° | 1351.0 | 1333.3 | 1244.9 | 1175.7 | 1156.5 |
| 15° | 1327.4 | 1293.5 | 1175.7 | 1082.9 | 1053.4 |
| 17.5° | 1300.9 | 1249.3 | 1100.5 | 979.7 | 937.0 |
| 20° | 1268.5 | 1199.2 | 1015.1 | 867.8 | 816.2 |
| 22.5° | 1234.6 | 1144.7 | 925.2 | 752.8 | 695.4 |
| 25° | 1197.8 | 1085.8 | 829.5 | 640.9 | 580.5 |
| 27.5° | 1156.5 | 1023.9 | 735.2 | 533.3 | 467.0 |
| 30° | 1113.8 | 959.1 | 642.3 | 430.2 | 363.9 |
| 32.5° | 1068.1 | 891.3 | 549.5 | 335.9 | 274.0 |
| 35° | 1022.5 | 820.6 | 462.6 | 249.0 | 188.6 |
| 37.5° | 973.8 | 749.9 | 378.6 | 172.4 | 119.3 |
| 40° | 925.2 | 680.7 | 299.1 | 109.0 | 60.4 |
| 42.5° | 875.1 | 608.5 | 226.9 | 54.5 | 41.3 |
| 45° | 820.6 | 537.7 | 160.6 | 39.8 | 32.4 |
| 47.5° | 769.0 | 470.0 | 106.1 | 32.4 | 25.0 |
| 50° | 716.0 | 402.2 | 57.5 | 23.6 | 17.7 |
| 52.5° | 663.0 | 337.4 | 41.3 | 17.7 | 11.8 |
| 55° | 611.4 | 271.1 | 32.4 | 11.8 | 7.4 |
| 57.5° | 558.4 | 213.6 | 25.0 | 7.4 | 4.4 |
| 60° | 505.3 | 157.6 | 17.7 | 4.4 | 2.9 |
| 62.5° | 452.3 | 109.0 | 11.8 | 2.9 | 1.5 |
| 65° | 397.8 | 66.3 | 7.4 | 1.5 | 1.5 |
| 67.5° | 341.8 | 45.7 | 4.4 | 1.5 | 1.5 |
| 70° | 288.8 | 32.4 | 2.9 | 1.5 | 1.5 |
| 72.5° | 235.7 | 20.6 | 1.5 | 1.5 | 0.0 |
| 75° | 185.6 | 11.8 | 1.5 | 1.5 | 1.5 |
| 77.5° | 137.0 | 4.4 | 1.5 | 1.5 | 0.0 |
| 80° | 92.8 | 1.5 | 1.5 | 1.5 | 0.0 |
| 82.5° | 51.6 | 0.0 | 1.5 | 1.5 | 0.0 |
| 85° | 17.7 | 0.0 | 0.0 | 1.5 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 1.5 | 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 | 18.92 | 20.20 | 19.28 | 20.51 | 20.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 20.86 | 22.00 | 21.24 | 22.33 | 22.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 21.69 | 22.74 | 22.09 | 23.10 | 23.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 22.24 | 23.21 | 22.66 | 23.58 | 23.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 22.37 | 23.28 | 22.80 | 23.68 | 24.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 22.39 | 23.27 | 22.83 | 23.65 | 24.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 18.68 | 19.74 | 19.08 | 20.09 | 20.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 20.63 | 21.50 | 21.05 | 21.90 | 22.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 21.45 | 22.22 | 21.88 | 22.64 | 23.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 22.05 | 22.71 | 22.51 | 23.16 | 23.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 22.20 | 22.82 | 22.67 | 23.27 | 23.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 22.25 | 22.79 | 22.73 | 23.27 | 23.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 21.30 | 21.92 | 21.77 | 22.37 | 22.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 21.89 | 22.39 | 22.39 | 22.89 | 23.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 22.04 | 22.49 | 22.56 | 23.00 | 23.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 22.09 | 22.49 | 22.61 | 22.98 | 23.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 21.26 | 21.80 | 21.74 | 22.28 | 22.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 21.82 | 22.27 | 22.35 | 22.79 | 23.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 21.99 | 22.39 | 22.51 | 22.88 | 23.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 |