

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: P1055785

Luminaire Tested: S123R3DRP-H560D940-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055785
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-H560D940-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, 90 CRI LEDS
Ballast/Driver: -

Summary

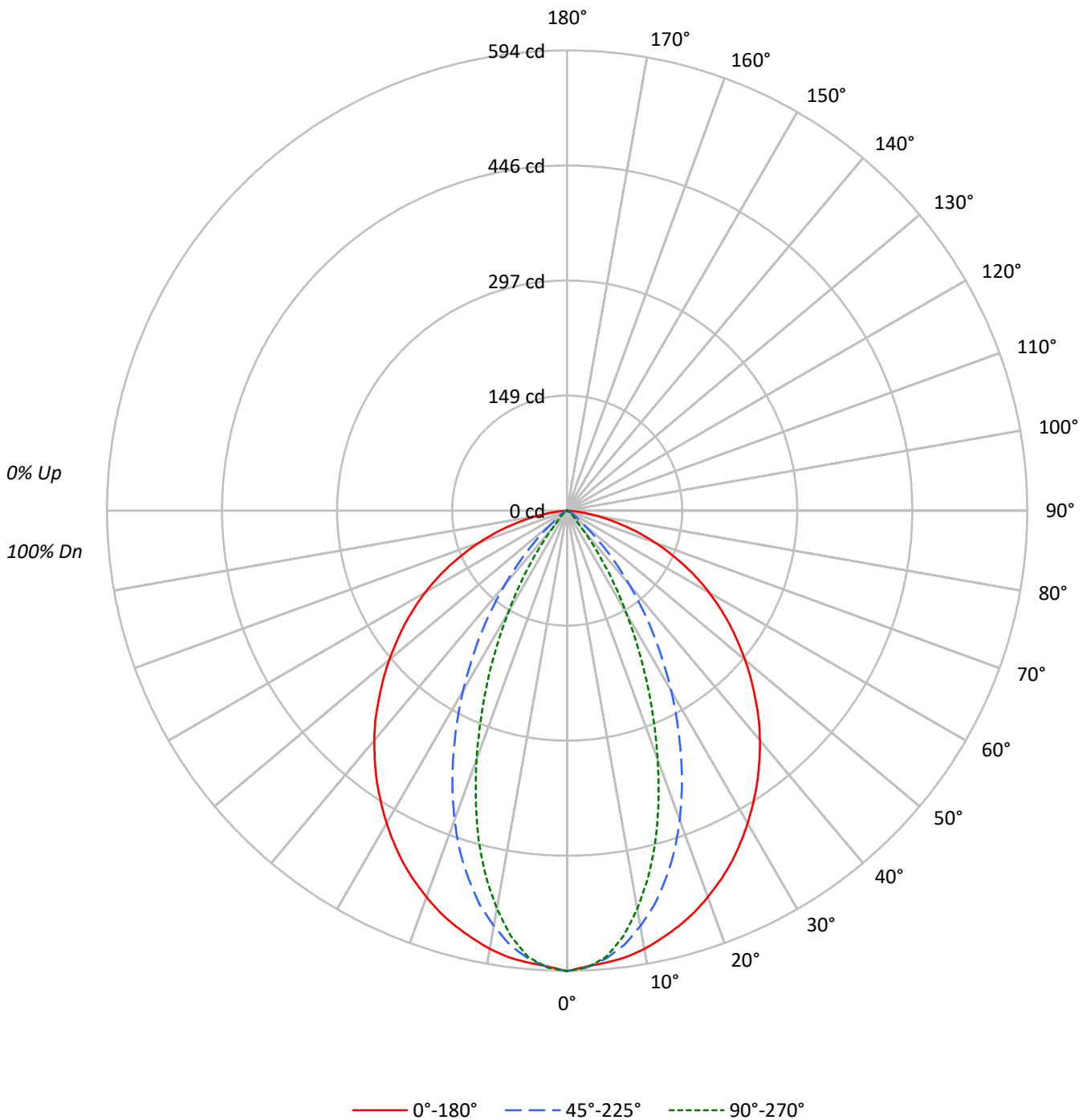
Lumens per Lamp: N/A
Luminaire Lumens: 695.6 lumens
Efficiency: N/A
Efficacy: 40.2 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 17.3
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 | 58 | 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° | 7166 | 7166 | 7166 |
| 5° | 7088 | 7022 | 6999 |
| 10° | 7034 | 6665 | 6386 |
| 15° | 6934 | 6141 | 5502 |
| 20° | 6812 | 5450 | 4383 |
| 25° | 6669 | 4617 | 3231 |
| 30° | 6489 | 3742 | 2120 |
| 35° | 6298 | 2849 | 1161 |
| 40° | 6094 | 1970 | 398 |
| 45° | 5855 | 1146 | 232 |
| 50° | 5621 | 450 | 139 |
| 55° | 5379 | 286 | 65 |
| 60° | 5100 | 178 | 29 |
| 65° | 4750 | 88 | 17 |
| 70° | 4258 | 42 | 21 |
| 75° | 3619 | 28 | 28 |
| 80° | 2694 | 42 | 0 |
| 85° | 1024 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5855 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 54.5 | 7.8 |
| 10°-20° | 138.3 | 19.9 |
| 20°-30° | 165.0 | 23.7 |
| 30°-40° | 139.9 | 20.1 |
| 40°-50° | 95.1 | 13.7 |
| 50°-60° | 58.9 | 8.5 |
| 60°-70° | 29.8 | 4.3 |
| 70°-80° | 12.2 | 1.7 |
| 80°-90° | 1.9 | 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° | 357.8 | 51.4 |
| 0°-40° | 497.7 | 71.5 |
| 0°-60° | 651.7 | 93.7 |
| 0°-90° | 695.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 695.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 594 | 594 | 594 | 594 | 594 | |
| 5° | 586 | 591 | 580 | 576 | 578 | 56 |
| 15° | 556 | 541 | 492 | 453 | 441 | 157 |
| 25° | 501 | 454 | 347 | 268 | 243 | 231 |
| 35° | 428 | 343 | 194 | 104 | 79 | 267 |
| 45° | 343 | 225 | 67 | 17 | 14 | 265 |
| 55° | 256 | 113 | 14 | 5 | 3 | 229 |
| 65° | 166 | 28 | 3 | 1 | 1 | 164 |
| 75° | 78 | 5 | 1 | 1 | 1 | 83 |
| 85° | 7 | 0 | 0 | 1 | 0 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 594.4 | 594.4 | 594.4 | 594.4 | 594.4 |
| 2.5° | 588.8 | 596.8 | 590.1 | 589.4 | 590.1 |
| 5° | 585.7 | 591.3 | 580.2 | 575.9 | 578.3 |
| 7.5° | 581.4 | 583.9 | 565.4 | 554.3 | 554.3 |
| 10° | 574.6 | 572.8 | 544.4 | 525.9 | 521.6 |
| 12.5° | 565.4 | 558.0 | 521.0 | 492.0 | 484.0 |
| 15° | 555.5 | 541.4 | 492.0 | 453.2 | 440.8 |
| 17.5° | 544.4 | 522.9 | 460.6 | 410.0 | 392.1 |
| 20° | 530.9 | 501.9 | 424.8 | 363.2 | 341.6 |
| 22.5° | 516.7 | 479.1 | 387.2 | 315.1 | 291.0 |
| 25° | 501.3 | 454.4 | 347.1 | 268.2 | 242.9 |
| 27.5° | 484.0 | 428.5 | 307.7 | 223.2 | 195.5 |
| 30° | 466.1 | 401.4 | 268.8 | 180.0 | 152.3 |
| 32.5° | 447.0 | 373.0 | 230.0 | 140.6 | 114.7 |
| 35° | 427.9 | 343.4 | 193.6 | 104.2 | 78.9 |
| 37.5° | 407.6 | 313.8 | 158.5 | 72.1 | 49.9 |
| 40° | 387.2 | 284.9 | 125.2 | 45.6 | 25.3 |
| 42.5° | 366.2 | 254.6 | 95.0 | 22.8 | 17.3 |
| 45° | 343.4 | 225.0 | 67.2 | 16.6 | 13.6 |
| 47.5° | 321.9 | 196.7 | 44.4 | 13.6 | 10.5 |
| 50° | 299.7 | 168.3 | 24.0 | 9.9 | 7.4 |
| 52.5° | 277.5 | 141.2 | 17.3 | 7.4 | 4.9 |
| 55° | 255.9 | 113.4 | 13.6 | 4.9 | 3.1 |
| 57.5° | 233.7 | 89.4 | 10.5 | 3.1 | 1.8 |
| 60° | 211.5 | 66.0 | 7.4 | 1.8 | 1.2 |
| 62.5° | 189.3 | 45.6 | 4.9 | 1.2 | 0.6 |
| 65° | 166.5 | 27.7 | 3.1 | 0.6 | 0.6 |
| 67.5° | 143.0 | 19.1 | 1.8 | 0.6 | 0.6 |
| 70° | 120.8 | 13.6 | 1.2 | 0.6 | 0.6 |
| 72.5° | 98.7 | 8.6 | 0.6 | 0.6 | 0.0 |
| 75° | 77.7 | 4.9 | 0.6 | 0.6 | 0.6 |
| 77.5° | 57.3 | 1.8 | 0.6 | 0.6 | 0.0 |
| 80° | 38.8 | 0.6 | 0.6 | 0.6 | 0.0 |
| 82.5° | 21.6 | 0.0 | 0.6 | 0.6 | 0.0 |
| 85° | 7.4 | 0.0 | 0.0 | 0.6 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.6 | 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 | 15.89 | 17.17 | 16.26 | 17.48 | 17.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 17.83 | 18.97 | 18.21 | 19.30 | 19.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 18.66 | 19.72 | 19.07 | 20.07 | 20.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.21 | 20.18 | 19.63 | 20.55 | 20.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.34 | 20.26 | 19.77 | 20.65 | 21.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.37 | 20.24 | 19.80 | 20.62 | 21.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 15.65 | 16.71 | 16.06 | 17.06 | 17.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 17.61 | 18.47 | 18.02 | 18.87 | 19.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 18.42 | 19.19 | 18.86 | 19.61 | 20.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 19.02 | 19.68 | 19.48 | 20.13 | 20.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.17 | 19.79 | 19.64 | 20.24 | 20.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.22 | 19.76 | 19.71 | 20.25 | 20.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 18.28 | 18.90 | 18.75 | 19.34 | 19.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.86 | 19.36 | 19.36 | 19.86 | 20.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 19.01 | 19.46 | 19.53 | 19.97 | 20.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 19.07 | 19.46 | 19.58 | 19.96 | 20.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 18.23 | 18.77 | 18.72 | 19.26 | 19.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 18.79 | 19.24 | 19.32 | 19.76 | 20.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 18.96 | 19.36 | 19.48 | 19.85 | 20.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |