

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: P1055738

Luminaire Tested: S123R3DR-H340D830-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1055738
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-6)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123R3DR-H340D830-X4F0-XX-UDD-FLL-S
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

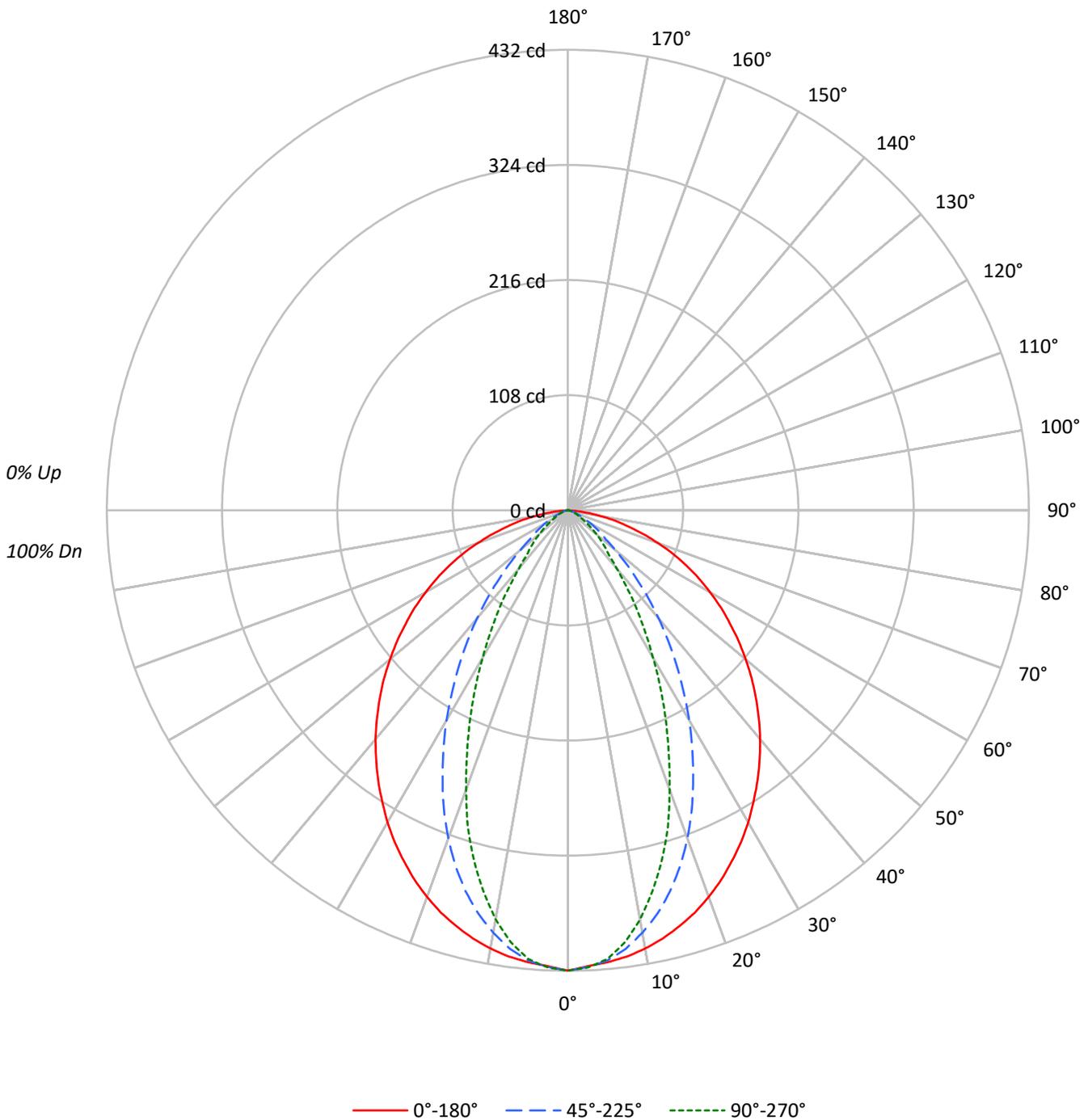
Lumens per Lamp: N/A
Luminaire Lumens: 600.4 lumens
Efficiency: N/A
Efficacy: 51.3 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.77 / 0.94
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

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 | 111 | 108 | 104 | 102 | 109 | 106 | 103 | 100 | 101 | 99 | 97 | 98 | 96 | 94 | 94 | 93 | 91 | 89 |
| 2 | 104 | 97 | 92 | 87 | 101 | 95 | 90 | 86 | 92 | 88 | 84 | 89 | 85 | 82 | 86 | 83 | 81 | 79 |
| 3 | 96 | 88 | 81 | 76 | 94 | 86 | 80 | 76 | 84 | 78 | 74 | 81 | 77 | 73 | 79 | 75 | 72 | 70 |
| 4 | 90 | 80 | 73 | 67 | 88 | 79 | 72 | 67 | 76 | 71 | 66 | 74 | 69 | 65 | 72 | 68 | 64 | 62 |
| 5 | 84 | 73 | 66 | 60 | 82 | 72 | 65 | 60 | 70 | 64 | 59 | 68 | 63 | 59 | 67 | 62 | 58 | 56 |
| 6 | 78 | 67 | 60 | 54 | 77 | 66 | 59 | 54 | 65 | 58 | 53 | 63 | 57 | 53 | 62 | 57 | 53 | 51 |
| 7 | 73 | 62 | 54 | 49 | 72 | 61 | 54 | 49 | 60 | 53 | 49 | 58 | 53 | 48 | 57 | 52 | 48 | 46 |
| 8 | 69 | 57 | 50 | 45 | 68 | 57 | 50 | 45 | 56 | 49 | 45 | 54 | 49 | 44 | 53 | 48 | 44 | 42 |
| 9 | 65 | 53 | 46 | 41 | 64 | 53 | 46 | 41 | 52 | 45 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 39 |
| 10 | 62 | 50 | 43 | 38 | 60 | 49 | 43 | 38 | 48 | 42 | 38 | 48 | 42 | 38 | 47 | 42 | 38 | 36 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5206 | 5206 | 5206 |
| 5° | 5151 | 5131 | 5116 |
| 10° | 5110 | 4925 | 4770 |
| 15° | 5041 | 4618 | 4245 |
| 20° | 4951 | 4201 | 3576 |
| 25° | 4834 | 3697 | 2885 |
| 30° | 4705 | 3167 | 2222 |
| 35° | 4560 | 2614 | 1644 |
| 40° | 4412 | 2081 | 1121 |
| 45° | 4249 | 1557 | 844 |
| 50° | 4076 | 1082 | 660 |
| 55° | 3897 | 792 | 481 |
| 60° | 3711 | 593 | 345 |
| 65° | 3492 | 397 | 268 |
| 70° | 3158 | 289 | 215 |
| 75° | 2725 | 210 | 172 |
| 80° | 2187 | 174 | 139 |
| 85° | 1134 | 166 | 111 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4249 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 39.9 | 6.6 |
| 10°-20° | 103.9 | 17.3 |
| 20°-30° | 130.5 | 21.7 |
| 30°-40° | 121.6 | 20.2 |
| 40°-50° | 93.1 | 15.5 |
| 50°-60° | 61.9 | 10.3 |
| 60°-70° | 33.3 | 5.6 |
| 70°-80° | 13.7 | 2.3 |
| 80°-90° | 2.6 | 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° | 274.3 | 45.7 |
| 0°-40° | 395.9 | 65.9 |
| 0°-60° | 550.8 | 91.7 |
| 0°-90° | 600.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 600.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 432 | 432 | 432 | 432 | 432 | |
| 5° | 426 | 430 | 424 | 422 | 423 | 40 |
| 15° | 404 | 397 | 370 | 348 | 340 | 114 |
| 25° | 363 | 339 | 278 | 232 | 217 | 167 |
| 35° | 310 | 264 | 178 | 126 | 112 | 194 |
| 45° | 249 | 184 | 91 | 54 | 50 | 192 |
| 55° | 185 | 107 | 38 | 26 | 23 | 166 |
| 65° | 122 | 41 | 14 | 10 | 9 | 121 |
| 75° | 58 | 10 | 4 | 4 | 4 | 63 |
| 85° | 8 | 1 | 1 | 1 | 1 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055738

CATALOG NUMBER: S123R3DR-H340D830-X4F0-XX-UDD-FLL-S

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 431.8 | 431.8 | 431.8 | 431.8 | 431.8 |
| 2.5° | 428.1 | 433.4 | 428.9 | 429.3 | 429.3 |
| 5° | 425.6 | 430.1 | 424.0 | 422.3 | 422.7 |
| 7.5° | 422.3 | 425.2 | 415.0 | 409.7 | 408.8 |
| 10° | 417.4 | 418.2 | 402.3 | 392.9 | 389.6 |
| 12.5° | 411.3 | 408.4 | 387.6 | 372.0 | 365.9 |
| 15° | 403.9 | 397.4 | 370.0 | 348.3 | 340.1 |
| 17.5° | 395.7 | 384.7 | 349.9 | 321.7 | 311.8 |
| 20° | 385.9 | 370.4 | 327.4 | 292.2 | 278.7 |
| 22.5° | 375.3 | 355.2 | 303.7 | 261.9 | 246.8 |
| 25° | 363.4 | 338.9 | 277.9 | 231.6 | 216.9 |
| 27.5° | 351.1 | 321.3 | 252.5 | 203.0 | 187.8 |
| 30° | 338.0 | 303.2 | 227.5 | 175.2 | 159.6 |
| 32.5° | 323.7 | 283.6 | 201.8 | 149.4 | 133.8 |
| 35° | 309.8 | 264.0 | 177.6 | 125.6 | 111.7 |
| 37.5° | 295.1 | 244.3 | 154.3 | 104.8 | 89.2 |
| 40° | 280.3 | 224.3 | 132.2 | 84.3 | 71.2 |
| 42.5° | 264.8 | 204.2 | 111.3 | 67.1 | 56.9 |
| 45° | 249.2 | 184.2 | 91.3 | 53.6 | 49.5 |
| 47.5° | 233.7 | 164.1 | 73.7 | 46.2 | 42.2 |
| 50° | 217.3 | 144.9 | 57.7 | 39.3 | 35.2 |
| 52.5° | 201.8 | 125.6 | 45.0 | 32.3 | 28.6 |
| 55° | 185.4 | 107.2 | 37.7 | 26.2 | 22.9 |
| 57.5° | 170.2 | 88.4 | 31.1 | 20.5 | 18.0 |
| 60° | 153.9 | 71.6 | 24.6 | 16.0 | 14.3 |
| 62.5° | 138.3 | 56.1 | 18.8 | 12.7 | 11.5 |
| 65° | 122.4 | 41.3 | 13.9 | 10.2 | 9.4 |
| 67.5° | 106.4 | 29.9 | 10.6 | 8.2 | 7.8 |
| 70° | 89.6 | 22.5 | 8.2 | 6.5 | 6.1 |
| 72.5° | 73.7 | 16.0 | 6.1 | 5.3 | 4.9 |
| 75° | 58.5 | 9.8 | 4.5 | 4.1 | 3.7 |
| 77.5° | 45.0 | 5.7 | 3.3 | 3.3 | 2.9 |
| 80° | 31.5 | 3.3 | 2.5 | 2.5 | 2.0 |
| 82.5° | 19.2 | 2.0 | 1.6 | 1.6 | 1.6 |
| 85° | 8.2 | 1.2 | 1.2 | 1.2 | 0.8 |
| 87.5° | 1.2 | 0.4 | 0.4 | 0.4 | 0.4 |
| 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 | 15.54 | 16.90 | 15.91 | 17.21 | 17.53 | 4.13 | 5.49 | 4.49 | 5.80 | 6.11 |
| | 3H | 17.30 | 18.50 | 17.68 | 18.83 | 19.20 | 4.79 | 5.99 | 5.17 | 6.32 | 6.69 |
| | 4H | 18.00 | 19.12 | 18.40 | 19.47 | 19.85 | 4.98 | 6.11 | 5.39 | 6.46 | 6.84 |
| | 6H | 18.51 | 19.54 | 18.92 | 19.91 | 20.31 | 5.11 | 6.14 | 5.52 | 6.51 | 6.90 |
| | 8H | 18.65 | 19.63 | 19.08 | 20.02 | 20.42 | 5.14 | 6.12 | 5.57 | 6.51 | 6.91 |
| | 12H | 18.70 | 19.64 | 19.13 | 20.02 | 20.45 | 5.15 | 6.08 | 5.58 | 6.47 | 6.90 |
| 4H | 2H | 15.35 | 16.48 | 15.75 | 16.83 | 17.21 | 4.68 | 5.81 | 5.08 | 6.16 | 6.54 |
| | 3H | 17.14 | 18.07 | 17.56 | 18.47 | 18.87 | 5.48 | 6.40 | 5.89 | 6.80 | 7.20 |
| | 4H | 17.84 | 18.66 | 18.27 | 19.08 | 19.52 | 5.73 | 6.56 | 6.17 | 6.98 | 7.42 |
| | 6H | 18.41 | 19.12 | 18.87 | 19.57 | 20.03 | 5.93 | 6.65 | 6.40 | 7.09 | 7.56 |
| | 8H | 18.58 | 19.25 | 19.05 | 19.69 | 20.16 | 5.98 | 6.65 | 6.45 | 7.09 | 7.56 |
| | 12H | 18.67 | 19.26 | 19.16 | 19.74 | 20.21 | 6.01 | 6.60 | 6.50 | 7.08 | 7.56 |
| 8H | 4H | 17.72 | 18.38 | 18.18 | 18.83 | 19.30 | 6.05 | 6.71 | 6.52 | 7.16 | 7.63 |
| | 6H | 18.27 | 18.81 | 18.77 | 19.31 | 19.79 | 6.30 | 6.84 | 6.80 | 7.34 | 7.82 |
| | 8H | 18.45 | 18.93 | 18.97 | 19.45 | 19.94 | 6.38 | 6.87 | 6.90 | 7.38 | 7.88 |
| | 12H | 18.55 | 18.98 | 19.06 | 19.47 | 20.04 | 6.46 | 6.89 | 6.97 | 7.38 | 7.95 |
| 12H | 4H | 17.67 | 18.26 | 18.16 | 18.74 | 19.22 | 6.09 | 6.68 | 6.58 | 7.16 | 7.64 |
| | 6H | 18.21 | 18.70 | 18.73 | 19.21 | 19.70 | 6.35 | 6.83 | 6.87 | 7.35 | 7.84 |
| | 8H | 18.41 | 18.83 | 18.92 | 19.33 | 19.90 | 6.47 | 6.89 | 6.98 | 7.39 | 7.96 |