

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: P1055602

Luminaire Tested: S123R3DR-S340D830-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1055602
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: S123R3DR-S340D830-X4F0-XX-UDD-F-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
CORE LIGHT ENGINE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

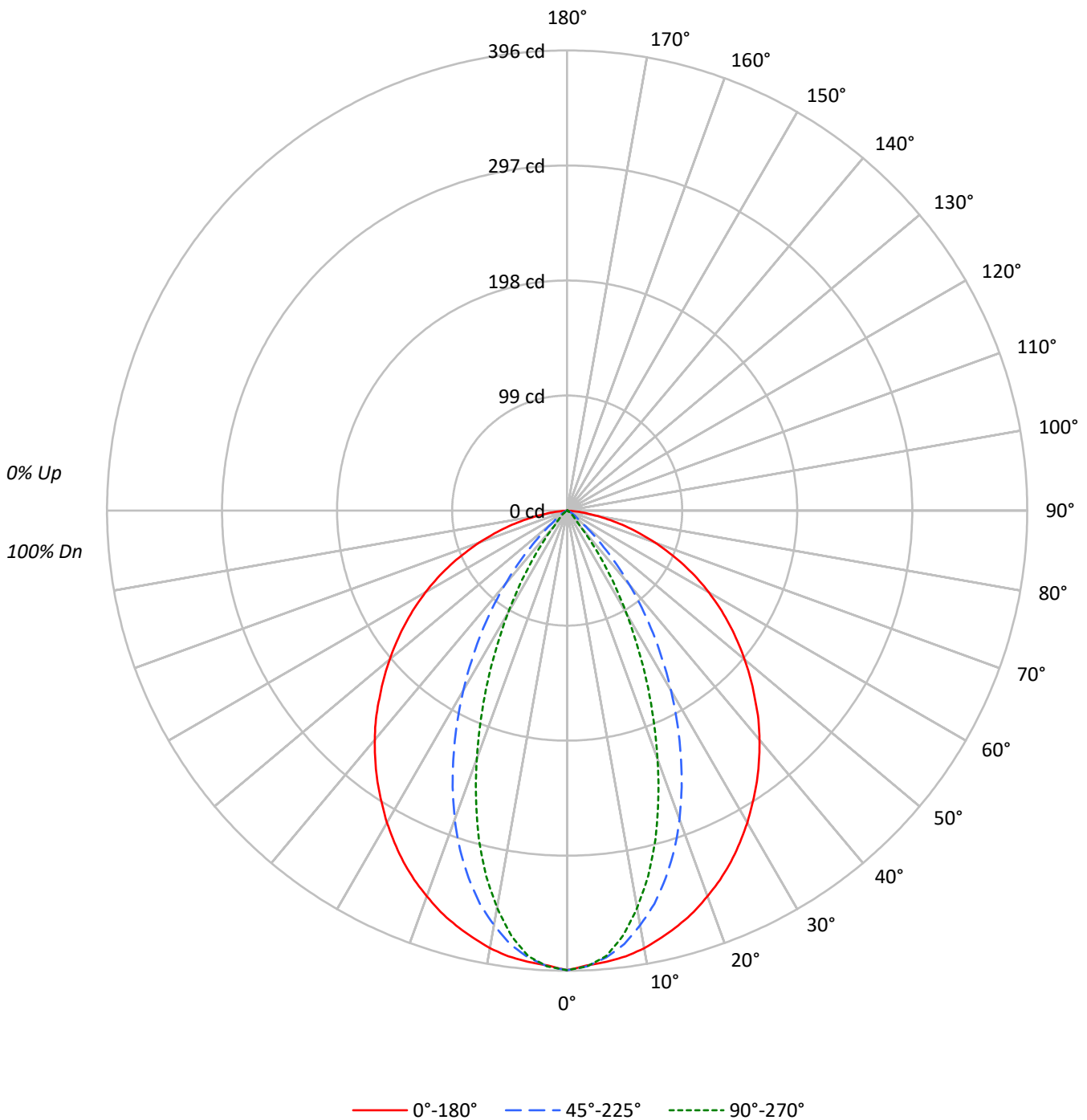
Lumens per Lamp: N/A
Luminaire Lumens: 462.8 lumens
Efficiency: N/A
Efficacy: 36.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 12.6
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 | | | | 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° | 4768 | 4768 | 4768 |
| 5° | 4716 | 4672 | 4657 |
| 10° | 4681 | 4434 | 4249 |
| 15° | 4613 | 4087 | 3661 |
| 20° | 4532 | 3627 | 2916 |
| 25° | 4436 | 3073 | 2150 |
| 30° | 4317 | 2491 | 1410 |
| 35° | 4190 | 1896 | 773 |
| 40° | 4054 | 1311 | 264 |
| 45° | 3896 | 762 | 153 |
| 50° | 3740 | 300 | 92 |
| 55° | 3580 | 189 | 44 |
| 60° | 3393 | 118 | 19 |
| 65° | 3161 | 60 | 11 |
| 70° | 2834 | 28 | 14 |
| 75° | 2408 | 19 | 19 |
| 80° | 1791 | 28 | 0 |
| 85° | 678 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3896 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 36.3 | 7.8 |
| 10°-20° | 92.0 | 19.9 |
| 20°-30° | 109.8 | 23.7 |
| 30°-40° | 93.1 | 20.1 |
| 40°-50° | 63.3 | 13.7 |
| 50°-60° | 39.2 | 8.5 |
| 60°-70° | 19.9 | 4.3 |
| 70°-80° | 8.1 | 1.7 |
| 80°-90° | 1.2 | 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° | 238.0 | 51.4 |
| 0°-40° | 331.1 | 71.5 |
| 0°-60° | 433.6 | 93.7 |
| 0°-90° | 462.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 462.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 396 | 396 | 396 | 396 | 396 | |
| 5° | 390 | 393 | 386 | 383 | 385 | 37 |
| 15° | 370 | 360 | 327 | 302 | 293 | 104 |
| 25° | 334 | 302 | 231 | 178 | 162 | 153 |
| 35° | 285 | 228 | 129 | 69 | 52 | 178 |
| 45° | 228 | 150 | 45 | 11 | 9 | 176 |
| 55° | 170 | 76 | 9 | 3 | 2 | 152 |
| 65° | 111 | 18 | 2 | 0 | 0 | 109 |
| 75° | 52 | 3 | 0 | 0 | 0 | 55 |
| 85° | 5 | 0 | 0 | 0 | 0 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1055602

CATALOG NUMBER: S123R3DR-S340D830-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 395.5 | 395.5 | 395.5 | 395.5 | 395.5 |
| 2.5° | 391.8 | 397.1 | 392.6 | 392.2 | 392.6 |
| 5° | 389.7 | 393.4 | 386.0 | 383.2 | 384.8 |
| 7.5° | 386.9 | 388.5 | 376.2 | 368.8 | 368.8 |
| 10° | 382.4 | 381.1 | 362.2 | 349.9 | 347.1 |
| 12.5° | 376.2 | 371.3 | 346.7 | 327.4 | 322.0 |
| 15° | 369.6 | 360.2 | 327.4 | 301.5 | 293.3 |
| 17.5° | 362.2 | 347.9 | 306.5 | 272.8 | 260.9 |
| 20° | 353.2 | 333.9 | 282.7 | 241.6 | 227.3 |
| 22.5° | 343.8 | 318.8 | 257.6 | 209.6 | 193.6 |
| 25° | 333.5 | 302.4 | 231.0 | 178.5 | 161.6 |
| 27.5° | 322.0 | 285.1 | 204.7 | 148.5 | 130.0 |
| 30° | 310.1 | 267.1 | 178.9 | 119.8 | 101.3 |
| 32.5° | 297.4 | 248.2 | 153.0 | 93.5 | 76.3 |
| 35° | 284.7 | 228.5 | 128.8 | 69.3 | 52.5 |
| 37.5° | 271.2 | 208.8 | 105.4 | 48.0 | 33.2 |
| 40° | 257.6 | 189.5 | 83.3 | 30.4 | 16.8 |
| 42.5° | 243.7 | 169.4 | 63.2 | 15.2 | 11.5 |
| 45° | 228.5 | 149.7 | 44.7 | 11.1 | 9.0 |
| 47.5° | 214.1 | 130.9 | 29.5 | 9.0 | 7.0 |
| 50° | 199.4 | 112.0 | 16.0 | 6.6 | 4.9 |
| 52.5° | 184.6 | 93.9 | 11.5 | 4.9 | 3.3 |
| 55° | 170.3 | 75.5 | 9.0 | 3.3 | 2.1 |
| 57.5° | 155.5 | 59.5 | 7.0 | 2.1 | 1.2 |
| 60° | 140.7 | 43.9 | 4.9 | 1.2 | 0.8 |
| 62.5° | 125.9 | 30.4 | 3.3 | 0.8 | 0.4 |
| 65° | 110.8 | 18.5 | 2.1 | 0.4 | 0.4 |
| 67.5° | 95.2 | 12.7 | 1.2 | 0.4 | 0.4 |
| 70° | 80.4 | 9.0 | 0.8 | 0.4 | 0.4 |
| 72.5° | 65.6 | 5.7 | 0.4 | 0.4 | 0.0 |
| 75° | 51.7 | 3.3 | 0.4 | 0.4 | 0.4 |
| 77.5° | 38.2 | 1.2 | 0.4 | 0.4 | 0.0 |
| 80° | 25.8 | 0.4 | 0.4 | 0.4 | 0.0 |
| 82.5° | 14.4 | 0.0 | 0.4 | 0.4 | 0.0 |
| 85° | 4.9 | 0.0 | 0.0 | 0.4 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 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 | 14.48 | 15.76 | 14.84 | 16.07 | 16.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.42 | 17.55 | 16.80 | 17.88 | 18.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.25 | 18.30 | 17.65 | 18.65 | 19.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.80 | 18.77 | 18.22 | 19.14 | 19.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.93 | 18.84 | 18.36 | 19.24 | 19.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.95 | 18.83 | 18.38 | 19.21 | 19.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 14.24 | 15.30 | 14.64 | 15.65 | 16.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 16.19 | 17.05 | 16.60 | 17.46 | 17.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 17.00 | 17.77 | 17.44 | 18.19 | 18.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.61 | 18.27 | 18.07 | 18.72 | 19.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.76 | 18.38 | 18.23 | 18.82 | 19.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.81 | 18.35 | 18.29 | 18.83 | 19.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 16.86 | 17.48 | 17.33 | 17.93 | 18.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.44 | 17.95 | 17.95 | 18.44 | 18.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.59 | 18.04 | 18.12 | 18.56 | 19.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.65 | 18.05 | 18.17 | 18.54 | 19.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 16.81 | 17.36 | 17.30 | 17.84 | 18.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.38 | 17.83 | 17.90 | 18.35 | 18.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.55 | 17.94 | 18.07 | 18.44 | 19.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |