

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: P1055749

Luminaire Tested: S123R3DR-H340D927-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1055749
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-H340D927-X4F0-XX-UDD-FLL-B
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

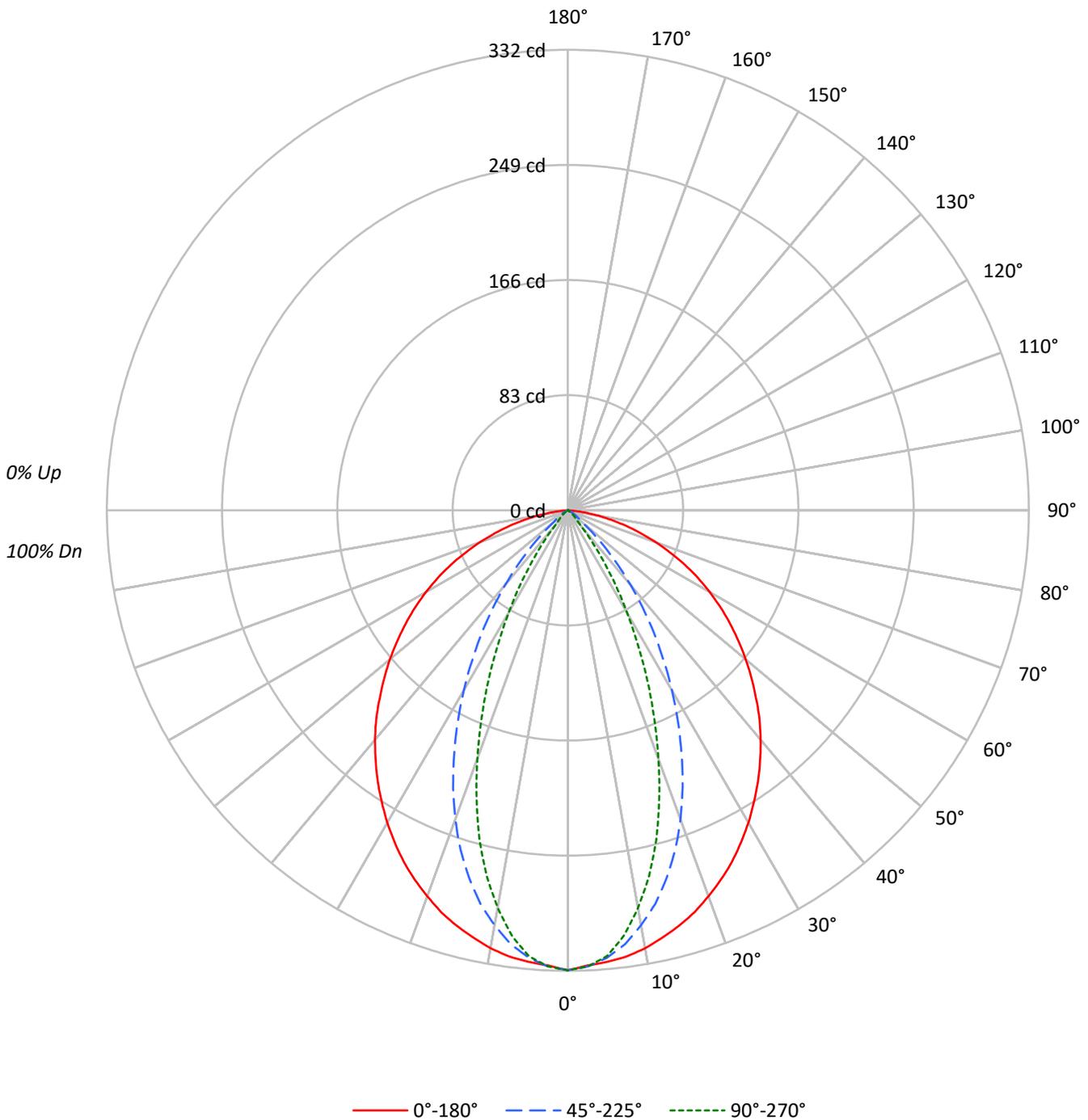
Lumens per Lamp: N/A
Luminaire Lumens: 388.0 lumens
Efficiency: N/A
Efficacy: 33.2 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
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 | 88 | 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° | 3998 | 3998 | 3998 |
| 5° | 3955 | 3918 | 3904 |
| 10° | 3925 | 3718 | 3563 |
| 15° | 3868 | 3426 | 3069 |
| 20° | 3799 | 3041 | 2445 |
| 25° | 3719 | 2575 | 1803 |
| 30° | 3620 | 2088 | 1183 |
| 35° | 3513 | 1590 | 648 |
| 40° | 3400 | 1099 | 222 |
| 45° | 3267 | 639 | 130 |
| 50° | 3136 | 251 | 77 |
| 55° | 3000 | 160 | 36 |
| 60° | 2845 | 99 | 17 |
| 65° | 2650 | 48 | 9 |
| 70° | 2376 | 25 | 11 |
| 75° | 2017 | 14 | 14 |
| 80° | 1507 | 21 | 0 |
| 85° | 567 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3267 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 30.4 | 7.8 |
| 10°-20° | 77.1 | 19.9 |
| 20°-30° | 92.0 | 23.7 |
| 30°-40° | 78.1 | 20.1 |
| 40°-50° | 53.1 | 13.7 |
| 50°-60° | 32.9 | 8.5 |
| 60°-70° | 16.7 | 4.3 |
| 70°-80° | 6.8 | 1.7 |
| 80°-90° | 1.0 | 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° | 199.6 | 51.4 |
| 0°-40° | 277.6 | 71.6 |
| 0°-60° | 363.6 | 93.7 |
| 0°-90° | 388.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 388.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 332 | 332 | 332 | 332 | 332 | |
| 5° | 327 | 330 | 324 | 321 | 323 | 31 |
| 15° | 310 | 302 | 274 | 253 | 246 | 87 |
| 25° | 280 | 254 | 194 | 150 | 136 | 129 |
| 35° | 239 | 192 | 108 | 58 | 44 | 149 |
| 45° | 192 | 126 | 38 | 9 | 8 | 148 |
| 55° | 143 | 63 | 8 | 3 | 2 | 128 |
| 65° | 93 | 16 | 2 | 0 | 0 | 92 |
| 75° | 43 | 3 | 0 | 0 | 0 | 46 |
| 85° | 4 | 0 | 0 | 0 | 0 | 7 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CATALOG NUMBER: S123R3DR-H340D927-X4F0-XX-UDD-FLL-B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 331.6 | 331.6 | 331.6 | 331.6 | 331.6 |
| 2.5° | 328.5 | 333.0 | 329.2 | 328.8 | 329.2 |
| 5° | 326.8 | 329.9 | 323.7 | 321.3 | 322.6 |
| 7.5° | 324.4 | 325.7 | 315.4 | 309.2 | 309.2 |
| 10° | 320.6 | 319.5 | 303.7 | 293.4 | 291.0 |
| 12.5° | 315.4 | 311.3 | 290.6 | 274.5 | 270.0 |
| 15° | 309.9 | 302.0 | 274.5 | 252.8 | 245.9 |
| 17.5° | 303.7 | 291.7 | 256.9 | 228.7 | 218.8 |
| 20° | 296.1 | 280.0 | 237.0 | 202.6 | 190.6 |
| 22.5° | 288.2 | 267.3 | 216.0 | 175.8 | 162.3 |
| 25° | 279.6 | 253.5 | 193.6 | 149.6 | 135.5 |
| 27.5° | 270.0 | 239.1 | 171.6 | 124.5 | 109.0 |
| 30° | 260.0 | 223.9 | 150.0 | 100.4 | 85.0 |
| 32.5° | 249.4 | 208.1 | 128.3 | 78.4 | 64.0 |
| 35° | 238.7 | 191.6 | 108.0 | 58.1 | 44.0 |
| 37.5° | 227.4 | 175.1 | 88.4 | 40.2 | 27.9 |
| 40° | 216.0 | 158.9 | 69.8 | 25.5 | 14.1 |
| 42.5° | 204.3 | 142.1 | 53.0 | 12.7 | 9.6 |
| 45° | 191.6 | 125.5 | 37.5 | 9.3 | 7.6 |
| 47.5° | 179.5 | 109.7 | 24.8 | 7.6 | 5.8 |
| 50° | 167.2 | 93.9 | 13.4 | 5.5 | 4.1 |
| 52.5° | 154.8 | 78.8 | 9.6 | 4.1 | 2.8 |
| 55° | 142.7 | 63.3 | 7.6 | 2.8 | 1.7 |
| 57.5° | 130.4 | 49.9 | 5.8 | 1.7 | 1.0 |
| 60° | 118.0 | 36.8 | 4.1 | 1.0 | 0.7 |
| 62.5° | 105.6 | 25.5 | 2.8 | 0.7 | 0.3 |
| 65° | 92.9 | 15.5 | 1.7 | 0.3 | 0.3 |
| 67.5° | 79.8 | 10.7 | 1.0 | 0.3 | 0.3 |
| 70° | 67.4 | 7.6 | 0.7 | 0.3 | 0.3 |
| 72.5° | 55.0 | 4.8 | 0.3 | 0.3 | 0.0 |
| 75° | 43.3 | 2.8 | 0.3 | 0.3 | 0.3 |
| 77.5° | 32.0 | 1.0 | 0.3 | 0.3 | 0.0 |
| 80° | 21.7 | 0.3 | 0.3 | 0.3 | 0.0 |
| 82.5° | 12.0 | 0.0 | 0.3 | 0.3 | 0.0 |
| 85° | 4.1 | 0.0 | 0.0 | 0.3 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.3 | 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 | 13.87 | 15.15 | 14.23 | 15.46 | 15.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 15.81 | 16.94 | 16.19 | 17.28 | 17.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 16.64 | 17.69 | 17.04 | 18.04 | 18.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.19 | 18.16 | 17.61 | 18.53 | 18.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.32 | 18.23 | 17.75 | 18.62 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.34 | 18.22 | 17.77 | 18.60 | 19.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4H | 2H | 13.63 | 14.68 | 14.03 | 15.04 | 15.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3H | 15.58 | 16.44 | 16.00 | 16.85 | 17.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 4H | 16.39 | 17.16 | 16.83 | 17.58 | 18.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 17.00 | 17.66 | 17.46 | 18.10 | 18.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 17.15 | 17.76 | 17.62 | 18.21 | 18.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.19 | 17.74 | 17.68 | 18.22 | 18.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8H | 4H | 16.25 | 16.87 | 16.72 | 17.32 | 17.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 16.83 | 17.34 | 17.34 | 17.83 | 18.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 16.98 | 17.43 | 17.51 | 17.95 | 18.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 12H | 17.04 | 17.43 | 17.55 | 17.93 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12H | 4H | 16.20 | 16.75 | 16.69 | 17.23 | 17.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 6H | 16.77 | 17.22 | 17.29 | 17.74 | 18.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 8H | 16.94 | 17.33 | 17.45 | 17.83 | 18.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |