

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: P1056165

Luminaire Tested: S124R3DR-H350D940-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056165
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-7)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124R3DR-H350D940-X4F0-XX-UDD-F-W
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

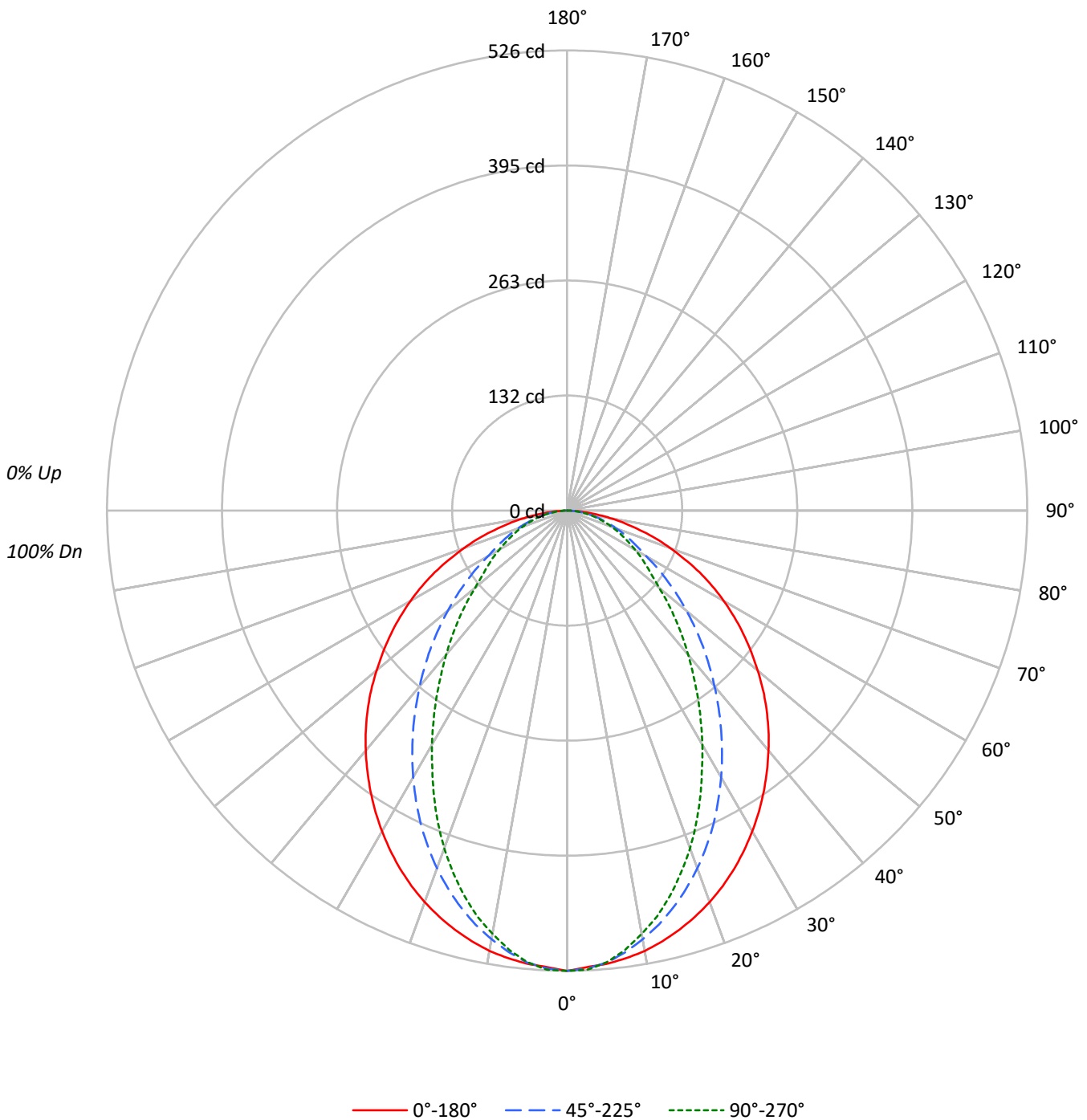
Lumens per Lamp: N/A
Luminaire Lumens: 1048.0 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P1056165

CATALOG NUMBER: S124R3DR-H350D940-X4F0-XX-UDD-F-W

Luminous Intensity Polar Plot





TEST NUMBER: P1056165

CATALOG NUMBER: S124R3DR-H350D940-X4F0-XX-UDD-F-W

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 | 110 | 105 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 93 | 95 | 93 | 91 | 92 | 90 | 88 | 86 |
| 2 | 101 | 93 | 87 | 82 | 98 | 91 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 77 | 82 | 78 | 76 | 73 |
| 3 | 93 | 83 | 75 | 69 | 90 | 81 | 74 | 69 | 79 | 73 | 68 | 76 | 71 | 67 | 73 | 69 | 65 | 63 |
| 4 | 85 | 74 | 66 | 60 | 83 | 73 | 65 | 60 | 71 | 64 | 59 | 68 | 63 | 58 | 66 | 61 | 57 | 55 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 49 |
| 6 | 73 | 61 | 53 | 47 | 72 | 60 | 52 | 46 | 58 | 51 | 46 | 57 | 50 | 46 | 55 | 50 | 45 | 43 |
| 7 | 68 | 56 | 47 | 42 | 67 | 55 | 47 | 42 | 53 | 46 | 41 | 52 | 46 | 41 | 51 | 45 | 41 | 39 |
| 8 | 64 | 51 | 43 | 38 | 62 | 51 | 43 | 38 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 35 |
| 9 | 60 | 47 | 39 | 34 | 59 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 32 |
| 10 | 56 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 41 | 35 | 31 | 29 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4652 | 4652 | 4652 |
| 5° | 4615 | 4604 | 4601 |
| 10° | 4589 | 4466 | 4411 |
| 15° | 4540 | 4298 | 4167 |
| 20° | 4480 | 4095 | 3865 |
| 25° | 4407 | 3860 | 3513 |
| 30° | 4321 | 3593 | 3155 |
| 35° | 4229 | 3314 | 2808 |
| 40° | 4133 | 3025 | 2485 |
| 45° | 4032 | 2745 | 2183 |
| 50° | 3909 | 2450 | 1886 |
| 55° | 3790 | 2155 | 1713 |
| 60° | 3657 | 1848 | 1588 |
| 65° | 3492 | 1676 | 1483 |
| 70° | 3242 | 1551 | 1401 |
| 75° | 2938 | 1428 | 1322 |
| 80° | 2561 | 1319 | 1242 |
| 85° | 1968 | 1217 | 1136 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4032 cd/sqm



TEST NUMBER: P1056165

CATALOG NUMBER: S124R3DR-H350D940-X4F0-XX-UDD-F-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 49.0 | 4.7 |
| 10°-20° | 132.9 | 12.7 |
| 20°-30° | 184.0 | 17.6 |
| 30°-40° | 197.5 | 18.8 |
| 40°-50° | 179.6 | 17.1 |
| 50°-60° | 141.4 | 13.5 |
| 60°-70° | 96.8 | 9.2 |
| 70°-80° | 52.1 | 5.0 |
| 80°-90° | 14.7 | 1.4 |
| 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° | 365.8 | 34.9 |
| 0°-40° | 563.3 | 53.8 |
| 0°-60° | 884.3 | 84.4 |
| 0°-90° | 1048.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1048.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 526 | 526 | 526 | 526 | 526 | |
| 5° | 520 | 526 | 519 | 516 | 518 | 49 |
| 15° | 496 | 490 | 470 | 457 | 455 | 140 |
| 25° | 452 | 433 | 396 | 367 | 360 | 208 |
| 35° | 392 | 361 | 307 | 270 | 260 | 245 |
| 45° | 322 | 282 | 220 | 182 | 175 | 249 |
| 55° | 246 | 199 | 140 | 113 | 111 | 220 |
| 65° | 167 | 119 | 80 | 71 | 71 | 165 |
| 75° | 86 | 52 | 42 | 38 | 39 | 92 |
| 85° | 19 | 13 | 12 | 11 | 11 | 23 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1056165

CATALOG NUMBER: S124R3DR-H350D940-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 526.2 | 526.2 | 526.2 | 526.2 | 526.2 |
| 2.5° | 522.3 | 528.5 | 523.8 | 524.6 | 525.4 |
| 5° | 520.0 | 525.8 | 518.8 | 516.1 | 518.4 |
| 7.5° | 516.1 | 520.0 | 509.1 | 504.1 | 506.4 |
| 10° | 511.1 | 511.8 | 497.5 | 490.2 | 491.3 |
| 12.5° | 504.1 | 502.2 | 484.7 | 474.3 | 475.1 |
| 15° | 496.0 | 490.5 | 469.6 | 456.9 | 455.3 |
| 17.5° | 486.7 | 477.8 | 453.0 | 436.7 | 433.6 |
| 20° | 476.2 | 464.2 | 435.2 | 414.3 | 410.8 |
| 22.5° | 464.6 | 449.1 | 415.8 | 391.0 | 386.0 |
| 25° | 451.8 | 433.2 | 395.7 | 367.0 | 360.1 |
| 27.5° | 437.9 | 416.2 | 374.0 | 342.6 | 333.7 |
| 30° | 423.2 | 398.4 | 351.9 | 318.3 | 309.0 |
| 32.5° | 408.1 | 380.2 | 329.5 | 293.9 | 284.2 |
| 35° | 391.8 | 361.2 | 307.0 | 269.9 | 260.2 |
| 37.5° | 375.2 | 341.5 | 284.2 | 246.6 | 236.6 |
| 40° | 358.1 | 321.7 | 262.1 | 223.4 | 215.3 |
| 42.5° | 340.7 | 301.6 | 240.4 | 201.7 | 194.4 |
| 45° | 322.5 | 281.5 | 219.5 | 181.6 | 174.6 |
| 47.5° | 303.9 | 261.0 | 198.2 | 162.6 | 156.0 |
| 50° | 284.2 | 240.4 | 178.1 | 144.0 | 137.1 |
| 52.5° | 265.2 | 219.5 | 158.7 | 125.8 | 122.3 |
| 55° | 245.9 | 199.0 | 139.8 | 112.7 | 111.1 |
| 57.5° | 226.5 | 178.5 | 122.3 | 102.2 | 100.7 |
| 60° | 206.8 | 158.4 | 104.5 | 91.4 | 89.8 |
| 62.5° | 187.0 | 138.6 | 91.4 | 80.9 | 80.1 |
| 65° | 166.9 | 119.2 | 80.1 | 71.2 | 70.9 |
| 67.5° | 145.6 | 100.7 | 70.1 | 62.7 | 62.3 |
| 70° | 125.4 | 82.1 | 60.0 | 54.2 | 54.2 |
| 72.5° | 106.5 | 65.0 | 50.7 | 46.1 | 46.1 |
| 75° | 86.0 | 52.3 | 41.8 | 38.3 | 38.7 |
| 77.5° | 67.8 | 41.0 | 33.7 | 31.4 | 31.4 |
| 80° | 50.3 | 30.6 | 25.9 | 24.0 | 24.4 |
| 82.5° | 34.1 | 21.3 | 18.6 | 17.4 | 17.4 |
| 85° | 19.4 | 13.2 | 12.0 | 11.2 | 11.2 |
| 87.5° | 7.0 | 6.2 | 5.8 | 5.0 | 5.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P1056165
 CATALOG NUMBER: S124R3DR-H350D940-X4F0-XX-UDD-F-W

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 | 16.48 | 18.01 | 16.85 | 18.32 | 18.64 | 12.26 | 13.79 | 12.63 | 14.10 | 14.41 |
| | 3H | 18.26 | 19.63 | 18.64 | 19.96 | 20.32 | 13.87 | 15.24 | 14.25 | 15.57 | 15.93 |
| | 4H | 18.93 | 20.22 | 19.33 | 20.57 | 20.94 | 14.50 | 15.79 | 14.90 | 16.14 | 16.52 |
| | 6H | 19.44 | 20.63 | 19.85 | 20.99 | 21.39 | 15.00 | 16.19 | 15.41 | 16.56 | 16.95 |
| | 8H | 19.60 | 20.74 | 20.03 | 21.12 | 21.53 | 15.17 | 16.31 | 15.60 | 16.69 | 17.10 |
| | 12H | 19.70 | 20.79 | 20.13 | 21.17 | 21.60 | 15.29 | 16.38 | 15.72 | 16.76 | 17.19 |
| 4H | 2H | 16.58 | 17.86 | 16.98 | 18.21 | 18.59 | 12.98 | 14.26 | 13.38 | 14.61 | 14.99 |
| | 3H | 18.52 | 19.59 | 18.93 | 19.99 | 20.39 | 14.79 | 15.86 | 15.20 | 16.25 | 16.66 |
| | 4H | 19.28 | 20.24 | 19.71 | 20.66 | 21.10 | 15.52 | 16.49 | 15.95 | 16.90 | 17.34 |
| | 6H | 19.91 | 20.75 | 20.37 | 21.20 | 21.66 | 16.14 | 16.98 | 16.60 | 17.42 | 17.88 |
| | 8H | 20.13 | 20.92 | 20.60 | 21.36 | 21.83 | 16.35 | 17.14 | 16.82 | 17.58 | 18.05 |
| | 12H | 20.29 | 20.99 | 20.77 | 21.47 | 21.94 | 16.52 | 17.22 | 17.00 | 17.70 | 18.17 |
| 8H | 4H | 19.34 | 20.12 | 19.80 | 20.57 | 21.03 | 15.91 | 16.70 | 16.37 | 17.14 | 17.61 |
| | 6H | 20.04 | 20.68 | 20.53 | 21.18 | 21.65 | 16.64 | 17.29 | 17.14 | 17.78 | 18.26 |
| | 8H | 20.30 | 20.89 | 20.82 | 21.40 | 21.88 | 16.93 | 17.51 | 17.44 | 18.02 | 18.51 |
| | 12H | 20.52 | 21.04 | 21.03 | 21.53 | 22.09 | 17.18 | 17.69 | 17.68 | 18.18 | 18.75 |
| 12H | 4H | 19.33 | 20.03 | 19.81 | 20.51 | 20.98 | 15.97 | 16.67 | 16.45 | 17.15 | 17.62 |
| | 6H | 20.03 | 20.61 | 20.54 | 21.12 | 21.61 | 16.73 | 17.31 | 17.24 | 17.82 | 18.31 |
| | 8H | 20.34 | 20.85 | 20.85 | 21.34 | 21.91 | 17.07 | 17.59 | 17.58 | 18.08 | 18.65 |