

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: P1056222

Luminaire Tested: S124R3DR-H795D950-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056222
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-H795D950-X4F0-XX-UDD-F-W
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

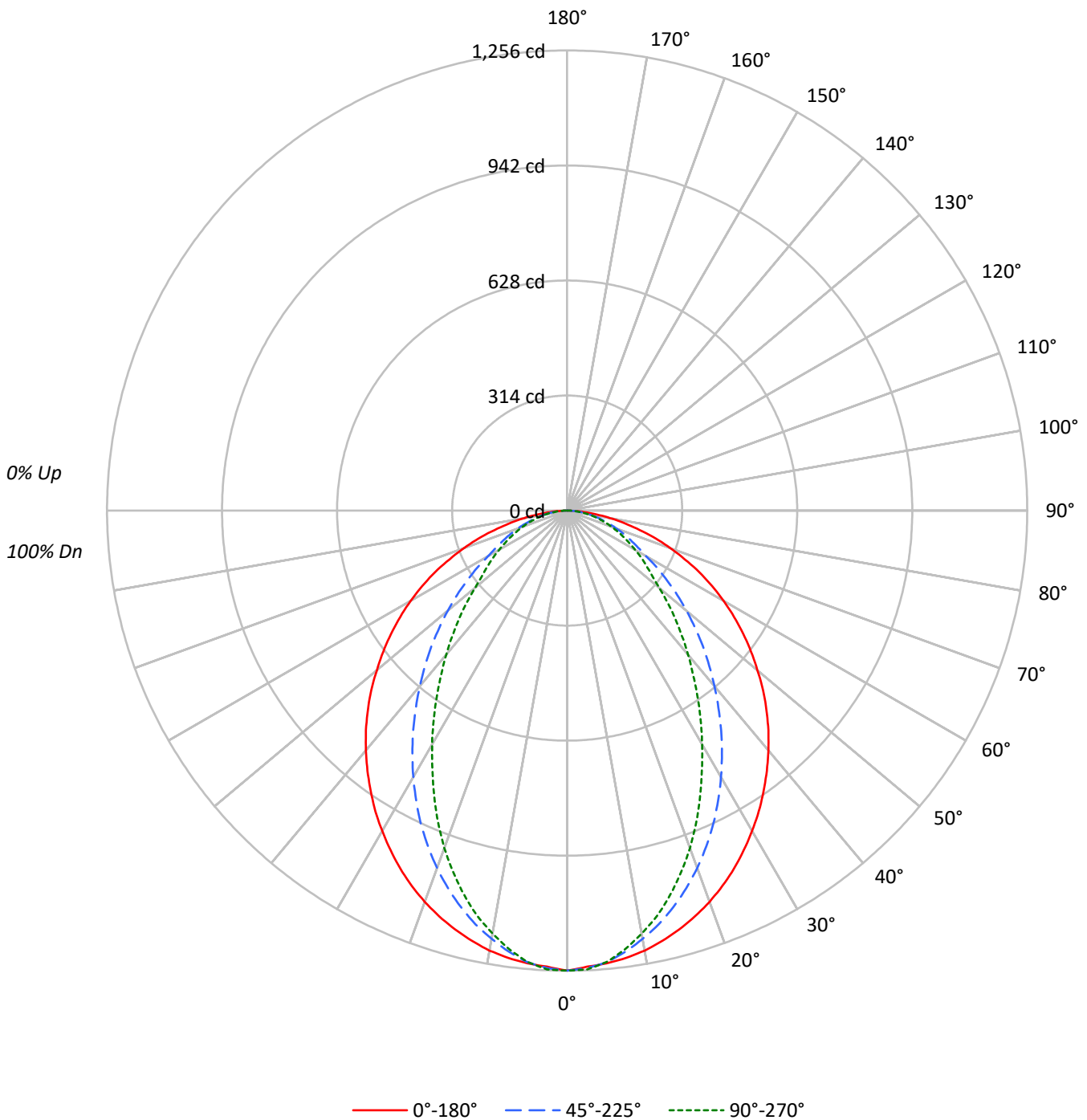
Lumens per Lamp: N/A
Luminaire Lumens: 2500.6 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 23.8
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 | 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° | 11100 | 11100 | 11100 |
| 5° | 11011 | 10987 | 10979 |
| 10° | 10948 | 10658 | 10525 |
| 15° | 10832 | 10257 | 9944 |
| 20° | 10691 | 9770 | 9223 |
| 25° | 10517 | 9211 | 8382 |
| 30° | 10308 | 8574 | 7526 |
| 35° | 10091 | 7907 | 6700 |
| 40° | 9862 | 7218 | 5928 |
| 45° | 9622 | 6549 | 5209 |
| 50° | 9327 | 5846 | 4498 |
| 55° | 9042 | 5141 | 4086 |
| 60° | 8723 | 4410 | 3789 |
| 65° | 8331 | 4000 | 3538 |
| 70° | 7737 | 3702 | 3342 |
| 75° | 7006 | 3409 | 3156 |
| 80° | 6115 | 3152 | 2963 |
| 85° | 4687 | 2901 | 2719 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9622 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 116.9 | 4.7 |
| 10°-20° | 317.1 | 12.7 |
| 20°-30° | 439.0 | 17.6 |
| 30°-40° | 471.2 | 18.8 |
| 40°-50° | 428.5 | 17.1 |
| 50°-60° | 337.4 | 13.5 |
| 60°-70° | 231.0 | 9.2 |
| 70°-80° | 124.3 | 5.0 |
| 80°-90° | 35.2 | 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° | 873.0 | 34.9 |
| 0°-40° | 1344.2 | 53.8 |
| 0°-60° | 2110.1 | 84.4 |
| 0°-90° | 2500.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2500.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1256 | 1256 | 1256 | 1256 | 1256 | |
| 5° | 1241 | 1255 | 1238 | 1232 | 1237 | 118 |
| 15° | 1183 | 1170 | 1121 | 1090 | 1086 | 334 |
| 25° | 1078 | 1034 | 944 | 876 | 859 | 496 |
| 35° | 935 | 862 | 733 | 644 | 621 | 585 |
| 45° | 770 | 672 | 524 | 433 | 417 | 593 |
| 55° | 587 | 475 | 334 | 269 | 265 | 524 |
| 65° | 398 | 284 | 191 | 170 | 169 | 393 |
| 75° | 205 | 125 | 100 | 92 | 92 | 219 |
| 85° | 46 | 31 | 29 | 27 | 27 | 56 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1255.5 | 1255.5 | 1255.5 | 1255.5 | 1255.5 |
| 2.5° | 1246.2 | 1261.0 | 1249.9 | 1251.8 | 1253.6 |
| 5° | 1240.7 | 1254.6 | 1237.9 | 1231.5 | 1237.0 |
| 7.5° | 1231.5 | 1240.7 | 1214.8 | 1202.8 | 1208.4 |
| 10° | 1219.5 | 1221.3 | 1187.1 | 1169.6 | 1172.3 |
| 12.5° | 1202.8 | 1198.2 | 1156.6 | 1131.7 | 1133.5 |
| 15° | 1183.4 | 1170.5 | 1120.6 | 1090.1 | 1086.4 |
| 17.5° | 1161.3 | 1140.0 | 1080.9 | 1042.1 | 1034.7 |
| 20° | 1136.3 | 1107.7 | 1038.4 | 988.5 | 980.2 |
| 22.5° | 1108.6 | 1071.6 | 992.2 | 933.1 | 921.1 |
| 25° | 1078.1 | 1033.8 | 944.2 | 875.8 | 859.2 |
| 27.5° | 1044.8 | 993.1 | 892.4 | 817.6 | 796.3 |
| 30° | 1009.7 | 950.6 | 839.8 | 759.4 | 737.2 |
| 32.5° | 973.7 | 907.2 | 786.2 | 701.2 | 678.1 |
| 35° | 934.9 | 861.9 | 732.6 | 643.9 | 620.8 |
| 37.5° | 895.2 | 814.8 | 678.1 | 588.5 | 564.5 |
| 40° | 854.5 | 767.7 | 625.4 | 533.0 | 513.6 |
| 42.5° | 813.0 | 719.7 | 573.7 | 481.3 | 463.8 |
| 45° | 769.5 | 671.6 | 523.8 | 433.3 | 416.6 |
| 47.5° | 725.2 | 622.7 | 473.0 | 388.0 | 372.3 |
| 50° | 678.1 | 573.7 | 425.0 | 343.7 | 327.0 |
| 52.5° | 632.8 | 523.8 | 378.8 | 300.2 | 291.9 |
| 55° | 586.6 | 474.8 | 333.5 | 268.8 | 265.1 |
| 57.5° | 540.4 | 425.9 | 291.9 | 243.9 | 240.2 |
| 60° | 493.3 | 377.8 | 249.4 | 218.0 | 214.3 |
| 62.5° | 446.2 | 330.7 | 218.0 | 193.1 | 191.2 |
| 65° | 398.2 | 284.5 | 191.2 | 170.0 | 169.1 |
| 67.5° | 347.4 | 240.2 | 167.2 | 149.7 | 148.7 |
| 70° | 299.3 | 195.9 | 143.2 | 129.3 | 129.3 |
| 72.5° | 254.1 | 155.2 | 121.0 | 109.9 | 109.9 |
| 75° | 205.1 | 124.7 | 99.8 | 91.5 | 92.4 |
| 77.5° | 161.7 | 97.9 | 80.4 | 74.8 | 74.8 |
| 80° | 120.1 | 73.0 | 61.9 | 57.3 | 58.2 |
| 82.5° | 81.3 | 50.8 | 44.3 | 41.6 | 41.6 |
| 85° | 46.2 | 31.4 | 28.6 | 26.8 | 26.8 |
| 87.5° | 16.6 | 14.8 | 13.9 | 12.0 | 12.9 |
| 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 | 19.50 | 21.03 | 19.87 | 21.34 | 21.66 | 15.28 | 16.81 | 15.65 | 17.12 | 17.43 |
| | 3H | 21.28 | 22.65 | 21.66 | 22.98 | 23.34 | 16.89 | 18.26 | 17.27 | 18.59 | 18.95 |
| | 4H | 21.95 | 23.24 | 22.35 | 23.59 | 23.96 | 17.52 | 18.81 | 17.92 | 19.16 | 19.54 |
| | 6H | 22.46 | 23.65 | 22.87 | 24.02 | 24.41 | 18.02 | 19.21 | 18.44 | 19.58 | 19.97 |
| | 8H | 22.62 | 23.76 | 23.05 | 24.15 | 24.55 | 18.19 | 19.33 | 18.62 | 19.72 | 20.12 |
| | 12H | 22.72 | 23.81 | 23.15 | 24.19 | 24.62 | 18.32 | 19.40 | 18.75 | 19.78 | 20.21 |
| 4H | 2H | 19.60 | 20.89 | 20.00 | 21.23 | 21.61 | 16.00 | 17.29 | 16.40 | 17.63 | 18.01 |
| | 3H | 21.54 | 22.61 | 21.95 | 23.01 | 23.41 | 17.81 | 18.88 | 18.22 | 19.28 | 19.68 |
| | 4H | 22.30 | 23.26 | 22.73 | 23.68 | 24.12 | 18.54 | 19.51 | 18.98 | 19.92 | 20.36 |
| | 6H | 22.94 | 23.77 | 23.39 | 24.22 | 24.68 | 19.16 | 20.00 | 19.62 | 20.44 | 20.90 |
| | 8H | 23.15 | 23.94 | 23.62 | 24.38 | 24.85 | 19.38 | 20.16 | 19.84 | 20.61 | 21.07 |
| | 12H | 23.31 | 24.01 | 23.79 | 24.49 | 24.96 | 19.54 | 20.25 | 20.03 | 20.72 | 21.19 |
| 8H | 4H | 22.36 | 23.14 | 22.82 | 23.59 | 24.05 | 18.93 | 19.72 | 19.40 | 20.16 | 20.63 |
| | 6H | 23.06 | 23.71 | 23.55 | 24.20 | 24.67 | 19.67 | 20.31 | 20.16 | 20.81 | 21.28 |
| | 8H | 23.32 | 23.91 | 23.84 | 24.42 | 24.90 | 19.95 | 20.54 | 20.47 | 21.05 | 21.53 |
| | 12H | 23.54 | 24.06 | 24.05 | 24.55 | 25.11 | 20.20 | 20.71 | 20.71 | 21.21 | 21.77 |
| 12H | 4H | 22.35 | 23.05 | 22.83 | 23.53 | 24.00 | 18.99 | 19.69 | 19.47 | 20.17 | 20.64 |
| | 6H | 23.05 | 23.63 | 23.56 | 24.14 | 24.63 | 19.75 | 20.33 | 20.26 | 20.84 | 21.33 |
| | 8H | 23.36 | 23.87 | 23.87 | 24.37 | 24.93 | 20.10 | 20.61 | 20.61 | 21.10 | 21.67 |