

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: P1060640

Luminaire Tested: S124RDR-H1020D835-X4F0-XX-UDD-WVL-S

Issue Date: 8/7/2025

Test Information

Test Method: LM-79-2019
Report Number: P1060640
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2406-143-76)
Test Lab: INNOVATION CENTER
Issue Date: 8/7/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDR-H1020D835-X4F0-XX-UDD-WVL-S
Description: DEFINE 4 SILVER REGRESSED DIRECT RECESSED HOUSING WITH WHITE STRAIGHT BLADE
LOUVER WITH DIFFUSER
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

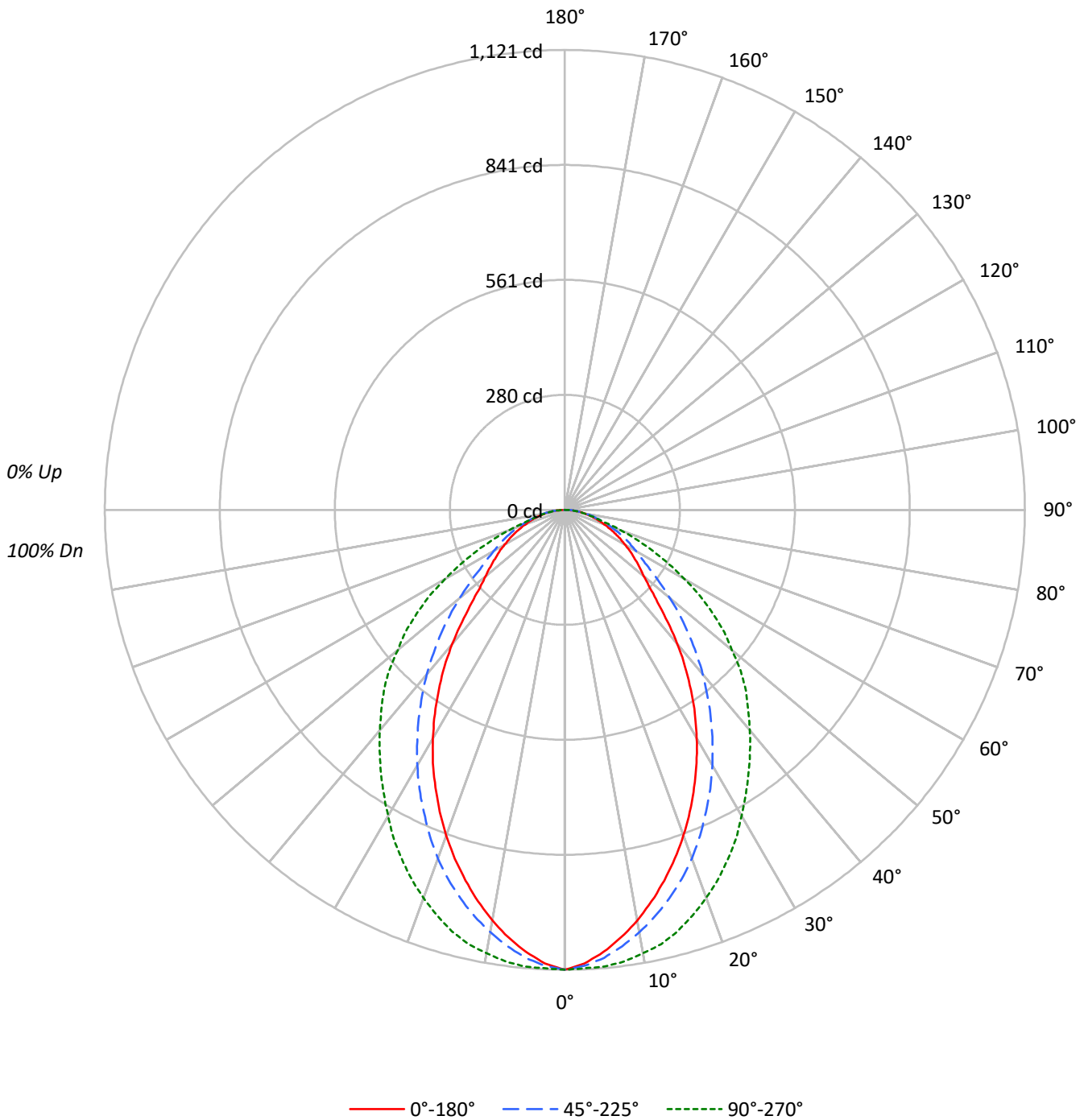
Lumens per Lamp: N/A
Luminaire Lumens: 2040.4 lumens
Efficiency: N/A
Efficacy: 65.4 lumens/watt
Spacing Criteria (0/90/45): 0.93 / 1.15 / 1.1
Luminous Opening: Rectangular (W 0.31' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 31.2
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 | | | | | | | | | | |
| 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 | 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 | | | | | 100 | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 93 | 91 | 92 | 90 | 89 | 87 | | | | | 87 | | | | | | | | | | | | | | | |
| 2 | 102 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 79 | 83 | 80 | 77 | 75 | | | | | 75 | | | | | | | | | | | | | | | |
| 3 | 94 | 84 | 77 | 71 | 91 | 83 | 76 | 71 | 80 | 74 | 69 | 77 | 72 | 68 | 75 | 71 | 67 | 65 | | | | | 65 | | | | | | | | | | | | | | | |
| 4 | 87 | 76 | 68 | 62 | 84 | 74 | 67 | 61 | 72 | 66 | 61 | 70 | 64 | 60 | 68 | 63 | 59 | 57 | | | | | 57 | | | | | | | | | | | | | | | |
| 5 | 80 | 69 | 60 | 54 | 78 | 68 | 60 | 54 | 65 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 | | | | | 50 | | | | | | | | | | | | | | | |
| 6 | 75 | 62 | 54 | 48 | 73 | 62 | 54 | 48 | 60 | 53 | 48 | 58 | 52 | 47 | 57 | 51 | 47 | 45 | | | | | 45 | | | | | | | | | | | | | | | |
| 7 | 70 | 57 | 49 | 43 | 68 | 56 | 49 | 43 | 55 | 48 | 43 | 54 | 47 | 43 | 52 | 47 | 42 | 41 | | | | | 41 | | | | | | | | | | | | | | | |
| 8 | 65 | 53 | 45 | 39 | 64 | 52 | 44 | 39 | 51 | 44 | 39 | 50 | 43 | 39 | 48 | 43 | 39 | 37 | | | | | 37 | | | | | | | | | | | | | | | |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 45 | 39 | 35 | 34 | | | | | 34 | | | | | | | | | | | | | | | |
| 10 | 58 | 45 | 38 | 33 | 56 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 33 | 42 | 36 | 32 | 31 | | | | | 31 | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9650 | 9650 | 9650 |
| 5° | 9353 | 9475 | 9657 |
| 10° | 8886 | 9142 | 9594 |
| 15° | 8336 | 8745 | 9478 |
| 20° | 7741 | 8290 | 9226 |
| 25° | 7088 | 7724 | 8929 |
| 30° | 6390 | 7149 | 8562 |
| 35° | 5631 | 6521 | 8212 |
| 40° | 4793 | 5877 | 7883 |
| 45° | 3891 | 5193 | 7597 |
| 50° | 3368 | 4469 | 7114 |
| 55° | 3121 | 3792 | 6597 |
| 60° | 2914 | 3419 | 5787 |
| 65° | 2728 | 3207 | 4811 |
| 70° | 2543 | 2958 | 3638 |
| 75° | 2422 | 2735 | 2618 |
| 80° | 2271 | 2504 | 2212 |
| 85° | 2085 | 2322 | 1739 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 7597 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 103.5 | 5.1 |
| 10°-20° | 278.1 | 13.6 |
| 20°-30° | 379.8 | 18.6 |
| 30°-40° | 397.9 | 19.5 |
| 40°-50° | 344.4 | 16.9 |
| 50°-60° | 258.8 | 12.7 |
| 60°-70° | 166.9 | 8.2 |
| 70°-80° | 85.6 | 4.2 |
| 80°-90° | 25.5 | 1.3 |
| 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° | 761.4 | 37.3 |
| 0°-40° | 1159.2 | 56.8 |
| 0°-60° | 1762.4 | 86.4 |
| 0°-90° | 2040.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2040.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1121 | 1121 | 1121 | 1121 | 1121 | |
| 5° | 1082 | 1098 | 1096 | 1104 | 1117 | 101 |
| 15° | 935 | 959 | 981 | 1026 | 1063 | 262 |
| 25° | 746 | 774 | 813 | 876 | 940 | 342 |
| 35° | 536 | 566 | 620 | 702 | 781 | 334 |
| 45° | 320 | 352 | 426 | 531 | 624 | 252 |
| 55° | 208 | 215 | 253 | 361 | 439 | 187 |
| 65° | 134 | 136 | 157 | 190 | 236 | 133 |
| 75° | 73 | 81 | 82 | 81 | 79 | 77 |
| 85° | 21 | 25 | 24 | 22 | 18 | 24 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1120.7 | 1120.7 | 1120.7 | 1120.7 | 1120.7 |
| 2.5° | 1106.6 | 1120.7 | 1112.5 | 1114.9 | 1118.4 |
| 5° | 1082.0 | 1098.4 | 1096.1 | 1104.3 | 1117.2 |
| 7.5° | 1051.4 | 1069.0 | 1072.6 | 1091.4 | 1110.2 |
| 10° | 1016.2 | 1036.1 | 1045.5 | 1073.7 | 1097.2 |
| 12.5° | 977.4 | 998.5 | 1015.0 | 1050.2 | 1084.3 |
| 15° | 935.1 | 958.6 | 980.9 | 1025.6 | 1063.2 |
| 17.5° | 891.6 | 915.1 | 944.5 | 993.8 | 1036.1 |
| 20° | 844.7 | 870.5 | 904.6 | 956.3 | 1006.8 |
| 22.5° | 796.5 | 823.5 | 859.9 | 916.3 | 975.1 |
| 25° | 746.0 | 774.2 | 812.9 | 876.4 | 939.8 |
| 27.5° | 695.5 | 723.7 | 767.1 | 834.1 | 903.4 |
| 30° | 642.6 | 672.0 | 719.0 | 791.8 | 861.1 |
| 32.5° | 589.7 | 621.4 | 669.6 | 747.1 | 821.2 |
| 35° | 535.7 | 566.2 | 620.3 | 702.5 | 781.2 |
| 37.5° | 481.7 | 513.4 | 570.9 | 659.0 | 741.3 |
| 40° | 426.4 | 459.3 | 522.8 | 615.6 | 701.3 |
| 42.5° | 371.2 | 406.5 | 473.4 | 570.9 | 661.4 |
| 45° | 319.5 | 352.4 | 426.4 | 531.0 | 623.8 |
| 47.5° | 280.8 | 303.1 | 379.4 | 492.2 | 581.5 |
| 50° | 251.4 | 263.1 | 333.6 | 449.9 | 531.0 |
| 52.5° | 229.1 | 237.3 | 291.3 | 404.1 | 489.9 |
| 55° | 207.9 | 215.0 | 252.6 | 360.7 | 439.4 |
| 57.5° | 189.1 | 192.7 | 223.2 | 318.4 | 391.2 |
| 60° | 169.2 | 172.7 | 198.5 | 272.5 | 336.0 |
| 62.5° | 151.5 | 153.9 | 178.6 | 229.1 | 285.5 |
| 65° | 133.9 | 136.3 | 157.4 | 190.3 | 236.1 |
| 67.5° | 117.5 | 121.0 | 137.4 | 155.1 | 188.0 |
| 70° | 101.0 | 108.1 | 117.5 | 125.7 | 144.5 |
| 72.5° | 86.9 | 94.0 | 98.7 | 101.0 | 102.2 |
| 75° | 72.8 | 81.1 | 82.2 | 81.1 | 78.7 |
| 77.5° | 58.7 | 65.8 | 65.8 | 63.4 | 61.1 |
| 80° | 45.8 | 51.7 | 50.5 | 48.2 | 44.6 |
| 82.5° | 34.1 | 37.6 | 36.4 | 34.1 | 30.5 |
| 85° | 21.1 | 24.7 | 23.5 | 22.3 | 17.6 |
| 87.5° | 10.6 | 14.1 | 12.9 | 11.7 | 7.0 |
| 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 | 14.31 | 15.79 | 14.67 | 16.11 | 16.42 | 18.08 | 19.57 | 18.45 | 19.88 | 20.19 |
| | 3H | 15.96 | 17.29 | 16.34 | 17.62 | 17.98 | 19.20 | 20.53 | 19.58 | 20.85 | 21.22 |
| | 4H | 16.63 | 17.88 | 17.03 | 18.23 | 18.61 | 19.49 | 20.73 | 19.89 | 21.08 | 21.46 |
| | 6H | 17.15 | 18.30 | 17.56 | 18.66 | 19.06 | 19.68 | 20.83 | 20.10 | 21.20 | 21.59 |
| | 8H | 17.33 | 18.42 | 17.76 | 18.81 | 19.21 | 19.74 | 20.83 | 20.16 | 21.22 | 21.62 |
| | 12H | 17.45 | 18.50 | 17.88 | 18.88 | 19.31 | 19.76 | 20.81 | 20.19 | 21.19 | 21.62 |
| 4H | 2H | 15.09 | 16.34 | 15.49 | 16.69 | 17.07 | 18.24 | 19.49 | 18.64 | 19.84 | 20.22 |
| | 3H | 16.95 | 17.99 | 17.36 | 18.39 | 18.79 | 19.55 | 20.59 | 19.96 | 20.99 | 21.39 |
| | 4H | 17.76 | 18.69 | 18.20 | 19.11 | 19.55 | 19.96 | 20.89 | 20.39 | 21.31 | 21.75 |
| | 6H | 18.41 | 19.22 | 18.87 | 19.66 | 20.12 | 20.28 | 21.08 | 20.74 | 21.53 | 21.99 |
| | 8H | 18.64 | 19.39 | 19.10 | 19.84 | 20.31 | 20.37 | 21.12 | 20.83 | 21.57 | 22.04 |
| | 12H | 18.81 | 19.48 | 19.29 | 19.96 | 20.43 | 20.43 | 21.10 | 20.91 | 21.58 | 22.06 |
| 8H | 4H | 18.11 | 18.87 | 18.58 | 19.31 | 19.78 | 20.09 | 20.85 | 20.56 | 21.29 | 21.76 |
| | 6H | 18.90 | 19.53 | 19.40 | 20.02 | 20.50 | 20.51 | 21.13 | 21.00 | 21.62 | 22.10 |
| | 8H | 19.23 | 19.78 | 19.74 | 20.30 | 20.78 | 20.66 | 21.22 | 21.17 | 21.73 | 22.22 |
| | 12H | 19.49 | 19.98 | 20.00 | 20.48 | 21.04 | 20.78 | 21.28 | 21.29 | 21.77 | 22.33 |
| 12H | 4H | 18.14 | 18.81 | 18.62 | 19.29 | 19.77 | 20.10 | 20.77 | 20.58 | 21.25 | 21.72 |
| | 6H | 18.97 | 19.53 | 19.48 | 20.04 | 20.53 | 20.53 | 21.09 | 21.04 | 21.60 | 22.09 |
| | 8H | 19.35 | 19.85 | 19.86 | 20.34 | 20.91 | 20.73 | 21.22 | 21.24 | 21.72 | 22.28 |