

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: P1060686

Luminaire Tested: S124RDR-H1020D935-X4F0-XX-UDD-WVL-W

Issue Date: 8/7/2025

Test Information

Test Method: LM-79-2019
Report Number: P1060686
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2406-143-73)
Test Lab: INNOVATION CENTER
Issue Date: 8/7/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDR-H1020D935-X4F0-XX-UDD-WVL-W
Description: DEFINE 4 WHITE REGRESSED DIRECT RECESSED HOUSING WITH WHITE STRAIGHT BLADE LOUVER WITH DIFFUSER
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

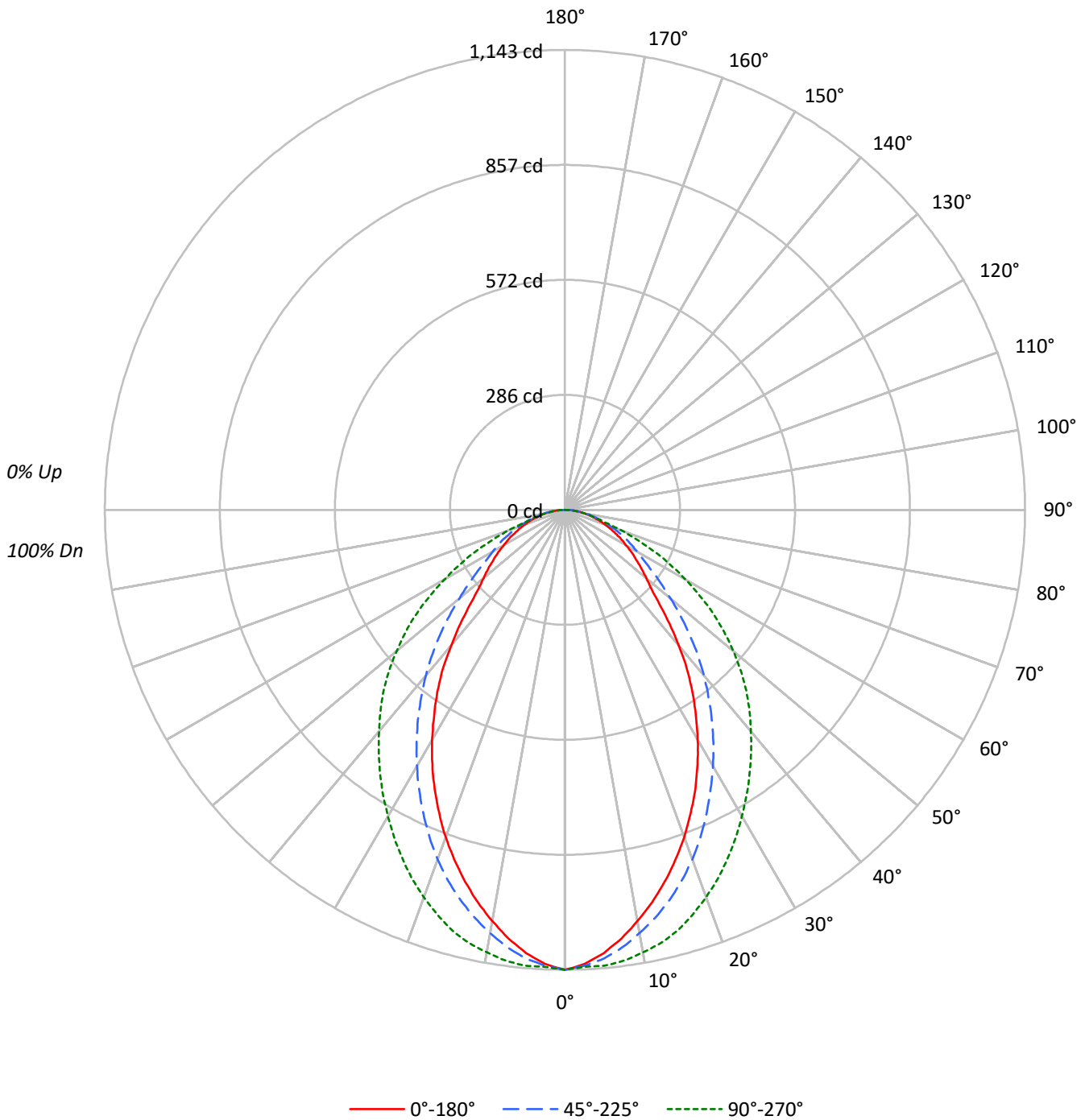
Lumens per Lamp: N/A
Luminaire Lumens: 2097.5 lumens
Efficiency: N/A
Efficacy: 67.2 lumens/watt
Spacing Criteria (0/90/45): 0.93 / 1.15 / 1.11
Luminous Opening: Rectangular (W 0.31' x L: 4' x H: 0')
CIE Type: Direct

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 | 100 | 100 | 100 | 100 | 100 | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 93 | 91 | 92 | 90 | 89 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | | | | | | | | | | | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 80 | 77 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | | | | | | | | | | | | | | |
| 3 | 94 | 84 | 77 | 71 | 91 | 83 | 76 | 70 | 80 | 74 | 69 | 77 | 72 | 68 | 75 | 70 | 67 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | | | | | | | | | | | | | | |
| 4 | 86 | 76 | 68 | 62 | 84 | 74 | 67 | 61 | 72 | 66 | 60 | 70 | 64 | 60 | 68 | 63 | 59 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | | | | | | | | | | | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 60 | 54 | 65 | 59 | 53 | 63 | 58 | 53 | 62 | 56 | 52 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | | | | | | | | | | | | | | |
| 6 | 75 | 62 | 54 | 48 | 73 | 61 | 54 | 48 | 60 | 53 | 48 | 58 | 52 | 47 | 57 | 51 | 47 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | | | | | | | | | | | | | | |
| 7 | 70 | 57 | 49 | 43 | 68 | 56 | 49 | 43 | 55 | 48 | 43 | 53 | 47 | 43 | 52 | 47 | 42 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | | | | | | | | | | | | | | |
| 8 | 65 | 53 | 45 | 39 | 64 | 52 | 44 | 39 | 51 | 44 | 39 | 49 | 43 | 39 | 48 | 43 | 38 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | | | | | | | | | | | | | | |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 35 | 46 | 40 | 35 | 45 | 39 | 35 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | | | | | | | | | | | | | | |
| 10 | 58 | 45 | 38 | 33 | 56 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 32 | 42 | 36 | 32 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9843 | 9843 | 9843 |
| 5° | 9558 | 9671 | 9828 |
| 10° | 9075 | 9340 | 9765 |
| 15° | 8532 | 8946 | 9649 |
| 20° | 7935 | 8473 | 9390 |
| 25° | 7276 | 7910 | 9083 |
| 30° | 6559 | 7312 | 8741 |
| 35° | 5806 | 6689 | 8412 |
| 40° | 4935 | 6039 | 8073 |
| 45° | 4041 | 5334 | 7761 |
| 50° | 3537 | 4580 | 7304 |
| 55° | 3250 | 3948 | 6759 |
| 60° | 3014 | 3555 | 5959 |
| 65° | 2824 | 3340 | 4988 |
| 70° | 2649 | 3057 | 3744 |
| 75° | 2492 | 2795 | 2725 |
| 80° | 2306 | 2559 | 2306 |
| 85° | 2095 | 2500 | 1996 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 7761 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 105.6 | 5.0 |
| 10°-20° | 284.2 | 13.6 |
| 20°-30° | 388.5 | 18.5 |
| 30°-40° | 408.3 | 19.5 |
| 40°-50° | 354.3 | 16.9 |
| 50°-60° | 267.3 | 12.7 |
| 60°-70° | 173.3 | 8.3 |
| 70°-80° | 88.9 | 4.2 |
| 80°-90° | 26.9 | 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° | 778.4 | 37.1 |
| 0°-40° | 1186.7 | 56.6 |
| 0°-60° | 1808.4 | 86.2 |
| 0°-90° | 2097.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2097.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1143 | 1143 | 1143 | 1143 | 1143 | |
| 5° | 1106 | 1121 | 1119 | 1128 | 1137 | 103 |
| 15° | 957 | 980 | 1004 | 1049 | 1082 | 268 |
| 25° | 766 | 793 | 832 | 896 | 956 | 351 |
| 35° | 552 | 583 | 636 | 721 | 800 | 343 |
| 45° | 332 | 363 | 438 | 547 | 637 | 261 |
| 55° | 216 | 223 | 263 | 373 | 450 | 195 |
| 65° | 139 | 142 | 164 | 198 | 245 | 138 |
| 75° | 75 | 84 | 84 | 85 | 82 | 79 |
| 85° | 21 | 26 | 25 | 24 | 20 | 24 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P1060686

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1143.1 | 1143.1 | 1143.1 | 1143.1 | 1143.1 |
| 2.5° | 1130.0 | 1144.1 | 1134.0 | 1136.0 | 1137.0 |
| 5° | 1105.7 | 1120.8 | 1118.8 | 1127.9 | 1137.0 |
| 7.5° | 1074.3 | 1092.5 | 1096.6 | 1114.8 | 1130.0 |
| 10° | 1037.9 | 1058.1 | 1068.2 | 1097.6 | 1116.8 |
| 12.5° | 999.5 | 1019.7 | 1037.9 | 1075.3 | 1102.6 |
| 15° | 957.0 | 980.2 | 1003.5 | 1049.0 | 1082.4 |
| 17.5° | 912.5 | 936.7 | 966.1 | 1015.6 | 1055.1 |
| 20° | 865.9 | 890.2 | 924.6 | 978.2 | 1024.7 |
| 22.5° | 816.4 | 843.7 | 880.1 | 937.7 | 992.4 |
| 25° | 765.8 | 793.1 | 832.5 | 896.3 | 956.0 |
| 27.5° | 713.2 | 741.5 | 784.0 | 854.8 | 918.5 |
| 30° | 659.6 | 689.9 | 735.4 | 810.3 | 879.1 |
| 32.5° | 604.9 | 637.3 | 685.9 | 765.8 | 840.6 |
| 35° | 552.3 | 582.7 | 636.3 | 721.3 | 800.2 |
| 37.5° | 497.7 | 528.1 | 585.7 | 677.8 | 759.7 |
| 40° | 439.0 | 472.4 | 537.2 | 632.2 | 718.2 |
| 42.5° | 384.4 | 417.8 | 487.6 | 588.7 | 678.8 |
| 45° | 331.8 | 363.2 | 438.0 | 547.3 | 637.3 |
| 47.5° | 291.3 | 313.6 | 388.5 | 506.8 | 592.8 |
| 50° | 264.0 | 274.1 | 341.9 | 462.3 | 545.2 |
| 52.5° | 239.7 | 247.8 | 299.4 | 417.8 | 498.7 |
| 55° | 216.5 | 222.6 | 263.0 | 373.3 | 450.2 |
| 57.5° | 196.2 | 199.3 | 230.6 | 328.8 | 397.6 |
| 60° | 175.0 | 179.1 | 206.4 | 283.2 | 346.0 |
| 62.5° | 157.8 | 159.8 | 185.1 | 239.7 | 294.4 |
| 65° | 138.6 | 141.6 | 163.9 | 198.3 | 244.8 |
| 67.5° | 121.4 | 126.4 | 141.6 | 161.9 | 193.2 |
| 70° | 105.2 | 112.3 | 121.4 | 131.5 | 148.7 |
| 72.5° | 90.0 | 98.1 | 103.2 | 107.2 | 104.2 |
| 75° | 74.9 | 84.0 | 84.0 | 85.0 | 81.9 |
| 77.5° | 60.7 | 68.8 | 67.8 | 66.8 | 62.7 |
| 80° | 46.5 | 53.6 | 51.6 | 50.6 | 46.5 |
| 82.5° | 34.4 | 39.5 | 37.4 | 36.4 | 31.4 |
| 85° | 21.2 | 26.3 | 25.3 | 24.3 | 20.2 |
| 87.5° | 10.1 | 15.2 | 14.2 | 13.2 | 9.1 |
| 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 | 14.45 | 15.93 | 14.81 | 16.25 | 16.56 | 18.19 | 19.67 | 18.55 | 19.99 | 20.30 |
| | 3H | 16.12 | 17.45 | 16.49 | 17.78 | 18.14 | 19.31 | 20.64 | 19.69 | 20.97 | 21.34 |
| | 4H | 16.78 | 18.03 | 17.18 | 18.38 | 18.76 | 19.61 | 20.86 | 20.01 | 21.21 | 21.59 |
| | 6H | 17.29 | 18.44 | 17.70 | 18.81 | 19.20 | 19.81 | 20.96 | 20.22 | 21.33 | 21.72 |
| | 8H | 17.46 | 18.56 | 17.89 | 18.95 | 19.35 | 19.86 | 20.96 | 20.29 | 21.35 | 21.75 |
| | 12H | 17.58 | 18.63 | 18.02 | 19.02 | 19.45 | 19.90 | 20.95 | 20.33 | 21.33 | 21.76 |
| 4H | 2H | 15.24 | 16.49 | 15.64 | 16.84 | 17.22 | 18.35 | 19.60 | 18.75 | 19.95 | 20.33 |
| | 3H | 17.11 | 18.15 | 17.52 | 18.55 | 18.95 | 19.68 | 20.72 | 20.09 | 21.12 | 21.52 |
| | 4H | 17.92 | 18.85 | 18.35 | 19.26 | 19.70 | 20.10 | 21.03 | 20.53 | 21.45 | 21.89 |
| | 6H | 18.56 | 19.37 | 19.02 | 19.81 | 20.27 | 20.42 | 21.23 | 20.88 | 21.67 | 22.13 |
| | 8H | 18.78 | 19.54 | 19.25 | 19.98 | 20.45 | 20.52 | 21.27 | 20.98 | 21.72 | 22.18 |
| | 12H | 18.95 | 19.62 | 19.43 | 20.10 | 20.57 | 20.59 | 21.26 | 21.07 | 21.74 | 22.21 |
| 8H | 4H | 18.26 | 19.02 | 18.73 | 19.47 | 19.93 | 20.23 | 20.99 | 20.70 | 21.43 | 21.90 |
| | 6H | 19.05 | 19.68 | 19.55 | 20.17 | 20.65 | 20.65 | 21.28 | 21.15 | 21.77 | 22.25 |
| | 8H | 19.37 | 19.93 | 19.89 | 20.44 | 20.93 | 20.81 | 21.37 | 21.32 | 21.88 | 22.37 |
| | 12H | 19.64 | 20.13 | 20.15 | 20.63 | 21.19 | 20.95 | 21.44 | 21.46 | 21.94 | 22.50 |
| 12H | 4H | 18.30 | 18.97 | 18.78 | 19.45 | 19.92 | 20.24 | 20.91 | 20.72 | 21.39 | 21.86 |
| | 6H | 19.12 | 19.68 | 19.63 | 20.19 | 20.68 | 20.67 | 21.24 | 21.19 | 21.75 | 22.23 |
| | 8H | 19.50 | 20.00 | 20.01 | 20.49 | 21.06 | 20.88 | 21.38 | 21.39 | 21.87 | 22.44 |