

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: P1056119

Luminaire Tested: S124R3DR-H1195D835-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2019
Report Number: P1056119
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-9)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124R3DR-H1195D835-X4F0-XX-UDD-FLL-S
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

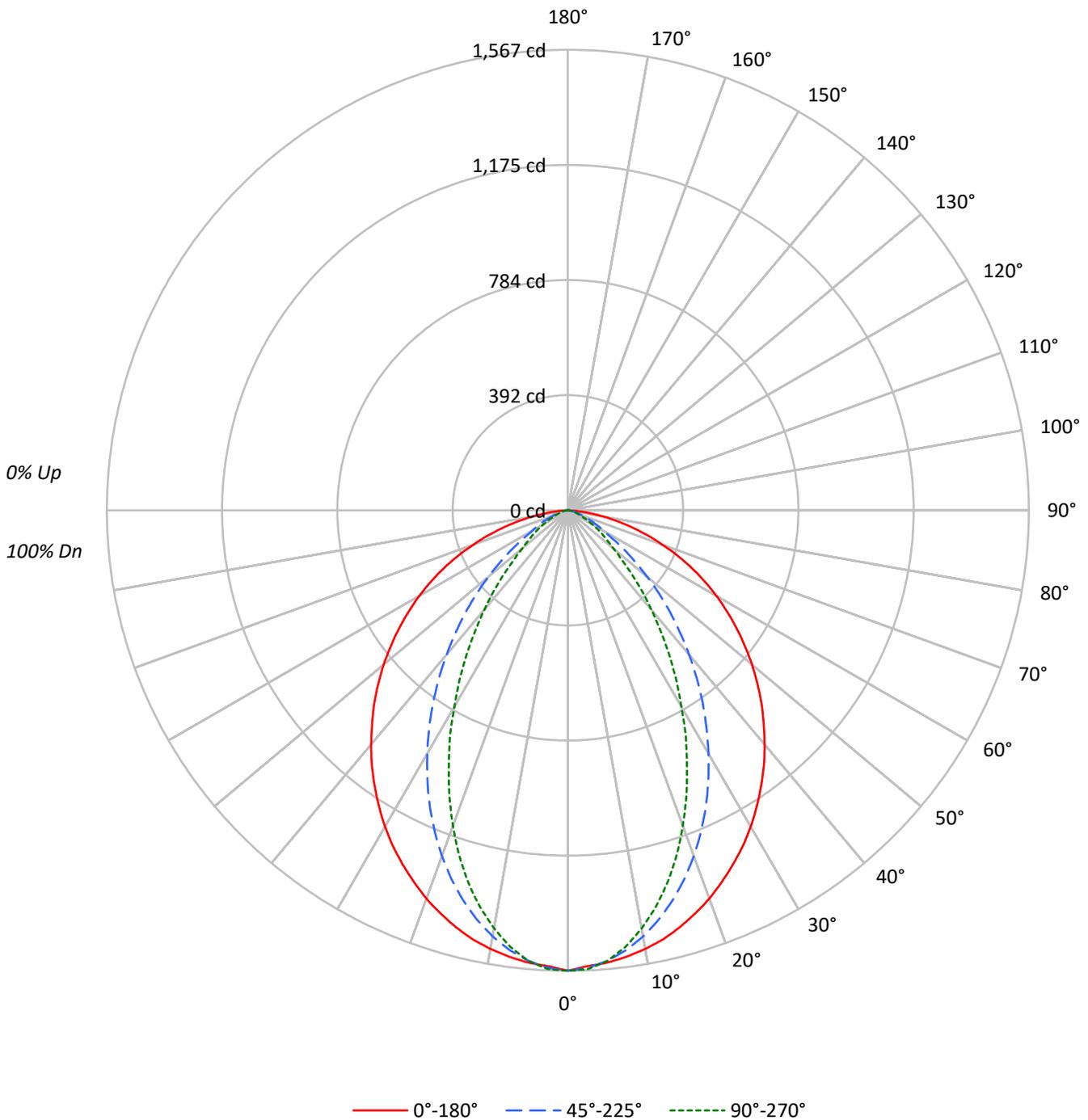
Lumens per Lamp: N/A
Luminaire Lumens: 2533.5 lumens
Efficiency: N/A
Efficacy: 69.2 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 36.6
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 | | | | 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 | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 94 | 92 | 90 | 89 |
| 2 | 103 | 96 | 91 | 86 | 101 | 94 | 89 | 85 | 91 | 87 | 83 | 88 | 84 | 81 | 85 | 82 | 79 | 78 |
| 3 | 95 | 87 | 80 | 74 | 93 | 85 | 79 | 74 | 82 | 77 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 68 |
| 4 | 89 | 78 | 71 | 65 | 86 | 77 | 70 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 71 | 66 | 62 | 60 |
| 5 | 82 | 71 | 64 | 58 | 80 | 70 | 63 | 58 | 68 | 62 | 57 | 66 | 61 | 56 | 65 | 60 | 56 | 54 |
| 6 | 77 | 65 | 57 | 52 | 75 | 64 | 57 | 52 | 63 | 56 | 51 | 61 | 55 | 51 | 60 | 54 | 50 | 48 |
| 7 | 72 | 60 | 52 | 47 | 70 | 59 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | 44 |
| 8 | 67 | 55 | 48 | 42 | 66 | 55 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 51 | 46 | 42 | 40 |
| 9 | 63 | 51 | 44 | 39 | 62 | 51 | 44 | 39 | 50 | 43 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 37 |
| 10 | 60 | 48 | 41 | 36 | 59 | 47 | 40 | 36 | 46 | 40 | 36 | 45 | 40 | 35 | 45 | 39 | 35 | 34 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13853 | 13853 | 13853 |
| 5° | 13712 | 13660 | 13660 |
| 10° | 13609 | 13215 | 12967 |
| 15° | 13447 | 12579 | 11992 |
| 20° | 13233 | 11777 | 10748 |
| 25° | 12965 | 10830 | 9336 |
| 30° | 12690 | 9756 | 7864 |
| 35° | 12361 | 8613 | 6472 |
| 40° | 12006 | 7391 | 5101 |
| 45° | 11638 | 6147 | 3812 |
| 50° | 11238 | 4836 | 2789 |
| 55° | 10795 | 3576 | 2226 |
| 60° | 10320 | 2477 | 1703 |
| 65° | 9705 | 1923 | 1251 |
| 70° | 8787 | 1357 | 980 |
| 75° | 7676 | 946 | 748 |
| 80° | 6166 | 743 | 667 |
| 85° | 3408 | 588 | 588 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11638 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 145.3 | 5.7 |
| 10°-20° | 388.3 | 15.3 |
| 20°-30° | 517.9 | 20.4 |
| 30°-40° | 521.5 | 20.6 |
| 40°-50° | 427.7 | 16.9 |
| 50°-60° | 292.3 | 11.5 |
| 60°-70° | 163.3 | 6.4 |
| 70°-80° | 64.8 | 2.6 |
| 80°-90° | 12.3 | 0.5 |
| 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° | 1051.6 | 41.5 |
| 0°-40° | 1573.1 | 62.1 |
| 0°-60° | 2293.1 | 90.5 |
| 0°-90° | 2533.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2533.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1567 | 1567 | 1567 | 1567 | 1567 | |
| 5° | 1545 | 1562 | 1539 | 1532 | 1539 | 147 |
| 15° | 1469 | 1453 | 1374 | 1326 | 1310 | 414 |
| 25° | 1329 | 1263 | 1110 | 998 | 957 | 612 |
| 35° | 1145 | 1024 | 798 | 646 | 600 | 716 |
| 45° | 931 | 760 | 492 | 346 | 305 | 717 |
| 55° | 700 | 492 | 232 | 155 | 144 | 626 |
| 65° | 464 | 233 | 92 | 66 | 60 | 458 |
| 75° | 225 | 61 | 28 | 23 | 22 | 241 |
| 85° | 34 | 6 | 6 | 6 | 6 | 47 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1566.8 | 1566.8 | 1566.8 | 1566.8 | 1566.8 |
| 2.5° | 1552.3 | 1571.2 | 1558.1 | 1559.5 | 1562.5 |
| 5° | 1545.0 | 1562.5 | 1539.1 | 1531.8 | 1539.1 |
| 7.5° | 1531.8 | 1545.0 | 1509.9 | 1495.4 | 1498.3 |
| 10° | 1515.8 | 1520.2 | 1472.0 | 1447.2 | 1444.3 |
| 12.5° | 1495.4 | 1489.5 | 1426.8 | 1390.3 | 1381.6 |
| 15° | 1469.1 | 1453.0 | 1374.3 | 1326.1 | 1310.1 |
| 17.5° | 1438.5 | 1410.7 | 1315.9 | 1253.2 | 1229.8 |
| 20° | 1406.4 | 1365.5 | 1251.7 | 1171.5 | 1142.3 |
| 22.5° | 1368.4 | 1317.4 | 1183.2 | 1085.4 | 1051.9 |
| 25° | 1329.0 | 1263.4 | 1110.2 | 997.9 | 957.0 |
| 27.5° | 1288.2 | 1208.0 | 1034.3 | 908.9 | 868.0 |
| 30° | 1243.0 | 1148.1 | 955.6 | 819.9 | 770.3 |
| 32.5° | 1194.8 | 1086.9 | 876.8 | 732.4 | 685.7 |
| 35° | 1145.2 | 1024.1 | 798.0 | 646.3 | 599.6 |
| 37.5° | 1094.2 | 959.9 | 719.2 | 564.6 | 517.9 |
| 40° | 1040.2 | 894.3 | 640.4 | 487.3 | 442.0 |
| 42.5° | 984.7 | 827.2 | 564.6 | 414.3 | 372.0 |
| 45° | 930.8 | 760.1 | 491.6 | 345.8 | 304.9 |
| 47.5° | 873.9 | 693.0 | 420.2 | 281.6 | 246.6 |
| 50° | 817.0 | 625.9 | 351.6 | 226.1 | 202.8 |
| 52.5° | 758.6 | 558.8 | 288.9 | 185.3 | 169.2 |
| 55° | 700.3 | 491.6 | 232.0 | 154.6 | 144.4 |
| 57.5° | 641.9 | 424.5 | 179.4 | 131.3 | 119.6 |
| 60° | 583.6 | 358.9 | 140.1 | 106.5 | 96.3 |
| 62.5° | 523.7 | 293.2 | 115.3 | 84.6 | 75.9 |
| 65° | 463.9 | 233.4 | 91.9 | 65.6 | 59.8 |
| 67.5° | 404.1 | 178.0 | 70.0 | 51.1 | 46.7 |
| 70° | 339.9 | 126.9 | 52.5 | 39.4 | 37.9 |
| 72.5° | 284.5 | 86.1 | 37.9 | 30.6 | 29.2 |
| 75° | 224.7 | 61.3 | 27.7 | 23.3 | 21.9 |
| 77.5° | 173.6 | 39.4 | 20.4 | 19.0 | 17.5 |
| 80° | 121.1 | 21.9 | 14.6 | 13.1 | 13.1 |
| 82.5° | 74.4 | 11.7 | 10.2 | 8.8 | 8.8 |
| 85° | 33.6 | 5.8 | 5.8 | 5.8 | 5.8 |
| 87.5° | 5.8 | 2.9 | 2.9 | 2.9 | 2.9 |
| 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 | 19.86 | 21.26 | 20.22 | 21.58 | 21.89 | 10.95 | 12.35 | 11.31 | 12.67 | 12.98 |
| | 3H | 21.44 | 22.69 | 21.82 | 23.02 | 23.39 | 11.54 | 12.79 | 11.92 | 13.12 | 13.48 |
| | 4H | 22.04 | 23.21 | 22.44 | 23.56 | 23.94 | 11.70 | 12.86 | 12.10 | 13.21 | 13.60 |
| | 6H | 22.47 | 23.54 | 22.88 | 23.91 | 24.31 | 11.80 | 12.88 | 12.22 | 13.25 | 13.64 |
| | 8H | 22.58 | 23.60 | 23.01 | 23.99 | 24.40 | 11.82 | 12.84 | 12.25 | 13.23 | 13.64 |
| | 12H | 22.62 | 23.60 | 23.06 | 23.98 | 24.41 | 11.83 | 12.81 | 12.26 | 13.19 | 13.62 |
| 4H | 2H | 19.71 | 20.88 | 20.11 | 21.23 | 21.61 | 11.53 | 12.70 | 11.93 | 13.05 | 13.43 |
| | 3H | 21.36 | 22.32 | 21.77 | 22.72 | 23.12 | 12.24 | 13.20 | 12.65 | 13.60 | 14.01 |
| | 4H | 21.96 | 22.82 | 22.40 | 23.24 | 23.68 | 12.45 | 13.30 | 12.88 | 13.72 | 14.16 |
| | 6H | 22.46 | 23.20 | 22.92 | 23.64 | 24.11 | 12.61 | 13.35 | 13.07 | 13.80 | 14.26 |
| | 8H | 22.60 | 23.29 | 23.07 | 23.74 | 24.21 | 12.64 | 13.34 | 13.11 | 13.78 | 14.25 |
| | 12H | 22.67 | 23.29 | 23.16 | 23.77 | 24.24 | 12.67 | 13.28 | 13.15 | 13.76 | 14.24 |
| 8H | 4H | 21.86 | 22.55 | 22.32 | 22.99 | 23.46 | 12.72 | 13.41 | 13.18 | 13.85 | 14.32 |
| | 6H | 22.34 | 22.90 | 22.84 | 23.40 | 23.88 | 12.92 | 13.49 | 13.42 | 13.98 | 14.46 |
| | 8H | 22.48 | 22.99 | 23.00 | 23.50 | 23.99 | 12.98 | 13.49 | 13.50 | 14.00 | 14.49 |
| | 12H | 22.57 | 23.02 | 23.09 | 23.52 | 24.08 | 13.04 | 13.49 | 13.55 | 13.98 | 14.55 |
| 12H | 4H | 21.82 | 22.43 | 22.30 | 22.91 | 23.39 | 12.74 | 13.36 | 13.23 | 13.84 | 14.31 |
| | 6H | 22.28 | 22.79 | 22.80 | 23.31 | 23.80 | 12.95 | 13.46 | 13.47 | 13.97 | 14.46 |
| | 8H | 22.45 | 22.90 | 22.96 | 23.39 | 23.96 | 13.04 | 13.49 | 13.56 | 13.99 | 14.55 |