

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: P1056093

Luminaire Tested: S124R3DRP-H1020D835-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056093
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: S124R3DRP-H1020D835-X4F0-XX-UDD-F-W
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

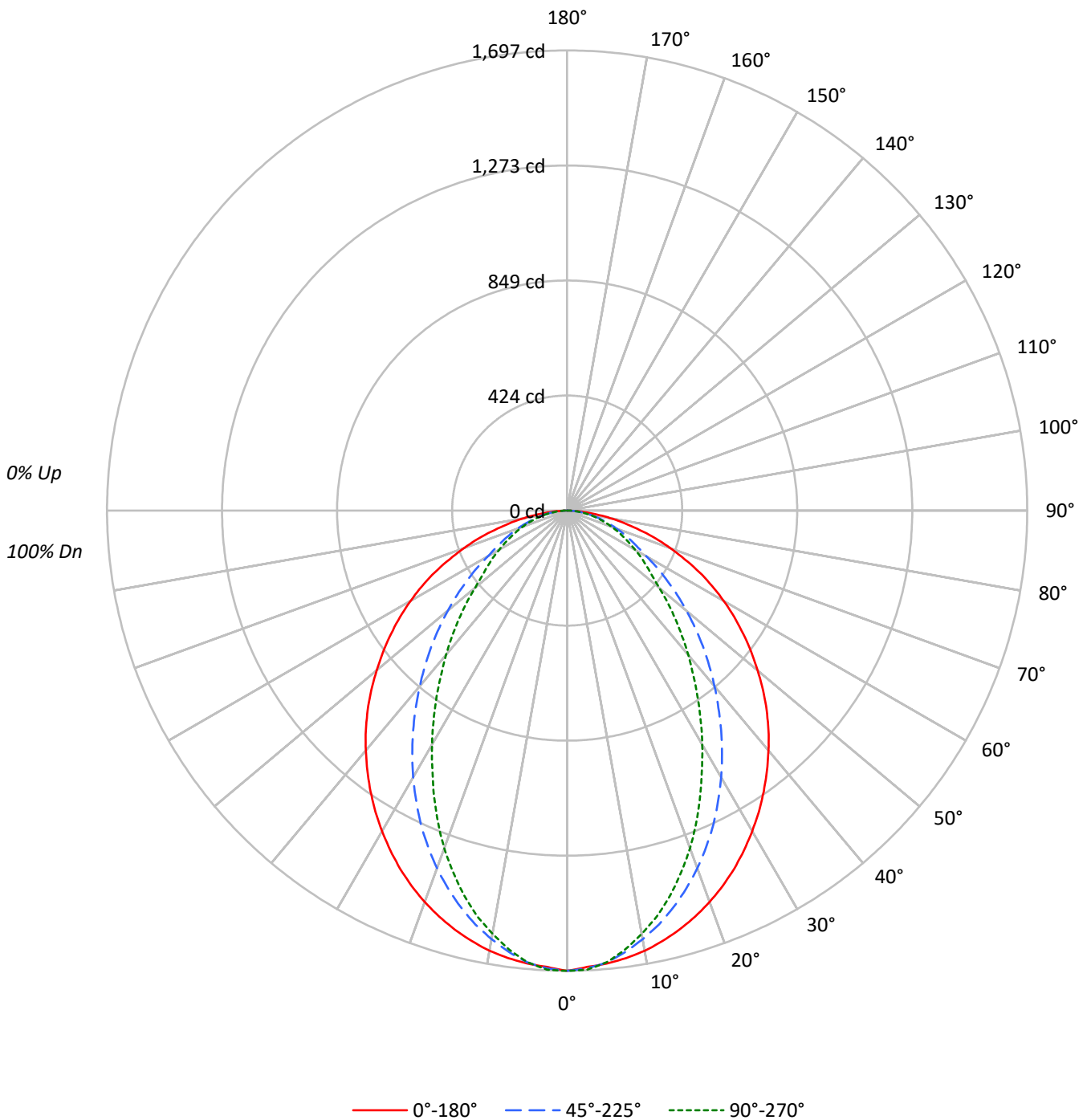
Lumens per Lamp: N/A
Luminaire Lumens: 3380.4 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
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 | 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° | 15006 | 15006 | 15006 |
| 5° | 14885 | 14853 | 14841 |
| 10° | 14800 | 14408 | 14228 |
| 15° | 14643 | 13866 | 13442 |
| 20° | 14453 | 13207 | 12467 |
| 25° | 14217 | 12451 | 11330 |
| 30° | 13935 | 11589 | 10174 |
| 35° | 13641 | 10689 | 9058 |
| 40° | 13333 | 9758 | 8014 |
| 45° | 13007 | 8854 | 7042 |
| 50° | 12609 | 7902 | 6081 |
| 55° | 12224 | 6949 | 5525 |
| 60° | 11793 | 5963 | 5123 |
| 65° | 11261 | 5408 | 4780 |
| 70° | 10459 | 5005 | 4519 |
| 75° | 9469 | 4608 | 4267 |
| 80° | 8269 | 4262 | 4007 |
| 85° | 6330 | 3926 | 3672 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13007 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 158.0 | 4.7 |
| 10°-20° | 428.6 | 12.7 |
| 20°-30° | 593.5 | 17.6 |
| 30°-40° | 637.0 | 18.8 |
| 40°-50° | 579.3 | 17.1 |
| 50°-60° | 456.2 | 13.5 |
| 60°-70° | 312.2 | 9.2 |
| 70°-80° | 168.1 | 5.0 |
| 80°-90° | 47.6 | 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° | 1180.1 | 34.9 |
| 0°-40° | 1817.1 | 53.8 |
| 0°-60° | 2852.5 | 84.4 |
| 0°-90° | 3380.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3380.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1697 | 1697 | 1697 | 1697 | 1697 | |
| 5° | 1677 | 1696 | 1674 | 1665 | 1672 | 159 |
| 15° | 1600 | 1582 | 1515 | 1474 | 1469 | 451 |
| 25° | 1457 | 1398 | 1276 | 1184 | 1161 | 671 |
| 35° | 1264 | 1165 | 990 | 870 | 839 | 791 |
| 45° | 1040 | 908 | 708 | 586 | 563 | 802 |
| 55° | 793 | 642 | 451 | 363 | 358 | 709 |
| 65° | 538 | 385 | 258 | 230 | 228 | 531 |
| 75° | 277 | 169 | 135 | 124 | 125 | 296 |
| 85° | 62 | 42 | 39 | 36 | 36 | 75 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1697.2 | 1697.2 | 1697.2 | 1697.2 | 1697.2 |
| 2.5° | 1684.7 | 1704.7 | 1689.7 | 1692.2 | 1694.7 |
| 5° | 1677.2 | 1695.9 | 1673.5 | 1664.7 | 1672.2 |
| 7.5° | 1664.7 | 1677.2 | 1642.2 | 1626.0 | 1633.5 |
| 10° | 1648.5 | 1651.0 | 1604.8 | 1581.0 | 1584.8 |
| 12.5° | 1626.0 | 1619.8 | 1563.6 | 1529.8 | 1532.3 |
| 15° | 1599.8 | 1582.3 | 1514.9 | 1473.6 | 1468.6 |
| 17.5° | 1569.8 | 1541.1 | 1461.2 | 1408.7 | 1398.7 |
| 20° | 1536.1 | 1497.4 | 1403.7 | 1336.3 | 1325.0 |
| 22.5° | 1498.6 | 1448.7 | 1341.3 | 1261.3 | 1245.1 |
| 25° | 1457.4 | 1397.5 | 1276.3 | 1183.9 | 1161.4 |
| 27.5° | 1412.4 | 1342.5 | 1206.4 | 1105.2 | 1076.5 |
| 30° | 1365.0 | 1285.1 | 1135.2 | 1026.6 | 996.6 |
| 32.5° | 1316.3 | 1226.4 | 1062.8 | 947.9 | 916.7 |
| 35° | 1263.8 | 1165.2 | 990.3 | 870.4 | 839.2 |
| 37.5° | 1210.1 | 1101.5 | 916.7 | 795.5 | 763.0 |
| 40° | 1155.2 | 1037.8 | 845.5 | 720.6 | 694.4 |
| 42.5° | 1099.0 | 972.9 | 775.5 | 650.6 | 626.9 |
| 45° | 1040.3 | 907.9 | 708.1 | 585.7 | 563.2 |
| 47.5° | 980.3 | 841.7 | 639.4 | 524.5 | 503.3 |
| 50° | 916.7 | 775.5 | 574.5 | 464.6 | 442.1 |
| 52.5° | 855.5 | 708.1 | 512.0 | 405.9 | 394.6 |
| 55° | 793.0 | 641.9 | 450.8 | 363.4 | 358.4 |
| 57.5° | 730.6 | 575.7 | 394.6 | 329.7 | 324.7 |
| 60° | 666.9 | 510.8 | 337.2 | 294.7 | 289.7 |
| 62.5° | 603.2 | 447.1 | 294.7 | 261.0 | 258.5 |
| 65° | 538.3 | 384.6 | 258.5 | 229.8 | 228.5 |
| 67.5° | 469.6 | 324.7 | 226.0 | 202.3 | 201.1 |
| 70° | 404.6 | 264.8 | 193.6 | 174.8 | 174.8 |
| 72.5° | 343.4 | 209.8 | 163.6 | 148.6 | 148.6 |
| 75° | 277.2 | 168.6 | 134.9 | 123.6 | 124.9 |
| 77.5° | 218.5 | 132.4 | 108.6 | 101.2 | 101.2 |
| 80° | 162.4 | 98.7 | 83.7 | 77.4 | 78.7 |
| 82.5° | 109.9 | 68.7 | 59.9 | 56.2 | 56.2 |
| 85° | 62.4 | 42.5 | 38.7 | 36.2 | 36.2 |
| 87.5° | 22.5 | 20.0 | 18.7 | 16.2 | 17.5 |
| 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 | 20.55 | 22.08 | 20.92 | 22.39 | 22.70 | 16.33 | 17.85 | 16.69 | 18.17 | 18.48 |
| | 3H | 22.33 | 23.70 | 22.70 | 24.02 | 24.39 | 17.94 | 19.31 | 18.32 | 19.64 | 20.00 |
| | 4H | 23.00 | 24.28 | 23.40 | 24.63 | 25.01 | 18.57 | 19.86 | 18.97 | 20.21 | 20.58 |
| | 6H | 23.51 | 24.70 | 23.92 | 25.06 | 25.45 | 19.07 | 20.26 | 19.48 | 20.63 | 21.02 |
| | 8H | 23.67 | 24.80 | 24.10 | 25.19 | 25.59 | 19.24 | 20.37 | 19.67 | 20.76 | 21.16 |
| | 12H | 23.77 | 24.85 | 24.20 | 25.24 | 25.67 | 19.36 | 20.45 | 19.79 | 20.83 | 21.26 |
| 4H | 2H | 20.65 | 21.93 | 21.05 | 22.28 | 22.66 | 17.05 | 18.33 | 17.45 | 18.68 | 19.06 |
| | 3H | 22.59 | 23.66 | 23.00 | 24.06 | 24.46 | 18.85 | 19.92 | 19.27 | 20.32 | 20.73 |
| | 4H | 23.35 | 24.31 | 23.78 | 24.73 | 25.16 | 19.59 | 20.56 | 20.02 | 20.97 | 21.41 |
| | 6H | 23.98 | 24.82 | 24.44 | 25.26 | 25.72 | 20.21 | 21.05 | 20.67 | 21.49 | 21.95 |
| | 8H | 24.20 | 24.99 | 24.66 | 25.43 | 25.90 | 20.42 | 21.21 | 20.89 | 21.65 | 22.12 |
| | 12H | 24.36 | 25.06 | 24.84 | 25.54 | 26.01 | 20.59 | 21.29 | 21.07 | 21.77 | 22.24 |
| 8H | 4H | 23.40 | 24.19 | 23.87 | 24.63 | 25.10 | 19.98 | 20.77 | 20.44 | 21.21 | 21.68 |
| | 6H | 24.10 | 24.75 | 24.60 | 25.24 | 25.72 | 20.71 | 21.36 | 21.21 | 21.85 | 22.33 |
| | 8H | 24.37 | 24.95 | 24.89 | 25.46 | 25.95 | 21.00 | 21.58 | 21.51 | 22.09 | 22.58 |
| | 12H | 24.59 | 25.10 | 25.10 | 25.60 | 26.16 | 21.25 | 21.76 | 21.76 | 22.25 | 22.82 |
| 12H | 4H | 23.40 | 24.10 | 23.88 | 24.58 | 25.05 | 20.04 | 20.74 | 20.52 | 21.22 | 21.69 |
| | 6H | 24.10 | 24.68 | 24.61 | 25.19 | 25.68 | 20.79 | 21.38 | 21.31 | 21.89 | 22.38 |
| | 8H | 24.41 | 24.92 | 24.91 | 25.41 | 25.98 | 21.14 | 21.66 | 21.65 | 22.15 | 22.72 |