

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: P1439763

Luminaire Tested: S123DR-H1005D850-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439763
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2603-719-3)
Test Lab: INNOVATION CENTER
Issue Date: 4/2/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DR-H1005D850-X4F0-XX-UDD-FLB-W
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

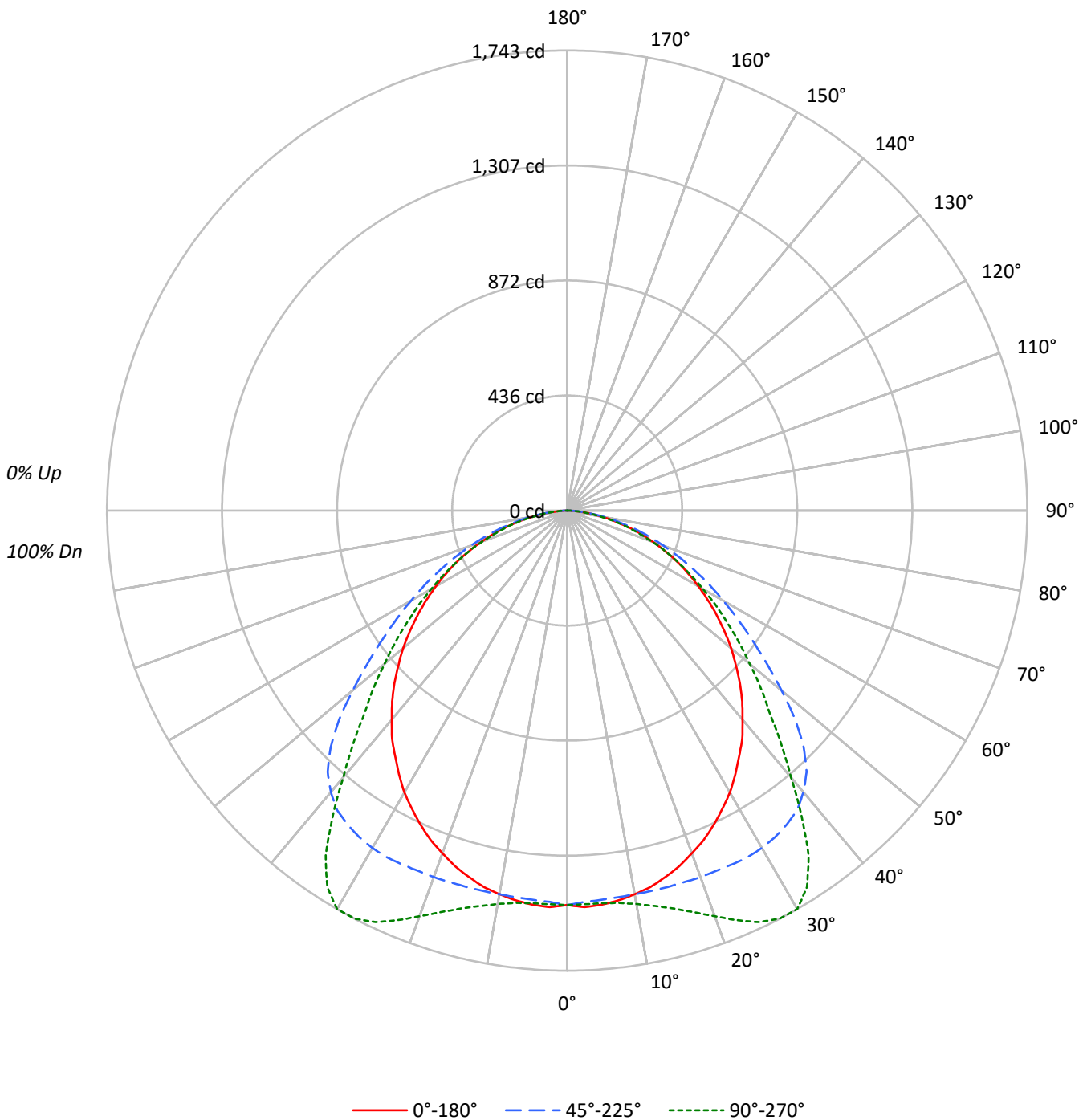
Lumens per Lamp: N/A
Luminaire Lumens: 4519.2 lumens
Efficiency: N/A
Efficacy: 123.5 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

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 | 109 | 105 | 100 | 97 | 106 | 102 | 99 | 95 | 98 | 95 | 92 | 94 | 92 | 89 | 91 | 89 | 87 | 85 |
| 2 | 100 | 92 | 85 | 79 | 97 | 90 | 84 | 78 | 86 | 81 | 77 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 88 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 72 | 63 | 56 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 54 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 47 | 45 |
| 6 | 71 | 58 | 49 | 42 | 69 | 57 | 48 | 42 | 55 | 47 | 42 | 53 | 47 | 41 | 52 | 46 | 41 | 39 |
| 7 | 66 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 34 |
| 8 | 61 | 48 | 39 | 33 | 59 | 47 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 35 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 29 | 28 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 18015 | 18015 | 18015 |
| 5° | 18139 | 17915 | 18064 |
| 10° | 18065 | 18065 | 18519 |
| 15° | 17936 | 18418 | 19479 |
| 20° | 17724 | 18953 | 20975 |
| 25° | 17472 | 19671 | 22878 |
| 30° | 17165 | 20543 | 24264 |
| 35° | 16715 | 21355 | 23470 |
| 40° | 16269 | 21911 | 20769 |
| 45° | 15780 | 21603 | 18494 |
| 50° | 15215 | 19882 | 16926 |
| 55° | 14550 | 17993 | 15557 |
| 60° | 13860 | 16469 | 14306 |
| 65° | 13180 | 15074 | 13223 |
| 70° | 12200 | 13670 | 11982 |
| 75° | 11012 | 12163 | 10723 |
| 80° | 9227 | 10192 | 8797 |
| 85° | 7055 | 7484 | 6626 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 21603 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 142.3 | 3.1 |
| 10°-20° | 422.8 | 9.4 |
| 20°-30° | 692.9 | 15.3 |
| 30°-40° | 876.5 | 19.4 |
| 40°-50° | 856.3 | 18.9 |
| 50°-60° | 703.5 | 15.6 |
| 60°-70° | 496.2 | 11.0 |
| 70°-80° | 264.5 | 5.9 |
| 80°-90° | 64.4 | 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° | 1257.9 | 27.8 |
| 0°-40° | 2134.4 | 47.2 |
| 0°-60° | 3694.1 | 81.7 |
| 0°-90° | 4519.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4519.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1494 | 1494 | 1494 | 1494 | 1494 | |
| 5° | 1499 | 1493 | 1480 | 1496 | 1493 | 142 |
| 15° | 1437 | 1445 | 1476 | 1542 | 1561 | 405 |
| 25° | 1313 | 1352 | 1479 | 1658 | 1720 | 605 |
| 35° | 1136 | 1214 | 1451 | 1619 | 1595 | 711 |
| 45° | 926 | 1031 | 1267 | 1143 | 1085 | 713 |
| 55° | 692 | 796 | 856 | 770 | 740 | 619 |
| 65° | 462 | 528 | 528 | 482 | 464 | 456 |
| 75° | 236 | 266 | 261 | 236 | 230 | 251 |
| 85° | 51 | 56 | 54 | 49 | 48 | 62 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P1439763

CATALOG NUMBER: S123DR-H1005D850-X4F0-XX-UDD-FLB-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1494.2 | 1494.2 | 1494.2 | 1494.2 | 1494.2 |
| 2.5° | 1503.4 | 1498.8 | 1483.4 | 1497.3 | 1492.6 |
| 5° | 1498.8 | 1492.6 | 1480.3 | 1495.7 | 1492.6 |
| 7.5° | 1489.5 | 1486.4 | 1477.2 | 1500.3 | 1498.8 |
| 10° | 1475.6 | 1474.1 | 1475.6 | 1509.6 | 1512.7 |
| 12.5° | 1460.2 | 1461.7 | 1475.6 | 1523.5 | 1534.3 |
| 15° | 1437.0 | 1444.7 | 1475.6 | 1542.1 | 1560.6 |
| 17.5° | 1412.3 | 1424.6 | 1475.6 | 1566.8 | 1594.6 |
| 20° | 1381.4 | 1403.0 | 1477.2 | 1593.1 | 1634.8 |
| 22.5° | 1350.5 | 1376.7 | 1477.2 | 1628.6 | 1679.6 |
| 25° | 1313.4 | 1352.0 | 1478.7 | 1658.0 | 1719.8 |
| 27.5° | 1273.2 | 1319.6 | 1480.3 | 1681.1 | 1742.9 |
| 30° | 1233.0 | 1288.7 | 1475.6 | 1690.4 | 1742.9 |
| 32.5° | 1185.1 | 1253.1 | 1466.4 | 1675.0 | 1690.4 |
| 35° | 1135.7 | 1214.5 | 1450.9 | 1619.3 | 1594.6 |
| 37.5° | 1089.3 | 1172.8 | 1430.8 | 1517.3 | 1458.6 |
| 40° | 1033.7 | 1128.0 | 1392.2 | 1387.6 | 1319.6 |
| 42.5° | 981.2 | 1080.1 | 1342.7 | 1256.2 | 1200.6 |
| 45° | 925.5 | 1030.6 | 1267.0 | 1143.4 | 1084.7 |
| 47.5° | 866.8 | 976.5 | 1171.2 | 1036.8 | 995.1 |
| 50° | 811.2 | 920.9 | 1060.0 | 939.5 | 902.4 |
| 52.5° | 750.9 | 862.2 | 953.4 | 852.9 | 820.5 |
| 55° | 692.2 | 795.8 | 856.0 | 769.5 | 740.1 |
| 57.5° | 633.5 | 730.9 | 766.4 | 690.7 | 667.5 |
| 60° | 574.8 | 662.9 | 683.0 | 618.1 | 593.3 |
| 62.5° | 517.6 | 599.5 | 605.7 | 548.5 | 526.9 |
| 65° | 462.0 | 528.4 | 528.4 | 482.1 | 463.5 |
| 67.5° | 403.3 | 460.5 | 457.4 | 414.1 | 403.3 |
| 70° | 346.1 | 394.0 | 387.8 | 352.3 | 339.9 |
| 72.5° | 292.0 | 327.6 | 322.9 | 295.1 | 281.2 |
| 75° | 236.4 | 265.8 | 261.1 | 236.4 | 230.2 |
| 77.5° | 183.9 | 204.0 | 199.3 | 182.3 | 177.7 |
| 80° | 132.9 | 148.3 | 146.8 | 134.4 | 126.7 |
| 82.5° | 89.6 | 97.3 | 95.8 | 88.1 | 83.4 |
| 85° | 51.0 | 55.6 | 54.1 | 49.4 | 47.9 |
| 87.5° | 20.1 | 23.2 | 24.7 | 23.2 | 21.6 |
| 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 | 21.68 | 23.29 | 22.05 | 23.60 | 23.92 | 21.41 | 23.02 | 21.78 | 23.33 | 23.64 |
| | 3H | 23.25 | 24.70 | 23.63 | 25.03 | 25.39 | 22.93 | 24.37 | 23.30 | 24.70 | 25.06 |
| | 4H | 23.80 | 25.16 | 24.20 | 25.51 | 25.89 | 23.46 | 24.82 | 23.86 | 25.17 | 25.54 |
| | 6H | 24.17 | 25.43 | 24.58 | 25.79 | 26.18 | 23.82 | 25.08 | 24.23 | 25.44 | 25.83 |
| | 8H | 24.27 | 25.47 | 24.69 | 25.86 | 26.26 | 23.91 | 25.11 | 24.34 | 25.50 | 25.90 |
| | 12H | 24.32 | 25.47 | 24.75 | 25.86 | 26.28 | 23.96 | 25.11 | 24.39 | 25.50 | 25.92 |
| 4H | 2H | 22.32 | 23.68 | 22.72 | 24.03 | 24.41 | 22.11 | 23.47 | 22.51 | 23.82 | 24.19 |
| | 3H | 24.13 | 25.26 | 24.54 | 25.66 | 26.06 | 23.82 | 24.96 | 24.23 | 25.36 | 25.76 |
| | 4H | 24.82 | 25.84 | 25.25 | 26.26 | 26.69 | 24.46 | 25.49 | 24.89 | 25.90 | 26.34 |
| | 6H | 25.30 | 26.19 | 25.75 | 26.63 | 27.09 | 24.92 | 25.81 | 25.38 | 26.26 | 26.71 |
| | 8H | 25.43 | 26.27 | 25.89 | 26.71 | 27.18 | 25.05 | 25.88 | 25.51 | 26.33 | 26.79 |
| | 12H | 25.52 | 26.27 | 26.00 | 26.74 | 27.21 | 25.13 | 25.88 | 25.61 | 26.35 | 26.82 |
| 8H | 4H | 25.08 | 25.92 | 25.54 | 26.36 | 26.83 | 24.77 | 25.60 | 25.23 | 26.05 | 26.51 |
| | 6H | 25.67 | 26.37 | 26.17 | 26.85 | 27.33 | 25.33 | 26.02 | 25.82 | 26.51 | 26.99 |
| | 8H | 25.87 | 26.49 | 26.38 | 27.00 | 27.48 | 25.51 | 26.13 | 26.02 | 26.64 | 27.12 |
| | 12H | 26.01 | 26.56 | 26.51 | 27.05 | 27.61 | 25.64 | 26.19 | 26.15 | 26.68 | 27.24 |
| 12H | 4H | 25.10 | 25.85 | 25.58 | 26.32 | 26.79 | 24.80 | 25.54 | 25.28 | 26.02 | 26.49 |
| | 6H | 25.70 | 26.33 | 26.22 | 26.83 | 27.32 | 25.37 | 26.00 | 25.88 | 26.50 | 26.99 |
| | 8H | 25.95 | 26.50 | 26.46 | 26.99 | 27.55 | 25.60 | 26.15 | 26.11 | 26.64 | 27.20 |