

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: P1439804

Luminaire Tested: S123DR-H865D950-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439804
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-H865D950-X4F0-XX-UDD-FLB-W
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

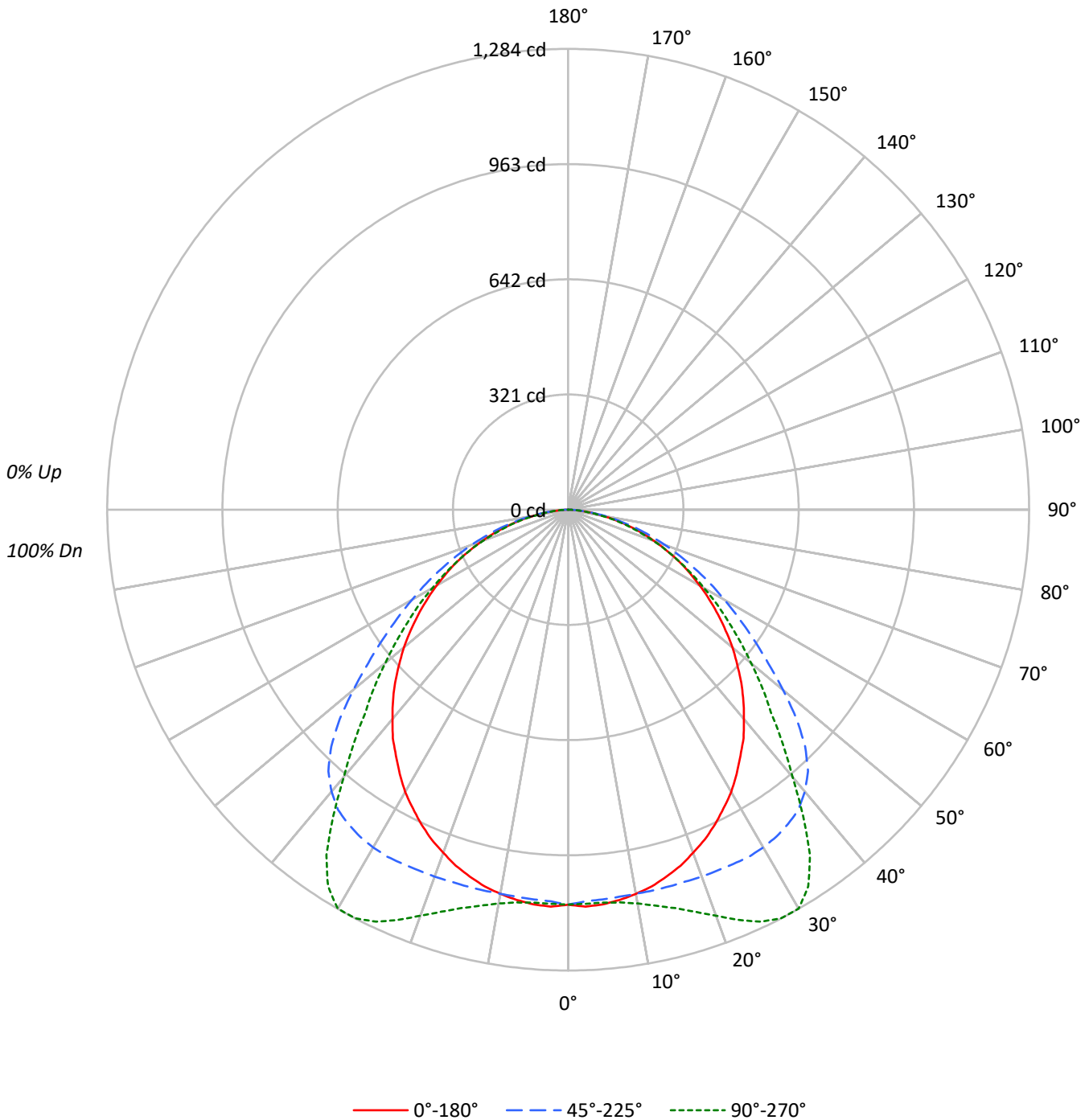
Lumens per Lamp: N/A
Luminaire Lumens: 3327.9 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
Input Voltage (V): 120
Input Current (A_{in}): 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° | 13266 | 13266 | 13266 |
| 5° | 13357 | 13192 | 13302 |
| 10° | 13303 | 13303 | 13637 |
| 15° | 13208 | 13563 | 14344 |
| 20° | 13051 | 13957 | 15445 |
| 25° | 12866 | 14485 | 16847 |
| 30° | 12641 | 15127 | 17868 |
| 35° | 12309 | 15725 | 17282 |
| 40° | 11980 | 16135 | 15293 |
| 45° | 11622 | 15908 | 13620 |
| 50° | 11205 | 14641 | 12464 |
| 55° | 10714 | 13251 | 11456 |
| 60° | 10207 | 12126 | 10535 |
| 65° | 9705 | 11100 | 9737 |
| 70° | 8985 | 10068 | 8823 |
| 75° | 8110 | 8958 | 7896 |
| 80° | 6797 | 7505 | 6478 |
| 85° | 5187 | 5506 | 4883 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 15908 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 104.8 | 3.1 |
| 10°-20° | 311.3 | 9.4 |
| 20°-30° | 510.2 | 15.3 |
| 30°-40° | 645.4 | 19.4 |
| 40°-50° | 630.6 | 18.9 |
| 50°-60° | 518.0 | 15.6 |
| 60°-70° | 365.4 | 11.0 |
| 70°-80° | 194.8 | 5.9 |
| 80°-90° | 47.5 | 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° | 926.3 | 27.8 |
| 0°-40° | 1571.7 | 47.2 |
| 0°-60° | 2720.3 | 81.7 |
| 0°-90° | 3327.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3327.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1100 | 1100 | 1100 | 1100 | 1100 | |
| 5° | 1104 | 1099 | 1090 | 1101 | 1099 | 105 |
| 15° | 1058 | 1064 | 1087 | 1136 | 1149 | 298 |
| 25° | 967 | 996 | 1089 | 1221 | 1266 | 445 |
| 35° | 836 | 894 | 1068 | 1192 | 1174 | 524 |
| 45° | 682 | 759 | 933 | 842 | 799 | 525 |
| 55° | 510 | 586 | 630 | 567 | 545 | 456 |
| 65° | 340 | 389 | 389 | 355 | 341 | 336 |
| 75° | 174 | 196 | 192 | 174 | 170 | 185 |
| 85° | 38 | 41 | 40 | 36 | 35 | 45 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P1439804

CATALOG NUMBER: S123DR-H865D950-X4F0-XX-UDD-FLB-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1100.3 | 1100.3 | 1100.3 | 1100.3 | 1100.3 |
| 2.5° | 1107.1 | 1103.7 | 1092.3 | 1102.6 | 1099.1 |
| 5° | 1103.7 | 1099.1 | 1090.0 | 1101.4 | 1099.1 |
| 7.5° | 1096.9 | 1094.6 | 1087.8 | 1104.8 | 1103.7 |
| 10° | 1086.6 | 1085.5 | 1086.6 | 1111.7 | 1113.9 |
| 12.5° | 1075.3 | 1076.4 | 1086.6 | 1121.9 | 1129.9 |
| 15° | 1058.2 | 1063.9 | 1086.6 | 1135.6 | 1149.2 |
| 17.5° | 1040.0 | 1049.1 | 1086.6 | 1153.8 | 1174.2 |
| 20° | 1017.2 | 1033.2 | 1087.8 | 1173.1 | 1203.8 |
| 22.5° | 994.5 | 1013.8 | 1087.8 | 1199.3 | 1236.8 |
| 25° | 967.2 | 995.6 | 1088.9 | 1220.9 | 1266.4 |
| 27.5° | 937.6 | 971.7 | 1090.0 | 1238.0 | 1283.5 |
| 30° | 908.0 | 949.0 | 1086.6 | 1244.8 | 1283.5 |
| 32.5° | 872.7 | 922.8 | 1079.8 | 1233.4 | 1244.8 |
| 35° | 836.3 | 894.3 | 1068.4 | 1192.4 | 1174.2 |
| 37.5° | 802.2 | 863.6 | 1053.6 | 1117.4 | 1074.1 |
| 40° | 761.2 | 830.6 | 1025.2 | 1021.8 | 971.7 |
| 42.5° | 722.5 | 795.3 | 988.8 | 925.1 | 884.1 |
| 45° | 681.6 | 758.9 | 933.0 | 842.0 | 798.8 |
| 47.5° | 638.3 | 719.1 | 862.5 | 763.5 | 732.8 |
| 50° | 597.4 | 678.1 | 780.6 | 691.8 | 664.5 |
| 52.5° | 553.0 | 634.9 | 702.0 | 628.1 | 604.2 |
| 55° | 509.7 | 586.0 | 630.4 | 566.6 | 545.0 |
| 57.5° | 466.5 | 538.2 | 564.4 | 508.6 | 491.5 |
| 60° | 423.3 | 488.1 | 502.9 | 455.1 | 436.9 |
| 62.5° | 381.2 | 441.5 | 446.0 | 403.9 | 388.0 |
| 65° | 340.2 | 389.1 | 389.1 | 355.0 | 341.3 |
| 67.5° | 297.0 | 339.1 | 336.8 | 304.9 | 297.0 |
| 70° | 254.9 | 290.1 | 285.6 | 259.4 | 250.3 |
| 72.5° | 215.1 | 241.2 | 237.8 | 217.3 | 207.1 |
| 75° | 174.1 | 195.7 | 192.3 | 174.1 | 169.5 |
| 77.5° | 135.4 | 150.2 | 146.8 | 134.3 | 130.9 |
| 80° | 97.9 | 109.2 | 108.1 | 99.0 | 93.3 |
| 82.5° | 66.0 | 71.7 | 70.5 | 64.9 | 61.4 |
| 85° | 37.5 | 41.0 | 39.8 | 36.4 | 35.3 |
| 87.5° | 14.8 | 17.1 | 18.2 | 17.1 | 15.9 |
| 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 | 20.62 | 22.22 | 20.98 | 22.54 | 22.85 | 20.35 | 21.95 | 20.71 | 22.27 | 22.58 |
| | 3H | 22.19 | 23.64 | 22.57 | 23.96 | 24.32 | 21.86 | 23.31 | 22.24 | 23.63 | 24.00 |
| | 4H | 22.74 | 24.10 | 23.14 | 24.45 | 24.83 | 22.40 | 23.76 | 22.80 | 24.10 | 24.48 |
| | 6H | 23.11 | 24.36 | 23.52 | 24.73 | 25.12 | 22.76 | 24.01 | 23.17 | 24.38 | 24.77 |
| | 8H | 23.21 | 24.41 | 23.63 | 24.80 | 25.19 | 22.85 | 24.05 | 23.27 | 24.44 | 24.84 |
| | 12H | 23.26 | 24.41 | 23.69 | 24.79 | 25.22 | 22.90 | 24.05 | 23.33 | 24.43 | 24.86 |
| 4H | 2H | 21.26 | 22.62 | 21.66 | 22.97 | 23.34 | 21.05 | 22.41 | 21.44 | 22.75 | 23.13 |
| | 3H | 23.07 | 24.20 | 23.48 | 24.60 | 25.00 | 22.76 | 23.90 | 23.17 | 24.29 | 24.69 |
| | 4H | 23.75 | 24.78 | 24.19 | 25.19 | 25.63 | 23.40 | 24.42 | 23.83 | 24.84 | 25.27 |
| | 6H | 24.23 | 25.13 | 24.69 | 25.57 | 26.03 | 23.86 | 24.75 | 24.31 | 25.19 | 25.65 |
| | 8H | 24.37 | 25.20 | 24.83 | 25.65 | 26.11 | 23.98 | 24.82 | 24.45 | 25.26 | 25.73 |
| | 12H | 24.45 | 25.20 | 24.93 | 25.68 | 26.15 | 24.06 | 24.81 | 24.55 | 25.29 | 25.76 |
| 8H | 4H | 24.02 | 24.85 | 24.48 | 25.30 | 25.76 | 23.71 | 24.54 | 24.17 | 24.98 | 25.45 |
| | 6H | 24.61 | 25.30 | 25.10 | 25.79 | 26.27 | 24.27 | 24.96 | 24.76 | 25.45 | 25.92 |
| | 8H | 24.80 | 25.43 | 25.31 | 25.93 | 26.42 | 24.45 | 25.07 | 24.96 | 25.57 | 26.06 |
| | 12H | 24.94 | 25.49 | 25.45 | 25.99 | 26.55 | 24.57 | 25.12 | 25.08 | 25.62 | 26.18 |
| 12H | 4H | 24.04 | 24.78 | 24.52 | 25.26 | 25.73 | 23.73 | 24.48 | 24.21 | 24.96 | 25.43 |
| | 6H | 24.64 | 25.26 | 25.15 | 25.77 | 26.26 | 24.31 | 24.93 | 24.82 | 25.44 | 25.93 |
| | 8H | 24.89 | 25.44 | 25.39 | 25.93 | 26.49 | 24.54 | 25.09 | 25.05 | 25.58 | 26.14 |