

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: P930107

Luminaire Tested: DFN2DS-HX2F0-050DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930107
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX2F0-050DS940-FLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

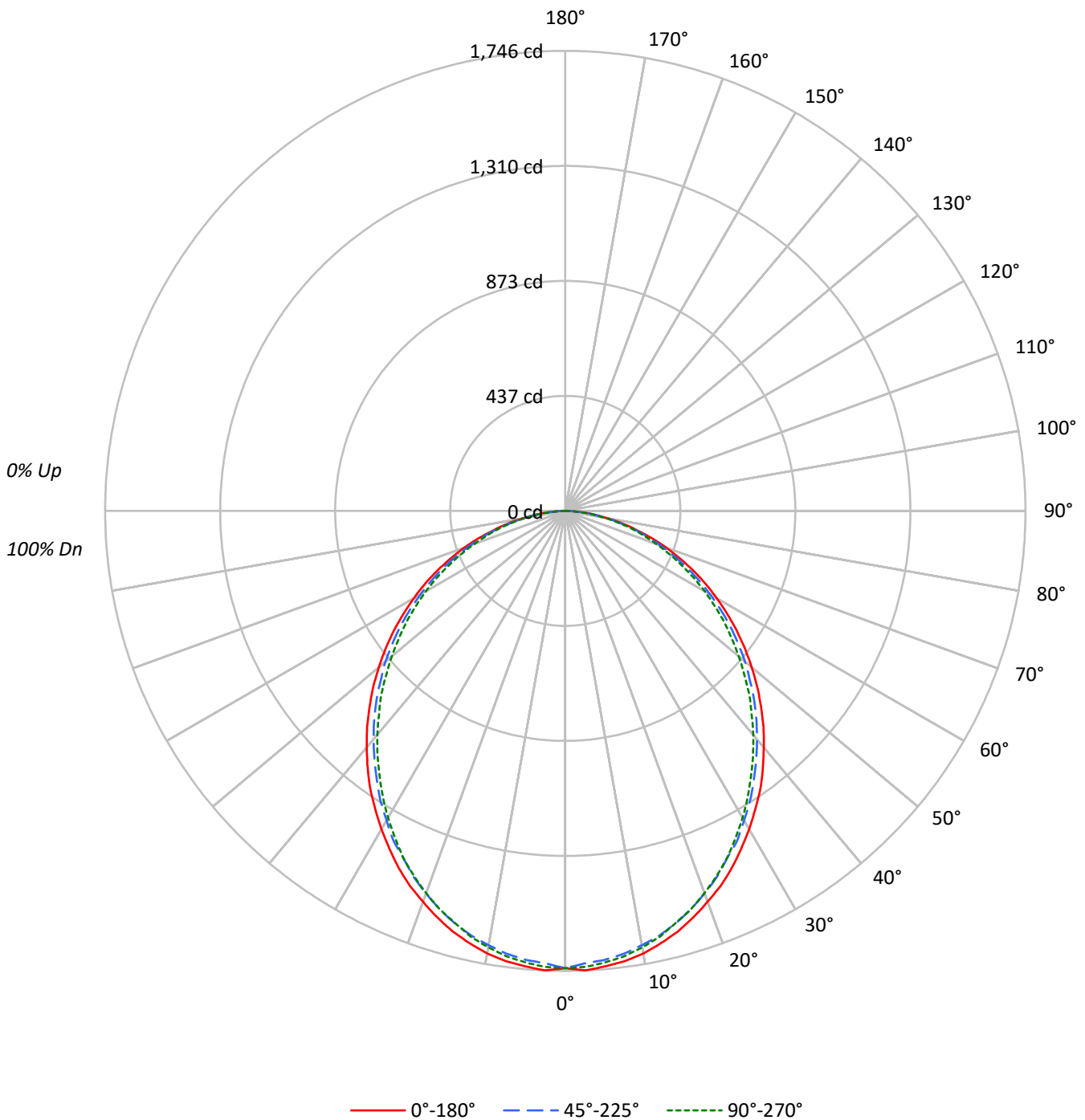
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4415.4 lumens
Efficiency: N/A
Efficacy: 88.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 2.3' x L: 1.99' x H: 0')
CIE Type: Direct

Input Watts (W): 49.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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





TEST NUMBER: P930107

CATALOG NUMBER: DFN2DS-HX2F0-050DS940-FLL

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 86 | 86 | 86 | 84 |
| 2 | 99 | 91 | 85 | 79 | 97 | 89 | 83 | 78 | 86 | 81 | 76 | 83 | 78 | 74 | 80 | 76 | 73 | 73 | 73 | 73 | 71 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 68 | 63 | 71 | 66 | 62 | 62 | 62 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 54 | 54 | 54 | 51 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 47 | 47 | 47 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 48 | 42 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 41 | 41 | 41 | 41 | 39 |
| 7 | 66 | 52 | 44 | 38 | 64 | 52 | 43 | 38 | 50 | 43 | 37 | 49 | 42 | 37 | 47 | 41 | 37 | 37 | 37 | 37 | 35 |
| 8 | 61 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 33 | 33 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 30 | 30 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 53 | 40 | 33 | 28 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 32 | 27 | 27 | 27 | 27 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4089 | 4089 | 4089 |
| 5° | 4104 | 4045 | 4069 |
| 10° | 4080 | 4005 | 4024 |
| 15° | 4030 | 3952 | 3948 |
| 20° | 3958 | 3875 | 3871 |
| 25° | 3887 | 3779 | 3779 |
| 30° | 3796 | 3691 | 3659 |
| 35° | 3710 | 3586 | 3533 |
| 40° | 3604 | 3480 | 3413 |
| 45° | 3498 | 3375 | 3292 |
| 50° | 3383 | 3266 | 3150 |
| 55° | 3263 | 3140 | 3023 |
| 60° | 3129 | 2989 | 2878 |
| 65° | 2987 | 2838 | 2707 |
| 70° | 2805 | 2655 | 2530 |
| 75° | 2552 | 2445 | 2386 |
| 80° | 2266 | 2195 | 2083 |
| 85° | 1846 | 1760 | 1579 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3498 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 163.3 | 3.7 |
| 10°-20° | 459.6 | 10.4 |
| 20°-30° | 675.4 | 15.3 |
| 30°-40° | 784.4 | 17.8 |
| 40°-50° | 783.4 | 17.7 |
| 50°-60° | 683.1 | 15.5 |
| 60°-70° | 505.0 | 11.4 |
| 70°-80° | 285.7 | 6.5 |
| 80°-90° | 75.4 | 1.7 |
| 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° | 1298.3 | 29.4 |
| 0°-40° | 2082.7 | 47.2 |
| 0°-60° | 3549.3 | 80.4 |
| 0°-90° | 4415.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4415.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1735 | 1735 | 1735 | 1735 | 1735 | |
| 5° | 1735 | 1729 | 1710 | 1724 | 1721 | 165 |
| 15° | 1652 | 1642 | 1620 | 1627 | 1619 | 465 |
| 25° | 1495 | 1482 | 1454 | 1457 | 1454 | 688 |
| 35° | 1290 | 1273 | 1247 | 1236 | 1228 | 806 |
| 45° | 1050 | 1038 | 1013 | 995 | 988 | 810 |
| 55° | 794 | 784 | 764 | 744 | 736 | 710 |
| 65° | 536 | 526 | 509 | 494 | 486 | 530 |
| 75° | 280 | 277 | 269 | 259 | 262 | 299 |
| 85° | 68 | 67 | 65 | 60 | 58 | 80 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P930107

CATALOG NUMBER: DFN2DS-HX2F0-050DS940-FLL

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1735.4 | 1735.4 | 1735.4 | 1735.4 | 1735.4 |
| 2.5° | 1745.5 | 1737.2 | 1718.8 | 1735.4 | 1732.3 |
| 5° | 1735.4 | 1728.9 | 1710.4 | 1723.7 | 1720.6 |
| 7.5° | 1723.7 | 1713.8 | 1695.4 | 1708.9 | 1705.5 |
| 10° | 1705.5 | 1693.8 | 1673.8 | 1687.0 | 1682.1 |
| 12.5° | 1680.3 | 1670.4 | 1650.5 | 1658.8 | 1655.4 |
| 15° | 1652.0 | 1642.1 | 1620.3 | 1627.1 | 1618.7 |
| 17.5° | 1616.9 | 1607.0 | 1585.3 | 1593.6 | 1585.3 |
| 20° | 1578.6 | 1568.7 | 1545.3 | 1550.2 | 1543.7 |
| 22.5° | 1540.3 | 1525.2 | 1503.5 | 1503.5 | 1500.1 |
| 25° | 1495.2 | 1481.9 | 1453.5 | 1456.7 | 1453.5 |
| 27.5° | 1445.0 | 1433.4 | 1411.8 | 1406.8 | 1398.5 |
| 30° | 1395.1 | 1381.7 | 1356.7 | 1351.7 | 1345.0 |
| 32.5° | 1341.7 | 1331.8 | 1305.0 | 1294.9 | 1288.2 |
| 35° | 1289.9 | 1273.3 | 1246.6 | 1236.5 | 1228.2 |
| 37.5° | 1231.5 | 1216.5 | 1189.7 | 1178.1 | 1169.8 |
| 40° | 1171.6 | 1158.1 | 1131.3 | 1116.4 | 1109.7 |
| 42.5° | 1113.1 | 1099.7 | 1073.1 | 1056.2 | 1046.3 |
| 45° | 1049.7 | 1038.0 | 1012.9 | 994.7 | 987.9 |
| 47.5° | 987.9 | 976.2 | 949.5 | 931.1 | 921.2 |
| 50° | 922.8 | 914.5 | 891.1 | 867.7 | 859.4 |
| 52.5° | 859.4 | 847.7 | 826.1 | 807.7 | 796.0 |
| 55° | 794.4 | 784.3 | 764.3 | 744.3 | 736.0 |
| 57.5° | 729.2 | 720.9 | 699.1 | 679.2 | 672.4 |
| 60° | 664.1 | 657.6 | 634.2 | 615.7 | 610.8 |
| 62.5° | 600.8 | 589.1 | 572.4 | 555.7 | 549.0 |
| 65° | 535.7 | 525.7 | 509.0 | 494.0 | 485.6 |
| 67.5° | 469.0 | 460.5 | 445.6 | 434.0 | 427.2 |
| 70° | 407.2 | 400.5 | 385.4 | 373.7 | 367.2 |
| 72.5° | 343.9 | 337.1 | 328.8 | 317.1 | 312.1 |
| 75° | 280.3 | 277.1 | 268.6 | 258.7 | 262.1 |
| 77.5° | 223.6 | 216.8 | 213.5 | 208.5 | 203.6 |
| 80° | 167.0 | 165.2 | 161.8 | 156.9 | 153.5 |
| 82.5° | 113.5 | 113.5 | 111.9 | 105.2 | 105.2 |
| 85° | 68.3 | 66.7 | 65.1 | 60.0 | 58.4 |
| 87.5° | 30.1 | 26.8 | 23.4 | 18.4 | 16.7 |
| 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 | 16.18 | 17.79 | 16.54 | 18.10 | 18.41 | 15.73 | 17.34 | 16.10 | 17.66 | 17.97 |
| | 3H | 17.93 | 19.38 | 18.30 | 19.71 | 20.07 | 17.43 | 18.89 | 17.81 | 19.22 | 19.58 |
| | 4H | 18.57 | 19.94 | 18.97 | 20.29 | 20.66 | 18.08 | 19.45 | 18.48 | 19.79 | 20.17 |
| | 6H | 19.04 | 20.31 | 19.45 | 20.67 | 21.07 | 18.54 | 19.81 | 18.95 | 20.17 | 20.56 |
| | 8H | 19.18 | 20.39 | 19.61 | 20.78 | 21.18 | 18.68 | 19.89 | 19.11 | 20.28 | 20.68 |
| | 12H | 19.27 | 20.43 | 19.70 | 20.82 | 21.24 | 18.76 | 19.92 | 19.19 | 20.30 | 20.73 |
| 4H | 2H | 16.74 | 18.10 | 17.13 | 18.45 | 18.83 | 16.38 | 17.75 | 16.78 | 18.10 | 18.48 |
| | 3H | 18.71 | 19.86 | 19.12 | 20.25 | 20.65 | 18.30 | 19.45 | 18.71 | 19.85 | 20.25 |
| | 4H | 19.49 | 20.52 | 19.92 | 20.94 | 21.37 | 19.06 | 20.10 | 19.50 | 20.51 | 20.95 |
| | 6H | 20.08 | 20.99 | 20.54 | 21.43 | 21.89 | 19.65 | 20.56 | 20.11 | 21.00 | 21.45 |
| | 8H | 20.27 | 21.12 | 20.73 | 21.56 | 22.03 | 19.84 | 20.68 | 20.30 | 21.12 | 21.59 |
| | 12H | 20.41 | 21.17 | 20.89 | 21.64 | 22.11 | 19.95 | 20.71 | 20.43 | 21.19 | 21.66 |
| 8H | 4H | 19.76 | 20.61 | 20.22 | 21.05 | 21.52 | 19.39 | 20.23 | 19.85 | 20.68 | 21.14 |
| | 6H | 20.48 | 21.18 | 20.97 | 21.67 | 22.14 | 20.09 | 20.80 | 20.59 | 21.29 | 21.76 |
| | 8H | 20.73 | 21.37 | 21.24 | 21.87 | 22.36 | 20.34 | 20.97 | 20.85 | 21.48 | 21.97 |
| | 12H | 20.93 | 21.49 | 21.44 | 21.98 | 22.54 | 20.52 | 21.08 | 21.03 | 21.57 | 22.13 |
| 12H | 4H | 19.79 | 20.55 | 20.27 | 21.02 | 21.49 | 19.42 | 20.18 | 19.90 | 20.66 | 21.13 |
| | 6H | 20.52 | 21.15 | 21.03 | 21.66 | 22.15 | 20.15 | 20.78 | 20.66 | 21.29 | 21.78 |
| | 8H | 20.83 | 21.39 | 21.34 | 21.88 | 22.44 | 20.46 | 21.01 | 20.96 | 21.51 | 22.07 |