

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: P929814

Luminaire Tested: DFN2DS-4P2F0-030DS927-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929814
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-4P2F0-030DS927-RLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

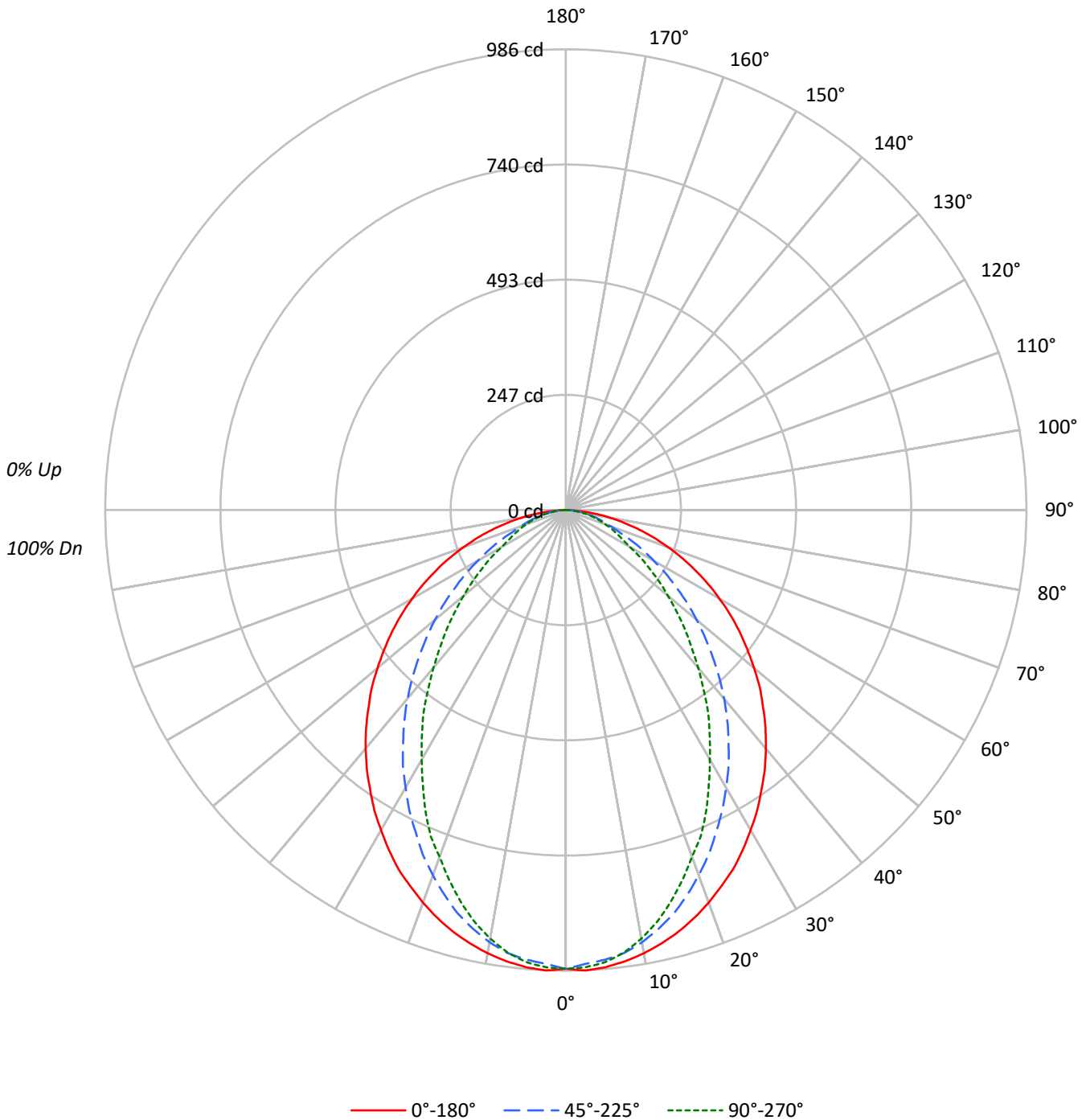
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2019.6 lumens
Efficiency: N/A
Efficacy: 66.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

Input Watts (W): 30.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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: P929814

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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 | 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 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 88 | 88 | 88 | 86 |
| 2 | 101 | 94 | 87 | 82 | 98 | 92 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 78 | 82 | 79 | 76 | 76 | 76 | 76 | 74 |
| 3 | 93 | 83 | 76 | 70 | 90 | 82 | 75 | 69 | 79 | 73 | 68 | 76 | 71 | 67 | 74 | 69 | 66 | 66 | 66 | 66 | 64 |
| 4 | 86 | 75 | 66 | 60 | 83 | 73 | 66 | 60 | 71 | 64 | 59 | 69 | 63 | 58 | 66 | 62 | 57 | 57 | 57 | 57 | 55 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 51 | 51 | 51 | 49 |
| 6 | 74 | 61 | 53 | 47 | 72 | 60 | 52 | 46 | 58 | 51 | 46 | 57 | 50 | 46 | 55 | 50 | 45 | 45 | 45 | 45 | 43 |
| 7 | 68 | 56 | 47 | 42 | 67 | 55 | 47 | 42 | 53 | 46 | 41 | 52 | 46 | 41 | 51 | 45 | 41 | 41 | 41 | 41 | 39 |
| 8 | 64 | 51 | 43 | 38 | 62 | 51 | 43 | 37 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 37 | 37 | 37 | 35 |
| 9 | 60 | 47 | 39 | 34 | 59 | 47 | 39 | 34 | 46 | 39 | 34 | 44 | 38 | 34 | 44 | 38 | 34 | 34 | 34 | 34 | 32 |
| 10 | 56 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 41 | 35 | 31 | 31 | 31 | 31 | 29 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2459 | 2459 | 2459 |
| 5° | 2468 | 2428 | 2441 |
| 10° | 2449 | 2389 | 2368 |
| 15° | 2421 | 2318 | 2251 |
| 20° | 2382 | 2216 | 2105 |
| 25° | 2342 | 2102 | 1964 |
| 30° | 2287 | 1983 | 1783 |
| 35° | 2233 | 1855 | 1624 |
| 40° | 2179 | 1723 | 1441 |
| 45° | 2115 | 1574 | 1274 |
| 50° | 2049 | 1423 | 1111 |
| 55° | 1982 | 1261 | 955 |
| 60° | 1905 | 1090 | 792 |
| 65° | 1817 | 916 | 721 |
| 70° | 1711 | 754 | 663 |
| 75° | 1582 | 688 | 619 |
| 80° | 1397 | 614 | 564 |
| 85° | 1097 | 486 | 486 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2115 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 92.0 | 4.6 |
| 10°-20° | 252.7 | 12.5 |
| 20°-30° | 354.7 | 17.6 |
| 30°-40° | 386.7 | 19.1 |
| 40°-50° | 355.4 | 17.6 |
| 50°-60° | 279.1 | 13.8 |
| 60°-70° | 181.6 | 9.0 |
| 70°-80° | 93.5 | 4.6 |
| 80°-90° | 23.9 | 1.2 |
| 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° | 699.4 | 34.6 |
| 0°-40° | 1086.1 | 53.8 |
| 0°-60° | 1720.5 | 85.2 |
| 0°-90° | 2019.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2019.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 982 | 982 | 982 | 982 | 982 | |
| 5° | 982 | 978 | 966 | 974 | 971 | 93 |
| 15° | 934 | 924 | 894 | 877 | 868 | 263 |
| 25° | 848 | 819 | 761 | 724 | 711 | 390 |
| 35° | 730 | 685 | 607 | 551 | 531 | 457 |
| 45° | 597 | 538 | 444 | 381 | 360 | 461 |
| 55° | 454 | 385 | 289 | 236 | 219 | 406 |
| 65° | 307 | 235 | 155 | 124 | 122 | 304 |
| 75° | 164 | 101 | 71 | 65 | 64 | 173 |
| 85° | 38 | 20 | 17 | 17 | 17 | 46 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P929814

CATALOG NUMBER: DFN2DS-4P2F0-030DS927-RLL

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 982.0 | 982.0 | 982.0 | 982.0 | 982.0 |
| 2.5° | 986.4 | 982.0 | 972.2 | 981.1 | 979.4 |
| 5° | 982.0 | 977.6 | 966.0 | 974.0 | 971.3 |
| 7.5° | 974.0 | 968.7 | 956.3 | 959.7 | 955.3 |
| 10° | 963.3 | 957.1 | 939.4 | 936.6 | 931.4 |
| 12.5° | 950.0 | 942.0 | 918.0 | 912.7 | 902.9 |
| 15° | 934.0 | 924.2 | 894.0 | 877.1 | 868.3 |
| 17.5° | 915.3 | 901.1 | 863.8 | 844.3 | 830.0 |
| 20° | 894.0 | 876.2 | 831.8 | 809.7 | 790.0 |
| 22.5° | 871.0 | 850.4 | 798.9 | 768.7 | 755.4 |
| 25° | 847.8 | 819.3 | 760.7 | 724.3 | 710.9 |
| 27.5° | 820.3 | 790.0 | 725.2 | 683.4 | 662.9 |
| 30° | 791.0 | 757.2 | 686.0 | 640.8 | 616.7 |
| 32.5° | 762.5 | 721.6 | 648.8 | 595.4 | 573.2 |
| 35° | 730.5 | 685.2 | 607.0 | 551.0 | 531.4 |
| 37.5° | 699.4 | 650.5 | 567.9 | 506.5 | 484.4 |
| 40° | 666.5 | 613.2 | 527.0 | 463.9 | 440.8 |
| 42.5° | 632.7 | 575.9 | 486.1 | 420.3 | 398.1 |
| 45° | 597.2 | 537.6 | 444.4 | 381.2 | 359.9 |
| 47.5° | 563.4 | 500.4 | 404.4 | 341.2 | 321.7 |
| 50° | 526.1 | 463.0 | 365.3 | 303.9 | 285.3 |
| 52.5° | 489.6 | 423.0 | 328.0 | 269.3 | 252.4 |
| 55° | 454.1 | 384.8 | 288.8 | 235.5 | 218.7 |
| 57.5° | 417.7 | 346.6 | 254.2 | 204.4 | 190.2 |
| 60° | 380.3 | 309.3 | 217.7 | 172.4 | 158.2 |
| 62.5° | 344.0 | 272.8 | 186.6 | 144.0 | 136.9 |
| 65° | 306.6 | 234.6 | 154.6 | 124.4 | 121.7 |
| 67.5° | 271.1 | 199.0 | 124.4 | 109.3 | 106.6 |
| 70° | 233.7 | 164.4 | 103.0 | 94.2 | 90.6 |
| 72.5° | 198.2 | 132.3 | 86.2 | 79.1 | 77.3 |
| 75° | 163.5 | 101.3 | 71.1 | 64.9 | 64.0 |
| 77.5° | 128.9 | 71.9 | 56.0 | 52.4 | 50.6 |
| 80° | 96.9 | 51.6 | 42.6 | 39.1 | 39.1 |
| 82.5° | 67.5 | 34.7 | 29.3 | 27.6 | 27.6 |
| 85° | 38.2 | 19.5 | 16.9 | 16.9 | 16.9 |
| 87.5° | 14.3 | 7.0 | 7.0 | 6.3 | 6.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P929814
 CATALOG NUMBER: DFN2DS-4P2F0-030DS927-RL

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 | 14.36 | 15.88 | 14.73 | 16.20 | 16.51 | 10.32 | 11.84 | 10.69 | 12.16 | 12.47 |
| | 3H | 16.13 | 17.49 | 16.50 | 17.82 | 18.18 | 11.59 | 12.95 | 11.96 | 13.28 | 13.64 |
| | 4H | 16.79 | 18.07 | 17.19 | 18.42 | 18.80 | 12.09 | 13.37 | 12.49 | 13.72 | 14.10 |
| | 6H | 17.28 | 18.46 | 17.69 | 18.83 | 19.22 | 12.47 | 13.65 | 12.88 | 14.02 | 14.41 |
| | 8H | 17.45 | 18.57 | 17.87 | 18.96 | 19.36 | 12.59 | 13.72 | 13.02 | 14.11 | 14.51 |
| | 12H | 17.55 | 18.63 | 17.98 | 19.01 | 19.44 | 12.67 | 13.75 | 13.11 | 14.14 | 14.56 |
| 4H | 2H | 14.46 | 15.75 | 14.86 | 16.09 | 16.47 | 11.02 | 12.30 | 11.42 | 12.65 | 13.02 |
| | 3H | 16.40 | 17.46 | 16.81 | 17.86 | 18.26 | 12.46 | 13.52 | 12.87 | 13.92 | 14.32 |
| | 4H | 17.15 | 18.10 | 17.58 | 18.52 | 18.96 | 13.06 | 14.02 | 13.49 | 14.43 | 14.87 |
| | 6H | 17.74 | 18.57 | 18.20 | 19.01 | 19.47 | 13.55 | 14.38 | 14.00 | 14.82 | 15.28 |
| | 8H | 17.95 | 18.73 | 18.42 | 19.18 | 19.64 | 13.71 | 14.49 | 14.17 | 14.93 | 15.40 |
| | 12H | 18.11 | 18.80 | 18.59 | 19.28 | 19.75 | 13.83 | 14.52 | 14.31 | 15.00 | 15.47 |
| 8H | 4H | 17.17 | 17.95 | 17.63 | 18.39 | 18.86 | 13.41 | 14.19 | 13.88 | 14.63 | 15.10 |
| | 6H | 17.81 | 18.45 | 18.31 | 18.94 | 19.42 | 14.00 | 14.64 | 14.50 | 15.13 | 15.61 |
| | 8H | 18.06 | 18.64 | 18.57 | 19.15 | 19.63 | 14.22 | 14.80 | 14.73 | 15.31 | 15.80 |
| | 12H | 18.26 | 18.77 | 18.77 | 19.27 | 19.83 | 14.40 | 14.91 | 14.91 | 15.40 | 15.97 |
| 12H | 4H | 17.16 | 17.85 | 17.64 | 18.33 | 18.80 | 13.46 | 14.15 | 13.94 | 14.63 | 15.10 |
| | 6H | 17.79 | 18.37 | 18.30 | 18.88 | 19.37 | 14.06 | 14.64 | 14.58 | 15.15 | 15.64 |
| | 8H | 18.07 | 18.58 | 18.58 | 19.08 | 19.64 | 14.34 | 14.85 | 14.85 | 15.34 | 15.90 |