

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: P931251

Luminaire Tested: DFN2DS-TR2F0-030DS850-FLL

Issue Date: 11/20/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P931251  
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-TR2F0-030DS850-FLL  
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

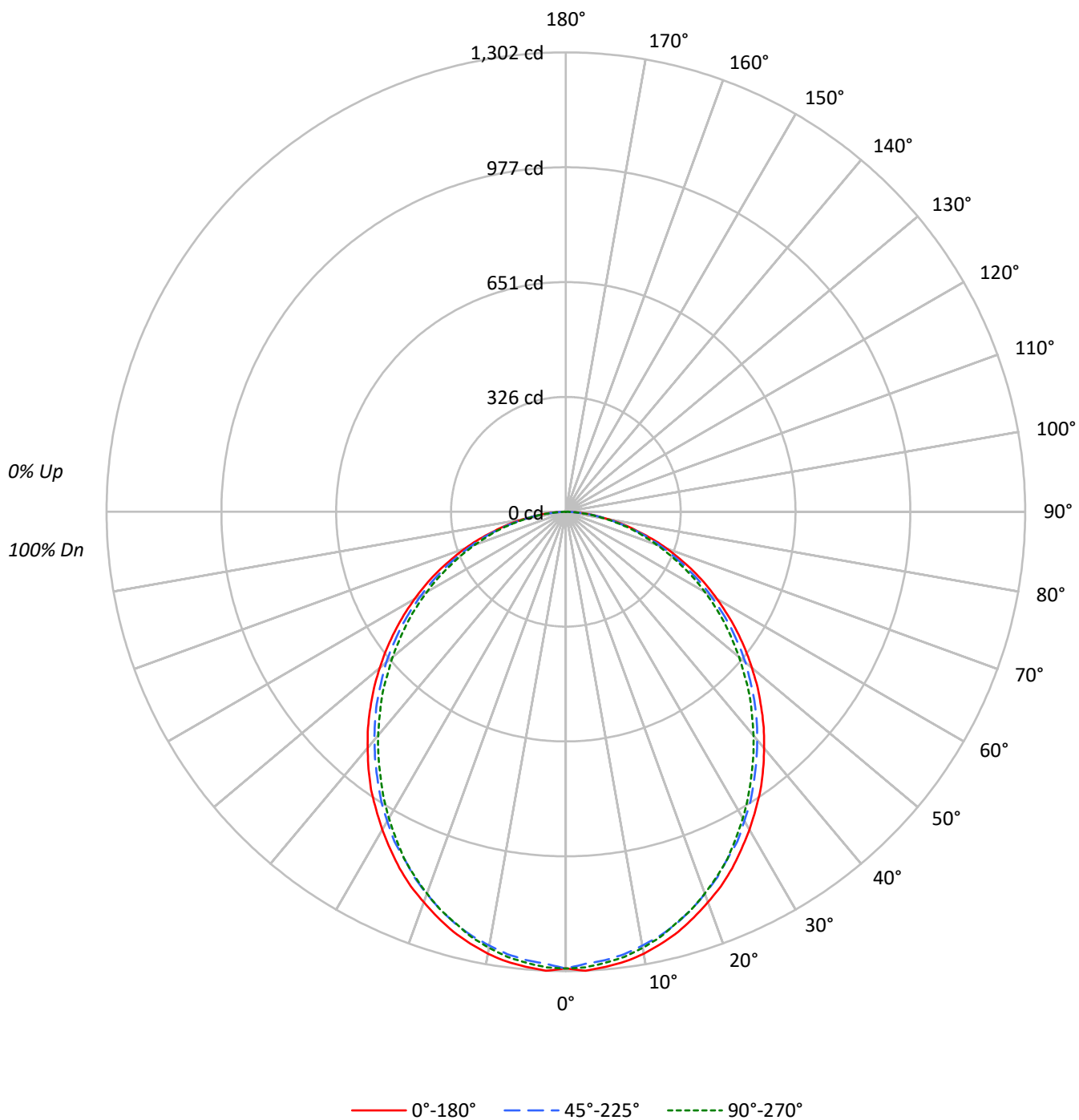
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3293.8 lumens  
Efficiency: N/A  
Efficacy: 119.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 2.36' x L: 2.04' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 27.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9951  
Total Harmonic Distortion (THDi): 0.07  
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  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 92  |  | 94  | 91  | 89  |  | 90  |
| 2   | 99  | 91  | 85  | 79  | 97  | 89  | 83  | 78  | 86  | 81  | 76  |  | 83  | 78  | 74  |  | 80  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  |  | 73  | 68  | 63  |  | 71  |
| 4   | 83  | 71  | 63  | 56  | 81  | 70  | 62  | 56  | 68  | 61  | 55  |  | 65  | 59  | 54  |  | 63  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 55  | 48  | 61  | 53  | 48  |  | 59  | 52  | 47  |  | 57  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 48  | 42  | 55  | 48  | 42  |  | 53  | 47  | 42  |  | 52  |
| 7   | 66  | 52  | 44  | 38  | 64  | 52  | 43  | 38  | 50  | 43  | 37  |  | 49  | 42  | 37  |  | 47  |
| 8   | 61  | 48  | 40  | 34  | 60  | 47  | 39  | 34  | 46  | 39  | 33  |  | 45  | 38  | 33  |  | 44  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 36  | 30  | 42  | 35  | 30  |  | 41  | 35  | 30  |  | 40  |
| 10  | 54  | 41  | 33  | 28  | 53  | 40  | 33  | 28  | 39  | 32  | 27  |  | 38  | 32  | 27  |  | 37  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2887 | 2887 | 2887 |
| 5°  | 2898 | 2857 | 2873 |
| 10° | 2881 | 2828 | 2842 |
| 15° | 2846 | 2791 | 2788 |
| 20° | 2795 | 2736 | 2733 |
| 25° | 2745 | 2668 | 2668 |
| 30° | 2680 | 2607 | 2584 |
| 35° | 2620 | 2532 | 2494 |
| 40° | 2544 | 2457 | 2411 |
| 45° | 2470 | 2383 | 2324 |
| 50° | 2389 | 2306 | 2225 |
| 55° | 2304 | 2217 | 2135 |
| 60° | 2210 | 2110 | 2033 |
| 65° | 2109 | 2004 | 1912 |
| 70° | 1981 | 1876 | 1786 |
| 75° | 1801 | 1727 | 1685 |
| 80° | 1599 | 1550 | 1472 |
| 85° | 1305 | 1244 | 1116 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2470 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 121.8  | 3.7       |
| 10°-20°   | 342.8  | 10.4      |
| 20°-30°   | 503.8  | 15.3      |
| 30°-40°   | 585.2  | 17.8      |
| 40°-50°   | 584.4  | 17.7      |
| 50°-60°   | 509.6  | 15.5      |
| 60°-70°   | 376.7  | 11.4      |
| 70°-80°   | 213.1  | 6.5       |
| 80°-90°   | 56.3   | 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°    | 968.5  | 29.4      |
| 0°-40°    | 1553.6 | 47.2      |
| 0°-60°    | 2647.7 | 80.4      |
| 0°-90°    | 3293.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3293.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1294 | 1294  | 1294 | 1294  | 1294 |      |
| 5°  | 1294 | 1290  | 1276 | 1286  | 1283 | 123  |
| 15° | 1232 | 1225  | 1209 | 1214  | 1208 | 347  |
| 25° | 1115 | 1106  | 1084 | 1087  | 1084 | 513  |
| 35° | 962  | 950   | 930  | 922   | 916  | 601  |
| 45° | 783  | 774   | 756  | 742   | 737  | 604  |
| 55° | 593  | 585   | 570  | 555   | 549  | 530  |
| 65° | 400  | 392   | 380  | 368   | 362  | 395  |
| 75° | 209  | 207   | 200  | 193   | 196  | 223  |
| 85° | 51   | 50    | 49   | 45    | 44   | 60   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1294.5 | 1294.5 | 1294.5 | 1294.5 | 1294.5 |
| 2.5°  | 1302.1 | 1295.9 | 1282.1 | 1294.5 | 1292.2 |
| 5°    | 1294.5 | 1289.7 | 1275.9 | 1285.9 | 1283.4 |
| 7.5°  | 1285.9 | 1278.5 | 1264.7 | 1274.8 | 1272.2 |
| 10°   | 1272.2 | 1263.5 | 1248.6 | 1258.5 | 1254.8 |
| 12.5° | 1253.5 | 1246.1 | 1231.2 | 1237.3 | 1234.9 |
| 15°   | 1232.3 | 1225.0 | 1208.7 | 1213.7 | 1207.5 |
| 17.5° | 1206.1 | 1198.8 | 1182.5 | 1188.7 | 1182.5 |
| 20°   | 1177.5 | 1170.1 | 1152.7 | 1156.4 | 1151.5 |
| 22.5° | 1149.0 | 1137.8 | 1121.5 | 1121.5 | 1119.0 |
| 25°   | 1115.3 | 1105.5 | 1084.3 | 1086.7 | 1084.3 |
| 27.5° | 1077.9 | 1069.2 | 1053.1 | 1049.4 | 1043.2 |
| 30°   | 1040.7 | 1030.7 | 1012.1 | 1008.3 | 1003.3 |
| 32.5° | 1000.9 | 993.4  | 973.5  | 965.9  | 960.9  |
| 35°   | 962.3  | 949.9  | 929.9  | 922.4  | 916.1  |
| 37.5° | 918.7  | 907.5  | 887.5  | 878.8  | 872.6  |
| 40°   | 873.9  | 863.9  | 843.9  | 832.9  | 827.9  |
| 42.5° | 830.3  | 820.3  | 800.5  | 787.9  | 780.5  |
| 45°   | 783.1  | 774.3  | 755.6  | 741.9  | 736.9  |
| 47.5° | 736.9  | 728.3  | 708.3  | 694.6  | 687.1  |
| 50°   | 688.4  | 682.1  | 664.7  | 647.3  | 641.1  |
| 52.5° | 641.1  | 632.4  | 616.3  | 602.5  | 593.8  |
| 55°   | 592.6  | 585.1  | 570.1  | 555.3  | 549.1  |
| 57.5° | 544.0  | 537.8  | 521.6  | 506.6  | 501.6  |
| 60°   | 495.4  | 490.5  | 473.1  | 459.3  | 455.7  |
| 62.5° | 448.1  | 439.4  | 427.0  | 414.5  | 409.6  |
| 65°   | 399.7  | 392.1  | 379.7  | 368.5  | 362.3  |
| 67.5° | 349.9  | 343.6  | 332.4  | 323.7  | 318.7  |
| 70°   | 303.8  | 298.8  | 287.6  | 278.8  | 273.9  |
| 72.5° | 256.5  | 251.4  | 245.2  | 236.5  | 232.9  |
| 75°   | 209.0  | 206.7  | 200.4  | 193.0  | 195.5  |
| 77.5° | 166.8  | 161.8  | 159.3  | 155.6  | 151.9  |
| 80°   | 124.5  | 123.2  | 120.7  | 117.0  | 114.6  |
| 82.5° | 84.6   | 84.6   | 83.5   | 78.4   | 78.4   |
| 85°   | 51.0   | 49.8   | 48.6   | 44.8   | 43.6   |
| 87.5° | 22.4   | 20.0   | 17.4   | 13.8   | 12.4   |
| 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 | 14.97            | 16.58 | 15.33 | 16.89 | 17.21 | 14.52          | 16.13 | 14.89 | 16.45 | 16.76 |
|                 | 3H   | 16.72            | 18.17 | 17.09 | 18.50 | 18.86 | 16.23          | 17.68 | 16.60 | 18.01 | 18.37 |
|                 | 4H   | 17.36            | 18.73 | 17.76 | 19.08 | 19.46 | 16.87          | 18.24 | 17.27 | 18.59 | 18.96 |
|                 | 6H   | 17.83            | 19.10 | 18.24 | 19.47 | 19.86 | 17.33          | 18.60 | 17.74 | 18.96 | 19.36 |
|                 | 8H   | 17.98            | 19.19 | 18.40 | 19.57 | 19.97 | 17.47          | 18.68 | 17.90 | 19.07 | 19.47 |
|                 | 12H  | 18.07            | 19.23 | 18.49 | 19.61 | 20.04 | 17.55          | 18.71 | 17.98 | 19.10 | 19.52 |
| 4H              | 2H   | 15.53            | 16.90 | 15.93 | 17.24 | 17.62 | 15.17          | 16.54 | 15.57 | 16.89 | 17.27 |
|                 | 3H   | 17.50            | 18.65 | 17.91 | 19.05 | 19.45 | 17.10          | 18.24 | 17.50 | 18.64 | 19.04 |
|                 | 4H   | 18.28            | 19.31 | 18.71 | 19.73 | 20.16 | 17.86          | 18.89 | 18.29 | 19.30 | 19.74 |
|                 | 6H   | 18.88            | 19.78 | 19.33 | 20.22 | 20.68 | 18.44          | 19.35 | 18.90 | 19.79 | 20.24 |
|                 | 8H   | 19.06            | 19.91 | 19.53 | 20.35 | 20.82 | 18.63          | 19.47 | 19.09 | 19.92 | 20.38 |
|                 | 12H  | 19.20            | 19.96 | 19.68 | 20.43 | 20.90 | 18.74          | 19.50 | 19.22 | 19.98 | 20.45 |
| 8H              | 4H   | 18.55            | 19.40 | 19.01 | 19.84 | 20.31 | 18.18          | 19.02 | 18.64 | 19.47 | 19.93 |
|                 | 6H   | 19.27            | 19.97 | 19.76 | 20.46 | 20.93 | 18.89          | 19.59 | 19.38 | 20.08 | 20.55 |
|                 | 8H   | 19.53            | 20.16 | 20.04 | 20.66 | 21.15 | 19.13          | 19.76 | 19.64 | 20.27 | 20.76 |
|                 | 12H  | 19.73            | 20.28 | 20.23 | 20.77 | 21.33 | 19.31          | 19.87 | 19.82 | 20.36 | 20.92 |
| 12H             | 4H   | 18.58            | 19.34 | 19.06 | 19.81 | 20.28 | 18.21          | 18.97 | 18.69 | 19.45 | 19.92 |
|                 | 6H   | 19.31            | 19.94 | 19.82 | 20.45 | 20.94 | 18.94          | 19.58 | 19.45 | 20.08 | 20.57 |
|                 | 8H   | 19.63            | 20.18 | 20.13 | 20.67 | 21.23 | 19.25          | 19.81 | 19.75 | 20.30 | 20.86 |