

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242518

Luminaire Tested: **S123DR-S1000D935-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242518  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DR-S1000D935-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3387.5 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct

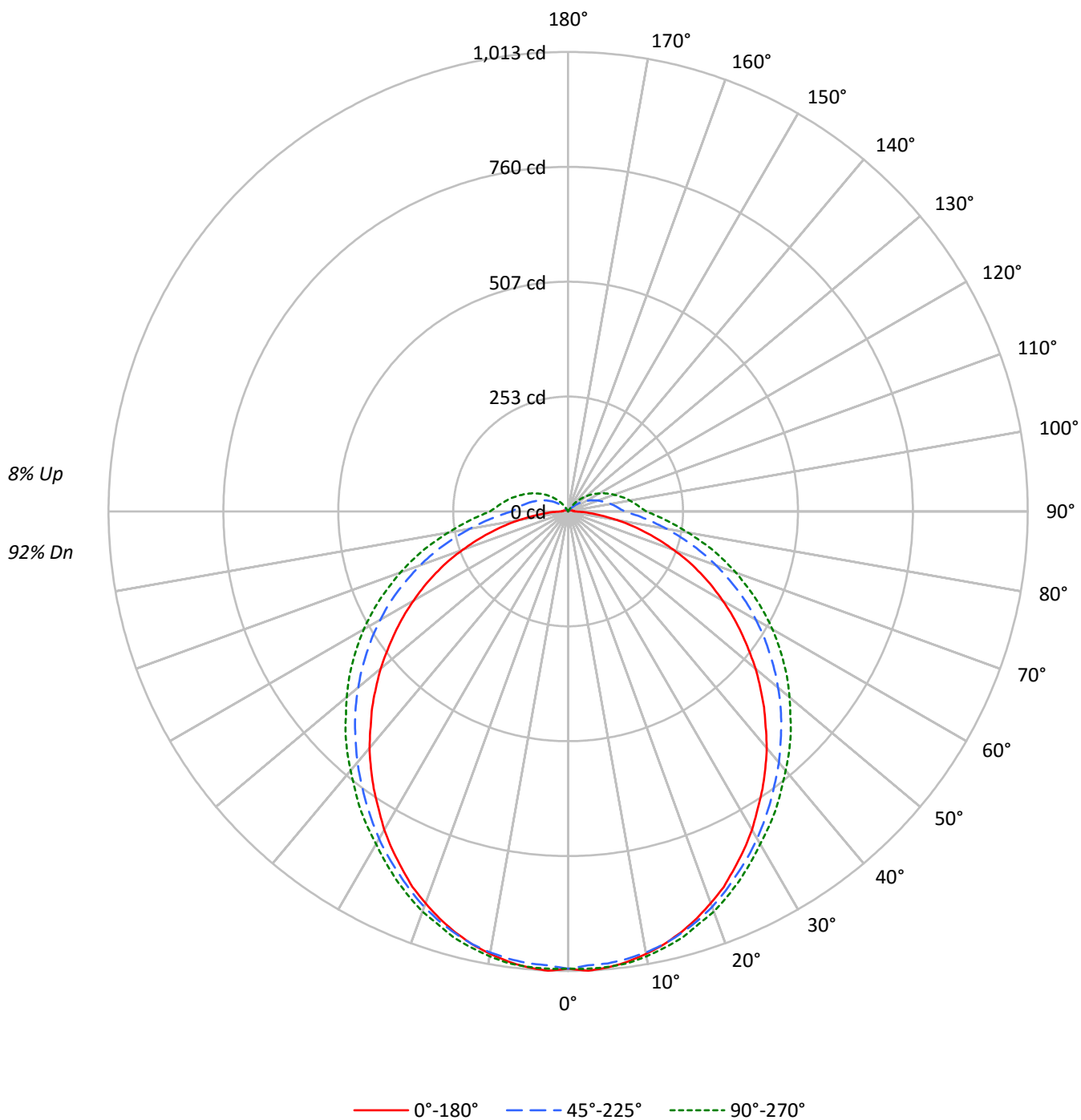
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |    |    |    |
| 0   | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 |  | 106 | 106 | 106 |  | 100 | 100 | 100 |  | 94 | 94 | 94 |
| 1   | 105 | 100 | 95  | 90  | 102 | 97  | 92  | 88  |  | 91  | 87  | 84  |  | 85  | 82  | 80  |  | 80 | 78 | 76 |
| 2   | 95  | 86  | 79  | 72  | 92  | 83  | 77  | 71  |  | 79  | 73  | 68  |  | 74  | 69  | 65  |  | 70 | 66 | 63 |
| 3   | 86  | 75  | 67  | 60  | 83  | 73  | 65  | 59  |  | 69  | 62  | 56  |  | 65  | 59  | 54  |  | 61 | 56 | 52 |
| 4   | 79  | 66  | 57  | 50  | 76  | 64  | 56  | 49  |  | 61  | 54  | 48  |  | 57  | 51  | 46  |  | 54 | 49 | 45 |
| 5   | 72  | 59  | 50  | 43  | 70  | 58  | 49  | 42  |  | 54  | 47  | 41  |  | 52  | 45  | 40  |  | 49 | 43 | 39 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  |  | 49  | 42  | 36  |  | 47  | 40  | 35  |  | 44 | 38 | 34 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  |  | 45  | 37  | 32  |  | 42  | 36  | 31  |  | 40 | 35 | 30 |
| 8   | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  |  | 41  | 33  | 28  |  | 39  | 32  | 28  |  | 37 | 31 | 27 |
| 9   | 54  | 40  | 32  | 26  | 52  | 39  | 31  | 26  |  | 37  | 30  | 25  |  | 36  | 29  | 25  |  | 34 | 28 | 24 |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 24  |  | 35  | 28  | 23  |  | 33  | 27  | 23  |  | 32 | 26 | 22 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 12218 | 12218 | 12218 |
| 5°  | 12255 | 11888 | 11887 |
| 10° | 12144 | 11593 | 11519 |
| 15° | 11987 | 11262 | 11124 |
| 20° | 11762 | 10889 | 10694 |
| 25° | 11486 | 10463 | 10246 |
| 30° | 11202 | 10080 | 9792  |
| 35° | 10884 | 9675  | 9427  |
| 40° | 10581 | 9306  | 9038  |
| 45° | 10245 | 8950  | 8723  |
| 50° | 9912  | 8598  | 8378  |
| 55° | 9544  | 8236  | 8063  |
| 60° | 9188  | 7867  | 7741  |
| 65° | 8820  | 7474  | 7361  |
| 70° | 8265  | 7034  | 6969  |
| 75° | 7570  | 6529  | 6567  |
| 80° | 6763  | 6024  | 6107  |
| 85° | 6006  | 5644  | 5804  |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 95.6   | 2.8       |
| 10°-20°   | 272.6  | 8.0       |
| 20°-30°   | 407.6  | 12.0      |
| 30°-40°   | 486.7  | 14.4      |
| 40°-50°   | 509.2  | 15.0      |
| 50°-60°   | 477.8  | 14.1      |
| 60°-70°   | 399.1  | 11.8      |
| 70°-80°   | 285.4  | 8.4       |
| 80°-90°   | 169.8  | 5.0       |
| 90°-100°  | 106.7  | 3.2       |
| 100°-110° | 78.4   | 2.3       |
| 110°-120° | 52.4   | 1.5       |
| 120°-130° | 29.9   | 0.9       |
| 130°-140° | 13.4   | 0.4       |
| 140°-150° | 2.8    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 775.8  | 22.9      |
| 0°-40°    | 1262.5 | 37.3      |
| 0°-60°    | 2249.5 | 66.4      |
| 0°-90°    | 3103.9 | 91.6      |
| 90°-120°  | 237.5  | 7.0       |
| 90°-150°  | 283.6  | 8.4       |
| 90°-180°  | 284.0  | 8.4       |
| 0°-180°   | 3387.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1008 | 1008  | 1008 | 1008  | 1008 |      |
| 5°   | 1009 | 1007  | 1000 | 1009  | 1008 | 96   |
| 15°  | 961  | 964   | 963  | 974   | 973  | 271  |
| 25°  | 867  | 878   | 882  | 896   | 896  | 400  |
| 35°  | 747  | 764   | 778  | 795   | 799  | 467  |
| 45°  | 610  | 637   | 664  | 685   | 694  | 471  |
| 55°  | 466  | 502   | 541  | 571   | 580  | 417  |
| 65°  | 322  | 364   | 413  | 446   | 457  | 318  |
| 75°  | 175  | 226   | 281  | 317   | 330  | 186  |
| 85°  | 54   | 109   | 167  | 204   | 215  | 55   |
| 90°  | 14   | 68    | 124  | 161   | 172  | 10   |
| 95°  | 12   | 55    | 109  | 143   | 154  | 9    |
| 105° | 9    | 35    | 82   | 113   | 123  | 9    |
| 115° | 6    | 19    | 58   | 84    | 93   | 6    |
| 125° | 3    | 3     | 35   | 58    | 66   | 3    |
| 135° | 2    | 1     | 13   | 33    | 38   | 2    |
| 145° | 1    | 0     | 0    | 9     | 13   | 0    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1008.0 | 1008.0 | 1008.0 | 1008.0 | 1008.0 |
| 2.5°   | 1013.4 | 1010.1 | 1001.4 | 1010.1 | 1009.1 |
| 5°     | 1009.1 | 1006.9 | 1000.3 | 1009.1 | 1008.0 |
| 7.5°   | 1001.4 | 1001.4 | 994.8  | 1005.8 | 1004.7 |
| 10°    | 990.4  | 992.6  | 987.1  | 998.1  | 995.9  |
| 12.5°  | 977.2  | 980.5  | 977.2  | 987.1  | 984.9  |
| 15°    | 960.7  | 964.0  | 962.9  | 973.9  | 972.8  |
| 17.5°  | 941.0  | 947.6  | 946.5  | 956.3  | 954.2  |
| 20°    | 919.0  | 925.6  | 927.8  | 937.7  | 938.8  |
| 22.5°  | 896.0  | 902.5  | 905.8  | 919.0  | 917.9  |
| 25°    | 867.4  | 878.4  | 881.7  | 896.0  | 896.0  |
| 27.5°  | 840.0  | 852.0  | 858.6  | 870.7  | 871.8  |
| 30°    | 810.3  | 824.6  | 833.4  | 846.5  | 846.5  |
| 32.5°  | 777.4  | 793.8  | 805.9  | 820.2  | 823.5  |
| 35°    | 746.6  | 764.2  | 778.5  | 794.9  | 799.3  |
| 37.5°  | 713.7  | 733.5  | 749.9  | 768.6  | 771.9  |
| 40°    | 680.8  | 700.5  | 722.5  | 741.1  | 745.5  |
| 42.5°  | 644.5  | 669.8  | 692.8  | 713.7  | 720.3  |
| 45°    | 610.5  | 636.8  | 664.3  | 685.1  | 693.9  |
| 47.5°  | 574.2  | 603.9  | 634.6  | 657.7  | 664.3  |
| 50°    | 539.1  | 569.9  | 603.9  | 629.1  | 636.8  |
| 52.5°  | 501.8  | 534.7  | 573.1  | 599.5  | 609.4  |
| 55°    | 465.5  | 501.8  | 541.3  | 571.0  | 579.7  |
| 57.5°  | 430.4  | 467.7  | 510.6  | 540.2  | 550.1  |
| 60°    | 393.1  | 432.6  | 477.6  | 508.4  | 520.4  |
| 62.5°  | 357.9  | 398.6  | 446.9  | 477.6  | 488.6  |
| 65°    | 321.7  | 364.5  | 412.8  | 445.8  | 456.8  |
| 67.5°  | 285.5  | 330.5  | 378.8  | 415.0  | 423.8  |
| 70°    | 247.0  | 294.3  | 347.0  | 382.1  | 393.1  |
| 72.5°  | 211.9  | 259.1  | 314.0  | 350.3  | 361.2  |
| 75°    | 174.6  | 226.2  | 281.1  | 317.3  | 330.5  |
| 77.5°  | 142.7  | 194.3  | 249.2  | 287.7  | 297.6  |
| 80°    | 108.7  | 162.5  | 219.6  | 256.9  | 267.9  |
| 82.5°  | 79.1   | 134.0  | 192.1  | 229.5  | 240.5  |
| 85°    | 53.8   | 108.7  | 166.9  | 204.2  | 215.2  |
| 87.5°  | 32.9   | 87.8   | 143.8  | 181.2  | 192.1  |
| 90°    | 14.3   | 68.1   | 124.1  | 161.4  | 172.4  |
| 92.5°  | 13.2   | 60.4   | 115.3  | 151.5  | 161.4  |
| 95°    | 12.1   | 54.9   | 108.7  | 142.7  | 153.7  |
| 97.5°  | 11.0   | 50.5   | 102.1  | 135.1  | 146.0  |
| 100°   | 9.9    | 45.0   | 95.5   | 127.4  | 138.3  |
| 102.5° | 8.8    | 39.5   | 88.9   | 119.7  | 130.7  |
| 105°   | 8.8    | 35.1   | 82.3   | 113.1  | 123.0  |
| 107.5° | 7.7    | 30.7   | 75.8   | 105.4  | 115.3  |
| 110°   | 6.6    | 26.4   | 70.3   | 98.8   | 107.6  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°   |
|--------|-----|-------|------|-------|-------|
| 112.5° | 6.6 | 22.0  | 63.7 | 91.1  | 101.0 |
| 115°   | 5.5 | 18.7  | 58.2 | 84.5  | 93.3  |
| 117.5° | 5.5 | 14.3  | 51.6 | 78.0  | 86.7  |
| 120°   | 4.4 | 9.9   | 46.1 | 71.4  | 79.1  |
| 122.5° | 4.4 | 6.6   | 40.6 | 64.8  | 72.5  |
| 125°   | 3.3 | 3.3   | 35.1 | 58.2  | 65.9  |
| 127.5° | 3.3 | 2.2   | 29.6 | 51.6  | 59.3  |
| 130°   | 3.3 | 2.2   | 24.2 | 45.0  | 51.6  |
| 132.5° | 2.2 | 2.2   | 18.7 | 38.4  | 46.1  |
| 135°   | 2.2 | 1.1   | 13.2 | 32.9  | 38.4  |
| 137.5° | 2.2 | 1.1   | 8.8  | 26.4  | 31.8  |
| 140°   | 1.1 | 1.1   | 4.4  | 20.9  | 26.4  |
| 142.5° | 1.1 | 0.0   | 0.0  | 14.3  | 19.8  |
| 145°   | 1.1 | 0.0   | 0.0  | 8.8   | 13.2  |
| 147.5° | 0.0 | 0.0   | 0.0  | 3.3   | 7.7   |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 2.2   |
| 152.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 155°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 157.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 160°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 162.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 165°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 167.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 170°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 172.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 175°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 177.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 180°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |

(END OF REPORT)