

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: P210489

Luminaire Tested: **S921DIP-W235-XX4XX-UDD-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P210489  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35510)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S921DIP-W235-XX4XX-UDD-W  
Description: NEO-RAY CONVERGE SUSPENDED LED WaveStream LUMINAIRE  
WHITE CURVILINEAR HOUSING  
Light Source: (238) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3238.6 lumens  
Efficiency: N/A  
Efficacy: 116.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.14 / 1.32  
Luminous Opening: Rectangular w/ Sides (W: 0.68' x L: 4' x H: 0.31')  
CIE Type: General Diffuse

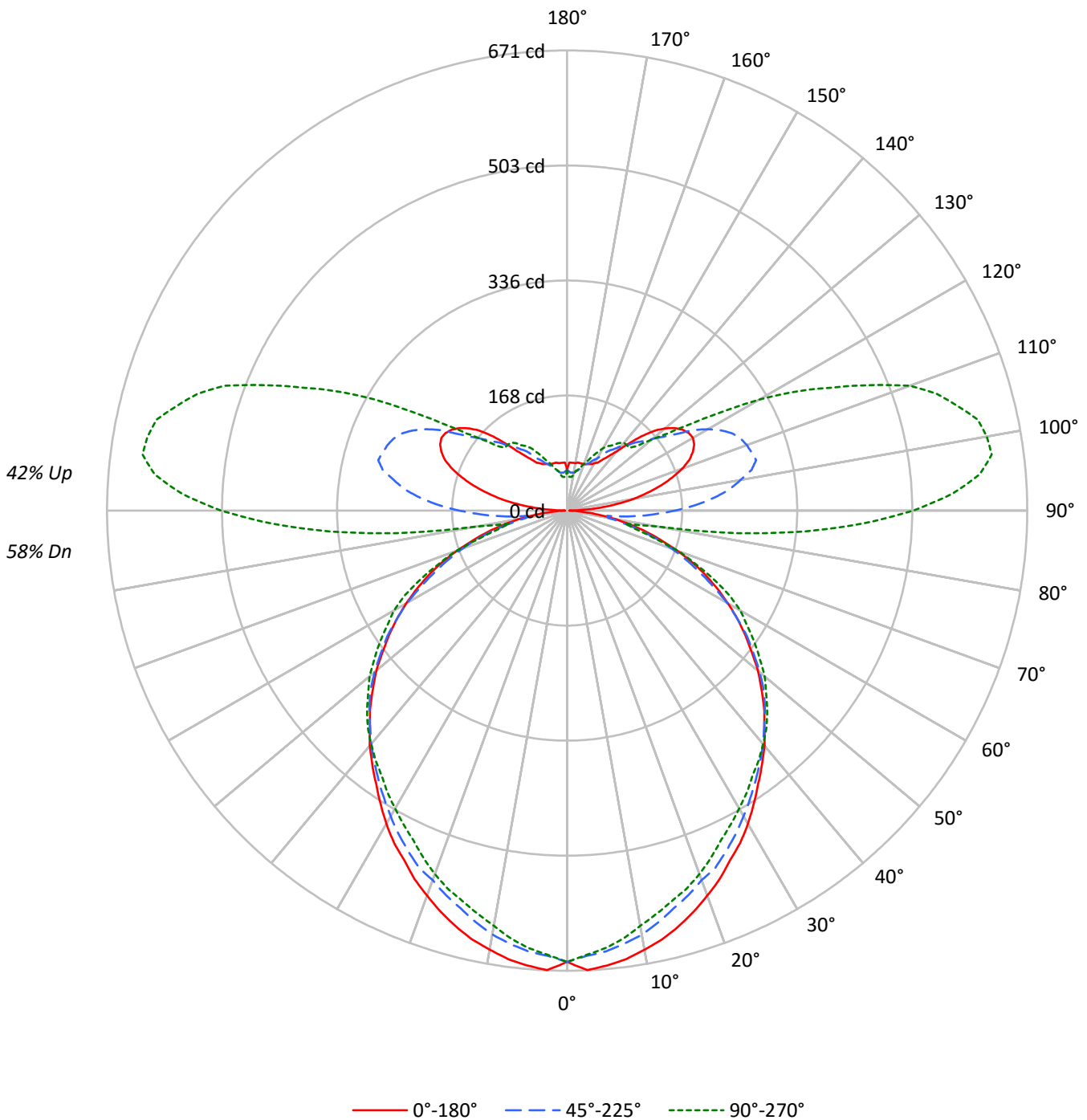
Input Watts (W): 27.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 0  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| RCR |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |
| 0   | 109 | 109 | 109 | 109 | 102 | 102 | 102 | 102 | 88 | 88 | 88 | 75 | 75 | 75 | 64 | 64 | 64 | 58 |
| 1   | 98  | 93  | 89  | 85  | 91  | 87  | 83  | 79  | 75 | 72 | 69 | 64 | 62 | 60 | 54 | 52 | 51 | 46 |
| 2   | 89  | 81  | 74  | 69  | 83  | 76  | 70  | 65  | 65 | 61 | 57 | 56 | 52 | 49 | 47 | 45 | 42 | 38 |
| 3   | 81  | 71  | 63  | 57  | 75  | 66  | 59  | 54  | 57 | 52 | 47 | 49 | 45 | 42 | 42 | 39 | 36 | 32 |
| 4   | 74  | 63  | 54  | 48  | 69  | 59  | 51  | 45  | 51 | 45 | 40 | 44 | 39 | 35 | 37 | 34 | 31 | 27 |
| 5   | 68  | 56  | 47  | 41  | 63  | 52  | 45  | 39  | 46 | 39 | 35 | 39 | 34 | 31 | 33 | 30 | 27 | 24 |
| 6   | 63  | 50  | 42  | 36  | 58  | 47  | 39  | 34  | 41 | 35 | 30 | 35 | 31 | 27 | 30 | 26 | 23 | 21 |
| 7   | 58  | 45  | 37  | 31  | 54  | 42  | 35  | 30  | 37 | 31 | 27 | 32 | 27 | 24 | 28 | 24 | 21 | 18 |
| 8   | 54  | 41  | 33  | 27  | 50  | 39  | 31  | 26  | 34 | 28 | 24 | 30 | 25 | 21 | 25 | 21 | 19 | 16 |
| 9   | 50  | 37  | 30  | 24  | 47  | 35  | 28  | 23  | 31 | 25 | 21 | 27 | 22 | 19 | 23 | 20 | 17 | 15 |
| 10  | 47  | 34  | 27  | 22  | 44  | 32  | 26  | 21  | 29 | 23 | 19 | 25 | 20 | 17 | 22 | 18 | 15 | 13 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2614 | 2614 | 2614 |
| 5°  | 2637 | 2490 | 2456 |
| 10° | 2586 | 2374 | 2296 |
| 15° | 2529 | 2243 | 2161 |
| 20° | 2456 | 2132 | 2045 |
| 25° | 2379 | 2043 | 1918 |
| 30° | 2315 | 1939 | 1823 |
| 35° | 2235 | 1840 | 1734 |
| 40° | 2180 | 1752 | 1668 |
| 45° | 2118 | 1664 | 1593 |
| 50° | 2055 | 1563 | 1506 |
| 55° | 1977 | 1442 | 1398 |
| 60° | 1898 | 1295 | 1295 |
| 65° | 1799 | 1110 | 1114 |
| 70° | 1634 | 928  | 888  |
| 75° | 1424 | 701  | 580  |
| 80° | 1116 | 442  | 855  |
| 85° | 618  | 822  | 2564 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 61.5   | 1.9       |
| 10°-20°   | 171.1  | 5.3       |
| 20°-30°   | 252.9  | 7.8       |
| 30°-40°   | 301.5  | 9.3       |
| 40°-50°   | 316.1  | 9.8       |
| 50°-60°   | 289.2  | 8.9       |
| 60°-70°   | 220.6  | 6.8       |
| 70°-80°   | 120.6  | 3.7       |
| 80°-90°   | 157.9  | 4.9       |
| 90°-100°  | 297.5  | 9.2       |
| 100°-110° | 339.9  | 10.5      |
| 110°-120° | 285.0  | 8.8       |
| 120°-130° | 187.4  | 5.8       |
| 130°-140° | 109.7  | 3.4       |
| 140°-150° | 66.6   | 2.1       |
| 150°-160° | 37.1   | 1.1       |
| 160°-170° | 18.5   | 0.6       |
| 170°-180° | 5.6    | 0.2       |
| 0°-30°    | 485.5  | 15.0      |
| 0°-40°    | 787.0  | 24.3      |
| 0°-60°    | 1392.3 | 43.0      |
| 0°-90°    | 1891.4 | 58.4      |
| 90°-120°  | 922.3  | 28.5      |
| 90°-150°  | 1286.0 | 39.7      |
| 90°-180°  | 1347.0 | 41.6      |
| 0°-180°   | 3238.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 658 | 658   | 658 | 658   | 658 |      |
| 5°   | 666 | 661   | 645 | 644   | 640 | 63   |
| 15°  | 628 | 621   | 601 | 593   | 590 | 177  |
| 25°  | 562 | 561   | 548 | 538   | 530 | 260  |
| 35°  | 486 | 491   | 480 | 475   | 472 | 305  |
| 45°  | 406 | 411   | 408 | 413   | 413 | 313  |
| 55°  | 317 | 322   | 320 | 328   | 333 | 284  |
| 65°  | 223 | 221   | 214 | 231   | 234 | 220  |
| 75°  | 120 | 113   | 110 | 105   | 102 | 126  |
| 85°  | 26  | 34    | 96  | 258   | 349 | 31   |
| 90°  | 3   | 57    | 158 | 389   | 505 | 5    |
| 95°  | 48  | 99    | 215 | 470   | 604 | 49   |
| 105° | 142 | 167   | 285 | 484   | 590 | 148  |
| 115° | 202 | 207   | 266 | 368   | 424 | 198  |
| 125° | 206 | 206   | 194 | 209   | 220 | 182  |
| 135° | 153 | 143   | 140 | 132   | 129 | 118  |
| 145° | 91  | 94    | 107 | 116   | 116 | 59   |
| 155° | 75  | 73    | 76  | 84    | 88  | 35   |
| 165° | 72  | 67    | 60  | 62    | 62  | 20   |
| 175° | 70  | 67    | 56  | 51    | 49  | 7    |
| 180° | 59  | 59    | 59  | 59    | 59  |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 658.0 | 658.0 | 658.0 | 658.0 | 658.0 |
| 2.5°   | 670.7 | 665.9 | 650.0 | 650.0 | 648.4 |
| 5°     | 665.9 | 661.2 | 645.2 | 643.6 | 640.4 |
| 7.5°   | 659.6 | 653.2 | 637.3 | 634.1 | 629.3 |
| 10°    | 650.0 | 645.2 | 627.7 | 621.3 | 614.9 |
| 12.5°  | 640.4 | 634.1 | 614.9 | 608.6 | 602.2 |
| 15°    | 627.7 | 621.3 | 600.6 | 592.6 | 589.5 |
| 17.5°  | 613.4 | 607.0 | 587.9 | 584.7 | 578.3 |
| 20°    | 597.4 | 591.1 | 573.5 | 570.3 | 564.0 |
| 22.5°  | 581.5 | 576.7 | 564.0 | 554.4 | 548.0 |
| 25°    | 562.4 | 560.8 | 548.0 | 538.5 | 530.5 |
| 27.5°  | 546.4 | 543.3 | 532.1 | 522.5 | 516.2 |
| 30°    | 527.3 | 525.7 | 514.6 | 506.6 | 501.8 |
| 32.5°  | 506.6 | 508.2 | 497.1 | 492.3 | 487.5 |
| 35°    | 485.9 | 490.7 | 479.5 | 474.8 | 471.6 |
| 37.5°  | 466.8 | 473.2 | 462.0 | 460.4 | 458.8 |
| 40°    | 447.7 | 452.5 | 444.5 | 444.5 | 444.5 |
| 42.5°  | 425.4 | 431.7 | 425.4 | 430.1 | 430.1 |
| 45°    | 406.2 | 411.0 | 407.8 | 412.6 | 412.6 |
| 47.5°  | 383.9 | 388.7 | 388.7 | 393.5 | 393.5 |
| 50°    | 363.2 | 368.0 | 366.4 | 372.8 | 376.0 |
| 52.5°  | 339.3 | 344.1 | 342.5 | 352.1 | 353.7 |
| 55°    | 317.0 | 321.8 | 320.2 | 328.2 | 333.0 |
| 57.5°  | 294.7 | 299.5 | 294.7 | 304.3 | 310.7 |
| 60°    | 270.8 | 275.6 | 269.2 | 278.8 | 291.5 |
| 62.5°  | 246.9 | 248.5 | 240.6 | 256.5 | 266.1 |
| 65°    | 223.0 | 221.4 | 213.5 | 231.0 | 234.2 |
| 67.5°  | 197.5 | 194.4 | 188.0 | 200.7 | 202.3 |
| 70°    | 170.5 | 167.3 | 162.5 | 168.9 | 172.1 |
| 72.5°  | 143.4 | 140.2 | 137.0 | 138.6 | 132.2 |
| 75°    | 119.5 | 113.1 | 109.9 | 105.1 | 102.0 |
| 77.5°  | 94.0  | 89.2  | 82.8  | 81.2  | 86.0  |
| 80°    | 70.1  | 70.1  | 60.5  | 84.4  | 133.8 |
| 82.5°  | 46.2  | 49.4  | 58.9  | 183.2 | 251.7 |
| 85°    | 25.5  | 33.5  | 95.6  | 258.1 | 348.9 |
| 87.5°  | 11.2  | 39.8  | 125.9 | 323.4 | 431.7 |
| 90°    | 3.2   | 57.4  | 157.7 | 388.7 | 505.0 |
| 92.5°  | 22.3  | 79.7  | 188.0 | 436.5 | 562.4 |
| 95°    | 47.8  | 98.8  | 215.1 | 470.0 | 603.8 |
| 97.5°  | 73.3  | 122.7 | 239.0 | 492.3 | 624.5 |
| 100°   | 98.8  | 138.6 | 256.5 | 497.1 | 621.3 |
| 102.5° | 119.5 | 154.5 | 275.6 | 493.9 | 613.4 |
| 105°   | 141.8 | 167.3 | 285.2 | 484.3 | 589.5 |
| 107.5° | 160.9 | 178.4 | 282.0 | 470.0 | 565.6 |
| 110°   | 178.4 | 184.8 | 278.8 | 436.5 | 532.1 |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 192.8 | 196.0 | 274.0 | 401.5 | 477.9 |
| 115°   | 202.3 | 207.1 | 266.1 | 368.0 | 423.8 |
| 117.5° | 208.7 | 213.5 | 253.3 | 331.4 | 376.0 |
| 120°   | 211.9 | 215.1 | 237.4 | 296.3 | 323.4 |
| 122.5° | 210.3 | 213.5 | 218.3 | 253.3 | 267.6 |
| 125°   | 205.5 | 205.5 | 194.4 | 208.7 | 219.9 |
| 127.5° | 197.5 | 196.0 | 176.8 | 176.8 | 184.8 |
| 130°   | 186.4 | 180.0 | 162.5 | 152.9 | 160.9 |
| 132.5° | 172.1 | 160.9 | 149.8 | 135.4 | 140.2 |
| 135°   | 152.9 | 143.4 | 140.2 | 132.2 | 129.0 |
| 137.5° | 132.2 | 127.5 | 129.0 | 132.2 | 129.0 |
| 140°   | 113.1 | 114.7 | 122.7 | 129.0 | 129.0 |
| 142.5° | 100.4 | 105.1 | 113.1 | 121.1 | 124.3 |
| 145°   | 90.8  | 94.0  | 106.7 | 116.3 | 116.3 |
| 147.5° | 82.8  | 86.0  | 97.2  | 108.3 | 111.5 |
| 150°   | 79.7  | 82.8  | 87.6  | 100.4 | 105.1 |
| 152.5° | 76.5  | 76.5  | 82.8  | 94.0  | 95.6  |
| 155°   | 74.9  | 73.3  | 76.5  | 84.4  | 87.6  |
| 157.5° | 73.3  | 71.7  | 73.3  | 76.5  | 78.1  |
| 160°   | 71.7  | 68.5  | 68.5  | 71.7  | 73.3  |
| 162.5° | 71.7  | 66.9  | 65.3  | 68.5  | 66.9  |
| 165°   | 71.7  | 66.9  | 60.5  | 62.1  | 62.1  |
| 167.5° | 71.7  | 65.3  | 58.9  | 57.4  | 58.9  |
| 170°   | 70.1  | 65.3  | 55.8  | 55.8  | 52.6  |
| 172.5° | 70.1  | 65.3  | 55.8  | 52.6  | 49.4  |
| 175°   | 70.1  | 66.9  | 55.8  | 51.0  | 49.4  |
| 177.5° | 70.1  | 66.9  | 57.4  | 52.6  | 49.4  |
| 180°   | 58.9  | 58.9  | 58.9  | 58.9  | 58.9  |

(END OF REPORT)