

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: P243372

Luminaire Tested: **S123DR-H775D930-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243372  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DR-H775D930-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2477.8 lumens  
Efficiency: N/A  
Efficacy: 105.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct

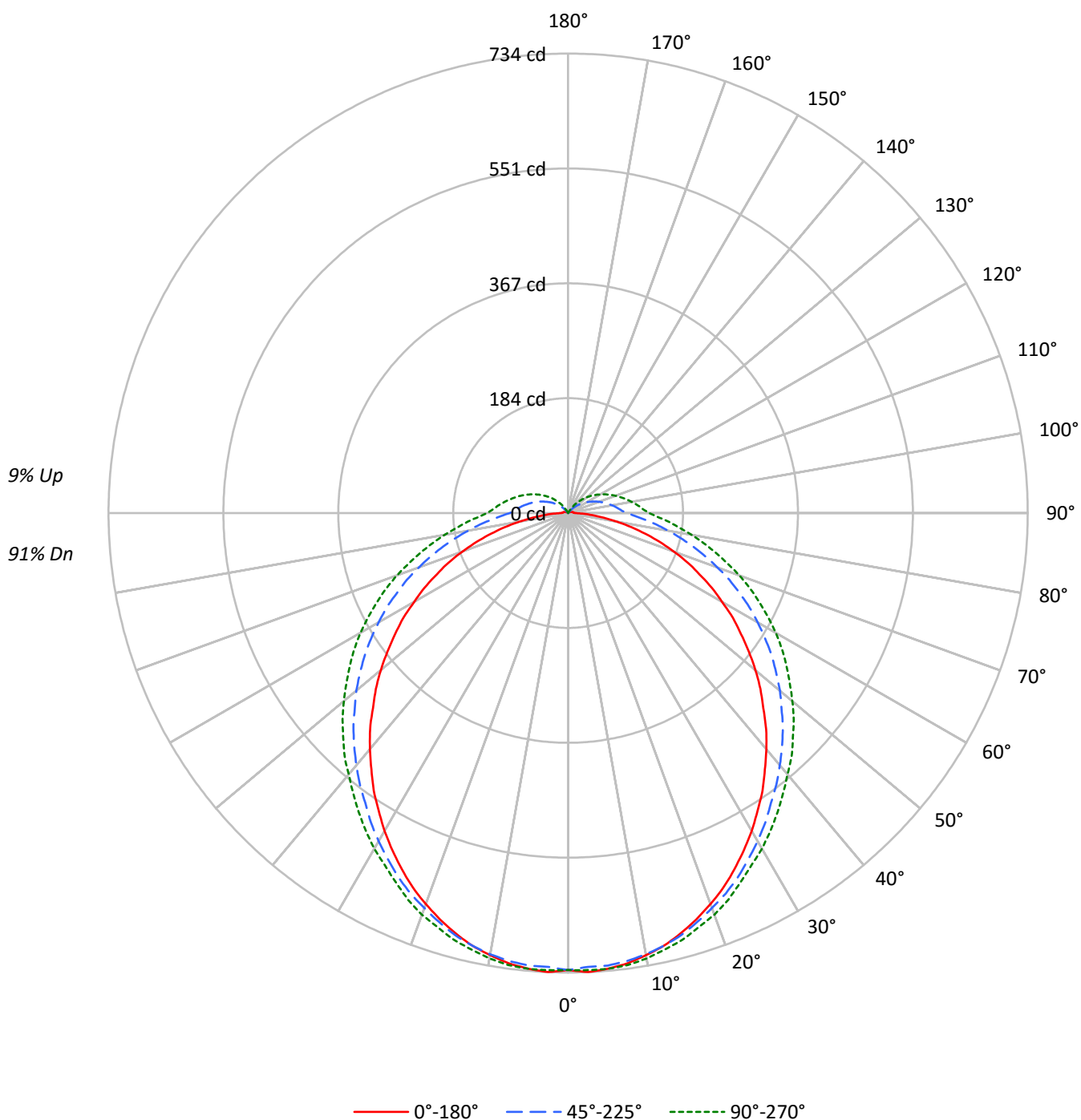
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 101 | 96  | 92  | 88  | 91  | 87  | 84  | 85  | 82  | 80  | 80 | 78 | 76 |
| 2   | 95  | 86  | 79  | 72  | 91  | 83  | 77  | 71  | 78  | 73  | 68  | 74  | 69  | 65  | 69 | 66 | 62 |
| 3   | 86  | 75  | 66  | 60  | 83  | 73  | 65  | 58  | 69  | 62  | 56  | 65  | 59  | 54  | 61 | 56 | 52 |
| 4   | 79  | 66  | 57  | 50  | 76  | 64  | 56  | 49  | 61  | 53  | 48  | 57  | 51  | 46  | 54 | 49 | 45 |
| 5   | 72  | 59  | 50  | 43  | 70  | 57  | 49  | 42  | 54  | 47  | 41  | 51  | 45  | 40  | 49 | 43 | 39 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 41  | 36  | 46  | 40  | 35  | 44 | 38 | 34 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 44  | 37  | 32  | 42  | 36  | 31  | 40 | 34 | 30 |
| 8   | 57  | 44  | 35  | 29  | 55  | 43  | 34  | 29  | 41  | 33  | 28  | 39  | 32  | 27  | 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  | 23  | 35  | 28  | 23  | 33  | 27  | 22  | 32 | 26 | 22 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8848 | 8848 | 8848 |
| 5°  | 8875 | 8622 | 8618 |
| 10° | 8793 | 8404 | 8356 |
| 15° | 8671 | 8163 | 8069 |
| 20° | 8506 | 7879 | 7778 |
| 25° | 8316 | 7615 | 7442 |
| 30° | 8103 | 7320 | 7159 |
| 35° | 7889 | 7019 | 6877 |
| 40° | 7655 | 6775 | 6608 |
| 45° | 7397 | 6533 | 6382 |
| 50° | 7180 | 6286 | 6149 |
| 55° | 6914 | 6034 | 5918 |
| 60° | 6635 | 5756 | 5695 |
| 65° | 6344 | 5457 | 5423 |
| 70° | 6010 | 5139 | 5155 |
| 75° | 5510 | 4792 | 4840 |
| 80° | 4878 | 4447 | 4564 |
| 85° | 4331 | 4170 | 4353 |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 69.3   | 2.8       |
| 10°-20°   | 197.6  | 8.0       |
| 20°-30°   | 295.9  | 11.9      |
| 30°-40°   | 354.1  | 14.3      |
| 40°-50°   | 371.3  | 15.0      |
| 50°-60°   | 349.1  | 14.1      |
| 60°-70°   | 292.1  | 11.8      |
| 70°-80°   | 209.7  | 8.5       |
| 80°-90°   | 125.6  | 5.1       |
| 90°-100°  | 79.6   | 3.2       |
| 100°-110° | 58.7   | 2.4       |
| 110°-120° | 39.3   | 1.6       |
| 120°-130° | 22.6   | 0.9       |
| 130°-140° | 10.4   | 0.4       |
| 140°-150° | 2.4    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 562.8  | 22.7      |
| 0°-40°    | 916.9  | 37.0      |
| 0°-60°    | 1637.3 | 66.1      |
| 0°-90°    | 2264.7 | 91.4      |
| 90°-120°  | 177.6  | 7.2       |
| 90°-150°  | 213.0  | 8.6       |
| 90°-180°  | 213.0  | 8.6       |
| 0°-180°   | 2477.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 730 | 730   | 730 | 730   | 730 |      |
| 5°   | 731 | 730   | 726 | 732   | 731 | 69   |
| 15°  | 695 | 700   | 698 | 707   | 706 | 196  |
| 25°  | 628 | 636   | 642 | 652   | 651 | 289  |
| 35°  | 541 | 554   | 565 | 579   | 583 | 338  |
| 45°  | 441 | 463   | 485 | 502   | 508 | 341  |
| 55°  | 337 | 365   | 397 | 418   | 426 | 302  |
| 65°  | 231 | 266   | 301 | 328   | 336 | 230  |
| 75°  | 127 | 166   | 206 | 234   | 244 | 135  |
| 85°  | 39  | 79    | 123 | 152   | 161 | 40   |
| 90°  | 11  | 50    | 93  | 121   | 129 | 7    |
| 95°  | 8   | 41    | 81  | 107   | 115 | 7    |
| 105° | 6   | 27    | 62  | 84    | 91  | 7    |
| 115° | 4   | 14    | 43  | 63    | 70  | 4    |
| 125° | 3   | 3     | 27  | 43    | 50  | 3    |
| 135° | 2   | 1     | 11  | 25    | 30  | 1    |
| 145° | 1   | 0     | 0   | 8     | 11  | 1    |
| 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°     | 730.0 | 730.0 | 730.0 | 730.0 | 730.0 |
| 2.5°   | 733.8 | 731.5 | 725.5 | 732.3 | 730.8 |
| 5°     | 730.8 | 730.0 | 725.5 | 731.5 | 730.8 |
| 7.5°   | 725.5 | 725.5 | 721.6 | 728.5 | 728.5 |
| 10°    | 717.1 | 719.4 | 715.6 | 723.2 | 722.4 |
| 12.5°  | 707.9 | 711.0 | 707.9 | 716.3 | 714.0 |
| 15°    | 695.0 | 699.6 | 698.0 | 707.2 | 705.7 |
| 17.5°  | 680.5 | 685.9 | 685.1 | 694.2 | 693.5 |
| 20°    | 664.6 | 671.4 | 671.4 | 680.5 | 682.8 |
| 22.5°  | 647.8 | 655.4 | 657.7 | 666.8 | 668.4 |
| 25°    | 628.0 | 636.4 | 641.7 | 651.6 | 650.8 |
| 27.5°  | 607.5 | 617.4 | 623.4 | 634.1 | 634.1 |
| 30°    | 586.1 | 597.6 | 605.2 | 616.6 | 618.9 |
| 32.5°  | 563.3 | 577.0 | 586.1 | 598.3 | 601.4 |
| 35°    | 541.2 | 554.2 | 564.8 | 579.3 | 583.1 |
| 37.5°  | 516.1 | 532.1 | 546.6 | 561.8 | 564.1 |
| 40°    | 492.5 | 510.0 | 526.0 | 542.0 | 545.0 |
| 42.5°  | 468.2 | 486.4 | 505.5 | 521.4 | 528.3 |
| 45°    | 440.8 | 462.8 | 484.9 | 501.6 | 507.7 |
| 47.5°  | 416.4 | 438.5 | 462.1 | 481.9 | 488.7 |
| 50°    | 390.5 | 413.3 | 441.5 | 460.5 | 467.4 |
| 52.5°  | 363.9 | 389.0 | 418.7 | 439.2 | 446.1 |
| 55°    | 337.2 | 365.4 | 396.6 | 417.9 | 425.5 |
| 57.5°  | 312.1 | 340.3 | 373.0 | 396.6 | 405.0 |
| 60°    | 283.9 | 315.1 | 349.4 | 373.8 | 382.9 |
| 62.5°  | 258.8 | 290.8 | 326.6 | 350.9 | 360.1 |
| 65°    | 231.4 | 265.7 | 301.4 | 328.1 | 336.5 |
| 67.5°  | 206.3 | 239.8 | 278.6 | 305.3 | 314.4 |
| 70°    | 179.6 | 214.7 | 253.5 | 280.9 | 290.8 |
| 72.5°  | 153.0 | 190.3 | 229.9 | 258.1 | 266.4 |
| 75°    | 127.1 | 165.9 | 206.3 | 234.5 | 243.6 |
| 77.5°  | 102.8 | 141.6 | 183.5 | 211.6 | 221.5 |
| 80°    | 78.4  | 118.8 | 162.1 | 190.3 | 200.2 |
| 82.5°  | 57.1  | 98.2  | 142.3 | 169.8 | 178.9 |
| 85°    | 38.8  | 79.2  | 123.3 | 151.5 | 161.4 |
| 87.5°  | 22.8  | 63.9  | 106.6 | 134.7 | 143.1 |
| 90°    | 10.7  | 50.2  | 92.9  | 121.0 | 129.4 |
| 92.5°  | 9.9   | 44.9  | 86.0  | 112.7 | 121.0 |
| 95°    | 8.4   | 41.1  | 80.7  | 106.6 | 114.9 |
| 97.5°  | 8.4   | 37.3  | 76.1  | 101.2 | 108.9 |
| 100°   | 7.6   | 33.5  | 71.6  | 95.2  | 102.8 |
| 102.5° | 6.9   | 29.7  | 66.2  | 89.8  | 97.4  |
| 105°   | 6.1   | 26.6  | 61.7  | 84.5  | 91.3  |
| 107.5° | 5.3   | 22.8  | 57.1  | 79.2  | 86.0  |
| 110°   | 5.3   | 19.8  | 52.5  | 73.8  | 80.7  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 4.6 | 16.7  | 48.0 | 68.5  | 75.4 |
| 115°   | 3.8 | 13.7  | 43.4 | 63.2  | 70.0 |
| 117.5° | 3.8 | 10.7  | 38.8 | 58.6  | 64.7 |
| 120°   | 3.8 | 8.4   | 35.0 | 53.3  | 59.4 |
| 122.5° | 3.0 | 5.3   | 31.2 | 48.7  | 54.8 |
| 125°   | 3.0 | 3.0   | 26.6 | 43.4  | 49.5 |
| 127.5° | 2.3 | 1.5   | 22.8 | 38.8  | 44.2 |
| 130°   | 2.3 | 1.5   | 19.0 | 34.3  | 39.6 |
| 132.5° | 1.5 | 1.5   | 15.2 | 29.7  | 35.0 |
| 135°   | 1.5 | 0.8   | 11.4 | 25.1  | 29.7 |
| 137.5° | 1.5 | 0.8   | 7.6  | 20.6  | 25.1 |
| 140°   | 0.8 | 0.8   | 3.8  | 16.0  | 20.6 |
| 142.5° | 0.8 | 0.0   | 0.8  | 12.2  | 16.0 |
| 145°   | 0.8 | 0.0   | 0.0  | 7.6   | 10.7 |
| 147.5° | 0.8 | 0.0   | 0.0  | 3.8   | 6.9  |
| 150°   | 0.8 | 0.0   | 0.0  | 0.0   | 2.3  |
| 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)