

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: P242100

Luminaire Tested: **S121DR-S880D930-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242100  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-S880D930-X4F0-XX-UDD-F-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2859.5 lumens  
Efficiency: N/A  
Efficacy: 82.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 0.09' x L: 3.88' x H: 0')  
CIE Type: Direct

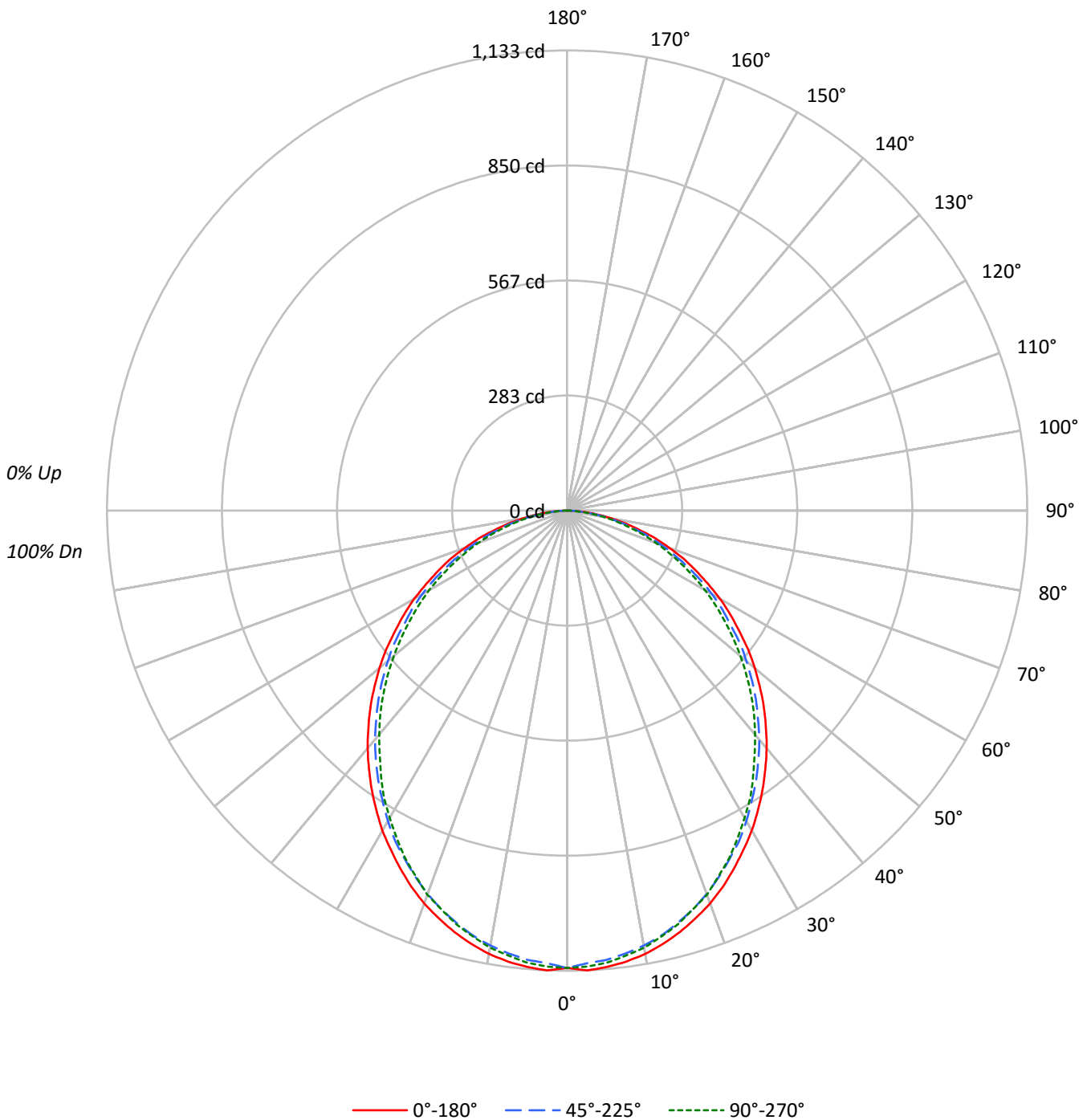
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242100

CATALOG NUMBER: S121DR-S880D930-X4F0-XX-UDD-F-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242100

CATALOG NUMBER: S121DR-S880D930-X4F0-XX-UDD-F-W

**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   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 92  | 94  | 91  | 89  | 90  | 88  | 86  | 84  |
| 2   | 99  | 91  | 85  | 79  | 97  | 89  | 83  | 78  | 86  | 81  | 76  | 83  | 78  | 75  | 80  | 76  | 73  | 71  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 66  | 76  | 70  | 64  | 73  | 68  | 63  | 71  | 66  | 62  | 60  |
| 4   | 83  | 72  | 63  | 56  | 81  | 70  | 62  | 56  | 68  | 61  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 55  | 48  | 61  | 54  | 48  | 59  | 52  | 47  | 57  | 51  | 47  | 45  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 49  | 42  | 55  | 48  | 42  | 53  | 47  | 42  | 52  | 46  | 41  | 39  |
| 7   | 66  | 53  | 44  | 38  | 64  | 52  | 44  | 38  | 50  | 43  | 37  | 49  | 42  | 37  | 47  | 41  | 37  | 35  |
| 8   | 61  | 48  | 40  | 34  | 60  | 47  | 39  | 34  | 46  | 39  | 34  | 45  | 38  | 33  | 44  | 38  | 33  | 31  |
| 9   | 57  | 44  | 36  | 31  | 56  | 44  | 36  | 30  | 42  | 35  | 30  | 41  | 35  | 30  | 40  | 34  | 30  | 28  |
| 10  | 54  | 41  | 33  | 28  | 53  | 40  | 33  | 28  | 39  | 32  | 28  | 38  | 32  | 27  | 37  | 32  | 27  | 26  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 33363 | 33363 | 33363 |
| 5°  | 33553 | 33026 | 33244 |
| 10° | 33345 | 32719 | 32876 |
| 15° | 32945 | 32242 | 32341 |
| 20° | 32455 | 31670 | 31733 |
| 25° | 31781 | 30931 | 30865 |
| 30° | 31124 | 30200 | 29882 |
| 35° | 30348 | 29335 | 28883 |
| 40° | 29558 | 28471 | 27829 |
| 45° | 28712 | 27534 | 26839 |
| 50° | 27796 | 26551 | 25689 |
| 55° | 26692 | 25348 | 24439 |
| 60° | 25754 | 24397 | 23289 |
| 65° | 24489 | 22891 | 21720 |
| 70° | 23061 | 21346 | 20176 |
| 75° | 21190 | 19404 | 18088 |
| 80° | 18803 | 17029 | 15783 |
| 85° | 15536 | 12715 | 11321 |



TEST NUMBER: P242100

CATALOG NUMBER: S121DR-S880D930-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 106.0  | 3.7       |
| 10°-20°   | 298.6  | 10.4      |
| 20°-30°   | 439.1  | 15.4      |
| 30°-40°   | 509.9  | 17.8      |
| 40°-50°   | 508.7  | 17.8      |
| 50°-60°   | 442.7  | 15.5      |
| 60°-70°   | 326.1  | 11.4      |
| 70°-80°   | 181.6  | 6.4       |
| 80°-90°   | 46.9   | 1.6       |
| 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°    | 843.7  | 29.5      |
| 0°-40°    | 1353.6 | 47.3      |
| 0°-60°    | 2305.0 | 80.6      |
| 0°-90°    | 2859.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2859.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1126 | 1126  | 1126 | 1126  | 1126 |      |
| 5°  | 1128 | 1123  | 1110 | 1120  | 1118 | 107  |
| 15° | 1074 | 1066  | 1051 | 1058  | 1054 | 303  |
| 25° | 972  | 962   | 946  | 948   | 944  | 448  |
| 35° | 839  | 829   | 811  | 803   | 798  | 525  |
| 45° | 685  | 674   | 657  | 645   | 640  | 528  |
| 55° | 517  | 510   | 491  | 481   | 473  | 464  |
| 65° | 349  | 342   | 326  | 316   | 310  | 347  |
| 75° | 185  | 180   | 170  | 162   | 158  | 197  |
| 85° | 46   | 44    | 37   | 35    | 33   | 54   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P242100

CATALOG NUMBER: S121DR-S880D930-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1126.0 | 1126.0 | 1126.0 | 1126.0 | 1126.0 |
| 2.5°  | 1133.3 | 1127.0 | 1115.6 | 1125.0 | 1123.9 |
| 5°    | 1128.1 | 1122.9 | 1110.4 | 1119.8 | 1117.7 |
| 7.5°  | 1119.8 | 1113.5 | 1100.0 | 1108.3 | 1105.2 |
| 10°   | 1108.3 | 1102.1 | 1087.5 | 1093.8 | 1092.7 |
| 12.5° | 1092.7 | 1085.5 | 1071.9 | 1077.1 | 1074.0 |
| 15°   | 1074.0 | 1065.7 | 1051.1 | 1058.4 | 1054.3 |
| 17.5° | 1052.2 | 1042.8 | 1029.3 | 1033.5 | 1029.3 |
| 20°   | 1029.3 | 1018.9 | 1004.4 | 1008.5 | 1006.4 |
| 22.5° | 1002.3 | 992.9  | 976.3  | 978.4  | 974.2  |
| 25°   | 972.1  | 961.7  | 946.1  | 948.2  | 944.1  |
| 27.5° | 940.9  | 931.6  | 917.0  | 913.9  | 908.7  |
| 30°   | 909.7  | 898.3  | 882.7  | 878.6  | 873.4  |
| 32.5° | 874.4  | 864.0  | 846.3  | 842.2  | 839.0  |
| 35°   | 839.0  | 828.6  | 811.0  | 802.7  | 798.5  |
| 37.5° | 801.6  | 791.2  | 773.5  | 764.2  | 757.9  |
| 40°   | 764.2  | 752.7  | 736.1  | 726.8  | 719.5  |
| 42.5° | 724.7  | 714.3  | 695.6  | 686.2  | 681.0  |
| 45°   | 685.2  | 673.7  | 657.1  | 644.6  | 640.5  |
| 47.5° | 643.6  | 633.2  | 616.5  | 603.0  | 598.9  |
| 50°   | 603.0  | 591.6  | 576.0  | 562.5  | 557.3  |
| 52.5° | 561.4  | 551.0  | 536.5  | 523.0  | 514.7  |
| 55°   | 516.7  | 510.5  | 490.7  | 481.4  | 473.1  |
| 57.5° | 476.2  | 468.9  | 453.3  | 437.7  | 432.5  |
| 60°   | 434.6  | 426.3  | 411.7  | 398.2  | 393.0  |
| 62.5° | 390.9  | 384.7  | 370.1  | 357.7  | 350.4  |
| 65°   | 349.3  | 342.1  | 326.5  | 316.1  | 309.8  |
| 67.5° | 310.9  | 301.5  | 285.9  | 275.5  | 270.3  |
| 70°   | 266.2  | 258.9  | 246.4  | 238.1  | 232.9  |
| 72.5° | 227.7  | 219.4  | 207.9  | 199.6  | 194.4  |
| 75°   | 185.1  | 179.9  | 169.5  | 162.2  | 158.0  |
| 77.5° | 147.6  | 140.4  | 133.1  | 127.9  | 124.8  |
| 80°   | 110.2  | 105.0  | 99.8   | 94.6   | 92.5   |
| 82.5° | 76.9   | 72.8   | 67.6   | 64.5   | 61.3   |
| 85°   | 45.7   | 43.7   | 37.4   | 35.4   | 33.3   |
| 87.5° | 21.8   | 18.7   | 12.5   | 11.4   | 10.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)