

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: P33923

Luminaire Tested: **S123DS-235-SR0048-1D-UDD-1-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P33923  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DS-235-SR0048-1D-UDD-1-W  
Description: NEORAY DIRECT- INDIRECT 3" FIXTURE WITH A FLUSH DIFFUSE LENS.LL2  
Light Source: [117] NICHIA 3500K LED  
Nichia 757D  
Ballast/Driver: [1] OSRAM SYLVANIA ELECTRONIC DRIVER  
OT48WPRG2000C

**Summary**

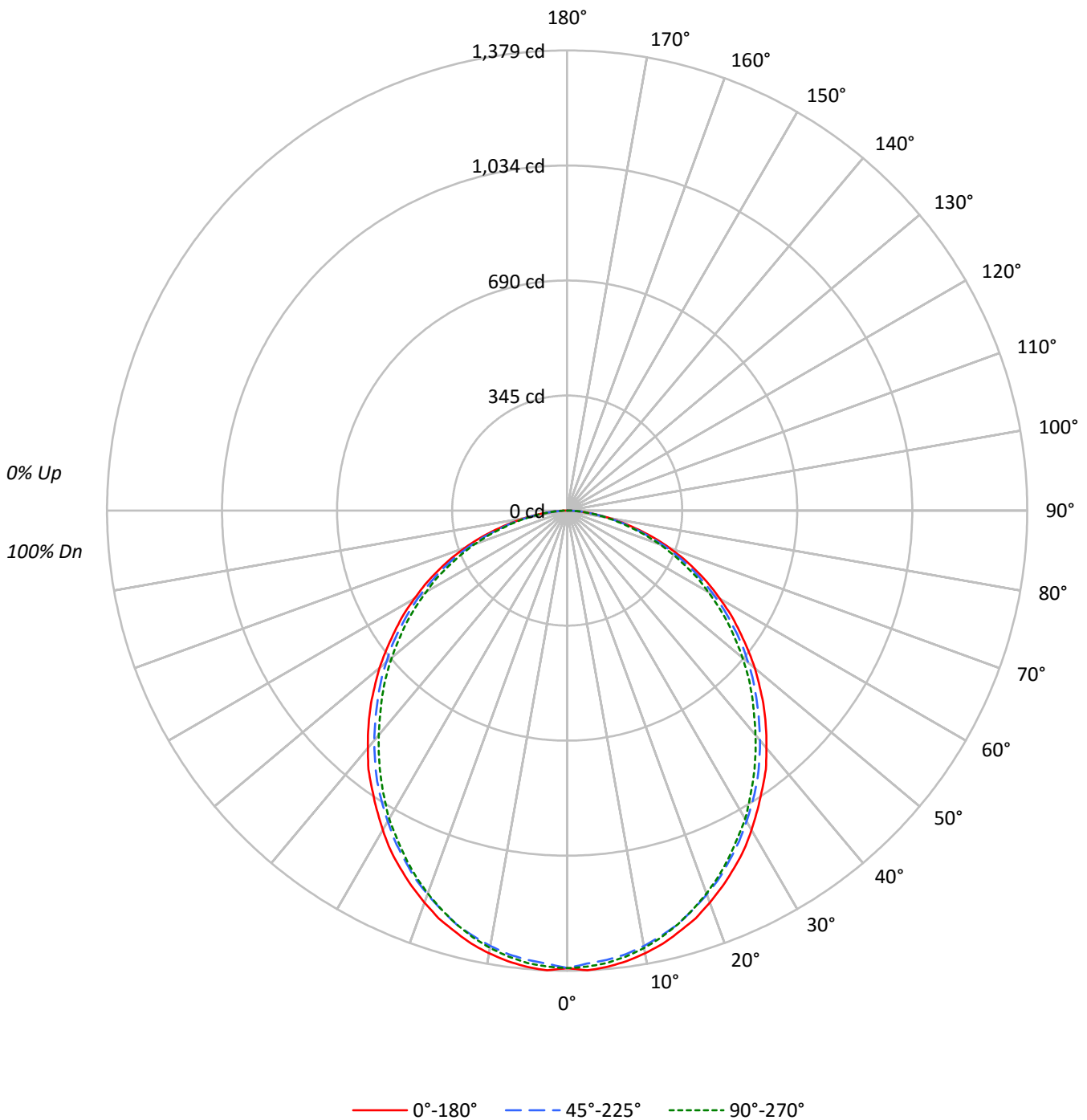
Lumens per Lamp: N/A  
Luminaire Lumens: 3503.3 lumens  
Efficiency: N/A  
Efficacy: 80.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.29  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.8  
Input Voltage (V): 120.03  
Input Current (Ain): 0.3668  
Voltage Rise (V): NR  
Power Factor: 0.999  
Total Harmonic Distortion (THDi): 8.11  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: HR  
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   | 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  | 74  | 80  | 76  | 73  | 71  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  | 73  | 68  | 63  | 71  | 66  | 62  | 60  |
| 4   | 83  | 71  | 63  | 56  | 81  | 70  | 62  | 56  | 68  | 61  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 51  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 55  | 48  | 61  | 53  | 48  | 59  | 52  | 47  | 57  | 51  | 47  | 45  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 48  | 42  | 55  | 48  | 42  | 53  | 47  | 42  | 52  | 46  | 41  | 39  |
| 7   | 66  | 52  | 44  | 38  | 64  | 52  | 43  | 38  | 50  | 43  | 37  | 49  | 42  | 37  | 47  | 41  | 37  | 35  |
| 8   | 61  | 48  | 39  | 34  | 60  | 47  | 39  | 34  | 46  | 39  | 33  | 45  | 38  | 33  | 43  | 37  | 33  | 31  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 36  | 30  | 42  | 35  | 30  | 41  | 35  | 30  | 40  | 34  | 30  | 28  |
| 10  | 54  | 41  | 33  | 28  | 53  | 40  | 33  | 28  | 39  | 32  | 27  | 38  | 32  | 27  | 37  | 31  | 27  | 25  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 14757 | 14757 | 14757 |
| 5°  | 14835 | 14608 | 14706 |
| 10° | 14723 | 14482 | 14548 |
| 15° | 14542 | 14297 | 14297 |
| 20° | 14318 | 14021 | 13986 |
| 25° | 14050 | 13706 | 13623 |
| 30° | 13734 | 13361 | 13262 |
| 35° | 13390 | 13035 | 12799 |
| 40° | 13054 | 12632 | 12337 |
| 45° | 12696 | 12224 | 11919 |
| 50° | 12291 | 11856 | 11488 |
| 55° | 11823 | 11429 | 11053 |
| 60° | 11388 | 10958 | 10506 |
| 65° | 10901 | 10417 | 9933  |
| 70° | 10228 | 9725  | 9284  |
| 75° | 9191  | 8650  | 8235  |
| 80° | 7810  | 7500  | 7252  |
| 85° | 6052  | 6052  | 5681  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 129.2  | 3.7       |
| 10°-20°   | 363.6  | 10.4      |
| 20°-30°   | 534.9  | 15.3      |
| 30°-40°   | 622.2  | 17.8      |
| 40°-50°   | 622.6  | 17.8      |
| 50°-60°   | 545.7  | 15.6      |
| 60°-70°   | 404.8  | 11.6      |
| 70°-80°   | 222.9  | 6.4       |
| 80°-90°   | 57.3   | 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°    | 1027.7 | 29.3      |
| 0°-40°    | 1649.9 | 47.1      |
| 0°-60°    | 2818.1 | 80.4      |
| 0°-90°    | 3503.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3503.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1371 | 1371  | 1371 | 1371  | 1371 |      |
| 5°  | 1373 | 1367  | 1352 | 1363  | 1361 | 130  |
| 15° | 1305 | 1298  | 1283 | 1288  | 1283 | 368  |
| 25° | 1183 | 1173  | 1154 | 1153  | 1147 | 545  |
| 35° | 1019 | 1010  | 992  | 982   | 974  | 638  |
| 45° | 834  | 824   | 803  | 791   | 783  | 643  |
| 55° | 630  | 627   | 609  | 596   | 589  | 565  |
| 65° | 428  | 422   | 409  | 395   | 390  | 424  |
| 75° | 221  | 217   | 208  | 202   | 198  | 235  |
| 85° | 49   | 49    | 49   | 47    | 46   | 60   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°   | 22.5° | 45°  | 67.5° | 90°  |
|-------|------|-------|------|-------|------|
| 0°    | 1371 | 1371  | 1371 | 1371  | 1371 |
| 2.5°  | 1379 | 1373  | 1359 | 1371  | 1368 |
| 5°    | 1373 | 1367  | 1352 | 1363  | 1361 |
| 7.5°  | 1362 | 1356  | 1341 | 1351  | 1348 |
| 10°   | 1347 | 1341  | 1325 | 1334  | 1331 |
| 12.5° | 1329 | 1322  | 1305 | 1313  | 1309 |
| 15°   | 1305 | 1298  | 1283 | 1288  | 1283 |
| 17.5° | 1281 | 1273  | 1254 | 1259  | 1253 |
| 20°   | 1250 | 1243  | 1224 | 1226  | 1221 |
| 22.5° | 1218 | 1208  | 1192 | 1192  | 1186 |
| 25°   | 1183 | 1173  | 1154 | 1153  | 1147 |
| 27.5° | 1147 | 1135  | 1117 | 1114  | 1106 |
| 30°   | 1105 | 1096  | 1075 | 1071  | 1067 |
| 32.5° | 1062 | 1054  | 1034 | 1027  | 1020 |
| 35°   | 1019 | 1010  | 992  | 982   | 974  |
| 37.5° | 978  | 964   | 946  | 935   | 927  |
| 40°   | 929  | 920   | 899  | 887   | 878  |
| 42.5° | 882  | 872   | 851  | 840   | 829  |
| 45°   | 834  | 824   | 803  | 791   | 783  |
| 47.5° | 783  | 776   | 757  | 743   | 736  |
| 50°   | 734  | 727   | 708  | 693   | 686  |
| 52.5° | 682  | 677   | 660  | 644   | 636  |
| 55°   | 630  | 627   | 609  | 596   | 589  |
| 57.5° | 582  | 575   | 560  | 547   | 538  |
| 60°   | 529  | 526   | 509  | 497   | 488  |
| 62.5° | 480  | 472   | 459  | 447   | 442  |
| 65°   | 428  | 422   | 409  | 395   | 390  |
| 67.5° | 377  | 369   | 359  | 348   | 342  |
| 70°   | 325  | 317   | 309  | 297   | 295  |
| 72.5° | 274  | 266   | 257  | 250   | 247  |
| 75°   | 221  | 217   | 208  | 202   | 198  |
| 77.5° | 172  | 168   | 164  | 159   | 156  |
| 80°   | 126  | 124   | 121  | 116   | 117  |
| 82.5° | 85   | 83    | 82   | 80    | 78   |
| 85°   | 49   | 49    | 49   | 47    | 46   |
| 87.5° | 22   | 21    | 21   | 20    | 20   |
| 90°   | 0    | 0     | 0    | 0     | 0    |

(END OF REPORT)