

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: P243579

Luminaire Tested: **S124RDR-H1020D930-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243579  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-65)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDR-H1020D930-X4F0-XX-UDD-F-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH SATIN FLUSH 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: 3136.7 lumens  
Efficiency: N/A  
Efficacy: 99.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.1 / 1.25  
Luminous Opening: Rectangular (W 0.31' x L: 3.88' x H: 0')  
CIE Type: Direct

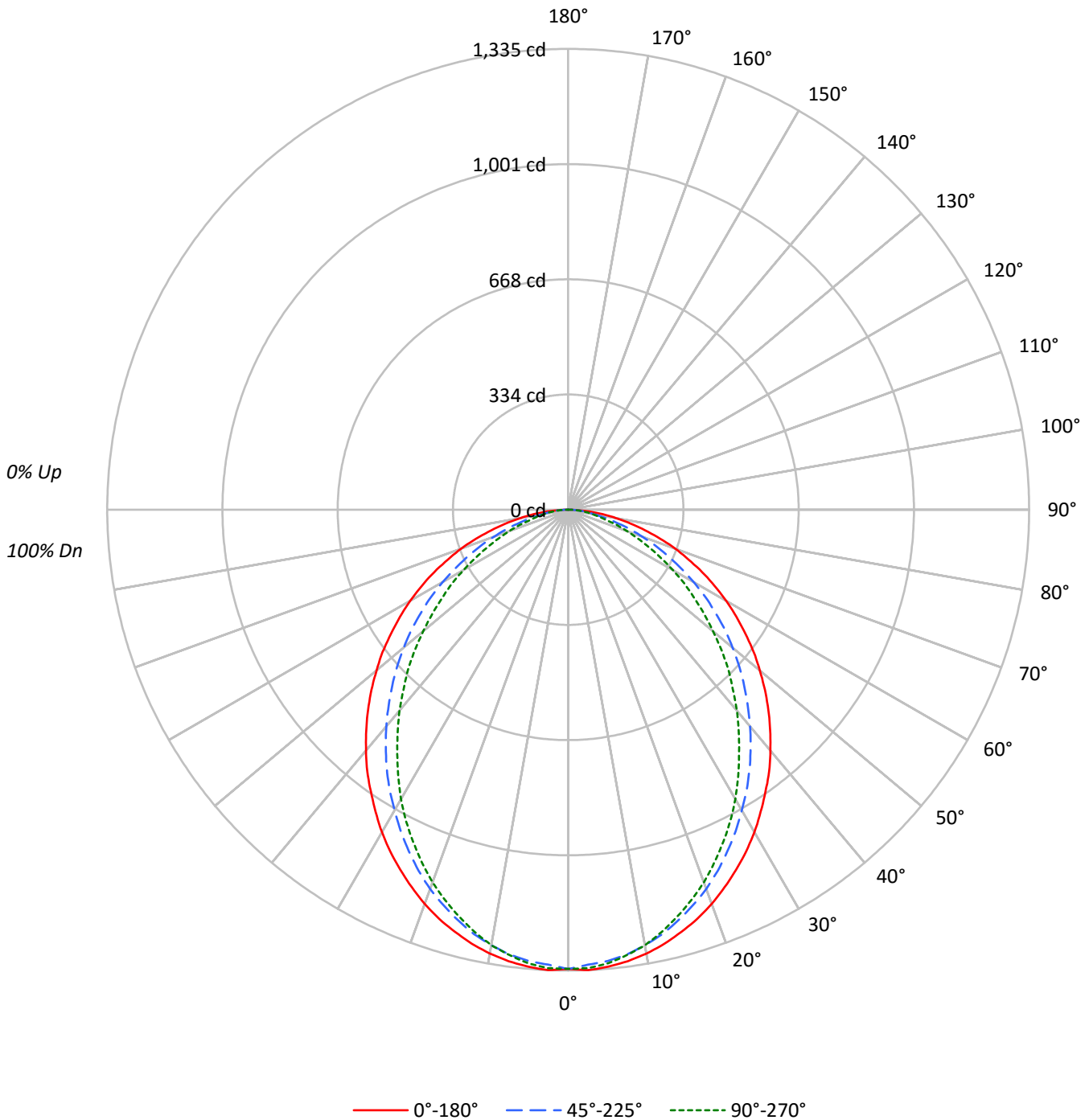
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 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 |    |    |    |    | 100 |   |  |   |
| 1   | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 96  | 98  | 95  | 93  | 95  | 92  | 90  | 91  | 89  | 87  | 85  |    |    |    |    | 85  |   |  |   |
| 2   | 100 | 92  | 86  | 80  | 97  | 90  | 84  | 79  | 87  | 82  | 78  | 84  | 79  | 76  | 81  | 77  | 74  | 72  |    |    |    |    | 72  |   |  |   |
| 3   | 92  | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 77  | 71  | 66  | 74  | 69  | 65  | 72  | 67  | 64  | 61  |    |    |    |    | 61  |   |  |   |
| 4   | 84  | 73  | 64  | 58  | 82  | 71  | 64  | 57  | 69  | 62  | 57  | 67  | 61  | 56  | 64  | 59  | 55  | 53  |    |    |    |    | 53  |   |  |   |
| 5   | 78  | 65  | 57  | 50  | 76  | 64  | 56  | 50  | 62  | 55  | 49  | 60  | 54  | 49  | 58  | 53  | 48  | 46  |    |    |    |    | 46  |   |  |   |
| 6   | 72  | 59  | 50  | 44  | 70  | 58  | 50  | 44  | 56  | 49  | 44  | 55  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    |    | 41  |   |  |   |
| 7   | 67  | 54  | 45  | 39  | 65  | 53  | 45  | 39  | 51  | 44  | 39  | 50  | 43  | 39  | 49  | 43  | 38  | 36  |    |    |    |    | 36  |   |  |   |
| 8   | 62  | 49  | 41  | 35  | 61  | 49  | 41  | 35  | 47  | 40  | 35  | 46  | 39  | 35  | 45  | 39  | 34  | 33  |    |    |    |    | 33  |   |  |   |
| 9   | 58  | 45  | 37  | 32  | 57  | 45  | 37  | 32  | 44  | 37  | 32  | 42  | 36  | 31  | 41  | 36  | 31  | 30  |    |    |    |    | 30  |   |  |   |
| 10  | 55  | 42  | 34  | 29  | 54  | 41  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 39  | 33  | 29  | 27  |    |    |    |    | 27  |   |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11824 | 11824 | 11824 |
| 5°  | 11860 | 11711 | 11773 |
| 10° | 11785 | 11563 | 11563 |
| 15° | 11654 | 11337 | 11230 |
| 20° | 11496 | 11060 | 10865 |
| 25° | 11285 | 10707 | 10418 |
| 30° | 11074 | 10318 | 9936  |
| 35° | 10812 | 9939  | 9364  |
| 40° | 10571 | 9512  | 8816  |
| 45° | 10304 | 9059  | 8244  |
| 50° | 10019 | 8593  | 7575  |
| 55° | 9706  | 8063  | 6907  |
| 60° | 9406  | 7452  | 6213  |
| 65° | 9002  | 6731  | 5431  |
| 70° | 8574  | 5944  | 4720  |
| 75° | 7923  | 4956  | 3843  |
| 80° | 7238  | 3870  | 3517  |
| 85° | 6405  | 3702  | 3508  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 125.1  | 4.0       |
| 10°-20°   | 349.4  | 11.1      |
| 20°-30°   | 506.6  | 16.2      |
| 30°-40°   | 577.4  | 18.4      |
| 40°-50°   | 561.8  | 17.9      |
| 50°-60°   | 471.9  | 15.0      |
| 60°-70°   | 328.8  | 10.5      |
| 70°-80°   | 169.8  | 5.4       |
| 80°-90°   | 45.9   | 1.5       |
| 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°    | 981.1  | 31.3      |
| 0°-40°    | 1558.5 | 49.7      |
| 0°-60°    | 2592.3 | 82.6      |
| 0°-90°    | 3136.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3136.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1330 | 1330  | 1330 | 1330  | 1330 |      |
| 5°  | 1329 | 1325  | 1312 | 1322  | 1319 | 126  |
| 15° | 1266 | 1257  | 1232 | 1230  | 1220 | 357  |
| 25° | 1151 | 1129  | 1092 | 1076  | 1062 | 530  |
| 35° | 996  | 966   | 916  | 882   | 863  | 624  |
| 45° | 820  | 780   | 721  | 674   | 656  | 632  |
| 55° | 626  | 586   | 520  | 467   | 446  | 561  |
| 65° | 428  | 387   | 320  | 274   | 258  | 424  |
| 75° | 231  | 195   | 144  | 121   | 112  | 246  |
| 85° | 63   | 40    | 36   | 34    | 34   | 72   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1330.2 | 1330.2 | 1330.2 | 1330.2 | 1330.2 |
| 2.5°  | 1335.1 | 1331.2 | 1319.4 | 1330.2 | 1329.2 |
| 5°    | 1329.2 | 1325.3 | 1312.5 | 1322.4 | 1319.4 |
| 7.5°  | 1319.4 | 1314.5 | 1299.8 | 1306.6 | 1301.7 |
| 10°   | 1305.7 | 1300.8 | 1281.1 | 1286.0 | 1281.1 |
| 12.5° | 1288.0 | 1281.1 | 1259.5 | 1260.5 | 1252.7 |
| 15°   | 1266.4 | 1256.6 | 1232.0 | 1230.1 | 1220.3 |
| 17.5° | 1242.8 | 1230.1 | 1201.6 | 1196.7 | 1185.9 |
| 20°   | 1215.3 | 1199.6 | 1169.2 | 1158.4 | 1148.6 |
| 22.5° | 1183.9 | 1165.3 | 1131.9 | 1119.1 | 1106.4 |
| 25°   | 1150.6 | 1129.0 | 1091.7 | 1075.9 | 1062.2 |
| 27.5° | 1116.2 | 1090.7 | 1050.4 | 1030.8 | 1017.0 |
| 30°   | 1078.9 | 1049.4 | 1005.3 | 982.7  | 968.0  |
| 32.5° | 1037.7 | 1008.2 | 962.1  | 934.6  | 915.9  |
| 35°   | 996.4  | 966.0  | 915.9  | 881.6  | 862.9  |
| 37.5° | 956.2  | 921.8  | 867.8  | 832.5  | 810.9  |
| 40°   | 911.0  | 874.7  | 819.7  | 779.5  | 759.8  |
| 42.5° | 865.9  | 828.6  | 769.7  | 727.4  | 705.8  |
| 45°   | 819.7  | 780.5  | 720.6  | 674.4  | 655.8  |
| 47.5° | 772.6  | 733.3  | 671.5  | 623.4  | 601.8  |
| 50°   | 724.5  | 685.2  | 621.4  | 568.4  | 547.8  |
| 52.5° | 677.4  | 636.1  | 572.3  | 518.3  | 496.7  |
| 55°   | 626.3  | 586.1  | 520.3  | 467.3  | 445.7  |
| 57.5° | 577.2  | 535.0  | 471.2  | 417.2  | 399.6  |
| 60°   | 529.1  | 486.9  | 419.2  | 367.2  | 349.5  |
| 62.5° | 478.1  | 435.9  | 369.1  | 319.1  | 303.3  |
| 65°   | 428.0  | 386.8  | 320.0  | 273.9  | 258.2  |
| 67.5° | 377.0  | 339.7  | 274.9  | 230.7  | 217.9  |
| 70°   | 329.9  | 287.6  | 228.7  | 190.4  | 181.6  |
| 72.5° | 279.8  | 242.5  | 185.5  | 154.1  | 147.3  |
| 75°   | 230.7  | 195.4  | 144.3  | 120.7  | 111.9  |
| 77.5° | 185.5  | 151.2  | 109.0  | 89.3   | 89.3   |
| 80°   | 141.4  | 110.9  | 75.6   | 70.7   | 68.7   |
| 82.5° | 100.1  | 71.7   | 56.0   | 52.0   | 51.0   |
| 85°   | 62.8   | 40.2   | 36.3   | 34.4   | 34.4   |
| 87.5° | 30.4   | 18.7   | 18.7   | 17.7   | 17.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)