

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P644276

Luminaire Tested: CRQ4DIP-SR4F0-125D150U935-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644276  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2203-563-26, G2-2206-689-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: CRQ4DIP-SR4F0-125D150U935-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1250 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

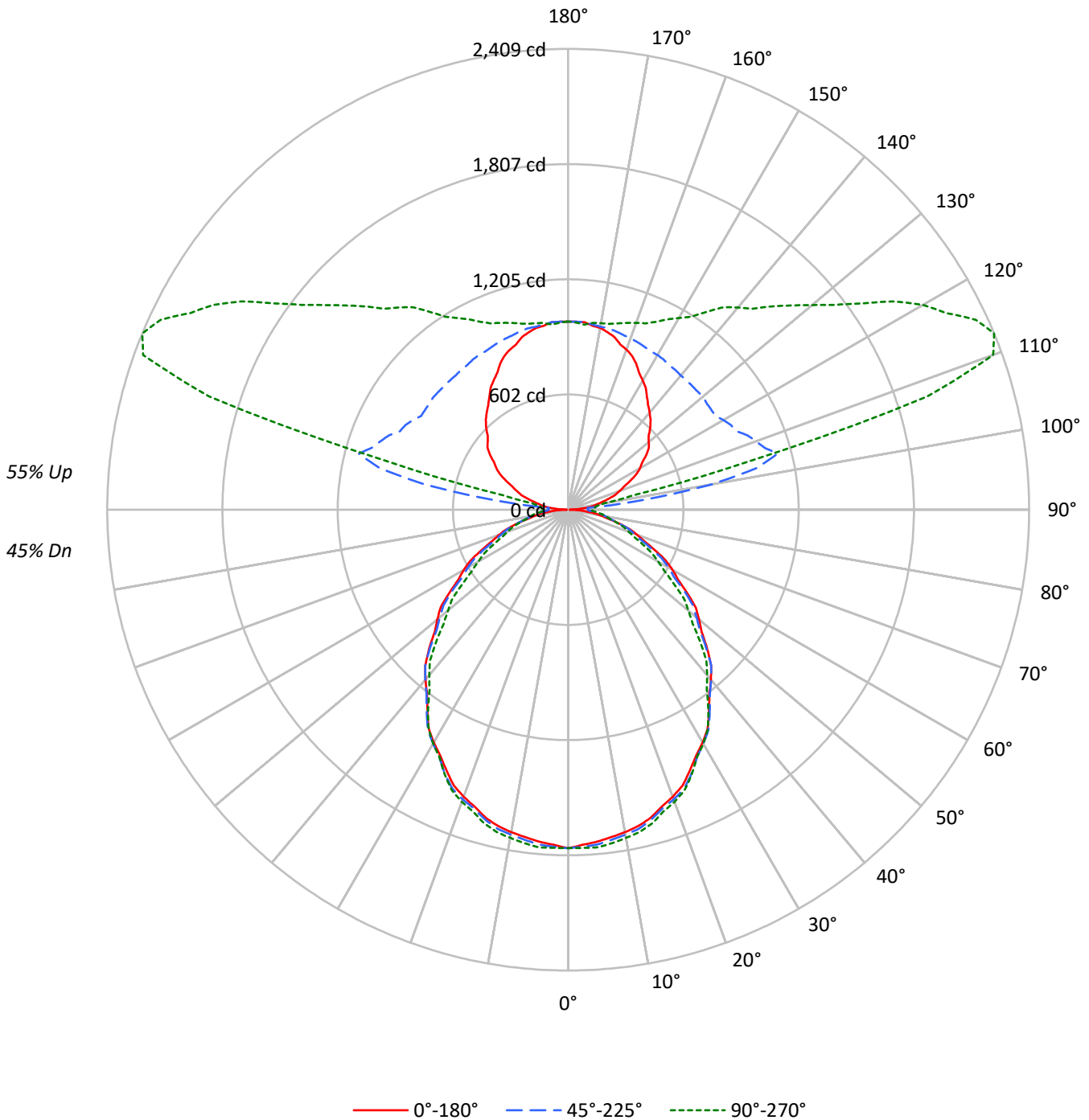
Lumens per Lamp: N/A  
Luminaire Lumens: 9847.3 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: General Diffuse

Input Watts (W): 88.6  
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: 24 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 | 0  |   |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| 0   | 106 | 106 | 106 | 106 | 97 | 97 | 97 | 97 | 81 | 81 | 81 | 66 | 66 | 66 | 52 | 52 | 52 | 45 |    |    |    |   |
| 1   | 97  | 92  | 88  | 85  | 88 | 85 | 81 | 78 | 71 | 68 | 66 | 58 | 56 | 54 | 46 | 45 | 44 | 38 |    |    |    |   |
| 2   | 88  | 81  | 74  | 69  | 80 | 74 | 69 | 64 | 62 | 58 | 55 | 51 | 48 | 45 | 40 | 38 | 37 | 32 |    |    |    |   |
| 3   | 80  | 71  | 64  | 58  | 73 | 65 | 59 | 54 | 55 | 50 | 46 | 45 | 41 | 39 | 36 | 33 | 31 | 27 |    |    |    |   |
| 4   | 73  | 63  | 55  | 49  | 67 | 58 | 51 | 46 | 49 | 43 | 39 | 40 | 36 | 33 | 32 | 29 | 27 | 23 |    |    |    |   |
| 5   | 67  | 56  | 48  | 42  | 62 | 52 | 45 | 39 | 44 | 38 | 34 | 36 | 32 | 29 | 29 | 26 | 24 | 20 |    |    |    |   |
| 6   | 62  | 50  | 42  | 36  | 57 | 46 | 39 | 34 | 39 | 34 | 30 | 33 | 28 | 25 | 26 | 23 | 21 | 18 |    |    |    |   |
| 7   | 57  | 45  | 37  | 32  | 53 | 42 | 35 | 30 | 36 | 30 | 26 | 30 | 25 | 22 | 24 | 21 | 19 | 16 |    |    |    |   |
| 8   | 53  | 41  | 33  | 28  | 49 | 38 | 31 | 27 | 32 | 27 | 23 | 27 | 23 | 20 | 22 | 19 | 17 | 14 |    |    |    |   |
| 9   | 50  | 38  | 30  | 25  | 46 | 35 | 28 | 24 | 30 | 24 | 21 | 25 | 21 | 18 | 20 | 17 | 15 | 13 |    |    |    |   |
| 10  | 46  | 34  | 27  | 23  | 43 | 32 | 26 | 21 | 27 | 22 | 19 | 23 | 19 | 16 | 19 | 16 | 14 | 12 |    |    |    |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 28568 | 28568 | 28568 |
| 5°  | 28028 | 25224 | 24441 |
| 10° | 27660 | 22442 | 21113 |
| 15° | 27254 | 20097 | 18468 |
| 20° | 26630 | 18029 | 16152 |
| 25° | 25798 | 16099 | 14075 |
| 30° | 24983 | 14226 | 12217 |
| 35° | 23876 | 12511 | 10486 |
| 40° | 22843 | 10954 | 8890  |
| 45° | 21648 | 9414  | 7418  |
| 50° | 20386 | 7973  | 6085  |
| 55° | 19048 | 6708  | 4908  |
| 60° | 17772 | 5499  | 3923  |
| 65° | 16200 | 4384  | 3105  |
| 70° | 14689 | 3436  | 2452  |
| 75° | 12843 | 2639  | 1934  |
| 80° | 10727 | 1962  | 1506  |
| 85° | 7828  | 1427  | 1144  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 21648 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 167.0  | 1.7       |
| 10°-20°   | 473.9  | 4.8       |
| 20°-30°   | 699.6  | 7.1       |
| 30°-40°   | 804.3  | 8.2       |
| 40°-50°   | 780.2  | 7.9       |
| 50°-60°   | 653.1  | 6.6       |
| 60°-70°   | 470.6  | 4.8       |
| 70°-80°   | 287.5  | 2.9       |
| 80°-90°   | 141.9  | 1.4       |
| 90°-100°  | 176.2  | 1.8       |
| 100°-110° | 881.8  | 9.0       |
| 110°-120° | 1176.9 | 12.0      |
| 120°-130° | 955.1  | 9.7       |
| 130°-140° | 766.2  | 7.8       |
| 140°-150° | 603.8  | 6.1       |
| 150°-160° | 441.5  | 4.5       |
| 160°-170° | 274.2  | 2.8       |
| 170°-180° | 93.5   | 0.9       |
| 0°-30°    | 1340.5 | 13.6      |
| 0°-40°    | 2144.8 | 21.8      |
| 0°-60°    | 3578.2 | 36.3      |
| 0°-90°    | 4478.2 | 45.5      |
| 90°-120°  | 2234.9 | 22.7      |
| 90°-150°  | 4560.0 | 46.3      |
| 90°-180°  | 5369.0 | 54.5      |
| 0°-180°   | 9847.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1769 | 1769  | 1769 | 1769  | 1769 |      |
| 5°   | 1742 | 1774  | 1757 | 1760  | 1772 | 165  |
| 15°  | 1667 | 1691  | 1677 | 1685  | 1697 | 469  |
| 25°  | 1504 | 1529  | 1524 | 1517  | 1527 | 693  |
| 35°  | 1282 | 1302  | 1290 | 1277  | 1277 | 803  |
| 45°  | 1027 | 1037  | 1020 | 989   | 975  | 792  |
| 55°  | 757  | 767   | 740  | 694   | 672  | 679  |
| 65°  | 500  | 502   | 477  | 442   | 430  | 497  |
| 75°  | 270  | 270   | 275  | 267   | 262  | 289  |
| 85°  | 82   | 100   | 137  | 147   | 147  | 87   |
| 90°  | 8    | 55    | 102  | 124   | 126  | 11   |
| 95°  | 74   | 114   | 102  | 126   | 140  | 76   |
| 105° | 217  | 305   | 1132 | 1453  | 974  | 229  |
| 115° | 358  | 420   | 970  | 2011  | 2350 | 355  |
| 125° | 499  | 560   | 912  | 1590  | 1881 | 443  |
| 135° | 606  | 673   | 916  | 1310  | 1503 | 467  |
| 145° | 718  | 778   | 922  | 1141  | 1262 | 451  |
| 155° | 841  | 872   | 940  | 1034  | 1083 | 386  |
| 165° | 934  | 946   | 965  | 990   | 1008 | 262  |
| 175° | 984  | 990   | 984  | 977   | 971  | 93   |
| 180° | 984  | 984   | 984  | 984   | 984  |      |

TEST NUMBER: P644276

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1769.4 | 1769.4 | 1769.4 | 1769.4 | 1769.4 |
| 2.5°   | 1753.4 | 1778.8 | 1763.4 | 1767.4 | 1769.4 |
| 5°     | 1741.9 | 1773.6 | 1756.9 | 1759.6 | 1771.9 |
| 7.5°   | 1725.9 | 1755.2 | 1740.4 | 1743.7 | 1757.9 |
| 10°    | 1711.9 | 1741.2 | 1724.4 | 1729.6 | 1741.9 |
| 12.5°  | 1693.9 | 1721.2 | 1708.4 | 1713.7 | 1725.9 |
| 15°    | 1666.9 | 1691.3 | 1676.9 | 1684.7 | 1696.9 |
| 17.5°  | 1626.9 | 1653.3 | 1637.9 | 1642.2 | 1654.4 |
| 20°    | 1596.9 | 1621.4 | 1611.9 | 1612.2 | 1624.4 |
| 22.5°  | 1560.9 | 1587.3 | 1579.9 | 1574.2 | 1588.4 |
| 25°    | 1504.4 | 1528.9 | 1524.4 | 1517.2 | 1526.9 |
| 27.5°  | 1448.5 | 1466.6 | 1458.0 | 1450.6 | 1458.0 |
| 30°    | 1404.5 | 1426.5 | 1412.0 | 1404.7 | 1412.0 |
| 32.5°  | 1356.5 | 1378.5 | 1364.0 | 1354.6 | 1358.0 |
| 35°    | 1282.0 | 1301.6 | 1289.5 | 1277.0 | 1277.0 |
| 37.5°  | 1211.6 | 1224.3 | 1216.1 | 1194.9 | 1189.6 |
| 40°    | 1159.6 | 1174.2 | 1162.1 | 1136.9 | 1129.6 |
| 42.5°  | 1105.6 | 1120.3 | 1106.1 | 1078.8 | 1067.6 |
| 45°    | 1027.1 | 1036.9 | 1019.6 | 989.3  | 974.6  |
| 47.5°  | 946.2  | 956.4  | 932.7  | 899.3  | 881.7  |
| 50°    | 892.2  | 904.4  | 874.7  | 839.2  | 819.7  |
| 52.5°  | 840.2  | 848.5  | 820.7  | 779.3  | 761.7  |
| 55°    | 757.2  | 767.0  | 739.7  | 694.2  | 672.3  |
| 57.5°  | 679.8  | 689.0  | 656.8  | 613.4  | 596.3  |
| 60°    | 629.8  | 637.1  | 604.8  | 559.4  | 542.3  |
| 62.5°  | 573.8  | 581.1  | 550.8  | 511.4  | 494.3  |
| 65°    | 499.8  | 502.3  | 477.3  | 442.1  | 429.8  |
| 67.5°  | 430.3  | 430.3  | 409.4  | 383.1  | 373.4  |
| 70°    | 382.4  | 382.4  | 367.4  | 347.2  | 337.4  |
| 72.5°  | 338.4  | 336.4  | 327.4  | 313.2  | 305.4  |
| 75°    | 269.9  | 269.9  | 274.9  | 267.3  | 262.4  |
| 77.5°  | 209.9  | 206.0  | 227.4  | 226.4  | 223.9  |
| 80°    | 169.9  | 169.9  | 197.4  | 202.4  | 199.9  |
| 82.5°  | 134.0  | 137.9  | 173.4  | 180.4  | 177.9  |
| 85°    | 82.5   | 99.6   | 137.4  | 147.4  | 147.4  |
| 87.5°  | 37.5   | 68.5   | 110.4  | 124.7  | 125.2  |
| 90°    | 7.5    | 55.1   | 102.3  | 123.6  | 126.0  |
| 92.5°  | 30.3   | 58.4   | 101.2  | 127.5  | 136.8  |
| 95°    | 74.5   | 114.4  | 102.0  | 126.0  | 140.5  |
| 97.5°  | 117.8  | 191.0  | 401.7  | 159.9  | 148.3  |
| 100°   | 147.5  | 233.2  | 760.0  | 257.5  | 189.8  |
| 102.5° | 175.2  | 265.8  | 1009.3 | 601.6  | 348.0  |
| 105°   | 216.8  | 304.9  | 1132.2 | 1453.0 | 974.0  |
| 107.5° | 258.3  | 321.6  | 1076.0 | 2095.8 | 1966.4 |
| 110°   | 286.0  | 346.4  | 1044.3 | 2197.5 | 2363.2 |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°    | 67.5°  | 90°    |
|--------|-------|-------|--------|--------|--------|
| 112.5° | 315.7 | 376.1 | 1014.6 | 2131.7 | 2408.7 |
| 115°   | 357.7 | 420.5 | 970.0  | 2010.8 | 2349.5 |
| 117.5° | 400.5 | 465.0 | 958.4  | 1878.1 | 2226.5 |
| 120°   | 433.2 | 494.8 | 936.6  | 1777.5 | 2140.4 |
| 122.5° | 457.9 | 522.4 | 911.9  | 1692.7 | 2026.6 |
| 125°   | 498.7 | 560.3 | 911.9  | 1590.2 | 1880.6 |
| 127.5° | 531.6 | 597.4 | 913.1  | 1471.4 | 1758.1 |
| 130°   | 549.4 | 622.0 | 918.0  | 1391.9 | 1664.1 |
| 132.5° | 570.1 | 642.7 | 916.0  | 1356.1 | 1579.9 |
| 135°   | 606.2 | 672.8 | 915.5  | 1309.7 | 1503.2 |
| 137.5° | 637.2 | 708.5 | 915.5  | 1258.3 | 1424.0 |
| 140°   | 661.9 | 728.5 | 915.5  | 1228.3 | 1379.5 |
| 142.5° | 686.7 | 748.4 | 920.5  | 1193.4 | 1335.0 |
| 145°   | 717.6 | 778.1 | 921.7  | 1141.0 | 1262.0 |
| 147.5° | 754.7 | 807.9 | 929.2  | 1103.2 | 1196.4 |
| 150°   | 779.5 | 827.8 | 934.1  | 1078.2 | 1156.8 |
| 152.5° | 804.2 | 847.7 | 934.1  | 1058.0 | 1122.2 |
| 155°   | 841.3 | 871.6 | 940.3  | 1034.2 | 1082.6 |
| 157.5° | 871.0 | 900.0 | 947.7  | 1019.0 | 1054.1 |
| 160°   | 890.8 | 915.0 | 952.7  | 1009.0 | 1039.3 |
| 162.5° | 905.7 | 929.8 | 957.6  | 1003.9 | 1024.4 |
| 165°   | 934.1 | 946.2 | 965.0  | 990.2  | 1008.3 |
| 167.5° | 950.2 | 961.1 | 971.2  | 983.8  | 994.7  |
| 170°   | 965.0 | 971.1 | 971.2  | 983.7  | 989.8  |
| 172.5° | 970.0 | 980.9 | 976.2  | 978.8  | 984.8  |
| 175°   | 983.6 | 989.6 | 983.6  | 977.3  | 971.2  |
| 177.5° | 983.6 | 988.4 | 983.6  | 983.5  | 978.6  |
| 180°   | 983.6 | 983.6 | 983.6  | 983.6  | 983.6  |

(END OF REPORT)