

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: P644196

Luminaire Tested: CRQ4DIP-SR4F0-100D150U830-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644196
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-SR4F0-100D150U830-FLLOOB-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

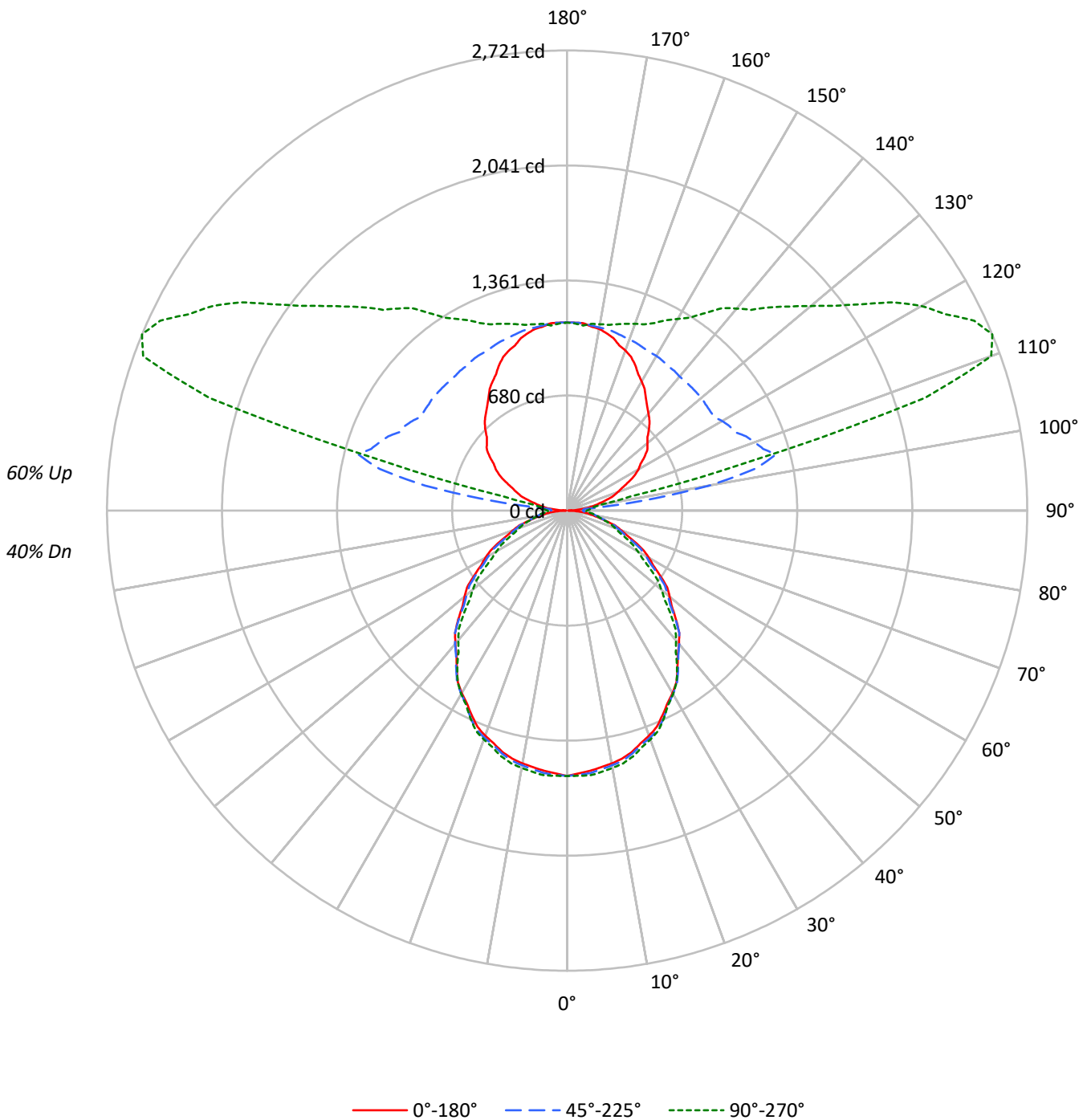
Lumens per Lamp: N/A
Luminaire Lumens: 10022.3 lumens
Efficiency: N/A
Efficacy: 127.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: Semi-Indirect

Input Watts (W): 78.5
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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 105 | 105 | 105 | 105 | 95 | 95 | 95 | 95 | 78 | 78 | 78 | 61 | 61 | 61 | 47 | 47 | 47 | 40 |
| 1 | 95 | 91 | 87 | 84 | 87 | 83 | 80 | 77 | 68 | 65 | 63 | 54 | 52 | 51 | 41 | 40 | 39 | 33 |
| 2 | 87 | 79 | 73 | 68 | 79 | 72 | 67 | 63 | 59 | 56 | 52 | 47 | 45 | 42 | 36 | 34 | 33 | 28 |
| 3 | 79 | 70 | 63 | 57 | 72 | 64 | 58 | 53 | 52 | 48 | 44 | 42 | 39 | 36 | 32 | 30 | 28 | 24 |
| 4 | 72 | 62 | 54 | 48 | 66 | 57 | 50 | 45 | 47 | 42 | 38 | 37 | 34 | 31 | 29 | 26 | 24 | 20 |
| 5 | 66 | 55 | 47 | 41 | 60 | 50 | 43 | 38 | 42 | 36 | 32 | 33 | 30 | 27 | 26 | 23 | 21 | 18 |
| 6 | 61 | 49 | 41 | 36 | 56 | 45 | 38 | 33 | 38 | 32 | 28 | 30 | 26 | 23 | 23 | 21 | 19 | 16 |
| 7 | 57 | 45 | 37 | 31 | 51 | 41 | 34 | 29 | 34 | 29 | 25 | 28 | 24 | 21 | 21 | 19 | 17 | 14 |
| 8 | 52 | 40 | 33 | 28 | 48 | 37 | 30 | 26 | 31 | 26 | 22 | 25 | 21 | 18 | 20 | 17 | 15 | 12 |
| 9 | 49 | 37 | 29 | 25 | 44 | 34 | 27 | 23 | 28 | 23 | 20 | 23 | 19 | 17 | 18 | 15 | 13 | 11 |
| 10 | 46 | 34 | 27 | 22 | 41 | 31 | 25 | 21 | 26 | 21 | 18 | 21 | 18 | 15 | 17 | 14 | 12 | 10 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 25339 | 25339 | 25339 |
| 5° | 24859 | 22373 | 21678 |
| 10° | 24534 | 19906 | 18726 |
| 15° | 24174 | 17825 | 16380 |
| 20° | 23620 | 15991 | 14327 |
| 25° | 22883 | 14279 | 12484 |
| 30° | 22158 | 12618 | 10836 |
| 35° | 21177 | 11098 | 9301 |
| 40° | 20261 | 9715 | 7885 |
| 45° | 19201 | 8350 | 6580 |
| 50° | 18081 | 7072 | 5397 |
| 55° | 16894 | 5950 | 4353 |
| 60° | 15763 | 4877 | 3479 |
| 65° | 14368 | 3889 | 2754 |
| 70° | 13026 | 3047 | 2175 |
| 75° | 11392 | 2341 | 1715 |
| 80° | 9515 | 1740 | 1336 |
| 85° | 6936 | 1266 | 1016 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 19201 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 148.1 | 1.5 |
| 10°-20° | 420.3 | 4.2 |
| 20°-30° | 620.5 | 6.2 |
| 30°-40° | 713.4 | 7.1 |
| 40°-50° | 692.0 | 6.9 |
| 50°-60° | 579.3 | 5.8 |
| 60°-70° | 417.4 | 4.2 |
| 70°-80° | 255.0 | 2.5 |
| 80°-90° | 126.4 | 1.3 |
| 90°-100° | 185.8 | 1.9 |
| 100°-110° | 992.1 | 9.9 |
| 110°-120° | 1329.0 | 13.3 |
| 120°-130° | 1079.2 | 10.8 |
| 130°-140° | 866.2 | 8.6 |
| 140°-150° | 682.6 | 6.8 |
| 150°-160° | 499.1 | 5.0 |
| 160°-170° | 310.0 | 3.1 |
| 170°-180° | 105.7 | 1.1 |
| 0°-30° | 1189.0 | 11.9 |
| 0°-40° | 1902.4 | 19.0 |
| 0°-60° | 3173.7 | 31.7 |
| 0°-90° | 3972.5 | 39.6 |
| 90°-120° | 2506.8 | 25.0 |
| 90°-150° | 5134.9 | 51.2 |
| 90°-180° | 6050.0 | 60.4 |
| 0°-180° | 10022.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1569 | 1569 | 1569 | 1569 | 1569 | |
| 5° | 1545 | 1573 | 1558 | 1561 | 1572 | 147 |
| 15° | 1478 | 1500 | 1487 | 1494 | 1505 | 416 |
| 25° | 1334 | 1356 | 1352 | 1346 | 1354 | 615 |
| 35° | 1137 | 1154 | 1144 | 1133 | 1133 | 712 |
| 45° | 911 | 920 | 904 | 878 | 864 | 702 |
| 55° | 672 | 680 | 656 | 616 | 596 | 602 |
| 65° | 443 | 446 | 423 | 392 | 381 | 441 |
| 75° | 239 | 239 | 244 | 237 | 233 | 256 |
| 85° | 73 | 88 | 122 | 131 | 131 | 77 |
| 90° | 7 | 50 | 94 | 114 | 116 | 11 |
| 95° | 78 | 124 | 102 | 125 | 141 | 81 |
| 105° | 239 | 342 | 1277 | 1637 | 1094 | 252 |
| 115° | 400 | 474 | 1096 | 2272 | 2655 | 397 |
| 125° | 561 | 632 | 1030 | 1798 | 2126 | 499 |
| 135° | 685 | 761 | 1035 | 1481 | 1700 | 528 |
| 145° | 811 | 880 | 1042 | 1290 | 1427 | 510 |
| 155° | 951 | 985 | 1063 | 1169 | 1224 | 437 |
| 165° | 1056 | 1070 | 1091 | 1120 | 1140 | 297 |
| 175° | 1112 | 1119 | 1112 | 1105 | 1098 | 105 |
| 180° | 1112 | 1112 | 1112 | 1112 | 1112 | |

TEST NUMBER: P644196

CATALOG NUMBER: CRQ4DIP-SR4F0-100D150U830-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1569.4 | 1569.4 | 1569.4 | 1569.4 | 1569.4 |
| 2.5° | 1555.2 | 1577.7 | 1564.0 | 1567.6 | 1569.4 |
| 5° | 1545.0 | 1573.1 | 1558.3 | 1560.7 | 1571.6 |
| 7.5° | 1530.8 | 1556.8 | 1543.6 | 1546.6 | 1559.2 |
| 10° | 1518.4 | 1544.4 | 1529.5 | 1534.1 | 1545.0 |
| 12.5° | 1502.4 | 1526.7 | 1515.3 | 1519.9 | 1530.8 |
| 15° | 1478.5 | 1500.1 | 1487.3 | 1494.2 | 1505.1 |
| 17.5° | 1443.0 | 1466.4 | 1452.8 | 1456.6 | 1467.4 |
| 20° | 1416.4 | 1438.1 | 1429.7 | 1430.0 | 1440.8 |
| 22.5° | 1384.5 | 1407.9 | 1401.3 | 1396.3 | 1408.9 |
| 25° | 1334.4 | 1356.1 | 1352.1 | 1345.7 | 1354.3 |
| 27.5° | 1284.7 | 1300.8 | 1293.2 | 1286.7 | 1293.2 |
| 30° | 1245.7 | 1265.2 | 1252.4 | 1245.9 | 1252.4 |
| 32.5° | 1203.2 | 1222.7 | 1209.8 | 1201.5 | 1204.5 |
| 35° | 1137.1 | 1154.5 | 1143.8 | 1132.7 | 1132.7 |
| 37.5° | 1074.6 | 1085.9 | 1078.6 | 1059.9 | 1055.1 |
| 40° | 1028.5 | 1041.5 | 1030.7 | 1008.4 | 1001.9 |
| 42.5° | 980.6 | 993.6 | 981.1 | 956.9 | 946.9 |
| 45° | 911.0 | 919.7 | 904.4 | 877.5 | 864.5 |
| 47.5° | 839.2 | 848.3 | 827.2 | 797.6 | 782.0 |
| 50° | 791.3 | 802.2 | 775.8 | 744.4 | 727.0 |
| 52.5° | 745.2 | 752.6 | 727.9 | 691.2 | 675.6 |
| 55° | 671.6 | 680.3 | 656.1 | 615.8 | 596.3 |
| 57.5° | 602.9 | 611.2 | 582.5 | 544.1 | 528.9 |
| 60° | 558.6 | 565.1 | 536.4 | 496.2 | 481.0 |
| 62.5° | 508.9 | 515.4 | 488.5 | 453.6 | 438.4 |
| 65° | 443.3 | 445.5 | 423.4 | 392.1 | 381.3 |
| 67.5° | 381.7 | 381.7 | 363.1 | 339.8 | 331.2 |
| 70° | 339.1 | 339.1 | 325.8 | 307.9 | 299.2 |
| 72.5° | 300.1 | 298.4 | 290.4 | 277.8 | 270.9 |
| 75° | 239.4 | 239.4 | 243.8 | 237.1 | 232.7 |
| 77.5° | 186.2 | 182.7 | 201.7 | 200.8 | 198.6 |
| 80° | 150.7 | 150.7 | 175.1 | 179.5 | 177.3 |
| 82.5° | 118.8 | 122.3 | 153.8 | 160.0 | 157.8 |
| 85° | 73.1 | 88.3 | 121.9 | 130.8 | 130.8 |
| 87.5° | 33.2 | 61.1 | 98.6 | 111.5 | 111.9 |
| 90° | 6.6 | 50.3 | 93.8 | 114.1 | 116.3 |
| 92.5° | 30.5 | 56.9 | 96.4 | 122.5 | 131.9 |
| 95° | 78.1 | 123.8 | 102.5 | 125.4 | 141.2 |
| 97.5° | 125.9 | 212.3 | 445.0 | 167.9 | 154.1 |
| 100° | 159.5 | 260.6 | 851.9 | 280.7 | 203.0 |
| 102.5° | 191.3 | 297.9 | 1135.8 | 671.7 | 384.4 |
| 105° | 239.0 | 342.2 | 1277.1 | 1637.3 | 1094.5 |
| 107.5° | 286.7 | 361.7 | 1214.8 | 2366.2 | 2219.2 |
| 110° | 318.5 | 389.7 | 1179.5 | 2482.1 | 2668.9 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 352.1 | 423.3 | 1145.9 | 2408.7 | 2721.3 |
| 115° | 400.2 | 473.6 | 1095.5 | 2272.3 | 2655.3 |
| 117.5° | 449.3 | 523.9 | 1082.5 | 2123.0 | 2516.9 |
| 120° | 486.7 | 557.6 | 1058.4 | 2009.7 | 2420.0 |
| 122.5° | 514.7 | 589.3 | 1030.4 | 1913.8 | 2291.3 |
| 125° | 561.4 | 632.3 | 1030.4 | 1798.0 | 2126.3 |
| 127.5° | 599.3 | 674.2 | 1031.8 | 1663.6 | 1987.8 |
| 130° | 619.9 | 702.0 | 1037.4 | 1573.7 | 1881.5 |
| 132.5° | 644.4 | 726.4 | 1035.6 | 1533.3 | 1786.3 |
| 135° | 685.4 | 760.7 | 1035.2 | 1480.8 | 1699.6 |
| 137.5° | 720.4 | 801.1 | 1035.2 | 1422.7 | 1610.1 |
| 140° | 748.4 | 823.6 | 1035.2 | 1388.8 | 1559.7 |
| 142.5° | 776.4 | 846.1 | 1040.8 | 1349.3 | 1509.4 |
| 145° | 811.3 | 879.7 | 1042.2 | 1290.1 | 1426.8 |
| 147.5° | 853.3 | 913.5 | 1050.5 | 1247.4 | 1352.7 |
| 150° | 881.3 | 936.0 | 1056.1 | 1219.0 | 1307.9 |
| 152.5° | 909.3 | 958.5 | 1056.1 | 1196.3 | 1268.8 |
| 155° | 951.2 | 985.4 | 1063.1 | 1169.3 | 1224.0 |
| 157.5° | 984.8 | 1017.6 | 1071.5 | 1152.2 | 1191.8 |
| 160° | 1007.2 | 1034.5 | 1077.1 | 1140.8 | 1175.0 |
| 162.5° | 1024.0 | 1051.3 | 1082.7 | 1135.0 | 1158.3 |
| 165° | 1056.1 | 1069.8 | 1091.1 | 1119.6 | 1140.1 |
| 167.5° | 1074.3 | 1086.6 | 1098.1 | 1112.4 | 1124.7 |
| 170° | 1091.1 | 1098.0 | 1098.1 | 1112.3 | 1119.1 |
| 172.5° | 1096.7 | 1109.0 | 1103.7 | 1106.7 | 1113.5 |
| 175° | 1112.1 | 1118.9 | 1112.1 | 1104.9 | 1098.1 |
| 177.5° | 1112.1 | 1117.6 | 1112.1 | 1112.0 | 1106.5 |
| 180° | 1112.1 | 1112.1 | 1112.1 | 1112.1 | 1112.1 |

(END OF REPORT)