

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: P644235

Luminaire Tested: CRQ4DIP-SR4F0-100D75U840-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644235
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2206-689-28, G2-2206-689-14)
Test Lab: INNOVATION CENTER
Issue Date: 2/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: CRQ4DIP-SR4F0-100D75U840-FLLFLL-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT
UPLIGHT - CURVED FROSTED LENS - 750 LUMENS PER FOOT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

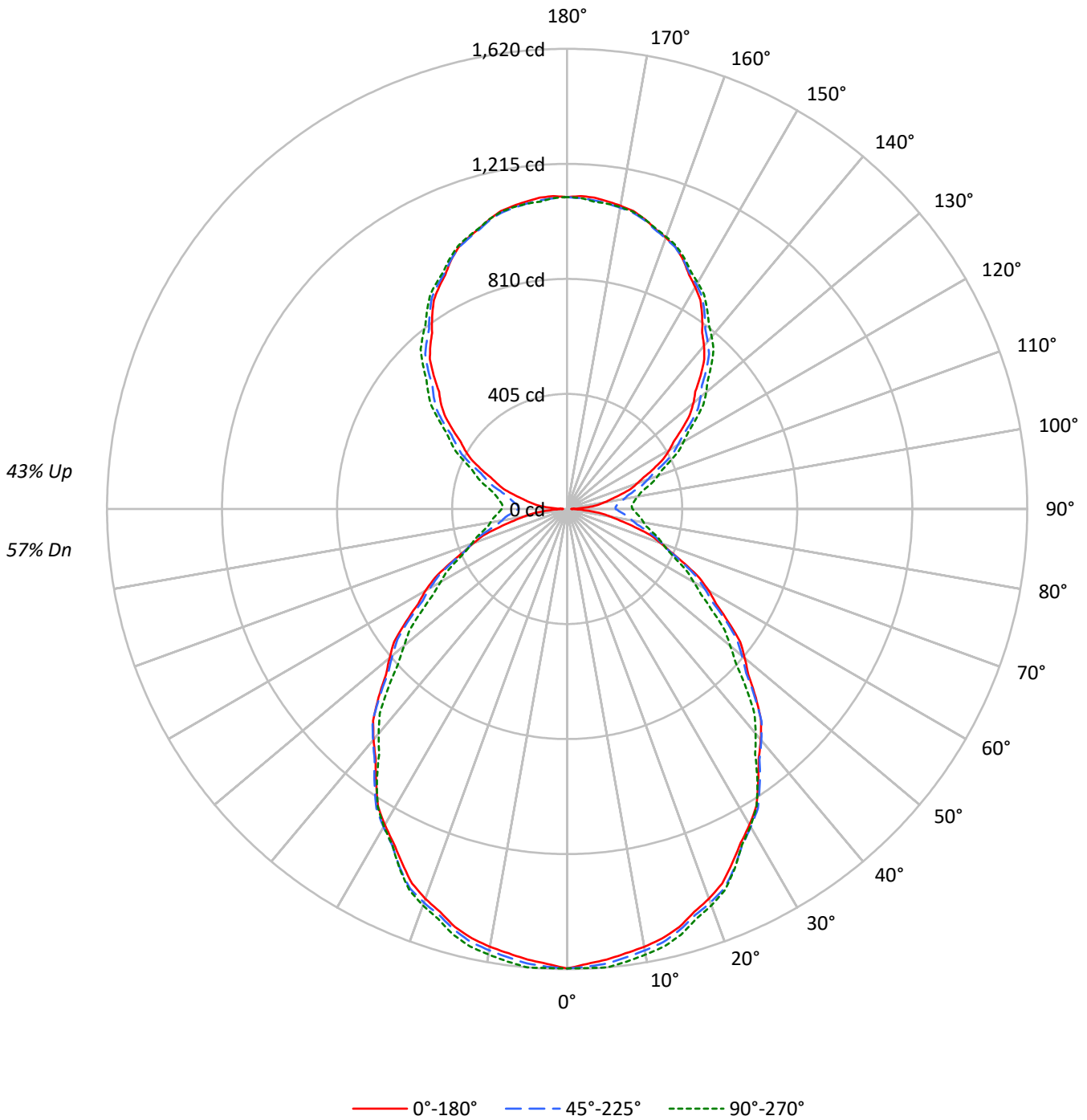
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7412.5 lumens
Efficiency: N/A
Efficacy: 146.2 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): 50.7
Input Voltage (V): 120
Input Current (A_{in}): 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





TEST NUMBER: P644235

CATALOG NUMBER: CRQ4DIP-SR4F0-100D75U840-FLLFLL-1DUDD-WW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| RF | 20 | | | | 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 | 109 | 109 | 109 | 109 | 101 | 101 | 101 | 101 | 87 | 87 | 87 | 74 | 74 | 74 | 63 | 63 | 63 | 57 |
| 1 | 99 | 94 | 90 | 86 | 92 | 88 | 84 | 81 | 76 | 73 | 70 | 64 | 63 | 61 | 54 | 53 | 52 | 47 |
| 2 | 90 | 82 | 76 | 70 | 83 | 77 | 71 | 66 | 66 | 62 | 58 | 57 | 53 | 51 | 48 | 45 | 43 | 39 |
| 3 | 82 | 72 | 65 | 59 | 76 | 67 | 61 | 55 | 58 | 53 | 49 | 50 | 46 | 43 | 42 | 39 | 37 | 33 |
| 4 | 75 | 64 | 56 | 50 | 70 | 60 | 53 | 47 | 52 | 46 | 42 | 45 | 40 | 37 | 38 | 35 | 32 | 28 |
| 5 | 69 | 57 | 49 | 43 | 64 | 53 | 46 | 40 | 47 | 41 | 36 | 40 | 36 | 32 | 34 | 31 | 28 | 25 |
| 6 | 64 | 51 | 43 | 37 | 59 | 48 | 41 | 35 | 42 | 36 | 32 | 36 | 32 | 28 | 31 | 27 | 25 | 22 |
| 7 | 59 | 46 | 38 | 33 | 55 | 44 | 36 | 31 | 38 | 32 | 28 | 33 | 28 | 25 | 28 | 25 | 22 | 19 |
| 8 | 55 | 42 | 34 | 29 | 51 | 40 | 33 | 28 | 35 | 29 | 25 | 30 | 26 | 22 | 26 | 22 | 20 | 17 |
| 9 | 51 | 39 | 31 | 26 | 47 | 36 | 29 | 25 | 32 | 26 | 22 | 28 | 23 | 20 | 24 | 21 | 18 | 16 |
| 10 | 48 | 35 | 28 | 23 | 44 | 33 | 27 | 22 | 30 | 24 | 20 | 26 | 21 | 18 | 22 | 19 | 16 | 14 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 26118 | 26118 | 26118 |
| 5° | 25624 | 23060 | 22345 |
| 10° | 25286 | 20531 | 19302 |
| 15° | 24916 | 18387 | 16883 |
| 20° | 24346 | 16496 | 14767 |
| 25° | 23586 | 14718 | 12868 |
| 30° | 22840 | 13029 | 11170 |
| 35° | 21829 | 11472 | 9587 |
| 40° | 20883 | 10025 | 8127 |
| 45° | 19792 | 8617 | 6782 |
| 50° | 18638 | 7321 | 5563 |
| 55° | 17415 | 6154 | 4546 |
| 60° | 16248 | 5070 | 3721 |
| 65° | 14809 | 4115 | 3074 |
| 70° | 13429 | 3327 | 2598 |
| 75° | 11744 | 2737 | 2275 |
| 80° | 9812 | 2315 | 2062 |
| 85° | 7154 | 2079 | 1951 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 19792 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 152.7 | 2.1 |
| 10°-20° | 433.4 | 5.8 |
| 20°-30° | 640.0 | 8.6 |
| 30°-40° | 736.2 | 9.9 |
| 40°-50° | 714.4 | 9.6 |
| 50°-60° | 601.1 | 8.1 |
| 60°-70° | 445.7 | 6.0 |
| 70°-80° | 300.0 | 4.0 |
| 80°-90° | 199.0 | 2.7 |
| 90°-100° | 181.2 | 2.4 |
| 100°-110° | 257.3 | 3.5 |
| 110°-120° | 368.4 | 5.0 |
| 120°-130° | 473.5 | 6.4 |
| 130°-140° | 534.3 | 7.2 |
| 140°-150° | 527.7 | 7.1 |
| 150°-160° | 446.4 | 6.0 |
| 160°-170° | 297.2 | 4.0 |
| 170°-180° | 103.9 | 1.4 |
| 0°-30° | 1226.1 | 16.5 |
| 0°-40° | 1962.4 | 26.5 |
| 0°-60° | 3277.9 | 44.2 |
| 0°-90° | 4222.6 | 57.0 |
| 90°-120° | 806.9 | 10.9 |
| 90°-150° | 2342.4 | 31.6 |
| 90°-180° | 3190.0 | 43.0 |
| 0°-180° | 7412.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1618 | 1618 | 1618 | 1618 | 1618 | |
| 5° | 1592 | 1622 | 1606 | 1609 | 1620 | 151 |
| 15° | 1524 | 1548 | 1534 | 1540 | 1551 | 429 |
| 25° | 1375 | 1400 | 1394 | 1387 | 1396 | 634 |
| 35° | 1172 | 1193 | 1182 | 1168 | 1168 | 734 |
| 45° | 939 | 951 | 933 | 904 | 891 | 724 |
| 55° | 692 | 706 | 679 | 638 | 623 | 621 |
| 65° | 457 | 466 | 448 | 431 | 426 | 454 |
| 75° | 247 | 256 | 285 | 304 | 309 | 264 |
| 85° | 75 | 118 | 200 | 241 | 251 | 80 |
| 90° | 15 | 84 | 171 | 216 | 230 | 14 |
| 95° | 75 | 97 | 177 | 223 | 232 | 74 |
| 105° | 194 | 197 | 243 | 281 | 288 | 207 |
| 115° | 336 | 346 | 373 | 395 | 401 | 334 |
| 125° | 495 | 510 | 532 | 550 | 555 | 444 |
| 135° | 664 | 679 | 692 | 710 | 718 | 512 |
| 145° | 829 | 839 | 844 | 850 | 859 | 518 |
| 155° | 967 | 973 | 968 | 970 | 975 | 444 |
| 165° | 1056 | 1060 | 1052 | 1049 | 1056 | 298 |
| 175° | 1100 | 1105 | 1091 | 1086 | 1086 | 104 |
| 180° | 1098 | 1098 | 1098 | 1098 | 1098 | |

TEST NUMBER: P644235

CATALOG NUMBER: CRQ4DIP-SR4F0-100D75U840-FLLFLL-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1617.6 | 1617.6 | 1617.6 | 1617.6 | 1617.6 |
| 2.5° | 1603.0 | 1626.2 | 1613.0 | 1615.8 | 1617.6 |
| 5° | 1592.5 | 1621.5 | 1606.2 | 1608.7 | 1619.9 |
| 7.5° | 1577.8 | 1605.6 | 1592.3 | 1594.1 | 1607.1 |
| 10° | 1565.0 | 1591.9 | 1577.6 | 1581.3 | 1592.5 |
| 12.5° | 1548.6 | 1575.4 | 1562.1 | 1566.7 | 1577.8 |
| 15° | 1523.9 | 1548.5 | 1534.2 | 1540.2 | 1551.3 |
| 17.5° | 1487.4 | 1512.6 | 1498.6 | 1501.3 | 1512.5 |
| 20° | 1459.9 | 1483.4 | 1474.8 | 1473.9 | 1485.1 |
| 22.5° | 1427.0 | 1452.3 | 1445.6 | 1439.2 | 1452.2 |
| 25° | 1375.4 | 1400.0 | 1393.7 | 1387.0 | 1396.0 |
| 27.5° | 1324.2 | 1344.9 | 1334.3 | 1326.2 | 1332.9 |
| 30° | 1284.0 | 1306.4 | 1293.2 | 1284.2 | 1290.9 |
| 32.5° | 1240.2 | 1263.5 | 1249.3 | 1238.4 | 1241.5 |
| 35° | 1172.1 | 1193.4 | 1182.4 | 1167.5 | 1167.5 |
| 37.5° | 1107.6 | 1123.8 | 1112.9 | 1092.5 | 1087.5 |
| 40° | 1060.1 | 1078.1 | 1063.6 | 1039.4 | 1032.7 |
| 42.5° | 1010.8 | 1028.7 | 1013.3 | 986.3 | 976.0 |
| 45° | 939.0 | 951.4 | 933.3 | 904.5 | 891.0 |
| 47.5° | 865.0 | 878.7 | 854.3 | 822.1 | 806.1 |
| 50° | 815.7 | 830.2 | 803.2 | 767.3 | 749.4 |
| 52.5° | 768.1 | 780.1 | 752.9 | 713.4 | 698.3 |
| 55° | 692.3 | 705.8 | 678.6 | 638.3 | 622.8 |
| 57.5° | 621.4 | 634.5 | 604.2 | 571.3 | 558.2 |
| 60° | 575.8 | 587.0 | 557.6 | 526.7 | 514.4 |
| 62.5° | 524.6 | 536.7 | 510.1 | 487.5 | 477.1 |
| 65° | 456.9 | 466.0 | 448.0 | 431.1 | 425.6 |
| 67.5° | 393.4 | 400.3 | 390.3 | 385.6 | 383.8 |
| 70° | 349.6 | 356.4 | 355.7 | 358.3 | 357.4 |
| 72.5° | 309.4 | 315.3 | 325.6 | 334.8 | 335.6 |
| 75° | 246.8 | 255.9 | 285.1 | 304.0 | 308.7 |
| 77.5° | 191.9 | 200.7 | 252.0 | 279.2 | 286.3 |
| 80° | 155.4 | 171.3 | 232.9 | 265.7 | 273.7 |
| 82.5° | 122.5 | 145.6 | 218.5 | 255.8 | 263.8 |
| 85° | 75.4 | 118.4 | 200.2 | 241.1 | 251.3 |
| 87.5° | 35.9 | 96.7 | 183.5 | 227.2 | 239.0 |
| 90° | 15.0 | 83.8 | 170.8 | 216.3 | 229.9 |
| 92.5° | 38.2 | 85.4 | 171.1 | 215.6 | 227.4 |
| 95° | 75.3 | 97.0 | 177.3 | 222.7 | 231.7 |
| 97.5° | 110.2 | 118.4 | 191.1 | 232.6 | 241.6 |
| 100° | 133.5 | 137.2 | 203.4 | 243.0 | 252.0 |
| 102.5° | 157.7 | 158.7 | 218.5 | 256.2 | 265.3 |
| 105° | 194.2 | 196.7 | 243.3 | 280.6 | 288.5 |
| 107.5° | 234.8 | 238.2 | 276.5 | 310.6 | 317.6 |
| 110° | 261.8 | 268.9 | 301.7 | 332.1 | 340.1 |



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CATALOG NUMBER: CRQ4DIP-SR4F0-100D75U840-FLLFLL-1DUDD-WW

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 292.6 | 299.7 | 328.8 | 355.5 | 363.4 |
| 115° | 336.5 | 345.8 | 372.8 | 395.1 | 400.8 |
| 117.5° | 382.2 | 393.7 | 418.1 | 437.8 | 443.3 |
| 120° | 415.8 | 427.3 | 449.8 | 468.6 | 473.2 |
| 122.5° | 446.6 | 459.0 | 482.4 | 501.2 | 505.8 |
| 125° | 495.1 | 510.0 | 532.5 | 550.2 | 554.7 |
| 127.5° | 544.8 | 560.6 | 581.3 | 599.2 | 605.1 |
| 130° | 580.3 | 595.1 | 613.0 | 631.8 | 638.6 |
| 132.5° | 612.0 | 626.9 | 643.8 | 663.5 | 671.3 |
| 135° | 664.3 | 679.1 | 692.2 | 709.9 | 717.9 |
| 137.5° | 714.9 | 729.2 | 739.3 | 753.3 | 763.3 |
| 140° | 749.4 | 761.9 | 769.2 | 782.2 | 791.3 |
| 142.5° | 781.1 | 793.6 | 799.0 | 810.2 | 819.3 |
| 145° | 828.6 | 838.9 | 843.7 | 849.8 | 858.9 |
| 147.5° | 873.1 | 883.1 | 885.2 | 890.5 | 896.2 |
| 150° | 902.0 | 911.1 | 911.3 | 913.8 | 919.5 |
| 152.5° | 929.1 | 937.3 | 934.7 | 936.2 | 942.8 |
| 155° | 967.3 | 973.0 | 968.4 | 969.7 | 975.4 |
| 157.5° | 997.6 | 1003.3 | 996.2 | 998.4 | 1002.9 |
| 160° | 1016.2 | 1021.9 | 1013.9 | 1015.2 | 1019.7 |
| 162.5° | 1033.9 | 1037.8 | 1030.7 | 1029.2 | 1035.6 |
| 165° | 1055.9 | 1060.4 | 1052.4 | 1049.0 | 1055.9 |
| 167.5° | 1074.5 | 1079.1 | 1068.4 | 1064.9 | 1071.7 |
| 170° | 1083.8 | 1088.4 | 1076.8 | 1072.3 | 1079.2 |
| 172.5° | 1092.2 | 1096.8 | 1084.3 | 1078.8 | 1083.8 |
| 175° | 1100.1 | 1104.7 | 1090.8 | 1086.2 | 1086.2 |
| 177.5° | 1102.5 | 1105.2 | 1095.0 | 1090.5 | 1095.9 |
| 180° | 1097.8 | 1097.8 | 1097.8 | 1097.8 | 1097.8 |

(END OF REPORT)