

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: P644342

Luminaire Tested: CRQ4DIP-SR4F0-50D150U835-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644342
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-SR4F0-50D150U835-FLLOOB-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

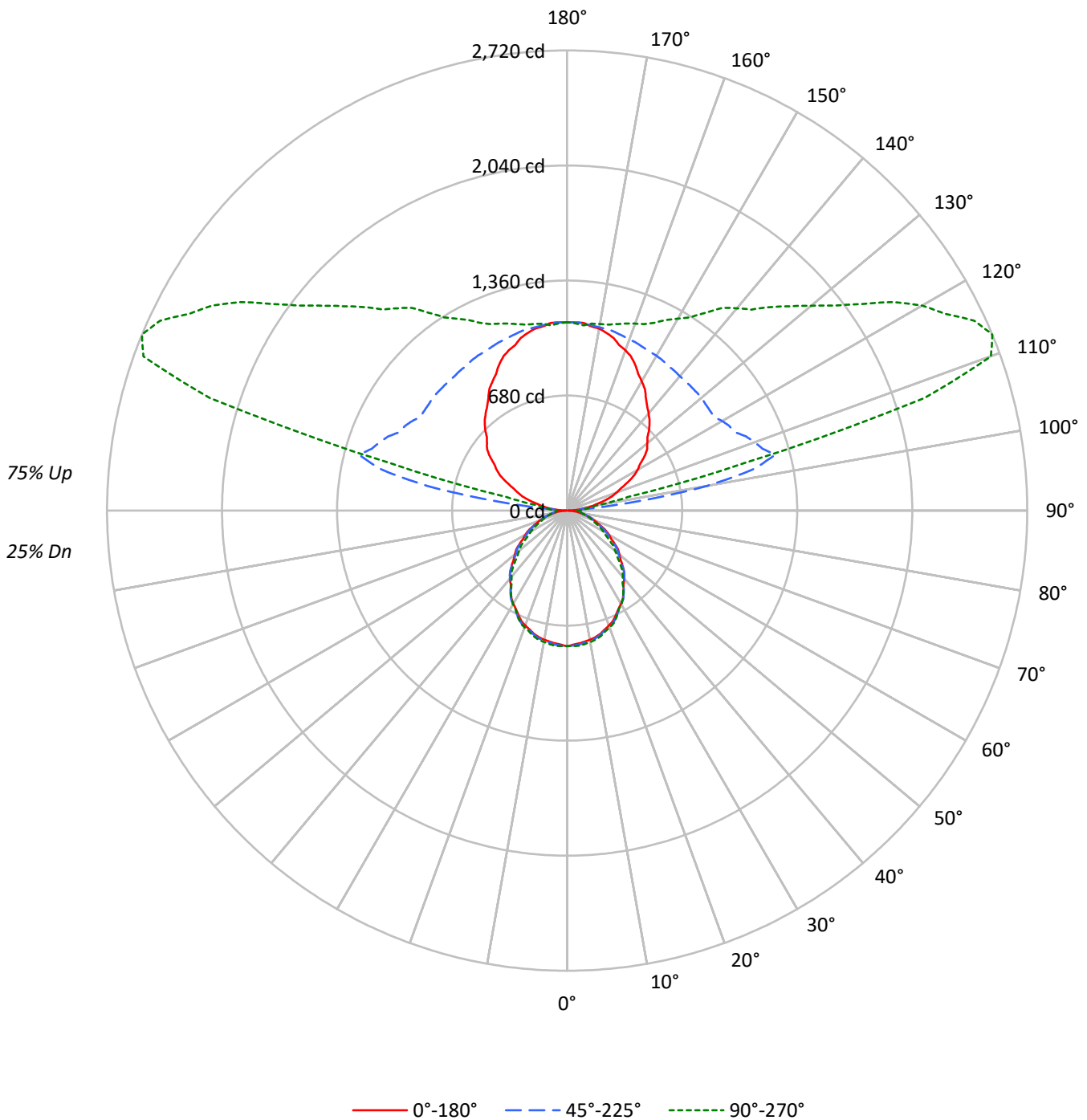
Lumens per Lamp: N/A
Luminaire Lumens: 8047.4 lumens
Efficiency: N/A
Efficacy: 127.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: Semi-Indirect

Input Watts (W): 62.9
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 | 101 | 101 | 101 | 101 | 90 | 90 | 90 | 90 | 70 | 70 | 70 | 51 | 51 | 51 | 33 | 33 | 33 | 25 | | | | |
| 1 | 92 | 88 | 84 | 81 | 82 | 78 | 75 | 72 | 61 | 59 | 57 | 44 | 43 | 42 | 29 | 29 | 28 | 21 | | | | |
| 2 | 84 | 77 | 71 | 66 | 74 | 69 | 64 | 59 | 53 | 50 | 47 | 39 | 37 | 35 | 26 | 25 | 24 | 18 | | | | |
| 3 | 76 | 67 | 60 | 55 | 68 | 60 | 54 | 50 | 47 | 43 | 39 | 34 | 32 | 30 | 23 | 21 | 20 | 15 | | | | |
| 4 | 70 | 60 | 52 | 46 | 62 | 53 | 47 | 42 | 42 | 37 | 33 | 31 | 28 | 25 | 20 | 19 | 17 | 13 | | | | |
| 5 | 64 | 53 | 45 | 39 | 57 | 47 | 41 | 36 | 37 | 32 | 29 | 27 | 24 | 22 | 18 | 17 | 15 | 11 | | | | |
| 6 | 59 | 47 | 40 | 34 | 52 | 42 | 36 | 31 | 33 | 29 | 25 | 25 | 22 | 19 | 17 | 15 | 13 | 10 | | | | |
| 7 | 54 | 43 | 35 | 30 | 48 | 38 | 32 | 27 | 30 | 25 | 22 | 22 | 19 | 17 | 15 | 13 | 12 | 9 | | | | |
| 8 | 50 | 39 | 31 | 26 | 45 | 35 | 28 | 24 | 27 | 23 | 19 | 20 | 17 | 15 | 14 | 12 | 11 | 8 | | | | |
| 9 | 47 | 35 | 28 | 23 | 42 | 32 | 25 | 21 | 25 | 20 | 17 | 19 | 16 | 13 | 13 | 11 | 9 | 7 | | | | |
| 10 | 44 | 32 | 25 | 20 | 39 | 29 | 23 | 19 | 23 | 18 | 15 | 17 | 14 | 12 | 12 | 10 | 9 | 6 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 12936 | 12936 | 12936 |
| 5° | 12692 | 11423 | 11067 |
| 10° | 12525 | 10162 | 9561 |
| 15° | 12341 | 9100 | 8363 |
| 20° | 12059 | 8164 | 7315 |
| 25° | 11683 | 7290 | 6373 |
| 30° | 11313 | 6442 | 5532 |
| 35° | 10811 | 5665 | 4749 |
| 40° | 10344 | 4960 | 4025 |
| 45° | 9803 | 4263 | 3359 |
| 50° | 9231 | 3611 | 2756 |
| 55° | 8626 | 3038 | 2222 |
| 60° | 8048 | 2490 | 1777 |
| 65° | 7335 | 1985 | 1406 |
| 70° | 6649 | 1556 | 1111 |
| 75° | 5815 | 1195 | 876 |
| 80° | 4862 | 889 | 682 |
| 85° | 3539 | 646 | 519 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9803 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 75.6 | 0.9 |
| 10°-20° | 214.6 | 2.7 |
| 20°-30° | 316.8 | 3.9 |
| 30°-40° | 364.2 | 4.5 |
| 40°-50° | 353.3 | 4.4 |
| 50°-60° | 295.8 | 3.7 |
| 60°-70° | 213.1 | 2.6 |
| 70°-80° | 130.2 | 1.6 |
| 80°-90° | 65.8 | 0.8 |
| 90°-100° | 161.9 | 2.0 |
| 100°-110° | 984.3 | 12.2 |
| 110°-120° | 1327.1 | 16.5 |
| 120°-130° | 1078.9 | 13.4 |
| 130°-140° | 866.8 | 10.8 |
| 140°-150° | 683.3 | 8.5 |
| 150°-160° | 499.6 | 6.2 |
| 160°-170° | 310.3 | 3.9 |
| 170°-180° | 105.8 | 1.3 |
| 0°-30° | 607.0 | 7.5 |
| 0°-40° | 971.2 | 12.1 |
| 0°-60° | 1620.3 | 20.1 |
| 0°-90° | 2029.3 | 25.2 |
| 90°-120° | 2473.3 | 30.7 |
| 90°-150° | 5102.3 | 63.4 |
| 90°-180° | 6018.0 | 74.8 |
| 0°-180° | 8047.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 801 | 801 | 801 | 801 | 801 | |
| 5° | 789 | 803 | 796 | 797 | 802 | 75 |
| 15° | 755 | 766 | 759 | 763 | 768 | 212 |
| 25° | 681 | 692 | 690 | 687 | 691 | 314 |
| 35° | 580 | 589 | 584 | 578 | 578 | 364 |
| 45° | 465 | 470 | 462 | 448 | 441 | 358 |
| 55° | 343 | 347 | 335 | 314 | 304 | 307 |
| 65° | 226 | 227 | 216 | 200 | 195 | 225 |
| 75° | 122 | 122 | 124 | 121 | 119 | 131 |
| 85° | 37 | 45 | 62 | 67 | 67 | 39 |
| 90° | 3 | 29 | 55 | 69 | 70 | 7 |
| 95° | 67 | 114 | 80 | 95 | 110 | 72 |
| 105° | 228 | 338 | 1273 | 1629 | 1084 | 241 |
| 115° | 393 | 471 | 1094 | 2272 | 2656 | 390 |
| 125° | 558 | 631 | 1030 | 1800 | 2128 | 495 |
| 135° | 686 | 761 | 1036 | 1482 | 1701 | 528 |
| 145° | 812 | 880 | 1043 | 1291 | 1428 | 510 |
| 155° | 952 | 986 | 1064 | 1170 | 1225 | 437 |
| 165° | 1057 | 1071 | 1092 | 1121 | 1141 | 297 |
| 175° | 1113 | 1120 | 1113 | 1106 | 1099 | 105 |
| 180° | 1113 | 1113 | 1113 | 1113 | 1113 | |



TEST NUMBER: P644342

CATALOG NUMBER: CRQ4DIP-SR4F0-50D150U835-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|--------|--------|--------|
| 0° | 801.2 | 801.2 | 801.2 | 801.2 | 801.2 |
| 2.5° | 794.0 | 805.5 | 798.5 | 800.3 | 801.2 |
| 5° | 788.8 | 803.2 | 795.6 | 796.8 | 802.3 |
| 7.5° | 781.5 | 794.8 | 788.1 | 789.6 | 796.0 |
| 10° | 775.2 | 788.5 | 780.8 | 783.2 | 788.8 |
| 12.5° | 767.0 | 779.4 | 773.6 | 776.0 | 781.5 |
| 15° | 754.8 | 765.9 | 759.3 | 762.9 | 768.4 |
| 17.5° | 736.7 | 748.7 | 741.7 | 743.6 | 749.2 |
| 20° | 723.1 | 734.2 | 729.9 | 730.0 | 735.6 |
| 22.5° | 706.8 | 718.8 | 715.4 | 712.9 | 719.3 |
| 25° | 681.3 | 692.3 | 690.3 | 687.0 | 691.4 |
| 27.5° | 655.9 | 664.1 | 660.2 | 656.9 | 660.2 |
| 30° | 636.0 | 646.0 | 639.4 | 636.1 | 639.4 |
| 32.5° | 614.3 | 624.2 | 617.7 | 613.4 | 614.9 |
| 35° | 580.5 | 589.4 | 583.9 | 578.3 | 578.3 |
| 37.5° | 548.6 | 554.4 | 550.7 | 541.1 | 538.7 |
| 40° | 525.1 | 531.7 | 526.2 | 514.8 | 511.5 |
| 42.5° | 500.6 | 507.3 | 500.9 | 488.5 | 483.4 |
| 45° | 465.1 | 469.5 | 461.7 | 448.0 | 441.3 |
| 47.5° | 428.4 | 433.1 | 422.3 | 407.2 | 399.3 |
| 50° | 404.0 | 409.5 | 396.1 | 380.0 | 371.2 |
| 52.5° | 380.5 | 384.2 | 371.6 | 352.9 | 344.9 |
| 55° | 342.9 | 347.3 | 335.0 | 314.4 | 304.4 |
| 57.5° | 307.8 | 312.0 | 297.4 | 277.8 | 270.0 |
| 60° | 285.2 | 288.5 | 273.9 | 253.3 | 245.6 |
| 62.5° | 259.8 | 263.1 | 249.4 | 231.6 | 223.8 |
| 65° | 226.3 | 227.4 | 216.1 | 200.2 | 194.6 |
| 67.5° | 194.9 | 194.9 | 185.4 | 173.5 | 169.1 |
| 70° | 173.1 | 173.1 | 166.4 | 157.2 | 152.8 |
| 72.5° | 153.2 | 152.3 | 148.2 | 141.8 | 138.3 |
| 75° | 122.2 | 122.2 | 124.5 | 121.0 | 118.8 |
| 77.5° | 95.1 | 93.3 | 103.0 | 102.5 | 101.4 |
| 80° | 77.0 | 77.0 | 89.4 | 91.6 | 90.5 |
| 82.5° | 60.7 | 62.4 | 78.5 | 81.7 | 80.6 |
| 85° | 37.3 | 45.1 | 62.2 | 66.8 | 66.8 |
| 87.5° | 17.0 | 31.8 | 51.7 | 59.0 | 59.2 |
| 90° | 3.4 | 29.1 | 54.7 | 68.6 | 69.7 |
| 92.5° | 23.8 | 40.6 | 64.3 | 83.9 | 91.3 |
| 95° | 67.3 | 114.1 | 79.8 | 95.0 | 109.8 |
| 97.5° | 113.0 | 206.1 | 428.8 | 145.2 | 130.1 |
| 100° | 146.6 | 255.2 | 839.7 | 262.4 | 182.5 |
| 102.5° | 179.3 | 293.4 | 1127.3 | 657.3 | 368.4 |
| 105° | 228.3 | 338.1 | 1272.8 | 1628.9 | 1083.5 |
| 107.5° | 277.4 | 358.6 | 1212.9 | 2362.2 | 2214.1 |
| 110° | 310.1 | 386.7 | 1178.4 | 2480.0 | 2665.9 |



TEST NUMBER: P644342

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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 343.7 | 420.3 | 1144.8 | 2408.2 | 2720.1 |
| 115° | 393.0 | 470.7 | 1094.4 | 2272.2 | 2655.5 |
| 117.5° | 443.4 | 521.1 | 1081.5 | 2124.1 | 2518.3 |
| 120° | 481.7 | 554.8 | 1058.2 | 2011.5 | 2422.2 |
| 122.5° | 509.7 | 587.4 | 1030.2 | 1915.6 | 2293.4 |
| 125° | 557.6 | 630.7 | 1030.2 | 1799.6 | 2128.2 |
| 127.5° | 596.8 | 672.6 | 1031.6 | 1665.1 | 1989.6 |
| 130° | 618.3 | 700.5 | 1037.2 | 1575.1 | 1883.2 |
| 132.5° | 644.5 | 726.7 | 1036.3 | 1534.7 | 1788.0 |
| 135° | 686.1 | 761.4 | 1036.1 | 1482.1 | 1701.2 |
| 137.5° | 721.1 | 801.8 | 1036.1 | 1424.0 | 1611.5 |
| 140° | 749.1 | 824.4 | 1036.1 | 1390.0 | 1561.1 |
| 142.5° | 777.1 | 846.9 | 1041.7 | 1350.6 | 1510.7 |
| 145° | 812.1 | 880.5 | 1043.1 | 1291.2 | 1428.1 |
| 147.5° | 854.1 | 914.3 | 1051.5 | 1248.5 | 1353.9 |
| 150° | 882.1 | 936.8 | 1057.1 | 1220.1 | 1309.1 |
| 152.5° | 910.1 | 959.4 | 1057.1 | 1197.4 | 1269.9 |
| 155° | 952.1 | 986.3 | 1064.1 | 1170.3 | 1225.1 |
| 157.5° | 985.7 | 1018.5 | 1072.5 | 1153.2 | 1192.9 |
| 160° | 1008.1 | 1035.5 | 1078.1 | 1141.9 | 1176.1 |
| 162.5° | 1024.9 | 1052.3 | 1083.7 | 1136.0 | 1159.3 |
| 165° | 1057.1 | 1070.8 | 1092.1 | 1120.6 | 1141.1 |
| 167.5° | 1075.3 | 1087.6 | 1099.1 | 1113.4 | 1125.7 |
| 170° | 1092.1 | 1098.9 | 1099.1 | 1113.3 | 1120.1 |
| 172.5° | 1097.7 | 1110.0 | 1104.7 | 1107.7 | 1114.5 |
| 175° | 1113.1 | 1119.9 | 1113.1 | 1105.9 | 1099.1 |
| 177.5° | 1113.1 | 1118.6 | 1113.1 | 1113.0 | 1107.5 |
| 180° | 1113.1 | 1113.1 | 1113.1 | 1113.1 | 1113.1 |

(END OF REPORT)