

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: P644389

Luminaire Tested: CRQ4DIP-SR4F0-75D100U835-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644389  
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-SR4F0-75D100U835-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 750 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

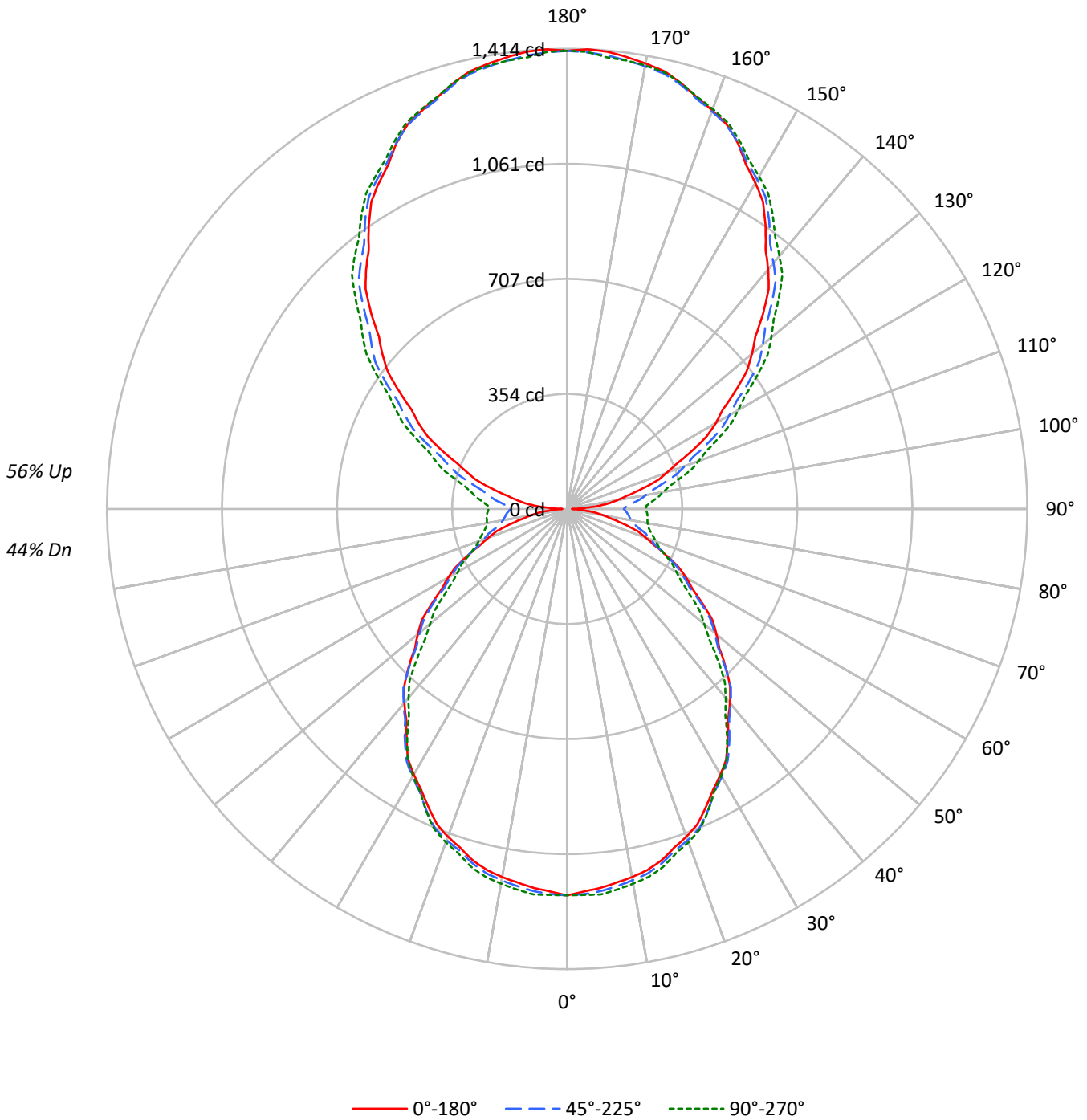
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7218.8 lumens  
Efficiency: N/A  
Efficacy: 142.1 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): 50.8  
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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CATALOG NUMBER: CRQ4DIP-SR4F0-75D100U835-FLLFLL-1DUDD-WW

**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   | 106 | 106 | 106 | 106 | 97 | 97 | 97 | 97 | 80 | 80 | 80 |  | 65 | 65 | 65 |  | 51 | 51 | 51 | 44 |
| 1   | 96  | 91  | 87  | 83  | 87 | 83 | 80 | 77 | 69 | 66 | 64 |  | 56 | 54 | 52 |  | 44 | 42 | 41 | 36 |
| 2   | 87  | 79  | 73  | 68  | 79 | 73 | 67 | 63 | 60 | 56 | 53 |  | 49 | 46 | 43 |  | 38 | 36 | 35 | 30 |
| 3   | 79  | 70  | 62  | 56  | 72 | 64 | 58 | 52 | 53 | 48 | 44 |  | 43 | 40 | 37 |  | 34 | 31 | 29 | 25 |
| 4   | 73  | 62  | 54  | 48  | 66 | 57 | 50 | 44 | 47 | 42 | 38 |  | 38 | 35 | 31 |  | 30 | 28 | 25 | 21 |
| 5   | 67  | 55  | 47  | 41  | 61 | 51 | 43 | 38 | 42 | 37 | 33 |  | 35 | 30 | 27 |  | 27 | 24 | 22 | 19 |
| 6   | 61  | 49  | 41  | 35  | 56 | 45 | 38 | 33 | 38 | 33 | 28 |  | 31 | 27 | 24 |  | 25 | 22 | 19 | 16 |
| 7   | 57  | 44  | 37  | 31  | 52 | 41 | 34 | 29 | 35 | 29 | 25 |  | 28 | 24 | 21 |  | 23 | 20 | 17 | 15 |
| 8   | 53  | 40  | 33  | 27  | 48 | 37 | 30 | 26 | 31 | 26 | 22 |  | 26 | 22 | 19 |  | 21 | 18 | 16 | 13 |
| 9   | 49  | 37  | 29  | 24  | 45 | 34 | 27 | 23 | 29 | 24 | 20 |  | 24 | 20 | 17 |  | 19 | 16 | 14 | 12 |
| 10  | 46  | 34  | 27  | 22  | 42 | 31 | 25 | 20 | 27 | 21 | 18 |  | 22 | 18 | 15 |  | 18 | 15 | 13 | 11 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 19168 | 19168 | 19168 |
| 5°  | 18806 | 16924 | 16400 |
| 10° | 18559 | 15077 | 14167 |
| 15° | 18288 | 13503 | 12392 |
| 20° | 17869 | 12114 | 10838 |
| 25° | 17311 | 10802 | 9444  |
| 30° | 16763 | 9575  | 8197  |
| 35° | 16020 | 8438  | 7036  |
| 40° | 15328 | 7363  | 5965  |
| 45° | 14526 | 6330  | 4978  |
| 50° | 13678 | 5391  | 4083  |
| 55° | 12782 | 4528  | 3369  |
| 60° | 11925 | 3744  | 2805  |
| 65° | 10871 | 3079  | 2386  |
| 70° | 9857  | 2543  | 2101  |
| 75° | 8617  | 2187  | 1948  |
| 80° | 7198  | 1985  | 1889  |
| 85° | 5247  | 1951  | 1929  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14526 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 112.1  | 1.6       |
| 10°-20°   | 318.2  | 4.4       |
| 20°-30°   | 469.9  | 6.5       |
| 30°-40°   | 540.9  | 7.5       |
| 40°-50°   | 525.0  | 7.3       |
| 50°-60°   | 443.3  | 6.1       |
| 60°-70°   | 335.7  | 4.6       |
| 70°-80°   | 240.6  | 3.3       |
| 80°-90°   | 185.2  | 2.6       |
| 90°-100°  | 204.7  | 2.8       |
| 100°-110° | 320.0  | 4.4       |
| 110°-120° | 468.9  | 6.5       |
| 120°-130° | 605.9  | 8.4       |
| 130°-140° | 685.0  | 9.5       |
| 140°-150° | 676.8  | 9.4       |
| 150°-160° | 572.5  | 7.9       |
| 160°-170° | 381.1  | 5.3       |
| 170°-180° | 133.3  | 1.8       |
| 0°-30°    | 900.2  | 12.5      |
| 0°-40°    | 1441.1 | 20.0      |
| 0°-60°    | 2409.3 | 33.4      |
| 0°-90°    | 3170.7 | 43.9      |
| 90°-120°  | 993.6  | 13.8      |
| 90°-150°  | 2961.2 | 41.0      |
| 90°-180°  | 4048.0 | 56.1      |
| 0°-180°   | 7218.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1187 | 1187  | 1187 | 1187  | 1187 |      |
| 5°   | 1169 | 1190  | 1179 | 1181  | 1189 | 111  |
| 15°  | 1118 | 1138  | 1127 | 1130  | 1139 | 315  |
| 25°  | 1010 | 1029  | 1023 | 1018  | 1024 | 465  |
| 35°  | 860  | 878   | 870  | 857   | 857  | 539  |
| 45°  | 689  | 700   | 686  | 664   | 654  | 531  |
| 55°  | 508  | 520   | 499  | 470   | 462  | 456  |
| 65°  | 335  | 346   | 335  | 331   | 330  | 334  |
| 75°  | 181  | 193   | 228  | 256   | 264  | 194  |
| 85°  | 55   | 102   | 188  | 235   | 248  | 59   |
| 90°  | 16   | 83    | 174  | 225   | 241  | 14   |
| 95°  | 84   | 113   | 201  | 250   | 261  | 84   |
| 105° | 236  | 247   | 306  | 349   | 356  | 252  |
| 115° | 423  | 440   | 476  | 504   | 512  | 420  |
| 125° | 630  | 652   | 682  | 706   | 712  | 565  |
| 135° | 852  | 871   | 888  | 910   | 921  | 657  |
| 145° | 1063 | 1076  | 1082 | 1090  | 1102 | 664  |
| 155° | 1241 | 1248  | 1242 | 1244  | 1251 | 570  |
| 165° | 1354 | 1360  | 1350 | 1345  | 1354 | 382  |
| 175° | 1411 | 1417  | 1399 | 1393  | 1393 | 134  |
| 180° | 1408 | 1408  | 1408 | 1408  | 1408 |      |

TEST NUMBER: P644389

CATALOG NUMBER: CRQ4DIP-SR4F0-75D100U835-FLLFLL-1DUDD-WW

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°         | 45°    | 67.5°  | 90°    |
|--------|--------|---------------|--------|--------|--------|
| 0°     | 1187.2 | <i>1187.2</i> | 1187.2 | 1187.2 | 1187.2 |
| 2.5°   | 1176.5 | <i>1193.5</i> | 1184.4 | 1185.9 | 1187.2 |
| 5°     | 1168.8 | <i>1190.1</i> | 1178.8 | 1180.7 | 1188.9 |
| 7.5°   | 1158.0 | <i>1178.9</i> | 1169.2 | 1170.0 | 1179.5 |
| 10°    | 1148.6 | <i>1168.3</i> | 1158.5 | 1160.6 | 1168.8 |
| 12.5°  | 1136.6 | <i>1157.3</i> | 1146.6 | 1149.8 | 1158.0 |
| 15°    | 1118.5 | <i>1137.8</i> | 1126.7 | 1130.4 | 1138.6 |
| 17.5°  | 1091.6 | <i>1110.8</i> | 1100.5 | 1101.9 | 1110.1 |
| 20°    | 1071.5 | <i>1089.4</i> | 1083.1 | 1081.7 | 1089.9 |
| 22.5°  | 1047.4 | <i>1066.5</i> | 1061.6 | 1056.3 | 1065.8 |
| 25°    | 1009.5 | <i>1028.8</i> | 1022.9 | 1018.0 | 1024.5 |
| 27.5°  | 971.9  | <i>989.3</i>  | 980.1  | 973.3  | 978.3  |
| 30°    | 942.4  | <i>960.1</i>  | 950.4  | 942.5  | 947.4  |
| 32.5°  | 910.2  | <i>929.0</i>  | 918.2  | 908.9  | 911.2  |
| 35°    | 860.2  | <i>877.7</i>  | 869.7  | 856.9  | 856.9  |
| 37.5°  | 812.9  | <i>827.3</i>  | 817.4  | 801.8  | 798.2  |
| 40°    | 778.1  | <i>793.7</i>  | 781.2  | 762.8  | 757.9  |
| 42.5°  | 741.8  | <i>757.5</i>  | 744.9  | 723.9  | 716.3  |
| 45°    | 689.2  | <i>700.1</i>  | 685.6  | 663.8  | 654.0  |
| 47.5°  | 634.9  | <i>647.3</i>  | 627.9  | 603.4  | 591.6  |
| 50°    | 598.6  | <i>611.2</i>  | 591.4  | 563.1  | 550.0  |
| 52.5°  | 563.8  | <i>574.9</i>  | 554.0  | 524.1  | 513.5  |
| 55°    | 508.1  | <i>520.5</i>  | 499.3  | 470.4  | 461.5  |
| 57.5°  | 456.1  | <i>468.2</i>  | 445.5  | 425.1  | 416.8  |
| 60°    | 422.6  | <i>433.3</i>  | 411.8  | 394.9  | 387.8  |
| 62.5°  | 385.0  | <i>396.9</i>  | 377.9  | 368.7  | 364.0  |
| 65°    | 335.4  | <i>345.8</i>  | 335.2  | 331.2  | 330.3  |
| 67.5°  | 288.8  | <i>297.5</i>  | 295.3  | 302.4  | 304.9  |
| 70°    | 256.6  | <i>265.3</i>  | 271.9  | 285.5  | 289.1  |
| 72.5°  | 227.0  | <i>235.7</i>  | 253.4  | 272.3  | 277.3  |
| 75°    | 181.1  | <i>192.8</i>  | 227.8  | 255.8  | 264.3  |
| 77.5°  | 140.9  | <i>154.0</i>  | 209.1  | 244.5  | 254.9  |
| 80°    | 114.0  | <i>134.5</i>  | 199.7  | 239.2  | 250.7  |
| 82.5°  | 89.9   | <i>117.6</i>  | 193.2  | 237.6  | 249.1  |
| 85°    | 55.3   | <i>101.9</i>  | 187.9  | 235.2  | 248.4  |
| 87.5°  | 27.2   | <i>90.2</i>   | 181.2  | 230.7  | 245.6  |
| 90°    | 15.5   | <i>82.8</i>   | 174.0  | 224.7  | 241.0  |
| 92.5°  | 41.2   | <i>90.7</i>   | 182.4  | 231.9  | 244.8  |
| 95°    | 84.0   | <i>113.1</i>  | 201.1  | 250.5  | 260.9  |
| 97.5°  | 126.2  | <i>144.4</i>  | 226.1  | 271.9  | 282.0  |
| 100°   | 156.1  | <i>169.5</i>  | 245.8  | 290.3  | 299.4  |
| 102.5° | 188.3  | <i>198.1</i>  | 269.1  | 311.2  | 321.4  |
| 105°   | 236.5  | <i>247.1</i>  | 305.8  | 348.6  | 356.2  |
| 107.5° | 290.1  | <i>301.6</i>  | 351.2  | 391.3  | 399.1  |
| 110°   | 325.8  | <i>341.0</i>  | 384.5  | 420.9  | 429.9  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 365.3  | 380.4  | 419.2  | 452.9  | 461.9  |
| 115°   | 422.8  | 439.6  | 475.7  | 504.2  | 511.5  |
| 117.5° | 482.9  | 501.1  | 533.9  | 560.5  | 567.5  |
| 120°   | 527.0  | 544.2  | 575.6  | 601.0  | 606.8  |
| 122.5° | 566.5  | 585.9  | 617.5  | 642.8  | 648.7  |
| 125°   | 630.0  | 651.5  | 681.7  | 705.6  | 711.5  |
| 127.5° | 695.2  | 716.4  | 744.2  | 768.4  | 776.0  |
| 130°   | 741.7  | 760.7  | 784.9  | 810.3  | 819.1  |
| 132.5° | 784.5  | 803.5  | 825.4  | 851.0  | 860.9  |
| 135°   | 852.0  | 870.9  | 887.8  | 910.5  | 920.7  |
| 137.5° | 916.8  | 935.2  | 948.2  | 966.1  | 979.0  |
| 140°   | 961.1  | 977.1  | 986.5  | 1003.2 | 1014.9 |
| 142.5° | 1001.7 | 1017.8 | 1024.7 | 1039.0 | 1050.7 |
| 145°   | 1062.7 | 1075.8 | 1082.1 | 1089.9 | 1101.6 |
| 147.5° | 1119.8 | 1132.7 | 1135.3 | 1142.1 | 1149.4 |
| 150°   | 1156.9 | 1168.5 | 1168.8 | 1172.0 | 1179.3 |
| 152.5° | 1191.5 | 1202.1 | 1198.7 | 1200.7 | 1209.2 |
| 155°   | 1240.6 | 1247.9 | 1242.1 | 1243.7 | 1251.0 |
| 157.5° | 1279.4 | 1286.7 | 1277.6 | 1280.4 | 1286.3 |
| 160°   | 1303.3 | 1310.6 | 1300.3 | 1302.0 | 1307.8 |
| 162.5° | 1326.1 | 1331.0 | 1321.9 | 1320.0 | 1328.1 |
| 165°   | 1354.2 | 1360.0 | 1349.7 | 1345.4 | 1354.2 |
| 167.5° | 1378.1 | 1383.9 | 1370.3 | 1365.7 | 1374.5 |
| 170°   | 1390.0 | 1395.9 | 1381.1 | 1375.3 | 1384.0 |
| 172.5° | 1400.8 | 1406.6 | 1390.6 | 1383.6 | 1390.0 |
| 175°   | 1410.9 | 1416.8 | 1399.0 | 1393.0 | 1393.0 |
| 177.5° | 1413.9 | 1417.4 | 1404.4 | 1398.6 | 1405.6 |
| 180°   | 1408.0 | 1408.0 | 1408.0 | 1408.0 | 1408.0 |

(END OF REPORT)