

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: P644463

Luminaire Tested: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644463
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2206-689-14)
Test Lab: INNOVATION CENTER
Issue Date: 2/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT
DIRECT ONLY
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

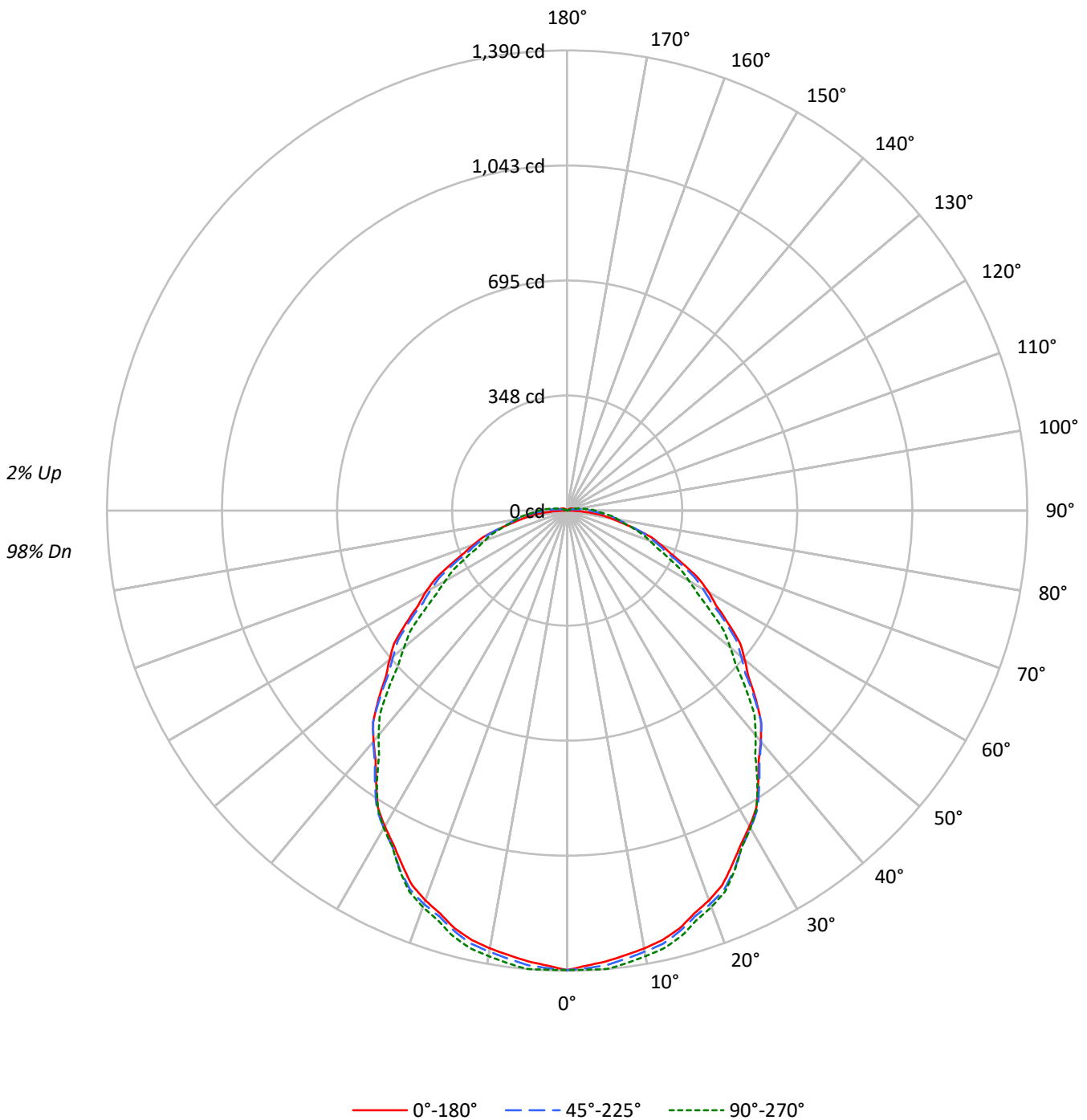
Lumens per Lamp: N/A
Luminaire Lumens: 3578.4 lumens
Efficiency: N/A
Efficacy: 119.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.02')
CIE Type: Direct

Input Watts (W): 29.9
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

TEST NUMBER: P644463

CATALOG NUMBER: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW

Luminous Intensity Polar Plot





TEST NUMBER: P644463

CATALOG NUMBER: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|--|--|--|----|--|--|--|--|--|--|--|--|----|---|
| RF | 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 | 50 | 30 | 10 | 0 | | | | | | | | | | | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 | 100 | 98 | | | | | 98 | | | | | | | | | | | | | | |
| 1 | 108 | 103 | 99 | 95 | 105 | 101 | 97 | 93 | 96 | 93 | 90 | 92 | 89 | 87 | 88 | 86 | 84 | 84 | 82 | | | | | 82 | | | | | | | | | | | | | | |
| 2 | 99 | 91 | 84 | 78 | 96 | 88 | 82 | 77 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 74 | 71 | 71 | 69 | | | | | 69 | | | | | | | | | | | | | | |
| 3 | 90 | 80 | 72 | 65 | 88 | 78 | 71 | 65 | 75 | 69 | 63 | 72 | 67 | 62 | 69 | 65 | 61 | 61 | 58 | | | | | 58 | | | | | | | | | | | | | | |
| 4 | 83 | 71 | 62 | 56 | 80 | 70 | 62 | 55 | 67 | 60 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 53 | 50 | | | | | 50 | | | | | | | | | | | | | | |
| 5 | 76 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 56 | 50 | 46 | 46 | 44 | | | | | 44 | | | | | | | | | | | | | | |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 45 | 41 | 41 | 39 | | | | | 39 | | | | | | | | | | | | | | |
| 7 | 66 | 52 | 44 | 38 | 64 | 51 | 43 | 38 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 36 | 34 | | | | | 34 | | | | | | | | | | | | | | |
| 8 | 61 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 33 | 31 | | | | | 31 | | | | | | | | | | | | | | |
| 9 | 57 | 44 | 36 | 31 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 30 | 28 | | | | | 28 | | | | | | | | | | | | | | |
| 10 | 54 | 41 | 33 | 28 | 52 | 40 | 33 | 28 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 27 | 25 | | | | | 25 | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 22410 | 22410 | 22410 |
| 5° | 22135 | 22123 | 22237 |
| 10° | 21992 | 21754 | 21826 |
| 15° | 21821 | 21357 | 21392 |
| 20° | 21475 | 20887 | 20762 |
| 25° | 20964 | 20261 | 19945 |
| 30° | 20468 | 19413 | 19006 |
| 35° | 19736 | 18507 | 17869 |
| 40° | 19074 | 17584 | 16588 |
| 45° | 18285 | 16447 | 15181 |
| 50° | 17450 | 15231 | 13702 |
| 55° | 16573 | 14109 | 12227 |
| 60° | 15781 | 12858 | 10904 |
| 65° | 14782 | 11567 | 9747 |
| 70° | 13923 | 10437 | 8849 |
| 75° | 12905 | 9527 | 8231 |
| 80° | 11970 | 8854 | 7878 |
| 85° | 11187 | 8825 | 7896 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18285 cd/sqm



TEST NUMBER: P644463

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 131.0 | 3.7 |
| 10°-20° | 371.8 | 10.4 |
| 20°-30° | 548.8 | 15.3 |
| 30°-40° | 631.0 | 17.6 |
| 40°-50° | 612.1 | 17.1 |
| 50°-60° | 512.4 | 14.3 |
| 60°-70° | 369.2 | 10.3 |
| 70°-80° | 225.6 | 6.3 |
| 80°-90° | 109.6 | 3.1 |
| 90°-100° | 43.4 | 1.2 |
| 100°-110° | 15.7 | 0.4 |
| 110°-120° | 5.5 | 0.2 |
| 120°-130° | 2.3 | 0.1 |
| 130°-140° | 0.3 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 1051.6 | 29.4 |
| 0°-40° | 1682.5 | 47.0 |
| 0°-60° | 2807.0 | 78.4 |
| 0°-90° | 3511.3 | 98.1 |
| 90°-120° | 64.6 | 1.8 |
| 90°-150° | 67.1 | 1.9 |
| 90°-180° | 67.0 | 1.9 |
| 0°-180° | 3578.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1388 | 1388 | 1388 | 1388 | 1388 | |
| 5° | 1366 | 1391 | 1378 | 1380 | 1390 | 130 |
| 15° | 1308 | 1327 | 1316 | 1322 | 1331 | 368 |
| 25° | 1180 | 1199 | 1196 | 1190 | 1198 | 544 |
| 35° | 1006 | 1021 | 1012 | 1002 | 1002 | 630 |
| 45° | 806 | 813 | 800 | 776 | 765 | 621 |
| 55° | 594 | 602 | 580 | 545 | 527 | 533 |
| 65° | 392 | 394 | 374 | 347 | 337 | 390 |
| 75° | 212 | 212 | 216 | 210 | 206 | 226 |
| 85° | 65 | 78 | 108 | 116 | 116 | 68 |
| 90° | 6 | 38 | 71 | 82 | 84 | 7 |
| 95° | 20 | 18 | 41 | 55 | 57 | 17 |
| 105° | 20 | 8 | 10 | 18 | 22 | 21 |
| 115° | 14 | 6 | 4 | 4 | 4 | 13 |
| 125° | 8 | 4 | 2 | 0 | 0 | 7 |
| 135° | 0 | 0 | 0 | 0 | 0 | 1 |
| 145° | 0 | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P644463

CATALOG NUMBER: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1388.0 | 1388.0 | 1388.0 | 1388.0 | 1388.0 |
| 2.5° | 1375.5 | 1395.4 | 1383.3 | 1386.5 | 1388.0 |
| 5° | 1366.5 | 1391.4 | 1378.2 | 1380.4 | 1390.0 |
| 7.5° | 1353.9 | 1376.9 | 1365.3 | 1367.9 | 1379.0 |
| 10° | 1342.9 | 1365.9 | 1352.7 | 1356.9 | 1366.5 |
| 12.5° | 1328.8 | 1350.3 | 1340.2 | 1344.3 | 1353.9 |
| 15° | 1307.6 | 1326.8 | 1315.5 | 1321.6 | 1331.2 |
| 17.5° | 1276.3 | 1297.0 | 1284.9 | 1288.3 | 1297.8 |
| 20° | 1252.7 | 1271.9 | 1264.5 | 1264.7 | 1274.3 |
| 22.5° | 1224.5 | 1245.2 | 1239.4 | 1235.0 | 1246.1 |
| 25° | 1180.2 | 1199.4 | 1195.9 | 1190.2 | 1197.9 |
| 27.5° | 1136.3 | 1150.5 | 1143.7 | 1138.0 | 1143.7 |
| 30° | 1101.8 | 1119.0 | 1107.7 | 1101.9 | 1107.7 |
| 32.5° | 1064.1 | 1081.4 | 1070.0 | 1062.6 | 1065.3 |
| 35° | 1005.7 | 1021.1 | 1011.6 | 1001.8 | 1001.8 |
| 37.5° | 950.4 | 960.4 | 954.0 | 937.4 | 933.2 |
| 40° | 909.7 | 921.2 | 911.6 | 891.9 | 886.1 |
| 42.5° | 867.3 | 878.8 | 867.7 | 846.3 | 837.5 |
| 45° | 805.8 | 813.4 | 799.9 | 776.1 | 764.6 |
| 47.5° | 742.2 | 750.3 | 731.6 | 705.5 | 691.7 |
| 50° | 699.9 | 709.5 | 686.2 | 658.4 | 643.0 |
| 52.5° | 659.1 | 665.6 | 643.8 | 611.4 | 597.6 |
| 55° | 594.0 | 601.7 | 580.3 | 544.6 | 527.4 |
| 57.5° | 533.2 | 540.5 | 515.2 | 481.2 | 467.8 |
| 60° | 494.0 | 499.8 | 474.4 | 438.8 | 425.4 |
| 62.5° | 450.1 | 455.9 | 432.1 | 401.2 | 387.8 |
| 65° | 392.1 | 394.0 | 374.5 | 346.8 | 337.2 |
| 67.5° | 337.6 | 337.6 | 321.1 | 300.6 | 292.9 |
| 70° | 300.0 | 300.0 | 288.2 | 272.3 | 264.7 |
| 72.5° | 265.4 | 263.9 | 256.8 | 245.7 | 239.6 |
| 75° | 211.7 | 211.7 | 215.7 | 209.7 | 205.8 |
| 77.5° | 164.7 | 161.6 | 178.4 | 177.6 | 175.7 |
| 80° | 133.3 | 133.3 | 154.9 | 158.8 | 156.8 |
| 82.5° | 105.1 | 108.1 | 136.1 | 141.5 | 139.6 |
| 85° | 64.7 | 78.1 | 107.8 | 115.7 | 115.7 |
| 87.5° | 29.4 | 52.8 | 84.7 | 94.9 | 95.3 |
| 90° | 5.9 | 38.5 | 70.6 | 82.4 | 84.3 |
| 92.5° | 12.2 | 29.4 | 58.0 | 69.9 | 73.3 |
| 95° | 19.6 | 17.7 | 41.2 | 54.9 | 56.9 |
| 97.5° | 23.5 | 11.6 | 29.8 | 41.2 | 43.5 |
| 100° | 23.5 | 10.1 | 23.5 | 33.4 | 37.2 |
| 102.5° | 22.0 | 8.5 | 17.3 | 27.1 | 29.4 |
| 105° | 19.6 | 8.1 | 9.8 | 17.7 | 21.6 |
| 107.5° | 17.3 | 6.1 | 5.5 | 11.0 | 12.9 |
| 110° | 15.7 | 6.1 | 3.9 | 7.9 | 9.8 |



TEST NUMBER: P644463

CATALOG NUMBER: CRQ4DP-SR4F0-100D935-FLL-1DUDD-WW

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|-----|-------|-----|
| 112.5° | 15.7 | 6.1 | 3.9 | 4.7 | 6.7 |
| 115° | 13.7 | 6.1 | 3.9 | 3.9 | 3.9 |
| 117.5° | 11.4 | 6.0 | 3.5 | 1.6 | 1.6 |
| 120° | 9.8 | 6.0 | 2.0 | 0.0 | 0.0 |
| 122.5° | 9.8 | 4.4 | 2.0 | 0.0 | 0.0 |
| 125° | 7.8 | 4.0 | 2.0 | 0.0 | 0.0 |
| 127.5° | 5.5 | 4.0 | 2.0 | 0.0 | 0.0 |
| 130° | 3.9 | 3.9 | 2.0 | 0.0 | 0.0 |
| 132.5° | 0.8 | 0.8 | 0.4 | 0.0 | 0.0 |
| 135° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)