

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P282428

Luminaire Tested: **LDA2B209050D010 EU2B20NFL259050 2LBAPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282428
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1809-951-26)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B209050D010 EU2B20NFL259050 2LBAPINSQ1MW
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC AND 2in Adj SQ PinHole, MW
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1613.7 lumens
Efficiency: N/A
Efficacy: 78.3 lumens/watt
Spacing Criteria (0/90/45): 0.33 / 0.3 / 0.32
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

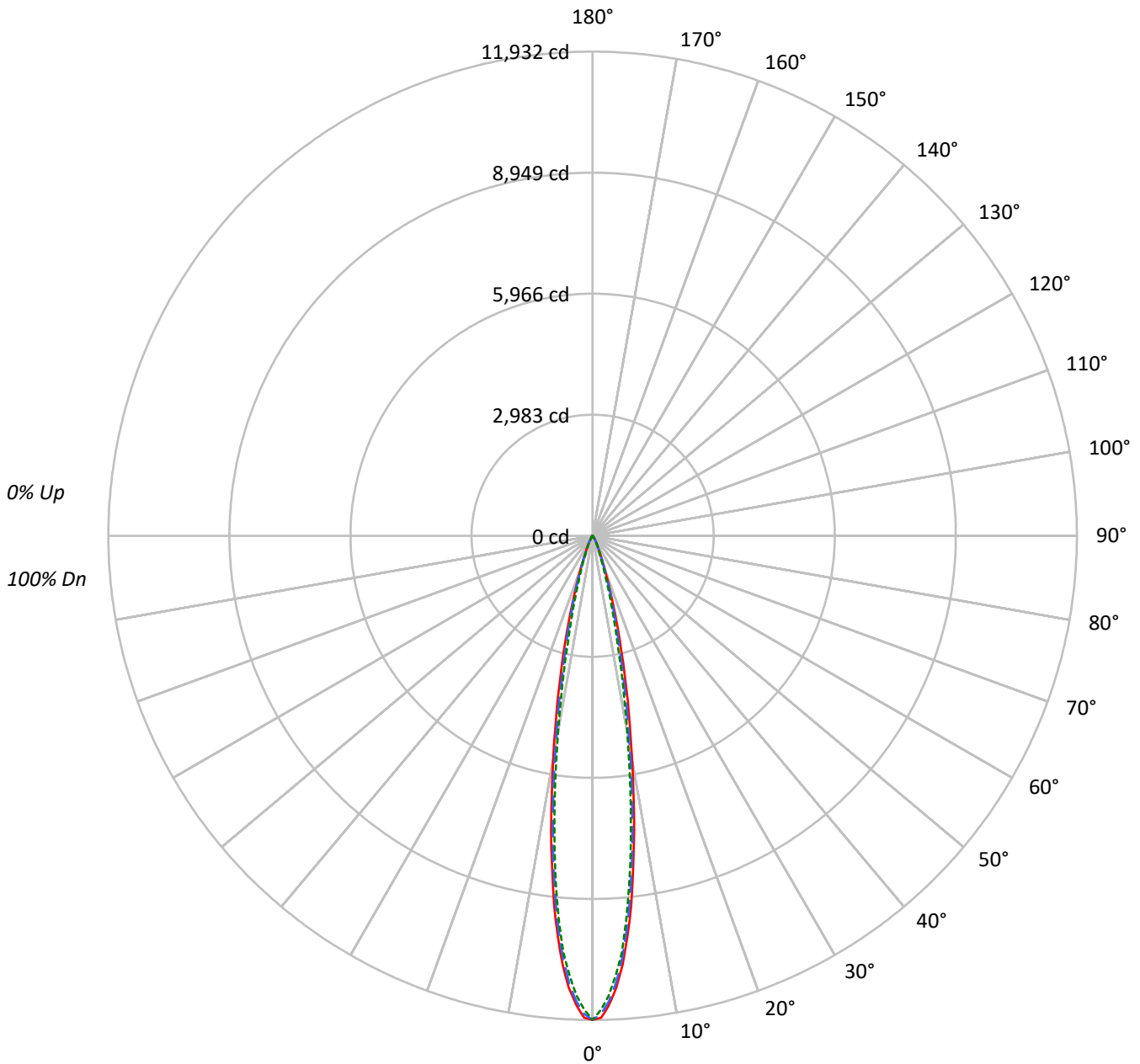
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|-----|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 | | | | | | | | | | | | | | | |
| 1 | 115 | 113 | 112 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 100 | 99 | 97 | | | | 97 | | | | | | | | | | | | | | | |
| 2 | 112 | 109 | 106 | 104 | 110 | 107 | 105 | 103 | 104 | 102 | 100 | 101 | 100 | 98 | 99 | 97 | 96 | 95 | | | | 95 | | | | | | | | | | | | | | | |
| 3 | 109 | 105 | 101 | 99 | 107 | 103 | 100 | 98 | 101 | 99 | 97 | 99 | 97 | 95 | 97 | 95 | 94 | 92 | | | | 92 | | | | | | | | | | | | | | | |
| 4 | 106 | 101 | 98 | 95 | 105 | 100 | 97 | 94 | 98 | 96 | 93 | 96 | 94 | 92 | 95 | 93 | 91 | 90 | | | | 90 | | | | | | | | | | | | | | | |
| 5 | 103 | 98 | 94 | 92 | 102 | 97 | 94 | 91 | 96 | 93 | 91 | 94 | 92 | 90 | 93 | 91 | 89 | 88 | | | | 88 | | | | | | | | | | | | | | | |
| 6 | 101 | 95 | 92 | 89 | 100 | 95 | 91 | 89 | 93 | 90 | 88 | 92 | 90 | 88 | 91 | 89 | 87 | 86 | | | | 86 | | | | | | | | | | | | | | | |
| 7 | 99 | 93 | 89 | 87 | 98 | 92 | 89 | 86 | 91 | 88 | 86 | 90 | 88 | 86 | 89 | 87 | 85 | 84 | | | | 84 | | | | | | | | | | | | | | | |
| 8 | 96 | 91 | 87 | 85 | 96 | 90 | 87 | 84 | 89 | 86 | 84 | 88 | 86 | 84 | 88 | 85 | 83 | 83 | | | | 83 | | | | | | | | | | | | | | | |
| 9 | 94 | 89 | 85 | 83 | 94 | 88 | 85 | 82 | 87 | 84 | 82 | 87 | 84 | 82 | 86 | 84 | 82 | 81 | | | | 81 | | | | | | | | | | | | | | | |
| 10 | 93 | 87 | 83 | 81 | 92 | 86 | 83 | 81 | 86 | 83 | 81 | 85 | 82 | 80 | 85 | 82 | 80 | 79 | | | | 79 | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 5886744 | 5886744 | 5886744 |
| 5° | 4898383 | 4808594 | 4711526 |
| 10° | 2805748 | 2632862 | 2457221 |
| 15° | 1247954 | 1108311 | 928776 |
| 20° | 452729 | 425637 | 337223 |
| 25° | 173816 | 162329 | 139738 |
| 30° | 74971 | 69729 | 61868 |
| 35° | 35475 | 35475 | 29391 |
| 40° | 17775 | 18355 | 14813 |
| 45° | 10256 | 9629 | 9001 |
| 50° | 7061 | 6371 | 6371 |
| 55° | 5505 | 3957 | 4731 |
| 60° | 4539 | 2763 | 3651 |
| 65° | 3269 | 2101 | 3269 |
| 70° | 2596 | 1298 | 2596 |
| 75° | 1716 | 1716 | 1716 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 776.0 | 48.1 |
| 10°-20° | 628.0 | 38.9 |
| 20°-30° | 151.4 | 9.4 |
| 30°-40° | 38.6 | 2.4 |
| 40°-50° | 11.5 | 0.7 |
| 50°-60° | 4.9 | 0.3 |
| 60°-70° | 2.4 | 0.1 |
| 70°-80° | 0.8 | 0.0 |
| 80°-90° | 0.0 | 0.0 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 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° | 1555.5 | 96.4 |
| 0°-40° | 1594.1 | 98.8 |
| 0°-60° | 1610.5 | 99.8 |
| 0°-90° | 1613.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1613.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 11932 | 11932 | 11932 | 11932 | 11932 | |
| 5° | 9891 | 9800 | 9710 | 9625 | 9514 | 800 |
| 15° | 2443 | 2385 | 2170 | 1955 | 1818 | 697 |
| 25° | 319 | 321 | 298 | 271 | 257 | 165 |
| 35° | 59 | 60 | 59 | 53 | 49 | 41 |
| 45° | 15 | 15 | 14 | 13 | 13 | 12 |
| 55° | 6 | 6 | 5 | 5 | 6 | 6 |
| 65° | 3 | 3 | 2 | 2 | 3 | 3 |
| 75° | 1 | 1 | 1 | 1 | 1 | 1 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 11931.9 | 11931.9 | 11931.9 | 11931.9 | 11931.9 |
| 1° | 11878.6 | 11795.7 | 11785.6 | 11837.1 | 11685.3 |
| 2° | 11574.9 | 11516.0 | 11481.9 | 11512.3 | 11340.2 |
| 3° | 11158.0 | 11100.9 | 11039.3 | 11040.2 | 10847.9 |
| 4° | 10590.2 | 10545.1 | 10441.1 | 10409.8 | 10298.5 |
| 5° | 9890.8 | 9799.7 | 9709.5 | 9624.9 | 9513.5 |
| 6° | 9117.8 | 9000.0 | 8871.2 | 8745.1 | 8631.0 |
| 7° | 8208.6 | 8130.4 | 7960.1 | 7788.1 | 7691.4 |
| 8° | 7353.7 | 7227.6 | 7028.9 | 6813.5 | 6731.6 |
| 9° | 6434.4 | 6344.2 | 6116.0 | 5865.7 | 5783.8 |
| 10° | 5600.6 | 5506.8 | 5255.5 | 4976.7 | 4904.9 |
| 11° | 4818.4 | 4730.1 | 4468.7 | 4176.1 | 4099.7 |
| 12° | 4156.8 | 4031.6 | 3731.6 | 3477.6 | 3403.1 |
| 13° | 3497.9 | 3412.3 | 3127.9 | 2876.7 | 2732.2 |
| 14° | 2937.4 | 2866.6 | 2608.9 | 2388.0 | 2235.3 |
| 15° | 2443.3 | 2385.3 | 2169.9 | 1954.6 | 1818.4 |
| 16° | 2004.3 | 1968.4 | 1798.2 | 1590.2 | 1478.8 |
| 17° | 1626.1 | 1592.9 | 1484.4 | 1292.9 | 1199.1 |
| 18° | 1313.2 | 1308.6 | 1218.4 | 1052.8 | 969.0 |
| 19° | 1080.4 | 1078.5 | 995.7 | 856.8 | 787.7 |
| 20° | 862.3 | 874.2 | 810.7 | 689.3 | 642.3 |
| 21° | 703.1 | 709.5 | 658.9 | 566.9 | 524.5 |
| 22° | 572.4 | 577.0 | 543.9 | 468.4 | 445.4 |
| 23° | 469.3 | 472.1 | 444.5 | 388.3 | 368.1 |
| 24° | 386.5 | 388.3 | 363.5 | 323.9 | 306.4 |
| 25° | 319.3 | 321.2 | 298.2 | 270.6 | 256.7 |
| 26° | 265.0 | 266.9 | 246.6 | 227.3 | 213.5 |
| 27° | 219.9 | 223.6 | 203.4 | 191.4 | 176.7 |
| 28° | 187.7 | 188.7 | 170.2 | 162.9 | 149.1 |
| 29° | 153.7 | 159.2 | 143.6 | 137.1 | 127.0 |
| 30° | 131.6 | 134.4 | 122.4 | 117.8 | 108.6 |
| 32.5° | 87.4 | 89.3 | 83.7 | 80.1 | 72.7 |
| 35° | 58.9 | 59.8 | 58.9 | 53.4 | 48.8 |
| 37.5° | 40.5 | 40.5 | 41.4 | 35.0 | 33.1 |
| 40° | 27.6 | 27.6 | 28.5 | 23.9 | 23.0 |
| 42.5° | 20.2 | 20.2 | 19.3 | 16.6 | 16.6 |
| 45° | 14.7 | 14.7 | 13.8 | 12.9 | 12.9 |
| 47.5° | 12.0 | 11.0 | 10.1 | 10.1 | 10.1 |
| 50° | 9.2 | 9.2 | 8.3 | 7.4 | 8.3 |
| 52.5° | 7.4 | 7.4 | 6.4 | 6.4 | 6.4 |
| 55° | 6.4 | 5.5 | 4.6 | 4.6 | 5.5 |
| 57.5° | 4.6 | 4.6 | 3.7 | 3.7 | 4.6 |
| 60° | 4.6 | 3.7 | 2.8 | 3.7 | 3.7 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 2.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 70° | 1.8 | 1.8 | 0.9 | 0.9 | 1.8 |
| 72.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 75° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 77.5° | 0.9 | 0.9 | 0.0 | 0.0 | 0.9 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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— 0°-180° - - 45°-225° - - - - 90°-270°







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 62.5° | 3.7 | 2.8 | 2.8 | 2.8 | 2.8 |
| 65° | 2.8 | 2.8 | 1.8 | 1.8 | 2.8 |



(END OF REPORT)