

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: P282440

Luminaire Tested: **LDA2B209730D010 EU2B20NFL259730 2LBAPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282440
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: LDA2B209730D010 EU2B20NFL259730 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: 1359.9 lumens
Efficiency: N/A
Efficacy: 66.0 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

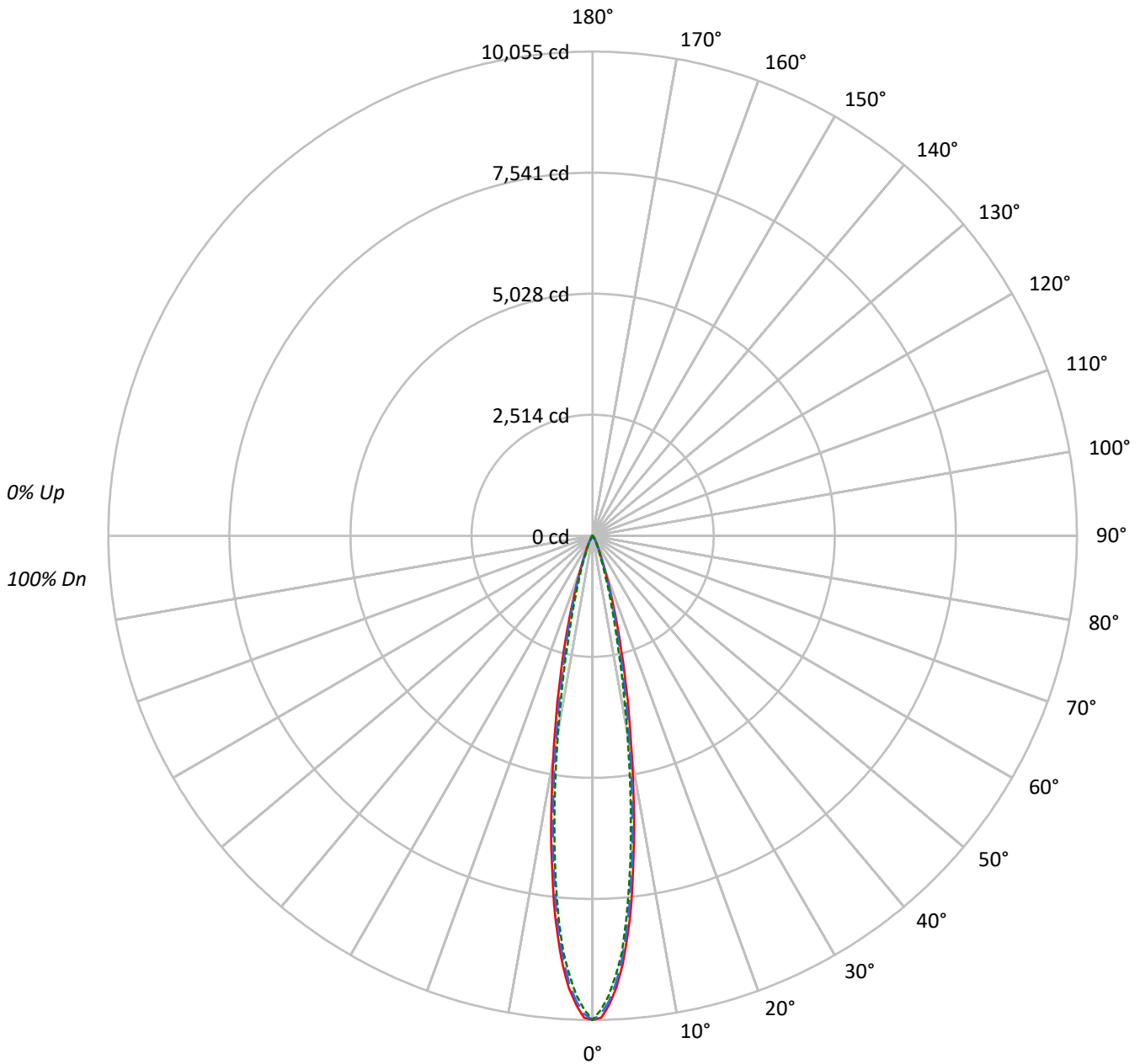
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 4960654 | 4960654 | 4960654 |
| 5° | 4127779 | 4052106 | 3970291 |
| 10° | 2364341 | 2218658 | 2070670 |
| 15° | 1051616 | 933986 | 782646 |
| 20° | 381483 | 358697 | 284196 |
| 25° | 146488 | 136799 | 117800 |
| 30° | 63178 | 58735 | 52126 |
| 35° | 29873 | 29873 | 24754 |
| 40° | 15006 | 15457 | 12494 |
| 45° | 8652 | 8094 | 7605 |
| 50° | 5987 | 5373 | 5373 |
| 55° | 4645 | 3355 | 4043 |
| 60° | 3848 | 2269 | 3059 |
| 65° | 2685 | 1868 | 2685 |
| 70° | 2308 | 1154 | 2308 |
| 75° | 1525 | 1525 | 1525 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 654.0 | 48.1 |
| 10°-20° | 529.2 | 38.9 |
| 20°-30° | 127.6 | 9.4 |
| 30°-40° | 32.5 | 2.4 |
| 40°-50° | 9.7 | 0.7 |
| 50°-60° | 4.1 | 0.3 |
| 60°-70° | 2.0 | 0.1 |
| 70°-80° | 0.7 | 0.1 |
| 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° | 1310.8 | 96.4 |
| 0°-40° | 1343.3 | 98.8 |
| 0°-60° | 1357.2 | 99.8 |
| 0°-90° | 1359.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1359.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 10055 | 10055 | 10055 | 10055 | 10055 | |
| 5° | 8335 | 8258 | 8182 | 8111 | 8017 | 674 |
| 15° | 2059 | 2010 | 1829 | 1647 | 1532 | 587 |
| 25° | 269 | 271 | 251 | 228 | 216 | 139 |
| 35° | 50 | 50 | 50 | 45 | 41 | 34 |
| 45° | 12 | 12 | 12 | 11 | 11 | 11 |
| 55° | 5 | 5 | 4 | 4 | 5 | 5 |
| 65° | 2 | 2 | 2 | 2 | 2 | 3 |
| 75° | 1 | 1 | 1 | 1 | 1 | 1 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P282440

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 10054.8 | 10054.8 | 10054.8 | 10054.8 | 10054.8 |
| 1° | 10009.8 | 9940.0 | 9931.5 | 9974.9 | 9847.0 |
| 2° | 9753.9 | 9704.3 | 9675.6 | 9701.2 | 9556.2 |
| 3° | 9402.6 | 9354.5 | 9302.6 | 9303.4 | 9141.3 |
| 4° | 8924.1 | 8886.2 | 8798.5 | 8772.2 | 8678.3 |
| 5° | 8334.8 | 8258.0 | 8182.0 | 8110.7 | 8016.8 |
| 6° | 7683.4 | 7584.1 | 7475.6 | 7369.3 | 7273.2 |
| 7° | 6917.2 | 6851.3 | 6707.8 | 6562.8 | 6481.4 |
| 8° | 6196.8 | 6090.6 | 5923.1 | 5741.6 | 5672.6 |
| 9° | 5422.1 | 5346.1 | 5153.8 | 4942.9 | 4873.9 |
| 10° | 4719.5 | 4640.4 | 4428.7 | 4193.8 | 4133.3 |
| 11° | 4060.4 | 3985.9 | 3765.7 | 3519.1 | 3454.7 |
| 12° | 3502.8 | 3397.3 | 3144.5 | 2930.5 | 2867.7 |
| 13° | 2947.6 | 2875.5 | 2635.8 | 2424.1 | 2302.4 |
| 14° | 2475.3 | 2415.6 | 2198.5 | 2012.4 | 1883.6 |
| 15° | 2058.9 | 2010.0 | 1828.6 | 1647.1 | 1532.3 |
| 16° | 1689.0 | 1658.7 | 1515.3 | 1340.0 | 1246.2 |
| 17° | 1370.3 | 1342.3 | 1250.8 | 1089.5 | 1010.4 |
| 18° | 1106.6 | 1102.7 | 1026.7 | 887.1 | 816.6 |
| 19° | 910.4 | 908.9 | 839.1 | 722.0 | 663.8 |
| 20° | 726.6 | 736.7 | 683.2 | 580.8 | 541.3 |
| 21° | 592.5 | 597.9 | 555.2 | 477.7 | 442.0 |
| 22° | 482.3 | 486.2 | 458.3 | 394.7 | 375.3 |
| 23° | 395.5 | 397.8 | 374.6 | 327.2 | 310.2 |
| 24° | 325.7 | 327.2 | 306.3 | 273.0 | 258.2 |
| 25° | 269.1 | 270.6 | 251.3 | 228.0 | 216.4 |
| 26° | 223.3 | 224.9 | 207.8 | 191.5 | 179.9 |
| 27° | 185.3 | 188.4 | 171.4 | 161.3 | 148.9 |
| 28° | 158.2 | 159.0 | 143.5 | 137.3 | 125.6 |
| 29° | 129.5 | 134.2 | 121.0 | 115.5 | 107.0 |
| 30° | 110.9 | 113.2 | 103.1 | 99.3 | 91.5 |
| 32.5° | 73.7 | 75.2 | 70.6 | 67.5 | 61.3 |
| 35° | 49.6 | 50.4 | 49.6 | 45.0 | 41.1 |
| 37.5° | 34.1 | 34.1 | 34.9 | 29.5 | 27.9 |
| 40° | 23.3 | 23.3 | 24.0 | 20.2 | 19.4 |
| 42.5° | 17.1 | 17.1 | 16.3 | 14.0 | 14.0 |
| 45° | 12.4 | 12.4 | 11.6 | 10.9 | 10.9 |
| 47.5° | 10.1 | 9.3 | 8.5 | 8.5 | 8.5 |
| 50° | 7.8 | 7.8 | 7.0 | 6.2 | 7.0 |
| 52.5° | 6.2 | 6.2 | 5.4 | 5.4 | 5.4 |
| 55° | 5.4 | 4.7 | 3.9 | 3.9 | 4.7 |
| 57.5° | 3.9 | 3.9 | 3.1 | 3.1 | 3.9 |
| 60° | 3.9 | 3.1 | 2.3 | 3.1 | 3.1 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 2.3 | 1.6 | 1.6 | 1.6 | 1.6 |
| 70° | 1.6 | 1.6 | 0.8 | 0.8 | 1.6 |
| 72.5° | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| 75° | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| 77.5° | 0.8 | 0.8 | 0.0 | 0.0 | 0.8 |
| 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° | 3.1 | 2.3 | 2.3 | 2.3 | 2.3 |
| 65° | 2.3 | 2.3 | 1.6 | 1.6 | 2.3 |



(END OF REPORT)