

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: P282316

Luminaire Tested: **LDA2B159024D010 EU2B15NFL259024 2LBAPINSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P282316  
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: LDA2B159024D010 EU2B15NFL259024 2LBAPINSQ1MMS  
Description: PORTFOLIO 2IN ADJ 1500 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC AND 2in Adj SQ PinHole, MMS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 937.6 lumens  
Efficiency: N/A  
Efficacy: 66.5 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

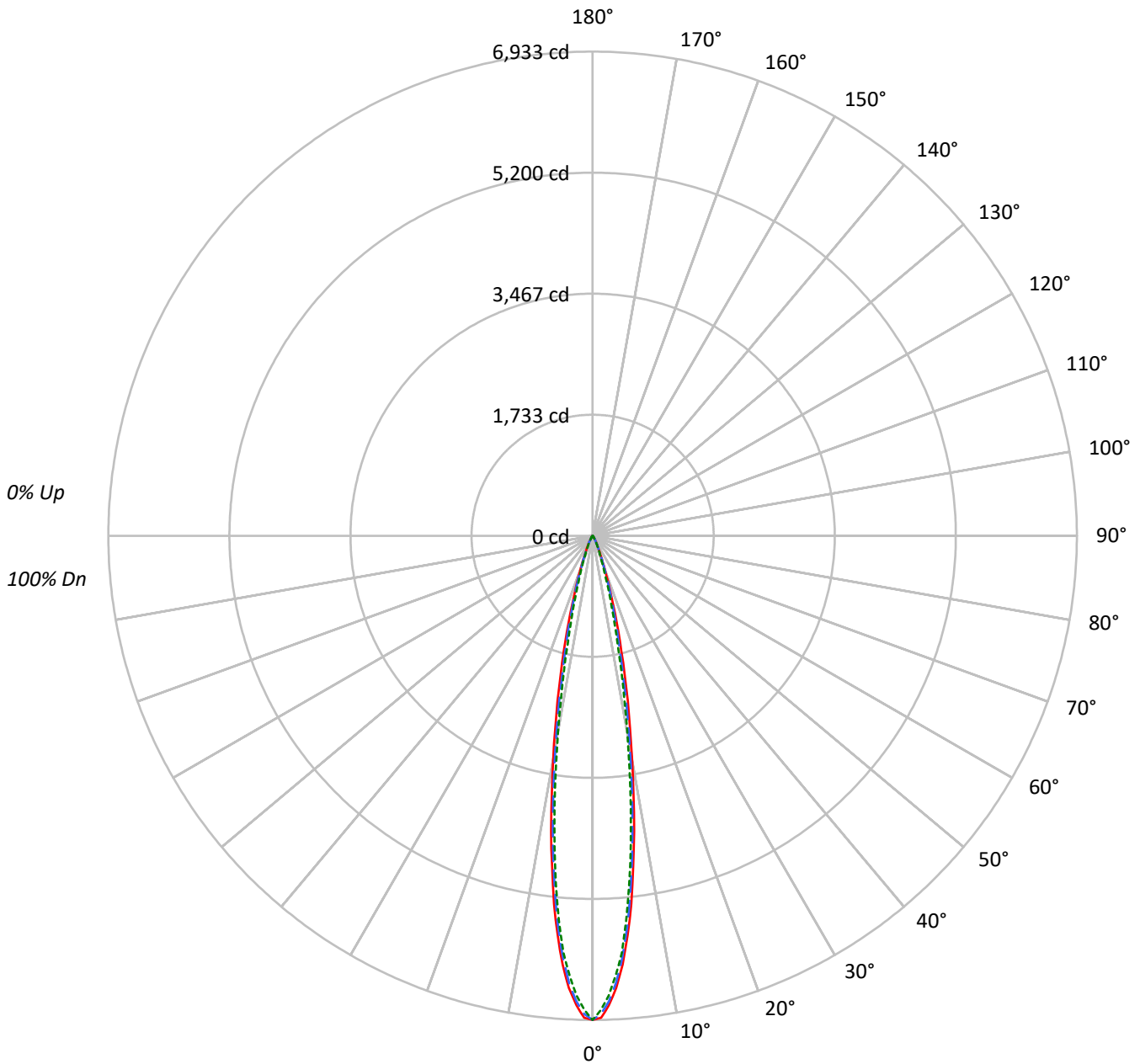
Input Watts (W): 14.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 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°  | 3420625 | 3420625 | 3420625 |
| 5°  | 2846280 | 2794130 | 2737722 |
| 10° | 1630315 | 1529870 | 1427822 |
| 15° | 725134  | 644024  | 539675  |
| 20° | 263037  | 247339  | 195939  |
| 25° | 101034  | 94338   | 81219   |
| 30° | 43581   | 40505   | 35947   |
| 35° | 20598   | 20598   | 17045   |
| 40° | 10305   | 10691   | 8630    |
| 45° | 6000    | 5582    | 5233    |
| 50° | 4068    | 3684    | 3684    |
| 55° | 3183    | 2322    | 2752    |
| 60° | 2664    | 1579    | 2072    |
| 65° | 1868    | 1284    | 1868    |
| 70° | 1587    | 721     | 1587    |
| 75° | 953     | 953     | 953     |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 0       | 0       |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 450.9  | 48.1      |
| 10°-20°   | 364.9  | 38.9      |
| 20°-30°   | 88.0   | 9.4       |
| 30°-40°   | 22.4   | 2.4       |
| 40°-50°   | 6.7    | 0.7       |
| 50°-60°   | 2.8    | 0.3       |
| 60°-70°   | 1.4    | 0.1       |
| 70°-80°   | 0.4    | 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°    | 903.9  | 96.4      |
| 0°-40°    | 926.3  | 98.8      |
| 0°-60°    | 935.8  | 99.8      |
| 0°-90°    | 937.6  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 937.6  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6933 | 6933  | 6933 | 6933  | 6933 |      |
| 5°  | 5747 | 5694  | 5642 | 5593  | 5528 | 465  |
| 15° | 1420 | 1386  | 1261 | 1136  | 1057 | 405  |
| 25° | 186  | 187   | 173  | 157   | 149  | 96   |
| 35° | 34   | 35    | 34   | 31    | 28   | 24   |
| 45° | 9    | 9     | 8    | 8     | 8    | 7    |
| 55° | 4    | 3     | 3    | 3     | 3    | 3    |
| 65° | 2    | 2     | 1    | 1     | 2    | 2    |
| 75° | 0    | 0     | 0    | 0     | 0    | 1    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6933.3 | 6933.3 | 6933.3 | 6933.3 | 6933.3 |
| 1°    | 6902.3 | 6854.1 | 6848.2 | 6878.2 | 6790.0 |
| 2°    | 6725.8 | 6691.6 | 6671.8 | 6689.4 | 6589.4 |
| 3°    | 6483.6 | 6450.4 | 6414.6 | 6415.1 | 6303.4 |
| 4°    | 6153.6 | 6127.4 | 6067.0 | 6048.8 | 5984.1 |
| 5°    | 5747.2 | 5694.3 | 5641.9 | 5592.7 | 5528.0 |
| 6°    | 5298.1 | 5229.6 | 5154.8 | 5081.5 | 5015.2 |
| 7°    | 4769.8 | 4724.3 | 4625.4 | 4525.4 | 4469.2 |
| 8°    | 4273.0 | 4199.7 | 4084.2 | 3959.1 | 3911.5 |
| 9°    | 3738.8 | 3686.4 | 3553.8 | 3408.3 | 3360.8 |
| 10°   | 3254.3 | 3199.8 | 3053.8 | 2891.8 | 2850.1 |
| 11°   | 2799.8 | 2748.5 | 2596.6 | 2426.6 | 2382.2 |
| 12°   | 2415.4 | 2342.6 | 2168.3 | 2020.7 | 1977.4 |
| 13°   | 2032.5 | 1982.8 | 1817.5 | 1671.6 | 1587.6 |
| 14°   | 1706.8 | 1665.7 | 1516.0 | 1387.6 | 1298.9 |
| 15°   | 1419.7 | 1386.0 | 1260.9 | 1135.8 | 1056.6 |
| 16°   | 1164.6 | 1143.8 | 1044.9 | 924.0  | 859.3  |
| 17°   | 944.9  | 925.6  | 862.5  | 751.3  | 696.7  |
| 18°   | 763.1  | 760.4  | 708.0  | 611.7  | 563.1  |
| 19°   | 627.8  | 626.7  | 578.6  | 497.8  | 457.7  |
| 20°   | 501.0  | 508.0  | 471.1  | 400.5  | 373.2  |
| 21°   | 408.5  | 412.3  | 382.9  | 329.4  | 304.8  |
| 22°   | 332.6  | 335.3  | 316.0  | 272.2  | 258.8  |
| 23°   | 272.7  | 274.3  | 258.3  | 225.7  | 213.9  |
| 24°   | 224.6  | 225.7  | 211.2  | 188.2  | 178.1  |
| 25°   | 185.6  | 186.6  | 173.3  | 157.2  | 149.2  |
| 26°   | 154.0  | 155.1  | 143.3  | 132.1  | 124.1  |
| 27°   | 127.8  | 129.9  | 118.2  | 111.2  | 102.7  |
| 28°   | 109.1  | 109.6  | 98.9   | 94.6   | 86.6   |
| 29°   | 89.3   | 92.5   | 83.4   | 79.7   | 73.8   |
| 30°   | 76.5   | 78.1   | 71.1   | 68.4   | 63.1   |
| 32.5° | 50.8   | 51.9   | 48.7   | 46.5   | 42.2   |
| 35°   | 34.2   | 34.8   | 34.2   | 31.0   | 28.3   |
| 37.5° | 23.5   | 23.5   | 24.1   | 20.3   | 19.3   |
| 40°   | 16.0   | 16.0   | 16.6   | 13.9   | 13.4   |
| 42.5° | 11.8   | 11.8   | 11.2   | 9.6    | 9.6    |
| 45°   | 8.6    | 8.6    | 8.0    | 7.5    | 7.5    |
| 47.5° | 7.0    | 6.4    | 5.9    | 5.9    | 5.9    |
| 50°   | 5.3    | 5.3    | 4.8    | 4.3    | 4.8    |
| 52.5° | 4.3    | 4.3    | 3.7    | 3.7    | 3.7    |
| 55°   | 3.7    | 3.2    | 2.7    | 2.7    | 3.2    |
| 57.5° | 2.7    | 2.7    | 2.1    | 2.1    | 2.7    |
| 60°   | 2.7    | 2.1    | 1.6    | 2.1    | 2.1    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 1.6 | 1.1   | 1.1 | 1.1   | 1.1 |
| 70°   | 1.1 | 1.1   | 0.5 | 0.5   | 1.1 |
| 72.5° | 0.5 | 0.5   | 0.5 | 0.5   | 0.5 |
| 75°   | 0.5 | 0.5   | 0.5 | 0.5   | 0.5 |
| 77.5° | 0.5 | 0.5   | 0.0 | 0.0   | 0.5 |
| 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° | 2.1 | 1.6 | 1.6 | 1.6 | 1.6 |
| 65°   | 1.6 | 1.6 | 1.1 | 1.1 | 1.6 |



(END OF REPORT)