

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: P282405

Luminaire Tested: **LDA2B209027D010 EU2B20NFL259027 2LBAPINSQ1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P282405  
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: LDA2B209027D010 EU2B20NFL259027 2LBAPINSQ1MB  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC AND 2in Adj SQ PinHole, MB  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1404.8 lumens  
Efficiency: N/A  
Efficacy: 68.2 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

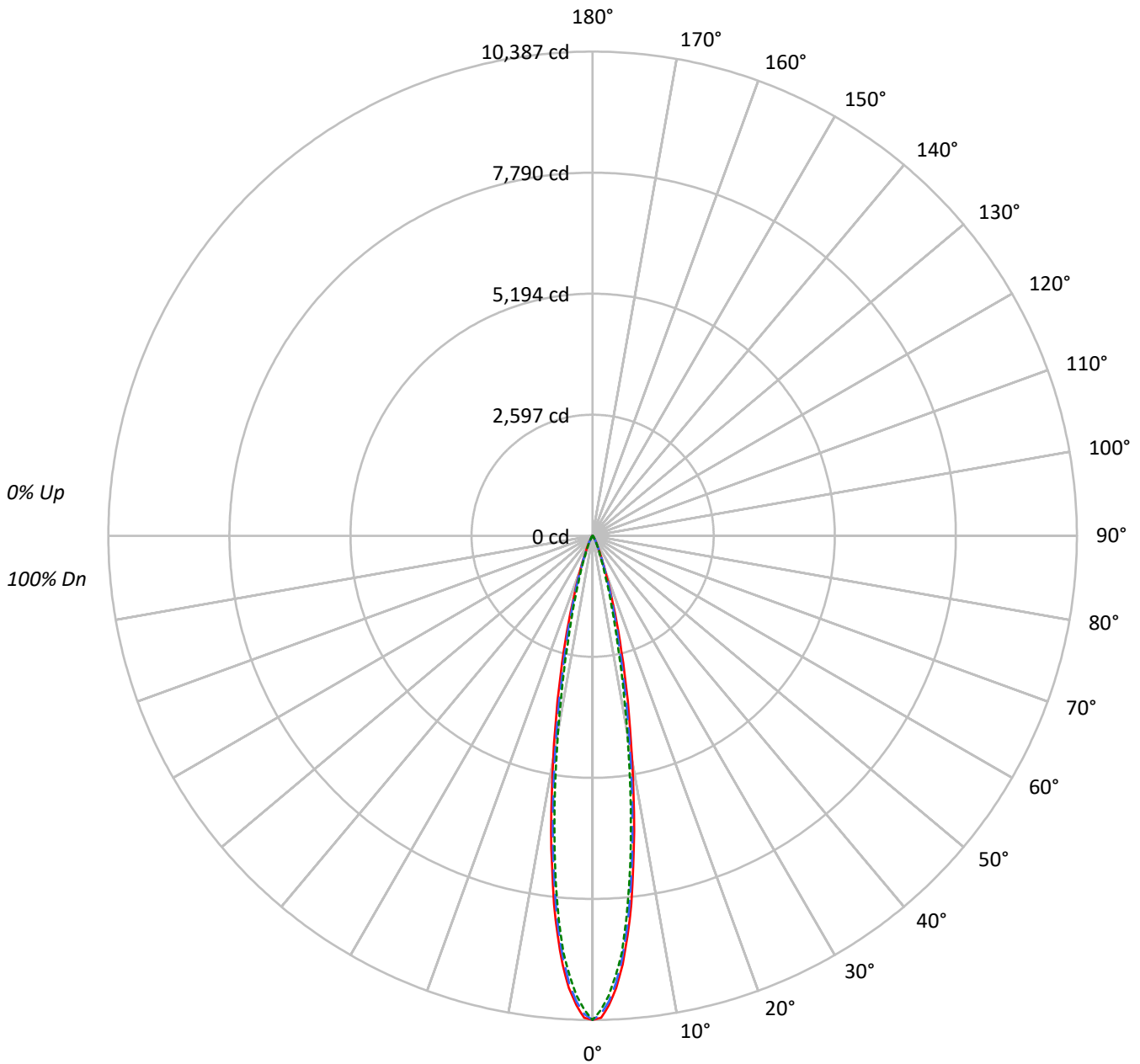
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 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°  | 5124648 | 5124648 | 5124648 |
| 5°  | 4264220 | 4186070 | 4101581 |
| 10° | 2442542 | 2292000 | 2139103 |
| 15° | 1086399 | 964836  | 808542  |
| 20° | 394084  | 370562  | 293594  |
| 25° | 151333  | 141317  | 121665  |
| 30° | 65286   | 60671   | 53835   |
| 35° | 30897   | 30897   | 25597   |
| 40° | 15457   | 15972   | 12881   |
| 45° | 8931    | 8373    | 7814    |
| 50° | 6140    | 5526    | 5526    |
| 55° | 4817    | 3441    | 4129    |
| 60° | 3947    | 2368    | 3158    |
| 65° | 2802    | 1868    | 2802    |
| 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°    | 675.6  | 48.1      |
| 10°-20°   | 546.7  | 38.9      |
| 20°-30°   | 131.8  | 9.4       |
| 30°-40°   | 33.6   | 2.4       |
| 40°-50°   | 10.0   | 0.7       |
| 50°-60°   | 4.3    | 0.3       |
| 60°-70°   | 2.1    | 0.1       |
| 70°-80°   | 0.7    | 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°    | 1354.1 | 96.4      |
| 0°-40°    | 1387.7 | 98.8      |
| 0°-60°    | 1402.0 | 99.8      |
| 0°-90°    | 1404.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1404.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 10387 | 10387 | 10387 | 10387 | 10387 |      |
| 5°  | 8610  | 8531  | 8452  | 8379  | 8282  | 696  |
| 15° | 2127  | 2076  | 1889  | 1702  | 1583  | 606  |
| 25° | 278   | 280   | 260   | 236   | 224   | 144  |
| 35° | 51    | 52    | 51    | 46    | 42    | 35   |
| 45° | 13    | 13    | 12    | 11    | 11    | 11   |
| 55° | 6     | 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     | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 10387.2 | 10387.2 | 10387.2 | 10387.2 | 10387.2 |
| 1°    | 10340.7 | 10268.6 | 10259.8 | 10304.7 | 10172.5 |
| 2°    | 10076.4 | 10025.1 | 9995.5  | 10021.9 | 9872.1  |
| 3°    | 9713.5  | 9663.8  | 9610.1  | 9610.9  | 9443.5  |
| 4°    | 9219.2  | 9179.9  | 9089.4  | 9062.2  | 8965.2  |
| 5°    | 8610.3  | 8531.0  | 8452.5  | 8378.8  | 8281.9  |
| 6°    | 7937.4  | 7834.9  | 7722.7  | 7613.0  | 7513.6  |
| 7°    | 7145.9  | 7077.8  | 6929.6  | 6779.8  | 6695.7  |
| 8°    | 6401.7  | 6291.9  | 6118.9  | 5931.4  | 5860.1  |
| 9°    | 5601.4  | 5522.9  | 5324.2  | 5106.3  | 5035.0  |
| 10°   | 4875.6  | 4793.9  | 4575.1  | 4332.4  | 4269.9  |
| 11°   | 4194.6  | 4117.7  | 3890.2  | 3635.4  | 3569.0  |
| 12°   | 3618.6  | 3509.7  | 3248.5  | 3027.4  | 2962.5  |
| 13°   | 3045.0  | 2970.5  | 2723.0  | 2504.3  | 2378.5  |
| 14°   | 2557.1  | 2495.5  | 2271.2  | 2078.9  | 1945.9  |
| 15°   | 2127.0  | 2076.5  | 1889.0  | 1701.6  | 1583.0  |
| 16°   | 1744.8  | 1713.6  | 1565.4  | 1384.3  | 1287.4  |
| 17°   | 1415.6  | 1386.7  | 1292.2  | 1125.6  | 1043.8  |
| 18°   | 1143.2  | 1139.2  | 1060.7  | 916.5   | 843.6   |
| 19°   | 940.5   | 938.9   | 866.8   | 745.8   | 685.8   |
| 20°   | 750.6   | 761.1   | 705.8   | 600.0   | 559.2   |
| 21°   | 612.0   | 617.7   | 573.6   | 493.5   | 456.6   |
| 22°   | 498.3   | 502.3   | 473.5   | 407.8   | 387.7   |
| 23°   | 408.6   | 411.0   | 386.9   | 338.1   | 320.4   |
| 24°   | 336.5   | 338.1   | 316.4   | 282.0   | 266.8   |
| 25°   | 278.0   | 279.6   | 259.6   | 235.5   | 223.5   |
| 26°   | 230.7   | 232.3   | 214.7   | 197.9   | 185.9   |
| 27°   | 191.5   | 194.7   | 177.0   | 166.6   | 153.8   |
| 28°   | 163.4   | 164.2   | 148.2   | 141.8   | 129.8   |
| 29°   | 133.8   | 138.6   | 125.0   | 119.4   | 110.6   |
| 30°   | 114.6   | 117.0   | 106.5   | 102.5   | 94.5    |
| 32.5° | 76.1    | 77.7    | 72.9    | 69.7    | 63.3    |
| 35°   | 51.3    | 52.1    | 51.3    | 46.5    | 42.5    |
| 37.5° | 35.2    | 35.2    | 36.1    | 30.4    | 28.8    |
| 40°   | 24.0    | 24.0    | 24.8    | 20.8    | 20.0    |
| 42.5° | 17.6    | 17.6    | 16.8    | 14.4    | 14.4    |
| 45°   | 12.8    | 12.8    | 12.0    | 11.2    | 11.2    |
| 47.5° | 10.4    | 9.6     | 8.8     | 8.8     | 8.8     |
| 50°   | 8.0     | 8.0     | 7.2     | 6.4     | 7.2     |
| 52.5° | 6.4     | 6.4     | 5.6     | 5.6     | 5.6     |
| 55°   | 5.6     | 4.8     | 4.0     | 4.0     | 4.8     |
| 57.5° | 4.0     | 4.0     | 3.2     | 3.2     | 4.0     |
| 60°   | 4.0     | 3.2     | 2.4     | 3.2     | 3.2     |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 2.4 | 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° | 3.2 | 2.4 | 2.4 | 2.4 | 2.4 |
| 65°   | 2.4 | 2.4 | 1.6 | 1.6 | 2.4 |



(END OF REPORT)