

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: P282480

Luminaire Tested: **LDA2B059040D010 EU2B05SP159040 2LBALPINSQ1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P282480  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-7)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B059040D010 EU2B05SP159040 2LBALPINSQ1MB  
Description: PORTFOLIO 2IN ADJ 500 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Pinhole w-lens, MB  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 681.0 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 0.32 / 0.3 / 0.32  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

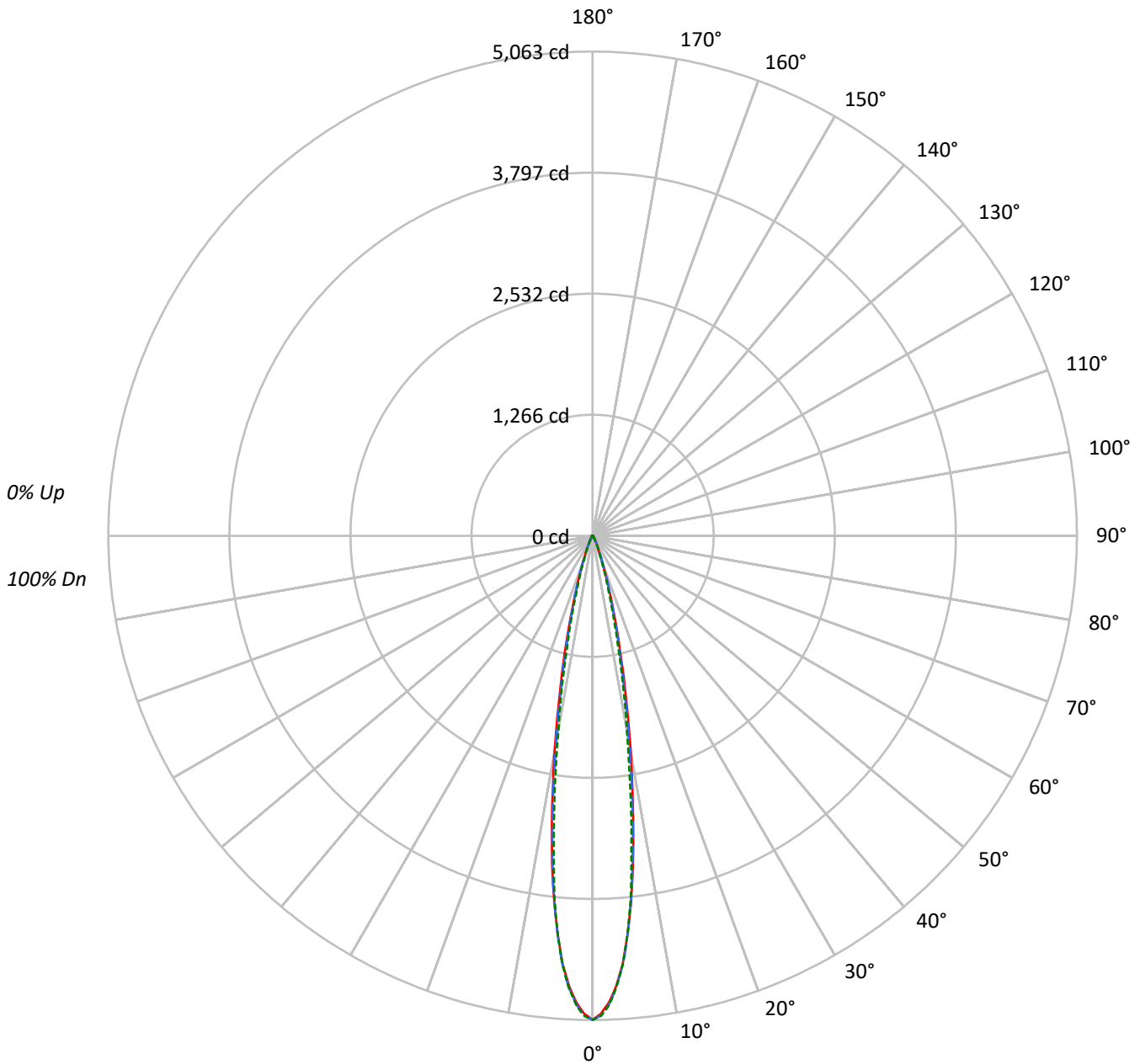
Input Watts (W): 7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 111 | 109 | 113 | 111 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 100 | 99  | 98  | 96  | 96 | 98 | 96 | 96  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 111 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 103 | 101 | 99  | 100 | 98  | 97  | 98  | 96  | 95  | 94  | 96 | 94 | 92 | 94  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 108 | 104 | 100 | 97  | 106 | 102 | 99  | 97  | 100 | 97  | 95  | 98  | 95  | 94  | 96  | 94  | 92  | 91  | 96 | 94 | 92 | 91  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 105 | 100 | 96  | 93  | 104 | 99  | 96  | 93  | 97  | 94  | 92  | 95  | 93  | 91  | 94  | 92  | 90  | 89  | 94 | 92 | 90 | 89  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 102 | 97  | 93  | 90  | 101 | 96  | 93  | 90  | 95  | 91  | 89  | 93  | 90  | 88  | 92  | 89  | 88  | 87  | 92 | 89 | 88 | 87  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 100 | 94  | 90  | 88  | 99  | 94  | 90  | 87  | 92  | 89  | 87  | 91  | 88  | 86  | 90  | 88  | 86  | 85  | 90 | 88 | 86 | 85  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 98  | 92  | 88  | 85  | 97  | 91  | 88  | 85  | 90  | 87  | 85  | 89  | 86  | 84  | 88  | 86  | 84  | 83  | 88 | 86 | 84 | 83  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 96  | 90  | 86  | 83  | 95  | 89  | 86  | 83  | 88  | 85  | 83  | 87  | 85  | 82  | 87  | 84  | 82  | 81  | 87 | 84 | 82 | 81  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 94  | 88  | 84  | 81  | 93  | 87  | 84  | 81  | 86  | 83  | 81  | 86  | 83  | 81  | 85  | 82  | 81  | 80  | 85 | 82 | 81 | 80  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 92  | 86  | 82  | 80  | 91  | 85  | 82  | 80  | 85  | 82  | 79  | 84  | 81  | 79  | 84  | 81  | 79  | 78  | 84 | 81 | 79 | 78  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 2497841 | 2497841 | 2497841 |
| 5°  | 2072210 | 2078945 | 2071071 |
| 10° | 1146927 | 1105446 | 1029799 |
| 15° | 464286  | 444060  | 394260  |
| 20° | 155565  | 164910  | 133514  |
| 25° | 59172   | 59390   | 56233   |
| 30° | 26547   | 26092   | 25237   |
| 35° | 12889   | 11443   | 9094    |
| 40° | 8501    | 10755   | 7471    |
| 45° | 2163    | 3489    | 3279    |
| 50° | 614     | 921     | 1228    |
| 55° | 5333    | 4645    | 7311    |
| 60° | 7696    | 6118    | 9966    |
| 65° | 3619    | 9573    | 9106    |
| 70° | 3318    | 2741    | 3318    |
| 75° | 1525    | 3622    | 10293   |
| 80° | 17615   | 24150   | 22161   |
| 85° | 0       | 10755   | 13020   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 331.6  | 48.7      |
| 10°-20°   | 251.2  | 36.9      |
| 20°-30°   | 57.1   | 8.4       |
| 30°-40°   | 16.9   | 2.5       |
| 40°-50°   | 5.6    | 0.8       |
| 50°-60°   | 5.0    | 0.7       |
| 60°-70°   | 6.0    | 0.9       |
| 70°-80°   | 3.8    | 0.6       |
| 80°-90°   | 4.0    | 0.6       |
| 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°    | 639.9  | 94.0      |
| 0°-40°    | 656.7  | 96.4      |
| 0°-60°    | 667.3  | 98.0      |
| 0°-90°    | 681.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 681.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 5063 | 5063  | 5063 | 5063  | 5063 |      |
| 5°  | 4184 | 4217  | 4198 | 4143  | 4182 | 335  |
| 15° | 909  | 921   | 869  | 788   | 772  | 264  |
| 25° | 109  | 117   | 109  | 108   | 103  | 57   |
| 35° | 21   | 24    | 19   | 22    | 15   | 17   |
| 45° | 3    | 9     | 5    | 9     | 5    | 5    |
| 55° | 6    | 9     | 5    | 8     | 8    | 3    |
| 65° | 3    | 7     | 8    | 8     | 8    | 3    |
| 75° | 1    | 3     | 2    | 4     | 5    | 2    |
| 85° | 0    | 0     | 2    | 2     | 2    | 2    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 5062.9 | 5062.9 | 5062.9 | 5062.9 | 5062.9 |
| 1°    | 4997.7 | 5017.9 | 5015.9 | 5007.8 | 5022.1 |
| 2°    | 4882.7 | 4907.2 | 4904.9 | 4887.0 | 4912.6 |
| 3°    | 4714.2 | 4736.0 | 4732.5 | 4706.8 | 4734.8 |
| 4°    | 4489.0 | 4513.9 | 4504.2 | 4465.7 | 4501.4 |
| 5°    | 4184.2 | 4217.2 | 4197.8 | 4143.0 | 4181.9 |
| 6°    | 3846.4 | 3874.3 | 3843.7 | 3771.1 | 3809.1 |
| 7°    | 3468.2 | 3485.7 | 3445.3 | 3352.1 | 3326.5 |
| 8°    | 3055.4 | 3078.4 | 3022.1 | 2913.3 | 2885.4 |
| 9°    | 2660.9 | 2668.7 | 2600.4 | 2484.7 | 2449.3 |
| 10°   | 2289.4 | 2283.5 | 2206.6 | 2089.4 | 2055.6 |
| 11°   | 1937.2 | 1929.4 | 1848.3 | 1739.9 | 1750.8 |
| 12°   | 1616.8 | 1632.0 | 1537.6 | 1439.4 | 1441.3 |
| 13°   | 1353.6 | 1355.1 | 1274.0 | 1180.4 | 1175.0 |
| 14°   | 1108.2 | 1122.5 | 1053.0 | 969.2  | 953.6  |
| 15°   | 909.0  | 921.4  | 869.4  | 787.8  | 771.9  |
| 16°   | 727.7  | 743.2  | 705.9  | 632.1  | 611.2  |
| 17°   | 585.9  | 605.7  | 581.3  | 519.5  | 495.5  |
| 18°   | 468.7  | 483.8  | 478.0  | 414.3  | 394.5  |
| 19°   | 370.0  | 391.0  | 392.6  | 339.4  | 315.7  |
| 20°   | 296.3  | 315.3  | 314.1  | 273.0  | 254.3  |
| 22.5° | 170.1  | 180.2  | 180.6  | 161.1  | 150.3  |
| 25°   | 108.7  | 116.9  | 109.1  | 107.9  | 103.3  |
| 26°   | 94.4   | 101.0  | 92.4   | 92.4   | 88.1   |
| 27°   | 76.5   | 82.3   | 74.2   | 77.7   | 71.8   |
| 28°   | 64.5   | 70.7   | 63.7   | 62.9   | 62.1   |
| 29°   | 53.6   | 59.4   | 50.5   | 54.4   | 52.0   |
| 30°   | 46.6   | 50.9   | 45.8   | 51.6   | 44.3   |
| 32.5° | 36.1   | 39.6   | 30.7   | 38.8   | 29.1   |
| 35°   | 21.4   | 23.7   | 19.0   | 22.1   | 15.1   |
| 37.5° | 22.1   | 22.9   | 20.6   | 22.9   | 21.4   |
| 40°   | 13.2   | 13.6   | 16.7   | 16.7   | 11.6   |
| 42.5° | 12.4   | 12.0   | 7.4    | 11.6   | 9.3    |
| 45°   | 3.1    | 8.9    | 5.0    | 8.9    | 4.7    |
| 47.5° | 2.3    | 3.1    | 3.1    | 6.2    | 6.2    |
| 50°   | 0.8    | 3.1    | 1.2    | 2.3    | 1.6    |
| 52.5° | 0.0    | 7.4    | 1.6    | 5.4    | 4.7    |
| 55°   | 6.2    | 8.9    | 5.4    | 8.2    | 8.5    |
| 57.5° | 0.8    | 6.2    | 3.1    | 6.6    | 4.7    |
| 60°   | 7.8    | 10.5   | 6.2    | 11.3   | 10.1   |
| 62.5° | 0.8    | 7.0    | 8.2    | 6.2    | 5.4    |
| 65°   | 3.1    | 6.6    | 8.2    | 7.8    | 7.8    |
| 67.5° | 3.9    | 6.6    | 5.0    | 5.0    | 7.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.8 | 2.7   | 1.9 | 3.5   | 5.4 |
| 77.5° | 0.8 | 3.1   | 2.7 | 6.2   | 4.7 |
| 80°   | 6.2 | 7.0   | 8.5 | 11.3  | 7.8 |
| 82.5° | 5.4 | 5.4   | 8.5 | 6.2   | 4.7 |
| 85°   | 0.0 | 0.0   | 1.9 | 1.9   | 2.3 |
| 87.5° | 0.0 | 1.6   | 3.9 | 3.1   | 5.4 |
| 90°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |



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







|       |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| 70°   | 2.3 | 0.8 | 1.9 | 1.9 | 2.3 |
| 72.5° | 0.8 | 3.5 | 3.1 | 1.9 | 3.9 |



(END OF REPORT)