

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: P281636

Luminaire Tested: **LDA2B059035D010 EU2B05SP159035 2LBAPINSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P281636  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-10)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B059035D010 EU2B05SP159035 2LBAPINSQ1MMS  
Description: PORTFOLIO 2IN ADJ 500 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ PinHole, MMS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 666.9 lumens  
Efficiency: N/A  
Efficacy: 95.3 lumens/watt  
Spacing Criteria (0/90/45): 0.3 / 0.3 / 0.29  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

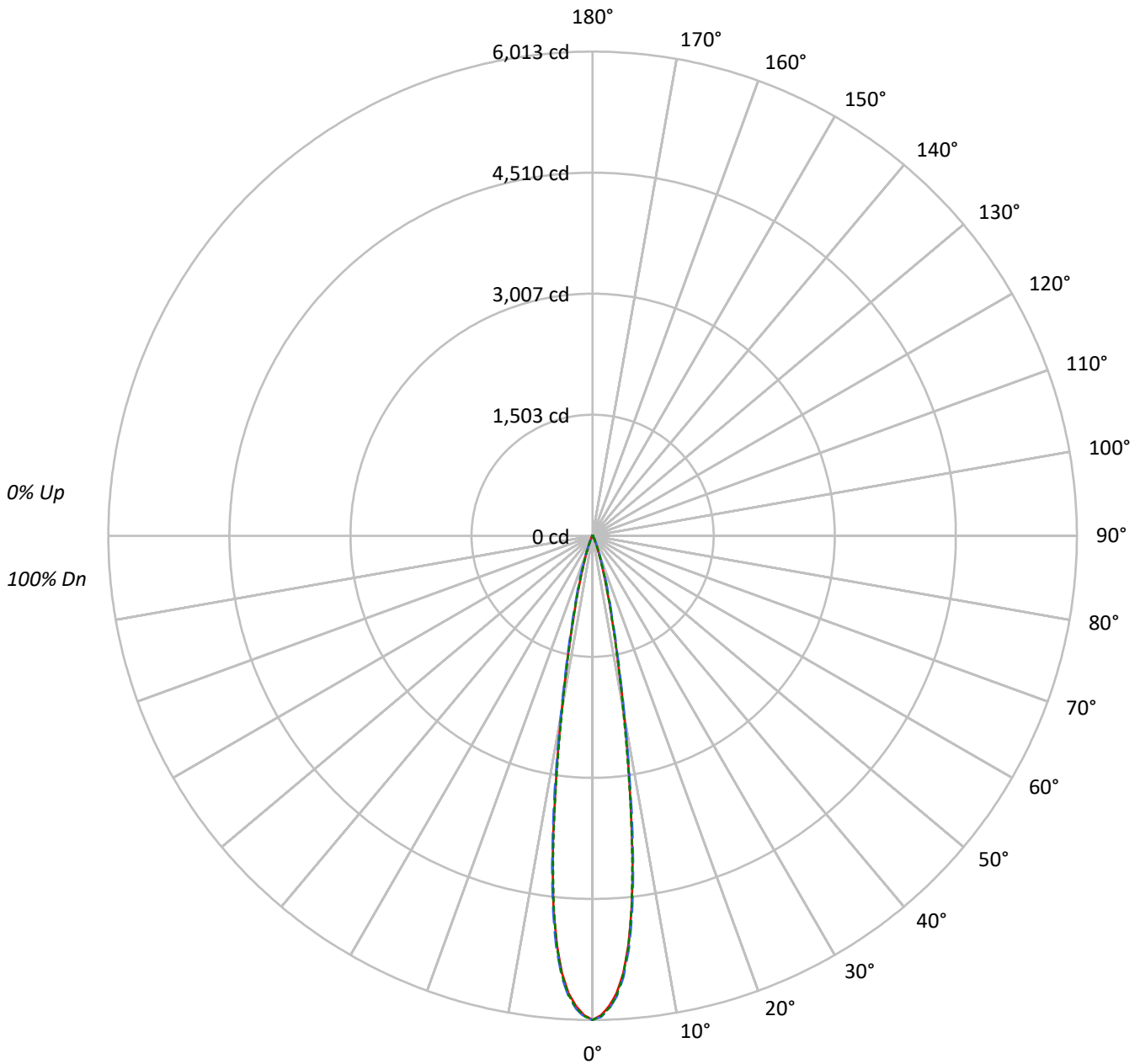
Input Watts (W): 7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 116 | 114 | 112 | 111 | 113 | 112 | 110 | 109 | 108 | 107 | 106 | 104 | 103 | 103 | 101 | 100 | 100 | 98  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 113 | 110 | 107 | 105 | 111 | 108 | 106 | 104 | 105 | 103 | 102 | 102 | 101 | 99  | 99  | 98  | 97  | 96  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 110 | 106 | 103 | 101 | 108 | 105 | 102 | 100 | 102 | 100 | 98  | 100 | 98  | 97  | 98  | 97  | 95  | 94  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 107 | 103 | 100 | 97  | 106 | 102 | 99  | 97  | 100 | 98  | 96  | 98  | 96  | 95  | 97  | 95  | 94  | 93  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 105 | 100 | 97  | 95  | 104 | 100 | 96  | 94  | 98  | 95  | 93  | 97  | 94  | 93  | 95  | 93  | 92  | 91  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 103 | 98  | 95  | 92  | 102 | 97  | 94  | 92  | 96  | 93  | 91  | 95  | 93  | 91  | 94  | 92  | 90  | 89  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 101 | 96  | 93  | 90  | 100 | 95  | 92  | 90  | 94  | 92  | 90  | 93  | 91  | 89  | 93  | 90  | 89  | 88  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 99  | 94  | 91  | 89  | 98  | 94  | 91  | 88  | 93  | 90  | 88  | 92  | 90  | 88  | 91  | 89  | 88  | 87  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 98  | 92  | 89  | 87  | 97  | 92  | 89  | 87  | 91  | 89  | 87  | 91  | 88  | 86  | 90  | 88  | 86  | 85  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 96  | 91  | 88  | 86  | 95  | 90  | 88  | 86  | 90  | 87  | 85  | 89  | 87  | 85  | 89  | 87  | 85  | 84  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 2966436 | 2966436 | 2966436 |
| 5°  | 2526004 | 2552351 | 2530808 |
| 10° | 1115215 | 1140715 | 1089165 |
| 15° | 338382  | 388131  | 343694  |
| 20° | 101225  | 134984  | 113143  |
| 25° | 39466   | 38813   | 41481   |
| 30° | 17546   | 15894   | 16749   |
| 35° | 3553    | 3132    | 3132    |
| 40° | 0       | 258     | 966     |
| 45° | 3140    | 2582    | 4675    |
| 50° | 0       | 844     | 2840    |
| 55° | 0       | 0       | 1290    |
| 60° | 0       | 395     | 1480    |
| 65° | 0       | 0       | 817     |
| 70° | 0       | 2164    | 4327    |
| 75° | 0       | 0       | 0       |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 2264    | 8491    |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 389.8  | 58.4      |
| 10°-20°   | 222.6  | 33.4      |
| 20°-30°   | 42.3   | 6.3       |
| 30°-40°   | 7.7    | 1.2       |
| 40°-50°   | 2.0    | 0.3       |
| 50°-60°   | 1.5    | 0.2       |
| 60°-70°   | 0.2    | 0.0       |
| 70°-80°   | 0.3    | 0.1       |
| 80°-90°   | 0.5    | 0.1       |
| 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°    | 654.7  | 98.2      |
| 0°-40°    | 662.3  | 99.3      |
| 0°-60°    | 665.8  | 99.8      |
| 0°-90°    | 666.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 666.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6013 | 6013  | 6013 | 6013  | 6013 |      |
| 5°  | 5100 | 5134  | 5154 | 5145  | 5110 | 387  |
| 15° | 662  | 720   | 760  | 714   | 673  | 211  |
| 25° | 72   | 78    | 71   | 81    | 76   | 38   |
| 35° | 6    | 7     | 5    | 6     | 5    | 8    |
| 45° | 4    | 7     | 4    | 4     | 7    | 2    |
| 55° | 0    | 0     | 0    | 0     | 2    | 0    |
| 65° | 0    | 0     | 0    | 0     | 1    | 0    |
| 75° | 0    | 0     | 0    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 2    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6012.7 | 6012.7 | 6012.7 | 6012.7 | 6012.7 |
| 1°    | 5955.9 | 5962.2 | 5975.6 | 5989.3 | 5967.8 |
| 2°    | 5844.4 | 5859.7 | 5878.6 | 5891.2 | 5867.8 |
| 3°    | 5688.4 | 5709.5 | 5729.6 | 5732.2 | 5710.3 |
| 4°    | 5447.2 | 5473.2 | 5494.4 | 5491.8 | 5464.3 |
| 5°    | 5100.5 | 5134.0 | 5153.7 | 5144.8 | 5110.2 |
| 6°    | 4642.4 | 4674.7 | 4700.0 | 4674.4 | 4627.9 |
| 7°    | 4071.7 | 4108.8 | 4135.6 | 4091.7 | 4034.9 |
| 8°    | 3410.3 | 3462.3 | 3489.0 | 3427.7 | 3369.4 |
| 9°    | 2783.8 | 2819.8 | 2847.0 | 2780.1 | 2720.6 |
| 10°   | 2226.1 | 2292.2 | 2277.0 | 2225.3 | 2174.1 |
| 11°   | 1750.8 | 1810.7 | 1813.3 | 1778.3 | 1728.2 |
| 12°   | 1370.7 | 1433.9 | 1449.9 | 1423.1 | 1378.5 |
| 13°   | 1083.1 | 1130.3 | 1156.7 | 1129.2 | 1086.8 |
| 14°   | 862.0  | 904.0  | 937.8  | 902.2  | 859.8  |
| 15°   | 662.5  | 720.5  | 759.9  | 713.8  | 672.9  |
| 16°   | 526.9  | 574.8  | 621.6  | 569.2  | 536.5  |
| 17°   | 404.6  | 447.4  | 495.7  | 448.1  | 421.4  |
| 18°   | 320.3  | 354.1  | 407.2  | 358.2  | 334.8  |
| 19°   | 250.8  | 276.4  | 325.9  | 282.8  | 263.8  |
| 20°   | 192.8  | 221.1  | 257.1  | 227.8  | 215.5  |
| 22.5° | 116.7  | 132.3  | 142.7  | 133.8  | 127.4  |
| 25°   | 72.5   | 78.0   | 71.3   | 81.4   | 76.2   |
| 26°   | 63.2   | 67.3   | 65.8   | 72.5   | 66.1   |
| 27°   | 50.5   | 55.7   | 51.6   | 56.9   | 55.0   |
| 28°   | 46.1   | 52.4   | 44.2   | 50.5   | 47.6   |
| 29°   | 32.3   | 34.9   | 31.6   | 33.8   | 33.8   |
| 30°   | 30.8   | 31.6   | 27.9   | 30.5   | 29.4   |
| 32.5° | 24.2   | 22.7   | 18.6   | 19.7   | 19.0   |
| 35°   | 5.9    | 7.4    | 5.2    | 6.3    | 5.2    |
| 37.5° | 8.9    | 8.2    | 9.7    | 9.3    | 8.9    |
| 40°   | 0.0    | 0.4    | 0.4    | 0.4    | 1.5    |
| 42.5° | 6.7    | 4.1    | 3.7    | 2.6    | 4.5    |
| 45°   | 4.5    | 7.1    | 3.7    | 4.1    | 6.7    |
| 47.5° | 0.0    | 0.4    | 0.0    | 0.7    | 0.7    |
| 50°   | 0.0    | 0.7    | 1.1    | 1.5    | 3.7    |
| 52.5° | 0.7    | 4.5    | 2.2    | 4.1    | 5.9    |
| 55°   | 0.0    | 0.4    | 0.0    | 0.4    | 1.5    |
| 57.5° | 1.5    | 0.7    | 1.5    | 1.5    | 6.7    |
| 60°   | 0.0    | 0.7    | 0.4    | 0.4    | 1.5    |
| 62.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 65°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.7    |
| 67.5° | 0.0    | 0.4    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 77.5° | 0.0 | 0.0   | 0.4 | 0.0   | 0.0 |
| 80°   | 0.0 | 0.4   | 0.0 | 0.0   | 0.0 |
| 82.5° | 0.0 | 0.4   | 0.7 | 1.1   | 0.7 |
| 85°   | 0.0 | 0.4   | 0.4 | 0.4   | 1.5 |
| 87.5° | 0.0 | 0.7   | 1.1 | 0.0   | 0.7 |
| 90°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |



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







|       |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| 70°   | 0.0 | 1.1 | 1.5 | 0.0 | 3.0 |
| 72.5° | 0.0 | 1.9 | 0.4 | 0.4 | 0.0 |



(END OF REPORT)