

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: P281166

Luminaire Tested: **LDA2B109030D010 EU2B10SP159030 2LBALD1WMH**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P281166  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-5)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B109030D010 EU2B10SP159030 2LBALD1WMH  
Description: PORTFOLIO 2IN ADJ 1000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in  
ADJ spun Refl w/lens Self-Flanged, WMH  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 872.7 lumens  
Efficiency: N/A  
Efficacy: 87.3 lumens/watt  
Spacing Criteria (0/90/45): 0.33 / 0.31 / 0.32  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

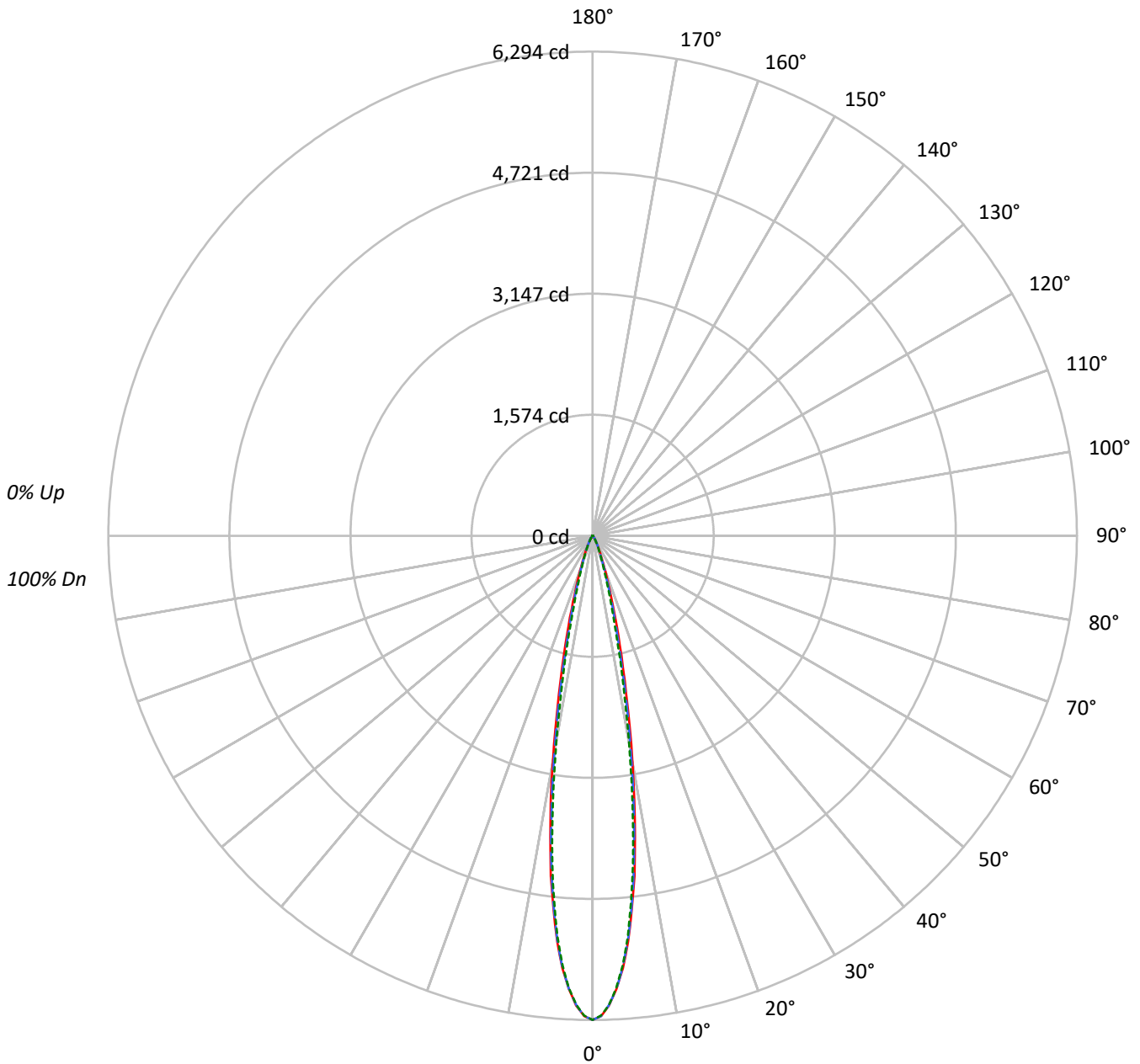
Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 3105120 | 3105120 | 3105120 |
| 5°  | 2623518 | 2609552 | 2590287 |
| 10° | 1493299 | 1427522 | 1354931 |
| 15° | 618384  | 547745  | 482520  |
| 20° | 235211  | 206020  | 188589  |
| 25° | 103919  | 99836   | 88731   |
| 30° | 48081   | 53095   | 42271   |
| 35° | 25296   | 29813   | 23670   |
| 40° | 11077   | 12816   | 7406    |
| 45° | 4326    | 3419    | 4954    |
| 50° | 2072    | 2379    | 3377    |
| 55° | 0       | 1548    | 0       |
| 60° | 0       | 0       | 888     |
| 65° | 0       | 0       | 0       |
| 70° | 0       | 577     | 0       |
| 75° | 0       | 0       | 0       |
| 80° | 2557    | 0       | 0       |
| 85° | 24907   | 22643   | 10189   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 420.8  | 48.2      |
| 10°-20°   | 321.7  | 36.9      |
| 20°-30°   | 89.5   | 10.3      |
| 30°-40°   | 29.1   | 3.3       |
| 40°-50°   | 6.4    | 0.7       |
| 50°-60°   | 2.0    | 0.2       |
| 60°-70°   | 1.1    | 0.1       |
| 70°-80°   | 0.7    | 0.1       |
| 80°-90°   | 1.4    | 0.2       |
| 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°    | 832.0  | 95.3      |
| 0°-40°    | 861.1  | 98.7      |
| 0°-60°    | 869.5  | 99.6      |
| 0°-90°    | 872.7  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 872.7  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6294 | 6294  | 6294 | 6294  | 6294 |      |
| 5°  | 5297 | 5258  | 5269 | 5230  | 5230 | 428  |
| 15° | 1211 | 1169  | 1072 | 990   | 945  | 353  |
| 25° | 191  | 193   | 183  | 173   | 163  | 96   |
| 35° | 42   | 46    | 50   | 38    | 39   | 28   |
| 45° | 6    | 9     | 5    | 5     | 7    | 6    |
| 55° | 0    | 3     | 2    | 1     | 0    | 2    |
| 65° | 0    | 2     | 0    | 0     | 0    | 1    |
| 75° | 0    | 0     | 0    | 1     | 0    | 0    |
| 85° | 4    | 2     | 4    | 2     | 2    | 1    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6293.8 | 6293.8 | 6293.8 | 6293.8 | 6293.8 |
| 1°    | 6245.7 | 6222.2 | 6244.8 | 6231.5 | 6239.0 |
| 2°    | 6110.0 | 6080.8 | 6104.3 | 6085.7 | 6101.2 |
| 3°    | 5898.8 | 5876.3 | 5897.0 | 5873.6 | 5886.0 |
| 4°    | 5634.1 | 5601.4 | 5622.2 | 5590.8 | 5598.3 |
| 5°    | 5297.4 | 5258.5 | 5269.2 | 5229.8 | 5230.3 |
| 6°    | 4873.2 | 4846.3 | 4852.5 | 4791.1 | 4786.6 |
| 7°    | 4458.3 | 4394.7 | 4388.1 | 4317.8 | 4304.1 |
| 8°    | 3954.6 | 3896.7 | 3877.7 | 3795.1 | 3766.0 |
| 9°    | 3471.7 | 3399.7 | 3360.8 | 3264.9 | 3230.9 |
| 10°   | 2980.8 | 2907.9 | 2849.5 | 2741.3 | 2704.6 |
| 11°   | 2526.5 | 2460.7 | 2388.2 | 2272.5 | 2236.7 |
| 12°   | 2105.0 | 2053.3 | 1973.8 | 1862.0 | 1824.4 |
| 13°   | 1760.8 | 1701.2 | 1615.9 | 1512.0 | 1479.8 |
| 14°   | 1462.5 | 1398.5 | 1313.2 | 1224.4 | 1161.6 |
| 15°   | 1210.7 | 1168.7 | 1072.4 | 989.8  | 944.7  |
| 16°   | 989.3  | 953.5  | 870.5  | 798.9  | 767.1  |
| 17°   | 811.3  | 782.5  | 711.8  | 655.7  | 629.2  |
| 18°   | 669.4  | 633.6  | 577.9  | 541.3  | 520.5  |
| 19°   | 543.0  | 515.2  | 474.6  | 446.3  | 425.5  |
| 20°   | 448.0  | 425.1  | 392.4  | 367.2  | 359.2  |
| 22.5° | 289.4  | 285.4  | 264.2  | 250.5  | 243.9  |
| 25°   | 190.9  | 193.1  | 183.4  | 172.8  | 163.0  |
| 26°   | 163.0  | 164.4  | 155.5  | 149.3  | 137.0  |
| 27°   | 139.6  | 140.1  | 140.1  | 128.6  | 116.7  |
| 28°   | 114.0  | 118.9  | 114.4  | 109.1  | 97.7   |
| 29°   | 97.7   | 103.8  | 101.6  | 96.3   | 85.3   |
| 30°   | 84.4   | 88.8   | 93.2   | 84.8   | 74.2   |
| 32.5° | 59.2   | 63.2   | 68.0   | 63.6   | 54.8   |
| 35°   | 42.0   | 45.5   | 49.5   | 37.6   | 39.3   |
| 37.5° | 28.7   | 34.9   | 33.6   | 30.5   | 26.1   |
| 40°   | 17.2   | 18.1   | 19.9   | 21.2   | 11.5   |
| 42.5° | 12.4   | 14.6   | 13.3   | 15.0   | 5.3    |
| 45°   | 6.2    | 8.8    | 4.9    | 4.9    | 7.1    |
| 47.5° | 4.4    | 7.5    | 2.7    | 2.7    | 0.9    |
| 50°   | 2.7    | 5.7    | 3.1    | 1.3    | 4.4    |
| 52.5° | 4.4    | 5.3    | 3.5    | 4.0    | 0.9    |
| 55°   | 0.0    | 2.7    | 1.8    | 0.9    | 0.0    |
| 57.5° | 1.8    | 3.1    | 1.8    | 0.9    | 1.8    |
| 60°   | 0.0    | 0.0    | 0.0    | 0.4    | 0.9    |
| 62.5° | 0.0    | 0.9    | 0.0    | 1.3    | 1.8    |
| 65°   | 0.0    | 1.8    | 0.0    | 0.0    | 0.0    |
| 67.5° | 2.7    | 3.1    | 1.8    | 3.5    | 5.3    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.0   | 0.0 | 0.9   | 0.0 |
| 77.5° | 0.0 | 4.4   | 1.3 | 1.3   | 1.8 |
| 80°   | 0.9 | 0.0   | 0.0 | 0.4   | 0.0 |
| 82.5° | 0.0 | 3.5   | 0.4 | 1.8   | 2.7 |
| 85°   | 4.4 | 2.2   | 4.0 | 2.2   | 1.8 |
| 87.5° | 0.0 | 0.4   | 0.9 | 0.4   | 0.0 |
| 90°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |



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







|       |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| 70°   | 0.0 | 0.0 | 0.4 | 0.4 | 0.0 |
| 72.5° | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)