

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: P281778

Luminaire Tested: **LDA2B059730D010 EU2B05SP159730 2LBALSQC1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P281778  
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: LDA2B059730D010 EU2B05SP159730 2LBALSQC1MB  
Description: PORTFOLIO 2IN ADJ 500 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Cast Trim w/lens, MB  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 589.6 lumens  
Efficiency: N/A  
Efficacy: 84.2 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

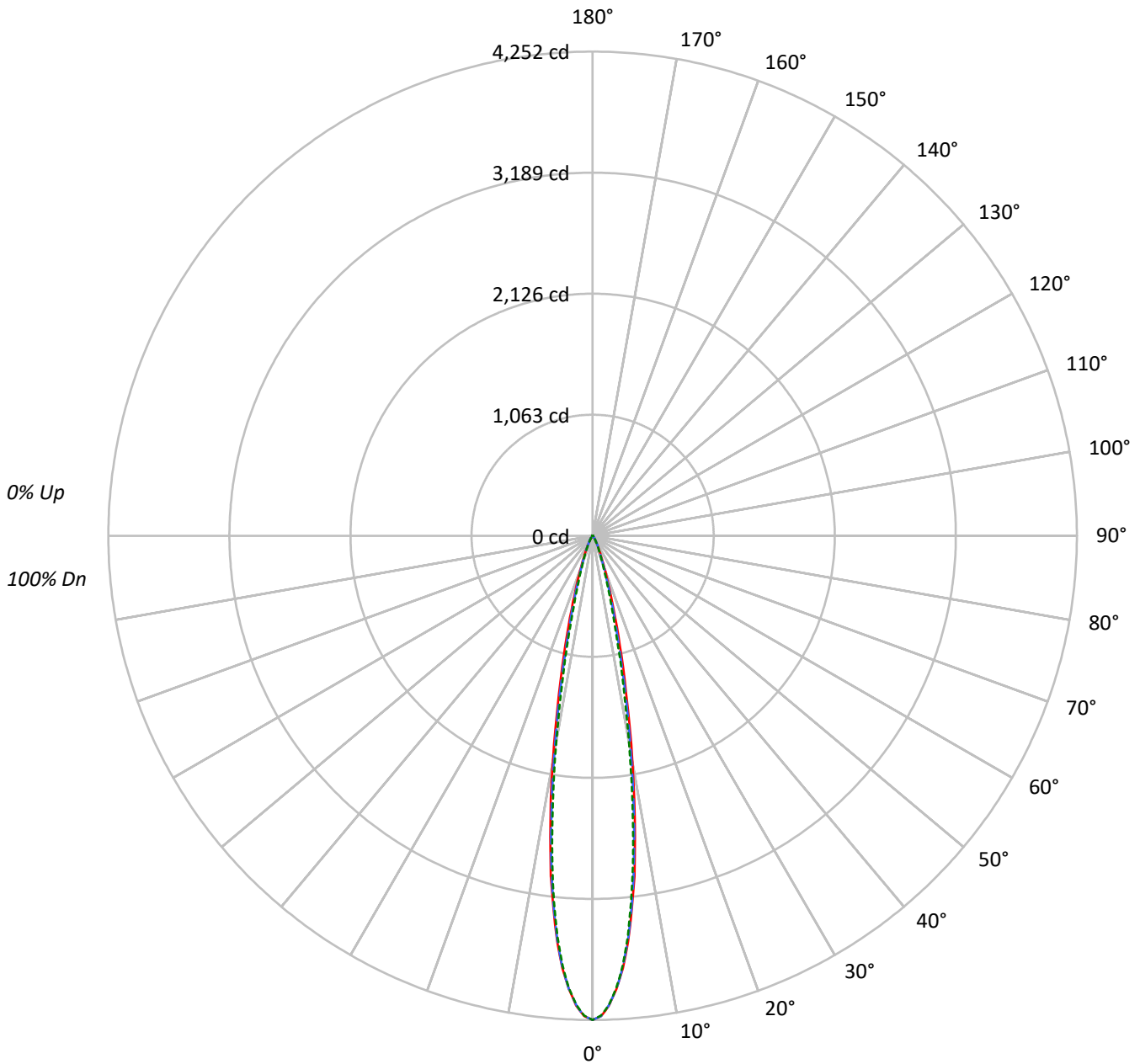
Input Watts (W): 7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|----|
| RF  | 20  |     |     |     |     |     |     |     |     | 20  |     |     |     |     |     |     |     |     | 20 |    |    |    |    |    |    |    |    | 20 |    |   |  |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  | 20 |
| RC  | 80  |     |     |     |     |     |     |     |     | 50  |     |     |     |     |     |     |     |     | 30 |    |    |    |    |    |    |    |    | 10 |    |   |  |  |  |  |  |  | 0  |  |  |  |  |  |  |  |  | 0  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 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°  | 2097922 | 2097922 | 2097922 |
| 5°  | 1772536 | 1763077 | 1750052 |
| 10° | 1008909 | 964473  | 915427  |
| 15° | 417806  | 370050  | 326022  |
| 20° | 158925  | 139184  | 127423  |
| 25° | 70223   | 67447   | 59989   |
| 30° | 32472   | 35890   | 28598   |
| 35° | 17105   | 20116   | 16021   |
| 40° | 7471    | 8630    | 5023    |
| 45° | 2930    | 2302    | 3349    |
| 50° | 1382    | 1612    | 2303    |
| 55° | 0       | 1032    | 0       |
| 60° | 0       | 0       | 592     |
| 65° | 0       | 0       | 0       |
| 70° | 0       | 433     | 0       |
| 75° | 0       | 0       | 0       |
| 80° | 1705    | 0       | 0       |
| 85° | 16982   | 15284   | 6793    |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 284.3  | 48.2      |
| 10°-20°   | 217.4  | 36.9      |
| 20°-30°   | 60.4   | 10.3      |
| 30°-40°   | 19.6   | 3.3       |
| 40°-50°   | 4.3    | 0.7       |
| 50°-60°   | 1.3    | 0.2       |
| 60°-70°   | 0.8    | 0.1       |
| 70°-80°   | 0.5    | 0.1       |
| 80°-90°   | 1.0    | 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°    | 562.1  | 95.3      |
| 0°-40°    | 581.8  | 98.7      |
| 0°-60°    | 587.4  | 99.6      |
| 0°-90°    | 589.6  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 589.6  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 4252 | 4252  | 4252 | 4252  | 4252 |      |
| 5°  | 3579 | 3553  | 3560 | 3533  | 3534 | 289  |
| 15° | 818  | 790   | 724  | 669   | 638  | 239  |
| 25° | 129  | 130   | 124  | 117   | 110  | 65   |
| 35° | 28   | 31    | 33   | 25    | 27   | 19   |
| 45° | 4    | 6     | 3    | 3     | 5    | 4    |
| 55° | 0    | 2     | 1    | 1     | 0    | 1    |
| 65° | 0    | 1     | 0    | 0     | 0    | 1    |
| 75° | 0    | 0     | 0    | 1     | 0    | 0    |
| 85° | 3    | 2     | 3    | 2     | 1    | 1    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 4252.3 | 4252.3 | 4252.3 | 4252.3 | 4252.3 |
| 1°    | 4219.7 | 4203.9 | 4219.2 | 4210.2 | 4215.3 |
| 2°    | 4128.1 | 4108.4 | 4124.2 | 4111.7 | 4122.1 |
| 3°    | 3985.4 | 3970.2 | 3984.2 | 3968.4 | 3976.7 |
| 4°    | 3806.6 | 3784.5 | 3798.5 | 3777.3 | 3782.4 |
| 5°    | 3579.1 | 3552.8 | 3560.0 | 3533.4 | 3533.7 |
| 6°    | 3292.5 | 3274.3 | 3278.5 | 3237.0 | 3234.0 |
| 7°    | 3012.2 | 2969.2 | 2964.7 | 2917.3 | 2908.0 |
| 8°    | 2671.9 | 2632.8 | 2619.9 | 2564.1 | 2544.4 |
| 9°    | 2345.6 | 2296.9 | 2270.6 | 2205.9 | 2182.9 |
| 10°   | 2013.9 | 1964.6 | 1925.2 | 1852.1 | 1827.3 |
| 11°   | 1707.0 | 1662.5 | 1613.6 | 1535.3 | 1511.2 |
| 12°   | 1422.2 | 1387.3 | 1333.5 | 1258.0 | 1232.6 |
| 13°   | 1189.6 | 1149.3 | 1091.7 | 1021.6 | 999.8  |
| 14°   | 988.1  | 944.9  | 887.2  | 827.2  | 784.8  |
| 15°   | 818.0  | 789.6  | 724.5  | 668.7  | 638.3  |
| 16°   | 668.4  | 644.2  | 588.1  | 539.7  | 518.3  |
| 17°   | 548.1  | 528.7  | 480.9  | 443.0  | 425.1  |
| 18°   | 452.3  | 428.1  | 390.5  | 365.7  | 351.7  |
| 19°   | 366.9  | 348.1  | 320.6  | 301.5  | 287.5  |
| 20°   | 302.7  | 287.2  | 265.1  | 248.1  | 242.7  |
| 22.5° | 195.5  | 192.9  | 178.5  | 169.3  | 164.8  |
| 25°   | 129.0  | 130.5  | 123.9  | 116.7  | 110.2  |
| 26°   | 110.2  | 111.1  | 105.1  | 100.9  | 92.5   |
| 27°   | 94.3   | 94.6   | 94.6   | 86.9   | 78.8   |
| 28°   | 77.0   | 80.3   | 77.3   | 73.7   | 66.0   |
| 29°   | 66.0   | 70.2   | 68.7   | 65.1   | 57.6   |
| 30°   | 57.0   | 60.0   | 63.0   | 57.3   | 50.2   |
| 32.5° | 40.0   | 42.7   | 46.0   | 43.0   | 37.0   |
| 35°   | 28.4   | 30.7   | 33.4   | 25.4   | 26.6   |
| 37.5° | 19.4   | 23.6   | 22.7   | 20.6   | 17.6   |
| 40°   | 11.6   | 12.2   | 13.4   | 14.3   | 7.8    |
| 42.5° | 8.4    | 9.9    | 9.0    | 10.2   | 3.6    |
| 45°   | 4.2    | 6.0    | 3.3    | 3.3    | 4.8    |
| 47.5° | 3.0    | 5.1    | 1.8    | 1.8    | 0.6    |
| 50°   | 1.8    | 3.9    | 2.1    | 0.9    | 3.0    |
| 52.5° | 3.0    | 3.6    | 2.4    | 2.7    | 0.6    |
| 55°   | 0.0    | 1.8    | 1.2    | 0.6    | 0.0    |
| 57.5° | 1.2    | 2.1    | 1.2    | 0.6    | 1.2    |
| 60°   | 0.0    | 0.0    | 0.0    | 0.3    | 0.6    |
| 62.5° | 0.0    | 0.6    | 0.0    | 0.9    | 1.2    |
| 65°   | 0.0    | 1.2    | 0.0    | 0.0    | 0.0    |
| 67.5° | 1.8    | 2.1    | 1.2    | 2.4    | 3.6    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.0   | 0.0 | 0.6   | 0.0 |
| 77.5° | 0.0 | 3.0   | 0.9 | 0.9   | 1.2 |
| 80°   | 0.6 | 0.0   | 0.0 | 0.3   | 0.0 |
| 82.5° | 0.0 | 2.4   | 0.3 | 1.2   | 1.8 |
| 85°   | 3.0 | 1.5   | 2.7 | 1.5   | 1.2 |
| 87.5° | 0.0 | 0.3   | 0.6 | 0.3   | 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 | 0.3 | 0.3 | 0.0 |
| 72.5° | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)