

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: P314857

Luminaire Tested: **LDA2B20SP9040D010 PIN1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P314857  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-8)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B20SP9040D010 PIN1MMS  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in  
Adj PinHole, Black oculus, matte metallic silver finish  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1712.8 lumens  
Efficiency: N/A  
Efficacy: 83.1 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

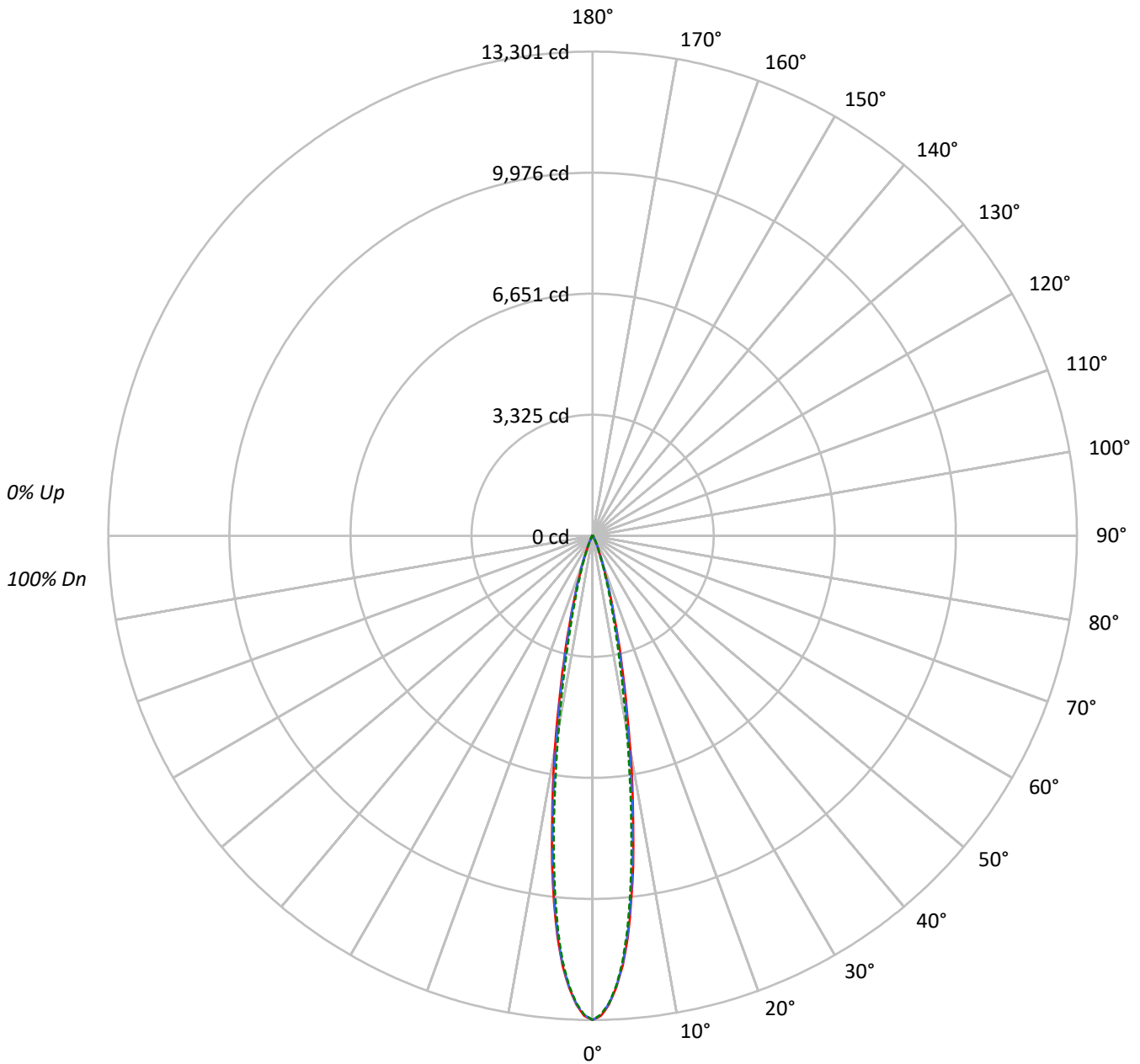
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |    |    |   | 100 |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 115 | 113 | 112 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 100 | 99  | 97  |    |    |   | 97  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 112 | 109 | 106 | 104 | 110 | 107 | 105 | 103 | 104 | 102 | 101 | 101 | 100 | 98  | 99  | 98  | 96  | 95  |    |    |   | 95  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 109 | 105 | 102 | 99  | 107 | 104 | 101 | 98  | 101 | 99  | 97  | 99  | 97  | 95  | 97  | 95  | 94  | 93  |    |    |   | 93  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 106 | 102 | 98  | 96  | 105 | 101 | 97  | 95  | 99  | 96  | 94  | 97  | 95  | 93  | 95  | 93  | 92  | 91  |    |    |   | 91  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 104 | 99  | 95  | 92  | 103 | 98  | 95  | 92  | 96  | 94  | 91  | 95  | 92  | 91  | 94  | 92  | 90  | 89  |    |    |   | 89  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 101 | 96  | 92  | 90  | 100 | 95  | 92  | 90  | 94  | 91  | 89  | 93  | 90  | 89  | 92  | 90  | 88  | 87  |    |    |   | 87  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 99  | 94  | 90  | 88  | 98  | 93  | 90  | 87  | 92  | 89  | 87  | 91  | 89  | 87  | 90  | 88  | 86  | 85  |    |    |   | 85  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 97  | 92  | 88  | 86  | 96  | 91  | 88  | 85  | 90  | 87  | 85  | 89  | 87  | 85  | 89  | 86  | 85  | 84  |    |    |   | 84  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 95  | 90  | 86  | 84  | 95  | 89  | 86  | 84  | 88  | 86  | 83  | 88  | 85  | 83  | 87  | 85  | 83  | 82  |    |    |   | 82  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 93  | 88  | 84  | 82  | 93  | 87  | 84  | 82  | 87  | 84  | 82  | 86  | 84  | 82  | 86  | 83  | 82  | 81  |    |    |   | 81  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 6562106 | 6562106 | 6562106 |
| 5°  | 5482328 | 5456129 | 5391549 |
| 10° | 2986949 | 2870574 | 2686867 |
| 15° | 1184210 | 1154024 | 990681  |
| 20° | 397916  | 425165  | 351399  |
| 25° | 138051  | 149156  | 132553  |
| 30° | 50474   | 55146   | 53949   |
| 35° | 32523   | 38064   | 28849   |
| 40° | 17067   | 20352   | 20996   |
| 45° | 15629   | 12071   | 11373   |
| 50° | 9364    | 6217    | 4682    |
| 55° | 0       | 0       | 0       |
| 60° | 6019    | 6019    | 1973    |
| 65° | 4786    | 1167    | 0       |
| 70° | 0       | 4472    | 5914    |
| 75° | 0       | 9722    | 0       |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 5661    | 0       |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 869.6  | 50.8      |
| 10°-20°   | 647.3  | 37.8      |
| 20°-30°   | 143.1  | 8.4       |
| 30°-40°   | 31.8   | 1.9       |
| 40°-50°   | 13.0   | 0.8       |
| 50°-60°   | 2.2    | 0.1       |
| 60°-70°   | 2.2    | 0.1       |
| 70°-80°   | 1.8    | 0.1       |
| 80°-90°   | 1.7    | 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°    | 1660.1 | 96.9      |
| 0°-40°    | 1691.9 | 98.8      |
| 0°-60°    | 1707.1 | 99.7      |
| 0°-90°    | 1712.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1712.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 13301 | 13301 | 13301 | 13301 | 13301 |      |
| 5°  | 11070 | 11024 | 11017 | 10975 | 10887 | 883  |
| 15° | 2318  | 2311  | 2259  | 2049  | 1940  | 682  |
| 25° | 254   | 283   | 274   | 254   | 244   | 138  |
| 35° | 54    | 54    | 63    | 51    | 48    | 31   |
| 45° | 22    | 18    | 17    | 17    | 16    | 13   |
| 55° | 0     | 0     | 0     | 0     | 0     | 3    |
| 65° | 4     | 2     | 1     | 0     | 0     | 4    |
| 75° | 0     | 0     | 5     | 0     | 0     | 1    |
| 85° | 0     | 1     | 1     | 3     | 0     | 0    |
| 90° | 0     | 0     | 0     | 0     | 0     |      |



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CATALOG NUMBER: LDA2B2OSP9040D010 PIN1MMS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 13300.8 | 13300.8 | 13300.8 | 13300.8 | 13300.8 |
| 1°    | 13191.8 | 13137.8 | 13164.3 | 13179.6 | 13157.2 |
| 2°    | 12884.2 | 12819.0 | 12860.8 | 12864.8 | 12842.4 |
| 3°    | 12425.8 | 12396.2 | 12409.5 | 12414.6 | 12369.8 |
| 4°    | 11839.0 | 11796.2 | 11805.4 | 11794.2 | 11739.2 |
| 5°    | 11069.9 | 11024.1 | 11017.0 | 10975.2 | 10886.6 |
| 6°    | 10129.7 | 10103.2 | 10055.3 | 9984.0  | 9865.9  |
| 7°    | 9122.2  | 9100.8  | 9018.3  | 8890.0  | 8753.5  |
| 8°    | 8018.0  | 8018.0  | 7898.8  | 7721.5  | 7565.7  |
| 9°    | 6972.8  | 6934.1  | 6782.3  | 6568.4  | 6417.6  |
| 10°   | 5962.3  | 5910.3  | 5730.0  | 5513.1  | 5363.3  |
| 11°   | 5005.8  | 4950.8  | 4777.6  | 4555.5  | 4417.0  |
| 12°   | 4179.6  | 4150.1  | 4015.6  | 3771.1  | 3632.6  |
| 13°   | 3481.8  | 3443.1  | 3325.0  | 3093.7  | 2975.5  |
| 14°   | 2873.7  | 2824.8  | 2730.0  | 2518.2  | 2403.1  |
| 15°   | 2318.5  | 2311.4  | 2259.4  | 2048.6  | 1939.6  |
| 16°   | 1894.7  | 1890.7  | 1841.8  | 1636.0  | 1591.2  |
| 17°   | 1520.9  | 1542.3  | 1528.0  | 1338.5  | 1287.6  |
| 18°   | 1183.7  | 1226.5  | 1236.7  | 1065.5  | 1014.6  |
| 19°   | 952.5   | 993.2   | 1010.5  | 860.8   | 818.0   |
| 20°   | 757.9   | 796.6   | 809.8   | 697.8   | 669.3   |
| 22.5° | 429.9   | 481.8   | 483.9   | 425.8   | 396.3   |
| 25°   | 253.6   | 283.2   | 274.0   | 253.6   | 243.5   |
| 26°   | 212.9   | 241.4   | 227.2   | 221.1   | 212.9   |
| 27°   | 179.3   | 198.6   | 187.4   | 177.2   | 184.4   |
| 28°   | 148.7   | 162.0   | 150.8   | 153.8   | 142.6   |
| 29°   | 118.2   | 140.6   | 124.3   | 127.3   | 118.2   |
| 30°   | 88.6    | 109.0   | 96.8    | 101.9   | 94.7    |
| 32.5° | 66.2    | 72.3    | 64.2    | 72.3    | 72.3    |
| 35°   | 54.0    | 54.0    | 63.2    | 50.9    | 47.9    |
| 37.5° | 24.4    | 19.4    | 21.4    | 17.3    | 20.4    |
| 40°   | 26.5    | 29.5    | 31.6    | 26.5    | 32.6    |
| 42.5° | 18.3    | 24.4    | 24.4    | 16.3    | 28.5    |
| 45°   | 22.4    | 18.3    | 17.3    | 17.3    | 16.3    |
| 47.5° | 10.2    | 7.1     | 8.1     | 9.2     | 14.3    |
| 50°   | 12.2    | 5.1     | 8.1     | 12.2    | 6.1     |
| 52.5° | 4.1     | 0.0     | 5.1     | 0.0     | 2.0     |
| 55°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 57.5° | 0.0     | 0.0     | 1.0     | 2.0     | 0.0     |
| 60°   | 6.1     | 7.1     | 6.1     | 4.1     | 2.0     |
| 62.5° | 10.2    | 2.0     | 3.1     | 4.1     | 0.0     |
| 65°   | 4.1     | 2.0     | 1.0     | 0.0     | 0.0     |
| 67.5° | 0.0     | 0.0     | 3.1     | 0.0     | 0.0     |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.0   | 5.1 | 0.0   | 0.0 |
| 77.5° | 2.0 | 0.0   | 4.1 | 0.0   | 0.0 |
| 80°   | 0.0 | 2.0   | 0.0 | 0.0   | 0.0 |
| 82.5° | 0.0 | 0.0   | 5.1 | 4.1   | 0.0 |
| 85°   | 0.0 | 1.0   | 1.0 | 3.1   | 0.0 |
| 87.5° | 0.0 | 3.1   | 4.1 | 1.0   | 2.0 |
| 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 | 3.1 | 2.0 | 4.1 |
| 72.5° | 0.0 | 1.0 | 4.1 | 6.1 | 2.0 |



(END OF REPORT)