

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: P281593

Luminaire Tested: **LDA2B209035D010 EU2B20SP159035 2LBASQC1MB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P281593  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-6)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B209035D010 EU2B20SP159035 2LBASQC1MB  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Cast Trim, MB  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1677.1 lumens  
Efficiency: N/A  
Efficacy: 81.4 lumens/watt  
Spacing Criteria (0/90/45): 0.31 / 0.31 / 0.29  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

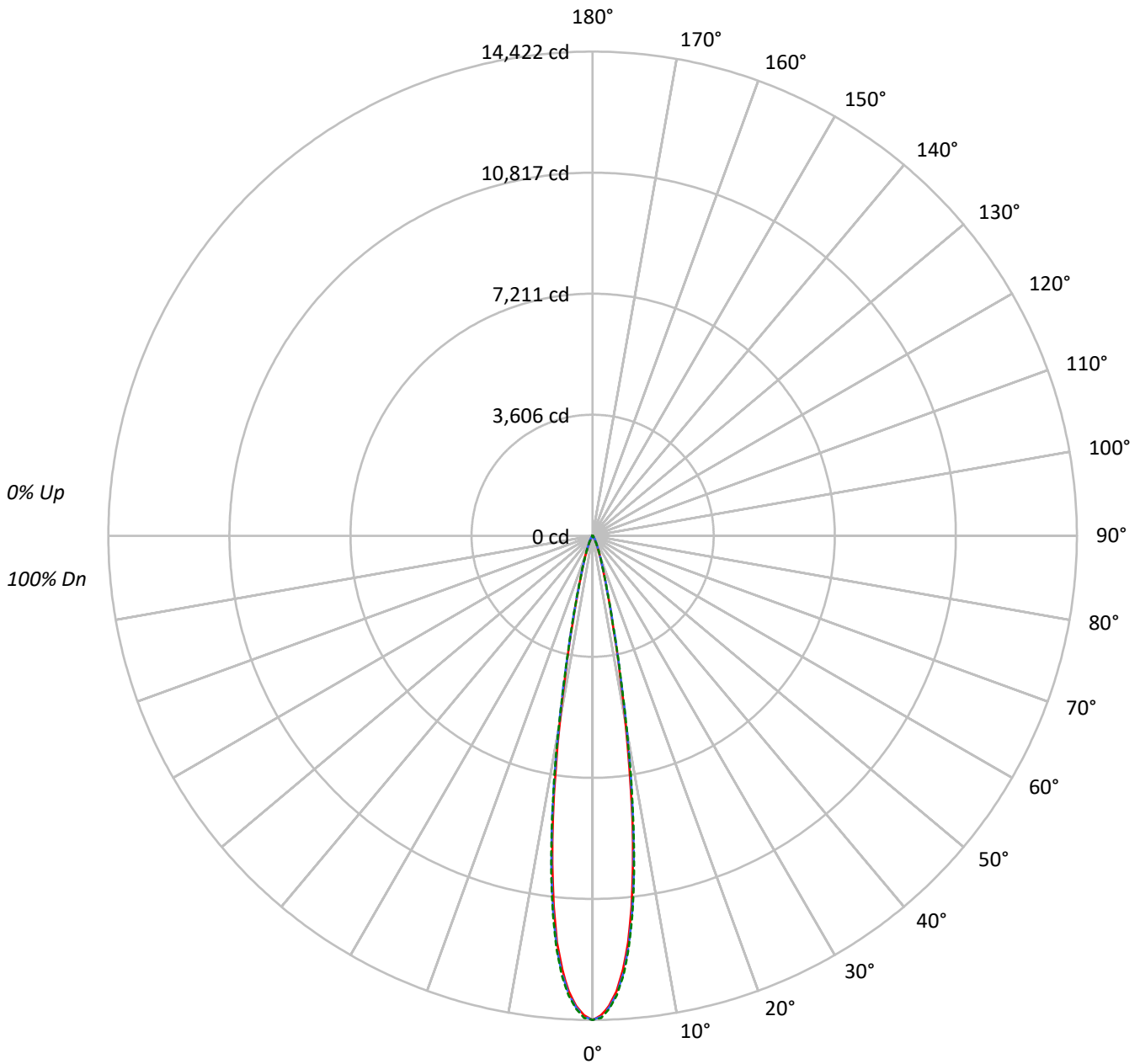
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |    |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|---|----|---|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |    |    | 20 |    |     |   |    |   |
| RC  | 80  |     |     |     |     | 70  |     |     |     |     | 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 | 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   | 116 | 114 | 112 | 111 | 113 | 112 | 110 | 109 | 108 | 107 | 106 | 104 | 103 | 102 | 101 | 100 | 99  | 98  | 97 | 96 |    |    |     |   | 98 |   |
| 2   | 113 | 109 | 107 | 105 | 111 | 108 | 105 | 103 | 105 | 103 | 101 | 102 | 100 | 99  | 99  | 98  | 97  | 96  | 95 | 94 |    |    |     |   | 96 |   |
| 3   | 110 | 106 | 103 | 100 | 108 | 104 | 102 | 99  | 102 | 100 | 98  | 100 | 98  | 96  | 98  | 96  | 95  | 94  | 93 | 92 |    |    |     |   | 94 |   |
| 4   | 107 | 103 | 99  | 97  | 106 | 102 | 99  | 96  | 100 | 97  | 95  | 98  | 96  | 94  | 96  | 95  | 93  | 92  | 91 | 90 |    |    |     |   | 92 |   |
| 5   | 105 | 100 | 96  | 94  | 103 | 99  | 96  | 93  | 98  | 95  | 93  | 96  | 94  | 92  | 95  | 93  | 91  | 90  | 89 | 88 |    |    |     |   | 90 |   |
| 6   | 103 | 97  | 94  | 91  | 101 | 97  | 94  | 91  | 96  | 93  | 91  | 94  | 92  | 90  | 93  | 91  | 90  | 89  | 88 | 87 |    |    |     |   | 89 |   |
| 7   | 100 | 95  | 92  | 89  | 100 | 95  | 91  | 89  | 94  | 91  | 89  | 93  | 90  | 88  | 92  | 90  | 88  | 87  | 86 | 85 |    |    |     |   | 87 |   |
| 8   | 99  | 93  | 90  | 88  | 98  | 93  | 90  | 87  | 92  | 89  | 87  | 91  | 89  | 87  | 90  | 88  | 86  | 85  | 84 | 83 |    |    |     |   | 86 |   |
| 9   | 97  | 91  | 88  | 86  | 96  | 91  | 88  | 86  | 90  | 88  | 86  | 90  | 87  | 85  | 89  | 87  | 85  | 84  | 83 | 82 |    |    |     |   | 84 |   |
| 10  | 95  | 90  | 87  | 84  | 94  | 89  | 86  | 84  | 89  | 86  | 84  | 88  | 86  | 84  | 88  | 85  | 84  | 83  | 82 | 81 |    |    |     |   | 83 |   |

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 7115313 | 7115313 | 7115313 |
| 5°  | 6022295 | 6085240 | 6111736 |
| 10° | 2816118 | 2922825 | 2928486 |
| 15° | 824836  | 836839  | 836430  |
| 20° | 331238  | 331658  | 332078  |
| 25° | 147686  | 162656  | 151224  |
| 30° | 62722   | 86250   | 57196   |
| 35° | 28789   | 39992   | 26802   |
| 40° | 9403    | 15650   | 8372    |
| 45° | 0       | 5652    | 0       |
| 50° | 0       | 0       | 0       |
| 55° | 2752    | 1376    | 0       |
| 60° | 0       | 0       | 0       |
| 65° | 0       | 0       | 0       |
| 70° | 0       | 0       | 0       |
| 75° | 0       | 0       | 0       |
| 80° | 4546    | 0       | 0       |
| 85° | 9057    | 0       | 0       |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 953.1  | 56.8      |
| 10°-20°   | 540.2  | 32.2      |
| 20°-30°   | 141.1  | 8.4       |
| 30°-40°   | 36.4   | 2.2       |
| 40°-50°   | 3.6    | 0.2       |
| 50°-60°   | 1.1    | 0.1       |
| 60°-70°   | 0.2    | 0.0       |
| 70°-80°   | 1.2    | 0.1       |
| 80°-90°   | 0.3    | 0.0       |
| 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°    | 1634.4 | 97.5      |
| 0°-40°    | 1670.8 | 99.6      |
| 0°-60°    | 1675.5 | 99.9      |
| 0°-90°    | 1677.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1677.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 14422 | 14422 | 14422 | 14422 | 14422 |      |
| 5°  | 12160 | 12269 | 12287 | 12210 | 12341 | 941  |
| 15° | 1615  | 1637  | 1638  | 1620  | 1638  | 530  |
| 25° | 271   | 294   | 299   | 285   | 278   | 135  |
| 35° | 48    | 51    | 66    | 45    | 44    | 33   |
| 45° | 0     | 3     | 8     | 1     | 0     | 3    |
| 55° | 3     | 4     | 2     | 1     | 0     | 2    |
| 65° | 0     | 0     | 0     | 0     | 0     | 1    |
| 75° | 0     | 1     | 0     | 0     | 0     | 3    |
| 85° | 2     | 0     | 0     | 0     | 0     | 2    |
| 90° | 0     | 0     | 0     | 0     | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 14422.1 | 14422.1 | 14422.1 | 14422.1 | 14422.1 |
| 1°    | 14286.9 | 14343.6 | 14326.5 | 14306.3 | 14363.0 |
| 2°    | 14011.5 | 14066.6 | 14061.7 | 14035.0 | 14101.4 |
| 3°    | 13587.1 | 13664.1 | 13664.1 | 13624.4 | 13707.0 |
| 4°    | 12954.6 | 13072.1 | 13083.4 | 13027.5 | 13130.4 |
| 5°    | 12160.2 | 12268.7 | 12287.3 | 12209.6 | 12340.8 |
| 6°    | 11083.8 | 11232.0 | 11274.2 | 11184.3 | 11318.7 |
| 7°    | 9847.2  | 10002.7 | 10066.6 | 9966.2  | 10116.9 |
| 8°    | 8513.3  | 8625.1  | 8702.0  | 8587.0  | 8740.1  |
| 9°    | 7020.7  | 7181.9  | 7252.4  | 7140.6  | 7289.6  |
| 10°   | 5621.3  | 5769.5  | 5834.3  | 5807.6  | 5845.6  |
| 11°   | 4366.0  | 4497.2  | 4540.9  | 4504.5  | 4522.3  |
| 12°   | 3418.4  | 3471.1  | 3499.4  | 3475.1  | 3487.3  |
| 13°   | 2595.6  | 2666.1  | 2679.0  | 2668.5  | 2674.2  |
| 14°   | 2027.1  | 2061.1  | 2075.7  | 2070.8  | 2073.3  |
| 15°   | 1614.9  | 1636.7  | 1638.4  | 1619.7  | 1637.6  |
| 16°   | 1300.6  | 1317.7  | 1324.9  | 1305.5  | 1329.0  |
| 17°   | 1065.8  | 1079.6  | 1087.7  | 1068.2  | 1077.9  |
| 18°   | 877.1   | 887.6   | 899.0   | 881.9   | 896.5   |
| 19°   | 736.2   | 742.6   | 743.5   | 738.6   | 742.6   |
| 20°   | 630.9   | 627.6   | 631.7   | 622.8   | 632.5   |
| 22.5° | 415.5   | 423.6   | 433.3   | 422.8   | 426.8   |
| 25°   | 271.3   | 294.0   | 298.8   | 285.1   | 277.8   |
| 26°   | 223.5   | 252.7   | 265.6   | 243.8   | 220.3   |
| 27°   | 185.5   | 206.5   | 223.5   | 194.4   | 175.7   |
| 28°   | 162.8   | 180.6   | 197.6   | 170.1   | 148.2   |
| 29°   | 136.1   | 153.9   | 183.0   | 151.4   | 137.7   |
| 30°   | 110.1   | 123.1   | 151.4   | 115.0   | 100.4   |
| 32.5° | 62.4    | 72.9    | 98.0    | 68.0    | 55.9    |
| 35°   | 47.8    | 51.0    | 66.4    | 45.4    | 44.5    |
| 37.5° | 41.3    | 37.3    | 51.8    | 37.3    | 30.0    |
| 40°   | 14.6    | 21.9    | 24.3    | 16.2    | 13.0    |
| 42.5° | 6.5     | 6.5     | 10.5    | 3.2     | 3.2     |
| 45°   | 0.0     | 3.2     | 8.1     | 0.8     | 0.0     |
| 47.5° | 0.0     | 0.0     | 1.6     | 0.0     | 0.0     |
| 50°   | 0.0     | 1.6     | 0.0     | 0.0     | 0.0     |
| 52.5° | 1.6     | 0.0     | 0.0     | 0.0     | 0.0     |
| 55°   | 3.2     | 4.0     | 1.6     | 0.8     | 0.0     |
| 57.5° | 4.9     | 4.0     | 1.6     | 1.6     | 1.6     |
| 60°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 62.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 65°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 67.5° | 1.6     | 0.8     | 0.0     | 0.0     | 0.0     |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.8   | 0.0 | 0.0   | 0.0 |
| 77.5° | 8.1 | 1.6   | 2.4 | 1.6   | 3.2 |
| 80°   | 1.6 | 0.0   | 0.0 | 0.0   | 0.0 |
| 82.5° | 3.2 | 0.0   | 0.0 | 0.0   | 0.0 |
| 85°   | 1.6 | 0.0   | 0.0 | 0.0   | 0.0 |
| 87.5° | 0.0 | 0.8   | 0.0 | 0.8   | 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 | 0.0 | 0.0 | 0.0 |
| 72.5° | 3.2 | 2.4 | 0.0 | 0.0 | 3.2 |



(END OF REPORT)