

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: P182604

Luminaire Tested: **LDSQA4A28935D010TE LAR35FL 4LSQAL1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182604  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26798)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA4A28935D010TE LAR35FL 4LSQAL1H  
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2441.0 lumens  
Efficiency: N/A  
Efficacy: 54.9 lumens/watt  
Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.57  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

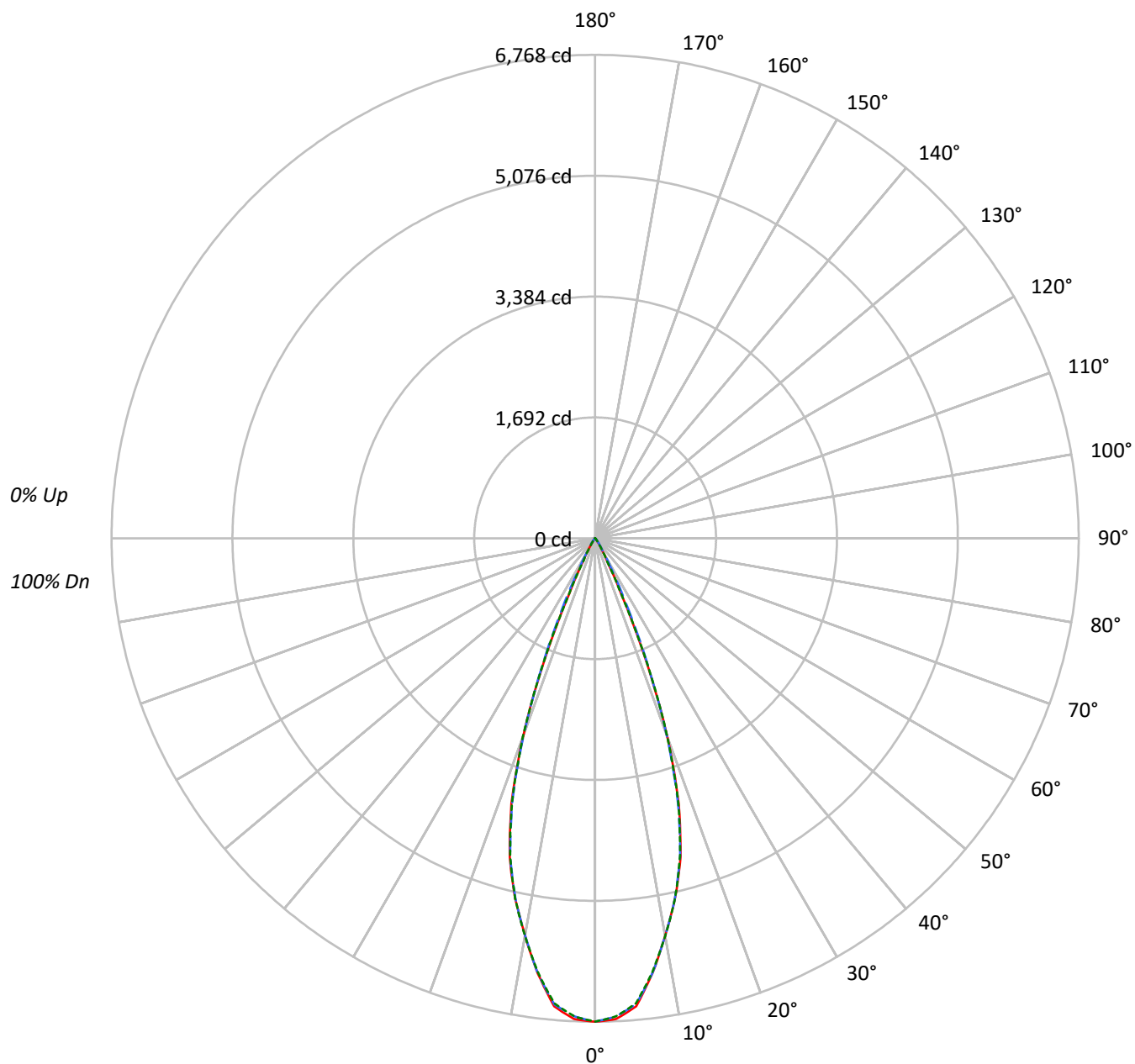
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 115 | 113 | 111 | 109 | 112 | 110 | 109 | 107 | 106 | 105 | 104 |  | 103 | 102 | 101 |  | 99  |
| 2   | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 100 | 102 | 100 | 98  |  | 99  | 97  | 96  |  | 97  |
| 3   | 107 | 102 | 98  | 95  | 105 | 101 | 97  | 94  | 98  | 95  | 93  |  | 96  | 94  | 92  |  | 94  |
| 4   | 103 | 98  | 93  | 90  | 102 | 97  | 93  | 90  | 95  | 91  | 89  |  | 93  | 90  | 88  |  | 91  |
| 5   | 100 | 94  | 89  | 86  | 98  | 93  | 89  | 86  | 91  | 88  | 85  |  | 90  | 87  | 84  |  | 88  |
| 6   | 97  | 90  | 86  | 82  | 95  | 89  | 85  | 82  | 88  | 84  | 82  |  | 87  | 83  | 81  |  | 85  |
| 7   | 94  | 87  | 82  | 79  | 92  | 86  | 82  | 79  | 85  | 81  | 78  |  | 84  | 81  | 78  |  | 83  |
| 8   | 91  | 84  | 79  | 76  | 90  | 83  | 79  | 76  | 82  | 78  | 76  |  | 81  | 78  | 75  |  | 80  |
| 9   | 88  | 81  | 76  | 73  | 87  | 80  | 76  | 73  | 79  | 76  | 73  |  | 79  | 75  | 73  |  | 78  |
| 10  | 85  | 78  | 74  | 71  | 84  | 78  | 74  | 71  | 77  | 73  | 71  |  | 76  | 73  | 70  |  | 76  |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 655672 | 655672 | 655672 |
| 5°  | 639807 | 636987 | 635791 |
| 10° | 555613 | 555505 | 556164 |
| 15° | 463453 | 460986 | 460755 |
| 20° | 303989 | 301577 | 304226 |
| 25° | 92952  | 117569 | 92599  |
| 30° | 23256  | 28133  | 22753  |
| 35° | 7533   | 11637  | 7403   |
| 40° | 3528   | 5514   | 3111   |
| 45° | 1836   | 2302   | 1384   |
| 50° | 1010   | 1176   | 678    |
| 55° | 574    | 760    | 372    |
| 60° | 426    | 426    | 426    |
| 65° | 252    | 252    | 252    |
| 70° | 312    | 312    | 312    |
| 75° | 0      | 412    | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 594.6  | 24.4      |
| 10°-20°   | 1232.0 | 50.5      |
| 20°-30°   | 538.0  | 22.0      |
| 30°-40°   | 58.7   | 2.4       |
| 40°-50°   | 12.1   | 0.5       |
| 50°-60°   | 3.4    | 0.1       |
| 60°-70°   | 1.4    | 0.1       |
| 70°-80°   | 0.8    | 0.0       |
| 80°-90°   | 0.0    | 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°    | 2364.6 | 96.9      |
| 0°-40°    | 2423.4 | 99.3      |
| 0°-60°    | 2438.8 | 99.9      |
| 0°-90°    | 2441.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2441.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6768 | 6768  | 6768 | 6768  | 6768 |      |
| 5°  | 6579 | 6561  | 6550 | 6567  | 6538 | 596  |
| 15° | 4621 | 4601  | 4596 | 4603  | 4594 | 1236 |
| 25° | 870  | 1072  | 1100 | 1082  | 866  | 503  |
| 35° | 64   | 76    | 98   | 75    | 63   | 50   |
| 45° | 13   | 14    | 17   | 12    | 10   | 11   |
| 55° | 3    | 3     | 4    | 2     | 2    | 4    |
| 65° | 1    | 1     | 1    | 1     | 1    | 1    |
| 75° | 0    | 1     | 1    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6768.2 | 6768.2 | 6768.2 | 6768.2 | 6768.2 |
| 2.5°  | 6738.1 | 6713.5 | 6700.0 | 6729.1 | 6700.0 |
| 5°    | 6579.3 | 6561.4 | 6550.3 | 6567.0 | 6538.0 |
| 7.5°  | 6144.5 | 6126.6 | 6142.3 | 6142.3 | 6127.7 |
| 10°   | 5648.2 | 5638.1 | 5647.1 | 5670.6 | 5653.8 |
| 12.5° | 5166.4 | 5158.6 | 5162.0 | 5186.6 | 5167.6 |
| 15°   | 4621.0 | 4600.8 | 4596.4 | 4603.1 | 4594.1 |
| 17.5° | 3894.4 | 3864.2 | 3845.2 | 3860.9 | 3865.3 |
| 20°   | 2948.7 | 2948.7 | 2925.3 | 2938.7 | 2951.0 |
| 22.5° | 1885.7 | 1929.3 | 1933.8 | 1931.5 | 1923.7 |
| 25°   | 869.6  | 1072.0 | 1099.9 | 1082.0 | 866.3  |
| 27.5° | 352.1  | 434.8  | 541.0  | 448.2  | 339.8  |
| 30°   | 207.9  | 219.1  | 251.5  | 215.7  | 203.4  |
| 32.5° | 109.5  | 131.9  | 154.3  | 130.8  | 106.2  |
| 35°   | 63.7   | 76.0   | 98.4   | 74.9   | 62.6   |
| 37.5° | 41.4   | 48.1   | 65.9   | 48.1   | 39.1   |
| 40°   | 27.9   | 31.3   | 43.6   | 30.2   | 24.6   |
| 42.5° | 19.0   | 21.2   | 27.9   | 19.0   | 15.6   |
| 45°   | 13.4   | 14.5   | 16.8   | 12.3   | 10.1   |
| 47.5° | 8.9    | 10.1   | 11.2   | 7.8    | 6.7    |
| 50°   | 6.7    | 6.7    | 7.8    | 5.6    | 4.5    |
| 52.5° | 4.5    | 5.6    | 5.6    | 3.4    | 3.4    |
| 55°   | 3.4    | 3.4    | 4.5    | 2.2    | 2.2    |
| 57.5° | 3.4    | 3.4    | 3.4    | 2.2    | 2.2    |
| 60°   | 2.2    | 2.2    | 2.2    | 2.2    | 2.2    |
| 62.5° | 1.1    | 2.2    | 2.2    | 1.1    | 1.1    |
| 65°   | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    |
| 67.5° | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    |
| 70°   | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    |
| 72.5° | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    |
| 75°   | 0.0    | 1.1    | 1.1    | 0.0    | 0.0    |
| 77.5° | 0.0    | 1.1    | 1.1    | 1.1    | 0.0    |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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







(END OF REPORT)