

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: P182563

Luminaire Tested: **LDSQA4A13930D010TE LAR25NF 4LSQAL1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182563  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26797)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA4A13930D010TE LAR25NF 4LSQAL1H  
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1391.5 lumens  
Efficiency: N/A  
Efficacy: 62.5 lumens/watt  
Spacing Criteria (0/90/45): 0.48 / 0.48 / 0.5  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

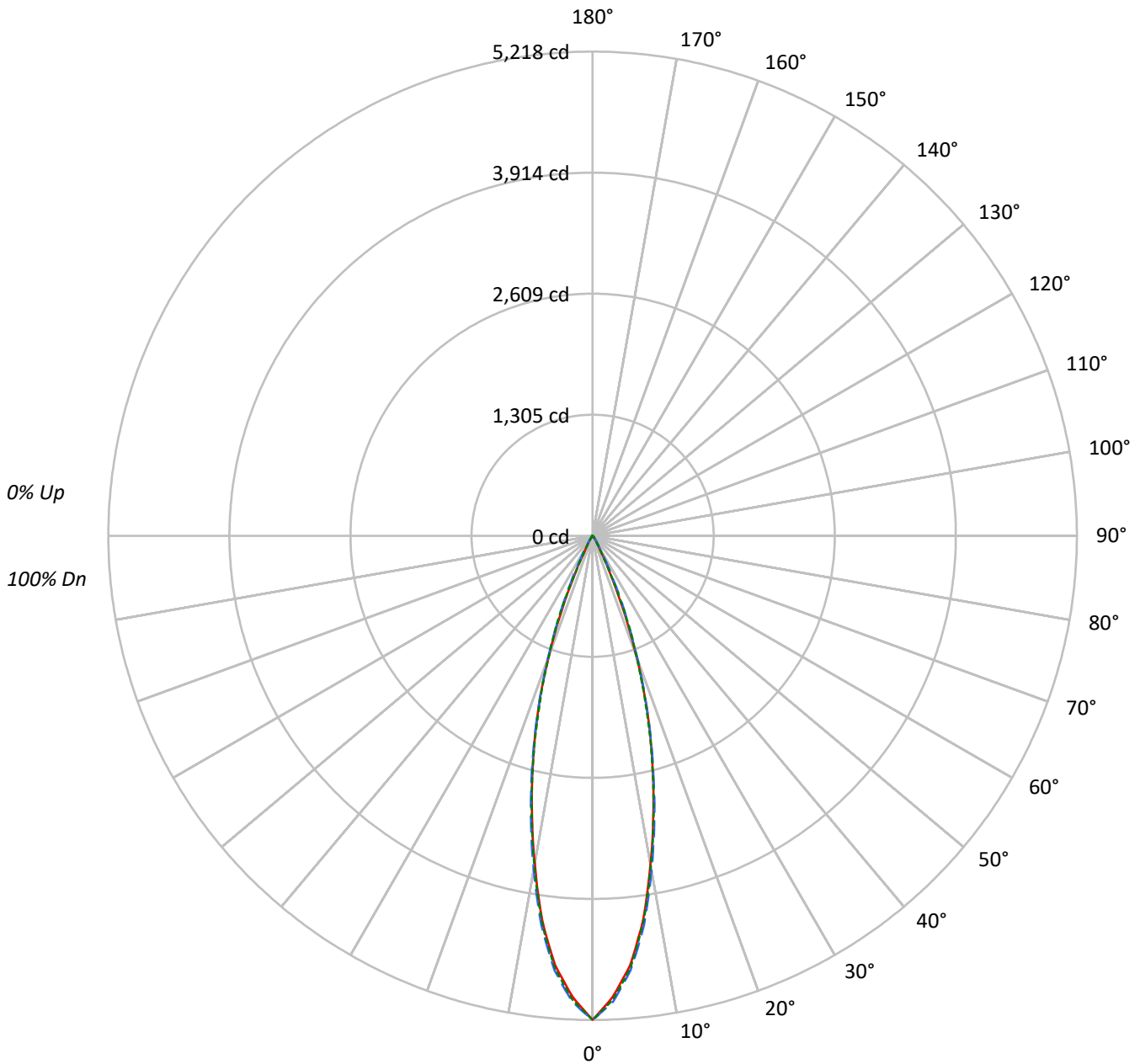
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF  | 20  |     |     |     |     |     |     |     |     | 20  |     |     |     |     |     |     |     |     | 20 |    |    |     |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  |   |
| 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 | 111 | 109 | 113 | 111 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 100 | 99  | 98  | 96  | 96 | 98 | 96 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 111 | 107 | 104 | 102 | 109 | 106 | 103 | 101 | 103 | 100 | 99  | 100 | 98  | 96  | 97  | 96  | 94  | 93  | 96 | 94 | 93 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 107 | 103 | 99  | 96  | 106 | 101 | 98  | 95  | 99  | 96  | 94  | 97  | 94  | 92  | 95  | 93  | 91  | 90  | 95 | 93 | 91 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 104 | 99  | 95  | 91  | 102 | 97  | 94  | 91  | 95  | 92  | 90  | 94  | 91  | 89  | 92  | 90  | 88  | 87  | 92 | 90 | 88 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 101 | 95  | 91  | 87  | 99  | 94  | 90  | 87  | 92  | 89  | 86  | 91  | 88  | 86  | 89  | 87  | 85  | 84  | 89 | 87 | 85 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 98  | 91  | 87  | 84  | 97  | 91  | 87  | 84  | 89  | 86  | 83  | 88  | 85  | 83  | 87  | 84  | 82  | 81  | 87 | 84 | 82 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 95  | 88  | 84  | 81  | 94  | 88  | 84  | 81  | 87  | 83  | 80  | 86  | 82  | 80  | 85  | 82  | 80  | 79  | 85 | 82 | 80 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 92  | 85  | 81  | 78  | 91  | 85  | 81  | 78  | 84  | 80  | 78  | 83  | 80  | 77  | 82  | 79  | 77  | 76  | 82 | 79 | 77 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 89  | 83  | 78  | 76  | 89  | 82  | 78  | 76  | 81  | 78  | 75  | 81  | 77  | 75  | 80  | 77  | 75  | 74  | 80 | 77 | 75 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 87  | 80  | 76  | 73  | 86  | 80  | 76  | 73  | 79  | 76  | 73  | 78  | 75  | 73  | 78  | 75  | 73  | 72  | 78 | 75 | 73 |     |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 505457 | 505457 | 505457 |
| 5°  | 451414 | 457093 | 454253 |
| 10° | 353354 | 359680 | 355273 |
| 15° | 248134 | 249960 | 246770 |
| 20° | 142412 | 145361 | 142278 |
| 25° | 45086  | 59303  | 46540  |
| 30° | 11980  | 14878  | 11544  |
| 35° | 4068   | 7368   | 4139   |
| 40° | 1808   | 2959   | 1808   |
| 45° | 973    | 1329   | 795    |
| 50° | 588    | 678    | 392    |
| 55° | 321    | 321    | 220    |
| 60° | 252    | 252    | 116    |
| 65° | 138    | 138    | 138    |
| 70° | 170    | 170    | 170    |
| 75° | 0      | 225    | 225    |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 413.9  | 29.7      |
| 10°-20°   | 674.8  | 48.5      |
| 20°-30°   | 261.4  | 18.8      |
| 30°-40°   | 32.0   | 2.3       |
| 40°-50°   | 6.7    | 0.5       |
| 50°-60°   | 1.8    | 0.1       |
| 60°-70°   | 0.6    | 0.0       |
| 70°-80°   | 0.4    | 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°    | 1350.0 | 97.0      |
| 0°-40°    | 1382.0 | 99.3      |
| 0°-60°    | 1390.5 | 99.9      |
| 0°-90°    | 1391.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1391.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 5218 | 5218  | 5218 | 5218  | 5218 |      |
| 5°  | 4642 | 4710  | 4700 | 4672  | 4671 | 410  |
| 15° | 2474 | 2507  | 2492 | 2474  | 2460 | 671  |
| 25° | 422  | 528   | 555  | 545   | 435  | 236  |
| 35° | 34   | 42    | 62   | 41    | 35   | 26   |
| 45° | 7    | 8     | 10   | 7     | 6    | 6    |
| 55° | 2    | 2     | 2    | 1     | 1    | 2    |
| 65° | 1    | 1     | 1    | 1     | 1    | 1    |
| 75° | 0    | 1     | 1    | 1     | 1    | 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°    | 5217.6 | 5217.6 | 5217.6 | 5217.6 | 5217.6 |
| 2.5°  | 4973.6 | 5043.0 | 5026.8 | 4994.3 | 5002.8 |
| 5°    | 4642.0 | 4709.5 | 4700.4 | 4671.9 | 4671.2 |
| 7.5°  | 4174.2 | 4240.4 | 4232.6 | 4198.2 | 4194.9 |
| 10°   | 3592.1 | 3652.5 | 3656.4 | 3606.4 | 3611.6 |
| 12.5° | 3023.7 | 3073.0 | 3075.0 | 3040.6 | 3033.5 |
| 15°   | 2474.1 | 2507.2 | 2492.3 | 2474.1 | 2460.5 |
| 17.5° | 1932.3 | 1939.5 | 1936.2 | 1909.6 | 1899.9 |
| 20°   | 1381.4 | 1412.6 | 1410.0 | 1387.3 | 1380.1 |
| 22.5° | 860.4  | 916.9  | 942.8  | 922.0  | 933.1  |
| 25°   | 421.8  | 528.2  | 554.8  | 545.0  | 435.4  |
| 27.5° | 171.3  | 223.9  | 279.0  | 220.6  | 165.5  |
| 30°   | 107.1  | 116.8  | 133.0  | 112.3  | 103.2  |
| 32.5° | 56.5   | 70.7   | 90.2   | 68.8   | 56.5   |
| 35°   | 34.4   | 41.5   | 62.3   | 40.9   | 35.0   |
| 37.5° | 22.1   | 26.0   | 36.3   | 26.0   | 22.7   |
| 40°   | 14.3   | 16.9   | 23.4   | 16.9   | 14.3   |
| 42.5° | 9.7    | 11.0   | 14.9   | 11.0   | 9.1    |
| 45°   | 7.1    | 7.8    | 9.7    | 7.1    | 5.8    |
| 47.5° | 5.2    | 5.8    | 6.5    | 4.5    | 3.9    |
| 50°   | 3.9    | 3.9    | 4.5    | 3.2    | 2.6    |
| 52.5° | 2.6    | 3.2    | 3.2    | 1.9    | 1.9    |
| 55°   | 1.9    | 1.9    | 1.9    | 1.3    | 1.3    |
| 57.5° | 1.9    | 1.3    | 1.3    | 1.3    | 1.3    |
| 60°   | 1.3    | 1.3    | 1.3    | 0.6    | 0.6    |
| 62.5° | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
| 65°   | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
| 67.5° | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
| 70°   | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
| 72.5° | 0.6    | 0.6    | 0.6    | 0.6    | 0.0    |
| 75°   | 0.0    | 0.6    | 0.6    | 0.6    | 0.6    |
| 77.5° | 0.0    | 0.0    | 0.0    | 0.0    | 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)