

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: P182524

Luminaire Tested: **LDSQA4A09935D010TE LAR15SP 4LSQAL1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182524  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26796)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA4A09935D010TE LAR15SP 4LSQAL1H  
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 15° SPOT  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 859.3 lumens  
Efficiency: N/A  
Efficacy: 62.1 lumens/watt  
Spacing Criteria (0/90/45): 0.31 / 0.32 / 0.36  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

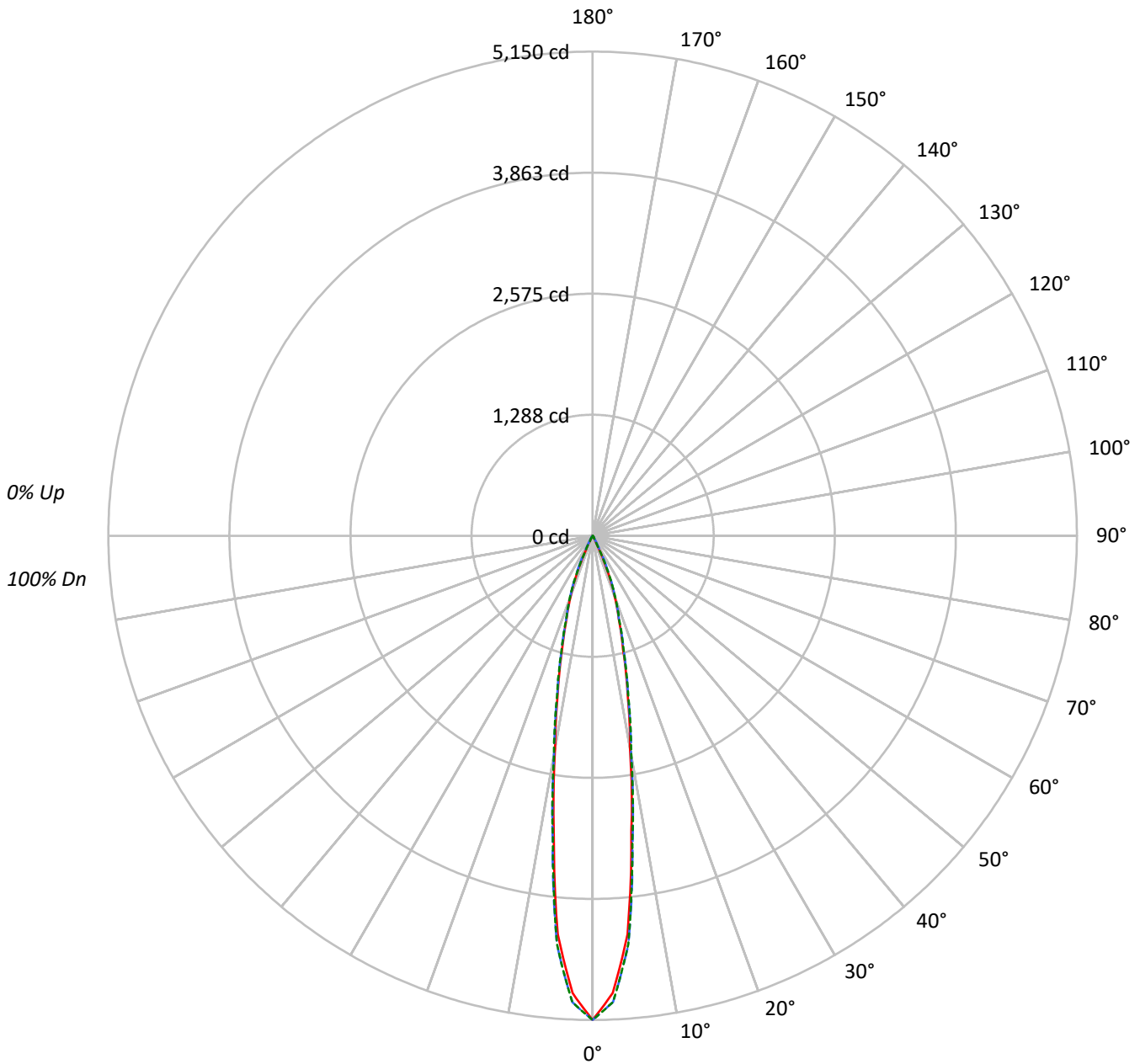
Input Watts (W): 13.84  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P182524

CATALOG NUMBER: LDSQA4A09935D010TE LAR15SP 4LSQAL1H

### Luminous Intensity Polar Plot





TEST NUMBER: P182524

CATALOG NUMBER: LDSQA4A09935D010TE LAR15SP 4LSQAL1H

**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 | 100 | 100 | 100 | 100 | 100 |  |   |
| 1   | 115 | 113 | 111 | 110 | 113 | 111 | 109 | 108 | 107 | 106 | 105 | 103 | 102 | 102 | 100 | 99  | 99  | 97  | 97  | 97  | 97  | 97  | 97  | 97  |  |   |
| 2   | 112 | 108 | 105 | 103 | 110 | 107 | 104 | 102 | 103 | 101 | 100 | 101 | 99  | 98  | 98  | 97  | 96  | 94  | 94  | 94  | 94  | 94  | 94  | 94  |  |   |
| 3   | 108 | 104 | 100 | 98  | 107 | 103 | 99  | 97  | 100 | 98  | 95  | 98  | 96  | 94  | 96  | 94  | 93  | 91  | 91  | 91  | 91  | 91  | 91  | 91  |  |   |
| 4   | 105 | 100 | 96  | 94  | 104 | 99  | 96  | 93  | 97  | 94  | 92  | 95  | 93  | 91  | 94  | 92  | 90  | 89  | 89  | 89  | 89  | 89  | 89  | 89  |  |   |
| 5   | 102 | 97  | 93  | 90  | 101 | 96  | 92  | 90  | 94  | 91  | 89  | 93  | 90  | 88  | 92  | 89  | 87  | 86  | 86  | 86  | 86  | 86  | 86  | 86  |  |   |
| 6   | 100 | 94  | 90  | 87  | 98  | 93  | 89  | 87  | 92  | 89  | 86  | 91  | 88  | 86  | 89  | 87  | 85  | 84  | 84  | 84  | 84  | 84  | 84  | 84  |  |   |
| 7   | 97  | 91  | 87  | 84  | 96  | 90  | 87  | 84  | 89  | 86  | 84  | 88  | 85  | 83  | 87  | 85  | 83  | 82  | 82  | 82  | 82  | 82  | 82  | 82  |  |   |
| 8   | 95  | 88  | 85  | 82  | 94  | 88  | 84  | 82  | 87  | 84  | 81  | 86  | 83  | 81  | 85  | 83  | 81  | 80  | 80  | 80  | 80  | 80  | 80  | 80  |  |   |
| 9   | 92  | 86  | 82  | 80  | 92  | 86  | 82  | 80  | 85  | 82  | 79  | 84  | 81  | 79  | 84  | 81  | 79  | 78  | 78  | 78  | 78  | 78  | 78  | 78  |  |   |
| 10  | 90  | 84  | 80  | 78  | 89  | 84  | 80  | 78  | 83  | 80  | 77  | 82  | 79  | 77  | 82  | 79  | 77  | 76  | 76  | 76  | 76  | 76  | 76  | 76  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 498879 | 498879 | 498879 |
| 5°  | 413809 | 424515 | 423912 |
| 10° | 225483 | 232143 | 233314 |
| 15° | 125366 | 128967 | 129628 |
| 20° | 70680  | 72691  | 73598  |
| 25° | 21282  | 31351  | 21186  |
| 30° | 4005   | 5739   | 4005   |
| 35° | 1727   | 2673   | 1774   |
| 40° | 835    | 1404   | 835    |
| 45° | 548    | 726    | 425    |
| 50° | 332    | 407    | 196    |
| 55° | 220    | 220    | 152    |
| 60° | 174    | 78     | 78     |
| 65° | 92     | 92     | 92     |
| 70° | 0      | 113    | 0      |
| 75° | 0      | 0      | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



TEST NUMBER: P182524

CATALOG NUMBER: LDSQA4A09935D010TE LAR15SP 4LSQAL1H

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 342.9  | 39.9      |
| 10°-20°   | 365.5  | 42.5      |
| 20°-30°   | 133.3  | 15.5      |
| 30°-40°   | 12.7   | 1.5       |
| 40°-50°   | 3.5    | 0.4       |
| 50°-60°   | 1.0    | 0.1       |
| 60°-70°   | 0.4    | 0.0       |
| 70°-80°   | 0.1    | 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°    | 841.6  | 97.9      |
| 0°-40°    | 854.3  | 99.4      |
| 0°-60°    | 858.9  | 99.9      |
| 0°-90°    | 859.3  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 859.3  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 5150 | 5150  | 5150 | 5150  | 5150 |      |
| 5°  | 4255 | 4363  | 4365 | 4320  | 4359 | 336  |
| 15° | 1250 | 1280  | 1286 | 1283  | 1292 | 358  |
| 25° | 199  | 288   | 293  | 291   | 198  | 115  |
| 35° | 15   | 18    | 23   | 18    | 15   | 10   |
| 45° | 4    | 4     | 5    | 4     | 3    | 3    |
| 55° | 1    | 1     | 1    | 1     | 1    | 1    |
| 65° | 0    | 0     | 0    | 0     | 0    | 0    |
| 75° | 0    | 0     | 0    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    | 0    |



TEST NUMBER: P182524

CATALOG NUMBER: LDSQA4A09935D010TE LAR15SP 4LSQAL1H

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 5149.7 | 5149.7 | 5149.7 | 5149.7 | 5149.7 |
| 2.5°  | 4868.8 | 4971.4 | 4963.9 | 4940.9 | 4963.9 |
| 5°    | 4255.3 | 4362.8 | 4365.4 | 4319.8 | 4359.2 |
| 7.5°  | 3163.1 | 3246.3 | 3260.9 | 3216.2 | 3245.9 |
| 10°   | 2292.2 | 2366.5 | 2359.9 | 2351.0 | 2371.8 |
| 12.5° | 1712.3 | 1749.9 | 1745.9 | 1755.6 | 1757.0 |
| 15°   | 1250.0 | 1279.7 | 1285.9 | 1283.2 | 1292.5 |
| 17.5° | 920.5  | 936.4  | 933.3  | 938.2  | 941.7  |
| 20°   | 685.6  | 710.8  | 705.1  | 709.5  | 713.9  |
| 22.5° | 454.7  | 501.2  | 495.4  | 502.5  | 498.5  |
| 25°   | 199.1  | 288.0  | 293.3  | 290.6  | 198.2  |
| 27.5° | 61.0   | 103.1  | 132.3  | 100.9  | 61.0   |
| 30°   | 35.8   | 42.9   | 51.3   | 42.0   | 35.8   |
| 32.5° | 22.6   | 27.0   | 32.3   | 26.5   | 22.1   |
| 35°   | 14.6   | 17.7   | 22.6   | 17.7   | 15.0   |
| 37.5° | 9.7    | 11.9   | 15.9   | 11.9   | 10.2   |
| 40°   | 6.6    | 8.0    | 11.1   | 8.4    | 6.6    |
| 42.5° | 4.9    | 5.8    | 7.5    | 5.8    | 4.4    |
| 45°   | 4.0    | 4.0    | 5.3    | 4.0    | 3.1    |
| 47.5° | 3.1    | 3.1    | 3.5    | 2.7    | 2.2    |
| 50°   | 2.2    | 2.2    | 2.7    | 1.8    | 1.3    |
| 52.5° | 1.3    | 1.8    | 1.8    | 1.3    | 0.9    |
| 55°   | 1.3    | 1.3    | 1.3    | 0.9    | 0.9    |
| 57.5° | 0.9    | 0.9    | 0.9    | 0.4    | 0.4    |
| 60°   | 0.9    | 0.9    | 0.4    | 0.4    | 0.4    |
| 62.5° | 0.4    | 0.4    | 0.4    | 0.4    | 0.4    |
| 65°   | 0.4    | 0.4    | 0.4    | 0.4    | 0.4    |
| 67.5° | 0.4    | 0.4    | 0.4    | 0.4    | 0.4    |
| 70°   | 0.0    | 0.4    | 0.4    | 0.0    | 0.0    |
| 72.5° | 0.0    | 0.4    | 0.0    | 0.0    | 0.0    |
| 75°   | 0.0    | 0.4    | 0.0    | 0.0    | 0.0    |
| 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    |



Report Generated By E9808895 / USPTCWHP6082093







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







(END OF REPORT)