

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: P1212393

Luminaire Tested: **LDSQA4A35940D010TE LAR25NF 4LSQAL1H**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: P1212393  
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: LDSQA4A35940D010TE LAR25NF 4LSQAL1H  
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

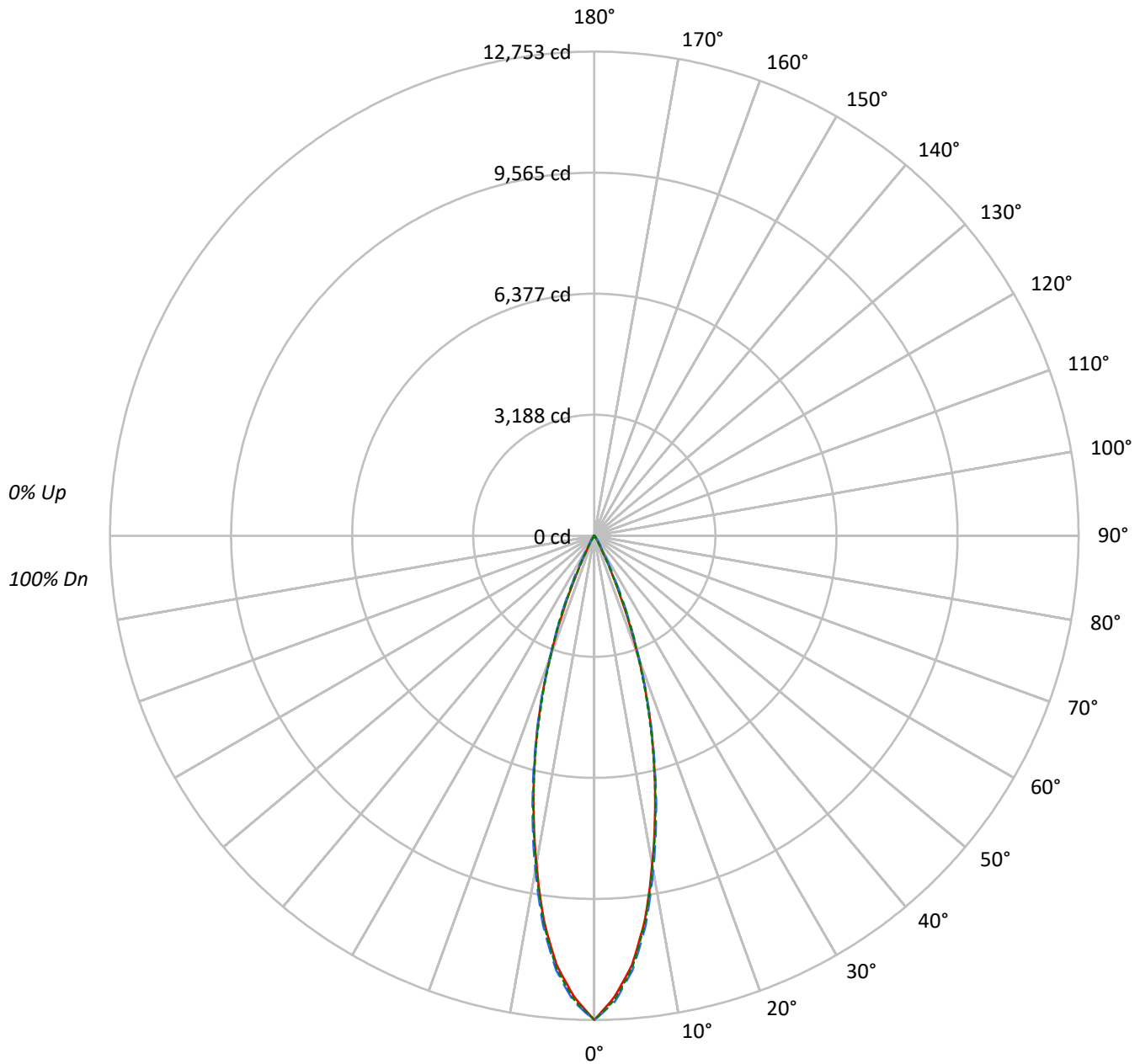
Lumens per Lamp: N/A  
Luminaire Lumens: 3401.4 lumens  
Efficiency: N/A  
Efficacy: 71.3 lumens/watt  
Spacing Criteria (0/90/45): 0.48 / 0.48 / 0.5  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 47.7  
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



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

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

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 1235423 | 1235423 | 1235423 |
| 5°  | 1103337 | 1117224 | 1110271 |
| 10° | 863678  | 879122  | 868360  |
| 15° | 606501  | 610954  | 603151  |
| 20° | 348092  | 355288  | 347763  |
| 25° | 110182  | 144943  | 113753  |
| 30° | 29263   | 36366   | 28200   |
| 35° | 9946    | 18011   | 10135   |
| 40° | 4426    | 7234    | 4426    |
| 45° | 2384    | 3261    | 1959    |
| 50° | 1432    | 1658    | 949     |
| 55° | 794     | 794     | 524     |
| 60° | 601     | 601     | 310     |
| 65° | 367     | 367     | 367     |
| 70° | 453     | 453     | 453     |
| 75° | 0       | 599     | 599     |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 0       | 0       |

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 1011.5 | 29.7      |
| 10°-20°   | 1649.3 | 48.5      |
| 20°-30°   | 638.8  | 18.8      |
| 30°-40°   | 78.3   | 2.3       |
| 40°-50°   | 16.5   | 0.5       |
| 50°-60°   | 4.4    | 0.1       |
| 60°-70°   | 1.7    | 0.1       |
| 70°-80°   | 0.9    | 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°    | 3299.6 | 97.0      |
| 0°-40°    | 3377.9 | 99.3      |
| 0°-60°    | 3398.7 | 99.9      |
| 0°-90°    | 3401.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3401.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 12753 | 12753 | 12753 | 12753 | 12753 |      |
| 5°  | 11346 | 11511 | 11489 | 11419 | 11417 | 1003 |
| 15° | 6047  | 6128  | 6092  | 6047  | 6014  | 1640 |
| 25° | 1031  | 1291  | 1356  | 1332  | 1064  | 578  |
| 35° | 84    | 102   | 152   | 100   | 86    | 64   |
| 45° | 17    | 19    | 24    | 17    | 14    | 15   |
| 55° | 5     | 5     | 5     | 3     | 3     | 5    |
| 65° | 2     | 2     | 2     | 2     | 2     | 2    |
| 75° | 0     | 2     | 2     | 2     | 2     | 1    |
| 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°    | 12752.7 | 12752.7 | 12752.7 | 12752.7 | 12752.7 |
| 2.5°  | 12156.3 | 12326.0 | 12286.4 | 12207.1 | 12227.7 |
| 5°    | 11345.9 | 11510.9 | 11488.7 | 11419.0 | 11417.2 |
| 7.5°  | 10202.4 | 10364.2 | 10345.1 | 10261.2 | 10253.1 |
| 10°   | 8779.9  | 8927.3  | 8936.9  | 8814.7  | 8827.5  |
| 12.5° | 7390.6  | 7511.1  | 7515.8  | 7431.7  | 7414.4  |
| 15°   | 6047.3  | 6128.1  | 6091.7  | 6047.3  | 6013.9  |
| 17.5° | 4722.9  | 4740.4  | 4732.5  | 4667.5  | 4643.7  |
| 20°   | 3376.5  | 3452.7  | 3446.3  | 3390.8  | 3373.3  |
| 22.5° | 2102.9  | 2240.9  | 2304.4  | 2253.7  | 2280.6  |
| 25°   | 1030.8  | 1291.0  | 1356.0  | 1332.2  | 1064.2  |
| 27.5° | 418.7   | 547.1   | 682.0   | 539.3   | 404.4   |
| 30°   | 261.6   | 285.5   | 325.1   | 274.3   | 252.1   |
| 32.5° | 138.0   | 172.9   | 220.5   | 168.0   | 138.0   |
| 35°   | 84.1    | 101.5   | 152.3   | 99.9    | 85.7    |
| 37.5° | 53.9    | 63.4    | 88.8    | 63.4    | 55.5    |
| 40°   | 35.0    | 41.2    | 57.2    | 41.2    | 35.0    |
| 42.5° | 23.8    | 26.9    | 36.5    | 26.9    | 22.2    |
| 45°   | 17.4    | 19.1    | 23.8    | 17.4    | 14.3    |
| 47.5° | 12.8    | 14.3    | 15.9    | 11.0    | 9.5     |
| 50°   | 9.5     | 9.5     | 11.0    | 7.9     | 6.3     |
| 52.5° | 6.3     | 7.9     | 7.9     | 4.7     | 4.7     |
| 55°   | 4.7     | 4.7     | 4.7     | 3.1     | 3.1     |
| 57.5° | 4.7     | 3.1     | 3.1     | 3.1     | 3.1     |
| 60°   | 3.1     | 3.1     | 3.1     | 1.6     | 1.6     |
| 62.5° | 1.6     | 1.6     | 1.6     | 1.6     | 1.6     |
| 65°   | 1.6     | 1.6     | 1.6     | 1.6     | 1.6     |
| 67.5° | 1.6     | 1.6     | 1.6     | 1.6     | 1.6     |
| 70°   | 1.6     | 1.6     | 1.6     | 1.6     | 1.6     |
| 72.5° | 1.6     | 1.6     | 1.6     | 1.6     | 0.0     |
| 75°   | 0.0     | 1.6     | 1.6     | 1.6     | 1.6     |
| 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°

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