

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: P182479

Luminaire Tested: **LDSQA4A18830D010TE LAR35FL 4LSQA1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182479  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26795)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA4A18830D010TE LAR35FL 4LSQA1H  
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,  
SELF-FLANGED, 35° FLOOD  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2310.5 lumens  
Efficiency: N/A  
Efficacy: 79.3 lumens/watt  
Spacing Criteria (0/90/45): 0.62 / 0.63 / 0.57  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

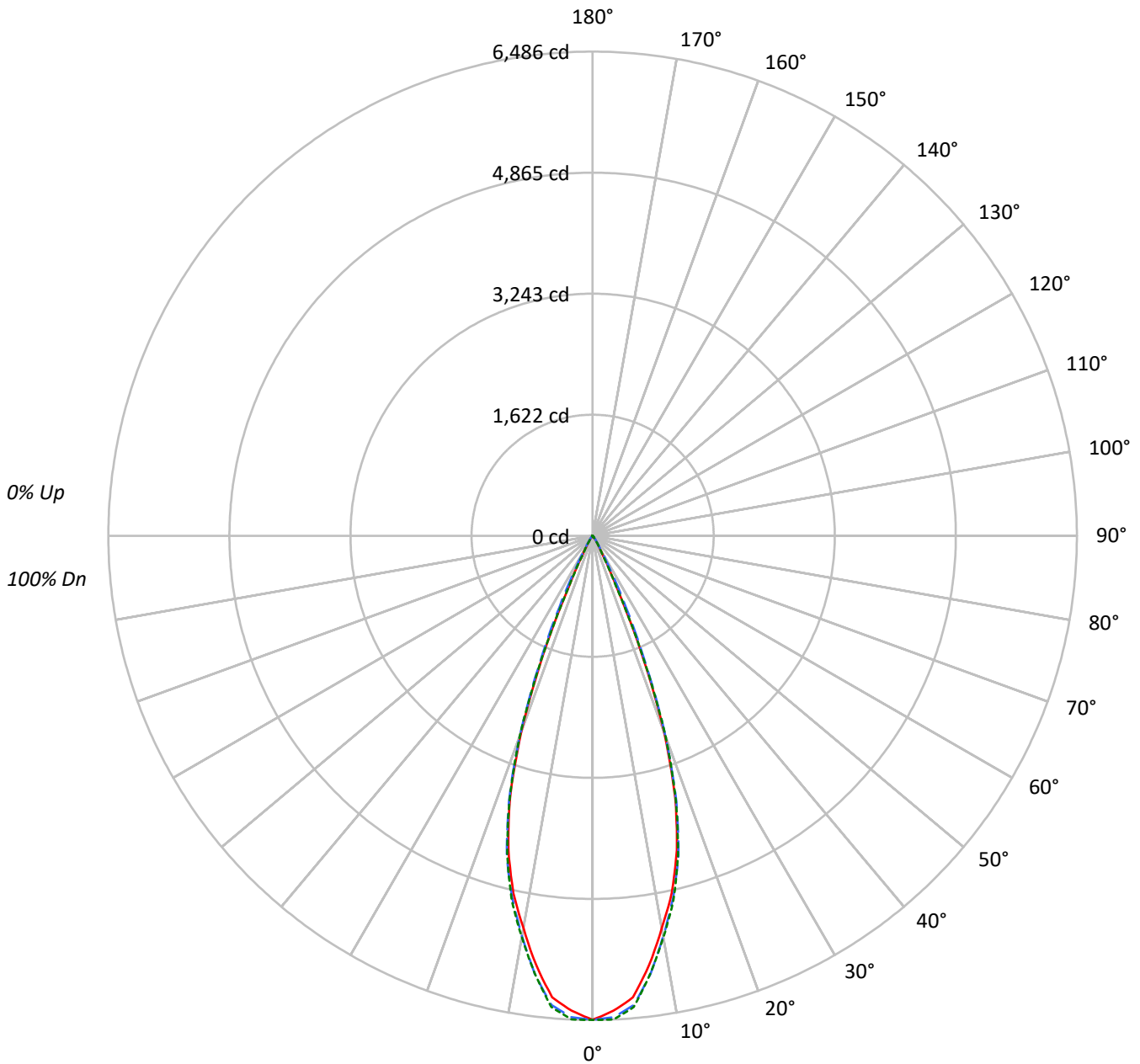
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF  | 20  |     |     |     |     |     |     |     |     | 20  |     |     |     |     |     |     |     |     | 20 |    |   |  |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  |   |
| 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 |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 115 | 113 | 111 | 109 | 112 | 110 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 99  | 99  | 98  | 96  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 111 | 107 | 104 | 101 | 109 | 105 | 103 | 100 | 102 | 100 | 98  | 99  | 98  | 96  | 97  | 95  | 94  | 93  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 107 | 102 | 98  | 95  | 105 | 101 | 97  | 95  | 98  | 96  | 93  | 96  | 94  | 92  | 94  | 92  | 90  | 89  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 103 | 98  | 94  | 91  | 102 | 97  | 93  | 90  | 95  | 92  | 89  | 93  | 90  | 88  | 91  | 89  | 87  | 86  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 100 | 94  | 90  | 86  | 99  | 93  | 89  | 86  | 91  | 88  | 85  | 90  | 87  | 85  | 88  | 86  | 84  | 83  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 97  | 90  | 86  | 83  | 96  | 90  | 85  | 82  | 88  | 85  | 82  | 87  | 84  | 81  | 86  | 83  | 81  | 80  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 94  | 87  | 83  | 79  | 93  | 86  | 82  | 79  | 85  | 82  | 79  | 84  | 81  | 79  | 83  | 80  | 78  | 77  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 91  | 84  | 80  | 77  | 90  | 83  | 79  | 76  | 82  | 79  | 76  | 82  | 78  | 76  | 81  | 78  | 76  | 74  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 88  | 81  | 77  | 74  | 87  | 81  | 77  | 74  | 80  | 76  | 73  | 79  | 76  | 73  | 78  | 75  | 73  | 72  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 86  | 78  | 74  | 71  | 85  | 78  | 74  | 71  | 77  | 74  | 71  | 77  | 73  | 71  | 76  | 73  | 71  | 70  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 628150 | 628150 | 628150 |
| 5°  | 603612 | 613736 | 616215 |
| 10° | 524882 | 535604 | 537149 |
| 15° | 437217 | 445390 | 443425 |
| 20° | 287288 | 293773 | 294175 |
| 25° | 79697  | 112032 | 78436  |
| 30° | 19117  | 24285  | 19453  |
| 35° | 5109   | 8834   | 4991   |
| 40° | 1859   | 3351   | 1745   |
| 45° | 945    | 1206   | 808    |
| 50° | 588    | 588    | 437    |
| 55° | 338    | 338    | 169    |
| 60° | 388    | 194    | 194    |
| 65° | 229    | 229    | 229    |
| 70° | 283    | 283    | 0      |
| 75° | 0      | 0      | 0      |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 569.8  | 24.7      |
| 10°-20°   | 1181.5 | 51.1      |
| 20°-30°   | 504.6  | 21.8      |
| 30°-40°   | 44.6   | 1.9       |
| 40°-50°   | 6.6    | 0.3       |
| 50°-60°   | 1.9    | 0.1       |
| 60°-70°   | 1.0    | 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°    | 2255.9 | 97.6      |
| 0°-40°    | 2300.5 | 99.6      |
| 0°-60°    | 2309.0 | 99.9      |
| 0°-90°    | 2310.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2310.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6484 | 6484  | 6484 | 6484  | 6484 |      |
| 5°  | 6207 | 6258  | 6311 | 6301  | 6337 | 563  |
| 15° | 4359 | 4402  | 4441 | 4408  | 4421 | 1169 |
| 25° | 746  | 1016  | 1048 | 1003  | 734  | 457  |
| 35° | 43   | 54    | 75   | 53    | 42   | 36   |
| 45° | 7    | 7     | 9    | 7     | 6    | 6    |
| 55° | 2    | 2     | 2    | 2     | 1    | 2    |
| 65° | 1    | 1     | 1    | 1     | 1    | 1    |
| 75° | 0    | 1     | 0    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6484.1 | 6484.1 | 6484.1 | 6484.1 | 6484.1 |
| 2.5°  | 6370.1 | 6415.3 | 6455.6 | 6452.6 | 6486.0 |
| 5°    | 6207.1 | 6258.1 | 6311.2 | 6301.4 | 6336.7 |
| 7.5°  | 5800.4 | 5852.5 | 5921.2 | 5894.7 | 5918.3 |
| 10°   | 5335.8 | 5390.8 | 5444.8 | 5428.1 | 5460.5 |
| 12.5° | 4900.6 | 4932.1 | 4971.4 | 4968.4 | 5002.8 |
| 15°   | 4359.4 | 4401.6 | 4440.9 | 4408.5 | 4421.3 |
| 17.5° | 3681.6 | 3698.3 | 3727.8 | 3695.4 | 3704.2 |
| 20°   | 2786.7 | 2832.9 | 2849.6 | 2812.3 | 2853.5 |
| 22.5° | 1743.6 | 1854.6 | 1863.4 | 1843.8 | 1781.9 |
| 25°   | 745.6  | 1015.7 | 1048.1 | 1002.9 | 733.8  |
| 27.5° | 301.6  | 385.1  | 499.0  | 377.2  | 293.7  |
| 30°   | 170.9  | 185.7  | 217.1  | 182.7  | 173.9  |
| 32.5° | 81.5   | 104.1  | 124.8  | 101.2  | 82.5   |
| 35°   | 43.2   | 54.0   | 74.7   | 53.0   | 42.2   |
| 37.5° | 24.6   | 31.4   | 45.2   | 29.5   | 24.6   |
| 40°   | 14.7   | 18.7   | 26.5   | 17.7   | 13.8   |
| 42.5° | 9.8    | 11.8   | 14.7   | 10.8   | 8.8    |
| 45°   | 6.9    | 6.9    | 8.8    | 6.9    | 5.9    |
| 47.5° | 4.9    | 4.9    | 5.9    | 3.9    | 3.9    |
| 50°   | 3.9    | 3.9    | 3.9    | 2.9    | 2.9    |
| 52.5° | 2.9    | 2.9    | 2.9    | 2.0    | 2.0    |
| 55°   | 2.0    | 2.0    | 2.0    | 2.0    | 1.0    |
| 57.5° | 2.0    | 2.0    | 2.0    | 1.0    | 1.0    |
| 60°   | 2.0    | 2.0    | 1.0    | 1.0    | 1.0    |
| 62.5° | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| 65°   | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| 67.5° | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| 70°   | 1.0    | 1.0    | 1.0    | 1.0    | 0.0    |
| 72.5° | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |
| 75°   | 0.0    | 1.0    | 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    |



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







(END OF REPORT)