

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: P182558

Luminaire Tested: **LDSQA4A13827D010TE LAR25NF 4LSQAL1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182558  
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: LDSQA4A13827D010TE LAR25NF 4LSQAL1H  
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1657.2 lumens  
Efficiency: N/A  
Efficacy: 74.4 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

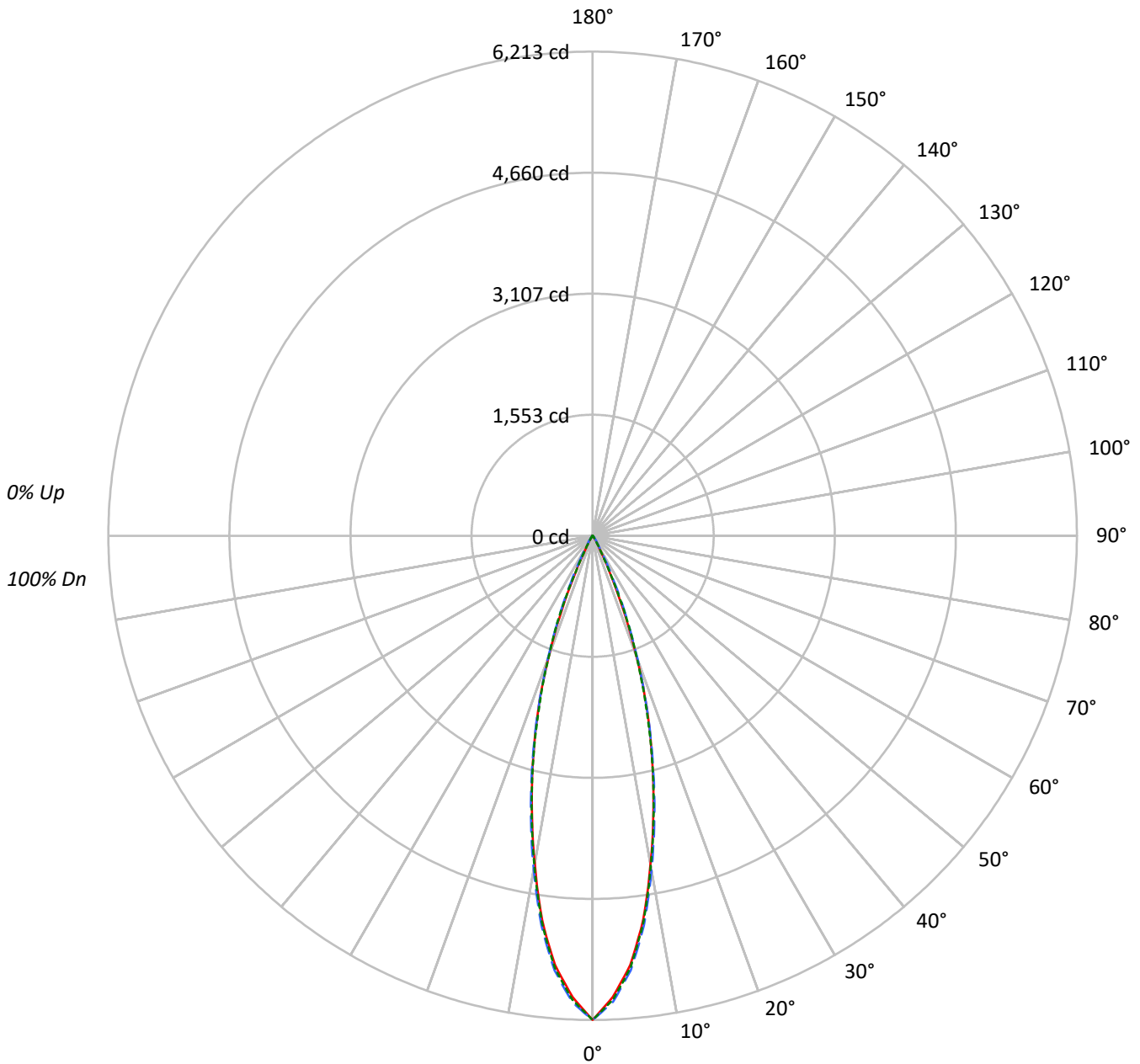
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

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

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

|     | 0°     | 45°    | 90°    |
|-----|--------|--------|--------|
| 0°  | 601906 | 601906 | 601906 |
| 5°  | 537554 | 544322 | 540938 |
| 10° | 420787 | 428312 | 423069 |
| 15° | 295493 | 297659 | 293868 |
| 20° | 169598 | 173103 | 169433 |
| 25° | 53691  | 70622  | 55423  |
| 30° | 14262  | 17719  | 13748  |
| 35° | 4849   | 8775   | 4932   |
| 40° | 2150   | 3516   | 2150   |
| 45° | 1165   | 1589   | 959    |
| 50° | 693    | 814    | 467    |
| 55° | 388    | 388    | 253    |
| 60° | 291    | 291    | 155    |
| 65° | 183    | 183    | 183    |
| 70° | 227    | 227    | 227    |
| 75° | 0      | 299    | 299    |
| 80° | 0      | 0      | 0      |
| 85° | 0      | 0      | 0      |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 492.8  | 29.7      |
| 10°-20°   | 803.5  | 48.5      |
| 20°-30°   | 311.2  | 18.8      |
| 30°-40°   | 38.2   | 2.3       |
| 40°-50°   | 8.0    | 0.5       |
| 50°-60°   | 2.1    | 0.1       |
| 60°-70°   | 0.8    | 0.1       |
| 70°-80°   | 0.5    | 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°    | 1607.6 | 97.0      |
| 0°-40°    | 1645.8 | 99.3      |
| 0°-60°    | 1655.9 | 99.9      |
| 0°-90°    | 1657.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1657.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6213 | 6213  | 6213 | 6213  | 6213 |      |
| 5°  | 5528 | 5608  | 5597 | 5563  | 5563 | 488  |
| 15° | 2946 | 2986  | 2968 | 2946  | 2930 | 799  |
| 25° | 502  | 629   | 661  | 649   | 518  | 282  |
| 35° | 41   | 50    | 74   | 49    | 42   | 31   |
| 45° | 8    | 9     | 12   | 8     | 7    | 7    |
| 55° | 2    | 2     | 2    | 2     | 2    | 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    | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 6213.2 | 6213.2 | 6213.2 | 6213.2 | 6213.2 |
| 2.5°  | 5922.7 | 6005.4 | 5986.1 | 5947.4 | 5957.5 |
| 5°    | 5527.8 | 5608.2 | 5597.4 | 5563.4 | 5562.6 |
| 7.5°  | 4970.7 | 5049.5 | 5040.3 | 4999.3 | 4995.5 |
| 10°   | 4277.6 | 4349.5 | 4354.1 | 4294.6 | 4300.8 |
| 12.5° | 3600.8 | 3659.5 | 3661.8 | 3620.8 | 3612.3 |
| 15°   | 2946.3 | 2985.7 | 2967.9 | 2946.3 | 2930.1 |
| 17.5° | 2301.1 | 2309.6 | 2305.7 | 2274.0 | 2262.4 |
| 20°   | 1645.1 | 1682.2 | 1679.1 | 1652.0 | 1643.5 |
| 22.5° | 1024.6 | 1091.8 | 1122.7 | 1098.0 | 1111.1 |
| 25°   | 502.3  | 629.0  | 660.7  | 649.1  | 518.5  |
| 27.5° | 204.0  | 266.6  | 332.3  | 262.7  | 197.0  |
| 30°   | 127.5  | 139.1  | 158.4  | 133.7  | 122.9  |
| 32.5° | 67.2   | 84.2   | 107.4  | 81.9   | 67.2   |
| 35°   | 41.0   | 49.5   | 74.2   | 48.7   | 41.7   |
| 37.5° | 26.3   | 30.9   | 43.3   | 30.9   | 27.0   |
| 40°   | 17.0   | 20.1   | 27.8   | 20.1   | 17.0   |
| 42.5° | 11.6   | 13.1   | 17.8   | 13.1   | 10.8   |
| 45°   | 8.5    | 9.3    | 11.6   | 8.5    | 7.0    |
| 47.5° | 6.2    | 7.0    | 7.7    | 5.4    | 4.6    |
| 50°   | 4.6    | 4.6    | 5.4    | 3.9    | 3.1    |
| 52.5° | 3.1    | 3.9    | 3.9    | 2.3    | 2.3    |
| 55°   | 2.3    | 2.3    | 2.3    | 1.5    | 1.5    |
| 57.5° | 2.3    | 1.5    | 1.5    | 1.5    | 1.5    |
| 60°   | 1.5    | 1.5    | 1.5    | 0.8    | 0.8    |
| 62.5° | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    |
| 65°   | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    |
| 67.5° | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    |
| 70°   | 0.8    | 0.8    | 0.8    | 0.8    | 0.8    |
| 72.5° | 0.8    | 0.8    | 0.8    | 0.8    | 0.0    |
| 75°   | 0.0    | 0.8    | 0.8    | 0.8    | 0.8    |
| 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)