

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: P282658

Luminaire Tested: **LDA2B059730D010 EU2B05NFL259730 2LBALPINSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P282658  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1809-951-26)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA2B059730D010 EU2B05NFL259730 2LBALPINSQ1MMS  
Description: PORTFOLIO 2IN ADJ 500 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC AND 2in Adj SQ Pinhole w-lens, MMS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 499.9 lumens  
Efficiency: N/A  
Efficacy: 71.4 lumens/watt  
Spacing Criteria (0/90/45): 0.33 / 0.3 / 0.32  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

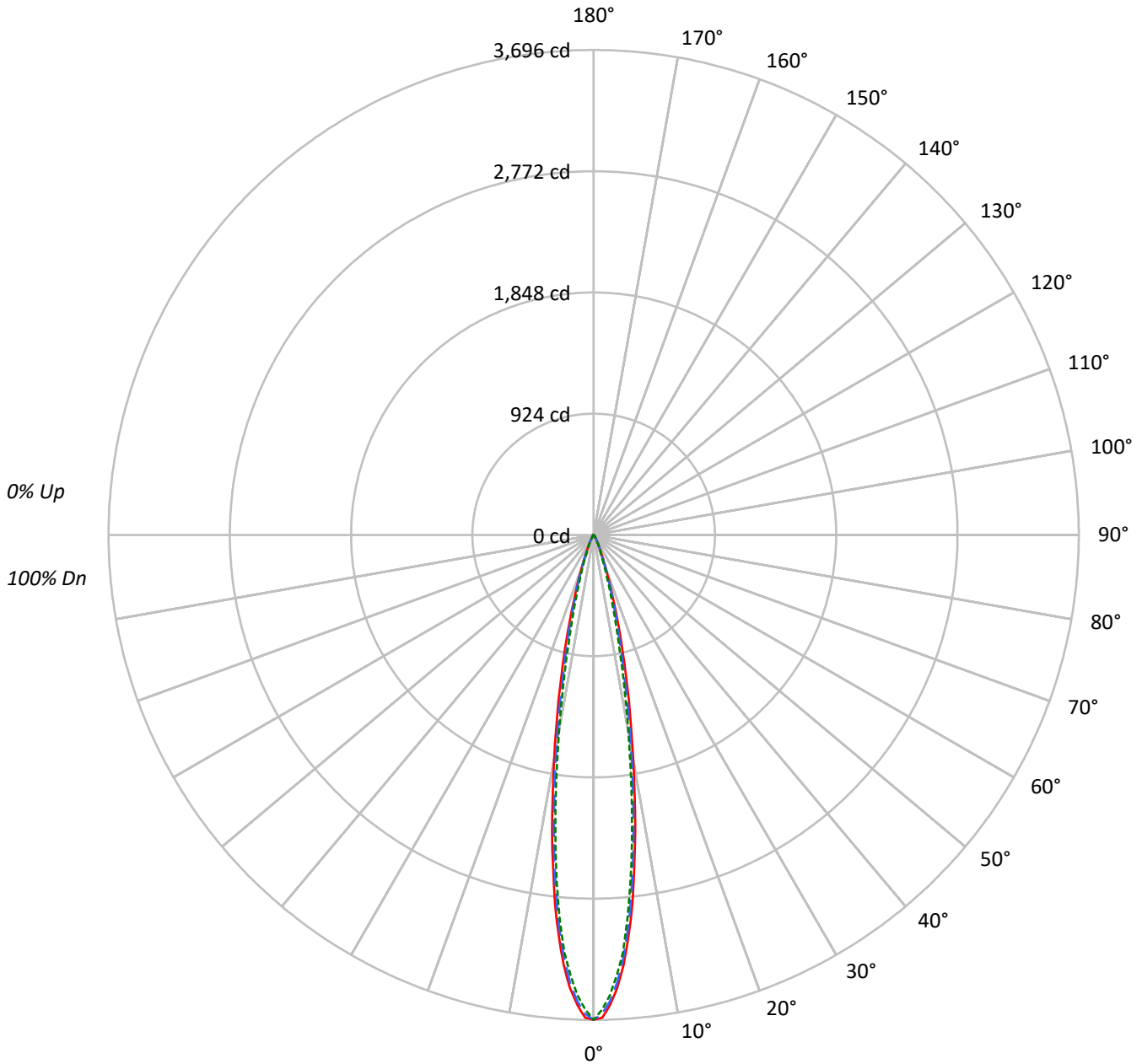
Input Watts (W): 7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 1823416 | 1823416 | 1823416 |
| 5°  | 1517286 | 1489453 | 1459392 |
| 10° | 869087  | 815533  | 761128  |
| 15° | 386547  | 343286  | 287714  |
| 20° | 140234  | 131834  | 104480  |
| 25° | 53838   | 50299   | 43277   |
| 30° | 23243   | 21591   | 19141   |
| 35° | 10962   | 10962   | 9094    |
| 40° | 5539    | 5668    | 4573    |
| 45° | 3210    | 3000    | 2791    |
| 50° | 2226    | 1996    | 1996    |
| 55° | 1720    | 1204    | 1462    |
| 60° | 1381    | 888     | 1085    |
| 65° | 1051    | 700     | 1051    |
| 70° | 865     | 433     | 865     |
| 75° | 572     | 572     | 572     |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 0       | 0       |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 240.4  | 48.1      |
| 10°-20°   | 194.5  | 38.9      |
| 20°-30°   | 46.9   | 9.4       |
| 30°-40°   | 11.9   | 2.4       |
| 40°-50°   | 3.6    | 0.7       |
| 50°-60°   | 1.5    | 0.3       |
| 60°-70°   | 0.8    | 0.2       |
| 70°-80°   | 0.3    | 0.1       |
| 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°    | 481.8  | 96.4      |
| 0°-40°    | 493.8  | 98.8      |
| 0°-60°    | 498.8  | 99.8      |
| 0°-90°    | 499.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 499.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3696 | 3696  | 3696 | 3696  | 3696 |      |
| 5°  | 3064 | 3036  | 3008 | 2981  | 2947 | 248  |
| 15° | 757  | 739   | 672  | 605   | 563  | 216  |
| 25° | 99   | 100   | 92   | 84    | 80   | 51   |
| 35° | 18   | 18    | 18   | 16    | 15   | 13   |
| 45° | 5    | 5     | 4    | 4     | 4    | 4    |
| 55° | 2    | 2     | 1    | 1     | 2    | 2    |
| 65° | 1    | 1     | 1    | 1     | 1    | 1    |
| 75° | 0    | 0     | 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°    | 3695.9 | 3695.9 | 3695.9 | 3695.9 | 3695.9 |
| 1°    | 3679.4 | 3653.7 | 3650.6 | 3666.6 | 3619.5 |
| 2°    | 3585.3 | 3567.1 | 3556.5 | 3566.0 | 3512.7 |
| 3°    | 3456.2 | 3438.5 | 3419.4 | 3419.7 | 3360.1 |
| 4°    | 3280.3 | 3266.4 | 3234.2 | 3224.5 | 3190.0 |
| 5°    | 3063.7 | 3035.5 | 3007.5 | 2981.3 | 2946.8 |
| 6°    | 2824.3 | 2787.8 | 2747.9 | 2708.8 | 2673.5 |
| 7°    | 2542.6 | 2518.4 | 2465.7 | 2412.4 | 2382.4 |
| 8°    | 2277.8 | 2238.8 | 2177.2 | 2110.5 | 2085.1 |
| 9°    | 1993.1 | 1965.1 | 1894.4 | 1816.9 | 1791.5 |
| 10°   | 1734.8 | 1705.7 | 1627.9 | 1541.5 | 1519.3 |
| 11°   | 1492.5 | 1465.1 | 1384.2 | 1293.5 | 1269.9 |
| 12°   | 1287.6 | 1248.8 | 1155.9 | 1077.2 | 1054.1 |
| 13°   | 1083.5 | 1057.0 | 968.9  | 891.1  | 846.3  |
| 14°   | 909.9  | 887.9  | 808.1  | 739.7  | 692.4  |
| 15°   | 756.8  | 738.8  | 672.1  | 605.4  | 563.3  |
| 16°   | 620.8  | 609.7  | 557.0  | 492.6  | 458.1  |
| 17°   | 503.7  | 493.4  | 459.8  | 400.5  | 371.4  |
| 18°   | 406.8  | 405.3  | 377.4  | 326.1  | 300.2  |
| 19°   | 334.6  | 334.1  | 308.4  | 265.4  | 244.0  |
| 20°   | 267.1  | 270.8  | 251.1  | 213.5  | 199.0  |
| 21°   | 217.8  | 219.8  | 204.1  | 175.6  | 162.5  |
| 22°   | 177.3  | 178.7  | 168.5  | 145.1  | 138.0  |
| 23°   | 145.4  | 146.2  | 137.7  | 120.3  | 114.0  |
| 24°   | 119.7  | 120.3  | 112.6  | 100.3  | 94.9   |
| 25°   | 98.9   | 99.5   | 92.4   | 83.8   | 79.5   |
| 26°   | 82.1   | 82.7   | 76.4   | 70.4   | 66.1   |
| 27°   | 68.1   | 69.3   | 63.0   | 59.3   | 54.7   |
| 28°   | 58.1   | 58.4   | 52.7   | 50.5   | 46.2   |
| 29°   | 47.6   | 49.3   | 44.5   | 42.5   | 39.3   |
| 30°   | 40.8   | 41.6   | 37.9   | 36.5   | 33.6   |
| 32.5° | 27.1   | 27.6   | 25.9   | 24.8   | 22.5   |
| 35°   | 18.2   | 18.5   | 18.2   | 16.5   | 15.1   |
| 37.5° | 12.5   | 12.5   | 12.8   | 10.8   | 10.3   |
| 40°   | 8.6    | 8.6    | 8.8    | 7.4    | 7.1    |
| 42.5° | 6.3    | 6.3    | 6.0    | 5.1    | 5.1    |
| 45°   | 4.6    | 4.6    | 4.3    | 4.0    | 4.0    |
| 47.5° | 3.7    | 3.4    | 3.1    | 3.1    | 3.1    |
| 50°   | 2.9    | 2.9    | 2.6    | 2.3    | 2.6    |
| 52.5° | 2.3    | 2.3    | 2.0    | 2.0    | 2.0    |
| 55°   | 2.0    | 1.7    | 1.4    | 1.4    | 1.7    |
| 57.5° | 1.4    | 1.4    | 1.1    | 1.1    | 1.4    |
| 60°   | 1.4    | 1.1    | 0.9    | 1.1    | 1.1    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 0.9 | 0.6   | 0.6 | 0.6   | 0.6 |
| 70°   | 0.6 | 0.6   | 0.3 | 0.3   | 0.6 |
| 72.5° | 0.3 | 0.3   | 0.3 | 0.3   | 0.3 |
| 75°   | 0.3 | 0.3   | 0.3 | 0.3   | 0.3 |
| 77.5° | 0.3 | 0.3   | 0.0 | 0.0   | 0.3 |
| 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°







|       |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| 62.5° | 1.1 | 0.9 | 0.9 | 0.9 | 0.9 |
| 65°   | 0.9 | 0.9 | 0.6 | 0.6 | 0.9 |



(END OF REPORT)