

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: P282550

Luminaire Tested: **LDA2B158050D010 EU2B15SP158050 2LBALPINSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282550
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-7)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B158050D010 EU2B15SP158050 2LBALPINSQ1MMS
Description: PORTFOLIO 2IN ADJ 1500 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Pinhole w-lens, MMS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1505.2 lumens
Efficiency: N/A
Efficacy: 106.8 lumens/watt
Spacing Criteria (0/90/45): 0.32 / 0.3 / 0.32
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

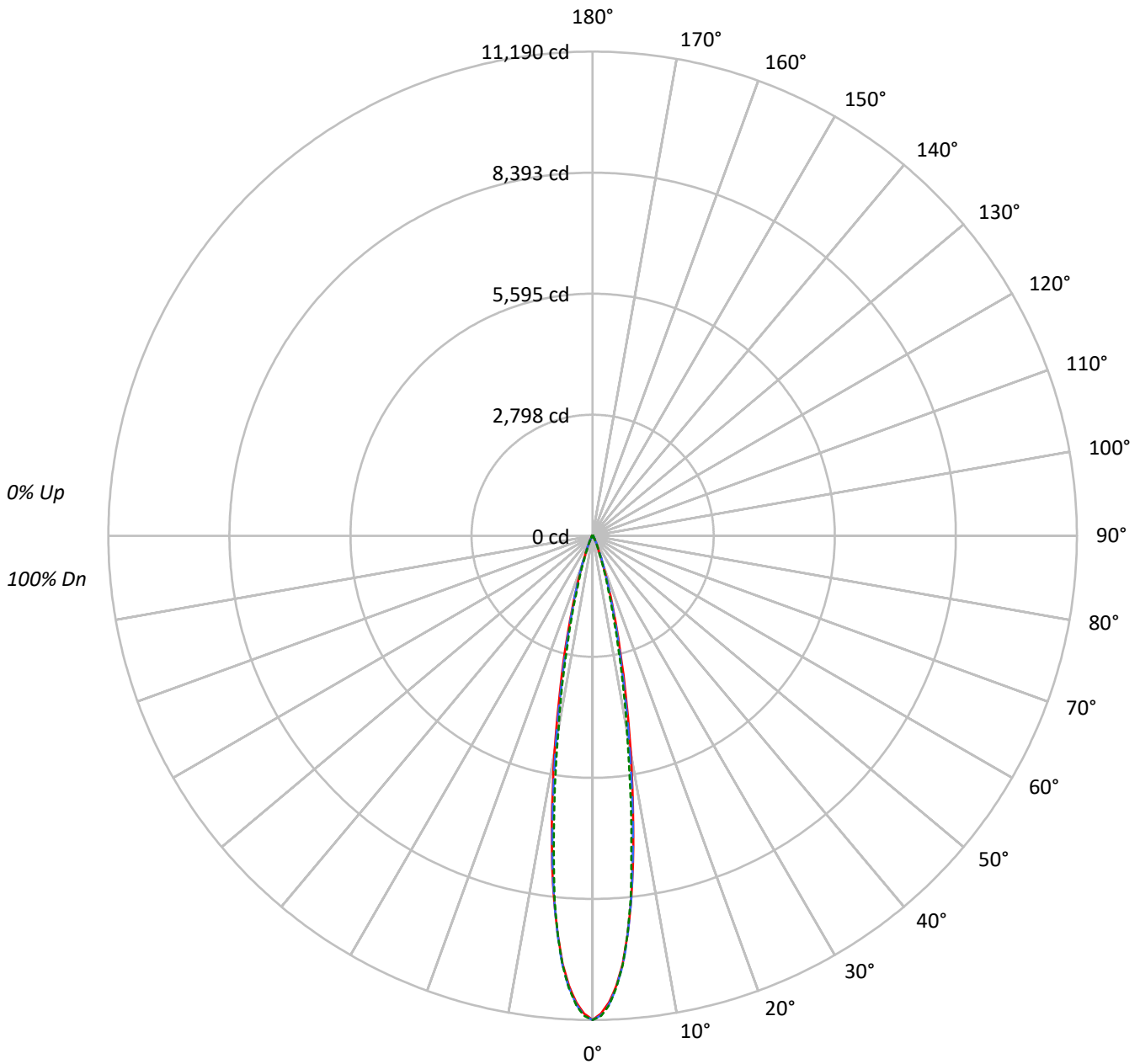
Input Watts (W): 14.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| 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 | 111 | 109 | 113 | 111 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 96 | 96 | 98 | 96 | 96 | | | | | | | | | | | | | | | |
| 2 | 111 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 103 | 101 | 99 | 100 | 98 | 97 | 98 | 96 | 95 | 94 | 94 | 96 | 94 | 94 | | | | | | | | | | | | | | | |
| 3 | 108 | 104 | 100 | 97 | 106 | 102 | 99 | 97 | 100 | 97 | 95 | 98 | 95 | 94 | 96 | 94 | 92 | 91 | 94 | 92 | 90 | 89 | | | | | | | | | | | | | | | |
| 4 | 105 | 100 | 96 | 93 | 104 | 99 | 96 | 93 | 97 | 94 | 92 | 95 | 93 | 91 | 92 | 89 | 88 | 87 | 92 | 89 | 88 | 87 | | | | | | | | | | | | | | | |
| 5 | 102 | 97 | 93 | 90 | 101 | 96 | 93 | 90 | 95 | 91 | 89 | 93 | 90 | 88 | 92 | 89 | 88 | 87 | 90 | 88 | 86 | 85 | | | | | | | | | | | | | | | |
| 6 | 100 | 94 | 90 | 88 | 99 | 94 | 90 | 87 | 92 | 89 | 87 | 91 | 88 | 86 | 90 | 88 | 86 | 85 | 88 | 86 | 84 | 83 | | | | | | | | | | | | | | | |
| 7 | 98 | 92 | 88 | 85 | 97 | 91 | 88 | 85 | 90 | 87 | 85 | 89 | 86 | 84 | 88 | 86 | 84 | 83 | 88 | 86 | 84 | 83 | | | | | | | | | | | | | | | |
| 8 | 96 | 90 | 86 | 83 | 95 | 89 | 86 | 83 | 88 | 85 | 83 | 87 | 85 | 82 | 87 | 84 | 82 | 81 | 87 | 84 | 82 | 81 | | | | | | | | | | | | | | | |
| 9 | 94 | 88 | 84 | 81 | 93 | 87 | 84 | 81 | 86 | 83 | 81 | 86 | 83 | 81 | 85 | 82 | 81 | 80 | 85 | 82 | 81 | 80 | | | | | | | | | | | | | | | |
| 10 | 92 | 86 | 82 | 80 | 91 | 85 | 82 | 80 | 85 | 82 | 79 | 84 | 81 | 79 | 84 | 81 | 79 | 78 | 84 | 81 | 79 | 78 | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 5520570 | 5520570 | 5520570 |
| 5° | 4579890 | 4594747 | 4577314 |
| 10° | 2534822 | 2443244 | 2276019 |
| 15° | 1026128 | 981436 | 871417 |
| 20° | 343786 | 364525 | 295116 |
| 25° | 130811 | 131246 | 124278 |
| 30° | 58678 | 57709 | 55715 |
| 35° | 28428 | 25356 | 20176 |
| 40° | 18806 | 23765 | 16552 |
| 45° | 4814 | 7814 | 7187 |
| 50° | 1305 | 1996 | 2610 |
| 55° | 11784 | 10322 | 16257 |
| 60° | 16972 | 13518 | 22004 |
| 65° | 8055 | 21013 | 20079 |
| 70° | 7357 | 6203 | 7357 |
| 75° | 3241 | 8197 | 22874 |
| 80° | 38924 | 53698 | 48868 |
| 85° | 0 | 24341 | 28870 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 732.9 | 48.7 |
| 10°-20° | 555.1 | 36.9 |
| 20°-30° | 126.2 | 8.4 |
| 30°-40° | 37.3 | 2.5 |
| 40°-50° | 12.4 | 0.8 |
| 50°-60° | 10.9 | 0.7 |
| 60°-70° | 13.2 | 0.9 |
| 70°-80° | 8.4 | 0.6 |
| 80°-90° | 8.8 | 0.6 |
| 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° | 1414.2 | 94.0 |
| 0°-40° | 1451.5 | 96.4 |
| 0°-60° | 1474.8 | 98.0 |
| 0°-90° | 1505.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1505.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 11190 | 11190 | 11190 | 11190 | 11190 | |
| 5° | 9248 | 9321 | 9278 | 9157 | 9242 | 741 |
| 15° | 2009 | 2036 | 1922 | 1741 | 1706 | 584 |
| 25° | 240 | 258 | 241 | 239 | 228 | 126 |
| 35° | 47 | 52 | 42 | 49 | 34 | 37 |
| 45° | 7 | 20 | 11 | 20 | 10 | 10 |
| 55° | 14 | 20 | 12 | 18 | 19 | 6 |
| 65° | 7 | 15 | 18 | 17 | 17 | 7 |
| 75° | 2 | 6 | 4 | 8 | 12 | 4 |
| 85° | 0 | 0 | 4 | 4 | 5 | 5 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 11189.7 | 11189.7 | 11189.7 | 11189.7 | 11189.7 |
| 1° | 11045.6 | 11090.2 | 11085.9 | 11067.9 | 11099.6 |
| 2° | 10791.5 | 10845.6 | 10840.5 | 10801.0 | 10857.6 |
| 3° | 10419.1 | 10467.1 | 10459.4 | 10402.8 | 10464.6 |
| 4° | 9921.4 | 9976.3 | 9954.8 | 9869.9 | 9948.8 |
| 5° | 9247.7 | 9320.6 | 9277.7 | 9156.7 | 9242.5 |
| 6° | 8501.1 | 8562.9 | 8495.1 | 8334.6 | 8418.7 |
| 7° | 7665.2 | 7703.8 | 7614.6 | 7408.6 | 7352.0 |
| 8° | 6753.0 | 6803.6 | 6679.2 | 6438.9 | 6377.1 |
| 9° | 5881.1 | 5898.2 | 5747.2 | 5491.5 | 5413.4 |
| 10° | 5059.8 | 5046.9 | 4877.0 | 4617.8 | 4543.2 |
| 11° | 4281.4 | 4264.3 | 4084.9 | 3845.5 | 3869.5 |
| 12° | 3573.4 | 3606.9 | 3398.4 | 3181.3 | 3185.5 |
| 13° | 2991.6 | 2995.0 | 2815.7 | 2608.8 | 2596.8 |
| 14° | 2449.2 | 2481.0 | 2327.4 | 2142.0 | 2107.7 |
| 15° | 2009.0 | 2036.4 | 1921.5 | 1741.2 | 1706.1 |
| 16° | 1608.2 | 1642.5 | 1560.2 | 1397.1 | 1350.8 |
| 17° | 1295.0 | 1338.8 | 1284.7 | 1148.2 | 1095.0 |
| 18° | 1035.8 | 1069.3 | 1056.4 | 915.7 | 871.9 |
| 19° | 817.8 | 864.2 | 867.6 | 750.0 | 697.7 |
| 20° | 654.8 | 696.8 | 694.3 | 603.3 | 562.1 |
| 22.5° | 375.9 | 398.2 | 399.1 | 356.1 | 332.1 |
| 25° | 240.3 | 258.3 | 241.1 | 238.6 | 228.3 |
| 26° | 208.5 | 223.1 | 204.2 | 204.2 | 194.8 |
| 27° | 169.1 | 181.9 | 163.9 | 171.6 | 158.8 |
| 28° | 142.5 | 156.2 | 140.7 | 139.0 | 137.3 |
| 29° | 118.4 | 131.3 | 111.6 | 120.1 | 115.0 |
| 30° | 103.0 | 112.4 | 101.3 | 114.1 | 97.8 |
| 32.5° | 79.8 | 87.5 | 67.8 | 85.8 | 64.4 |
| 35° | 47.2 | 52.3 | 42.1 | 48.9 | 33.5 |
| 37.5° | 48.9 | 50.6 | 45.5 | 50.6 | 47.2 |
| 40° | 29.2 | 30.0 | 36.9 | 36.9 | 25.7 |
| 42.5° | 27.5 | 26.6 | 16.3 | 25.7 | 20.6 |
| 45° | 6.9 | 19.7 | 11.2 | 19.7 | 10.3 |
| 47.5° | 5.1 | 6.9 | 6.9 | 13.7 | 13.7 |
| 50° | 1.7 | 6.9 | 2.6 | 5.1 | 3.4 |
| 52.5° | 0.0 | 16.3 | 3.4 | 12.0 | 10.3 |
| 55° | 13.7 | 19.7 | 12.0 | 18.0 | 18.9 |
| 57.5° | 1.7 | 13.7 | 6.9 | 14.6 | 10.3 |
| 60° | 17.2 | 23.2 | 13.7 | 24.9 | 22.3 |
| 62.5° | 1.7 | 15.4 | 18.0 | 13.7 | 12.0 |
| 65° | 6.9 | 14.6 | 18.0 | 17.2 | 17.2 |
| 67.5° | 8.6 | 14.6 | 11.2 | 11.2 | 15.4 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|------|-------|------|-------|------|
| 75° | 1.7 | 6.0 | 4.3 | 7.7 | 12.0 |
| 77.5° | 1.7 | 6.9 | 6.0 | 13.7 | 10.3 |
| 80° | 13.7 | 15.4 | 18.9 | 24.9 | 17.2 |
| 82.5° | 12.0 | 12.0 | 18.9 | 13.7 | 10.3 |
| 85° | 0.0 | 0.0 | 4.3 | 4.3 | 5.1 |
| 87.5° | 0.0 | 3.4 | 8.6 | 6.9 | 12.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 70° | 5.1 | 1.7 | 4.3 | 4.3 | 5.1 |
| 72.5° | 1.7 | 7.7 | 6.9 | 4.3 | 8.6 |



(END OF REPORT)