

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: P282521

Luminaire Tested: **LDA2B109040D010 EU2B10SP159040 2LBALPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282521
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: LDA2B109040D010 EU2B10SP159040 2LBALPINSQ1MW
Description: PORTFOLIO 2IN ADJ 1000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Pinhole w-lens, MW
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 925.2 lumens
Efficiency: N/A
Efficacy: 92.5 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

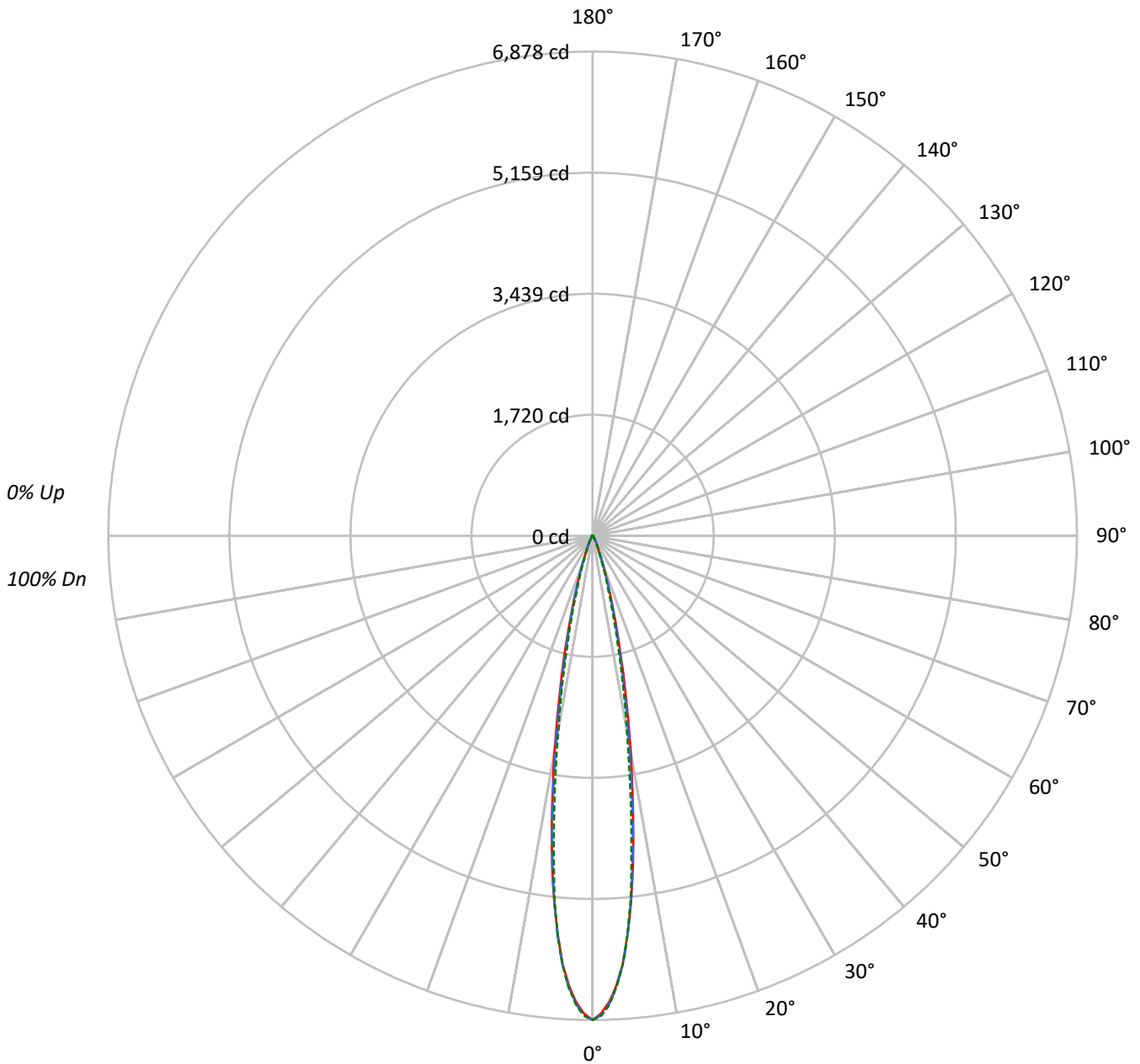
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 96 | 94 | 92 | 94 | | | | | | | | | | | | | | | |
| 3 | 108 | 104 | 100 | 97 | 106 | 102 | 99 | 97 | 100 | 97 | 95 | 98 | 95 | 94 | 96 | 94 | 92 | 91 | 96 | 94 | 92 | 91 | | | | | | | | | | | | | | | |
| 4 | 105 | 100 | 96 | 93 | 104 | 99 | 96 | 93 | 97 | 94 | 92 | 95 | 93 | 91 | 94 | 92 | 90 | 89 | 94 | 92 | 90 | 89 | | | | | | | | | | | | | | | |
| 5 | 102 | 97 | 93 | 90 | 101 | 96 | 93 | 90 | 95 | 91 | 89 | 93 | 90 | 88 | 92 | 89 | 88 | 87 | 92 | 89 | 88 | 87 | | | | | | | | | | | | | | | |
| 6 | 100 | 94 | 90 | 88 | 99 | 94 | 90 | 87 | 92 | 89 | 87 | 91 | 88 | 86 | 90 | 88 | 86 | 85 | 90 | 88 | 86 | 85 | | | | | | | | | | | | | | | |
| 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° | 3393490 | 3393490 | 3393490 |
| 5° | 2815228 | 2824390 | 2813643 |
| 10° | 1558125 | 1501866 | 1399066 |
| 15° | 630745 | 603265 | 535640 |
| 20° | 211322 | 224081 | 181396 |
| 25° | 80403 | 80675 | 76374 |
| 30° | 36061 | 35434 | 34238 |
| 35° | 17466 | 15539 | 12407 |
| 40° | 11528 | 14620 | 10176 |
| 45° | 2930 | 4814 | 4396 |
| 50° | 844 | 1228 | 1612 |
| 55° | 7225 | 6365 | 9978 |
| 60° | 10459 | 8288 | 13518 |
| 65° | 4903 | 12958 | 12374 |
| 70° | 4616 | 3750 | 4616 |
| 75° | 2097 | 4956 | 14106 |
| 80° | 23866 | 32957 | 30116 |
| 85° | 0 | 14718 | 18114 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 450.5 | 48.7 |
| 10°-20° | 341.2 | 36.9 |
| 20°-30° | 77.6 | 8.4 |
| 30°-40° | 22.9 | 2.5 |
| 40°-50° | 7.6 | 0.8 |
| 50°-60° | 6.7 | 0.7 |
| 60°-70° | 8.1 | 0.9 |
| 70°-80° | 5.2 | 0.6 |
| 80°-90° | 5.4 | 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° | 869.3 | 94.0 |
| 0°-40° | 892.2 | 96.4 |
| 0°-60° | 906.6 | 98.0 |
| 0°-90° | 925.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 925.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 6878 | 6878 | 6878 | 6878 | 6878 | |
| 5° | 5684 | 5729 | 5703 | 5629 | 5681 | 456 |
| 15° | 1235 | 1252 | 1181 | 1070 | 1049 | 359 |
| 25° | 148 | 159 | 148 | 147 | 140 | 77 |
| 35° | 29 | 32 | 26 | 30 | 21 | 23 |
| 45° | 4 | 12 | 7 | 12 | 6 | 6 |
| 55° | 8 | 12 | 7 | 11 | 12 | 3 |
| 65° | 4 | 9 | 11 | 11 | 11 | 4 |
| 75° | 1 | 4 | 3 | 5 | 7 | 2 |
| 85° | 0 | 0 | 3 | 3 | 3 | 3 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P282521

CATALOG NUMBER: LDA2B109040D010 EU2B10SP159040 2LBALPINSQ1MW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 6878.3 | 6878.3 | 6878.3 | 6878.3 | 6878.3 |
| 1° | 6789.6 | 6817.1 | 6814.4 | 6803.4 | 6822.9 |
| 2° | 6633.5 | 6666.7 | 6663.6 | 6639.3 | 6674.1 |
| 3° | 6404.6 | 6434.1 | 6429.3 | 6394.5 | 6432.5 |
| 4° | 6098.6 | 6132.4 | 6119.2 | 6066.9 | 6115.5 |
| 5° | 5684.5 | 5729.3 | 5703.0 | 5628.6 | 5681.3 |
| 6° | 5225.6 | 5263.5 | 5221.9 | 5123.2 | 5174.9 |
| 7° | 4711.8 | 4735.5 | 4680.6 | 4554.0 | 4519.2 |
| 8° | 4151.0 | 4182.1 | 4105.6 | 3957.9 | 3920.0 |
| 9° | 3615.1 | 3625.6 | 3532.8 | 3375.6 | 3327.6 |
| 10° | 3110.2 | 3102.3 | 2997.9 | 2838.6 | 2792.7 |
| 11° | 2631.8 | 2621.2 | 2511.0 | 2363.8 | 2378.6 |
| 12° | 2196.6 | 2217.1 | 2089.0 | 1955.5 | 1958.1 |
| 13° | 1838.9 | 1841.0 | 1730.8 | 1603.6 | 1596.3 |
| 14° | 1505.5 | 1525.0 | 1430.6 | 1316.7 | 1295.6 |
| 15° | 1234.9 | 1251.8 | 1181.1 | 1070.3 | 1048.7 |
| 16° | 988.6 | 1009.7 | 959.0 | 858.8 | 830.3 |
| 17° | 796.0 | 822.9 | 789.7 | 705.8 | 673.1 |
| 18° | 636.7 | 657.3 | 649.4 | 562.9 | 536.0 |
| 19° | 502.7 | 531.2 | 533.3 | 461.0 | 428.9 |
| 20° | 402.5 | 428.3 | 426.8 | 370.8 | 345.5 |
| 22.5° | 231.1 | 244.8 | 245.3 | 218.9 | 204.1 |
| 25° | 147.7 | 158.8 | 148.2 | 146.6 | 140.3 |
| 26° | 128.2 | 137.2 | 125.5 | 125.5 | 119.7 |
| 27° | 103.9 | 111.8 | 100.8 | 105.5 | 97.6 |
| 28° | 87.6 | 96.0 | 86.5 | 85.5 | 84.4 |
| 29° | 72.8 | 80.7 | 68.6 | 73.9 | 70.7 |
| 30° | 63.3 | 69.1 | 62.2 | 70.2 | 60.1 |
| 32.5° | 49.1 | 53.8 | 41.7 | 52.8 | 39.6 |
| 35° | 29.0 | 32.2 | 25.8 | 30.1 | 20.6 |
| 37.5° | 30.1 | 31.1 | 28.0 | 31.1 | 29.0 |
| 40° | 17.9 | 18.5 | 22.7 | 22.7 | 15.8 |
| 42.5° | 16.9 | 16.4 | 10.0 | 15.8 | 12.7 |
| 45° | 4.2 | 12.1 | 6.9 | 12.1 | 6.3 |
| 47.5° | 3.2 | 4.2 | 4.2 | 8.4 | 8.4 |
| 50° | 1.1 | 4.2 | 1.6 | 3.2 | 2.1 |
| 52.5° | 0.0 | 10.0 | 2.1 | 7.4 | 6.3 |
| 55° | 8.4 | 12.1 | 7.4 | 11.1 | 11.6 |
| 57.5° | 1.1 | 8.4 | 4.2 | 9.0 | 6.3 |
| 60° | 10.6 | 14.2 | 8.4 | 15.3 | 13.7 |
| 62.5° | 1.1 | 9.5 | 11.1 | 8.4 | 7.4 |
| 65° | 4.2 | 9.0 | 11.1 | 10.6 | 10.6 |
| 67.5° | 5.3 | 9.0 | 6.9 | 6.9 | 9.5 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|------|-------|------|
| 75° | 1.1 | 3.7 | 2.6 | 4.7 | 7.4 |
| 77.5° | 1.1 | 4.2 | 3.7 | 8.4 | 6.3 |
| 80° | 8.4 | 9.5 | 11.6 | 15.3 | 10.6 |
| 82.5° | 7.4 | 7.4 | 11.6 | 8.4 | 6.3 |
| 85° | 0.0 | 0.0 | 2.6 | 2.6 | 3.2 |
| 87.5° | 0.0 | 2.1 | 5.3 | 4.2 | 7.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 70° | 3.2 | 1.1 | 2.6 | 2.6 | 3.2 |
| 72.5° | 1.1 | 4.7 | 4.2 | 2.6 | 5.3 |



(END OF REPORT)