

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: P283793

Luminaire Tested: **LDA2B20D2WD010 EU2B20FL40D2W 2LBALPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P283793
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1809-951-15)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B20D2WD010 EU2B20FL40D2W 2LBALPINSQ1MW
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj SQ Pinhole w-lens, MW

Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1244.6 lumens
Efficiency: N/A
Efficacy: 60.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 0.55 / 0.55
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

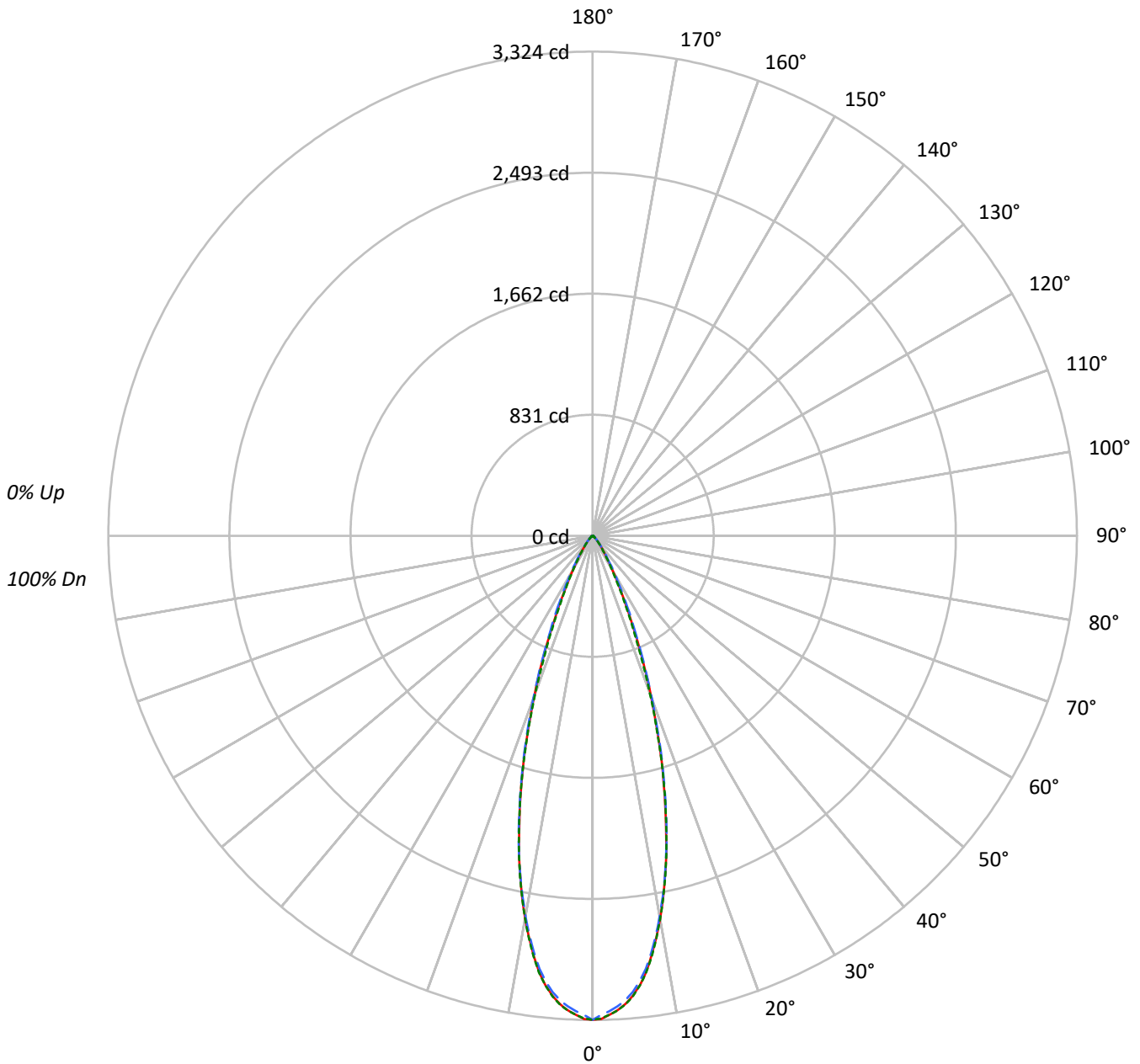
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|---|--|---|
| RF | 20 | | | | | 20 | | | | | 20 | | | | | 20 | | | | | 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 | 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 | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 95 | | | | | 95 | | | |
| 2 | 110 | 106 | 102 | 99 | 108 | 104 | 101 | 98 | 101 | 98 | 96 | 98 | 96 | 94 | 95 | 93 | 92 | 90 | | | | | 90 | | | |
| 3 | 105 | 100 | 96 | 92 | 104 | 99 | 95 | 92 | 96 | 93 | 90 | 94 | 91 | 89 | 92 | 89 | 88 | 86 | | | | | 86 | | | |
| 4 | 101 | 95 | 90 | 87 | 100 | 94 | 90 | 86 | 92 | 88 | 85 | 90 | 87 | 84 | 88 | 86 | 83 | 82 | | | | | 82 | | | |
| 5 | 98 | 91 | 86 | 82 | 96 | 90 | 85 | 82 | 88 | 84 | 81 | 86 | 83 | 80 | 85 | 82 | 80 | 79 | | | | | 79 | | | |
| 6 | 94 | 87 | 82 | 78 | 93 | 86 | 81 | 78 | 84 | 80 | 77 | 83 | 80 | 77 | 82 | 79 | 76 | 75 | | | | | 75 | | | |
| 7 | 91 | 83 | 78 | 75 | 89 | 82 | 78 | 74 | 81 | 77 | 74 | 80 | 76 | 74 | 79 | 76 | 73 | 72 | | | | | 72 | | | |
| 8 | 87 | 80 | 75 | 71 | 86 | 79 | 74 | 71 | 78 | 74 | 71 | 77 | 73 | 71 | 76 | 73 | 70 | 69 | | | | | 69 | | | |
| 9 | 84 | 77 | 72 | 69 | 83 | 76 | 72 | 68 | 75 | 71 | 68 | 74 | 71 | 68 | 74 | 70 | 68 | 67 | | | | | 67 | | | |
| 10 | 82 | 74 | 69 | 66 | 81 | 73 | 69 | 66 | 73 | 69 | 66 | 72 | 68 | 65 | 71 | 68 | 65 | 64 | | | | | 64 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 1639787 | 1639787 | 1639787 |
| 5° | 1569238 | 1557500 | 1571664 |
| 10° | 1336946 | 1328529 | 1338349 |
| 15° | 985420 | 991805 | 988587 |
| 20° | 615171 | 626512 | 601573 |
| 25° | 317746 | 340935 | 301796 |
| 30° | 152334 | 174608 | 145213 |
| 35° | 78658 | 87030 | 73599 |
| 40° | 44052 | 46306 | 41798 |
| 45° | 26792 | 26792 | 25816 |
| 50° | 13969 | 17116 | 13969 |
| 55° | 7225 | 11440 | 7827 |
| 60° | 8288 | 8288 | 8288 |
| 65° | 8989 | 8989 | 8989 |
| 70° | 11107 | 10097 | 11107 |
| 75° | 10675 | 10675 | 10675 |
| 80° | 9944 | 9944 | 9944 |
| 85° | 7925 | 7925 | 7925 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 285.9 | 23.0 |
| 10°-20° | 525.1 | 42.2 |
| 20°-30° | 284.7 | 22.9 |
| 30°-40° | 91.4 | 7.3 |
| 40°-50° | 31.1 | 2.5 |
| 50°-60° | 10.9 | 0.9 |
| 60°-70° | 8.0 | 0.6 |
| 70°-80° | 5.8 | 0.5 |
| 80°-90° | 1.7 | 0.1 |
| 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° | 1095.7 | 88.0 |
| 0°-40° | 1187.1 | 95.4 |
| 0°-60° | 1229.2 | 98.8 |
| 0°-90° | 1244.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1244.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3324 | 3324 | 3324 | 3324 | 3324 | |
| 5° | 3169 | 3149 | 3145 | 3176 | 3174 | 287 |
| 15° | 1929 | 1945 | 1942 | 1951 | 1936 | 523 |
| 25° | 584 | 610 | 626 | 583 | 554 | 280 |
| 35° | 131 | 136 | 144 | 131 | 122 | 88 |
| 45° | 38 | 39 | 38 | 38 | 37 | 31 |
| 55° | 8 | 10 | 13 | 10 | 9 | 9 |
| 65° | 8 | 8 | 8 | 8 | 8 | 8 |
| 75° | 6 | 6 | 6 | 6 | 6 | 6 |
| 85° | 1 | 1 | 1 | 1 | 1 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P283793

CATALOG NUMBER: LDA2B20D2WD010 EU2B20FL40D2W 2LBALPINSQ1MW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3323.7 | 3323.7 | 3323.7 | 3323.7 | 3323.7 |
| 1° | 3318.1 | 3294.3 | 3290.8 | 3321.6 | 3314.6 |
| 2° | 3291.5 | 3269.2 | 3265.7 | 3296.4 | 3290.1 |
| 3° | 3262.2 | 3242.0 | 3235.0 | 3267.1 | 3262.9 |
| 4° | 3223.1 | 3204.3 | 3198.0 | 3230.1 | 3226.6 |
| 5° | 3168.6 | 3149.1 | 3144.9 | 3176.3 | 3173.5 |
| 6° | 3101.6 | 3085.6 | 3077.9 | 3109.3 | 3103.7 |
| 7° | 3017.8 | 3003.2 | 2994.8 | 3017.8 | 3020.6 |
| 8° | 2908.9 | 2901.9 | 2892.1 | 2915.2 | 2915.2 |
| 9° | 2793.0 | 2786.7 | 2776.2 | 2797.2 | 2797.2 |
| 10° | 2668.7 | 2664.5 | 2651.9 | 2671.5 | 2671.5 |
| 11° | 2532.5 | 2530.5 | 2521.4 | 2537.4 | 2537.4 |
| 12° | 2389.4 | 2394.3 | 2385.9 | 2399.9 | 2395.0 |
| 13° | 2246.3 | 2244.2 | 2244.9 | 2255.3 | 2247.7 |
| 14° | 2084.3 | 2096.8 | 2098.9 | 2105.2 | 2093.3 |
| 15° | 1929.3 | 1945.3 | 1941.8 | 1950.9 | 1935.5 |
| 16° | 1770.8 | 1788.9 | 1788.2 | 1790.3 | 1775.6 |
| 17° | 1622.7 | 1633.2 | 1633.9 | 1631.8 | 1613.7 |
| 18° | 1464.9 | 1479.6 | 1479.6 | 1476.1 | 1454.5 |
| 19° | 1310.6 | 1321.8 | 1329.5 | 1321.8 | 1296.6 |
| 20° | 1171.7 | 1179.3 | 1193.3 | 1173.8 | 1145.8 |
| 21° | 1038.3 | 1045.3 | 1057.1 | 1034.1 | 1003.4 |
| 22° | 910.5 | 919.6 | 930.8 | 904.2 | 872.1 |
| 23° | 791.1 | 812.1 | 816.3 | 779.9 | 752.7 |
| 24° | 681.5 | 705.2 | 712.2 | 675.2 | 646.6 |
| 25° | 583.7 | 610.3 | 626.3 | 583.0 | 554.4 |
| 26° | 499.2 | 525.1 | 544.6 | 501.3 | 474.1 |
| 27° | 425.2 | 452.5 | 472.7 | 432.2 | 406.4 |
| 28° | 361.7 | 388.2 | 409.2 | 371.5 | 347.0 |
| 29° | 314.2 | 329.6 | 350.5 | 319.1 | 296.8 |
| 30° | 267.4 | 284.2 | 306.5 | 274.4 | 254.9 |
| 32.5° | 183.6 | 192.7 | 210.2 | 190.6 | 175.3 |
| 35° | 130.6 | 136.2 | 144.5 | 131.3 | 122.2 |
| 37.5° | 92.9 | 95.7 | 100.5 | 92.9 | 88.0 |
| 40° | 68.4 | 69.8 | 71.9 | 67.7 | 64.9 |
| 42.5° | 51.0 | 51.7 | 51.7 | 50.3 | 48.9 |
| 45° | 38.4 | 39.1 | 38.4 | 38.4 | 37.0 |
| 47.5° | 27.9 | 30.0 | 29.3 | 29.3 | 27.2 |
| 50° | 18.2 | 22.3 | 22.3 | 21.6 | 18.2 |
| 52.5° | 11.2 | 15.4 | 17.5 | 15.4 | 11.9 |
| 55° | 8.4 | 10.5 | 13.3 | 10.5 | 9.1 |
| 57.5° | 8.4 | 8.4 | 9.8 | 8.4 | 8.4 |
| 60° | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| 70° | 7.7 | 7.7 | 7.0 | 7.7 | 7.7 |
| 72.5° | 7.0 | 7.0 | 6.3 | 7.0 | 6.3 |
| 75° | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| 77.5° | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| 80° | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 82.5° | 2.1 | 2.1 | 2.1 | 2.8 | 2.1 |
| 85° | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| 87.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 62.5° | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 |
| 65° | 7.7 | 8.4 | 7.7 | 8.4 | 7.7 |



(END OF REPORT)