

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: P281779

Luminaire Tested: **LDA2B20D2WD010 EU2B20SP15D2W 2LBALSQC1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P281779
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-5)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B20D2WD010 EU2B20SP15D2W 2LBALSQC1MMS
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ Cast Trim w/lens, MMS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1498.4 lumens
Efficiency: N/A
Efficacy: 72.7 lumens/watt
Spacing Criteria (0/90/45): 0.33 / 0.31 / 0.32
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

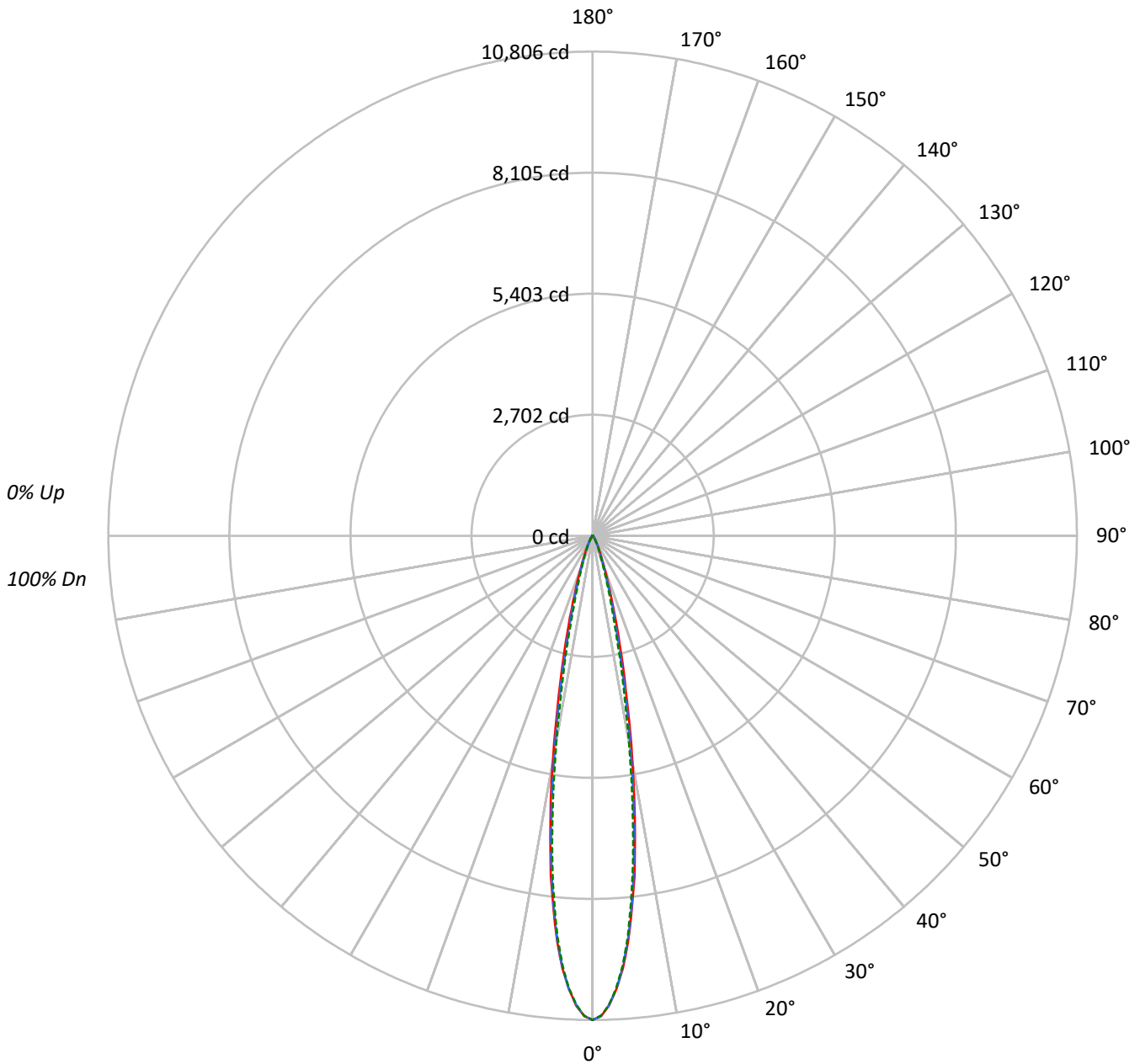
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 5331366 | 5331366 | 5331366 |
| 5° | 4504464 | 4480444 | 4447362 |
| 10° | 2563878 | 2451009 | 2326367 |
| 15° | 1061729 | 940422 | 828462 |
| 20° | 403901 | 353709 | 323835 |
| 25° | 178388 | 171366 | 152368 |
| 30° | 82547 | 91207 | 72635 |
| 35° | 43425 | 51194 | 40654 |
| 40° | 19064 | 21962 | 12688 |
| 45° | 7396 | 5791 | 8442 |
| 50° | 3531 | 4068 | 5833 |
| 55° | 0 | 2580 | 0 |
| 60° | 0 | 0 | 1480 |
| 65° | 0 | 0 | 0 |
| 70° | 0 | 1154 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 4262 | 0 | 0 |
| 85° | 43021 | 38493 | 16982 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 722.5 | 48.2 |
| 10°-20° | 552.4 | 36.9 |
| 20°-30° | 153.6 | 10.3 |
| 30°-40° | 49.9 | 3.3 |
| 40°-50° | 11.0 | 0.7 |
| 50°-60° | 3.4 | 0.2 |
| 60°-70° | 2.0 | 0.1 |
| 70°-80° | 1.2 | 0.1 |
| 80°-90° | 2.4 | 0.2 |
| 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° | 1428.5 | 95.3 |
| 0°-40° | 1478.4 | 98.7 |
| 0°-60° | 1492.8 | 99.6 |
| 0°-90° | 1498.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1498.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 10806 | 10806 | 10806 | 10806 | 10806 | |
| 5° | 9095 | 9029 | 9047 | 8979 | 8980 | 735 |
| 15° | 2079 | 2007 | 1841 | 1699 | 1622 | 607 |
| 25° | 328 | 332 | 315 | 297 | 280 | 164 |
| 35° | 72 | 78 | 85 | 64 | 68 | 47 |
| 45° | 11 | 15 | 8 | 8 | 12 | 11 |
| 55° | 0 | 5 | 3 | 2 | 0 | 3 |
| 65° | 0 | 3 | 0 | 0 | 0 | 2 |
| 75° | 0 | 0 | 0 | 2 | 0 | 1 |
| 85° | 8 | 4 | 7 | 4 | 3 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 10806.2 | 10806.2 | 10806.2 | 10806.2 | 10806.2 |
| 1° | 10723.5 | 10683.3 | 10722.0 | 10699.2 | 10712.1 |
| 2° | 10490.6 | 10440.5 | 10480.7 | 10448.9 | 10475.4 |
| 3° | 10128.0 | 10089.3 | 10124.9 | 10084.7 | 10106.0 |
| 4° | 9673.5 | 9617.4 | 9653.1 | 9599.2 | 9612.1 |
| 5° | 9095.4 | 9028.7 | 9046.9 | 8979.4 | 8980.1 |
| 6° | 8367.1 | 8320.9 | 8331.5 | 8226.0 | 8218.4 |
| 7° | 7654.8 | 7545.5 | 7534.1 | 7413.5 | 7390.0 |
| 8° | 6789.9 | 6690.5 | 6657.9 | 6516.0 | 6466.0 |
| 9° | 5960.7 | 5837.0 | 5770.3 | 5605.7 | 5547.2 |
| 10° | 5117.8 | 4992.7 | 4892.5 | 4706.7 | 4643.7 |
| 11° | 4338.0 | 4224.9 | 4100.5 | 3901.7 | 3840.3 |
| 12° | 3614.2 | 3525.4 | 3388.9 | 3196.9 | 3132.5 |
| 13° | 3023.2 | 2920.8 | 2774.4 | 2596.1 | 2540.7 |
| 14° | 2511.1 | 2401.1 | 2254.7 | 2102.2 | 1994.5 |
| 15° | 2078.7 | 2006.6 | 1841.2 | 1699.4 | 1622.0 |
| 16° | 1698.6 | 1637.2 | 1494.5 | 1371.6 | 1317.0 |
| 17° | 1392.9 | 1343.6 | 1222.2 | 1125.8 | 1080.3 |
| 18° | 1149.4 | 1087.9 | 992.3 | 929.3 | 893.7 |
| 19° | 932.4 | 884.6 | 814.8 | 766.2 | 730.6 |
| 20° | 769.3 | 729.8 | 673.7 | 630.4 | 616.8 |
| 22.5° | 496.9 | 490.1 | 453.7 | 430.2 | 418.8 |
| 25° | 327.7 | 331.5 | 314.8 | 296.6 | 279.9 |
| 26° | 279.9 | 282.2 | 267.0 | 256.4 | 235.2 |
| 27° | 239.7 | 240.5 | 240.5 | 220.8 | 200.3 |
| 28° | 195.7 | 204.1 | 196.5 | 187.4 | 167.7 |
| 29° | 167.7 | 178.3 | 174.5 | 165.4 | 146.4 |
| 30° | 144.9 | 152.5 | 160.1 | 145.7 | 127.5 |
| 32.5° | 101.7 | 108.5 | 116.8 | 109.2 | 94.1 |
| 35° | 72.1 | 78.1 | 85.0 | 64.5 | 67.5 |
| 37.5° | 49.3 | 59.9 | 57.7 | 52.3 | 44.8 |
| 40° | 29.6 | 31.1 | 34.1 | 36.4 | 19.7 |
| 42.5° | 21.2 | 25.0 | 22.8 | 25.8 | 9.1 |
| 45° | 10.6 | 15.2 | 8.3 | 8.3 | 12.1 |
| 47.5° | 7.6 | 12.9 | 4.6 | 4.6 | 1.5 |
| 50° | 4.6 | 9.9 | 5.3 | 2.3 | 7.6 |
| 52.5° | 7.6 | 9.1 | 6.1 | 6.8 | 1.5 |
| 55° | 0.0 | 4.6 | 3.0 | 1.5 | 0.0 |
| 57.5° | 3.0 | 5.3 | 3.0 | 1.5 | 3.0 |
| 60° | 0.0 | 0.0 | 0.0 | 0.8 | 1.5 |
| 62.5° | 0.0 | 1.5 | 0.0 | 2.3 | 3.0 |
| 65° | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| 67.5° | 4.6 | 5.3 | 3.0 | 6.1 | 9.1 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75° | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 |
| 77.5° | 0.0 | 7.6 | 2.3 | 2.3 | 3.0 |
| 80° | 1.5 | 0.0 | 0.0 | 0.8 | 0.0 |
| 82.5° | 0.0 | 6.1 | 0.8 | 3.0 | 4.6 |
| 85° | 7.6 | 3.8 | 6.8 | 3.8 | 3.0 |
| 87.5° | 0.0 | 0.8 | 1.5 | 0.8 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 70° | 0.0 | 0.0 | 0.8 | 0.8 | 0.0 |
| 72.5° | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)