

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: P282148

Luminaire Tested: **LDA2B059024D010 EU2B05NFL259024 2LBAPINSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282148
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: LDA2B059024D010 EU2B05NFL259024 2LBAPINSQ1MMS
Description: PORTFOLIO 2IN ADJ 500 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC
AND 2in Adj SQ PinHole, MMS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 518.7 lumens
Efficiency: N/A
Efficacy: 74.1 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

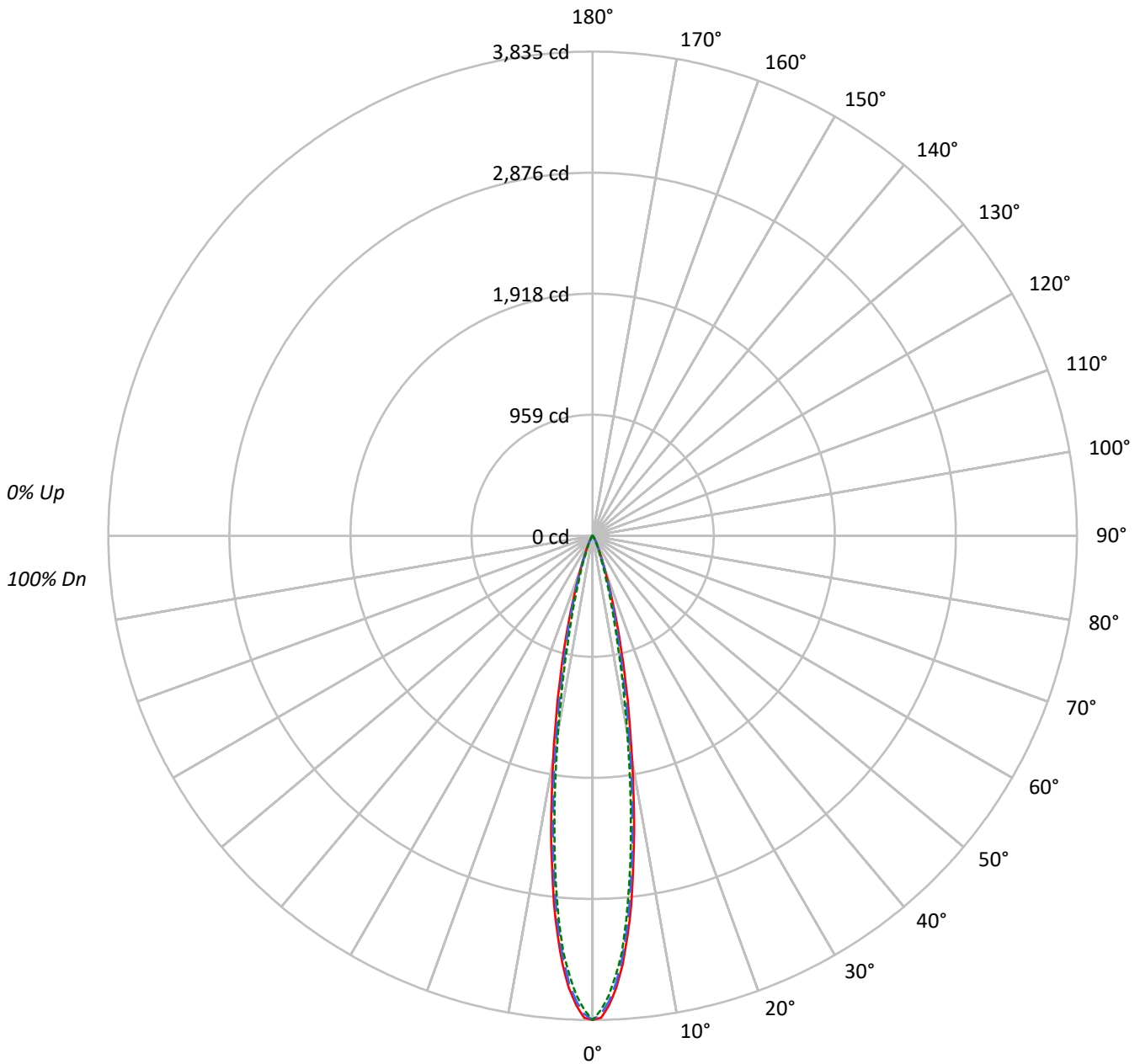
Input Watts (W): 7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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° | 1892240 | 1892240 | 1892240 |
| 5° | 1574537 | 1545713 | 1514463 |
| 10° | 901901 | 846293 | 789834 |
| 15° | 401155 | 356259 | 298543 |
| 20° | 145537 | 136821 | 108418 |
| 25° | 55852 | 52150 | 44910 |
| 30° | 24098 | 22389 | 19882 |
| 35° | 11383 | 11383 | 9456 |
| 40° | 5732 | 5925 | 4766 |
| 45° | 3279 | 3070 | 2861 |
| 50° | 2303 | 2072 | 2072 |
| 55° | 1806 | 1290 | 1548 |
| 60° | 1480 | 888 | 1184 |
| 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° | 249.5 | 48.1 |
| 10°-20° | 201.9 | 38.9 |
| 20°-30° | 48.7 | 9.4 |
| 30°-40° | 12.4 | 2.4 |
| 40°-50° | 3.7 | 0.7 |
| 50°-60° | 1.6 | 0.3 |
| 60°-70° | 0.8 | 0.1 |
| 70°-80° | 0.3 | 0.0 |
| 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° | 500.0 | 96.4 |
| 0°-40° | 512.4 | 98.8 |
| 0°-60° | 517.7 | 99.8 |
| 0°-90° | 518.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 518.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3835 | 3835 | 3835 | 3835 | 3835 | |
| 5° | 3179 | 3150 | 3121 | 3094 | 3058 | 257 |
| 15° | 785 | 767 | 698 | 628 | 584 | 224 |
| 25° | 103 | 103 | 96 | 87 | 82 | 53 |
| 35° | 19 | 19 | 19 | 17 | 16 | 13 |
| 45° | 5 | 5 | 4 | 4 | 4 | 4 |
| 55° | 2 | 2 | 2 | 2 | 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° | 3835.4 | 3835.4 | 3835.4 | 3835.4 | 3835.4 |
| 1° | 3818.3 | 3791.6 | 3788.4 | 3805.0 | 3756.1 |
| 2° | 3720.7 | 3701.7 | 3690.8 | 3700.5 | 3645.2 |
| 3° | 3586.7 | 3568.3 | 3548.5 | 3548.8 | 3487.0 |
| 4° | 3404.1 | 3389.6 | 3356.2 | 3346.2 | 3310.4 |
| 5° | 3179.3 | 3150.0 | 3121.1 | 3093.8 | 3058.0 |
| 6° | 2930.8 | 2893.0 | 2851.6 | 2811.0 | 2774.4 |
| 7° | 2638.6 | 2613.4 | 2558.7 | 2503.4 | 2472.3 |
| 8° | 2363.8 | 2323.3 | 2259.4 | 2190.1 | 2163.8 |
| 9° | 2068.3 | 2039.3 | 1965.9 | 1885.5 | 1859.1 |
| 10° | 1800.3 | 1770.1 | 1689.3 | 1599.7 | 1576.6 |
| 11° | 1548.8 | 1520.4 | 1436.4 | 1342.4 | 1317.8 |
| 12° | 1336.2 | 1295.9 | 1199.5 | 1117.9 | 1093.9 |
| 13° | 1124.4 | 1096.8 | 1005.4 | 924.7 | 878.2 |
| 14° | 944.2 | 921.4 | 838.6 | 767.6 | 718.5 |
| 15° | 785.4 | 766.7 | 697.5 | 628.3 | 584.5 |
| 16° | 644.3 | 632.7 | 578.0 | 511.2 | 475.4 |
| 17° | 522.7 | 512.0 | 477.1 | 415.6 | 385.4 |
| 18° | 422.1 | 420.6 | 391.6 | 338.4 | 311.5 |
| 19° | 347.3 | 346.7 | 320.1 | 275.4 | 253.2 |
| 20° | 277.2 | 281.0 | 260.6 | 221.6 | 206.5 |
| 21° | 226.0 | 228.1 | 211.8 | 182.2 | 168.6 |
| 22° | 184.0 | 185.5 | 174.8 | 150.6 | 143.2 |
| 23° | 150.9 | 151.7 | 142.9 | 124.8 | 118.3 |
| 24° | 124.2 | 124.8 | 116.8 | 104.1 | 98.5 |
| 25° | 102.6 | 103.2 | 95.8 | 87.0 | 82.5 |
| 26° | 85.2 | 85.8 | 79.3 | 73.1 | 68.6 |
| 27° | 70.7 | 71.9 | 65.4 | 61.5 | 56.8 |
| 28° | 60.3 | 60.6 | 54.7 | 52.4 | 47.9 |
| 29° | 49.4 | 51.2 | 46.1 | 44.1 | 40.8 |
| 30° | 42.3 | 43.2 | 39.3 | 37.9 | 34.9 |
| 32.5° | 28.1 | 28.7 | 26.9 | 25.7 | 23.4 |
| 35° | 18.9 | 19.2 | 18.9 | 17.2 | 15.7 |
| 37.5° | 13.0 | 13.0 | 13.3 | 11.2 | 10.6 |
| 40° | 8.9 | 8.9 | 9.2 | 7.7 | 7.4 |
| 42.5° | 6.5 | 6.5 | 6.2 | 5.3 | 5.3 |
| 45° | 4.7 | 4.7 | 4.4 | 4.1 | 4.1 |
| 47.5° | 3.8 | 3.5 | 3.3 | 3.3 | 3.3 |
| 50° | 3.0 | 3.0 | 2.7 | 2.4 | 2.7 |
| 52.5° | 2.4 | 2.4 | 2.1 | 2.1 | 2.1 |
| 55° | 2.1 | 1.8 | 1.5 | 1.5 | 1.8 |
| 57.5° | 1.5 | 1.5 | 1.2 | 1.2 | 1.5 |
| 60° | 1.5 | 1.2 | 0.9 | 1.2 | 1.2 |



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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° | 1.2 | 0.9 | 0.9 | 0.9 | 0.9 |
| 65° | 0.9 | 0.9 | 0.6 | 0.6 | 0.9 |



(END OF REPORT)