

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: P282680

Luminaire Tested: **LDA2B109027D010 EU2B10NFL259027 2LBALPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282680
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: LDA2B109027D010 EU2B10NFL259027 2LBALPINSQ1MW
Description: PORTFOLIO 2IN ADJ 1000 LUMEN LED LUMINAIRE WITH NARROW FLOOD OPTIC AND 2in Adj SQ Pinhole w-lens, MW
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 707.3 lumens
Efficiency: N/A
Efficacy: 70.7 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

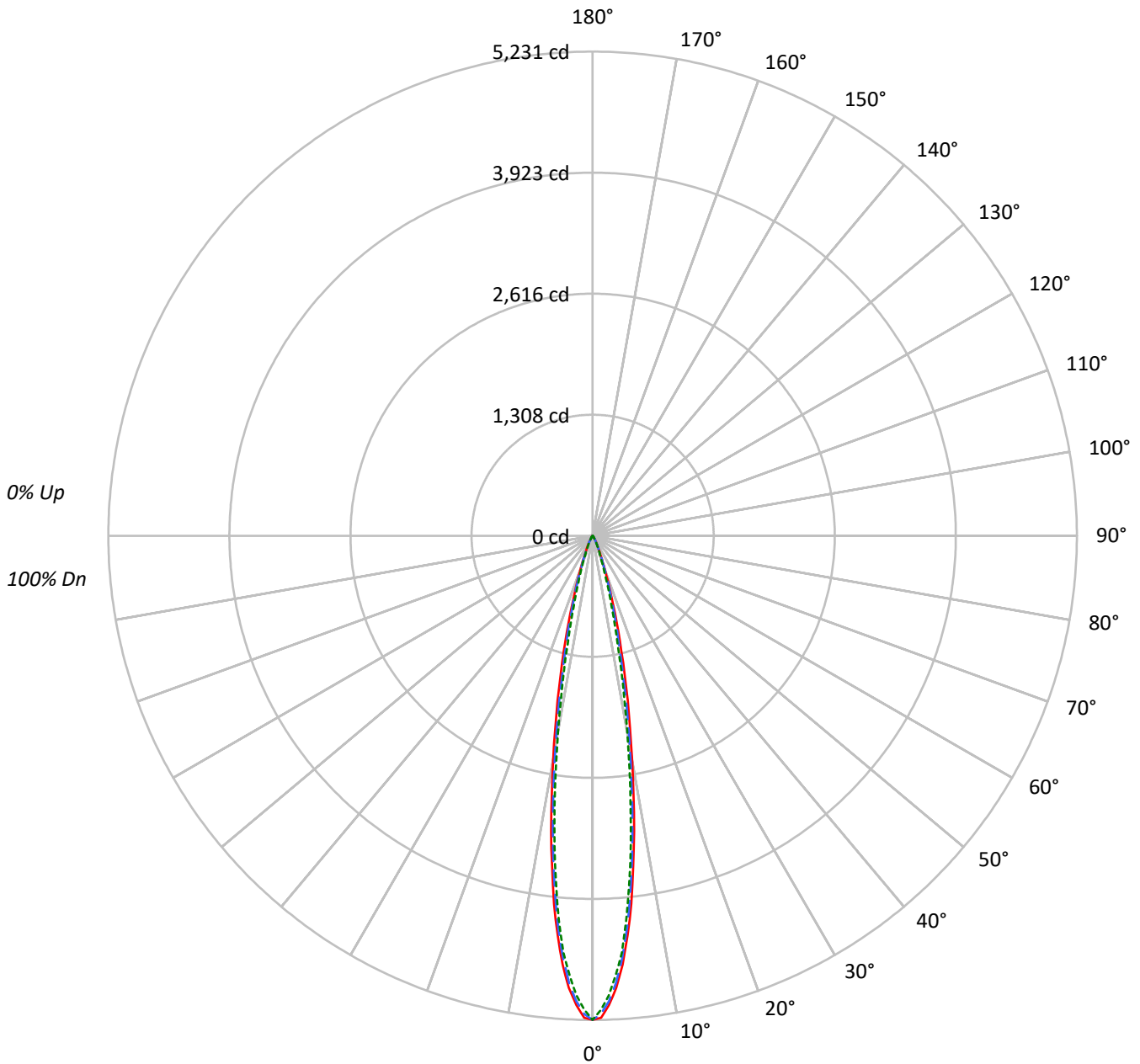
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | | | | | | | | | | | | | | | | | |
| 1 | 115 | 113 | 112 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 100 | 99 | 97 | | | | | | | | | | | | | | | | | | | |
| 2 | 112 | 109 | 106 | 104 | 110 | 107 | 105 | 103 | 104 | 102 | 100 | 101 | 100 | 98 | 99 | 97 | 96 | 95 | | | | | | | | | | | | | | | | | | | |
| 3 | 109 | 105 | 101 | 99 | 107 | 103 | 100 | 98 | 101 | 99 | 97 | 99 | 97 | 95 | 97 | 95 | 94 | 92 | | | | | | | | | | | | | | | | | | | |
| 4 | 106 | 101 | 98 | 95 | 105 | 100 | 97 | 94 | 98 | 96 | 93 | 96 | 94 | 92 | 95 | 93 | 91 | 90 | | | | | | | | | | | | | | | | | | | |
| 5 | 103 | 98 | 94 | 92 | 102 | 97 | 94 | 91 | 96 | 93 | 91 | 94 | 92 | 90 | 93 | 91 | 89 | 88 | | | | | | | | | | | | | | | | | | | |
| 6 | 101 | 95 | 92 | 89 | 100 | 95 | 91 | 89 | 93 | 90 | 88 | 92 | 90 | 88 | 91 | 89 | 87 | 86 | | | | | | | | | | | | | | | | | | | |
| 7 | 99 | 93 | 89 | 87 | 98 | 92 | 89 | 86 | 91 | 88 | 86 | 90 | 88 | 86 | 89 | 87 | 85 | 84 | | | | | | | | | | | | | | | | | | | |
| 8 | 96 | 91 | 87 | 85 | 96 | 90 | 87 | 84 | 89 | 86 | 84 | 88 | 86 | 84 | 88 | 85 | 83 | 83 | | | | | | | | | | | | | | | | | | | |
| 9 | 94 | 89 | 85 | 83 | 94 | 88 | 85 | 82 | 87 | 84 | 82 | 87 | 84 | 82 | 86 | 84 | 82 | 81 | | | | | | | | | | | | | | | | | | | |
| 10 | 93 | 87 | 83 | 81 | 92 | 86 | 83 | 81 | 86 | 83 | 81 | 85 | 82 | 80 | 85 | 82 | 80 | 79 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 2580578 | 2580578 | 2580578 |
| 5° | 2147289 | 2107917 | 2065375 |
| 10° | 1229938 | 1154141 | 1077141 |
| 15° | 547030 | 485840 | 407131 |
| 20° | 198459 | 186594 | 147847 |
| 25° | 76211 | 71148 | 61295 |
| 30° | 32871 | 30592 | 27117 |
| 35° | 15539 | 15539 | 12889 |
| 40° | 7793 | 8050 | 6505 |
| 45° | 4535 | 4256 | 3907 |
| 50° | 3070 | 2763 | 2763 |
| 55° | 2408 | 1720 | 2064 |
| 60° | 1973 | 1184 | 1579 |
| 65° | 1401 | 934 | 1401 |
| 70° | 1154 | 577 | 1154 |
| 75° | 762 | 762 | 762 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 340.2 | 48.1 |
| 10°-20° | 275.3 | 38.9 |
| 20°-30° | 66.4 | 9.4 |
| 30°-40° | 16.9 | 2.4 |
| 40°-50° | 5.0 | 0.7 |
| 50°-60° | 2.1 | 0.3 |
| 60°-70° | 1.0 | 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° | 681.9 | 96.4 |
| 0°-40° | 698.8 | 98.8 |
| 0°-60° | 706.0 | 99.8 |
| 0°-90° | 707.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 707.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5231 | 5231 | 5231 | 5231 | 5231 | |
| 5° | 4336 | 4296 | 4256 | 4219 | 4170 | 351 |
| 15° | 1071 | 1046 | 951 | 857 | 797 | 305 |
| 25° | 140 | 141 | 131 | 119 | 113 | 72 |
| 35° | 26 | 26 | 26 | 23 | 21 | 18 |
| 45° | 6 | 6 | 6 | 6 | 6 | 5 |
| 55° | 3 | 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° | 5230.6 | 5230.6 | 5230.6 | 5230.6 | 5230.6 |
| 1° | 5207.2 | 5170.8 | 5166.4 | 5189.0 | 5122.4 |
| 2° | 5074.0 | 5048.2 | 5033.3 | 5046.6 | 4971.2 |
| 3° | 4891.3 | 4866.3 | 4839.2 | 4839.7 | 4755.3 |
| 4° | 4642.4 | 4622.6 | 4577.0 | 4563.3 | 4514.5 |
| 5° | 4335.8 | 4295.9 | 4256.3 | 4219.2 | 4170.4 |
| 6° | 3996.9 | 3945.3 | 3888.8 | 3833.6 | 3783.5 |
| 7° | 3598.4 | 3564.1 | 3489.5 | 3414.0 | 3371.7 |
| 8° | 3223.6 | 3168.3 | 3081.2 | 2986.8 | 2950.9 |
| 9° | 2820.6 | 2781.1 | 2681.0 | 2571.3 | 2535.4 |
| 10° | 2455.1 | 2414.0 | 2303.8 | 2181.6 | 2150.1 |
| 11° | 2112.2 | 2073.5 | 1958.9 | 1830.7 | 1797.2 |
| 12° | 1822.2 | 1767.3 | 1635.8 | 1524.5 | 1491.8 |
| 13° | 1533.3 | 1495.8 | 1371.2 | 1261.0 | 1197.7 |
| 14° | 1287.7 | 1256.6 | 1143.7 | 1046.8 | 979.9 |
| 15° | 1071.0 | 1045.6 | 951.2 | 856.8 | 797.1 |
| 16° | 878.6 | 862.9 | 788.3 | 697.1 | 648.3 |
| 17° | 712.8 | 698.3 | 650.7 | 566.8 | 525.6 |
| 18° | 575.7 | 573.6 | 534.1 | 461.5 | 424.8 |
| 19° | 473.6 | 472.8 | 436.5 | 375.6 | 345.3 |
| 20° | 378.0 | 383.2 | 355.4 | 302.2 | 281.6 |
| 21° | 308.2 | 311.0 | 288.8 | 248.5 | 229.9 |
| 22° | 250.9 | 252.9 | 238.4 | 205.3 | 195.2 |
| 23° | 205.7 | 206.9 | 194.8 | 170.2 | 161.4 |
| 24° | 169.4 | 170.2 | 159.3 | 142.0 | 134.3 |
| 25° | 140.0 | 140.8 | 130.7 | 118.6 | 112.6 |
| 26° | 116.2 | 117.0 | 108.1 | 99.6 | 93.6 |
| 27° | 96.4 | 98.0 | 89.2 | 83.9 | 77.5 |
| 28° | 82.3 | 82.7 | 74.6 | 71.4 | 65.4 |
| 29° | 67.4 | 69.8 | 62.9 | 60.1 | 55.7 |
| 30° | 57.7 | 58.9 | 53.7 | 51.6 | 47.6 |
| 32.5° | 38.3 | 39.1 | 36.7 | 35.1 | 31.9 |
| 35° | 25.8 | 26.2 | 25.8 | 23.4 | 21.4 |
| 37.5° | 17.7 | 17.7 | 18.2 | 15.3 | 14.5 |
| 40° | 12.1 | 12.1 | 12.5 | 10.5 | 10.1 |
| 42.5° | 8.9 | 8.9 | 8.5 | 7.3 | 7.3 |
| 45° | 6.5 | 6.5 | 6.1 | 5.6 | 5.6 |
| 47.5° | 5.2 | 4.8 | 4.4 | 4.4 | 4.4 |
| 50° | 4.0 | 4.0 | 3.6 | 3.2 | 3.6 |
| 52.5° | 3.2 | 3.2 | 2.8 | 2.8 | 2.8 |
| 55° | 2.8 | 2.4 | 2.0 | 2.0 | 2.4 |
| 57.5° | 2.0 | 2.0 | 1.6 | 1.6 | 2.0 |
| 60° | 2.0 | 1.6 | 1.2 | 1.6 | 1.6 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 67.5° | 1.2 | 0.8 | 0.8 | 0.8 | 0.8 |
| 70° | 0.8 | 0.8 | 0.4 | 0.4 | 0.8 |
| 72.5° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 75° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 77.5° | 0.4 | 0.4 | 0.0 | 0.0 | 0.4 |
| 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° | 1.6 | 1.2 | 1.2 | 1.2 | 1.2 |
| 65° | 1.2 | 1.2 | 0.8 | 0.8 | 1.2 |



(END OF REPORT)