

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: P282611

Luminaire Tested: **LDA2B209727D010 EU2B20SP159727 2LBALPINSQ1MW**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P282611
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: LDA2B209727D010 EU2B20SP159727 2LBALPINSQ1MW
Description: PORTFOLIO 2IN ADJ 2000 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: 1393.3 lumens
Efficiency: N/A
Efficacy: 67.6 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

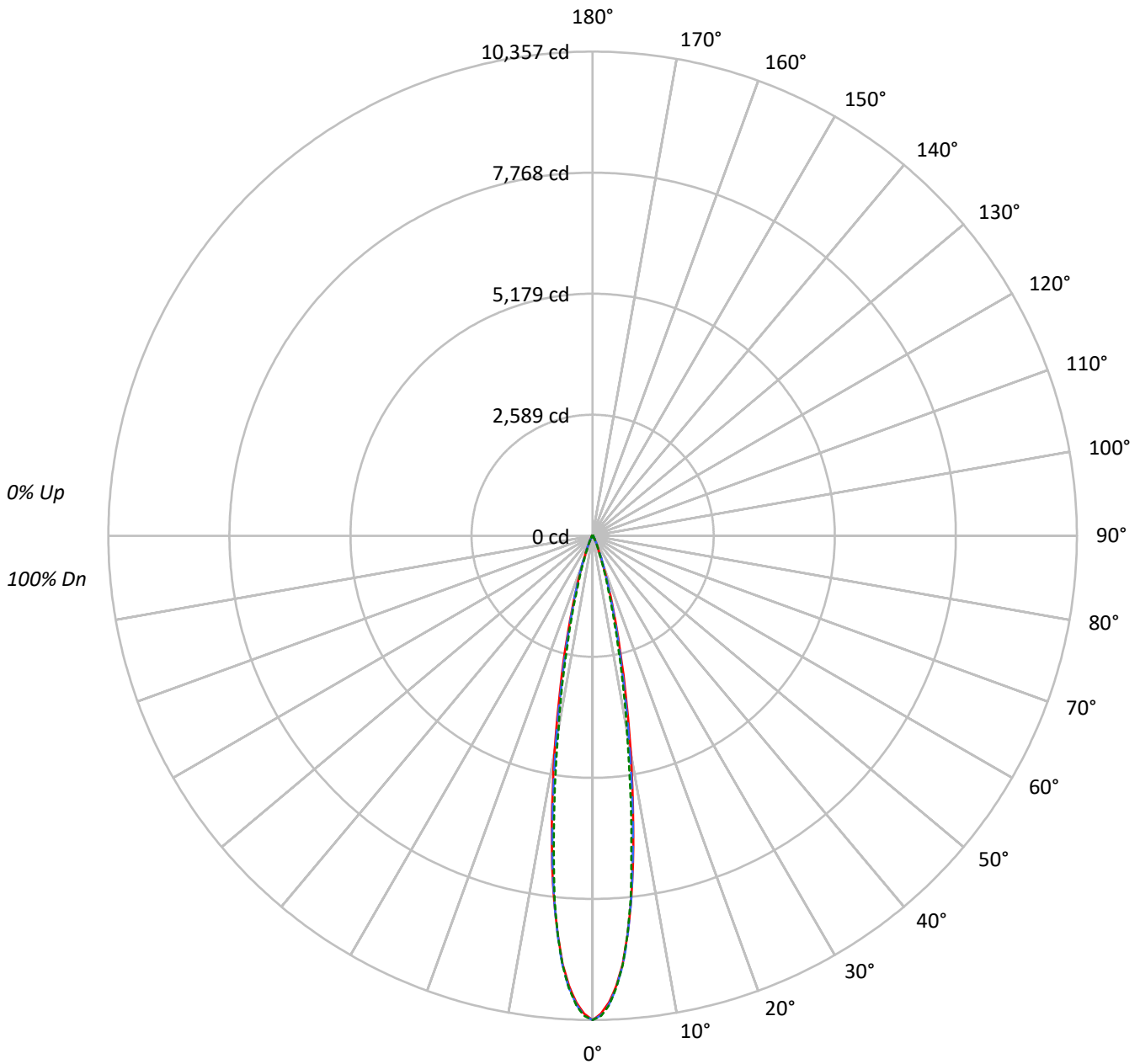
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| 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 | 98 | 96 | | | | | | | | | | | | | | | |
| 2 | 111 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 103 | 101 | 99 | 100 | 98 | 97 | 98 | 96 | 95 | 94 | 94 | 96 | 95 | 94 | | | | | | | | | | | | | | | |
| 3 | 108 | 104 | 100 | 97 | 106 | 102 | 99 | 97 | 100 | 97 | 95 | 98 | 95 | 94 | 96 | 94 | 92 | 91 | 94 | 92 | 90 | 89 | | | | | | | | | | | | | | | |
| 4 | 105 | 100 | 96 | 93 | 104 | 99 | 96 | 93 | 97 | 94 | 92 | 95 | 93 | 91 | 92 | 89 | 88 | 87 | 92 | 89 | 88 | 87 | | | | | | | | | | | | | | | |
| 5 | 102 | 97 | 93 | 90 | 101 | 96 | 93 | 90 | 95 | 91 | 89 | 93 | 90 | 88 | 92 | 89 | 88 | 87 | 90 | 88 | 86 | 85 | | | | | | | | | | | | | | | |
| 6 | 100 | 94 | 90 | 88 | 99 | 94 | 90 | 87 | 92 | 89 | 87 | 91 | 88 | 86 | 90 | 88 | 86 | 85 | 88 | 86 | 84 | 83 | | | | | | | | | | | | | | | |
| 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° | 5109847 | 5109847 | 5109847 |
| 5° | 4239111 | 4252879 | 4236783 |
| 10° | 2346205 | 2261441 | 2106690 |
| 15° | 949769 | 908397 | 806550 |
| 20° | 318217 | 337381 | 273170 |
| 25° | 121067 | 121502 | 115024 |
| 30° | 54291 | 53379 | 51613 |
| 35° | 26320 | 23429 | 18671 |
| 40° | 17389 | 22026 | 15328 |
| 45° | 4465 | 7187 | 6628 |
| 50° | 1228 | 1842 | 2456 |
| 55° | 10924 | 9548 | 15053 |
| 60° | 15689 | 12531 | 20425 |
| 65° | 7471 | 19495 | 18562 |
| 70° | 6924 | 5770 | 6924 |
| 75° | 3050 | 7625 | 21159 |
| 80° | 36083 | 49720 | 45174 |
| 85° | 0 | 22643 | 27171 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 678.3 | 48.7 |
| 10°-20° | 513.8 | 36.9 |
| 20°-30° | 116.8 | 8.4 |
| 30°-40° | 34.5 | 2.5 |
| 40°-50° | 11.5 | 0.8 |
| 50°-60° | 10.1 | 0.7 |
| 60°-70° | 12.2 | 0.9 |
| 70°-80° | 7.8 | 0.6 |
| 80°-90° | 8.1 | 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° | 1309.0 | 93.9 |
| 0°-40° | 1343.5 | 96.4 |
| 0°-60° | 1365.2 | 98.0 |
| 0°-90° | 1393.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1393.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 10357 | 10357 | 10357 | 10357 | 10357 | |
| 5° | 8560 | 8627 | 8587 | 8475 | 8555 | 686 |
| 15° | 1860 | 1885 | 1778 | 1612 | 1579 | 540 |
| 25° | 222 | 239 | 223 | 221 | 211 | 116 |
| 35° | 44 | 48 | 39 | 45 | 31 | 34 |
| 45° | 6 | 18 | 10 | 18 | 10 | 10 |
| 55° | 13 | 18 | 11 | 17 | 18 | 5 |
| 65° | 6 | 14 | 17 | 16 | 16 | 7 |
| 75° | 2 | 6 | 4 | 7 | 11 | 4 |
| 85° | 0 | 0 | 4 | 4 | 5 | 5 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CATALOG NUMBER: LDA2B209727D010 EU2B20SP159727 2LBALPINSQ1MW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 10357.2 | 10357.2 | 10357.2 | 10357.2 | 10357.2 |
| 1° | 10223.8 | 10265.1 | 10261.1 | 10244.4 | 10273.8 |
| 2° | 9988.6 | 10038.7 | 10033.9 | 9997.4 | 10049.8 |
| 3° | 9643.9 | 9688.4 | 9681.2 | 9628.8 | 9686.0 |
| 4° | 9183.2 | 9234.0 | 9214.2 | 9135.5 | 9208.6 |
| 5° | 8559.6 | 8627.2 | 8587.4 | 8475.4 | 8554.9 |
| 6° | 7868.6 | 7925.8 | 7863.0 | 7714.5 | 7792.3 |
| 7° | 7094.9 | 7130.7 | 7048.0 | 6857.4 | 6805.0 |
| 8° | 6250.5 | 6297.4 | 6182.2 | 5959.8 | 5902.6 |
| 9° | 5443.5 | 5459.4 | 5319.6 | 5082.9 | 5010.6 |
| 10° | 4683.3 | 4671.4 | 4514.1 | 4274.3 | 4205.2 |
| 11° | 3962.9 | 3947.0 | 3781.0 | 3559.4 | 3581.6 |
| 12° | 3307.6 | 3338.5 | 3145.5 | 2944.6 | 2948.5 |
| 13° | 2769.0 | 2772.2 | 2606.2 | 2414.7 | 2403.6 |
| 14° | 2267.0 | 2296.4 | 2154.2 | 1982.6 | 1950.9 |
| 15° | 1859.5 | 1884.9 | 1778.5 | 1611.7 | 1579.1 |
| 16° | 1488.6 | 1520.3 | 1444.1 | 1293.2 | 1250.3 |
| 17° | 1198.6 | 1239.1 | 1189.1 | 1062.8 | 1013.6 |
| 18° | 958.7 | 989.7 | 977.8 | 847.5 | 807.0 |
| 19° | 757.0 | 799.9 | 803.1 | 694.2 | 645.8 |
| 20° | 606.1 | 645.0 | 642.6 | 558.4 | 520.3 |
| 22.5° | 347.9 | 368.6 | 369.4 | 329.6 | 307.4 |
| 25° | 222.4 | 239.1 | 223.2 | 220.8 | 211.3 |
| 26° | 193.0 | 206.5 | 189.0 | 189.0 | 180.3 |
| 27° | 156.5 | 168.4 | 151.7 | 158.9 | 147.0 |
| 28° | 131.9 | 144.6 | 130.3 | 128.7 | 127.1 |
| 29° | 109.6 | 121.5 | 103.3 | 111.2 | 106.4 |
| 30° | 95.3 | 104.1 | 93.7 | 105.6 | 90.6 |
| 32.5° | 73.9 | 81.0 | 62.8 | 79.4 | 59.6 |
| 35° | 43.7 | 48.5 | 38.9 | 45.3 | 31.0 |
| 37.5° | 45.3 | 46.9 | 42.1 | 46.9 | 43.7 |
| 40° | 27.0 | 27.8 | 34.2 | 34.2 | 23.8 |
| 42.5° | 25.4 | 24.6 | 15.1 | 23.8 | 19.1 |
| 45° | 6.4 | 18.3 | 10.3 | 18.3 | 9.5 |
| 47.5° | 4.8 | 6.4 | 6.4 | 12.7 | 12.7 |
| 50° | 1.6 | 6.4 | 2.4 | 4.8 | 3.2 |
| 52.5° | 0.0 | 15.1 | 3.2 | 11.1 | 9.5 |
| 55° | 12.7 | 18.3 | 11.1 | 16.7 | 17.5 |
| 57.5° | 1.6 | 12.7 | 6.4 | 13.5 | 9.5 |
| 60° | 15.9 | 21.4 | 12.7 | 23.0 | 20.7 |
| 62.5° | 1.6 | 14.3 | 16.7 | 12.7 | 11.1 |
| 65° | 6.4 | 13.5 | 16.7 | 15.9 | 15.9 |
| 67.5° | 7.9 | 13.5 | 10.3 | 10.3 | 14.3 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|------|-------|------|-------|------|
| 75° | 1.6 | 5.6 | 4.0 | 7.1 | 11.1 |
| 77.5° | 1.6 | 6.4 | 5.6 | 12.7 | 9.5 |
| 80° | 12.7 | 14.3 | 17.5 | 23.0 | 15.9 |
| 82.5° | 11.1 | 11.1 | 17.5 | 12.7 | 9.5 |
| 85° | 0.0 | 0.0 | 4.0 | 4.0 | 4.8 |
| 87.5° | 0.0 | 3.2 | 7.9 | 6.4 | 11.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 70° | 4.8 | 1.6 | 4.0 | 4.0 | 4.8 |
| 72.5° | 1.6 | 7.1 | 6.4 | 4.0 | 7.9 |



(END OF REPORT)