

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: **LDA2B209727D010 EU2B20SP159727 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: LDA2B209727D010 EU2B20SP159727 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: 1393.2 lumens
Efficiency: N/A
Efficacy: 67.6 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

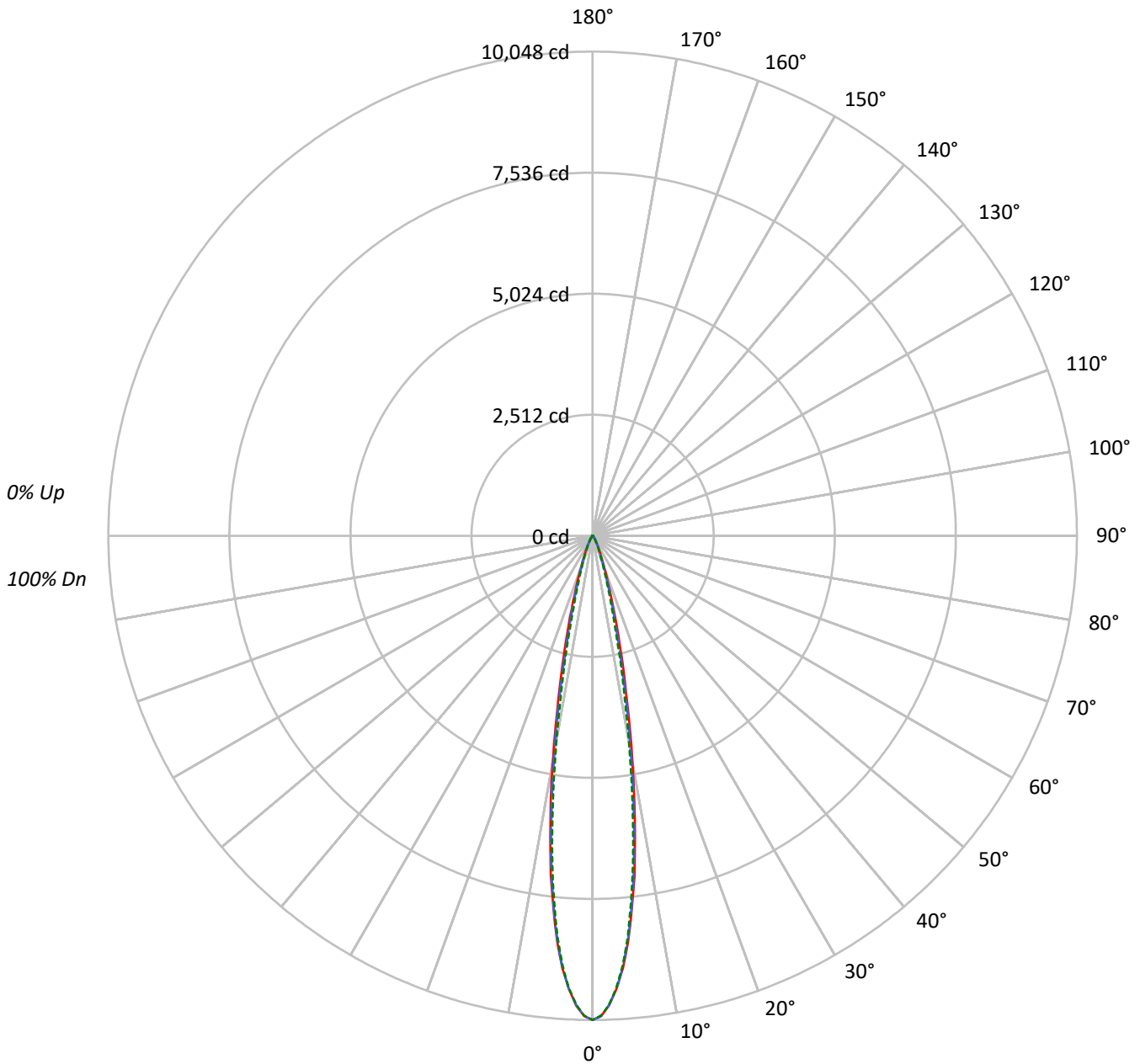
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| 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 | 111 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 99 | 99 | 97 | | | | | | | | | | | | | | | | | | | |
| 2 | 112 | 108 | 106 | 103 | 110 | 107 | 104 | 102 | 104 | 102 | 100 | 101 | 99 | 98 | 98 | 97 | 96 | 95 | | | | | | | | | | | | | | | | | | | |
| 3 | 109 | 104 | 101 | 98 | 107 | 103 | 100 | 98 | 101 | 98 | 96 | 98 | 96 | 95 | 96 | 95 | 93 | 92 | | | | | | | | | | | | | | | | | | | |
| 4 | 106 | 101 | 97 | 95 | 104 | 100 | 97 | 94 | 98 | 95 | 93 | 96 | 94 | 92 | 94 | 93 | 91 | 90 | | | | | | | | | | | | | | | | | | | |
| 5 | 103 | 98 | 94 | 91 | 102 | 97 | 93 | 91 | 95 | 92 | 90 | 94 | 91 | 89 | 93 | 90 | 89 | 88 | | | | | | | | | | | | | | | | | | | |
| 6 | 101 | 95 | 91 | 89 | 99 | 94 | 91 | 88 | 93 | 90 | 88 | 92 | 89 | 87 | 91 | 88 | 87 | 86 | | | | | | | | | | | | | | | | | | | |
| 7 | 98 | 92 | 89 | 86 | 97 | 92 | 88 | 86 | 91 | 88 | 85 | 90 | 87 | 85 | 89 | 87 | 85 | 84 | | | | | | | | | | | | | | | | | | | |
| 8 | 96 | 90 | 86 | 84 | 95 | 90 | 86 | 84 | 89 | 86 | 83 | 88 | 85 | 83 | 87 | 85 | 83 | 82 | | | | | | | | | | | | | | | | | | | |
| 9 | 94 | 88 | 84 | 82 | 93 | 88 | 84 | 82 | 87 | 84 | 82 | 86 | 83 | 81 | 86 | 83 | 81 | 80 | | | | | | | | | | | | | | | | | | | |
| 10 | 92 | 86 | 83 | 80 | 91 | 86 | 82 | 80 | 85 | 82 | 80 | 85 | 82 | 80 | 84 | 81 | 80 | 79 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 4957299 | 4957299 | 4957299 |
| 5° | 4188447 | 4166111 | 4135357 |
| 10° | 2384029 | 2279075 | 2163150 |
| 15° | 987259 | 874482 | 770337 |
| 20° | 375550 | 328875 | 301102 |
| 25° | 165868 | 159390 | 141698 |
| 30° | 76737 | 84769 | 67508 |
| 35° | 40353 | 47580 | 37823 |
| 40° | 17711 | 20416 | 11786 |
| 45° | 6907 | 5442 | 7884 |
| 50° | 3224 | 3761 | 5449 |
| 55° | 0 | 2408 | 0 |
| 60° | 0 | 0 | 1381 |
| 65° | 0 | 0 | 0 |
| 70° | 0 | 1010 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 3978 | 0 | 0 |
| 85° | 40191 | 35662 | 15850 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 671.8 | 48.2 |
| 10°-20° | 513.6 | 36.9 |
| 20°-30° | 142.8 | 10.3 |
| 30°-40° | 46.4 | 3.3 |
| 40°-50° | 10.2 | 0.7 |
| 50°-60° | 3.1 | 0.2 |
| 60°-70° | 1.8 | 0.1 |
| 70°-80° | 1.1 | 0.1 |
| 80°-90° | 2.2 | 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° | 1328.3 | 95.3 |
| 0°-40° | 1374.7 | 98.7 |
| 0°-60° | 1388.1 | 99.6 |
| 0°-90° | 1393.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1393.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 10048 | 10048 | 10048 | 10048 | 10048 | |
| 5° | 8457 | 8395 | 8412 | 8349 | 8350 | 684 |
| 15° | 1933 | 1866 | 1712 | 1580 | 1508 | 564 |
| 25° | 305 | 308 | 293 | 276 | 260 | 153 |
| 35° | 67 | 73 | 79 | 60 | 63 | 44 |
| 45° | 10 | 14 | 8 | 8 | 11 | 10 |
| 55° | 0 | 4 | 3 | 1 | 0 | 3 |
| 65° | 0 | 3 | 0 | 0 | 0 | 2 |
| 75° | 0 | 0 | 0 | 1 | 0 | 1 |
| 85° | 7 | 4 | 6 | 4 | 3 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 10048.0 | 10048.0 | 10048.0 | 10048.0 | 10048.0 |
| 1° | 9971.1 | 9933.8 | 9969.7 | 9948.6 | 9960.6 |
| 2° | 9754.6 | 9708.0 | 9745.4 | 9715.8 | 9740.5 |
| 3° | 9417.4 | 9381.4 | 9414.6 | 9377.2 | 9396.9 |
| 4° | 8994.8 | 8942.6 | 8975.8 | 8925.7 | 8937.7 |
| 5° | 8457.3 | 8395.2 | 8412.2 | 8349.4 | 8350.1 |
| 6° | 7780.1 | 7737.1 | 7746.9 | 7648.9 | 7641.8 |
| 7° | 7117.7 | 7016.1 | 7005.5 | 6893.4 | 6871.5 |
| 8° | 6313.5 | 6221.1 | 6190.8 | 6058.9 | 6012.3 |
| 9° | 5542.5 | 5427.5 | 5365.4 | 5212.4 | 5158.0 |
| 10° | 4758.8 | 4642.4 | 4549.3 | 4376.4 | 4317.9 |
| 11° | 4033.6 | 3928.5 | 3812.8 | 3628.0 | 3570.8 |
| 12° | 3360.6 | 3278.1 | 3151.1 | 2972.6 | 2912.7 |
| 13° | 2811.1 | 2715.9 | 2579.7 | 2414.0 | 2362.5 |
| 14° | 2334.9 | 2232.7 | 2096.5 | 1954.7 | 1854.6 |
| 15° | 1932.9 | 1865.8 | 1712.1 | 1580.1 | 1508.2 |
| 16° | 1579.4 | 1522.3 | 1389.7 | 1275.4 | 1224.6 |
| 17° | 1295.2 | 1249.3 | 1136.4 | 1046.8 | 1004.5 |
| 18° | 1068.7 | 1011.6 | 922.7 | 864.1 | 831.0 |
| 19° | 867.0 | 822.5 | 757.6 | 712.5 | 679.3 |
| 20° | 715.3 | 678.6 | 626.4 | 586.2 | 573.5 |
| 22.5° | 462.1 | 455.7 | 421.8 | 400.0 | 389.4 |
| 25° | 304.7 | 308.3 | 292.8 | 275.8 | 260.3 |
| 26° | 260.3 | 262.4 | 248.3 | 238.4 | 218.7 |
| 27° | 222.9 | 223.6 | 223.6 | 205.3 | 186.2 |
| 28° | 182.0 | 189.8 | 182.7 | 174.2 | 155.9 |
| 29° | 155.9 | 165.8 | 162.2 | 153.8 | 136.1 |
| 30° | 134.7 | 141.8 | 148.8 | 135.4 | 118.5 |
| 32.5° | 94.5 | 100.9 | 108.6 | 101.6 | 87.5 |
| 35° | 67.0 | 72.7 | 79.0 | 60.0 | 62.8 |
| 37.5° | 45.9 | 55.7 | 53.6 | 48.7 | 41.6 |
| 40° | 27.5 | 28.9 | 31.7 | 33.9 | 18.3 |
| 42.5° | 19.8 | 23.3 | 21.2 | 24.0 | 8.5 |
| 45° | 9.9 | 14.1 | 7.8 | 7.8 | 11.3 |
| 47.5° | 7.1 | 12.0 | 4.2 | 4.2 | 1.4 |
| 50° | 4.2 | 9.2 | 4.9 | 2.1 | 7.1 |
| 52.5° | 7.1 | 8.5 | 5.6 | 6.3 | 1.4 |
| 55° | 0.0 | 4.2 | 2.8 | 1.4 | 0.0 |
| 57.5° | 2.8 | 4.9 | 2.8 | 1.4 | 2.8 |
| 60° | 0.0 | 0.0 | 0.0 | 0.7 | 1.4 |
| 62.5° | 0.0 | 1.4 | 0.0 | 2.1 | 2.8 |
| 65° | 0.0 | 2.8 | 0.0 | 0.0 | 0.0 |
| 67.5° | 4.2 | 4.9 | 2.8 | 5.6 | 8.5 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75° | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 |
| 77.5° | 0.0 | 7.1 | 2.1 | 2.1 | 2.8 |
| 80° | 1.4 | 0.0 | 0.0 | 0.7 | 0.0 |
| 82.5° | 0.0 | 5.6 | 0.7 | 2.8 | 4.2 |
| 85° | 7.1 | 3.5 | 6.3 | 3.5 | 2.8 |
| 87.5° | 0.0 | 0.7 | 1.4 | 0.7 | 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 | 0.7 | 0.7 | 0.0 |
| 72.5° | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)