

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: P281738

Luminaire Tested: **LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P281738
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-10)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in Adj SQ PinHole, MMS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1964.9 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 0.3 / 0.3 / 0.29
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

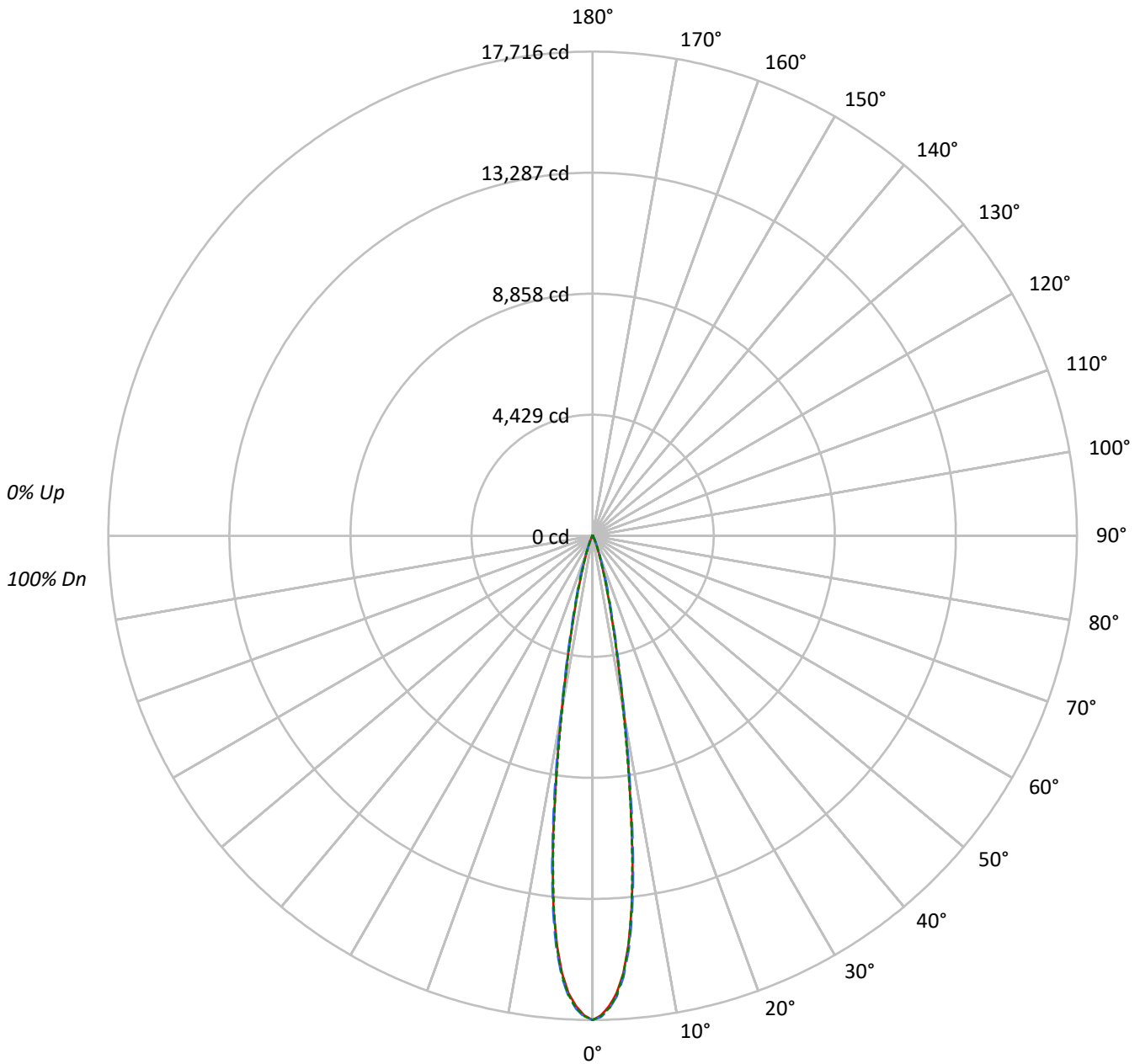
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P281738

CATALOG NUMBER: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS

Luminous Intensity Polar Plot





TEST NUMBER: P281738

CATALOG NUMBER: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS

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 | 116 | 114 | 112 | 111 | 113 | 112 | 110 | 109 | 108 | 107 | 106 | 104 | 103 | 103 | 101 | 100 | 100 | 98 | | | | | | | | | | | | | | | | | | | |
| 2 | 113 | 110 | 107 | 105 | 111 | 108 | 106 | 104 | 105 | 103 | 102 | 102 | 101 | 99 | 99 | 98 | 97 | 96 | | | | | | | | | | | | | | | | | | | |
| 3 | 110 | 106 | 103 | 101 | 108 | 105 | 102 | 100 | 102 | 100 | 98 | 100 | 98 | 97 | 98 | 97 | 95 | 94 | | | | | | | | | | | | | | | | | | | |
| 4 | 107 | 103 | 100 | 97 | 106 | 102 | 99 | 97 | 100 | 98 | 96 | 98 | 96 | 95 | 97 | 95 | 94 | 93 | | | | | | | | | | | | | | | | | | | |
| 5 | 105 | 100 | 97 | 95 | 104 | 100 | 96 | 94 | 98 | 95 | 93 | 97 | 94 | 93 | 95 | 93 | 92 | 91 | | | | | | | | | | | | | | | | | | | |
| 6 | 103 | 98 | 95 | 92 | 102 | 97 | 94 | 92 | 96 | 93 | 91 | 95 | 93 | 91 | 94 | 92 | 90 | 89 | | | | | | | | | | | | | | | | | | | |
| 7 | 101 | 96 | 93 | 90 | 100 | 95 | 92 | 90 | 94 | 92 | 90 | 93 | 91 | 89 | 93 | 90 | 89 | 88 | | | | | | | | | | | | | | | | | | | |
| 8 | 99 | 94 | 91 | 89 | 98 | 94 | 91 | 88 | 93 | 90 | 88 | 92 | 90 | 88 | 91 | 89 | 88 | 87 | | | | | | | | | | | | | | | | | | | |
| 9 | 98 | 92 | 89 | 87 | 97 | 92 | 89 | 87 | 91 | 89 | 87 | 91 | 88 | 86 | 90 | 88 | 86 | 85 | | | | | | | | | | | | | | | | | | | |
| 10 | 96 | 91 | 88 | 86 | 95 | 90 | 88 | 86 | 90 | 87 | 85 | 89 | 87 | 85 | 89 | 87 | 85 | 84 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 8740447 | 8740447 | 8740447 |
| 5° | 7442760 | 7520266 | 7456825 |
| 10° | 3285880 | 3361026 | 3209081 |
| 15° | 997015 | 1143553 | 1012695 |
| 20° | 298319 | 397759 | 333391 |
| 25° | 116222 | 114425 | 122155 |
| 30° | 51784 | 46771 | 49278 |
| 35° | 10540 | 9215 | 9215 |
| 40° | 0 | 708 | 2834 |
| 45° | 9140 | 7605 | 13745 |
| 50° | 0 | 2533 | 8366 |
| 55° | 0 | 0 | 3785 |
| 60° | 0 | 1085 | 4342 |
| 65° | 0 | 0 | 2568 |
| 70° | 0 | 6347 | 12694 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 6227 | 24907 |



TEST NUMBER: P281738

CATALOG NUMBER: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 1148.4 | 58.4 |
| 10°-20° | 655.9 | 33.4 |
| 20°-30° | 124.5 | 6.3 |
| 30°-40° | 22.6 | 1.2 |
| 40°-50° | 5.8 | 0.3 |
| 50°-60° | 4.4 | 0.2 |
| 60°-70° | 0.7 | 0.0 |
| 70°-80° | 1.0 | 0.1 |
| 80°-90° | 1.4 | 0.1 |
| 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° | 1928.9 | 98.2 |
| 0°-40° | 1951.5 | 99.3 |
| 0°-60° | 1961.8 | 99.8 |
| 0°-90° | 1964.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1964.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 17716 | 17716 | 17716 | 17716 | 17716 | |
| 5° | 15028 | 15127 | 15185 | 15159 | 15057 | 1141 |
| 15° | 1952 | 2123 | 2239 | 2103 | 1983 | 621 |
| 25° | 214 | 230 | 210 | 240 | 224 | 112 |
| 35° | 18 | 22 | 15 | 19 | 15 | 24 |
| 45° | 13 | 21 | 11 | 12 | 20 | 6 |
| 55° | 0 | 1 | 0 | 1 | 4 | 1 |
| 65° | 0 | 0 | 0 | 0 | 2 | 0 |
| 75° | 0 | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 1 | 1 | 1 | 4 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P281738

CATALOG NUMBER: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 17716.1 | 17716.1 | 17716.1 | 17716.1 | 17716.1 |
| 1° | 17548.6 | 17567.2 | 17606.6 | 17647.2 | 17583.7 |
| 2° | 17220.2 | 17265.1 | 17320.9 | 17358.1 | 17289.2 |
| 3° | 16760.4 | 16822.8 | 16881.9 | 16889.5 | 16825.0 |
| 4° | 16049.8 | 16126.5 | 16188.9 | 16181.2 | 16100.2 |
| 5° | 15028.4 | 15126.9 | 15184.9 | 15158.7 | 15056.8 |
| 6° | 13678.5 | 13773.7 | 13848.2 | 13772.6 | 13635.8 |
| 7° | 11996.9 | 12106.3 | 12185.2 | 12056.0 | 11888.5 |
| 8° | 10048.1 | 10201.4 | 10280.2 | 10099.6 | 9927.7 |
| 9° | 8202.3 | 8308.5 | 8388.4 | 8191.3 | 8016.2 |
| 10° | 6559.0 | 6753.8 | 6709.0 | 6556.8 | 6405.7 |
| 11° | 5158.7 | 5335.0 | 5342.6 | 5239.7 | 5091.9 |
| 12° | 4038.7 | 4224.9 | 4271.9 | 4193.1 | 4061.7 |
| 13° | 3191.4 | 3330.4 | 3408.1 | 3327.1 | 3202.3 |
| 14° | 2539.9 | 2663.7 | 2763.3 | 2658.2 | 2533.4 |
| 15° | 1952.0 | 2122.8 | 2238.9 | 2103.1 | 1982.7 |
| 16° | 1552.4 | 1693.7 | 1831.6 | 1677.2 | 1580.9 |
| 17° | 1192.2 | 1318.1 | 1460.5 | 1320.3 | 1241.5 |
| 18° | 943.7 | 1043.3 | 1199.9 | 1055.4 | 986.4 |
| 19° | 739.0 | 814.5 | 960.1 | 833.1 | 777.3 |
| 20° | 568.2 | 651.4 | 757.6 | 671.1 | 635.0 |
| 22.5° | 343.8 | 389.8 | 420.4 | 394.1 | 375.5 |
| 25° | 213.5 | 229.9 | 210.2 | 239.8 | 224.4 |
| 26° | 186.1 | 198.2 | 193.8 | 213.5 | 194.9 |
| 27° | 148.9 | 164.2 | 152.2 | 167.5 | 162.0 |
| 28° | 135.8 | 154.4 | 130.3 | 148.9 | 140.1 |
| 29° | 95.2 | 102.9 | 93.1 | 99.6 | 99.6 |
| 30° | 90.9 | 93.1 | 82.1 | 89.8 | 86.5 |
| 32.5° | 71.2 | 66.8 | 54.7 | 58.0 | 55.8 |
| 35° | 17.5 | 21.9 | 15.3 | 18.6 | 15.3 |
| 37.5° | 26.3 | 24.1 | 28.5 | 27.4 | 26.3 |
| 40° | 0.0 | 1.1 | 1.1 | 1.1 | 4.4 |
| 42.5° | 19.7 | 12.0 | 10.9 | 7.7 | 13.1 |
| 45° | 13.1 | 20.8 | 10.9 | 12.0 | 19.7 |
| 47.5° | 0.0 | 1.1 | 0.0 | 2.2 | 2.2 |
| 50° | 0.0 | 2.2 | 3.3 | 4.4 | 10.9 |
| 52.5° | 2.2 | 13.1 | 6.6 | 12.0 | 17.5 |
| 55° | 0.0 | 1.1 | 0.0 | 1.1 | 4.4 |
| 57.5° | 4.4 | 2.2 | 4.4 | 4.4 | 19.7 |
| 60° | 0.0 | 2.2 | 1.1 | 1.1 | 4.4 |
| 62.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 |
| 67.5° | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P281738

CATALOG NUMBER: LDA2B208027D010 EU2B20SP158027 2LBAPINSQ1MMS

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 |
| 80° | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 1.1 | 2.2 | 3.3 | 2.2 |
| 85° | 0.0 | 1.1 | 1.1 | 1.1 | 4.4 |
| 87.5° | 0.0 | 2.2 | 3.3 | 0.0 | 2.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



Report Generated By E9808895 / USPTCWHP6082093





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







| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 70° | 0.0 | 3.3 | 4.4 | 0.0 | 8.8 |
| 72.5° | 0.0 | 5.5 | 1.1 | 1.1 | 0.0 |



(END OF REPORT)