

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: P281381

Luminaire Tested: **LDA2B209027D010 EU2B20SP159027 2LBALD1B**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P281381
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: LDA2B209027D010 EU2B20SP159027 2LBALD1B
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in
ADJ spun Refl w/lens Self-Flanged, B
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1548.4 lumens
Efficiency: N/A
Efficacy: 75.2 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

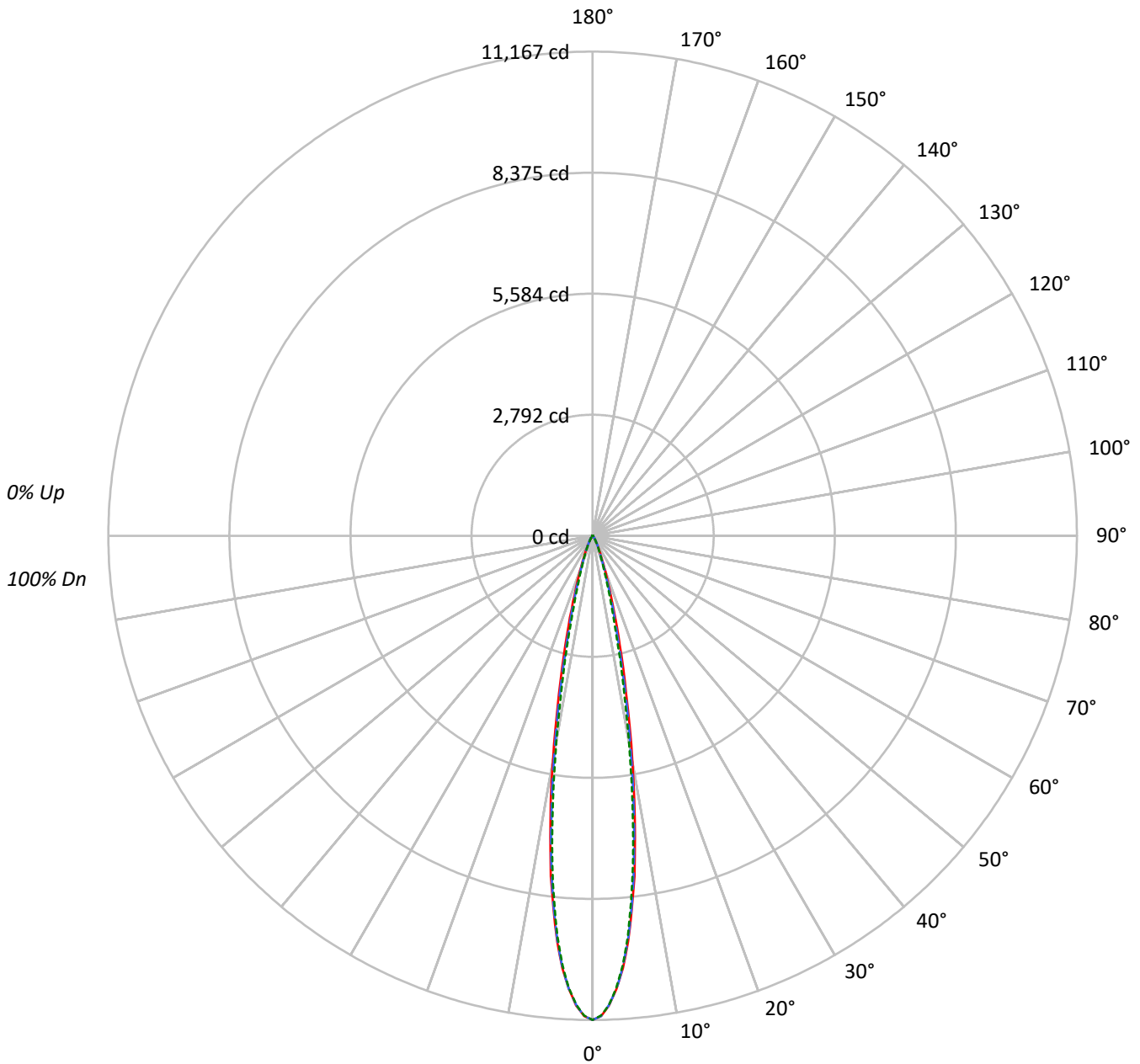
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 5509519 | 5509519 | 5509519 |
| 5° | 4654969 | 4630157 | 4595985 |
| 10° | 2649544 | 2532918 | 2404068 |
| 15° | 1097227 | 971885 | 856145 |
| 20° | 417395 | 365522 | 334651 |
| 25° | 184376 | 177136 | 157485 |
| 30° | 85282 | 94226 | 75028 |
| 35° | 44870 | 52880 | 42039 |
| 40° | 19708 | 22735 | 13138 |
| 45° | 7675 | 6000 | 8721 |
| 50° | 3607 | 4221 | 5987 |
| 55° | 0 | 2666 | 0 |
| 60° | 0 | 0 | 1579 |
| 65° | 0 | 0 | 0 |
| 70° | 0 | 1154 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 4546 | 0 | 0 |
| 85° | 44153 | 40191 | 17548 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 746.7 | 48.2 |
| 10°-20° | 570.8 | 36.9 |
| 20°-30° | 158.7 | 10.3 |
| 30°-40° | 51.6 | 3.3 |
| 40°-50° | 11.4 | 0.7 |
| 50°-60° | 3.5 | 0.2 |
| 60°-70° | 2.0 | 0.1 |
| 70°-80° | 1.2 | 0.1 |
| 80°-90° | 2.5 | 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° | 1476.2 | 95.3 |
| 0°-40° | 1527.8 | 98.7 |
| 0°-60° | 1542.7 | 99.6 |
| 0°-90° | 1548.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1548.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 11167 | 11167 | 11167 | 11167 | 11167 | |
| 5° | 9399 | 9330 | 9349 | 9279 | 9280 | 760 |
| 15° | 2148 | 2074 | 1903 | 1756 | 1676 | 627 |
| 25° | 339 | 343 | 325 | 306 | 289 | 170 |
| 35° | 74 | 81 | 88 | 67 | 70 | 49 |
| 45° | 11 | 16 | 9 | 9 | 12 | 11 |
| 55° | 0 | 5 | 3 | 2 | 0 | 3 |
| 65° | 0 | 3 | 0 | 0 | 0 | 2 |
| 75° | 0 | 0 | 0 | 2 | 0 | 1 |
| 85° | 8 | 4 | 7 | 4 | 3 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P281381

CATALOG NUMBER: LDA2B209027D010 EU2B20SP159027 2LBALD1B

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 11167.3 | 11167.3 | 11167.3 | 11167.3 | 11167.3 |
| 1° | 11081.8 | 11040.3 | 11080.2 | 11056.7 | 11070.0 |
| 2° | 10841.1 | 10789.4 | 10830.9 | 10798.0 | 10825.4 |
| 3° | 10466.4 | 10426.4 | 10463.2 | 10421.7 | 10443.6 |
| 4° | 9996.8 | 9938.7 | 9975.6 | 9919.9 | 9933.2 |
| 5° | 9399.3 | 9330.4 | 9349.2 | 9279.4 | 9280.2 |
| 6° | 8646.7 | 8598.9 | 8609.9 | 8500.9 | 8493.0 |
| 7° | 7910.5 | 7797.6 | 7785.9 | 7661.2 | 7636.9 |
| 8° | 7016.8 | 6914.1 | 6880.4 | 6733.8 | 6682.0 |
| 9° | 6159.9 | 6032.1 | 5963.1 | 5793.0 | 5732.6 |
| 10° | 5288.8 | 5159.5 | 5056.0 | 4863.9 | 4798.8 |
| 11° | 4482.9 | 4366.1 | 4237.5 | 4032.1 | 3968.6 |
| 12° | 3735.0 | 3643.2 | 3502.1 | 3303.8 | 3237.1 |
| 13° | 3124.2 | 3018.4 | 2867.1 | 2682.8 | 2625.6 |
| 14° | 2595.0 | 2481.4 | 2330.0 | 2172.5 | 2061.1 |
| 15° | 2148.2 | 2073.7 | 1902.8 | 1756.2 | 1676.2 |
| 16° | 1755.4 | 1691.9 | 1544.5 | 1417.5 | 1361.0 |
| 17° | 1439.4 | 1388.5 | 1263.0 | 1163.5 | 1116.4 |
| 18° | 1187.8 | 1124.3 | 1025.5 | 960.4 | 923.5 |
| 19° | 963.5 | 914.1 | 842.0 | 791.8 | 755.0 |
| 20° | 795.0 | 754.2 | 696.2 | 651.5 | 637.4 |
| 22.5° | 513.5 | 506.5 | 468.8 | 444.5 | 432.8 |
| 25° | 338.7 | 342.6 | 325.4 | 306.5 | 289.3 |
| 26° | 289.3 | 291.6 | 276.0 | 265.0 | 243.0 |
| 27° | 247.7 | 248.5 | 248.5 | 228.1 | 207.0 |
| 28° | 202.3 | 210.9 | 203.1 | 193.6 | 173.3 |
| 29° | 173.3 | 184.2 | 180.3 | 170.9 | 151.3 |
| 30° | 149.7 | 157.6 | 165.4 | 150.5 | 131.7 |
| 32.5° | 105.1 | 112.1 | 120.7 | 112.9 | 97.2 |
| 35° | 74.5 | 80.8 | 87.8 | 66.6 | 69.8 |
| 37.5° | 51.0 | 61.9 | 59.6 | 54.1 | 46.3 |
| 40° | 30.6 | 32.1 | 35.3 | 37.6 | 20.4 |
| 42.5° | 22.0 | 25.9 | 23.5 | 26.7 | 9.4 |
| 45° | 11.0 | 15.7 | 8.6 | 8.6 | 12.5 |
| 47.5° | 7.8 | 13.3 | 4.7 | 4.7 | 1.6 |
| 50° | 4.7 | 10.2 | 5.5 | 2.4 | 7.8 |
| 52.5° | 7.8 | 9.4 | 6.3 | 7.1 | 1.6 |
| 55° | 0.0 | 4.7 | 3.1 | 1.6 | 0.0 |
| 57.5° | 3.1 | 5.5 | 3.1 | 1.6 | 3.1 |
| 60° | 0.0 | 0.0 | 0.0 | 0.8 | 1.6 |
| 62.5° | 0.0 | 1.6 | 0.0 | 2.4 | 3.1 |
| 65° | 0.0 | 3.1 | 0.0 | 0.0 | 0.0 |
| 67.5° | 4.7 | 5.5 | 3.1 | 6.3 | 9.4 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75° | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 |
| 77.5° | 0.0 | 7.8 | 2.4 | 2.4 | 3.1 |
| 80° | 1.6 | 0.0 | 0.0 | 0.8 | 0.0 |
| 82.5° | 0.0 | 6.3 | 0.8 | 3.1 | 4.7 |
| 85° | 7.8 | 3.9 | 7.1 | 3.9 | 3.1 |
| 87.5° | 0.0 | 0.8 | 1.6 | 0.8 | 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 | 0.8 | 0.8 | 0.0 |
| 72.5° | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)