

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: P281403

Luminaire Tested: **LDA2B209040D010 EU2B20SP159040 2LBALD1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P281403  
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: LDA2B209040D010 EU2B20SP159040 2LBALD1H  
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH SPOT OPTIC AND 2in  
ADJ spun Refl w/lens Self-Flanged, LI  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1712.8 lumens  
Efficiency: N/A  
Efficacy: 83.1 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

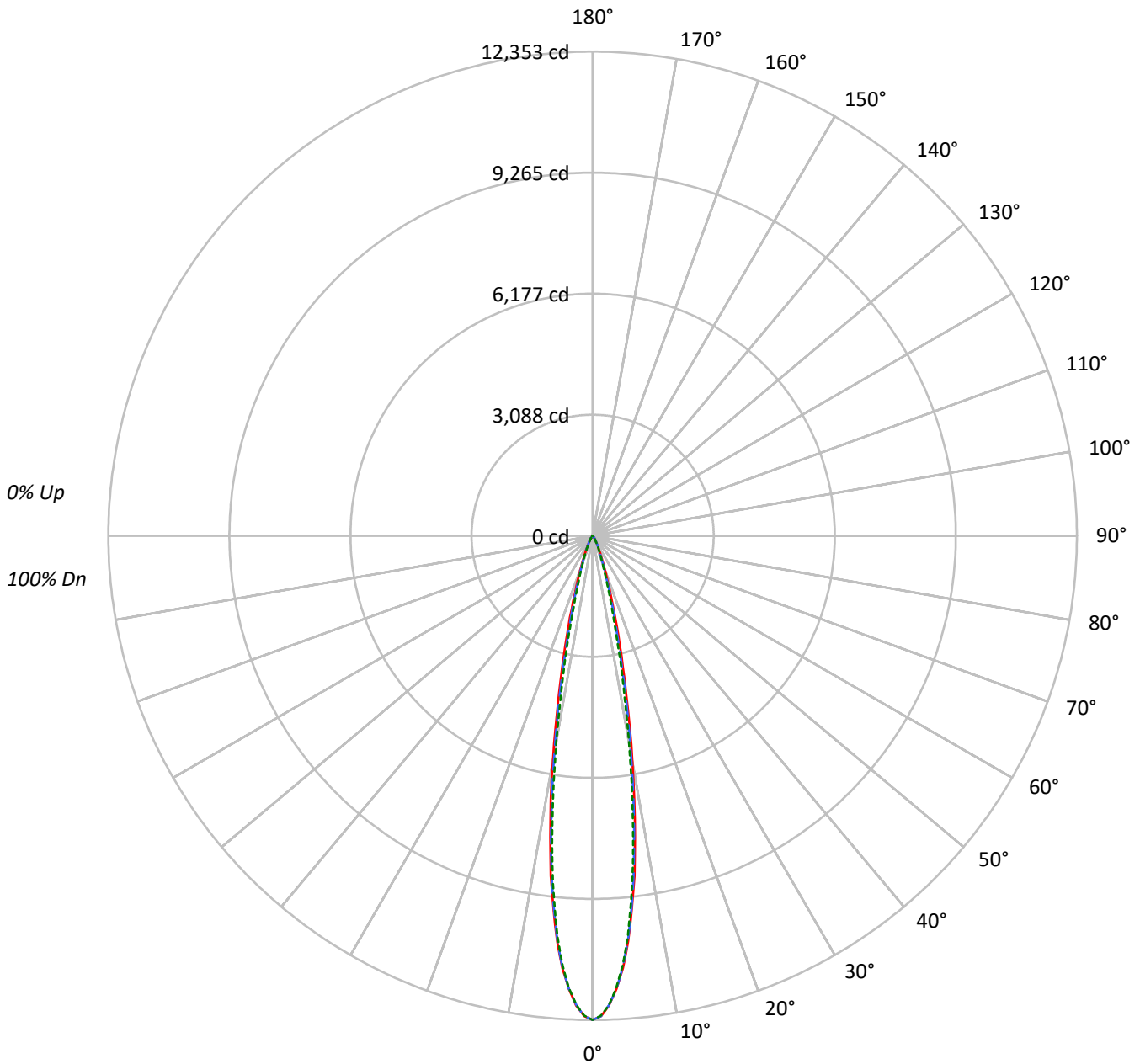
Input Watts (W): 20.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 88  | 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°  | 6094301 | 6094301 | 6094301 |
| 5°  | 5149076 | 5121590 | 5083803 |
| 10° | 2930790 | 2801740 | 2659263 |
| 15° | 1213681 | 1075009 | 947011  |
| 20° | 461707  | 404321  | 370142  |
| 25° | 203919  | 195917  | 174197  |
| 30° | 94340   | 104252  | 83003   |
| 35° | 49628   | 58482   | 46496   |
| 40° | 21768   | 25117   | 14491   |
| 45° | 8442    | 6628    | 9698    |
| 50° | 3991    | 4682    | 6678    |
| 55° | 0       | 3011    | 0       |
| 60° | 0       | 0       | 1677    |
| 65° | 0       | 0       | 0       |
| 70° | 0       | 1298    | 0       |
| 75° | 0       | 0       | 0       |
| 80° | 4830    | 0       | 0       |
| 85° | 49248   | 44153   | 19812   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 825.9  | 48.2      |
| 10°-20°   | 631.4  | 36.9      |
| 20°-30°   | 175.6  | 10.3      |
| 30°-40°   | 57.1   | 3.3       |
| 40°-50°   | 12.6   | 0.7       |
| 50°-60°   | 3.9    | 0.2       |
| 60°-70°   | 2.2    | 0.1       |
| 70°-80°   | 1.3    | 0.1       |
| 80°-90°   | 2.8    | 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°    | 1632.9 | 95.3      |
| 0°-40°    | 1690.0 | 98.7      |
| 0°-60°    | 1706.4 | 99.6      |
| 0°-90°    | 1712.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1712.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 12353 | 12353 | 12353 | 12353 | 12353 |      |
| 5°  | 10397 | 10321 | 10342 | 10264 | 10265 | 840  |
| 15° | 2376  | 2294  | 2105  | 1943  | 1854  | 694  |
| 25° | 375   | 379   | 360   | 339   | 320   | 188  |
| 35° | 82    | 89    | 97    | 74    | 77    | 54   |
| 45° | 12    | 17    | 10    | 10    | 14    | 12   |
| 55° | 0     | 5     | 4     | 2     | 0     | 3    |
| 65° | 0     | 4     | 0     | 0     | 0     | 3    |
| 75° | 0     | 0     | 0     | 2     | 0     | 1    |
| 85° | 9     | 4     | 8     | 4     | 4     | 3    |
| 90° | 0     | 0     | 0     | 0     | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 12352.6 | 12352.6 | 12352.6 | 12352.6 | 12352.6 |
| 1°    | 12258.0 | 12212.1 | 12256.3 | 12230.3 | 12245.0 |
| 2°    | 11991.8 | 11934.6 | 11980.5 | 11944.1 | 11974.5 |
| 3°    | 11577.3 | 11533.0 | 11573.8 | 11527.8 | 11552.1 |
| 4°    | 11057.8 | 10993.6 | 11034.4 | 10972.8 | 10987.6 |
| 5°    | 10397.0 | 10320.7 | 10341.5 | 10264.3 | 10265.2 |
| 6°    | 9564.5  | 9511.6  | 9523.7  | 9403.2  | 9394.5  |
| 7°    | 8750.2  | 8625.3  | 8612.3  | 8474.4  | 8447.5  |
| 8°    | 7761.5  | 7647.9  | 7610.6  | 7448.5  | 7391.2  |
| 9°    | 6813.7  | 6672.3  | 6596.0  | 6407.8  | 6341.0  |
| 10°   | 5850.2  | 5707.1  | 5592.6  | 5380.2  | 5308.2  |
| 11°   | 4958.7  | 4829.5  | 4687.3  | 4460.1  | 4389.8  |
| 12°   | 4131.4  | 4029.9  | 3873.8  | 3654.4  | 3580.7  |
| 13°   | 3455.8  | 3338.8  | 3171.4  | 2967.6  | 2904.3  |
| 14°   | 2870.5  | 2744.7  | 2577.4  | 2403.0  | 2279.9  |
| 15°   | 2376.2  | 2293.8  | 2104.7  | 1942.6  | 1854.1  |
| 16°   | 1941.7  | 1871.4  | 1708.4  | 1567.9  | 1505.5  |
| 17°   | 1592.2  | 1535.8  | 1397.1  | 1286.9  | 1234.9  |
| 18°   | 1313.8  | 1243.6  | 1134.3  | 1062.3  | 1021.6  |
| 19°   | 1065.8  | 1011.2  | 931.4   | 875.9   | 835.1   |
| 20°   | 879.4   | 834.3   | 770.1   | 720.7   | 705.0   |
| 22.5° | 568.0   | 560.2   | 518.6   | 491.7   | 478.7   |
| 25°   | 374.6   | 379.0   | 359.9   | 339.1   | 320.0   |
| 26°   | 320.0   | 322.6   | 305.3   | 293.1   | 268.8   |
| 27°   | 274.0   | 274.9   | 274.9   | 252.4   | 228.9   |
| 28°   | 223.7   | 233.3   | 224.6   | 214.2   | 191.7   |
| 29°   | 191.7   | 203.8   | 199.5   | 189.1   | 167.4   |
| 30°   | 165.6   | 174.3   | 183.0   | 166.5   | 145.7   |
| 32.5° | 116.2   | 124.0   | 133.6   | 124.9   | 107.5   |
| 35°   | 82.4    | 89.3    | 97.1    | 73.7    | 77.2    |
| 37.5° | 56.4    | 68.5    | 65.9    | 59.8    | 51.2    |
| 40°   | 33.8    | 35.6    | 39.0    | 41.6    | 22.5    |
| 42.5° | 24.3    | 28.6    | 26.0    | 29.5    | 10.4    |
| 45°   | 12.1    | 17.3    | 9.5     | 9.5     | 13.9    |
| 47.5° | 8.7     | 14.7    | 5.2     | 5.2     | 1.7     |
| 50°   | 5.2     | 11.3    | 6.1     | 2.6     | 8.7     |
| 52.5° | 8.7     | 10.4    | 6.9     | 7.8     | 1.7     |
| 55°   | 0.0     | 5.2     | 3.5     | 1.7     | 0.0     |
| 57.5° | 3.5     | 6.1     | 3.5     | 1.7     | 3.5     |
| 60°   | 0.0     | 0.0     | 0.0     | 0.9     | 1.7     |
| 62.5° | 0.0     | 1.7     | 0.0     | 2.6     | 3.5     |
| 65°   | 0.0     | 3.5     | 0.0     | 0.0     | 0.0     |
| 67.5° | 5.2     | 6.1     | 3.5     | 6.9     | 10.4    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 75°   | 0.0 | 0.0   | 0.0 | 1.7   | 0.0 |
| 77.5° | 0.0 | 8.7   | 2.6 | 2.6   | 3.5 |
| 80°   | 1.7 | 0.0   | 0.0 | 0.9   | 0.0 |
| 82.5° | 0.0 | 6.9   | 0.9 | 3.5   | 5.2 |
| 85°   | 8.7 | 4.3   | 7.8 | 4.3   | 3.5 |
| 87.5° | 0.0 | 0.9   | 1.7 | 0.9   | 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 | 0.9 | 0.9 | 0.0 |
| 72.5° | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)