

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: PORTFOLIO

Report Number: P430591

Luminaire Tested: **LAM4B312R659035DE01021MB**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P430591  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-908-22)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 11/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LAM4B312R659035DE01021MB  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 65 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3691.7 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.98 / 0.97  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

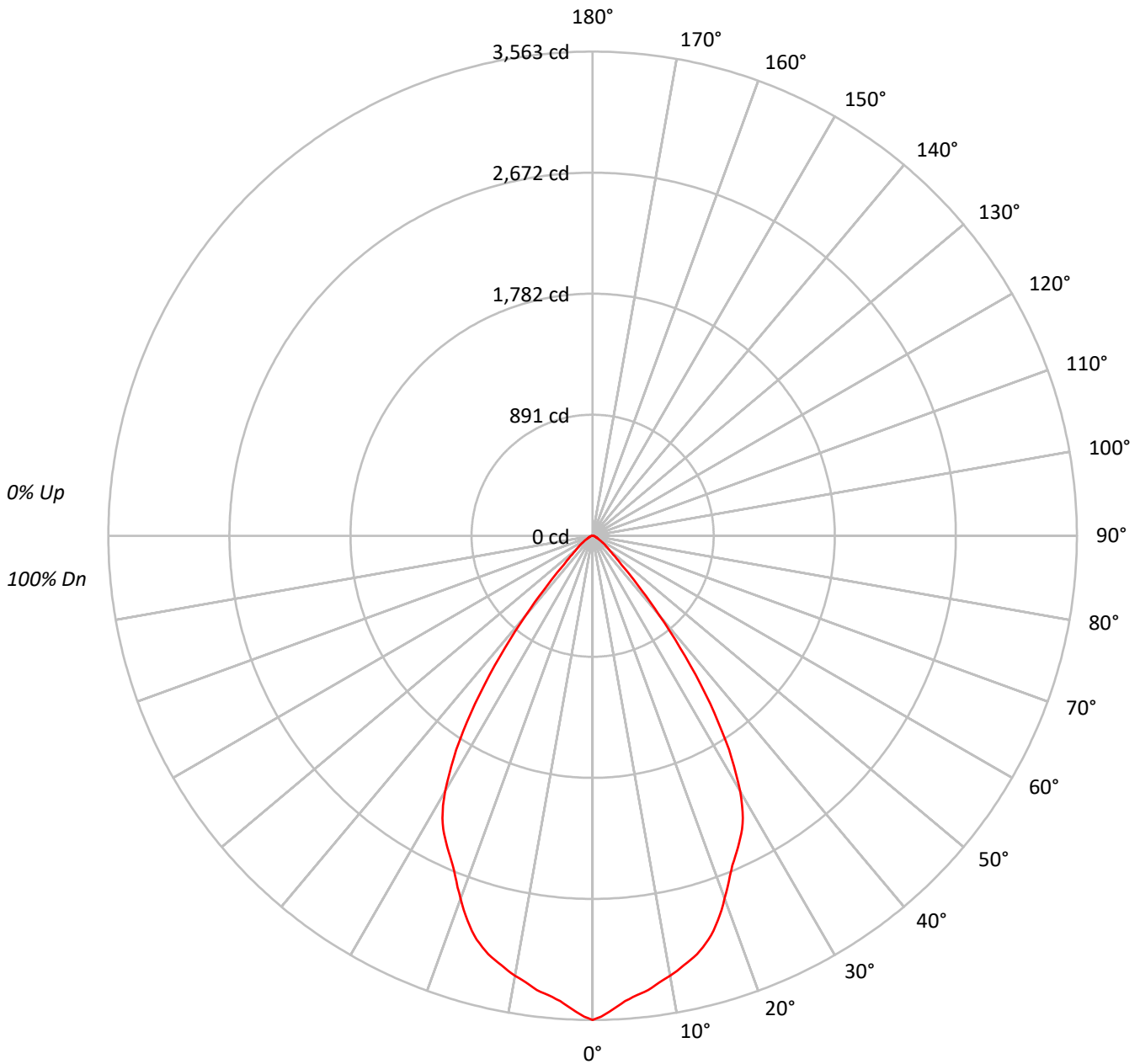
Input Watts (W): 40.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P430591

CATALOG NUMBER: LAM4B312R659035DE01021MB

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |    |    |     |
| RC  | 80  |     |     |     | 70  |     |     |     | 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   | 113 | 110 | 107 | 105 | 111 | 108 | 106 | 103 | 104 | 102 | 100 | 100 | 99  | 97  | 97  | 96  | 94  | 93  |    |    | 93  |
| 2   | 107 | 102 | 98  | 94  | 105 | 100 | 96  | 93  | 97  | 94  | 91  | 94  | 91  | 89  | 91  | 89  | 87  | 85  |    |    | 85  |
| 3   | 101 | 94  | 89  | 85  | 99  | 93  | 88  | 84  | 90  | 86  | 83  | 88  | 84  | 81  | 86  | 83  | 80  | 79  |    |    | 79  |
| 4   | 96  | 88  | 82  | 77  | 94  | 86  | 81  | 77  | 84  | 80  | 76  | 82  | 78  | 75  | 80  | 77  | 74  | 72  |    |    | 72  |
| 5   | 90  | 82  | 75  | 71  | 89  | 81  | 75  | 70  | 79  | 74  | 70  | 77  | 73  | 69  | 75  | 72  | 68  | 67  |    |    | 67  |
| 6   | 85  | 76  | 70  | 65  | 84  | 75  | 69  | 65  | 74  | 68  | 64  | 72  | 68  | 64  | 71  | 67  | 64  | 62  |    |    | 62  |
| 7   | 81  | 71  | 65  | 60  | 80  | 70  | 64  | 60  | 69  | 64  | 60  | 68  | 63  | 59  | 67  | 62  | 59  | 58  |    |    | 58  |
| 8   | 77  | 67  | 60  | 56  | 75  | 66  | 60  | 56  | 65  | 59  | 56  | 64  | 59  | 55  | 63  | 58  | 55  | 54  |    |    | 54  |
| 9   | 73  | 63  | 56  | 52  | 72  | 62  | 56  | 52  | 61  | 56  | 52  | 60  | 55  | 52  | 59  | 55  | 51  | 50  |    |    | 50  |
| 10  | 69  | 59  | 53  | 49  | 68  | 58  | 53  | 49  | 58  | 52  | 48  | 57  | 52  | 48  | 56  | 51  | 48  | 47  |    |    | 47  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°      |
|-----|---------|
| 0°  | 1758109 |
| 5°  | 1687117 |
| 10° | 1647157 |
| 15° | 1601155 |
| 20° | 1491124 |
| 25° | 1377292 |
| 30° | 1236375 |
| 35° | 908276  |
| 40° | 490581  |
| 45° | 210998  |
| 50° | 117514  |
| 55° | 82319   |
| 60° | 52890   |
| 65° | 40160   |
| 70° | 33179   |
| 75° | 29166   |
| 80° | 32674   |
| 85° | 21511   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 321.9  | 8.7       |
| 10°-20°   | 874.7  | 23.7      |
| 20°-30°   | 1159.5 | 31.4      |
| 30°-40°   | 918.2  | 24.9      |
| 40°-50°   | 273.5  | 7.4       |
| 50°-60°   | 87.6   | 2.4       |
| 60°-70°   | 34.9   | 0.9       |
| 70°-80°   | 16.7   | 0.5       |
| 80°-90°   | 4.7    | 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°    | 2356.1 | 63.8      |
| 0°-40°    | 3274.3 | 88.7      |
| 0°-60°    | 3635.4 | 98.5      |
| 0°-90°    | 3691.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3691.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 3563 |      |
| 5°  | 3406 | 322  |
| 15° | 3135 | 875  |
| 25° | 2530 | 1160 |
| 35° | 1508 | 918  |
| 45° | 302  | 274  |
| 55° | 96   | 88   |
| 65° | 34   | 35   |
| 75° | 15   | 17   |
| 85° | 4    | 5    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

| 0°    |        |
|-------|--------|
| 0°    | 3563.4 |
| 1°    | 3540.4 |
| 2°    | 3506.0 |
| 3°    | 3467.7 |
| 4°    | 3433.2 |
| 5°    | 3406.5 |
| 6°    | 3387.3 |
| 7°    | 3368.2 |
| 8°    | 3337.6 |
| 9°    | 3310.8 |
| 10°   | 3287.8 |
| 11°   | 3261.0 |
| 12°   | 3230.4 |
| 13°   | 3203.6 |
| 14°   | 3173.0 |
| 15°   | 3134.7 |
| 16°   | 3092.6 |
| 17°   | 3039.0 |
| 18°   | 2977.8 |
| 19°   | 2912.7 |
| 20°   | 2840.0 |
| 21°   | 2771.1 |
| 22°   | 2698.4 |
| 23°   | 2633.3 |
| 24°   | 2579.7 |
| 25°   | 2530.0 |
| 26°   | 2476.4 |
| 27°   | 2422.8 |
| 28°   | 2353.9 |
| 29°   | 2269.7 |
| 30°   | 2170.2 |
| 32.5° | 1867.8 |
| 35°   | 1508.0 |
| 37.5° | 1117.6 |
| 40°   | 761.7  |
| 42.5° | 482.3  |
| 45°   | 302.4  |
| 47.5° | 202.9  |
| 50°   | 153.1  |
| 52.5° | 122.5  |
| 55°   | 95.7   |
| 57.5° | 72.7   |
| 60°   | 53.6   |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 67.5° | 26.8 |
| 70°   | 23.0 |
| 72.5° | 19.1 |
| 75°   | 15.3 |
| 77.5° | 11.5 |
| 80°   | 11.5 |
| 82.5° | 7.7  |
| 85°   | 3.8  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



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— 0°-180°







|       |  |      |
|-------|--|------|
| 62.5° |  | 42.1 |
| 65°   |  | 34.4 |



(END OF REPORT)