

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: P431896

Luminaire Tested: **LAMR4B412R359727DE01021MB**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P431896  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-908-6)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 11/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LAMR4B412R359727DE01021MB  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 35 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 97CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4965.7 lumens  
Efficiency: N/A  
Efficacy: 91.8 lumens/watt  
Spacing Criteria (0/90/45): 0.57 / 0.57 / 0.51  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

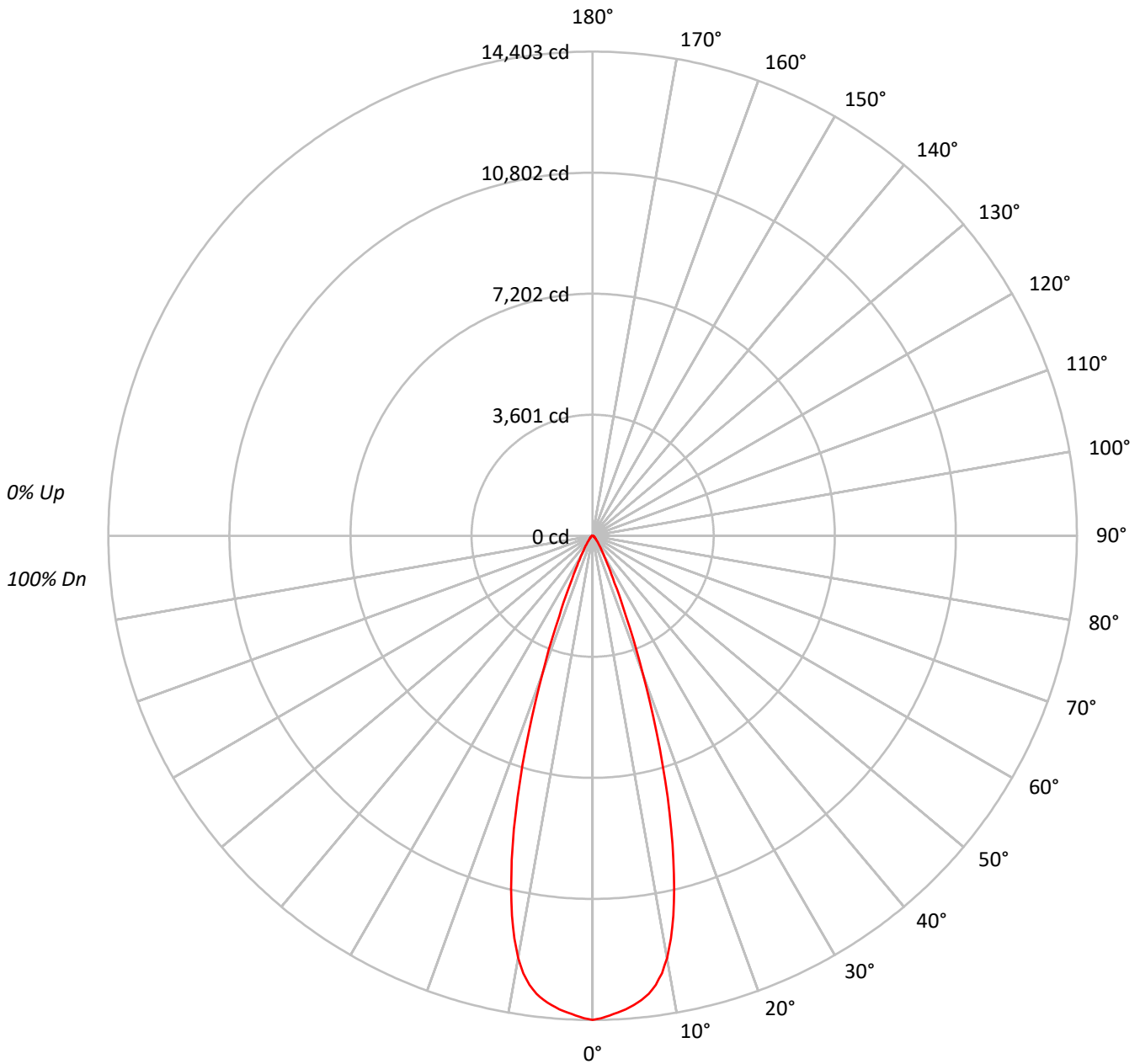
Input Watts (W): 54.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 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   | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 2   | 110 | 106 | 103 | 100 | 108 | 104 | 101 | 99  | 101 | 99  | 97  | 98  | 96  | 95  | 96  | 94  | 93  | 91  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 3   | 106 | 101 | 97  | 94  | 104 | 100 | 96  | 93  | 97  | 94  | 92  | 95  | 92  | 90  | 93  | 91  | 89  | 87  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 4   | 102 | 96  | 92  | 89  | 101 | 95  | 91  | 88  | 93  | 90  | 87  | 91  | 88  | 86  | 90  | 87  | 85  | 84  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 5   | 99  | 92  | 88  | 84  | 97  | 91  | 87  | 84  | 90  | 86  | 83  | 88  | 85  | 83  | 87  | 84  | 82  | 81  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 6   | 96  | 89  | 84  | 81  | 94  | 88  | 84  | 80  | 87  | 83  | 80  | 85  | 82  | 79  | 84  | 81  | 79  | 78  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 7   | 92  | 85  | 81  | 77  | 91  | 85  | 80  | 77  | 84  | 80  | 77  | 82  | 79  | 76  | 81  | 78  | 76  | 75  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 8   | 90  | 82  | 78  | 74  | 88  | 82  | 77  | 74  | 81  | 77  | 74  | 80  | 76  | 74  | 79  | 76  | 73  | 72  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 9   | 87  | 79  | 75  | 72  | 86  | 79  | 75  | 72  | 78  | 74  | 71  | 77  | 74  | 71  | 77  | 73  | 71  | 70  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 10  | 84  | 77  | 72  | 69  | 83  | 76  | 72  | 69  | 76  | 72  | 69  | 75  | 71  | 69  | 74  | 71  | 69  | 68  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |

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

|     | 0°      |
|-----|---------|
| 0°  | 7106047 |
| 5°  | 6942267 |
| 10° | 6388634 |
| 15° | 4617539 |
| 20° | 2281104 |
| 25° | 836827  |
| 30° | 377316  |
| 35° | 205386  |
| 40° | 127331  |
| 45° | 86241   |
| 50° | 64475   |
| 55° | 55310   |
| 60° | 48746   |
| 65° | 46114   |
| 70° | 42844   |
| 75° | 37744   |
| 80° | 42051   |
| 85° | 27738   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 1302.5 | 26.2      |
| 10°-20°   | 2380.4 | 47.9      |
| 20°-30°   | 828.7  | 16.7      |
| 30°-40°   | 229.7  | 4.6       |
| 40°-50°   | 99.8   | 2.0       |
| 50°-60°   | 57.9   | 1.2       |
| 60°-70°   | 39.1   | 0.8       |
| 70°-80°   | 21.5   | 0.4       |
| 80°-90°   | 6.0    | 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°    | 4511.6 | 90.9      |
| 0°-40°    | 4741.3 | 95.5      |
| 0°-60°    | 4899.0 | 98.7      |
| 0°-90°    | 4965.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4965.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | Flux |
|-----|-------|------|
| 0°  | 14403 |      |
| 5°  | 14017 | ###  |
| 15° | 9040  | 2380 |
| 25° | 1537  | 829  |
| 35° | 341   | 230  |
| 45° | 124   | 100  |
| 55° | 64    | 58   |
| 65° | 40    | 39   |
| 75° | 20    | 22   |
| 85° | 5     | 6    |
| 90° | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      |
|-------|---------|
| 0°    | 14402.8 |
| 1°    | 14353.4 |
| 2°    | 14279.3 |
| 3°    | 14205.1 |
| 4°    | 14121.1 |
| 5°    | 14017.3 |
| 6°    | 13888.8 |
| 7°    | 13730.6 |
| 8°    | 13488.4 |
| 9°    | 13177.1 |
| 10°   | 12752.0 |
| 11°   | 12208.3 |
| 12°   | 11550.9 |
| 13°   | 10779.9 |
| 14°   | 9934.7  |
| 15°   | 9040.1  |
| 16°   | 8086.1  |
| 17°   | 7127.3  |
| 18°   | 6163.5  |
| 19°   | 5234.2  |
| 20°   | 4344.6  |
| 22.5° | 2589.9  |
| 25°   | 1537.2  |
| 26°   | 1280.1  |
| 27°   | 1067.6  |
| 28°   | 904.5   |
| 29°   | 771.1   |
| 30°   | 662.3   |
| 32.5° | 469.5   |
| 35°   | 341.0   |
| 37.5° | 257.0   |
| 40°   | 197.7   |
| 42.5° | 153.2   |
| 45°   | 123.6   |
| 47.5° | 103.8   |
| 50°   | 84.0    |
| 52.5° | 74.1    |
| 55°   | 64.3    |
| 57.5° | 54.4    |
| 60°   | 49.4    |
| 62.5° | 44.5    |
| 65°   | 39.5    |
| 67.5° | 34.6    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 75°   | 19.8 |
| 77.5° | 14.8 |
| 80°   | 14.8 |
| 82.5° | 9.9  |
| 85°   | 4.9  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



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— 0°-180°







|       |  |      |
|-------|--|------|
| 70°   |  | 29.7 |
| 72.5° |  | 24.7 |



(END OF REPORT)