

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: P431592

Luminaire Tested: **LAMR4B312R359024DE01021MW**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P431592  
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: LAMR4B312R359024DE01021MW  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 35 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 2400K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3094.9 lumens  
Efficiency: N/A  
Efficacy: 75.7 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

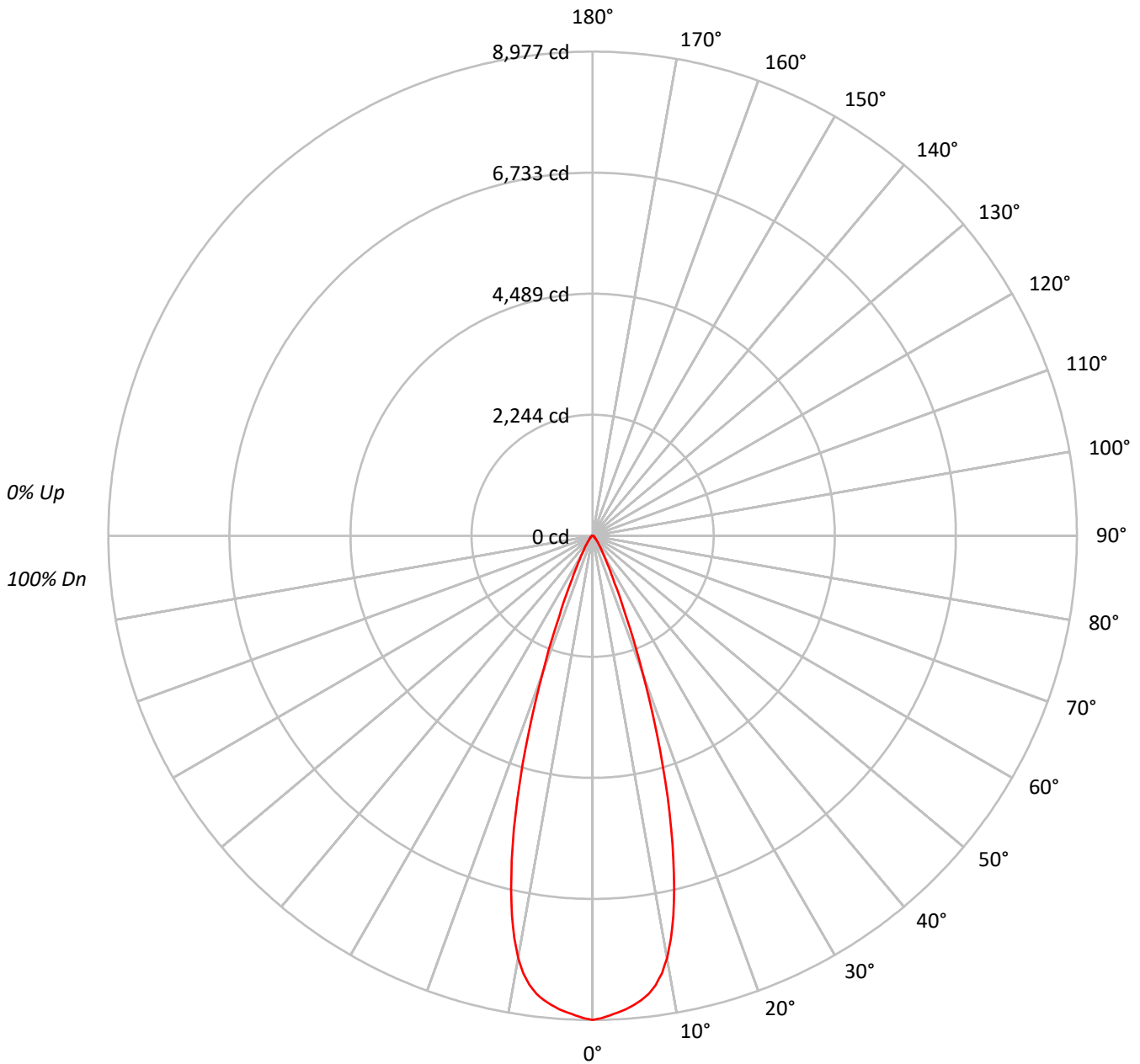
Input Watts (W): 40.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### 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 | 100 | 100 |
| 1   | 114 | 112 | 110 | 108 | 112 | 110 | 108 | 106 | 106 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 96  | 96  | 96  |
| 2   | 110 | 106 | 103 | 100 | 108 | 104 | 101 | 99  | 101 | 99  | 97  | 98  | 96  | 95  | 96  | 94  | 93  | 91  | 91  | 91  | 91  |
| 3   | 106 | 101 | 97  | 94  | 104 | 100 | 96  | 93  | 97  | 94  | 92  | 95  | 92  | 90  | 93  | 91  | 89  | 87  | 87  | 87  | 87  |
| 4   | 102 | 96  | 92  | 89  | 101 | 95  | 91  | 88  | 93  | 90  | 87  | 91  | 88  | 86  | 90  | 87  | 85  | 84  | 84  | 84  | 84  |
| 5   | 99  | 92  | 88  | 84  | 97  | 91  | 87  | 84  | 90  | 86  | 83  | 88  | 85  | 83  | 87  | 84  | 82  | 81  | 81  | 81  | 81  |
| 6   | 96  | 89  | 84  | 81  | 94  | 88  | 84  | 80  | 87  | 83  | 80  | 85  | 82  | 79  | 84  | 81  | 79  | 78  | 78  | 78  | 78  |
| 7   | 92  | 85  | 81  | 77  | 91  | 85  | 80  | 77  | 84  | 80  | 77  | 82  | 79  | 76  | 81  | 78  | 76  | 75  | 75  | 75  | 75  |
| 8   | 90  | 82  | 78  | 74  | 88  | 82  | 77  | 74  | 81  | 77  | 74  | 80  | 76  | 74  | 79  | 76  | 73  | 72  | 72  | 72  | 72  |
| 9   | 87  | 79  | 75  | 72  | 86  | 79  | 75  | 72  | 78  | 74  | 71  | 77  | 74  | 71  | 77  | 73  | 71  | 70  | 70  | 70  | 70  |
| 10  | 84  | 77  | 72  | 69  | 83  | 76  | 72  | 69  | 76  | 72  | 69  | 75  | 71  | 69  | 74  | 71  | 69  | 68  | 68  | 68  | 68  |

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

|     | 0°      |
|-----|---------|
| 0°  | 4428871 |
| 5°  | 4326826 |
| 10° | 3981774 |
| 15° | 2877911 |
| 20° | 1421713 |
| 25° | 521520  |
| 30° | 235174  |
| 35° | 128050  |
| 40° | 79348   |
| 45° | 53726   |
| 50° | 40220   |
| 55° | 34407   |
| 60° | 30392   |
| 65° | 28719   |
| 70° | 26687   |
| 75° | 23447   |
| 80° | 26140   |
| 85° | 17549   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 811.8  | 26.2      |
| 10°-20°   | 1483.6 | 47.9      |
| 20°-30°   | 516.5  | 16.7      |
| 30°-40°   | 143.2  | 4.6       |
| 40°-50°   | 62.2   | 2.0       |
| 50°-60°   | 36.1   | 1.2       |
| 60°-70°   | 24.4   | 0.8       |
| 70°-80°   | 13.4   | 0.4       |
| 80°-90°   | 3.8    | 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°    | 2811.9 | 90.9      |
| 0°-40°    | 2955.1 | 95.5      |
| 0°-60°    | 3053.3 | 98.7      |
| 0°-90°    | 3094.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3094.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 8977 |      |
| 5°  | 8736 | 812  |
| 15° | 5634 | 1484 |
| 25° | 958  | 517  |
| 35° | 213  | 143  |
| 45° | 77   | 62   |
| 55° | 40   | 36   |
| 65° | 25   | 24   |
| 75° | 12   | 13   |
| 85° | 3    | 4    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 8976.6 |
| 1°    | 8945.8 |
| 2°    | 8899.6 |
| 3°    | 8853.4 |
| 4°    | 8801.1 |
| 5°    | 8736.4 |
| 6°    | 8656.3 |
| 7°    | 8557.7 |
| 8°    | 8406.7 |
| 9°    | 8212.7 |
| 10°   | 7947.8 |
| 11°   | 7608.9 |
| 12°   | 7199.2 |
| 13°   | 6718.6 |
| 14°   | 6191.9 |
| 15°   | 5634.3 |
| 16°   | 5039.7 |
| 17°   | 4442.1 |
| 18°   | 3841.4 |
| 19°   | 3262.3 |
| 20°   | 2707.8 |
| 22.5° | 1614.2 |
| 25°   | 958.0  |
| 26°   | 797.9  |
| 27°   | 665.4  |
| 28°   | 563.7  |
| 29°   | 480.6  |
| 30°   | 412.8  |
| 32.5° | 292.6  |
| 35°   | 212.6  |
| 37.5° | 160.2  |
| 40°   | 123.2  |
| 42.5° | 95.5   |
| 45°   | 77.0   |
| 47.5° | 64.7   |
| 50°   | 52.4   |
| 52.5° | 46.2   |
| 55°   | 40.0   |
| 57.5° | 33.9   |
| 60°   | 30.8   |
| 62.5° | 27.7   |
| 65°   | 24.6   |
| 67.5° | 21.6   |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 75°   | 12.3 |
| 77.5° | 9.2  |
| 80°   | 9.2  |
| 82.5° | 6.2  |
| 85°   | 3.1  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



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— 0°-180°







|       |  |      |
|-------|--|------|
| 70°   |  | 18.5 |
| 72.5° |  | 15.4 |



(END OF REPORT)