

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: P431603

Luminaire Tested: **LAMR4B312R359040DE01021MMS**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P431603  
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: LAMR4B312R359040DE01021MMS  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 35 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

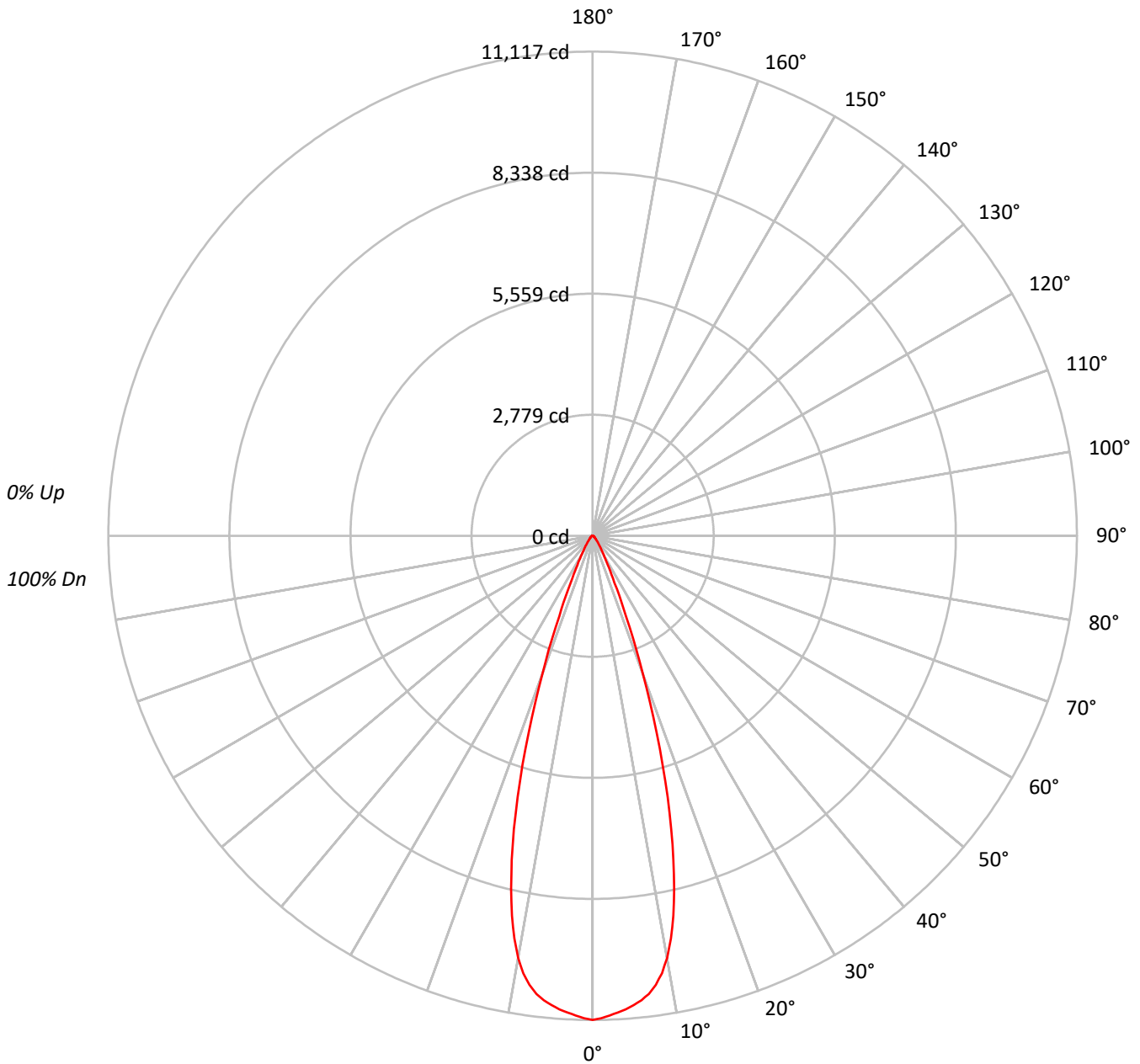
Lumens per Lamp: N/A  
Luminaire Lumens: 3832.9 lumens  
Efficiency: N/A  
Efficacy: 93.7 lumens/watt  
Spacing Criteria (0/90/45): 0.57 / 0.57 / 0.51  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

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 |  |  |  |  |  |  |  |  |   |
| 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   | 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°  | 5484999 |
| 5°  | 5358610 |
| 10° | 4931252 |
| 15° | 3564149 |
| 20° | 1760734 |
| 25° | 645912  |
| 30° | 291234  |
| 35° | 158527  |
| 40° | 98284   |
| 45° | 66565   |
| 50° | 49815   |
| 55° | 42665   |
| 60° | 37694   |
| 65° | 35607   |
| 70° | 33034   |
| 75° | 29166   |
| 80° | 32390   |
| 85° | 21511   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 1005.4 | 26.2      |
| 10°-20°   | 1837.4 | 47.9      |
| 20°-30°   | 639.7  | 16.7      |
| 30°-40°   | 177.3  | 4.6       |
| 40°-50°   | 77.1   | 2.0       |
| 50°-60°   | 44.7   | 1.2       |
| 60°-70°   | 30.2   | 0.8       |
| 70°-80°   | 16.6   | 0.4       |
| 80°-90°   | 4.6    | 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°    | 3482.4 | 90.9      |
| 0°-40°    | 3659.7 | 95.5      |
| 0°-60°    | 3781.5 | 98.7      |
| 0°-90°    | 3832.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3832.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | Flux |
|-----|-------|------|
| 0°  | 11117 |      |
| 5°  | 10820 | ###  |
| 15° | 6978  | 1837 |
| 25° | 1186  | 640  |
| 35° | 263   | 177  |
| 45° | 95    | 77   |
| 55° | 50    | 45   |
| 65° | 30    | 30   |
| 75° | 15    | 17   |
| 85° | 4     | 5    |
| 90° | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      |
|-------|---------|
| 0°    | 11117.2 |
| 1°    | 11079.1 |
| 2°    | 11021.9 |
| 3°    | 10964.6 |
| 4°    | 10899.8 |
| 5°    | 10819.7 |
| 6°    | 10720.5 |
| 7°    | 10598.4 |
| 8°    | 10411.4 |
| 9°    | 10171.1 |
| 10°   | 9843.0  |
| 11°   | 9423.3  |
| 12°   | 8915.9  |
| 13°   | 8320.8  |
| 14°   | 7668.4  |
| 15°   | 6977.8  |
| 16°   | 6241.5  |
| 17°   | 5501.4  |
| 18°   | 4757.4  |
| 19°   | 4040.2  |
| 20°   | 3353.5  |
| 22.5° | 1999.1  |
| 25°   | 1186.5  |
| 26°   | 988.1   |
| 27°   | 824.1   |
| 28°   | 698.2   |
| 29°   | 595.2   |
| 30°   | 511.2   |
| 32.5° | 362.4   |
| 35°   | 263.2   |
| 37.5° | 198.4   |
| 40°   | 152.6   |
| 42.5° | 118.3   |
| 45°   | 95.4    |
| 47.5° | 80.1    |
| 50°   | 64.9    |
| 52.5° | 57.2    |
| 55°   | 49.6    |
| 57.5° | 42.0    |
| 60°   | 38.2    |
| 62.5° | 34.3    |
| 65°   | 30.5    |
| 67.5° | 26.7    |



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**CANDELA DISTRIBUTION (continued):**

|       | 0°   |
|-------|------|
| 75°   | 15.3 |
| 77.5° | 11.4 |
| 80°   | 11.4 |
| 82.5° | 7.6  |
| 85°   | 3.8  |
| 87.5° | 0.0  |
| 90°   | 0.0  |



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— 0°-180°







|       |      |
|-------|------|
| 70°   | 22.9 |
| 72.5° | 19.1 |



(END OF REPORT)