

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: P430376

Luminaire Tested: **LAM4B312R209035DE01021MMS**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P430376  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2007-857-3)  
Test Lab: INNOVATION CENTER (G1)  
Issue Date: 11/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LAM4B312R209035DE01021MMS  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 20 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3838.1 lumens  
Efficiency: N/A  
Efficacy: 93.8 lumens/watt  
Spacing Criteria (0/90/45): 0.34 / 0.34 / 0.33  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

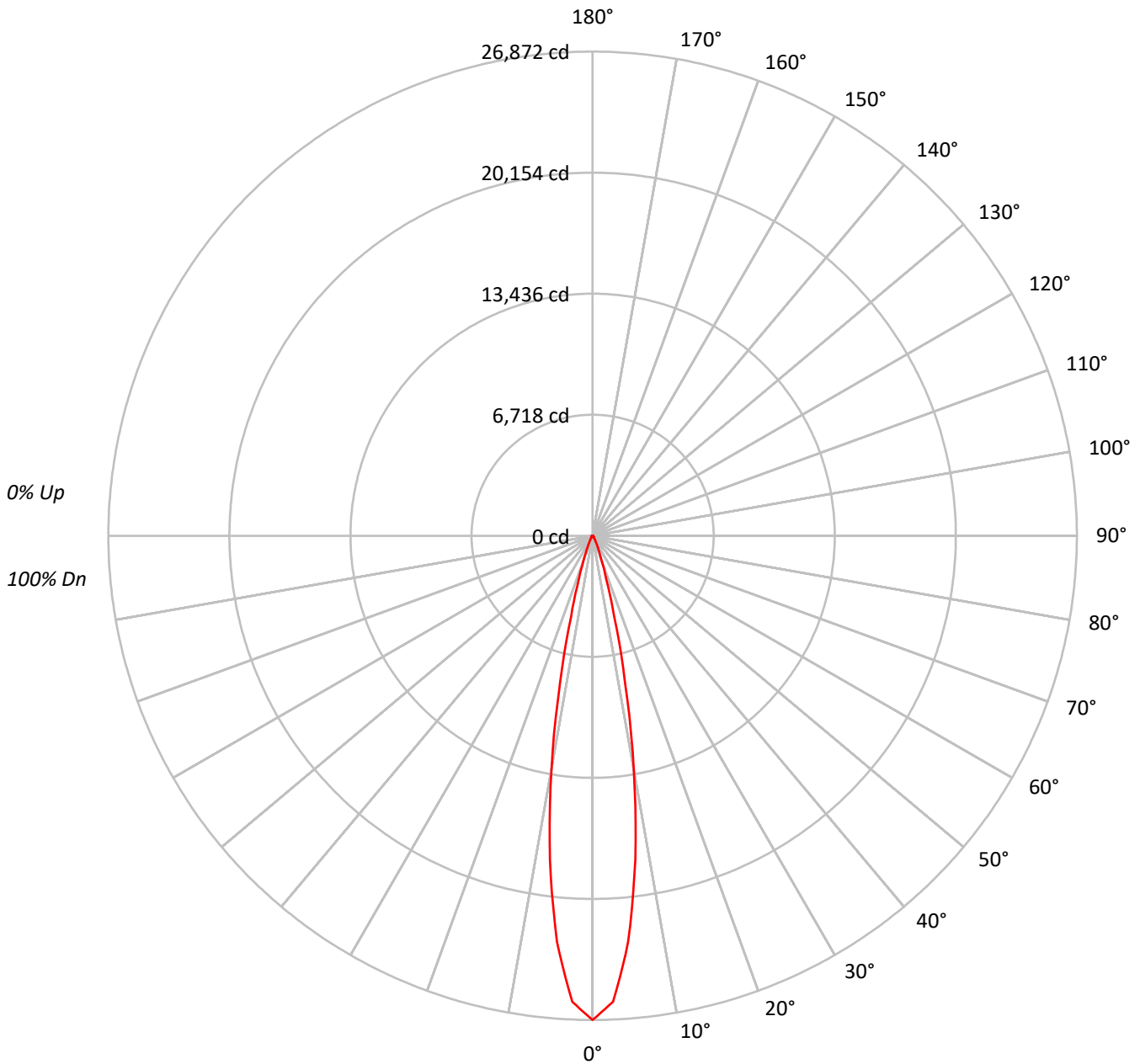
Input Watts (W): 40.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 |    |    |   | 100 |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 115 | 113 | 111 | 110 | 113 | 111 | 109 | 108 | 107 | 106 | 105 | 103 | 102 | 102 | 100 | 99  | 99  | 97  |    |    |   | 97  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 112 | 108 | 105 | 103 | 110 | 106 | 104 | 102 | 103 | 101 | 100 | 101 | 99  | 97  | 98  | 97  | 95  | 94  |    |    |   | 94  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 108 | 104 | 100 | 98  | 107 | 103 | 100 | 97  | 100 | 98  | 96  | 98  | 96  | 94  | 96  | 94  | 93  | 91  |    |    |   | 91  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 105 | 100 | 97  | 94  | 104 | 99  | 96  | 93  | 97  | 94  | 92  | 96  | 93  | 91  | 94  | 92  | 90  | 89  |    |    |   | 89  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 103 | 97  | 93  | 90  | 101 | 96  | 93  | 90  | 95  | 92  | 89  | 93  | 91  | 89  | 92  | 90  | 88  | 87  |    |    |   | 87  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 100 | 94  | 90  | 88  | 99  | 94  | 90  | 87  | 92  | 89  | 87  | 91  | 88  | 86  | 90  | 88  | 86  | 85  |    |    |   | 85  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 98  | 92  | 88  | 85  | 97  | 91  | 88  | 85  | 90  | 87  | 85  | 89  | 86  | 84  | 88  | 86  | 84  | 83  |    |    |   | 83  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 96  | 90  | 86  | 83  | 95  | 89  | 86  | 83  | 88  | 85  | 83  | 87  | 85  | 82  | 87  | 84  | 82  | 81  |    |    |   | 81  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 94  | 88  | 84  | 81  | 93  | 87  | 84  | 81  | 86  | 83  | 81  | 86  | 83  | 81  | 85  | 82  | 81  | 80  |    |    |   | 80  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 92  | 86  | 82  | 80  | 91  | 85  | 82  | 80  | 85  | 82  | 79  | 84  | 81  | 79  | 83  | 81  | 79  | 78  |    |    |   | 78  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     |          |
|-----|----------|
|     | 0°       |
| 0°  | 13258046 |
| 5°  | 11206491 |
| 10° | 6582267  |
| 15° | 2356809  |
| 20° | 779847   |
| 25° | 310408   |
| 30° | 148351   |
| 35° | 84805    |
| 40° | 61186    |
| 45° | 51563    |
| 50° | 59409    |
| 55° | 48428    |
| 60° | 24274    |
| 65° | 20547    |
| 70° | 25389    |
| 75° | 26878    |
| 80° | 19889    |
| 85° | 19813    |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 1852.8 | 48.3      |
| 10°-20°   | 1444.9 | 37.6      |
| 20°-30°   | 299.9  | 7.8       |
| 30°-40°   | 94.5   | 2.5       |
| 40°-50°   | 60.8   | 1.6       |
| 50°-60°   | 48.8   | 1.3       |
| 60°-70°   | 19.2   | 0.5       |
| 70°-80°   | 14.4   | 0.4       |
| 80°-90°   | 2.9    | 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°    | 3597.6 | 93.7      |
| 0°-40°    | 3692.1 | 96.2      |
| 0°-60°    | 3801.7 | 99.1      |
| 0°-90°    | 3838.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3838.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | Flux |
|-----|-------|------|
| 0°  | 26872 |      |
| 5°  | 22627 | ###  |
| 15° | 4614  | 1445 |
| 25° | 570   | 300  |
| 35° | 141   | 95   |
| 45° | 74    | 61   |
| 55° | 56    | 49   |
| 65° | 18    | 19   |
| 75° | 14    | 14   |
| 85° | 4     | 3    |
| 90° | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      |
|-------|---------|
| 0°    | 26871.9 |
| 2.5°  | 25886.4 |
| 5°    | 22627.3 |
| 7.5°  | 18129.3 |
| 10°   | 13138.5 |
| 12.5° | 8288.6  |
| 15°   | 4614.1  |
| 17.5° | 2537.6  |
| 20°   | 1485.3  |
| 22.5° | 908.0   |
| 25°   | 570.2   |
| 27.5° | 376.6   |
| 30°   | 260.4   |
| 32.5° | 183.0   |
| 35°   | 140.8   |
| 37.5° | 112.6   |
| 40°   | 95.0    |
| 42.5° | 80.9    |
| 45°   | 73.9    |
| 47.5° | 73.9    |
| 50°   | 77.4    |
| 52.5° | 73.9    |
| 55°   | 56.3    |
| 57.5° | 38.7    |
| 60°   | 24.6    |
| 62.5° | 21.1    |
| 65°   | 17.6    |
| 67.5° | 17.6    |
| 70°   | 17.6    |
| 72.5° | 17.6    |
| 75°   | 14.1    |
| 77.5° | 10.6    |
| 80°   | 7.0     |
| 82.5° | 3.5     |
| 85°   | 3.5     |
| 87.5° | 0.0     |
| 90°   | 0.0     |



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— 0°-180°







(END OF REPORT)