

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: P431651

Luminaire Tested: **LAMR4B312R459040DE01021MMS**

Issue Date: 11/23/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P431651  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-908-8)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 11/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: PORTFOLIO  
Catalog Number: LAMR4B312R459040DE01021MMS  
Description: PORTFOLIO 4INCH ADJUSTABLE MULTIPLE, 45 DEG TIR OPTIC  
Light Source: HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3871.4 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 0.73 / 0.73 / 0.66  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

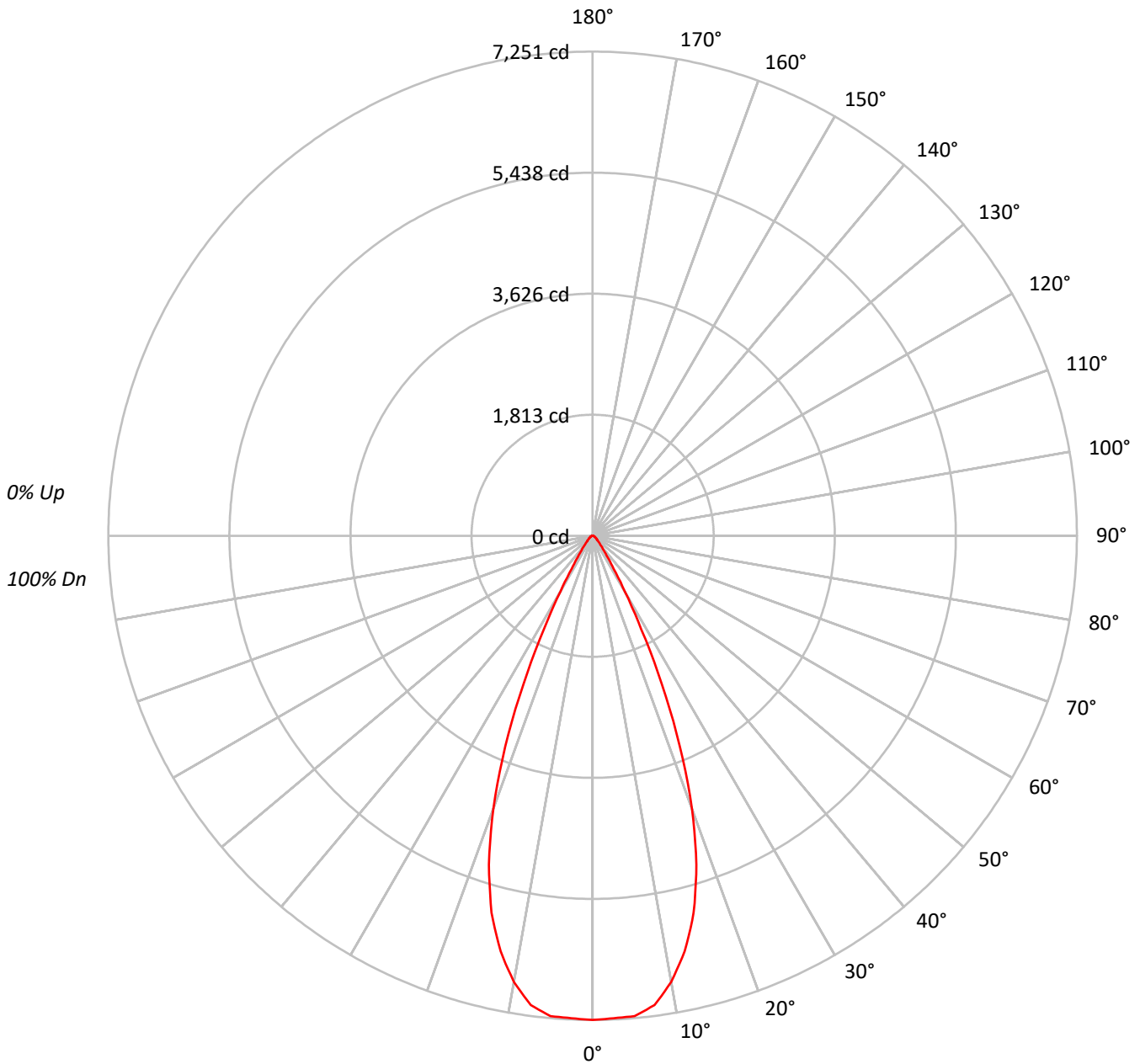
Input Watts (W): 40.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |     |     |     |     |     |     |     |     | 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 | 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 | 109 | 107 | 112 | 109 | 107 | 105 | 105 | 104 | 102 | 102 | 100 | 99  | 98  | 97  | 96  | 95  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 2   | 109 | 105 | 101 | 98  | 107 | 103 | 100 | 97  | 100 | 97  | 95  | 97  | 95  | 93  | 94  | 93  | 91  | 89  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 3   | 105 | 99  | 94  | 91  | 103 | 98  | 93  | 90  | 95  | 92  | 89  | 93  | 90  | 87  | 90  | 88  | 86  | 85  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 4   | 100 | 94  | 89  | 85  | 99  | 93  | 88  | 85  | 90  | 87  | 84  | 89  | 85  | 83  | 87  | 84  | 82  | 80  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 5   | 96  | 89  | 84  | 80  | 95  | 88  | 83  | 80  | 86  | 82  | 79  | 85  | 81  | 78  | 83  | 80  | 78  | 76  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 6   | 92  | 85  | 79  | 76  | 91  | 84  | 79  | 75  | 82  | 78  | 75  | 81  | 77  | 74  | 80  | 77  | 74  | 73  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 7   | 89  | 81  | 75  | 72  | 87  | 80  | 75  | 72  | 79  | 74  | 71  | 78  | 74  | 71  | 77  | 73  | 71  | 69  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 8   | 85  | 77  | 72  | 68  | 84  | 77  | 72  | 68  | 76  | 71  | 68  | 75  | 71  | 68  | 74  | 70  | 67  | 66  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 9   | 82  | 74  | 69  | 65  | 81  | 73  | 68  | 65  | 72  | 68  | 65  | 72  | 68  | 65  | 71  | 67  | 65  | 63  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |
| 10  | 79  | 71  | 66  | 62  | 78  | 70  | 66  | 62  | 70  | 65  | 62  | 69  | 65  | 62  | 68  | 65  | 62  | 61  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |

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

|     |         |
|-----|---------|
|     | 0°      |
| 0°  | 3577396 |
| 5°  | 3576154 |
| 10° | 3399172 |
| 15° | 2985891 |
| 20° | 2284202 |
| 25° | 1333469 |
| 30° | 545778  |
| 35° | 230803  |
| 40° | 125850  |
| 45° | 81287   |
| 50° | 63477   |
| 55° | 54966   |
| 60° | 44503   |
| 65° | 35140   |
| 70° | 32457   |
| 75° | 28594   |
| 80° | 32106   |
| 85° | 21511   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 675.7  | 17.5      |
| 10°-20°   | 1591.5 | 41.1      |
| 20°-30°   | 1121.3 | 29.0      |
| 30°-40°   | 276.0  | 7.1       |
| 40°-50°   | 96.3   | 2.5       |
| 50°-60°   | 57.0   | 1.5       |
| 60°-70°   | 31.6   | 0.8       |
| 70°-80°   | 17.3   | 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°    | 3388.5 | 87.5      |
| 0°-40°    | 3664.5 | 94.7      |
| 0°-60°    | 3817.8 | 98.6      |
| 0°-90°    | 3871.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3871.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 7251 |      |
| 5°  | 7221 | 676  |
| 15° | 5846 | 1591 |
| 25° | 2450 | 1121 |
| 35° | 383  | 276  |
| 45° | 116  | 96   |
| 55° | 64   | 57   |
| 65° | 30   | 32   |
| 75° | 15   | 17   |
| 85° | 4    | 5    |
| 90° | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 7250.8 |
| 2.5°  | 7232.0 |
| 5°    | 7220.7 |
| 7.5°  | 7089.2 |
| 10°   | 6784.9 |
| 12.5° | 6371.7 |
| 15°   | 5845.7 |
| 17.5° | 5165.7 |
| 20°   | 4350.5 |
| 22.5° | 3415.0 |
| 25°   | 2449.5 |
| 27.5° | 1581.6 |
| 30°   | 958.0  |
| 32.5° | 582.3  |
| 35°   | 383.2  |
| 37.5° | 270.5  |
| 40°   | 195.4  |
| 42.5° | 150.3  |
| 45°   | 116.5  |
| 47.5° | 97.7   |
| 50°   | 82.7   |
| 52.5° | 71.4   |
| 55°   | 63.9   |
| 57.5° | 56.4   |
| 60°   | 45.1   |
| 62.5° | 37.6   |
| 65°   | 30.1   |
| 67.5° | 26.3   |
| 70°   | 22.5   |
| 72.5° | 18.8   |
| 75°   | 15.0   |
| 77.5° | 15.0   |
| 80°   | 11.3   |
| 82.5° | 7.5    |
| 85°   | 3.8    |
| 87.5° | 0.0    |
| 90°   | 0.0    |



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— 0°-180°







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