

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: METALUX

Report Number: 227P155

Luminaire Tested: **MBF-132TB-UNV-EB81-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: 227P155  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: MBF-132TB-UNV-EB81-U  
Description: MICROBAY, 1 LAMP T8, WITH SPECULAR TASK BEAM REFLECTOR  
Light Source: ONE T8 LINEAR FLUORESCENT LAMP  
F32T8 32 WATTS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 3100 (1 lamp)  
Luminaire Lumens: 2997.5 lumens  
Efficiency: 96.7%  
Efficacy: 85.6 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 0.91 / 1.03  
Luminous Opening: Rectangular (W 0.6' x L: 4' x H: 0')  
CIE Type: Direct

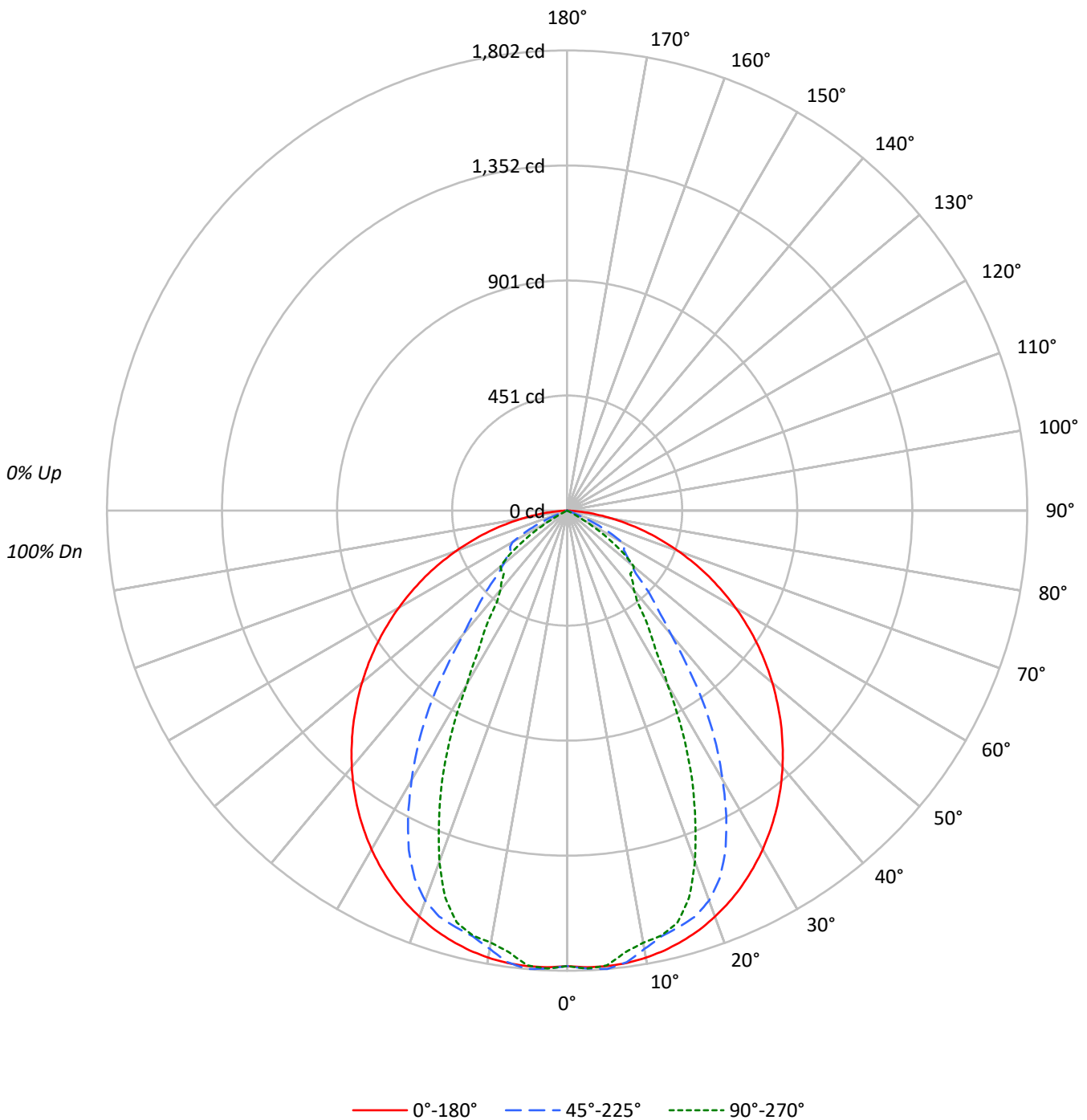
Input Watts (W): 35  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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   | 115 | 115 | 115 | 115 | 112 | 112 | 112 | 112 | 107 | 107 | 107 | 103 | 103 | 103 | 99 | 99 | 99 | 99 | 99 | 99 | 97 |   |
| 1   | 108 | 104 | 101 | 98  | 105 | 102 | 99  | 96  | 98  | 95  | 93  | 94  | 92  | 90  | 91 | 89 | 88 | 88 | 88 | 88 | 86 |   |
| 2   | 100 | 94  | 88  | 84  | 98  | 92  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 83 | 80 | 77 | 77 | 77 | 77 | 76 |   |
| 3   | 93  | 84  | 78  | 73  | 90  | 83  | 77  | 72  | 80  | 75  | 71  | 78  | 73  | 70  | 75 | 72 | 69 | 69 | 69 | 69 | 67 |   |
| 4   | 86  | 76  | 69  | 64  | 84  | 75  | 69  | 63  | 73  | 67  | 63  | 71  | 66  | 62  | 69 | 65 | 61 | 61 | 61 | 61 | 59 |   |
| 5   | 80  | 70  | 62  | 57  | 78  | 69  | 62  | 56  | 67  | 61  | 56  | 65  | 60  | 55  | 63 | 59 | 55 | 55 | 55 | 55 | 53 |   |
| 6   | 75  | 64  | 56  | 51  | 73  | 63  | 56  | 51  | 61  | 55  | 50  | 60  | 54  | 50  | 58 | 53 | 49 | 49 | 49 | 49 | 48 |   |
| 7   | 70  | 59  | 51  | 46  | 68  | 58  | 51  | 46  | 56  | 50  | 45  | 55  | 49  | 45  | 54 | 49 | 45 | 45 | 45 | 45 | 43 |   |
| 8   | 66  | 54  | 47  | 42  | 64  | 53  | 47  | 42  | 52  | 46  | 41  | 51  | 45  | 41  | 50 | 45 | 41 | 41 | 41 | 41 | 39 |   |
| 9   | 62  | 50  | 43  | 38  | 60  | 50  | 43  | 38  | 49  | 42  | 38  | 48  | 42  | 38  | 47 | 42 | 38 | 38 | 38 | 38 | 36 |   |
| 10  | 58  | 47  | 40  | 35  | 57  | 46  | 40  | 35  | 45  | 39  | 35  | 44  | 39  | 35  | 44 | 39 | 35 | 35 | 35 | 35 | 33 |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 7946 | 7946 | 7946 |
| 5°  | 8008 | 8057 | 7994 |
| 10° | 8041 | 7883 | 7770 |
| 15° | 8046 | 7784 | 7701 |
| 20° | 8020 | 7702 | 6934 |
| 25° | 7966 | 7210 | 5681 |
| 30° | 7879 | 6264 | 4042 |
| 35° | 7770 | 5127 | 3001 |
| 40° | 7628 | 3669 | 2361 |
| 45° | 7464 | 2835 | 2205 |
| 50° | 7269 | 2245 | 2363 |
| 55° | 7051 | 2104 | 1685 |
| 60° | 6788 | 2200 | 659  |
| 65° | 6460 | 1328 | 0    |
| 70° | 6016 | 169  | 0    |
| 75° | 5438 | 52   | 0    |
| 80° | 4566 | 77   | 0    |
| 85° | 2964 | 102  | 0    |



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

| Zone      | Lumens | % Fixture | % Lamp |     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----------|--------|-----------|--------|-----|------|-------|------|-------|------|------|
| 0°-10°    | 169.8  | 5.7       | 5.5    | 0°  | 1784 | 1784  | 1784 | 1784  | 1784 |      |
| 10°-20°   | 477.0  | 15.9      | 15.4   | 5°  | 1791 | 1800  | 1802 | 1798  | 1788 | 171  |
| 20°-30°   | 645.9  | 21.5      | 20.8   | 15° | 1745 | 1730  | 1688 | 1684  | 1670 | 492  |
| 30°-40°   | 608.8  | 20.3      | 19.6   | 25° | 1621 | 1569  | 1467 | 1238  | 1156 | 747  |
| 40°-50°   | 493.8  | 16.5      | 15.9   | 35° | 1429 | 1366  | 943  | 601   | 552  | 893  |
| 50°-60°   | 356.7  | 11.9      | 11.5   | 45° | 1185 | 979   | 450  | 355   | 350  | 913  |
| 60°-70°   | 167.5  | 5.6       | 5.4    | 55° | 908  | 504   | 271  | 257   | 217  | 811  |
| 70°-80°   | 65.6   | 2.2       | 2.1    | 65° | 613  | 194   | 126  | 5     | 0    | 606  |
| 80°-90°   | 12.5   | 0.4       | 0.4    | 75° | 316  | 90    | 3    | 0     | 0    | 335  |
| 90°-100°  | 0.0    | 0.0       | 0.0    | 85° | 58   | 10    | 2    | 0     | 0    | 75   |
| 100°-110° | 0.0    | 0.0       | 0.0    | 90° | 0    | 0     | 0    | 0     | 0    |      |
| 110°-120° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 120°-130° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 130°-140° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 140°-150° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 150°-160° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 160°-170° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 170°-180° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 0°-30°    | 1292.6 | 43.1      | 41.7   |     |      |       |      |       |      |      |
| 0°-40°    | 1901.4 | 63.4      | 61.3   |     |      |       |      |       |      |      |
| 0°-60°    | 2751.9 | 91.8      | 88.8   |     |      |       |      |       |      |      |
| 0°-90°    | 2997.5 | 100.0     | 96.7   |     |      |       |      |       |      |      |
| 90°-120°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 90°-150°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 90°-180°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 0°-180°   | 2997.5 | 100.0     | 96.7   |     |      |       |      |       |      |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°   | 22.5° | 45°  | 67.5° | 90°  |
|-------|------|-------|------|-------|------|
| 0°    | 1784 | 1784  | 1784 | 1784  | 1784 |
| 2.5°  | 1790 | 1792  | 1795 | 1799  | 1795 |
| 5°    | 1791 | 1800  | 1802 | 1798  | 1788 |
| 7.5°  | 1787 | 1799  | 1784 | 1757  | 1744 |
| 10°   | 1778 | 1787  | 1743 | 1722  | 1718 |
| 12.5° | 1764 | 1766  | 1708 | 1709  | 1705 |
| 15°   | 1745 | 1730  | 1688 | 1684  | 1670 |
| 17.5° | 1722 | 1687  | 1667 | 1624  | 1589 |
| 20°   | 1692 | 1645  | 1625 | 1523  | 1463 |
| 22.5° | 1659 | 1606  | 1560 | 1388  | 1311 |
| 25°   | 1621 | 1569  | 1467 | 1238  | 1156 |
| 27.5° | 1578 | 1530  | 1349 | 1084  | 980  |
| 30°   | 1532 | 1484  | 1218 | 908   | 786  |
| 32.5° | 1482 | 1429  | 1085 | 724   | 643  |
| 35°   | 1429 | 1366  | 943  | 601   | 552  |
| 37.5° | 1372 | 1287  | 781  | 516   | 452  |
| 40°   | 1312 | 1195  | 631  | 421   | 406  |
| 42.5° | 1249 | 1092  | 526  | 382   | 380  |
| 45°   | 1185 | 979   | 450  | 355   | 350  |
| 47.5° | 1117 | 864   | 365  | 328   | 349  |
| 50°   | 1049 | 750   | 324  | 327   | 341  |
| 52.5° | 979  | 630   | 297  | 315   | 286  |
| 55°   | 908  | 504   | 271  | 257   | 217  |
| 57.5° | 835  | 391   | 265  | 187   | 145  |
| 60°   | 762  | 315   | 247  | 120   | 74   |
| 62.5° | 687  | 252   | 188  | 53    | 15   |
| 65°   | 613  | 194   | 126  | 5     | 0    |
| 67.5° | 537  | 166   | 63   | 0     | 0    |
| 70°   | 462  | 145   | 13   | 0     | 0    |
| 72.5° | 388  | 132   | 4    | 0     | 0    |
| 75°   | 316  | 90    | 3    | 0     | 0    |
| 77.5° | 245  | 43    | 3    | 0     | 0    |
| 80°   | 178  | 14    | 3    | 0     | 0    |
| 82.5° | 114  | 12    | 3    | 0     | 0    |
| 85°   | 58   | 10    | 2    | 0     | 0    |
| 87.5° | 15   | 9     | 2    | 0     | 0    |
| 90°   | 0    | 0     | 0    | 0     | 0    |

(END OF REPORT)