

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P892845

Luminaire Tested: 2MB-5HL-LVRA-UNV-L830

Issue Date: 11/11/2024

**Test Information**

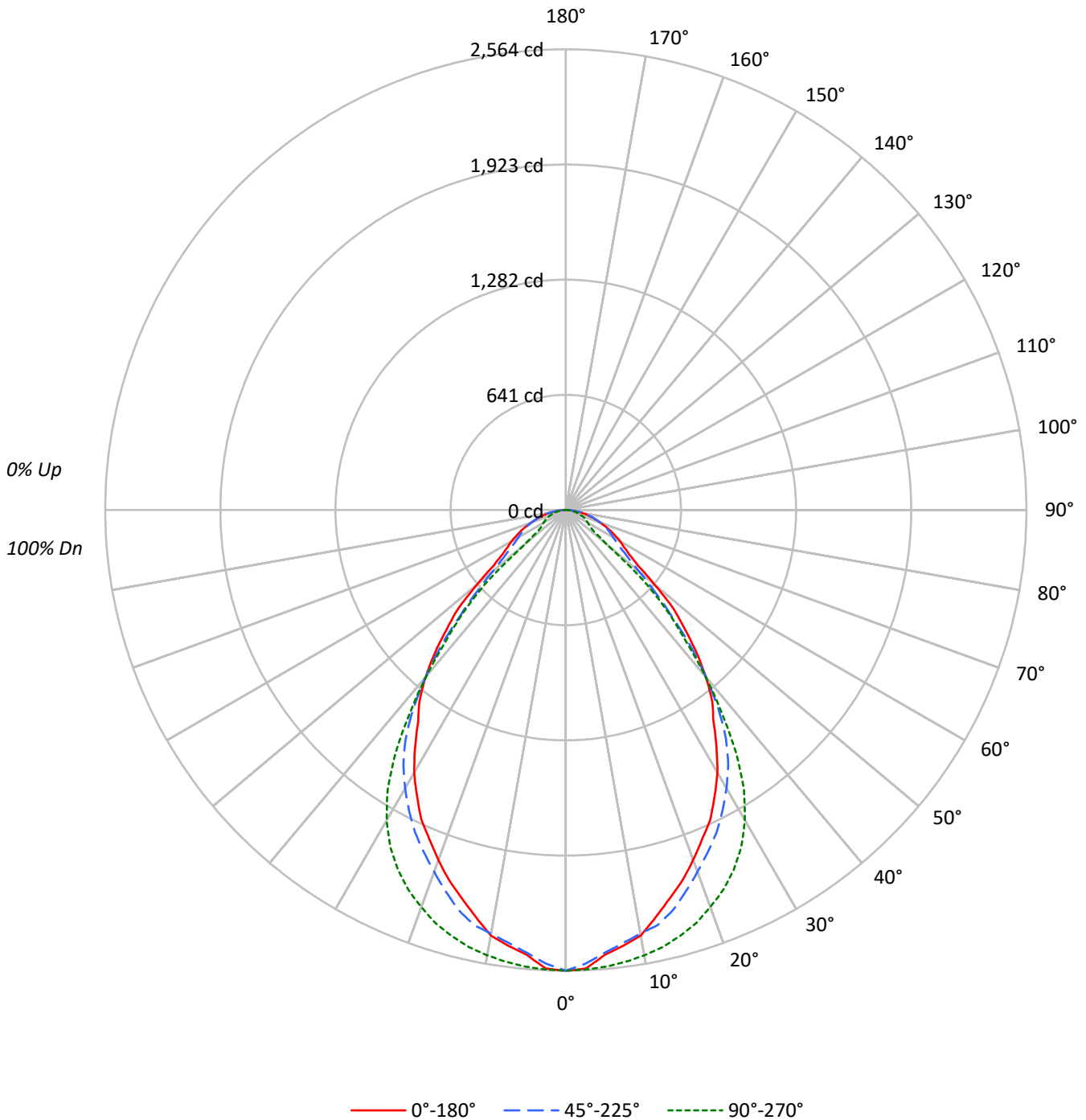
Test Method: LM-79-2019  
Report Number: P892845  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-26)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 2MB-5HL-LVRA-UNV-L830  
Description: 5000 Lumen 2FT MICROBAY LINEAR BAY with LOUVER WITH AISLE OPTIC, 80CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4161.0 lumens  
Efficiency: N/A  
Efficacy: 123.5 lumens/watt  
Spacing Criteria (0/90/45): 1.02 / 1.16 / 1.12  
Luminous Opening: Rectangular (W 0.38' x L: 1.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.7  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 4.5  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 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 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 100 |    |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 90  | 88  |    |
| 2   | 103 | 96  | 91  | 86  | 101 | 95  | 90  | 85  | 91  | 87  | 83  | 88  | 85  | 82  | 85  | 82  | 80  | 80  | 78  |    |
| 3   | 96  | 87  | 80  | 75  | 94  | 86  | 80  | 75  | 83  | 78  | 73  | 80  | 76  | 72  | 78  | 74  | 71  | 71  | 69  |    |
| 4   | 89  | 79  | 72  | 66  | 87  | 78  | 71  | 66  | 76  | 70  | 65  | 73  | 68  | 64  | 71  | 67  | 63  | 63  | 62  |    |
| 5   | 83  | 72  | 65  | 59  | 81  | 71  | 64  | 59  | 69  | 63  | 58  | 67  | 62  | 58  | 66  | 61  | 57  | 57  | 55  |    |
| 6   | 78  | 66  | 59  | 53  | 76  | 65  | 58  | 53  | 64  | 57  | 53  | 62  | 57  | 52  | 61  | 56  | 52  | 52  | 50  |    |
| 7   | 73  | 61  | 54  | 48  | 71  | 60  | 53  | 48  | 59  | 52  | 48  | 58  | 52  | 47  | 56  | 51  | 47  | 47  | 45  |    |
| 8   | 68  | 57  | 49  | 44  | 67  | 56  | 49  | 44  | 55  | 48  | 44  | 53  | 48  | 43  | 52  | 47  | 43  | 43  | 41  |    |
| 9   | 64  | 52  | 45  | 40  | 63  | 52  | 45  | 40  | 51  | 44  | 40  | 50  | 44  | 40  | 49  | 44  | 40  | 40  | 38  |    |
| 10  | 61  | 49  | 42  | 37  | 60  | 48  | 42  | 37  | 47  | 41  | 37  | 47  | 41  | 37  | 46  | 40  | 37  | 37  | 35  |    |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 36676 | 36676 | 36676 |
| 5°  | 35688 | 35527 | 36637 |
| 10° | 34930 | 34776 | 36552 |
| 15° | 33126 | 34145 | 36346 |
| 20° | 31557 | 32623 | 35792 |
| 25° | 30017 | 31300 | 34879 |
| 30° | 27888 | 29547 | 32931 |
| 35° | 25006 | 27153 | 28883 |
| 40° | 22656 | 22704 | 22581 |
| 45° | 18942 | 16778 | 16363 |
| 50° | 14308 | 11809 | 6692  |
| 55° | 10762 | 9443  | 4220  |
| 60° | 10002 | 8698  | 4066  |
| 65° | 9305  | 8679  | 4072  |
| 70° | 8512  | 8512  | 4007  |
| 75° | 8070  | 8291  | 3869  |
| 80° | 7456  | 7843  | 3971  |
| 85° | 6500  | 6828  | 4333  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 19383 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 236.8  | 5.7       |
| 10°-20°   | 652.6  | 15.7      |
| 20°-30°   | 925.3  | 22.2      |
| 30°-40°   | 953.3  | 22.9      |
| 40°-50°   | 665.8  | 16.0      |
| 50°-60°   | 319.5  | 7.7       |
| 60°-70°   | 224.2  | 5.4       |
| 70°-80°   | 140.1  | 3.4       |
| 80°-90°   | 43.3   | 1.0       |
| 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°    | 1814.7 | 43.6      |
| 0°-40°    | 2768.0 | 66.5      |
| 0°-60°    | 3753.3 | 90.2      |
| 0°-90°    | 4161.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4161.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2564 | 2564  | 2564 | 2564  | 2564 |      |
| 5°  | 2485 | 2482  | 2474 | 2539  | 2551 | 235  |
| 15° | 2237 | 2253  | 2306 | 2372  | 2454 | 630  |
| 25° | 1902 | 1921  | 1983 | 2117  | 2210 | 870  |
| 35° | 1432 | 1471  | 1555 | 1587  | 1654 | 902  |
| 45° | 936  | 958   | 829  | 787   | 809  | 721  |
| 55° | 432  | 410   | 379  | 242   | 169  | 404  |
| 65° | 275  | 257   | 256  | 195   | 120  | 272  |
| 75° | 146  | 144   | 150  | 130   | 70   | 154  |
| 85° | 40   | 40    | 42   | 41    | 26   | 44   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2563.8 | 2563.8 | 2563.8 | 2563.8 | 2563.8 |
| 2.5°  | 2553.9 | 2546.0 | 2526.8 | 2561.8 | 2559.2 |
| 5°    | 2485.2 | 2481.9 | 2474.0 | 2538.7 | 2551.3 |
| 7.5°  | 2446.2 | 2439.6 | 2430.4 | 2501.7 | 2536.7 |
| 10°   | 2404.6 | 2412.5 | 2394.0 | 2459.4 | 2516.3 |
| 12.5° | 2318.7 | 2339.8 | 2364.9 | 2415.8 | 2491.1 |
| 15°   | 2236.7 | 2253.3 | 2305.5 | 2371.5 | 2454.1 |
| 17.5° | 2160.1 | 2179.3 | 2224.2 | 2323.3 | 2411.2 |
| 20°   | 2072.9 | 2099.3 | 2142.9 | 2269.8 | 2351.1 |
| 22.5° | 1983.0 | 2007.5 | 2062.3 | 2198.4 | 2288.9 |
| 25°   | 1901.7 | 1920.9 | 1983.0 | 2117.1 | 2209.7 |
| 27.5° | 1794.0 | 1829.7 | 1888.5 | 2018.0 | 2115.2 |
| 30°   | 1688.3 | 1718.7 | 1788.7 | 1897.8 | 1993.6 |
| 32.5° | 1560.8 | 1605.0 | 1682.3 | 1765.6 | 1845.6 |
| 35°   | 1431.9 | 1470.9 | 1554.8 | 1587.2 | 1653.9 |
| 37.5° | 1338.1 | 1348.7 | 1396.2 | 1392.3 | 1429.9 |
| 40°   | 1213.2 | 1234.3 | 1215.8 | 1166.3 | 1209.2 |
| 42.5° | 1078.4 | 1103.5 | 1028.8 | 971.3  | 986.5  |
| 45°   | 936.3  | 958.1  | 829.3  | 787.0  | 808.8  |
| 47.5° | 813.4  | 811.4  | 668.7  | 640.3  | 609.9  |
| 50°   | 642.9  | 664.1  | 530.6  | 477.7  | 300.7  |
| 52.5° | 502.2  | 510.1  | 437.4  | 305.3  | 197.6  |
| 55°   | 431.5  | 410.3  | 378.6  | 242.5  | 169.2  |
| 57.5° | 383.3  | 356.8  | 335.7  | 225.3  | 154.6  |
| 60°   | 349.6  | 319.8  | 304.0  | 214.1  | 142.1  |
| 62.5° | 311.2  | 288.1  | 282.2  | 204.2  | 130.8  |
| 65°   | 274.9  | 257.0  | 256.4  | 194.9  | 120.3  |
| 67.5° | 238.5  | 228.6  | 231.3  | 183.7  | 108.4  |
| 70°   | 203.5  | 201.5  | 203.5  | 169.2  | 95.8   |
| 72.5° | 173.8  | 171.8  | 177.1  | 150.7  | 81.9   |
| 75°   | 146.0  | 144.1  | 150.0  | 129.5  | 70.0   |
| 77.5° | 116.3  | 117.6  | 121.6  | 107.7  | 58.8   |
| 80°   | 90.5   | 90.5   | 95.2   | 84.6   | 48.2   |
| 82.5° | 64.8   | 65.4   | 68.1   | 62.1   | 37.7   |
| 85°   | 39.6   | 39.6   | 41.6   | 41.0   | 26.4   |
| 87.5° | 13.2   | 15.2   | 17.8   | 19.2   | 13.2   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 18.16            | 19.52 | 18.53 | 19.83 | 20.14 | 14.49          | 15.85 | 14.86 | 16.16 | 16.47 |
|                 | 3H   | 19.90            | 21.11 | 20.28 | 21.44 | 21.80 | 16.47          | 17.68 | 16.85 | 18.01 | 18.37 |
|                 | 4H   | 20.57            | 21.70 | 20.97 | 22.05 | 22.43 | 17.17          | 18.30 | 17.58 | 18.65 | 19.03 |
|                 | 6H   | 21.08            | 22.12 | 21.49 | 22.49 | 22.88 | 17.70          | 18.74 | 18.11 | 19.10 | 19.50 |
|                 | 8H   | 21.25            | 22.23 | 21.68 | 22.63 | 23.03 | 17.88          | 18.87 | 18.31 | 19.26 | 19.66 |
|                 | 12H  | 21.36            | 22.30 | 21.79 | 22.68 | 23.11 | 18.02          | 18.96 | 18.45 | 19.35 | 19.78 |
| 4H              | 2H   | 18.69            | 19.82 | 19.09 | 20.17 | 20.55 | 16.12          | 17.24 | 16.52 | 17.59 | 17.98 |
|                 | 3H   | 20.67            | 21.60 | 21.08 | 22.00 | 22.41 | 18.29          | 19.23 | 18.71 | 19.63 | 20.03 |
|                 | 4H   | 21.47            | 22.31 | 21.91 | 22.73 | 23.17 | 19.17          | 20.01 | 19.61 | 20.43 | 20.87 |
|                 | 6H   | 22.11            | 22.84 | 22.58 | 23.28 | 23.75 | 19.82          | 20.54 | 20.28 | 20.99 | 21.45 |
|                 | 8H   | 22.33            | 23.01 | 22.80 | 23.46 | 23.93 | 20.03          | 20.70 | 20.49 | 21.15 | 21.62 |
|                 | 12H  | 22.49            | 23.09 | 22.97 | 23.57 | 24.04 | 20.18          | 20.78 | 20.67 | 21.27 | 21.74 |
| 8H              | 4H   | 21.76            | 22.43 | 22.22 | 22.88 | 23.35 | 19.82          | 20.50 | 20.29 | 20.95 | 21.42 |
|                 | 6H   | 22.54            | 23.09 | 23.04 | 23.59 | 24.07 | 20.68          | 21.24 | 21.19 | 21.74 | 22.22 |
|                 | 8H   | 22.84            | 23.34 | 23.36 | 23.85 | 24.34 | 21.01          | 21.51 | 21.53 | 22.02 | 22.52 |
|                 | 12H  | 23.08            | 23.52 | 23.59 | 24.01 | 24.58 | 21.28          | 21.72 | 21.79 | 22.21 | 22.78 |
| 12H             | 4H   | 21.77            | 22.37 | 22.26 | 22.85 | 23.33 | 19.90          | 20.50 | 20.38 | 20.98 | 21.45 |
|                 | 6H   | 22.59            | 23.09 | 23.11 | 23.60 | 24.10 | 20.82          | 21.32 | 21.34 | 21.84 | 22.33 |
|                 | 8H   | 22.96            | 23.40 | 23.47 | 23.89 | 24.46 | 21.24          | 21.68 | 21.75 | 22.17 | 22.74 |