

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: P892741

Luminaire Tested: 2MB-4HL-LVR-UNV-L830

Issue Date: 11/11/2024

**Test Information**

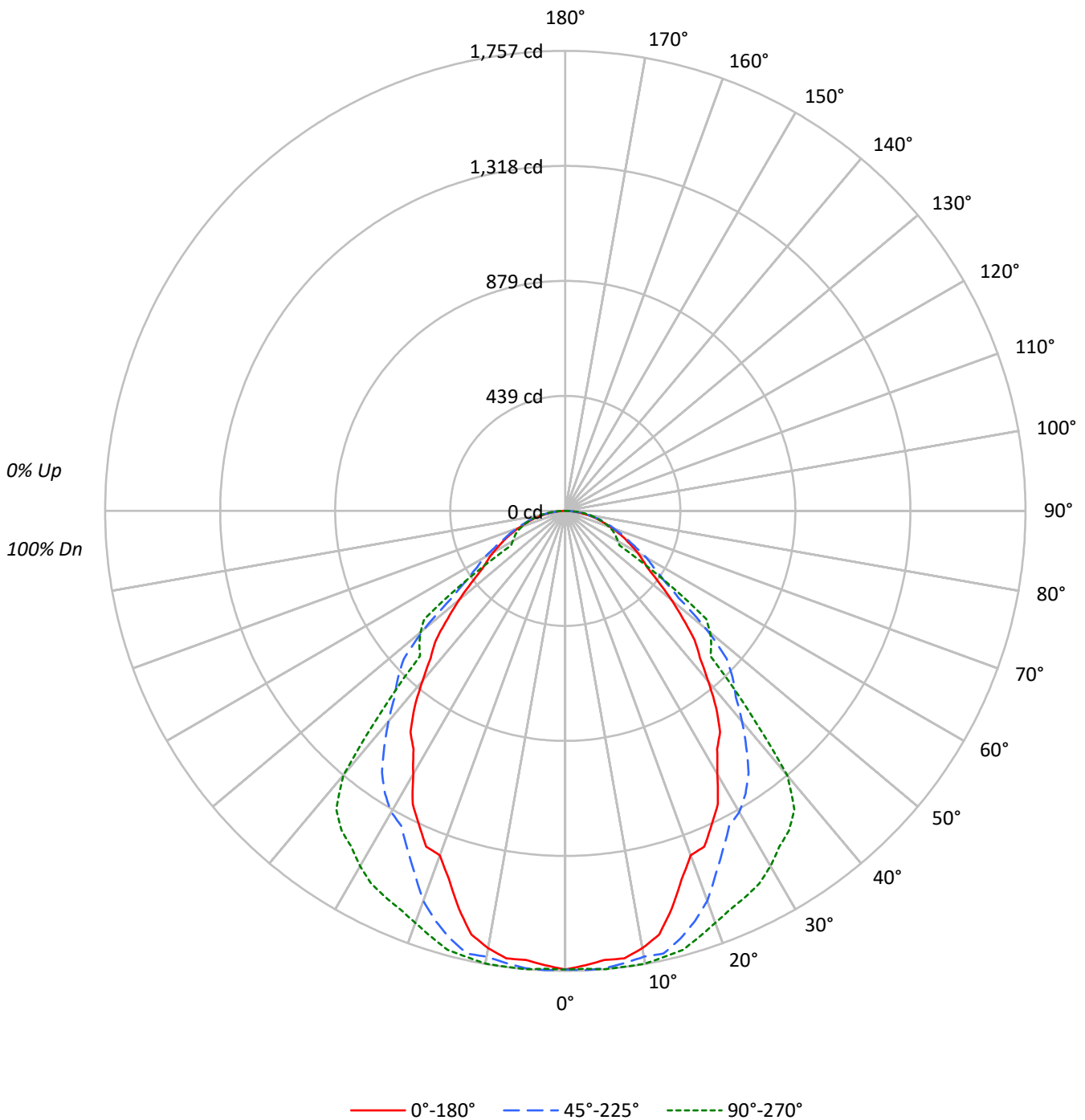
Test Method: LM-79-2019  
Report Number: P892741  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-175-2)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 2MB-4HL-LVR-UNV-L830  
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with LOUVER, 80CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3569.0 lumens  
Efficiency: N/A  
Efficacy: 129.3 lumens/watt  
Spacing Criteria (0/90/45): 1.05 / 1.32 / 1.24  
Luminous Opening: Rectangular (W 0.38' x L: 1.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 27.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 6.5  
Total Harmonic Distortion (THDi): 0.99  
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  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1   | 110 | 106 | 102 | 99  | 108 | 104 | 101 | 98  | 100 | 97  | 94  | 96  | 94  | 92  | 92  | 91  | 89  | 89  | 89  | 89  | 87  |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 77  | 77  | 77  | 75  |
| 3   | 94  | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 68  | 68  | 68  | 66  |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 68  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 60  | 60  | 60  | 60  | 58  |
| 5   | 81  | 69  | 61  | 55  | 79  | 68  | 60  | 55  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 53  | 53  | 53  | 51  |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 54  | 49  | 60  | 53  | 48  | 59  | 52  | 48  | 57  | 52  | 47  | 47  | 47  | 47  | 46  |
| 7   | 70  | 57  | 49  | 44  | 68  | 57  | 49  | 44  | 55  | 48  | 43  | 54  | 48  | 43  | 53  | 47  | 43  | 43  | 43  | 43  | 41  |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 39  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 39  | 39  | 39  | 37  |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 36  | 45  | 40  | 35  | 35  | 35  | 35  | 34  |
| 10  | 58  | 45  | 38  | 33  | 56  | 45  | 38  | 33  | 44  | 37  | 33  | 43  | 37  | 33  | 42  | 37  | 32  | 32  | 32  | 32  | 31  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 25055 | 25055 | 25055 |
| 5°  | 24721 | 25173 | 25234 |
| 10° | 24633 | 25116 | 25501 |
| 15° | 23274 | 25066 | 25704 |
| 20° | 21312 | 24126 | 25489 |
| 25° | 20867 | 22502 | 25681 |
| 30° | 19181 | 21947 | 25876 |
| 35° | 17993 | 21308 | 26011 |
| 40° | 15834 | 19612 | 24611 |
| 45° | 14135 | 18295 | 15863 |
| 50° | 11786 | 15679 | 16066 |
| 55° | 9655  | 11371 | 11308 |
| 60° | 9130  | 10220 | 6641  |
| 65° | 8473  | 8892  | 7071  |
| 70° | 7834  | 8319  | 7420  |
| 75° | 7329  | 7926  | 7650  |
| 80° | 6689  | 7373  | 7991  |
| 85° | 5991  | 6401  | 8847  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 18295 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 166.5  | 4.7       |
| 10°-20°   | 468.6  | 13.1      |
| 20°-30°   | 675.9  | 18.9      |
| 30°-40°   | 766.6  | 21.5      |
| 40°-50°   | 638.4  | 17.9      |
| 50°-60°   | 412.7  | 11.6      |
| 60°-70°   | 244.6  | 6.9       |
| 70°-80°   | 149.2  | 4.2       |
| 80°-90°   | 46.6   | 1.3       |
| 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°    | 1310.9 | 36.7      |
| 0°-40°    | 2077.5 | 58.2      |
| 0°-60°    | 3128.7 | 87.7      |
| 0°-90°    | 3569.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3569.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1751 | 1751  | 1751 | 1751  | 1751 |      |
| 5°  | 1722 | 1742  | 1753 | 1763  | 1757 | 164  |
| 15° | 1572 | 1623  | 1692 | 1720  | 1736 | 438  |
| 25° | 1322 | 1368  | 1426 | 1616  | 1627 | 604  |
| 35° | 1030 | 1066  | 1220 | 1384  | 1489 | 634  |
| 45° | 699  | 748   | 904  | 831   | 784  | 531  |
| 55° | 387  | 424   | 456  | 548   | 453  | 361  |
| 65° | 250  | 257   | 263  | 234   | 209  | 249  |
| 75° | 133  | 136   | 143  | 151   | 138  | 141  |
| 85° | 36   | 36    | 39   | 45    | 54   | 41   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1751.4 | 1751.4 | 1751.4 | 1751.4 | 1751.4 |
| 2.5°  | 1737.3 | 1753.0 | 1755.5 | 1769.6 | 1750.5 |
| 5°    | 1721.5 | 1742.2 | 1753.0 | 1763.0 | 1757.2 |
| 7.5°  | 1724.0 | 1735.6 | 1741.4 | 1758.8 | 1755.5 |
| 10°   | 1695.8 | 1719.0 | 1729.0 | 1749.7 | 1755.5 |
| 12.5° | 1656.9 | 1686.7 | 1731.5 | 1727.3 | 1744.7 |
| 15°   | 1571.5 | 1622.9 | 1692.5 | 1719.9 | 1735.6 |
| 17.5° | 1475.4 | 1532.5 | 1643.6 | 1708.3 | 1704.9 |
| 20°   | 1399.9 | 1443.0 | 1584.8 | 1675.9 | 1674.3 |
| 22.5° | 1387.5 | 1397.4 | 1501.0 | 1653.6 | 1646.9 |
| 25°   | 1322.0 | 1368.4 | 1425.6 | 1616.3 | 1627.0 |
| 27.5° | 1261.5 | 1303.0 | 1356.0 | 1569.0 | 1604.7 |
| 30°   | 1161.2 | 1232.5 | 1328.6 | 1518.5 | 1566.5 |
| 32.5° | 1078.3 | 1147.1 | 1280.6 | 1456.3 | 1520.9 |
| 35°   | 1030.3 | 1065.9 | 1220.1 | 1384.2 | 1489.4 |
| 37.5° | 945.7  | 1012.0 | 1134.7 | 1299.6 | 1436.4 |
| 40°   | 847.9  | 924.2  | 1050.2 | 1225.0 | 1317.9 |
| 42.5° | 760.9  | 822.2  | 964.0  | 1084.1 | 1034.4 |
| 45°   | 698.7  | 747.6  | 904.3  | 831.3  | 784.1  |
| 47.5° | 609.2  | 671.4  | 835.5  | 683.0  | 755.9  |
| 50°   | 529.6  | 583.5  | 704.5  | 645.7  | 721.9  |
| 52.5° | 452.6  | 503.9  | 545.4  | 609.2  | 678.8  |
| 55°   | 387.1  | 424.4  | 455.9  | 547.9  | 453.4  |
| 57.5° | 351.4  | 363.0  | 398.7  | 391.2  | 244.5  |
| 60°   | 319.1  | 324.1  | 357.2  | 264.4  | 232.1  |
| 62.5° | 282.6  | 291.8  | 305.0  | 247.8  | 219.6  |
| 65°   | 250.3  | 256.9  | 262.7  | 233.7  | 208.9  |
| 67.5° | 218.8  | 225.4  | 231.2  | 217.2  | 195.6  |
| 70°   | 187.3  | 191.5  | 198.9  | 195.6  | 177.4  |
| 72.5° | 159.1  | 162.5  | 171.6  | 174.1  | 160.0  |
| 75°   | 132.6  | 135.9  | 143.4  | 150.9  | 138.4  |
| 77.5° | 106.9  | 109.4  | 117.7  | 123.5  | 119.4  |
| 80°   | 81.2   | 85.4   | 89.5   | 97.0   | 97.0   |
| 82.5° | 59.7   | 60.5   | 64.7   | 72.1   | 75.4   |
| 85°   | 36.5   | 36.5   | 39.0   | 44.8   | 53.9   |
| 87.5° | 15.7   | 15.7   | 17.4   | 19.1   | 27.4   |
| 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 | 18.54            | 20.00 | 18.91 | 20.32 | 20.63 | 18.51          | 19.98 | 18.88 | 20.29 | 20.60 |
|                 | 3H   | 20.14            | 21.45 | 20.52 | 21.78 | 22.14 | 19.99          | 21.30 | 20.37 | 21.63 | 21.99 |
|                 | 4H   | 20.75            | 21.97 | 21.15 | 22.32 | 22.70 | 20.69          | 21.92 | 21.09 | 22.27 | 22.65 |
|                 | 6H   | 21.21            | 22.34 | 21.62 | 22.71 | 23.10 | 21.31          | 22.44 | 21.72 | 22.81 | 23.20 |
|                 | 8H   | 21.37            | 22.44 | 21.79 | 22.83 | 23.23 | 21.56          | 22.63 | 21.98 | 23.02 | 23.42 |
|                 | 12H  | 21.47            | 22.50 | 21.90 | 22.88 | 23.31 | 21.76          | 22.79 | 22.19 | 23.17 | 23.60 |
| 4H              | 2H   | 19.14            | 20.36 | 19.54 | 20.71 | 21.09 | 19.12          | 20.34 | 19.52 | 20.69 | 21.07 |
|                 | 3H   | 20.96            | 21.97 | 21.37 | 22.37 | 22.77 | 20.87          | 21.89 | 21.28 | 22.29 | 22.69 |
|                 | 4H   | 21.69            | 22.60 | 22.13 | 23.02 | 23.46 | 21.74          | 22.65 | 22.17 | 23.07 | 23.51 |
|                 | 6H   | 22.28            | 23.08 | 22.74 | 23.52 | 23.98 | 22.50          | 23.29 | 22.96 | 23.73 | 24.20 |
|                 | 8H   | 22.49            | 23.23 | 22.95 | 23.67 | 24.14 | 22.80          | 23.54 | 23.26 | 23.98 | 24.45 |
|                 | 12H  | 22.63            | 23.29 | 23.12 | 23.77 | 24.25 | 23.05          | 23.71 | 23.54 | 24.19 | 24.67 |
| 8H              | 4H   | 22.01            | 22.75 | 22.47 | 23.19 | 23.66 | 22.05          | 22.79 | 22.52 | 23.24 | 23.71 |
|                 | 6H   | 22.73            | 23.34 | 23.23 | 23.84 | 24.32 | 22.95          | 23.57 | 23.45 | 24.06 | 24.54 |
|                 | 8H   | 23.01            | 23.56 | 23.53 | 24.07 | 24.56 | 23.34          | 23.90 | 23.86 | 24.41 | 24.90 |
|                 | 12H  | 23.23            | 23.72 | 23.74 | 24.21 | 24.78 | 23.70          | 24.19 | 24.21 | 24.68 | 25.24 |
| 12H             | 4H   | 22.04            | 22.71 | 22.53 | 23.19 | 23.66 | 22.08          | 22.74 | 22.56 | 23.22 | 23.69 |
|                 | 6H   | 22.80            | 23.35 | 23.31 | 23.86 | 24.35 | 23.01          | 23.56 | 23.52 | 24.07 | 24.56 |
|                 | 8H   | 23.14            | 23.63 | 23.65 | 24.12 | 24.69 | 23.46          | 23.95 | 23.97 | 24.44 | 25.01 |