

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: P894021

Luminaire Tested: 4MB-9HL-FLT-UNV-L930

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P894021  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-4)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-9HL-FLT-UNV-L930  
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with FLAT FROSTED LENS, 90CRI, 3000K CCT  
Light Source: -  
Ballast/Driver: -

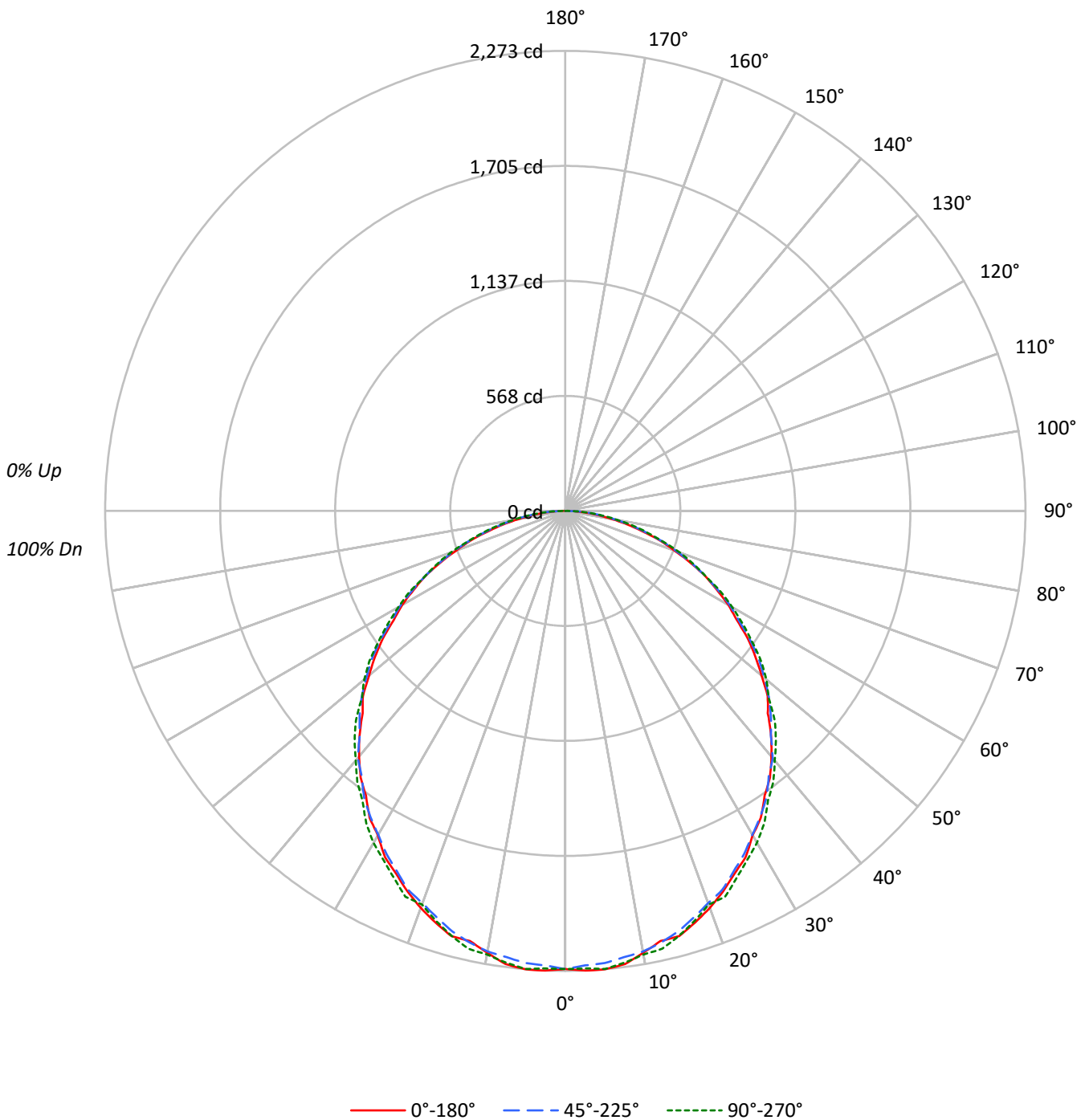
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6272.0 lumens  
Efficiency: N/A  
Efficacy: 97.4 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.24 / 1.34  
Luminous Opening: Rectangular (W 0.38' x L: 3.98' x H: 0')  
CIE Type: Direct

Input Watts (W): 64.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 8.94  
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   | 109 | 104 | 99  | 96  | 106 | 102 | 98  | 94  | 97  | 94  | 91  | 93  | 91  | 88  | 90  | 88  | 86  | 86  | 86  | 86  | 84  |
| 2   | 99  | 90  | 84  | 78  | 96  | 89  | 82  | 77  | 85  | 80  | 75  | 82  | 77  | 73  | 79  | 75  | 72  | 72  | 72  | 72  | 70  |
| 3   | 90  | 79  | 71  | 65  | 88  | 78  | 70  | 64  | 75  | 68  | 63  | 72  | 67  | 62  | 69  | 65  | 61  | 61  | 61  | 61  | 59  |
| 4   | 82  | 70  | 62  | 55  | 80  | 69  | 61  | 54  | 67  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 52  | 52  | 52  | 52  | 50  |
| 5   | 76  | 63  | 54  | 47  | 74  | 62  | 53  | 47  | 60  | 52  | 46  | 58  | 51  | 46  | 56  | 50  | 45  | 45  | 45  | 45  | 43  |
| 6   | 70  | 57  | 48  | 41  | 68  | 56  | 47  | 41  | 54  | 46  | 41  | 52  | 45  | 40  | 51  | 45  | 40  | 40  | 40  | 40  | 38  |
| 7   | 65  | 51  | 43  | 36  | 63  | 51  | 42  | 36  | 49  | 41  | 36  | 48  | 41  | 36  | 46  | 40  | 35  | 35  | 35  | 35  | 33  |
| 8   | 60  | 47  | 38  | 33  | 59  | 46  | 38  | 32  | 45  | 37  | 32  | 44  | 37  | 32  | 42  | 36  | 32  | 32  | 32  | 32  | 30  |
| 9   | 57  | 43  | 35  | 29  | 55  | 42  | 35  | 29  | 41  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 29  | 29  | 29  | 27  |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 26  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 26  | 26  | 26  | 24  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16106 | 16106 | 16106 |
| 5°  | 16237 | 16021 | 16223 |
| 10° | 16015 | 15972 | 16079 |
| 15° | 16018 | 15852 | 16004 |
| 20° | 15807 | 15614 | 15673 |
| 25° | 15521 | 15436 | 15713 |
| 30° | 15207 | 15183 | 15561 |
| 35° | 14914 | 15041 | 15168 |
| 40° | 14712 | 14803 | 14948 |
| 45° | 14237 | 14453 | 14719 |
| 50° | 14006 | 14210 | 14352 |
| 55° | 13657 | 13827 | 13973 |
| 60° | 13232 | 13427 | 13553 |
| 65° | 12840 | 12889 | 12889 |
| 70° | 11941 | 12226 | 12530 |
| 75° | 10993 | 11425 | 11667 |
| 80° | 9694  | 10538 | 10899 |
| 85° | 8702  | 9739  | 10457 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 14719 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 214.2  | 3.4       |
| 10°-20°   | 610.6  | 9.7       |
| 20°-30°   | 915.9  | 14.6      |
| 30°-40°   | 1087.7 | 17.3      |
| 40°-50°   | 1113.7 | 17.8      |
| 50°-60°   | 997.8  | 15.9      |
| 60°-70°   | 758.0  | 12.1      |
| 70°-80°   | 441.5  | 7.0       |
| 80°-90°   | 132.6  | 2.1       |
| 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°    | 1740.7 | 27.8      |
| 0°-40°    | 2828.4 | 45.1      |
| 0°-60°    | 4939.9 | 78.8      |
| 0°-90°    | 6272.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6272.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2264 | 2264  | 2264 | 2264  | 2264 |      |
| 5°  | 2273 | 2265  | 2243 | 2257  | 2271 | 215  |
| 15° | 2175 | 2189  | 2152 | 2161  | 2173 | 610  |
| 25° | 1977 | 1995  | 1966 | 1992  | 2002 | 912  |
| 35° | 1717 | 1755  | 1732 | 1738  | 1746 | 1079 |
| 45° | 1415 | 1450  | 1436 | 1448  | 1463 | 1100 |
| 55° | 1101 | 1118  | 1115 | 1127  | 1126 | 981  |
| 65° | 763  | 763   | 766  | 775   | 766  | 749  |
| 75° | 400  | 407   | 416  | 428   | 424  | 426  |
| 85° | 107  | 108   | 119  | 127   | 128  | 119  |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2263.6 | 2263.6 | 2263.6 | 2263.6 | 2263.6 |
| 2.5°  | 2273.4 | 2262.6 | 2247.9 | 2252.8 | 2262.6 |
| 5°    | 2273.4 | 2264.6 | 2243.1 | 2256.7 | 2271.4 |
| 7.5°  | 2258.7 | 2270.4 | 2223.5 | 2223.5 | 2250.9 |
| 10°   | 2216.7 | 2239.1 | 2210.8 | 2207.9 | 2225.5 |
| 12.5° | 2176.6 | 2217.6 | 2184.4 | 2194.2 | 2215.7 |
| 15°   | 2174.6 | 2189.3 | 2152.1 | 2160.9 | 2172.7 |
| 17.5° | 2132.6 | 2147.2 | 2107.1 | 2123.8 | 2123.8 |
| 20°   | 2087.6 | 2090.5 | 2062.2 | 2098.3 | 2070.0 |
| 22.5° | 2035.8 | 2066.1 | 2027.0 | 2038.7 | 2063.1 |
| 25°   | 1977.1 | 1994.7 | 1966.3 | 1991.8 | 2001.5 |
| 27.5° | 1929.2 | 1950.7 | 1911.6 | 1941.9 | 1944.8 |
| 30°   | 1851.0 | 1874.4 | 1848.0 | 1867.6 | 1894.0 |
| 32.5° | 1798.2 | 1806.0 | 1792.3 | 1821.6 | 1829.5 |
| 35°   | 1717.0 | 1755.1 | 1731.7 | 1738.5 | 1746.3 |
| 37.5° | 1660.3 | 1672.0 | 1651.5 | 1675.0 | 1687.7 |
| 40°   | 1584.0 | 1601.6 | 1593.8 | 1597.7 | 1609.4 |
| 42.5° | 1504.8 | 1523.4 | 1502.9 | 1531.2 | 1540.0 |
| 45°   | 1414.9 | 1450.1 | 1436.4 | 1448.1 | 1462.8 |
| 47.5° | 1356.2 | 1367.9 | 1364.0 | 1370.9 | 1361.1 |
| 50°   | 1265.3 | 1277.0 | 1283.8 | 1292.6 | 1296.6 |
| 52.5° | 1184.1 | 1192.9 | 1205.6 | 1210.5 | 1219.3 |
| 55°   | 1101.0 | 1117.6 | 1114.7 | 1127.4 | 1126.4 |
| 57.5° | 1004.2 | 1028.6 | 1020.8 | 1039.4 | 1039.4 |
| 60°   | 929.9  | 933.8  | 943.6  | 952.4  | 952.4  |
| 62.5° | 843.8  | 848.7  | 853.6  | 861.4  | 867.3  |
| 65°   | 762.7  | 762.7  | 765.6  | 775.4  | 765.6  |
| 67.5° | 668.8  | 664.9  | 674.7  | 686.4  | 685.4  |
| 70°   | 574.0  | 578.9  | 587.7  | 602.3  | 602.3  |
| 72.5° | 492.8  | 492.8  | 502.6  | 510.4  | 509.4  |
| 75°   | 399.9  | 406.8  | 415.6  | 428.3  | 424.4  |
| 77.5° | 316.8  | 321.7  | 336.4  | 348.1  | 349.1  |
| 80°   | 236.6  | 241.5  | 257.2  | 268.9  | 266.0  |
| 82.5° | 165.2  | 172.1  | 186.8  | 195.6  | 194.6  |
| 85°   | 106.6  | 108.5  | 119.3  | 127.1  | 128.1  |
| 87.5° | 48.9   | 52.8   | 60.6   | 63.6   | 63.6   |
| 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 | 21.18            | 22.82 | 21.55 | 23.14 | 23.45 | 21.29          | 22.93 | 21.65 | 23.24 | 23.56 |
|                 | 3H   | 22.96            | 24.45 | 23.34 | 24.77 | 25.13 | 23.13          | 24.61 | 23.50 | 24.94 | 25.30 |
|                 | 4H   | 23.63            | 25.03 | 24.03 | 25.37 | 25.75 | 23.82          | 25.22 | 24.22 | 25.57 | 25.95 |
|                 | 6H   | 24.10            | 25.40 | 24.51 | 25.76 | 26.15 | 24.37          | 25.67 | 24.79 | 26.03 | 26.43 |
|                 | 8H   | 24.25            | 25.49 | 24.68 | 25.88 | 26.28 | 24.56          | 25.80 | 24.99 | 26.19 | 26.59 |
|                 | 12H  | 24.36            | 25.55 | 24.79 | 25.93 | 26.36 | 24.71          | 25.90 | 25.14 | 26.28 | 26.71 |
| 4H              | 2H   | 21.83            | 23.23 | 22.23 | 23.57 | 23.95 | 21.91          | 23.31 | 22.31 | 23.66 | 24.03 |
|                 | 3H   | 23.83            | 25.01 | 24.24 | 25.40 | 25.80 | 23.98          | 25.15 | 24.39 | 25.55 | 25.95 |
|                 | 4H   | 24.62            | 25.69 | 25.05 | 26.10 | 26.53 | 24.81          | 25.88 | 25.24 | 26.29 | 26.72 |
|                 | 6H   | 25.22            | 26.15 | 25.68 | 26.59 | 27.05 | 25.50          | 26.43 | 25.96 | 26.87 | 27.33 |
|                 | 8H   | 25.42            | 26.29 | 25.88 | 26.73 | 27.20 | 25.75          | 26.62 | 26.21 | 27.06 | 27.53 |
|                 | 12H  | 25.57            | 26.36 | 26.05 | 26.83 | 27.30 | 25.95          | 26.73 | 26.43 | 27.20 | 27.67 |
| 8H              | 4H   | 24.96            | 25.83 | 25.42 | 26.27 | 26.74 | 25.13          | 26.00 | 25.59 | 26.44 | 26.90 |
|                 | 6H   | 25.68            | 26.41 | 26.18 | 26.90 | 27.37 | 25.95          | 26.68 | 26.44 | 27.16 | 27.64 |
|                 | 8H   | 25.95            | 26.61 | 26.46 | 27.11 | 27.60 | 26.28          | 26.93 | 26.79 | 27.44 | 27.93 |
|                 | 12H  | 26.18            | 26.76 | 26.69 | 27.25 | 27.81 | 26.57          | 27.15 | 27.08 | 27.64 | 28.20 |
| 12H             | 4H   | 25.00            | 25.79 | 25.48 | 26.26 | 26.73 | 25.16          | 25.94 | 25.64 | 26.42 | 26.89 |
|                 | 6H   | 25.76            | 26.41 | 26.26 | 26.91 | 27.40 | 26.01          | 26.66 | 26.52 | 27.17 | 27.65 |
|                 | 8H   | 26.09            | 26.67 | 26.60 | 27.16 | 27.72 | 26.41          | 26.98 | 26.91 | 27.47 | 28.03 |