

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: P893539

Luminaire Tested: 4MB-4SL-LVRF-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893539
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-175-7)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-4SL-LVRF-UNV-L840
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with LOUVER WITH FROSTED INLAY, 80CRI, 4000K C
Light Source: -
Ballast/Driver: -

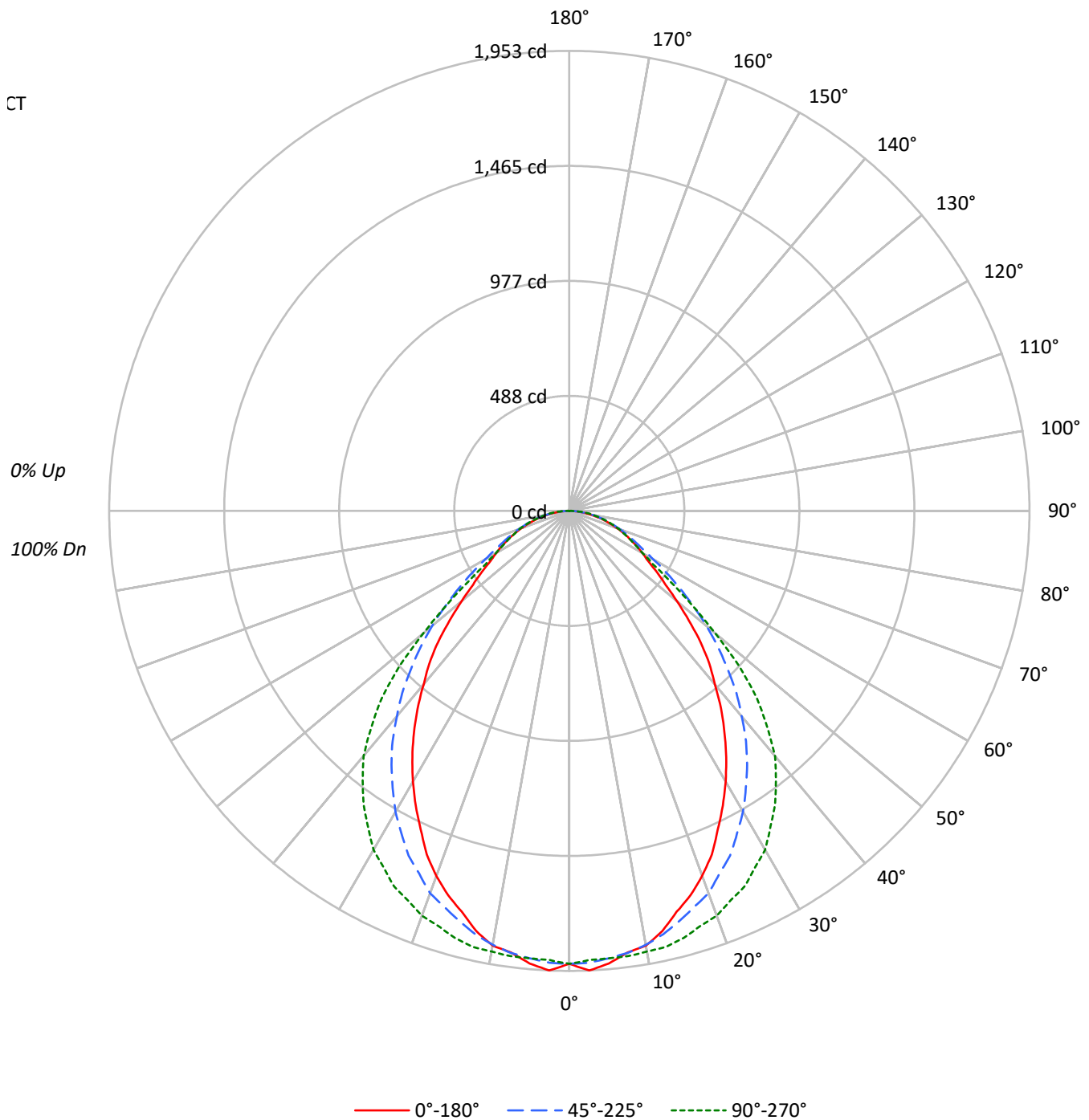
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3996.0 lumens
Efficiency: N/A
Efficacy: 134.1 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.27 / 1.23
Luminous Opening: Rectangular (W 0.38' x L: 3.98' x H: 0')
CIE Type: Direct

Input Watts (W): 29.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 5.5
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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CATALOG NUMBER: 4MB-4SL-LVRF-UNV-L840

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 | 100 | 97 | 100 | 97 | 94 | 96 | 93 | 91 | 92 | 90 | 89 | 89 | 89 | 89 | 87 |
| 2 | 102 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 79 | 83 | 80 | 77 | 77 | 77 | 77 | 75 |
| 3 | 94 | 84 | 77 | 71 | 91 | 83 | 76 | 70 | 80 | 74 | 69 | 77 | 72 | 68 | 75 | 71 | 67 | 67 | 67 | 67 | 65 |
| 4 | 87 | 76 | 68 | 62 | 84 | 74 | 67 | 61 | 72 | 66 | 60 | 70 | 64 | 60 | 68 | 63 | 59 | 59 | 59 | 59 | 57 |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 60 | 54 | 65 | 59 | 53 | 63 | 58 | 53 | 62 | 56 | 52 | 52 | 52 | 52 | 50 |
| 6 | 75 | 62 | 54 | 48 | 73 | 61 | 54 | 48 | 60 | 53 | 48 | 58 | 52 | 47 | 56 | 51 | 47 | 47 | 47 | 47 | 45 |
| 7 | 69 | 57 | 49 | 43 | 68 | 56 | 48 | 43 | 55 | 48 | 43 | 53 | 47 | 42 | 52 | 46 | 42 | 42 | 42 | 42 | 40 |
| 8 | 65 | 52 | 44 | 39 | 63 | 52 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 38 | 38 | 38 | 36 |
| 9 | 61 | 48 | 41 | 35 | 60 | 48 | 40 | 35 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 35 | 35 | 35 | 35 | 33 |
| 10 | 57 | 45 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 42 | 36 | 32 | 32 | 32 | 32 | 30 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13680 | 13680 | 13680 |
| 5° | 13775 | 13618 | 13618 |
| 10° | 13537 | 13515 | 13725 |
| 15° | 12977 | 13279 | 13824 |
| 20° | 12483 | 13081 | 13846 |
| 25° | 11711 | 12676 | 13815 |
| 30° | 10901 | 12117 | 13652 |
| 35° | 9978 | 11429 | 13218 |
| 40° | 8933 | 10568 | 12611 |
| 45° | 7928 | 9567 | 11338 |
| 50° | 6596 | 8422 | 8943 |
| 55° | 5618 | 7094 | 6499 |
| 60° | 5093 | 5861 | 5136 |
| 65° | 4798 | 5135 | 4781 |
| 70° | 4514 | 4764 | 4660 |
| 75° | 4206 | 4536 | 4453 |
| 80° | 3852 | 4179 | 4302 |
| 85° | 3347 | 3674 | 4816 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 11338 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 182.0 | 4.6 |
| 10°-20° | 512.2 | 12.8 |
| 20°-30° | 743.9 | 18.6 |
| 30°-40° | 828.3 | 20.7 |
| 40°-50° | 731.8 | 18.3 |
| 50°-60° | 480.2 | 12.0 |
| 60°-70° | 294.1 | 7.4 |
| 70°-80° | 171.1 | 4.3 |
| 80°-90° | 52.4 | 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° | 1438.1 | 36.0 |
| 0°-40° | 2266.4 | 56.7 |
| 0°-60° | 3478.4 | 87.0 |
| 0°-90° | 3996.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3996.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1923 | 1923 | 1923 | 1923 | 1923 | |
| 5° | 1929 | 1930 | 1907 | 1926 | 1907 | 182 |
| 15° | 1762 | 1782 | 1803 | 1874 | 1877 | 497 |
| 25° | 1492 | 1528 | 1615 | 1718 | 1760 | 686 |
| 35° | 1149 | 1211 | 1316 | 1455 | 1522 | 717 |
| 45° | 788 | 836 | 951 | 1079 | 1127 | 603 |
| 55° | 453 | 485 | 572 | 567 | 524 | 411 |
| 65° | 285 | 290 | 305 | 296 | 284 | 283 |
| 75° | 153 | 155 | 165 | 168 | 162 | 162 |
| 85° | 41 | 43 | 45 | 51 | 59 | 46 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P893539

CATALOG NUMBER: 4MB-4SL-LVRF-UNV-L840

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1922.7 | 1922.7 | 1922.7 | 1922.7 | 1922.7 |
| 2.5° | 1952.7 | 1928.7 | 1919.7 | 1928.7 | 1908.7 |
| 5° | 1928.7 | 1929.7 | 1906.7 | 1925.7 | 1906.7 |
| 7.5° | 1890.7 | 1903.7 | 1892.7 | 1921.7 | 1906.7 |
| 10° | 1873.7 | 1874.7 | 1870.7 | 1900.7 | 1899.7 |
| 12.5° | 1826.7 | 1829.7 | 1840.7 | 1885.7 | 1895.7 |
| 15° | 1761.7 | 1781.7 | 1802.7 | 1873.7 | 1876.7 |
| 17.5° | 1710.7 | 1734.7 | 1762.7 | 1838.7 | 1847.7 |
| 20° | 1648.7 | 1658.7 | 1727.7 | 1794.7 | 1828.7 |
| 22.5° | 1579.7 | 1598.7 | 1665.7 | 1755.7 | 1789.7 |
| 25° | 1491.8 | 1527.8 | 1614.7 | 1717.7 | 1759.7 |
| 27.5° | 1410.8 | 1452.8 | 1542.8 | 1657.7 | 1706.7 |
| 30° | 1326.8 | 1374.8 | 1474.8 | 1587.7 | 1661.7 |
| 32.5° | 1239.8 | 1299.8 | 1394.8 | 1524.8 | 1589.7 |
| 35° | 1148.8 | 1210.8 | 1315.8 | 1454.8 | 1521.8 |
| 37.5° | 1057.8 | 1117.8 | 1231.8 | 1380.8 | 1440.8 |
| 40° | 961.8 | 1020.8 | 1137.8 | 1288.8 | 1357.8 |
| 42.5° | 878.9 | 929.9 | 1049.8 | 1178.8 | 1242.8 |
| 45° | 787.9 | 835.9 | 950.8 | 1078.8 | 1126.8 |
| 47.5° | 687.9 | 743.9 | 855.9 | 960.8 | 979.8 |
| 50° | 595.9 | 653.9 | 760.9 | 821.9 | 807.9 |
| 52.5° | 514.9 | 563.9 | 661.9 | 687.9 | 654.9 |
| 55° | 452.9 | 484.9 | 571.9 | 566.9 | 523.9 |
| 57.5° | 395.9 | 415.9 | 489.9 | 461.9 | 420.9 |
| 60° | 357.9 | 366.9 | 411.9 | 385.9 | 360.9 |
| 62.5° | 321.9 | 325.9 | 349.9 | 335.9 | 316.9 |
| 65° | 285.0 | 290.0 | 305.0 | 296.0 | 284.0 |
| 67.5° | 251.0 | 253.0 | 267.0 | 265.0 | 250.0 |
| 70° | 217.0 | 220.0 | 229.0 | 233.0 | 224.0 |
| 72.5° | 184.0 | 187.0 | 196.0 | 200.0 | 192.0 |
| 75° | 153.0 | 155.0 | 165.0 | 168.0 | 162.0 |
| 77.5° | 123.0 | 127.0 | 133.0 | 138.0 | 131.0 |
| 80° | 94.0 | 96.0 | 102.0 | 108.0 | 105.0 |
| 82.5° | 66.0 | 69.0 | 73.0 | 81.0 | 83.0 |
| 85° | 41.0 | 43.0 | 45.0 | 51.0 | 59.0 |
| 87.5° | 16.0 | 17.0 | 20.0 | 22.0 | 29.0 |
| 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 | 16.62 | 18.10 | 16.98 | 18.41 | 18.73 | 17.27 | 18.75 | 17.63 | 19.06 | 19.38 |
| | 3H | 18.22 | 19.55 | 18.60 | 19.87 | 20.24 | 18.71 | 20.03 | 19.08 | 20.36 | 20.72 |
| | 4H | 18.84 | 20.08 | 19.24 | 20.43 | 20.81 | 19.31 | 20.55 | 19.71 | 20.90 | 21.28 |
| | 6H | 19.31 | 20.45 | 19.72 | 20.82 | 21.21 | 19.80 | 20.94 | 20.21 | 21.31 | 21.70 |
| | 8H | 19.46 | 20.55 | 19.89 | 20.94 | 21.34 | 20.00 | 21.09 | 20.42 | 21.48 | 21.88 |
| | 12H | 19.56 | 20.60 | 19.99 | 20.99 | 21.42 | 20.16 | 21.21 | 20.59 | 21.59 | 22.02 |
| 4H | 2H | 17.24 | 18.48 | 17.64 | 18.83 | 19.21 | 17.76 | 19.01 | 18.16 | 19.35 | 19.73 |
| | 3H | 19.06 | 20.09 | 19.47 | 20.49 | 20.89 | 19.46 | 20.49 | 19.87 | 20.89 | 21.29 |
| | 4H | 19.80 | 20.73 | 20.23 | 21.14 | 21.58 | 20.22 | 21.14 | 20.65 | 21.56 | 22.00 |
| | 6H | 20.40 | 21.20 | 20.86 | 21.65 | 22.11 | 20.85 | 21.66 | 21.31 | 22.10 | 22.56 |
| | 8H | 20.59 | 21.35 | 21.06 | 21.79 | 22.26 | 21.11 | 21.86 | 21.57 | 22.30 | 22.77 |
| | 12H | 20.74 | 21.41 | 21.22 | 21.89 | 22.36 | 21.33 | 22.00 | 21.81 | 22.48 | 22.95 |
| 8H | 4H | 20.12 | 20.87 | 20.58 | 21.32 | 21.78 | 20.49 | 21.24 | 20.95 | 21.68 | 22.15 |
| | 6H | 20.84 | 21.47 | 21.34 | 21.96 | 22.44 | 21.26 | 21.88 | 21.76 | 22.38 | 22.85 |
| | 8H | 21.11 | 21.68 | 21.63 | 22.19 | 22.67 | 21.60 | 22.17 | 22.12 | 22.68 | 23.16 |
| | 12H | 21.33 | 21.83 | 21.84 | 22.32 | 22.89 | 21.92 | 22.42 | 22.43 | 22.91 | 23.48 |
| 12H | 4H | 20.15 | 20.82 | 20.64 | 21.30 | 21.78 | 20.50 | 21.18 | 20.99 | 21.66 | 22.13 |
| | 6H | 20.91 | 21.47 | 21.42 | 21.98 | 22.47 | 21.31 | 21.87 | 21.82 | 22.38 | 22.87 |
| | 8H | 21.24 | 21.74 | 21.75 | 22.23 | 22.79 | 21.71 | 22.21 | 22.22 | 22.70 | 23.27 |