

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: P893541

Luminaire Tested: 4MB-4SL-LVRF-UNV-L930

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893541
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-L930
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with LOUVER WITH FROSTED INLAY, 90CRI, 3000K C
Light Source: -
Ballast/Driver: -

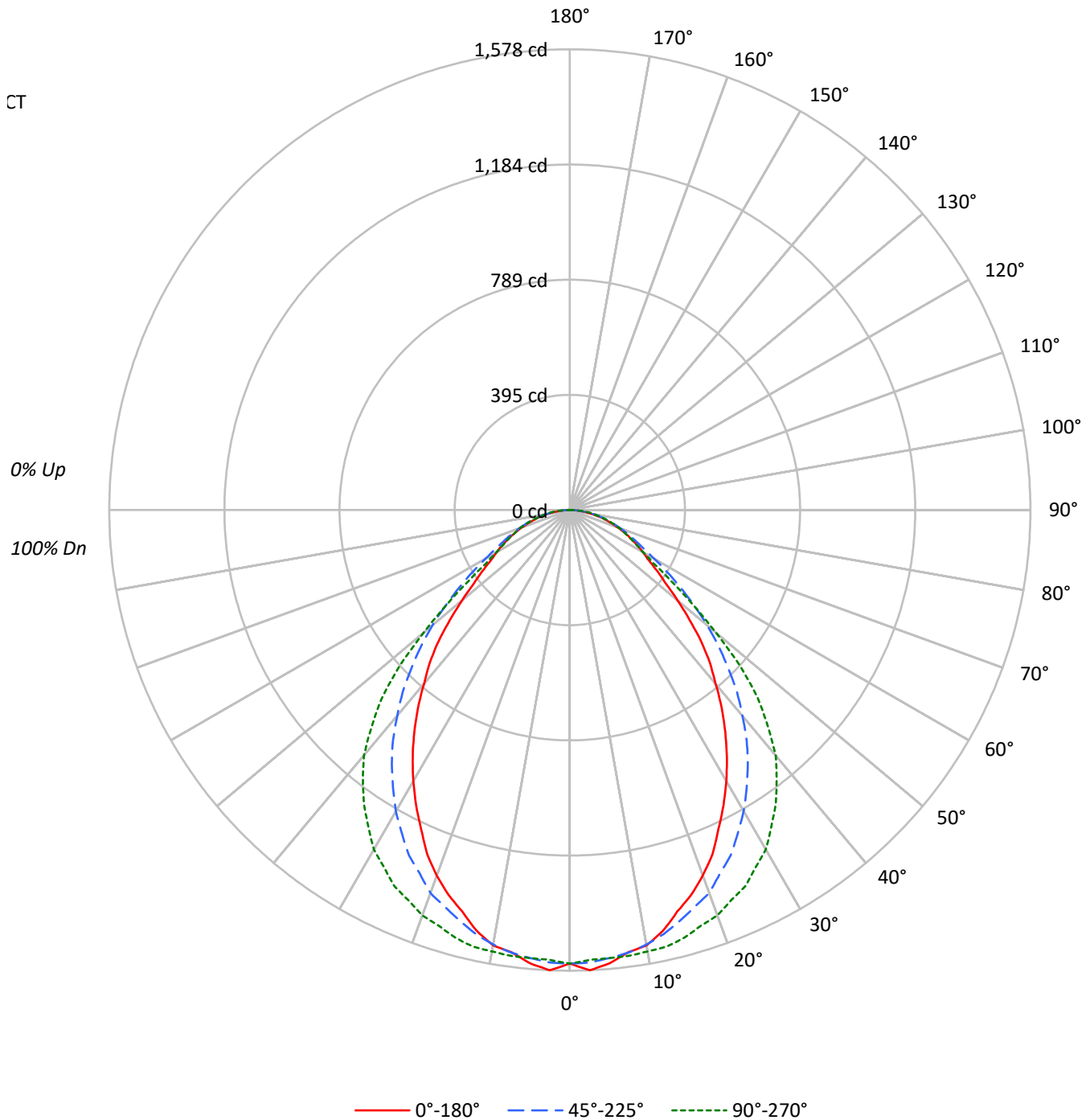
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3229.0 lumens
Efficiency: N/A
Efficacy: 108.4 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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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° | 11054 | 11054 | 11054 |
| 5° | 11131 | 11004 | 11004 |
| 10° | 10939 | 10921 | 11091 |
| 15° | 10486 | 10730 | 11171 |
| 20° | 10088 | 10571 | 11189 |
| 25° | 9463 | 10243 | 11163 |
| 30° | 8808 | 9791 | 11032 |
| 35° | 8063 | 9235 | 10681 |
| 40° | 7219 | 8539 | 10191 |
| 45° | 6406 | 7731 | 9162 |
| 50° | 5330 | 6805 | 7226 |
| 55° | 4540 | 5732 | 5252 |
| 60° | 4115 | 4737 | 4151 |
| 65° | 3877 | 4148 | 3864 |
| 70° | 3647 | 3849 | 3765 |
| 75° | 3398 | 3664 | 3598 |
| 80° | 3110 | 3376 | 3475 |
| 85° | 2702 | 2972 | 3894 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 9162 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 147.1 | 4.6 |
| 10°-20° | 413.9 | 12.8 |
| 20°-30° | 601.1 | 18.6 |
| 30°-40° | 669.3 | 20.7 |
| 40°-50° | 591.3 | 18.3 |
| 50°-60° | 388.0 | 12.0 |
| 60°-70° | 237.6 | 7.4 |
| 70°-80° | 138.3 | 4.3 |
| 80°-90° | 42.4 | 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° | 1162.1 | 36.0 |
| 0°-40° | 1831.4 | 56.7 |
| 0°-60° | 2810.8 | 87.0 |
| 0°-90° | 3229.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3229.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1554 | 1554 | 1554 | 1554 | 1554 | |
| 5° | 1558 | 1559 | 1541 | 1556 | 1541 | 147 |
| 15° | 1424 | 1440 | 1457 | 1514 | 1516 | 402 |
| 25° | 1205 | 1234 | 1305 | 1388 | 1422 | 555 |
| 35° | 928 | 978 | 1063 | 1176 | 1230 | 579 |
| 45° | 637 | 675 | 768 | 872 | 910 | 487 |
| 55° | 366 | 392 | 462 | 458 | 423 | 332 |
| 65° | 230 | 234 | 246 | 239 | 230 | 229 |
| 75° | 124 | 125 | 133 | 136 | 131 | 131 |
| 85° | 33 | 35 | 36 | 41 | 48 | 37 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P893541

CATALOG NUMBER: 4MB-4SL-LVRF-UNV-L930

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1553.6 | 1553.6 | 1553.6 | 1553.6 | 1553.6 |
| 2.5° | 1577.9 | 1558.5 | 1551.2 | 1558.5 | 1542.3 |
| 5° | 1558.5 | 1559.3 | 1540.7 | 1556.1 | 1540.7 |
| 7.5° | 1527.8 | 1538.3 | 1529.4 | 1552.8 | 1540.7 |
| 10° | 1514.1 | 1514.9 | 1511.6 | 1535.9 | 1535.1 |
| 12.5° | 1476.1 | 1478.5 | 1487.4 | 1523.8 | 1531.8 |
| 15° | 1423.6 | 1439.7 | 1456.7 | 1514.1 | 1516.5 |
| 17.5° | 1382.4 | 1401.8 | 1424.4 | 1485.8 | 1493.1 |
| 20° | 1332.3 | 1340.4 | 1396.1 | 1450.2 | 1477.7 |
| 22.5° | 1276.5 | 1291.9 | 1346.0 | 1418.7 | 1446.2 |
| 25° | 1205.4 | 1234.5 | 1304.8 | 1388.0 | 1422.0 |
| 27.5° | 1140.0 | 1173.9 | 1246.6 | 1339.5 | 1379.1 |
| 30° | 1072.1 | 1110.9 | 1191.7 | 1283.0 | 1342.8 |
| 32.5° | 1001.8 | 1050.3 | 1127.1 | 1232.1 | 1284.6 |
| 35° | 928.3 | 978.4 | 1063.2 | 1175.5 | 1229.7 |
| 37.5° | 854.8 | 903.3 | 995.4 | 1115.7 | 1164.2 |
| 40° | 777.2 | 824.9 | 919.4 | 1041.4 | 1097.2 |
| 42.5° | 710.2 | 751.4 | 848.3 | 952.5 | 1004.3 |
| 45° | 636.6 | 675.4 | 768.3 | 871.8 | 910.5 |
| 47.5° | 555.9 | 601.1 | 691.6 | 776.4 | 791.8 |
| 50° | 481.5 | 528.4 | 614.8 | 664.1 | 652.8 |
| 52.5° | 416.1 | 455.7 | 534.8 | 555.9 | 529.2 |
| 55° | 366.0 | 391.8 | 462.1 | 458.1 | 423.4 |
| 57.5° | 319.9 | 336.1 | 395.9 | 373.3 | 340.1 |
| 60° | 289.2 | 296.5 | 332.9 | 311.9 | 291.7 |
| 62.5° | 260.2 | 263.4 | 282.8 | 271.5 | 256.1 |
| 65° | 230.3 | 234.3 | 246.4 | 239.1 | 229.5 |
| 67.5° | 202.8 | 204.4 | 215.7 | 214.1 | 202.0 |
| 70° | 175.3 | 177.7 | 185.0 | 188.2 | 181.0 |
| 72.5° | 148.7 | 151.1 | 158.4 | 161.6 | 155.1 |
| 75° | 123.6 | 125.2 | 133.3 | 135.7 | 130.9 |
| 77.5° | 99.4 | 102.6 | 107.5 | 111.5 | 105.8 |
| 80° | 75.9 | 77.6 | 82.4 | 87.3 | 84.8 |
| 82.5° | 53.3 | 55.7 | 59.0 | 65.4 | 67.1 |
| 85° | 33.1 | 34.7 | 36.4 | 41.2 | 47.7 |
| 87.5° | 12.9 | 13.7 | 16.2 | 17.8 | 23.4 |
| 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 | 15.88 | 17.36 | 16.24 | 17.67 | 17.99 | 16.53 | 18.01 | 16.90 | 18.32 | 18.64 |
| | 3H | 17.48 | 18.80 | 17.86 | 19.13 | 19.50 | 17.97 | 19.29 | 18.34 | 19.62 | 19.98 |
| | 4H | 18.10 | 19.34 | 18.50 | 19.69 | 20.07 | 18.57 | 19.81 | 18.97 | 20.16 | 20.54 |
| | 6H | 18.57 | 19.71 | 18.98 | 20.08 | 20.47 | 19.06 | 20.20 | 19.47 | 20.57 | 20.96 |
| | 8H | 18.72 | 19.81 | 19.15 | 20.20 | 20.60 | 19.25 | 20.35 | 19.68 | 20.74 | 21.14 |
| | 12H | 18.82 | 19.86 | 19.25 | 20.24 | 20.67 | 19.42 | 20.47 | 19.85 | 20.85 | 21.28 |
| 4H | 2H | 16.50 | 17.74 | 16.90 | 18.09 | 18.47 | 17.02 | 18.27 | 17.42 | 18.62 | 18.99 |
| | 3H | 18.32 | 19.35 | 18.73 | 19.75 | 20.15 | 18.72 | 19.75 | 19.13 | 20.15 | 20.55 |
| | 4H | 19.06 | 19.98 | 19.49 | 20.40 | 20.84 | 19.47 | 20.40 | 19.91 | 20.82 | 21.26 |
| | 6H | 19.66 | 20.46 | 20.11 | 20.90 | 21.37 | 20.11 | 20.91 | 20.57 | 21.36 | 21.82 |
| | 8H | 19.85 | 20.61 | 20.32 | 21.05 | 21.52 | 20.36 | 21.12 | 20.83 | 21.56 | 22.03 |
| | 12H | 19.99 | 20.67 | 20.48 | 21.15 | 21.62 | 20.59 | 21.26 | 21.07 | 21.74 | 22.21 |
| 8H | 4H | 19.38 | 20.13 | 19.84 | 20.57 | 21.04 | 19.74 | 20.50 | 20.21 | 20.94 | 21.41 |
| | 6H | 20.10 | 20.72 | 20.60 | 21.22 | 21.69 | 20.52 | 21.14 | 21.02 | 21.63 | 22.11 |
| | 8H | 20.37 | 20.93 | 20.89 | 21.44 | 21.93 | 20.86 | 21.42 | 21.38 | 21.93 | 22.42 |
| | 12H | 20.59 | 21.09 | 21.10 | 21.58 | 22.15 | 21.18 | 21.68 | 21.69 | 22.17 | 22.74 |
| 12H | 4H | 19.41 | 20.08 | 19.89 | 20.56 | 21.03 | 19.76 | 20.44 | 20.25 | 20.92 | 21.39 |
| | 6H | 20.17 | 20.73 | 20.68 | 21.24 | 21.73 | 20.56 | 21.13 | 21.08 | 21.64 | 22.13 |
| | 8H | 20.50 | 20.99 | 21.01 | 21.49 | 22.05 | 20.97 | 21.47 | 21.48 | 21.96 | 22.53 |