

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: P893171

Luminaire Tested: 4MB-10HL-FLT-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893171
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-10HL-FLT-UNV-L840
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FLAT FROSTED LENS, 80CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

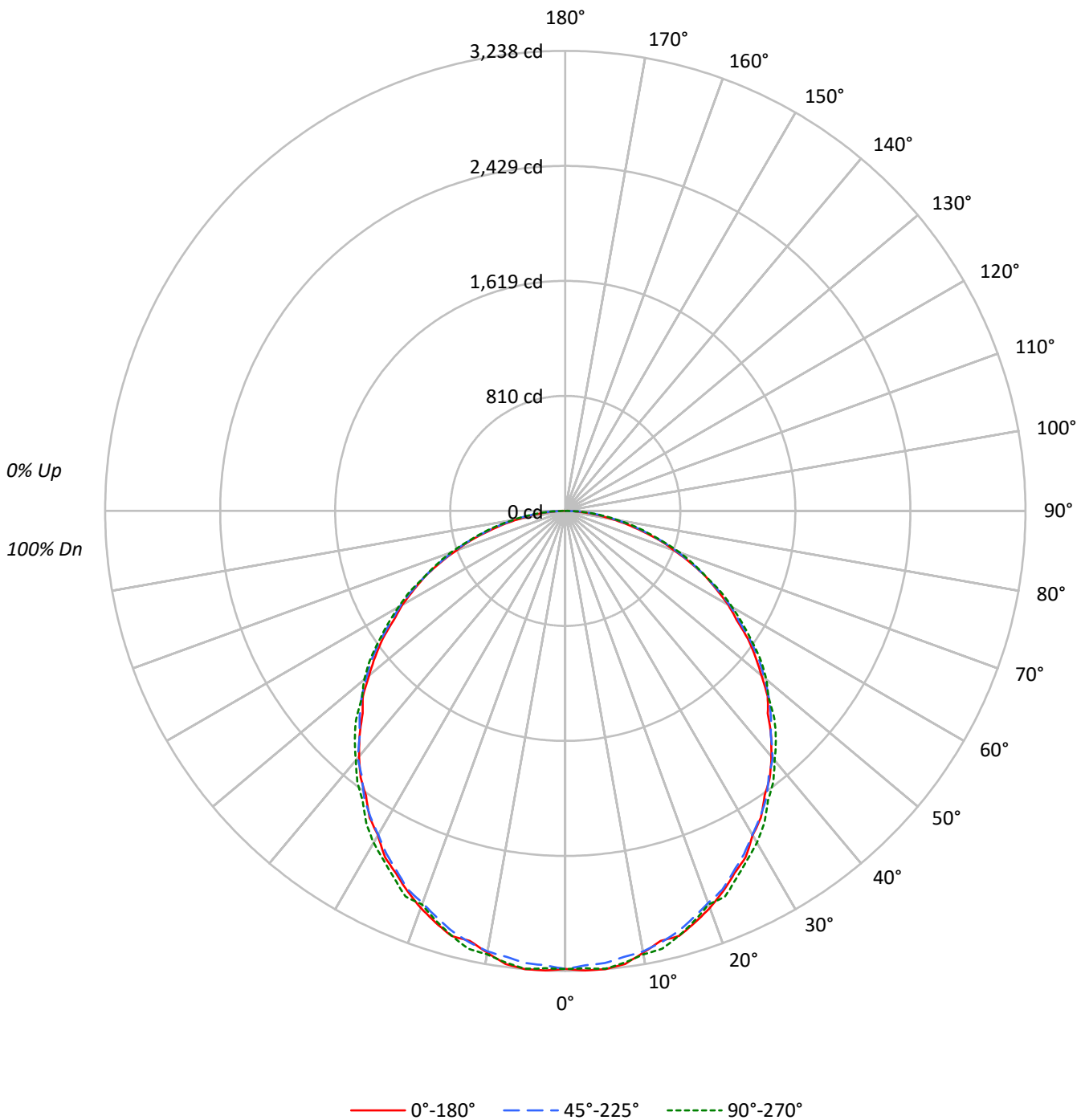
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8933.0 lumens
Efficiency: N/A
Efficacy: 118.3 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): 75.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.997
Total Harmonic Distortion (THDi): 7.45
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 | | | | 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° | 22939 | 22939 | 22939 |
| 5° | 23126 | 22817 | 23106 |
| 10° | 22809 | 22749 | 22900 |
| 15° | 22814 | 22578 | 22793 |
| 20° | 22513 | 22239 | 22323 |
| 25° | 22106 | 21986 | 22380 |
| 30° | 21659 | 21625 | 22162 |
| 35° | 21241 | 21423 | 21604 |
| 40° | 20955 | 21084 | 21291 |
| 45° | 20276 | 20585 | 20963 |
| 50° | 19947 | 20240 | 20440 |
| 55° | 19452 | 19694 | 19901 |
| 60° | 18846 | 19124 | 19302 |
| 65° | 18288 | 18357 | 18357 |
| 70° | 17006 | 17412 | 17847 |
| 75° | 15658 | 16271 | 16615 |
| 80° | 13808 | 15009 | 15521 |
| 85° | 12392 | 13870 | 14890 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 20963 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 305.1 | 3.4 |
| 10°-20° | 869.7 | 9.7 |
| 20°-30° | 1304.4 | 14.6 |
| 30°-40° | 1549.2 | 17.3 |
| 40°-50° | 1586.2 | 17.8 |
| 50°-60° | 1421.1 | 15.9 |
| 60°-70° | 1079.6 | 12.1 |
| 70°-80° | 628.8 | 7.0 |
| 80°-90° | 188.8 | 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° | 2479.2 | 27.8 |
| 0°-40° | 4028.5 | 45.1 |
| 0°-60° | 7035.8 | 78.8 |
| 0°-90° | 8933.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8933.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3224 | 3224 | 3224 | 3224 | 3224 | |
| 5° | 3238 | 3225 | 3195 | 3214 | 3235 | 307 |
| 15° | 3097 | 3118 | 3065 | 3078 | 3094 | 869 |
| 25° | 2816 | 2841 | 2801 | 2837 | 2851 | 1299 |
| 35° | 2446 | 2500 | 2466 | 2476 | 2487 | 1537 |
| 45° | 2015 | 2065 | 2046 | 2062 | 2083 | 1567 |
| 55° | 1568 | 1592 | 1588 | 1606 | 1604 | 1397 |
| 65° | 1086 | 1086 | 1090 | 1104 | 1090 | 1067 |
| 75° | 570 | 579 | 592 | 610 | 604 | 606 |
| 85° | 152 | 155 | 170 | 181 | 182 | 170 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P893171

CATALOG NUMBER: 4MB-10HL-FLT-UNV-L840

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3224.0 | 3224.0 | 3224.0 | 3224.0 | 3224.0 |
| 2.5° | 3237.9 | 3222.6 | 3201.7 | 3208.6 | 3222.6 |
| 5° | 3237.9 | 3225.3 | 3194.7 | 3214.2 | 3235.1 |
| 7.5° | 3217.0 | 3233.7 | 3166.9 | 3166.9 | 3205.9 |
| 10° | 3157.1 | 3189.1 | 3148.8 | 3144.6 | 3169.6 |
| 12.5° | 3100.0 | 3158.5 | 3111.2 | 3125.1 | 3155.7 |
| 15° | 3097.2 | 3118.1 | 3065.2 | 3077.7 | 3094.4 |
| 17.5° | 3037.3 | 3058.2 | 3001.1 | 3024.8 | 3024.8 |
| 20° | 2973.3 | 2977.5 | 2937.1 | 2988.6 | 2948.2 |
| 22.5° | 2899.5 | 2942.6 | 2886.9 | 2903.6 | 2938.5 |
| 25° | 2815.9 | 2841.0 | 2800.6 | 2836.8 | 2850.7 |
| 27.5° | 2747.7 | 2778.3 | 2722.6 | 2765.8 | 2770.0 |
| 30° | 2636.3 | 2669.7 | 2632.1 | 2659.9 | 2697.5 |
| 32.5° | 2561.1 | 2572.2 | 2552.7 | 2594.5 | 2605.6 |
| 35° | 2445.5 | 2499.8 | 2466.4 | 2476.1 | 2487.3 |
| 37.5° | 2364.7 | 2381.4 | 2352.2 | 2385.6 | 2403.7 |
| 40° | 2256.1 | 2281.1 | 2270.0 | 2275.6 | 2292.3 |
| 42.5° | 2143.3 | 2169.7 | 2140.5 | 2180.9 | 2193.4 |
| 45° | 2015.1 | 2065.3 | 2045.8 | 2062.5 | 2083.4 |
| 47.5° | 1931.6 | 1948.3 | 1942.7 | 1952.5 | 1938.6 |
| 50° | 1802.1 | 1818.8 | 1828.5 | 1841.1 | 1846.6 |
| 52.5° | 1686.5 | 1699.0 | 1717.1 | 1724.1 | 1736.6 |
| 55° | 1568.1 | 1591.8 | 1587.6 | 1605.7 | 1604.3 |
| 57.5° | 1430.2 | 1465.1 | 1453.9 | 1480.4 | 1480.4 |
| 60° | 1324.4 | 1330.0 | 1343.9 | 1356.4 | 1356.4 |
| 62.5° | 1201.8 | 1208.8 | 1215.8 | 1226.9 | 1235.3 |
| 65° | 1086.3 | 1086.3 | 1090.4 | 1104.4 | 1090.4 |
| 67.5° | 952.6 | 947.0 | 960.9 | 977.6 | 976.2 |
| 70° | 817.5 | 824.4 | 837.0 | 857.9 | 857.9 |
| 72.5° | 701.9 | 701.9 | 715.8 | 727.0 | 725.6 |
| 75° | 569.6 | 579.3 | 591.9 | 610.0 | 604.4 |
| 77.5° | 451.2 | 458.2 | 479.1 | 495.8 | 497.2 |
| 80° | 337.0 | 344.0 | 366.3 | 383.0 | 378.8 |
| 82.5° | 235.4 | 245.1 | 266.0 | 278.5 | 277.1 |
| 85° | 151.8 | 154.6 | 169.9 | 181.0 | 182.4 |
| 87.5° | 69.6 | 75.2 | 86.3 | 90.5 | 90.5 |
| 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 | 22.41 | 24.05 | 22.78 | 24.37 | 24.68 | 22.52 | 24.16 | 22.88 | 24.47 | 24.79 |
| | 3H | 24.19 | 25.68 | 24.57 | 26.00 | 26.36 | 24.36 | 25.84 | 24.73 | 26.17 | 26.53 |
| | 4H | 24.86 | 26.26 | 25.26 | 26.60 | 26.98 | 25.05 | 26.45 | 25.45 | 26.80 | 27.17 |
| | 6H | 25.33 | 26.63 | 25.74 | 26.99 | 27.38 | 25.60 | 26.90 | 26.01 | 27.26 | 27.65 |
| | 8H | 25.48 | 26.72 | 25.91 | 27.11 | 27.51 | 25.79 | 27.03 | 26.22 | 27.42 | 27.82 |
| | 12H | 25.59 | 26.77 | 26.02 | 27.16 | 27.58 | 25.94 | 27.12 | 26.37 | 27.51 | 27.93 |
| 4H | 2H | 23.06 | 24.46 | 23.46 | 24.80 | 25.18 | 23.14 | 24.54 | 23.54 | 24.89 | 25.26 |
| | 3H | 25.06 | 26.23 | 25.47 | 26.63 | 27.03 | 25.20 | 26.38 | 25.61 | 26.78 | 27.18 |
| | 4H | 25.85 | 26.92 | 26.28 | 27.33 | 27.76 | 26.04 | 27.11 | 26.47 | 27.52 | 27.95 |
| | 6H | 26.45 | 27.38 | 26.91 | 27.82 | 28.28 | 26.73 | 27.66 | 27.18 | 28.10 | 28.56 |
| | 8H | 26.65 | 27.52 | 27.11 | 27.96 | 28.43 | 26.98 | 27.85 | 27.44 | 28.29 | 28.75 |
| | 12H | 26.80 | 27.58 | 27.28 | 28.06 | 28.53 | 27.18 | 27.96 | 27.65 | 28.43 | 28.90 |
| 8H | 4H | 26.19 | 27.06 | 26.65 | 27.50 | 27.97 | 26.36 | 27.23 | 26.82 | 27.67 | 28.13 |
| | 6H | 26.91 | 27.64 | 27.40 | 28.12 | 28.60 | 27.18 | 27.90 | 27.67 | 28.39 | 28.87 |
| | 8H | 27.18 | 27.83 | 27.69 | 28.34 | 28.83 | 27.51 | 28.16 | 28.02 | 28.67 | 29.15 |
| | 12H | 27.41 | 27.99 | 27.92 | 28.48 | 29.04 | 27.80 | 28.38 | 28.31 | 28.87 | 29.43 |
| 12H | 4H | 26.23 | 27.01 | 26.71 | 27.49 | 27.96 | 26.39 | 27.17 | 26.87 | 27.65 | 28.12 |
| | 6H | 26.98 | 27.64 | 27.49 | 28.14 | 28.63 | 27.24 | 27.89 | 27.75 | 28.40 | 28.88 |
| | 8H | 27.32 | 27.89 | 27.82 | 28.38 | 28.94 | 27.63 | 28.21 | 28.14 | 28.70 | 29.26 |