

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: P894034

Luminaire Tested: 4MB-9HL-LVR-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P894034
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-175-6)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-9HL-LVR-UNV-L835
Description: 9000 Lumen 4FT MICROBAY LINEAR BAY with LOUVER, 80CRI, 3500K CCT
Light Source: -
Ballast/Driver: -

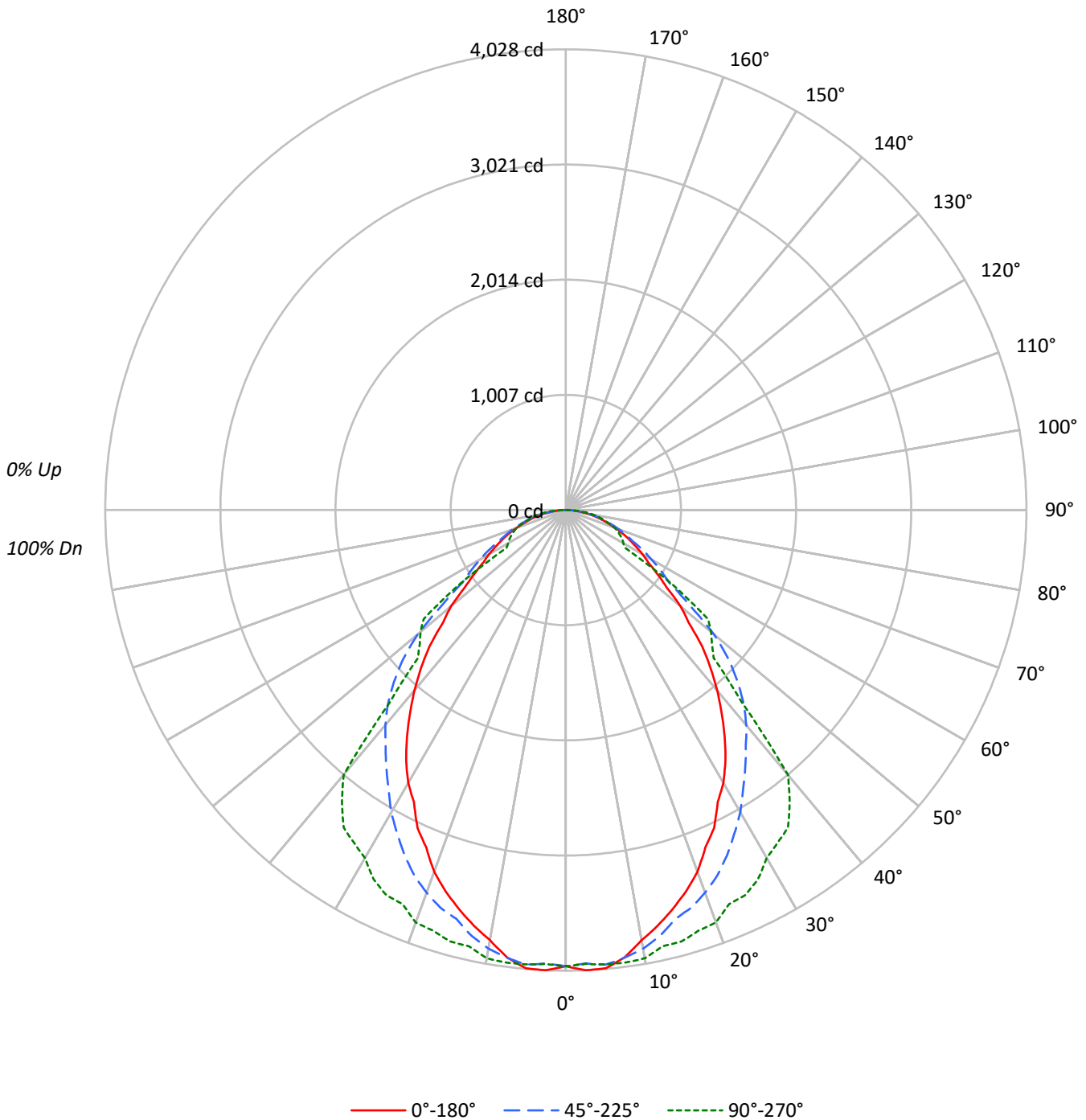
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8350.0 lumens
Efficiency: N/A
Efficacy: 129.7 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.32 / 1.26
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_{in}): 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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CATALOG NUMBER: 4MB-9HL-LVR-UNV-L835

Luminous Intensity Polar Plot





TEST NUMBER: P894034

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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 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 80 | 77 | 77 | 77 | 77 | 75 |
| 3 | 94 | 84 | 77 | 71 | 91 | 83 | 76 | 70 | 80 | 74 | 69 | 77 | 72 | 68 | 75 | 70 | 67 | 67 | 67 | 67 | 65 |
| 4 | 86 | 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 | 57 | 53 | 62 | 56 | 52 | 52 | 52 | 52 | 50 |
| 6 | 74 | 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 | 43 | 39 | 49 | 43 | 38 | 48 | 42 | 38 | 38 | 38 | 38 | 36 |
| 9 | 61 | 48 | 41 | 35 | 59 | 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° | 28382 | 28382 | 28382 |
| 5° | 28725 | 28499 | 28482 |
| 10° | 27593 | 28135 | 28752 |
| 15° | 26604 | 27261 | 28771 |
| 20° | 25485 | 26957 | 29059 |
| 25° | 24078 | 26166 | 29164 |
| 30° | 22628 | 25073 | 28865 |
| 35° | 21043 | 23781 | 29428 |
| 40° | 19118 | 22796 | 28063 |
| 45° | 16940 | 21395 | 18402 |
| 50° | 14498 | 18699 | 18362 |
| 55° | 12149 | 13646 | 14285 |
| 60° | 11052 | 12320 | 8269 |
| 65° | 10356 | 10908 | 8835 |
| 70° | 9530 | 10333 | 9457 |
| 75° | 8954 | 9693 | 9630 |
| 80° | 8350 | 9170 | 10321 |
| 85° | 7176 | 7649 | 10996 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 21395 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 379.1 | 4.5 |
| 10°-20° | 1060.6 | 12.7 |
| 20°-30° | 1545.7 | 18.5 |
| 30°-40° | 1768.3 | 21.2 |
| 40°-50° | 1512.7 | 18.1 |
| 50°-60° | 997.6 | 11.9 |
| 60°-70° | 603.1 | 7.2 |
| 70°-80° | 368.9 | 4.4 |
| 80°-90° | 114.0 | 1.4 |
| 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° | 2985.4 | 35.8 |
| 0°-40° | 4753.7 | 56.9 |
| 0°-60° | 7264.0 | 87.0 |
| 0°-90° | 8350.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8350.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3989 | 3989 | 3989 | 3989 | 3989 | |
| 5° | 4022 | 4018 | 3990 | 3982 | 3988 | 377 |
| 15° | 3612 | 3654 | 3701 | 3938 | 3906 | 1015 |
| 25° | 3067 | 3114 | 3333 | 3618 | 3715 | 1403 |
| 35° | 2423 | 2545 | 2738 | 3168 | 3388 | 1509 |
| 45° | 1684 | 1814 | 2126 | 1987 | 1829 | 1289 |
| 55° | 979 | 1034 | 1100 | 1304 | 1152 | 891 |
| 65° | 615 | 630 | 648 | 579 | 525 | 608 |
| 75° | 326 | 334 | 353 | 369 | 350 | 344 |
| 85° | 88 | 87 | 94 | 111 | 135 | 100 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P894034

CATALOG NUMBER: 4MB-9HL-LVR-UNV-L835

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3989.1 | 3989.1 | 3989.1 | 3989.1 | 3989.1 |
| 2.5° | 4027.7 | 4016.0 | 3968.0 | 4013.7 | 3972.7 |
| 5° | 4021.9 | 4018.4 | 3990.2 | 3982.0 | 3987.9 |
| 7.5° | 3944.5 | 3952.7 | 3948.1 | 4035.9 | 3991.4 |
| 10° | 3819.2 | 3835.6 | 3894.2 | 4017.2 | 3979.7 |
| 12.5° | 3720.8 | 3733.7 | 3812.2 | 3994.9 | 3907.1 |
| 15° | 3611.8 | 3654.0 | 3700.9 | 3937.5 | 3905.9 |
| 17.5° | 3494.7 | 3534.5 | 3645.8 | 3860.2 | 3856.7 |
| 20° | 3365.8 | 3439.6 | 3560.3 | 3759.4 | 3837.9 |
| 22.5° | 3191.3 | 3290.8 | 3460.7 | 3713.8 | 3729.0 |
| 25° | 3067.1 | 3113.9 | 3333.0 | 3617.7 | 3714.9 |
| 27.5° | 2878.5 | 2967.5 | 3191.3 | 3479.4 | 3639.9 |
| 30° | 2754.3 | 2828.1 | 3051.8 | 3398.6 | 3513.4 |
| 32.5° | 2598.5 | 2686.3 | 2886.7 | 3310.7 | 3449.0 |
| 35° | 2422.7 | 2544.6 | 2737.9 | 3167.8 | 3388.1 |
| 37.5° | 2237.6 | 2358.3 | 2586.7 | 3049.5 | 3215.9 |
| 40° | 2058.4 | 2161.5 | 2454.4 | 2907.7 | 3021.4 |
| 42.5° | 1874.5 | 1985.7 | 2303.2 | 2627.7 | 2272.8 |
| 45° | 1683.5 | 1813.5 | 2126.3 | 1986.9 | 1828.8 |
| 47.5° | 1457.4 | 1616.7 | 1930.7 | 1596.8 | 1732.7 |
| 50° | 1309.8 | 1396.5 | 1689.3 | 1505.4 | 1658.9 |
| 52.5° | 1114.1 | 1231.3 | 1356.6 | 1405.8 | 1567.5 |
| 55° | 979.4 | 1034.5 | 1100.1 | 1303.9 | 1151.6 |
| 57.5° | 855.2 | 904.4 | 980.6 | 919.7 | 613.9 |
| 60° | 776.7 | 799.0 | 865.8 | 657.2 | 581.1 |
| 62.5° | 687.7 | 709.9 | 759.2 | 613.9 | 557.6 |
| 65° | 615.1 | 630.3 | 647.9 | 578.7 | 524.8 |
| 67.5° | 537.7 | 545.9 | 564.7 | 534.2 | 493.2 |
| 70° | 458.1 | 469.8 | 496.7 | 488.5 | 454.6 |
| 72.5° | 387.8 | 398.3 | 421.8 | 433.5 | 401.8 |
| 75° | 325.7 | 333.9 | 352.6 | 369.0 | 350.3 |
| 77.5° | 258.9 | 267.1 | 291.7 | 309.3 | 301.1 |
| 80° | 203.8 | 205.0 | 223.8 | 241.3 | 251.9 |
| 82.5° | 142.9 | 145.3 | 159.3 | 178.1 | 199.2 |
| 85° | 87.9 | 86.7 | 93.7 | 111.3 | 134.7 |
| 87.5° | 34.0 | 32.8 | 38.7 | 46.9 | 69.1 |
| 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 | 19.45 | 20.93 | 19.82 | 21.24 | 21.56 | 19.13 | 20.61 | 19.49 | 20.92 | 21.24 |
| | 3H | 21.01 | 22.33 | 21.39 | 22.66 | 23.03 | 20.75 | 22.07 | 21.12 | 22.40 | 22.76 |
| | 4H | 21.61 | 22.85 | 22.01 | 23.20 | 23.58 | 21.49 | 22.73 | 21.89 | 23.08 | 23.46 |
| | 6H | 22.07 | 23.21 | 22.48 | 23.58 | 23.97 | 22.16 | 23.31 | 22.57 | 23.68 | 24.07 |
| | 8H | 22.22 | 23.31 | 22.65 | 23.70 | 24.10 | 22.44 | 23.53 | 22.87 | 23.92 | 24.32 |
| | 12H | 22.32 | 23.36 | 22.75 | 23.74 | 24.17 | 22.66 | 23.70 | 23.09 | 24.09 | 24.52 |
| 4H | 2H | 20.04 | 21.28 | 20.44 | 21.63 | 22.01 | 19.79 | 21.03 | 20.19 | 21.38 | 21.76 |
| | 3H | 21.83 | 22.86 | 22.24 | 23.26 | 23.66 | 21.67 | 22.70 | 22.08 | 23.10 | 23.50 |
| | 4H | 22.56 | 23.48 | 22.99 | 23.90 | 24.34 | 22.57 | 23.49 | 23.00 | 23.91 | 24.35 |
| | 6H | 23.14 | 23.95 | 23.60 | 24.39 | 24.85 | 23.38 | 24.18 | 23.83 | 24.62 | 25.09 |
| | 8H | 23.34 | 24.09 | 23.80 | 24.54 | 25.00 | 23.70 | 24.46 | 24.17 | 24.90 | 25.37 |
| | 12H | 23.48 | 24.15 | 23.96 | 24.63 | 25.10 | 23.98 | 24.65 | 24.46 | 25.13 | 25.60 |
| 8H | 4H | 22.88 | 23.63 | 23.35 | 24.08 | 24.55 | 22.89 | 23.64 | 23.35 | 24.09 | 24.56 |
| | 6H | 23.59 | 24.21 | 24.09 | 24.71 | 25.18 | 23.84 | 24.46 | 24.34 | 24.96 | 25.43 |
| | 8H | 23.86 | 24.42 | 24.38 | 24.93 | 25.42 | 24.26 | 24.82 | 24.77 | 25.33 | 25.82 |
| | 12H | 24.07 | 24.57 | 24.58 | 25.06 | 25.62 | 24.62 | 25.12 | 25.13 | 25.61 | 26.18 |
| 12H | 4H | 22.92 | 23.59 | 23.40 | 24.07 | 24.54 | 22.92 | 23.59 | 23.40 | 24.07 | 24.54 |
| | 6H | 23.66 | 24.22 | 24.18 | 24.73 | 25.22 | 23.89 | 24.45 | 24.41 | 24.96 | 25.45 |
| | 8H | 23.99 | 24.49 | 24.50 | 24.98 | 25.54 | 24.37 | 24.87 | 24.88 | 25.36 | 25.93 |