

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: P893658

Luminaire Tested: 4MB-5SL-RFLW-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893658
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2408-210-3)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-5SL-RFLW-UNV-L835
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with REFLECTOR WITH WHITE FINISH, 80CRI, 3500K
Light Source: -
Ballast/Driver: -

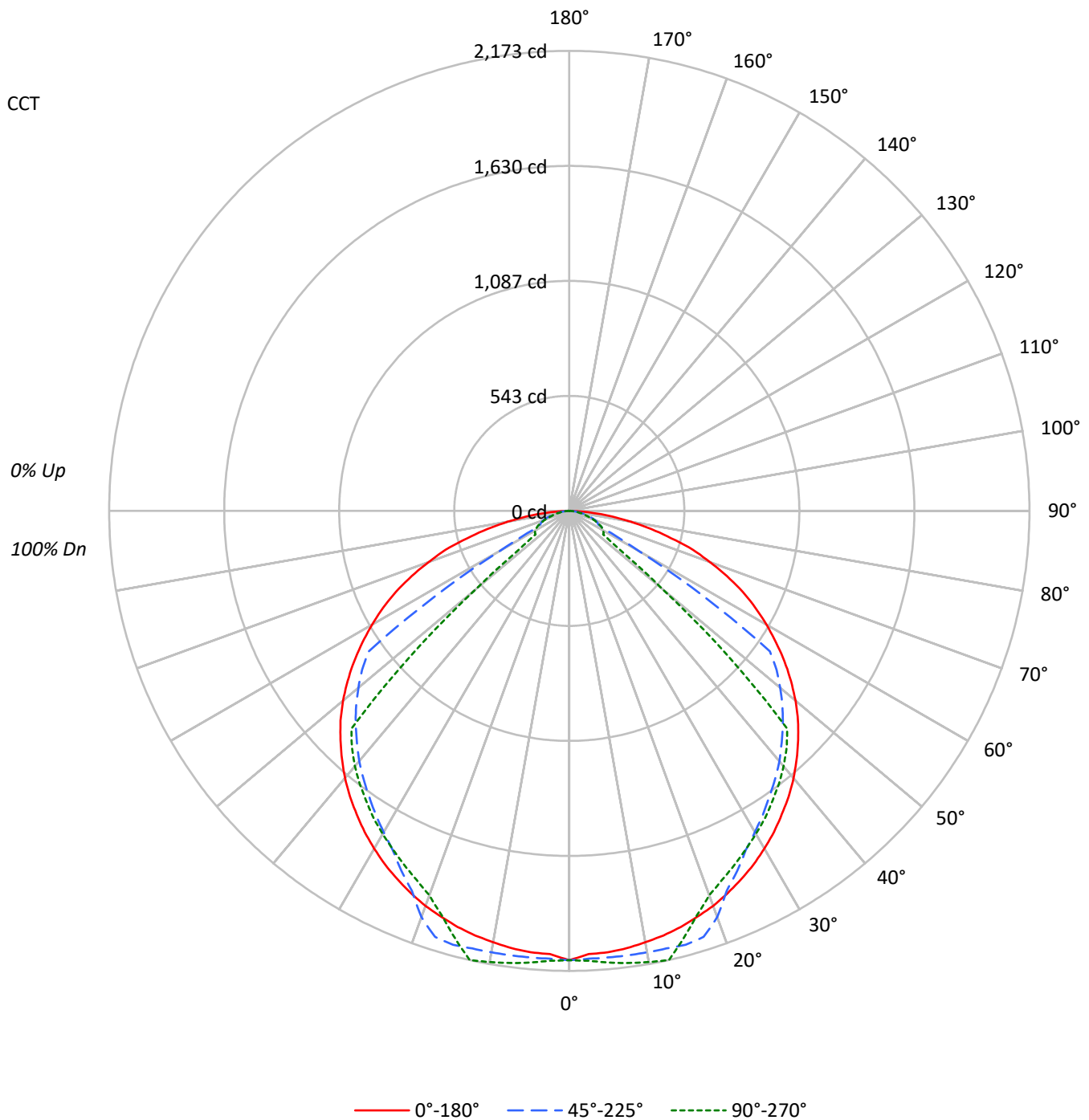
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5176.0 lumens
Efficiency: N/A
Efficacy: 147.9 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.24 / 1.38
Luminous Opening: Rectangular (W 0.21' x L: 3.98' x H: 0')
CIE Type: Direct

Input Watts (W): 35
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.995
Total Harmonic Distortion (THDi): 9.55
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 | 101 | 98 | 100 | 97 | 94 | 96 | 94 | 92 | 92 | 91 | 89 | 89 | 89 | 89 | 87 |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 77 | 77 | 77 | 75 |
| 3 | 93 | 84 | 76 | 70 | 91 | 82 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 67 | 74 | 70 | 66 | 66 | 66 | 66 | 64 |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 60 | 71 | 65 | 59 | 69 | 63 | 59 | 67 | 62 | 58 | 58 | 58 | 58 | 56 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 53 | 64 | 57 | 52 | 62 | 56 | 51 | 61 | 55 | 51 | 51 | 51 | 51 | 49 |
| 6 | 73 | 61 | 53 | 47 | 72 | 60 | 52 | 46 | 58 | 51 | 46 | 57 | 50 | 46 | 55 | 50 | 45 | 45 | 45 | 45 | 43 |
| 7 | 68 | 55 | 47 | 41 | 67 | 55 | 47 | 41 | 53 | 46 | 41 | 52 | 45 | 41 | 50 | 45 | 40 | 40 | 40 | 40 | 38 |
| 8 | 64 | 51 | 43 | 37 | 62 | 50 | 42 | 37 | 49 | 42 | 37 | 48 | 41 | 37 | 46 | 41 | 36 | 36 | 36 | 36 | 35 |
| 9 | 60 | 47 | 39 | 33 | 58 | 46 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 33 | 33 | 33 | 31 |
| 10 | 56 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 30 | 30 | 30 | 28 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 27557 | 27557 | 27557 |
| 5° | 27282 | 27598 | 27916 |
| 10° | 27277 | 27917 | 28528 |
| 15° | 27351 | 28529 | 28071 |
| 20° | 27442 | 28216 | 26703 |
| 25° | 27512 | 26884 | 26431 |
| 30° | 27623 | 26274 | 26419 |
| 35° | 27738 | 26118 | 26504 |
| 40° | 27928 | 26155 | 26691 |
| 45° | 28067 | 26190 | 26726 |
| 50° | 28171 | 26253 | 11553 |
| 55° | 28099 | 26170 | 4408 |
| 60° | 27936 | 9986 | 4804 |
| 65° | 27742 | 4636 | 4934 |
| 70° | 26796 | 4989 | 4620 |
| 75° | 25030 | 4761 | 4029 |
| 80° | 22022 | 4188 | 3455 |
| 85° | 17402 | 3620 | 2905 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 50°
 Luminance: 28171 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 202.7 | 3.9 |
| 10°-20° | 588.5 | 11.4 |
| 20°-30° | 878.1 | 17.0 |
| 30°-40° | 1064.3 | 20.6 |
| 40°-50° | 1089.8 | 21.1 |
| 50°-60° | 724.7 | 14.0 |
| 60°-70° | 413.1 | 8.0 |
| 70°-80° | 173.5 | 3.4 |
| 80°-90° | 41.4 | 0.8 |
| 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° | 1669.2 | 32.2 |
| 0°-40° | 2733.5 | 52.8 |
| 0°-60° | 4548.0 | 87.9 |
| 0°-90° | 5176.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5176.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2122 | 2122 | 2122 | 2122 | 2122 | |
| 5° | 2093 | 2134 | 2117 | 2122 | 2142 | 199 |
| 15° | 2035 | 2091 | 2122 | 2115 | 2088 | 575 |
| 25° | 1920 | 2013 | 1876 | 1835 | 1845 | 886 |
| 35° | 1750 | 1782 | 1648 | 1655 | 1672 | 1096 |
| 45° | 1528 | 1436 | 1426 | 1443 | 1455 | 1179 |
| 55° | 1241 | 1136 | 1156 | 253 | 195 | 1108 |
| 65° | 903 | 808 | 151 | 161 | 161 | 888 |
| 75° | 499 | 105 | 95 | 83 | 80 | 530 |
| 85° | 117 | 29 | 24 | 20 | 20 | 140 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P893658

CATALOG NUMBER: 4MB-5SL-RFLW-UNV-L835

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2122.2 | 2122.2 | 2122.2 | 2122.2 | 2122.2 |
| 2.5° | 2095.4 | 2139.2 | 2117.3 | 2119.8 | 2127.1 |
| 5° | 2093.0 | 2134.4 | 2117.3 | 2122.2 | 2141.7 |
| 7.5° | 2083.3 | 2127.1 | 2117.3 | 2131.9 | 2153.8 |
| 10° | 2068.7 | 2119.8 | 2117.3 | 2141.7 | 2163.6 |
| 12.5° | 2054.1 | 2105.2 | 2117.3 | 2153.8 | 2173.3 |
| 15° | 2034.6 | 2090.6 | 2122.2 | 2114.9 | 2088.1 |
| 17.5° | 2010.2 | 2076.0 | 2110.0 | 2005.4 | 2002.9 |
| 20° | 1985.9 | 2056.5 | 2041.9 | 1942.1 | 1932.4 |
| 22.5° | 1954.3 | 2037.0 | 1942.1 | 1874.0 | 1886.1 |
| 25° | 1920.2 | 2012.7 | 1876.4 | 1835.0 | 1844.8 |
| 27.5° | 1883.7 | 1988.3 | 1805.8 | 1791.2 | 1803.4 |
| 30° | 1842.3 | 1954.3 | 1752.3 | 1747.4 | 1762.0 |
| 32.5° | 1798.5 | 1888.6 | 1701.2 | 1703.6 | 1720.6 |
| 35° | 1749.8 | 1781.5 | 1647.6 | 1654.9 | 1672.0 |
| 37.5° | 1701.2 | 1681.7 | 1596.5 | 1608.7 | 1625.7 |
| 40° | 1647.6 | 1603.8 | 1543.0 | 1555.1 | 1574.6 |
| 42.5° | 1589.2 | 1521.1 | 1484.6 | 1501.6 | 1518.6 |
| 45° | 1528.4 | 1435.9 | 1426.2 | 1443.2 | 1455.4 |
| 47.5° | 1465.1 | 1362.9 | 1365.3 | 1377.5 | 1031.9 |
| 50° | 1394.5 | 1289.9 | 1299.6 | 900.5 | 571.9 |
| 52.5° | 1319.1 | 1214.4 | 1233.9 | 501.3 | 289.6 |
| 55° | 1241.2 | 1136.5 | 1156.0 | 253.1 | 194.7 |
| 57.5° | 1158.4 | 1058.7 | 754.5 | 182.5 | 192.3 |
| 60° | 1075.7 | 975.9 | 384.5 | 180.1 | 185.0 |
| 62.5° | 990.5 | 893.2 | 182.5 | 172.8 | 175.2 |
| 65° | 902.9 | 808.0 | 150.9 | 160.6 | 160.6 |
| 67.5° | 805.6 | 717.9 | 143.6 | 143.6 | 141.2 |
| 70° | 705.8 | 596.3 | 131.4 | 124.1 | 121.7 |
| 72.5° | 613.3 | 228.8 | 114.4 | 102.2 | 99.8 |
| 75° | 498.9 | 104.6 | 94.9 | 82.7 | 80.3 |
| 77.5° | 396.7 | 87.6 | 75.4 | 65.7 | 63.3 |
| 80° | 294.5 | 68.1 | 56.0 | 48.7 | 46.2 |
| 82.5° | 204.4 | 46.2 | 38.9 | 31.6 | 31.6 |
| 85° | 116.8 | 29.2 | 24.3 | 19.5 | 19.5 |
| 87.5° | 46.2 | 14.6 | 12.2 | 7.3 | 7.3 |
| 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 | 24.45 | 25.97 | 24.81 | 26.28 | 26.60 | 12.21 | 13.73 | 12.58 | 14.05 | 14.36 |
| | 3H | 26.47 | 27.83 | 26.85 | 28.15 | 28.52 | 14.53 | 15.89 | 14.91 | 16.21 | 16.58 |
| | 4H | 26.93 | 28.20 | 27.33 | 28.55 | 28.93 | 15.24 | 16.51 | 15.64 | 16.86 | 17.24 |
| | 6H | 27.34 | 28.51 | 27.75 | 28.88 | 29.27 | 15.72 | 16.90 | 16.14 | 17.26 | 17.66 |
| | 8H | 27.49 | 28.60 | 27.91 | 28.99 | 29.39 | 15.86 | 16.98 | 16.29 | 17.37 | 17.77 |
| | 12H | 27.58 | 28.65 | 28.01 | 29.03 | 29.46 | 15.95 | 17.02 | 16.38 | 17.40 | 17.83 |
| 4H | 2H | 24.29 | 25.56 | 24.69 | 25.91 | 26.29 | 13.01 | 14.28 | 13.41 | 14.63 | 15.01 |
| | 3H | 26.49 | 27.54 | 26.90 | 27.94 | 28.34 | 15.52 | 16.57 | 15.93 | 16.97 | 17.37 |
| | 4H | 26.94 | 27.88 | 27.37 | 28.29 | 28.73 | 16.34 | 17.28 | 16.77 | 17.70 | 18.14 |
| | 6H | 27.41 | 28.22 | 27.86 | 28.66 | 29.12 | 16.93 | 17.75 | 17.39 | 18.19 | 18.65 |
| | 8H | 27.60 | 28.36 | 28.06 | 28.80 | 29.27 | 17.10 | 17.86 | 17.57 | 18.31 | 18.78 |
| | 12H | 27.75 | 28.43 | 28.23 | 28.91 | 29.38 | 17.22 | 17.90 | 17.70 | 18.38 | 18.85 |
| 8H | 4H | 26.86 | 27.62 | 27.32 | 28.06 | 28.53 | 17.18 | 17.94 | 17.64 | 18.39 | 18.85 |
| | 6H | 27.32 | 27.95 | 27.82 | 28.44 | 28.92 | 17.80 | 18.43 | 18.30 | 18.92 | 19.40 |
| | 8H | 27.52 | 28.08 | 28.03 | 28.59 | 29.08 | 18.00 | 18.57 | 18.52 | 19.08 | 19.57 |
| | 12H | 27.70 | 28.20 | 28.21 | 28.70 | 29.26 | 18.16 | 18.66 | 18.67 | 19.15 | 19.72 |
| 12H | 4H | 26.83 | 27.51 | 27.31 | 27.99 | 28.46 | 17.25 | 17.93 | 17.73 | 18.41 | 18.88 |
| | 6H | 27.27 | 27.84 | 27.79 | 28.35 | 28.84 | 17.90 | 18.46 | 18.41 | 18.97 | 19.46 |
| | 8H | 27.49 | 27.99 | 28.00 | 28.49 | 29.05 | 18.15 | 18.65 | 18.66 | 19.14 | 19.71 |