

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: P894896

Luminaire Tested: 8TMB-20HL-LVR-UNV-L850

Issue Date: 11/11/2024

**Test Information**

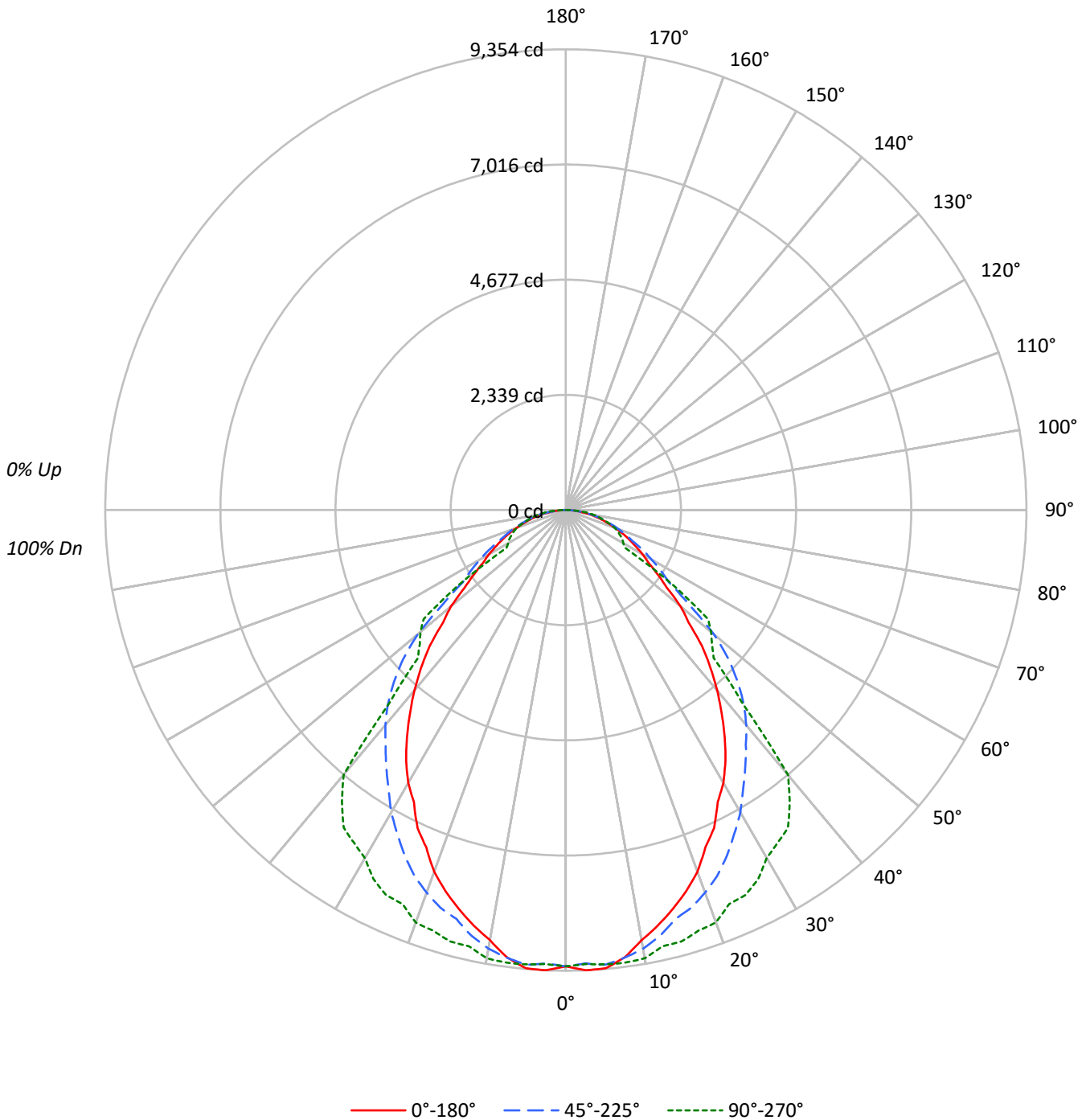
Test Method: LM-79-2019  
Report Number: P894896  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2407-175-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 8TMB-20HL-LVR-UNV-L850  
Description: 20000 Lumen 8FT MICROBAY LINEAR BAY with LOUVER, 80CRI, 5000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 19392.0 lumens  
Efficiency: N/A  
Efficacy: 133.7 lumens/watt  
Spacing Criteria (0/90/45): 1.05 / 1.32 / 1.26  
Luminous Opening: Rectangular (W 0.38' x L: 7.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 145  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.997  
Total Harmonic Distortion (THDi): 7.79  
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   | 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°  | 32871 | 32871 | 32871 |
| 5°  | 33268 | 33006 | 32987 |
| 10° | 31956 | 32584 | 33299 |
| 15° | 30812 | 31572 | 33321 |
| 20° | 29515 | 31220 | 33655 |
| 25° | 27886 | 30304 | 33776 |
| 30° | 26207 | 29038 | 33430 |
| 35° | 24371 | 27541 | 34082 |
| 40° | 22142 | 26401 | 32500 |
| 45° | 19618 | 24779 | 21311 |
| 50° | 16790 | 21656 | 21266 |
| 55° | 14071 | 15804 | 16544 |
| 60° | 12801 | 14268 | 9576  |
| 65° | 11992 | 12632 | 10233 |
| 70° | 11036 | 11968 | 10952 |
| 75° | 10369 | 11226 | 11152 |
| 80° | 9673  | 10619 | 11953 |
| 85° | 8309  | 8863  | 12738 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 24779 cd/sqm



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**ZONAL LUMENS:**

| Zone            | Lumens         | % Fixture    |
|-----------------|----------------|--------------|
| 0°-10°          | 880.3          | 4.5          |
| 10°-20°         | 2463.1         | 12.7         |
| 20°-30°         | 3589.8         | 18.5         |
| 30°-40°         | 4106.7         | 21.2         |
| 40°-50°         | 3513.1         | 18.1         |
| 50°-60°         | 2316.7         | 11.9         |
| 60°-70°         | 1400.6         | 7.2          |
| 70°-80°         | 856.8          | 4.4          |
| 80°-90°         | 264.7          | 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          |
| <b>0°-30°</b>   | <b>6933.3</b>  | <b>35.8</b>  |
| <b>0°-40°</b>   | <b>11040.0</b> | <b>56.9</b>  |
| <b>0°-60°</b>   | <b>16869.9</b> | <b>87.0</b>  |
| <b>0°-90°</b>   | <b>19392.0</b> | <b>100.0</b> |
| 90°-120°        | 0.0            | 0.0          |
| 90°-150°        | 0.0            | 0.0          |
| <b>90°-180°</b> | <b>0.0</b>     | <b>0.0</b>   |
| <b>0°-180°</b>  | <b>19392.0</b> | <b>100.0</b> |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 9264 | 9264  | 9264 | 9264  | 9264 |      |
| 5°  | 9340 | 9332  | 9267 | 9248  | 9262 | 875  |
| 15° | 8388 | 8486  | 8595 | 9144  | 9071 | 2358 |
| 25° | 7123 | 7232  | 7741 | 8402  | 8628 | 3258 |
| 35° | 5626 | 5910  | 6358 | 7357  | 7868 | 3505 |
| 45° | 3910 | 4212  | 4938 | 4614  | 4247 | 2993 |
| 55° | 2275 | 2402  | 2555 | 3028  | 2674 | 2069 |
| 65° | 1428 | 1464  | 1505 | 1344  | 1219 | 1412 |
| 75° | 756  | 775   | 819  | 857   | 814  | 798  |
| 85° | 204  | 201   | 218  | 258   | 313  | 232  |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 9264.2 | 9264.2 | 9264.2 | 9264.2 | 9264.2 |
| 2.5°  | 9354.0 | 9326.8 | 9215.2 | 9321.3 | 9226.1 |
| 5°    | 9340.4 | 9332.2 | 9266.9 | 9247.9 | 9261.5 |
| 7.5°  | 9160.8 | 9179.8 | 9169.0 | 9373.0 | 9269.6 |
| 10°   | 8869.7 | 8907.8 | 9043.8 | 9329.5 | 9242.4 |
| 12.5° | 8641.1 | 8671.1 | 8853.3 | 9277.8 | 9073.7 |
| 15°   | 8388.1 | 8486.0 | 8594.9 | 9144.5 | 9071.0 |
| 17.5° | 8116.0 | 8208.5 | 8467.0 | 8964.9 | 8956.7 |
| 20°   | 7816.7 | 7988.1 | 8268.4 | 8730.9 | 8913.2 |
| 22.5° | 7411.3 | 7642.6 | 8037.1 | 8624.8 | 8660.2 |
| 25°   | 7122.9 | 7231.8 | 7740.6 | 8401.7 | 8627.5 |
| 27.5° | 6684.9 | 6891.7 | 7411.3 | 8080.7 | 8453.4 |
| 30°   | 6396.5 | 6567.9 | 7087.6 | 7892.9 | 8159.6 |
| 32.5° | 6034.6 | 6238.7 | 6704.0 | 7688.9 | 8009.9 |
| 35°   | 5626.5 | 5909.5 | 6358.4 | 7356.9 | 7868.4 |
| 37.5° | 5196.6 | 5476.9 | 6007.4 | 7082.1 | 7468.5 |
| 40°   | 4780.4 | 5019.8 | 5700.0 | 6752.9 | 7016.8 |
| 42.5° | 4353.2 | 4611.7 | 5349.0 | 6102.7 | 5278.3 |
| 45°   | 3909.7 | 4211.7 | 4938.2 | 4614.4 | 4247.1 |
| 47.5° | 3384.6 | 3754.6 | 4483.8 | 3708.4 | 4024.0 |
| 50°   | 3041.8 | 3243.1 | 3923.3 | 3496.2 | 3852.6 |
| 52.5° | 2587.4 | 2859.5 | 3150.6 | 3264.9 | 3640.4 |
| 55°   | 2274.6 | 2402.4 | 2554.8 | 3028.2 | 2674.5 |
| 57.5° | 1986.2 | 2100.4 | 2277.3 | 2135.8 | 1425.7 |
| 60°   | 1803.9 | 1855.6 | 2010.6 | 1526.3 | 1349.5 |
| 62.5° | 1597.1 | 1648.8 | 1763.1 | 1425.7 | 1295.1 |
| 65°   | 1428.4 | 1463.8 | 1504.6 | 1344.1 | 1218.9 |
| 67.5° | 1248.8 | 1267.9 | 1311.4 | 1240.7 | 1145.4 |
| 70°   | 1063.8 | 1091.0 | 1153.6 | 1134.6 | 1055.7 |
| 72.5° | 900.6  | 925.1  | 979.5  | 1006.7 | 933.2  |
| 75°   | 756.4  | 775.4  | 818.9  | 857.0  | 813.5  |
| 77.5° | 601.3  | 620.3  | 677.5  | 718.3  | 699.2  |
| 80°   | 473.4  | 476.1  | 519.7  | 560.5  | 585.0  |
| 82.5° | 331.9  | 337.4  | 370.0  | 413.6  | 462.5  |
| 85°   | 204.1  | 201.3  | 217.7  | 258.5  | 312.9  |
| 87.5° | 78.9   | 76.2   | 89.8   | 108.8  | 160.5  |
| 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 | 19.96            | 21.44 | 20.33 | 21.75 | 22.07 | 19.64          | 21.12 | 20.00 | 21.43 | 21.74 |
|                 | 3H   | 21.52            | 22.84 | 21.90 | 23.17 | 23.54 | 21.26          | 22.58 | 21.63 | 22.91 | 23.27 |
|                 | 4H   | 22.12            | 23.36 | 22.52 | 23.71 | 24.09 | 22.00          | 23.24 | 22.40 | 23.59 | 23.97 |
|                 | 6H   | 22.58            | 23.72 | 22.99 | 24.09 | 24.48 | 22.67          | 23.82 | 23.08 | 24.19 | 24.58 |
|                 | 8H   | 22.73            | 23.82 | 23.16 | 24.21 | 24.61 | 22.95          | 24.04 | 23.38 | 24.43 | 24.83 |
|                 | 12H  | 22.83            | 23.87 | 23.26 | 24.25 | 24.68 | 23.17          | 24.21 | 23.60 | 24.60 | 25.03 |
| 4H              | 2H   | 20.55            | 21.79 | 20.95 | 22.14 | 22.52 | 20.30          | 21.54 | 20.70 | 21.89 | 22.27 |
|                 | 3H   | 22.34            | 23.37 | 22.75 | 23.77 | 24.17 | 22.18          | 23.21 | 22.59 | 23.61 | 24.01 |
|                 | 4H   | 23.07            | 23.99 | 23.50 | 24.41 | 24.85 | 23.08          | 24.00 | 23.51 | 24.42 | 24.86 |
|                 | 6H   | 23.65            | 24.46 | 24.11 | 24.90 | 25.36 | 23.89          | 24.69 | 24.34 | 25.13 | 25.60 |
|                 | 8H   | 23.85            | 24.60 | 24.31 | 25.05 | 25.51 | 24.21          | 24.97 | 24.68 | 25.41 | 25.88 |
|                 | 12H  | 23.99            | 24.66 | 24.47 | 25.14 | 25.61 | 24.49          | 25.16 | 24.97 | 25.64 | 26.11 |
| 8H              | 4H   | 23.39            | 24.14 | 23.86 | 24.59 | 25.06 | 23.40          | 24.15 | 23.86 | 24.60 | 25.07 |
|                 | 6H   | 24.10            | 24.72 | 24.60 | 25.22 | 25.69 | 24.35          | 24.97 | 24.85 | 25.47 | 25.94 |
|                 | 8H   | 24.37            | 24.93 | 24.89 | 25.44 | 25.93 | 24.77          | 25.33 | 25.28 | 25.84 | 26.33 |
|                 | 12H  | 24.58            | 25.08 | 25.09 | 25.57 | 26.13 | 25.13          | 25.63 | 25.64 | 26.12 | 26.69 |
| 12H             | 4H   | 23.43            | 24.10 | 23.91 | 24.58 | 25.05 | 23.43          | 24.10 | 23.91 | 24.58 | 25.05 |
|                 | 6H   | 24.17            | 24.73 | 24.69 | 25.24 | 25.73 | 24.40          | 24.96 | 24.92 | 25.47 | 25.96 |
|                 | 8H   | 24.50            | 25.00 | 25.01 | 25.49 | 26.06 | 24.88          | 25.38 | 25.39 | 25.87 | 26.44 |