

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: P893896

Luminaire Tested: 4MB-8HL-A-UNV-L950

Issue Date: 11/11/2024

**Test Information**

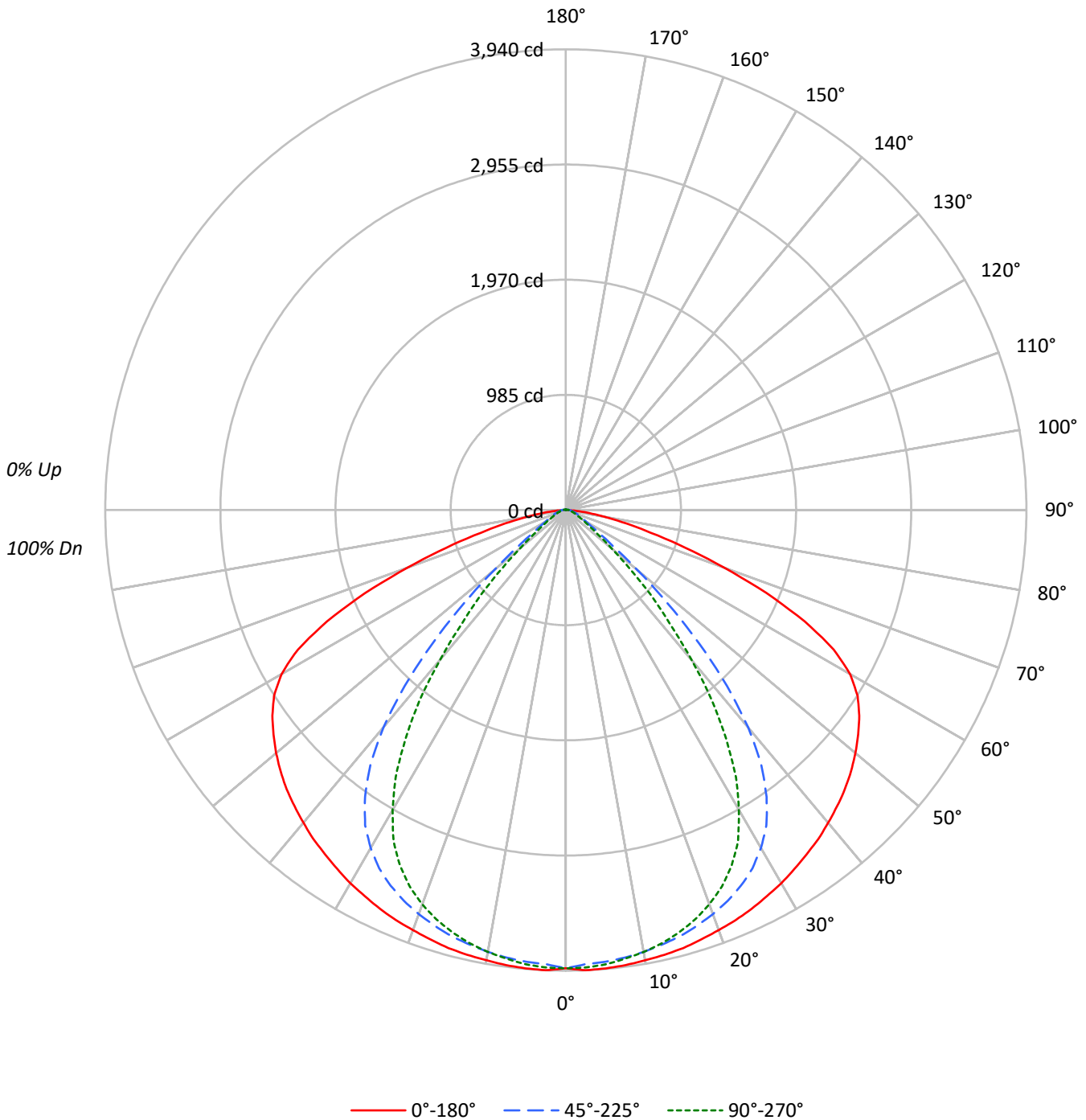
Test Method: LM-79-2019  
Report Number: P893896  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-21)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-8HL-A-UNV-L950  
Description: 8000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTIC, 90CRI, 5000K CCT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7937.0 lumens  
Efficiency: N/A  
Efficacy: 137.1 lumens/watt  
Spacing Criteria (0/90/45): 1.41 / 1.14 / 1.22  
Luminous Opening: Rectangular (W 0.27' x L: 3.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 57.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.999  
Total Harmonic Distortion (THDi): 4.23  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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CATALOG NUMBER: 4MB-8HL-A-UNV-L950

### 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  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 91  | 90  | 90  | 90  | 88  |
| 2   | 103 | 96  | 90  | 86  | 100 | 94  | 89  | 85  | 91  | 86  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 79  | 79  | 77  |
| 3   | 95  | 86  | 80  | 74  | 93  | 85  | 79  | 74  | 82  | 77  | 72  | 79  | 75  | 71  | 77  | 73  | 70  | 70  | 70  | 68  |
| 4   | 88  | 78  | 71  | 65  | 86  | 77  | 70  | 64  | 74  | 68  | 64  | 72  | 67  | 63  | 70  | 66  | 62  | 62  | 62  | 60  |
| 5   | 82  | 71  | 63  | 57  | 80  | 70  | 63  | 57  | 68  | 61  | 56  | 66  | 60  | 56  | 64  | 59  | 55  | 55  | 55  | 53  |
| 6   | 76  | 65  | 57  | 51  | 75  | 64  | 56  | 51  | 62  | 55  | 50  | 60  | 55  | 50  | 59  | 54  | 50  | 50  | 50  | 48  |
| 7   | 71  | 59  | 51  | 46  | 70  | 58  | 51  | 46  | 57  | 50  | 45  | 56  | 50  | 45  | 54  | 49  | 45  | 45  | 45  | 43  |
| 8   | 67  | 55  | 47  | 42  | 65  | 54  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 41  | 41  | 39  |
| 9   | 63  | 50  | 43  | 38  | 61  | 50  | 43  | 38  | 49  | 42  | 38  | 48  | 42  | 37  | 47  | 41  | 37  | 37  | 37  | 35  |
| 10  | 59  | 47  | 39  | 35  | 58  | 46  | 39  | 35  | 45  | 39  | 34  | 44  | 38  | 34  | 43  | 38  | 34  | 34  | 34  | 32  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 39918 | 39918 | 39918 |
| 5°  | 40229 | 39653 | 39880 |
| 10° | 40442 | 39683 | 39691 |
| 15° | 40889 | 39779 | 39436 |
| 20° | 41428 | 39854 | 38898 |
| 25° | 42271 | 39840 | 37700 |
| 30° | 43339 | 39245 | 34826 |
| 35° | 44668 | 37225 | 29726 |
| 40° | 46415 | 32241 | 22232 |
| 45° | 48631 | 23200 | 14802 |
| 50° | 51242 | 12713 | 8112  |
| 55° | 54412 | 6248  | 4670  |
| 60° | 57227 | 4121  | 3230  |
| 65° | 54314 | 3374  | 2554  |
| 70° | 42756 | 3067  | 2361  |
| 75° | 29649 | 3034  | 2247  |
| 80° | 19512 | 3044  | 2780  |
| 85° | 11171 | 4674  | 4768  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 60°  
 Luminance: 57227 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 371.7  | 4.7       |
| 10°-20°   | 1072.9 | 13.5      |
| 20°-30°   | 1634.5 | 20.6      |
| 30°-40°   | 1856.2 | 23.4      |
| 40°-50°   | 1490.5 | 18.8      |
| 50°-60°   | 799.5  | 10.1      |
| 60°-70°   | 422.9  | 5.3       |
| 70°-80°   | 191.7  | 2.4       |
| 80°-90°   | 61.1   | 0.8       |
| 90°-100°  | 18.9   | 0.2       |
| 100°-110° | 6.8    | 0.1       |
| 110°-120° | 2.1    | 0.0       |
| 120°-130° | 1.6    | 0.0       |
| 130°-140° | 1.7    | 0.0       |
| 140°-150° | 1.8    | 0.0       |
| 150°-160° | 1.6    | 0.0       |
| 160°-170° | 1.2    | 0.0       |
| 170°-180° | 0.5    | 0.0       |
| 0°-30°    | 3079.1 | 38.8      |
| 0°-40°    | 4935.3 | 62.2      |
| 0°-60°    | 7225.3 | 91.0      |
| 0°-90°    | 7901.0 | 99.5      |
| 90°-120°  | 27.8   | 0.4       |
| 90°-150°  | 32.8   | 0.4       |
| 90°-180°  | 36.0   | 0.5       |
| 0°-180°   | 7937.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 3920 | 3920  | 3920 | 3920  | 3920 |      |
| 5°   | 3935 | 3927  | 3879 | 3911  | 3901 | 375  |
| 15°  | 3878 | 3854  | 3773 | 3762  | 3740 | 1097 |
| 25°  | 3762 | 3702  | 3545 | 3422  | 3355 | 1738 |
| 35°  | 3593 | 3440  | 2994 | 2560  | 2391 | 2254 |
| 45°  | 3376 | 2857  | 1611 | 1120  | 1028 | 2608 |
| 55°  | 3064 | 1143  | 352  | 275   | 263  | 2732 |
| 65°  | 2254 | 266   | 140  | 113   | 106  | 2180 |
| 75°  | 754  | 152   | 77   | 61    | 57   | 852  |
| 85°  | 96   | 57    | 40   | 40    | 41   | 130  |
| 90°  | 4    | 26    | 29   | 33    | 32   | 6    |
| 95°  | 4    | 10    | 23   | 20    | 19   | 3    |
| 105° | 2    | 2     | 4    | 10    | 13   | 2    |
| 115° | 2    | 2     | 2    | 3     | 3    | 1    |
| 125° | 2    | 2     | 2    | 2     | 2    | 1    |
| 135° | 2    | 2     | 2    | 2     | 2    | 1    |
| 145° | 2    | 2     | 3    | 3     | 3    | 1    |
| 155° | 3    | 3     | 4    | 4     | 4    | 1    |
| 165° | 3    | 4     | 4    | 5     | 4    | 1    |
| 175° | 4    | 4     | 5    | 6     | 5    | 0    |
| 180° | 5    | 5     | 5    | 5     | 5    |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 3919.6 | 3919.6 | 3919.6 | 3919.6 | 3919.6 |
| 2.5°   | 3939.6 | 3932.2 | 3887.7 | 3924.8 | 3915.1 |
| 5°     | 3935.1 | 3927.0 | 3878.8 | 3911.4 | 3901.0 |
| 7.5°   | 3925.5 | 3915.1 | 3861.0 | 3887.7 | 3871.4 |
| 10°    | 3910.7 | 3900.3 | 3837.3 | 3855.9 | 3838.1 |
| 12.5°  | 3895.9 | 3878.1 | 3806.2 | 3812.1 | 3795.1 |
| 15°    | 3878.1 | 3853.6 | 3772.9 | 3762.5 | 3740.3 |
| 17.5°  | 3850.7 | 3823.3 | 3729.2 | 3704.7 | 3673.6 |
| 20°    | 3822.5 | 3785.5 | 3677.3 | 3627.6 | 3589.1 |
| 22.5°  | 3796.6 | 3745.5 | 3618.0 | 3538.7 | 3486.9 |
| 25°    | 3761.8 | 3701.7 | 3545.4 | 3421.7 | 3355.0 |
| 27.5°  | 3724.0 | 3650.6 | 3455.7 | 3270.5 | 3191.2 |
| 30°    | 3685.4 | 3589.1 | 3337.2 | 3080.8 | 2961.5 |
| 32.5°  | 3640.2 | 3521.7 | 3194.9 | 2851.1 | 2710.4 |
| 35°    | 3592.8 | 3440.2 | 2994.1 | 2559.9 | 2391.0 |
| 37.5°  | 3547.6 | 3346.1 | 2746.7 | 2206.5 | 2056.8 |
| 40°    | 3491.3 | 3236.4 | 2425.1 | 1827.2 | 1672.3 |
| 42.5°  | 3435.7 | 3067.5 | 2039.8 | 1463.4 | 1315.2 |
| 45°    | 3376.5 | 2857.1 | 1610.8 | 1120.3 | 1027.7 |
| 47.5°  | 3309.0 | 2568.8 | 1178.8 | 815.8  | 735.8  |
| 50°    | 3234.2 | 2153.9 | 802.4  | 555.7  | 512.0  |
| 52.5°  | 3152.0 | 1668.6 | 521.6  | 383.1  | 357.9  |
| 55°    | 3064.5 | 1143.3 | 351.9  | 274.9  | 263.0  |
| 57.5°  | 2959.3 | 716.5  | 260.8  | 206.7  | 200.1  |
| 60°    | 2809.6 | 464.6  | 202.3  | 166.7  | 158.6  |
| 62.5°  | 2584.4 | 332.7  | 169.7  | 136.3  | 129.7  |
| 65°    | 2253.9 | 266.0  | 140.0  | 113.4  | 106.0  |
| 67.5°  | 1858.3 | 227.5  | 120.0  | 97.1   | 91.9   |
| 70°    | 1435.9 | 200.1  | 103.0  | 84.5   | 79.3   |
| 72.5°  | 1071.4 | 174.9  | 88.9   | 73.4   | 66.7   |
| 75°    | 753.5  | 151.9  | 77.1   | 60.8   | 57.1   |
| 77.5°  | 529.8  | 131.1  | 63.7   | 51.9   | 51.1   |
| 80°    | 332.7  | 108.9  | 51.9   | 48.2   | 47.4   |
| 82.5°  | 202.3  | 85.9   | 45.2   | 44.5   | 43.7   |
| 85°    | 95.6   | 57.1   | 40.0   | 40.0   | 40.8   |
| 87.5°  | 31.1   | 37.8   | 34.1   | 35.6   | 35.6   |
| 90°    | 3.7    | 25.9   | 28.9   | 33.3   | 31.9   |
| 92.5°  | 3.7    | 18.5   | 26.7   | 26.7   | 21.5   |
| 95°    | 3.7    | 10.4   | 23.0   | 20.0   | 19.3   |
| 97.5°  | 3.7    | 5.2    | 17.0   | 19.3   | 18.5   |
| 100°   | 3.7    | 3.0    | 12.6   | 17.0   | 18.5   |
| 102.5° | 3.0    | 2.2    | 8.2    | 14.1   | 15.6   |
| 105°   | 2.2    | 1.5    | 4.4    | 10.4   | 12.6   |
| 107.5° | 1.5    | 1.5    | 3.0    | 7.4    | 8.9    |
| 110°   | 1.5    | 0.7    | 2.2    | 5.2    | 5.9    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 1.5 | 0.7   | 2.2 | 3.7   | 3.7 |
| 115°   | 1.5 | 1.5   | 1.5 | 3.0   | 3.0 |
| 117.5° | 1.5 | 1.5   | 1.5 | 2.2   | 2.2 |
| 120°   | 1.5 | 1.5   | 1.5 | 2.2   | 1.5 |
| 122.5° | 1.5 | 1.5   | 1.5 | 2.2   | 1.5 |
| 125°   | 1.5 | 1.5   | 1.5 | 2.2   | 1.5 |
| 127.5° | 1.5 | 1.5   | 2.2 | 2.2   | 1.5 |
| 130°   | 1.5 | 1.5   | 2.2 | 2.2   | 1.5 |
| 132.5° | 1.5 | 1.5   | 2.2 | 2.2   | 2.2 |
| 135°   | 2.2 | 1.5   | 2.2 | 2.2   | 2.2 |
| 137.5° | 2.2 | 2.2   | 2.2 | 3.0   | 2.2 |
| 140°   | 2.2 | 2.2   | 3.0 | 3.0   | 2.2 |
| 142.5° | 2.2 | 2.2   | 3.0 | 3.0   | 3.0 |
| 145°   | 2.2 | 2.2   | 3.0 | 3.0   | 3.0 |
| 147.5° | 2.2 | 2.2   | 3.0 | 3.7   | 3.0 |
| 150°   | 2.2 | 3.0   | 3.7 | 3.7   | 3.0 |
| 152.5° | 2.2 | 3.0   | 3.7 | 3.7   | 3.7 |
| 155°   | 3.0 | 3.0   | 3.7 | 4.4   | 3.7 |
| 157.5° | 3.0 | 3.0   | 3.7 | 4.4   | 3.7 |
| 160°   | 3.0 | 3.0   | 4.4 | 4.4   | 4.4 |
| 162.5° | 3.0 | 3.7   | 4.4 | 5.2   | 4.4 |
| 165°   | 3.0 | 3.7   | 4.4 | 5.2   | 4.4 |
| 167.5° | 3.0 | 3.7   | 4.4 | 5.2   | 5.2 |
| 170°   | 3.0 | 3.7   | 5.2 | 5.2   | 5.2 |
| 172.5° | 3.7 | 3.7   | 5.2 | 5.9   | 5.2 |
| 175°   | 3.7 | 3.7   | 5.2 | 5.9   | 5.2 |
| 177.5° | 3.7 | 3.7   | 5.2 | 5.9   | 5.2 |
| 180°   | 5.2 | 5.2   | 5.2 | 5.2   | 5.2 |



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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 | 22.48            | 23.86 | 22.85 | 24.19 | 24.51 | 10.69          | 12.07 | 11.06 | 12.40 | 12.72 |
|                 | 3H   | 25.37            | 26.61 | 25.76 | 26.95 | 27.32 | 11.64          | 12.88 | 12.03 | 13.22 | 13.59 |
|                 | 4H   | 26.16            | 27.31 | 26.57 | 27.67 | 28.06 | 12.07          | 13.22 | 12.47 | 13.58 | 13.97 |
|                 | 6H   | 26.59            | 27.65 | 27.02 | 28.03 | 28.44 | 12.54          | 13.60 | 12.97 | 13.98 | 14.39 |
|                 | 8H   | 26.69            | 27.70 | 27.13 | 28.10 | 28.51 | 12.85          | 13.86 | 13.29 | 14.26 | 14.67 |
|                 | 12H  | 26.73            | 27.69 | 27.17 | 28.08 | 28.53 | 13.26          | 14.22 | 13.70 | 14.61 | 15.05 |
| 4H              | 2H   | 22.29            | 23.44 | 22.70 | 23.80 | 24.19 | 11.20          | 12.35 | 11.61 | 12.71 | 13.11 |
|                 | 3H   | 25.21            | 26.15 | 25.63 | 26.56 | 26.97 | 12.41          | 13.36 | 12.83 | 13.77 | 14.18 |
|                 | 4H   | 26.00            | 26.84 | 26.44 | 27.27 | 27.72 | 12.95          | 13.80 | 13.39 | 14.22 | 14.68 |
|                 | 6H   | 26.53            | 27.26 | 27.00 | 27.71 | 28.19 | 13.59          | 14.32 | 14.06 | 14.77 | 15.25 |
|                 | 8H   | 26.67            | 27.35 | 27.15 | 27.81 | 28.29 | 13.99          | 14.67 | 14.46 | 15.13 | 15.61 |
|                 | 12H  | 26.75            | 27.36 | 27.24 | 27.85 | 28.33 | 14.52          | 15.12 | 15.01 | 15.61 | 16.10 |
| 8H              | 4H   | 25.89            | 26.57 | 26.36 | 27.02 | 27.50 | 13.51          | 14.20 | 13.99 | 14.65 | 15.13 |
|                 | 6H   | 26.42            | 26.98 | 26.92 | 27.48 | 27.97 | 14.29          | 14.85 | 14.79 | 15.35 | 15.84 |
|                 | 8H   | 26.58            | 27.09 | 27.11 | 27.61 | 28.11 | 14.81          | 15.31 | 15.34 | 15.84 | 16.34 |
|                 | 12H  | 26.70            | 27.15 | 27.22 | 27.65 | 28.23 | 15.51          | 15.96 | 16.03 | 16.46 | 17.04 |
| 12H             | 4H   | 25.85            | 26.45 | 26.34 | 26.94 | 27.43 | 13.76          | 14.37 | 14.25 | 14.86 | 15.34 |
|                 | 6H   | 26.36            | 26.87 | 26.89 | 27.39 | 27.89 | 14.56          | 15.07 | 15.09 | 15.59 | 16.09 |
|                 | 8H   | 26.55            | 27.00 | 27.07 | 27.50 | 28.08 | 15.16          | 15.60 | 15.68 | 16.11 | 16.69 |