

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: P893579

Luminaire Tested: 4MB-5SL-ACL-UNV-L840

Issue Date: 11/11/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P893579  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-5SL-ACL-UNV-L840  
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS, 80CRI, 4000K (C)  
Light Source: -  
Ballast/Driver: -

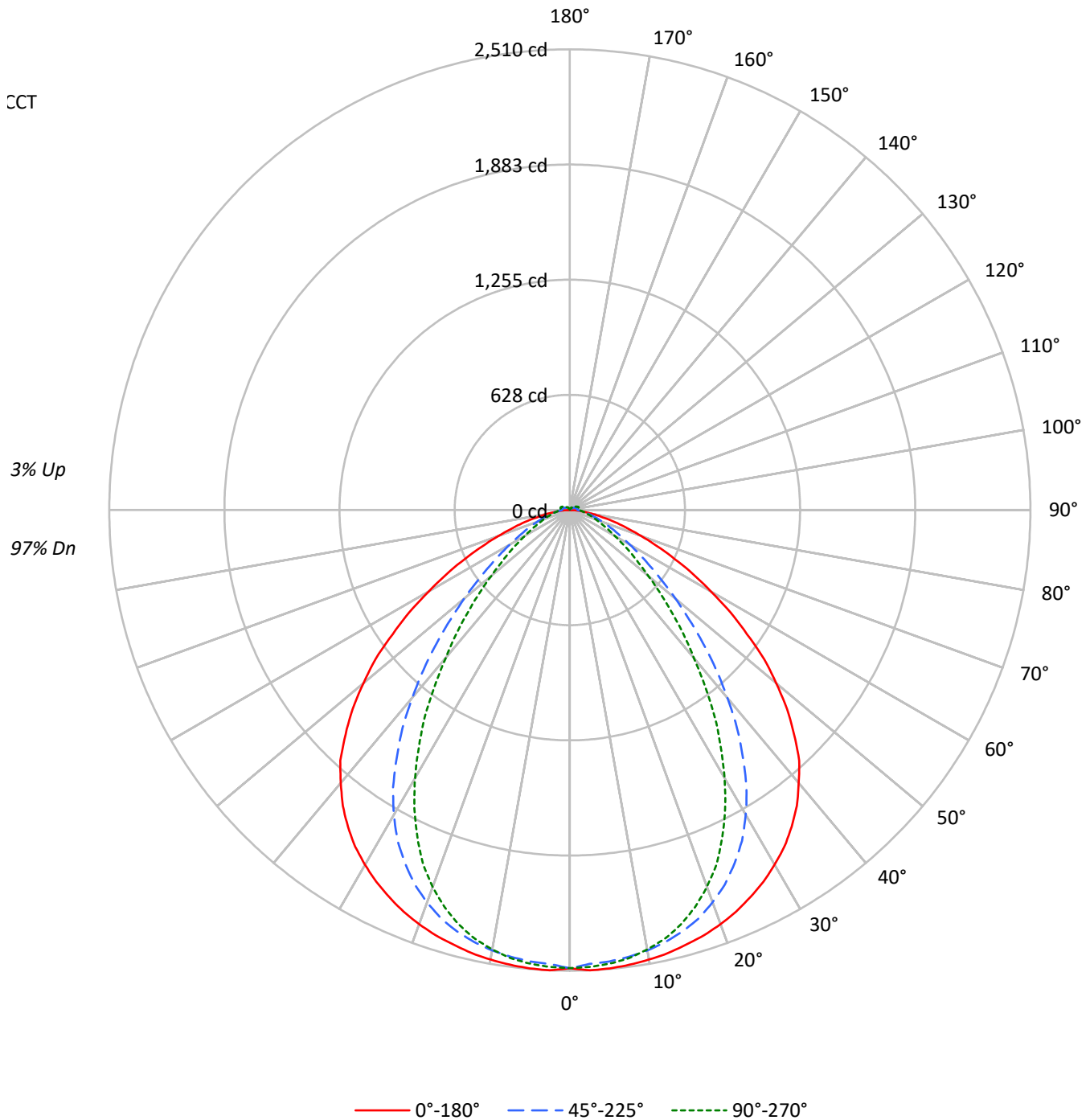
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5120.0 lumens  
Efficiency: N/A  
Efficacy: 146.3 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 1.06 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.08')  
CIE Type: Direct

Input Watts (W): 35  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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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CATALOG NUMBER: 4MB-5SL-ACL-UNV-L840

### 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   | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 104 | 104 | 104 | 100 | 100 | 100 | 97 |    |    |    | 97 |
| 1   | 110 | 106 | 102 | 99  | 107 | 103 | 100 | 97  | 99  | 96  | 93  | 94  | 92  | 90  | 90  | 89  | 87  | 85 |    |    |    | 85 |
| 2   | 101 | 94  | 88  | 84  | 99  | 92  | 87  | 82  | 88  | 84  | 80  | 85  | 81  | 78  | 82  | 79  | 76  | 74 |    |    |    | 74 |
| 3   | 94  | 85  | 77  | 72  | 91  | 83  | 76  | 71  | 80  | 74  | 69  | 77  | 72  | 68  | 74  | 70  | 66  | 64 |    |    |    | 64 |
| 4   | 87  | 76  | 68  | 62  | 84  | 75  | 67  | 62  | 72  | 66  | 61  | 69  | 64  | 60  | 67  | 62  | 59  | 57 |    |    |    | 57 |
| 5   | 80  | 69  | 61  | 55  | 78  | 68  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 53  | 61  | 56  | 52  | 50 |    |    |    | 50 |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 54  | 49  | 60  | 53  | 48  | 58  | 52  | 47  | 56  | 51  | 47  | 45 |    |    |    | 45 |
| 7   | 70  | 57  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 48  | 43  | 53  | 47  | 43  | 52  | 46  | 42  | 40 |    |    |    | 40 |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 40  | 51  | 44  | 39  | 49  | 43  | 39  | 48  | 42  | 38  | 37 |    |    |    | 37 |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 45  | 39  | 35  | 33 |    |    |    | 33 |
| 10  | 58  | 45  | 38  | 33  | 56  | 45  | 38  | 33  | 44  | 37  | 33  | 43  | 37  | 32  | 42  | 36  | 32  | 31 |    |    |    | 31 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 25419 | 25419 | 25419 |
| 5°  | 25580 | 24728 | 24689 |
| 10° | 25625 | 24192 | 23823 |
| 15° | 25703 | 23563 | 22739 |
| 20° | 25827 | 22696 | 21255 |
| 25° | 25904 | 21494 | 19279 |
| 30° | 25930 | 19843 | 16797 |
| 35° | 25818 | 17535 | 14051 |
| 40° | 25361 | 14812 | 11058 |
| 45° | 24384 | 11957 | 8574  |
| 50° | 22700 | 9278  | 6432  |
| 55° | 20323 | 7102  | 4920  |
| 60° | 17460 | 5460  | 3749  |
| 65° | 14557 | 4307  | 2980  |
| 70° | 11646 | 3456  | 2434  |
| 75° | 9274  | 2784  | 2072  |
| 80° | 6794  | 2297  | 1813  |
| 85° | 4667  | 1953  | 1669  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 24384 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 236.4  | 4.6       |
| 10°-20°   | 673.5  | 13.2      |
| 20°-30°   | 981.9  | 19.2      |
| 30°-40°   | 1054.9 | 20.6      |
| 40°-50°   | 878.0  | 17.1      |
| 50°-60°   | 587.2  | 11.5      |
| 60°-70°   | 336.1  | 6.6       |
| 70°-80°   | 167.1  | 3.3       |
| 80°-90°   | 68.4   | 1.3       |
| 90°-100°  | 39.7   | 0.8       |
| 100°-110° | 35.0   | 0.7       |
| 110°-120° | 25.7   | 0.5       |
| 120°-130° | 16.5   | 0.3       |
| 130°-140° | 9.8    | 0.2       |
| 140°-150° | 5.5    | 0.1       |
| 150°-160° | 2.8    | 0.1       |
| 160°-170° | 1.2    | 0.0       |
| 170°-180° | 0.3    | 0.0       |
| 0°-30°    | 1891.7 | 36.9      |
| 0°-40°    | 2946.6 | 57.6      |
| 0°-60°    | 4411.8 | 86.2      |
| 0°-90°    | 4983.5 | 97.3      |
| 90°-120°  | 100.4  | 2.0       |
| 90°-150°  | 132.3  | 2.6       |
| 90°-180°  | 137.0  | 2.7       |
| 0°-180°   | 5120.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 2496 | 2496  | 2496 | 2496  | 2496 |      |
| 5°   | 2507 | 2499  | 2469 | 2489  | 2481 | 239  |
| 15°  | 2452 | 2435  | 2376 | 2359  | 2338 | 693  |
| 25°  | 2328 | 2272  | 2124 | 2017  | 1967 | 1073 |
| 35°  | 2107 | 1954  | 1644 | 1442  | 1378 | 1316 |
| 45°  | 1728 | 1436  | 1027 | 831   | 782  | 1329 |
| 55°  | 1179 | 850   | 535  | 423   | 401  | 1056 |
| 65°  | 631  | 428   | 269  | 218   | 207  | 631  |
| 75°  | 254  | 185   | 133  | 118   | 114  | 273  |
| 85°  | 50   | 55    | 62   | 65    | 66   | 58   |
| 90°  | 7    | 23    | 42   | 50    | 52   | 7    |
| 95°  | 11   | 23    | 42   | 50    | 52   | 9    |
| 105° | 7    | 19    | 37   | 49    | 51   | 8    |
| 115° | 4    | 11    | 29   | 40    | 44   | 4    |
| 125° | 2    | 7     | 20   | 29    | 32   | 2    |
| 135° | 2    | 6     | 13   | 20    | 22   | 1    |
| 145° | 2    | 4     | 9    | 13    | 15   | 1    |
| 155° | 2    | 4     | 6    | 8     | 10   | 1    |
| 165° | 2    | 3     | 4    | 5     | 7    | 1    |
| 175° | 2    | 2     | 3    | 3     | 3    | 0    |
| 180° | 2    | 2     | 2    | 2     | 2    |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 2495.9 | 2495.9 | 2495.9 | 2495.9 | 2495.9 |
| 2.5°   | 2510.4 | 2503.9 | 2475.5 | 2498.1 | 2491.5 |
| 5°     | 2506.8 | 2498.8 | 2468.9 | 2489.3 | 2481.3 |
| 7.5°   | 2498.8 | 2490.0 | 2455.8 | 2471.8 | 2463.1 |
| 10°    | 2487.1 | 2476.2 | 2436.9 | 2444.9 | 2431.1 |
| 12.5°  | 2472.6 | 2458.7 | 2410.0 | 2407.8 | 2392.5 |
| 15°    | 2451.5 | 2434.7 | 2376.5 | 2359.0 | 2337.9 |
| 17.5°  | 2429.6 | 2404.9 | 2333.5 | 2297.8 | 2268.7 |
| 20°    | 2401.2 | 2368.5 | 2274.5 | 2221.4 | 2185.0 |
| 22.5°  | 2368.5 | 2324.0 | 2208.3 | 2126.7 | 2088.9 |
| 25°    | 2327.7 | 2272.3 | 2123.8 | 2016.8 | 1966.6 |
| 27.5°  | 2284.0 | 2210.5 | 2032.1 | 1891.6 | 1834.0 |
| 30°    | 2231.6 | 2140.6 | 1917.8 | 1748.9 | 1687.0 |
| 32.5°  | 2176.2 | 2051.7 | 1792.5 | 1598.9 | 1531.2 |
| 35°    | 2107.1 | 1954.2 | 1644.0 | 1441.6 | 1378.3 |
| 37.5°  | 2032.1 | 1837.7 | 1496.9 | 1280.7 | 1209.3 |
| 40°    | 1941.1 | 1714.6 | 1335.3 | 1121.2 | 1050.6 |
| 42.5°  | 1850.8 | 1580.7 | 1180.2 | 977.1  | 915.9  |
| 45°    | 1728.5 | 1436.5 | 1026.6 | 830.7  | 782.0  |
| 47.5°  | 1605.4 | 1282.2 | 879.5  | 712.1  | 664.0  |
| 50°    | 1468.5 | 1130.7 | 750.7  | 597.8  | 557.7  |
| 52.5°  | 1335.3 | 989.5  | 633.4  | 505.3  | 471.1  |
| 55°    | 1178.8 | 850.4  | 535.1  | 423.0  | 401.2  |
| 57.5°  | 1037.5 | 721.5  | 451.4  | 358.2  | 337.8  |
| 60°    | 888.3  | 611.6  | 377.9  | 302.9  | 284.0  |
| 62.5°  | 757.2  | 514.0  | 318.2  | 257.0  | 243.9  |
| 65°    | 631.2  | 428.1  | 269.4  | 218.4  | 206.8  |
| 67.5°  | 515.5  | 357.5  | 227.2  | 186.4  | 176.9  |
| 70°    | 413.6  | 289.8  | 191.5  | 158.7  | 152.2  |
| 72.5°  | 325.5  | 233.0  | 159.5  | 136.9  | 131.1  |
| 75°    | 254.1  | 184.9  | 133.2  | 117.9  | 114.3  |
| 77.5°  | 183.5  | 144.2  | 111.4  | 101.2  | 99.0   |
| 80°    | 129.6  | 109.2  | 91.7   | 87.4   | 85.9   |
| 82.5°  | 85.9   | 79.4   | 75.7   | 75.7   | 75.0   |
| 85°    | 49.5   | 55.3   | 61.9   | 64.8   | 65.5   |
| 87.5°  | 25.5   | 37.1   | 49.5   | 55.3   | 56.1   |
| 90°    | 7.3    | 23.3   | 42.2   | 50.2   | 51.7   |
| 92.5°  | 10.9   | 23.3   | 41.5   | 50.2   | 51.7   |
| 95°    | 10.9   | 23.3   | 41.5   | 50.2   | 51.7   |
| 97.5°  | 10.2   | 22.6   | 41.5   | 50.2   | 51.7   |
| 100°   | 9.5    | 21.1   | 40.8   | 50.2   | 51.7   |
| 102.5° | 8.0    | 20.4   | 39.3   | 49.5   | 51.7   |
| 105°   | 7.3    | 18.9   | 37.1   | 48.8   | 51.0   |
| 107.5° | 6.6    | 16.0   | 34.9   | 46.6   | 49.5   |
| 110°   | 5.1    | 13.8   | 33.5   | 44.4   | 48.1   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 4.4 | 12.4  | 31.3 | 42.2  | 45.9 |
| 115°   | 3.6 | 10.9  | 29.1 | 40.0  | 43.7 |
| 117.5° | 2.9 | 10.2  | 26.2 | 37.1  | 40.8 |
| 120°   | 2.2 | 9.5   | 24.0 | 34.9  | 37.9 |
| 122.5° | 2.2 | 8.7   | 21.1 | 32.0  | 34.9 |
| 125°   | 2.2 | 7.3   | 19.7 | 29.1  | 32.0 |
| 127.5° | 1.5 | 6.6   | 17.5 | 26.2  | 29.1 |
| 130°   | 1.5 | 6.6   | 16.0 | 24.0  | 26.2 |
| 132.5° | 1.5 | 5.8   | 14.6 | 21.8  | 24.0 |
| 135°   | 1.5 | 5.8   | 13.1 | 19.7  | 21.8 |
| 137.5° | 1.5 | 5.1   | 11.6 | 18.2  | 20.4 |
| 140°   | 1.5 | 5.1   | 10.9 | 16.0  | 18.2 |
| 142.5° | 1.5 | 4.4   | 9.5  | 15.3  | 16.7 |
| 145°   | 1.5 | 4.4   | 8.7  | 13.1  | 15.3 |
| 147.5° | 1.5 | 4.4   | 8.0  | 12.4  | 13.8 |
| 150°   | 1.5 | 3.6   | 7.3  | 10.2  | 12.4 |
| 152.5° | 1.5 | 3.6   | 6.6  | 9.5   | 11.6 |
| 155°   | 1.5 | 3.6   | 5.8  | 8.0   | 10.2 |
| 157.5° | 1.5 | 3.6   | 5.8  | 7.3   | 8.7  |
| 160°   | 2.2 | 2.9   | 5.1  | 6.6   | 8.0  |
| 162.5° | 2.2 | 2.9   | 4.4  | 5.8   | 7.3  |
| 165°   | 2.2 | 2.9   | 4.4  | 5.1   | 6.6  |
| 167.5° | 2.2 | 2.9   | 3.6  | 4.4   | 5.1  |
| 170°   | 2.2 | 2.2   | 3.6  | 3.6   | 3.6  |
| 172.5° | 2.2 | 2.2   | 2.9  | 3.6   | 2.9  |
| 175°   | 2.2 | 2.2   | 2.9  | 2.9   | 2.9  |
| 177.5° | 2.2 | 2.2   | 2.9  | 2.9   | 2.9  |
| 180°   | 2.2 | 2.2   | 2.2  | 2.2   | 2.2  |



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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 | 19.98            | 21.37 | 20.39 | 21.74 | 22.12 | 15.27          | 16.66 | 15.68 | 17.03 | 17.42 |
|                 | 3H   | 21.07            | 22.31 | 21.49 | 22.70 | 23.13 | 16.41          | 17.65 | 16.84 | 18.04 | 18.47 |
|                 | 4H   | 21.38            | 22.54 | 21.82 | 22.94 | 23.39 | 16.91          | 18.07 | 17.36 | 18.48 | 18.93 |
|                 | 6H   | 21.52            | 22.59 | 21.98 | 23.02 | 23.48 | 17.41          | 18.49 | 17.87 | 18.91 | 19.37 |
|                 | 8H   | 21.54            | 22.56 | 22.01 | 23.00 | 23.47 | 17.67          | 18.69 | 18.14 | 19.14 | 19.60 |
|                 | 12H  | 21.53            | 22.51 | 22.01 | 22.95 | 23.44 | 17.97          | 18.94 | 18.44 | 19.38 | 19.87 |
| 4H              | 2H   | 19.96            | 21.12 | 20.40 | 21.53 | 21.97 | 15.77          | 16.93 | 16.21 | 17.34 | 17.78 |
|                 | 3H   | 21.19            | 22.16 | 21.65 | 22.61 | 23.08 | 17.08          | 18.04 | 17.54 | 18.50 | 18.96 |
|                 | 4H   | 21.58            | 22.44 | 22.06 | 22.91 | 23.42 | 17.68          | 18.54 | 18.15 | 19.01 | 19.51 |
|                 | 6H   | 21.81            | 22.56 | 22.31 | 23.06 | 23.58 | 18.30          | 19.05 | 18.80 | 19.54 | 20.07 |
|                 | 8H   | 21.85            | 22.55 | 22.36 | 23.05 | 23.58 | 18.62          | 19.32 | 19.13 | 19.81 | 20.34 |
|                 | 12H  | 21.86            | 22.49 | 22.39 | 23.02 | 23.55 | 18.99          | 19.62 | 19.52 | 20.15 | 20.68 |
| 8H              | 4H   | 21.57            | 22.27 | 22.08 | 22.76 | 23.29 | 17.91          | 18.62 | 18.42 | 19.11 | 19.64 |
|                 | 6H   | 21.84            | 22.42 | 22.39 | 22.96 | 23.50 | 18.64          | 19.22 | 19.18 | 19.76 | 20.30 |
|                 | 8H   | 21.92            | 22.44 | 22.48 | 22.99 | 23.55 | 19.04          | 19.57 | 19.60 | 20.12 | 20.67 |
|                 | 12H  | 21.96            | 22.42 | 22.52 | 22.96 | 23.59 | 19.54          | 20.00 | 20.09 | 20.54 | 21.16 |
| 12H             | 4H   | 21.54            | 22.17 | 22.07 | 22.70 | 23.23 | 17.93          | 18.56 | 18.46 | 19.08 | 19.62 |
|                 | 6H   | 21.82            | 22.34 | 22.38 | 22.90 | 23.45 | 18.68          | 19.20 | 19.23 | 19.75 | 20.31 |
|                 | 8H   | 21.93            | 22.39 | 22.48 | 22.93 | 23.56 | 19.14          | 19.60 | 19.69 | 20.14 | 20.76 |