

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: P894132

Luminaire Tested: 4MB-SC3-AOL-UNV-CC93-MID-3500K

Issue Date: 11/11/2024

**Test Information**

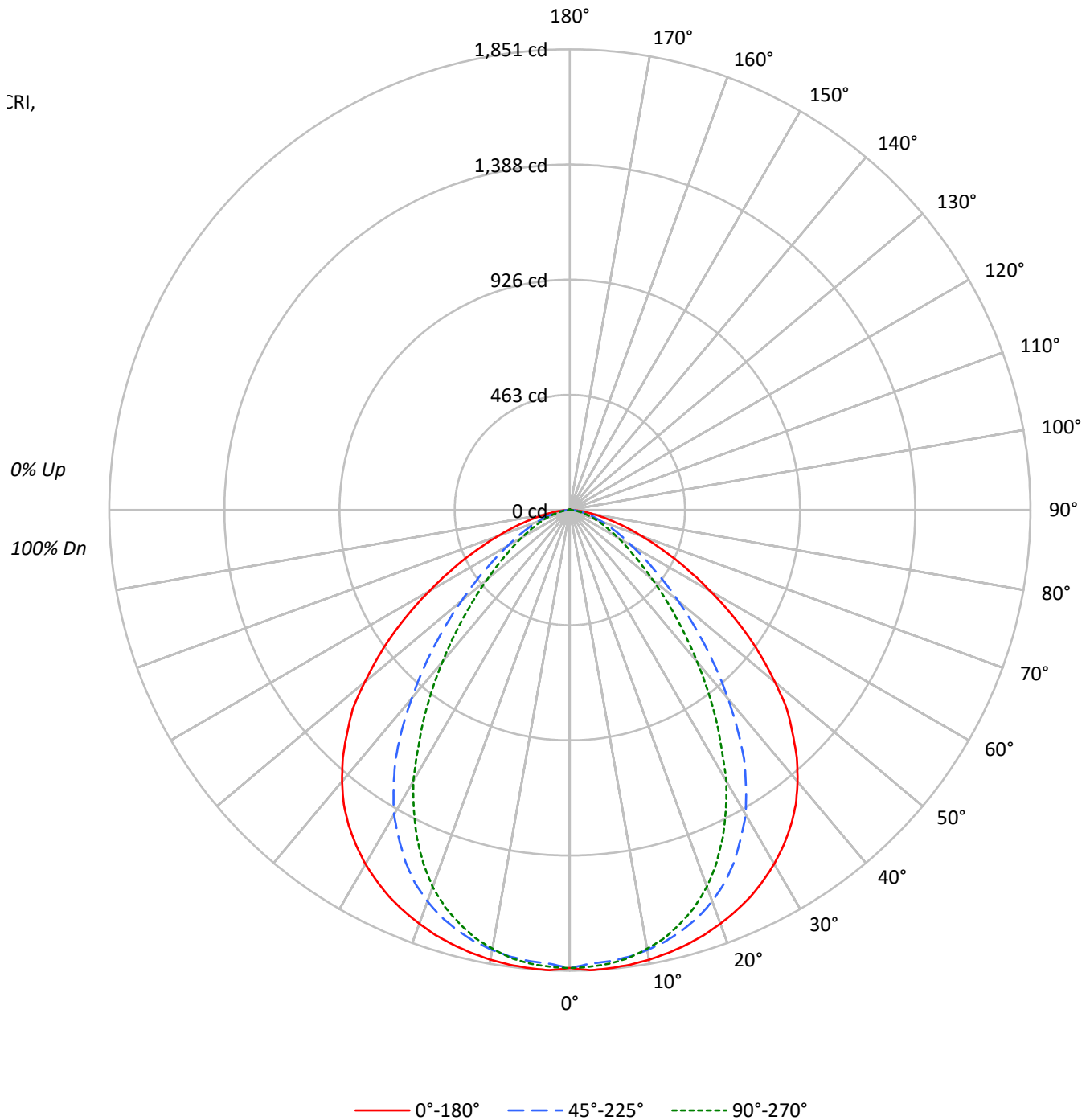
Test Method: LM-79-2019  
Report Number: P894132  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-SC3-AOL-UNV-CC93-MID-3500K  
Description: Selectable 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 90C  
3500K CCT, MID lumen setting  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3676.1 lumens  
Efficiency: N/A  
Efficacy: 109.7 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 1.06 / 1.16  
Luminous Opening: Rectangular (W 0.27' x L: 3.98' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9948  
Total Harmonic Distortion (THDi): 5.65231997856897  
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   | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 98  | 100 | 98  | 95  | 96  | 94  | 92  | 93  | 91  | 89  | 89  | 89  | 89  | 87  |
| 2   | 102 | 95  | 89  | 85  | 100 | 93  | 88  | 84  | 90  | 85  | 82  | 87  | 83  | 80  | 84  | 81  | 78  | 78  | 78  | 78  | 76  |
| 3   | 94  | 85  | 78  | 73  | 92  | 84  | 77  | 72  | 81  | 75  | 71  | 78  | 73  | 70  | 76  | 72  | 68  | 68  | 68  | 68  | 66  |
| 4   | 87  | 77  | 69  | 63  | 85  | 76  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 61  | 69  | 64  | 60  | 60  | 60  | 60  | 58  |
| 5   | 81  | 70  | 62  | 56  | 79  | 69  | 61  | 55  | 66  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 54  | 54  | 54  | 52  |
| 6   | 75  | 63  | 55  | 50  | 74  | 63  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 49  | 58  | 52  | 48  | 48  | 48  | 48  | 46  |
| 7   | 70  | 58  | 50  | 45  | 69  | 57  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 53  | 48  | 43  | 43  | 43  | 43  | 42  |
| 8   | 66  | 53  | 46  | 40  | 64  | 53  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 39  | 39  | 39  | 39  | 38  |
| 9   | 62  | 49  | 42  | 37  | 60  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 36  | 36  | 36  | 34  |
| 10  | 58  | 46  | 38  | 34  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 43  | 37  | 33  | 33  | 33  | 33  | 31  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 18741 | 18741 | 18741 |
| 5°  | 18893 | 18607 | 18704 |
| 10° | 18970 | 18561 | 18512 |
| 15° | 19068 | 18428 | 18122 |
| 20° | 19171 | 18131 | 17461 |
| 25° | 19278 | 17541 | 16331 |
| 30° | 19313 | 16618 | 14787 |
| 35° | 19249 | 15180 | 12719 |
| 40° | 18927 | 13138 | 10569 |
| 45° | 18224 | 11040 | 8554  |
| 50° | 17054 | 8991  | 6849  |
| 55° | 15408 | 7227  | 5492  |
| 60° | 13290 | 5882  | 4548  |
| 65° | 11246 | 4897  | 3740  |
| 70° | 9180  | 4166  | 3174  |
| 75° | 7354  | 3510  | 2699  |
| 80° | 5730  | 3003  | 2322  |
| 85° | 4440  | 2653  | 2092  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 18224 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 174.3  | 4.7       |
| 10°-20°   | 495.9  | 13.5      |
| 20°-30°   | 722.8  | 19.7      |
| 30°-40°   | 779.1  | 21.2      |
| 40°-50°   | 653.1  | 17.8      |
| 50°-60°   | 442.2  | 12.0      |
| 60°-70°   | 252.2  | 6.9       |
| 70°-80°   | 115.3  | 3.1       |
| 80°-90°   | 30.2   | 0.8       |
| 90°-100°  | 3.7    | 0.1       |
| 100°-110° | 2.5    | 0.1       |
| 110°-120° | 1.4    | 0.0       |
| 120°-130° | 0.8    | 0.0       |
| 130°-140° | 0.8    | 0.0       |
| 140°-150° | 0.7    | 0.0       |
| 150°-160° | 0.6    | 0.0       |
| 160°-170° | 0.4    | 0.0       |
| 170°-180° | 0.2    | 0.0       |
| 0°-30°    | 1392.9 | 37.9      |
| 0°-40°    | 2172.0 | 59.1      |
| 0°-60°    | 3267.3 | 88.9      |
| 0°-90°    | 3665.0 | 99.7      |
| 90°-120°  | 7.7    | 0.2       |
| 90°-150°  | 10.0   | 0.3       |
| 90°-180°  | 11.0   | 0.3       |
| 0°-180°   | 3676.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1840 | 1840  | 1840 | 1840  | 1840 |      |
| 5°   | 1848 | 1842  | 1820 | 1835  | 1830 | 176  |
| 15°  | 1808 | 1793  | 1748 | 1736  | 1719 | 511  |
| 25°  | 1716 | 1670  | 1561 | 1489  | 1453 | 790  |
| 35°  | 1548 | 1432  | 1221 | 1072  | 1023 | 967  |
| 45°  | 1265 | 1056  | 766  | 632   | 594  | 974  |
| 55°  | 868  | 635   | 407  | 330   | 309  | 773  |
| 65°  | 467  | 325   | 203  | 165   | 155  | 466  |
| 75°  | 187  | 137   | 89   | 73    | 69   | 204  |
| 85°  | 38   | 32    | 23   | 19    | 18   | 44   |
| 90°  | 5    | 5     | 3    | 3     | 2    | 5    |
| 95°  | 8    | 5     | 3    | 2     | 2    | 6    |
| 105° | 5    | 4     | 2    | 1     | 0    | 6    |
| 115° | 3    | 2     | 1    | 0     | 0    | 3    |
| 125° | 1    | 1     | 1    | 0     | 0    | 1    |
| 135° | 0    | 1     | 1    | 1     | 0    | 1    |
| 145° | 1    | 1     | 1    | 1     | 1    | 1    |
| 155° | 1    | 1     | 1    | 2     | 2    | 1    |
| 165° | 1    | 2     | 2    | 2     | 2    | 0    |
| 175° | 2    | 2     | 2    | 2     | 2    | 0    |
| 180° | 2    | 2     | 2    | 2     | 2    |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1840.2 | 1840.2 | 1840.2 | 1840.2 | 1840.2 |
| 2.5°   | 1850.8 | 1846.0 | 1824.9 | 1842.3 | 1837.0 |
| 5°     | 1848.1 | 1842.3 | 1820.1 | 1834.9 | 1829.6 |
| 7.5°   | 1842.8 | 1835.5 | 1810.6 | 1821.7 | 1814.9 |
| 10°    | 1834.4 | 1825.4 | 1794.8 | 1801.1 | 1790.1 |
| 12.5°  | 1822.8 | 1811.7 | 1775.3 | 1773.7 | 1760.5 |
| 15°    | 1808.5 | 1792.7 | 1747.8 | 1736.2 | 1718.8 |
| 17.5°  | 1791.1 | 1771.1 | 1715.1 | 1691.9 | 1670.8 |
| 20°    | 1768.9 | 1743.1 | 1672.9 | 1635.9 | 1611.1 |
| 22.5°  | 1743.6 | 1708.8 | 1623.8 | 1564.7 | 1537.7 |
| 25°    | 1715.6 | 1670.2 | 1561.0 | 1489.2 | 1453.3 |
| 27.5°  | 1680.8 | 1623.8 | 1488.1 | 1395.2 | 1358.2 |
| 30°    | 1642.3 | 1569.9 | 1413.1 | 1294.4 | 1257.4 |
| 32.5°  | 1598.4 | 1508.2 | 1317.6 | 1185.6 | 1133.9 |
| 35°    | 1548.3 | 1431.6 | 1221.0 | 1071.6 | 1023.0 |
| 37.5°  | 1491.8 | 1351.9 | 1105.4 | 956.5  | 907.4  |
| 40°    | 1423.7 | 1257.4 | 988.2  | 840.9  | 795.0  |
| 42.5°  | 1350.3 | 1161.3 | 875.8  | 731.1  | 691.5  |
| 45°    | 1265.3 | 1055.8 | 766.5  | 631.9  | 593.9  |
| 47.5°  | 1183.5 | 949.1  | 664.1  | 541.1  | 509.9  |
| 50°    | 1076.4 | 835.6  | 567.5  | 458.2  | 432.3  |
| 52.5°  | 971.8  | 730.6  | 485.1  | 391.7  | 367.4  |
| 55°    | 867.8  | 635.0  | 407.0  | 329.9  | 309.3  |
| 57.5°  | 758.0  | 541.6  | 342.6  | 279.3  | 265.5  |
| 60°    | 652.5  | 460.8  | 288.8  | 234.4  | 223.3  |
| 62.5°  | 555.9  | 386.4  | 244.4  | 198.0  | 187.4  |
| 65°    | 466.7  | 324.6  | 203.2  | 164.7  | 155.2  |
| 67.5°  | 382.2  | 267.1  | 169.5  | 137.3  | 130.4  |
| 70°    | 308.3  | 216.4  | 139.9  | 113.0  | 106.6  |
| 72.5°  | 244.4  | 173.1  | 111.9  | 92.4   | 85.5   |
| 75°    | 186.9  | 137.3  | 89.2   | 72.8   | 68.6   |
| 77.5°  | 139.4  | 103.5  | 68.6   | 56.0   | 52.8   |
| 80°    | 97.7   | 75.0   | 51.2   | 42.2   | 39.6   |
| 82.5°  | 66.5   | 51.7   | 35.9   | 29.6   | 28.0   |
| 85°    | 38.0   | 32.2   | 22.7   | 19.0   | 17.9   |
| 87.5°  | 19.5   | 16.9   | 12.1   | 9.0    | 7.9    |
| 90°    | 5.3    | 5.3    | 3.2    | 2.6    | 2.1    |
| 92.5°  | 8.4    | 4.8    | 3.2    | 2.1    | 1.6    |
| 95°    | 7.9    | 4.8    | 2.6    | 1.6    | 1.6    |
| 97.5°  | 7.4    | 4.8    | 2.1    | 1.6    | 1.1    |
| 100°   | 6.9    | 4.2    | 2.1    | 1.1    | 1.1    |
| 102.5° | 6.3    | 4.2    | 2.1    | 1.1    | 1.1    |
| 105°   | 5.3    | 3.7    | 1.6    | 1.1    | 0.5    |
| 107.5° | 4.8    | 3.2    | 1.6    | 1.1    | 0.5    |
| 110°   | 3.7    | 2.6    | 1.6    | 1.1    | 0.5    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 3.2 | 2.6   | 1.1 | 1.1   | 0.5 |
| 115°   | 2.6 | 2.1   | 1.1 | 0.5   | 0.5 |
| 117.5° | 2.1 | 1.6   | 1.1 | 0.5   | 0.5 |
| 120°   | 1.6 | 1.6   | 1.1 | 0.5   | 0.5 |
| 122.5° | 1.6 | 1.1   | 1.1 | 0.5   | 0.5 |
| 125°   | 1.1 | 1.1   | 1.1 | 0.5   | 0.5 |
| 127.5° | 1.1 | 1.1   | 1.1 | 0.5   | 0.5 |
| 130°   | 1.1 | 1.1   | 1.1 | 0.5   | 0.5 |
| 132.5° | 1.1 | 1.1   | 1.1 | 1.1   | 0.5 |
| 135°   | 0.5 | 1.1   | 1.1 | 1.1   | 0.5 |
| 137.5° | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 140°   | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 142.5° | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 145°   | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 147.5° | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 150°   | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 152.5° | 1.1 | 1.1   | 1.1 | 1.1   | 1.1 |
| 155°   | 1.1 | 1.1   | 1.1 | 1.6   | 1.6 |
| 157.5° | 1.1 | 1.1   | 1.6 | 1.6   | 1.6 |
| 160°   | 1.1 | 1.1   | 1.6 | 1.6   | 1.6 |
| 162.5° | 1.1 | 1.1   | 1.6 | 1.6   | 1.6 |
| 165°   | 1.1 | 1.6   | 1.6 | 1.6   | 1.6 |
| 167.5° | 1.1 | 1.6   | 1.6 | 1.6   | 2.1 |
| 170°   | 1.1 | 1.6   | 1.6 | 2.1   | 2.1 |
| 172.5° | 1.1 | 1.6   | 1.6 | 2.1   | 2.1 |
| 175°   | 1.6 | 1.6   | 1.6 | 2.1   | 2.1 |
| 177.5° | 1.6 | 1.6   | 1.6 | 2.1   | 2.1 |
| 180°   | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 |



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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 | 20.55            | 21.99 | 20.92 | 22.31 | 22.63 | 15.40          | 16.83 | 15.77 | 17.15 | 17.48 |
|                 | 3H   | 21.86            | 23.14 | 22.24 | 23.48 | 23.85 | 16.41          | 17.69 | 16.79 | 18.02 | 18.40 |
|                 | 4H   | 22.28            | 23.48 | 22.69 | 23.84 | 24.23 | 16.74          | 17.94 | 17.15 | 18.30 | 18.68 |
|                 | 6H   | 22.55            | 23.65 | 22.97 | 24.03 | 24.43 | 16.97          | 18.07 | 17.39 | 18.45 | 18.85 |
|                 | 8H   | 22.62            | 23.67 | 23.06 | 24.07 | 24.48 | 17.03          | 18.08 | 17.47 | 18.48 | 18.89 |
|                 | 12H  | 22.66            | 23.66 | 23.10 | 24.05 | 24.49 | 17.08          | 18.08 | 17.51 | 18.47 | 18.91 |
| 4H              | 2H   | 20.55            | 21.75 | 20.95 | 22.10 | 22.49 | 16.02          | 17.22 | 16.42 | 17.57 | 17.96 |
|                 | 3H   | 22.01            | 23.00 | 22.43 | 23.41 | 23.82 | 17.22          | 18.20 | 17.63 | 18.61 | 19.02 |
|                 | 4H   | 22.54            | 23.42 | 22.98 | 23.85 | 24.30 | 17.63          | 18.52 | 18.07 | 18.94 | 19.39 |
|                 | 6H   | 22.92            | 23.68 | 23.38 | 24.13 | 24.60 | 17.94          | 18.71 | 18.41 | 19.16 | 19.63 |
|                 | 8H   | 23.03            | 23.75 | 23.50 | 24.20 | 24.67 | 18.03          | 18.75 | 18.51 | 19.20 | 19.68 |
|                 | 12H  | 23.10            | 23.74 | 23.59 | 24.23 | 24.71 | 18.11          | 18.74 | 18.59 | 19.23 | 19.71 |
| 8H              | 4H   | 22.52            | 23.24 | 22.99 | 23.69 | 24.16 | 17.96          | 18.68 | 18.44 | 19.13 | 19.61 |
|                 | 6H   | 22.95            | 23.54 | 23.46 | 24.04 | 24.53 | 18.36          | 18.95 | 18.86 | 19.45 | 19.93 |
|                 | 8H   | 23.11            | 23.64 | 23.63 | 24.16 | 24.65 | 18.50          | 19.03 | 19.02 | 19.55 | 20.04 |
|                 | 12H  | 23.24            | 23.71 | 23.76 | 24.21 | 24.78 | 18.62          | 19.09 | 19.14 | 19.59 | 20.16 |
| 12H             | 4H   | 22.49            | 23.13 | 22.98 | 23.62 | 24.10 | 18.01          | 18.65 | 18.50 | 19.13 | 19.61 |
|                 | 6H   | 22.92            | 23.45 | 23.44 | 23.97 | 24.46 | 18.42          | 18.95 | 18.95 | 19.47 | 19.97 |
|                 | 8H   | 23.11            | 23.58 | 23.63 | 24.08 | 24.65 | 18.62          | 19.08 | 19.13 | 19.58 | 20.16 |