

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: P893179

Luminaire Tested: 4MB-10HL-FLTU-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893179
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-6)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-10HL-FLTU-UNV-L840
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with FLAT FROSTED LENS WITH UPLIGHT, 80CRI, 40
Light Source: -
Ballast/Driver: -

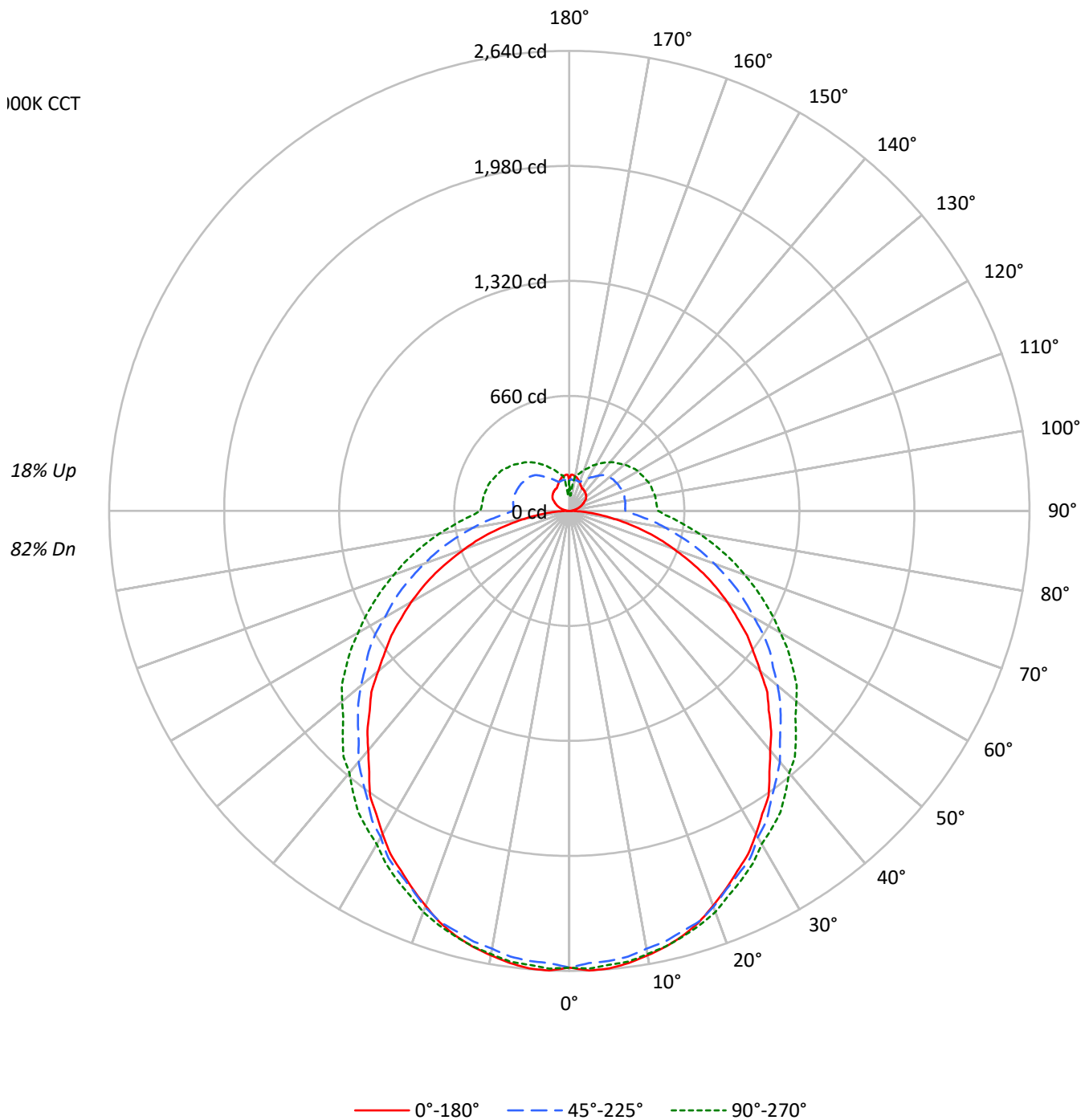
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9853.0 lumens
Efficiency: N/A
Efficacy: 130.5 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.26 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 3.98' x H: 0.21')
CIE Type: Semi-Direct

Input Watts (W): 75.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.997
Total Harmonic Distortion (THDi): 7.45
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 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 110 | 101 | 101 | 101 | 93 | 93 | 93 | 86 | 86 | 86 | 86 | 86 | 86 | 82 |
| 1 | 103 | 98 | 93 | 89 | 99 | 94 | 90 | 86 | 87 | 83 | 80 | 80 | 77 | 74 | 73 | 71 | 69 | 69 | 69 | 69 | 66 |
| 2 | 93 | 85 | 77 | 71 | 89 | 81 | 75 | 69 | 75 | 70 | 65 | 69 | 65 | 61 | 63 | 60 | 57 | 57 | 57 | 57 | 54 |
| 3 | 85 | 74 | 66 | 59 | 81 | 71 | 63 | 57 | 66 | 59 | 54 | 60 | 55 | 51 | 56 | 51 | 48 | 48 | 48 | 48 | 45 |
| 4 | 78 | 65 | 56 | 49 | 74 | 63 | 55 | 48 | 58 | 51 | 46 | 54 | 48 | 43 | 50 | 45 | 41 | 41 | 41 | 41 | 38 |
| 5 | 71 | 58 | 49 | 42 | 68 | 56 | 48 | 41 | 52 | 45 | 39 | 48 | 42 | 37 | 44 | 39 | 35 | 35 | 35 | 35 | 33 |
| 6 | 66 | 52 | 43 | 37 | 63 | 50 | 42 | 36 | 47 | 40 | 34 | 43 | 37 | 33 | 40 | 35 | 31 | 31 | 31 | 31 | 28 |
| 7 | 61 | 47 | 38 | 32 | 58 | 46 | 37 | 32 | 42 | 35 | 30 | 39 | 33 | 29 | 37 | 31 | 27 | 27 | 27 | 27 | 25 |
| 8 | 56 | 43 | 34 | 29 | 54 | 42 | 34 | 28 | 39 | 32 | 27 | 36 | 30 | 26 | 34 | 28 | 24 | 24 | 24 | 24 | 22 |
| 9 | 53 | 39 | 31 | 26 | 50 | 38 | 30 | 25 | 36 | 29 | 24 | 33 | 27 | 23 | 31 | 26 | 22 | 22 | 22 | 22 | 20 |
| 10 | 49 | 36 | 28 | 23 | 47 | 35 | 28 | 23 | 33 | 26 | 22 | 31 | 25 | 21 | 29 | 24 | 20 | 20 | 20 | 20 | 18 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 18647 | 18647 | 18647 |
| 5° | 18742 | 17857 | 17824 |
| 10° | 18542 | 17148 | 17009 |
| 15° | 18329 | 16523 | 16234 |
| 20° | 17920 | 15864 | 15463 |
| 25° | 17480 | 15058 | 14611 |
| 30° | 17080 | 14271 | 13784 |
| 35° | 16709 | 13520 | 13252 |
| 40° | 15958 | 12875 | 12484 |
| 45° | 15472 | 12109 | 11949 |
| 50° | 14901 | 11465 | 11386 |
| 55° | 14384 | 10851 | 10883 |
| 60° | 13663 | 10016 | 10207 |
| 65° | 12837 | 9339 | 9572 |
| 70° | 11599 | 8506 | 8880 |
| 75° | 10280 | 7673 | 8222 |
| 80° | 8138 | 6765 | 7557 |
| 85° | 5618 | 5886 | 6934 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 15472 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 248.3 | 2.5 |
| 10°-20° | 708.9 | 7.2 |
| 20°-30° | 1064.9 | 10.8 |
| 30°-40° | 1276.3 | 13.0 |
| 40°-50° | 1338.1 | 13.6 |
| 50°-60° | 1255.2 | 12.7 |
| 60°-70° | 1042.6 | 10.6 |
| 70°-80° | 745.4 | 7.6 |
| 80°-90° | 442.1 | 4.5 |
| 90°-100° | 324.3 | 3.3 |
| 100°-110° | 319.5 | 3.2 |
| 110°-120° | 298.1 | 3.0 |
| 120°-130° | 261.5 | 2.7 |
| 130°-140° | 210.6 | 2.1 |
| 140°-150° | 151.2 | 1.5 |
| 150°-160° | 96.1 | 1.0 |
| 160°-170° | 53.2 | 0.5 |
| 170°-180° | 16.8 | 0.2 |
| 0°-30° | 2022.0 | 20.5 |
| 0°-40° | 3298.3 | 33.5 |
| 0°-60° | 5891.6 | 59.8 |
| 0°-90° | 8121.7 | 82.4 |
| 90°-120° | 941.9 | 9.6 |
| 90°-150° | 1565.2 | 15.9 |
| 90°-180° | 1731.0 | 17.6 |
| 0°-180° | 9853.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2621 | 2621 | 2621 | 2621 | 2621 | |
| 5° | 2636 | 2631 | 2593 | 2606 | 2615 | 250 |
| 15° | 2523 | 2508 | 2498 | 2516 | 2528 | 710 |
| 25° | 2281 | 2302 | 2298 | 2324 | 2337 | 1053 |
| 35° | 1994 | 2001 | 2019 | 2078 | 2111 | 1238 |
| 45° | 1618 | 1664 | 1714 | 1827 | 1838 | 1252 |
| 55° | 1246 | 1287 | 1405 | 1519 | 1564 | 1109 |
| 65° | 848 | 912 | 1060 | 1202 | 1237 | 836 |
| 75° | 447 | 550 | 721 | 870 | 911 | 472 |
| 85° | 110 | 241 | 422 | 564 | 617 | 121 |
| 90° | 4 | 146 | 322 | 460 | 510 | 9 |
| 95° | 12 | 153 | 322 | 454 | 501 | 13 |
| 105° | 45 | 168 | 327 | 448 | 490 | 47 |
| 115° | 81 | 182 | 320 | 426 | 468 | 80 |
| 125° | 116 | 188 | 310 | 396 | 432 | 101 |
| 135° | 134 | 181 | 288 | 358 | 387 | 104 |
| 145° | 145 | 167 | 237 | 315 | 337 | 91 |
| 155° | 159 | 167 | 194 | 244 | 276 | 73 |
| 165° | 189 | 184 | 178 | 177 | 221 | 53 |
| 175° | 209 | 200 | 180 | 149 | 90 | 19 |
| 180° | 173 | 173 | 173 | 173 | 173 | |



TEST NUMBER: P893179

CATALOG NUMBER: 4MB-10HL-FLTU-UNV-L840

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 2620.8 | 2620.8 | 2620.8 | 2620.8 | 2620.8 |
| 2.5° | 2640.3 | 2619.4 | 2597.1 | 2630.6 | 2629.2 |
| 5° | 2636.1 | 2630.6 | 2593.0 | 2605.5 | 2615.2 |
| 7.5° | 2616.6 | 2602.7 | 2580.4 | 2611.1 | 2608.3 |
| 10° | 2590.2 | 2573.5 | 2551.2 | 2569.3 | 2581.8 |
| 12.5° | 2560.9 | 2547.0 | 2531.7 | 2551.2 | 2559.5 |
| 15° | 2523.3 | 2508.0 | 2498.3 | 2516.4 | 2527.5 |
| 17.5° | 2474.6 | 2470.4 | 2471.8 | 2473.2 | 2491.3 |
| 20° | 2411.9 | 2414.7 | 2418.9 | 2444.0 | 2449.5 |
| 22.5° | 2347.9 | 2363.2 | 2352.0 | 2391.0 | 2388.3 |
| 25° | 2281.0 | 2301.9 | 2297.7 | 2324.2 | 2336.7 |
| 27.5° | 2221.1 | 2222.5 | 2247.6 | 2285.2 | 2281.0 |
| 30° | 2141.8 | 2165.4 | 2162.7 | 2208.6 | 2208.6 |
| 32.5° | 2061.0 | 2095.8 | 2107.0 | 2147.3 | 2161.3 |
| 35° | 1994.2 | 2001.1 | 2019.2 | 2077.7 | 2111.1 |
| 37.5° | 1885.5 | 1919.0 | 1948.2 | 2024.8 | 2037.3 |
| 40° | 1793.6 | 1827.0 | 1880.0 | 1969.1 | 1962.1 |
| 42.5° | 1714.3 | 1749.1 | 1788.1 | 1891.1 | 1916.2 |
| 45° | 1618.2 | 1664.1 | 1714.3 | 1827.0 | 1838.2 |
| 47.5° | 1540.2 | 1576.4 | 1641.8 | 1744.9 | 1758.8 |
| 50° | 1430.2 | 1488.7 | 1559.7 | 1679.4 | 1700.3 |
| 52.5° | 1332.7 | 1382.8 | 1473.3 | 1597.3 | 1644.6 |
| 55° | 1246.3 | 1286.7 | 1405.1 | 1519.3 | 1563.9 |
| 57.5° | 1140.5 | 1196.2 | 1320.2 | 1446.9 | 1487.3 |
| 60° | 1047.2 | 1101.5 | 1221.3 | 1366.1 | 1398.1 |
| 62.5° | 948.3 | 1012.4 | 1141.9 | 1282.6 | 1318.8 |
| 65° | 848.1 | 912.1 | 1059.7 | 1201.8 | 1236.6 |
| 67.5° | 739.5 | 818.8 | 969.2 | 1116.8 | 1153.0 |
| 70° | 637.8 | 724.1 | 885.7 | 1033.3 | 1069.5 |
| 72.5° | 545.9 | 639.2 | 803.5 | 955.3 | 994.3 |
| 75° | 447.0 | 550.1 | 721.3 | 870.4 | 910.7 |
| 77.5° | 350.9 | 462.3 | 636.4 | 786.8 | 834.1 |
| 80° | 257.6 | 380.2 | 562.6 | 707.4 | 757.6 |
| 82.5° | 181.0 | 306.4 | 494.4 | 636.4 | 682.4 |
| 85° | 110.0 | 240.9 | 421.9 | 564.0 | 616.9 |
| 87.5° | 48.7 | 186.6 | 364.9 | 505.5 | 552.8 |
| 90° | 4.2 | 146.2 | 321.7 | 459.5 | 509.7 |
| 92.5° | 8.4 | 149.0 | 320.3 | 454.0 | 504.1 |
| 95° | 12.5 | 153.2 | 321.7 | 454.0 | 501.3 |
| 97.5° | 18.1 | 158.8 | 324.5 | 454.0 | 499.9 |
| 100° | 26.5 | 161.5 | 325.9 | 454.0 | 499.9 |
| 102.5° | 34.8 | 165.7 | 324.5 | 447.0 | 494.4 |
| 105° | 44.6 | 168.5 | 327.3 | 448.4 | 490.2 |
| 107.5° | 54.3 | 171.3 | 327.3 | 441.4 | 488.8 |
| 110° | 64.1 | 175.5 | 324.5 | 437.3 | 483.2 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 72.4 | 179.6 | 323.1 | 428.9 | 473.5 |
| 115° | 80.8 | 182.4 | 320.3 | 426.1 | 467.9 |
| 117.5° | 89.1 | 183.8 | 318.9 | 419.2 | 459.5 |
| 120° | 96.1 | 186.6 | 316.1 | 410.8 | 455.4 |
| 122.5° | 104.4 | 188.0 | 311.9 | 402.5 | 447.0 |
| 125° | 115.6 | 188.0 | 310.5 | 395.5 | 431.7 |
| 127.5° | 121.2 | 189.4 | 305.0 | 387.1 | 424.7 |
| 130° | 126.7 | 185.2 | 302.2 | 377.4 | 413.6 |
| 132.5° | 130.9 | 183.8 | 295.2 | 367.6 | 399.7 |
| 135° | 133.7 | 181.0 | 288.3 | 357.9 | 387.1 |
| 137.5° | 137.9 | 176.9 | 278.5 | 350.9 | 378.8 |
| 140° | 140.6 | 174.1 | 264.6 | 337.0 | 364.9 |
| 142.5° | 143.4 | 169.9 | 250.7 | 324.5 | 350.9 |
| 145° | 144.8 | 167.1 | 236.7 | 314.7 | 337.0 |
| 147.5° | 149.0 | 162.9 | 228.4 | 302.2 | 321.7 |
| 150° | 147.6 | 160.1 | 215.8 | 286.9 | 306.4 |
| 152.5° | 151.8 | 164.3 | 204.7 | 266.0 | 293.8 |
| 155° | 158.8 | 167.1 | 193.6 | 243.7 | 275.7 |
| 157.5° | 165.7 | 172.7 | 185.2 | 224.2 | 261.8 |
| 160° | 175.5 | 175.5 | 175.5 | 208.9 | 250.7 |
| 162.5° | 181.0 | 181.0 | 176.9 | 190.8 | 235.3 |
| 165° | 189.4 | 183.8 | 178.2 | 176.9 | 221.4 |
| 167.5° | 197.7 | 186.6 | 181.0 | 171.3 | 211.7 |
| 170° | 199.1 | 190.8 | 179.6 | 161.5 | 204.7 |
| 172.5° | 204.7 | 195.0 | 178.2 | 153.2 | 158.8 |
| 175° | 208.9 | 200.5 | 179.6 | 149.0 | 90.5 |
| 177.5° | 207.5 | 200.5 | 183.8 | 149.0 | 87.7 |
| 180° | 172.7 | 172.7 | 172.7 | 172.7 | 172.7 |



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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 | 17.89 | 19.21 | 18.50 | 19.84 | 20.56 | 20.40 | 21.73 | 21.01 | 22.35 | 23.07 |
| | 3H | 19.32 | 20.53 | 19.95 | 21.16 | 21.91 | 22.77 | 23.97 | 23.39 | 24.61 | 25.36 |
| | 4H | 19.79 | 20.93 | 20.43 | 21.58 | 22.34 | 23.88 | 25.02 | 24.53 | 25.67 | 26.44 |
| | 6H | 20.05 | 21.11 | 20.71 | 21.77 | 22.55 | 25.00 | 26.06 | 25.65 | 26.72 | 27.50 |
| | 8H | 20.11 | 21.12 | 20.77 | 21.80 | 22.59 | 25.55 | 26.56 | 26.21 | 27.24 | 28.02 |
| | 12H | 20.12 | 21.09 | 20.80 | 21.77 | 22.58 | 26.13 | 27.10 | 26.80 | 27.78 | 28.59 |
| 4H | 2H | 18.76 | 19.90 | 19.41 | 20.55 | 21.32 | 20.75 | 21.89 | 21.39 | 22.54 | 23.30 |
| | 3H | 20.42 | 21.39 | 21.07 | 22.07 | 22.86 | 23.33 | 24.30 | 23.98 | 24.98 | 25.77 |
| | 4H | 21.00 | 21.89 | 21.67 | 22.58 | 23.39 | 24.60 | 25.49 | 25.28 | 26.18 | 26.99 |
| | 6H | 21.37 | 22.15 | 22.07 | 22.87 | 23.69 | 25.89 | 26.67 | 26.58 | 27.39 | 28.21 |
| | 8H | 21.46 | 22.20 | 22.16 | 22.91 | 23.75 | 26.53 | 27.27 | 27.23 | 27.98 | 28.82 |
| | 12H | 21.51 | 22.17 | 22.23 | 22.91 | 23.75 | 27.23 | 27.89 | 27.95 | 28.63 | 29.47 |
| 8H | 4H | 21.62 | 22.36 | 22.32 | 23.07 | 23.91 | 24.76 | 25.49 | 25.46 | 26.20 | 27.04 |
| | 6H | 22.16 | 22.78 | 22.89 | 23.53 | 24.37 | 26.19 | 26.81 | 26.92 | 27.57 | 28.40 |
| | 8H | 22.33 | 22.88 | 23.07 | 23.64 | 24.49 | 26.96 | 27.51 | 27.70 | 28.27 | 29.12 |
| | 12H | 22.43 | 22.93 | 23.18 | 23.68 | 24.59 | 27.81 | 28.30 | 28.55 | 29.05 | 29.96 |
| 12H | 4H | 21.78 | 22.45 | 22.50 | 23.18 | 24.02 | 24.75 | 25.41 | 25.47 | 26.15 | 26.99 |
| | 6H | 22.40 | 22.96 | 23.14 | 23.72 | 24.57 | 26.21 | 26.77 | 26.95 | 27.53 | 28.38 |
| | 8H | 22.65 | 23.15 | 23.39 | 23.89 | 24.81 | 27.03 | 27.53 | 27.77 | 28.27 | 29.18 |