

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: P893875

Luminaire Tested: 4MB-7HL-RND-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893875
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-1)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-7HL-RND-UNV-L840
Description: 7000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS, 80CRI, 4000K CCT
Light Source: -
Ballast/Driver: -

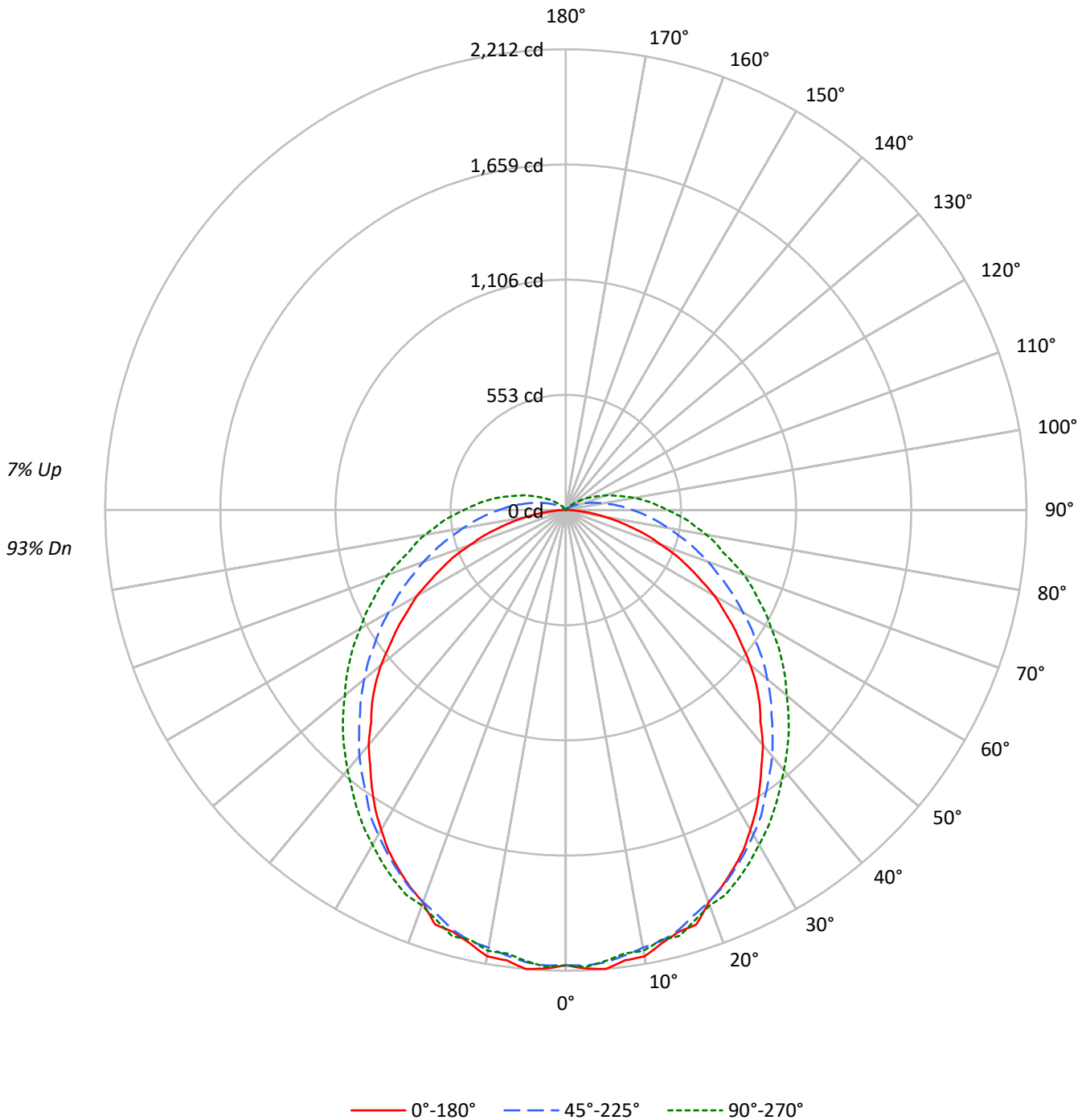
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7200.1 lumens
Efficiency: N/A
Efficacy: 139.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.26 / 1.35
Luminous Opening: Rectangular (W 0.38' x L: 3.98' x H: 0')
CIE Type: Direct

Input Watts (W): 51.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 4
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P893875
CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

Luminous Intensity Polar Plot





TEST NUMBER: P893875

CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

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 | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 96 | 96 | 96 | 96 | 96 | 96 | 93 |
| 1 | 105 | 100 | 95 | 90 | 102 | 97 | 92 | 88 | 91 | 87 | 84 | 86 | 83 | 80 | 81 | 79 | 77 | 77 | 77 | 77 | 74 |
| 2 | 95 | 86 | 79 | 72 | 92 | 84 | 77 | 71 | 79 | 73 | 68 | 74 | 70 | 66 | 70 | 67 | 63 | 63 | 63 | 63 | 60 |
| 3 | 86 | 75 | 66 | 60 | 83 | 73 | 65 | 59 | 69 | 62 | 57 | 65 | 60 | 55 | 62 | 57 | 53 | 53 | 53 | 53 | 50 |
| 4 | 79 | 66 | 57 | 50 | 76 | 65 | 56 | 49 | 61 | 54 | 48 | 58 | 52 | 47 | 55 | 50 | 45 | 45 | 45 | 45 | 43 |
| 5 | 73 | 59 | 50 | 43 | 70 | 58 | 49 | 42 | 55 | 47 | 41 | 52 | 45 | 40 | 49 | 44 | 39 | 39 | 39 | 39 | 37 |
| 6 | 67 | 53 | 44 | 37 | 65 | 52 | 43 | 37 | 49 | 42 | 36 | 47 | 40 | 35 | 45 | 39 | 34 | 34 | 34 | 34 | 32 |
| 7 | 62 | 48 | 39 | 33 | 60 | 47 | 39 | 33 | 45 | 37 | 32 | 43 | 36 | 31 | 41 | 35 | 30 | 30 | 30 | 30 | 28 |
| 8 | 58 | 44 | 35 | 29 | 56 | 43 | 35 | 29 | 41 | 34 | 28 | 39 | 33 | 28 | 38 | 32 | 27 | 27 | 27 | 27 | 25 |
| 9 | 54 | 40 | 32 | 26 | 52 | 39 | 32 | 26 | 38 | 31 | 26 | 36 | 30 | 25 | 35 | 29 | 25 | 25 | 25 | 25 | 23 |
| 10 | 51 | 37 | 29 | 24 | 49 | 36 | 29 | 24 | 35 | 28 | 23 | 34 | 27 | 23 | 32 | 27 | 22 | 22 | 22 | 22 | 21 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 15553 | 15553 | 15553 |
| 5° | 15798 | 15569 | 15526 |
| 10° | 15720 | 15417 | 15525 |
| 15° | 15438 | 15387 | 15593 |
| 20° | 15180 | 15165 | 15294 |
| 25° | 14931 | 14994 | 15363 |
| 30° | 14566 | 14796 | 15247 |
| 35° | 14105 | 14513 | 15191 |
| 40° | 13680 | 14321 | 15138 |
| 45° | 13251 | 14066 | 15233 |
| 50° | 12817 | 13979 | 15329 |
| 55° | 12230 | 13880 | 15728 |
| 60° | 11753 | 13972 | 16221 |
| 65° | 10977 | 14342 | 17204 |
| 70° | 10089 | 15144 | 18949 |
| 75° | 9154 | 16769 | 21467 |
| 80° | 7867 | 20487 | 28149 |
| 85° | 6368 | 33144 | 48165 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 87.5°
 Luminance: 87430 cd/sqm



TEST NUMBER: P893875
 CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 207.2 | 2.9 |
| 10°-20° | 590.0 | 8.2 |
| 20°-30° | 884.1 | 12.3 |
| 30°-40° | 1050.6 | 14.6 |
| 40°-50° | 1087.7 | 15.1 |
| 50°-60° | 1007.9 | 14.0 |
| 60°-70° | 839.1 | 11.7 |
| 70°-80° | 622.8 | 8.7 |
| 80°-90° | 412.0 | 5.7 |
| 90°-100° | 250.7 | 3.5 |
| 100°-110° | 140.5 | 2.0 |
| 110°-120° | 69.2 | 1.0 |
| 120°-130° | 28.2 | 0.4 |
| 130°-140° | 8.2 | 0.1 |
| 140°-150° | 1.2 | 0.0 |
| 150°-160° | 0.3 | 0.0 |
| 160°-170° | 0.2 | 0.0 |
| 170°-180° | 0.1 | 0.0 |
| 0°-30° | 1681.3 | 23.4 |
| 0°-40° | 2731.9 | 37.9 |
| 0°-60° | 4827.5 | 67.0 |
| 0°-90° | 6701.5 | 93.1 |
| 90°-120° | 460.4 | 6.4 |
| 90°-150° | 498.0 | 6.9 |
| 90°-180° | 499.0 | 6.9 |
| 0°-180° | 7200.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2186 | 2186 | 2186 | 2186 | 2186 | |
| 5° | 2212 | 2188 | 2180 | 2191 | 2174 | 209 |
| 15° | 2096 | 2088 | 2089 | 2092 | 2117 | 594 |
| 25° | 1902 | 1900 | 1910 | 1947 | 1957 | 875 |
| 35° | 1624 | 1636 | 1671 | 1724 | 1749 | 1016 |
| 45° | 1317 | 1336 | 1398 | 1485 | 1514 | 1015 |
| 55° | 986 | 1028 | 1119 | 1231 | 1268 | 882 |
| 65° | 652 | 713 | 852 | 977 | 1022 | 648 |
| 75° | 333 | 434 | 610 | 741 | 781 | 356 |
| 85° | 78 | 219 | 406 | 550 | 590 | 88 |
| 90° | 4 | 142 | 321 | 449 | 489 | 6 |
| 95° | 1 | 88 | 249 | 371 | 412 | 1 |
| 105° | 1 | 29 | 135 | 229 | 261 | 1 |
| 115° | 1 | 7 | 63 | 126 | 151 | 1 |
| 125° | 1 | 2 | 23 | 58 | 74 | 1 |
| 135° | 2 | 1 | 6 | 19 | 26 | 1 |
| 145° | 2 | 1 | 0 | 2 | 3 | 1 |
| 155° | 2 | 2 | 0 | 0 | 0 | 1 |
| 165° | 3 | 2 | 0 | 0 | 0 | 1 |
| 175° | 3 | 2 | 0 | 0 | 0 | 0 |
| 180° | 1 | 1 | 1 | 1 | 1 | |



TEST NUMBER: P893875
 CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 2185.9 | 2185.9 | 2185.9 | 2185.9 | 2185.9 |
| 2.5° | 2203.9 | 2192.9 | 2188.9 | 2183.9 | 2195.9 |
| 5° | 2211.9 | 2187.9 | 2179.9 | 2190.9 | 2173.9 |
| 7.5° | 2180.9 | 2174.9 | 2157.9 | 2163.9 | 2147.9 |
| 10° | 2175.9 | 2142.9 | 2133.9 | 2153.9 | 2148.9 |
| 12.5° | 2130.9 | 2102.9 | 2118.9 | 2132.9 | 2113.9 |
| 15° | 2095.9 | 2087.9 | 2088.9 | 2091.9 | 2116.9 |
| 17.5° | 2086.9 | 2050.9 | 2040.9 | 2065.9 | 2063.9 |
| 20° | 2004.9 | 1997.9 | 2002.9 | 2035.9 | 2019.9 |
| 22.5° | 1956.9 | 1934.9 | 1961.9 | 1993.9 | 2000.9 |
| 25° | 1901.9 | 1899.9 | 1909.9 | 1946.9 | 1956.9 |
| 27.5° | 1843.9 | 1830.9 | 1857.9 | 1900.9 | 1908.9 |
| 30° | 1772.9 | 1767.9 | 1800.9 | 1837.9 | 1855.9 |
| 32.5° | 1702.9 | 1705.9 | 1743.9 | 1774.9 | 1805.9 |
| 35° | 1623.9 | 1635.9 | 1670.9 | 1723.9 | 1748.9 |
| 37.5° | 1543.9 | 1558.9 | 1605.9 | 1666.9 | 1687.9 |
| 40° | 1472.9 | 1475.9 | 1541.9 | 1603.9 | 1629.9 |
| 42.5° | 1383.9 | 1413.9 | 1469.9 | 1551.9 | 1571.9 |
| 45° | 1316.9 | 1335.9 | 1397.9 | 1484.9 | 1513.9 |
| 47.5° | 1240.9 | 1262.9 | 1333.9 | 1418.9 | 1449.9 |
| 50° | 1157.9 | 1177.9 | 1262.9 | 1359.9 | 1384.9 |
| 52.5° | 1065.9 | 1106.9 | 1195.9 | 1295.9 | 1328.9 |
| 55° | 985.9 | 1027.9 | 1118.9 | 1230.9 | 1267.9 |
| 57.5° | 899.9 | 941.9 | 1055.9 | 1159.9 | 1207.9 |
| 60° | 825.9 | 865.9 | 981.9 | 1110.9 | 1139.9 |
| 62.5° | 734.0 | 790.9 | 916.9 | 1043.9 | 1084.9 |
| 65° | 652.0 | 713.0 | 851.9 | 976.9 | 1021.9 |
| 67.5° | 577.0 | 640.0 | 784.9 | 918.9 | 967.9 |
| 70° | 485.0 | 568.0 | 728.0 | 859.9 | 910.9 |
| 72.5° | 417.0 | 500.0 | 667.0 | 797.9 | 843.9 |
| 75° | 333.0 | 434.0 | 610.0 | 741.0 | 780.9 |
| 77.5° | 263.0 | 372.0 | 551.0 | 698.0 | 738.0 |
| 80° | 192.0 | 316.0 | 500.0 | 641.0 | 687.0 |
| 82.5° | 131.0 | 264.0 | 453.0 | 588.0 | 632.0 |
| 85° | 78.0 | 219.0 | 406.0 | 550.0 | 590.0 |
| 87.5° | 34.0 | 179.0 | 363.0 | 495.0 | 536.0 |
| 90° | 4.0 | 142.0 | 321.0 | 449.0 | 489.0 |
| 92.5° | 1.0 | 114.0 | 284.0 | 408.0 | 447.0 |
| 95° | 1.0 | 88.0 | 249.0 | 371.0 | 412.0 |
| 97.5° | 1.0 | 68.0 | 214.0 | 333.0 | 372.0 |
| 100° | 1.0 | 52.0 | 185.0 | 293.0 | 335.0 |
| 102.5° | 1.0 | 39.0 | 157.0 | 260.0 | 296.0 |
| 105° | 1.0 | 29.0 | 135.0 | 229.0 | 261.0 |
| 107.5° | 1.0 | 21.0 | 113.0 | 200.0 | 232.0 |
| 110° | 1.0 | 15.0 | 95.0 | 173.0 | 205.0 |



TEST NUMBER: P893875
 CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|------|-------|-------|
| 112.5° | 1.0 | 11.0 | 77.0 | 149.0 | 176.0 |
| 115° | 1.0 | 7.0 | 63.0 | 126.0 | 151.0 |
| 117.5° | 1.0 | 5.0 | 50.0 | 106.0 | 130.0 |
| 120° | 1.0 | 4.0 | 40.0 | 88.0 | 109.0 |
| 122.5° | 1.0 | 3.0 | 31.0 | 72.0 | 92.0 |
| 125° | 1.0 | 2.0 | 23.0 | 58.0 | 74.0 |
| 127.5° | 1.0 | 2.0 | 17.0 | 46.0 | 60.0 |
| 130° | 1.0 | 1.0 | 12.0 | 35.0 | 47.0 |
| 132.5° | 1.0 | 1.0 | 8.0 | 26.0 | 35.0 |
| 135° | 2.0 | 1.0 | 6.0 | 19.0 | 26.0 |
| 137.5° | 2.0 | 1.0 | 4.0 | 13.0 | 18.0 |
| 140° | 2.0 | 1.0 | 2.0 | 8.0 | 11.0 |
| 142.5° | 2.0 | 1.0 | 1.0 | 4.0 | 6.0 |
| 145° | 2.0 | 1.0 | 0.0 | 2.0 | 3.0 |
| 147.5° | 2.0 | 1.0 | 0.0 | 1.0 | 1.0 |
| 150° | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 155° | 2.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 2.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 160° | 2.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 2.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 165° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 170° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 175° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 3.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| 180° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |



TEST NUMBER: P893875
 CATALOG NUMBER: 4MB-7HL-RND-UNV-L840

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 | 19.76 | 21.30 | 20.23 | 21.76 | 22.24 | 21.34 | 22.87 | 21.81 | 23.33 | 23.81 |
| | 3H | 21.53 | 22.93 | 22.01 | 23.40 | 23.92 | 23.92 | 25.33 | 24.40 | 25.79 | 26.31 |
| | 4H | 22.18 | 23.51 | 22.69 | 24.00 | 24.53 | 25.18 | 26.51 | 25.68 | 26.99 | 27.53 |
| | 6H | 22.66 | 23.90 | 23.18 | 24.40 | 24.95 | 26.56 | 27.80 | 27.08 | 28.30 | 28.85 |
| | 8H | 22.81 | 24.00 | 23.34 | 24.52 | 25.08 | 27.29 | 28.48 | 27.82 | 29.00 | 29.56 |
| | 12H | 22.91 | 24.05 | 23.44 | 24.56 | 25.15 | 28.14 | 29.28 | 28.67 | 29.79 | 30.38 |
| 4H | 2H | 20.72 | 22.05 | 21.22 | 22.53 | 23.07 | 21.91 | 23.24 | 22.41 | 23.72 | 24.26 |
| | 3H | 22.76 | 23.90 | 23.27 | 24.42 | 24.98 | 24.78 | 25.91 | 25.29 | 26.44 | 27.00 |
| | 4H | 23.57 | 24.61 | 24.11 | 25.15 | 25.74 | 26.25 | 27.30 | 26.79 | 27.83 | 28.42 |
| | 6H | 24.22 | 25.14 | 24.78 | 25.70 | 26.31 | 27.87 | 28.80 | 28.43 | 29.36 | 29.96 |
| | 8H | 24.45 | 25.32 | 25.01 | 25.88 | 26.50 | 28.73 | 29.60 | 29.29 | 30.16 | 30.78 |
| | 12H | 24.62 | 25.41 | 25.20 | 26.00 | 26.62 | 29.72 | 30.51 | 30.30 | 31.10 | 31.72 |
| 8H | 4H | 24.42 | 25.29 | 24.98 | 25.85 | 26.47 | 26.63 | 27.49 | 27.19 | 28.05 | 28.67 |
| | 6H | 25.34 | 26.08 | 25.94 | 26.68 | 27.31 | 28.50 | 29.24 | 29.10 | 29.84 | 30.47 |
| | 8H | 25.73 | 26.39 | 26.33 | 27.01 | 27.64 | 29.56 | 30.23 | 30.17 | 30.84 | 31.48 |
| | 12H | 26.05 | 26.64 | 26.65 | 27.25 | 27.95 | 30.82 | 31.42 | 31.43 | 32.02 | 32.72 |
| 12H | 4H | 24.68 | 25.47 | 25.26 | 26.06 | 26.68 | 26.67 | 27.46 | 27.25 | 28.05 | 28.67 |
| | 6H | 25.77 | 26.43 | 26.37 | 27.05 | 27.69 | 28.61 | 29.28 | 29.22 | 29.90 | 30.53 |
| | 8H | 26.31 | 26.90 | 26.91 | 27.51 | 28.21 | 29.79 | 30.38 | 30.40 | 30.99 | 31.69 |