

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: P893227

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

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893227
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2403-334-3)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-10HL-RNDU-UNV-L840
Description: 10000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, CCT
Light Source: -
Ballast/Driver: -

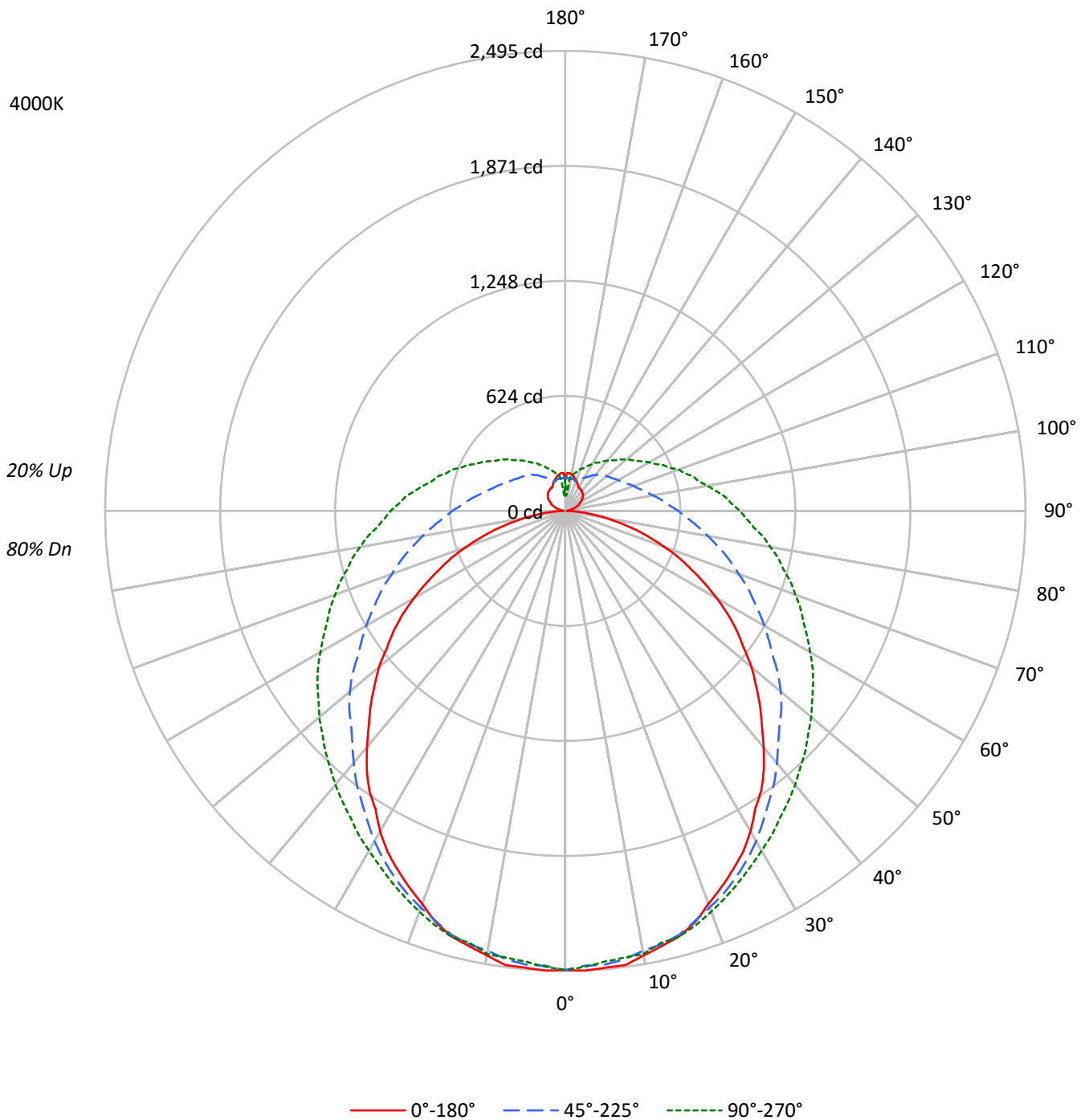
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10467.0 lumens
Efficiency: N/A
Efficacy: 138.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.28 / 1.37
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

TEST NUMBER: P893227
CATALOG NUMBER: 4MB-10HL-RNDU-UNV-L840

Luminous Intensity Polar Plot





TEST NUMBER: P893227
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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 | 50 | 30 | 10 | 50 | 30 | 10 | 0 | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 114 | 114 | 114 | 114 | 109 | 109 | 109 | 109 | 100 | 100 | 100 | 91 | 91 | 91 | 83 | 83 | 83 | 80 | | | | | | | | | | | | | |
| 1 | 102 | 96 | 91 | 86 | 97 | 92 | 87 | 83 | 84 | 80 | 77 | 76 | 73 | 71 | 69 | 67 | 65 | 61 | | | | | | | | | | | | | |
| 2 | 92 | 82 | 75 | 68 | 87 | 79 | 72 | 66 | 72 | 66 | 61 | 66 | 61 | 57 | 60 | 56 | 53 | 49 | | | | | | | | | | | | | |
| 3 | 83 | 72 | 63 | 56 | 79 | 69 | 61 | 54 | 63 | 56 | 51 | 57 | 52 | 47 | 52 | 48 | 44 | 41 | | | | | | | | | | | | | |
| 4 | 76 | 63 | 54 | 47 | 72 | 60 | 52 | 45 | 55 | 48 | 43 | 51 | 45 | 40 | 46 | 41 | 37 | 34 | | | | | | | | | | | | | |
| 5 | 69 | 56 | 47 | 40 | 66 | 54 | 45 | 39 | 49 | 42 | 37 | 45 | 39 | 34 | 41 | 36 | 32 | 29 | | | | | | | | | | | | | |
| 6 | 64 | 50 | 41 | 35 | 61 | 48 | 40 | 34 | 44 | 37 | 32 | 41 | 35 | 30 | 38 | 32 | 28 | 26 | | | | | | | | | | | | | |
| 7 | 59 | 46 | 37 | 30 | 56 | 44 | 35 | 30 | 40 | 33 | 28 | 37 | 31 | 26 | 34 | 29 | 25 | 23 | | | | | | | | | | | | | |
| 8 | 55 | 41 | 33 | 27 | 52 | 40 | 32 | 26 | 37 | 30 | 25 | 34 | 28 | 24 | 31 | 26 | 22 | 20 | | | | | | | | | | | | | |
| 9 | 51 | 38 | 30 | 24 | 49 | 37 | 29 | 23 | 34 | 27 | 22 | 31 | 25 | 21 | 29 | 24 | 20 | 18 | | | | | | | | | | | | | |
| 10 | 48 | 35 | 27 | 22 | 46 | 34 | 26 | 21 | 31 | 25 | 20 | 29 | 23 | 19 | 27 | 22 | 18 | 16 | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 17716 | 17716 | 17716 |
| 5° | 17682 | 17012 | 16722 |
| 10° | 17525 | 16287 | 16073 |
| 15° | 17348 | 15749 | 15348 |
| 20° | 16854 | 15014 | 14601 |
| 25° | 16466 | 14364 | 13897 |
| 30° | 16013 | 13654 | 13280 |
| 35° | 15518 | 12886 | 12745 |
| 40° | 14879 | 12226 | 12333 |
| 45° | 14273 | 11597 | 11966 |
| 50° | 13739 | 11208 | 11656 |
| 55° | 13115 | 10604 | 11416 |
| 60° | 12372 | 10221 | 11194 |
| 65° | 11444 | 9879 | 11027 |
| 70° | 10408 | 9601 | 11019 |
| 75° | 9063 | 9495 | 11051 |
| 80° | 7127 | 9445 | 11265 |
| 85° | 4693 | 9655 | 11520 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 14273 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 235.7 | 2.3 |
| 10°-20° | 673.5 | 6.4 |
| 20°-30° | 1011.3 | 9.7 |
| 30°-40° | 1214.5 | 11.6 |
| 40°-50° | 1284.6 | 12.3 |
| 50°-60° | 1238.0 | 11.8 |
| 60°-70° | 1098.3 | 10.5 |
| 70°-80° | 900.7 | 8.6 |
| 80°-90° | 697.1 | 6.7 |
| 90°-100° | 543.9 | 5.2 |
| 100°-110° | 433.0 | 4.1 |
| 110°-120° | 346.0 | 3.3 |
| 120°-130° | 272.9 | 2.6 |
| 130°-140° | 208.3 | 2.0 |
| 140°-150° | 146.4 | 1.4 |
| 150°-160° | 93.6 | 0.9 |
| 160°-170° | 52.5 | 0.5 |
| 170°-180° | 16.6 | 0.2 |
| 0°-30° | 1920.6 | 18.3 |
| 0°-40° | 3135.1 | 30.0 |
| 0°-60° | 5657.6 | 54.1 |
| 0°-90° | 8353.8 | 79.8 |
| 90°-120° | 1322.9 | 12.6 |
| 90°-150° | 1950.5 | 18.6 |
| 90°-180° | 2113.0 | 20.2 |
| 0°-180° | 10467.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2490 | 2490 | 2490 | 2490 | 2490 | |
| 5° | 2487 | 2494 | 2470 | 2488 | 2454 | 237 |
| 15° | 2388 | 2390 | 2381 | 2397 | 2390 | 671 |
| 25° | 2149 | 2184 | 2192 | 2230 | 2222 | 990 |
| 35° | 1852 | 1880 | 1924 | 2004 | 2030 | 1155 |
| 45° | 1493 | 1537 | 1642 | 1798 | 1841 | 1152 |
| 55° | 1136 | 1193 | 1373 | 1560 | 1640 | 1014 |
| 65° | 756 | 861 | 1121 | 1354 | 1425 | 752 |
| 75° | 394 | 567 | 893 | 1134 | 1224 | 417 |
| 85° | 92 | 345 | 692 | 941 | 1025 | 104 |
| 90° | 10 | 274 | 613 | 852 | 947 | 10 |
| 95° | 12 | 227 | 542 | 778 | 870 | 12 |
| 105° | 42 | 184 | 433 | 636 | 718 | 44 |
| 115° | 81 | 180 | 359 | 519 | 586 | 78 |
| 125° | 113 | 182 | 309 | 426 | 472 | 99 |
| 135° | 132 | 177 | 277 | 361 | 388 | 103 |
| 145° | 143 | 163 | 228 | 302 | 320 | 90 |
| 155° | 159 | 167 | 188 | 237 | 265 | 73 |
| 165° | 188 | 184 | 177 | 173 | 214 | 53 |
| 175° | 206 | 199 | 177 | 145 | 92 | 19 |
| 180° | 168 | 168 | 168 | 168 | 168 | |



TEST NUMBER: P893227

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

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 2489.9 | 2489.9 | 2489.9 | 2489.9 | 2489.9 |
| 2.5° | 2495.4 | 2503.8 | 2469.0 | 2489.9 | 2474.5 |
| 5° | 2487.1 | 2494.0 | 2470.4 | 2488.5 | 2453.6 |
| 7.5° | 2484.3 | 2481.5 | 2452.3 | 2475.9 | 2443.9 |
| 10° | 2448.1 | 2457.8 | 2423.0 | 2455.0 | 2439.7 |
| 12.5° | 2417.4 | 2436.9 | 2406.3 | 2431.4 | 2399.3 |
| 15° | 2388.2 | 2389.6 | 2381.2 | 2396.6 | 2389.6 |
| 17.5° | 2339.5 | 2352.0 | 2332.5 | 2367.3 | 2354.8 |
| 20° | 2268.4 | 2307.4 | 2289.3 | 2321.4 | 2313.0 |
| 22.5° | 2210.0 | 2229.5 | 2244.8 | 2281.0 | 2269.8 |
| 25° | 2148.7 | 2183.5 | 2191.9 | 2229.5 | 2222.5 |
| 27.5° | 2086.0 | 2101.3 | 2133.4 | 2173.7 | 2175.1 |
| 30° | 2008.0 | 2024.7 | 2069.3 | 2115.3 | 2127.8 |
| 32.5° | 1916.1 | 1969.0 | 1995.5 | 2065.1 | 2084.6 |
| 35° | 1852.1 | 1879.9 | 1924.5 | 2003.9 | 2030.3 |
| 37.5° | 1768.5 | 1800.5 | 1860.4 | 1953.7 | 1985.8 |
| 40° | 1672.4 | 1719.8 | 1785.2 | 1900.8 | 1938.4 |
| 42.5° | 1576.4 | 1632.1 | 1708.6 | 1843.7 | 1886.9 |
| 45° | 1492.8 | 1537.4 | 1641.8 | 1797.8 | 1840.9 |
| 47.5° | 1402.3 | 1456.6 | 1588.9 | 1737.9 | 1786.6 |
| 50° | 1318.7 | 1374.4 | 1524.8 | 1682.2 | 1740.7 |
| 52.5° | 1218.5 | 1282.5 | 1455.2 | 1618.1 | 1686.4 |
| 55° | 1136.3 | 1193.4 | 1373.0 | 1559.6 | 1640.4 |
| 57.5° | 1045.8 | 1109.9 | 1309.0 | 1516.5 | 1590.3 |
| 60° | 948.3 | 1029.1 | 1246.3 | 1462.2 | 1533.2 |
| 62.5° | 852.2 | 948.3 | 1182.3 | 1409.2 | 1478.9 |
| 65° | 756.1 | 860.6 | 1121.0 | 1353.5 | 1424.6 |
| 67.5° | 669.8 | 782.6 | 1065.3 | 1292.3 | 1380.0 |
| 70° | 572.3 | 707.4 | 999.8 | 1235.2 | 1327.1 |
| 72.5° | 480.4 | 639.2 | 946.9 | 1189.2 | 1281.1 |
| 75° | 394.1 | 566.8 | 892.6 | 1133.5 | 1224.0 |
| 77.5° | 307.8 | 498.5 | 835.5 | 1083.4 | 1182.3 |
| 80° | 225.6 | 442.8 | 785.4 | 1034.7 | 1129.3 |
| 82.5° | 156.0 | 394.1 | 736.7 | 994.3 | 1083.4 |
| 85° | 91.9 | 345.3 | 692.1 | 941.4 | 1024.9 |
| 87.5° | 41.8 | 306.4 | 646.1 | 901.0 | 983.1 |
| 90° | 9.7 | 274.3 | 612.7 | 852.2 | 946.9 |
| 92.5° | 9.7 | 249.3 | 572.3 | 816.0 | 902.4 |
| 95° | 12.5 | 227.0 | 541.7 | 778.4 | 870.3 |
| 97.5° | 16.7 | 210.3 | 513.8 | 743.6 | 824.4 |
| 100° | 23.7 | 199.1 | 483.2 | 703.2 | 782.6 |
| 102.5° | 32.0 | 190.8 | 455.4 | 667.0 | 740.8 |
| 105° | 41.8 | 183.8 | 433.1 | 636.4 | 718.5 |
| 107.5° | 51.5 | 181.0 | 410.8 | 607.1 | 676.8 |
| 110° | 61.3 | 179.6 | 394.1 | 576.5 | 654.5 |



TEST NUMBER: P893227

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

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 71.0 | 178.2 | 376.0 | 548.7 | 611.3 |
| 115° | 80.8 | 179.6 | 359.3 | 519.4 | 586.3 |
| 117.5° | 86.3 | 179.6 | 344.0 | 494.4 | 550.1 |
| 120° | 94.7 | 181.0 | 332.8 | 467.9 | 526.4 |
| 122.5° | 103.0 | 181.0 | 321.7 | 448.4 | 499.9 |
| 125° | 112.8 | 182.4 | 309.1 | 426.1 | 472.1 |
| 127.5° | 118.4 | 182.4 | 302.2 | 410.8 | 452.6 |
| 130° | 123.9 | 181.0 | 292.4 | 391.3 | 434.5 |
| 132.5° | 129.5 | 178.2 | 286.9 | 373.2 | 413.6 |
| 135° | 132.3 | 176.9 | 277.1 | 360.7 | 388.5 |
| 137.5° | 136.5 | 172.7 | 267.4 | 342.6 | 373.2 |
| 140° | 140.6 | 171.3 | 253.4 | 328.6 | 355.1 |
| 142.5° | 140.6 | 167.1 | 243.7 | 316.1 | 339.8 |
| 145° | 143.4 | 162.9 | 228.4 | 302.2 | 320.3 |
| 147.5° | 146.2 | 161.5 | 217.2 | 288.3 | 310.5 |
| 150° | 146.2 | 160.1 | 207.5 | 272.9 | 293.8 |
| 152.5° | 149.0 | 161.5 | 197.7 | 259.0 | 278.5 |
| 155° | 158.7 | 167.1 | 188.0 | 236.7 | 264.6 |
| 157.5° | 167.1 | 172.7 | 178.2 | 220.0 | 249.3 |
| 160° | 174.1 | 176.9 | 169.9 | 203.3 | 242.3 |
| 162.5° | 179.6 | 181.0 | 171.3 | 188.0 | 227.0 |
| 165° | 188.0 | 183.8 | 176.9 | 172.7 | 214.5 |
| 167.5° | 195.0 | 186.6 | 179.6 | 168.5 | 204.7 |
| 170° | 200.5 | 192.2 | 176.9 | 158.7 | 200.5 |
| 172.5° | 204.7 | 193.6 | 178.2 | 149.0 | 168.5 |
| 175° | 206.1 | 199.1 | 176.9 | 144.8 | 91.9 |
| 177.5° | 204.7 | 200.5 | 182.4 | 143.4 | 82.2 |
| 180° | 168.5 | 168.5 | 168.5 | 168.5 | 168.5 |



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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 | 17.03 | 18.34 | 17.67 | 19.01 | 19.77 | 20.44 | 21.75 | 21.08 | 22.42 | 23.18 |
| | 3H | 18.48 | 19.68 | 19.13 | 20.35 | 21.15 | 23.27 | 24.48 | 23.93 | 25.15 | 25.95 |
| | 4H | 18.95 | 20.10 | 19.62 | 20.78 | 21.59 | 24.72 | 25.87 | 25.39 | 26.55 | 27.36 |
| | 6H | 19.23 | 20.30 | 19.92 | 20.99 | 21.82 | 26.28 | 27.35 | 26.97 | 28.04 | 28.87 |
| | 8H | 19.29 | 20.31 | 19.99 | 21.03 | 21.86 | 27.10 | 28.12 | 27.80 | 28.84 | 29.67 |
| | 12H | 19.31 | 20.29 | 20.01 | 21.00 | 21.86 | 27.98 | 28.96 | 28.68 | 29.67 | 30.53 |
| 4H | 2H | 18.17 | 19.31 | 18.84 | 19.99 | 20.80 | 20.78 | 21.92 | 21.45 | 22.60 | 23.42 |
| | 3H | 19.87 | 20.85 | 20.56 | 21.57 | 22.40 | 23.85 | 24.83 | 24.53 | 25.55 | 26.38 |
| | 4H | 20.47 | 21.37 | 21.17 | 22.10 | 22.95 | 25.48 | 26.39 | 26.18 | 27.11 | 27.97 |
| | 6H | 20.88 | 21.68 | 21.60 | 22.43 | 23.29 | 27.24 | 28.04 | 27.96 | 28.79 | 29.65 |
| | 8H | 20.99 | 21.74 | 21.72 | 22.49 | 23.37 | 28.17 | 28.93 | 28.90 | 29.67 | 30.55 |
| | 12H | 21.05 | 21.74 | 21.79 | 22.50 | 23.39 | 29.18 | 29.87 | 29.93 | 30.64 | 31.52 |
| 8H | 4H | 21.50 | 22.25 | 22.22 | 23.00 | 23.88 | 25.66 | 26.42 | 26.39 | 27.16 | 28.04 |
| | 6H | 22.15 | 22.79 | 22.90 | 23.57 | 24.46 | 27.60 | 28.25 | 28.36 | 29.03 | 29.91 |
| | 8H | 22.37 | 22.95 | 23.14 | 23.74 | 24.63 | 28.69 | 29.27 | 29.45 | 30.05 | 30.95 |
| | 12H | 22.52 | 23.04 | 23.29 | 23.82 | 24.77 | 29.89 | 30.41 | 30.66 | 31.18 | 32.14 |
| 12H | 4H | 21.83 | 22.52 | 22.58 | 23.28 | 24.17 | 25.66 | 26.35 | 26.41 | 27.11 | 28.00 |
| | 6H | 22.64 | 23.22 | 23.40 | 24.00 | 24.90 | 27.64 | 28.22 | 28.40 | 29.00 | 29.90 |
| | 8H | 22.98 | 23.50 | 23.75 | 24.28 | 25.23 | 28.78 | 29.30 | 29.55 | 30.08 | 31.03 |