

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: P893475

Luminaire Tested: 4MB-4SL-AOL-UNV-L840

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893475
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-4SL-AOL-UNV-L840
Description: 4000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 8
4000K CCT
Light Source: -
Ballast/Driver: -

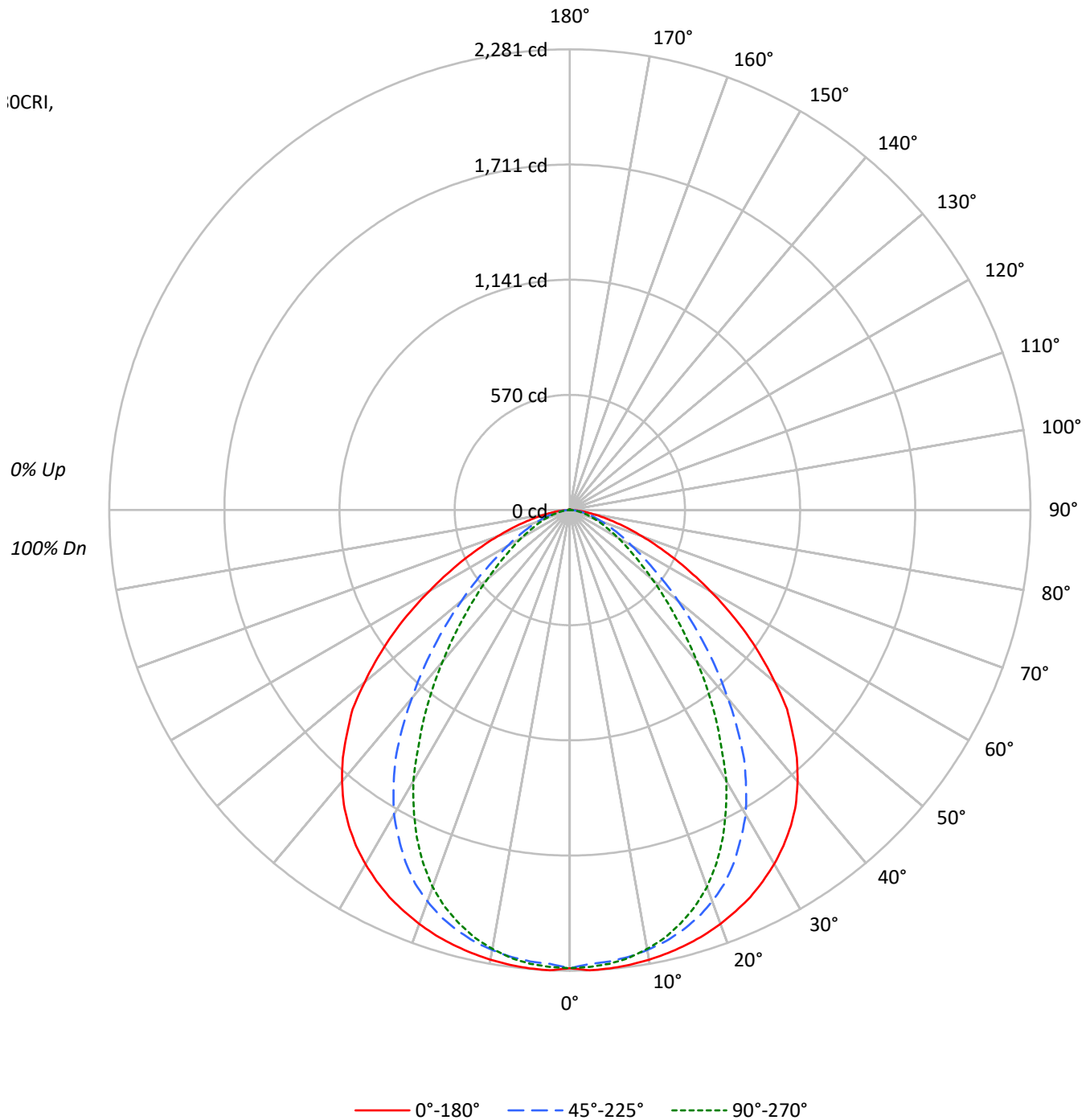
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4531.1 lumens
Efficiency: N/A
Efficacy: 152.1 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): 29.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 5.5
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P893475
CATALOG NUMBER: 4MB-4SL-AOL-UNV-L840

Luminous Intensity Polar Plot





TEST NUMBER: P893475

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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° | 23100 | 23100 | 23100 |
| 5° | 23288 | 22936 | 23055 |
| 10° | 23383 | 22878 | 22817 |
| 15° | 23504 | 22715 | 22337 |
| 20° | 23631 | 22348 | 21522 |
| 25° | 23763 | 21620 | 20129 |
| 30° | 23804 | 20483 | 18226 |
| 35° | 23726 | 18711 | 15678 |
| 40° | 23329 | 16193 | 13027 |
| 45° | 22462 | 13608 | 10543 |
| 50° | 21020 | 11083 | 8443 |
| 55° | 18993 | 8908 | 6770 |
| 60° | 16380 | 7249 | 5605 |
| 65° | 13861 | 6037 | 4610 |
| 70° | 11315 | 5133 | 3913 |
| 75° | 9062 | 4328 | 3329 |
| 80° | 7061 | 3701 | 2862 |
| 85° | 5469 | 3272 | 2582 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 22462 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------------|---------------|--------------|
| 0°-10° | 214.8 | 4.7 |
| 10°-20° | 611.2 | 13.5 |
| 20°-30° | 890.9 | 19.7 |
| 30°-40° | 960.3 | 21.2 |
| 40°-50° | 805.0 | 17.8 |
| 50°-60° | 545.0 | 12.0 |
| 60°-70° | 310.8 | 6.9 |
| 70°-80° | 142.1 | 3.1 |
| 80°-90° | 37.2 | 0.8 |
| 90°-100° | 4.6 | 0.1 |
| 100°-110° | 3.1 | 0.1 |
| 110°-120° | 1.7 | 0.0 |
| 120°-130° | 1.0 | 0.0 |
| 130°-140° | 0.9 | 0.0 |
| 140°-150° | 0.8 | 0.0 |
| 150°-160° | 0.7 | 0.0 |
| 160°-170° | 0.5 | 0.0 |
| 170°-180° | 0.2 | 0.0 |
| 0°-30° | 1716.9 | 37.9 |
| 0°-40° | 2677.2 | 59.1 |
| 0°-60° | 4027.3 | 88.9 |
| 0°-90° | 4517.5 | 99.7 |
| 90°-120° | 9.5 | 0.2 |
| 90°-150° | 12.2 | 0.3 |
| 90°-180° | 14.0 | 0.3 |
| 0°-180° | 4531.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 2268 | 2268 | 2268 | 2268 | 2268 | |
| 5° | 2278 | 2271 | 2244 | 2262 | 2255 | 217 |
| 15° | 2229 | 2210 | 2154 | 2140 | 2119 | 630 |
| 25° | 2115 | 2059 | 1924 | 1836 | 1791 | 974 |
| 35° | 1908 | 1765 | 1505 | 1321 | 1261 | 1191 |
| 45° | 1560 | 1301 | 945 | 779 | 732 | 1201 |
| 55° | 1070 | 783 | 502 | 407 | 381 | 953 |
| 65° | 575 | 400 | 250 | 203 | 191 | 574 |
| 75° | 230 | 169 | 110 | 90 | 85 | 251 |
| 85° | 47 | 40 | 28 | 23 | 22 | 55 |
| 90° | 6 | 6 | 4 | 3 | 3 | 7 |
| 95° | 10 | 6 | 3 | 2 | 2 | 8 |
| 105° | 6 | 5 | 2 | 1 | 1 | 7 |
| 115° | 3 | 3 | 1 | 1 | 1 | 3 |
| 125° | 1 | 1 | 1 | 1 | 1 | 1 |
| 135° | 1 | 1 | 1 | 1 | 1 | 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 | 3 | 3 | 0 |
| 180° | 2 | 2 | 2 | 2 | 2 | |



TEST NUMBER: P893475

CATALOG NUMBER: 4MB-4SL-AOL-UNV-L840

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 2268.2 | 2268.2 | 2268.2 | 2268.2 | 2268.2 |
| 2.5° | 2281.2 | 2275.4 | 2249.4 | 2270.8 | 2264.3 |
| 5° | 2278.0 | 2270.8 | 2243.5 | 2261.7 | 2255.2 |
| 7.5° | 2271.5 | 2262.4 | 2231.8 | 2245.4 | 2237.0 |
| 10° | 2261.1 | 2250.0 | 2212.3 | 2220.1 | 2206.4 |
| 12.5° | 2246.7 | 2233.1 | 2188.2 | 2186.2 | 2170.0 |
| 15° | 2229.2 | 2209.7 | 2154.4 | 2140.0 | 2118.6 |
| 17.5° | 2207.7 | 2183.0 | 2114.0 | 2085.4 | 2059.4 |
| 20° | 2180.4 | 2148.5 | 2062.0 | 2016.4 | 1985.8 |
| 22.5° | 2149.1 | 2106.2 | 2001.4 | 1928.6 | 1895.4 |
| 25° | 2114.7 | 2058.7 | 1924.0 | 1835.5 | 1791.3 |
| 27.5° | 2071.7 | 2001.4 | 1834.2 | 1719.7 | 1674.2 |
| 30° | 2024.2 | 1935.1 | 1741.8 | 1595.4 | 1549.9 |
| 32.5° | 1970.2 | 1859.0 | 1624.1 | 1461.4 | 1397.6 |
| 35° | 1908.4 | 1764.6 | 1505.0 | 1320.9 | 1261.0 |
| 37.5° | 1838.8 | 1666.4 | 1362.5 | 1179.0 | 1118.5 |
| 40° | 1754.8 | 1549.9 | 1218.0 | 1036.5 | 979.9 |
| 42.5° | 1664.4 | 1431.5 | 1079.5 | 901.2 | 852.4 |
| 45° | 1559.6 | 1301.3 | 944.8 | 778.8 | 732.0 |
| 47.5° | 1458.8 | 1169.9 | 818.5 | 666.9 | 628.5 |
| 50° | 1326.7 | 1030.0 | 699.5 | 564.8 | 532.9 |
| 52.5° | 1197.9 | 900.5 | 598.0 | 482.8 | 452.9 |
| 55° | 1069.7 | 782.8 | 501.7 | 406.7 | 381.3 |
| 57.5° | 934.4 | 667.6 | 422.3 | 344.2 | 327.3 |
| 60° | 804.2 | 568.0 | 355.9 | 288.9 | 275.2 |
| 62.5° | 685.2 | 476.3 | 301.3 | 244.0 | 231.0 |
| 65° | 575.2 | 400.2 | 250.5 | 203.0 | 191.3 |
| 67.5° | 471.1 | 329.2 | 208.9 | 169.2 | 160.7 |
| 70° | 380.0 | 266.8 | 172.4 | 139.2 | 131.4 |
| 72.5° | 301.3 | 213.4 | 137.9 | 113.9 | 105.4 |
| 75° | 230.3 | 169.2 | 110.0 | 89.8 | 84.6 |
| 77.5° | 171.8 | 127.5 | 84.6 | 69.0 | 65.1 |
| 80° | 120.4 | 92.4 | 63.1 | 52.1 | 48.8 |
| 82.5° | 82.0 | 63.8 | 44.2 | 36.4 | 34.5 |
| 85° | 46.8 | 39.7 | 28.0 | 23.4 | 22.1 |
| 87.5° | 24.1 | 20.8 | 15.0 | 11.1 | 9.8 |
| 90° | 6.5 | 6.5 | 3.9 | 3.3 | 2.6 |
| 92.5° | 10.4 | 5.9 | 3.9 | 2.6 | 2.0 |
| 95° | 9.8 | 5.9 | 3.3 | 2.0 | 2.0 |
| 97.5° | 9.1 | 5.9 | 2.6 | 2.0 | 1.3 |
| 100° | 8.5 | 5.2 | 2.6 | 1.3 | 1.3 |
| 102.5° | 7.8 | 5.2 | 2.6 | 1.3 | 1.3 |
| 105° | 6.5 | 4.6 | 2.0 | 1.3 | 0.7 |
| 107.5° | 5.9 | 3.9 | 2.0 | 1.3 | 0.7 |
| 110° | 4.6 | 3.3 | 2.0 | 1.3 | 0.7 |



TEST NUMBER: P893475
 CATALOG NUMBER: 4MB-4SL-AOL-UNV-L840

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 3.9 | 3.3 | 1.3 | 1.3 | 0.7 |
| 115° | 3.3 | 2.6 | 1.3 | 0.7 | 0.7 |
| 117.5° | 2.6 | 2.0 | 1.3 | 0.7 | 0.7 |
| 120° | 2.0 | 2.0 | 1.3 | 0.7 | 0.7 |
| 122.5° | 2.0 | 1.3 | 1.3 | 0.7 | 0.7 |
| 125° | 1.3 | 1.3 | 1.3 | 0.7 | 0.7 |
| 127.5° | 1.3 | 1.3 | 1.3 | 0.7 | 0.7 |
| 130° | 1.3 | 1.3 | 1.3 | 0.7 | 0.7 |
| 132.5° | 1.3 | 1.3 | 1.3 | 1.3 | 0.7 |
| 135° | 0.7 | 1.3 | 1.3 | 1.3 | 0.7 |
| 137.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 140° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 142.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 145° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 147.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 150° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 152.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 155° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 157.5° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 160° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 162.5° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 165° | 1.3 | 2.0 | 2.0 | 2.0 | 2.0 |
| 167.5° | 1.3 | 2.0 | 2.0 | 2.0 | 2.6 |
| 170° | 1.3 | 2.0 | 2.0 | 2.6 | 2.6 |
| 172.5° | 1.3 | 2.0 | 2.0 | 2.6 | 2.6 |
| 175° | 2.0 | 2.0 | 2.0 | 2.6 | 2.6 |
| 177.5° | 2.0 | 2.0 | 2.0 | 2.6 | 2.6 |
| 180° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |



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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 | 21.28 | 22.72 | 21.65 | 23.04 | 23.36 | 16.12 | 17.56 | 16.49 | 17.88 | 18.20 |
| | 3H | 22.59 | 23.87 | 22.97 | 24.20 | 24.57 | 17.13 | 18.41 | 17.52 | 18.75 | 19.12 |
| | 4H | 23.01 | 24.21 | 23.42 | 24.57 | 24.95 | 17.47 | 18.67 | 17.87 | 19.02 | 19.41 |
| | 6H | 23.28 | 24.38 | 23.69 | 24.76 | 25.16 | 17.69 | 18.80 | 18.11 | 19.17 | 19.57 |
| | 8H | 23.35 | 24.40 | 23.78 | 24.79 | 25.21 | 17.76 | 18.81 | 18.19 | 19.21 | 19.62 |
| | 12H | 23.39 | 24.39 | 23.82 | 24.78 | 25.22 | 17.80 | 18.81 | 18.24 | 19.20 | 19.63 |
| 4H | 2H | 21.28 | 22.47 | 21.68 | 22.83 | 23.22 | 16.74 | 17.94 | 17.15 | 18.30 | 18.69 |
| | 3H | 22.74 | 23.73 | 23.16 | 24.14 | 24.55 | 17.94 | 18.93 | 18.36 | 19.34 | 19.75 |
| | 4H | 23.27 | 24.15 | 23.71 | 24.57 | 25.02 | 18.36 | 19.24 | 18.80 | 19.66 | 20.11 |
| | 6H | 23.64 | 24.41 | 24.11 | 24.86 | 25.33 | 18.67 | 19.43 | 19.13 | 19.88 | 20.35 |
| | 8H | 23.76 | 24.47 | 24.23 | 24.92 | 25.40 | 18.76 | 19.48 | 19.23 | 19.93 | 20.40 |
| | 12H | 23.83 | 24.47 | 24.32 | 24.95 | 25.43 | 18.83 | 19.47 | 19.32 | 19.96 | 20.44 |
| 8H | 4H | 23.25 | 23.96 | 23.72 | 24.42 | 24.89 | 18.69 | 19.41 | 19.16 | 19.86 | 20.33 |
| | 6H | 23.68 | 24.27 | 24.18 | 24.77 | 25.25 | 19.08 | 19.67 | 19.59 | 20.17 | 20.66 |
| | 8H | 23.84 | 24.37 | 24.36 | 24.88 | 25.38 | 19.22 | 19.75 | 19.75 | 20.27 | 20.77 |
| | 12H | 23.97 | 24.43 | 24.48 | 24.93 | 25.51 | 19.35 | 19.82 | 19.86 | 20.32 | 20.89 |
| 12H | 4H | 23.22 | 23.86 | 23.71 | 24.34 | 24.82 | 18.74 | 19.37 | 19.23 | 19.86 | 20.34 |
| | 6H | 23.65 | 24.18 | 24.17 | 24.69 | 25.19 | 19.15 | 19.68 | 19.67 | 20.20 | 20.70 |
| | 8H | 23.84 | 24.31 | 24.35 | 24.80 | 25.38 | 19.34 | 19.81 | 19.86 | 20.31 | 20.88 |