

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: P893802

Luminaire Tested: 4MB-7HL-ACL-UNV-L835

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P893802
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-20)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 4MB-7HL-ACL-UNV-L835
Description: 7000 Lumen 4FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS, 80CRI, 3500K (C)
Light Source: -
Ballast/Driver: -

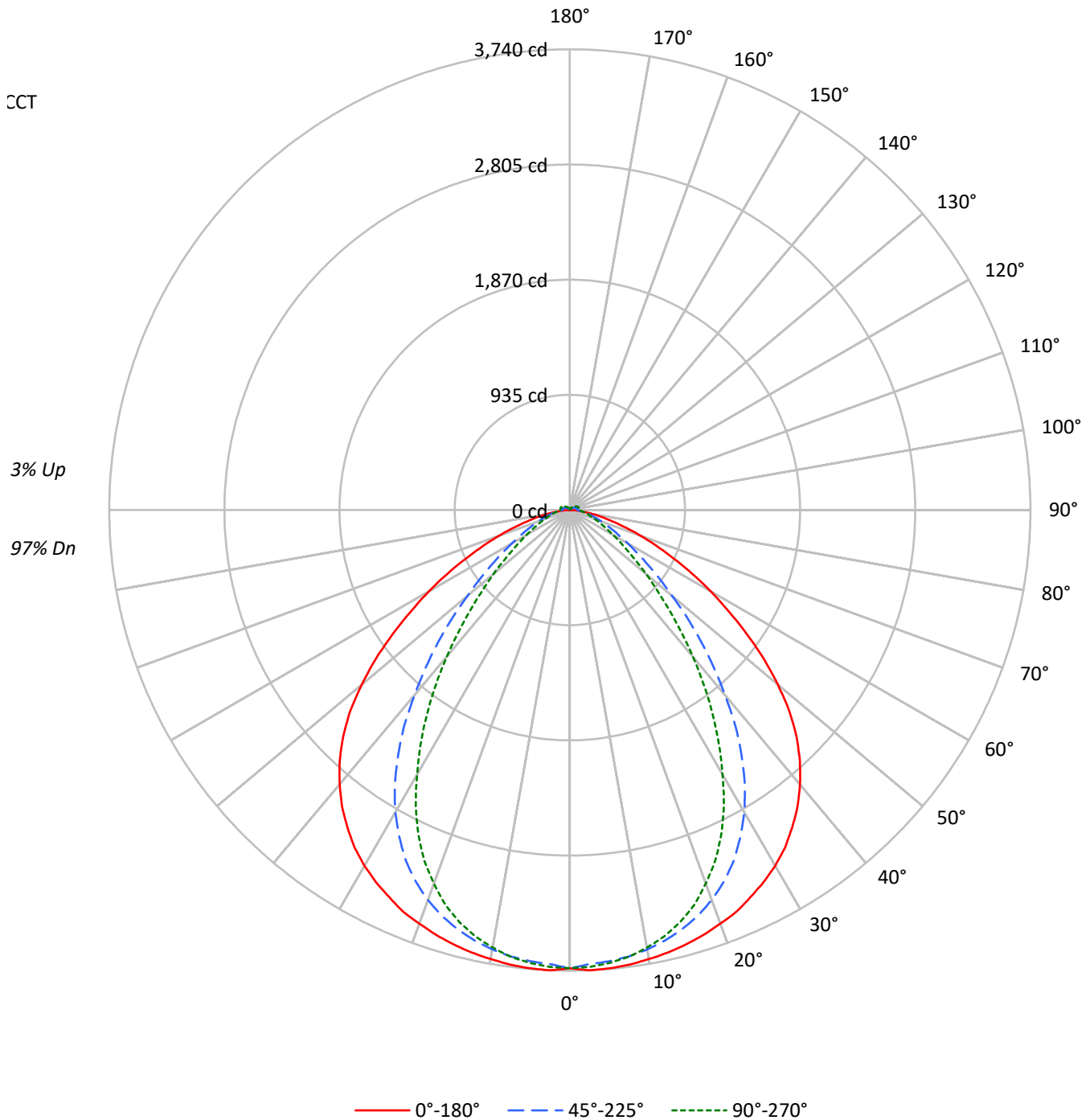
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7545.0 lumens
Efficiency: N/A
Efficacy: 145.7 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.05 / 1.15
Luminous Opening: Rectangular w/ Sides (W: 0.27' x L: 3.98' x H: 0.08')
CIE Type: Direct

Input Watts (W): 51.8
Input Voltage (V): 120
Input Current (A_{in}): 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

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Luminous Intensity Polar Plot





TEST NUMBER: P893802

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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 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 110 | 110 | 110 | 104 | 104 | 104 | 100 | 100 | 100 | 97 | | | | 97 |
| 1 | 110 | 106 | 102 | 99 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 94 | 92 | 90 | 90 | 89 | 87 | 85 | | | | 85 |
| 2 | 101 | 94 | 89 | 84 | 99 | 92 | 87 | 83 | 88 | 84 | 80 | 85 | 81 | 78 | 82 | 79 | 76 | 74 | | | | 74 |
| 3 | 94 | 85 | 78 | 72 | 91 | 83 | 76 | 71 | 80 | 74 | 70 | 77 | 72 | 68 | 74 | 70 | 67 | 65 | | | | 65 |
| 4 | 87 | 76 | 69 | 63 | 84 | 75 | 68 | 62 | 72 | 66 | 61 | 70 | 64 | 60 | 67 | 63 | 59 | 57 | | | | 57 |
| 5 | 81 | 69 | 61 | 55 | 78 | 68 | 60 | 55 | 66 | 59 | 54 | 63 | 58 | 53 | 61 | 56 | 52 | 50 | | | | 50 |
| 6 | 75 | 63 | 55 | 49 | 73 | 62 | 54 | 49 | 60 | 53 | 48 | 58 | 52 | 48 | 56 | 51 | 47 | 45 | | | | 45 |
| 7 | 70 | 58 | 50 | 44 | 68 | 57 | 49 | 44 | 55 | 48 | 43 | 53 | 47 | 43 | 52 | 47 | 42 | 41 | | | | 41 |
| 8 | 65 | 53 | 45 | 40 | 64 | 52 | 45 | 40 | 51 | 44 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | 37 | | | | 37 |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 36 | 45 | 39 | 35 | 34 | | | | 34 |
| 10 | 58 | 45 | 38 | 33 | 56 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 33 | 42 | 36 | 32 | 31 | | | | 31 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 37881 | 37881 | 37881 |
| 5° | 38108 | 36827 | 36727 |
| 10° | 38139 | 35959 | 35350 |
| 15° | 38269 | 34929 | 33682 |
| 20° | 38430 | 33615 | 31387 |
| 25° | 38603 | 31838 | 28514 |
| 30° | 38742 | 29320 | 24700 |
| 35° | 38564 | 25925 | 20591 |
| 40° | 37992 | 21742 | 16370 |
| 45° | 36737 | 17514 | 12378 |
| 50° | 34068 | 13388 | 9335 |
| 55° | 30244 | 10257 | 6955 |
| 60° | 25953 | 7890 | 5381 |
| 65° | 21411 | 6184 | 4258 |
| 70° | 17294 | 4956 | 3482 |
| 75° | 13161 | 4050 | 2970 |
| 80° | 9845 | 3316 | 2622 |
| 85° | 6704 | 2808 | 2383 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 36737 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 351.8 | 4.7 |
| 10°-20° | 999.1 | 13.2 |
| 20°-30° | 1454.3 | 19.3 |
| 30°-40° | 1560.7 | 20.7 |
| 40°-50° | 1291.4 | 17.1 |
| 50°-60° | 855.9 | 11.3 |
| 60°-70° | 487.6 | 6.5 |
| 70°-80° | 241.8 | 3.2 |
| 80°-90° | 97.8 | 1.3 |
| 90°-100° | 57.5 | 0.8 |
| 100°-110° | 51.1 | 0.7 |
| 110°-120° | 38.6 | 0.5 |
| 120°-130° | 25.6 | 0.3 |
| 130°-140° | 15.7 | 0.2 |
| 140°-150° | 9.0 | 0.1 |
| 150°-160° | 4.6 | 0.1 |
| 160°-170° | 2.0 | 0.0 |
| 170°-180° | 0.5 | 0.0 |
| 0°-30° | 2805.3 | 37.2 |
| 0°-40° | 4365.9 | 57.9 |
| 0°-60° | 6513.2 | 86.3 |
| 0°-90° | 7340.5 | 97.3 |
| 90°-120° | 147.1 | 2.0 |
| 90°-150° | 197.5 | 2.6 |
| 90°-180° | 204.0 | 2.7 |
| 0°-180° | 7545.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3720 | 3720 | 3720 | 3720 | 3720 | |
| 5° | 3734 | 3725 | 3677 | 3705 | 3691 | 355 |
| 15° | 3650 | 3621 | 3523 | 3491 | 3463 | 1032 |
| 25° | 3469 | 3378 | 3146 | 2974 | 2909 | 1601 |
| 35° | 3147 | 2897 | 2431 | 2113 | 2020 | 1967 |
| 45° | 2604 | 2115 | 1504 | 1211 | 1129 | 1995 |
| 55° | 1754 | 1240 | 773 | 611 | 567 | 1570 |
| 65° | 928 | 622 | 387 | 312 | 296 | 932 |
| 75° | 361 | 269 | 194 | 169 | 164 | 398 |
| 85° | 71 | 76 | 89 | 94 | 94 | 82 |
| 90° | 10 | 31 | 61 | 74 | 76 | 9 |
| 95° | 11 | 33 | 61 | 74 | 76 | 9 |
| 105° | 9 | 25 | 55 | 71 | 75 | 9 |
| 115° | 5 | 16 | 43 | 61 | 66 | 5 |
| 125° | 3 | 11 | 31 | 45 | 50 | 3 |
| 135° | 2 | 9 | 21 | 31 | 35 | 2 |
| 145° | 3 | 7 | 14 | 22 | 25 | 2 |
| 155° | 3 | 6 | 10 | 14 | 17 | 1 |
| 165° | 4 | 4 | 7 | 8 | 10 | 1 |
| 175° | 4 | 4 | 5 | 5 | 4 | 0 |
| 180° | 4 | 4 | 4 | 4 | 4 | |



TEST NUMBER: P893802

CATALOG NUMBER: 4MB-7HL-ACL-UNV-L835

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 3719.6 | 3719.6 | 3719.6 | 3719.6 | 3719.6 |
| 2.5° | 3740.5 | 3732.3 | 3689.6 | 3721.8 | 3712.1 |
| 5° | 3734.5 | 3724.8 | 3676.9 | 3704.6 | 3691.1 |
| 7.5° | 3721.8 | 3709.8 | 3656.0 | 3674.7 | 3658.2 |
| 10° | 3701.6 | 3686.6 | 3622.3 | 3626.0 | 3607.3 |
| 12.5° | 3679.9 | 3656.7 | 3578.2 | 3567.7 | 3544.5 |
| 15° | 3650.0 | 3620.8 | 3522.8 | 3490.6 | 3463.0 |
| 17.5° | 3615.6 | 3575.2 | 3454.0 | 3397.1 | 3361.2 |
| 20° | 3572.9 | 3519.1 | 3368.7 | 3281.9 | 3226.6 |
| 22.5° | 3531.8 | 3452.5 | 3267.0 | 3142.8 | 3084.4 |
| 25° | 3468.9 | 3378.4 | 3145.8 | 2974.4 | 2908.6 |
| 27.5° | 3406.8 | 3284.9 | 2996.9 | 2786.7 | 2710.4 |
| 30° | 3334.3 | 3174.2 | 2833.8 | 2575.0 | 2480.7 |
| 32.5° | 3250.5 | 3053.0 | 2644.5 | 2355.0 | 2254.8 |
| 35° | 3147.3 | 2897.4 | 2430.6 | 2112.6 | 2019.9 |
| 37.5° | 3036.5 | 2726.1 | 2209.9 | 1882.2 | 1786.5 |
| 40° | 2907.9 | 2544.3 | 1960.0 | 1642.8 | 1555.3 |
| 42.5° | 2765.0 | 2336.3 | 1728.1 | 1417.6 | 1330.1 |
| 45° | 2604.1 | 2114.9 | 1503.7 | 1211.2 | 1128.9 |
| 47.5° | 2419.4 | 1888.2 | 1286.7 | 1024.9 | 956.1 |
| 50° | 2203.9 | 1661.5 | 1083.2 | 860.3 | 809.4 |
| 52.5° | 1987.0 | 1448.3 | 919.4 | 729.4 | 674.8 |
| 55° | 1754.3 | 1240.3 | 772.8 | 611.2 | 567.1 |
| 57.5° | 1529.1 | 1056.3 | 645.6 | 512.4 | 481.8 |
| 60° | 1320.4 | 891.7 | 546.1 | 432.4 | 407.7 |
| 62.5° | 1119.9 | 751.8 | 457.1 | 365.8 | 344.1 |
| 65° | 928.4 | 622.4 | 386.8 | 312.0 | 295.5 |
| 67.5° | 760.1 | 519.9 | 326.2 | 266.3 | 253.6 |
| 70° | 614.2 | 420.4 | 274.6 | 228.2 | 217.7 |
| 72.5° | 478.0 | 337.4 | 230.4 | 197.5 | 188.5 |
| 75° | 360.6 | 268.6 | 193.8 | 169.1 | 163.8 |
| 77.5° | 271.6 | 208.7 | 160.1 | 145.9 | 142.1 |
| 80° | 187.8 | 155.6 | 132.4 | 126.4 | 124.2 |
| 82.5° | 119.7 | 111.5 | 108.5 | 108.5 | 108.5 |
| 85° | 71.1 | 76.3 | 89.0 | 94.3 | 93.5 |
| 87.5° | 33.7 | 50.1 | 71.8 | 81.5 | 83.0 |
| 90° | 9.7 | 31.4 | 60.6 | 74.1 | 76.3 |
| 92.5° | 11.2 | 32.2 | 60.6 | 74.1 | 76.3 |
| 95° | 11.2 | 32.9 | 61.3 | 74.1 | 76.3 |
| 97.5° | 11.2 | 31.4 | 60.6 | 74.8 | 77.1 |
| 100° | 11.2 | 30.7 | 59.8 | 74.1 | 77.1 |
| 102.5° | 9.7 | 28.4 | 57.6 | 73.3 | 76.3 |
| 105° | 9.0 | 24.7 | 55.4 | 71.1 | 74.8 |
| 107.5° | 7.5 | 22.4 | 53.1 | 68.8 | 73.3 |
| 110° | 6.7 | 20.2 | 50.1 | 66.6 | 71.8 |



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CATALOG NUMBER: 4MB-7HL-ACL-UNV-L835

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|------|-------|------|
| 112.5° | 6.0 | 18.0 | 46.4 | 64.3 | 68.8 |
| 115° | 5.2 | 16.5 | 42.6 | 60.6 | 65.8 |
| 117.5° | 4.5 | 15.0 | 38.9 | 56.9 | 62.8 |
| 120° | 3.7 | 13.5 | 35.9 | 53.1 | 58.4 |
| 122.5° | 3.7 | 12.7 | 32.9 | 48.6 | 54.6 |
| 125° | 3.0 | 11.2 | 30.7 | 44.9 | 50.1 |
| 127.5° | 3.0 | 10.5 | 27.7 | 41.1 | 45.6 |
| 130° | 2.2 | 10.5 | 25.4 | 38.2 | 42.6 |
| 132.5° | 2.2 | 9.7 | 22.4 | 34.4 | 38.9 |
| 135° | 2.2 | 9.0 | 20.9 | 31.4 | 35.2 |
| 137.5° | 2.2 | 9.0 | 18.7 | 29.2 | 32.9 |
| 140° | 3.0 | 8.2 | 16.5 | 26.2 | 29.9 |
| 142.5° | 3.0 | 7.5 | 15.7 | 23.9 | 26.9 |
| 145° | 3.0 | 6.7 | 14.2 | 21.7 | 24.7 |
| 147.5° | 3.0 | 6.7 | 12.7 | 19.5 | 22.4 |
| 150° | 3.0 | 6.0 | 12.0 | 17.2 | 20.2 |
| 152.5° | 3.0 | 6.0 | 11.2 | 15.0 | 18.7 |
| 155° | 3.0 | 6.0 | 9.7 | 13.5 | 17.2 |
| 157.5° | 3.0 | 5.2 | 9.0 | 12.0 | 15.0 |
| 160° | 3.7 | 5.2 | 8.2 | 10.5 | 13.5 |
| 162.5° | 3.7 | 5.2 | 7.5 | 9.7 | 12.0 |
| 165° | 3.7 | 4.5 | 6.7 | 8.2 | 10.5 |
| 167.5° | 3.7 | 4.5 | 6.7 | 7.5 | 9.0 |
| 170° | 3.7 | 4.5 | 6.0 | 6.0 | 6.7 |
| 172.5° | 3.7 | 4.5 | 5.2 | 6.0 | 4.5 |
| 175° | 3.7 | 4.5 | 5.2 | 5.2 | 4.5 |
| 177.5° | 3.7 | 4.5 | 4.5 | 5.2 | 4.5 |
| 180° | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |



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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 | 21.29 | 22.68 | 21.70 | 23.05 | 23.44 | 16.41 | 17.80 | 16.82 | 18.17 | 18.55 |
| | 3H | 22.39 | 23.63 | 22.81 | 24.01 | 24.44 | 17.56 | 18.79 | 17.98 | 19.18 | 19.61 |
| | 4H | 22.68 | 23.84 | 23.13 | 24.25 | 24.69 | 18.06 | 19.22 | 18.51 | 19.62 | 20.07 |
| | 6H | 22.83 | 23.90 | 23.29 | 24.32 | 24.78 | 18.57 | 19.63 | 19.03 | 20.06 | 20.52 |
| | 8H | 22.84 | 23.86 | 23.31 | 24.30 | 24.77 | 18.83 | 19.85 | 19.30 | 20.29 | 20.76 |
| | 12H | 22.83 | 23.80 | 23.31 | 24.24 | 24.74 | 19.13 | 20.10 | 19.60 | 20.53 | 21.03 |
| 4H | 2H | 21.27 | 22.42 | 21.71 | 22.83 | 23.28 | 16.91 | 18.07 | 17.36 | 18.48 | 18.93 |
| | 3H | 22.50 | 23.46 | 22.96 | 23.91 | 24.38 | 18.23 | 19.19 | 18.69 | 19.65 | 20.11 |
| | 4H | 22.87 | 23.73 | 23.35 | 24.20 | 24.71 | 18.83 | 19.69 | 19.31 | 20.16 | 20.66 |
| | 6H | 23.10 | 23.85 | 23.61 | 24.34 | 24.87 | 19.46 | 20.20 | 19.96 | 20.70 | 21.22 |
| | 8H | 23.14 | 23.83 | 23.65 | 24.33 | 24.86 | 19.78 | 20.48 | 20.29 | 20.98 | 21.51 |
| | 12H | 23.15 | 23.77 | 23.67 | 24.30 | 24.83 | 20.16 | 20.78 | 20.69 | 21.31 | 21.84 |
| 8H | 4H | 22.86 | 23.55 | 23.37 | 24.05 | 24.58 | 19.07 | 19.77 | 19.59 | 20.27 | 20.80 |
| | 6H | 23.13 | 23.71 | 23.67 | 24.25 | 24.79 | 19.81 | 20.38 | 20.35 | 20.93 | 21.47 |
| | 8H | 23.19 | 23.71 | 23.75 | 24.27 | 24.82 | 20.21 | 20.73 | 20.77 | 21.29 | 21.84 |
| | 12H | 23.23 | 23.69 | 23.79 | 24.23 | 24.86 | 20.71 | 21.17 | 21.26 | 21.71 | 22.34 |
| 12H | 4H | 22.83 | 23.46 | 23.36 | 23.98 | 24.52 | 19.09 | 19.71 | 19.62 | 20.24 | 20.78 |
| | 6H | 23.11 | 23.63 | 23.67 | 24.18 | 24.74 | 19.84 | 20.36 | 20.40 | 20.92 | 21.47 |
| | 8H | 23.20 | 23.66 | 23.76 | 24.20 | 24.83 | 20.31 | 20.77 | 20.86 | 21.31 | 21.93 |