

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: P892714

Luminaire Tested: 2MB-4HL-AOL-UNV-L935

Issue Date: 11/11/2024

Test Information

Test Method: LM-79-2019
Report Number: P892714
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-077-6)
Test Lab: INNOVATION CENTER
Issue Date: 11/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: 2MB-4HL-AOL-UNV-L935
Description: 4000 Lumen 2FT MICROBAY LINEAR BAY with AISLE OPTICS WITH CLEAR LENS NO UPLIGHT, 9
3500K CCT
Light Source: -
Ballast/Driver: -

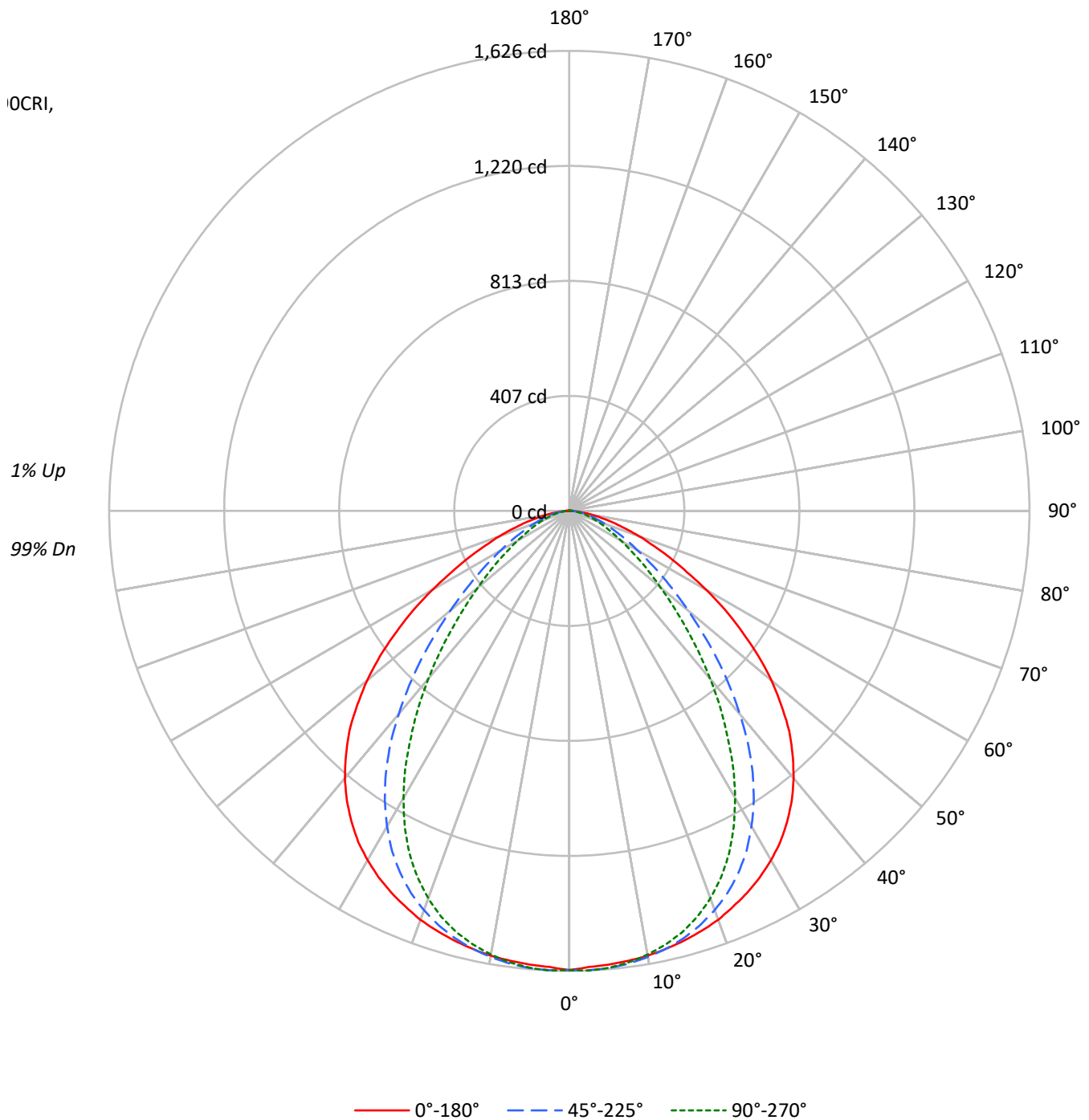
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3363.9 lumens
Efficiency: N/A
Efficacy: 121.9 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.1 / 1.2
Luminous Opening: Rectangular (W 0.27' x L: 1.98' x H: 0')
CIE Type: Direct

Input Watts (W): 27.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 6.5
Total Harmonic Distortion (THDi): 0.99
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P892714
CATALOG NUMBER: 2MB-4HL-AOL-UNV-L935

Luminous Intensity Polar Plot





TEST NUMBER: P892714

CATALOG NUMBER: 2MB-4HL-AOL-UNV-L935

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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 101 | 101 | 101 | 99 | | | | 99 |
| 1 | 110 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 92 | 91 | 89 | 87 | | | | 87 |
| 2 | 102 | 95 | 89 | 84 | 99 | 93 | 88 | 83 | 89 | 85 | 81 | 86 | 83 | 79 | 83 | 80 | 77 | 75 | | | | 75 |
| 3 | 94 | 85 | 78 | 72 | 92 | 83 | 77 | 72 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | | | | 66 |
| 4 | 87 | 76 | 69 | 63 | 85 | 75 | 68 | 62 | 73 | 66 | 61 | 70 | 65 | 61 | 68 | 64 | 60 | 58 | | | | 58 |
| 5 | 81 | 69 | 61 | 55 | 79 | 68 | 61 | 55 | 66 | 59 | 54 | 64 | 58 | 54 | 62 | 57 | 53 | 51 | | | | 51 |
| 6 | 75 | 63 | 55 | 49 | 73 | 62 | 54 | 49 | 60 | 53 | 48 | 59 | 53 | 48 | 57 | 52 | 48 | 46 | | | | 46 |
| 7 | 70 | 58 | 50 | 44 | 68 | 57 | 49 | 44 | 55 | 48 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | 41 |
| 8 | 65 | 53 | 45 | 40 | 64 | 52 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 | | | | 37 |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 36 | 45 | 40 | 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° | 33231 | 33231 | 33231 |
| 5° | 33085 | 33332 | 33317 |
| 10° | 33193 | 33289 | 33110 |
| 15° | 33322 | 33140 | 32676 |
| 20° | 33516 | 32723 | 31755 |
| 25° | 33628 | 31922 | 30187 |
| 30° | 33705 | 30447 | 27706 |
| 35° | 33531 | 28232 | 24375 |
| 40° | 32969 | 25054 | 20697 |
| 45° | 31822 | 21351 | 16842 |
| 50° | 29712 | 17492 | 13399 |
| 55° | 26628 | 14166 | 10806 |
| 60° | 22897 | 11422 | 8682 |
| 65° | 19066 | 9434 | 7219 |
| 70° | 15823 | 8052 | 6149 |
| 75° | 12738 | 6915 | 5348 |
| 80° | 10070 | 6167 | 4681 |
| 85° | 8881 | 6061 | 4675 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 31822 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 153.9 | 4.6 |
| 10°-20° | 439.9 | 13.1 |
| 20°-30° | 648.7 | 19.3 |
| 30°-40° | 712.4 | 21.2 |
| 40°-50° | 606.3 | 18.0 |
| 50°-60° | 411.4 | 12.2 |
| 60°-70° | 231.8 | 6.9 |
| 70°-80° | 108.1 | 3.2 |
| 80°-90° | 31.5 | 0.9 |
| 90°-100° | 7.5 | 0.2 |
| 100°-110° | 4.8 | 0.1 |
| 110°-120° | 2.9 | 0.1 |
| 120°-130° | 1.6 | 0.0 |
| 130°-140° | 1.0 | 0.0 |
| 140°-150° | 0.8 | 0.0 |
| 150°-160° | 0.6 | 0.0 |
| 160°-170° | 0.4 | 0.0 |
| 170°-180° | 0.2 | 0.0 |
| 0°-30° | 1242.5 | 36.9 |
| 0°-40° | 1954.9 | 58.1 |
| 0°-60° | 2972.6 | 88.4 |
| 0°-90° | 3344.1 | 99.4 |
| 90°-120° | 15.3 | 0.5 |
| 90°-150° | 18.7 | 0.6 |
| 90°-180° | 20.0 | 0.6 |
| 0°-180° | 3363.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1623 | 1623 | 1623 | 1623 | 1623 | |
| 5° | 1610 | 1618 | 1622 | 1623 | 1621 | 153 |
| 15° | 1572 | 1574 | 1563 | 1550 | 1541 | 444 |
| 25° | 1488 | 1470 | 1413 | 1360 | 1336 | 686 |
| 35° | 1341 | 1273 | 1129 | 1019 | 975 | 838 |
| 45° | 1099 | 958 | 737 | 615 | 582 | 842 |
| 55° | 746 | 585 | 397 | 321 | 303 | 667 |
| 65° | 394 | 297 | 195 | 158 | 149 | 394 |
| 75° | 161 | 126 | 87 | 72 | 68 | 174 |
| 85° | 38 | 33 | 26 | 21 | 20 | 41 |
| 90° | 7 | 8 | 7 | 6 | 6 | 6 |
| 95° | 11 | 9 | 7 | 5 | 5 | 8 |
| 105° | 3 | 7 | 5 | 3 | 3 | 3 |
| 115° | 2 | 4 | 3 | 3 | 3 | 2 |
| 125° | 1 | 2 | 2 | 2 | 2 | 1 |
| 135° | 1 | 1 | 1 | 1 | 1 | 1 |
| 145° | 1 | 1 | 1 | 1 | 1 | 0 |
| 155° | 1 | 1 | 1 | 1 | 1 | 0 |
| 165° | 1 | 1 | 1 | 2 | 2 | 0 |
| 175° | 1 | 1 | 2 | 2 | 2 | 0 |
| 180° | 2 | 2 | 2 | 2 | 2 | |



TEST NUMBER: P892714

CATALOG NUMBER: 2MB-4HL-AOL-UNV-L935

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1622.9 | 1622.9 | 1622.9 | 1622.9 | 1622.9 |
| 2.5° | 1613.6 | 1620.2 | 1624.9 | 1627.5 | 1626.2 |
| 5° | 1609.6 | 1617.6 | 1621.6 | 1622.9 | 1620.9 |
| 7.5° | 1603.7 | 1611.6 | 1613.6 | 1612.9 | 1609.6 |
| 10° | 1596.4 | 1602.3 | 1601.0 | 1597.7 | 1592.4 |
| 12.5° | 1585.1 | 1589.8 | 1585.1 | 1576.5 | 1569.9 |
| 15° | 1571.9 | 1573.9 | 1563.3 | 1550.0 | 1541.4 |
| 17.5° | 1556.0 | 1554.7 | 1535.4 | 1516.2 | 1504.3 |
| 20° | 1538.1 | 1530.8 | 1501.7 | 1472.5 | 1457.3 |
| 22.5° | 1513.6 | 1502.3 | 1461.9 | 1420.2 | 1401.6 |
| 25° | 1488.4 | 1469.9 | 1412.9 | 1359.9 | 1336.1 |
| 27.5° | 1459.3 | 1429.5 | 1355.9 | 1288.4 | 1258.6 |
| 30° | 1425.5 | 1385.7 | 1287.7 | 1207.6 | 1171.8 |
| 32.5° | 1387.7 | 1333.4 | 1213.5 | 1116.8 | 1078.4 |
| 35° | 1341.4 | 1273.1 | 1129.4 | 1019.4 | 975.1 |
| 37.5° | 1291.0 | 1204.2 | 1038.0 | 913.4 | 876.4 |
| 40° | 1233.4 | 1127.4 | 937.3 | 810.8 | 774.3 |
| 42.5° | 1167.8 | 1044.6 | 837.3 | 708.8 | 676.3 |
| 45° | 1098.9 | 957.8 | 737.3 | 615.4 | 581.6 |
| 47.5° | 1016.1 | 861.8 | 637.9 | 526.6 | 496.8 |
| 50° | 932.7 | 765.7 | 549.1 | 447.8 | 420.6 |
| 52.5° | 842.6 | 674.3 | 467.0 | 380.2 | 357.7 |
| 55° | 745.9 | 584.9 | 396.8 | 320.6 | 302.7 |
| 57.5° | 654.5 | 500.8 | 333.8 | 268.3 | 251.7 |
| 60° | 559.1 | 422.6 | 278.9 | 225.9 | 212.0 |
| 62.5° | 469.0 | 354.4 | 235.8 | 188.1 | 176.9 |
| 65° | 393.5 | 296.8 | 194.7 | 158.3 | 149.0 |
| 67.5° | 320.6 | 246.4 | 162.3 | 131.8 | 123.9 |
| 70° | 264.3 | 199.4 | 134.5 | 108.6 | 102.7 |
| 72.5° | 206.0 | 161.6 | 108.6 | 88.8 | 83.5 |
| 75° | 161.0 | 125.9 | 87.4 | 71.5 | 67.6 |
| 77.5° | 119.2 | 97.4 | 68.9 | 56.3 | 53.7 |
| 80° | 85.4 | 72.2 | 52.3 | 43.1 | 39.7 |
| 82.5° | 59.6 | 50.3 | 37.8 | 31.1 | 29.1 |
| 85° | 37.8 | 33.1 | 25.8 | 21.2 | 19.9 |
| 87.5° | 19.9 | 18.5 | 15.2 | 12.6 | 11.9 |
| 90° | 6.6 | 7.9 | 7.3 | 6.0 | 6.0 |
| 92.5° | 11.3 | 8.6 | 6.6 | 6.0 | 5.3 |
| 95° | 11.3 | 8.6 | 6.6 | 5.3 | 5.3 |
| 97.5° | 10.6 | 7.9 | 6.0 | 5.3 | 4.6 |
| 100° | 5.3 | 7.9 | 5.3 | 4.6 | 4.0 |
| 102.5° | 3.3 | 7.3 | 5.3 | 4.0 | 4.0 |
| 105° | 3.3 | 6.6 | 4.6 | 3.3 | 3.3 |
| 107.5° | 2.6 | 6.0 | 4.0 | 3.3 | 3.3 |
| 110° | 2.6 | 5.3 | 4.0 | 3.3 | 2.6 |



TEST NUMBER: P892714

CATALOG NUMBER: 2MB-4HL-AOL-UNV-L935

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 2.6 | 4.6 | 3.3 | 2.6 | 2.6 |
| 115° | 2.0 | 4.0 | 2.6 | 2.6 | 2.6 |
| 117.5° | 2.0 | 3.3 | 2.6 | 2.6 | 2.6 |
| 120° | 1.3 | 2.6 | 2.0 | 2.0 | 2.0 |
| 122.5° | 1.3 | 2.0 | 2.0 | 2.0 | 2.0 |
| 125° | 1.3 | 2.0 | 2.0 | 2.0 | 2.0 |
| 127.5° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 130° | 0.7 | 1.3 | 1.3 | 2.0 | 2.0 |
| 132.5° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 135° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 137.5° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 140° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 142.5° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 145° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 147.5° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 150° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 152.5° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 155° | 0.7 | 1.3 | 1.3 | 1.3 | 1.3 |
| 157.5° | 1.3 | 1.3 | 1.3 | 1.3 | 2.0 |
| 160° | 1.3 | 1.3 | 1.3 | 1.3 | 2.0 |
| 162.5° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 165° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 167.5° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 170° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 172.5° | 1.3 | 1.3 | 1.3 | 2.0 | 2.0 |
| 175° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 177.5° | 1.3 | 1.3 | 2.0 | 2.0 | 2.0 |
| 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 | 22.60 | 24.05 | 22.98 | 24.37 | 24.70 | 17.81 | 19.25 | 18.19 | 19.58 | 19.91 |
| | 3H | 23.83 | 25.12 | 24.22 | 25.46 | 25.84 | 18.82 | 20.11 | 19.21 | 20.45 | 20.83 |
| | 4H | 24.23 | 25.43 | 24.64 | 25.79 | 26.19 | 19.17 | 20.38 | 19.59 | 20.74 | 21.14 |
| | 6H | 24.48 | 25.59 | 24.91 | 25.97 | 26.38 | 19.43 | 20.54 | 19.86 | 20.92 | 21.33 |
| | 8H | 24.56 | 25.61 | 25.00 | 26.01 | 26.43 | 19.51 | 20.57 | 19.95 | 20.97 | 21.39 |
| | 12H | 24.61 | 25.61 | 25.05 | 26.01 | 26.45 | 19.58 | 20.58 | 20.02 | 20.98 | 21.42 |
| 4H | 2H | 22.62 | 23.83 | 23.04 | 24.19 | 24.59 | 18.44 | 19.64 | 18.85 | 20.00 | 20.40 |
| | 3H | 24.02 | 25.01 | 24.44 | 25.43 | 25.84 | 19.64 | 20.63 | 20.06 | 21.04 | 21.46 |
| | 4H | 24.53 | 25.42 | 24.97 | 25.85 | 26.30 | 20.07 | 20.96 | 20.52 | 21.39 | 21.85 |
| | 6H | 24.90 | 25.67 | 25.37 | 26.13 | 26.60 | 20.42 | 21.19 | 20.89 | 21.65 | 22.13 |
| | 8H | 25.02 | 25.74 | 25.49 | 26.19 | 26.68 | 20.54 | 21.26 | 21.01 | 21.71 | 22.20 |
| | 12H | 25.11 | 25.75 | 25.60 | 26.24 | 26.73 | 20.63 | 21.28 | 21.13 | 21.77 | 22.25 |
| 8H | 4H | 24.53 | 25.25 | 25.00 | 25.70 | 26.19 | 20.41 | 21.13 | 20.89 | 21.59 | 22.07 |
| | 6H | 24.97 | 25.56 | 25.48 | 26.07 | 26.56 | 20.86 | 21.45 | 21.36 | 21.95 | 22.45 |
| | 8H | 25.13 | 25.67 | 25.66 | 26.19 | 26.69 | 21.03 | 21.56 | 21.55 | 22.08 | 22.59 |
| | 12H | 25.29 | 25.76 | 25.81 | 26.27 | 26.85 | 21.19 | 21.66 | 21.71 | 22.16 | 22.74 |
| 12H | 4H | 24.50 | 25.14 | 25.00 | 25.63 | 26.12 | 20.46 | 21.10 | 20.95 | 21.59 | 22.08 |
| | 6H | 24.94 | 25.48 | 25.47 | 26.00 | 26.50 | 20.93 | 21.46 | 21.46 | 21.99 | 22.49 |
| | 8H | 25.15 | 25.62 | 25.67 | 26.12 | 26.70 | 21.16 | 21.63 | 21.68 | 22.13 | 22.71 |