

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: NEO-RAY

Report Number: P624663

Luminaire Tested: S930DIP-W227-X2-U5LT-W

Issue Date: 11/3/2022

Test Information

Test Method: LM-79-2019
Report Number: P624663
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35531-R2)
Test Lab: INNOVATION CENTER
Issue Date: 11/3/2022
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S930DIP-W227-X2-U5LT-W
Description: NEO-RAY COVERA DIRECT/INDIRECT 2-FOOT LED WaveStream LUMINAIRE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

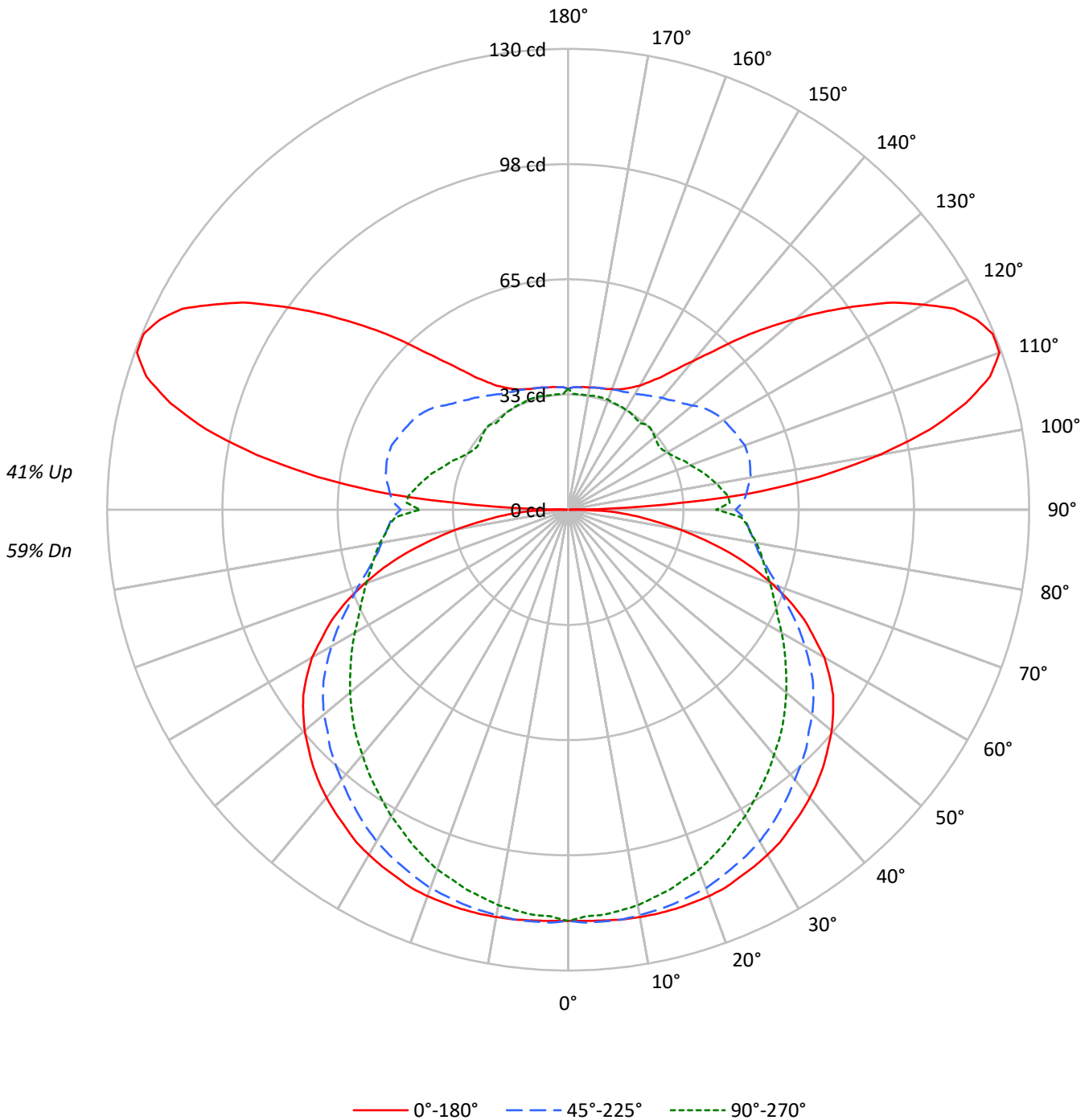
Lumens per Lamp: N/A
Luminaire Lumens: 815.7 lumens
Efficiency: N/A
Efficacy: 70.3 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.28 / 1.52
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1.92' x H: 0.17')
CIE Type: General Diffuse

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
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





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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 109 | 109 | 109 | 109 | 102 | 102 | 102 | 102 | 88 | 88 | 88 | 76 | 76 | 76 | 64 | 64 | 64 | 59 |
| 1 | 97 | 92 | 87 | 82 | 90 | 85 | 81 | 77 | 74 | 70 | 67 | 63 | 60 | 58 | 53 | 51 | 49 | 44 |
| 2 | 87 | 78 | 71 | 65 | 81 | 73 | 67 | 61 | 63 | 58 | 53 | 54 | 50 | 46 | 45 | 42 | 39 | 35 |
| 3 | 79 | 68 | 60 | 53 | 73 | 63 | 56 | 50 | 55 | 49 | 44 | 46 | 42 | 38 | 39 | 35 | 32 | 28 |
| 4 | 72 | 60 | 51 | 44 | 66 | 56 | 48 | 42 | 48 | 42 | 37 | 41 | 36 | 32 | 34 | 30 | 27 | 24 |
| 5 | 66 | 53 | 44 | 37 | 61 | 49 | 41 | 35 | 43 | 36 | 31 | 36 | 31 | 27 | 31 | 26 | 23 | 20 |
| 6 | 61 | 47 | 38 | 32 | 56 | 44 | 36 | 30 | 38 | 32 | 27 | 33 | 27 | 23 | 28 | 23 | 20 | 17 |
| 7 | 56 | 43 | 34 | 28 | 52 | 40 | 32 | 26 | 35 | 28 | 23 | 30 | 24 | 20 | 25 | 21 | 18 | 15 |
| 8 | 52 | 38 | 30 | 24 | 48 | 36 | 28 | 23 | 31 | 25 | 21 | 27 | 22 | 18 | 23 | 19 | 16 | 13 |
| 9 | 48 | 35 | 27 | 22 | 45 | 33 | 26 | 21 | 29 | 23 | 18 | 25 | 20 | 16 | 21 | 17 | 14 | 12 |
| 10 | 45 | 32 | 24 | 19 | 42 | 30 | 23 | 18 | 26 | 20 | 16 | 23 | 18 | 15 | 20 | 16 | 13 | 11 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 977 | 977 | 977 |
| 5° | 976 | 966 | 949 |
| 10° | 983 | 953 | 928 |
| 15° | 994 | 944 | 906 |
| 20° | 1008 | 937 | 887 |
| 25° | 1022 | 928 | 867 |
| 30° | 1041 | 923 | 848 |
| 35° | 1060 | 916 | 832 |
| 40° | 1086 | 911 | 821 |
| 45° | 1117 | 914 | 816 |
| 50° | 1152 | 918 | 811 |
| 55° | 1191 | 923 | 810 |
| 60° | 1221 | 920 | 817 |
| 65° | 1235 | 918 | 838 |
| 70° | 1217 | 936 | 885 |
| 75° | 1160 | 984 | 960 |
| 80° | 1036 | 1102 | 1081 |
| 85° | 877 | 1319 | 1270 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 90°
 Luminance: 2092 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 11.1 | 1.4 |
| 10°-20° | 32.4 | 4.0 |
| 20°-30° | 50.9 | 6.2 |
| 30°-40° | 64.8 | 7.9 |
| 40°-50° | 72.9 | 8.9 |
| 50°-60° | 74.7 | 9.2 |
| 60°-70° | 69.1 | 8.5 |
| 70°-80° | 58.0 | 7.1 |
| 80°-90° | 47.9 | 5.9 |
| 90°-100° | 55.2 | 6.8 |
| 100°-110° | 69.4 | 8.5 |
| 110°-120° | 66.0 | 8.1 |
| 120°-130° | 51.7 | 6.3 |
| 130°-140° | 36.5 | 4.5 |
| 140°-150° | 24.9 | 3.1 |
| 150°-160° | 16.8 | 2.1 |
| 160°-170° | 9.9 | 1.2 |
| 170°-180° | 3.3 | 0.4 |
| 0°-30° | 94.4 | 11.6 |
| 0°-40° | 159.2 | 19.5 |
| 0°-60° | 306.9 | 37.6 |
| 0°-90° | 481.9 | 59.1 |
| 90°-120° | 190.7 | 23.4 |
| 90°-150° | 303.8 | 37.2 |
| 90°-180° | 334.0 | 40.9 |
| 0°-180° | 815.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0° | 116 | 116 | 116 | 116 | 116 | |
| 5° | 116 | 116 | 117 | 116 | 115 | 11 |
| 15° | 117 | 116 | 115 | 114 | 111 | 33 |
| 25° | 114 | 114 | 111 | 108 | 104 | 53 |
| 35° | 109 | 108 | 104 | 100 | 95 | 69 |
| 45° | 102 | 99 | 95 | 90 | 86 | 79 |
| 55° | 91 | 88 | 84 | 79 | 75 | 81 |
| 65° | 74 | 72 | 70 | 68 | 65 | 72 |
| 75° | 47 | 51 | 57 | 59 | 57 | 50 |
| 85° | 18 | 39 | 51 | 52 | 51 | 17 |
| 90° | 0 | 44 | 47 | 44 | 42 | 5 |
| 95° | 51 | 61 | 50 | 46 | 45 | 48 |
| 105° | 116 | 92 | 53 | 43 | 40 | 120 |
| 115° | 127 | 97 | 52 | 38 | 34 | 125 |
| 125° | 100 | 80 | 49 | 36 | 31 | 90 |
| 135° | 68 | 58 | 43 | 36 | 33 | 53 |
| 145° | 46 | 44 | 39 | 36 | 32 | 29 |
| 155° | 38 | 38 | 37 | 35 | 33 | 18 |
| 165° | 36 | 36 | 36 | 35 | 33 | 10 |
| 175° | 35 | 35 | 35 | 34 | 33 | 3 |
| 180° | 34 | 34 | 34 | 34 | 34 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 0° | 116.0 | 116.0 | 116.0 | 116.0 | 116.0 |
| 2.5° | 116.1 | 116.3 | 116.6 | 116.6 | 114.8 |
| 5° | 116.3 | 116.4 | 116.6 | 116.4 | 114.7 |
| 7.5° | 116.6 | 116.4 | 116.6 | 116.0 | 114.0 |
| 10° | 116.7 | 116.6 | 116.1 | 115.5 | 113.3 |
| 12.5° | 116.7 | 116.4 | 115.7 | 114.4 | 112.0 |
| 15° | 116.6 | 116.1 | 115.1 | 113.5 | 110.9 |
| 17.5° | 116.3 | 115.9 | 114.3 | 112.1 | 109.3 |
| 20° | 116.0 | 115.3 | 113.6 | 111.1 | 108.0 |
| 22.5° | 115.5 | 114.4 | 112.3 | 109.4 | 106.1 |
| 25° | 114.4 | 113.5 | 110.9 | 107.6 | 104.1 |
| 27.5° | 113.5 | 112.3 | 109.6 | 105.7 | 101.8 |
| 30° | 112.4 | 110.9 | 108.0 | 103.7 | 99.8 |
| 32.5° | 111.2 | 109.4 | 106.1 | 101.7 | 97.4 |
| 35° | 109.4 | 107.6 | 103.9 | 99.5 | 95.1 |
| 37.5° | 107.8 | 105.8 | 101.8 | 97.2 | 92.8 |
| 40° | 106.0 | 103.7 | 99.4 | 94.7 | 90.3 |
| 42.5° | 104.1 | 101.5 | 97.2 | 92.7 | 88.0 |
| 45° | 101.9 | 99.0 | 95.0 | 90.1 | 85.6 |
| 47.5° | 99.4 | 96.4 | 92.1 | 87.6 | 82.9 |
| 50° | 97.0 | 94.0 | 89.9 | 84.9 | 80.3 |
| 52.5° | 94.2 | 91.1 | 87.2 | 82.1 | 77.5 |
| 55° | 91.2 | 87.7 | 84.2 | 79.4 | 74.8 |
| 57.5° | 87.4 | 84.5 | 80.7 | 76.3 | 72.2 |
| 60° | 83.4 | 80.6 | 77.1 | 73.4 | 69.5 |
| 62.5° | 78.2 | 76.6 | 73.5 | 70.5 | 66.8 |
| 65° | 73.5 | 72.4 | 69.6 | 67.9 | 64.6 |
| 67.5° | 67.7 | 68.0 | 66.0 | 65.3 | 62.5 |
| 70° | 61.2 | 62.8 | 62.9 | 63.0 | 60.6 |
| 72.5° | 54.6 | 56.9 | 59.8 | 60.6 | 58.6 |
| 75° | 47.2 | 50.7 | 57.1 | 58.9 | 57.0 |
| 77.5° | 39.4 | 44.9 | 54.9 | 57.3 | 55.5 |
| 80° | 31.9 | 40.9 | 53.4 | 55.5 | 53.9 |
| 82.5° | 24.1 | 38.9 | 52.0 | 53.5 | 52.0 |
| 85° | 18.1 | 39.0 | 50.8 | 51.8 | 50.7 |
| 87.5° | 11.7 | 40.8 | 49.6 | 49.9 | 48.8 |
| 90° | 0.3 | 43.7 | 47.2 | 43.9 | 41.7 |
| 92.5° | 20.7 | 52.0 | 49.4 | 46.9 | 45.6 |
| 95° | 50.6 | 61.0 | 50.4 | 46.5 | 45.2 |
| 97.5° | 71.4 | 70.3 | 51.2 | 45.6 | 43.7 |
| 100° | 89.2 | 78.3 | 52.2 | 44.8 | 42.4 |
| 102.5° | 104.5 | 85.7 | 52.6 | 43.7 | 41.0 |
| 105° | 116.1 | 91.7 | 53.0 | 42.7 | 39.7 |
| 107.5° | 124.7 | 96.2 | 53.0 | 41.6 | 38.1 |
| 110° | 129.4 | 99.0 | 53.0 | 40.5 | 36.7 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|------|-------|------|
| 112.5° | 129.6 | 99.0 | 52.3 | 39.2 | 35.7 |
| 115° | 127.0 | 97.0 | 51.8 | 38.4 | 34.2 |
| 117.5° | 122.7 | 93.7 | 51.1 | 37.2 | 33.1 |
| 120° | 115.7 | 89.7 | 50.6 | 36.5 | 32.2 |
| 122.5° | 108.8 | 84.8 | 49.8 | 36.2 | 31.5 |
| 125° | 100.2 | 79.5 | 48.7 | 36.1 | 31.2 |
| 127.5° | 92.0 | 74.0 | 47.5 | 36.2 | 31.5 |
| 130° | 83.7 | 68.5 | 45.7 | 36.6 | 31.9 |
| 132.5° | 75.9 | 62.5 | 44.3 | 36.7 | 32.3 |
| 135° | 68.3 | 57.5 | 43.3 | 36.5 | 32.7 |
| 137.5° | 60.6 | 53.0 | 42.0 | 35.7 | 32.6 |
| 140° | 54.7 | 49.2 | 41.2 | 35.4 | 31.8 |
| 142.5° | 49.8 | 46.0 | 40.1 | 35.5 | 31.9 |
| 145° | 45.6 | 43.6 | 39.3 | 35.5 | 32.2 |
| 147.5° | 42.8 | 41.6 | 38.5 | 35.5 | 32.5 |
| 150° | 40.4 | 39.8 | 37.7 | 35.4 | 32.5 |
| 152.5° | 38.9 | 38.6 | 37.3 | 35.4 | 32.7 |
| 155° | 37.6 | 37.6 | 36.7 | 35.3 | 32.7 |
| 157.5° | 36.7 | 36.7 | 36.5 | 35.1 | 32.7 |
| 160° | 36.2 | 36.3 | 36.1 | 35.1 | 33.0 |
| 162.5° | 35.7 | 35.8 | 35.8 | 35.0 | 33.0 |
| 165° | 35.5 | 35.5 | 35.5 | 34.9 | 33.0 |
| 167.5° | 35.3 | 35.3 | 35.3 | 34.7 | 32.9 |
| 170° | 35.0 | 35.0 | 35.0 | 34.6 | 32.7 |
| 172.5° | 34.9 | 34.7 | 34.7 | 34.5 | 32.7 |
| 175° | 34.7 | 34.7 | 34.7 | 34.5 | 32.7 |
| 177.5° | 34.6 | 34.6 | 34.6 | 34.3 | 32.7 |
| 180° | 34.1 | 34.1 | 34.1 | 34.1 | 34.1 |



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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 | 9.07 | 10.11 | 9.93 | 11.01 | 12.13 | 8.71 | 9.75 | 9.57 | 10.65 | 11.77 |
| | 3H | 11.26 | 12.21 | 12.12 | 13.11 | 14.26 | 11.37 | 12.31 | 12.23 | 13.22 | 14.37 |
| | 4H | 12.08 | 12.99 | 12.96 | 13.89 | 15.05 | 12.73 | 13.64 | 13.62 | 14.55 | 15.71 |
| | 6H | 12.70 | 13.54 | 13.60 | 14.45 | 15.63 | 14.22 | 15.06 | 15.11 | 15.97 | 17.15 |
| | 8H | 12.91 | 13.72 | 13.82 | 14.65 | 15.83 | 14.99 | 15.79 | 15.89 | 16.72 | 17.90 |
| | 12H | 13.06 | 13.83 | 13.97 | 14.76 | 15.96 | 15.81 | 16.58 | 16.72 | 17.50 | 18.71 |
| 4H | 2H | 9.73 | 10.63 | 10.61 | 11.54 | 12.70 | 9.45 | 10.36 | 10.34 | 11.27 | 12.43 |
| | 3H | 12.16 | 12.94 | 13.06 | 13.87 | 15.05 | 12.33 | 13.10 | 13.23 | 14.04 | 15.22 |
| | 4H | 13.16 | 13.88 | 14.07 | 14.81 | 16.01 | 13.86 | 14.58 | 14.77 | 15.51 | 16.71 |
| | 6H | 13.96 | 14.59 | 14.88 | 15.55 | 16.75 | 15.52 | 16.15 | 16.44 | 17.11 | 18.31 |
| | 8H | 14.27 | 14.87 | 15.20 | 15.82 | 17.03 | 16.39 | 16.99 | 17.32 | 17.94 | 19.15 |
| | 12H | 14.51 | 15.05 | 15.45 | 16.02 | 17.24 | 17.32 | 17.86 | 18.26 | 18.83 | 20.05 |
| 8H | 4H | 13.73 | 14.32 | 14.65 | 15.27 | 16.49 | 14.32 | 14.91 | 15.24 | 15.86 | 17.08 |
| | 6H | 14.78 | 15.29 | 15.73 | 16.28 | 17.49 | 16.21 | 16.71 | 17.16 | 17.70 | 18.92 |
| | 8H | 15.27 | 15.72 | 16.23 | 16.70 | 17.93 | 17.24 | 17.70 | 18.20 | 18.67 | 19.91 |
| | 12H | 15.69 | 16.09 | 16.66 | 17.07 | 18.35 | 18.36 | 18.77 | 19.33 | 19.74 | 21.02 |
| 12H | 4H | 13.87 | 14.41 | 14.82 | 15.38 | 16.60 | 14.37 | 14.91 | 15.32 | 15.88 | 17.11 |
| | 6H | 15.07 | 15.52 | 16.03 | 16.50 | 17.73 | 16.36 | 16.81 | 17.31 | 17.79 | 19.02 |
| | 8H | 15.67 | 16.08 | 16.64 | 17.05 | 18.33 | 17.48 | 17.88 | 18.44 | 18.86 | 20.13 |