

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: NEO-RAY

Report Number: P919286

Luminaire Tested: DFN2DIP-PN2F0-050D040US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919286
REPORT IS A COMBINATION OF REPORTS P899488 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D040US935-RLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

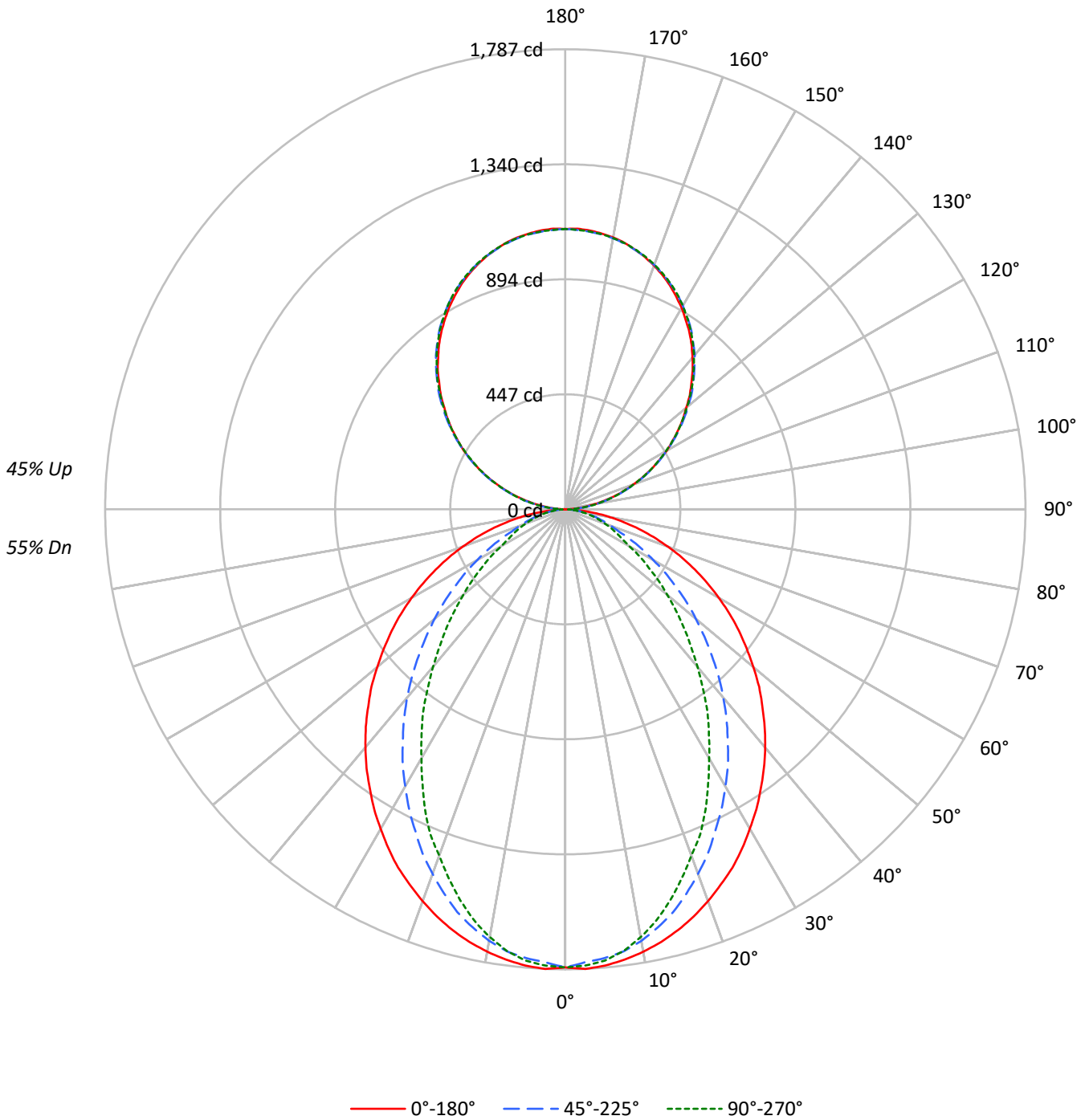
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6707.2 lumens
Efficiency: N/A
Efficacy: 81.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 82
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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: P919286

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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 | 108 | 108 | 108 | 108 | 100 | 100 | 100 | 100 | 86 | 86 | 86 | 73 | 73 | 73 | 60 | 60 | 60 | 55 |
| 1 | 99 | 95 | 91 | 88 | 92 | 89 | 85 | 82 | 76 | 74 | 72 | 65 | 63 | 62 | 54 | 53 | 52 | 47 |
| 2 | 91 | 84 | 78 | 73 | 84 | 78 | 73 | 69 | 67 | 63 | 60 | 57 | 55 | 52 | 48 | 46 | 45 | 40 |
| 3 | 83 | 74 | 67 | 61 | 77 | 69 | 63 | 58 | 60 | 55 | 51 | 51 | 48 | 45 | 43 | 41 | 39 | 35 |
| 4 | 76 | 66 | 58 | 52 | 71 | 62 | 55 | 50 | 54 | 48 | 44 | 46 | 42 | 39 | 39 | 36 | 34 | 30 |
| 5 | 70 | 59 | 51 | 45 | 65 | 55 | 48 | 43 | 48 | 43 | 38 | 42 | 37 | 34 | 35 | 32 | 30 | 27 |
| 6 | 65 | 53 | 45 | 40 | 60 | 50 | 43 | 38 | 44 | 38 | 34 | 38 | 33 | 30 | 32 | 29 | 26 | 24 |
| 7 | 60 | 48 | 40 | 35 | 56 | 45 | 38 | 33 | 40 | 34 | 30 | 35 | 30 | 27 | 30 | 26 | 24 | 21 |
| 8 | 56 | 44 | 36 | 31 | 52 | 41 | 34 | 30 | 36 | 31 | 27 | 32 | 27 | 24 | 27 | 24 | 21 | 19 |
| 9 | 52 | 40 | 33 | 28 | 49 | 38 | 31 | 27 | 34 | 28 | 24 | 29 | 25 | 22 | 25 | 22 | 19 | 17 |
| 10 | 49 | 37 | 30 | 25 | 46 | 35 | 28 | 24 | 31 | 26 | 22 | 27 | 23 | 20 | 24 | 20 | 18 | 16 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3854 | 3854 | 3854 |
| 5° | 3854 | 3784 | 3811 |
| 10° | 3809 | 3702 | 3681 |
| 15° | 3751 | 3572 | 3485 |
| 20° | 3675 | 3395 | 3245 |
| 25° | 3598 | 3199 | 3014 |
| 30° | 3496 | 2999 | 2722 |
| 35° | 3396 | 2784 | 2467 |
| 40° | 3293 | 2563 | 2174 |
| 45° | 3176 | 2319 | 1909 |
| 50° | 3053 | 2073 | 1651 |
| 55° | 2924 | 1811 | 1404 |
| 60° | 2775 | 1539 | 1150 |
| 65° | 2603 | 1264 | 1029 |
| 70° | 2394 | 1007 | 923 |
| 75° | 2132 | 871 | 829 |
| 80° | 1754 | 708 | 701 |
| 85° | 1146 | 441 | 498 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3176 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 166.8 | 2.5 |
| 10°-20° | 457.8 | 6.8 |
| 20°-30° | 642.7 | 9.6 |
| 30°-40° | 700.6 | 10.4 |
| 40°-50° | 643.9 | 9.6 |
| 50°-60° | 505.7 | 7.5 |
| 60°-70° | 329.2 | 4.9 |
| 70°-80° | 169.5 | 2.5 |
| 80°-90° | 46.4 | 0.7 |
| 90°-100° | 67.4 | 1.0 |
| 100°-110° | 214.2 | 3.2 |
| 110°-120° | 366.5 | 5.5 |
| 120°-130° | 482.0 | 7.2 |
| 130°-140° | 541.0 | 8.1 |
| 140°-150° | 530.5 | 7.9 |
| 150°-160° | 445.0 | 6.6 |
| 160°-170° | 295.1 | 4.4 |
| 170°-180° | 103.2 | 1.5 |
| 0°-30° | 1267.2 | 18.9 |
| 0°-40° | 1967.8 | 29.3 |
| 0°-60° | 3117.4 | 46.5 |
| 0°-90° | 3662.4 | 54.6 |
| 90°-120° | 648.0 | 9.7 |
| 90°-150° | 2201.5 | 32.8 |
| 90°-180° | 3045.0 | 45.4 |
| 0°-180° | 6707.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1779 | 1779 | 1779 | 1779 | 1779 | |
| 5° | 1779 | 1771 | 1750 | 1765 | 1760 | 169 |
| 15° | 1692 | 1675 | 1620 | 1589 | 1573 | 477 |
| 25° | 1536 | 1484 | 1378 | 1312 | 1288 | 706 |
| 35° | 1324 | 1242 | 1100 | 998 | 963 | 828 |
| 45° | 1082 | 974 | 805 | 691 | 652 | 836 |
| 55° | 823 | 697 | 523 | 427 | 396 | 735 |
| 65° | 556 | 425 | 280 | 226 | 221 | 551 |
| 75° | 296 | 184 | 129 | 118 | 116 | 313 |
| 85° | 69 | 35 | 31 | 31 | 31 | 79 |
| 90° | 1 | 12 | 32 | 30 | 31 | 7 |
| 95° | 48 | 57 | 59 | 59 | 57 | 53 |
| 105° | 198 | 200 | 202 | 204 | 204 | 209 |
| 115° | 368 | 373 | 371 | 370 | 368 | 364 |
| 125° | 535 | 543 | 540 | 538 | 537 | 478 |
| 135° | 692 | 702 | 704 | 703 | 700 | 535 |
| 145° | 840 | 846 | 852 | 853 | 849 | 525 |
| 155° | 960 | 963 | 966 | 971 | 968 | 442 |
| 165° | 1045 | 1044 | 1044 | 1050 | 1046 | 295 |
| 175° | 1087 | 1085 | 1083 | 1089 | 1084 | 103 |
| 180° | 1089 | 1089 | 1089 | 1089 | 1089 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1779.3 | 1779.3 | 1779.3 | 1779.3 | 1779.3 |
| 2.5° | 1787.3 | 1779.3 | 1761.5 | 1777.7 | 1774.4 |
| 5° | 1779.3 | 1771.2 | 1750.2 | 1764.7 | 1760.0 |
| 7.5° | 1764.7 | 1755.1 | 1732.6 | 1739.0 | 1730.9 |
| 10° | 1745.4 | 1734.1 | 1702.0 | 1697.1 | 1687.5 |
| 12.5° | 1721.3 | 1706.8 | 1663.3 | 1653.7 | 1635.9 |
| 15° | 1692.3 | 1674.6 | 1619.9 | 1589.3 | 1573.2 |
| 17.5° | 1658.5 | 1632.7 | 1565.0 | 1529.6 | 1503.8 |
| 20° | 1619.9 | 1587.6 | 1507.1 | 1467.0 | 1431.4 |
| 22.5° | 1578.0 | 1540.9 | 1447.5 | 1392.8 | 1368.7 |
| 25° | 1536.1 | 1484.5 | 1378.3 | 1312.3 | 1288.1 |
| 27.5° | 1486.3 | 1431.4 | 1313.9 | 1238.2 | 1201.2 |
| 30° | 1433.1 | 1371.8 | 1243.0 | 1161.0 | 1117.4 |
| 32.5° | 1381.6 | 1307.4 | 1175.5 | 1078.8 | 1038.5 |
| 35° | 1323.6 | 1241.5 | 1099.8 | 998.3 | 962.9 |
| 37.5° | 1267.2 | 1178.6 | 1029.0 | 917.7 | 877.6 |
| 40° | 1207.6 | 1111.1 | 954.8 | 840.5 | 798.7 |
| 42.5° | 1146.5 | 1043.4 | 880.8 | 761.6 | 721.4 |
| 45° | 1082.1 | 974.1 | 805.1 | 690.7 | 652.0 |
| 47.5° | 1020.9 | 906.6 | 732.7 | 618.3 | 582.9 |
| 50° | 953.3 | 839.0 | 661.8 | 550.6 | 516.9 |
| 52.5° | 887.2 | 766.4 | 594.2 | 487.9 | 457.4 |
| 55° | 822.8 | 697.1 | 523.2 | 426.7 | 396.1 |
| 57.5° | 756.8 | 628.0 | 460.5 | 370.4 | 344.6 |
| 60° | 689.1 | 560.3 | 394.4 | 312.5 | 286.6 |
| 62.5° | 623.2 | 494.4 | 338.1 | 260.9 | 248.1 |
| 65° | 555.5 | 425.1 | 280.2 | 225.5 | 220.6 |
| 67.5° | 491.1 | 360.7 | 225.5 | 198.0 | 193.2 |
| 70° | 423.5 | 297.9 | 186.8 | 170.6 | 164.2 |
| 72.5° | 359.1 | 239.9 | 156.2 | 143.4 | 140.1 |
| 75° | 296.3 | 183.5 | 128.8 | 117.5 | 116.0 |
| 77.5° | 233.5 | 130.4 | 101.5 | 95.0 | 91.7 |
| 80° | 175.5 | 93.4 | 77.2 | 70.9 | 70.9 |
| 82.5° | 122.3 | 62.9 | 53.1 | 49.9 | 49.9 |
| 85° | 69.2 | 35.4 | 30.6 | 30.6 | 30.6 |
| 87.5° | 25.8 | 12.8 | 12.8 | 11.3 | 11.3 |
| 90° | 0.9 | 11.8 | 32.2 | 30.2 | 31.2 |
| 92.5° | 20.3 | 27.6 | 28.6 | 29.5 | 29.5 |
| 95° | 48.0 | 57.2 | 58.8 | 58.8 | 57.2 |
| 97.5° | 79.8 | 88.3 | 92.0 | 92.0 | 92.0 |
| 100° | 116.6 | 124.2 | 126.7 | 126.7 | 125.8 |
| 102.5° | 155.3 | 160.9 | 164.5 | 165.5 | 164.5 |
| 105° | 197.7 | 200.3 | 202.2 | 203.9 | 203.9 |
| 107.5° | 239.7 | 243.7 | 243.7 | 244.3 | 239.7 |
| 110° | 280.4 | 285.7 | 285.7 | 285.7 | 283.1 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 324.4 | 330.0 | 329.0 | 326.4 | 324.4 |
| 115° | 367.7 | 373.1 | 371.3 | 370.4 | 367.7 |
| 117.5° | 410.8 | 418.0 | 413.5 | 410.8 | 408.2 |
| 120° | 454.2 | 461.3 | 454.2 | 454.2 | 451.2 |
| 122.5° | 493.5 | 502.7 | 498.2 | 495.5 | 493.5 |
| 125° | 534.9 | 543.1 | 540.5 | 537.5 | 536.6 |
| 127.5° | 575.3 | 585.5 | 581.9 | 577.9 | 575.3 |
| 130° | 613.0 | 624.9 | 623.3 | 621.3 | 617.7 |
| 132.5° | 655.4 | 664.6 | 665.3 | 660.6 | 658.1 |
| 135° | 691.9 | 702.1 | 704.0 | 703.0 | 700.4 |
| 137.5° | 732.6 | 740.8 | 742.4 | 741.7 | 737.9 |
| 140° | 768.4 | 776.6 | 781.2 | 781.2 | 777.6 |
| 142.5° | 805.2 | 813.4 | 816.0 | 817.0 | 813.4 |
| 145° | 840.0 | 846.5 | 851.8 | 852.8 | 849.2 |
| 147.5° | 871.2 | 879.3 | 883.3 | 884.9 | 881.3 |
| 150° | 903.4 | 909.0 | 912.6 | 915.5 | 912.6 |
| 152.5° | 931.9 | 937.5 | 942.1 | 945.7 | 942.1 |
| 155° | 960.4 | 963.1 | 966.0 | 970.7 | 967.7 |
| 157.5° | 985.2 | 987.0 | 988.7 | 995.3 | 990.7 |
| 160° | 1007.1 | 1009.1 | 1010.0 | 1015.6 | 1011.7 |
| 162.5° | 1027.4 | 1027.4 | 1028.5 | 1034.7 | 1030.1 |
| 165° | 1044.9 | 1043.9 | 1043.9 | 1050.4 | 1045.9 |
| 167.5° | 1060.7 | 1057.6 | 1057.6 | 1064.3 | 1059.6 |
| 170° | 1072.5 | 1069.8 | 1068.8 | 1075.4 | 1069.8 |
| 172.5° | 1080.6 | 1078.1 | 1077.0 | 1083.7 | 1078.1 |
| 175° | 1087.3 | 1084.6 | 1082.6 | 1089.2 | 1083.7 |
| 177.5° | 1090.9 | 1088.2 | 1086.2 | 1091.8 | 1086.2 |
| 180° | 1089.2 | 1089.2 | 1089.2 | 1089.2 | 1089.2 |



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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 | 12.14 | 13.01 | 13.06 | 13.94 | 15.15 | 8.10 | 8.97 | 9.03 | 9.91 | 11.12 |
| | 3H | 13.80 | 14.57 | 14.73 | 15.52 | 16.75 | 9.28 | 10.06 | 10.21 | 11.00 | 12.23 |
| | 4H | 14.39 | 15.13 | 15.34 | 16.08 | 17.32 | 9.72 | 10.45 | 10.67 | 11.40 | 12.64 |
| | 6H | 14.80 | 15.48 | 15.76 | 16.43 | 17.68 | 10.03 | 10.70 | 10.99 | 11.66 | 12.91 |
| | 8H | 14.92 | 15.56 | 15.89 | 16.53 | 17.78 | 10.11 | 10.75 | 11.08 | 11.73 | 12.98 |
| | 12H | 14.97 | 15.58 | 15.95 | 16.55 | 17.83 | 10.15 | 10.76 | 11.12 | 11.73 | 13.00 |
| 4H | 2H | 12.15 | 12.89 | 13.11 | 13.84 | 15.08 | 8.69 | 9.43 | 9.65 | 10.38 | 11.62 |
| | 3H | 13.96 | 14.57 | 14.93 | 15.56 | 16.81 | 10.03 | 10.64 | 10.99 | 11.62 | 12.87 |
| | 4H | 14.64 | 15.20 | 15.62 | 16.17 | 17.45 | 10.56 | 11.12 | 11.54 | 12.09 | 13.37 |
| | 6H | 15.14 | 15.62 | 16.13 | 16.62 | 17.89 | 10.97 | 11.44 | 11.95 | 12.44 | 13.72 |
| | 8H | 15.30 | 15.75 | 16.29 | 16.74 | 18.03 | 11.09 | 11.53 | 12.07 | 12.52 | 13.81 |
| | 12H | 15.39 | 15.79 | 16.40 | 16.80 | 18.10 | 11.14 | 11.55 | 12.15 | 12.55 | 13.85 |
| 8H | 4H | 14.61 | 15.06 | 15.60 | 16.05 | 17.34 | 10.83 | 11.28 | 11.82 | 12.27 | 13.56 |
| | 6H | 15.15 | 15.52 | 16.17 | 16.56 | 17.85 | 11.33 | 11.70 | 12.34 | 12.73 | 14.02 |
| | 8H | 15.36 | 15.68 | 16.38 | 16.70 | 18.01 | 11.51 | 11.83 | 12.53 | 12.85 | 14.16 |
| | 12H | 15.48 | 15.77 | 16.51 | 16.78 | 18.14 | 11.61 | 11.90 | 12.64 | 12.92 | 14.27 |
| 12H | 4H | 14.56 | 14.96 | 15.57 | 15.97 | 17.27 | 10.84 | 11.24 | 11.84 | 12.25 | 13.54 |
| | 6H | 15.13 | 15.45 | 16.15 | 16.47 | 17.78 | 11.37 | 11.70 | 12.39 | 12.72 | 14.03 |
| | 8H | 15.34 | 15.62 | 16.36 | 16.64 | 17.99 | 11.57 | 11.86 | 12.59 | 12.87 | 14.23 |