

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: P925426

Luminaire Tested: DFN2DIP-SQ2F0-080D060US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925426
REPORT IS A COMBINATION OF REPORTS P899818 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D060US950-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

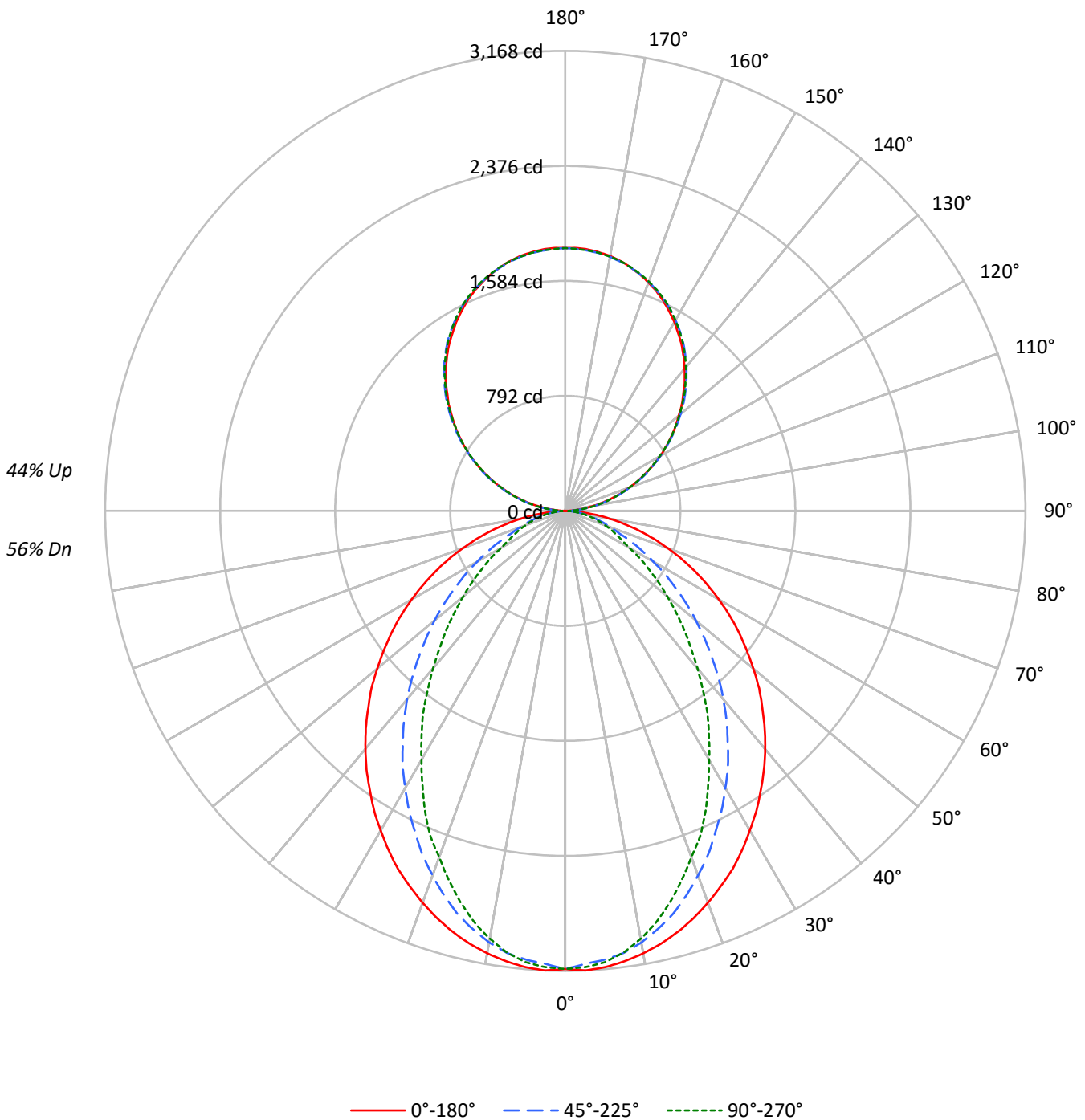
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11553.0 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925426
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Luminous Intensity Polar Plot





TEST NUMBER: P925426
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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 | 109 | 109 | 109 | 109 | 101 | 101 | 101 | 101 | 87 | 87 | 87 | 74 | 74 | 74 | 62 | 62 | 62 | 56 | 56 | 56 | 56 |
| 1 | 100 | 96 | 92 | 88 | 93 | 89 | 86 | 83 | 77 | 75 | 72 | 66 | 64 | 63 | 55 | 54 | 53 | 48 | 48 | 48 | 48 |
| 2 | 91 | 84 | 78 | 73 | 85 | 79 | 73 | 69 | 68 | 64 | 61 | 58 | 56 | 53 | 49 | 47 | 46 | 41 | 41 | 41 | 41 |
| 3 | 84 | 74 | 67 | 62 | 78 | 70 | 63 | 58 | 61 | 56 | 52 | 52 | 49 | 46 | 44 | 42 | 40 | 36 | 36 | 36 | 36 |
| 4 | 77 | 66 | 59 | 53 | 71 | 62 | 55 | 50 | 54 | 49 | 45 | 47 | 43 | 40 | 40 | 37 | 35 | 31 | 31 | 31 | 31 |
| 5 | 71 | 59 | 51 | 46 | 66 | 56 | 49 | 43 | 49 | 43 | 39 | 42 | 38 | 35 | 36 | 33 | 30 | 27 | 27 | 27 | 27 |
| 6 | 65 | 53 | 46 | 40 | 61 | 50 | 43 | 38 | 44 | 38 | 34 | 38 | 34 | 31 | 33 | 30 | 27 | 24 | 24 | 24 | 24 |
| 7 | 61 | 48 | 41 | 35 | 56 | 46 | 39 | 34 | 40 | 35 | 30 | 35 | 31 | 27 | 30 | 27 | 24 | 22 | 22 | 22 | 22 |
| 8 | 56 | 44 | 37 | 31 | 52 | 42 | 35 | 30 | 37 | 31 | 27 | 32 | 28 | 25 | 28 | 25 | 22 | 20 | 20 | 20 | 20 |
| 9 | 53 | 41 | 33 | 28 | 49 | 38 | 32 | 27 | 34 | 28 | 25 | 30 | 25 | 22 | 26 | 23 | 20 | 18 | 18 | 18 | 18 |
| 10 | 49 | 37 | 30 | 25 | 46 | 35 | 29 | 24 | 31 | 26 | 22 | 28 | 23 | 20 | 24 | 21 | 18 | 16 | 16 | 16 | 16 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 6936 | 6936 | 6936 |
| 5° | 6935 | 6811 | 6860 |
| 10° | 6854 | 6662 | 6627 |
| 15° | 6748 | 6427 | 6273 |
| 20° | 6611 | 6110 | 5842 |
| 25° | 6471 | 5757 | 5426 |
| 30° | 6287 | 5396 | 4902 |
| 35° | 6106 | 5010 | 4441 |
| 40° | 5921 | 4611 | 3915 |
| 45° | 5707 | 4172 | 3440 |
| 50° | 5485 | 3730 | 2975 |
| 55° | 5253 | 3259 | 2529 |
| 60° | 4983 | 2769 | 2073 |
| 65° | 4672 | 2273 | 1854 |
| 70° | 4294 | 1810 | 1665 |
| 75° | 3818 | 1567 | 1495 |
| 80° | 3135 | 1272 | 1266 |
| 85° | 2041 | 790 | 902 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5707 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 295.6 | 2.6 |
| 10°-20° | 811.5 | 7.0 |
| 20°-30° | 1139.4 | 9.9 |
| 30°-40° | 1242.0 | 10.8 |
| 40°-50° | 1141.5 | 9.9 |
| 50°-60° | 896.5 | 7.8 |
| 60°-70° | 583.5 | 5.1 |
| 70°-80° | 300.4 | 2.6 |
| 80°-90° | 81.8 | 0.7 |
| 90°-100° | 112.0 | 1.0 |
| 100°-110° | 355.9 | 3.1 |
| 110°-120° | 609.1 | 5.3 |
| 120°-130° | 801.1 | 6.9 |
| 130°-140° | 899.2 | 7.8 |
| 140°-150° | 881.7 | 7.6 |
| 150°-160° | 739.6 | 6.4 |
| 160°-170° | 490.5 | 4.2 |
| 170°-180° | 171.4 | 1.5 |
| 0°-30° | 2246.6 | 19.4 |
| 0°-40° | 3488.6 | 30.2 |
| 0°-60° | 5526.6 | 47.8 |
| 0°-90° | 6492.4 | 56.2 |
| 90°-120° | 1077.0 | 9.3 |
| 90°-150° | 3659.0 | 31.7 |
| 90°-180° | 5061.0 | 43.8 |
| 0°-180° | 11553.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3154 | 3154 | 3154 | 3154 | 3154 | |
| 5° | 3154 | 3140 | 3103 | 3128 | 3120 | 299 |
| 15° | 3000 | 2969 | 2872 | 2818 | 2789 | 845 |
| 25° | 2723 | 2632 | 2444 | 2327 | 2284 | 1252 |
| 35° | 2347 | 2201 | 1950 | 1770 | 1707 | 1469 |
| 45° | 1918 | 1727 | 1427 | 1224 | 1156 | 1481 |
| 55° | 1459 | 1236 | 928 | 756 | 702 | 1303 |
| 65° | 985 | 754 | 497 | 400 | 391 | 976 |
| 75° | 525 | 325 | 228 | 208 | 206 | 555 |
| 85° | 123 | 63 | 54 | 54 | 54 | 141 |
| 90° | 2 | 20 | 54 | 50 | 52 | 11 |
| 95° | 80 | 95 | 98 | 98 | 95 | 89 |
| 105° | 329 | 333 | 336 | 339 | 339 | 347 |
| 115° | 611 | 620 | 617 | 616 | 611 | 605 |
| 125° | 889 | 903 | 898 | 893 | 892 | 794 |
| 135° | 1150 | 1167 | 1170 | 1168 | 1164 | 889 |
| 145° | 1396 | 1407 | 1416 | 1417 | 1411 | 872 |
| 155° | 1596 | 1601 | 1606 | 1613 | 1608 | 735 |
| 165° | 1737 | 1735 | 1735 | 1746 | 1738 | 490 |
| 175° | 1807 | 1803 | 1799 | 1810 | 1801 | 172 |
| 180° | 1810 | 1810 | 1810 | 1810 | 1810 | |



TEST NUMBER: P925426

CATALOG NUMBER: DFN2DIP-SQ2F0-080D060US950-RLLFLL

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 3154.3 | 3154.3 | 3154.3 | 3154.3 | 3154.3 |
| 2.5° | 3168.5 | 3154.3 | 3122.8 | 3151.5 | 3145.8 |
| 5° | 3154.3 | 3140.1 | 3102.8 | 3128.5 | 3120.1 |
| 7.5° | 3128.5 | 3111.6 | 3071.6 | 3082.9 | 3068.5 |
| 10° | 3094.3 | 3074.4 | 3017.4 | 3008.6 | 2991.6 |
| 12.5° | 3051.7 | 3025.9 | 2948.6 | 2931.6 | 2900.2 |
| 15° | 3000.1 | 2968.7 | 2871.7 | 2817.5 | 2789.0 |
| 17.5° | 2940.1 | 2894.4 | 2774.5 | 2711.8 | 2666.0 |
| 20° | 2871.7 | 2814.5 | 2671.9 | 2600.7 | 2537.6 |
| 22.5° | 2797.5 | 2731.8 | 2566.2 | 2469.2 | 2426.5 |
| 25° | 2723.3 | 2631.9 | 2443.5 | 2326.6 | 2283.6 |
| 27.5° | 2634.9 | 2537.6 | 2329.3 | 2195.2 | 2129.4 |
| 30° | 2540.7 | 2431.9 | 2203.6 | 2058.3 | 1981.0 |
| 32.5° | 2449.2 | 2317.8 | 2084.0 | 1912.6 | 1841.1 |
| 35° | 2346.6 | 2200.9 | 1949.8 | 1770.0 | 1706.9 |
| 37.5° | 2246.6 | 2089.5 | 1824.1 | 1627.0 | 1555.8 |
| 40° | 2141.0 | 1969.8 | 1692.7 | 1490.1 | 1415.8 |
| 42.5° | 2032.5 | 1849.9 | 1561.5 | 1350.2 | 1278.9 |
| 45° | 1918.3 | 1726.9 | 1427.4 | 1224.5 | 1156.1 |
| 47.5° | 1809.9 | 1607.3 | 1299.0 | 1096.1 | 1033.4 |
| 50° | 1689.9 | 1487.4 | 1173.3 | 976.1 | 916.4 |
| 52.5° | 1572.8 | 1358.6 | 1053.3 | 865.0 | 810.8 |
| 55° | 1458.6 | 1236.0 | 927.7 | 756.5 | 702.3 |
| 57.5° | 1341.7 | 1113.3 | 816.5 | 656.6 | 610.8 |
| 60° | 1221.7 | 993.4 | 699.3 | 553.9 | 508.2 |
| 62.5° | 1104.8 | 876.4 | 599.4 | 462.5 | 439.8 |
| 65° | 984.9 | 753.5 | 496.7 | 399.8 | 390.9 |
| 67.5° | 870.7 | 639.4 | 399.8 | 351.0 | 342.6 |
| 70° | 750.8 | 528.2 | 331.0 | 302.5 | 291.1 |
| 72.5° | 636.6 | 425.2 | 276.9 | 254.1 | 248.3 |
| 75° | 525.2 | 325.3 | 228.4 | 208.4 | 205.7 |
| 77.5° | 414.0 | 231.1 | 179.9 | 168.4 | 162.7 |
| 80° | 311.0 | 165.7 | 136.9 | 125.6 | 125.6 |
| 82.5° | 216.8 | 111.4 | 94.2 | 88.4 | 88.4 |
| 85° | 122.7 | 62.7 | 54.2 | 54.2 | 54.2 |
| 87.5° | 45.7 | 22.7 | 22.7 | 20.0 | 20.0 |
| 90° | 1.6 | 19.7 | 53.5 | 50.2 | 51.8 |
| 92.5° | 33.9 | 45.9 | 47.5 | 49.1 | 49.1 |
| 95° | 79.7 | 94.9 | 97.7 | 97.7 | 94.9 |
| 97.5° | 132.6 | 146.8 | 152.8 | 152.8 | 152.8 |
| 100° | 193.8 | 206.3 | 210.6 | 210.6 | 209.0 |
| 102.5° | 258.2 | 267.4 | 273.4 | 275.0 | 273.4 |
| 105° | 328.6 | 332.9 | 336.2 | 339.0 | 339.0 |
| 107.5° | 398.4 | 405.0 | 405.0 | 406.0 | 398.4 |
| 110° | 466.1 | 474.8 | 474.8 | 474.8 | 470.4 |



TEST NUMBER: P925426

CATALOG NUMBER: DFN2DIP-SQ2F0-080D060US950-RLFL

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 539.2 | 548.5 | 546.8 | 542.4 | 539.2 |
| 115° | 611.2 | 620.0 | 617.2 | 615.6 | 611.2 |
| 117.5° | 682.8 | 694.8 | 687.1 | 682.8 | 678.4 |
| 120° | 754.8 | 766.8 | 754.8 | 754.8 | 749.8 |
| 122.5° | 820.2 | 835.5 | 827.9 | 823.6 | 820.2 |
| 125° | 889.0 | 902.7 | 898.3 | 893.4 | 891.8 |
| 127.5° | 956.2 | 973.1 | 967.1 | 960.6 | 956.2 |
| 130° | 1019.0 | 1038.6 | 1035.9 | 1032.6 | 1026.6 |
| 132.5° | 1089.4 | 1104.6 | 1105.7 | 1098.1 | 1093.7 |
| 135° | 1150.0 | 1166.8 | 1170.1 | 1168.5 | 1164.1 |
| 137.5° | 1217.6 | 1231.2 | 1234.0 | 1232.9 | 1226.4 |
| 140° | 1277.1 | 1290.8 | 1298.4 | 1298.4 | 1292.4 |
| 142.5° | 1338.2 | 1351.8 | 1356.2 | 1357.8 | 1351.8 |
| 145° | 1396.1 | 1407.0 | 1415.7 | 1417.4 | 1411.3 |
| 147.5° | 1447.9 | 1461.5 | 1468.1 | 1470.8 | 1464.8 |
| 150° | 1501.4 | 1510.7 | 1516.7 | 1521.5 | 1516.7 |
| 152.5° | 1548.8 | 1558.2 | 1565.8 | 1571.8 | 1565.8 |
| 155° | 1596.3 | 1600.7 | 1605.6 | 1613.3 | 1608.3 |
| 157.5° | 1637.3 | 1640.6 | 1643.3 | 1654.2 | 1646.6 |
| 160° | 1673.9 | 1677.1 | 1678.8 | 1688.0 | 1681.5 |
| 162.5° | 1707.7 | 1707.7 | 1709.3 | 1719.7 | 1712.0 |
| 165° | 1736.6 | 1734.9 | 1734.9 | 1745.9 | 1738.3 |
| 167.5° | 1762.8 | 1757.9 | 1757.9 | 1768.8 | 1761.2 |
| 170° | 1782.5 | 1778.1 | 1776.4 | 1787.3 | 1778.1 |
| 172.5° | 1796.1 | 1791.7 | 1790.1 | 1801.0 | 1791.7 |
| 175° | 1807.0 | 1802.7 | 1799.3 | 1810.3 | 1801.0 |
| 177.5° | 1813.0 | 1808.7 | 1805.3 | 1814.6 | 1805.3 |
| 180° | 1810.3 | 1810.3 | 1810.3 | 1810.3 | 1810.3 |



TEST NUMBER: P925426
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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 | 14.32 | 15.20 | 15.23 | 16.13 | 17.31 | 10.28 | 11.16 | 11.19 | 12.09 | 13.27 |
| | 3H | 15.98 | 16.77 | 16.90 | 17.70 | 18.91 | 11.45 | 12.24 | 12.38 | 13.18 | 14.39 |
| | 4H | 16.58 | 17.33 | 17.52 | 18.26 | 19.48 | 11.89 | 12.64 | 12.83 | 13.58 | 14.80 |
| | 6H | 16.99 | 17.68 | 17.94 | 18.62 | 19.85 | 12.20 | 12.89 | 13.15 | 13.83 | 15.06 |
| | 8H | 17.11 | 17.76 | 18.06 | 18.72 | 19.95 | 12.29 | 12.94 | 13.24 | 13.90 | 15.13 |
| | 12H | 17.16 | 17.78 | 18.12 | 18.74 | 19.99 | 12.32 | 12.94 | 13.28 | 13.90 | 15.15 |
| 4H | 2H | 14.34 | 15.09 | 15.28 | 16.02 | 17.24 | 10.87 | 11.62 | 11.81 | 12.56 | 13.77 |
| | 3H | 16.15 | 16.77 | 17.10 | 17.74 | 18.97 | 12.21 | 12.83 | 13.16 | 13.79 | 15.02 |
| | 4H | 16.83 | 17.40 | 17.79 | 18.36 | 19.61 | 12.74 | 13.31 | 13.70 | 14.27 | 15.52 |
| | 6H | 17.33 | 17.82 | 18.30 | 18.80 | 20.06 | 13.14 | 13.63 | 14.12 | 14.62 | 15.87 |
| | 8H | 17.49 | 17.95 | 18.47 | 18.93 | 20.20 | 13.26 | 13.72 | 14.24 | 14.70 | 15.96 |
| | 12H | 17.58 | 17.99 | 18.57 | 18.99 | 20.26 | 13.32 | 13.73 | 14.31 | 14.72 | 16.00 |
| 8H | 4H | 16.80 | 17.25 | 17.77 | 18.23 | 19.50 | 13.01 | 13.47 | 13.99 | 14.45 | 15.72 |
| | 6H | 17.34 | 17.72 | 18.34 | 18.74 | 20.01 | 13.51 | 13.88 | 14.51 | 14.90 | 16.17 |
| | 8H | 17.55 | 17.88 | 18.56 | 18.89 | 20.17 | 13.69 | 14.02 | 14.69 | 15.03 | 16.31 |
| | 12H | 17.67 | 17.97 | 18.69 | 18.97 | 20.30 | 13.79 | 14.08 | 14.80 | 15.09 | 16.42 |
| 12H | 4H | 16.75 | 17.16 | 17.74 | 18.16 | 19.43 | 13.02 | 13.43 | 14.01 | 14.42 | 15.70 |
| | 6H | 17.32 | 17.65 | 18.33 | 18.66 | 19.94 | 13.55 | 13.88 | 14.56 | 14.89 | 16.18 |
| | 8H | 17.53 | 17.82 | 18.54 | 18.82 | 20.15 | 13.75 | 14.04 | 14.76 | 15.04 | 16.37 |