

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: P919842

Luminaire Tested: DFN2DIP-SQ2F0-030D040US935-RLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P919842  
REPORT IS A COMBINATION OF REPORTS P899784 AND P896659  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-030D040US935-RLLFLL  
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

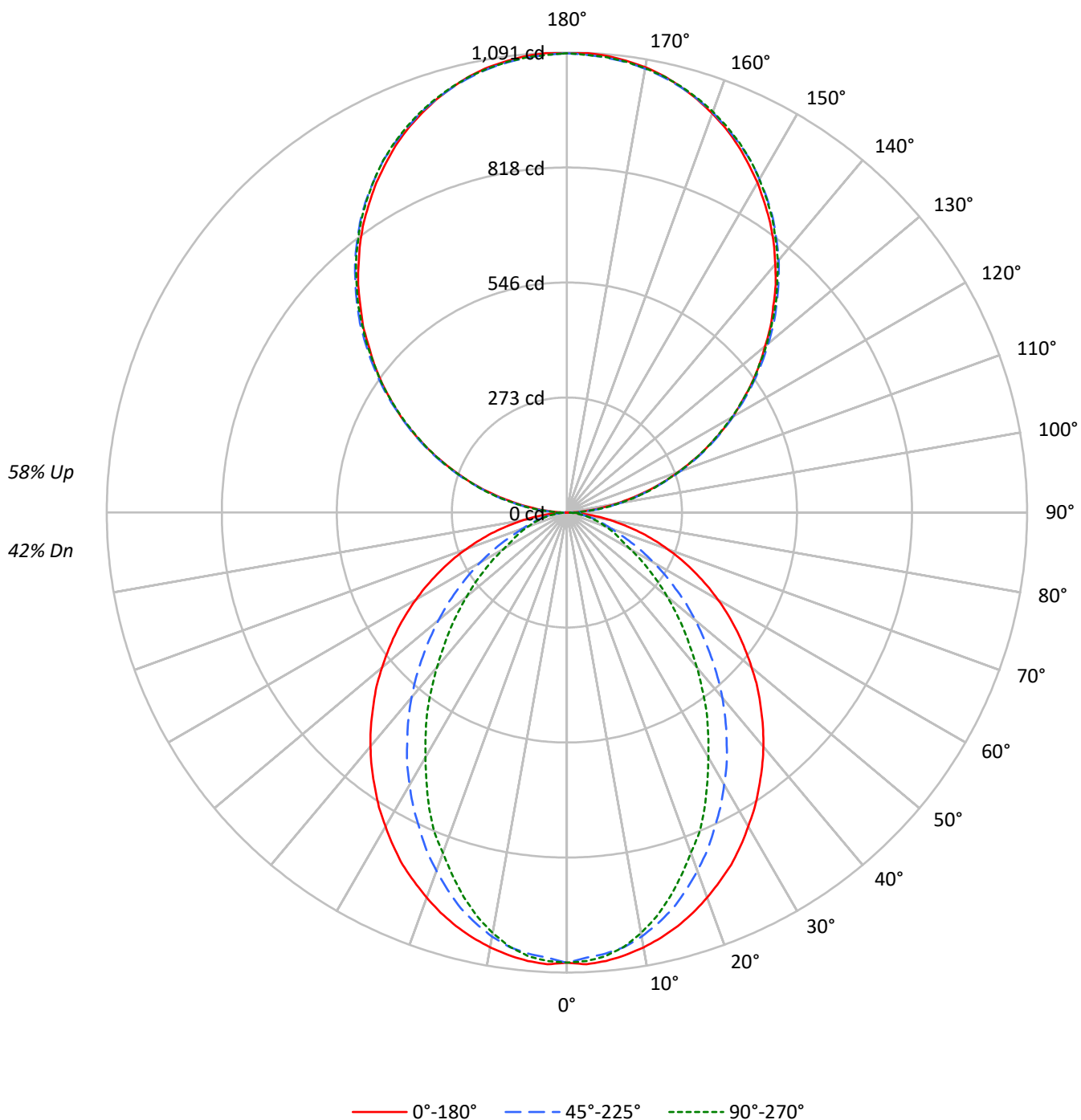
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5243.4 lumens  
Efficiency: N/A  
Efficacy: 99.9 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): 52.5  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9963  
Total Harmonic Distortion (THDi): 0.065  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLLFLL

### Luminous Intensity Polar Plot



TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLLFLL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20 |    |    |    | 20 |    |    |    | 20 |    |    |    | 20 |
| RC  | 80  |     |     |     | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |
| RW  | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 79 | 79 | 79 | 63 | 63 | 63 | 49 | 49 | 49 |
| 1   | 96  | 92  | 89  | 85  | 88 | 84 | 81 | 78 | 70 | 67 | 65 | 56 | 55 | 53 | 44 | 43 | 42 |
| 2   | 88  | 81  | 75  | 70  | 80 | 74 | 69 | 65 | 61 | 58 | 55 | 50 | 47 | 45 | 39 | 37 | 36 |
| 3   | 81  | 72  | 65  | 59  | 73 | 66 | 60 | 55 | 55 | 50 | 47 | 44 | 41 | 39 | 35 | 33 | 31 |
| 4   | 74  | 64  | 56  | 50  | 67 | 58 | 52 | 47 | 49 | 44 | 40 | 40 | 36 | 33 | 31 | 29 | 27 |
| 5   | 68  | 57  | 49  | 43  | 62 | 52 | 45 | 40 | 44 | 39 | 35 | 36 | 32 | 29 | 28 | 26 | 24 |
| 6   | 63  | 51  | 43  | 38  | 57 | 47 | 40 | 35 | 40 | 34 | 30 | 33 | 29 | 26 | 26 | 23 | 21 |
| 7   | 58  | 46  | 38  | 33  | 53 | 43 | 36 | 31 | 36 | 31 | 27 | 30 | 26 | 23 | 24 | 21 | 19 |
| 8   | 54  | 42  | 34  | 29  | 49 | 39 | 32 | 28 | 33 | 28 | 24 | 27 | 23 | 21 | 22 | 19 | 17 |
| 9   | 50  | 38  | 31  | 26  | 46 | 36 | 29 | 25 | 30 | 25 | 22 | 25 | 21 | 19 | 20 | 18 | 16 |
| 10  | 47  | 35  | 28  | 24  | 43 | 33 | 26 | 22 | 28 | 23 | 19 | 23 | 19 | 17 | 19 | 16 | 14 |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2348 | 2348 | 2348 |
| 5°  | 2347 | 2305 | 2321 |
| 10° | 2320 | 2255 | 2243 |
| 15° | 2284 | 2175 | 2123 |
| 20° | 2237 | 2068 | 1977 |
| 25° | 2190 | 1948 | 1836 |
| 30° | 2128 | 1826 | 1659 |
| 35° | 2067 | 1696 | 1503 |
| 40° | 2004 | 1561 | 1325 |
| 45° | 1932 | 1412 | 1164 |
| 50° | 1857 | 1262 | 1007 |
| 55° | 1778 | 1103 | 856  |
| 60° | 1686 | 937  | 702  |
| 65° | 1581 | 769  | 628  |
| 70° | 1453 | 612  | 563  |
| 75° | 1292 | 530  | 506  |
| 80° | 1061 | 430  | 428  |
| 85° | 690  | 267  | 304  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1932 cd/sqm

TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLLFLL

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 100.1  | 1.9       |
| 10°-20°   | 274.7  | 5.2       |
| 20°-30°   | 385.6  | 7.4       |
| 30°-40°   | 420.3  | 8.0       |
| 40°-50°   | 386.3  | 7.4       |
| 50°-60°   | 303.4  | 5.8       |
| 60°-70°   | 197.5  | 3.8       |
| 70°-80°   | 101.7  | 1.9       |
| 80°-90°   | 29.0   | 0.6       |
| 90°-100°  | 67.4   | 1.3       |
| 100°-110° | 214.2  | 4.1       |
| 110°-120° | 366.5  | 7.0       |
| 120°-130° | 482.0  | 9.2       |
| 130°-140° | 541.0  | 10.3      |
| 140°-150° | 530.5  | 10.1      |
| 150°-160° | 445.0  | 8.5       |
| 160°-170° | 295.1  | 5.6       |
| 170°-180° | 103.2  | 2.0       |
| 0°-30°    | 760.3  | 14.5      |
| 0°-40°    | 1180.7 | 22.5      |
| 0°-60°    | 1870.4 | 35.7      |
| 0°-90°    | 2198.6 | 41.9      |
| 90°-120°  | 648.0  | 12.4      |
| 90°-150°  | 2201.5 | 42.0      |
| 90°-180°  | 3045.0 | 58.1      |
| 0°-180°   | 5243.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1068 | 1068  | 1068 | 1068  | 1068 |      |
| 5°   | 1068 | 1063  | 1050 | 1059  | 1056 | 101  |
| 15°  | 1015 | 1005  | 972  | 954   | 944  | 286  |
| 25°  | 922  | 891   | 827  | 787   | 773  | 424  |
| 35°  | 794  | 745   | 660  | 599   | 578  | 497  |
| 45°  | 649  | 584   | 483  | 414   | 391  | 501  |
| 55°  | 494  | 418   | 314  | 256   | 238  | 441  |
| 65°  | 333  | 255   | 168  | 135   | 132  | 330  |
| 75°  | 178  | 110   | 77   | 70    | 70   | 188  |
| 85°  | 42   | 21    | 18   | 18    | 18   | 48   |
| 90°  | 1    | 12    | 32   | 30    | 31   | 5    |
| 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 |      |

TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLFL

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1067.6 | 1067.6 | 1067.6 | 1067.6 | 1067.6 |
| 2.5°   | 1072.4 | 1067.6 | 1056.9 | 1066.6 | 1064.7 |
| 5°     | 1067.6 | 1062.7 | 1050.2 | 1058.9 | 1055.9 |
| 7.5°   | 1058.9 | 1053.1 | 1039.6 | 1043.4 | 1038.5 |
| 10°    | 1047.2 | 1040.5 | 1021.2 | 1018.2 | 1012.5 |
| 12.5°  | 1032.8 | 1024.1 | 998.0  | 992.2  | 981.5  |
| 15°    | 1015.4 | 1004.7 | 971.9  | 953.6  | 943.9  |
| 17.5°  | 995.1  | 979.6  | 939.0  | 917.8  | 902.3  |
| 20°    | 971.9  | 952.5  | 904.2  | 880.2  | 858.8  |
| 22.5°  | 946.8  | 924.5  | 868.5  | 835.7  | 821.2  |
| 25°    | 921.7  | 890.7  | 827.0  | 787.4  | 772.8  |
| 27.5°  | 891.7  | 858.8  | 788.3  | 743.0  | 720.7  |
| 30°    | 859.9  | 823.1  | 745.8  | 696.6  | 670.5  |
| 32.5°  | 828.9  | 784.5  | 705.3  | 647.3  | 623.1  |
| 35°    | 794.2  | 744.8  | 659.9  | 599.0  | 577.7  |
| 37.5°  | 760.3  | 707.1  | 617.3  | 550.6  | 526.6  |
| 40°    | 724.6  | 666.7  | 572.9  | 504.3  | 479.2  |
| 42.5°  | 687.9  | 626.1  | 528.5  | 456.9  | 432.8  |
| 45°    | 649.3  | 584.4  | 483.1  | 414.4  | 391.2  |
| 47.5°  | 612.5  | 544.0  | 439.6  | 370.9  | 349.7  |
| 50°    | 572.0  | 503.3  | 397.1  | 330.4  | 310.1  |
| 52.5°  | 532.3  | 459.9  | 356.5  | 292.7  | 274.4  |
| 55°    | 493.6  | 418.3  | 313.9  | 256.1  | 237.7  |
| 57.5°  | 454.1  | 376.8  | 276.4  | 222.2  | 206.7  |
| 60°    | 413.5  | 336.2  | 236.7  | 187.4  | 172.0  |
| 62.5°  | 373.9  | 296.6  | 202.9  | 156.5  | 148.9  |
| 65°    | 333.3  | 255.0  | 168.1  | 135.3  | 132.3  |
| 67.5°  | 294.7  | 216.4  | 135.3  | 118.8  | 115.9  |
| 70°    | 254.1  | 178.7  | 112.0  | 102.4  | 98.5   |
| 72.5°  | 215.4  | 143.9  | 93.7   | 86.0   | 84.0   |
| 75°    | 177.7  | 110.1  | 77.3   | 70.5   | 69.6   |
| 77.5°  | 140.1  | 78.2   | 60.9   | 57.0   | 55.0   |
| 80°    | 105.3  | 56.1   | 46.3   | 42.5   | 42.5   |
| 82.5°  | 73.4   | 37.7   | 31.9   | 30.0   | 30.0   |
| 85°    | 41.5   | 21.2   | 18.3   | 18.3   | 18.3   |
| 87.5°  | 15.5   | 7.7    | 7.7    | 6.8    | 6.8    |
| 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  |

TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLLFLL

**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 |

TEST NUMBER: P919842

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US935-RLLFLL

**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 | 9.19             | 9.96  | 10.22 | 10.99 | 12.38 | 5.15           | 5.92 | 6.18 | 6.95 | 8.34  |
|                 | 3H   | 10.85            | 11.53 | 11.88 | 12.57 | 13.98 | 6.32           | 7.00 | 7.36 | 8.05 | 9.45  |
|                 | 4H   | 11.44            | 12.09 | 12.49 | 13.13 | 14.54 | 6.75           | 7.40 | 7.80 | 8.45 | 9.86  |
|                 | 6H   | 11.84            | 12.44 | 12.90 | 13.49 | 14.91 | 7.05           | 7.65 | 8.11 | 8.70 | 10.12 |
|                 | 8H   | 11.96            | 12.53 | 13.02 | 13.59 | 15.01 | 7.13           | 7.70 | 8.20 | 8.77 | 10.19 |
|                 | 12H  | 12.01            | 12.55 | 13.08 | 13.61 | 15.05 | 7.17           | 7.71 | 8.24 | 8.77 | 10.21 |
| 4H              | 2H   | 9.20             | 9.85  | 10.26 | 10.89 | 12.30 | 5.73           | 6.38 | 6.79 | 7.42 | 8.84  |
|                 | 3H   | 11.00            | 11.54 | 12.06 | 12.61 | 14.04 | 7.05           | 7.59 | 8.12 | 8.67 | 10.09 |
|                 | 4H   | 11.67            | 12.17 | 12.74 | 13.23 | 14.68 | 7.58           | 8.08 | 8.65 | 9.14 | 10.59 |
|                 | 6H   | 12.17            | 12.59 | 13.25 | 13.68 | 15.12 | 7.98           | 8.40 | 9.06 | 9.49 | 10.93 |
|                 | 8H   | 12.33            | 12.73 | 13.41 | 13.80 | 15.26 | 8.10           | 8.49 | 9.18 | 9.57 | 11.03 |
|                 | 12H  | 12.41            | 12.77 | 13.51 | 13.86 | 15.32 | 8.15           | 8.51 | 9.25 | 9.60 | 11.06 |
| 8H              | 4H   | 11.63            | 12.03 | 12.71 | 13.11 | 14.56 | 7.85           | 8.24 | 8.93 | 9.32 | 10.78 |
|                 | 6H   | 12.17            | 12.50 | 13.28 | 13.62 | 15.07 | 8.34           | 8.66 | 9.44 | 9.79 | 11.24 |
|                 | 8H   | 12.38            | 12.66 | 13.49 | 13.77 | 15.24 | 8.51           | 8.80 | 9.62 | 9.90 | 11.38 |
|                 | 12H  | 12.50            | 12.75 | 13.61 | 13.85 | 15.36 | 8.62           | 8.87 | 9.73 | 9.97 | 11.48 |
| 12H             | 4H   | 11.58            | 11.94 | 12.68 | 13.03 | 14.49 | 7.85           | 8.20 | 8.94 | 9.30 | 10.76 |
|                 | 6H   | 12.15            | 12.43 | 13.26 | 13.54 | 15.01 | 8.38           | 8.67 | 9.49 | 9.77 | 11.24 |
|                 | 8H   | 12.35            | 12.60 | 13.46 | 13.70 | 15.21 | 8.57           | 8.83 | 9.69 | 9.92 | 11.44 |