

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: P999001

Luminaire Tested: SA2XXDIP-B865D1080UB30-4F0-XX-W2A-D4

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P999001  
REPORT IS A COMBINATION OF REPORTS P984747 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B865D1080UB30-4F0-XX-W2A-D4  
Description: Define 2 Direct/Indirect Pendant with 3000K BioUP LEDs {m-DER=0.589} {m-EER=0.647}  
Light Source: -  
Ballast/Driver: -

**Summary**

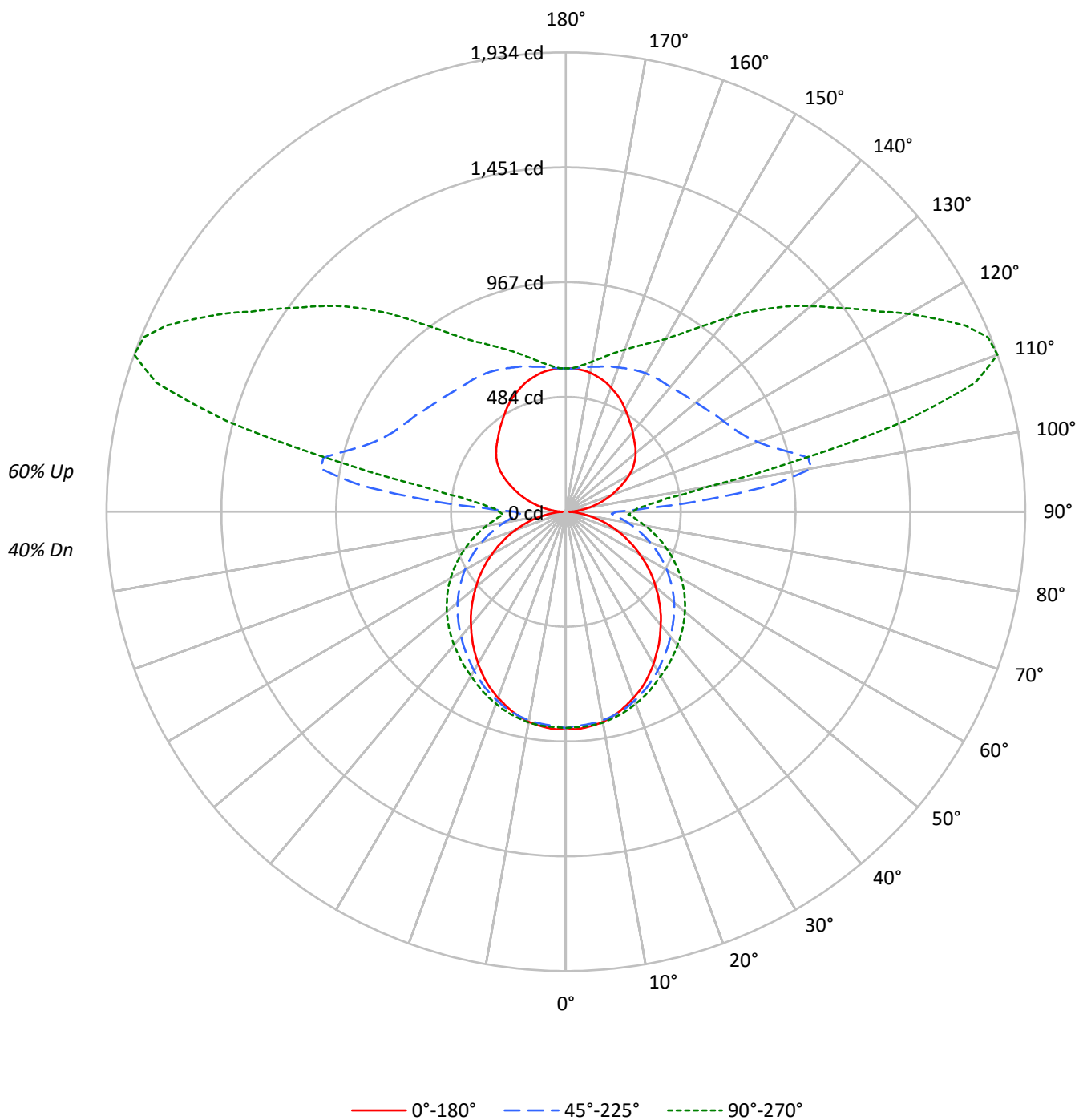
Lumens per Lamp: N/A  
Luminaire Lumens: 7685.8 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 81.8  
Input Voltage (V):  
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 |    |    |    |    | 0  |
| RW  | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 105 | 105 | 105 | 105 | 95 | 95 | 95 | 95 | 78 | 78 | 78 | 62 | 62 | 62 | 47 | 47 | 47 | 40 | 40 | 40 |
| 1   | 94  | 90  | 85  | 81  | 86 | 82 | 78 | 75 | 66 | 64 | 61 | 53 | 51 | 49 | 40 | 38 | 37 | 31 | 31 | 31 |
| 2   | 85  | 78  | 71  | 65  | 77 | 71 | 65 | 60 | 57 | 53 | 50 | 45 | 42 | 40 | 34 | 32 | 31 | 25 | 25 | 25 |
| 3   | 78  | 68  | 60  | 54  | 70 | 62 | 55 | 50 | 50 | 45 | 41 | 40 | 36 | 33 | 30 | 28 | 25 | 21 | 21 | 21 |
| 4   | 71  | 60  | 51  | 45  | 64 | 54 | 47 | 42 | 44 | 39 | 35 | 35 | 31 | 28 | 27 | 24 | 22 | 18 | 18 | 18 |
| 5   | 65  | 53  | 45  | 38  | 59 | 48 | 41 | 35 | 39 | 34 | 30 | 31 | 27 | 24 | 24 | 21 | 19 | 15 | 15 | 15 |
| 6   | 60  | 47  | 39  | 33  | 54 | 43 | 36 | 31 | 35 | 30 | 26 | 28 | 24 | 21 | 21 | 18 | 16 | 13 | 13 | 13 |
| 7   | 55  | 42  | 34  | 29  | 50 | 39 | 32 | 27 | 32 | 26 | 22 | 26 | 21 | 18 | 20 | 17 | 14 | 11 | 11 | 11 |
| 8   | 51  | 38  | 31  | 25  | 46 | 35 | 28 | 23 | 29 | 24 | 20 | 23 | 19 | 16 | 18 | 15 | 13 | 10 | 10 | 10 |
| 9   | 47  | 35  | 27  | 22  | 43 | 32 | 25 | 21 | 27 | 21 | 18 | 21 | 17 | 14 | 16 | 14 | 11 | 9  | 9  | 9  |
| 10  | 44  | 32  | 25  | 20  | 40 | 29 | 23 | 18 | 24 | 19 | 16 | 20 | 16 | 13 | 15 | 12 | 10 | 8  | 8  | 8  |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 14408 | 14408 | 14408 |
| 5°  | 14473 | 13793 | 13716 |
| 10° | 14375 | 13315 | 13121 |
| 15° | 14172 | 12822 | 12511 |
| 20° | 13917 | 12303 | 11934 |
| 25° | 13665 | 11806 | 11409 |
| 30° | 13310 | 11300 | 10889 |
| 35° | 12952 | 10814 | 10507 |
| 40° | 12575 | 10392 | 10129 |
| 45° | 12215 | 10011 | 9799  |
| 50° | 11830 | 9659  | 9472  |
| 55° | 11423 | 9285  | 9140  |
| 60° | 10927 | 8895  | 8791  |
| 65° | 10409 | 8448  | 8389  |
| 70° | 9826  | 7969  | 7957  |
| 75° | 9079  | 7486  | 7549  |
| 80° | 7896  | 6986  | 7127  |
| 85° | 6710  | 6516  | 6763  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12215 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 86.3   | 1.1       |
| 10°-20°   | 247.5  | 3.2       |
| 20°-30°   | 375.0  | 4.9       |
| 30°-40°   | 456.6  | 5.9       |
| 40°-50°   | 491.3  | 6.4       |
| 50°-60°   | 477.1  | 6.2       |
| 60°-70°   | 416.7  | 5.4       |
| 70°-80°   | 320.7  | 4.2       |
| 80°-90°   | 218.6  | 2.8       |
| 90°-100°  | 392.9  | 5.1       |
| 100°-110° | 935.6  | 12.2      |
| 110°-120° | 941.1  | 12.2      |
| 120°-130° | 754.9  | 9.8       |
| 130°-140° | 591.4  | 7.7       |
| 140°-150° | 436.9  | 5.7       |
| 150°-160° | 305.2  | 4.0       |
| 160°-170° | 179.7  | 2.3       |
| 170°-180° | 58.5   | 0.8       |
| 0°-30°    | 708.7  | 9.2       |
| 0°-40°    | 1165.3 | 15.2      |
| 0°-60°    | 2133.7 | 27.8      |
| 0°-90°    | 3089.7 | 40.2      |
| 90°-120°  | 2269.6 | 29.5      |
| 90°-150°  | 4052.8 | 52.7      |
| 90°-180°  | 4596.0 | 59.8      |
| 0°-180°   | 7685.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90°  | Flux |
|------|-----|-------|-----|-------|------|------|
| 0°   | 910 | 910   | 910 | 910   | 910  |      |
| 5°   | 913 | 909   | 901 | 909   | 908  | 87   |
| 15°  | 871 | 873   | 873 | 885   | 884  | 245  |
| 25°  | 792 | 801   | 813 | 828   | 832  | 364  |
| 35°  | 682 | 704   | 730 | 758   | 768  | 426  |
| 45°  | 559 | 595   | 641 | 682   | 695  | 432  |
| 55°  | 429 | 476   | 545 | 592   | 609  | 383  |
| 65°  | 293 | 358   | 435 | 489   | 506  | 291  |
| 75°  | 162 | 236   | 320 | 377   | 394  | 172  |
| 85°  | 48  | 129   | 214 | 269   | 288  | 50   |
| 90°  | 14  | 105   | 214 | 265   | 281  | 12   |
| 95°  | 51  | 172   | 607 | 374   | 350  | 50   |
| 105° | 148 | 259   | 974 | 1697  | 1482 | 158  |
| 115° | 255 | 335   | 799 | 1604  | 1855 | 252  |
| 125° | 351 | 415   | 737 | 1284  | 1489 | 312  |
| 135° | 410 | 489   | 698 | 1053  | 1210 | 317  |
| 145° | 467 | 536   | 680 | 852   | 939  | 293  |
| 155° | 531 | 573   | 661 | 747   | 777  | 244  |
| 165° | 578 | 596   | 633 | 671   | 682  | 163  |
| 175° | 602 | 603   | 608 | 616   | 614  | 57   |
| 180° | 604 | 604   | 604 | 604   | 604  |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°    | 67.5°  | 90°    |
|--------|-------|-------|--------|--------|--------|
| 0°     | 910.2 | 910.2 | 910.2  | 910.2  | 910.2  |
| 2.5°   | 916.8 | 912.8 | 903.6  | 910.2  | 907.6  |
| 5°     | 912.8 | 908.9 | 901.0  | 908.9  | 907.6  |
| 7.5°   | 906.2 | 903.6 | 897.0  | 906.2  | 904.9  |
| 10°    | 898.3 | 895.7 | 891.7  | 902.3  | 901.0  |
| 12.5°  | 885.1 | 886.5 | 883.8  | 894.4  | 893.1  |
| 15°    | 870.6 | 873.3 | 873.3  | 885.1  | 883.8  |
| 17.5°  | 852.2 | 857.4 | 861.4  | 873.3  | 873.3  |
| 20°    | 833.7 | 840.3 | 845.6  | 860.1  | 860.1  |
| 22.5°  | 813.9 | 821.8 | 829.7  | 844.2  | 846.9  |
| 25°    | 791.5 | 800.7 | 812.6  | 828.4  | 832.4  |
| 27.5°  | 765.1 | 779.6 | 792.8  | 812.6  | 815.2  |
| 30°    | 738.7 | 755.9 | 773.0  | 794.1  | 798.1  |
| 32.5°  | 709.7 | 729.5 | 750.6  | 775.6  | 783.6  |
| 35°    | 682.0 | 704.4 | 729.5  | 758.5  | 767.7  |
| 37.5°  | 651.6 | 676.7 | 708.4  | 740.0  | 749.3  |
| 40°    | 621.3 | 650.3 | 685.9  | 720.2  | 732.1  |
| 42.5°  | 592.3 | 621.3 | 663.5  | 701.8  | 713.6  |
| 45°    | 559.3 | 594.9 | 641.1  | 682.0  | 695.2  |
| 47.5°  | 527.7 | 565.9 | 618.7  | 660.9  | 675.4  |
| 50°    | 494.7 | 535.6 | 594.9  | 639.8  | 654.3  |
| 52.5°  | 463.0 | 506.5 | 569.9  | 616.0  | 631.9  |
| 55°    | 428.7 | 476.2 | 544.8  | 592.3  | 609.4  |
| 57.5°  | 395.7 | 448.5 | 517.1  | 568.5  | 585.7  |
| 60°    | 360.1 | 416.8 | 492.0  | 542.2  | 560.6  |
| 62.5°  | 328.5 | 387.8 | 463.0  | 517.1  | 534.2  |
| 65°    | 292.8 | 357.5 | 435.3  | 489.4  | 506.5  |
| 67.5°  | 261.2 | 328.5 | 407.6  | 461.7  | 480.2  |
| 70°    | 226.9 | 295.5 | 377.3  | 434.0  | 449.8  |
| 72.5°  | 195.2 | 266.5 | 349.6  | 405.0  | 424.8  |
| 75°    | 162.3 | 236.1 | 320.5  | 377.3  | 394.4  |
| 77.5°  | 130.6 | 207.1 | 292.8  | 349.6  | 368.0  |
| 80°    | 98.9  | 179.4 | 265.1  | 320.5  | 339.0  |
| 82.5°  | 72.6  | 151.7 | 238.8  | 294.2  | 311.3  |
| 85°    | 47.5  | 129.3 | 213.7  | 269.1  | 287.6  |
| 87.5°  | 29.0  | 108.2 | 192.6  | 246.7  | 263.8  |
| 90°    | 14.4  | 105.4 | 213.6  | 264.6  | 281.0  |
| 92.5°  | 29.3  | 137.0 | 341.1  | 296.2  | 300.3  |
| 95°    | 51.2  | 172.4 | 606.8  | 373.6  | 350.0  |
| 97.5°  | 69.6  | 197.8 | 884.3  | 536.1  | 428.8  |
| 100°   | 98.6  | 219.4 | 1049.0 | 867.4  | 610.8  |
| 102.5° | 124.0 | 239.4 | 1045.7 | 1331.2 | 995.0  |
| 105°   | 148.2 | 258.6 | 973.7  | 1697.2 | 1482.5 |
| 107.5° | 176.1 | 277.4 | 906.4  | 1823.2 | 1807.5 |
| 110°   | 202.7 | 297.0 | 859.0  | 1790.5 | 1933.9 |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5°  | 90°    |
|--------|-------|-------|-------|--------|--------|
| 112.5° | 228.2 | 316.6 | 824.3 | 1706.4 | 1922.4 |
| 115°   | 254.9 | 335.0 | 798.9 | 1604.1 | 1854.9 |
| 117.5° | 281.5 | 354.6 | 780.4 | 1507.3 | 1758.5 |
| 120°   | 307.0 | 373.8 | 764.4 | 1418.3 | 1666.7 |
| 122.5° | 331.4 | 394.8 | 751.8 | 1348.2 | 1569.0 |
| 125°   | 350.9 | 414.8 | 736.8 | 1283.8 | 1488.9 |
| 127.5° | 368.3 | 434.9 | 725.3 | 1226.2 | 1412.2 |
| 130°   | 383.4 | 454.0 | 715.1 | 1169.4 | 1347.1 |
| 132.5° | 397.3 | 472.6 | 706.1 | 1110.8 | 1281.0 |
| 135°   | 410.0 | 488.8 | 698.3 | 1053.4 | 1210.3 |
| 137.5° | 422.7 | 502.8 | 691.7 | 995.4  | 1140.5 |
| 140°   | 437.8 | 514.3 | 685.2 | 943.2  | 1068.4 |
| 142.5° | 452.9 | 524.8 | 682.6 | 894.0  | 997.6  |
| 145°   | 466.7 | 536.4 | 680.3 | 852.5  | 938.6  |
| 147.5° | 483.0 | 545.6 | 676.8 | 816.3  | 884.1  |
| 150°   | 499.2 | 555.0 | 673.3 | 789.4  | 839.4  |
| 152.5° | 515.5 | 564.2 | 667.5 | 768.0  | 805.7  |
| 155°   | 530.6 | 572.9 | 660.6 | 747.1  | 776.7  |
| 157.5° | 543.3 | 579.8 | 653.6 | 727.4  | 751.1  |
| 160°   | 556.1 | 586.8 | 646.6 | 707.6  | 726.8  |
| 162.5° | 568.9 | 592.0 | 640.8 | 689.0  | 703.5  |
| 165°   | 578.2 | 595.6 | 632.7 | 671.0  | 681.5  |
| 167.5° | 586.3 | 599.0 | 625.7 | 654.8  | 660.6  |
| 170°   | 594.4 | 600.8 | 619.9 | 639.6  | 642.0  |
| 172.5° | 599.0 | 602.6 | 613.0 | 626.3  | 626.9  |
| 175°   | 602.5 | 603.1 | 608.3 | 615.9  | 614.1  |
| 177.5° | 604.9 | 603.7 | 603.7 | 608.3  | 604.9  |
| 180°   | 603.7 | 603.7 | 603.7 | 603.7  | 603.7  |

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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 | 13.51            | 14.33 | 14.54 | 15.37 | 16.77 | 16.59          | 17.40 | 17.61 | 18.45 | 19.85 |
|                 | 3H   | 14.97            | 15.71 | 16.01 | 16.76 | 18.18 | 19.17          | 19.91 | 20.21 | 20.96 | 22.38 |
|                 | 4H   | 15.44            | 16.15 | 16.49 | 17.20 | 18.62 | 20.42          | 21.13 | 21.47 | 22.18 | 23.61 |
|                 | 6H   | 15.73            | 16.37 | 16.78 | 17.43 | 18.87 | 21.72          | 22.37 | 22.78 | 23.42 | 24.86 |
|                 | 8H   | 15.78            | 16.40 | 16.85 | 17.48 | 18.91 | 22.38          | 23.00 | 23.44 | 24.07 | 25.50 |
|                 | 12H  | 15.80            | 16.39 | 16.87 | 17.46 | 18.91 | 23.10          | 23.69 | 24.17 | 24.76 | 26.22 |
| 4H              | 2H   | 14.56            | 15.26 | 15.61 | 16.31 | 17.74 | 16.91          | 17.61 | 17.97 | 18.67 | 20.09 |
|                 | 3H   | 16.26            | 16.86 | 17.32 | 17.94 | 19.37 | 19.70          | 20.29 | 20.76 | 21.37 | 22.81 |
|                 | 4H   | 16.88            | 17.43 | 17.95 | 18.50 | 19.96 | 21.11          | 21.66 | 22.18 | 22.73 | 24.19 |
|                 | 6H   | 17.30            | 17.77 | 18.37 | 18.86 | 20.32 | 22.58          | 23.06 | 23.66 | 24.15 | 25.60 |
|                 | 8H   | 17.40            | 17.85 | 18.48 | 18.93 | 20.41 | 23.34          | 23.78 | 24.41 | 24.87 | 26.34 |
|                 | 12H  | 17.44            | 17.85 | 18.54 | 18.95 | 20.43 | 24.16          | 24.57 | 25.26 | 25.67 | 27.14 |
| 8H              | 4H   | 17.67            | 18.11 | 18.75 | 19.20 | 20.67 | 21.26          | 21.70 | 22.33 | 22.79 | 24.26 |
|                 | 6H   | 18.30            | 18.67 | 19.40 | 19.80 | 21.27 | 22.88          | 23.26 | 23.98 | 24.38 | 25.85 |
|                 | 8H   | 18.52            | 18.85 | 19.63 | 19.96 | 21.45 | 23.77          | 24.10 | 24.88 | 25.21 | 26.70 |
|                 | 12H  | 18.65            | 18.95 | 19.76 | 20.05 | 21.57 | 24.76          | 25.06 | 25.88 | 26.16 | 27.69 |
| 12H             | 4H   | 17.86            | 18.27 | 18.96 | 19.37 | 20.85 | 21.23          | 21.63 | 22.32 | 22.73 | 24.21 |
|                 | 6H   | 18.63            | 18.96 | 19.74 | 20.07 | 21.56 | 22.91          | 23.24 | 24.01 | 24.35 | 25.83 |
|                 | 8H   | 18.94            | 19.23 | 20.05 | 20.33 | 21.86 | 23.83          | 24.13 | 24.95 | 25.23 | 26.76 |