

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: P998423

Luminaire Tested: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998423  
REPORT IS A COMBINATION OF REPORTS P984165 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

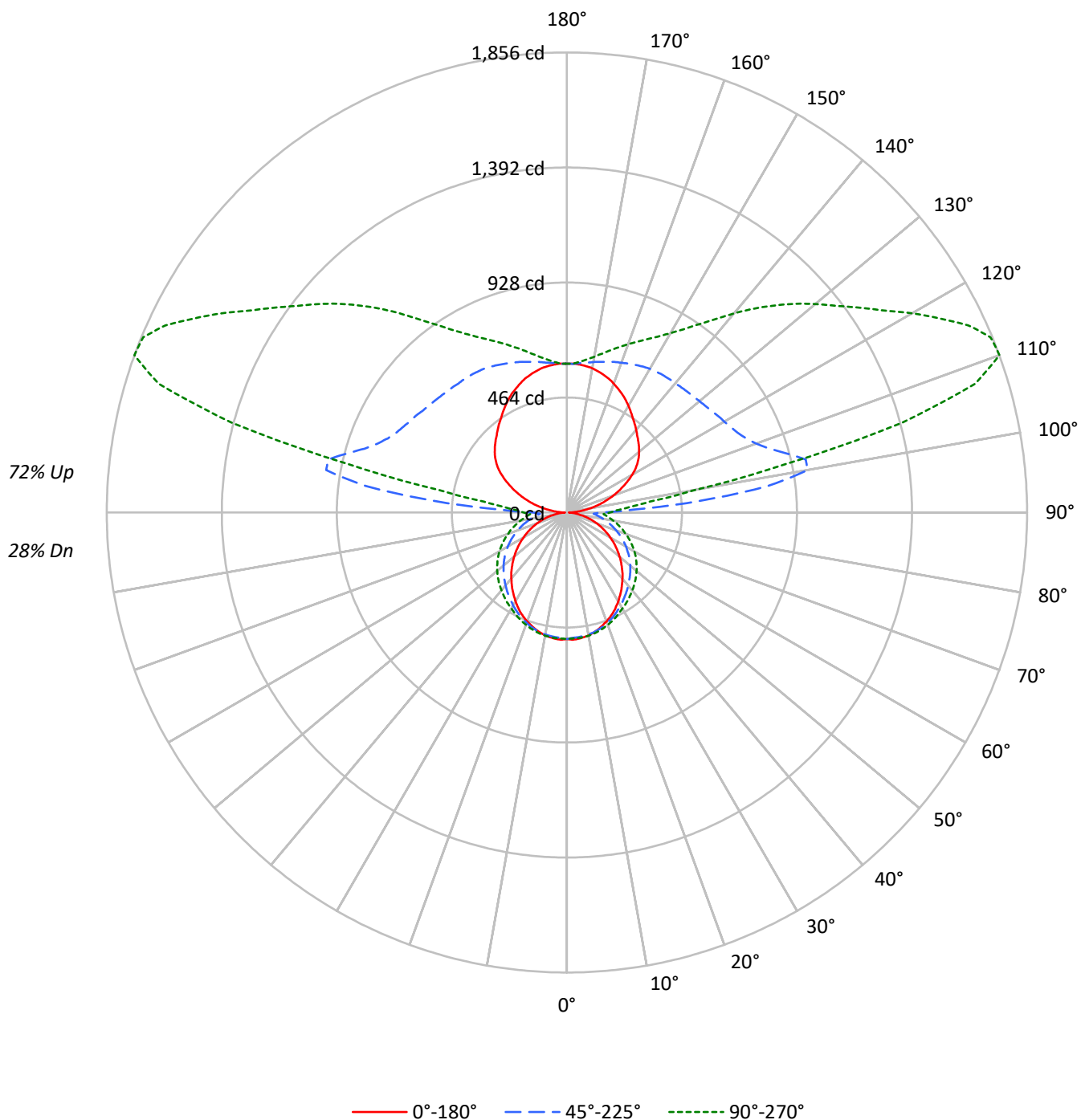
Lumens per Lamp: N/A  
Luminaire Lumens: 6135.8 lumens  
Efficiency: N/A  
Efficacy: 104.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Indirect

Input Watts (W): 59  
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 |    |    |    |    | 10 |
| RW  | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 102 | 102 | 102 | 102 | 91 | 91 | 91 | 91 | 71 | 71 | 71 | 53 | 53 | 53 | 36 | 36 | 36 |    |    | 28 |
| 1   | 92  | 87  | 83  | 80  | 82 | 78 | 75 | 72 | 61 | 59 | 56 | 45 | 44 | 42 | 31 | 30 | 29 |    |    | 22 |
| 2   | 83  | 76  | 70  | 64  | 74 | 68 | 63 | 58 | 53 | 49 | 46 | 39 | 37 | 35 | 26 | 25 | 24 |    |    | 18 |
| 3   | 76  | 66  | 59  | 53  | 67 | 59 | 53 | 48 | 46 | 42 | 38 | 34 | 31 | 29 | 23 | 21 | 20 |    |    | 15 |
| 4   | 69  | 58  | 51  | 45  | 61 | 52 | 46 | 40 | 41 | 36 | 32 | 30 | 27 | 24 | 20 | 18 | 17 |    |    | 12 |
| 5   | 63  | 52  | 44  | 38  | 56 | 46 | 40 | 34 | 36 | 31 | 28 | 27 | 24 | 21 | 18 | 16 | 14 |    |    | 11 |
| 6   | 58  | 46  | 38  | 32  | 52 | 42 | 35 | 30 | 33 | 28 | 24 | 24 | 21 | 18 | 17 | 14 | 12 |    |    | 9  |
| 7   | 54  | 42  | 34  | 28  | 48 | 37 | 31 | 26 | 29 | 24 | 21 | 22 | 18 | 16 | 15 | 13 | 11 |    |    | 8  |
| 8   | 50  | 37  | 30  | 25  | 44 | 34 | 27 | 22 | 27 | 22 | 18 | 20 | 17 | 14 | 14 | 11 | 10 |    |    | 7  |
| 9   | 46  | 34  | 27  | 22  | 41 | 31 | 24 | 20 | 24 | 19 | 16 | 18 | 15 | 12 | 13 | 10 | 9  |    |    | 6  |
| 10  | 43  | 31  | 24  | 19  | 38 | 28 | 22 | 18 | 22 | 18 | 14 | 17 | 13 | 11 | 12 | 9  | 8  |    |    | 6  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8078 | 8078 | 8078 |
| 5°  | 8113 | 7733 | 7689 |
| 10° | 8059 | 7464 | 7356 |
| 15° | 7946 | 7188 | 7014 |
| 20° | 7802 | 6896 | 6690 |
| 25° | 7660 | 6618 | 6395 |
| 30° | 7461 | 6336 | 6104 |
| 35° | 7260 | 6063 | 5891 |
| 40° | 7049 | 5826 | 5678 |
| 45° | 6849 | 5612 | 5493 |
| 50° | 6631 | 5415 | 5310 |
| 55° | 6403 | 5205 | 5125 |
| 60° | 6127 | 4986 | 4929 |
| 65° | 5837 | 4736 | 4704 |
| 70° | 5509 | 4467 | 4462 |
| 75° | 5091 | 4198 | 4232 |
| 80° | 4431 | 3916 | 3996 |
| 85° | 3757 | 3653 | 3791 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6849 cd/sqm

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CATALOG NUMBER: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 48.4   | 0.8       |
| 10°-20°   | 138.7  | 2.3       |
| 20°-30°   | 210.2  | 3.4       |
| 30°-40°   | 256.0  | 4.2       |
| 40°-50°   | 275.4  | 4.5       |
| 50°-60°   | 267.5  | 4.4       |
| 60°-70°   | 233.6  | 3.8       |
| 70°-80°   | 179.8  | 2.9       |
| 80°-90°   | 124.2  | 2.0       |
| 90°-100°  | 326.4  | 5.3       |
| 100°-110° | 883.3  | 14.4      |
| 110°-120° | 904.7  | 14.7      |
| 120°-130° | 733.4  | 12.0      |
| 130°-140° | 580.7  | 9.5       |
| 140°-150° | 433.2  | 7.1       |
| 150°-160° | 303.4  | 4.9       |
| 160°-170° | 178.7  | 2.9       |
| 170°-180° | 58.1   | 0.9       |
| 0°-30°    | 397.3  | 6.5       |
| 0°-40°    | 653.3  | 10.6      |
| 0°-60°    | 1196.2 | 19.5      |
| 0°-90°    | 1733.8 | 28.3      |
| 90°-120°  | 2114.4 | 34.5      |
| 90°-150°  | 3861.8 | 62.9      |
| 90°-180°  | 4402.0 | 71.7      |
| 0°-180°   | 6135.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90°  | Flux |
|------|-----|-------|-----|-------|------|------|
| 0°   | 510 | 510   | 510 | 510   | 510  |      |
| 5°   | 512 | 510   | 505 | 510   | 509  | 49   |
| 15°  | 488 | 490   | 490 | 496   | 496  | 137  |
| 25°  | 444 | 449   | 456 | 464   | 467  | 204  |
| 35°  | 382 | 395   | 409 | 425   | 430  | 239  |
| 45°  | 314 | 334   | 359 | 382   | 390  | 242  |
| 55°  | 240 | 267   | 305 | 332   | 342  | 215  |
| 65°  | 164 | 200   | 244 | 274   | 284  | 163  |
| 75°  | 91  | 132   | 180 | 212   | 221  | 96   |
| 85°  | 27  | 72    | 120 | 151   | 161  | 28   |
| 90°  | 9   | 66    | 137 | 165   | 174  | 8    |
| 95°  | 46  | 140   | 538 | 284   | 254  | 46   |
| 105° | 144 | 238   | 919 | 1618  | 1398 | 154  |
| 115° | 251 | 324   | 760 | 1544  | 1787 | 249  |
| 125° | 348 | 411   | 713 | 1242  | 1440 | 309  |
| 135° | 407 | 486   | 688 | 1029  | 1180 | 315  |
| 145° | 464 | 533   | 676 | 844   | 927  | 291  |
| 155° | 528 | 570   | 657 | 743   | 772  | 243  |
| 165° | 575 | 592   | 629 | 667   | 678  | 162  |
| 175° | 599 | 600   | 605 | 612   | 611  | 57   |
| 180° | 600 | 600   | 600 | 600   | 600  |      |

TEST NUMBER: P998423

CATALOG NUMBER: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5°  | 90°    |
|--------|-------|-------|-------|--------|--------|
| 0°     | 510.3 | 510.3 | 510.3 | 510.3  | 510.3  |
| 2.5°   | 514.0 | 511.7 | 506.6 | 510.3  | 508.8  |
| 5°     | 511.7 | 509.5 | 505.1 | 509.5  | 508.8  |
| 7.5°   | 508.0 | 506.6 | 502.9 | 508.0  | 507.3  |
| 10°    | 503.6 | 502.1 | 499.9 | 505.8  | 505.1  |
| 12.5°  | 496.2 | 497.0 | 495.5 | 501.4  | 500.7  |
| 15°    | 488.1 | 489.6 | 489.6 | 496.2  | 495.5  |
| 17.5°  | 477.7 | 480.7 | 482.9 | 489.6  | 489.6  |
| 20°    | 467.4 | 471.1 | 474.0 | 482.2  | 482.2  |
| 22.5°  | 456.3 | 460.7 | 465.2 | 473.3  | 474.8  |
| 25°    | 443.7 | 448.9 | 455.5 | 464.4  | 466.6  |
| 27.5°  | 428.9 | 437.1 | 444.4 | 455.5  | 457.0  |
| 30°    | 414.1 | 423.7 | 433.4 | 445.2  | 447.4  |
| 32.5°  | 397.9 | 409.0 | 420.8 | 434.8  | 439.3  |
| 35°    | 382.3 | 394.9 | 409.0 | 425.2  | 430.4  |
| 37.5°  | 365.3 | 379.4 | 397.1 | 414.9  | 420.0  |
| 40°    | 348.3 | 364.6 | 384.5 | 403.8  | 410.4  |
| 42.5°  | 332.0 | 348.3 | 372.0 | 393.4  | 400.1  |
| 45°    | 313.6 | 333.5 | 359.4 | 382.3  | 389.7  |
| 47.5°  | 295.8 | 317.3 | 346.8 | 370.5  | 378.6  |
| 50°    | 277.3 | 300.2 | 333.5 | 358.7  | 366.8  |
| 52.5°  | 259.6 | 284.0 | 319.5 | 345.4  | 354.2  |
| 55°    | 240.3 | 267.0 | 305.4 | 332.0  | 341.7  |
| 57.5°  | 221.9 | 251.4 | 289.9 | 318.7  | 328.3  |
| 60°    | 201.9 | 233.7 | 275.8 | 303.9  | 314.3  |
| 62.5°  | 184.1 | 217.4 | 259.6 | 289.9  | 299.5  |
| 65°    | 164.2 | 200.4 | 244.0 | 274.4  | 284.0  |
| 67.5°  | 146.4 | 184.1 | 228.5 | 258.8  | 269.2  |
| 70°    | 127.2 | 165.7 | 211.5 | 243.3  | 252.2  |
| 72.5°  | 109.4 | 149.4 | 196.0 | 227.0  | 238.1  |
| 75°    | 91.0  | 132.4 | 179.7 | 211.5  | 221.1  |
| 77.5°  | 73.2  | 116.1 | 164.2 | 196.0  | 206.3  |
| 80°    | 55.5  | 100.6 | 148.6 | 179.7  | 190.1  |
| 82.5°  | 40.7  | 85.0  | 133.9 | 164.9  | 174.5  |
| 85°    | 26.6  | 72.5  | 119.8 | 150.9  | 161.2  |
| 87.5°  | 16.3  | 60.6  | 108.0 | 138.3  | 147.9  |
| 90°    | 8.6   | 65.9  | 136.8 | 164.7  | 174.2  |
| 92.5°  | 24.0  | 100.8 | 268.8 | 201.8  | 199.1  |
| 95°    | 46.3  | 140.0 | 537.5 | 283.9  | 253.6  |
| 97.5°  | 65.2  | 168.0 | 817.5 | 450.0  | 336.6  |
| 100°   | 94.1  | 193.0 | 985.9 | 784.0  | 522.6  |
| 102.5° | 119.8 | 215.8 | 986.5 | 1249.8 | 909.2  |
| 105°   | 144.5 | 237.5 | 919.0 | 1618.4 | 1398.5 |
| 107.5° | 172.2 | 259.2 | 856.0 | 1748.1 | 1726.2 |
| 110°   | 199.2 | 281.4 | 812.4 | 1720.2 | 1856.5 |

TEST NUMBER: P998423

CATALOG NUMBER: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4

**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5°  | 90°    |
|--------|-------|-------|-------|--------|--------|
| 112.5° | 224.6 | 303.4 | 781.8 | 1640.6 | 1849.0 |
| 115°   | 251.2 | 324.5 | 760.1 | 1543.6 | 1786.6 |
| 117.5° | 278.1 | 346.4 | 745.6 | 1451.2 | 1695.2 |
| 120°   | 303.5 | 367.7 | 733.2 | 1367.4 | 1608.1 |
| 122.5° | 327.7 | 390.2 | 724.0 | 1301.6 | 1516.0 |
| 125°   | 347.8 | 411.2 | 713.1 | 1241.6 | 1440.5 |
| 127.5° | 365.1 | 431.8 | 705.2 | 1188.9 | 1368.8 |
| 130°   | 380.1 | 450.8 | 698.5 | 1136.4 | 1308.5 |
| 132.5° | 394.0 | 469.4 | 692.9 | 1082.1 | 1246.8 |
| 135°   | 407.0 | 485.6 | 688.0 | 1029.1 | 1180.5 |
| 137.5° | 419.7 | 499.4 | 684.3 | 975.4  | 1115.7 |
| 140°   | 434.7 | 511.4 | 680.2 | 927.5  | 1048.5 |
| 142.5° | 449.7 | 521.8 | 678.7 | 882.1  | 982.2  |
| 145°   | 464.0 | 533.3 | 676.4 | 844.2  | 926.9  |
| 147.5° | 480.2 | 542.6 | 673.0 | 811.0  | 876.8  |
| 150°   | 496.4 | 551.8 | 669.5 | 785.0  | 834.6  |
| 152.5° | 512.5 | 561.0 | 663.7 | 763.6  | 801.1  |
| 155°   | 527.5 | 569.6 | 656.8 | 742.8  | 772.2  |
| 157.5° | 540.2 | 576.6 | 649.9 | 723.2  | 746.8  |
| 160°   | 552.9 | 583.6 | 643.0 | 703.6  | 722.6  |
| 162.5° | 565.6 | 588.7 | 637.2 | 685.1  | 699.5  |
| 165°   | 574.9 | 592.2 | 629.1 | 667.2  | 677.6  |
| 167.5° | 582.9 | 595.6 | 622.2 | 651.0  | 656.8  |
| 170°   | 591.0 | 597.4 | 616.4 | 636.0  | 638.3  |
| 172.5° | 595.6 | 599.0 | 609.5 | 622.8  | 623.3  |
| 175°   | 599.1 | 599.7 | 604.9 | 612.3  | 610.6  |
| 177.5° | 601.4 | 600.2 | 600.2 | 604.9  | 601.4  |
| 180°   | 600.2 | 600.2 | 600.2 | 600.2  | 600.2  |

TEST NUMBER: P998423

CATALOG NUMBER: SA2XXDIP-B485D1080UB40-4F0-XX-W2A-D4

**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 | 10.04            | 10.76 | 11.15 | 11.87 | 13.42 | 13.11          | 13.83 | 14.23 | 14.95 | 16.50 |
|                 | 3H   | 11.49            | 12.14 | 12.61 | 13.26 | 14.82 | 15.69          | 16.34 | 16.82 | 17.46 | 19.03 |
|                 | 4H   | 11.96            | 12.58 | 13.09 | 13.70 | 15.27 | 16.94          | 17.56 | 18.07 | 18.68 | 20.25 |
|                 | 6H   | 12.24            | 12.81 | 13.38 | 13.93 | 15.51 | 18.23          | 18.80 | 19.37 | 19.93 | 21.51 |
|                 | 8H   | 12.29            | 12.83 | 13.44 | 13.98 | 15.55 | 18.88          | 19.43 | 20.03 | 20.57 | 22.14 |
|                 | 12H  | 12.30            | 12.82 | 13.45 | 13.96 | 15.55 | 19.61          | 20.12 | 20.75 | 21.26 | 22.86 |
| 4H              | 2H   | 11.07            | 11.69 | 12.21 | 12.81 | 14.38 | 13.43          | 14.04 | 14.57 | 15.17 | 16.74 |
|                 | 3H   | 12.77            | 13.29 | 13.92 | 14.44 | 16.02 | 16.21          | 16.73 | 17.35 | 17.88 | 19.46 |
|                 | 4H   | 13.39            | 13.87 | 14.54 | 15.01 | 16.61 | 17.62          | 18.10 | 18.77 | 19.24 | 20.84 |
|                 | 6H   | 13.79            | 14.21 | 14.95 | 15.37 | 16.96 | 19.08          | 19.49 | 20.23 | 20.66 | 22.25 |
|                 | 8H   | 13.90            | 14.29 | 15.05 | 15.44 | 17.05 | 19.83          | 20.22 | 20.99 | 21.37 | 22.98 |
|                 | 12H  | 13.94            | 14.29 | 15.11 | 15.45 | 17.07 | 20.65          | 21.01 | 21.83 | 22.17 | 23.79 |
| 8H              | 4H   | 14.17            | 14.55 | 15.32 | 15.71 | 17.32 | 17.75          | 18.14 | 18.91 | 19.29 | 20.90 |
|                 | 6H   | 14.79            | 15.12 | 15.97 | 16.31 | 17.92 | 19.38          | 19.70 | 20.55 | 20.89 | 22.50 |
|                 | 8H   | 15.01            | 15.30 | 16.19 | 16.47 | 18.09 | 20.26          | 20.55 | 21.44 | 21.72 | 23.35 |
|                 | 12H  | 15.14            | 15.39 | 16.32 | 16.56 | 18.22 | 21.25          | 21.50 | 22.43 | 22.67 | 24.33 |
| 12H             | 4H   | 14.36            | 14.71 | 15.53 | 15.87 | 17.49 | 17.72          | 18.07 | 18.89 | 19.24 | 20.85 |
|                 | 6H   | 15.13            | 15.41 | 16.30 | 16.58 | 18.21 | 19.40          | 19.68 | 20.58 | 20.86 | 22.48 |
|                 | 8H   | 15.42            | 15.67 | 16.61 | 16.84 | 18.50 | 20.32          | 20.57 | 21.50 | 21.74 | 23.40 |