

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: P997949

Luminaire Tested: SA2XXDIP-B1005D530UB40-4F0-XX-W2A-F

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P997949  
REPORT IS A COMBINATION OF REPORTS P983686 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B1005D530UB40-4F0-XX-W2A-F  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

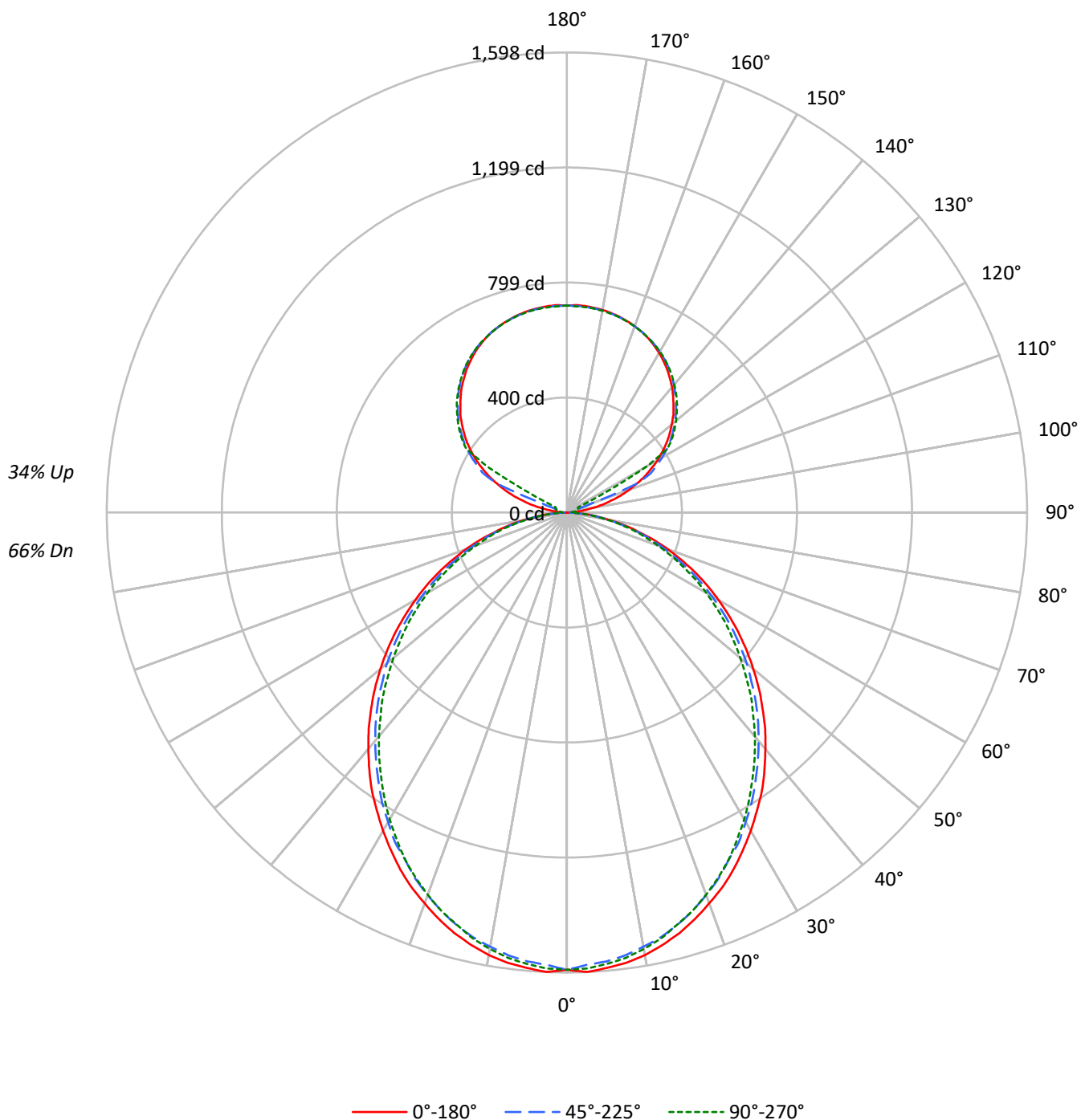
Lumens per Lamp: N/A  
Luminaire Lumens: 6149.0 lumens  
Efficiency: N/A  
Efficacy: 80.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 76.7  
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 |
| RCR |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
| 0   | 111 | 111 | 111 | 111 | 104 | 104 | 104 | 104 | 92 | 92 | 92 | 81 | 81 | 81 | 71 | 71 | 71 |
| 1   | 101 | 97  | 93  | 89  | 95  | 91  | 88  | 85  | 81 | 78 | 76 | 71 | 69 | 67 | 62 | 61 | 60 |
| 2   | 92  | 85  | 78  | 73  | 87  | 80  | 74  | 70  | 71 | 67 | 63 | 63 | 59 | 56 | 55 | 52 | 50 |
| 3   | 84  | 74  | 67  | 61  | 79  | 70  | 64  | 58  | 63 | 57 | 53 | 55 | 51 | 48 | 49 | 46 | 43 |
| 4   | 77  | 66  | 58  | 52  | 72  | 62  | 55  | 49  | 56 | 50 | 45 | 49 | 45 | 41 | 44 | 40 | 37 |
| 5   | 71  | 59  | 51  | 44  | 66  | 56  | 48  | 43  | 50 | 44 | 39 | 44 | 39 | 36 | 39 | 35 | 32 |
| 6   | 65  | 53  | 45  | 39  | 61  | 50  | 43  | 37  | 45 | 39 | 34 | 40 | 35 | 31 | 36 | 32 | 28 |
| 7   | 61  | 48  | 40  | 34  | 57  | 45  | 38  | 33  | 41 | 35 | 30 | 37 | 32 | 28 | 33 | 28 | 25 |
| 8   | 56  | 44  | 36  | 30  | 53  | 41  | 34  | 29  | 37 | 31 | 27 | 34 | 28 | 25 | 30 | 26 | 23 |
| 9   | 52  | 40  | 32  | 27  | 49  | 38  | 31  | 26  | 34 | 28 | 24 | 31 | 26 | 22 | 28 | 24 | 21 |
| 10  | 49  | 37  | 29  | 24  | 46  | 35  | 28  | 24  | 32 | 26 | 22 | 29 | 24 | 20 | 26 | 22 | 19 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 25142 | 25142 | 25142 |
| 5°  | 25183 | 23965 | 23795 |
| 10° | 24979 | 22873 | 22420 |
| 15° | 24613 | 21773 | 20971 |
| 20° | 24118 | 20575 | 19601 |
| 25° | 23625 | 19325 | 18232 |
| 30° | 23005 | 18152 | 16796 |
| 35° | 22421 | 16912 | 15385 |
| 40° | 21698 | 15689 | 14051 |
| 45° | 20979 | 14475 | 12743 |
| 50° | 20197 | 13242 | 11386 |
| 55° | 19372 | 11922 | 10101 |
| 60° | 18443 | 10493 | 8766  |
| 65° | 17426 | 9040  | 7360  |
| 70° | 16136 | 7451  | 5944  |
| 75° | 14354 | 5744  | 4590  |
| 80° | 12191 | 3903  | 2954  |
| 85° | 8843  | 1817  | 1258  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 20979 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 149.5  | 2.4       |
| 10°-20°   | 420.6  | 6.8       |
| 20°-30°   | 618.1  | 10.1      |
| 30°-40°   | 717.9  | 11.7      |
| 40°-50°   | 717.0  | 11.7      |
| 50°-60°   | 625.2  | 10.2      |
| 60°-70°   | 462.2  | 7.5       |
| 70°-80°   | 261.5  | 4.3       |
| 80°-90°   | 70.3   | 1.1       |
| 90°-100°  | 23.7   | 0.4       |
| 100°-110° | 88.3   | 1.4       |
| 110°-120° | 234.3  | 3.8       |
| 120°-130° | 388.6  | 6.3       |
| 130°-140° | 412.7  | 6.7       |
| 140°-150° | 383.6  | 6.2       |
| 150°-160° | 308.4  | 5.0       |
| 160°-170° | 198.7  | 3.2       |
| 170°-180° | 68.4   | 1.1       |
| 0°-30°    | 1188.2 | 19.3      |
| 0°-40°    | 1906.1 | 31.0      |
| 0°-60°    | 3248.3 | 52.8      |
| 0°-90°    | 4042.3 | 65.7      |
| 90°-120°  | 346.3  | 5.6       |
| 90°-150°  | 1531.2 | 24.9      |
| 90°-180°  | 2107.0 | 34.3      |
| 0°-180°   | 6149.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1588 | 1588  | 1588 | 1588  | 1588 |      |
| 5°   | 1588 | 1582  | 1565 | 1578  | 1575 | 151  |
| 15°  | 1512 | 1503  | 1483 | 1489  | 1481 | 426  |
| 25°  | 1368 | 1356  | 1330 | 1333  | 1330 | 630  |
| 35°  | 1181 | 1165  | 1141 | 1132  | 1124 | 737  |
| 45°  | 961  | 950   | 927  | 910   | 904  | 741  |
| 55°  | 727  | 718   | 700  | 681   | 674  | 650  |
| 65°  | 490  | 481   | 466  | 452   | 444  | 485  |
| 75°  | 257  | 254   | 246  | 237   | 240  | 274  |
| 85°  | 63   | 61    | 60   | 55    | 54   | 70   |
| 90°  | 0    | 6     | 10   | 13    | 14   | 6    |
| 95°  | 34   | 17    | 20   | 23    | 22   | 40   |
| 105° | 158  | 174   | 32   | 37    | 40   | 169  |
| 115° | 299  | 308   | 321  | 80    | 43   | 294  |
| 125° | 423  | 430   | 439  | 443   | 445  | 377  |
| 135° | 523  | 531   | 536  | 541   | 540  | 404  |
| 145° | 607  | 606   | 615  | 619   | 616  | 380  |
| 155° | 668  | 664   | 670  | 673   | 669  | 308  |
| 165° | 704  | 701   | 702  | 706   | 702  | 199  |
| 175° | 720  | 716   | 718  | 721   | 716  | 69   |
| 180° | 719  | 719   | 719  | 719   | 719  |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1588.3 | 1588.3 | 1588.3 | 1588.3 | 1588.3 |
| 2.5°   | 1597.5 | 1589.9 | 1573.1 | 1588.3 | 1585.3 |
| 5°     | 1588.3 | 1582.2 | 1565.4 | 1577.7 | 1574.6 |
| 7.5°   | 1577.7 | 1568.5 | 1551.7 | 1563.9 | 1560.9 |
| 10°    | 1560.9 | 1550.2 | 1531.8 | 1544.1 | 1539.5 |
| 12.5°  | 1537.9 | 1528.8 | 1510.5 | 1518.1 | 1515.0 |
| 15°    | 1512.0 | 1502.8 | 1483.0 | 1489.1 | 1481.4 |
| 17.5°  | 1479.9 | 1470.7 | 1450.9 | 1458.5 | 1450.9 |
| 20°    | 1444.8 | 1435.6 | 1414.2 | 1418.8 | 1412.7 |
| 22.5°  | 1409.7 | 1395.9 | 1376.1 | 1376.1 | 1373.0 |
| 25°    | 1368.4 | 1356.2 | 1330.2 | 1333.3 | 1330.2 |
| 27.5°  | 1322.6 | 1311.9 | 1292.1 | 1287.5 | 1279.8 |
| 30°    | 1276.8 | 1264.6 | 1241.7 | 1237.1 | 1231.0 |
| 32.5°  | 1227.9 | 1218.7 | 1194.3 | 1185.1 | 1179.0 |
| 35°    | 1180.6 | 1165.3 | 1140.9 | 1131.7 | 1124.1 |
| 37.5°  | 1127.1 | 1113.4 | 1088.9 | 1078.2 | 1070.6 |
| 40°    | 1072.1 | 1059.9 | 1035.5 | 1021.7 | 1015.6 |
| 42.5°  | 1018.7 | 1006.5 | 982.0  | 966.8  | 957.6  |
| 45°    | 960.6  | 950.0  | 927.0  | 910.2  | 904.1  |
| 47.5°  | 904.1  | 893.4  | 869.0  | 852.2  | 843.0  |
| 50°    | 844.6  | 836.9  | 815.6  | 794.2  | 786.5  |
| 52.5°  | 786.5  | 775.8  | 756.0  | 739.2  | 728.5  |
| 55°    | 727.0  | 717.8  | 699.5  | 681.2  | 673.5  |
| 57.5°  | 667.4  | 659.8  | 639.9  | 621.6  | 615.5  |
| 60°    | 607.8  | 601.7  | 580.4  | 563.6  | 559.0  |
| 62.5°  | 549.8  | 539.1  | 523.8  | 508.6  | 502.5  |
| 65°    | 490.2  | 481.1  | 465.8  | 452.1  | 444.4  |
| 67.5°  | 429.2  | 421.5  | 407.8  | 397.1  | 391.0  |
| 70°    | 372.6  | 366.5  | 352.8  | 342.1  | 336.0  |
| 72.5°  | 314.6  | 308.5  | 300.9  | 290.2  | 285.6  |
| 75°    | 256.6  | 253.5  | 245.9  | 236.7  | 239.8  |
| 77.5°  | 204.7  | 198.5  | 195.5  | 190.9  | 186.3  |
| 80°    | 152.7  | 151.2  | 148.1  | 143.6  | 140.5  |
| 82.5°  | 103.9  | 103.9  | 102.3  | 96.2   | 96.2   |
| 85°    | 62.6   | 61.1   | 59.6   | 55.0   | 53.5   |
| 87.5°  | 27.5   | 24.4   | 21.4   | 16.8   | 15.3   |
| 90°    | 0.5    | 6.2    | 10.4   | 13.0   | 14.0   |
| 92.5°  | 13.0   | 10.9   | 12.5   | 13.5   | 14.0   |
| 95°    | 33.8   | 16.6   | 20.3   | 22.9   | 22.4   |
| 97.5°  | 60.8   | 18.2   | 26.5   | 28.1   | 28.6   |
| 100°   | 92.0   | 20.8   | 29.6   | 33.8   | 34.8   |
| 102.5° | 126.4  | 125.3  | 30.7   | 36.4   | 38.0   |
| 105°   | 158.1  | 173.7  | 31.7   | 37.4   | 39.5   |
| 107.5° | 195.0  | 208.0  | 32.8   | 38.5   | 40.6   |
| 110°   | 230.4  | 241.3  | 91.0   | 39.0   | 41.1   |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 263.6 | 273.0 | 264.2 | 40.0  | 41.6  |
| 115°   | 299.0 | 307.8 | 320.8 | 80.1  | 42.6  |
| 117.5° | 329.7 | 340.1 | 348.9 | 274.6 | 138.3 |
| 120°   | 364.0 | 371.8 | 381.1 | 387.4 | 317.2 |
| 122.5° | 393.1 | 401.4 | 411.8 | 414.9 | 415.5 |
| 125°   | 422.7 | 429.5 | 439.4 | 443.0 | 444.6 |
| 127.5° | 449.8 | 457.1 | 464.9 | 470.1 | 470.6 |
| 130°   | 475.3 | 483.6 | 489.3 | 495.0 | 494.5 |
| 132.5° | 501.3 | 508.0 | 513.7 | 518.4 | 517.9 |
| 135°   | 523.1 | 531.4 | 536.1 | 541.3 | 540.3 |
| 137.5° | 546.0 | 552.2 | 557.4 | 562.6 | 561.1 |
| 140°   | 568.3 | 572.5 | 578.2 | 582.9 | 580.3 |
| 142.5° | 587.1 | 590.7 | 597.5 | 601.6 | 599.0 |
| 145°   | 606.8 | 606.3 | 615.1 | 618.8 | 616.2 |
| 147.5° | 624.0 | 622.4 | 631.3 | 633.9 | 631.8 |
| 150°   | 640.6 | 637.0 | 645.3 | 648.4 | 645.8 |
| 152.5° | 654.7 | 650.5 | 658.3 | 661.4 | 657.8 |
| 155°   | 668.2 | 663.5 | 669.7 | 672.9 | 668.7 |
| 157.5° | 679.1 | 674.9 | 679.6 | 683.3 | 679.1 |
| 160°   | 688.5 | 685.3 | 688.5 | 691.6 | 687.9 |
| 162.5° | 696.8 | 693.7 | 696.3 | 699.9 | 695.2 |
| 165°   | 704.1 | 700.9 | 702.5 | 706.1 | 702.5 |
| 167.5° | 709.8 | 706.7 | 708.2 | 711.9 | 707.2 |
| 170°   | 714.5 | 711.3 | 712.4 | 716.0 | 711.3 |
| 172.5° | 717.6 | 714.5 | 715.5 | 719.1 | 714.5 |
| 175°   | 720.2 | 716.5 | 717.6 | 721.2 | 716.0 |
| 177.5° | 721.2 | 717.6 | 718.1 | 721.7 | 717.1 |
| 180°   | 718.6 | 718.6 | 718.6 | 718.6 | 718.6 |

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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 | 17.78            | 18.80 | 18.59 | 19.63 | 20.66 | 18.56          | 19.58 | 19.37 | 20.41 | 21.44 |
|                 | 3H   | 19.13            | 20.05 | 19.95 | 20.89 | 21.94 | 20.20          | 21.12 | 21.02 | 21.96 | 23.01 |
|                 | 4H   | 19.54            | 20.41 | 20.38 | 21.26 | 22.32 | 20.80          | 21.66 | 21.64 | 22.51 | 23.58 |
|                 | 6H   | 19.77            | 20.57 | 20.62 | 21.42 | 22.50 | 21.21          | 22.01 | 22.06 | 22.87 | 23.95 |
|                 | 8H   | 19.80            | 20.56 | 20.66 | 21.44 | 22.52 | 21.32          | 22.08 | 22.18 | 22.96 | 24.04 |
|                 | 12H  | 19.80            | 20.53 | 20.66 | 21.39 | 22.50 | 21.37          | 22.10 | 22.24 | 22.97 | 24.07 |
| 4H              | 2H   | 18.27            | 19.13 | 19.11 | 19.98 | 21.05 | 18.91          | 19.78 | 19.75 | 20.63 | 21.69 |
|                 | 3H   | 19.80            | 20.52 | 20.65 | 21.40 | 22.49 | 20.70          | 21.43 | 21.56 | 22.31 | 23.39 |
|                 | 4H   | 20.31            | 20.97 | 21.18 | 21.85 | 22.96 | 21.39          | 22.05 | 22.26 | 22.93 | 24.04 |
|                 | 6H   | 20.62            | 21.19 | 21.51 | 22.10 | 23.21 | 21.90          | 22.47 | 22.78 | 23.37 | 24.48 |
|                 | 8H   | 20.68            | 21.22 | 21.57 | 22.11 | 23.24 | 22.04          | 22.58 | 22.93 | 23.48 | 24.60 |
|                 | 12H  | 20.69            | 21.17 | 21.60 | 22.09 | 23.22 | 22.11          | 22.59 | 23.02 | 23.51 | 24.64 |
| 8H              | 4H   | 20.50            | 21.03 | 21.38 | 21.93 | 23.05 | 21.49          | 22.02 | 22.38 | 22.92 | 24.05 |
|                 | 6H   | 20.89            | 21.33 | 21.80 | 22.27 | 23.40 | 22.07          | 22.51 | 22.98 | 23.45 | 24.57 |
|                 | 8H   | 20.99            | 21.38 | 21.92 | 22.32 | 23.46 | 22.26          | 22.65 | 23.18 | 23.58 | 24.72 |
|                 | 12H  | 21.03            | 21.38 | 21.96 | 22.30 | 23.50 | 22.36          | 22.71 | 23.29 | 23.63 | 24.83 |
| 12H             | 4H   | 20.49            | 20.97 | 21.40 | 21.89 | 23.02 | 21.46          | 21.94 | 22.37 | 22.86 | 23.99 |
|                 | 6H   | 20.91            | 21.30 | 21.83 | 22.23 | 23.37 | 22.06          | 22.45 | 22.98 | 23.38 | 24.53 |
|                 | 8H   | 21.03            | 21.37 | 21.96 | 22.30 | 23.49 | 22.26          | 22.61 | 23.19 | 23.53 | 24.73 |