

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: P998739

Luminaire Tested: SA2XXDIP-B675D330UB27-4F0-XX-W2A-F1

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998739  
REPORT IS A COMBINATION OF REPORTS P984485 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B675D330UB27-4F0-XX-W2A-F1  
Description: Define 2 Direct/Indirect Pendant with 2700K BioUP LEDs {m-DER=0.473} {m-EER=0.52}  
Light Source: -  
Ballast/Driver: -

**Summary**

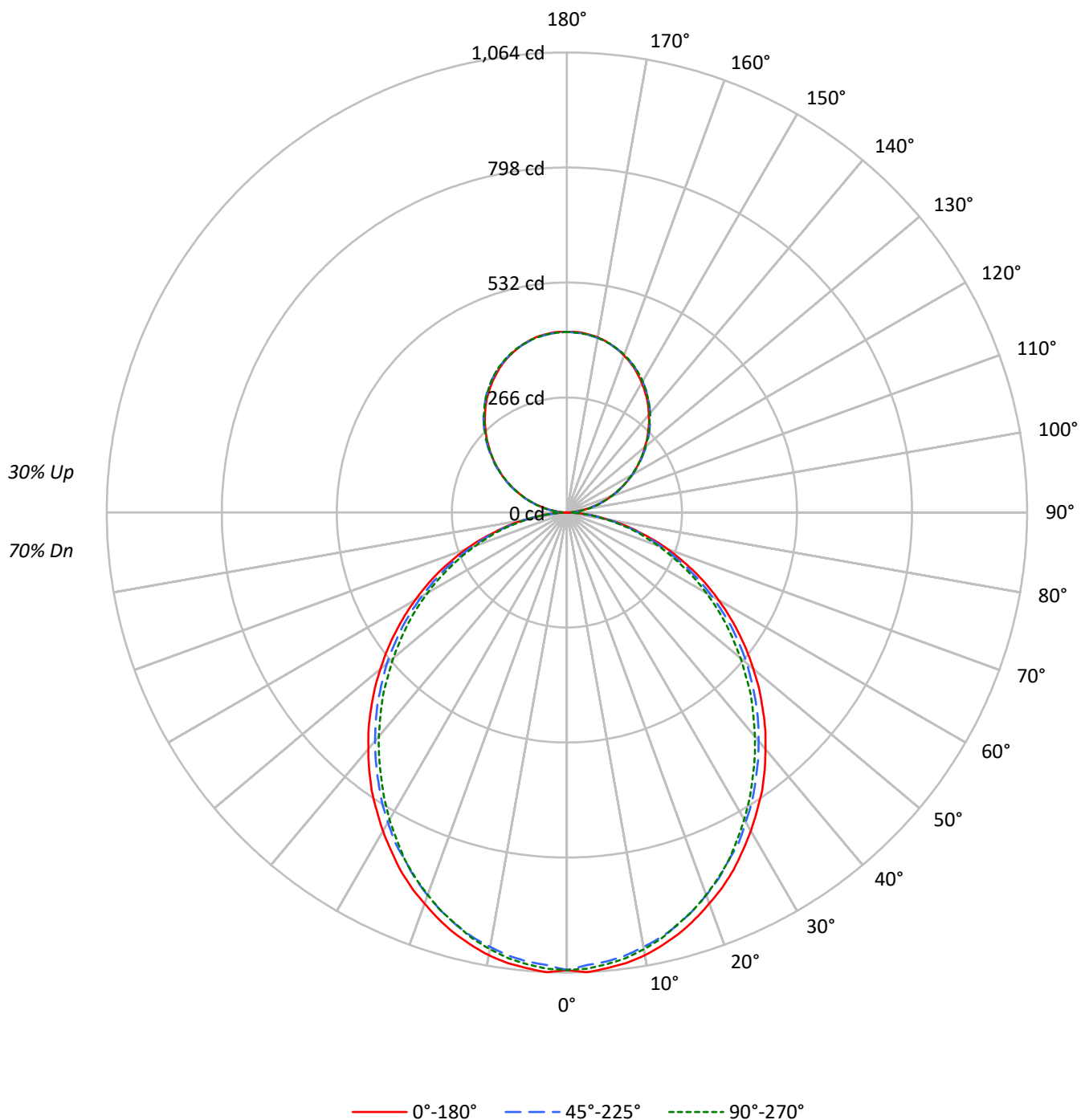
Lumens per Lamp: N/A  
Luminaire Lumens: 3861.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 45.2  
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   | 112 | 112 | 112 | 112 | 106 | 106 | 106 | 106 | 94 | 94 | 94 | 84 | 84 | 84 | 74 | 74 | 74 |
| 1   | 102 | 98  | 94  | 90  | 96  | 93  | 89  | 86  | 83 | 80 | 78 | 74 | 72 | 70 | 66 | 64 | 63 |
| 2   | 93  | 85  | 79  | 74  | 88  | 81  | 75  | 71  | 73 | 68 | 64 | 65 | 62 | 58 | 58 | 55 | 53 |
| 3   | 85  | 75  | 68  | 61  | 80  | 71  | 65  | 59  | 64 | 59 | 54 | 57 | 53 | 50 | 51 | 48 | 45 |
| 4   | 78  | 67  | 58  | 52  | 73  | 63  | 56  | 50  | 57 | 51 | 46 | 51 | 46 | 43 | 46 | 42 | 39 |
| 5   | 72  | 59  | 51  | 45  | 67  | 57  | 49  | 43  | 51 | 45 | 40 | 46 | 41 | 37 | 41 | 37 | 34 |
| 6   | 66  | 54  | 45  | 39  | 62  | 51  | 43  | 38  | 46 | 40 | 35 | 42 | 36 | 32 | 38 | 33 | 30 |
| 7   | 61  | 48  | 40  | 34  | 58  | 46  | 39  | 33  | 42 | 36 | 31 | 38 | 33 | 29 | 34 | 30 | 27 |
| 8   | 57  | 44  | 36  | 31  | 54  | 42  | 35  | 30  | 38 | 32 | 28 | 35 | 30 | 26 | 32 | 27 | 24 |
| 9   | 53  | 40  | 33  | 27  | 50  | 39  | 31  | 27  | 35 | 29 | 25 | 32 | 27 | 23 | 29 | 25 | 22 |
| 10  | 50  | 37  | 30  | 25  | 47  | 36  | 29  | 24  | 33 | 27 | 23 | 30 | 25 | 21 | 27 | 23 | 20 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16749 | 16749 | 16749 |
| 5°  | 16776 | 15964 | 15853 |
| 10° | 16640 | 15238 | 14936 |
| 15° | 16396 | 14504 | 13971 |
| 20° | 16067 | 13707 | 13057 |
| 25° | 15738 | 12875 | 12146 |
| 30° | 15326 | 12092 | 11188 |
| 35° | 14937 | 11266 | 10249 |
| 40° | 14455 | 10451 | 9361  |
| 45° | 13978 | 9644  | 8489  |
| 50° | 13454 | 8821  | 7586  |
| 55° | 12905 | 7942  | 6730  |
| 60° | 12287 | 6990  | 5840  |
| 65° | 11610 | 6022  | 4904  |
| 70° | 10749 | 4963  | 3959  |
| 75° | 9560  | 3826  | 3057  |
| 80° | 8119  | 2601  | 1968  |
| 85° | 5890  | 1211  | 837   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13978 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.6   | 2.6       |
| 10°-20°   | 280.2  | 7.3       |
| 20°-30°   | 411.8  | 10.7      |
| 30°-40°   | 478.3  | 12.4      |
| 40°-50°   | 477.7  | 12.4      |
| 50°-60°   | 416.5  | 10.8      |
| 60°-70°   | 307.9  | 8.0       |
| 70°-80°   | 174.2  | 4.5       |
| 80°-90°   | 47.2   | 1.2       |
| 90°-100°  | 25.8   | 0.7       |
| 100°-110° | 82.1   | 2.1       |
| 110°-120° | 140.6  | 3.6       |
| 120°-130° | 184.8  | 4.8       |
| 130°-140° | 207.5  | 5.4       |
| 140°-150° | 203.5  | 5.3       |
| 150°-160° | 170.7  | 4.4       |
| 160°-170° | 113.2  | 2.9       |
| 170°-180° | 39.6   | 1.0       |
| 0°-30°    | 791.6  | 20.5      |
| 0°-40°    | 1269.8 | 32.9      |
| 0°-60°    | 2164.0 | 56.0      |
| 0°-90°    | 2693.2 | 69.8      |
| 90°-120°  | 248.5  | 6.4       |
| 90°-150°  | 844.4  | 21.9      |
| 90°-180°  | 1168.0 | 30.3      |
| 0°-180°   | 3861.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1058 | 1058  | 1058 | 1058  | 1058 |      |
| 5°   | 1058 | 1054  | 1043 | 1051  | 1049 | 100  |
| 15°  | 1007 | 1001  | 988  | 992   | 987  | 284  |
| 25°  | 912  | 904   | 886  | 888   | 886  | 419  |
| 35°  | 786  | 776   | 760  | 754   | 749  | 491  |
| 45°  | 640  | 633   | 618  | 606   | 602  | 494  |
| 55°  | 484  | 478   | 466  | 454   | 449  | 433  |
| 65°  | 327  | 320   | 310  | 301   | 296  | 323  |
| 75°  | 171  | 169   | 164  | 158   | 160  | 182  |
| 85°  | 42   | 41    | 40   | 37    | 36   | 46   |
| 90°  | 0    | 5     | 12   | 12    | 12   | 4    |
| 95°  | 18   | 22    | 23   | 23    | 22   | 20   |
| 105° | 76   | 77    | 78   | 78    | 78   | 80   |
| 115° | 141  | 143   | 142  | 142   | 141  | 139  |
| 125° | 205  | 208   | 207  | 206   | 206  | 183  |
| 135° | 265  | 269   | 270  | 270   | 269  | 205  |
| 145° | 322  | 325   | 327  | 327   | 326  | 201  |
| 155° | 368  | 369   | 370  | 372   | 371  | 170  |
| 165° | 401  | 400   | 400  | 403   | 401  | 113  |
| 175° | 417  | 416   | 415  | 418   | 416  | 40   |
| 180° | 418  | 418   | 418  | 418   | 418  |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1058.1 | 1058.1 | 1058.1 | 1058.1 | 1058.1 |
| 2.5°   | 1064.2 | 1059.1 | 1047.9 | 1058.1 | 1056.1 |
| 5°     | 1058.1 | 1054.0 | 1042.8 | 1051.0 | 1049.0 |
| 7.5°   | 1051.0 | 1044.9 | 1033.7 | 1041.8 | 1039.8 |
| 10°    | 1039.8 | 1032.7 | 1020.5 | 1028.6 | 1025.6 |
| 12.5°  | 1024.5 | 1018.4 | 1006.2 | 1011.3 | 1009.3 |
| 15°    | 1007.2 | 1001.1 | 987.9  | 992.0  | 986.9  |
| 17.5°  | 985.9  | 979.8  | 966.5  | 971.6  | 966.5  |
| 20°    | 962.5  | 956.4  | 942.1  | 945.2  | 941.1  |
| 22.5°  | 939.1  | 929.9  | 916.7  | 916.7  | 914.7  |
| 25°    | 911.6  | 903.5  | 886.2  | 888.2  | 886.2  |
| 27.5°  | 881.1  | 874.0  | 860.7  | 857.7  | 852.6  |
| 30°    | 850.6  | 842.4  | 827.2  | 824.1  | 820.0  |
| 32.5°  | 818.0  | 811.9  | 795.6  | 789.5  | 785.4  |
| 35°    | 786.5  | 776.3  | 760.0  | 753.9  | 748.8  |
| 37.5°  | 750.9  | 741.7  | 725.4  | 718.3  | 713.2  |
| 40°    | 714.2  | 706.1  | 689.8  | 680.6  | 676.6  |
| 42.5°  | 678.6  | 670.5  | 654.2  | 644.0  | 637.9  |
| 45°    | 640.0  | 632.8  | 617.6  | 606.4  | 602.3  |
| 47.5°  | 602.3  | 595.2  | 578.9  | 567.7  | 561.6  |
| 50°    | 562.6  | 557.5  | 543.3  | 529.1  | 524.0  |
| 52.5°  | 524.0  | 516.8  | 503.6  | 492.4  | 485.3  |
| 55°    | 484.3  | 478.2  | 466.0  | 453.8  | 448.7  |
| 57.5°  | 444.6  | 439.5  | 426.3  | 414.1  | 410.0  |
| 60°    | 404.9  | 400.9  | 386.6  | 375.4  | 372.4  |
| 62.5°  | 366.3  | 359.1  | 349.0  | 338.8  | 334.7  |
| 65°    | 326.6  | 320.5  | 310.3  | 301.2  | 296.1  |
| 67.5°  | 285.9  | 280.8  | 271.6  | 264.5  | 260.5  |
| 70°    | 248.2  | 244.2  | 235.0  | 227.9  | 223.8  |
| 72.5°  | 209.6  | 205.5  | 200.4  | 193.3  | 190.3  |
| 75°    | 170.9  | 168.9  | 163.8  | 157.7  | 159.7  |
| 77.5°  | 136.3  | 132.3  | 130.2  | 127.2  | 124.1  |
| 80°    | 101.7  | 100.7  | 98.7   | 95.6   | 93.6   |
| 82.5°  | 69.2   | 69.2   | 68.2   | 64.1   | 64.1   |
| 85°    | 41.7   | 40.7   | 39.7   | 36.6   | 35.6   |
| 87.5°  | 18.3   | 16.3   | 14.2   | 11.2   | 10.2   |
| 90°    | 0.4    | 4.6    | 12.3   | 11.6   | 12.0   |
| 92.5°  | 7.8    | 10.6   | 10.9   | 11.3   | 11.3   |
| 95°    | 18.3   | 21.9   | 22.6   | 22.6   | 21.9   |
| 97.5°  | 30.7   | 33.8   | 35.2   | 35.2   | 35.2   |
| 100°   | 44.8   | 47.6   | 48.6   | 48.6   | 48.3   |
| 102.5° | 59.6   | 61.7   | 63.1   | 63.4   | 63.1   |
| 105°   | 75.8   | 76.8   | 77.5   | 78.3   | 78.3   |
| 107.5° | 92.0   | 93.4   | 93.4   | 93.8   | 92.0   |
| 110°   | 107.5  | 109.6  | 109.6  | 109.6  | 108.6  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 124.4 | 126.5 | 126.2 | 125.1 | 124.4 |
| 115°   | 141.0 | 143.1 | 142.4 | 142.1 | 141.0 |
| 117.5° | 157.6 | 160.4 | 158.6 | 157.6 | 156.5 |
| 120°   | 174.1 | 176.9 | 174.1 | 174.1 | 173.1 |
| 122.5° | 189.3 | 192.8 | 191.0 | 190.0 | 189.3 |
| 125°   | 205.1 | 208.3 | 207.3 | 206.2 | 205.9 |
| 127.5° | 220.7 | 224.5 | 223.1 | 221.7 | 220.7 |
| 130°   | 235.1 | 239.7 | 239.0 | 238.3 | 236.9 |
| 132.5° | 251.3 | 254.9 | 255.2 | 253.4 | 252.4 |
| 135°   | 265.4 | 269.3 | 270.0 | 269.7 | 268.6 |
| 137.5° | 280.9 | 284.1 | 284.8 | 284.5 | 283.0 |
| 140°   | 294.7 | 297.9 | 299.6 | 299.6 | 298.2 |
| 142.5° | 308.8 | 312.0 | 313.0 | 313.4 | 312.0 |
| 145°   | 322.2 | 324.6 | 326.8 | 327.1 | 325.7 |
| 147.5° | 334.2 | 337.3 | 338.7 | 339.4 | 338.0 |
| 150°   | 346.5 | 348.6 | 350.0 | 351.1 | 350.0 |
| 152.5° | 357.4 | 359.5 | 361.3 | 362.7 | 361.3 |
| 155°   | 368.4 | 369.4 | 370.5 | 372.2 | 371.2 |
| 157.5° | 377.9 | 378.6 | 379.3 | 381.7 | 380.0 |
| 160°   | 386.3 | 387.0 | 387.4 | 389.5 | 388.1 |
| 162.5° | 394.1 | 394.1 | 394.4 | 396.9 | 395.1 |
| 165°   | 400.8 | 400.4 | 400.4 | 402.9 | 401.1 |
| 167.5° | 406.8 | 405.7 | 405.7 | 408.2 | 406.4 |
| 170°   | 411.4 | 410.3 | 409.9 | 412.4 | 410.3 |
| 172.5° | 414.5 | 413.5 | 413.1 | 415.6 | 413.5 |
| 175°   | 417.0 | 415.9 | 415.2 | 417.7 | 415.6 |
| 177.5° | 418.4 | 417.3 | 416.6 | 418.8 | 416.6 |
| 180°   | 417.7 | 417.7 | 417.7 | 417.7 | 417.7 |

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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 | 16.68            | 17.75 | 17.44 | 18.54 | 19.50 | 17.46          | 18.53 | 18.23 | 19.32 | 20.28 |
|                 | 3H   | 18.03            | 18.99 | 18.81 | 19.79 | 20.78 | 19.10          | 20.06 | 19.88 | 20.86 | 21.85 |
|                 | 4H   | 18.45            | 19.35 | 19.24 | 20.16 | 21.16 | 19.70          | 20.61 | 20.50 | 21.42 | 22.42 |
|                 | 6H   | 18.67            | 19.51 | 19.49 | 20.33 | 21.34 | 20.12          | 20.96 | 20.93 | 21.77 | 22.79 |
|                 | 8H   | 18.71            | 19.51 | 19.53 | 20.35 | 21.36 | 20.23          | 21.03 | 21.05 | 21.87 | 22.88 |
|                 | 12H  | 18.71            | 19.47 | 19.54 | 20.30 | 21.34 | 20.28          | 21.05 | 21.11 | 21.87 | 22.91 |
| 4H              | 2H   | 17.17            | 18.08 | 17.97 | 18.89 | 19.89 | 17.82          | 18.72 | 18.62 | 19.53 | 20.53 |
|                 | 3H   | 18.71            | 19.47 | 19.52 | 20.31 | 21.32 | 19.61          | 20.37 | 20.43 | 21.21 | 22.23 |
|                 | 4H   | 19.22            | 19.91 | 20.05 | 20.75 | 21.80 | 20.30          | 21.00 | 21.13 | 21.84 | 22.88 |
|                 | 6H   | 19.54            | 20.14 | 20.38 | 21.00 | 22.05 | 20.81          | 21.41 | 21.66 | 22.27 | 23.32 |
|                 | 8H   | 19.60            | 20.16 | 20.45 | 21.02 | 22.08 | 20.96          | 21.52 | 21.81 | 22.38 | 23.44 |
|                 | 12H  | 19.61            | 20.11 | 20.48 | 20.99 | 22.06 | 21.03          | 21.54 | 21.90 | 22.42 | 23.48 |
| 8H              | 4H   | 19.41            | 19.97 | 20.26 | 20.83 | 21.89 | 20.41          | 20.97 | 21.25 | 21.83 | 22.89 |
|                 | 6H   | 19.81            | 20.27 | 20.68 | 21.17 | 22.23 | 20.98          | 21.45 | 21.86 | 22.35 | 23.41 |
|                 | 8H   | 19.91            | 20.32 | 20.80 | 21.22 | 22.30 | 21.17          | 21.59 | 22.06 | 22.48 | 23.56 |
|                 | 12H  | 19.95            | 20.32 | 20.84 | 21.20 | 22.33 | 21.28          | 21.65 | 22.17 | 22.53 | 23.66 |
| 12H             | 4H   | 19.41            | 19.91 | 20.27 | 20.79 | 21.86 | 20.38          | 20.88 | 21.25 | 21.76 | 22.83 |
|                 | 6H   | 19.83            | 20.24 | 20.71 | 21.13 | 22.21 | 20.98          | 21.39 | 21.86 | 22.29 | 23.36 |
|                 | 8H   | 19.95            | 20.31 | 20.84 | 21.20 | 22.33 | 21.18          | 21.55 | 22.07 | 22.43 | 23.57 |