

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: P998781

Luminaire Tested: SA2XXDIP-B675D330UB40-4F0-XX-W2A-F1

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998781  
REPORT IS A COMBINATION OF REPORTS P984527 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B675D330UB40-4F0-XX-W2A-F1  
Description: Define 2 Direct/Indirect Pendant with 4000K BioUP LEDs {m-DER=0.865} {m-EER=0.951}  
Light Source: -  
Ballast/Driver: -

**Summary**

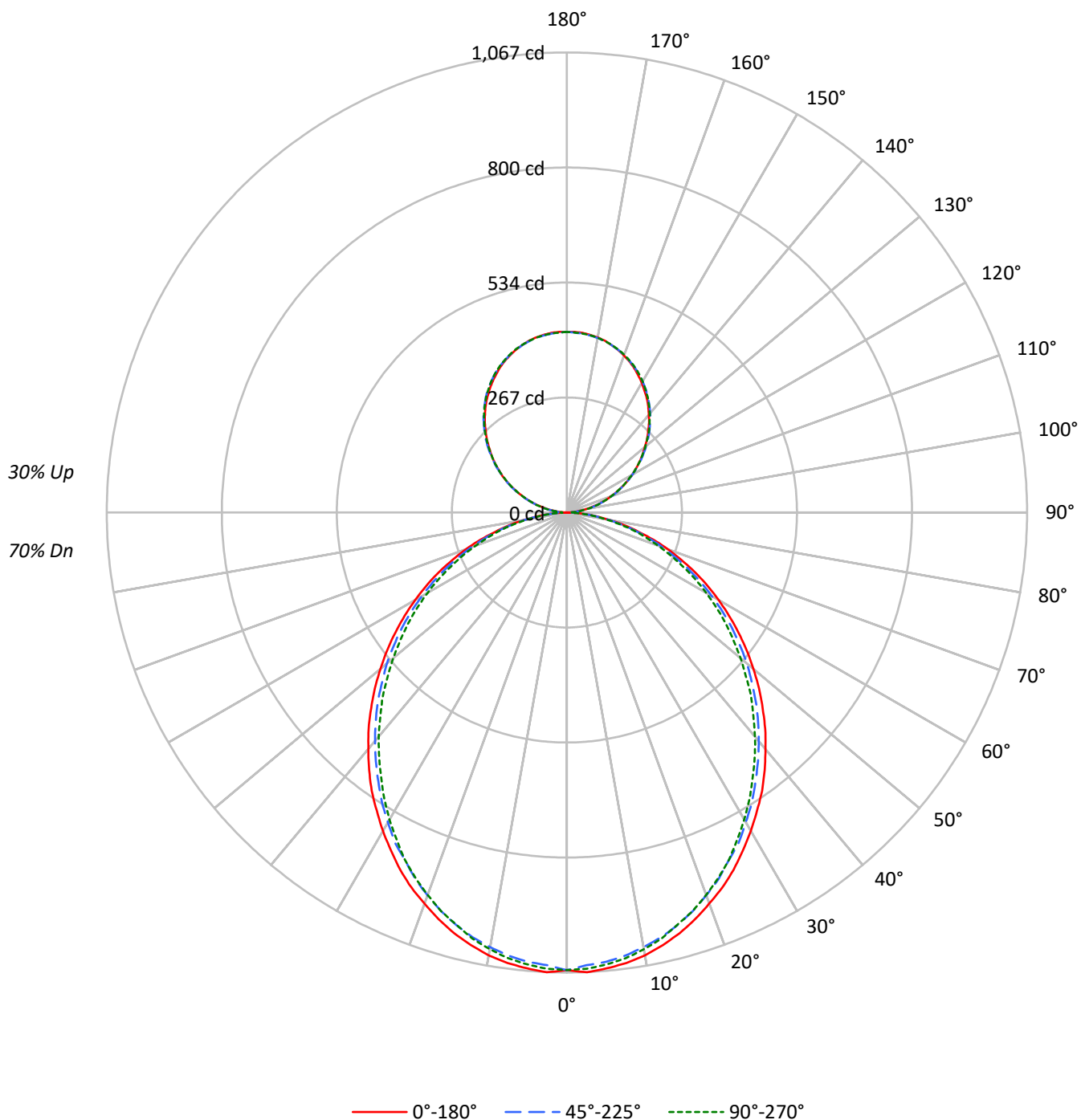
Lumens per Lamp: N/A  
Luminaire Lumens: 3872.0 lumens  
Efficiency: N/A  
Efficacy: 85.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Direct

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 | 59 | 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°  | 16800 | 16800 | 16800 |
| 5°  | 16827 | 16012 | 15899 |
| 10° | 16689 | 15283 | 14979 |
| 15° | 16445 | 14547 | 14012 |
| 20° | 16114 | 13747 | 13096 |
| 25° | 15785 | 12913 | 12182 |
| 30° | 15371 | 12127 | 11222 |
| 35° | 14981 | 11300 | 10279 |
| 40° | 14497 | 10483 | 9388  |
| 45° | 14019 | 9672  | 8515  |
| 50° | 13494 | 8847  | 7608  |
| 55° | 12942 | 7966  | 6749  |
| 60° | 12323 | 7011  | 5857  |
| 65° | 11646 | 6040  | 4917  |
| 70° | 10783 | 4978  | 3972  |
| 75° | 9588  | 3838  | 3066  |
| 80° | 8143  | 2609  | 1974  |
| 85° | 5905  | 1214  | 839   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14019 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.9   | 2.6       |
| 10°-20°   | 281.0  | 7.3       |
| 20°-30°   | 413.0  | 10.7      |
| 30°-40°   | 479.7  | 12.4      |
| 40°-50°   | 479.1  | 12.4      |
| 50°-60°   | 417.7  | 10.8      |
| 60°-70°   | 308.8  | 8.0       |
| 70°-80°   | 174.7  | 4.5       |
| 80°-90°   | 47.3   | 1.2       |
| 90°-100°  | 25.9   | 0.7       |
| 100°-110° | 82.3   | 2.1       |
| 110°-120° | 140.9  | 3.6       |
| 120°-130° | 185.3  | 4.8       |
| 130°-140° | 208.0  | 5.4       |
| 140°-150° | 204.0  | 5.3       |
| 150°-160° | 171.1  | 4.4       |
| 160°-170° | 113.5  | 2.9       |
| 170°-180° | 39.7   | 1.0       |
| 0°-30°    | 793.9  | 20.5      |
| 0°-40°    | 1273.6 | 32.9      |
| 0°-60°    | 2170.4 | 56.1      |
| 0°-90°    | 2701.2 | 69.8      |
| 90°-120°  | 249.2  | 6.4       |
| 90°-150°  | 846.5  | 21.9      |
| 90°-180°  | 1171.0 | 30.2      |
| 0°-180°   | 3872.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1061 | 1061  | 1061 | 1061  | 1061 |      |
| 5°   | 1061 | 1057  | 1046 | 1054  | 1052 | 101  |
| 15°  | 1010 | 1004  | 991  | 995   | 990  | 285  |
| 25°  | 914  | 906   | 889  | 891   | 889  | 421  |
| 35°  | 789  | 779   | 762  | 756   | 751  | 493  |
| 45°  | 642  | 635   | 619  | 608   | 604  | 495  |
| 55°  | 486  | 480   | 467  | 455   | 450  | 434  |
| 65°  | 328  | 321   | 311  | 302   | 297  | 324  |
| 75°  | 171  | 169   | 164  | 158   | 160  | 183  |
| 85°  | 42   | 41    | 40   | 37    | 36   | 47   |
| 90°  | 0    | 5     | 12   | 12    | 12   | 4    |
| 95°  | 18   | 22    | 23   | 23    | 22   | 21   |
| 105° | 76   | 77    | 78   | 78    | 78   | 80   |
| 115° | 141  | 144   | 143  | 142   | 141  | 140  |
| 125° | 206  | 209   | 208  | 207   | 206  | 184  |
| 135° | 266  | 270   | 271  | 270   | 269  | 206  |
| 145° | 323  | 326   | 328  | 328   | 326  | 202  |
| 155° | 369  | 370   | 371  | 373   | 372  | 170  |
| 165° | 402  | 402   | 402  | 404   | 402  | 113  |
| 175° | 418  | 417   | 416  | 419   | 417  | 40   |
| 180° | 419  | 419   | 419  | 419   | 419  |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1061.3 | 1061.3 | 1061.3 | 1061.3 | 1061.3 |
| 2.5°   | 1067.4 | 1062.3 | 1051.0 | 1061.3 | 1059.2 |
| 5°     | 1061.3 | 1057.2 | 1045.9 | 1054.1 | 1052.1 |
| 7.5°   | 1054.1 | 1048.0 | 1036.8 | 1044.9 | 1042.9 |
| 10°    | 1042.9 | 1035.7 | 1023.5 | 1031.7 | 1028.6 |
| 12.5°  | 1027.6 | 1021.5 | 1009.2 | 1014.3 | 1012.3 |
| 15°    | 1010.2 | 1004.1 | 990.8  | 994.9  | 989.8  |
| 17.5°  | 988.8  | 982.7  | 969.4  | 974.5  | 969.4  |
| 20°    | 965.3  | 959.2  | 944.9  | 948.0  | 943.9  |
| 22.5°  | 941.9  | 932.7  | 919.4  | 919.4  | 917.4  |
| 25°    | 914.3  | 906.1  | 888.8  | 890.8  | 888.8  |
| 27.5°  | 883.7  | 876.6  | 863.3  | 860.2  | 855.1  |
| 30°    | 853.1  | 844.9  | 829.6  | 826.6  | 822.5  |
| 32.5°  | 820.4  | 814.3  | 798.0  | 791.9  | 787.8  |
| 35°    | 788.8  | 778.6  | 762.3  | 756.1  | 751.0  |
| 37.5°  | 753.1  | 743.9  | 727.6  | 720.4  | 715.3  |
| 40°    | 716.3  | 708.2  | 691.9  | 682.7  | 678.6  |
| 42.5°  | 680.6  | 672.5  | 656.1  | 645.9  | 639.8  |
| 45°    | 641.9  | 634.7  | 619.4  | 608.2  | 604.1  |
| 47.5°  | 604.1  | 597.0  | 580.6  | 569.4  | 563.3  |
| 50°    | 564.3  | 559.2  | 544.9  | 530.6  | 525.5  |
| 52.5°  | 525.5  | 518.4  | 505.1  | 493.9  | 486.7  |
| 55°    | 485.7  | 479.6  | 467.4  | 455.1  | 450.0  |
| 57.5°  | 445.9  | 440.8  | 427.6  | 415.3  | 411.2  |
| 60°    | 406.1  | 402.1  | 387.8  | 376.5  | 373.5  |
| 62.5°  | 367.4  | 360.2  | 350.0  | 339.8  | 335.7  |
| 65°    | 327.6  | 321.4  | 311.2  | 302.0  | 296.9  |
| 67.5°  | 286.7  | 281.6  | 272.5  | 265.3  | 261.2  |
| 70°    | 249.0  | 244.9  | 235.7  | 228.6  | 224.5  |
| 72.5°  | 210.2  | 206.1  | 201.0  | 193.9  | 190.8  |
| 75°    | 171.4  | 169.4  | 164.3  | 158.2  | 160.2  |
| 77.5°  | 136.7  | 132.7  | 130.6  | 127.6  | 124.5  |
| 80°    | 102.0  | 101.0  | 99.0   | 95.9   | 93.9   |
| 82.5°  | 69.4   | 69.4   | 68.4   | 64.3   | 64.3   |
| 85°    | 41.8   | 40.8   | 39.8   | 36.7   | 35.7   |
| 87.5°  | 18.4   | 16.3   | 14.3   | 11.2   | 10.2   |
| 90°    | 0.4    | 4.6    | 12.4   | 11.7   | 12.0   |
| 92.5°  | 7.8    | 10.6   | 11.0   | 11.3   | 11.3   |
| 95°    | 18.4   | 21.9   | 22.6   | 22.6   | 21.9   |
| 97.5°  | 30.7   | 33.9   | 35.3   | 35.3   | 35.3   |
| 100°   | 44.9   | 47.7   | 48.8   | 48.8   | 48.4   |
| 102.5° | 59.7   | 61.8   | 63.3   | 63.6   | 63.3   |
| 105°   | 76.0   | 77.0   | 77.7   | 78.5   | 78.5   |
| 107.5° | 92.2   | 93.6   | 93.6   | 94.0   | 92.2   |
| 110°   | 107.8  | 109.9  | 109.9  | 109.9  | 108.8  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 124.7 | 126.9 | 126.5 | 125.5 | 124.7 |
| 115°   | 141.4 | 143.5 | 142.8 | 142.4 | 141.4 |
| 117.5° | 158.0 | 160.8 | 159.0 | 158.0 | 156.9 |
| 120°   | 174.6 | 177.4 | 174.6 | 174.6 | 173.5 |
| 122.5° | 189.8 | 193.3 | 191.5 | 190.5 | 189.8 |
| 125°   | 205.7 | 208.9 | 207.8 | 206.7 | 206.4 |
| 127.5° | 221.2 | 225.1 | 223.7 | 222.3 | 221.2 |
| 130°   | 235.7 | 240.3 | 239.6 | 238.9 | 237.5 |
| 132.5° | 252.0 | 255.5 | 255.9 | 254.1 | 253.0 |
| 135°   | 266.1 | 270.0 | 270.7 | 270.3 | 269.3 |
| 137.5° | 281.7 | 284.8 | 285.5 | 285.2 | 283.8 |
| 140°   | 295.4 | 298.6 | 300.4 | 300.4 | 299.0 |
| 142.5° | 309.6 | 312.8 | 313.8 | 314.2 | 312.8 |
| 145°   | 323.0 | 325.5 | 327.6 | 328.0 | 326.5 |
| 147.5° | 335.0 | 338.2 | 339.6 | 340.3 | 338.9 |
| 150°   | 347.4 | 349.5 | 350.9 | 352.0 | 350.9 |
| 152.5° | 358.3 | 360.5 | 362.2 | 363.6 | 362.2 |
| 155°   | 369.3 | 370.4 | 371.4 | 373.2 | 372.1 |
| 157.5° | 378.8 | 379.5 | 380.3 | 382.7 | 381.0 |
| 160°   | 387.3 | 388.0 | 388.4 | 390.5 | 389.1 |
| 162.5° | 395.1 | 395.1 | 395.4 | 397.9 | 396.2 |
| 165°   | 401.8 | 401.5 | 401.5 | 403.9 | 402.2 |
| 167.5° | 407.8 | 406.8 | 406.8 | 409.2 | 407.5 |
| 170°   | 412.4 | 411.4 | 411.0 | 413.5 | 411.4 |
| 172.5° | 415.6 | 414.5 | 414.2 | 416.7 | 414.5 |
| 175°   | 418.1 | 417.0 | 416.3 | 418.8 | 416.7 |
| 177.5° | 419.5 | 418.4 | 417.7 | 419.8 | 417.7 |
| 180°   | 418.8 | 418.8 | 418.8 | 418.8 | 418.8 |

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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 | 16.69            | 17.76 | 17.46 | 18.55 | 19.51 | 17.47          | 18.54 | 18.24 | 19.33 | 20.29 |
|                 | 3H   | 18.04            | 19.00 | 18.82 | 19.80 | 20.79 | 19.11          | 20.08 | 19.89 | 20.87 | 21.86 |
|                 | 4H   | 18.46            | 19.37 | 19.25 | 20.17 | 21.17 | 19.71          | 20.62 | 20.51 | 21.43 | 22.43 |
|                 | 6H   | 18.69            | 19.53 | 19.50 | 20.34 | 21.35 | 20.13          | 20.97 | 20.94 | 21.78 | 22.80 |
|                 | 8H   | 18.72            | 19.52 | 19.54 | 20.36 | 21.37 | 20.24          | 21.04 | 21.06 | 21.88 | 22.89 |
|                 | 12H  | 18.72            | 19.48 | 19.55 | 20.31 | 21.35 | 20.29          | 21.06 | 21.12 | 21.89 | 22.93 |
| 4H              | 2H   | 17.18            | 18.09 | 17.98 | 18.90 | 19.90 | 17.83          | 18.74 | 18.63 | 19.54 | 20.54 |
|                 | 3H   | 18.72            | 19.48 | 19.53 | 20.32 | 21.33 | 19.62          | 20.38 | 20.44 | 21.23 | 22.24 |
|                 | 4H   | 19.23            | 19.92 | 20.06 | 20.76 | 21.81 | 20.31          | 21.01 | 21.14 | 21.85 | 22.89 |
|                 | 6H   | 19.55            | 20.15 | 20.39 | 21.01 | 22.06 | 20.82          | 21.42 | 21.67 | 22.29 | 23.33 |
|                 | 8H   | 19.61            | 20.17 | 20.46 | 21.03 | 22.09 | 20.97          | 21.53 | 21.82 | 22.39 | 23.45 |
|                 | 12H  | 19.62            | 20.12 | 20.49 | 21.00 | 22.07 | 21.04          | 21.55 | 21.91 | 22.43 | 23.49 |
| 8H              | 4H   | 19.42            | 19.98 | 20.27 | 20.84 | 21.90 | 20.42          | 20.98 | 21.27 | 21.84 | 22.90 |
|                 | 6H   | 19.82            | 20.28 | 20.69 | 21.18 | 22.24 | 21.00          | 21.46 | 21.87 | 22.36 | 23.42 |
|                 | 8H   | 19.92            | 20.33 | 20.81 | 21.23 | 22.31 | 21.19          | 21.60 | 22.07 | 22.49 | 23.57 |
|                 | 12H  | 19.96            | 20.33 | 20.85 | 21.21 | 22.35 | 21.29          | 21.66 | 22.18 | 22.54 | 23.68 |
| 12H             | 4H   | 19.42            | 19.92 | 20.29 | 20.80 | 21.87 | 20.39          | 20.90 | 21.26 | 21.78 | 22.84 |
|                 | 6H   | 19.84            | 20.25 | 20.72 | 21.15 | 22.22 | 20.99          | 21.40 | 21.87 | 22.30 | 23.37 |
|                 | 8H   | 19.96            | 20.32 | 20.85 | 21.21 | 22.34 | 21.20          | 21.56 | 22.08 | 22.45 | 23.58 |