

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: P998715

Luminaire Tested: SA2XXDIP-B675D1080UB35-4F0-XX-W2A-F1

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998715  
REPORT IS A COMBINATION OF REPORTS P984458 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B675D1080UB35-4F0-XX-W2A-F1  
Description: Define 2 Direct/Indirect Pendant with 3500K BioUP LEDs {m-DER=0.721} {m-EER=0.792}  
Light Source: -  
Ballast/Driver: -

**Summary**

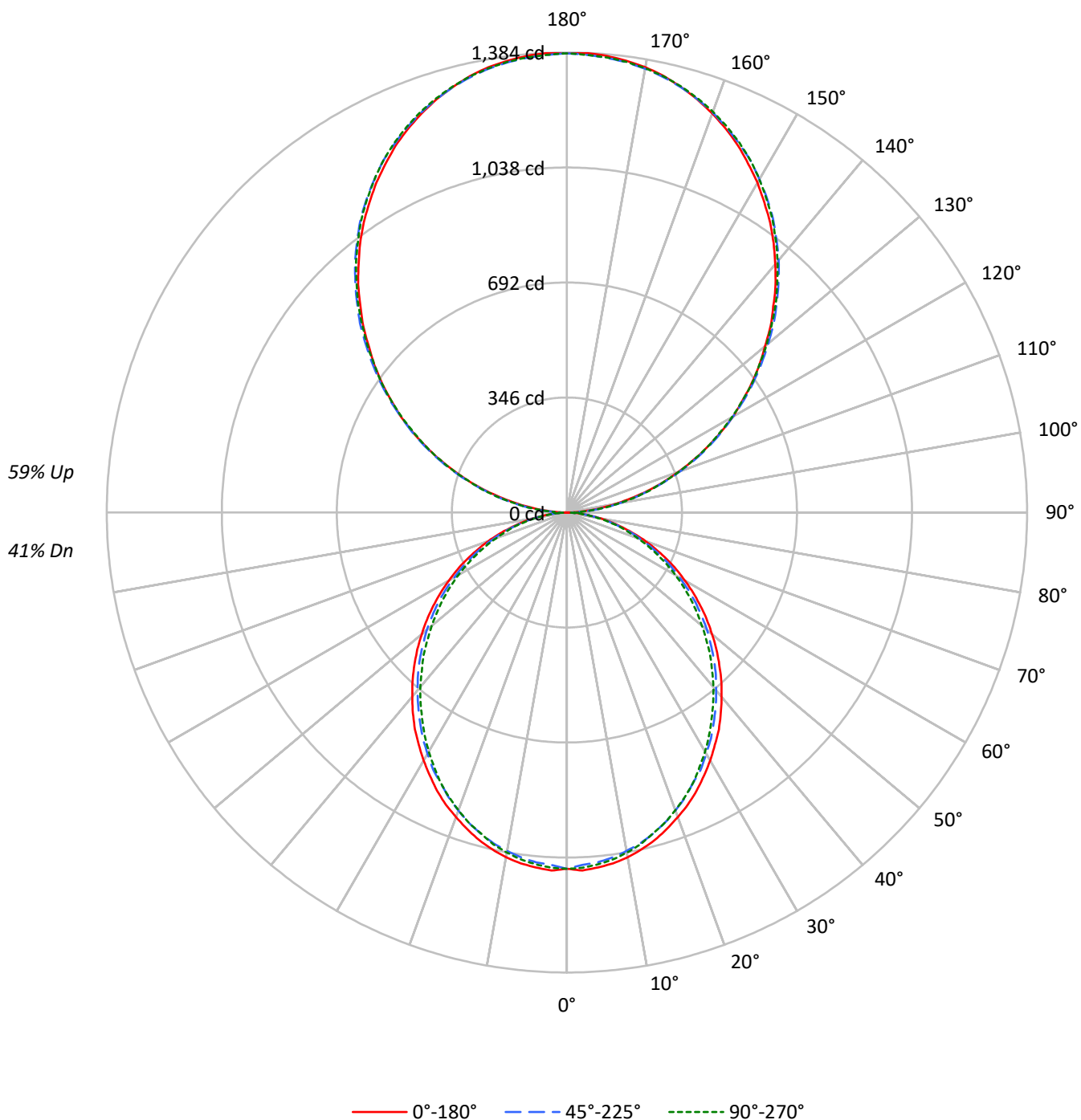
Lumens per Lamp: N/A  
Luminaire Lumens: 6593.0 lumens  
Efficiency: N/A  
Efficacy: 93.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 70.9  
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   | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 79 | 79 | 79 | 63 | 63 | 63 | 48 | 48 | 48 |
| 1   | 96  | 92  | 88  | 84  | 87 | 84 | 80 | 77 | 69 | 67 | 64 | 55 | 54 | 52 | 43 | 42 | 41 |
| 2   | 87  | 80  | 74  | 69  | 79 | 73 | 68 | 64 | 60 | 57 | 53 | 48 | 46 | 44 | 37 | 36 | 34 |
| 3   | 80  | 70  | 63  | 57  | 72 | 64 | 58 | 53 | 53 | 49 | 45 | 43 | 40 | 37 | 33 | 31 | 29 |
| 4   | 73  | 62  | 54  | 48  | 66 | 57 | 50 | 45 | 47 | 42 | 38 | 38 | 34 | 32 | 30 | 27 | 25 |
| 5   | 67  | 55  | 47  | 41  | 61 | 51 | 44 | 39 | 42 | 37 | 33 | 34 | 30 | 27 | 27 | 24 | 22 |
| 6   | 61  | 50  | 42  | 36  | 56 | 46 | 39 | 33 | 38 | 33 | 29 | 31 | 27 | 24 | 24 | 21 | 19 |
| 7   | 57  | 45  | 37  | 31  | 52 | 41 | 34 | 29 | 34 | 29 | 25 | 28 | 24 | 21 | 22 | 19 | 17 |
| 8   | 53  | 41  | 33  | 28  | 48 | 37 | 31 | 26 | 31 | 26 | 22 | 26 | 22 | 19 | 20 | 17 | 15 |
| 9   | 49  | 37  | 30  | 25  | 45 | 34 | 28 | 23 | 29 | 24 | 20 | 24 | 20 | 17 | 19 | 16 | 14 |
| 10  | 46  | 34  | 27  | 22  | 42 | 31 | 25 | 21 | 26 | 21 | 18 | 22 | 18 | 15 | 17 | 15 | 13 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16967 | 16967 | 16967 |
| 5°  | 16995 | 16172 | 16058 |
| 10° | 16856 | 15435 | 15129 |
| 15° | 16609 | 14694 | 14152 |
| 20° | 16276 | 13886 | 13227 |
| 25° | 15944 | 13042 | 12304 |
| 30° | 15524 | 12249 | 11334 |
| 35° | 15131 | 11412 | 10383 |
| 40° | 14643 | 10587 | 9482  |
| 45° | 14159 | 9769  | 8599  |
| 50° | 13628 | 8936  | 7684  |
| 55° | 13073 | 8044  | 6817  |
| 60° | 12447 | 7080  | 5915  |
| 65° | 11760 | 6100  | 4967  |
| 70° | 10892 | 5029  | 4010  |
| 75° | 9683  | 3875  | 3097  |
| 80° | 8231  | 2635  | 1993  |
| 85° | 5975  | 1226  | 849   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14159 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 100.9  | 1.5       |
| 10°-20°   | 283.8  | 4.3       |
| 20°-30°   | 417.1  | 6.3       |
| 30°-40°   | 484.5  | 7.3       |
| 40°-50°   | 483.9  | 7.3       |
| 50°-60°   | 421.9  | 6.4       |
| 60°-70°   | 311.9  | 4.7       |
| 70°-80°   | 176.5  | 2.7       |
| 80°-90°   | 50.5   | 0.8       |
| 90°-100°  | 85.5   | 1.3       |
| 100°-110° | 271.7  | 4.1       |
| 110°-120° | 464.8  | 7.1       |
| 120°-130° | 611.3  | 9.3       |
| 130°-140° | 686.2  | 10.4      |
| 140°-150° | 672.9  | 10.2      |
| 150°-160° | 564.5  | 8.6       |
| 160°-170° | 374.4  | 5.7       |
| 170°-180° | 130.8  | 2.0       |
| 0°-30°    | 801.8  | 12.2      |
| 0°-40°    | 1286.3 | 19.5      |
| 0°-60°    | 2192.1 | 33.2      |
| 0°-90°    | 2730.9 | 41.4      |
| 90°-120°  | 822.0  | 12.5      |
| 90°-150°  | 2792.4 | 42.4      |
| 90°-180°  | 3862.0 | 58.6      |
| 0°-180°   | 6593.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1072 | 1072  | 1072 | 1072  | 1072 |      |
| 5°   | 1072 | 1068  | 1056 | 1065  | 1063 | 102  |
| 15°  | 1020 | 1014  | 1001 | 1005  | 1000 | 287  |
| 25°  | 924  | 915   | 898  | 900   | 898  | 425  |
| 35°  | 797  | 786   | 770  | 764   | 759  | 497  |
| 45°  | 648  | 641   | 626  | 614   | 610  | 500  |
| 55°  | 491  | 484   | 472  | 460   | 454  | 439  |
| 65°  | 331  | 325   | 314  | 305   | 300  | 327  |
| 75°  | 173  | 171   | 166  | 160   | 162  | 185  |
| 85°  | 42   | 41    | 40   | 37    | 36   | 47   |
| 90°  | 1    | 15    | 41   | 38    | 40   | 6    |
| 95°  | 61   | 72    | 75   | 75    | 72   | 68   |
| 105° | 251  | 254   | 256  | 259   | 259  | 265  |
| 115° | 466  | 473   | 471  | 470   | 466  | 461  |
| 125° | 678  | 689   | 685  | 682   | 681  | 606  |
| 135° | 878  | 891   | 893  | 892   | 888  | 678  |
| 145° | 1066 | 1074  | 1081 | 1082  | 1077 | 666  |
| 155° | 1218 | 1222  | 1225 | 1231  | 1228 | 561  |
| 165° | 1325 | 1324  | 1324 | 1332  | 1327 | 374  |
| 175° | 1379 | 1376  | 1373 | 1381  | 1374 | 131  |
| 180° | 1381 | 1381  | 1381 | 1381  | 1381 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1071.9 | 1071.9 | 1071.9 | 1071.9 | 1071.9 |
| 2.5°   | 1078.1 | 1072.9 | 1061.6 | 1071.9 | 1069.8 |
| 5°     | 1071.9 | 1067.7 | 1056.4 | 1064.7 | 1062.6 |
| 7.5°   | 1064.7 | 1058.5 | 1047.1 | 1055.4 | 1053.3 |
| 10°    | 1053.3 | 1046.1 | 1033.7 | 1042.0 | 1038.9 |
| 12.5°  | 1037.9 | 1031.7 | 1019.3 | 1024.5 | 1022.4 |
| 15°    | 1020.3 | 1014.2 | 1000.8 | 1004.9 | 999.7  |
| 17.5°  | 998.7  | 992.5  | 979.1  | 984.3  | 979.1  |
| 20°    | 975.0  | 968.8  | 954.4  | 957.5  | 953.3  |
| 22.5°  | 951.3  | 942.0  | 928.6  | 928.6  | 926.5  |
| 25°    | 923.5  | 915.2  | 897.7  | 899.7  | 897.7  |
| 27.5°  | 892.5  | 885.3  | 871.9  | 868.8  | 863.7  |
| 30°    | 861.6  | 853.4  | 837.9  | 834.8  | 830.7  |
| 32.5°  | 828.6  | 822.5  | 806.0  | 799.8  | 795.7  |
| 35°    | 796.7  | 786.4  | 769.9  | 763.7  | 758.6  |
| 37.5°  | 760.6  | 751.3  | 734.8  | 727.6  | 722.5  |
| 40°    | 723.5  | 715.3  | 698.8  | 689.5  | 685.4  |
| 42.5°  | 687.4  | 679.2  | 662.7  | 652.4  | 646.2  |
| 45°    | 648.3  | 641.1  | 625.6  | 614.3  | 610.1  |
| 47.5°  | 610.1  | 602.9  | 586.4  | 575.1  | 568.9  |
| 50°    | 569.9  | 564.8  | 550.4  | 535.9  | 530.8  |
| 52.5°  | 530.8  | 523.6  | 510.2  | 498.8  | 491.6  |
| 55°    | 490.6  | 484.4  | 472.0  | 459.7  | 454.5  |
| 57.5°  | 450.4  | 445.2  | 431.8  | 419.5  | 415.3  |
| 60°    | 410.2  | 406.1  | 391.6  | 380.3  | 377.2  |
| 62.5°  | 371.0  | 363.8  | 353.5  | 343.2  | 339.1  |
| 65°    | 330.8  | 324.7  | 314.3  | 305.1  | 299.9  |
| 67.5°  | 289.6  | 284.5  | 275.2  | 268.0  | 263.8  |
| 70°    | 251.5  | 247.4  | 238.1  | 230.9  | 226.7  |
| 72.5°  | 212.3  | 208.2  | 203.0  | 195.8  | 192.7  |
| 75°    | 173.1  | 171.1  | 165.9  | 159.7  | 161.8  |
| 77.5°  | 138.1  | 134.0  | 131.9  | 128.8  | 125.7  |
| 80°    | 103.1  | 102.0  | 100.0  | 96.9   | 94.8   |
| 82.5°  | 70.1   | 70.1   | 69.1   | 64.9   | 64.9   |
| 85°    | 42.3   | 41.2   | 40.2   | 37.1   | 36.1   |
| 87.5°  | 18.6   | 16.5   | 14.4   | 11.3   | 10.3   |
| 90°    | 1.2    | 15.2   | 40.8   | 38.5   | 39.6   |
| 92.5°  | 25.6   | 35.0   | 36.1   | 37.3   | 37.3   |
| 95°    | 60.6   | 72.3   | 74.6   | 74.6   | 72.3   |
| 97.5°  | 101.4  | 111.9  | 116.6  | 116.6  | 116.6  |
| 100°   | 148.0  | 157.4  | 160.9  | 160.9  | 159.7  |
| 102.5° | 197.0  | 204.0  | 208.7  | 209.8  | 208.7  |
| 105°   | 250.6  | 254.1  | 256.5  | 258.8  | 258.8  |
| 107.5° | 304.3  | 308.9  | 308.9  | 310.1  | 304.3  |
| 110°   | 355.5  | 362.5  | 362.5  | 362.5  | 359.0  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 411.5  | 418.5  | 417.3  | 413.8  | 411.5  |
| 115°   | 466.3  | 473.3  | 471.0  | 469.8  | 466.3  |
| 117.5° | 521.1  | 530.4  | 524.6  | 521.1  | 517.6  |
| 120°   | 575.9  | 585.2  | 575.9  | 575.9  | 572.4  |
| 122.5° | 626.0  | 637.6  | 631.8  | 628.3  | 626.0  |
| 125°   | 678.4  | 688.9  | 685.4  | 681.9  | 680.8  |
| 127.5° | 729.7  | 742.6  | 737.9  | 733.2  | 729.7  |
| 130°   | 777.5  | 792.7  | 790.4  | 788.0  | 783.4  |
| 132.5° | 831.2  | 842.8  | 844.0  | 838.2  | 834.7  |
| 135°   | 877.8  | 890.6  | 892.9  | 891.8  | 888.3  |
| 137.5° | 929.1  | 939.6  | 941.9  | 940.7  | 936.1  |
| 140°   | 974.5  | 985.0  | 990.9  | 990.9  | 986.2  |
| 142.5° | 1021.2 | 1031.7 | 1035.2 | 1036.3 | 1031.7 |
| 145°   | 1065.5 | 1073.6 | 1080.6 | 1081.8 | 1077.1 |
| 147.5° | 1105.1 | 1115.6 | 1120.3 | 1122.6 | 1117.9 |
| 150°   | 1145.9 | 1152.9 | 1157.6 | 1161.1 | 1157.6 |
| 152.5° | 1182.0 | 1189.0 | 1194.9 | 1199.5 | 1194.9 |
| 155°   | 1218.2 | 1221.7 | 1225.2 | 1231.0 | 1227.5 |
| 157.5° | 1249.7 | 1252.0 | 1254.3 | 1262.5 | 1256.6 |
| 160°   | 1277.6 | 1280.0 | 1281.1 | 1288.1 | 1283.5 |
| 162.5° | 1303.3 | 1303.3 | 1304.4 | 1312.6 | 1306.8 |
| 165°   | 1325.4 | 1324.3 | 1324.3 | 1332.4 | 1326.6 |
| 167.5° | 1345.2 | 1341.7 | 1341.7 | 1349.9 | 1344.1 |
| 170°   | 1360.4 | 1356.9 | 1355.7 | 1363.9 | 1356.9 |
| 172.5° | 1370.9 | 1367.4 | 1366.2 | 1374.4 | 1367.4 |
| 175°   | 1379.0 | 1375.5 | 1373.2 | 1381.4 | 1374.4 |
| 177.5° | 1383.7 | 1380.2 | 1377.9 | 1384.9 | 1377.9 |
| 180°   | 1381.4 | 1381.4 | 1381.4 | 1381.4 | 1381.4 |

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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 | 14.22            | 15.01 | 15.25 | 16.05 | 17.44 | 15.00          | 15.79 | 16.03 | 16.83 | 18.22 |
|                 | 3H   | 15.55            | 16.26 | 16.59 | 17.31 | 18.71 | 16.62          | 17.33 | 17.66 | 18.38 | 19.78 |
|                 | 4H   | 15.96            | 16.63 | 17.01 | 17.67 | 19.09 | 17.21          | 17.88 | 18.26 | 18.93 | 20.35 |
|                 | 6H   | 16.17            | 16.79 | 17.23 | 17.84 | 19.27 | 17.61          | 18.23 | 18.67 | 19.28 | 20.71 |
|                 | 8H   | 16.20            | 16.79 | 17.26 | 17.85 | 19.28 | 17.72          | 18.31 | 18.78 | 19.37 | 20.80 |
|                 | 12H  | 16.19            | 16.75 | 17.26 | 17.81 | 19.25 | 17.76          | 18.32 | 18.83 | 19.38 | 20.83 |
| 4H              | 2H   | 14.68            | 15.35 | 15.74 | 16.40 | 17.81 | 15.33          | 16.00 | 16.38 | 17.04 | 18.46 |
|                 | 3H   | 16.19            | 16.75 | 17.26 | 17.83 | 19.25 | 17.10          | 17.66 | 18.16 | 18.73 | 20.16 |
|                 | 4H   | 16.70            | 17.21 | 17.77 | 18.27 | 19.72 | 17.78          | 18.29 | 18.85 | 19.36 | 20.81 |
|                 | 6H   | 16.99            | 17.44 | 18.07 | 18.52 | 19.97 | 18.27          | 18.71 | 19.35 | 19.80 | 21.24 |
|                 | 8H   | 17.05            | 17.46 | 18.13 | 18.54 | 20.00 | 18.41          | 18.82 | 19.49 | 19.90 | 21.36 |
|                 | 12H  | 17.05            | 17.42 | 18.14 | 18.51 | 19.98 | 18.47          | 18.84 | 19.57 | 19.94 | 21.40 |
| 8H              | 4H   | 16.87            | 17.28 | 17.94 | 18.36 | 19.82 | 17.86          | 18.27 | 18.94 | 19.35 | 20.81 |
|                 | 6H   | 17.25            | 17.59 | 18.35 | 18.71 | 20.17 | 18.42          | 18.76 | 19.52 | 19.89 | 21.34 |
|                 | 8H   | 17.35            | 17.65 | 18.46 | 18.75 | 20.23 | 18.61          | 18.91 | 19.72 | 20.01 | 21.49 |
|                 | 12H  | 17.38            | 17.64 | 18.49 | 18.74 | 20.25 | 18.71          | 18.97 | 19.82 | 20.07 | 21.58 |
| 12H             | 4H   | 16.84            | 17.22 | 17.94 | 18.31 | 19.78 | 17.82          | 18.19 | 18.91 | 19.28 | 20.75 |
|                 | 6H   | 17.26            | 17.56 | 18.37 | 18.67 | 20.14 | 18.41          | 18.71 | 19.52 | 19.82 | 21.29 |
|                 | 8H   | 17.37            | 17.64 | 18.49 | 18.74 | 20.25 | 18.61          | 18.87 | 19.72 | 19.97 | 21.49 |