

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: P998476

Luminaire Tested: SA2XXDIP-B485D330UB35-4F0-XX-W2A-F4

Issue Date: 5/7/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P998476  
REPORT IS A COMBINATION OF REPORTS P984219 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/7/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B485D330UB35-4F0-XX-W2A-F4  
Description: Define 2 Direct/Indirect Pendant with 3500K BioUP LEDs {m-DER=0.721} {m-EER=0.792}  
Light Source: -  
Ballast/Driver: -

**Summary**

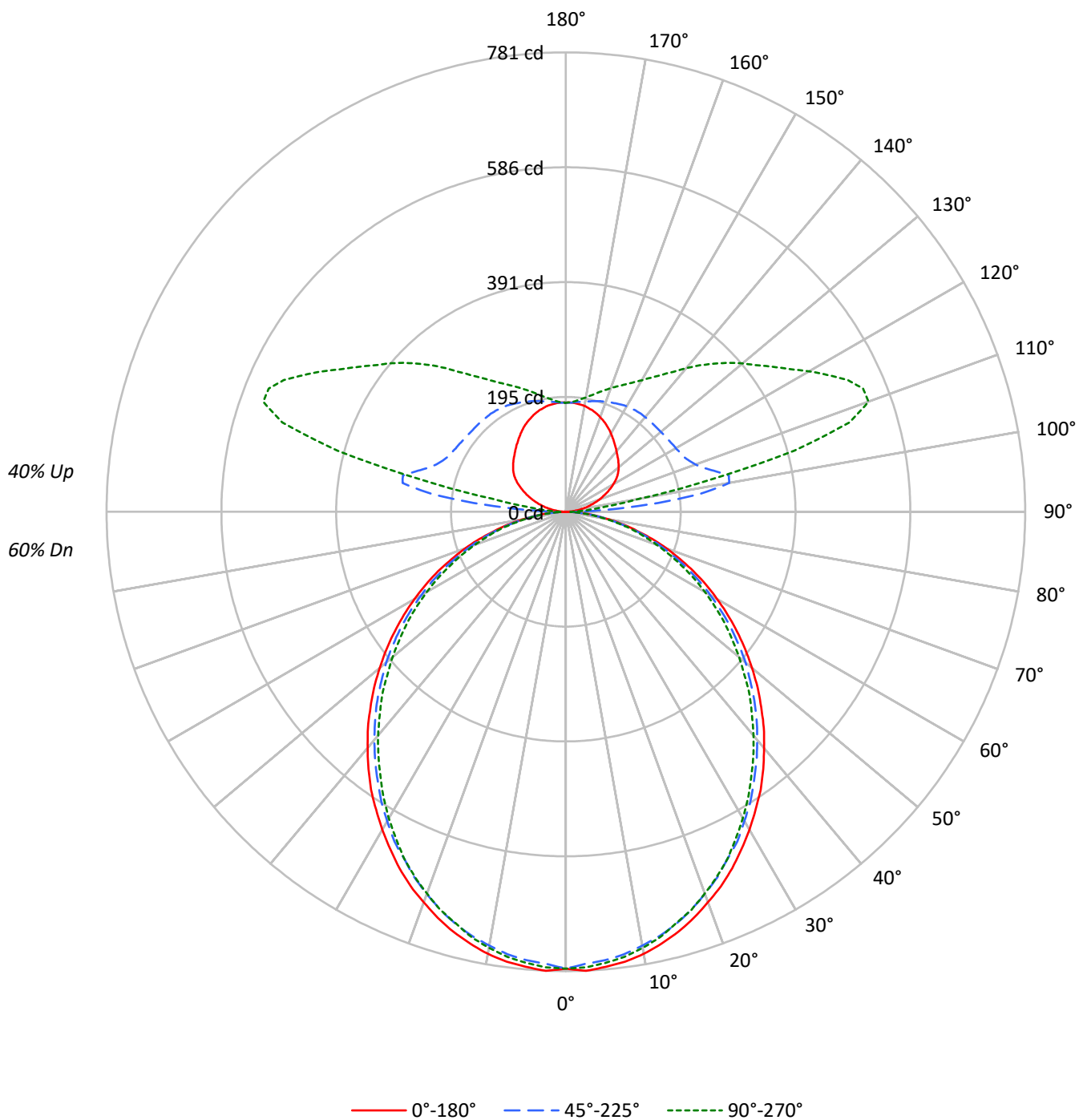
Lumens per Lamp: N/A  
Luminaire Lumens: 3271.5 lumens  
Efficiency: N/A  
Efficacy: 98.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 33.3  
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   | 110 | 110 | 110 | 110 | 102 | 102 | 102 | 102 | 89 | 89 | 89 | 77 | 77 | 77 | 66 | 66 | 66 |
| 1   | 100 | 96  | 92  | 88  | 93  | 90  | 86  | 83  | 78 | 76 | 73 | 68 | 66 | 64 | 58 | 57 | 56 |
| 2   | 91  | 84  | 77  | 72  | 85  | 78  | 73  | 68  | 69 | 64 | 61 | 60 | 56 | 54 | 51 | 49 | 47 |
| 3   | 83  | 74  | 66  | 60  | 77  | 69  | 62  | 57  | 61 | 55 | 51 | 53 | 49 | 45 | 45 | 42 | 40 |
| 4   | 76  | 65  | 57  | 51  | 71  | 61  | 54  | 48  | 54 | 48 | 44 | 47 | 43 | 39 | 41 | 37 | 34 |
| 5   | 70  | 58  | 50  | 44  | 65  | 55  | 47  | 42  | 48 | 42 | 38 | 42 | 37 | 34 | 37 | 33 | 30 |
| 6   | 65  | 52  | 44  | 38  | 60  | 49  | 42  | 36  | 43 | 37 | 33 | 38 | 33 | 30 | 33 | 29 | 26 |
| 7   | 60  | 47  | 39  | 33  | 56  | 45  | 37  | 32  | 39 | 33 | 29 | 35 | 30 | 26 | 30 | 26 | 23 |
| 8   | 55  | 43  | 35  | 30  | 52  | 41  | 33  | 28  | 36 | 30 | 26 | 32 | 27 | 23 | 28 | 24 | 21 |
| 9   | 52  | 39  | 32  | 26  | 48  | 37  | 30  | 25  | 33 | 27 | 23 | 29 | 25 | 21 | 26 | 22 | 19 |
| 10  | 48  | 36  | 29  | 24  | 45  | 34  | 27  | 23  | 31 | 25 | 21 | 27 | 22 | 19 | 24 | 20 | 17 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 12295 | 12295 | 12295 |
| 5°  | 12315 | 11719 | 11636 |
| 10° | 12213 | 11184 | 10963 |
| 15° | 12035 | 10647 | 10255 |
| 20° | 11794 | 10061 | 9585  |
| 25° | 11552 | 9451  | 8916  |
| 30° | 11249 | 8876  | 8212  |
| 35° | 10964 | 8270  | 7524  |
| 40° | 10611 | 7671  | 6870  |
| 45° | 10258 | 7078  | 6231  |
| 50° | 9876  | 6475  | 5568  |
| 55° | 9473  | 5829  | 4939  |
| 60° | 9018  | 5131  | 4286  |
| 65° | 8521  | 4421  | 3599  |
| 70° | 7891  | 3643  | 2907  |
| 75° | 7021  | 2808  | 2243  |
| 80° | 5964  | 1908  | 1444  |
| 85° | 4322  | 887   | 614   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10258 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 73.1   | 2.2       |
| 10°-20°   | 205.7  | 6.3       |
| 20°-30°   | 302.3  | 9.2       |
| 30°-40°   | 351.0  | 10.7      |
| 40°-50°   | 350.6  | 10.7      |
| 50°-60°   | 305.7  | 9.3       |
| 60°-70°   | 226.0  | 6.9       |
| 70°-80°   | 127.9  | 3.9       |
| 80°-90°   | 34.9   | 1.1       |
| 90°-100°  | 75.3   | 2.3       |
| 100°-110° | 254.4  | 7.8       |
| 110°-120° | 267.4  | 8.2       |
| 120°-130° | 219.9  | 6.7       |
| 130°-140° | 176.7  | 5.4       |
| 140°-150° | 133.5  | 4.1       |
| 150°-160° | 93.9   | 2.9       |
| 160°-170° | 55.3   | 1.7       |
| 170°-180° | 18.0   | 0.5       |
| 0°-30°    | 581.0  | 17.8      |
| 0°-40°    | 932.1  | 28.5      |
| 0°-60°    | 1588.4 | 48.6      |
| 0°-90°    | 1977.2 | 60.4      |
| 90°-120°  | 597.1  | 18.3      |
| 90°-150°  | 1127.2 | 34.5      |
| 90°-180°  | 1294.0 | 39.6      |
| 0°-180°   | 3271.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 777 | 777   | 777 | 777   | 777 |      |
| 5°   | 777 | 774   | 766 | 772   | 770 | 74   |
| 15°  | 739 | 735   | 725 | 728   | 724 | 208  |
| 25°  | 669 | 663   | 650 | 652   | 650 | 308  |
| 35°  | 577 | 570   | 558 | 553   | 550 | 360  |
| 45°  | 470 | 464   | 453 | 445   | 442 | 363  |
| 55°  | 356 | 351   | 342 | 333   | 329 | 318  |
| 65°  | 240 | 235   | 228 | 221   | 217 | 237  |
| 75°  | 126 | 124   | 120 | 116   | 117 | 134  |
| 85°  | 31  | 30    | 29  | 27    | 26  | 34   |
| 90°  | 0   | 5     | 12  | 12    | 12  | 3    |
| 95°  | 12  | 31    | 140 | 53    | 41  | 13   |
| 105° | 44  | 66    | 264 | 473   | 402 | 46   |
| 115° | 77  | 97    | 221 | 457   | 529 | 76   |
| 125° | 107 | 127   | 213 | 370   | 430 | 95   |
| 135° | 126 | 150   | 210 | 311   | 356 | 97   |
| 145° | 144 | 165   | 209 | 260   | 284 | 90   |
| 155° | 163 | 176   | 203 | 230   | 239 | 75   |
| 165° | 178 | 183   | 195 | 206   | 210 | 50   |
| 175° | 185 | 185   | 187 | 189   | 189 | 18   |
| 180° | 186 | 186   | 186 | 186   | 186 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 776.7 | 776.7 | 776.7 | 776.7 | 776.7 |
| 2.5°   | 781.2 | 777.4 | 769.2 | 776.7 | 775.2 |
| 5°     | 776.7 | 773.7 | 765.5 | 771.5 | 770.0 |
| 7.5°   | 771.5 | 767.0 | 758.8 | 764.7 | 763.2 |
| 10°    | 763.2 | 758.0 | 749.0 | 755.0 | 752.8 |
| 12.5°  | 752.0 | 747.6 | 738.6 | 742.3 | 740.8 |
| 15°    | 739.3 | 734.9 | 725.2 | 728.1 | 724.4 |
| 17.5°  | 723.7 | 719.2 | 709.5 | 713.2 | 709.5 |
| 20°    | 706.5 | 702.0 | 691.5 | 693.8 | 690.8 |
| 22.5°  | 689.3 | 682.6 | 672.9 | 672.9 | 671.4 |
| 25°    | 669.1 | 663.2 | 650.5 | 652.0 | 650.5 |
| 27.5°  | 646.7 | 641.5 | 631.8 | 629.6 | 625.8 |
| 30°    | 624.3 | 618.4 | 607.2 | 604.9 | 601.9 |
| 32.5°  | 600.4 | 596.0 | 584.0 | 579.5 | 576.5 |
| 35°    | 577.3 | 569.8 | 557.9 | 553.4 | 549.7 |
| 37.5°  | 551.1 | 544.4 | 532.5 | 527.2 | 523.5 |
| 40°    | 524.3 | 518.3 | 506.3 | 499.6 | 496.6 |
| 42.5°  | 498.1 | 492.1 | 480.2 | 472.7 | 468.2 |
| 45°    | 469.7 | 464.5 | 453.3 | 445.1 | 442.1 |
| 47.5°  | 442.1 | 436.9 | 424.9 | 416.7 | 412.2 |
| 50°    | 413.0 | 409.3 | 398.8 | 388.3 | 384.6 |
| 52.5°  | 384.6 | 379.4 | 369.7 | 361.5 | 356.2 |
| 55°    | 355.5 | 351.0 | 342.0 | 333.1 | 329.3 |
| 57.5°  | 326.4 | 322.6 | 312.9 | 304.0 | 301.0 |
| 60°    | 297.2 | 294.2 | 283.8 | 275.6 | 273.3 |
| 62.5°  | 268.9 | 263.6 | 256.2 | 248.7 | 245.7 |
| 65°    | 239.7 | 235.2 | 227.8 | 221.1 | 217.3 |
| 67.5°  | 209.9 | 206.1 | 199.4 | 194.2 | 191.2 |
| 70°    | 182.2 | 179.2 | 172.5 | 167.3 | 164.3 |
| 72.5°  | 153.8 | 150.9 | 147.1 | 141.9 | 139.7 |
| 75°    | 125.5 | 124.0 | 120.2 | 115.8 | 117.2 |
| 77.5°  | 100.1 | 97.1  | 95.6  | 93.4  | 91.1  |
| 80°    | 74.7  | 73.9  | 72.4  | 70.2  | 68.7  |
| 82.5°  | 50.8  | 50.8  | 50.0  | 47.0  | 47.0  |
| 85°    | 30.6  | 29.9  | 29.1  | 26.9  | 26.1  |
| 87.5°  | 13.4  | 11.9  | 10.5  | 8.2   | 7.5   |
| 90°    | 0.4   | 4.8   | 12.1  | 11.6  | 11.8  |
| 92.5°  | 5.4   | 17.0  | 55.0  | 25.4  | 21.8  |
| 95°    | 12.5  | 30.7  | 139.9 | 52.8  | 40.7  |
| 97.5°  | 18.6  | 40.5  | 228.1 | 106.0 | 68.2  |
| 100°   | 27.5  | 49.6  | 282.0 | 211.2 | 127.8 |
| 102.5° | 35.7  | 57.8  | 283.8 | 357.0 | 249.2 |
| 105°   | 43.6  | 65.7  | 264.5 | 472.8 | 402.3 |
| 107.5° | 52.1  | 73.5  | 246.7 | 514.8 | 505.5 |
| 110°   | 60.7  | 81.6  | 234.5 | 508.0 | 547.6 |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 68.5  | 89.2  | 226.7 | 485.0 | 546.9 |
| 115°   | 76.8  | 96.9  | 221.3 | 456.8 | 529.4 |
| 117.5° | 85.3  | 104.6 | 218.5 | 429.8 | 503.0 |
| 120°   | 93.2  | 112.1 | 216.0 | 405.8 | 477.7 |
| 122.5° | 100.7 | 119.8 | 214.6 | 387.0 | 451.2 |
| 125°   | 107.1 | 126.7 | 212.8 | 370.0 | 429.5 |
| 127.5° | 112.5 | 133.4 | 211.7 | 355.6 | 409.1 |
| 130°   | 117.1 | 139.2 | 211.0 | 341.0 | 392.3 |
| 132.5° | 121.4 | 144.9 | 210.6 | 325.8 | 374.9 |
| 135°   | 125.7 | 149.9 | 210.3 | 311.0 | 355.9 |
| 137.5° | 129.6 | 154.2 | 210.3 | 296.0 | 337.7 |
| 140°   | 134.2 | 158.2 | 209.9 | 282.8 | 318.8 |
| 142.5° | 138.9 | 161.4 | 209.9 | 270.0 | 299.9 |
| 145°   | 143.5 | 165.0 | 209.2 | 259.7 | 284.2 |
| 147.5° | 148.5 | 167.8 | 208.1 | 250.6 | 270.3 |
| 150°   | 153.5 | 170.6 | 207.1 | 242.8 | 258.1 |
| 152.5° | 158.5 | 173.5 | 205.3 | 236.2 | 247.8 |
| 155°   | 163.1 | 176.2 | 203.1 | 229.8 | 238.8 |
| 157.5° | 167.1 | 178.3 | 201.0 | 223.7 | 231.0 |
| 160°   | 171.0 | 180.4 | 198.8 | 217.6 | 223.5 |
| 162.5° | 174.9 | 182.0 | 197.1 | 211.9 | 216.3 |
| 165°   | 177.8 | 183.1 | 194.6 | 206.4 | 209.6 |
| 167.5° | 180.3 | 184.2 | 192.4 | 201.4 | 203.1 |
| 170°   | 182.8 | 184.8 | 190.6 | 196.8 | 197.4 |
| 172.5° | 184.2 | 185.2 | 188.5 | 192.6 | 192.8 |
| 175°   | 185.3 | 185.4 | 187.1 | 189.4 | 188.9 |
| 177.5° | 186.0 | 185.6 | 185.6 | 187.1 | 186.0 |
| 180°   | 185.6 | 185.6 | 185.6 | 185.6 | 185.6 |

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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 | 14.86            | 15.83 | 15.73 | 16.71 | 17.83 | 15.65          | 16.61 | 16.51 | 17.49 | 18.61 |
|                 | 3H   | 16.21            | 17.07 | 17.08 | 17.97 | 19.11 | 17.28          | 18.15 | 18.15 | 19.04 | 20.18 |
|                 | 4H   | 16.62            | 17.44 | 17.51 | 18.34 | 19.49 | 17.88          | 18.69 | 18.77 | 19.59 | 20.74 |
|                 | 6H   | 16.84            | 17.60 | 17.75 | 18.50 | 19.67 | 18.29          | 19.04 | 19.19 | 19.95 | 21.11 |
|                 | 8H   | 16.88            | 17.59 | 17.79 | 18.52 | 19.68 | 18.40          | 19.11 | 19.31 | 20.04 | 21.20 |
|                 | 12H  | 16.87            | 17.56 | 17.79 | 18.47 | 19.66 | 18.44          | 19.13 | 19.36 | 20.05 | 21.23 |
| 4H              | 2H   | 15.35            | 16.16 | 16.24 | 17.06 | 18.21 | 15.99          | 16.81 | 16.88 | 17.71 | 18.86 |
|                 | 3H   | 16.87            | 17.55 | 17.78 | 18.48 | 19.65 | 17.78          | 18.46 | 18.68 | 19.39 | 20.56 |
|                 | 4H   | 17.38            | 18.00 | 18.30 | 18.93 | 20.12 | 18.46          | 19.09 | 19.38 | 20.01 | 21.20 |
|                 | 6H   | 17.69            | 18.23 | 18.62 | 19.18 | 20.37 | 18.97          | 19.50 | 19.90 | 20.45 | 21.65 |
|                 | 8H   | 17.75            | 18.25 | 18.68 | 19.20 | 20.40 | 19.11          | 19.61 | 20.04 | 20.56 | 21.76 |
|                 | 12H  | 17.76            | 18.21 | 18.71 | 19.17 | 20.38 | 19.18          | 19.63 | 20.13 | 20.59 | 21.80 |
| 8H              | 4H   | 17.57            | 18.07 | 18.50 | 19.01 | 20.22 | 18.56          | 19.06 | 19.49 | 20.00 | 21.21 |
|                 | 6H   | 17.95            | 18.37 | 18.91 | 19.36 | 20.56 | 19.13          | 19.55 | 20.09 | 20.53 | 21.74 |
|                 | 8H   | 18.06            | 18.42 | 19.03 | 19.40 | 20.62 | 19.32          | 19.69 | 20.29 | 20.66 | 21.89 |
|                 | 12H  | 18.09            | 18.42 | 19.07 | 19.39 | 20.66 | 19.42          | 19.75 | 20.40 | 20.72 | 21.99 |
| 12H             | 4H   | 17.55            | 18.01 | 18.51 | 18.97 | 20.18 | 18.53          | 18.98 | 19.48 | 19.94 | 21.15 |
|                 | 6H   | 17.97            | 18.34 | 18.94 | 19.32 | 20.54 | 19.12          | 19.49 | 20.09 | 20.47 | 21.69 |
|                 | 8H   | 18.09            | 18.41 | 19.06 | 19.38 | 20.65 | 19.32          | 19.65 | 20.30 | 20.62 | 21.89 |