

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243201

Luminaire Tested: S122DRP-H865D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243201  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-53)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-H865D930-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

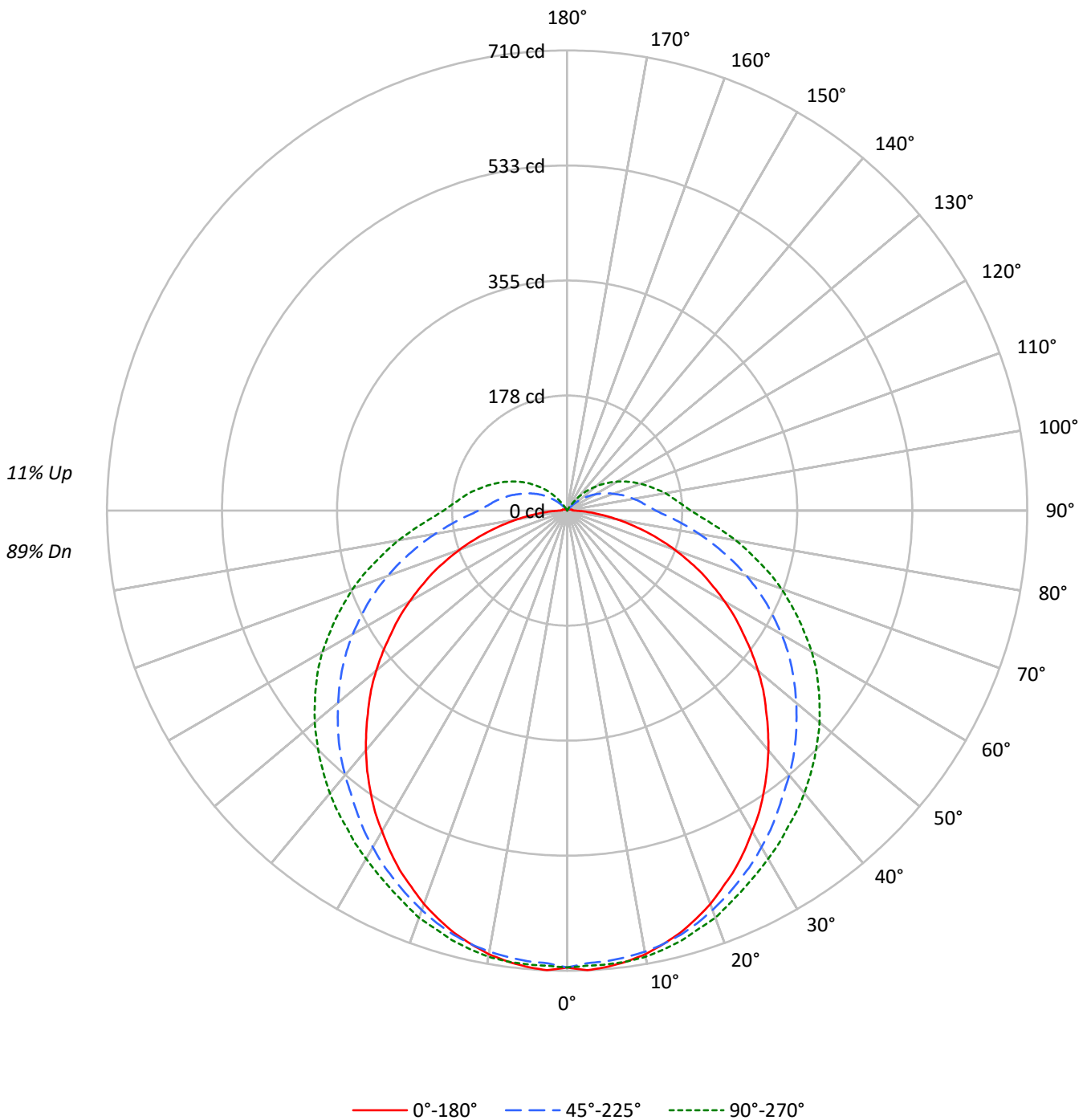
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2704.8 lumens  
Efficiency: N/A  
Efficacy: 85.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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 | 0  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |
| 0   | 116 | 116 | 116 | 116 | 112 | 112 | 112 | 112 | 105 | 105 | 105 | 98 | 98 | 98 | 92 | 92 | 92 | 89 |
| 1   | 104 | 98  | 93  | 88  | 100 | 95  | 90  | 86  | 88  | 84  | 81  | 82 | 79 | 76 | 77 | 74 | 72 | 69 |
| 2   | 93  | 84  | 77  | 70  | 90  | 81  | 74  | 68  | 76  | 70  | 65  | 71 | 66 | 62 | 66 | 62 | 59 | 56 |
| 3   | 85  | 73  | 64  | 57  | 81  | 71  | 63  | 56  | 66  | 59  | 54  | 62 | 56 | 51 | 58 | 53 | 49 | 46 |
| 4   | 77  | 64  | 55  | 48  | 74  | 62  | 54  | 47  | 58  | 51  | 45  | 55 | 48 | 43 | 51 | 46 | 41 | 39 |
| 5   | 71  | 57  | 48  | 41  | 68  | 55  | 47  | 40  | 52  | 44  | 39  | 49 | 42 | 37 | 46 | 40 | 36 | 33 |
| 6   | 65  | 51  | 42  | 35  | 63  | 50  | 41  | 35  | 47  | 39  | 34  | 44 | 37 | 32 | 41 | 36 | 31 | 29 |
| 7   | 60  | 46  | 37  | 31  | 58  | 45  | 37  | 30  | 42  | 35  | 29  | 40 | 33 | 28 | 38 | 32 | 28 | 25 |
| 8   | 56  | 42  | 33  | 27  | 54  | 41  | 33  | 27  | 39  | 31  | 26  | 37 | 30 | 25 | 35 | 29 | 25 | 22 |
| 9   | 52  | 39  | 30  | 25  | 50  | 38  | 30  | 24  | 36  | 28  | 24  | 34 | 27 | 23 | 32 | 26 | 22 | 20 |
| 10  | 49  | 36  | 28  | 22  | 47  | 35  | 27  | 22  | 33  | 26  | 21  | 31 | 25 | 21 | 30 | 24 | 20 | 18 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13427 | 13427 | 13427 |
| 5°  | 13489 | 12874 | 12800 |
| 10° | 13392 | 12447 | 12282 |
| 15° | 13223 | 12009 | 11735 |
| 20° | 12993 | 11533 | 11218 |
| 25° | 12726 | 11063 | 10687 |
| 30° | 12413 | 10621 | 10260 |
| 35° | 12121 | 10182 | 9880  |
| 40° | 11797 | 9806  | 9570  |
| 45° | 11442 | 9465  | 9255  |
| 50° | 11118 | 9117  | 8964  |
| 55° | 10690 | 8788  | 8653  |
| 60° | 10313 | 8428  | 8346  |
| 65° | 9896  | 8062  | 7974  |
| 70° | 9292  | 7622  | 7615  |
| 75° | 8625  | 7157  | 7196  |
| 80° | 7675  | 6696  | 6831  |
| 85° | 6719  | 6335  | 6465  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11442 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 66.8   | 2.5       |
| 10°-20°   | 191.9  | 7.1       |
| 20°-30°   | 290.6  | 10.7      |
| 30°-40°   | 354.5  | 13.1      |
| 40°-50°   | 381.5  | 14.1      |
| 50°-60°   | 370.9  | 13.7      |
| 60°-70°   | 324.3  | 12.0      |
| 70°-80°   | 249.6  | 9.2       |
| 80°-90°   | 167.7  | 6.2       |
| 90°-100°  | 116.1  | 4.3       |
| 100°-110° | 85.4   | 3.2       |
| 110°-120° | 56.8   | 2.1       |
| 120°-130° | 32.2   | 1.2       |
| 130°-140° | 13.8   | 0.5       |
| 140°-150° | 2.6    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 549.4  | 20.3      |
| 0°-40°    | 903.9  | 33.4      |
| 0°-60°    | 1656.3 | 61.2      |
| 0°-90°    | 2397.9 | 88.7      |
| 90°-120°  | 258.3  | 9.5       |
| 90°-150°  | 306.9  | 11.3      |
| 90°-180°  | 307.0  | 11.4      |
| 0°-180°   | 2704.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 705 | 705   | 705 | 705   | 705 |      |
| 5°   | 707 | 704   | 698 | 704   | 703 | 67   |
| 15°  | 674 | 677   | 677 | 686   | 686 | 190  |
| 25°  | 612 | 621   | 629 | 643   | 644 | 281  |
| 35°  | 529 | 547   | 566 | 588   | 595 | 331  |
| 45°  | 434 | 460   | 499 | 529   | 540 | 335  |
| 55°  | 332 | 371   | 423 | 461   | 473 | 297  |
| 65°  | 230 | 279   | 340 | 381   | 394 | 226  |
| 75°  | 127 | 185   | 249 | 294   | 306 | 134  |
| 85°  | 38  | 101   | 168 | 210   | 223 | 39   |
| 90°  | 11  | 71    | 136 | 178   | 190 | 7    |
| 95°  | 8   | 57    | 119 | 158   | 170 | 6    |
| 105° | 6   | 35    | 90  | 126   | 136 | 6    |
| 115° | 4   | 17    | 63  | 94    | 105 | 4    |
| 125° | 3   | 2     | 37  | 64    | 74  | 2    |
| 135° | 1   | 1     | 13  | 34    | 43  | 1    |
| 145° | 1   | 0     | 0   | 8     | 12  | 0    |
| 155° | 0   | 0     | 0   | 0     | 0   | 0    |
| 165° | 0   | 0     | 0   | 0     | 0   | 0    |
| 175° | 0   | 0     | 0   | 0     | 0   | 0    |
| 180° | 0   | 0     | 0   | 0     | 0   | 0    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 704.9 | 704.9 | 704.9 | 704.9 | 704.9 |
| 2.5°   | 709.8 | 706.8 | 699.0 | 704.9 | 702.9 |
| 5°     | 706.8 | 703.9 | 698.0 | 703.9 | 702.9 |
| 7.5°   | 701.9 | 700.0 | 695.0 | 702.9 | 701.9 |
| 10°    | 695.0 | 694.1 | 691.1 | 699.0 | 699.0 |
| 12.5°  | 685.2 | 686.2 | 685.2 | 694.1 | 693.1 |
| 15°    | 674.4 | 677.4 | 677.4 | 686.2 | 686.2 |
| 17.5°  | 660.7 | 665.6 | 667.6 | 677.4 | 676.4 |
| 20°    | 646.0 | 651.9 | 655.8 | 666.6 | 668.5 |
| 22.5°  | 628.3 | 637.1 | 643.0 | 654.8 | 655.8 |
| 25°    | 611.6 | 621.4 | 629.3 | 643.0 | 644.0 |
| 27.5°  | 592.0 | 603.7 | 615.5 | 629.3 | 632.2 |
| 30°    | 571.4 | 586.1 | 599.8 | 616.5 | 620.4 |
| 32.5°  | 551.7 | 566.4 | 584.1 | 601.8 | 608.7 |
| 35°    | 529.1 | 546.8 | 566.4 | 588.0 | 594.9 |
| 37.5°  | 506.6 | 525.2 | 548.8 | 574.3 | 583.1 |
| 40°    | 483.0 | 504.6 | 533.1 | 560.6 | 569.4 |
| 42.5°  | 458.5 | 482.0 | 516.4 | 544.8 | 554.7 |
| 45°    | 433.9 | 460.4 | 498.7 | 529.1 | 539.9 |
| 47.5°  | 410.4 | 438.8 | 480.1 | 514.4 | 524.2 |
| 50°    | 384.8 | 416.2 | 461.4 | 496.7 | 508.5 |
| 52.5°  | 358.3 | 393.7 | 442.7 | 479.1 | 490.9 |
| 55°    | 331.8 | 371.1 | 423.1 | 461.4 | 473.2 |
| 57.5°  | 307.3 | 348.5 | 403.5 | 441.8 | 455.5 |
| 60°    | 280.8 | 324.9 | 381.9 | 422.1 | 435.9 |
| 62.5°  | 254.3 | 302.4 | 360.3 | 401.5 | 414.3 |
| 65°    | 229.7 | 278.8 | 339.7 | 380.9 | 393.7 |
| 67.5°  | 202.2 | 254.3 | 317.1 | 360.3 | 372.1 |
| 70°    | 176.7 | 231.7 | 294.5 | 337.7 | 351.4 |
| 72.5°  | 151.2 | 207.1 | 271.9 | 315.1 | 329.9 |
| 75°    | 126.6 | 184.6 | 249.4 | 293.5 | 306.3 |
| 77.5°  | 101.1 | 162.0 | 227.8 | 271.9 | 284.7 |
| 80°    | 78.5  | 139.4 | 206.2 | 250.3 | 264.1 |
| 82.5°  | 56.0  | 118.8 | 186.5 | 229.7 | 242.5 |
| 85°    | 38.3  | 101.1 | 167.9 | 210.1 | 222.8 |
| 87.5°  | 22.6  | 84.4  | 150.2 | 192.4 | 205.2 |
| 90°    | 10.8  | 70.7  | 136.5 | 177.7 | 190.5 |
| 92.5°  | 8.8   | 63.8  | 126.6 | 166.9 | 179.7 |
| 95°    | 7.9   | 56.9  | 118.8 | 158.1 | 169.8 |
| 97.5°  | 7.9   | 52.0  | 111.9 | 150.2 | 162.0 |
| 100°   | 6.9   | 46.1  | 104.1 | 141.4 | 154.1 |
| 102.5° | 6.9   | 40.2  | 97.2  | 133.5 | 145.3 |
| 105°   | 5.9   | 35.3  | 90.3  | 125.7 | 136.5 |
| 107.5° | 4.9   | 30.4  | 82.5  | 117.8 | 128.6 |
| 110°   | 4.9   | 25.5  | 75.6  | 110.0 | 120.7 |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°   |
|--------|-----|-------|------|-------|-------|
| 112.5° | 3.9 | 21.6  | 69.7 | 102.1 | 112.9 |
| 115°   | 3.9 | 16.7  | 62.8 | 94.2  | 105.0 |
| 117.5° | 3.9 | 11.8  | 56.0 | 86.4  | 97.2  |
| 120°   | 2.9 | 7.9   | 50.1 | 79.5  | 89.3  |
| 122.5° | 2.9 | 4.9   | 43.2 | 71.7  | 81.5  |
| 125°   | 2.9 | 2.0   | 37.3 | 63.8  | 73.6  |
| 127.5° | 2.0 | 2.0   | 30.4 | 56.9  | 65.8  |
| 130°   | 2.0 | 1.0   | 24.5 | 49.1  | 57.9  |
| 132.5° | 2.0 | 1.0   | 18.7 | 42.2  | 50.1  |
| 135°   | 1.0 | 1.0   | 12.8 | 34.4  | 43.2  |
| 137.5° | 1.0 | 1.0   | 6.9  | 27.5  | 34.4  |
| 140°   | 1.0 | 0.0   | 2.9  | 20.6  | 26.5  |
| 142.5° | 1.0 | 0.0   | 0.0  | 13.7  | 19.6  |
| 145°   | 1.0 | 0.0   | 0.0  | 7.9   | 11.8  |
| 147.5° | 0.0 | 0.0   | 0.0  | 2.0   | 5.9   |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 1.0   |
| 152.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 155°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 157.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 160°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 162.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 165°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 167.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 170°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 172.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 175°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 177.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 180°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |



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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 | 17.24            | 18.72 | 17.77 | 19.25 | 19.83 | 20.30          | 21.78 | 20.83 | 22.31 | 22.90 |
|                 | 3H   | 18.74            | 20.09 | 19.28 | 20.63 | 21.25 | 22.94          | 24.29 | 23.48 | 24.83 | 25.45 |
|                 | 4H   | 19.25            | 20.53 | 19.81 | 21.08 | 21.72 | 24.22          | 25.50 | 24.78 | 26.05 | 26.69 |
|                 | 6H   | 19.56            | 20.76 | 20.14 | 21.33 | 21.98 | 25.54          | 26.74 | 26.12 | 27.31 | 27.96 |
|                 | 8H   | 19.64            | 20.79 | 20.22 | 21.38 | 22.03 | 26.23          | 27.38 | 26.81 | 27.97 | 28.62 |
|                 | 12H  | 19.68            | 20.78 | 20.27 | 21.36 | 22.05 | 26.98          | 28.08 | 27.57 | 28.67 | 29.35 |
| 4H              | 2H   | 18.36            | 19.64 | 18.92 | 20.20 | 20.83 | 20.70          | 21.98 | 21.26 | 22.54 | 23.17 |
|                 | 3H   | 20.12            | 21.22 | 20.69 | 21.81 | 22.47 | 23.54          | 24.64 | 24.12 | 25.24 | 25.89 |
|                 | 4H   | 20.77            | 21.78 | 21.36 | 22.38 | 23.07 | 24.98          | 25.99 | 25.58 | 26.60 | 27.28 |
|                 | 6H   | 21.22            | 22.11 | 21.83 | 22.74 | 23.44 | 26.49          | 27.38 | 27.10 | 28.01 | 28.71 |
|                 | 8H   | 21.35            | 22.19 | 21.96 | 22.82 | 23.53 | 27.27          | 28.11 | 27.89 | 28.74 | 29.45 |
|                 | 12H  | 21.42            | 22.19 | 22.06 | 22.84 | 23.56 | 28.14          | 28.90 | 28.78 | 29.56 | 30.27 |
| 8H              | 4H   | 21.61            | 22.45 | 22.23 | 23.08 | 23.79 | 25.18          | 26.02 | 25.79 | 26.65 | 27.36 |
|                 | 6H   | 22.27            | 22.99 | 22.92 | 23.66 | 24.37 | 26.84          | 27.55 | 27.49 | 28.22 | 28.94 |
|                 | 8H   | 22.50            | 23.15 | 23.16 | 23.83 | 24.55 | 27.75          | 28.39 | 28.41 | 29.07 | 29.80 |
|                 | 12H  | 22.67            | 23.25 | 23.33 | 23.92 | 24.71 | 28.78          | 29.36 | 29.44 | 30.02 | 30.81 |
| 12H             | 4H   | 21.84            | 22.60 | 22.48 | 23.26 | 23.98 | 25.18          | 25.95 | 25.82 | 26.60 | 27.32 |
|                 | 6H   | 22.61            | 23.26 | 23.27 | 23.94 | 24.67 | 26.87          | 27.52 | 27.53 | 28.20 | 28.92 |
|                 | 8H   | 22.95            | 23.53 | 23.62 | 24.20 | 24.99 | 27.84          | 28.42 | 28.50 | 29.09 | 29.88 |