

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: P242326

Luminaire Tested: S122DRP-S675D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242326  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-S675D830-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

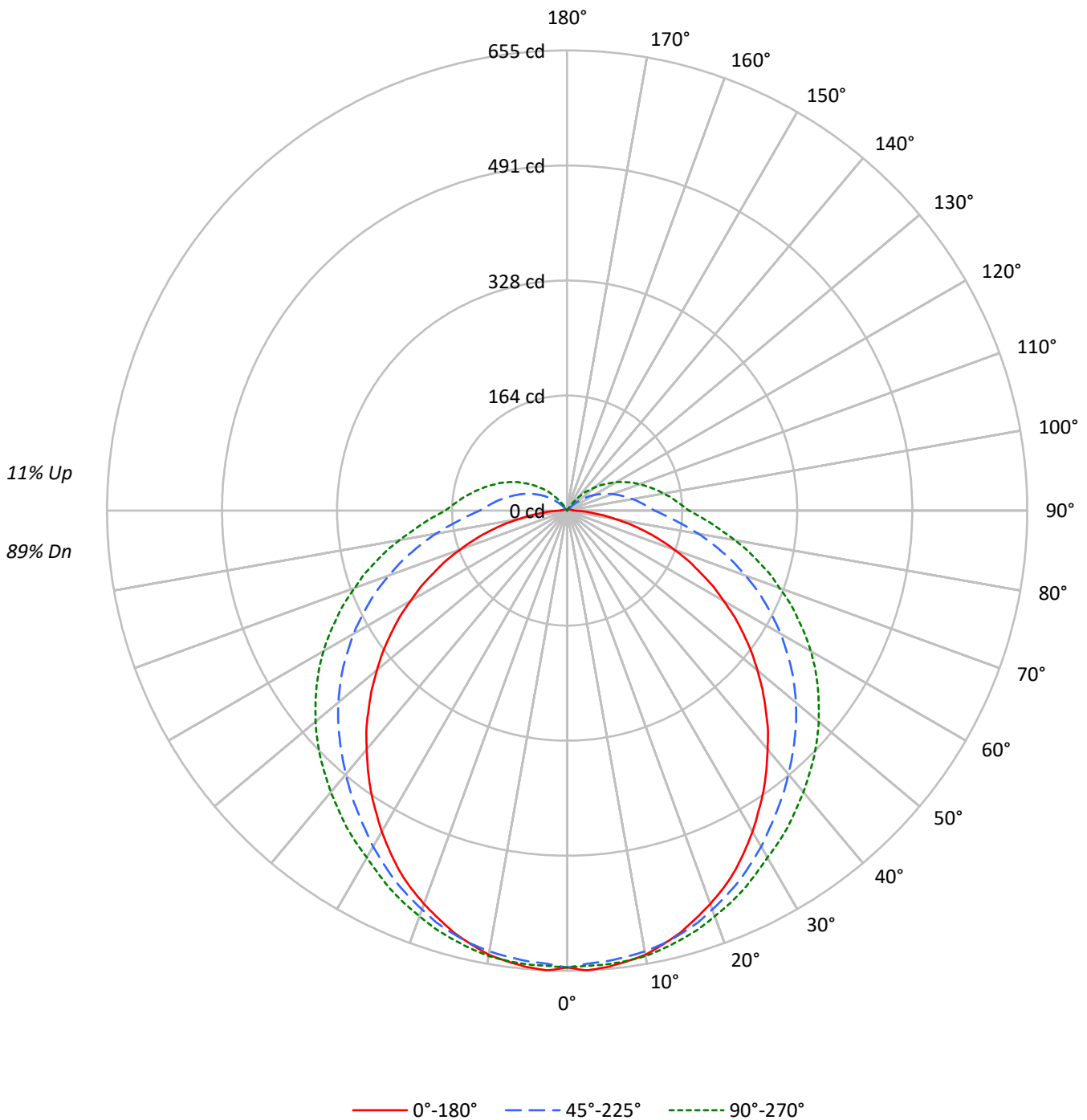
Lumens per Lamp: N/A  
Luminaire Lumens: 2481.5 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 26.4  
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  | 85  | 81  | 82 | 79 | 77 | 77 | 75 | 72 | 69 |
| 2   | 94  | 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 | 42 | 39 |
| 5   | 71  | 57  | 48  | 41  | 68  | 56  | 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 | 42 | 36 | 31 | 29 |
| 7   | 60  | 46  | 37  | 31  | 58  | 45  | 37  | 31  | 43  | 35  | 30  | 40 | 34 | 29 | 38 | 32 | 28 | 25 |
| 8   | 56  | 42  | 34  | 28  | 54  | 41  | 33  | 27  | 39  | 32  | 26  | 37 | 30 | 25 | 35 | 29 | 25 | 23 |
| 9   | 52  | 39  | 30  | 25  | 50  | 38  | 30  | 24  | 36  | 29  | 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°  | 12389 | 12389 | 12389 |
| 5°  | 12447 | 11874 | 11809 |
| 10° | 12368 | 11476 | 11312 |
| 15° | 12197 | 11062 | 10799 |
| 20° | 11981 | 10626 | 10311 |
| 25° | 11767 | 10207 | 9869  |
| 30° | 11466 | 9780  | 9430  |
| 35° | 11163 | 9369  | 9111  |
| 40° | 10842 | 9015  | 8792  |
| 45° | 10538 | 8695  | 8515  |
| 50° | 10214 | 8400  | 8241  |
| 55° | 9869  | 8086  | 7964  |
| 60° | 9450  | 7760  | 7670  |
| 65° | 9013  | 7381  | 7330  |
| 70° | 8524  | 6977  | 6965  |
| 75° | 7896  | 6571  | 6621  |
| 80° | 6912  | 6154  | 6265  |
| 85° | 5947  | 5762  | 5963  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10538 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 61.7   | 2.5       |
| 10°-20°   | 176.8  | 7.1       |
| 20°-30°   | 267.9  | 10.8      |
| 30°-40°   | 326.3  | 13.1      |
| 40°-50°   | 351.0  | 14.1      |
| 50°-60°   | 340.9  | 13.7      |
| 60°-70°   | 297.7  | 12.0      |
| 70°-80°   | 229.1  | 9.2       |
| 80°-90°   | 153.5  | 6.2       |
| 90°-100°  | 105.9  | 4.3       |
| 100°-110° | 77.3   | 3.1       |
| 110°-120° | 51.1   | 2.1       |
| 120°-130° | 28.4   | 1.1       |
| 130°-140° | 11.9   | 0.5       |
| 140°-150° | 2.0    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 506.4  | 20.4      |
| 0°-40°    | 832.7  | 33.6      |
| 0°-60°    | 1524.6 | 61.4      |
| 0°-90°    | 2204.9 | 88.9      |
| 90°-120°  | 234.3  | 9.4       |
| 90°-150°  | 276.7  | 11.1      |
| 90°-180°  | 277.0  | 11.2      |
| 0°-180°   | 2481.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 650 | 650   | 650 | 650   | 650 |      |
| 5°   | 652 | 649   | 644 | 649   | 648 | 62   |
| 15°  | 622 | 624   | 624 | 632   | 632 | 175  |
| 25°  | 566 | 572   | 581 | 592   | 595 | 260  |
| 35°  | 487 | 503   | 521 | 542   | 549 | 305  |
| 45°  | 400 | 425   | 458 | 487   | 497 | 309  |
| 55°  | 306 | 340   | 389 | 423   | 436 | 274  |
| 65°  | 209 | 255   | 311 | 350   | 362 | 208  |
| 75°  | 116 | 169   | 229 | 270   | 282 | 123  |
| 85°  | 34  | 92    | 153 | 192   | 206 | 36   |
| 90°  | 9   | 64    | 124 | 162   | 173 | 7    |
| 95°  | 8   | 52    | 108 | 144   | 156 | 6    |
| 105° | 5   | 32    | 81  | 114   | 124 | 5    |
| 115° | 4   | 14    | 57  | 85    | 95  | 3    |
| 125° | 2   | 2     | 32  | 58    | 66  | 2    |
| 135° | 1   | 1     | 10  | 30    | 38  | 1    |
| 145° | 0   | 0     | 0   | 6     | 10  | 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    |



TEST NUMBER: P242326

CATALOG NUMBER: S122DRP-S675D830-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 650.4 | 650.4 | 650.4 | 650.4 | 650.4 |
| 2.5°   | 655.1 | 652.2 | 645.6 | 650.4 | 648.5 |
| 5°     | 652.2 | 649.4 | 643.8 | 649.4 | 648.5 |
| 7.5°   | 647.5 | 645.6 | 640.9 | 647.5 | 646.6 |
| 10°    | 641.9 | 640.0 | 637.2 | 644.7 | 643.8 |
| 12.5°  | 632.4 | 633.4 | 631.5 | 639.0 | 638.1 |
| 15°    | 622.1 | 624.0 | 624.0 | 632.4 | 631.5 |
| 17.5°  | 608.9 | 612.7 | 615.5 | 624.0 | 624.0 |
| 20°    | 595.7 | 600.4 | 604.2 | 614.5 | 614.5 |
| 22.5°  | 581.5 | 587.2 | 592.9 | 603.2 | 605.1 |
| 25°    | 565.5 | 572.1 | 580.6 | 591.9 | 594.7 |
| 27.5°  | 546.7 | 557.0 | 566.5 | 580.6 | 582.5 |
| 30°    | 527.8 | 540.1 | 552.3 | 567.4 | 570.2 |
| 32.5°  | 507.1 | 521.2 | 536.3 | 554.2 | 559.9 |
| 35°    | 487.3 | 503.3 | 521.2 | 542.0 | 548.6 |
| 37.5°  | 465.6 | 483.5 | 506.1 | 528.8 | 535.4 |
| 40°    | 443.9 | 464.7 | 490.1 | 514.6 | 523.1 |
| 42.5°  | 423.2 | 443.9 | 474.1 | 501.4 | 509.9 |
| 45°    | 399.6 | 425.1 | 458.1 | 487.3 | 496.7 |
| 47.5°  | 377.0 | 404.4 | 442.1 | 472.2 | 482.6 |
| 50°    | 353.5 | 382.7 | 425.1 | 457.1 | 467.5 |
| 52.5°  | 330.8 | 361.9 | 407.2 | 440.2 | 451.5 |
| 55°    | 306.3 | 340.3 | 389.3 | 423.2 | 435.5 |
| 57.5°  | 282.8 | 320.5 | 369.5 | 406.2 | 418.5 |
| 60°    | 257.3 | 297.8 | 351.6 | 387.4 | 400.6 |
| 62.5°  | 234.7 | 277.1 | 330.8 | 369.5 | 381.7 |
| 65°    | 209.2 | 255.4 | 311.0 | 349.7 | 361.9 |
| 67.5°  | 186.6 | 234.7 | 291.2 | 329.9 | 343.1 |
| 70°    | 162.1 | 211.1 | 269.6 | 310.1 | 321.4 |
| 72.5°  | 139.5 | 190.4 | 249.8 | 289.4 | 303.5 |
| 75°    | 115.9 | 168.7 | 229.0 | 269.6 | 281.8 |
| 77.5°  | 93.3  | 148.0 | 209.2 | 249.8 | 263.0 |
| 80°    | 70.7  | 128.2 | 189.5 | 229.0 | 242.2 |
| 82.5°  | 51.8  | 108.4 | 170.6 | 210.2 | 222.4 |
| 85°    | 33.9  | 92.4  | 152.7 | 192.3 | 205.5 |
| 87.5°  | 20.7  | 77.3  | 137.6 | 176.3 | 188.5 |
| 90°    | 9.4   | 64.1  | 124.4 | 162.1 | 173.4 |
| 92.5°  | 8.5   | 58.4  | 115.9 | 152.7 | 164.0 |
| 95°    | 7.5   | 51.8  | 108.4 | 144.2 | 155.5 |
| 97.5°  | 6.6   | 47.1  | 101.8 | 136.7 | 148.0 |
| 100°   | 6.6   | 41.5  | 94.3  | 129.1 | 139.5 |
| 102.5° | 5.7   | 36.8  | 87.7  | 121.6 | 132.0 |
| 105°   | 4.7   | 32.0  | 81.1  | 114.0 | 124.4 |
| 107.5° | 4.7   | 27.3  | 74.5  | 106.5 | 116.9 |
| 110°   | 3.8   | 22.6  | 68.8  | 99.0  | 109.3 |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°   |
|--------|-----|-------|------|-------|-------|
| 112.5° | 3.8 | 18.9  | 62.2 | 92.4  | 102.7 |
| 115°   | 3.8 | 14.1  | 56.6 | 84.8  | 95.2  |
| 117.5° | 2.8 | 10.4  | 50.0 | 78.2  | 87.7  |
| 120°   | 2.8 | 6.6   | 44.3 | 70.7  | 81.1  |
| 122.5° | 2.8 | 3.8   | 38.6 | 64.1  | 72.6  |
| 125°   | 1.9 | 1.9   | 32.0 | 57.5  | 66.0  |
| 127.5° | 1.9 | 0.9   | 26.4 | 50.0  | 58.4  |
| 130°   | 1.9 | 0.9   | 20.7 | 43.4  | 50.9  |
| 132.5° | 1.9 | 0.9   | 15.1 | 36.8  | 44.3  |
| 135°   | 0.9 | 0.9   | 10.4 | 30.2  | 37.7  |
| 137.5° | 0.9 | 0.9   | 5.7  | 23.6  | 30.2  |
| 140°   | 0.9 | 0.0   | 1.9  | 17.0  | 22.6  |
| 142.5° | 0.9 | 0.0   | 0.0  | 11.3  | 16.0  |
| 145°   | 0.0 | 0.0   | 0.0  | 5.7   | 10.4  |
| 147.5° | 0.0 | 0.0   | 0.0  | 0.9   | 3.8   |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0   |
| 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 | 16.96            | 18.45 | 17.49 | 18.97 | 19.55 | 20.03          | 21.51 | 20.55 | 22.03 | 22.61 |
|                 | 3H   | 18.46            | 19.82 | 19.00 | 20.36 | 20.97 | 22.65          | 24.01 | 23.19 | 24.54 | 25.16 |
|                 | 4H   | 18.96            | 20.25 | 19.52 | 20.80 | 21.43 | 23.93          | 25.22 | 24.49 | 25.77 | 26.40 |
|                 | 6H   | 19.28            | 20.48 | 19.85 | 21.04 | 21.69 | 25.27          | 26.46 | 25.84 | 27.03 | 27.67 |
|                 | 8H   | 19.36            | 20.50 | 19.94 | 21.09 | 21.74 | 25.95          | 27.10 | 26.53 | 27.68 | 28.33 |
|                 | 12H  | 19.39            | 20.50 | 19.98 | 21.08 | 21.76 | 26.70          | 27.80 | 27.29 | 28.38 | 29.07 |
| 4H              | 2H   | 18.07            | 19.36 | 18.63 | 19.91 | 20.54 | 20.42          | 21.70 | 20.97 | 22.25 | 22.88 |
|                 | 3H   | 19.83            | 20.93 | 20.40 | 21.52 | 22.18 | 23.26          | 24.36 | 23.83 | 24.95 | 25.60 |
|                 | 4H   | 20.48            | 21.49 | 21.07 | 22.09 | 22.77 | 24.70          | 25.71 | 25.29 | 26.31 | 26.99 |
|                 | 6H   | 20.93            | 21.82 | 21.54 | 22.45 | 23.14 | 26.21          | 27.10 | 26.82 | 27.73 | 28.42 |
|                 | 8H   | 21.05            | 21.90 | 21.67 | 22.52 | 23.23 | 26.98          | 27.83 | 27.60 | 28.45 | 29.16 |
|                 | 12H  | 21.13            | 21.89 | 21.76 | 22.55 | 23.26 | 27.85          | 28.62 | 28.49 | 29.27 | 29.98 |
| 8H              | 4H   | 21.32            | 22.16 | 21.93 | 22.79 | 23.49 | 24.89          | 25.74 | 25.51 | 26.36 | 27.07 |
|                 | 6H   | 21.98            | 22.70 | 22.62 | 23.36 | 24.07 | 26.55          | 27.27 | 27.20 | 27.94 | 28.65 |
|                 | 8H   | 22.21            | 22.86 | 22.87 | 23.53 | 24.26 | 27.46          | 28.11 | 28.12 | 28.78 | 29.50 |
|                 | 12H  | 22.38            | 22.95 | 23.04 | 23.62 | 24.40 | 28.49          | 29.07 | 29.15 | 29.73 | 30.52 |
| 12H             | 4H   | 21.55            | 22.32 | 22.18 | 22.97 | 23.68 | 24.90          | 25.67 | 25.54 | 26.32 | 27.03 |
|                 | 6H   | 22.32            | 22.97 | 22.98 | 23.65 | 24.37 | 26.59          | 27.24 | 27.24 | 27.91 | 28.63 |
|                 | 8H   | 22.66            | 23.24 | 23.32 | 23.90 | 24.69 | 27.55          | 28.13 | 28.21 | 28.80 | 29.58 |