

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: P1055811

Luminaire Tested: S123R3DR-H775D935-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055811  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-4)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123R3DR-H775D935-X4F0-XX-UDD-FLL-W  
Description: DEFINE 3, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

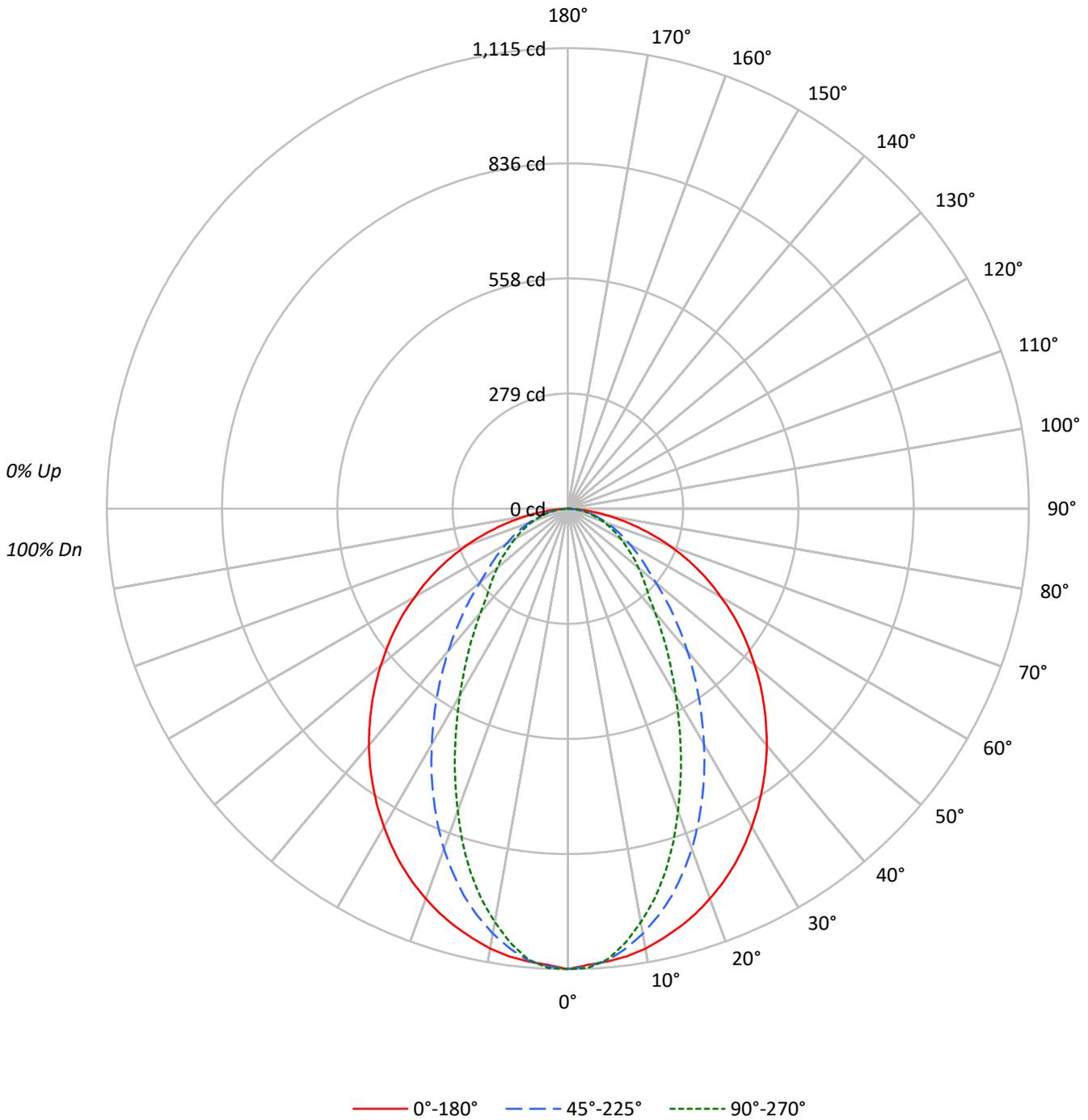
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1955.1 lumens  
Efficiency: N/A  
Efficacy: 82.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 0.83 / 1.02  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.8  
Input Voltage (V): 120  
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 |  |  |  |  |  |  |  |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |     |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |    |    |    |    |    |    |    |    | 100 |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 110 | 106 | 102 | 99  | 107 | 104 | 100 | 97  | 99  | 97  | 94  | 96  | 93  | 91  | 92  | 90  | 88  | 86  |    |    |    |    |    |    |    |    |    |    |    | 86  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 101 | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 85  | 82  | 78  | 83  | 79  | 76  | 74  |    |    |    |    |    |    |    |    |    |    |    | 74  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 93  | 84  | 77  | 71  | 91  | 82  | 76  | 70  | 80  | 74  | 69  | 77  | 72  | 68  | 74  | 70  | 67  | 65  |    |    |    |    |    |    |    |    |    |    |    | 65  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 86  | 75  | 68  | 61  | 84  | 74  | 67  | 61  | 72  | 65  | 60  | 70  | 64  | 59  | 67  | 63  | 59  | 57  |    |    |    |    |    |    |    |    |    |    |    | 57  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 80  | 68  | 60  | 54  | 78  | 67  | 60  | 54  | 65  | 58  | 53  | 63  | 57  | 53  | 62  | 56  | 52  | 50  |    |    |    |    |    |    |    |    |    |    |    | 50  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 75  | 62  | 54  | 48  | 73  | 61  | 54  | 48  | 60  | 53  | 48  | 58  | 52  | 47  | 57  | 51  | 47  | 45  |    |    |    |    |    |    |    |    |    |    |    | 45  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 70  | 57  | 49  | 43  | 68  | 56  | 49  | 43  | 55  | 48  | 43  | 53  | 47  | 43  | 52  | 47  | 42  | 40  |    |    |    |    |    |    |    |    |    |    |    | 40  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 65  | 53  | 45  | 39  | 64  | 52  | 44  | 39  | 51  | 44  | 39  | 49  | 43  | 39  | 48  | 43  | 39  | 37  |    |    |    |    |    |    |    |    |    |    |    | 37  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 45  | 39  | 35  | 34  |    |    |    |    |    |    |    |    |    |    |    | 34  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 58  | 45  | 38  | 33  | 56  | 45  | 38  | 33  | 44  | 37  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |    |    |    |    |    |    |    |    | 31  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13439 | 13439 | 13439 |
| 5°  | 13320 | 13290 | 13259 |
| 10° | 13239 | 12790 | 12443 |
| 15° | 13081 | 12113 | 11365 |
| 20° | 12890 | 11243 | 9991  |
| 25° | 12667 | 10238 | 8596  |
| 30° | 12385 | 9158  | 7266  |
| 35° | 12088 | 8099  | 6136  |
| 40° | 11783 | 7073  | 5158  |
| 45° | 11429 | 6099  | 4549  |
| 50° | 11072 | 5192  | 4175  |
| 55° | 10743 | 4626  | 3855  |
| 60° | 10294 | 4181  | 3598  |
| 65° | 9871  | 3828  | 3378  |
| 70° | 9200  | 3529  | 3173  |
| 75° | 8236  | 3261  | 2991  |
| 80° | 7061  | 3013  | 2777  |
| 85° | 4966  | 2767  | 2656  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11429 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 103.3  | 5.3       |
| 10°-20°   | 273.4  | 14.0      |
| 20°-30°   | 360.1  | 18.4      |
| 30°-40°   | 365.5  | 18.7      |
| 40°-50°   | 317.7  | 16.3      |
| 50°-60°   | 248.9  | 12.7      |
| 60°-70°   | 169.1  | 8.7       |
| 70°-80°   | 91.7   | 4.7       |
| 80°-90°   | 25.2   | 1.3       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 736.9  | 37.7      |
| 0°-40°    | 1102.4 | 56.4      |
| 0°-60°    | 1669.1 | 85.4      |
| 0°-90°    | 1955.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1955.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1115 | 1115  | 1115 | 1115  | 1115 |      |
| 5°  | 1101 | 1114  | 1098 | 1088  | 1096 | 104  |
| 15° | 1048 | 1033  | 970  | 923   | 910  | 295  |
| 25° | 952  | 895   | 770  | 674   | 646  | 438  |
| 35° | 821  | 724   | 550  | 445   | 417  | 514  |
| 45° | 670  | 538   | 358  | 276   | 267  | 517  |
| 55° | 511  | 355   | 220  | 188   | 183  | 456  |
| 65° | 346  | 192   | 134  | 120   | 118  | 342  |
| 75° | 177  | 88    | 70   | 65    | 64   | 189  |
| 85° | 36   | 22    | 20   | 18    | 19   | 45   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1114.7 | 1114.7 | 1114.7 | 1114.7 | 1114.7 |
| 2.5°  | 1105.6 | 1119.7 | 1108.9 | 1109.7 | 1113.1 |
| 5°    | 1100.6 | 1113.9 | 1098.1 | 1088.1 | 1095.6 |
| 7.5°  | 1093.1 | 1103.1 | 1073.9 | 1058.0 | 1060.5 |
| 10°   | 1081.4 | 1084.7 | 1044.7 | 1019.7 | 1016.4 |
| 12.5° | 1065.6 | 1059.7 | 1009.7 | 973.0  | 967.2  |
| 15°   | 1048.0 | 1033.0 | 970.5  | 923.0  | 910.5  |
| 17.5° | 1028.0 | 1003.0 | 924.6  | 866.3  | 847.1  |
| 20°   | 1004.7 | 969.7  | 876.3  | 802.1  | 778.7  |
| 22.5° | 979.7  | 934.6  | 823.8  | 736.2  | 712.0  |
| 25°   | 952.2  | 894.6  | 769.6  | 673.7  | 646.2  |
| 27.5° | 922.1  | 854.6  | 714.5  | 612.0  | 581.1  |
| 30°   | 889.6  | 812.9  | 657.8  | 552.0  | 521.9  |
| 32.5° | 856.3  | 768.7  | 603.6  | 496.1  | 466.9  |
| 35°   | 821.3  | 723.7  | 550.3  | 445.2  | 416.9  |
| 37.5° | 785.4  | 677.9  | 498.6  | 396.9  | 370.2  |
| 40°   | 748.7  | 631.2  | 449.4  | 351.8  | 327.7  |
| 42.5° | 709.5  | 584.5  | 401.9  | 309.3  | 291.0  |
| 45°   | 670.3  | 537.8  | 357.7  | 276.0  | 266.8  |
| 47.5° | 631.2  | 490.3  | 316.0  | 252.6  | 244.3  |
| 50°   | 590.3  | 444.4  | 276.8  | 231.0  | 222.6  |
| 52.5° | 550.3  | 399.4  | 244.3  | 210.1  | 204.3  |
| 55°   | 511.1  | 355.2  | 220.1  | 187.6  | 183.4  |
| 57.5° | 470.2  | 311.8  | 195.9  | 170.1  | 165.1  |
| 60°   | 426.9  | 270.1  | 173.4  | 151.7  | 149.2  |
| 62.5° | 387.7  | 231.0  | 153.4  | 135.9  | 133.4  |
| 65°   | 346.0  | 191.8  | 134.2  | 120.1  | 118.4  |
| 67.5° | 303.5  | 159.2  | 116.7  | 105.1  | 104.2  |
| 70°   | 261.0  | 134.2  | 100.1  | 90.9   | 90.0   |
| 72.5° | 219.3  | 110.9  | 84.2   | 78.4   | 76.7   |
| 75°   | 176.8  | 88.4   | 70.0   | 65.0   | 64.2   |
| 77.5° | 138.4  | 68.4   | 55.9   | 52.5   | 51.7   |
| 80°   | 101.7  | 50.9   | 43.4   | 40.9   | 40.0   |
| 82.5° | 66.7   | 35.0   | 30.8   | 29.2   | 29.2   |
| 85°   | 35.9   | 21.7   | 20.0   | 18.3   | 19.2   |
| 87.5° | 12.5   | 9.2    | 9.2    | 8.3    | 9.2    |
| 90°   | 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 | 19.58            | 21.08 | 19.95 | 21.39 | 21.70 | 14.73          | 16.23 | 15.10 | 16.54 | 16.85 |
|                 | 3H   | 21.47            | 22.81 | 21.85 | 23.14 | 23.50 | 16.36          | 17.70 | 16.74 | 18.03 | 18.39 |
|                 | 4H   | 22.23            | 23.48 | 22.63 | 23.83 | 24.21 | 17.00          | 18.25 | 17.40 | 18.60 | 18.98 |
|                 | 6H   | 22.79            | 23.95 | 23.20 | 24.32 | 24.71 | 17.49          | 18.65 | 17.90 | 19.02 | 19.41 |
|                 | 8H   | 22.97            | 24.07 | 23.39 | 24.46 | 24.86 | 17.66          | 18.76 | 18.09 | 19.15 | 19.55 |
|                 | 12H  | 23.06            | 24.12 | 23.49 | 24.50 | 24.93 | 17.78          | 18.84 | 18.21 | 19.22 | 19.65 |
| 4H              | 2H   | 19.63            | 20.89 | 20.03 | 21.24 | 21.61 | 15.46          | 16.72 | 15.86 | 17.07 | 17.45 |
|                 | 3H   | 21.65            | 22.69 | 22.06 | 23.09 | 23.49 | 17.28          | 18.33 | 17.69 | 18.73 | 19.13 |
|                 | 4H   | 22.47            | 23.41 | 22.90 | 23.82 | 24.26 | 18.03          | 18.97 | 18.46 | 19.39 | 19.82 |
|                 | 6H   | 23.15            | 23.97 | 23.61 | 24.41 | 24.87 | 18.64          | 19.46 | 19.10 | 19.90 | 20.36 |
|                 | 8H   | 23.38            | 24.14 | 23.84 | 24.59 | 25.05 | 18.85          | 19.62 | 19.32 | 20.06 | 20.53 |
|                 | 12H  | 23.53            | 24.21 | 24.01 | 24.69 | 25.16 | 19.02          | 19.70 | 19.50 | 20.18 | 20.65 |
| 8H              | 4H   | 22.49            | 23.25 | 22.95 | 23.70 | 24.17 | 18.41          | 19.18 | 18.88 | 19.62 | 20.09 |
|                 | 6H   | 23.22            | 23.85 | 23.72 | 24.34 | 24.82 | 19.14          | 19.77 | 19.64 | 20.26 | 20.74 |
|                 | 8H   | 23.49            | 24.05 | 24.00 | 24.56 | 25.05 | 19.43          | 20.00 | 19.94 | 20.51 | 20.99 |
|                 | 12H  | 23.70            | 24.20 | 24.21 | 24.69 | 25.26 | 19.67          | 20.17 | 20.18 | 20.67 | 21.23 |
| 12H             | 4H   | 22.48            | 23.16 | 22.96 | 23.64 | 24.11 | 18.47          | 19.15 | 18.95 | 19.63 | 20.10 |
|                 | 6H   | 23.20            | 23.77 | 23.72 | 24.28 | 24.77 | 19.22          | 19.79 | 19.74 | 20.30 | 20.79 |
|                 | 8H   | 23.51            | 24.01 | 24.02 | 24.50 | 25.07 | 19.57          | 20.07 | 20.08 | 20.56 | 21.13 |