

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: P1056134

Luminaire Tested: S124R3DR-H1195D935-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056134  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1195D935-X4F0-XX-UDD-FLL-S  
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

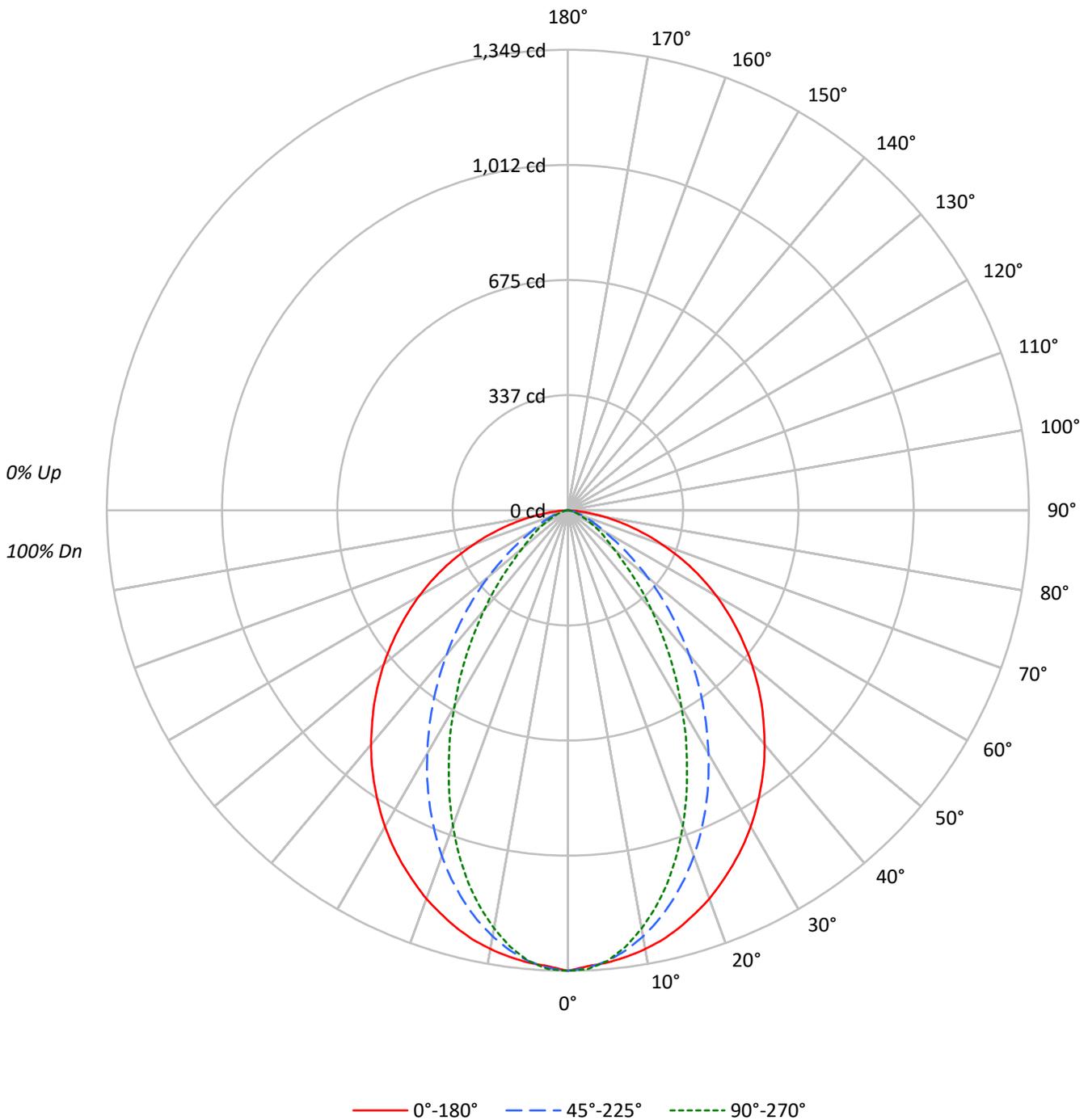
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2181.3 lumens  
Efficiency: N/A  
Efficacy: 59.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03  
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 36.6  
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 |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 1   | 111 | 107 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 94  | 92  | 90  | 89  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 103 | 96  | 91  | 86  | 101 | 94  | 89  | 85  | 91  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 78  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 95  | 87  | 80  | 74  | 93  | 85  | 79  | 74  | 82  | 77  | 73  | 80  | 75  | 71  | 77  | 73  | 70  | 68  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 89  | 78  | 71  | 65  | 86  | 77  | 70  | 65  | 75  | 69  | 64  | 73  | 67  | 63  | 71  | 66  | 62  | 60  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 82  | 71  | 64  | 58  | 80  | 70  | 63  | 58  | 68  | 62  | 57  | 66  | 61  | 56  | 65  | 60  | 56  | 54  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 77  | 65  | 57  | 52  | 75  | 64  | 57  | 52  | 63  | 56  | 51  | 61  | 55  | 51  | 60  | 54  | 50  | 48  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 72  | 60  | 52  | 47  | 70  | 59  | 52  | 47  | 58  | 51  | 46  | 56  | 50  | 46  | 55  | 50  | 46  | 44  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 67  | 55  | 48  | 42  | 66  | 55  | 47  | 42  | 53  | 47  | 42  | 52  | 46  | 42  | 51  | 46  | 42  | 40  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 63  | 51  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 43  | 39  | 49  | 43  | 38  | 48  | 42  | 38  | 37  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 60  | 48  | 41  | 36  | 59  | 47  | 40  | 36  | 46  | 40  | 36  | 45  | 40  | 35  | 45  | 39  | 35  | 34  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11927 | 11927 | 11927 |
| 5°  | 11806 | 11761 | 11761 |
| 10° | 11717 | 11378 | 11164 |
| 15° | 11578 | 10830 | 10325 |
| 20° | 11393 | 10140 | 9254  |
| 25° | 11163 | 9325  | 8038  |
| 30° | 10926 | 8399  | 6771  |
| 35° | 10642 | 7416  | 5573  |
| 40° | 10337 | 6364  | 4393  |
| 45° | 10020 | 5293  | 3282  |
| 50° | 9675  | 4164  | 2402  |
| 55° | 9293  | 3078  | 1918  |
| 60° | 8884  | 2133  | 1466  |
| 65° | 8356  | 1655  | 1077  |
| 70° | 7566  | 1168  | 845   |
| 75° | 6607  | 816   | 642   |
| 80° | 5310  | 642   | 575   |
| 85° | 2932  | 507   | 507   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10020 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 125.1  | 5.7       |
| 10°-20°   | 334.3  | 15.3      |
| 20°-30°   | 445.9  | 20.4      |
| 30°-40°   | 449.0  | 20.6      |
| 40°-50°   | 368.2  | 16.9      |
| 50°-60°   | 251.7  | 11.5      |
| 60°-70°   | 140.6  | 6.4       |
| 70°-80°   | 55.8   | 2.6       |
| 80°-90°   | 10.6   | 0.5       |
| 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°    | 905.4  | 41.5      |
| 0°-40°    | 1354.4 | 62.1      |
| 0°-60°    | 1974.3 | 90.5      |
| 0°-90°    | 2181.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2181.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1349 | 1349  | 1349 | 1349  | 1349 |      |
| 5°  | 1330 | 1345  | 1325 | 1319  | 1325 | 126  |
| 15° | 1265 | 1251  | 1183 | 1142  | 1128 | 356  |
| 25° | 1144 | 1088  | 956  | 859   | 824  | 527  |
| 35° | 986  | 882   | 687  | 556   | 516  | 617  |
| 45° | 801  | 654   | 423  | 298   | 262  | 618  |
| 55° | 603  | 423   | 200  | 133   | 124  | 539  |
| 65° | 399  | 201   | 79   | 56    | 52   | 395  |
| 75° | 193  | 53    | 24   | 20    | 19   | 207  |
| 85° | 29   | 5     | 5    | 5     | 5    | 41   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1349.0 | 1349.0 | 1349.0 | 1349.0 | 1349.0 |
| 2.5°  | 1336.5 | 1352.8 | 1341.5 | 1342.8 | 1345.3 |
| 5°    | 1330.2 | 1345.3 | 1325.2 | 1318.9 | 1325.2 |
| 7.5°  | 1318.9 | 1330.2 | 1300.1 | 1287.5 | 1290.0 |
| 10°   | 1305.1 | 1308.9 | 1267.4 | 1246.0 | 1243.5 |
| 12.5° | 1287.5 | 1282.5 | 1228.5 | 1197.1 | 1189.5 |
| 15°   | 1264.9 | 1251.1 | 1183.2 | 1141.8 | 1128.0 |
| 17.5° | 1238.5 | 1214.6 | 1133.0 | 1079.0 | 1058.9 |
| 20°   | 1210.9 | 1175.7 | 1077.7 | 1008.6 | 983.5  |
| 22.5° | 1178.2 | 1134.3 | 1018.7 | 934.5  | 905.6  |
| 25°   | 1144.3 | 1087.8 | 955.9  | 859.2  | 824.0  |
| 27.5° | 1109.1 | 1040.0 | 890.6  | 782.5  | 747.4  |
| 30°   | 1070.2 | 988.5  | 822.7  | 705.9  | 663.2  |
| 32.5° | 1028.7 | 935.8  | 754.9  | 630.6  | 590.4  |
| 35°   | 986.0  | 881.8  | 687.1  | 556.4  | 516.3  |
| 37.5° | 942.1  | 826.5  | 619.3  | 486.1  | 445.9  |
| 40°   | 895.6  | 770.0  | 551.4  | 419.5  | 380.6  |
| 42.5° | 847.9  | 712.2  | 486.1  | 356.7  | 320.3  |
| 45°   | 801.4  | 654.4  | 423.3  | 297.7  | 262.5  |
| 47.5° | 752.4  | 596.6  | 361.8  | 242.4  | 212.3  |
| 50°   | 703.4  | 538.9  | 302.7  | 194.7  | 174.6  |
| 52.5° | 653.2  | 481.1  | 248.7  | 159.5  | 145.7  |
| 55°   | 602.9  | 423.3  | 199.7  | 133.1  | 124.4  |
| 57.5° | 552.7  | 365.5  | 154.5  | 113.0  | 103.0  |
| 60°   | 502.4  | 309.0  | 120.6  | 91.7   | 82.9   |
| 62.5° | 450.9  | 252.5  | 99.2   | 72.9   | 65.3   |
| 65°   | 399.4  | 201.0  | 79.1   | 56.5   | 51.5   |
| 67.5° | 347.9  | 153.2  | 60.3   | 44.0   | 40.2   |
| 70°   | 292.7  | 109.3  | 45.2   | 33.9   | 32.7   |
| 72.5° | 244.9  | 74.1   | 32.7   | 26.4   | 25.1   |
| 75°   | 193.4  | 52.8   | 23.9   | 20.1   | 18.8   |
| 77.5° | 149.5  | 33.9   | 17.6   | 16.3   | 15.1   |
| 80°   | 104.3  | 18.8   | 12.6   | 11.3   | 11.3   |
| 82.5° | 64.1   | 10.0   | 8.8    | 7.5    | 7.5    |
| 85°   | 28.9   | 5.0    | 5.0    | 5.0    | 5.0    |
| 87.5° | 5.0    | 2.5    | 2.5    | 2.5    | 2.5    |
| 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 | 19.34            | 20.74 | 19.70 | 21.06 | 21.37 | 10.42          | 11.83 | 10.79 | 12.14 | 12.46 |
|                 | 3H   | 20.92            | 22.17 | 21.30 | 22.50 | 22.87 | 11.02          | 12.27 | 11.40 | 12.60 | 12.96 |
|                 | 4H   | 21.52            | 22.69 | 21.92 | 23.04 | 23.42 | 11.17          | 12.34 | 11.58 | 12.69 | 13.07 |
|                 | 6H   | 21.95            | 23.02 | 22.36 | 23.39 | 23.79 | 11.28          | 12.36 | 11.69 | 12.73 | 13.12 |
|                 | 8H   | 22.06            | 23.08 | 22.49 | 23.47 | 23.88 | 11.30          | 12.32 | 11.73 | 12.71 | 13.12 |
|                 | 12H  | 22.10            | 23.08 | 22.54 | 23.46 | 23.89 | 11.31          | 12.28 | 11.74 | 12.67 | 13.10 |
| 4H              | 2H   | 19.19            | 20.36 | 19.59 | 20.71 | 21.09 | 11.01          | 12.18 | 11.41 | 12.53 | 12.91 |
|                 | 3H   | 20.84            | 21.80 | 21.25 | 22.20 | 22.60 | 11.72          | 12.68 | 12.13 | 13.08 | 13.48 |
|                 | 4H   | 21.44            | 22.30 | 21.88 | 22.72 | 23.16 | 11.92          | 12.78 | 12.36 | 13.20 | 13.64 |
|                 | 6H   | 21.94            | 22.68 | 22.40 | 23.12 | 23.59 | 12.09          | 12.83 | 12.55 | 13.28 | 13.74 |
|                 | 8H   | 22.08            | 22.77 | 22.55 | 23.22 | 23.69 | 12.12          | 12.81 | 12.59 | 13.26 | 13.73 |
|                 | 12H  | 22.15            | 22.77 | 22.64 | 23.25 | 23.72 | 12.15          | 12.76 | 12.63 | 13.24 | 13.72 |
| 8H              | 4H   | 21.34            | 22.03 | 21.80 | 22.47 | 22.94 | 12.20          | 12.89 | 12.66 | 13.33 | 13.80 |
|                 | 6H   | 21.82            | 22.38 | 22.32 | 22.88 | 23.36 | 12.40          | 12.97 | 12.90 | 13.46 | 13.94 |
|                 | 8H   | 21.96            | 22.47 | 22.48 | 22.98 | 23.47 | 12.46          | 12.96 | 12.98 | 13.48 | 13.97 |
|                 | 12H  | 22.05            | 22.50 | 22.57 | 23.00 | 23.56 | 12.52          | 12.96 | 13.03 | 13.46 | 14.03 |
| 12H             | 4H   | 21.30            | 21.91 | 21.78 | 22.39 | 22.87 | 12.22          | 12.84 | 12.71 | 13.32 | 13.79 |
|                 | 6H   | 21.76            | 22.27 | 22.28 | 22.79 | 23.28 | 12.43          | 12.94 | 12.95 | 13.45 | 13.94 |
|                 | 8H   | 21.93            | 22.38 | 22.44 | 22.87 | 23.44 | 12.52          | 12.97 | 13.03 | 13.46 | 14.03 |