

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: P242534

Luminaire Tested: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242534  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123RDRP-S1165D830-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

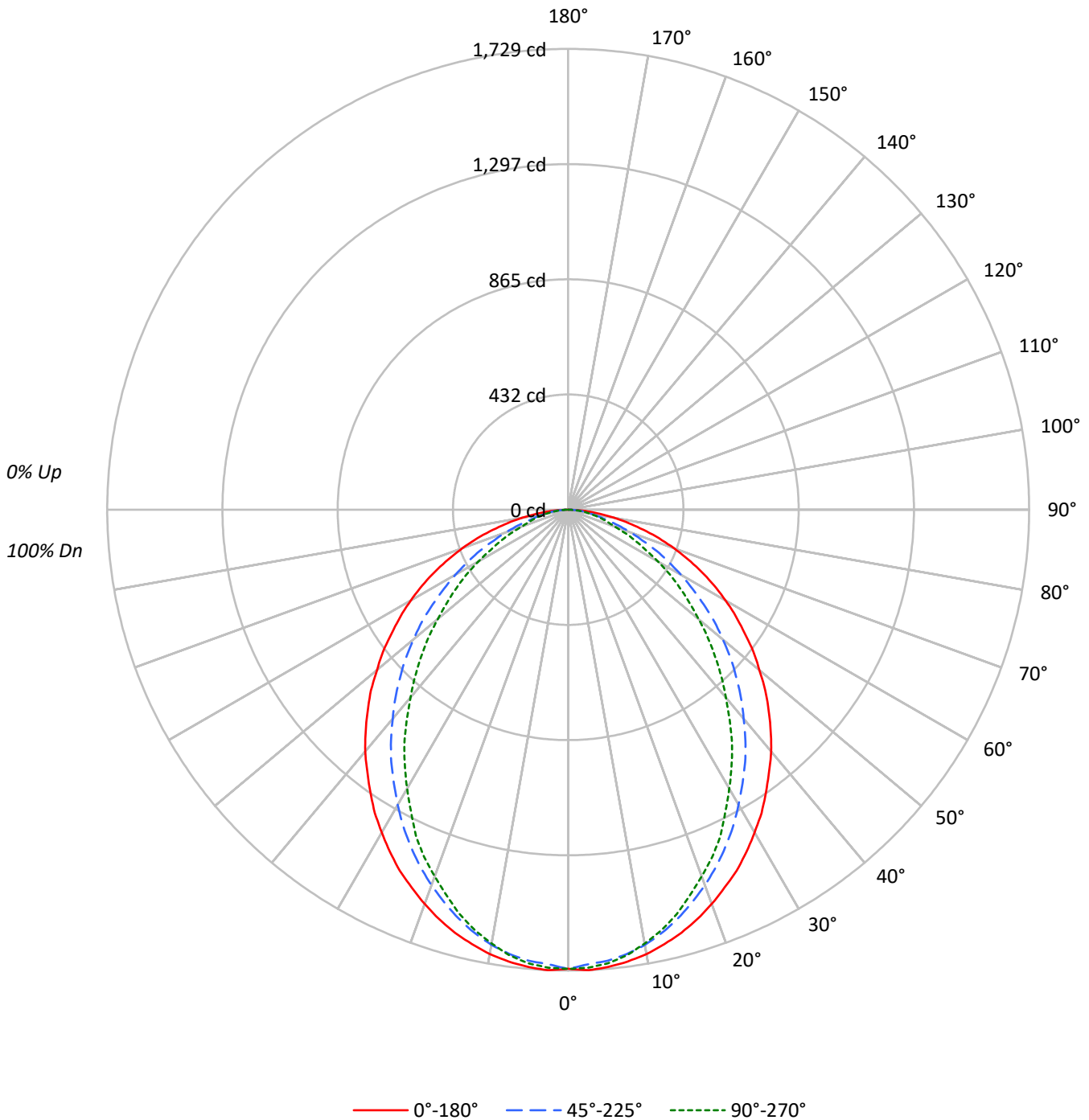
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3891.2 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 41.1  
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

TEST NUMBER: P242534

CATALOG NUMBER: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242534

CATALOG NUMBER: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF  | 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   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  | 95  | 93  | 90  | 91  | 89  | 88  | 86  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 100 | 93  | 86  | 81  | 98  | 91  | 85  | 80  | 87  | 83  | 78  | 84  | 80  | 77  | 81  | 78  | 75  | 73  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 92  | 82  | 75  | 68  | 90  | 81  | 74  | 68  | 78  | 72  | 67  | 75  | 70  | 66  | 73  | 68  | 64  | 62  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 85  | 73  | 65  | 59  | 83  | 72  | 64  | 58  | 70  | 63  | 58  | 67  | 62  | 57  | 65  | 60  | 56  | 54  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 78  | 66  | 57  | 51  | 76  | 65  | 57  | 51  | 63  | 56  | 50  | 61  | 55  | 50  | 59  | 54  | 49  | 47  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 73  | 60  | 51  | 45  | 71  | 59  | 51  | 45  | 57  | 50  | 45  | 55  | 49  | 44  | 54  | 48  | 44  | 42  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 67  | 54  | 46  | 40  | 66  | 54  | 46  | 40  | 52  | 45  | 40  | 51  | 44  | 39  | 49  | 44  | 39  | 37  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 63  | 50  | 42  | 36  | 61  | 49  | 41  | 36  | 48  | 41  | 36  | 47  | 40  | 36  | 46  | 40  | 35  | 34  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 59  | 46  | 38  | 33  | 58  | 45  | 38  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 42  | 36  | 32  | 30  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 55  | 43  | 35  | 30  | 54  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 29  | 39  | 34  | 29  | 28  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 20878 | 20878 | 20878 |
| 5°  | 20957 | 20669 | 20787 |
| 10° | 20839 | 20408 | 20341 |
| 15° | 20615 | 19931 | 19720 |
| 20° | 20307 | 19335 | 18884 |
| 25° | 19991 | 18664 | 18066 |
| 30° | 19571 | 17890 | 16912 |
| 35° | 19142 | 17116 | 15854 |
| 40° | 18744 | 16201 | 14545 |
| 45° | 18224 | 15301 | 13362 |
| 50° | 17649 | 14277 | 12038 |
| 55° | 17063 | 13107 | 10805 |
| 60° | 16526 | 11852 | 9447  |
| 65° | 15826 | 10497 | 8094  |
| 70° | 14952 | 8814  | 6535  |
| 75° | 13675 | 6936  | 6149  |
| 80° | 12188 | 6143  | 5654  |
| 85° | 10292 | 5438  | 5048  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 18224 cd/sqm



TEST NUMBER: P242534

CATALOG NUMBER: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 161.9  | 4.2       |
| 10°-20°   | 450.4  | 11.6      |
| 20°-30°   | 648.5  | 16.7      |
| 30°-40°   | 730.3  | 18.8      |
| 40°-50°   | 698.6  | 18.0      |
| 50°-60°   | 571.9  | 14.7      |
| 60°-70°   | 385.6  | 9.9       |
| 70°-80°   | 193.4  | 5.0       |
| 80°-90°   | 50.6   | 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°    | 1260.9 | 32.4      |
| 0°-40°    | 1991.2 | 51.2      |
| 0°-60°    | 3261.7 | 83.8      |
| 0°-90°    | 3891.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3891.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1722 | 1722  | 1722 | 1722  | 1722 |      |
| 5°  | 1722 | 1715  | 1699 | 1711  | 1708 | 163  |
| 15° | 1643 | 1627  | 1588 | 1581  | 1572 | 463  |
| 25° | 1495 | 1460  | 1396 | 1366  | 1351 | 688  |
| 35° | 1294 | 1243  | 1157 | 1097  | 1071 | 810  |
| 45° | 1063 | 1000  | 893  | 813   | 780  | 820  |
| 55° | 807  | 739   | 620  | 539   | 511  | 724  |
| 65° | 552  | 475   | 366  | 298   | 282  | 546  |
| 75° | 292  | 225   | 148  | 134   | 131  | 311  |
| 85° | 74   | 43    | 39   | 36    | 36   | 86   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P242534

CATALOG NUMBER: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1722.4 | 1722.4 | 1722.4 | 1722.4 | 1722.4 |
| 2.5°  | 1729.4 | 1723.8 | 1707.0 | 1722.4 | 1719.6 |
| 5°    | 1722.4 | 1715.4 | 1698.7 | 1711.2 | 1708.4 |
| 7.5°  | 1709.8 | 1702.8 | 1681.9 | 1690.3 | 1686.1 |
| 10°   | 1693.1 | 1683.3 | 1658.1 | 1659.5 | 1652.6 |
| 12.5° | 1669.3 | 1658.1 | 1626.0 | 1624.6 | 1616.2 |
| 15°   | 1642.8 | 1627.4 | 1588.3 | 1581.3 | 1571.5 |
| 17.5° | 1610.7 | 1593.9 | 1545.0 | 1531.0 | 1517.1 |
| 20°   | 1574.3 | 1552.0 | 1498.9 | 1480.7 | 1464.0 |
| 22.5° | 1533.8 | 1507.3 | 1450.0 | 1426.3 | 1410.9 |
| 25°   | 1494.7 | 1459.8 | 1395.5 | 1366.2 | 1350.8 |
| 27.5° | 1447.2 | 1409.5 | 1339.6 | 1300.5 | 1276.8 |
| 30°   | 1398.3 | 1356.4 | 1278.2 | 1230.7 | 1208.3 |
| 32.5° | 1349.4 | 1300.5 | 1216.7 | 1163.6 | 1139.9 |
| 35°   | 1293.6 | 1243.3 | 1156.7 | 1096.6 | 1071.4 |
| 37.5° | 1237.7 | 1183.2 | 1092.4 | 1025.3 | 994.6  |
| 40°   | 1184.6 | 1123.1 | 1023.9 | 951.3  | 919.2  |
| 42.5° | 1124.5 | 1063.1 | 959.7  | 878.7  | 850.7  |
| 45°   | 1063.1 | 1000.2 | 892.6  | 813.0  | 779.5  |
| 47.5° | 1003.0 | 933.1  | 827.0  | 740.4  | 711.0  |
| 50°   | 935.9  | 870.3  | 757.1  | 670.5  | 638.4  |
| 52.5° | 875.9  | 803.2  | 691.5  | 600.7  | 572.7  |
| 55°   | 807.4  | 739.0  | 620.2  | 539.2  | 511.3  |
| 57.5° | 746.0  | 671.9  | 551.8  | 475.0  | 451.2  |
| 60°   | 681.7  | 604.9  | 488.9  | 413.5  | 389.7  |
| 62.5° | 617.4  | 540.6  | 424.7  | 354.8  | 329.7  |
| 65°   | 551.8  | 475.0  | 366.0  | 297.5  | 282.2  |
| 67.5° | 486.1  | 407.9  | 301.7  | 250.0  | 233.3  |
| 70°   | 421.9  | 346.4  | 248.7  | 199.8  | 184.4  |
| 72.5° | 357.6  | 283.6  | 197.0  | 159.2  | 155.1  |
| 75°   | 292.0  | 224.9  | 148.1  | 134.1  | 131.3  |
| 77.5° | 231.9  | 170.4  | 115.9  | 107.6  | 104.8  |
| 80°   | 174.6  | 117.3  | 88.0   | 83.8   | 81.0   |
| 82.5° | 120.1  | 72.6   | 62.9   | 58.7   | 58.7   |
| 85°   | 74.0   | 43.3   | 39.1   | 36.3   | 36.3   |
| 87.5° | 33.5   | 18.2   | 18.2   | 16.8   | 15.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



TEST NUMBER: P242534  
 CATALOG NUMBER: S123RDRP-S1165D830-X4F0-XX-UDD-F-W

**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 | 22.01            | 23.56 | 22.37 | 23.87 | 24.19 | 19.38          | 20.93 | 19.74 | 21.25 | 21.56 |
|                 | 3H   | 23.78            | 25.18 | 24.16 | 25.51 | 25.87 | 20.49          | 21.89 | 20.87 | 22.21 | 22.57 |
|                 | 4H   | 24.44            | 25.75 | 24.84 | 26.10 | 26.48 | 20.88          | 22.20 | 21.28 | 22.54 | 22.92 |
|                 | 6H   | 24.92            | 26.14 | 25.34 | 26.50 | 26.89 | 21.20          | 22.42 | 21.61 | 22.78 | 23.17 |
|                 | 8H   | 25.07            | 26.23 | 25.50 | 26.62 | 27.02 | 21.31          | 22.47 | 21.74 | 22.86 | 23.26 |
|                 | 12H  | 25.18            | 26.28 | 25.61 | 26.67 | 27.09 | 21.39          | 22.49 | 21.82 | 22.88 | 23.30 |
| 4H              | 2H   | 22.27            | 23.58 | 22.66 | 23.93 | 24.30 | 20.09          | 21.40 | 20.49 | 21.75 | 22.13 |
|                 | 3H   | 24.23            | 25.32 | 24.64 | 25.72 | 26.12 | 21.37          | 22.46 | 21.78 | 22.86 | 23.26 |
|                 | 4H   | 25.00            | 25.98 | 25.43 | 26.40 | 26.83 | 21.85          | 22.83 | 22.28 | 23.25 | 23.68 |
|                 | 6H   | 25.59            | 26.45 | 26.05 | 26.89 | 27.35 | 22.27          | 23.12 | 22.72 | 23.56 | 24.02 |
|                 | 8H   | 25.79            | 26.59 | 26.25 | 27.03 | 27.50 | 22.41          | 23.21 | 22.87 | 23.66 | 24.12 |
|                 | 12H  | 25.93            | 26.65 | 26.41 | 27.13 | 27.60 | 22.52          | 23.24 | 23.00 | 23.71 | 24.19 |
| 8H              | 4H   | 25.05            | 25.85 | 25.52 | 26.30 | 26.76 | 22.17          | 22.97 | 22.63 | 23.41 | 23.88 |
|                 | 6H   | 25.71            | 26.38 | 26.21 | 26.87 | 27.34 | 22.68          | 23.34 | 23.18 | 23.83 | 24.31 |
|                 | 8H   | 25.95            | 26.54 | 26.46 | 27.05 | 27.54 | 22.89          | 23.48 | 23.40 | 23.99 | 24.48 |
|                 | 12H  | 26.15            | 26.67 | 26.66 | 27.17 | 27.73 | 23.06          | 23.58 | 23.57 | 24.07 | 24.64 |
| 12H             | 4H   | 25.04            | 25.76 | 25.52 | 26.24 | 26.71 | 22.21          | 22.93 | 22.69 | 23.41 | 23.88 |
|                 | 6H   | 25.70            | 26.30 | 26.21 | 26.81 | 27.29 | 22.74          | 23.34 | 23.25 | 23.85 | 24.33 |
|                 | 8H   | 25.97            | 26.50 | 26.48 | 26.99 | 27.55 | 23.00          | 23.52 | 23.51 | 24.01 | 24.58 |