

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: P997787

Luminaire Tested: SA2XXDIP-B1005D1080UB27-4F0-XX-W2A-D

Issue Date: 5/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P997787  
REPORT IS A COMBINATION OF REPORTS P983521 AND P1007351  
Test Lab: INNOVATION CENTER  
Issue Date: 5/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-B1005D1080UB27-4F0-XX-W2A-D  
Description: Define 2 Direct/Indirect Pendant with 2700K BioUP LEDs {m-DER=0.473} {m-EER=0.52}  
Light Source: -  
Ballast/Driver: -

**Summary**

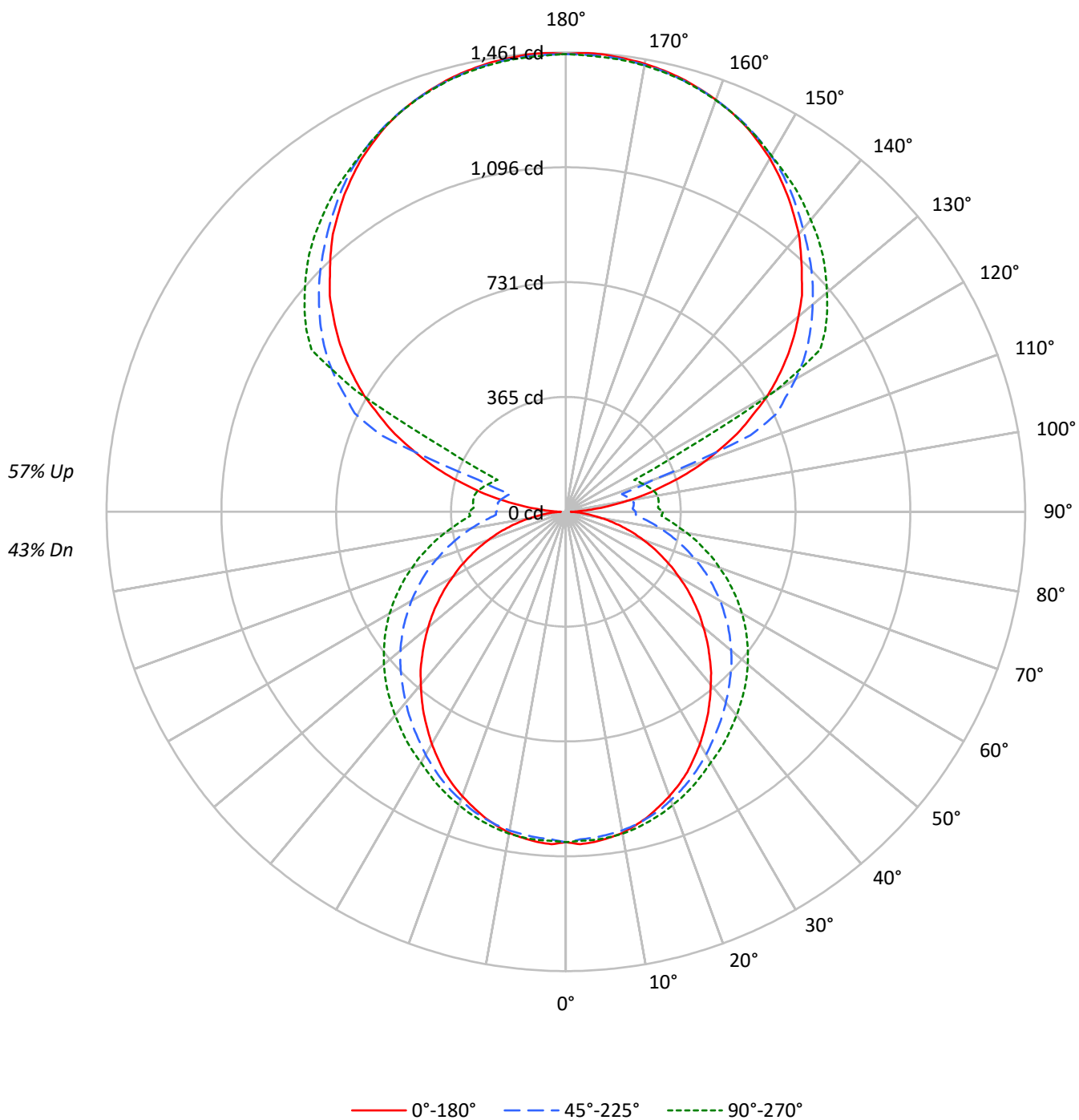
Lumens per Lamp: N/A  
Luminaire Lumens: 8279.0 lumens  
Efficiency: N/A  
Efficacy: 86.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.1')  
CIE Type: General Diffuse

Input Watts (W): 96.3  
Input Voltage (V):  
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 |
| RW  | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 79 | 79 | 79 | 64 | 64 | 64 | 50 | 50 | 50 |
| 1   | 95  | 90  | 86  | 82  | 86 | 82 | 79 | 75 | 68 | 65 | 63 | 54 | 52 | 51 | 42 | 41 | 39 |
| 2   | 86  | 78  | 71  | 66  | 78 | 71 | 65 | 61 | 59 | 54 | 51 | 47 | 44 | 41 | 36 | 34 | 32 |
| 3   | 78  | 68  | 60  | 54  | 71 | 62 | 55 | 50 | 51 | 46 | 42 | 41 | 37 | 34 | 32 | 29 | 27 |
| 4   | 71  | 60  | 52  | 45  | 65 | 55 | 48 | 42 | 45 | 40 | 35 | 36 | 32 | 29 | 28 | 25 | 23 |
| 5   | 65  | 53  | 45  | 39  | 59 | 49 | 41 | 36 | 40 | 35 | 30 | 32 | 28 | 25 | 25 | 22 | 20 |
| 6   | 60  | 47  | 39  | 33  | 54 | 44 | 36 | 31 | 36 | 30 | 26 | 29 | 25 | 22 | 23 | 20 | 17 |
| 7   | 55  | 43  | 35  | 29  | 50 | 39 | 32 | 27 | 33 | 27 | 23 | 26 | 22 | 19 | 21 | 17 | 15 |
| 8   | 51  | 39  | 31  | 25  | 47 | 36 | 29 | 24 | 30 | 24 | 20 | 24 | 20 | 17 | 19 | 16 | 13 |
| 9   | 48  | 35  | 28  | 22  | 43 | 32 | 26 | 21 | 27 | 22 | 18 | 22 | 18 | 15 | 17 | 14 | 12 |
| 10  | 44  | 32  | 25  | 20  | 40 | 30 | 23 | 19 | 25 | 20 | 16 | 20 | 16 | 13 | 16 | 13 | 11 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 16632 | 16632 | 16632 |
| 5°  | 16706 | 15921 | 15831 |
| 10° | 16595 | 15371 | 15146 |
| 15° | 16360 | 14799 | 14442 |
| 20° | 16066 | 14201 | 13775 |
| 25° | 15773 | 13627 | 13169 |
| 30° | 15364 | 13044 | 12569 |
| 35° | 14950 | 12483 | 12129 |
| 40° | 14515 | 11997 | 11692 |
| 45° | 14100 | 11555 | 11311 |
| 50° | 13655 | 11149 | 10935 |
| 55° | 13187 | 10718 | 10551 |
| 60° | 12614 | 10269 | 10149 |
| 65° | 12016 | 9752  | 9684  |
| 70° | 11342 | 9198  | 9185  |
| 75° | 10478 | 8643  | 8715  |
| 80° | 9117  | 8066  | 8226  |
| 85° | 7741  | 7522  | 7807  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14100 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.6   | 1.2       |
| 10°-20°   | 285.7  | 3.5       |
| 20°-30°   | 432.8  | 5.2       |
| 30°-40°   | 527.1  | 6.4       |
| 40°-50°   | 567.1  | 6.8       |
| 50°-60°   | 550.7  | 6.7       |
| 60°-70°   | 481.0  | 5.8       |
| 70°-80°   | 370.2  | 4.5       |
| 80°-90°   | 250.5  | 3.0       |
| 90°-100°  | 219.1  | 2.6       |
| 100°-110° | 303.8  | 3.7       |
| 110°-120° | 557.0  | 6.7       |
| 120°-130° | 833.0  | 10.1      |
| 130°-140° | 855.3  | 10.3      |
| 140°-150° | 780.3  | 9.4       |
| 150°-160° | 624.7  | 7.5       |
| 160°-170° | 402.5  | 4.9       |
| 170°-180° | 138.5  | 1.7       |
| 0°-30°    | 818.1  | 9.9       |
| 0°-40°    | 1345.2 | 16.2      |
| 0°-60°    | 2463.0 | 29.8      |
| 0°-90°    | 3564.6 | 43.1      |
| 90°-120°  | 1079.9 | 13.0      |
| 90°-150°  | 3548.5 | 42.9      |
| 90°-180°  | 4714.0 | 56.9      |
| 0°-180°   | 8279.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1051 | 1051  | 1051 | 1051  | 1051 |      |
| 5°   | 1054 | 1049  | 1040 | 1049  | 1048 | 100  |
| 15°  | 1005 | 1008  | 1008 | 1022  | 1020 | 283  |
| 25°  | 914  | 924   | 938  | 956   | 961  | 420  |
| 35°  | 787  | 813   | 842  | 876   | 886  | 492  |
| 45°  | 646  | 687   | 740  | 787   | 802  | 498  |
| 55°  | 495  | 550   | 629  | 684   | 704  | 443  |
| 65°  | 338  | 413   | 502  | 565   | 585  | 336  |
| 75°  | 187  | 273   | 370  | 436   | 455  | 198  |
| 85°  | 55   | 149   | 247  | 311   | 332  | 58   |
| 90°  | 16   | 116   | 222  | 288   | 309  | 15   |
| 95°  | 81   | 117   | 216  | 279   | 296  | 91   |
| 105° | 328  | 404   | 195  | 260   | 281  | 351  |
| 115° | 612  | 646   | 741  | 299   | 240  | 602  |
| 125° | 859  | 873   | 942  | 990   | 1007 | 767  |
| 135° | 1061 | 1078  | 1103 | 1145  | 1155 | 820  |
| 145° | 1229 | 1228  | 1246 | 1262  | 1265 | 769  |
| 155° | 1354 | 1344  | 1357 | 1363  | 1354 | 624  |
| 165° | 1426 | 1420  | 1423 | 1430  | 1423 | 403  |
| 175° | 1459 | 1451  | 1454 | 1461  | 1450 | 139  |
| 180° | 1456 | 1456  | 1456 | 1456  | 1456 |      |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1050.7 | 1050.7 | 1050.7 | 1050.7 | 1050.7 |
| 2.5°   | 1058.3 | 1053.7 | 1043.1 | 1050.7 | 1047.6 |
| 5°     | 1053.7 | 1049.2 | 1040.0 | 1049.2 | 1047.6 |
| 7.5°   | 1046.1 | 1043.1 | 1035.4 | 1046.1 | 1044.6 |
| 10°    | 1037.0 | 1033.9 | 1029.4 | 1041.5 | 1040.0 |
| 12.5°  | 1021.7 | 1023.3 | 1020.2 | 1032.4 | 1030.9 |
| 15°    | 1005.0 | 1008.0 | 1008.0 | 1021.7 | 1020.2 |
| 17.5°  | 983.7  | 989.8  | 994.3  | 1008.0 | 1008.0 |
| 20°    | 962.4  | 970.0  | 976.1  | 992.8  | 992.8  |
| 22.5°  | 939.5  | 948.7  | 957.8  | 974.5  | 977.6  |
| 25°    | 913.6  | 924.3  | 938.0  | 956.3  | 960.8  |
| 27.5°  | 883.2  | 899.9  | 915.2  | 938.0  | 941.0  |
| 30°    | 852.7  | 872.5  | 892.3  | 916.7  | 921.2  |
| 32.5°  | 819.2  | 842.1  | 866.4  | 895.4  | 904.5  |
| 35°    | 787.2  | 813.1  | 842.1  | 875.6  | 886.2  |
| 37.5°  | 752.2  | 781.2  | 817.7  | 854.2  | 864.9  |
| 40°    | 717.2  | 750.7  | 791.8  | 831.4  | 845.1  |
| 42.5°  | 683.7  | 717.2  | 765.9  | 810.1  | 823.8  |
| 45°    | 645.6  | 686.7  | 740.0  | 787.2  | 802.5  |
| 47.5°  | 609.1  | 653.2  | 714.2  | 762.9  | 779.6  |
| 50°    | 571.0  | 618.2  | 686.7  | 738.5  | 755.3  |
| 52.5°  | 534.5  | 584.7  | 657.8  | 711.1  | 729.4  |
| 55°    | 494.9  | 549.7  | 628.9  | 683.7  | 703.5  |
| 57.5°  | 456.8  | 517.7  | 596.9  | 656.3  | 676.1  |
| 60°    | 415.7  | 481.2  | 568.0  | 625.8  | 647.2  |
| 62.5°  | 379.2  | 447.7  | 534.5  | 596.9  | 616.7  |
| 65°    | 338.0  | 412.7  | 502.5  | 564.9  | 584.7  |
| 67.5°  | 301.5  | 379.2  | 470.5  | 533.0  | 554.3  |
| 70°    | 261.9  | 341.1  | 435.5  | 501.0  | 519.2  |
| 72.5°  | 225.4  | 307.6  | 403.5  | 467.5  | 490.3  |
| 75°    | 187.3  | 272.6  | 370.0  | 435.5  | 455.3  |
| 77.5°  | 150.7  | 239.1  | 338.0  | 403.5  | 424.8  |
| 80°    | 114.2  | 207.1  | 306.1  | 370.0  | 391.3  |
| 82.5°  | 83.7   | 175.1  | 275.6  | 339.6  | 359.4  |
| 85°    | 54.8   | 149.2  | 246.7  | 310.6  | 332.0  |
| 87.5°  | 33.5   | 124.9  | 222.3  | 284.7  | 304.5  |
| 90°    | 16.3   | 116.1  | 222.1  | 288.2  | 308.6  |
| 92.5°  | 40.0   | 116.5  | 212.6  | 274.1  | 293.4  |
| 95°    | 80.7   | 117.4  | 216.2  | 279.3  | 296.5  |
| 97.5°  | 133.9  | 113.0  | 218.2  | 277.7  | 297.0  |
| 100°   | 197.1  | 109.1  | 212.3  | 277.1  | 296.0  |
| 102.5° | 265.0  | 313.2  | 203.7  | 270.1  | 290.1  |
| 105°   | 327.8  | 403.6  | 195.3  | 260.0  | 281.0  |
| 107.5° | 402.6  | 465.5  | 186.7  | 250.0  | 271.0  |
| 110°   | 472.7  | 525.2  | 295.5  | 238.9  | 259.8  |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 540.1  | 583.5  | 635.6  | 230.3  | 250.3  |
| 115°   | 611.7  | 646.3  | 741.3  | 299.2  | 240.2  |
| 117.5° | 672.4  | 705.6  | 787.5  | 682.5  | 421.8  |
| 120°   | 741.9  | 763.8  | 843.7  | 898.9  | 773.5  |
| 122.5° | 800.9  | 819.2  | 896.6  | 944.0  | 958.8  |
| 125°   | 859.3  | 873.0  | 941.8  | 990.3  | 1007.2 |
| 127.5° | 914.1  | 927.3  | 984.2  | 1032.9 | 1047.6 |
| 130°   | 965.7  | 981.1  | 1024.6 | 1072.7 | 1083.9 |
| 132.5° | 1018.4 | 1030.6 | 1065.0 | 1109.5 | 1120.7 |
| 135°   | 1061.1 | 1078.0 | 1102.6 | 1145.2 | 1155.3 |
| 137.5° | 1107.5 | 1120.1 | 1138.2 | 1177.8 | 1185.2 |
| 140°   | 1152.7 | 1159.7 | 1174.3 | 1208.1 | 1212.0 |
| 142.5° | 1190.7 | 1196.5 | 1210.2 | 1237.0 | 1239.3 |
| 145°   | 1229.2 | 1228.1 | 1246.0 | 1262.5 | 1264.8 |
| 147.5° | 1263.9 | 1260.8 | 1278.7 | 1285.5 | 1285.8 |
| 150°   | 1297.7 | 1290.3 | 1307.1 | 1313.5 | 1308.2 |
| 152.5° | 1326.1 | 1317.7 | 1333.5 | 1339.8 | 1332.4 |
| 155°   | 1353.5 | 1344.0 | 1356.6 | 1363.0 | 1354.5 |
| 157.5° | 1375.6 | 1367.2 | 1376.6 | 1384.0 | 1375.6 |
| 160°   | 1394.6 | 1388.2 | 1394.6 | 1400.9 | 1393.5 |
| 162.5° | 1411.4 | 1405.1 | 1410.4 | 1417.7 | 1408.2 |
| 165°   | 1426.2 | 1419.8 | 1423.0 | 1430.4 | 1423.0 |
| 167.5° | 1437.7 | 1431.4 | 1434.6 | 1442.0 | 1432.5 |
| 170°   | 1447.2 | 1440.9 | 1443.0 | 1450.4 | 1440.9 |
| 172.5° | 1453.5 | 1447.2 | 1449.3 | 1456.7 | 1447.2 |
| 175°   | 1458.8 | 1451.4 | 1453.5 | 1460.9 | 1450.4 |
| 177.5° | 1460.9 | 1453.5 | 1454.6 | 1462.0 | 1452.5 |
| 180°   | 1455.6 | 1455.6 | 1455.6 | 1455.6 | 1455.6 |

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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 | 14.31            | 15.15 | 15.31 | 16.17 | 17.54 | 17.38          | 18.23 | 18.39 | 19.25 | 20.61 |
|                 | 3H   | 15.77            | 16.53 | 16.78 | 17.56 | 18.94 | 19.97          | 20.73 | 20.99 | 21.77 | 23.15 |
|                 | 4H   | 16.24            | 16.97 | 17.27 | 18.00 | 19.39 | 21.22          | 21.95 | 22.25 | 22.98 | 24.37 |
|                 | 6H   | 16.53            | 17.20 | 17.56 | 18.23 | 19.64 | 22.52          | 23.19 | 23.56 | 24.23 | 25.63 |
|                 | 8H   | 16.59            | 17.23 | 17.63 | 18.28 | 19.68 | 23.18          | 23.82 | 24.22 | 24.87 | 26.27 |
|                 | 12H  | 16.60            | 17.21 | 17.65 | 18.26 | 19.68 | 23.90          | 24.51 | 24.95 | 25.56 | 26.99 |
| 4H              | 2H   | 15.36            | 16.08 | 16.39 | 17.12 | 18.51 | 17.71          | 18.44 | 18.74 | 19.47 | 20.86 |
|                 | 3H   | 17.06            | 17.68 | 18.10 | 18.74 | 20.14 | 20.50          | 21.12 | 21.54 | 22.18 | 23.58 |
|                 | 4H   | 17.69            | 18.25 | 18.73 | 19.30 | 20.73 | 21.92          | 22.48 | 22.97 | 23.54 | 24.96 |
|                 | 6H   | 18.10            | 18.59 | 19.16 | 19.67 | 21.09 | 23.39          | 23.88 | 24.44 | 24.95 | 26.37 |
|                 | 8H   | 18.21            | 18.67 | 19.27 | 19.74 | 21.17 | 24.14          | 24.60 | 25.20 | 25.67 | 27.11 |
|                 | 12H  | 18.25            | 18.67 | 19.33 | 19.75 | 21.19 | 24.97          | 25.39 | 26.05 | 26.47 | 27.91 |
| 8H              | 4H   | 18.47            | 18.94 | 19.53 | 20.00 | 21.44 | 22.06          | 22.52 | 23.12 | 23.59 | 25.03 |
|                 | 6H   | 19.11            | 19.49 | 20.19 | 20.60 | 22.03 | 23.69          | 24.08 | 24.77 | 25.19 | 26.62 |
|                 | 8H   | 19.33            | 19.67 | 20.41 | 20.76 | 22.21 | 24.58          | 24.92 | 25.67 | 26.01 | 27.46 |
|                 | 12H  | 19.46            | 19.76 | 20.55 | 20.85 | 22.34 | 25.57          | 25.88 | 26.66 | 26.96 | 28.45 |
| 12H             | 4H   | 18.67            | 19.09 | 19.75 | 20.17 | 21.61 | 22.03          | 22.45 | 23.11 | 23.54 | 24.98 |
|                 | 6H   | 19.44            | 19.78 | 20.53 | 20.88 | 22.33 | 23.71          | 24.06 | 24.80 | 25.15 | 26.60 |
|                 | 8H   | 19.74            | 20.05 | 20.84 | 21.14 | 22.63 | 24.64          | 24.95 | 25.73 | 26.03 | 27.52 |