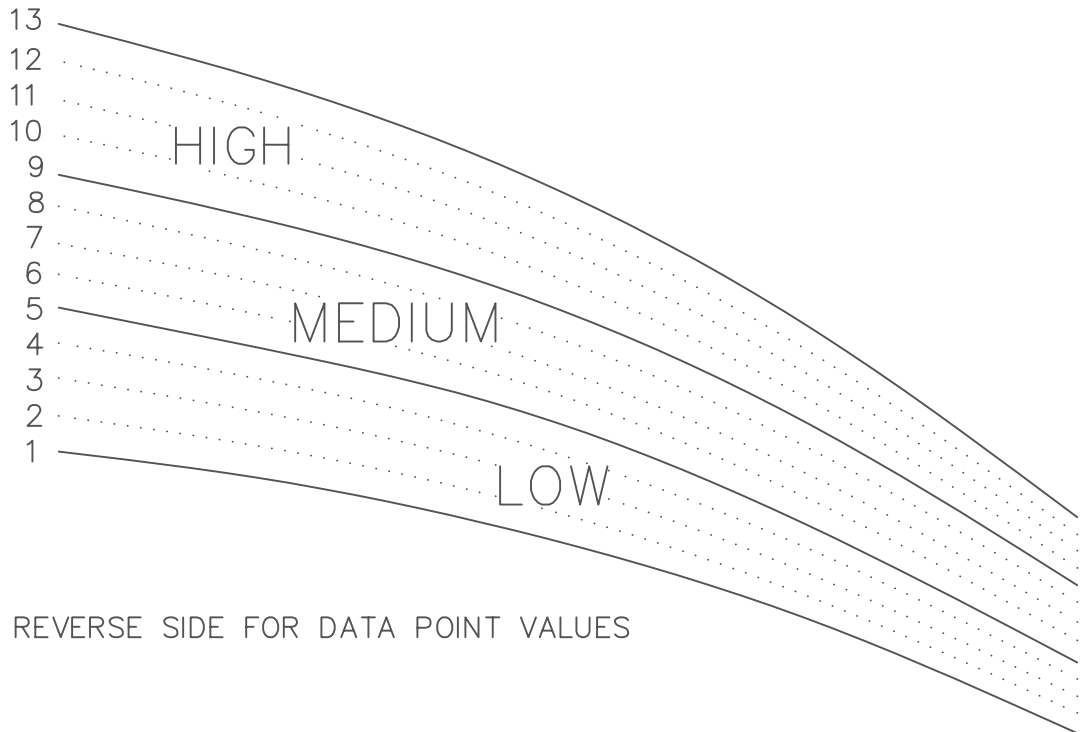


# STANDARD NAMES FOR HAMMER WEIGHT LEVELS

- 13. Top High
- 12. 3/4 High
- 11. 1/2 High
- 10. 1/4 High
- 9. Top Medium
- 8. 3/4 Medium
- 7. 1/2 Medium
- 6. 1/4 Medium
- 5. Top Low
- 4. 3/4 Low
- 3. 1/2 Low
- 2. 1/4 Low
- 1. Bottom Low

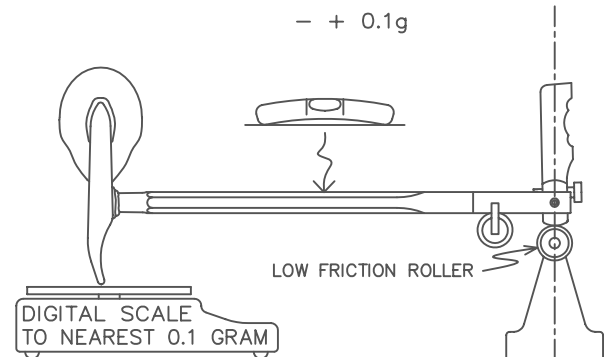


SEE REVERSE SIDE FOR DATA POINT VALUES

# STANDARD PROCEDURES FOR MEASURING HAMMER WEIGHT

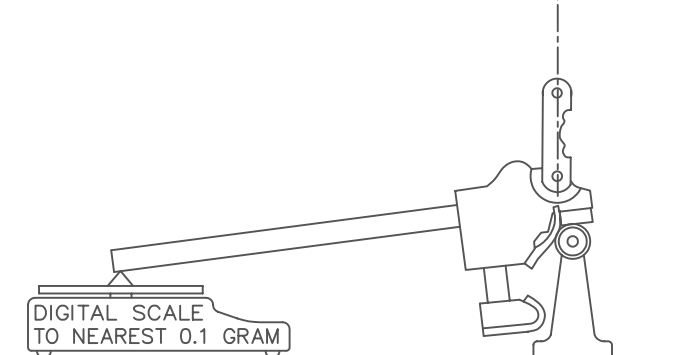
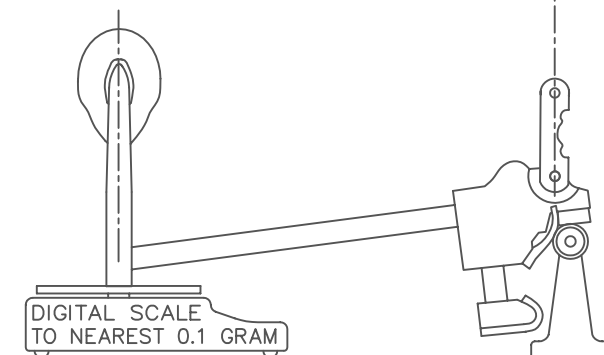
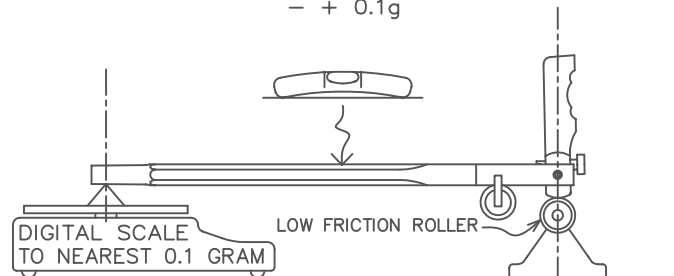
## STRIKE WEIGHT

SW  
- + 0.1g



## SHANK STRIKE WEIGHT

SS  
- + 0.1g



### NOTES

THE HAMMER WEIGHT CURVE STANDARDS ARE FOR RATING HAMMER WEIGHT LEVELS. THEY ARE DERIVED FROM THOUSANDS OF OBSERVATIONS TAKEN FROM PIANOS OF THE LATE 19TH CENTURY TO THE LATE 20TH CENTURY.

THE STANDARD CURVES MAY BE USED AS HAMMER WEIGHT SPECIFICATIONS OR CUSTOM CURVES MAY BE CREATED WHICH CUT ACROSS THE STANDARDS AS DESIRED.

HAMMER WEIGHT ADDED WITH THE SHANK STRIKE WEIGHT MAY NOT ADD UP TO MATCH THE MEASURED STRIKE WEIGHT BECAUSE OF THE POSSIBILITY OF VARIATIONS IN THE DISTRIBUTION OF HAMMER WEIGHT RELATIVE TO THE CENTER LINE.

PLEASE DISTRIBUTE, COPY, AND ENCOURAGE THE USE OF THE INFORMATION AND LANGUAGE GIVEN IN THESE CHARTS.

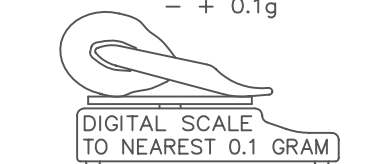
VERSION MARCH 13, 2006

DAVID C. STANWOOD

AVAILABLE AT WWW.STANWOODPIANO.COM

## HAMMER WEIGHT

HW  
- + 0.1g



$$SW = HW + SS$$

$$HW = SW - SS$$

Strike Weight Curve Standards in grams

Hammer Weight Curve Standards in grams

| Note | 1   | 2   | 3   | 4   | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | Note | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8    | 9    | 10   | 11   | 12   | 13   |
|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| 1    | 8.0 | 8.6 | 9.1 | 9.7 | 10.3 | 10.8 | 11.3 | 11.9 | 12.4 | 13.0 | 13.6 | 14.2 | 14.8 | 1    | 6.2 | 6.8 | 7.3 | 7.9 | 8.5 | 9.0 | 9.5 | 10.1 | 10.6 | 11.2 | 11.8 | 12.4 | 13.0 |
| 2    | 8.0 | 8.5 | 9.1 | 9.7 | 10.3 | 10.8 | 11.3 | 11.8 | 12.4 | 13.0 | 13.6 | 14.2 | 14.8 | 2    | 6.2 | 6.7 | 7.3 | 7.9 | 8.5 | 9.0 | 9.5 | 10.0 | 10.6 | 11.2 | 11.8 | 12.4 | 13.0 |
| 3    | 8.0 | 8.5 | 9.1 | 9.7 | 10.2 | 10.8 | 11.3 | 11.8 | 12.3 | 12.9 | 13.5 | 14.1 | 14.7 | 3    | 6.2 | 6.7 | 7.3 | 7.9 | 8.4 | 9.0 | 9.5 | 10.0 | 10.5 | 11.1 | 11.7 | 12.3 | 12.9 |
| 4    | 7.9 | 8.5 | 9.1 | 9.6 | 10.2 | 10.7 | 11.2 | 11.8 | 12.3 | 12.9 | 13.5 | 14.1 | 14.7 | 4    | 6.1 | 6.7 | 7.3 | 7.8 | 8.4 | 8.9 | 9.4 | 10.0 | 10.5 | 11.1 | 11.7 | 12.3 | 12.9 |
| 5    | 7.9 | 8.5 | 9.0 | 9.6 | 10.2 | 10.7 | 11.2 | 11.7 | 12.2 | 12.8 | 13.4 | 14.0 | 14.6 | 5    | 6.1 | 6.7 | 7.2 | 7.8 | 8.4 | 8.9 | 9.4 | 9.9  | 10.4 | 11.0 | 11.6 | 12.2 | 12.8 |
| 6    | 7.9 | 8.4 | 9.0 | 9.6 | 10.1 | 10.6 | 11.2 | 11.7 | 12.2 | 12.8 | 13.4 | 14.0 | 14.6 | 6    | 6.1 | 6.6 | 7.2 | 7.8 | 8.3 | 8.8 | 9.4 | 9.9  | 10.4 | 11.0 | 11.6 | 12.2 | 12.8 |
| 7    | 7.9 | 8.4 | 9.0 | 9.5 | 10.1 | 10.6 | 11.1 | 11.6 | 12.2 | 12.7 | 13.3 | 13.9 | 14.5 | 7    | 6.1 | 6.6 | 7.2 | 7.7 | 8.3 | 8.8 | 9.3 | 9.8  | 10.4 | 10.9 | 11.5 | 12.1 | 12.7 |
| 8    | 7.8 | 8.4 | 8.9 | 9.5 | 10.0 | 10.6 | 11.1 | 11.6 | 12.1 | 12.7 | 13.3 | 13.9 | 14.5 | 8    | 6.0 | 6.6 | 7.1 | 7.7 | 8.2 | 8.8 | 9.3 | 9.8  | 10.3 | 10.9 | 11.5 | 12.1 | 12.7 |
| 9    | 7.8 | 8.4 | 8.9 | 9.5 | 10.0 | 10.5 | 11.0 | 11.6 | 12.1 | 12.7 | 13.2 | 13.8 | 14.4 | 9    | 6.0 | 6.6 | 7.1 | 7.7 | 8.2 | 8.7 | 9.2 | 9.8  | 10.3 | 10.9 | 11.4 | 12.0 | 12.6 |
| 10   | 7.8 | 8.3 | 8.9 | 9.4 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.6 | 13.2 | 13.8 | 14.4 | 10   | 6.0 | 6.5 | 7.1 | 7.6 | 8.2 | 8.7 | 9.2 | 9.7  | 10.2 | 10.8 | 11.4 | 12.0 | 12.6 |
| 11   | 7.8 | 8.3 | 8.8 | 9.4 | 9.9  | 10.4 | 11.0 | 11.5 | 12.0 | 12.6 | 13.1 | 13.7 | 14.3 | 11   | 6.0 | 6.5 | 7.0 | 7.6 | 8.1 | 8.6 | 9.2 | 9.7  | 10.2 | 10.8 | 11.3 | 11.9 | 12.5 |
| 12   | 7.7 | 8.3 | 8.8 | 9.4 | 9.9  | 10.4 | 10.9 | 11.4 | 12.0 | 12.5 | 13.1 | 13.7 | 14.3 | 12   | 5.9 | 6.5 | 7.0 | 7.6 | 8.1 | 8.6 | 9.1 | 9.6  | 10.2 | 10.7 | 11.3 | 11.9 | 12.5 |
| 13   | 7.7 | 8.2 | 8.8 | 9.3 | 9.9  | 10.4 | 10.9 | 11.4 | 11.9 | 12.5 | 13.1 | 13.6 | 14.2 | 13   | 5.9 | 6.4 | 7.0 | 7.5 | 8.1 | 8.6 | 9.1 | 9.6  | 10.1 | 10.7 | 11.3 | 11.8 | 12.4 |
| 14   | 7.7 | 8.2 | 8.7 | 9.3 | 9.8  | 10.3 | 10.8 | 11.4 | 11.9 | 12.4 | 13.0 | 13.6 | 14.1 | 14   | 5.9 | 6.4 | 6.9 | 7.5 | 8.0 | 8.5 | 9.0 | 9.6  | 10.1 | 10.6 | 11.2 | 11.8 | 12.3 |
| 15   | 7.6 | 8.2 | 8.7 | 9.2 | 9.8  | 10.3 | 10.8 | 11.3 | 11.8 | 12.4 | 13.0 | 13.5 | 14.1 | 15   | 5.8 | 6.4 | 6.9 | 7.4 | 8.0 | 8.5 | 9.0 | 9.5  | 10.0 | 10.6 | 11.2 | 11.7 | 12.3 |
| 16   | 7.6 | 8.2 | 8.7 | 9.2 | 9.7  | 10.2 | 10.8 | 11.3 | 11.8 | 12.3 | 12.9 | 13.5 | 14.0 | 16   | 5.8 | 6.4 | 6.9 | 7.4 | 7.9 | 8.4 | 9.0 | 9.5  | 10.0 | 10.5 | 11.1 | 11.7 | 12.2 |
| 17   | 7.6 | 8.1 | 8.6 | 9.2 | 9.7  | 10.2 | 10.7 | 11.2 | 11.7 | 12.3 | 12.9 | 13.4 | 14.0 | 17   | 5.8 | 6.3 | 6.8 | 7.4 | 7.9 | 8.4 | 8.9 | 9.4  | 9.9  | 10.5 | 11.1 | 11.6 | 12.2 |
| 18   | 7.6 | 8.1 | 8.6 | 9.1 | 9.7  | 10.2 | 10.7 | 11.2 | 11.7 | 12.2 | 12.8 | 13.4 | 13.9 | 18   | 5.8 | 6.3 | 6.8 | 7.3 | 7.9 | 8.4 | 8.9 | 9.4  | 9.9  | 10.4 | 11.0 | 11.6 | 12.1 |
| 19   | 7.5 | 8.1 | 8.6 | 9.1 | 9.6  | 10.1 | 10.6 | 11.1 | 11.6 | 12.2 | 12.8 | 13.3 | 13.9 | 19   | 5.7 | 6.3 | 6.8 | 7.3 | 7.8 | 8.3 | 8.8 | 9.3  | 9.8  | 10.4 | 11.0 | 11.5 | 12.1 |
| 20   | 7.5 | 8.0 | 8.5 | 9.1 | 9.6  | 10.1 | 10.6 | 11.1 | 11.6 | 12.2 | 12.7 | 13.3 | 13.8 | 20   | 5.7 | 6.2 | 6.7 | 7.3 | 7.8 | 8.3 | 8.8 | 9.3  | 9.8  | 10.4 | 10.9 | 11.5 | 12.0 |
| 21   | 7.5 | 8.0 | 8.5 | 9.0 | 9.5  | 10.0 | 10.5 | 11.0 | 11.5 | 12.1 | 12.7 | 13.2 | 13.8 | 21   | 5.7 | 6.2 | 6.7 | 7.2 | 7.7 | 8.2 | 8.7 | 9.2  | 9.7  | 10.3 | 10.9 | 11.4 | 12.0 |
| 22   | 7.4 | 8.0 | 8.5 | 9.0 | 9.5  | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.6 | 13.1 | 13.7 | 22   | 5.6 | 6.2 | 6.7 | 7.2 | 7.7 | 8.2 | 8.7 | 9.2  | 9.7  | 10.2 | 10.8 | 11.3 | 11.9 |
| 23   | 7.4 | 7.9 | 8.4 | 8.9 | 9.5  | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.1 | 13.6 | 23   | 5.6 | 6.1 | 6.6 | 7.1 | 7.7 | 8.2 | 8.7 | 9.2  | 9.7  | 10.2 | 10.7 | 11.3 | 11.8 |
| 24   | 7.4 | 7.9 | 8.4 | 8.9 | 9.4  | 9.9  | 10.4 | 10.9 | 11.4 | 11.9 | 12.5 | 13.0 | 13.6 | 24   | 5.6 | 6.1 | 6.6 | 7.1 | 7.6 | 8.1 | 8.6 | 9.1  | 9.6  | 10.1 | 10.7 | 11.2 | 11.8 |
| 25   | 7.3 | 7.8 | 8.4 | 8.9 | 9.4  | 9.9  | 10.4 | 10.9 | 11.4 | 11.9 | 12.4 | 13.0 | 13.5 | 25   | 5.5 | 6.0 | 6.6 | 7.1 | 7.6 | 8.1 | 8.6 | 9.1  | 9.6  | 10.1 | 10.6 | 11.2 | 11.7 |
| 26   | 7.3 | 7.8 | 8.3 | 8.8 | 9.3  | 9.8  | 10.3 | 10.8 | 11.3 | 11.8 | 12.4 | 12.9 | 13.5 | 26   | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0  | 9.5  | 10.0 | 10.6 | 11.1 | 11.7 |
| 27   | 7.3 | 7.8 | 8.3 | 8.8 | 9.3  | 9.8  | 10.3 | 10.8 | 11.2 | 11.8 | 12.3 | 12.9 | 13.4 | 27   | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0  | 9.4  | 10.0 | 10.5 | 11.1 | 11.6 |
| 28   | 7.2 | 7.7 | 8.2 | 8.7 | 9.2  | 9.7  | 10.2 | 10.7 | 11.2 | 11.7 | 12.3 | 12.8 | 13.3 | 28   | 5.4 | 5.9 | 6.4 | 6.9 | 7.4 | 7.9 | 8.4 | 8.9  | 9.4  | 9.9  | 10.5 | 11.0 | 11.5 |
| 29   | 7.2 | 7.7 | 8.2 | 8.7 | 9.2  | 9.7  | 10.2 | 10.7 | 11.1 | 11.7 | 12.2 | 12.7 | 13.3 | 29   | 5.4 | 5.9 | 6.4 | 6.9 | 7.4 | 7.9 | 8.4 | 8.9  | 9.3  | 9.9  | 10.4 | 10.9 | 11.5 |
| 30   | 7.1 | 7.6 | 8.1 | 8.6 | 9.2  | 9.6  | 10.1 | 10.6 | 11.1 | 11.6 | 12.1 | 12.7 | 13.2 | 30   | 5.3 | 5.8 | 6.3 | 6.8 | 7.4 | 7.8 | 8.3 | 8.8  | 9.3  | 9.8  | 10.3 | 10.9 | 11.4 |
| 31   | 7.1 | 7.6 | 8.1 | 8.6 | 9.1  | 9.6  | 10.1 | 10.5 | 11.0 | 11.6 | 12.1 | 12.6 | 13.1 | 31   | 5.3 | 5.8 | 6.3 | 6.8 | 7.3 | 7.8 | 8.3 | 8.7  | 9.2  | 9.8  | 10.3 | 10.8 | 11.3 |
| 32   | 7.1 | 7.6 | 8.1 | 8.6 | 9.1  | 9.5  | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 32   | 5.3 | 5.8 | 6.3 | 6.8 | 7.3 | 7.7 | 8.2 | 8.7  | 9.2  | 9.7  | 10.2 | 10.7 | 11.2 |
| 33   | 7.0 | 7.5 | 8.0 | 8.5 | 9.0  | 9.5  | 10.0 | 10.4 | 10.9 | 11.4 | 11.9 | 12.5 | 13.0 | 33   | 5.2 | 5.7 | 6.2 | 6.7 | 7.2 | 7.7 | 8.2 | 8.6  | 9.1  | 9.6  | 10.1 | 10.7 | 11.2 |
| 34   | 7.0 | 7.5 | 8.0 | 8.5 | 9.0  | 9.4  | 9.9  | 10.4 | 10.9 | 11.4 | 11.9 | 12.4 | 12.9 | 34   | 5.2 | 5.7 | 6.2 | 6.7 | 7.2 | 7.6 | 8.1 | 8.6  | 9.1  | 9.6  | 10.1 | 10.6 | 11.1 |
| 35   | 6.9 | 7.4 | 7.9 | 8.4 | 8.9  | 9.4  | 9.9  | 10.3 | 10.8 | 11.3 | 11.8 | 12.3 | 12.8 | 35   | 5.1 | 5.6 | 6.1 | 6.6 | 7.1 | 7.6 | 8.1 | 8.5  | 9.0  | 9.5  | 10.0 | 10.5 | 11.0 |
| 36   | 6.9 | 7.4 | 7.9 | 8.4 | 8.9  | 9.3  | 9.8  | 10.3 | 10.7 | 11.2 | 11.7 | 12.2 | 12.8 | 36   | 5.1 | 5.6 | 6.1 | 6.6 | 7.1 | 7.5 | 8.0 | 8.5  | 8.9  | 9.4  | 9.9  | 10.4 | 11.0 |
| 37   | 6.8 | 7.3 | 7.8 | 8.3 | 8.8  | 9.3  | 9.7  | 10.2 | 10.7 | 11.2 | 11.7 | 12.2 | 12.7 | 37   | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 7.9 | 8.4  | 8.9  | 9.4  | 9.9  | 10.4 | 10.9 |
| 38   | 6.8 | 7.3 | 7.8 | 8.3 | 8.8  | 9.2  | 9.7  | 10.1 | 10.6 | 11.1 | 11.6 | 12.1 | 12.6 | 38   | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.4 | 7.9 | 8.3  | 8.8  | 9.3  | 9.8  | 10.3 | 10.8 |
| 39   | 6.7 | 7.2 | 7.7 | 8.2 | 8.7  | 9.2  | 9.6  | 10.1 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 39   | 4.9 | 5.4 | 5.9 | 6.4 | 6.9 | 7.4 | 7.8 | 8.3  | 8.7  | 9.2  | 9.7  | 10.2 | 10.7 |
| 40   | 6.7 | 7.2 | 7.7 | 8.2 | 8.6  | 9.1  | 9.6  | 10.0 | 10.5 | 11.0 | 11.5 | 11.9 | 12.4 | 40   | 4.9 | 5.4 | 5.9 | 6.4 | 6.8 | 7.3 | 7.8 | 8.2  | 8.7  | 9.2  | 9.7  | 10.1 | 10.6 |
| 41   | 6.6 | 7.1 | 7.6 | 8.1 | 8.6  | 9.0  | 9.5  | 10.0 | 10.4 | 10.9 | 11.4 | 11.9 | 12.4 | 41   | 4.8 | 5.3 | 5.8 | 6.3 | 6.8 | 7.2 | 7.7 | 8.2  | 8.6  | 9.1  | 9.6  | 10.1 | 10.6 |
| 42   | 6.6 | 7.1 | 7.6 | 8.0 | 8.5  | 9.0  | 9.4  | 9.9  | 10.3 | 10.8 | 11.3 | 11.8 | 12.3 | 42   | 4.8 | 5.3 | 5.8 | 6.2 | 6.7 | 7.2 | 7.6 | 8.1  | 8.5  | 9.0  | 9.5  | 10.0 | 10.5 |
| 43   | 6.6 | 7.0 | 7.5 | 8.0 | 8.5  | 8.9  | 9.4  | 9.8  | 10.3 | 10.7 | 11.2 | 11.7 | 12.2 | 43   | 4.8 | 5.2 | 5.7 | 6.2 | 6.7 | 7.1 | 7.6 | 8.0  | 8.5  | 8.9  | 9.4  | 9.9  | 10.4 |
| 44   | 6.5 | 7.0 | 7.4 | 7.9 | 8.4  | 8.8  | 9.3  | 9.7  | 10.2 | 10.7 | 11.1 | 11.6 | 12.1 | 44   | 4.7 | 5.2 | 5.6 | 6.1 | 6.6 | 7.0 | 7.5 | 7.9  | 8.4  | 8.9  | 9.3  | 9.8  | 10.3 |
| 45   | 6.4 | 6.9 | 7.4 | 7.9 | 8.3  | 8.8  | 9.2  | 9.7  | 10.1 | 10.6 | 11.1 | 11.5 | 12.0 | 45   | 4.6 | 5.1 | 5.6 | 6.1 | 6.5 | 7.0 | 7.4 | 7.9  | 8.3  | 8.8  | 9.3  | 9.7  | 10.2 |
| 46   | 6.4 | 6.9 | 7.3 | 7.8 | 8.3  | 8.7  | 9.2  | 9.6  | 10.1 | 10.5 | 11.0 | 11.5 | 11.9 | 46   | 4.6 | 5.1 | 5.5 | 6.0 | 6.5 | 6.9 | 7.4 | 7.8  | 8.3  | 8.7  | 9.2  | 9.7  | 10.1 |
| 47   | 6.3 | 6.8 | 7.3 | 7.7 | 8.2  | 8.6  | 9.1  | 9.5  | 10.0 | 10.4 | 10.9 | 11.4 | 11.8 | 47   | 4.5 | 5.0 | 5.5 | 5.9 | 6.4 | 6.8 | 7.3 | 7.7  | 8.2  | 8.6  | 9.1  | 9.6  | 10.0 |
| 48   | 6.3 | 6.8 | 7.2 | 7.7 | 8.1  | 8.6  | 9.0  | 9.5  | 9.9  | 10.4 | 10.8 | 11.3 | 11.7 | 48   | 4.5 | 5.0 | 5.4 | 5.9 | 6.3 | 6.8 | 7.2 | 7.7  | 8.1  | 8.6  | 9.0  | 9.5  | 9.9  |
| 49   | 6.2 | 6.7 | 7.2 | 7.6 | 8.1  | 8.5  | 8.9  | 9.4  | 9.8  | 10.3 | 10.7 | 11.2 | 11.6 | 49   | 4.4 | 4.9 | 5.4 | 5.8 | 6.3 | 6.7 | 7.1 | 7.6  | 8.0  | 8.5  | 8.9  | 9.4  | 9.8  |
| 50   | 6.2 | 6.6 | 7.1 | 7.5 | 8.0  | 8.4  | 8.9  | 9.3  | 9.7  | 10.2 |      |      |      |      |     |     |     |     |     |     |     |      |      |      |      |      |      |