



## Rapsodo Data Pitch Summaries (Advanced—1.0)

### Spin Rate (RPM)

Pitch Type	Low	Average	Above-Average	High
FB	< 1025	1025 – 1324	1325 – 1499	≥ 1500
DB	< 975	975 – 1199	1200 – 1399	≥ 1400
RS	< 1240	1240 – 1499	1500 – 1699	≥ 1700
CB	< 1150	1150 – 1424	1425 – 1699	≥ 1700
SB	< 1075	1075 – 1349	1350 – 1559	≥ 1560
Pitch Type	Low	Above-Average	Average	High
CH	≤ 725	726 – 875	876 – 1250	> 1250

\*In most cases, low spin is better for CH—see explanation on CH spin in “Notes” section

### Spin Efficiency (%)

Pitch Type	Low	Average	High
FB	30%	50%	70%
DB	54%	72%	90%
RS	18%	36%	54%
CB	21%	39%	57%
SB	21%	39%	57%
CH	46%	68%	90%

\*Use chart as a guide to shape pitches. This is not an evaluation metric—see “Notes” for explanation

### Vertical Break (Inches)

Pitch Type	Low	Average	Above-Average	High
FB	> -2.5	-2.5 – -4.3	-4.4 – -5.4	≤ -5.5
DB	> -5.5	-5.5 – -6.9	-7.0 – -8.1	≤ -8.2
RS	< 0	0 – 1.9	2.0 – 3.9	≥ 4.0
CB	< -0.5	-0.5 – 1.9	2.0 – 3.9	≥ 4.0
SB	< -0.5	-0.5 – 1.4	1.5 – 2.9	≥ 3.0
CH*	> -2.0	-2.0 – -5.4	-5.5 – -7.9	≤ -8.0

\*See explanation on CH VB in “Notes” section

### Horizontal Break (Inches)

Pitch Type	Low	Average	Above-Average	High
FB	< 1.0	1.0 – 2.6	2.7 – 3.7	≥ 3.8
DB	< 1.0	1.0 – 2.6	2.7 – 3.7	≥ 3.8
RS	< 1.8	1.8 – 3.1	3.2 – 4.4	≥ 4.5
CB	< 1.5	1.5 – 3.1	3.2 – 4.2	≥ 4.3
SB	< 1.0	1.0 – 2.9	3.0 – 4.0	≥ 4.1
Pitch Type	Low	Above-Average	Average	High
CH	< 1.0	1.0 – 2.0	2.1 – 5.0	> 5.0

\*CH numbers above represent horizontal blend benchmarks (difference in horizontal break between FB/DB and CH)—the lower the HZ blend number, the better. See “Notes” for explanation.



## Rapsodo Data Pitch Summaries (Advanced—2.0)

### Spin Rate (RPM)

Pitch Type	Low	Average	Above-Average	High
FB	< 1025	1025 – 1324	1325 – 1499	≥ 1500
DB	< 975	975 – 1199	1200 – 1399	≥ 1400
RS	< 1240	1240 – 1499	1500 – 1699	≥ 1700
CB	< 1150	1150 – 1424	1425 – 1699	≥ 1700
SB	< 1075	1075 – 1349	1350 – 1559	≥ 1560
Pitch Type	Low	Above-Average	Average	High
CH*	≤ 725	726 – 875	876 – 1250	> 1250

\*In most cases, low spin is better for CH—see explanation on CH spin in “Notes” section

### Spin Efficiency (%)

Pitch Type	Low	Average	High
FB	30%	50%	70%
DB	54%	72%	90%
RS	18%	36%	54%
CB	21%	39%	57%
SB	21%	39%	57%
CH	46%	68%	90%

\*Use chart as a guide to shape pitches. This is not an evaluation metric—see “Notes” for explanation

### Vertical Break (Inches)

Pitch Type	Low	Average	Above-Average	High
FB	> -2.8	-2.8 – -4.6	-4.7 – -5.7	≤ -5.8
DB	> -5.8	-5.8 – -7.2	-7.3 – -8.4	≤ -8.5
RS	< 0	0 – 2.2	2.3 – 4.2	≥ 4.3
CB	< -0.8	-0.8 – 2.2	2.3 – 4.2	≥ 4.3
SB	< -0.8	-0.8 – 1.7	1.8 – 3.2	≥ 3.3
CH*	> -2.3	-2.3 – -5.7	-5.8 – -8.2	≤ -8.3

\*See explanation on CH VB in “Notes” section

### Horizontal Break (Inches)

Pitch Type	Low	Average	Above-Average	High
FB	< 1.5	1.5 – 3.6	3.7 – 4.7	≥ 4.8
DB	< 1.5	1.5 – 3.6	3.7 – 4.7	≥ 4.8
RS	< 2.3	2.3 – 4.1	4.2 – 5.4	≥ 5.5
CB	< 2.0	2.0 – 4.1	4.2 – 5.2	≥ 5.3
SB	< 1.5	1.5 – 3.9	4.0 – 5.0	≥ 5.1
Pitch Type	Low	Above-Average	Average	High
CH*	< 1.0	1.0 – 2.0	2.1 – 5.0	> 5.0

\*CH numbers above represent horizontal blend benchmarks (difference in horizontal break between FB/DB and CH)—the lower the HZ blend number, the better. See “Notes” for explanation.

## Notes

- Ranges are approximate and could change when we track more pitches.
- These charts are meant to give a coach a **brief** overview of spin/movement data and show how a metric's normal range varies within our sample of pitchers. They do **not** determine whether or not a pitch can be effective. There are multiple cases when a pitch in the "low" range can contribute to a successful outcome. For example, a pitcher with more up to down movement would fare better with less horizontal break because it allows her more opportunity to tunnel her rising and sinking pitches off one another.
- The spin efficiency table should not be used for evaluation purposes. It is meant to show how the metric varies within our sample and also serves as a guide when designing a particular pitch shape. Different pitch shapes require different levels of spin efficiencies, which is why it is difficult to create cutoffs for a range. For example, a pitcher can throw a very effective riseball with a lower spin efficiency. To use this chart correctly, identify the pitcher's target movement profile for the pitch, and determine whether that profile requires spin efficiencies in the low, average, or high range.
- It is important to note that sink pitches typically have higher spin efficiencies than rise pitches. Curveballs and screwballs are more prone to slight sink than riseballs, which explains why their spin efficiencies are slightly higher on the chart.
- When describing vertical break, we categorize fastballs, dropballs, and changeups as sink pitches and riseballs, curveballs, and screwballs as rise pitches. For example, if a dropball has -3 inches of vertical break, we say "the dropball has a low amount of sink" when describing the pitch. If a riseball has 5 inches of vertical break, we say "the riseball has a high amount of rise" when describing the pitch.
- If a pitcher is generating a "high" amount of sink (vertical break) on a fastball, the pitch is most likely a dropball. Overall, if a pitcher is generating at least 5.5 inches of sink ( $\leq -5.5$ ), it is considered a good sinking pitch ( $\leq -5.8$  for a 2.0 unit). However, an average dropball vertical break range for advanced pitchers is between -5.5 and -7.0 inches (-5.8 - -7.3 for a 2.0 unit).
- Changeups with sink and lower total spin rank better than changeups with rise and higher total spin. If a pitcher backspins a changeup, the pitch will generate positive vertical break (rise) and most likely a higher spin rate which will grade less favorably to a changeup that has topspin and a lower spin rate. Additionally, the changeup vertical break box will shade green (above-average) on a player profile if it is generating more sink than the FB or DB. There are rare instances when a high spin/flip CH can work, but it depends on the movement/spin profile of her core pitches.
- Typically, horizontal break numbers are either positive or negative. Negative represents glove-side movement for a RHP, positive represents glove-side movement for a LHP. For the pitch summaries charts, I took the absolute value of the horizontal break numbers in order to compare RHPs and LHPs properly.
- If a changeup generates significantly more horizontal break (greater than 5 inches) than her FB or DB, it classifies as below-average. A pitch that has significantly more sidespin than the rest of her pitches will be easier for a hitter to recognize, especially at a lower velocity. If a changeup has a good horizontal blend with a FB or DB (less than 2 inches of separation), then the pitch classifies as having "above-average" horizontal break on the chart above.

## Questions?

Feel free to reach out to me via email ([nhwalker34@gmail.com](mailto:nhwalker34@gmail.com)) or Twitter (@DomiNate34).