# 2009 Compound Hunting Bow Evaluation

## Ross Carnivore 34 Test Results

**By *Anthony Barnum***

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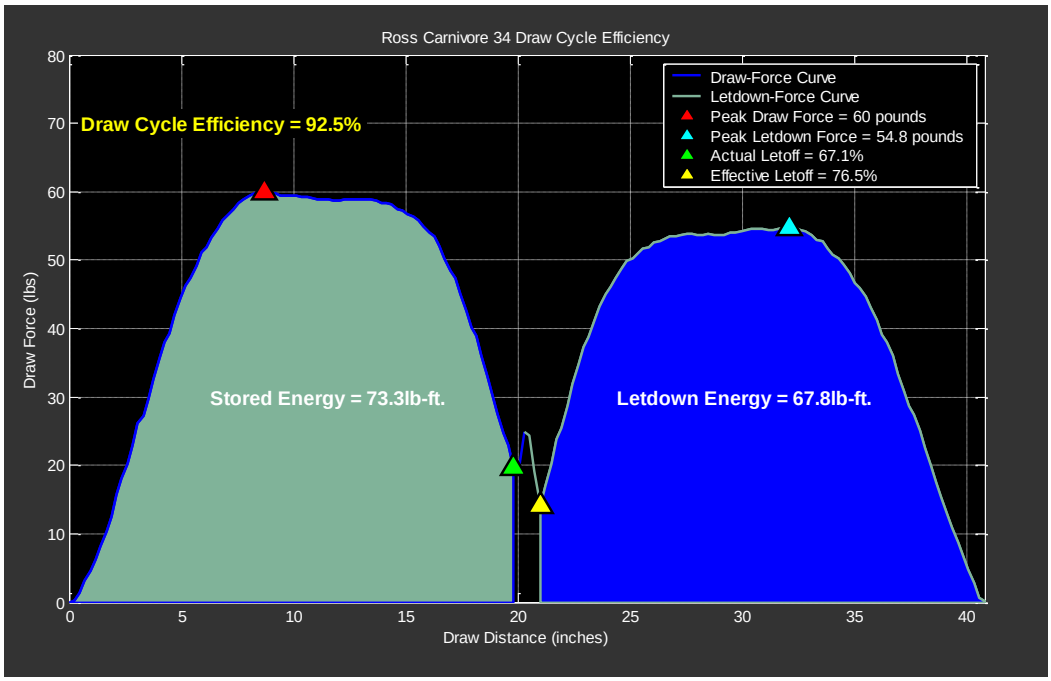
# Ross Carnivore 34




## Introduction:

As the most recent addition to BowTech's family of brands, the Ross lineup provides an additional outlet for BowTech's R&D team to provide fresh technology. This technology is exemplified in Ross's flagship model, the Carnivore 34, with the addition of the Krank. The Krank is incorporated into a Hybrid cam setup and, for the first time in this type of configuration, provides the ability to tune out any cam lean on both the top and bottom limb. Because the Krank provides a significant mechanical advantage, thicker limbs are required to maintain peak draw weight which Ross says can only help increase durability. Like its BowTech and Diamond counterparts, the Carnivore 34 hybrid cam system also provides a rotating module covering all available draw-lengths without the need for a bow press. It also comes standard with the InVelvet™ finish found in the BowTech and Diamond lines. The Flatline™ damping system, aluminum broadhead guard, and string suppressor come standard on the Carnivore 34 and offer a great value for a bow with an MSRP of $699.

The Carnivore 34 sample that was provided to Archery Evolution was measured to have a brace-height of 7.445 inches, while the axle-to-axle length was measured to be 34 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 7/32 inch draw length and peak draw-weight of 61.3 pounds. At these settings, The Carnivore 34 achieved an average speed of 295.6 fps when shot by hand in the out of box configuration (brass nock installed) with a 300 grain arrow. When shot from the shooting machine with the addition of a string loop, the Carnivore 34 achieved and average speed of 294.2 fps at these settings. Even though the draw-length was within the test specifications, Ross requested that the Carnivore 34 be set to exactly 60 pounds, 29 inches. A slight adjustment to the integrated draw stop and limb bolts brought the bow into exact specifications in short order.

### Ross Carnivore 34

**Contact Info: Ross Bowhunting**

www.huntwithross.com

| | | | |
|---|---|---|---|
| **MSRP:** | $699 | **Draw Length:** | 25"-30" * |
| **Cams:** | Hybrid cam w/ The Krank | **Draw Weight:** | 50, 60, 70* |
| **Limbs:** | Composite solid limb | **Brace Height:** | 7 3/8" * |
| **Grip:** | One-piece slim line grip | **Axle to Axle:** | 34" * |
| **Let-off:** | 65%-80%* | **Mass Weight:** | 4.8 ^ |
| **String:** | BCY 452X | | |
| **Damping:** | Flatline™ damping system | | *Advertised |
| **Finish:** | Realtree® AP® HD | | ^ Measured |

**Performance at a Glance (60 lbs, 29"):**

| Arrow | Speed | K.E. | Momentum |
|---|---|---|---|
| 300 Grains | 290.1 | 56.1 | 12.4 |
| 360 Grains | 268.2 | 57.5 | 13.8 |
| 420 Grains | 250.7 | 58.6 | 15.0 |
| 540 Grains | 224.2 | 60.3 | 17.3 |

| Arrow (Grains): | 300 | 360 | 420 | 540 |
|---|---|---|---|---|
| Dynamic Efficiency: | 76.5% | 78.4% | 80.0% | 82.2% |
| Speed Per Inch of PS: | 14.6 | 13.5 | 12.7 | 11.3 |
| Noise Output (dBA): | 85.1 | 83.0 | 82.4 | 84.2 |
| Total Vibration (G): | 363.0 | 370.5 | 235.9 | 267.0 |

A thorough examination of the finish quality showed only minor imperfections. Some indentations in the machined aluminum limb pockets were evident, but the grey anodized finish looked excellent with no noticeable imperfections. Various "pin-prick" areas void of film dip finish were also noticed throughout the riser and a more significant blemish with a larger void was noted just above the sight window. Finally, some machining marks were noticeable on the interior portions of the eccentrics. These items are noted strictly for aesthetic purposes as the functionality of the bow is not inhibited in any way. Other than these few items, the Carnivore 34 appeared to be free of any additional cosmetic defects.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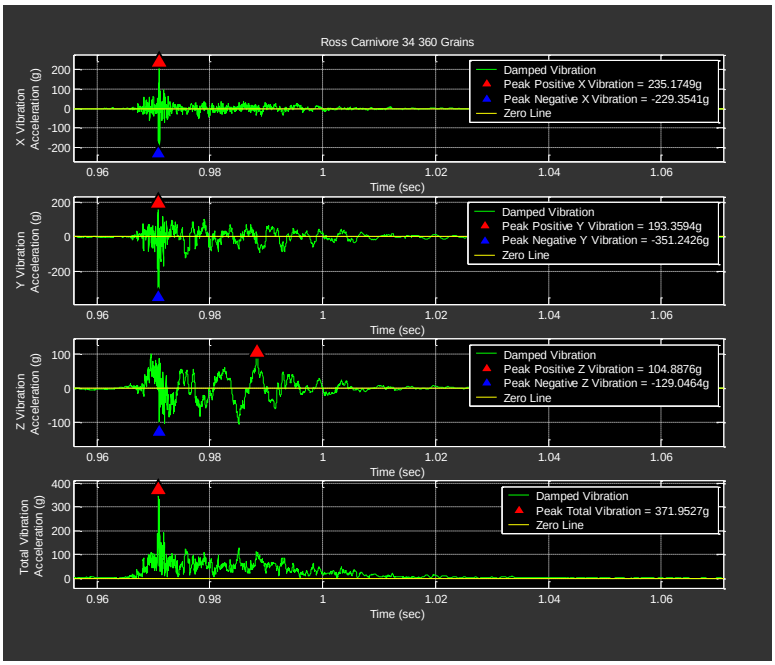
# Detailed Test Results:

## Speed / Performance Measurements:

Speed measurements were made with 4 different arrow weights to determine the average speed of the bow per inch of Power Stroke. Utilizing the stored energy obtained from the Force-Draw curve, average dynamic efficiency was calculated.

**Speed per inch of Power Stroke:** 13.0
**Dynamic Efficiency:** 79.3%

| Speed Point Blank - 29" ± 1/4", 60# ± 1# | Ross Carnivore 34 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Brace Height = 7.445 | | Draw Weight = 60.0 | | Draw Length = 29 | | Axle-to-Axle = 34 | |
| Grains | 300 Grains | | 360 Grains | | 420 Grains | | 540 Grains | |
| Chronograph | BFM | Pro-Chrono | BFM | Pro-Chrono | BFM | Pro-Chrono | BFM | Pro-Chrono |
| 1 | 290.0 | 289 | 268.2 | 267 | 250.7 | 250 | ~~224.4~~ | 223 |
| 2 | ~~289.9~~ | 289 | 268.2 | 267 | ~~250.6~~ | 250 | 224.2 | 223 |
| 3 | 290.2 | 289 | ~~268.3~~ | 267 | ~~250.9~~ | 250 | 224.3 | 223 |
| 4 | ~~290.6~~ | 290 | 268.1 | 267 | 250.8 | 250 | 224.2 | 223 |
| 5 | 290.1 | 289 | ~~268.0~~ | 267 | 250.7 | 250 | ~~224.1~~ | 223 |
| Avg. Speed | 290.1 | 289 | 268.2 | 267 | 250.7 | 250 | 224.2 | 223 |
| Kinetic Energy | 56.1 | 55.6 | 57.5 | 57.0 | 58.6 | 58.3 | 60.3 | 59.6 |
| Momentum | 12.4 | 12.4 | 13.8 | 13.7 | 15.0 | 15.0 | 17.3 | 17.2 |
| Power Stroke | 19.805 | | | | | | | |
| Speed per inch of Power Stroke | 14.6 | 14.6 | 13.5 | 13.5 | 12.7 | 12.6 | 11.3 | 11.3 |
| Avg. Speed per inch of PS | 13.0 | | | | | | | |
| Stored Energy | 73.3 | | | | | | | |
| Dynamic Efficiency | 76.5% | 75.9% | 78.4% | 77.7% | 80.0% | 79.5% | 82.2% | 81.3% |
| Avg. Dynamic Efficiency (BFM) | 79.3% | | | | | | | |




## Vibration Measurements:

Vibration measurements were made with 4 different arrow weights to determine the average vibration in 3 dimensions as well as the total average vibration.

**Positive X-Vibration:** 203.5 g
**Negative X-Vibration:** -160.6 g

**Positive Y-Vibration:** 170.0 g
**Negative Y-Vibration:** -295.7 g

**Positive Z-Vibration:** 106.1 g
**Negative Z-Vibration:** -117.2 g

**Total Vibration:** 309.1 g

The addition of a 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a significant reduction of peak total vibration when measured with a 360 grain arrow.

**B-Stinger Reduction:** 8.6%

## Sound Measurements:

Sound measurements were made with 4 different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

**Unweighted Sound Output:** 101.1 dB
**A-Weighted Sound Output:** 83.7 dBA
**C-Weighted Sound Output:** 92.7 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of peak A-weighted sound Output when measured with a 360 grain arrow.

**B-Stinger Reduction:** 0.6%

| Noise & Vibration | Ross Carnivore 34 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Brace Height = 7.445 | | | | Draw Weight = 60 | | | | Draw Length = 29 | | | Axle to Axle = 34 |
| Parameter | Peak Noise Output (dB) | | | | Peak A-Weighted Noise Output (dBA) | | | | Peak C-Weighted Noise Output (dBC) | | | |
| Grains | 300 Grains | 360 Grains | 420 Grains | 540 Grains | 300 Grains | 360 Grains | 420 Grains | 540 Grains | 300 Grains | 360 Grains | 420 Grains | 540 Grains |
| Measurement | Max | | | | Max | | | | Max | | | |
| 1 | ~~102.5~~ | ~~101.8~~ | 101.3 | ~~100.2~~ | 84.8 | 83.1 | ~~83.9~~ | ~~86.8~~ | ~~94.1~~ | 93.3 | ~~93.4~~ | ~~92.0~~ |
| 2 | 102.0 | ~~100.8~~ | ~~102.0~~ | 99.6 | 85.4 | ~~85.8~~ | 83.5 | 86.7 | 93.7 | 92.6 | 93.2 | 91.8 |
| 3 | 102.2 | 101.8 | 100.9 | 100.0 | ~~85.5~~ | ~~82.6~~ | 80.3 | 82.5 | 94.1 | ~~93.5~~ | 92.8 | 91.2 |
| 4 | 101.9 | 101.6 | ~~100.0~~ | 100.0 | 85.3 | 82.6 | ~~79.2~~ | 83.5 | ~~93.4~~ | 93.2 | 92.1 | 90.7 |
| 5 | ~~101.5~~ | 100.9 | 100.7 | ~~97.5~~ | ~~82.8~~ | 83.1 | 83.3 | ~~80.1~~ | 93.4 | ~~92.3~~ | ~~91.9~~ | ~~88.1~~ |
| Average | 102.0 | 101.4 | 101.0 | 99.9 | 85.1 | 83.0 | 82.4 | 84.2 | 93.7 | 93.0 | 92.7 | 91.2 |
| Total Average Max | 101.1 | | | | 83.7 | | | | 92.7 | | | |

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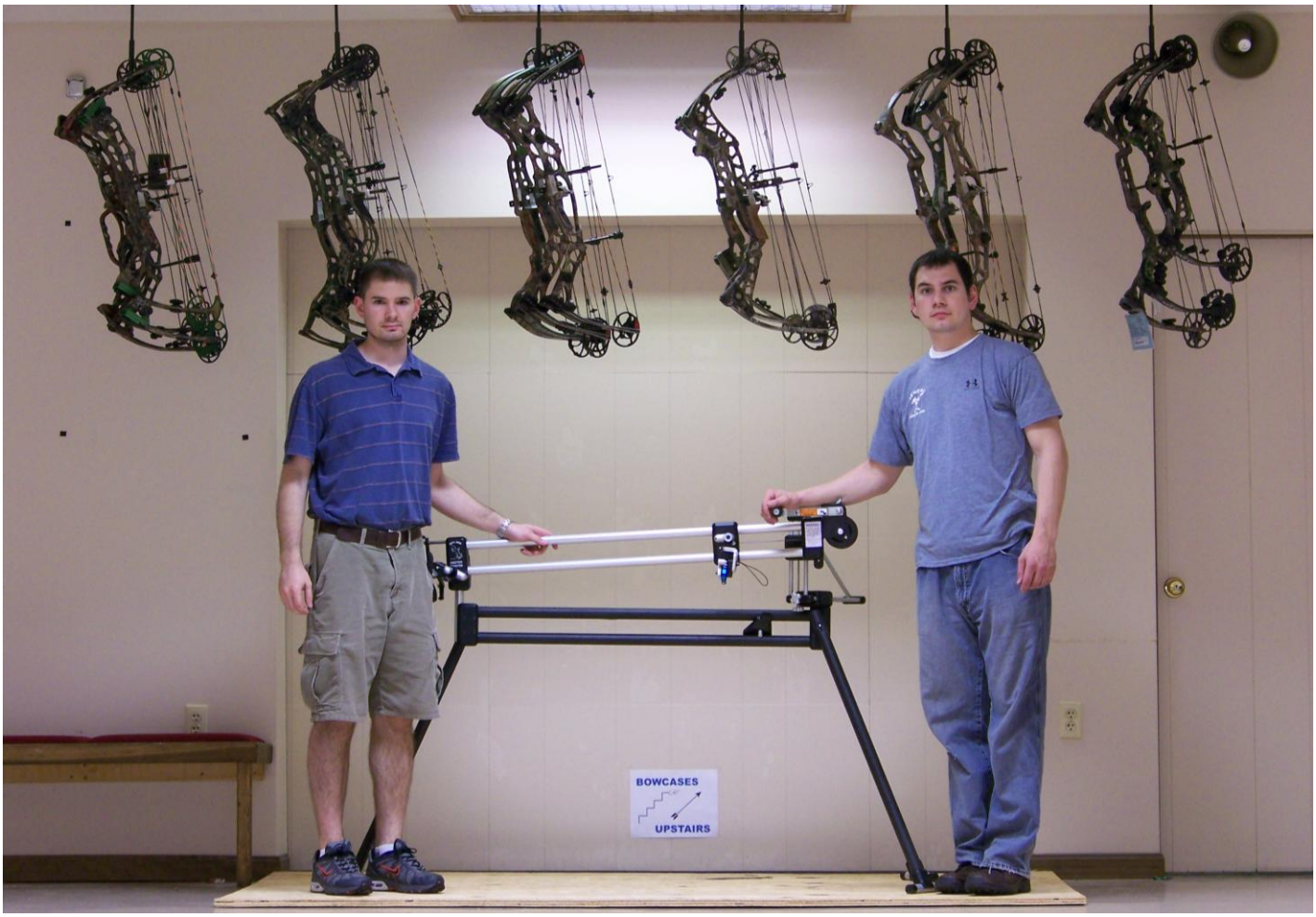


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