2010 Compound Bow Evaluation

Rytera Nemesis

By *Anthony Barnum*

Rytera Nemesis

Introduction:

For 2010, Rytera has expanded the Alien lineup of bows with the introduction of the Alien Z and the Nemesis in addition to the popular Alien X that was introduced in 2009. Also new for 2010 is the Tranz Cam single cam system that is optional on each of the bows, offering additional customization for those archers interested in the Rytera line. The focus of this evaluation, though, is the Nemesis with the speedier Hybrix cams. This cam system is focused on performance, but also offers good adjustability by incorporating a rotating module that allows for draw length adjustment from 27”-30”. More notable yet is the riser design; when looking at the side profile of the Nemesis, it is hard not to be in awe of the riser design.. With its sweeping curves and skeleton bridging, the riser is relatively lightweight while also maintaining structural integrity and visually appealing lines. A bridge is incorporated on the back of the bow which to bolster the overall rigidity of the riser. This bridge, when combined with the STS string suppressor and Vibration Escape Modules (V.E.M.) that come standard on the bow, also helps direct some of the shot vibration away from the user’s hand.

The Nemesis sample that was provided for this evaluation was measured to have a brace-height of 7.165 inches, while the axle-to-axle length was measured to be 34 ½ inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 inch draw length and peak draw-weight of 62.2 pounds. When shot by hand with a 300 grain arrow, the Nemesis achieved an average speed of 314.0 fps in the out of box configuration with only a brass nock added to the string. Per Rytera’s recommendation, adjustments were made to bring the peak draw weight down to 60.1 pounds, after which the Nemesis achieved an average speed of 309.2 fps when shot by hand.

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Contact Info: Rytera

www.rytera.com

MSRP:	$799	**Draw Length:**	27”-30” *
Cams:	Hybrix 2.0	**Draw Weight:**	35-70*
Limbs:	Multi Laminate 5x	**Brace Height:**	7” *
Grip:	Integral Vented Grip	**Axle to Axle:**	34 ½” *
Let-off:	80%+*	**Mass Weight:**	4.6 ^
String:	BCY 8125 Dakota Bowstrings		
Damping:	V.E.M, STS		*Advertised
Finish:	NEXT® Camo		^Measured

Performance at a Glance (60.1 lbs, 29”):

Arrow	Speed	K.E.	Momentum
300 Grains	308.1	63.2	13.2
360 Grains	283.9	64.4	14.6
420 Grains	264.4	65.2	15.9
540 Grains	234.8	66.1	18.1

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	79.9%	81.5%	82.4%	83.5%
Speed Per Inch of PS:	15.3	14.1	13.2	11.7
Noise Output (dBA):	85.1	84.2	83.0	82.4
Total Vibration (G):	370.5	363.0	267.0	235.9

Subjective Test Results:

Fit & Finish:

Overall, I would consider the finish of the Nemesis to be about average, but it is certainly above average when compared with the Rytera bows that I’ve evaluated in the past. Various “pin-prick” areas void of film dip finish were noted on the riser and limbs; more noticeable imperfections in the finish were evident on the riser bridge and a small area on the front of the riser, where it appears that the film may have folder over during the dipping process. The machined aluminum limb cups and eccentric system exhibited very good anodized finishing and minimal machining marks.

Grip:

The grip on the Nemesis is integrated directly into the riser; no side plates or wooden handle are provided. Reinforced by the riser bridge, the grip itself is quite slim but it is comfortable and fits my hand well. My hand found consistent placement each time I drew the Nemesis and it was surprisingly resistant to torque. Since the grip is the contact point of the bow, it is worth noting that the Nemesis seemed to be extremely well balanced when at full draw and all the way through the shot. It does want to tip back ever so slightly after the arrow is released, but a lightweight stabilizer should help reduce this effect.

Draw Cycle:

The Nemesis stacks up steeply to peak draw weight in the first quarter of the draw cycle, and drops quickly into a deep valley with a hard wall after a minor “hump” on the back end of the draw. The draw is stiff throughout the cycle as well, which is to be expected with any performance cam system. On average, the Nemesis stores 3.94 ft-lbs. of energy for each inch that you draw it back.

Sound & Vibration:

At the shot, the Nemesis exhibits very little jump or shock but a low amplitude residual vibration is noticeable for a relatively lengthy period of time after the arrow is released. The Nemesis also seemed to be louder than average after the shot, from a shooter’s perspective, but the addition of a stabilizer and some limb dampeners should help alleviate some of this.

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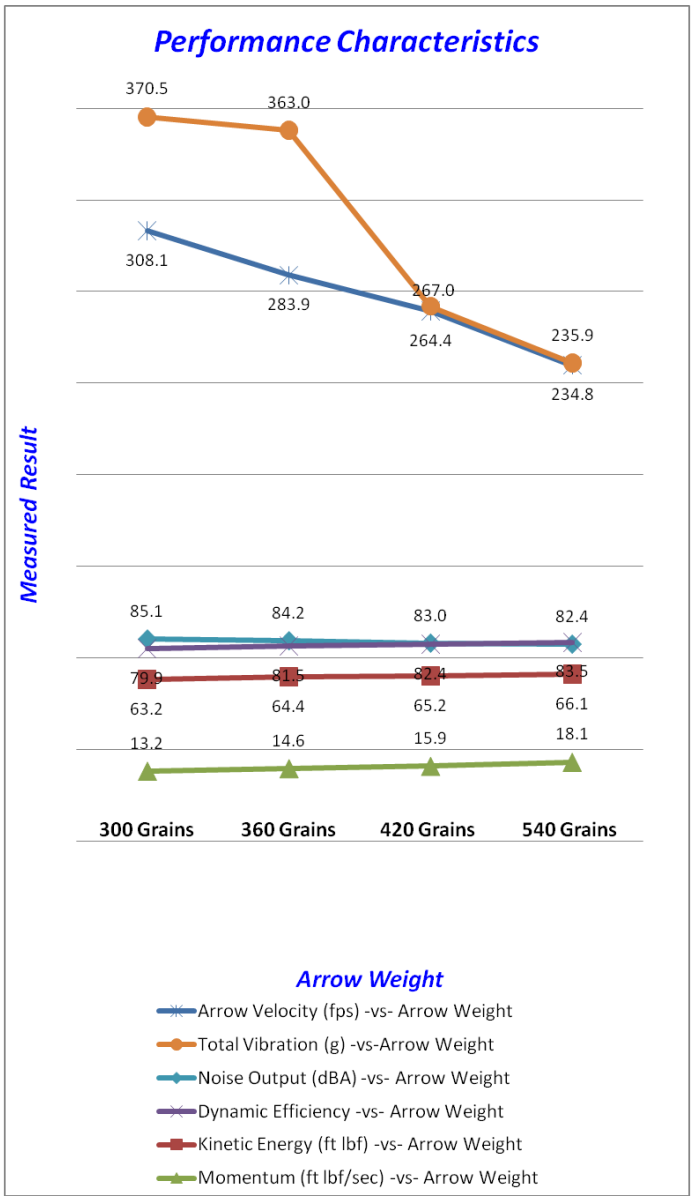
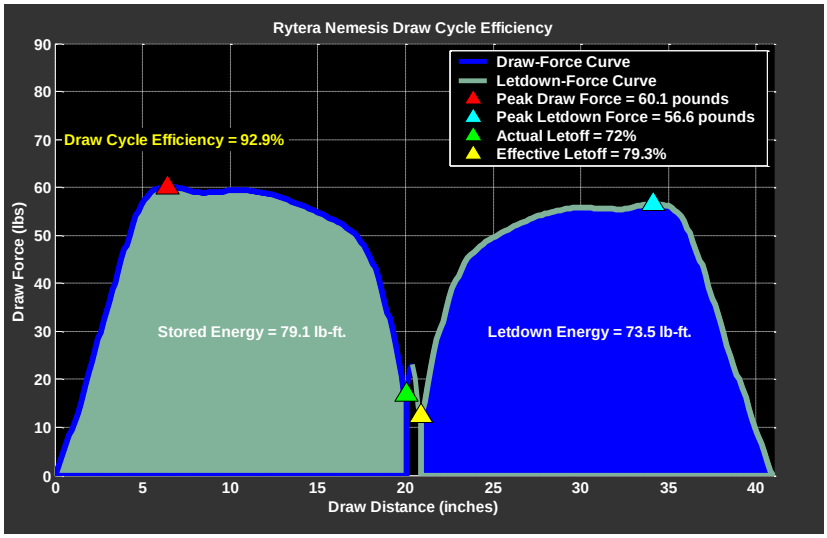
Objective Test Results:

Speed / Performance Measurements:

Speed measurements are made with 4 different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

Speed per inch of Power Stroke: 13.6
Dynamic Efficiency: 81.8%
Draw Cycle Efficiency: 92.9%





Vibration Measurements:

Vibration measurements are 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: -117.2g

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%