Terra Firma SICARIO 5mm– 350 Spine

Arrow Consistency Test Report

Prepared by: PNL Testers
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1. Manufacturer and Arrow Information

The arrows evaluated in this report were Terra Firma SICARIO, 350-spine carbon arrows. The information below identifies the specific product tested and provides the basic manufacturer and sample information.

Manufacturer: Terra Firma
Model: Sicario 5mm
Rated Spine: 350
Material: Carbon
Quantity Tested: 6 arrows
Purchase Price: $10.00 per arrow

Manufacturer Published Specifications

GPI: 8.2
Straightness Tolerance: .001
Weight Tolerance: ±1gr

Only specifications published by the manufacturer for this model are reported. No numerical manufacturer tolerance for radial spine variation was found.

Straightness tolerance is listed as a manufacturer-published specification only. Straightness was not independently tested as part of this evaluation.

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2. Test Data and Results

Each arrow was measured for static spine at eight rotational positions, spaced at 45° intervals around the shaft. The measurements shown below represent the raw spine data collected for each of the 6 arrows tested.

The raw data was then used to calculate the average spine, minimum and maximum spine, radial spread, radial variation, and maximum deviation from the individual arrow average.

Raw Spine Measurements

Arrow	0°	45°	90°	135°	180°	225°	270°	315°
Arrow 1	0.334	0.329	0.326	0.329	0.331	0.330	0.326	0.330
Arrow 2	0.339	0.337	0.336	0.337	0.339	0.336	0.335	0.340
Arrow 3	0.333	0.334	0.332	0.330	0.337	0.333	0.333	0.334
Arrow 4	0.334	0.333	0.334	0.336	0.335	0.335	0.334	0.336
Arrow 5	0.336	0.338	0.336	0.336	0.339	0.336	0.336	0.339
Arrow 6	0.335	0.334	0.332	0.333	0.337	0.332	0.332	0.335

360° Automated Spine Analysis & Radial Consistency Report

Arrow	Average	Minimum	Maximum	ATA SAS (4 × 90°)	8-Point Radial Spread (45°)	8- Point Radial Variation (%)	Radial Consistency Rank	Maximum deviation from average
Arrow 1	0.3294	0.3255	0.3337	0.0082	0.0082	2.48%	Field Grade	0.0043
Arrow 2	0.337	0.335	0.340	0.0039	0.0053	1.57%	Match Grade	0.0030
Arrow 3	0.333	0.330	0.337	0.0048	0.0067	2.02%	Field Grade	0.0037
Arrow 4	0.335	0.333	0.336	0.0014	0.0029	0.86%	Elite Match	0.0014
Arrow 5	0.337	0.336	0.339	0.0034	0.0039	1.14%	Match Grade	0.0026
Arrow 6	0.334	0.332	0.337	0.0043	0.0043	1.30%	Match Grade	0.0028

Group Spine Summary

Average Group Spine	**0.334**	
Stiffest Arrow	**Arrow 1**	**0.329**
Weakest Arrow	**Arrow 2**	**0.337**
Group Average Spine Spread	**0.008**	
Group Average Spine Spread (%)	**2.39%**	
Difference from Factory Spine	**0.034**	
Difference from Factory Spine	**11.42%**	

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3. Arrow Weight Consistency Results

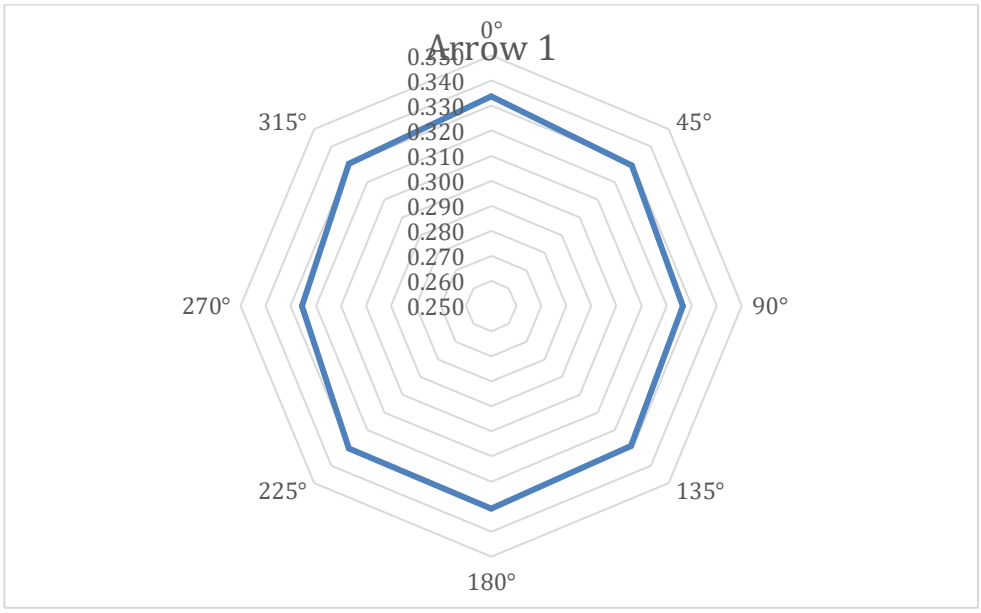
Each arrow was weighed in the **factory-supplied configuration**, consisting of the carbon shaft. **No insert or nock was installed during weight measurement.**

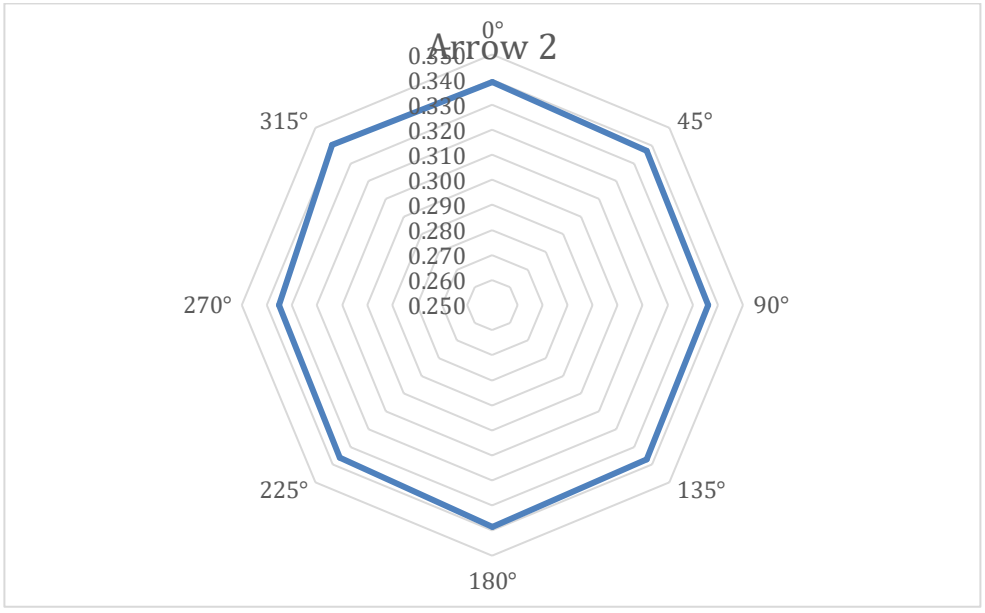
BARE SHAFTS		
Arrow	Total Weight (gr)	Notes
Arrow 1	**266.7**	
Arrow 2	**266.5**	
Arrow 3	**266.4**	
Arrow 4	**266.3**	
Arrow 5	**266.3**	
Arrow 6	**266.4**	
Summary		**Weight (gr)**
Average		266.4
Minimum		266.3
Maximum		266.7
Total Weight Spread		0.4
Maximum Deviation from Average		0.3
Weight Spread Percentage		**0.15%**

Across the 6 arrows tested, the total weight spread was **0.4 grain**, representing a **0.15% difference** between the lightest and heaviest arrows.

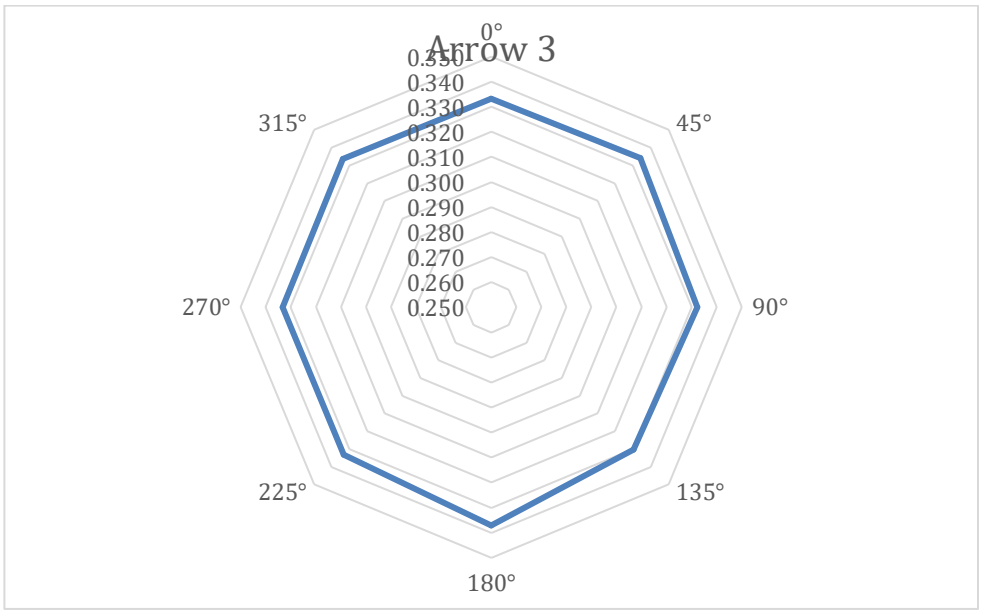
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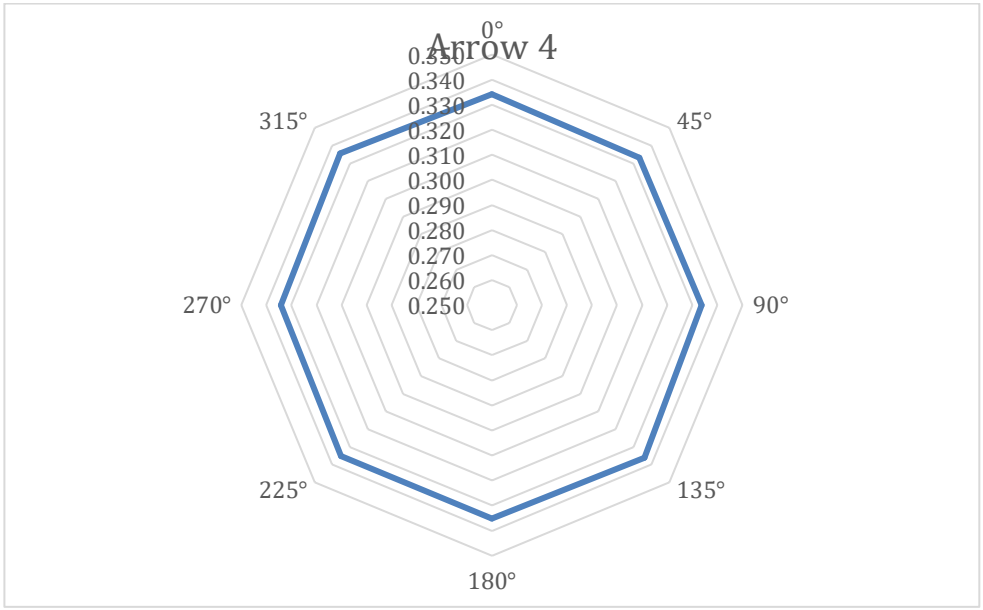
4. Individual Arrow Radial Spine Profiles



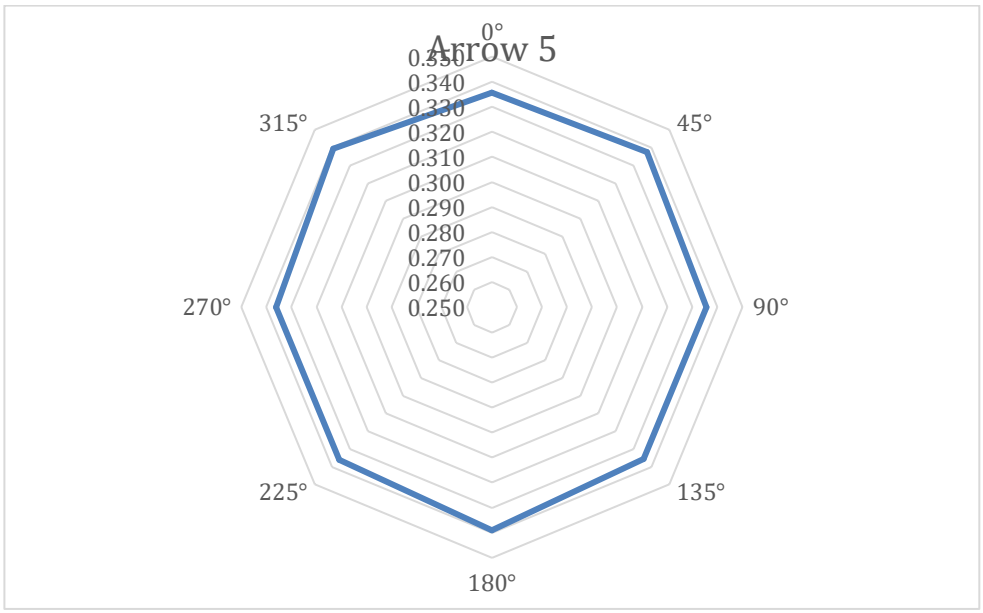


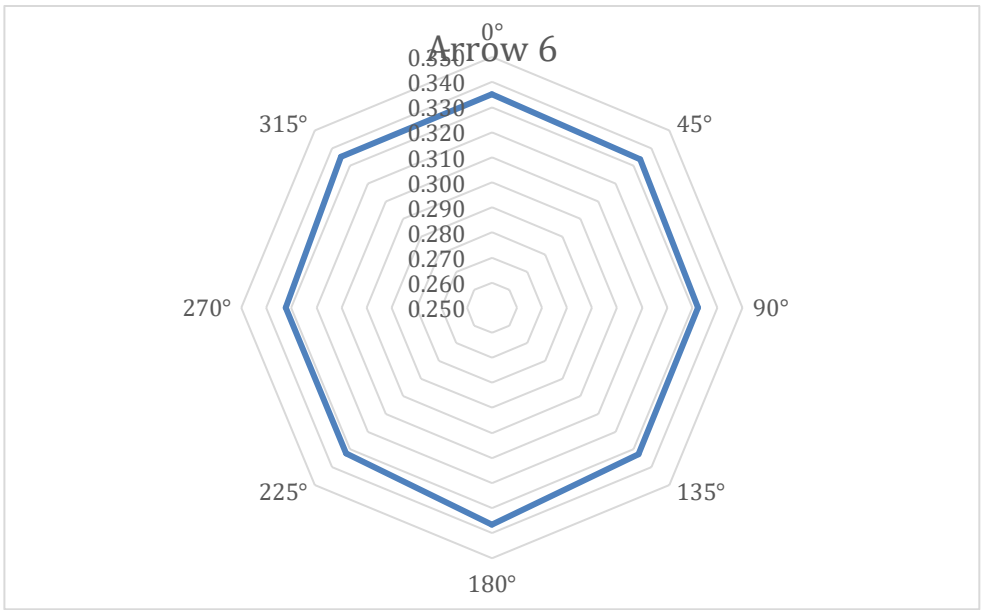
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Appendix A — PNL Testers Technical Reference Notes

Technical Reference Notes
PNL Testers Radial Spine Consistency
Radial Variation (%) is reported as a measured consistency characteristic, not as a pass/fail specification.
The ATA defines a method for measuring spine variation around the shaft (SAS), but does not establish pass/fail acceptance limits for SAS.
Consistency Rank:
Ranks each shaft within the tested group using Radial Variation (%).
This rank applies only to the shafts in this test group and is not a comparison with other brands or models.
Maximum Deviation from Average:
Shows the largest difference between any individual radial spine measurement and that arrow's average spine.
ATA SAS (Standard Spine Around Shaft Variation):
SAS is the ATA-defined measurement of spine variation around the circumference of an arrow shaft. It is derived from four spine measurements taken 90° apart around the shaft.
Formula: ATA SAS = Maximum Spine − Minimum Spine, using the four measurements taken at 90° intervals.
8-Point Radial Spread:
Shows the difference between the highest and lowest spine measurements from all eight measurements taken at 45° intervals around the shaft.
Formula: 8-Point Radial Spread = Maximum Spine − Minimum Spine, using all eight measurements.
8-Point Radial Variation (%):
Shows radial spread as a percentage of that arrow's average spine. It measures how much the shaft's bending stiffness changes as the shaft is rotated through 360°. Lower percentages indicate greater radial spine consistency.
Formula: Radial Variation (%) = Radial Spread ÷ Average Spine × 100
These measurements describe shaft consistency, not guaranteed shooting performance. An arrow with higher radial variation may still shoot accurately, and the practical effect may depend on the complete bow-and-arrow setup.

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