

ORVIS®

HELIOS 3

No one else has ever approached rod design with the express intent of increasing accuracy. You hear about power, sensitivity, and lifting power. What if you could have all of that plus extreme accuracy? This is the roadmap our rod designers took when designing Helios 3 rods.

Helios rods have been the most celebrated rods in history. The first Helios were introduced in fall 2007 and the world was amazed at how light they were, and how well they cast. The Helios 2 rods in fall 2012 were a measureable improvement, with great strength, better tapers, and more accuracy. And now, Helios 3 rods take another giant step ahead of other Orvis rods and the competition. Not only are they even stronger than Helios 2, they are the most accurate rods ever made. And we can prove it, with both laboratory tests and reports from the field.

HOW IS THE HELIOS 3 BETTER THAN HELIOS 2?

It's more accurate

Accuracy anywhere. That's a bold statement. We're prepared to back it up. Not only do we know this is the most accurate rod Orvis has ever built (and the Helios 2 was known for its accuracy), we feel it's the most accurate rod in the world. And the rods are not just accurate in close where most of us think about accuracy. They're accurate way out there at the end of your casting range, even in strong winds. How can we back up such a statement?

New materials

Since the launch of our Helios 2 rods, we've investigated more than 60 new raw materials/resin systems. We finally found a new material that had the right combination of stiffness and strength, which allowed us to build a thinner and more precise blank that would translate casting energy better than anything we'd seen. The new raw material used in the tips of Helios 3 rods is a denser fiber that gives us lighter tips and a quicker recovery weight, while increasing strength at the same time.

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For distance and feel, the H3 casts just like the H2—great. What was amazing is the accuracy. Unlike every other fly rod that I've cast, there is no horizontal wobble to the fly line on the forward cast. In other words, even on long casts the fly was delivered on a straight line exactly where it was supposed to go. I had to adjust how I cast to bonefish to account for the straight-on accuracy.

— AARON ADAMS, SENIOR SCIENTIST, BONEFISH & TARPON TRUST

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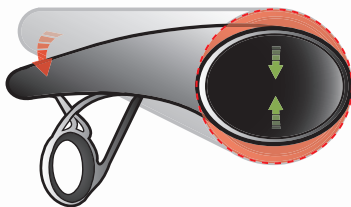
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New construction

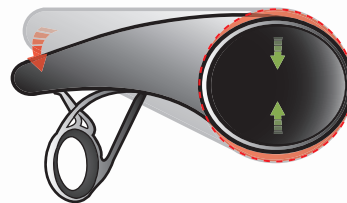
More important than the materials in a fly rod is how you utilize them. Our designers and engineers experiment with new construction techniques all the time. For the Helios 3, they developed a flag construction technique that has resulted in increased hoop strength and smoother loading and unloading of energy during casting. Better hoop strength means a more durable rod; it means you can design a thinner rod—but most important is that much more of your casting energy goes where you intend it to, where you point the rod. When a fly rod deforms from its circular shape to more of an egg shape during the stresses of casting, more casting energy is dissipated sideways rather than getting translated along the rod.

COMPETITION HOOP STRENGTH



Helios 3 construction maintains circular integrity better than other rods, which gives them superior strength, tracking, and energy transfer.

H3 HOOP STRENGTH



New tapers

Along with the increase in hoop strength, our rod designers created new tapers for the Helios 3 rods, using a combination of raw graphite materials, thermoplastic resins (with our patented process), and scrim. The tapers ensure that the energy developed is translated smoothly in the direction of the cast so the fly lands where you point the tip—not off to one side or the other. The tapers also result in a satisfying, lively casting sensation.

Precision blank matching

Technically, graphite blanks are not perfectly circular. Matching each section of each blank is an exacting process that requires a special skill, and each rod must be done separately. We've developed a system to make sure that each rod that leaves our shop is perfectly tuned to take every advantage of our new technology.



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It's stronger

Tensile strength

Our new raw material, combined with our new construction techniques, allow us to build a stronger rod (exactly how is a trade secret). The new Helios 3 rods are 17 percent stronger than Helios 2 rods (which were 20 percent stronger than the first Helios). We measure rod strength (think lifting power and high-sticking a rod next to a boat) by measuring how far we can bend the tip of a rod before it breaks. The diagram shows how we measure this and how the Helios 3 rods stack up to Helios 2 and Helios 1:

Hoop strength

Hoop strength measure how much the hollow rod blank bends before it deforms. So besides increasing accuracy, our increased hoop strength protects Helios 3 rods from breakage because this deformation, if it becomes extreme, can cause the rod blank to fail. Helios 3 rods have 40 percent greater hoop strength than Helios 2.

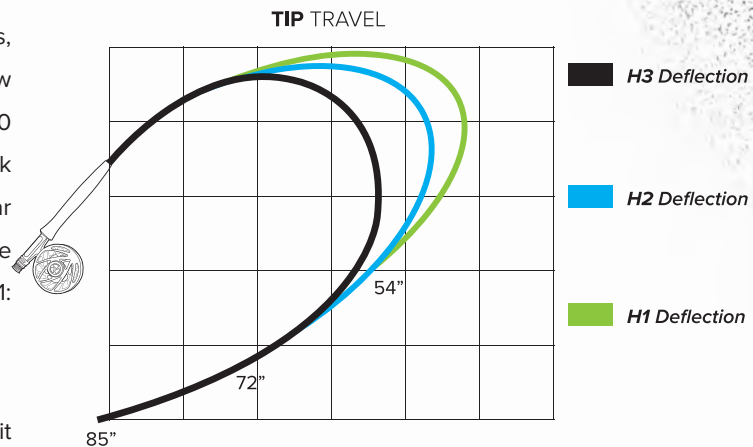
Impact strength

Impact strength protects a rod from shattering if struck by a heavy fly or a tree branch. The new, denser raw material used in Helios 3 tips, combined with the way the scrim is added, increases impact strength by 77 percent. We measure this by striking tips against a solid object with a controlled and measured force until the tips break.

It feels lighter in the hand

Although overall Helios 3 rods are about the same physical weight as Helios 2 rods, they feel lighter in the hand. This is a result of the new tapers, combined with the new material used in the tips. Because the new material is stronger and denser than we used in Helios 2, we can use less material in the tip and still obtain the stiffness and strength we need.

So the rods do feel lighter in the hand and over a day of fishing; because there is not as much weight beyond the grip, you'll feel less fatigued.



H3 DEFLECTION

The measured distance the rod tip can travel before it breaks

To test tensile strength, rods are mounted in a fixture that simulates someone "high sticking" a fish under a boat—where many rods are broken. H3 rods travel farther than previous models before failure.

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BRAND	MODEL	PHYSICAL WEIGHT (OZ)	LAYERED WEIGHT (GRAMS)
ORVIS	H3	3.9	84
ORVIS	H2	3.6	95
ORVIS	RECON	3.6	91
SAGE	X	3.6	91
WINSTON	BORON IIX	3.6	103
SCOTT	MERIDIAN	4.0	86

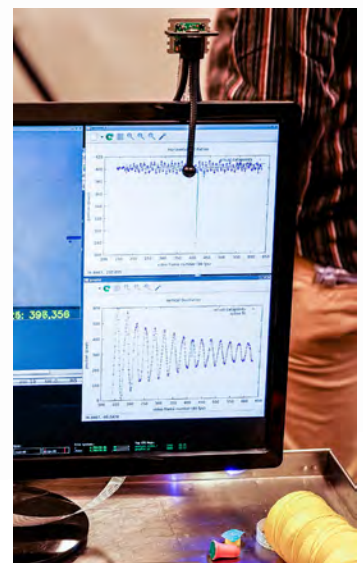
How can we prove it?

In the past, when rod makers measure accuracy, they had to do it subjectively. Casters would say “that rod tracks well” and that was all you had to go on. This assumed less wobble in the rod tip, because wobble in the tip means wobble when delivering the fly line. One rod manufacturer showed a video where the rod maker banged a blank on a table to tell how well it reduced vibration.

That was not good enough for us.

Our rod designers contracted with an independent lab to find a way to empirically measure the way a rod reduces vibration, especially in the horizontal direction (“tracking”). Using a high-speed camera and a sophisticated software program developed specifically for measuring rod tracking, they developed a way of graphing the vibrations in a rod tip during oscillation.

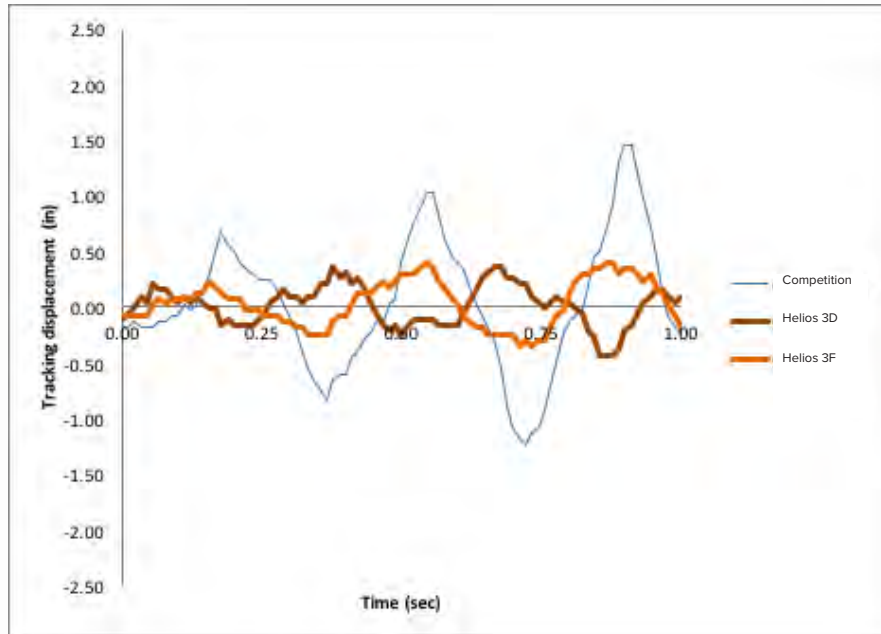
We now have a way of evaluating all of our rod designs, making sure that we eliminate as much vibration as possible. We are able to compare our Helios 3 rods against the competition to ensure they are superior. We’ve learned much about rod design in the process, and this has enabled us to design the most accurate rods we have ever seen.



Real-time analysis of horizontal and vertical oscillations (above). Output of comparative graphs showing horizontal oscillation of H3 versus a competitor's premium rod (below). The lower frequency vibrations of the H3 rods means the rods will throw a tighter, more accurate line.

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The tracking (side-to-side oscillation) measurement of the rod tip at the stopping point of the forward cast.

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There is always a silent prayer that I used to say just as the angler released the fly line in hopes that the fly would land where it was intended. There had always been a measure of unpredictability between where the line was aimed and where it actually went. Kind of a knuckle ball effect. Now that we are using the new H3 I don't need to pray anymore. The fly goes where it is supposed to! Now, we are picking apart the strike zone with fastballs, building confidence as an angler and guide team, and catching more fish.

— CAPT. WILL BENSON, FLORIDA KEYS PERMIT GUIDE

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Small details matter

In the fall of 2016 we tested a version of our Helios 2 rods, the Covert Series, with a matte finish and a modified full wells grip. Customers loved the rods, in fact despite being made from the Helios 2 blanks we had been using for four years, the rod was received like a new product and we sold three times as many as we projected. We knew we had something.

Thus many of the mid-size rods in the Helios 3 series have the same modified full-wells grip and we're using the same matte finish as on the Covert rods. The rods are finished with a durable, non-glare matte surface with a UV inhibitor. It gives them a unique appearance and cuts down on flash when fish are spooky.

Reel seats are an exclusive Orvis design, manufactured in the same Vermont machine shop as our Mirage Reels, Nippers, and Pliers. The easy-grip knurling on the lock ring makes it much less of a struggle to tighten down or release a fly reel, and the wide band is very secure with the addition of a Delrin bushing to ensure it will not loosen over a day of fishing. The sliding band is also indexed to the proper spot on the reel seat—no more squinting to find the reel hood while rotating the band—it's always in place.

The reel seat is Type 3 hard anodized, aircraft-grade aluminum and the black metal matches our Mirage reels (in fact the reel seats are made in the same US machine shop as the reels). The inserts are black, non-glare carbon fiber in both saltwater and freshwater versions.

The high-contrast label area is all about quickly identifying the rod. No one will mistake these for any other fly rod, in print or on video. Also, each rod can be instantly identified as the length and line size are printed at the 12 o'clock version just above the cork—no more holding the rod sideways and squinting to see which model you're holding.



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Accuracy, now offered in two flavors

In the past we tried to steer customers toward a particular rod action by asking them what kind of caster they were. An aggressive caster should pick Tip Flex and a more relaxed caster should choose Mid Flex. But what is an aggressive caster? And sometimes aren't you more relaxed than others? It was a less-than-perfect system and no one really knew what kind of caster they were. What everyone knows is where, what for, and how they plan on fishing. Enter Helios 3D and Helios 3F.



In Helios 3, we revised both our tapers and the way we talk about them. And we make recommendations based on what kind of fishing the angler does, not what kind of caster he or she is. The tapers of Helios 2 and Helios 3 are shown below. You can see that we did not change the taper of Helios 3D much from Helios 2 Tip Flex (although the rods are slimmer and feel lighter in the hand), but we did change the taper of the Helios 3F from the Helios 2 Mid Flex. We felt that the older Mid Flex was a bit soft in the butt and too stiff in the tip. So the new Helios 3F taper is more progressive and should give both delicacy and reserve power in a more efficient manner, without needing to over-line the rod.

Think of the Helios 3D action (D for distance) as the distance rod, the rod for high winds, the rod for higher line speeds and big flies. Pounding big streamers with sinking lines. It will cast as far as anyone needs, yet it still retains its accuracy under tough conditions. The configuration also has more lifting power to fight big fish close to the boat. This is why most of the saltwater and big game models will be available only in the D configuration. And, yeah, you could call it “fast action.”

Think of the Helios 3F (F for feel) as the rod for medium to short distances, out to 60 feet (although it can throw a whole fly line if needed). You will feel the rod more when you cast. Some anglers need this feedback to help their casting; others just prefer it. The accuracy of the F rods is slightly better than the D rods in short to medium distances (up to 50 feet), and the rods are more sensitive, which is helpful when swinging wet flies and nymphs. And these rods have a slight edge over the D models in delicacy—for situations like technical trout fishing or carp fishing, where having the line land on the water with fewer disturbances can make a big difference. Combining this delicacy with their unmatched accuracy gives the stalking angler a far superior tool. And OK, you could call it medium action.



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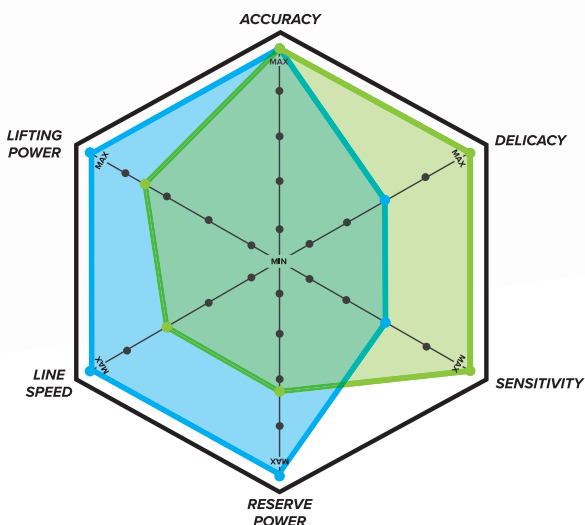
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I've really enjoyed casting and fishing with the new Helios 3 prototypes. Excellent rods. The 5 weight 3D (fast action) is another excellent rod in the Helios line. It does feel a bit livelier than the H2 and still a powerhouse rod that I would recommend as a do-everything 5 weight. Perfect rod for streamers, hopper/dropper rigs, big casts, and big water. I really enjoyed that while very powerful, it appears to be designed as a 'true-to-weight' 5 weight. It fishes wonderfully with the SA MPX Amplitude.

I'm most impressed with the new 3F rods. They generate excellent line speed, power and - most important—impressive accuracy. They are capable of making long accurate presentations with appropriate delicacy. They are exactly what I need for turning over long leaders in a breeze on the Mo', and protecting 5x and 6x tipped. I like the smooth and strong taper. The tip does not collapse when I apply power, a common failing of many technical dry fly rods. I've always been a 'tip-flex' guy but these will likely be my go-to rods for technical dry fly fishing and most other 5 weight situations. — JOHN ARNOLD, HEADHUNTERS FLY SHOP, CRAIG, MONTANA

The new Orvis H3 is the most accurate fly rod I've ever cast, by some margin. It's so accurate, in fact, that it took me 10 minutes to get the right feel for it—I was accustomed to over-correcting a bit while casting with my other fly rods. I used a 4-weight on the big trout water of the Delaware system. It covered the water brilliantly, even in a fairly stiff wind. And though that 4-weight is very light in hand, it has the necessary backbone to quickly and efficiently fight and land big wild trout. — MONTE BURKE, FORBES

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3D ACCURACY
POWER

3F ACCURACY
PRESENTATION

The chart at the left shows how their characteristics compare in a subjective manner.