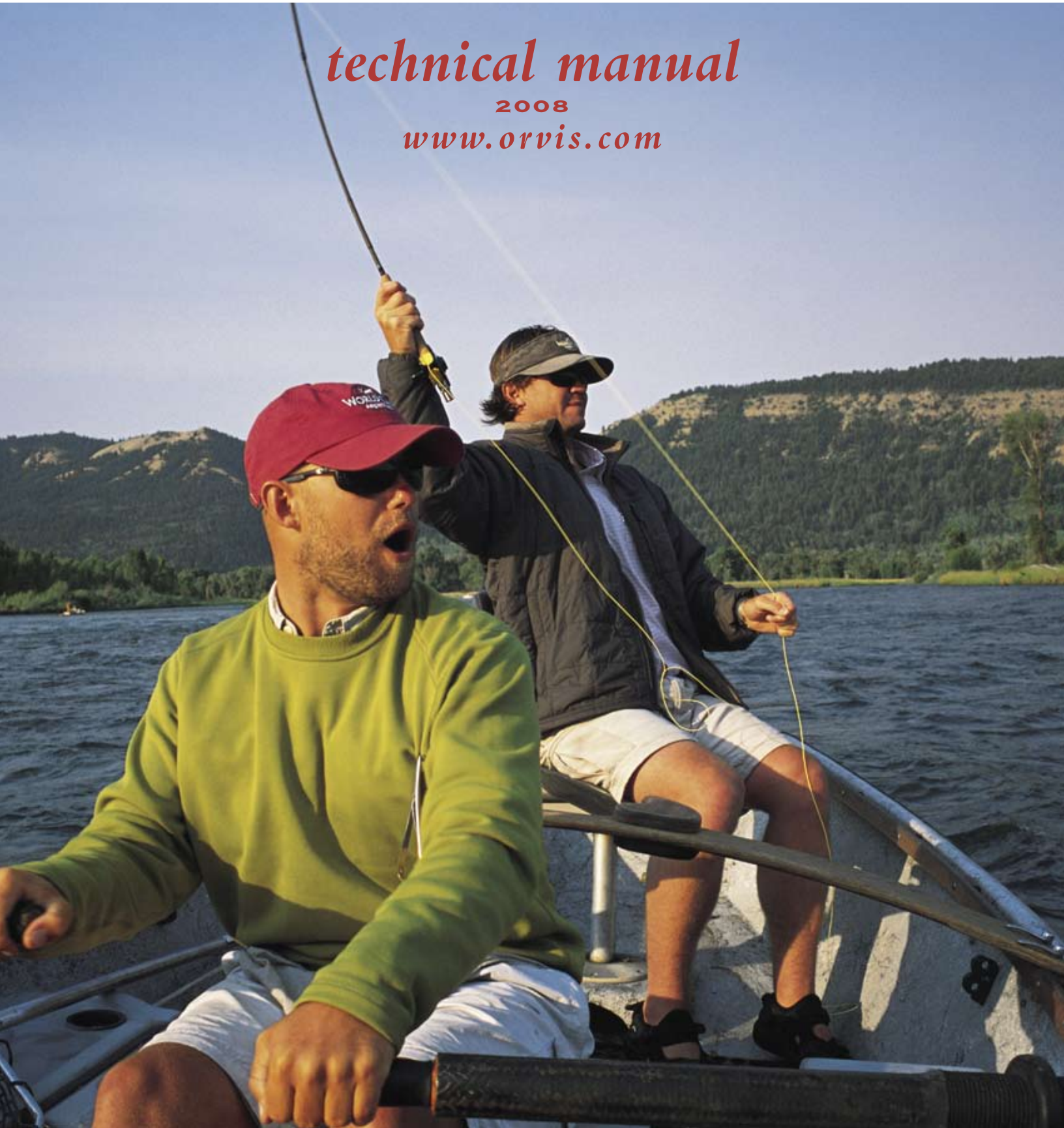


ORVIS[®]
SPORTING TRADITIONS
Since 1856

technical manual

2008

www.orvis.com



ZG Helios

Tech Information

IN SHORT

- Helios rods are the lightest fly rods in the world today.
- A new unidirectional graphite scrim with thermoplastic resins improves upon the technology already proven in T-3 and Zero Gravity rods.
- A new Power Taper™ gives the rods a steeper profile, resulting in a lively, quick feel without sacrificing power.
- Ferrule engagement is very secure because of the Power Taper. Sections are less likely to loosen during extensive casting.
- The rods are beautiful to look at, with elegant but lightweight new cosmetics, and polished graphite rod tubes.



Weight

Every caster's first reaction to a Helios rod is "My God, I heard this rod was light but this is truly amazing". Just the "wow" factor of owning the lightest fly rod ever made is enough for some fly fishers.

Does weight in a fly rod really matter? Although weight doesn't seem to matter when you hold a rod at its balance point, you still have to hold that rod all day long, and in the course of a day a Helios 908 will save you about 13 pounds of lifting in 100 casts. But a light rod just feels responsive in your hand, and makes casting more enjoyable. And if you're in a situation where you're holding the rod high above the water, like high-stick nymphing or fishing a dry fly over tricky currents, that reduced weight really makes your casting arm feel better at the end of the day. The less fatigued your arm, the easier and better that last cast of the day will be.

Just look at the weight of the Helios as compared to other premium rods — they are a full ounce lighter than comparable Sage Z-Axis models!

Rod Model	Helios Weight	Sage Z-Axis rod weight	Winston Boron Iix rod weight	Scott rod weight	St. Croix Rod Legend Elite weight	Temple Fork Lefty Kreh Professional Series rod weight
865-4 mid	2.1 oz.	3.1 oz.	2.6 oz.	S4 2.8 oz.	2.8 oz.	3.7 oz.
905-4 tip	2.3 oz.	3.3 oz.	2.7 oz.	S4 2.9 oz.	2.9 oz.	3.8 oz.
908-4 mid	3.0 oz.	4.0 oz.	3.5 oz.	X2s 4.0 oz.	4.1 oz.	5.2 oz.

Taper

The best aspect of Helios technology is that it allows us to use a steeper taper than we've ever used before. To get the light feel and casting power in a T-3 or Zero Gravity rod, we use a compound taper, which distributes the material in a rod's taper in a non-linear manner. It's a terrific way of making efficient use of graphite and allows us to create a taper that is fine-tuned to a specific flex profile. The new steeper taper of the Helios rods moves weight away from the tip of the rod, giving it a quicker taper but without the feeling of stiffness you get with other "fast" rods.

Is this new taper better? It's trickier to produce and thus more expensive. These rods translate the energy of your hand to the rod and line in a way that is noticeably more direct, balanced, and smooth. Anglers who have preferred rods built by other manufacturers tell us we've finally made a rod they love, and many diehard fans of other rods have told us this is the best rod Orvis has ever made — and many have told us it's the best-casting rod on the market.

But Will It Break?

No matter how good the Helios casts, we would never have brought this rod to the market if it broke more readily than other Orvis rods. The new thermoplastic scrim lets us maintain the same strength as our other rods because it provides just as much strength with less material. Less material means a slimmer, lighter rod.

Another advantage of the new taper is that you get more secure ferrule engagement. Helios rod sections are less likely to twist out of alignment after a day of hard casting in the wind.

ZG Helios

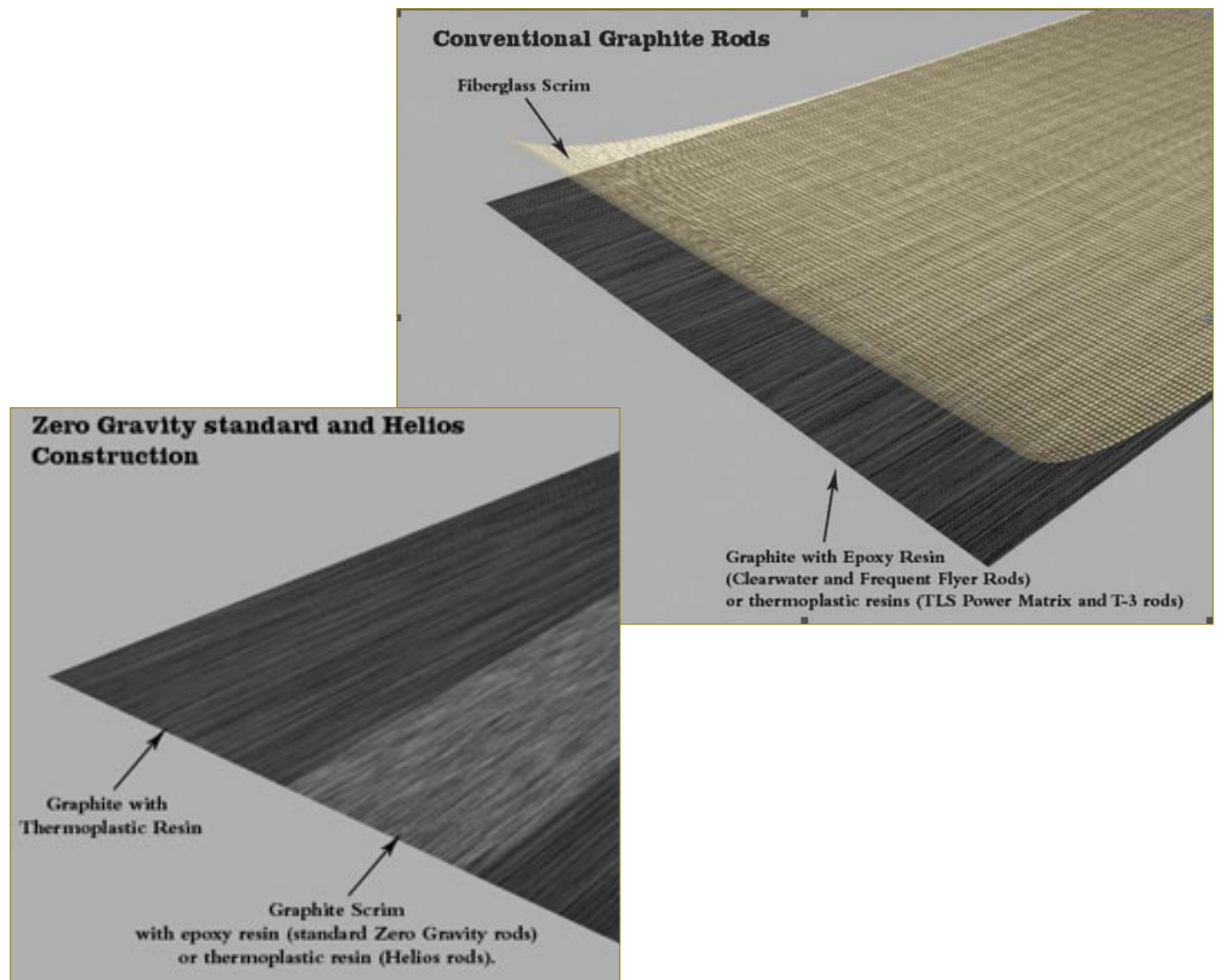
Tech Information

Construction

Helios rods are lighter and feel different from any other rod because their materials and construction methods are different. For the first time, the scrim used to augment hoop strength in a fly rod is made from a unidirectional carbon fiber and held together with a thermoplastic resin. Why is this different and why should it matter to the fly fisher?

Historically, even “100% graphite” rods were almost 50% fiberglass. Rod manufacturers were using 100% graphite for the power fibers of the rod, but an equal amount of cross-weave fiberglass scrim was rolled into the blank. (Scrim is necessary for hoop strength, or keeping the hollow rod tube from collapsing under stress as the rod bends.) Was ignoring this fiberglass misleading? No more than ignoring the epoxy and paint on the outside of a rod, or the resin that held the graphite together. A 100% graphite rod would merely be like a hank of loose hair in your hand.

Orvis’s first modern breakthrough in graphite rods was the T-3 rod. Heavier, more brittle epoxy resins used to hold the graphite fibers were replaced with lighter, more durable thermoplastic resins, which encased the fibers instead of just sticking to them like epoxy. Next were the Zero Gravity rods, where the cross-weave fiberglass/epoxy scrim was replaced by a unidirectional graphite/epoxy scrim. This made rods lighter and more durable. Finally, the Helios, which replaces the graphite/epoxy scrim with unidirectional graphite/thermoplastic scrim.



2008 ZG Helios Rods

ZG HELIOS 704-4 MID FLEX
ZG HELIOS 865-4 TIP FLEX
ZG HELIOS 906-4 MID FLEX
ZG HELIOS 843-4 TIP FLEX

ZG HELIOS 763-4 MID FLEX
ZG HELIOS 907-4 TIP FLEX
ZG HELIOS 966-4 TIP FLEX
ZG HELIOS 105-4 TIP FLEX
ZG HELIOS 904-4 TIP FLEX

ZG HELIOS 911-4 TIP FLEX
ZG HELIOS 912-4 TIP FLEX
ZG HELIOS 602-4 MID
ZG HELIOS 104-4 TIP FLEX

ZG Helios

Tech Information

Freshwater Rods

A smart translucent olive finish, a woven-graphite reel seat, and REC Recoil guides that resist breakage complete the new Helios, which comes in a handsome woven-graphite rod tube.

Line wt.	Rod Name and Flex Index	Length	Weight in oz.	Pieces	Reel Seat	Target Species	Description
3-wt	ZG Helios 843-4 Mid 8.0	8'4"	2	4	Fresh	Trout	The perfect rod for small streams. Extreme accuracy. Lightest weight.
	ZG Helios 864-4 Mid 6.5	8'6"	2½	4	Fresh	Trout	The lightest, most-accurate, smoothest-casting 4-weight made.
4-wt	ZG Helios 904-4 Mid 8.0	9'	2½	4	Fresh	Trout	The rod of choice for dry-fly and nymph fishing medium-sized rivers.
	ZG Helios 865-4 Mid 6.5	8'6"	2½	4	Fresh	Trout	The best, and the lightest, all-around trout rod made for the widest range of conditions and techniques.
5-wt	ZG Helios 905-4 Mid 6.5	9'	2½	4	Fresh	Trout	An unmatched rod for nymphing, streamers, and dry fly fishing on big trout rivers for big trout.
	ZG Helios 905-4 Tip 9.5	9'	2½	4	Fresh	Trout	The fast-action Tip-Flex is the go-to rod for big water and big trout.
6-wt	ZG Helios 906-4 Tip FW 9.5	9'	2½	4	Fresh	Trout, bass	A fast-action Tip-Flex to handle any size trout, steelhead, or warmwater species. The rod of choice for streamer fishermen.

Saltwater Rods

A smart translucent olive finish, a woven-graphite reel seat, and REC Recoil® guides that resist breakage complete the new Helios, which comes in a handsome woven-graphite rod tube.

Line wt.	Rod Name and Flex Index	Length	Weight in oz.	Pieces	Reel Seat	Target Species	Description
6-wt	ZG Helios 906-4 Tip SW 9.5	9'	2¾	4	Salt	Light saltwater	Quick-loading rod feels like a 4-weight. Light duty bonefish, warmwater bass, schoolie stripers, and small steelhead.
7-wt	ZG Helios 107-4 Tip 9.5	10'	3½	4	Salt	Steelhead, salmon	Extra length for improved line control and roll casting. A Great Lakes and summer steelheader's dream.
8-wt	ZG Helios 908-4 Mid 6.5	9'	3	4	Salt	Bonefish, stripers	Throw big flies all day with accuracy and far less fatigue than any other fly rod. Great fighting power.
	ZG Helios 908-4 Tip 9.5	9'	2½	4	Salt	Bonefish, stripers	Our best-selling flex profile for bones, reds, stripers, and larger freshwater species.
9-wt	ZG Helios 909-4 Tip 9.5	9'	3¾	4	Salt	Salt species 5-30 lbs.	Best travel rod for big bones and big stripers. Beats the wind with incredible butt strength.
10-wt	ZG Helios 910-4 Tip 10.0	9'	3½	4	Salt	Permit, baby tarpon	Powerful, fast-action Tip-Flex travel rod for permit and baby tarpon. Carries right onto plane.

Battenkill® Large Arbor Trout Tech Information

THE NEW BLA TROUT REEL OFFERS THE IDEAL COMBINATION OF:

- Quick, large arbor performance and line pick up
- Lightweight design
- The best value of any premium large arbor reel made
- Maximum backing capacity

The BLA III retrieves line 3x faster than the Battenkill Bar Stock III and 1.5x faster than the Battenkill Mid Arbor III.

CONSTRUCTION:

- The BLA III frame is machined from 6061 bar-stock aluminum with a hard anodized aluminum bushing for the ultimate balance of durability and light weight.
- Its carbon and stainless center disc drag construction features a one-way clutch bearing and zero plastic parts.
- The smooth, strong, and reliable drag is infinitely and quickly adjusted by using the ideally-placed positive click and numbered drag knob.
- The drag can be easily reset back to the drag you want while casting and fishing and not fighting a big fish.
- The textured paddle handle of the BLA gives the angler the ultimate and most comfortable control to retrieve line, even in cold weather and when using gloves.



	BLA III	Lampson Litespeed	Galvan T-5	Ross Evolution	Ross Rhythm
Weight	4.4 oz	3.9 oz	4.7 oz	3.9 oz	4.7 oz
Retail	\$179	\$299	\$320	\$295	\$230
Wholesale	\$118.80	\$164.45	\$194.70	\$194.30	\$145.20

Comparative retrieve rates					
All reels wound with WF5F line and 100 yards backing.					
	BLA III	Lampson Litespeed	Galvan T-5	Ross Evolution	Ross Rhythm
In feet for 10 revolutions	7.1	7.5	6.4	5.6	5.6
As compared to BKLA	SAME	6%	-10%	-21%	-21%

Battenkill Large Arbor Trout Prices, Reel Weights, Spool Diameters and Backing Capacities

weight and diameter	backing	backing capacities by line weight in yards			
B-Kill LA I for line weights 1-3; 3.9 oz, 3" diameter	12-lb. Dacron	WF1F: 150 yds.	WF2F: 125 yds.	WF3F: 100 yds.	
	20-lb. Dacron	WF1F: 100 yds.	WF2F: 75 yds.	WF3F: 50 yds.	
B-Kill LA II for line weights 3-5; 4.1 oz, 3¼" diameter	20-lb. Dacron	WF3F: 125 yds.	WF4F: 100 yds.	WF5F: 75 yds.	
	35-lb. Gel Spun	WF4F: 125 yds.	WF5F: 100 yds.	WF6F: 75 yds.	
B-Kill LA III for line weights 5-7; 4.4 oz, 3½" diameter	20-lb. Dacron	WF5F: 150 yds.	WF6F: 125 yds.	WF7F: 100 yds.	
	35-lb. Gel Spun	WF6F: 200 yds.	WF7F: 175 yds.	WF8F: 150 yds.	

Mirage™ MaxKnot Tech Information

New Mirage MaxKnot is the fluorocarbon tippet material for technical fishing and for fishing dries and nymphs for finicky, educated, and larger trout.

- greater wet-knot strength
- increased suppleness
- superior abrasion-resistance
- lowest visibility
- new handy, marked dispenser

IN SHORT

A special double-extrusion method gives the outer surface more suppleness. This means the knots tie, seat, and hold better so the tippet retains more of its original strength, especially crucial when wet.

The interior of MaxKnot has superior tensile strength too. The result is a stronger connection to fish.

A high abrasion resistance means tippet lasts longer and frays and breaks less over time

With a light refraction index nearest to that of water than any other tippet material, Mirage Maxknot is super clear and nearly invisible

All that and MaxKnot comes on retainer with an elastic band laser-labeled with tippet size for easy ID on the water. And a metal grommet for easy and fast tippet dispensing.



Comparative Knot Strength in Independent Testing shows the actual knot strength of tippet materials straight off the spool, and when wet and tied with a single overhand knot.

Dry Straight Max Load		Wet Knot Max Load	
Sample #	(lbs)	Sample #	(lbs)
Mirage 5X	4.96	Mirage 5X	2.67
MaxKnot	4.87	MaxKnot 5X	3.18
Super Strong 5X	4.61	Super Strong 5X	3.72

Dry Straight Max Load		Wet Knot Max Load	
Sample	(lbs)	Sample	(lbs)
Mirage 2X	11.08	Mirage 2X	5.74
MaxKnot 2X	10.84	MaxKnot 2X	6.94
Super Strong 2X	9.88	Super Strong 2X	8.01

BENEFITS OF MAXKNOT

MaxKnot is our strongest fluorocarbon tippet material. It holds a knot better and is easiest overall to knot than other fluorocarbon. Available in 7x-0x, it is the fluorocarbon tippet material for technical fishing and for fishing dries and nymphs for finicky, educated, and larger trout. More expensive, it is well worth it for the experience and technical angler.

Mirage is our best value fluorocarbon. It offers great abrasion resistance and invisibility, but does not have quite the same knot retention as SuperStrong or MaxKnot. It is a great and proven fluorocarbon for experienced knot tyers and at \$9.95 for a 40M spool, still the best deal going for fluorocarbon. It is also available in sizes for saltwater bite tippet and for making leaders.

Super Strong remains our strongest overall material for fishing. It is a great value, supple, and offers the greatest knot strength. But it does not offer the invisibility or the abrasion resistance of fluorocarbon.

Pro Guide³ Tech Information

New Pro Guide 3 waders are the most comfortable and durable premium waders on the market, made with an exclusive new fabric and rear seam construction.

IN SHORT

- New exclusive double-weave condenser fabric — lighter, more comfortable and abrasion- and puncture-resistant than ever
- New rear seams relocated from inner thigh for longer life and less chance of leakage due to wear of seams
- Double layers of fabric from thighs to feet for extra durability
- Articulated knee for increased mobility and a trim, nonbaggy fit
- Special stretch fabric upper panel for a more comfortable fit and improved casting movement
- Anatomically sculpted Hypalon[®] left and right booties for more comfort
- External chest handwarmer pocket features fleece-lined handwarmers behind a zip-close mesh pocket
- Internal flip-out zip security pocket stores wallet and keys safely
- Easy conversion to a waist wader—remove suspenders and fold upper into waist
- Dual wader-belt tunnels, dual elastic chest-high draw cords, and adjustable suspenders for custom fit
- Attached gravel guards never get lost or separated; rubberized strips inside prevent ride-up

How does new construction and fabric help make a better wader?

- First, our new rear seam construction eliminates the leakage that can occur when the seams are located at the inseam, the most common area for the rubbing together and wear of seam tape and fabric. Pro Guide 3's will last longer due to this improvement.
- The new fabric has a woven outer shell (or face fabric) made of an exclusive, densely woven polyester microfiber. This weave has more threads per square inch than Simms G4 waders, for a fabric that has greater puncture and abrasion resistance. Plus, the Pro Guide 3's membrane system has a waterproof capability and a breathability on par with Gore membranes, but it is significantly less expensive.
- Greater breathability is a result of a microporous polyurethane coating with thousands of microscopic pores make the coating hydrophobic, giving it the ability to transport moisture vapor only, without transporting moisture in liquid (condensation) form.
- A polyurethane monolithic laminate that's bonded with the face fabric. It is completely waterproof but breathes through intermolecular spaces, rather than tiny pores to pass moisture in the form of liquid (sweat, condensation) rather than vapor.
- This is the best possible waterproof breathable membrane for a wader because it transports moisture in both vapor and liquid form. A special DWR treatment on the outside face causes water to bead up on the outside for additional waterproofing.
- The inside layer of the fabric is a very thin nylon tricot pressed on the membrane. This last layer protects the membrane from abrasion, body oils and other contaminants, and provides a surface for seam sealing.
- The Pro Guide 3 is offered in more sizes than any other premium wader — 19 stock sizes

- A New double-weave condenser polyester microfiber outer shell**
- B breathable microporous polyurethane coating**
- C breathable membrane**
- D nylon tricot knit**

**NO SWEAT[®]**



Prod Guide³

Tech Information

PRO GUIDE 3 WADERS COMPARED TO SIMMS G3 and PATAGONIA

	Orvis Pro Guide III	Simms G3	Patagonia Watermaster II
Back seam only	One single rear seam for the very least amount of possible seam wear and tear	Front and rear seams increase possibility for seam wear and tear	Seam inside thigh, causes greater wear of seams
Hand warmer front pocket	Front pocket, mesh tippet and leader pocket.	Front pocket	No handwarmer pocket
Double layer lower leg	Two double layers of fabric, allows optimum flexibility	5-layer fabric. Stiff and less flexible than Pro Guide 3's double layer lower leg	3-layer lower leg fabric
Thread Count per Square Inch*	167x175 - 342 total Denser than Simms G3 and G4 with maximum durability. Twice the durability of ProGuide2	Simms Pro Shell 181x145, 326 total *Thread counts provided by an independent lab.	110x131, 241 total (body); 184x175, 359 total (lower leg front panel only) *Thread counts provided by an independent lab.
Booties	Ergonomically sculpted with flat shaped sole, best fit	Shaped, but with "rounded" soles	Unshaped booties
Uppers	Stretch panel upper for fitted comfort	No stretch upper	No stretch upper
Belt	Nylon with elastic stretch, at buckles for safest most comfortable fit	Nylon only. Less give.	Full elastic. Less safe.
Price	\$349	\$399.95	\$350

	Orvis Pro Guide3	Silver Label 2	Clearwater Endura
Articulated Knee	X		
Double layer lower leg	X	X	
Handwarmer Front pocket	X		
Attached gravel guards	X (Self Fabric)	X (neoprene)	
Back seam construction	X	X (on XT model only)	
shaped bootie	X		

External chest handwarmer pocket

Special stretch fabric upper panel



Attached gravel guards



Internal flip-out zip security pocket



Anatomically sculpted Hypalon® left and right booties



New rear seams

