



Trestles Ti:Sapphire Femtosecond Lasers

- Tuning range: 710-970 nm
- Pulse duration down to 20 fs
- Small footprint
- Output power up to 1.5 W
- Optional thermostabilized main breadboard
- Motorized USB wavelength tuning
- Electromagnetic starter
- Kit version available



Trestles-50M femtosecond solid-state Ti:S laser

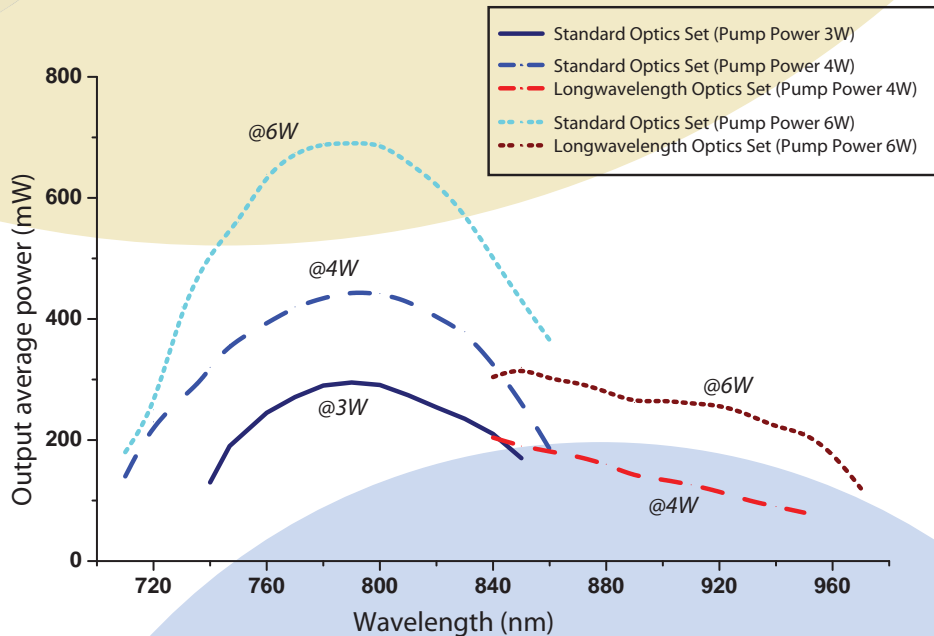
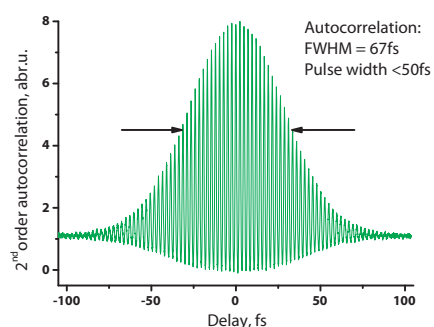
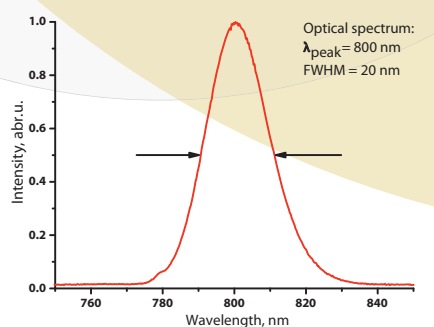
Product overview

The Trestles laser series, being one of our first products, has been upgraded over the years to match the increasing demand for stability and hands-free operation from scientists all over the world. The laser comprises a selected Ti:Sapphire crystal, compact or long resonator design, electronic control of emitted wavelength (by controlling both wavelength tuning slit and one of the prisms), electronic starter unit for easy maintenance of fs regime, and an additional mirror set if broad wavelength tuning is required (see tuning curves for the laser).

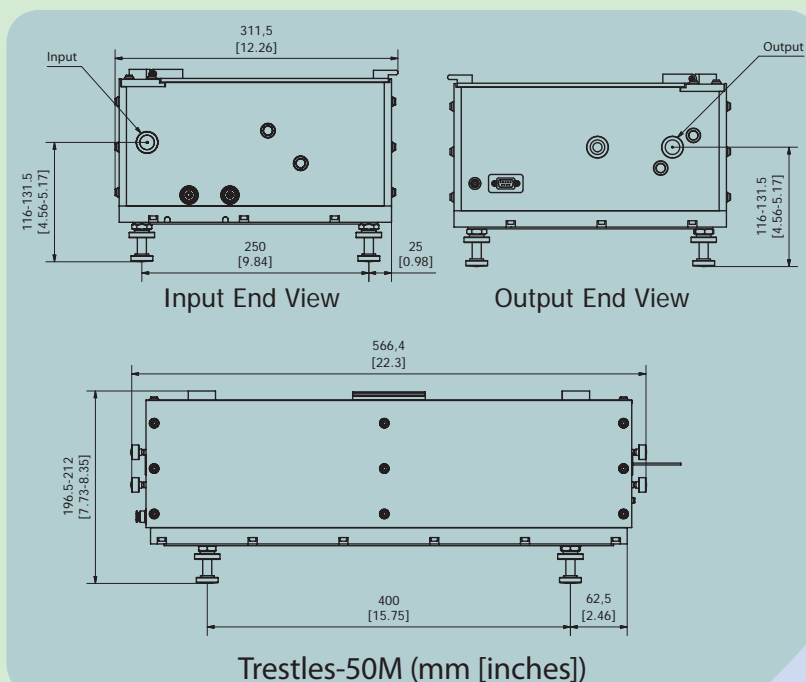
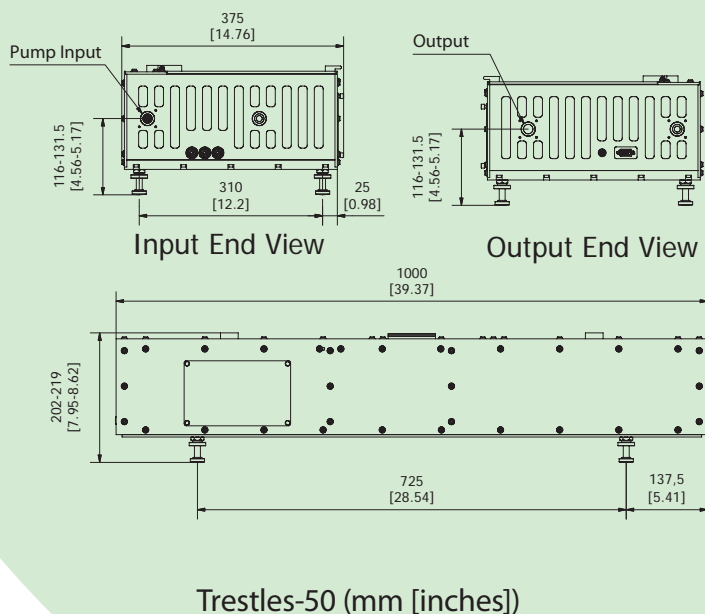
The two main models are Trestles and Trestles-M, the only difference being the size of the unit. The traditional Trestles variant is more suitable when there is no strict space requirement and some upgrades and customization of the laser are planned after the purchase. We also recommend this version for education purposes. The new Trestles-M unit has compact design and yet provides stable generation.

The laser is shipped fully aligned and tested for the desired specification and at normal transportation conditions the laser can be aligned by the customer following the steps described and illustrated in the laser manual. Once the laser has been aligned, little to no day-to-day maintenance is required. The amount of maintenance greatly depends on room temperature stability over time. To improve stability in poor room conditions we offer a thermostabilized main breadboard option for the Trestles-M model.

As for the cooling issue, the crystal can be cooled by moderate tap water flow or no cooling at all may be necessary with 3W pump. However, we strongly recommend using a chiller for greater stability, especially with the thermostabilized main breadboard.



Trestles wavelength tuning curves



Trestles technical specifications

	Trestles-20	Trestles-50/50M	Trestles-100/100M
Pulse duration, fs	<20***	<50	<100
Tuning range, nm	780-840	740-920*	710-970**
Output power at 800 nm, mW	150-250*	300-900*	300-1500*
Pump power, W	3-5	3-7	3-10
Repetition rate, MHz	80 (75 to 125 MHz available upon request)		
Output stability, typical	<1% rms		
Spatial mode	TEM ₀₀		
Polarization, linear	horizontal		
Beam divergence, mrad	<2		
Electronic starter	yes		
USB wavelength tuning	yes		
Water-cooled thermostabilized breadboard	optional		
Dimensions, mm	1000x360x200	Trestles - 1000x360x200/Trestles-M 566x312x197	

* - depends on pump power. Please see tuning curves for exact values. Two mirror sets (included in the package) are required to cover the whole tuning range.

** - at pump power >5W.

*** - with external group velocity dispersion compensation.

Ti:S and Cr:F kits are available.
Please contact us for details.