

Femtosecond Solid-State Lasers



Trestles Ti:Sapphire Femtosecond Laser with a Pump Source

- Tuning range 710 - 950 nm
- Pulse duration <20 fs
- Output power up to 1.5 W (@10W pump laser, 100fs)
- Optional thermostabilized main breadboard
- Motorized USB wavelength tuning
- Electromagnetic starter



Trestles Finesse femtosecond laser with a pump source

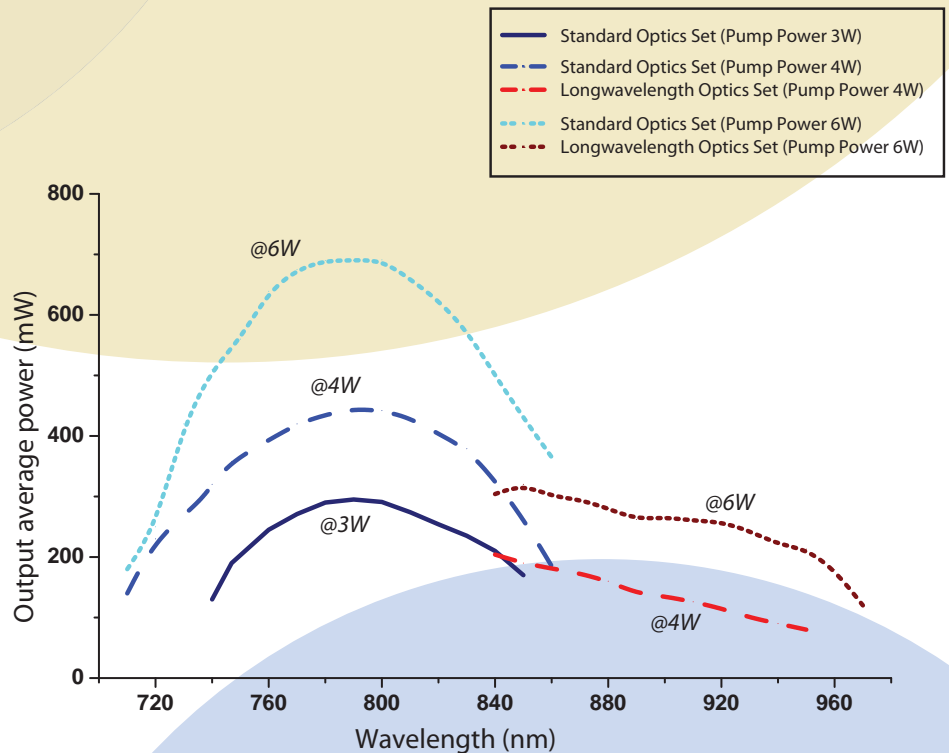
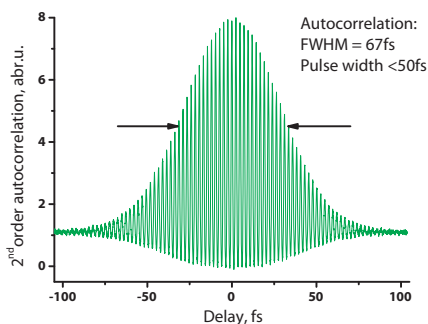
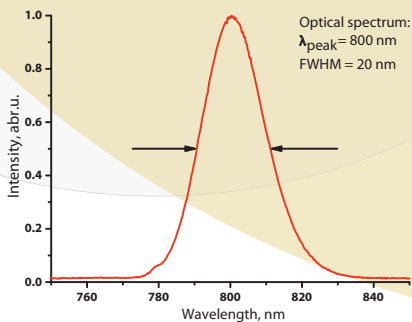
Product overview

The Trestles Finesse and the Trestles Opus lasers are based on the Trestles-M design and inherits all its parameters and specifications. The built-in pump laser is integrated in the system and thermally stabilized. Pump laser OEM module by Laser Quantum is equal to models Opus 3 (3 W), Finesse family (4 to 10 W).

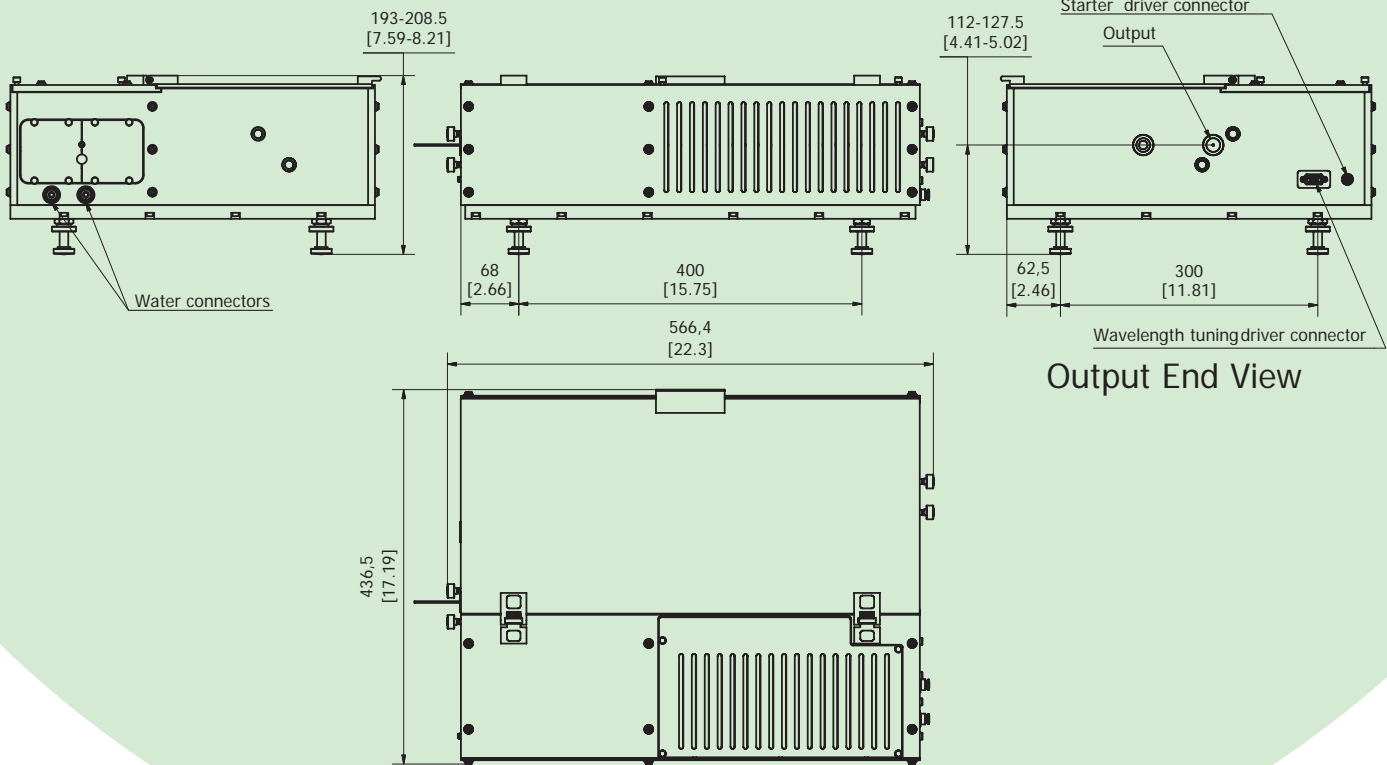
The Trestles Opus model includes the smaller Opus 3 OEM pump laser and may be good for starting a femtosecond project with restricted budget or adding femtosecond capability to your microscope with this cost-effective solution. USB wavelength tuning and electronic starter provide smooth and hands-free tuning and mode-locking control.

Application:

- Multiphoton microscopy
- Seed oscillator for amplifier systems
- Terahertz generation
- Nonlinear microscopy
- "Pump-probe" spectroscopy
- Material processing
- Optical coherent tomography



Trestles wavelength tuning curves



Trestles Finesse/Trestles Opus (mm [inches])

Technical specifications

| | Trestles | Opus 3 | Finesse 4 or 6 | Finesse 4 or 6 | Finesse 4 or 6 |
|-----------------------------|----------|--|----------------|----------------|----------------|
| Pulse duration, fs | | <50 (or <100) | <20*** | <50 | <100 |
| Tuning range, nm | | 740-850 | 780-840 | 740-910 | 710-950 |
| Output power at 800 nm, mW | | >300 | >250* (>400) | >400* (>600) | >500* (>800) |
| Pump power, W | | 3 | 4 (6) | 4 (6) | 4 (6) |
| Repetition rate, MHz | | 80** | 80 | 80** | 80** |
| Output stability, typical | | <1% rms (view graph) | | | |
| Spatial mode | | TEM ₀₀ | | | |
| Polarization, linear | | horizontal | | | |
| Beam divergence | | <2mrad | | | |
| Electronic starter | | yes | | | |
| USB wavelength tuning | | yes | | | |
| Thermostabilized breadboard | | optional | | | |
| Dimensions, mm | | 567x437x193 (laser head); pump laser power supplies may vary in dimensions | | | |

* - depends on pump power and mirror set (two mirror sets are required to cover the whole tuning range).

** - repetition rate from 75 MHz to 120 MHz according to customer specification.

*** - with external group velocity dispersion compensation.