

# SOPRANO 20 MINI

## Turnkey 2 μm Femtosecond Laser



### DESCRIPTION

The SOPRANO 20 MINI is a next-generation SESAM-free 2-μm femtosecond fiber laser that delivers stable, clean pulses below 100 fs without the drift or sensitivity typical of this wavelength class, offering exceptional mechanical and environmental robustness.

Its monolithic, air-cooled design integrates all optics, electronics, and rep-rate actuators into a single compact enclosure, enabling true turnkey, maintenance-free operation and long-term reliability. The SOPRANO 20 MINI also provides configurable center wavelength, pulse energy, repetition rate, and output format for seamless integration into advanced ultrafast systems.

### BENEFITS

- Customizable center wavelength
- Extremely clean pulse < 100 fs duration
- Rep. rate control actuators available
- High environmental stability
- Turn-key and user-friendly operation

### APPLICATIONS

- Seeder for Thulium and Holmium amplifiers
- 2 μm supercontinuum generation
- Signal for OPCPA source
- Mid-IR generation
- Spectroscopy

### SPECIFICATIONS

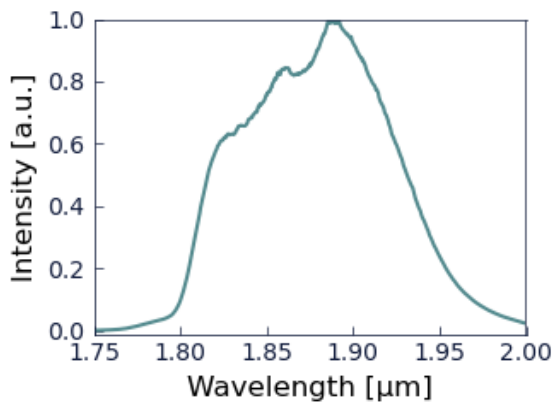
Parameter	Specification	Comment
Feature	Compact; Short pulse	Rep. rate control actuators available
Center wavelength	1900 +/- 50 nm	Specify center wavelength available on request
Pulse duration	< 100 fs	Other pulse durations available on request
Avg. output power	10-20 mW	Multiple output ports available on request
Pulse energy	Up to 0.3 nJ	High output energy available on request
Pulse repetition rate	30 - 60 MHz	Other rep. rates available on request
Beam quality	$M^2 < 1.1$ , TEM00	From fiber output port
PER	> 20 dB	Typical > 25 dB
Free-running Rep. rate drift	< 1 ppm	At stable room temperature (+/-0.5 °C)
Laser TEC tuning range	> 10.000 Hz	Laser temp can be used as a slow rep rate control
Slow PZT tuning range	> 400 Hz	Optional
Fast PZT tuning range	> 40 Hz	Optional
Laser output	PM fiber output	With FC/APC connector, fiber length customized
Laser head dimensions	119 × 231 × 266 mm (H×W×D)	All-in-one laser with electronics and optics
Power supply	24 VDC	



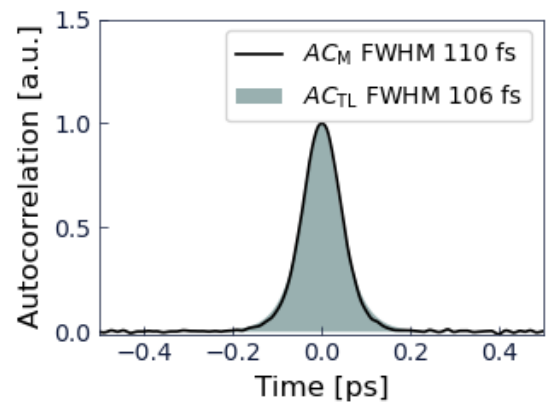
## MEASUREMENT DATA

The following measurement data was obtained with a SOPRANO 20 MINI model delivering 60 MHz at an average output power up to 20 mW.

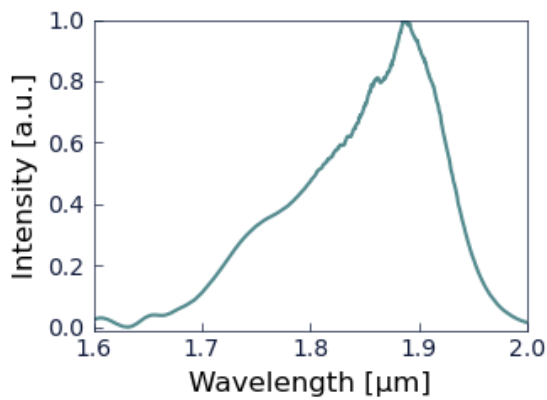
Spectrum configuration 1



Autocorrelation configuration 1



Spectrum configuration 2



Autocorrelation configuration 2

