

SOPRANO 15 MINI

Turnkey 1560 nm Er Femtosecond Laser



DESCRIPTION

The SOPRANO 15 MINI is a SESAM-free femtosecond laser delivering sub-120 fs pulses with exceptional stability and low optical noise. Its monolithic fiber architecture and an air-cooled design ensure continuous, maintenance-free operation.

The SOPRANO 15 MINI can be customized with repetition rates, optimized pulse durations, or multi-port output options. It also supports advanced synchronization and timing-control features for demanding precision applications.

BENEFITS

- Customizable pulse energy up to 3 nJ
- Clean and reliable pulse formation
- Integrated actuators for repetition-rate control
- Excellent environmental stability
- Turn-key, user-friendly operation

APPLICATIONS

- THz time-domain spectroscopy
- Ultrafast synchronization experiments
- Seed source for Ti: Sapphire amplifiers
- Two-photon microscopy
- Spectroscopy and metrology

SPECIFICATIONS

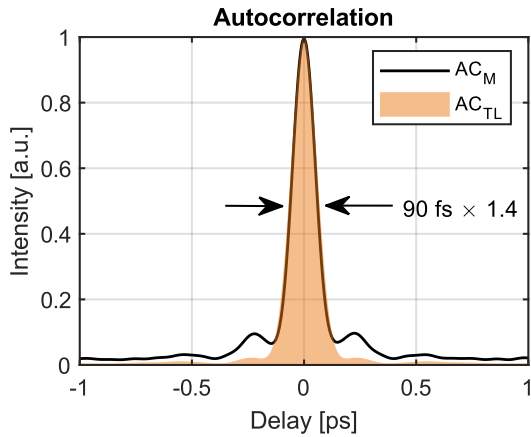
Model	Specification		Comment
	SOPRANO 15 MINI S	SOPRANO 15 MINI U	
Feature	Synchronization	Short pulse	
Center wavelength	1560 +/- 10 nm		
Pulse duration	< 120 fs	< 40 fs	Other pulse durations available on request
Avg. output power	Up to 140 mW	Up to 200 mW	Multiple output ports available on request
Pulse energy	Up to 2 nJ	Up to 3 nJ	
Pulse repetition rate	60 ~ 110 MHz	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
SHG module	Optional		Add-on separated module
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 controller
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 x 231 x 266 mm (HxWxD)		All-in-one laser with electronics and optics
Power supply	24 VDC		



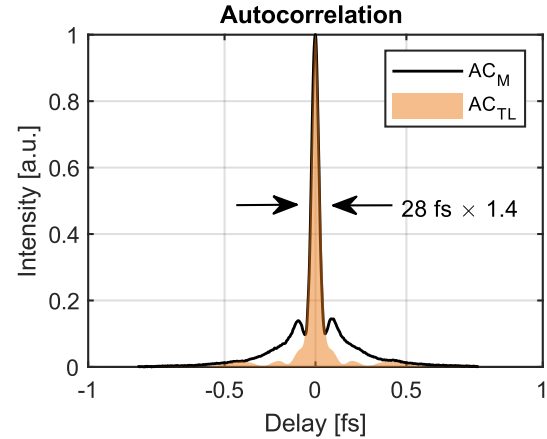
MEASUREMENT DATA

The following measurement data was obtained with a SOPRANO 15 MINI (S&U) model, delivering > 100 mW average power at an 80 MHz repetition rate.

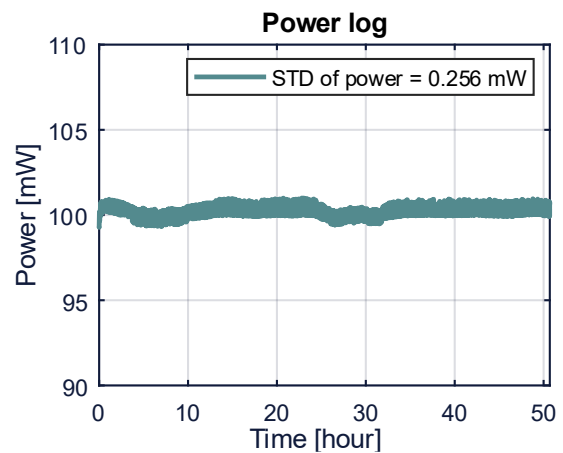
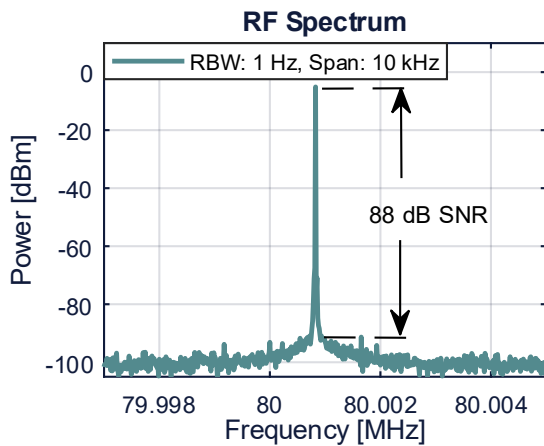
Autocorrelation (SOPRANO 15 MINI S)



Autocorrelation (SOPRANO 15 MINI U)



RF spectrum & power log (SOPRANO 15 MINI S&U)



Phase noise & RIN (SOPRANO 15 MINI S&U)

