

# SOPRANO 15

## Turnkey 1560 nm Er Femtosecond Laser



### DESCRIPTION

The SOPRANO 15 is a high-performance femtosecond laser delivering clean sub-160-fs pulses with exceptional stability and highly consistent pulse quality. Its unique fiber architecture offers outstanding mechanical and thermal stability, ensuring turnkey, maintenance-free operation and long-term reliability in demanding scientific and industrial environments.

The SOPRANO 15 series support a wide range of customization options including higher output power, fiber-coupled delivery, synchronization modules, and application-specific beam parameters.

### BENEFITS

- Customizable pulse energy up to 140 nJ
- Clean and reliable pulse formation
- Rep rate control actuators available
- Air-cooled design, no water cooling required
- Turn-key, user-friendly operation

### APPLICATIONS

- Materials processing (e.g. Silica)
- Semiconductor testing (e.g. OBIC)
- Multiphoton microscopy
- Spectroscopy

### SPECIFICATIONS

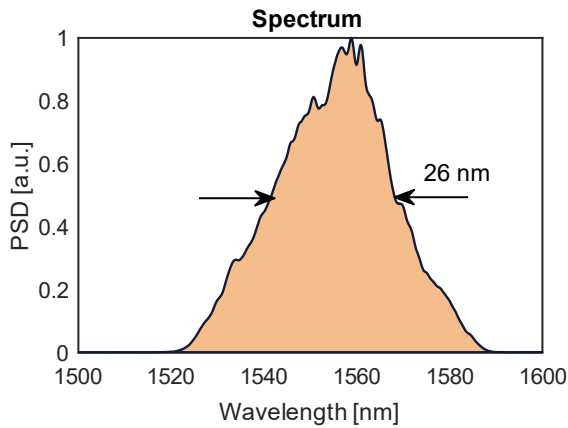
Parameter	Specification	Comment
Center wavelength	1560 +/- 10 nm	
Pulse duration	< 160 fs	Typ. < 140 fs
Avg. output power	> 400 mW	Up to 4 W on request
Pulse energy	14 nJ	Up to 140 nJ on request
Pulse repetition rate	30 - 110 MHz	
Spectral bandwidth	> 25 nm	
Beam quality	M <sup>2</sup> < 1.1, TEM00	
PER	> 20 dB	
Laser output	collimated free space	Additional fiber output port possible
Output beam diameter	2 mm	Other beam size possible
Second harm. generator	Optional	
PZTs for Synchronization	Optional	
<b>Dimensions</b>		
Laser head	119 × 231 × 266 mm (H×W×D)	
Electronic controller	3U rack unit	



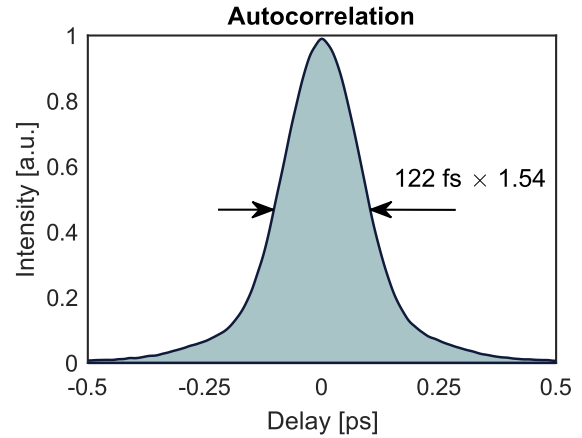
## MEASUREMENT DATA

The following measurement data was obtained with a SOPRANO 15 laser delivering 30 MHz at an average output power of 420 mW.

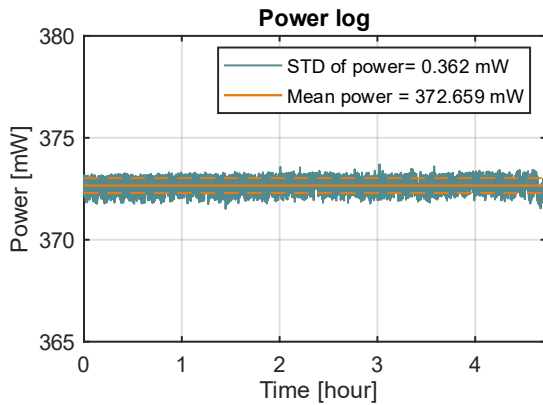
Spectrum



Autocorrelation



Power log



RIN power spectral density

