

Mode-locked Thin-Disk Laser

Applications

- Extremely high repetition rate material processing and micromachining
- Waveguide fabrication
- RGB pump source
- OPO pumping

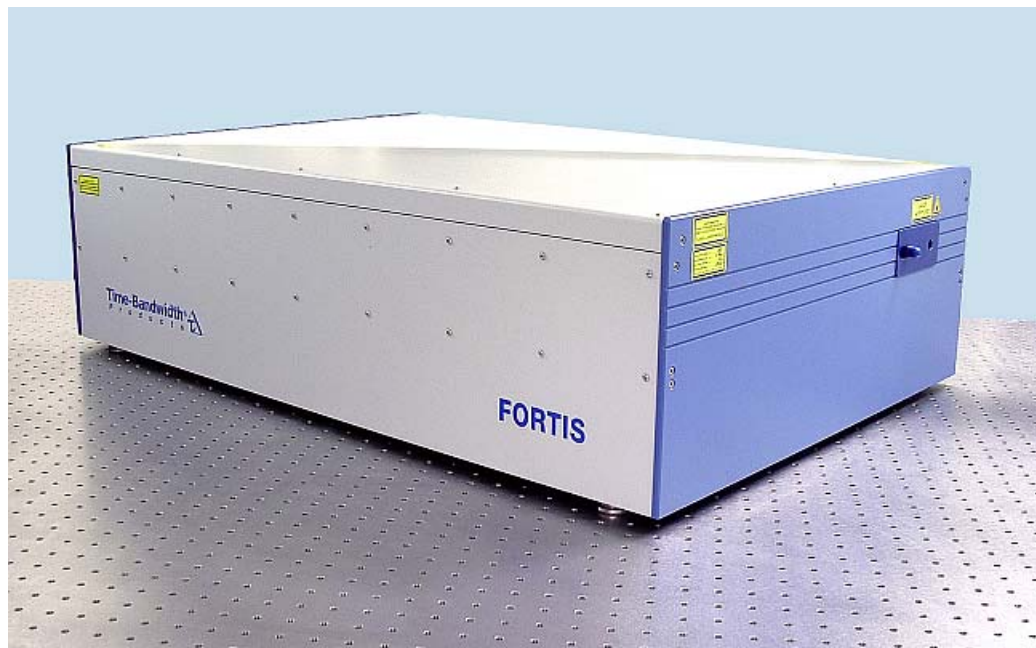
1 μ J per pulse with 50 W output power

Oscillator only, no amplifier

SESAM® Technology

Features

- 50 W output power
- Oscillator-only design
- Turn-key operation
- Low maintenance
- Closed-loop water cooling

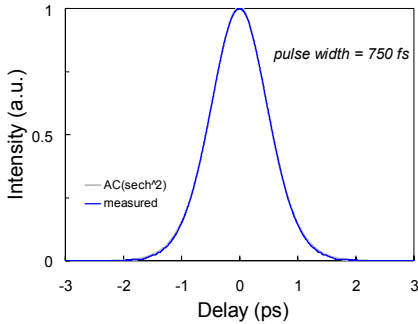


Options

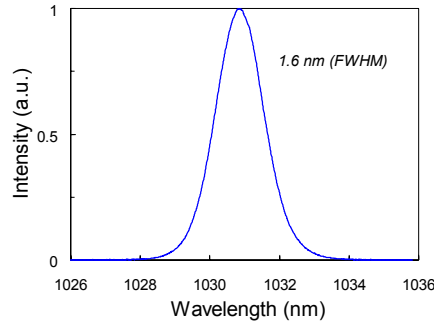
- Second harmonic generation
- UV harmonic generation
- Clock synchronization
- Remote control / RS-232

	50 W	output power
40 MHz – 60 MHz		repetition rate
	1 μ J	per pulse
	< 800 fs	pulse width
	1 MW	peak power
1030 nm		wavelength
	1.1	M ² (TEM ₀₀)

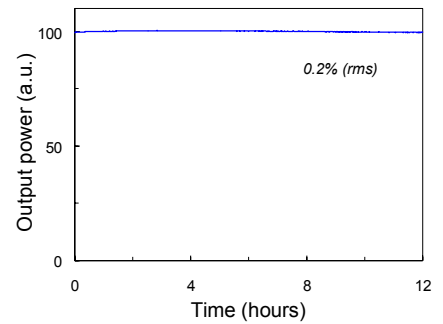
The FORTIS is today's most powerful commercially available ultrafast oscillator laser system. The combination of Time-Bandwidth Products' patented SESAM® technology with the thin-disk laser concept provides clean and transform-limited sub-picosecond pulses with tens of watts of average power. The oscillator-only, amplifier-free design results in particularly reliable and stable operation.



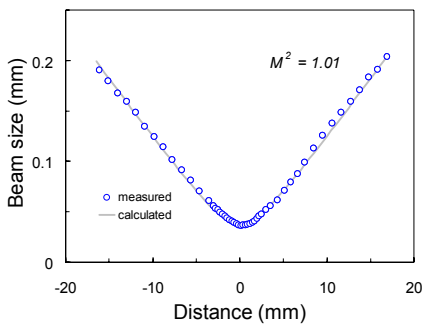
Typical autocorrelation trace of the FORTIS laser pulses



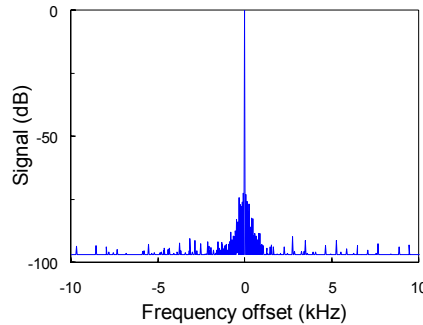
Optical spectrum of the FORTIS laser pulses at center wavelength (resolution: 0.1 nm)



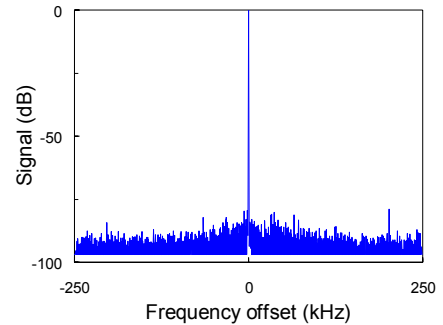
Average laser output power (long term)



Measured beam size versus propagation distance through a beam focus. The calculated curve shows the dependence for a Gaussian beam with the indicated M^2 value



Typical microwave spectrum of the pulse train, centered at the laser repetition rate (span: 20 kHz, resolution: 3 Hz, vertical scale in dB)



Typical microwave spectrum of the pulse train, centered at the laser repetition rate (span: 500 kHz, resolution: 100 Hz, vertical scale in dB)

The FORTIS laser system provides cutting-edge performance that benefits numerous applications, especially in fields such as micromachining and nonlinear optics. The system can be made to fit your particular application with options such as user-specified repetition rates, frequency conversion with nonlinear crystals, or timing synchronization.

Additional specifications	FORTIS
turn-on time	< 15 min
pointing stability	25 μ rad / °C
power stability (>1kHz)	0.1% rms
voltage	100 VAC – 240 VAC
frequency	50 Hz – 60 Hz
input power (single phase)	2800 VA
laser head (size, weight)	620 mm x 270 mm x 930 mm, 90 kg
power supply (size, weight)	465 mm x 167 mm x 590 mm, 22 kg
chiller (size, weight)	483 mm x 267 mm x 560 mm, 42 kg



Does the FORTIS laser system match your requirements? Please let us know the specifications of the laser you are looking for. A superior technology and a strong team enable us to tailor our products to your special needs.

All specifications are subject to change without notice. All numbers given in this datasheet are typical values and may depend on the specific laser configuration. SESAM is a registered trademark in the following countries: USA, Switzerland, United Kingdom, Germany, Austria, Netherlands, Belgium, Luxembourg, France, Italy, Russia, China, Liechtenstein, Estonia, and Lithuania. This product is protected by one or several of the following patents: US6,538,298, US6,466,604