GigaTera® Pulse-Generating Laser

SESAM® Technology
Customizable

Applications

- 10 / 40 / 160G transmission systems
- Nonlinear switching, optical mux/demux
- Optical clocking
- Multi-wavelength source
- Supercontinuum generation
- Ultra-dense WDM source
- Frequency metrology

Features

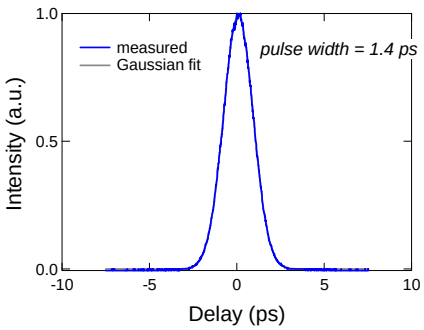
- **Passively mode-locked Er-glass microlaser**
- **Fundamentally mode-locked**
- **Stable turn-key operation**

Options

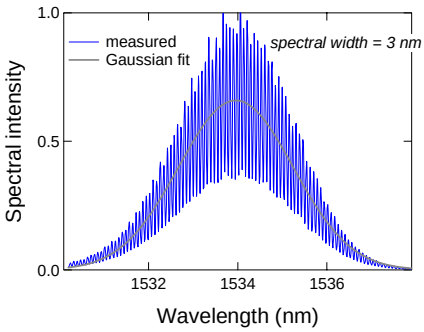
- Fixed center wavelength from 1530-65 nm
- Tunable wavelength from 1545-65 nm
- Active clock synchronization, <100 fs jitter
- Available rep rates: 10 GHz (9.95328 GHz for SONET), 12.5 GHz, or 25 GHz

<2 ps	pulse width
1550 nm	wavelength
10 GHz	repetition rate
10 dBm	output power
100 fs rms	timing jitter

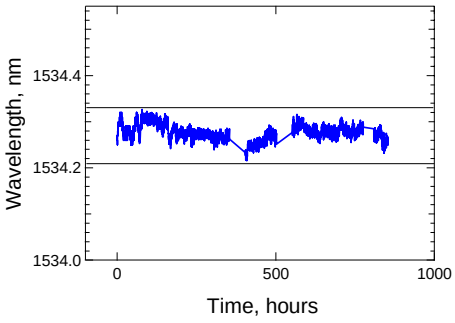
The ERGO-XG pulse-generating laser consists of a diode-pumped, solid-state erbium-glass, passively mode-locked laser employing Time-Bandwidth Products' patented SESAM® technology, resulting in clean picosecond pulses with unprecedented stability, and a micro-processor-controlled power supply for simple ease of use.



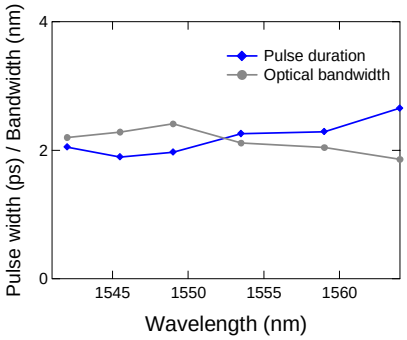
Typical autocorrelation trace of the ERGO



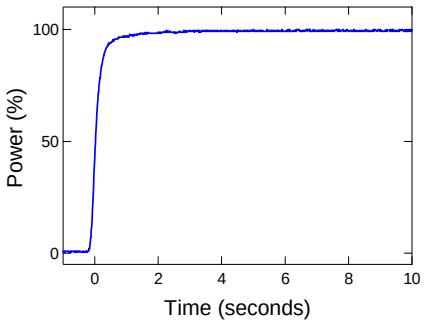
Optical spectrum corresponding to the pulse to the left



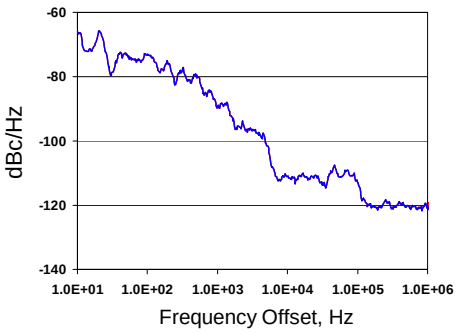
Free-running wavelength drift measured over 800 hours: < ±0.06 nm (±7.5 GHz)



Wavelength tuning curve showing pulse width and optical spectrum bandwidth as a function of center wavelength



Average power output versus time from turn-on showing << 1 minute warm-up



Microwave phase noise spectrum corresponding to an rms jitter of 90 fs over the measurement bandwidth of 10 Hz to 1 MHz

The ERGO laser system provides high-repetition rate mode-locked picosecond pulses in a compact, robust, price-competitive package. Fundamental modelocking (i.e. the laser cavity only has one pulse in it) results in excellent amplitude, optical, and microwave phase stability. The sealed laser head is a true turn-key system and reaches its specified performance typically within less than a minute. The new ERGO-XG features a more modular design approach that allows for repetition rates ranging from 10 GHz to 40 GHz. The modular laser head also provides a basis for integration into instrument-based test & measurement platforms.

Additional specifications	**ERGO (all models)**
turn-on time	<1 min typical (<5 minutes from cold start)
power stability (>1 kHz)	<0.5% rms
voltage	100 VAC – 240 VAC
frequency	50 Hz – 60 Hz
input power (single phase)	200 VA
laser head (size, weight)	94 mm x 45 mm x 210 mm (WxHxL), 2 kg
power supply (size, weight)	255 mm x 110 mm x 320 mm (WxHxL), 5 kg

LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT

Our team can customize the ERGO to your specific application , and we would be pleased to discuss and propose possible solutions . Please give us your key specifications and requirements in case they do not match our standard products.

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Time-Bandwidth® Products

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