

YbPico30 Elite



One Platform Many Possibilities

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The Ideal "Heart" for Amplifiers: Highly Stable Picosecond Seed Source

The YbPico30 Elite Series is a fixed repetition rate (typically 20MHz) near-infrared picosecond all-fiber laser.

Utilizing automatic mode-locking and low-noise fiber amplification technologies, it delivers 10ps pulses at 1030nm. Specifically optimized as a **seed source** for fiber and solid-state amplifiers, it eliminates complex adjustments while providing superior pulse quality and signal-to-noise ratio.

Core Highlights & Positioning

A 1030nm fixed repetition rate picosecond fiber seed source designed for industrial and scientific amplification systems, featuring Fourier transform-limited pulses and exceptional environmental stability.

- **Unique Mode-Locking State:** All-PM fiber structure ensures long-term lock stability and vibration resistance.
- **Perfect Pump Protection:** Built-in protection circuitry extends lifespan, enabling "plug-and-play" operation.
- **Fourier Transform Limited Pulse:** Spectral bandwidth <0.5nm, suitable for high-quality amplification and precision metrology.
- **Compact Integration:** Small footprint (190 x 135 x 50 mm³), easy to integrate into larger laser systems.

Applications

Seed for High-Power Fiber Lasers: Serves as the core front-end for MOPA (Master Oscillator Power Amplifier) architectures, driving industrial-grade high-power picosecond cutters or markers. Its ultra-narrow spectral bandwidth effectively suppresses nonlinear effects during amplification, making it ideal for brittle material (e.g., glass, sapphire) cutting and precision micromachining systems.

Seed for Solid-State/Regenerative Amplifiers: Designed for Yb:YAG disk lasers or rod solid-state lasers. With Fourier transform-limited pulse characteristics (chirp-free), it perfectly matches the injection requirements of regenerative amplifiers, ensuring beam quality and pulse fidelity after high-energy amplification.

Precision Optical Metrology & Inspection: Applied in non-contact semiconductor wafer inspection, Pump-Probe experiments, and time-resolved fluorescence spectroscopy. Its 10ps short pulse provides excellent time resolution, capable of capturing rapidly changing physical processes.

Interfaces & Operation

Fiber Output: Standard 0.5m PM fiber with FC/APC connector.
Control: RS232 interface, TTL synchronized pulse output.

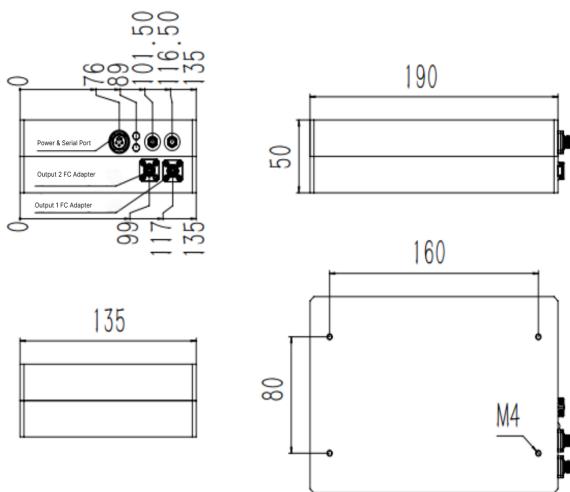
Environmental Requirements

Operating Temperature: 18 - 32 °C; Power Supply: 12V/3A DC.

Detailed Technical Specifications of YbPico30 Elite

Parameter	YbPico30 Elite 10	YbPico30 Elite 20	YbPico30 Elite 40
Central Wavelength	1030 ± 0.5 nm	1030 ± 0.5 nm	1030 ± 0.5 nm
Pulse Duration	10 ps (Opt: 4 - 120 ps)	10 ps (Opt: 4 - 120 ps)	10 ps (Opt: 4 - 120 ps)
Spectral Bandwidth (3dB)	< 0.5 nm	< 0.5 nm	< 0.5 nm
Repetition Rate	20 MHz (Opt: 10-80 MHz)	20 MHz (Opt: 10-80 MHz)	20 MHz (Opt: 10-80 MHz)
Average Power	> 1 mW	> 20 mW	> 40 mW
Pulse Energy	> 0.05 nJ	> 1.0 nJ	> 2.0 nJ
Chirp	Fourier transform limited	Fourier transform limited	Fourier transform limited
Polarization Extinction Ratio	Linear, > 20 dB	Linear, > 20 dB	Linear, > 20 dB
Power Stability (RMS)	< 1%	< 1%	< 1%
Optical Output	PM Fiber, FC/APC	PM Fiber, FC/APC	PM Fiber, FC/APC
Control Interface	RS232	RS232	RS232
Voltage / Current	12V / 3A	12V / 3A	12V / 3A
Dimensions	190 x 135 x 50 mm ³	190 x 135 x 50 mm ³	190 x 135 x 50 mm ³

Mechanical Dimensions of YbPico30 Elite



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