

Phidia

Ti: Sapphire Ultrafast Laser Amplifier



FEATURES

- Single-box amplifier
- Industrial grade PM fiber seeders for <120 fs output
- External Ti:sapphire seeder for <40 fs output
- Output power up to 7 W
- Field-proven pump laser modules
- High reliability and stability
- Super beam quality and pointing
- Series with operating repetition of 1 kHz and 10 kHz
- Option to any external seeders and pump lasers

The Phidia is a one-box Ti:sapphire ultrafast amplifier with a PM fiber seed laser, pump laser and amplifiers integrated inside one single enclosure. It features an industrial-grade, maintenance-free PM-fiber oscillator as a seeder as well as field-proven Q-switch pump lasers, resulting in excellent reliability for day-to-day operations.

The Phidia is capable of delivering <40 fs and ~2ps with energy up to 7 mJ (at 1 kHz) when external seeded by our Aria-Ti or qualified broadband oscillators.

The Phidia is a robust, reliable ultrafast amplifier offering the widest range of operation repetition-rate. It is an ideal ultrafast tool for scientific and industrial applications such as OPA pumping, time resolved spectroscopy, material processing, precision micromachining, etc.

■ Phidia-1 series offers up to 5 W or 7 W output, capable of operating from 1 kHz to 3 kHz repetition rate due to diode pumped, second harmonic Nd:YLF pump lasers (Lucia).

■ Phidia-10 series offers up to 5W operating at 5-10 kHz.

APPLICATIONS

- Time resolved spectroscopy
- Pump probe
- Harmonics generation
- Optical parametric amplification (OPA)
- Precision micromachining
- Material processing

	Phidia-1-FS	Phidia-1-SP ¹	Phidia-1-PS ¹
Pulse Width (FWHM)	<120 fs	<40 fs	<2 ps
Output Power (at 1 kHz) ²	5W / 7 W	5W / 7 W	5W / 7 W
Repetition Rate	Up to 3 KHz	Up to 3 KHz	Up to 3 KHz
Center Wavelength	790 ± 10 nm	800 ± 10 nm	800 ± 10 nm
Spatial Mode	M ² <1.3 (TEM ₀₀)	M ² <1.3 (TEM ₀₀)	M ² <1.4 (TEM ₀₀)
Energy Stability	<0.5% RMS	<0.5% RMS	<0.5% RMS
Contrast Ratio	>1000:1 pre pulse >150:1 post pulse	>1000:1 pre pulse >150:1 post pulse	>1000:1 pre pulse >100:1 post pulse
Beam Pointing Stability	<20 μrad/°C	<20 μrad/°C	<20 μrad/°C
Beam Size (1/e ²)	8-10 mm	8-10 mm	8-10 mm
Polarization	Linear, Vertical	Linear, Vertical	Linear, Vertical

1. SP and PS models feature an external femtosecond oscillator Aria-Ti for flexible application
 2. Depends on one or two Lucia pump lasers.

	Phidia-10-FS	Phidia-10-SP ¹	Phidia-10-PS ¹
Pulse Width (FWHM)	<120 fs	<40 fs	<2 ps
Output Power	5.0 W	5.0 W	5.0 W
Repetition Rate	Up to 10 KHz	Up to 10 KHz	Up to 10KHz
Center Wavelength	790 ± 10 nm	800 ± 10 nm	800 ± 10 nm
Spatial Mode	M ² <1.3 (TEM ₀₀)	M ² <1.3 (TEM ₀₀)	M ² <1.4 (TEM ₀₀)
Energy Stability	<0.75% RMS	<0.75% RMS	<0.75% RMS
Contrast Ratio	>1000:1 pre pulse >150:1 post pulse	>1000:1 pre pulse >150:1 post pulse	>1000:1 pre-pulse >100:1 post-pulse
Beam Pointing Stability	<20 μrad/°C	<20 μrad/°C	<20 μrad/°C
Beam Size (1/e ²)	~ 6-8 mm	~ 6-8 mm	~ 6-8 mm
Polarization	Linear, Vertical	Linear, Vertical	Linear, Vertical

