

# Phidia

## Ti: Sapphire Ultrafast Laser Amplifier



### FEATURES

- Single-box amplifier
- Industrial grade seeders
- Field-proven pump laser modules
- High reliability and stability
- Super beam quality and pointing
- Series with operating repetition of 1KHz, 10KHz and 100 KHz
- Output power up to 5 W
- Option to any external seeder and pump lasers

### APPLICATIONS

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

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

Phidia is capable of operating at variable repetition-rate up to 150 KHz and delivers pulse duration from <35 fs to 3ps with output power up to more than 5W.

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

■ Phidia-1 series offer up to 3.5W, 4W or 5W output, capable of operating up to 3KHz repetition rate due to diode pumped, second harmonic Nd:YLF pump laser (Lucia).

■ Phidia-10 series are regenerative amplifier pumped by a field-proven second harmonic Nd:YAG laser delivering up to 2W output at 10 KHz operating repetition rate.

■ Phidia-100 series feature diode-pumped Nd:YVO4 laser as a pump source and are capable of operating at 50-150 KHz with output up to 1.5 W femtosecond pulses.

	Phidia-1-FS / HFS	Phidia-1-SP / HSP <sup>1</sup>	Phidia-1-PS <sup>1</sup>
Pulse Width (FWHM)	<100 fs	<35 fs	<3 ps
Output Power	3.5W / 5W	3.0W / 4.0W	>3.5W
Repetition Rate	Up to 3 KHz	Up to 3 KHz	Up to 3 KHz
Center Wavelength	790 ± 10 nm	800 ± 20 nm	800 ± 10 nm
Spatial Mode	M <sup>2</sup> <1.3 (TEM <sub>00</sub> )	M <sup>2</sup> <1.3 (TEM <sub>00</sub> )	M <sup>2</sup> <1.4 (TEM <sub>00</sub> )
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 <sup>2</sup> )	8-10 mm	8-10 mm	~ 8 mm
Polarization	Linear, Horizontal	Linear, Horizontal	Linear, Horizontal

1. SP/HSP features an external 500mW femtosecond oscillator ARIA for flexible application.

	Phidia-10-FS / HFS	Phidia-10-SP / HSP <sup>1</sup>	Phidia-10-PS <sup>1</sup>
Pulse Width (FWHM)	<120 fs	<40 fs	< 3 ps
Output Power	1.0W / 2.0W	1.0W / 2.0W	1.0 W
Repetition Rate	Up to 10 KHz	Up to 10 KHz	Up to 10KHz
Center Wavelength	790 ± 10 nm	800 ± 20 nm	800 ± 10 nm
Spatial Mode	M <sup>2</sup> <1.3 (TEM <sub>00</sub> )	M <sup>2</sup> <1.3 (TEM <sub>00</sub> )	M <sup>2</sup> <1.4 (TEM <sub>00</sub> )
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 <sup>2</sup> )	~ 6 mm	~ 6 mm	~ 6 mm
Polarization	Linear, Horizontal	Linear, Horizontal	Linear, Horizontal

	Phidia-100-FS / HFS	Phidia-100-SP / HSP <sup>1</sup>
Pulse Width (FWHM)	<150 fs	<50 fs
Average Power	1.0W / 1.5W	1.0W / 1.5 W
Repetition Rate	50-150 KHz	50-150 KHz
Center Wavelength	790 ± 10 nm	800 ± 20 nm
Spatial Mode	M <sup>2</sup> <1.4 (TEM <sub>00</sub> )	M <sup>2</sup> <1.4 (TEM <sub>00</sub> )
Energy Stability	<0.75% RMS	<0.75% RMS
Contrast Ratio	>1000:1 pre pulse >100:1 post pulse	>1000:1 pre pulse >100:1 post pulse
Beam Pointing Stability	<20 μrad/°C	<20 μrad/°C
Beam Size (1/e <sup>2</sup> )	~ 4 mm	~ 4 mm
Polarization	Linear, Horizontal	Linear, Horizontal

