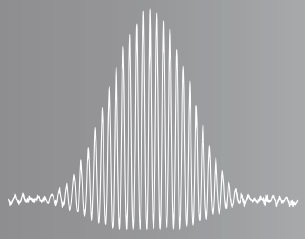
FEMTO LASERS
www.femtolasers.com



FEMTOPOWER™

compact™ PRO CE-Phase

Applications

ATTO science

Time-resolved spectroscopy

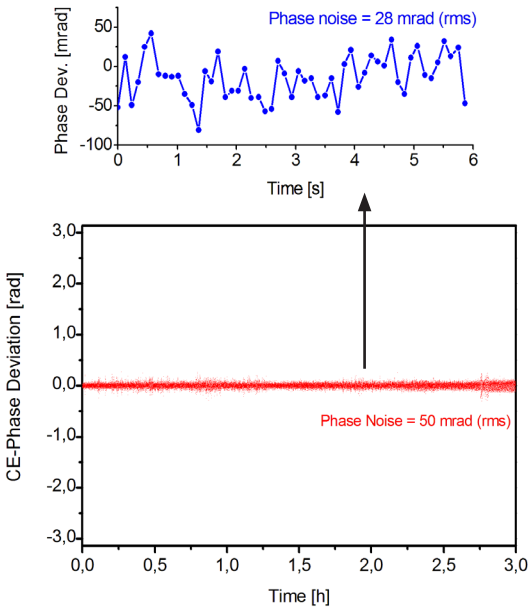
Frontend for high power ultrafast amplifier systems

Femtochemistry

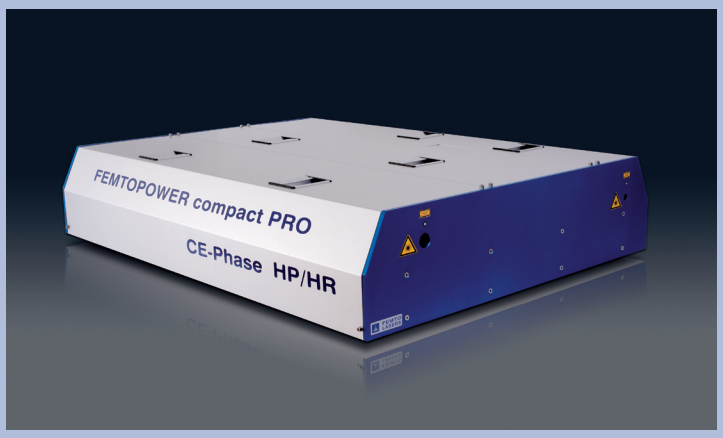
Coherent THz generation

Materials processing

OPA pumping



CE-Phase data (inloop) from a FEMTOLASERS CEP-stabilized FEMTOPOWER™ compact™ PRO.



FEMTOPOWER™ compact™ PRO CE-Phase is an ultrafast Ti:Sapphire multipass amplifier using a sealed vacuum chamber system for the amplifier crystal and Dispersive Mirror (DM) technology for dispersion compensation. The system generates the shortest, phase stabilized, high energy optical pulses commercially available with unprecedented quality, stability, and reproducibility. This compact multipass system is the optimum light source for attosecond science.

The amplifier is equipped with a CE-Phase stabilization system. It includes the FEMTOSOURCE™ rainbow™ DFG as seed source. The feedback signal for CE-Phase stabilization is derived from a new compact and stable DFG (Difference Frequency Generation) scheme utilizing the > 300 nm bandwidth (-10 dB) of the FEMTOSOURCE™ rainbow™ *(Optics Letters, vol. 30, no. 3, Feb. 2005).*

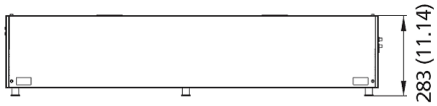
FEMTOPOWER™

compact™ PRO CE-Phase

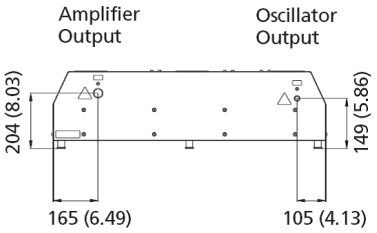
Extraordinary Features

Excellent short & long term CEP stability
Highest pulse quality and stability
Broad spectrum | Ultrashort pulses
Excellent pulse contrast
Ultrahigh peak power
Ultrafast oscillator output

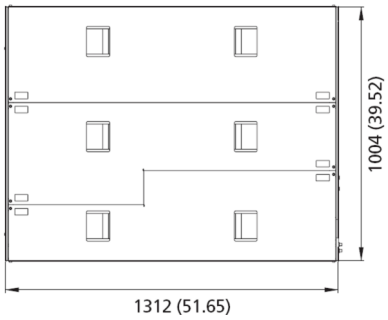
FP compact™ PRO CEP - SIDE VIEW,. Dimensions in [mm] ([in])



FP compact™ PRO CEP - FRONT VIEW, Dimensions in [mm] ([in])



FP compact™ PRO CEP - TOP VIEW, Dimensions in [mm] ([in])



Ultrashort Pulses

By employing an ultra broadband multipass scheme and DM technology, high quality, sub-30 fs pulses (sub-25 fs pulses on request) can be generated from a Ti:Sapphire kHz amplifier constituting the state of the art of high power high repetition rate lasers. *(Optics Letters, vol. 22, No. 20, pp. 1562, Oct. 15,1997)*

Efficiency & Pulse quality

The use of DM technology allows the elimination of diffraction gratings, giving the highest efficiency and best pulse quality available from any commercial high power ultrafast amplifier.

Stability & Reliability

The amplifier crystal is cooled in a vacuum chamber, reducing thermal lensing and preventing dust mediated damage to the amplifier crystal. The compact footprint, as well as the superior mechanical and optical design of the entire system yields long term stability. Sufficient saturation of the Ti:Sapphire guarantees high pulse-to-pulse stability.

Inherent minimum CE-Phase noise guaranteed by:

FEMTOSOURCE™ rainbow™
- Dispersive Mirrors
- Large bandwidth
- CE-Phase decoupled from beam postition

DFG
- Monolithic setup
- PPLN based
- Enhanced S/N ratio

Multipass CPA
- Gratingless
- Min. dispersion
- Min. CE-Phase Distortion

FEMTOPOWER™ compact™ PRO	Amplifier CEP	Amplifier CEP HP/HR	Oscillator (optional exit)
Pulse duration	< 30 fs | < 25 fs	< 30 fs | < 25 fs	< 7 fs CEP stabilised
Bandwidth (FWHM) @ 800 nm	> 40 nm | > 60 nm	> 40 nm | > 60 nm	> 250 nm @ -10 dB
Repetition rate	1 kHz	3 kHz | 4 kHz | 5 kHz	78 MHz
Output energy	> 800 µJ	> 800 µJ	> 2.1 nJ
Peak power	> 30 GW	> 30 GW	> 300 kW
Beam diameter (1/e²) | Beam divergence	15 mm (nom.) | < 2 mrad	15 mm (nom.) | < 2 mrad	< 2 mm | < 2 mrad
Beam pointing stability (optional active stab.)	< 10 µrad rms @ Ø 15 mm	< 10 µ rad rms @ Ø 15 mm	-
Spatial mode	TEM_{00} (M^2 < 2)	TEM_{00} (M^2 < 2)	-
Polarization	linear, horizontal	linear, horizontal	linear, horizontal
Contrast ratio [1) 2)]	> 10^8:1 or > 10^4:1	> 10^8:1 or > 10^4:1	-
Pulse to pulse energy stability	< 1.5 % rms	< 1.5 % rms	-

1) Defined as ratio between output pulse peak power and power of ampflified spontaneous emission (ASE)
2) Defined as ratio between output pulse peak power and power of any pulse > 1 ns before or after output pulse.

All specifications are subject to change without notice

TÜV CERT ISO 9001 12 100 11296

CE

FEMTOLASERS Produktions GmbH
Fernkorngasse 10 | 1100 Wien | Austria
P: +43 1 503 7002 0
F: +43 1 503 7002 99
info@femtolasers.com

FEMTOLASERS, Inc.
124 Mt. Auburn St. | Suite 200 North
Cambridge | MA 02138 | USA
P: +1 978 456 9920
F: +1 978 456 9922
infofli@femtolasers.com

FEMTO LASERS
www.femtolasers.com

FEMTOLASERS' laser products are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by Center of Devices and Radiological Health on all systems ordered for shipment after October 1, 2003.