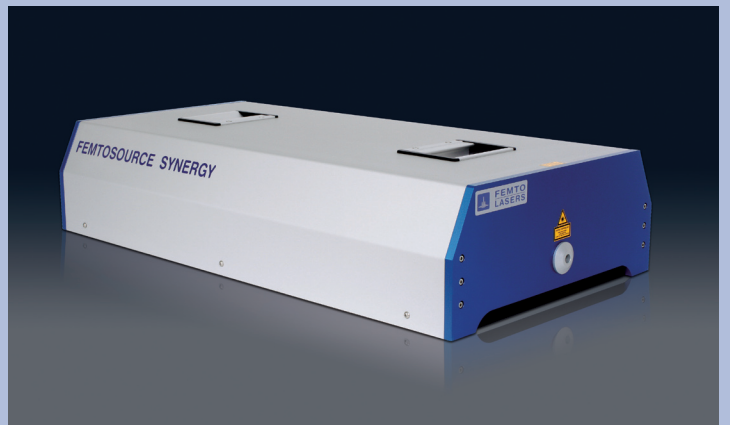


FEMTOSOURCE™ synergy™

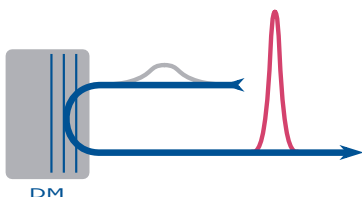
Applications

Amplifier seeding
Coherent THz generation
Optical Coherence Tomography
Multiphoton microscopy
Time-resolved spectroscopy
Materials processing



FEMTOSOURCE™ synergy™ is an ultrafast Ti:Sapphire oscillator, using our patented Dispersive Mirror (DM) technology which is specifically designed for broadband intracavity group delay dispersion compensation.

The system generates the shortest commercially available optical pulses with unprecedented quality, stability, and reproducibility. DM systems constitute the ideal solution for a wide range of scientific, industrial, and medical applications.



FEMTOSOURCE™

synergy™

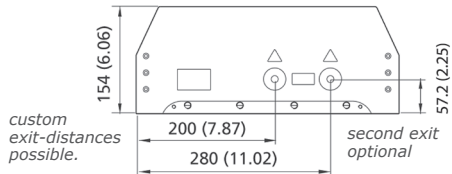
Extraordinary Features

- Extremely broad spectrum
- Ultrahigh peak power
- Extremely low noise | Ultrashort pulses
- Excellent long term output stability

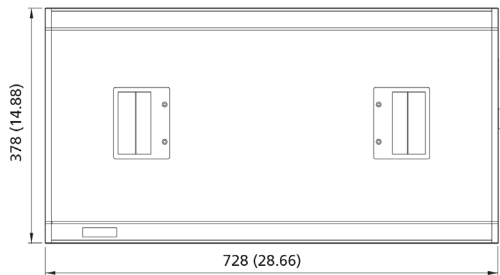
Options

- Length stabilisation with FEMTOLOCK™
- CE-Phase stabilization
- Custom repetition rate
- Custom center wavelength

SYNERGY™ - FRONT VIEW, Dimensions in [mm] ([in])



SYNERGY™ - TOP VIEW, Dimensions in [mm] ([in])



Ultrashort Pulses

Intracavity high order dispersion can be eliminated to an extent that high quality, bandwidth limited sub-10 fs pulses can be generated from a Ti:Sapphire oscillator (*Optics Letters, Vol. 20, No. 6, pp. 602, March 15, 1995*). An Extra Cavity Dispersion Control (ECDC) unit provides precise control of dispersion outside of the oscillator to transmit pulses with these extraordinary parameters to your target.

Compactness

DM systems contain no intracavity elements other than the gain medium resulting in an extremely compact and simple setup.

Stability & Reproducibility

The intracavity dispersion is not sensitive to cavity alignment, in strong contrast to prism controlled systems. Hence the day-to-day reproducibility as well as the stability of the laser output parameters is excellent in the sub-10 fs regime. Owing to the compact DM resonator design the system features the lowest energy noise and timing jitter demonstrated in the sub-10 fs regime to date.

Flexibility

Custom designed systems are available with repetition rates between 65 and 125 MHz. The center wavelength can be chosen and factory set to your specifications.

FEMTOSOURCE™	SYNERGY™ PRO	SYNERGY™ 20
Pulse duration	< 10 fs	< 20 fs
Bandwidth (FWHM) @ 800 nm	> 100 nm	> 40 nm
Mode locked output power (av.)	> 400 mW @ 5 W (532 nm)	> 400 mW @ 5 W (532 nm)
Output energy @ 75 MHz	> 5.3 nJ	5.3 nJ
Peak power @ 75 MHz	> 530 kW	> 265 kW
Beam diameter (1/e ²)	< 2 mm	
Beam divergence	< 2 mrad	
Spatial mode	TEM ₀₀ (M ² < 1.3)	
Polarization	> 100:1 (horiz.)	
Noise (measured 10 Hz - 100 KHz)	< 0.05 % rms	
Power stability ¹⁾	± 1%	
1) Measured over 2 hours after 30 min. warmup at constant environmental conditions		
<i>All specifications are subject to change without notice</i>		



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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.