FEMTO LASERS
www.femtolasers.com

XS™

Short Pulse Module

| Peak power > 20 MW | > 70 % throughput | sub-15 fs |

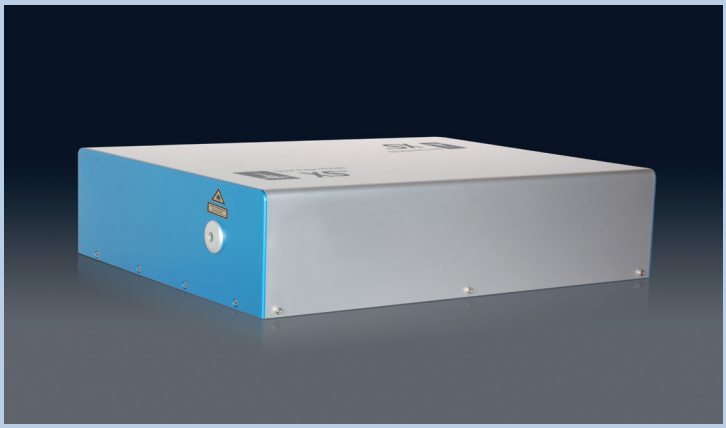
Applications

Ultrafast spectroscopy

High harmonic generation

Ultrafast nano-optics

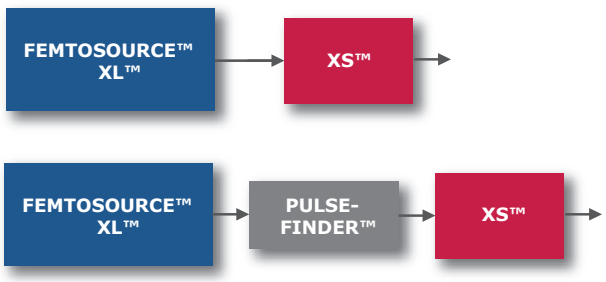
THz generation



The **XS™ Short Pulse Module** represents the newest add-on for the High Energy Oscillator family FEMTOSOURCE™ XL™. The XL™ already offers sub-50 fs pulses with up to 13 MW peak power at 4 or 5 MHz repetition rate. Some applications require shorter pulses or higher peak powers without sacrificing the MHz repetition rate.

The XS™ is a unique product, designed as a plug-in module which compresses high energy sub-50 fs pulses from the oscillators down to sub-15 fs with pulse energies in excess of 300 nJ at 5 MHz repetition rate.

Prior compression techniques were limited in maximum throughput and input energy due to, e.g., damaging effects. The XS™ novel spectral broadening and compression scheme allows for more than 70% throughput resulting in pulse energies of several 100 nJ.



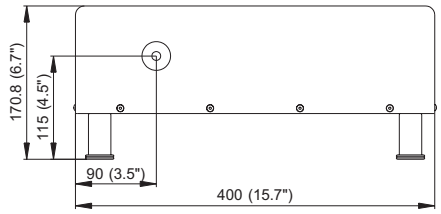
XS™

Short Pulse Module

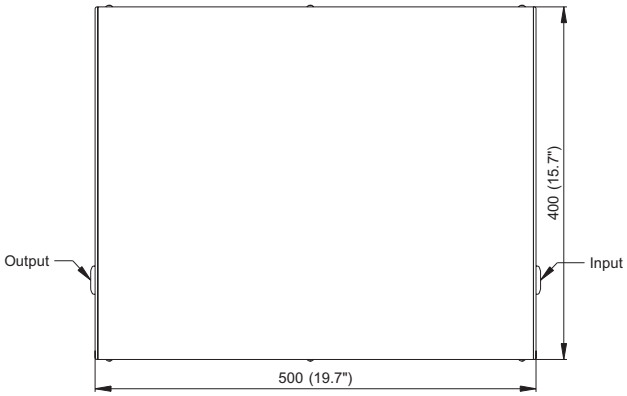
Extraordinary Features

Few cycle pulses
Highest peak power
Pre-aligned plug-in module
Compact size

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

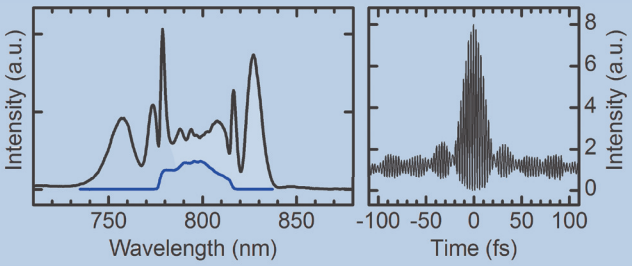


XS™ - TOP VIEW, Dimensions in [mm] ([in])



Benefits

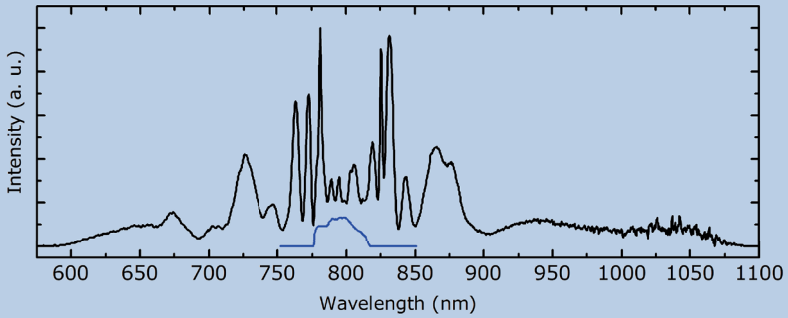
The combination of FEMTOSOURCE™ XL™ and XS™ delivers a compact solution as an alternative to much more complex amplifier systems. Applications that benefit from short pulses at high pulse energies are ultrafast nano-optics and spectroscopy, as well as high order harmonics and THz-generation.



Typical spectrum and interferometric auto-correlation of XS™ 15 pumped by FEMTOSOURCE™ XL™ 500: 350 nJ of output energy with 15 fs pulse duration (black line). The blue line indicates the input laser spectrum.

Models

The XS™ is currently available as XS™ 15 with sub-15 fs pulses. Sub-10 fs and sub-7 fs models will be available soon.



Spectral spectral broadening achieved using the FEMTOSOURCE™ XL™ 500 with a XS™ 7 short pulse module. The blue curve shows the original laser spectrum.

SPECIFICATIONS	XS™ 15	XS™ 10 (available soon)	XS™ 7 (available soon)
Maximum input energy	500 nJ	200 nJ	100 nJ
Conversion efficiency	> 70 %	> 70 %	> 60 %
Compressed Pulse duration @ max. input energy	< 15 fs	< 10 fs	< 7 fs
Min. spectral bandwidth	725 nm - 830 nm	700 nm - 875 nm	675 nm - 900 nm

All specifications are subject to change without notice

TÜV SÜD ISO 9001

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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.