



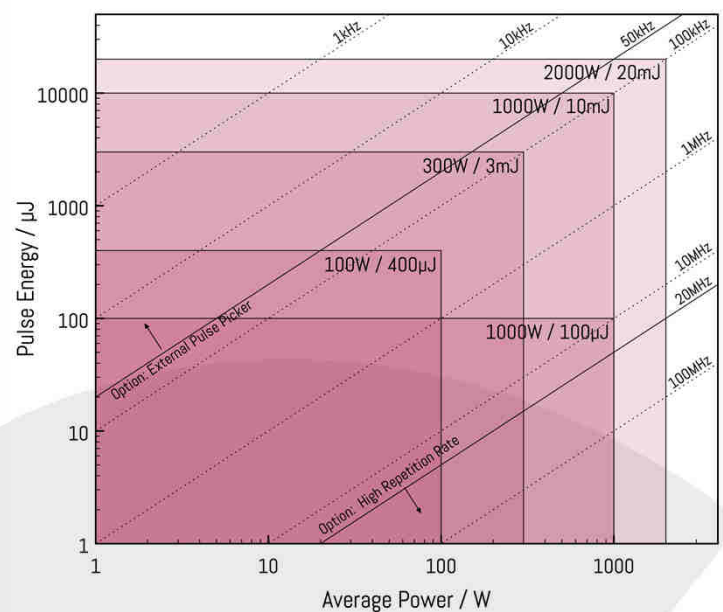
activefiber
systems

CUSTOMIZED kW- AND mJ-CLASS FEMTOSECOND LASER SYSTEMS

Active Fiber Systems GmbH (AFS) is located in Jena, known as the "city of photonics" in Germany. As a spin-off from the Fraunhofer IOF Jena and the Institute of Applied Physics at the university of Jena AFS represents the expertise of innovative solid-state-laser development.

The mission of AFS is to transfer groundbreaking experimental results to reliable laser systems suitable for scientific and industrial applications. Among the extra-ordinary features of pulsed fiber lasers made by AFS are compact dimensions, considerably reduced production costs as well as flexible and outstanding laser parameters.

AFS customized kW- and mJ-class ultrafast laser systems are based on AFS leading-edge fiber technology. They unite multiple main-amplifier channels using coherent combination, a technology which AFS has matured to an industrial grade. Thus, the generated laser parameters are, for the first time, not limited by physical (optical) constraints of the laser architecture. Building on the exceptional performance of AFS fiber lasers, an extreme reliability, remarkable long-term stability, compact system design and high wall-plug efficiency can be guaranteed.



Overview of available laser parameters



kW-class high-repetition-rate fiber laser



CUSTOMIZED kW- AND mJ-CLASS FEMTOSECOND LASER SYSTEMS

	HIGH REPETITION-RATE	HIGH PULSE-ENERGY
Central wavelength	1030 nm	
Repetition rate	Single shot ... 250 MHz	Single shot ... 20 MHz
Pulse energy	up to 100 μ J (more on request)	up to 20 mJ
Peak power	up to 0.3 GW	up to 60 GW
Average power	up to 1 kW	up to 2 kW
Dimensions	One box: 135 x 105 x 50cm ²	Two boxes: 42 x 150 x 25cm ³ , 92 x 160 x 30cm ³
Pulse duration	< 300 fs ... 5 ps adjustable (upgradable down to 6fs via nonlinear compression)	
Polarization	linear	
Beam quality	Close to diffraction-limited, $M^2 < 1.3$	
Average-power stability	< 0.5% RMS	
Pulse-energy stability	< 0.5% RMS	
Beam-pointing stability	<20 μ rad RMS	
Additional features	Turnkey, completely software-controlled, temperature-stabilized dust-sealed housings	
Add-ons	OPA, SHG, THG, HHG, Nonlinear compression, GHz-BURST, FAST SWITCH, CEP-stability	

Performance overview



High-pulse energy laser with nonlinear-compression add-on