



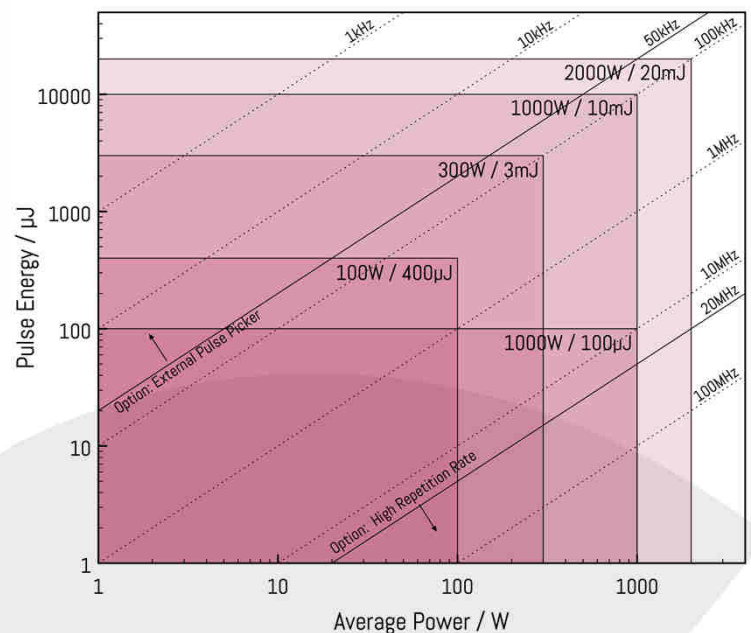
COMPACT 100 W FEMTOSECOND LASER

The quality of any laser application crucially depends on the performance of the driving light source, i.e. the laser itself. In addition, most applications ask for more and more average power from the laser source to be cost-effective or sensitive enough.

AFS's ultrafast fiber lasers are characterized by an outstanding performance combined with flexibility and maximum stability. All essential parameters are software controlled and can be tuned over a wide range, making them an extremely valuable tool in many applications.

APPLICATIONS

- Materials processing
- Micro- and nano-machining
- Pumping of optical parametric amplifiers (OPA)
- Generation of high harmonics (HHG)



Overview of available laser parameters

MORE INFORMATION

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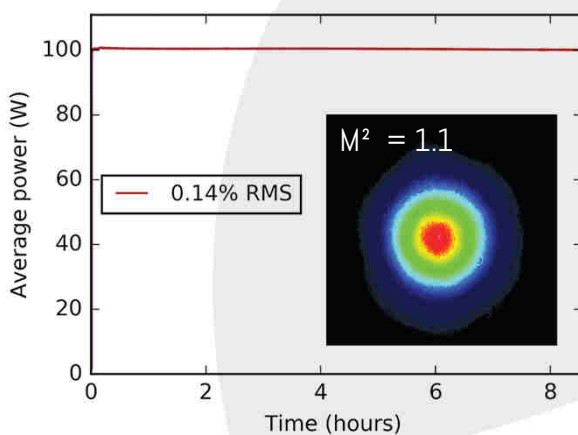




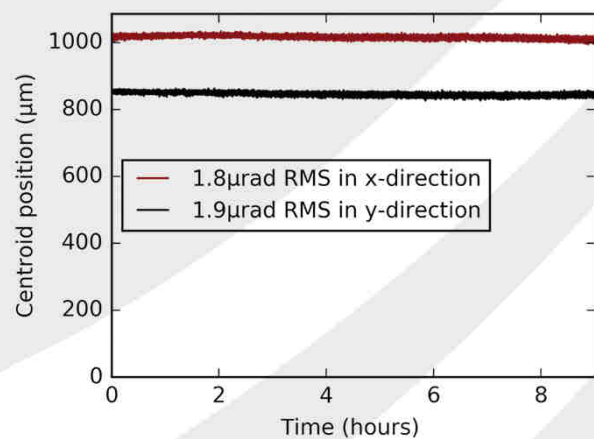
COMPACT 100-W FEMTOSECOND LASER

Central wavelength	1030 nm
Repetition rate	Single pulse ... 20 MHz, others on request
Pulse energy	up to 400 μ J
Peak power	up to 1 GW
Average power	up to 100 W
Pulse duration	< 250 fs ... 5 ps adjustable, others on request
Polarization	linear
Beam quality	close to diffraction-limited, $M^2 < 1.3$
Average-power stability	< 0.2% RMS
Pulse-energy stability	< 0.5% RMS
Beam pointing	< 10 μ rad RMS (< 5% nat. divergence)
Beam diameter	approx. 3 mm
Dimensions laser (W \times D \times H)	112 \times 41 \times 20 cm ³
Mass	approx. 80 kg
Add-ons	OPA, SHG, THG, HHG, Nonlinear compression, GHz-BURST, CEP-stability
Additional features	Turnkey reliability, all parameters software-controlled, temperature-stabilized and dust-sealed housing

Performance overview



Typical characterization of power stability and beam quality



Typical characterization of beam pointing @ 100 W average power