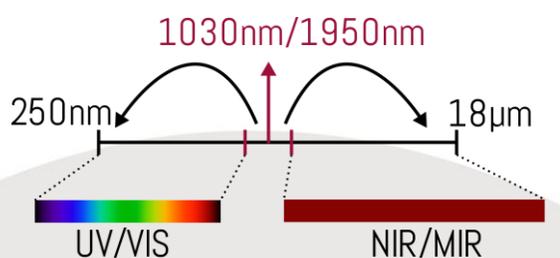




ADD-ON: OPA & MID-IR

Frequency combs in the molecular finger-print region have enabled applications in metrology, spectroscopy and medicine. All these applications benefit from higher average powers that allow for faster acquisition rates and an improved signal-to-noise ratio. This extension complements the compact 50 fs-Thulium-doped ultrafast fiber laser system and provides a high-power frequency comb in the mid-IR. The ultrafast mid-IR pulses are achieved through intra-pulse difference-frequency generation, which guarantees passive carrier-envelope-offset stability.

The complete frequency-comb nature of the source can be achieved by controlling and stabilizing the fundamental pulse-repetition frequency of the driving laser.



Wavelength range that can be covered by AFS Addons

	MID-IR ADD-ON FOR 2-µm SYSTEMS
Central wavelength	5-18 µm (tunable)
Pulse repetition rate	20 MHz, others on request
Average power	up to 100 mW
Polarization	Linear
Beam quality	close to diffraction-limited, $M^2 < 1.3$
Average power stability	< 1% RMS
Pulse energy stability	< 1% RMS
Beam pointing	< 10 µrad RMS
Additional features	Turnkey reliability, all parameters software-controlled, temperature-stabilized and dust-sealed housing

The specs above show only a configuration example. We happily customize a system exactly to your needs.



ADD-ON: SHG, THG

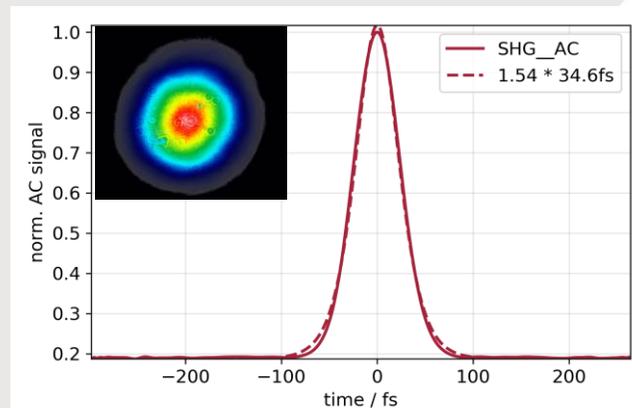


ADD-ON: Frequency conversion to VIS and UV

Many applications benefit from central wavelengths in the VIS or UV range. AFS offers fully integrated frequency conversion modules from 1030nm to 515nm, 343nm or even 258nm (on request). The conversion efficiency depends on the pulse duration of the driving laser. The table below shows typical values that can be specified.

	<300 fs	<40 fs
SHG (1030nm -> 515nm)	>50%	>15%
THG (1030nm -> 343nm)	>25%	>5%
FHG (1030nm -> 256nm)	On request	

Conversion efficiency starting from 1030nm depending on pulse-duration



AC measurement of a SHG-pulse at 35fs pulse duration and 9.4W average power. Inset: Output beam profile.



MORE INFORMATION

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