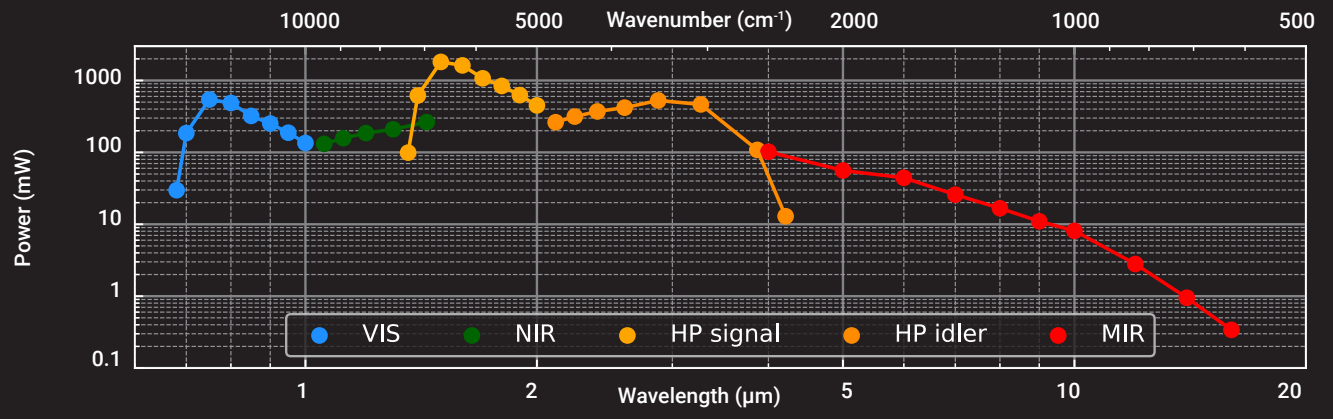
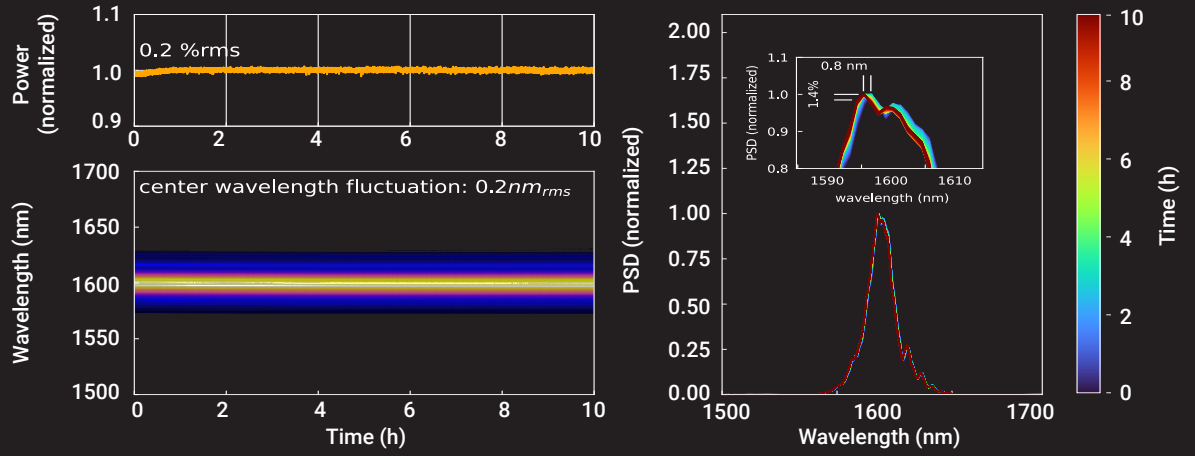
STUTTGART INSTRUMENTS
INFRARED LASERS

Alpha 100 fs

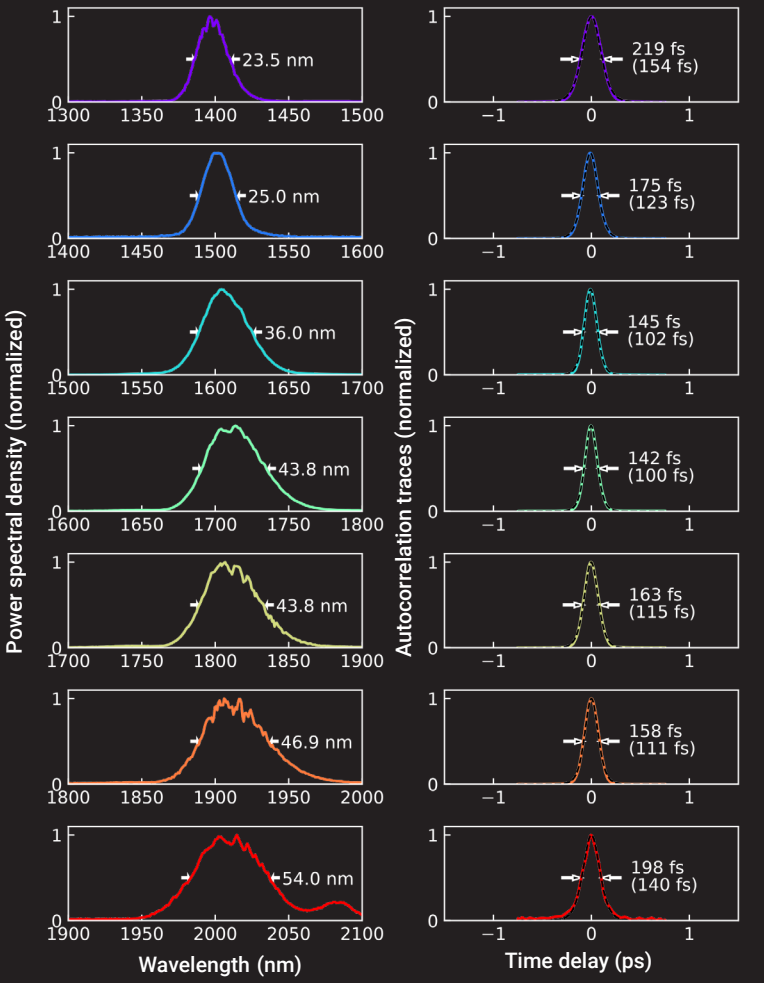
Short pulse tunable laser system



Tuning range and output power of the Alpha modules.



Power (top left) and simultaneous spectral stability measurement (bottom left) over a period of 10 hours in fully passive operation. Stacked plot (right) with ~1800 individual spectra.



Typical spectra and autocorrelation measurements over the Alpha signal tuning range. Values in brackets denote the pulse duration assuming Gaussian pulses.

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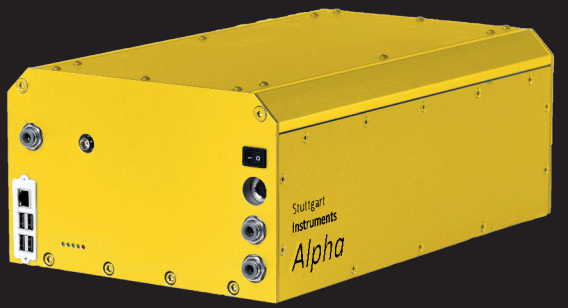
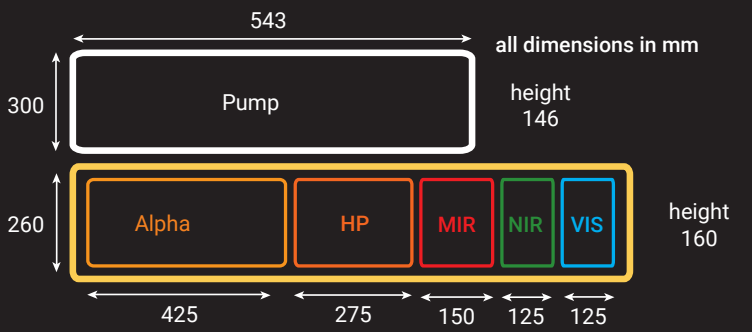
Specifications	Pump	Alpha	HP	MIR	NIR	VIS
Tuning range						
Signal	1.03 ± 0.03 µm	1.35 - 2.05 µm	1.35 - 2.05 µm	4.5 - 16 µm	1.10 - 1.40 µm	0.72 - 0.98 µm
Idler		2.15 - 4.50 µm	2.15 - 4.50 µm			
Linewidth (FWHM)	100 cm^{-1}			100 cm^{-1}		
Average power	> 8 W	> 400 mW	> 1500 mW	> 50 mW	300 mW	500 mW
Repetition rate	76 MHz			76 MHz		
Pulse width (FWHM)	120 fs			150 fs		
Time-bandwidth product	< 0.5	0.5 (typ.)	0.5 (typ.)	0.4 - 0.6	0.4 - 0.6	0.4 - 0.6
Power stability (RMS)	< 0.5 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %
Spectral stability (RMS)		< 0.02 %	< 0.02 %			
Beam pointing (RMS)		< 10 µrad	< 10 µrad			
Shot-noise limited	> 1 MHz			> 1 MHz		
Ethernet + WIFI		✓	✓	✓	✓	✓
GUI / API		✓	✓	✓	✓	✓





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