HIGH Q LASER®
THINK ULTRAFAST!™

*femto*TUNE™ TH

Noncollinear optical parametric amplifier (NOPA)

*femto*TUNE™		
Pump source	*femto*REGEN™ INDUSTRIAL	*femto*REGEN™ SCIENCE
	minimum 20 µJ, < 400 fs, 1045 nm, up to 100 kHz	maximum 300 µJ, < 400 fs, 1035 nm, up to 6 kHz
Wavelength range	signal / idler: 550 nm to 900 nm	
	NIR, MIR and IR range on request	
Pulse energy	> 0.3 µJ at 100 kHz @ 700 nm	typical 5 µJ at 6 kHz @ 700 nm
Pulse duration	< 300 fs	
Beam quality	M^2 < 2 (signal)	
Bandwidth	depending on desired pulse length, TBWP typically < 0.7	
Polarization	horizontal (signal and idler)	
Size	393 x 825 x 175 mm^3 (w x l x h)	
Options		
Pulse energy	> 0.2 µJ after compression	typical 3 µJ after compression
Pulse duration	< 30 fs @ 80 % efficiency after compression	
Sum frequency generation	signal / idler + pump: 360 nm to 480 nm	
2nd harmonic generation	SHG signal / idler: 280 nm to 450 nm	

Key features

Optimized for operation with *femto*REGEN™ as pump source	Pulse duration below 30 fs with compression
Multiple *femto*TUNE™ TH modules can be pumped by a single *femto*REGEN™	Optimized for a repetition rate up to 100 kHz
Integrated third harmonic generation of pump source	Manual wavelength tuning
Compact and flexible design	

Description

The principle of operation is based on noncollinear parametric amplification of a white-light continuum in a nonlinear crystal.
A single stage noncollinear amplification scheme is used. The noncollinear amplifier is pumped by the THG of *femto*REGEN™ INDUSTRIAL or *femto*REGEN™ SCIENCE. THG is integrated in the *femto*TUNE™.
A small fraction of the incoming 1045 nm pulse is used to create a white-light continuum. After amplification, signal pulses can be compressed using a pair of fused silica prisms (optional). The output bandwidth can be controlled by dispersion management in the white-light path before amplification. The wavelength range can be extended via sum frequency generation or SHG.

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