CrF. Femtosecond Cr:F Solid-State Oscillator

- Wavelength range: 1230-1270 nm
- Output power up to 800 mW
- Pulse energy >20 nJ at 30 MHz
- Integrated pump source option
- Short pulse duration down to <35 fs
- Electronic starter or SESAM models

The CrF-800TP laser head with fiber pump laser rack

Product overview

The CrF (chromium-forsterite) laser offers a unique active media that produces femtosecond pulses around 1250 nm. The laser features an integrated Peltier TC with control unit for cooling the crystal to lower temperatures for higher average power generation and precise temperature control. Three models of the laser feature SESAM self-starting with a fixed wavelength operation and one model with an electromagnetic starter offers wavelength tunability.

The CrF includes a built-in 15-W fiber pump laser and control unit. The 1250 nm region offers new horizons for microscopy or human tissue studies where fs pulses conquer new heights each year. CW version of the CrF is available separately as the CrF-CW laser.

The CrF laser can also be used as a seed oscillator for building high-power Cr:F amplifiers also offered by our company.

Technical specifications

	CrF-450TP	CrF-400SP	CrF-700SP	CrF-700SP-L
Pulse duration	<65* fs	<75 fs		<140 fs
Tuning range	1230-1270 nm (tunable)	1230...1270 nm (fixed)		1265+/-15 nm (fixed)
Output average power	>450** mW	>400 mW	>700 mW	>560 mW
Pulse energy	>4 nJ	>4 nJ	>7 nJ	>20 nJ
Pump laser power	15 W			
Repetition rate (fixed)	96 MHz	95 MHz		30+/-2 MHz
Mode-locking maintenance	automatic starter	self-starting (SESAM)		
Long-term stability	<2% rms			<5% rms
Spatial mode	TEMoo			
Output polarization	linear, horizontal			
Beam divergence	<2 mrad			
Crystal cooling and breadboard stabilization	thermoelectric + closed-loop water chiller			

** - down to 35 fs pulse duration is available upon request;*
*** - up to 800 mW average power (model CrF-800TP) is available upon request.*

Possible application of the Cr:F laser:

• Multi-photon excitation microscopy • Seed oscillator for amplifiers • Pump-probe spectroscopy
• Generation of terahertz radiation • Time-resolved spectroscopy • Optical coherent tomography

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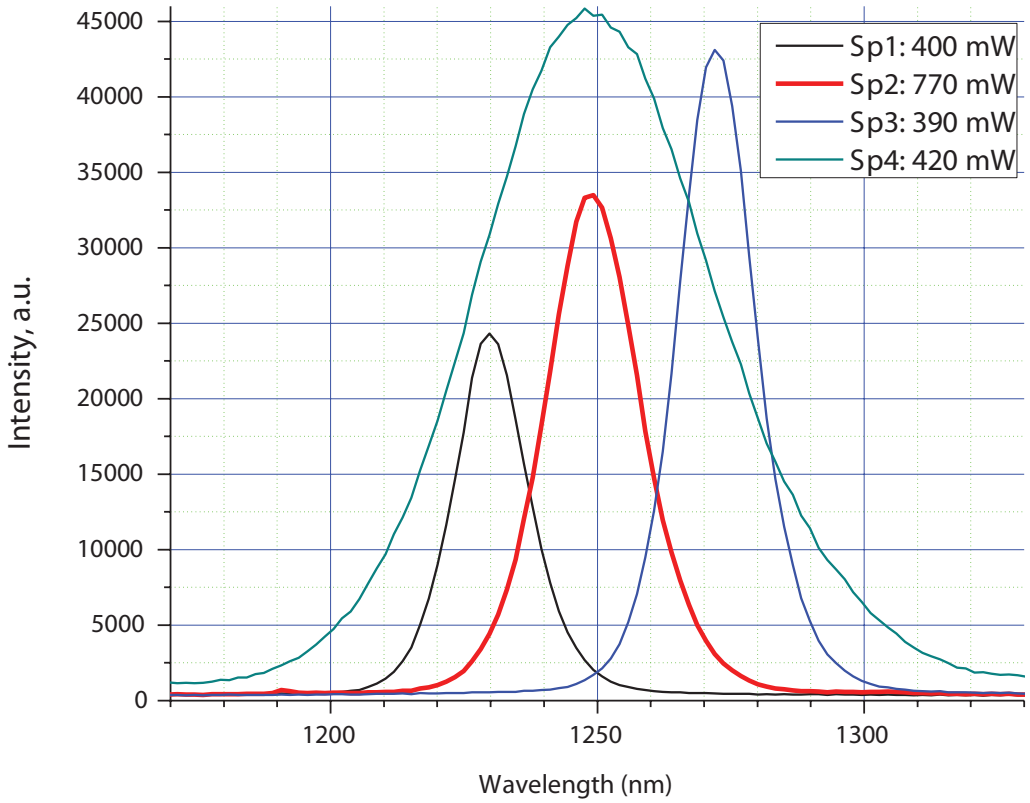
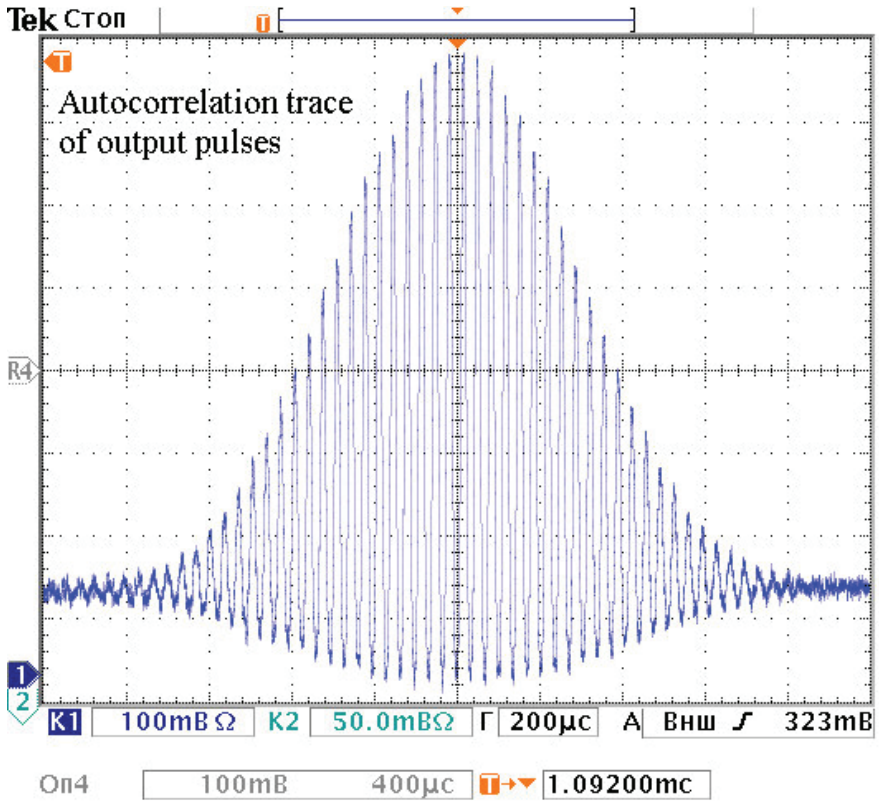


Spectra and tuning range of the CrF-750TP



AC trace of the CrF-450TP (pulse duration <65 fs)

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