



Amplifiers



Ti:Sapphire Regenerative Amplifier Regulus

- Rigid design
- Compact single-box design
- >1 mJ/pulse
- Can be upgraded to higher energies
- <50 fs pulse duration
- High beam quality
- Excellent beam pointing and long-term power stability



Ti:Sapphire regenerative amplifier Regulus RAPOP

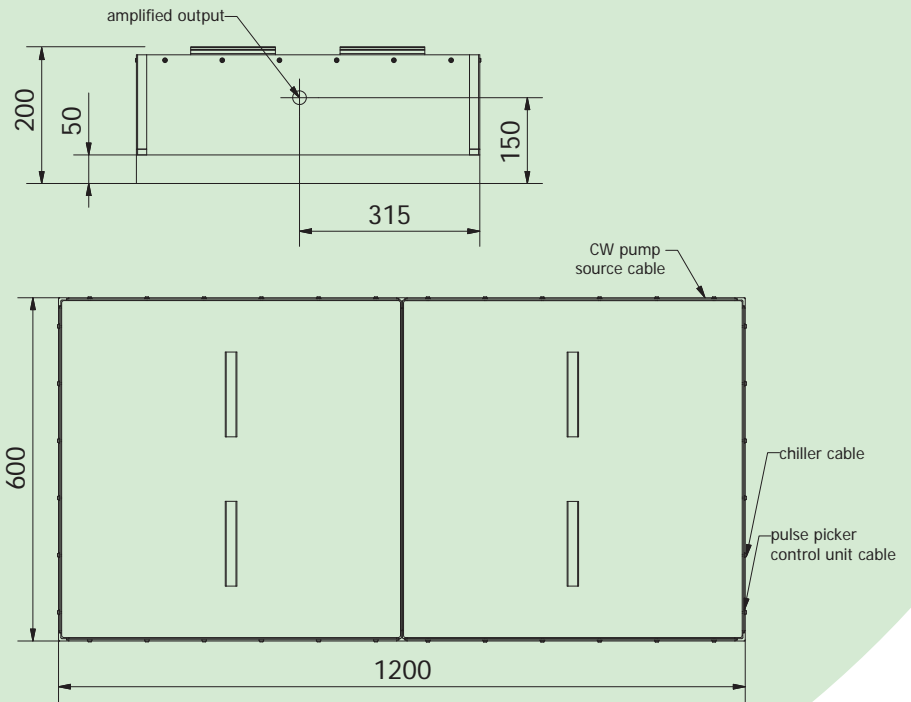
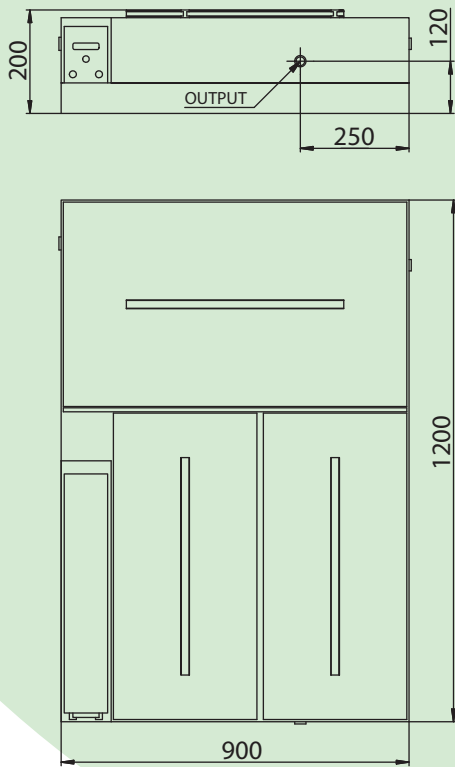
Product overview

The Regulus RA family of amplifiers comprise a femtosecond seed oscillator (TiF-50F or fiber EFOA-SH), stretcher, Faraday isolator, Pockels cell with control and synchronization unit, regenerative amplifier, pulsed amplifier pump laser and compressor. The system may be equipped with an additional Pockels cell for contrast improvement. The cell enables the user to get "pulse-on-demand" operation and reduce the repetition rate to the required values. All elements are gathered into a single box on a thick breadboard, thus providing reliable and stable generation and hands-free operation. Upon customer request the system can be upgraded to deliver up to 150 mJ per pulse by adding further stages of multipass power amplifiers (with reducing the repetition rate to 10 or 15 Hz).

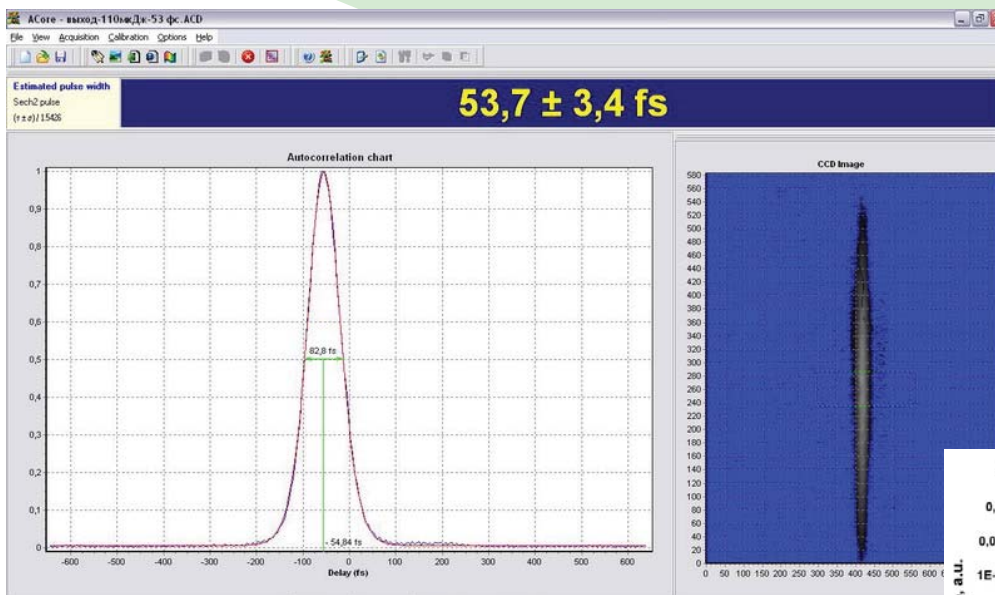
The Regulus RA amplifier family is an ideal source for femtosecond micromachining systems, terahertz imaging, OPA pumping, remote sensing and ultrafast spectroscopy.

Regulus technical specifications

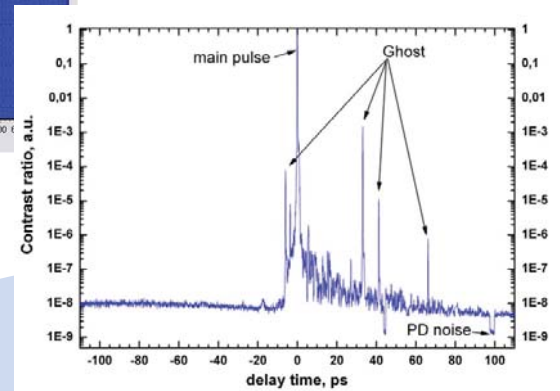
	RAPOP	RAPOF	RAP
Seed oscillator	TiF-50F	EFOA-SH (fiber)	No
Output pulse energy, mJ	>1@1 kHz or >0.15@1 kHz (depends on the pump laser) >0.6@3 kHz or >0.15@3 kHz (depends on the pump laser) >0.1@5 kHz >0.05@10 kHz		
Pulse duration, fs	<50	<120	**
Central wavelength (fixed), nm	800±15	780±15	**
M ²	<1.3		
Beam diameter (1/e ²), mm	8		
Stability, % rms	<1.5		
Contrast	>200:1 @ 10 ns* >10 ³ :1 @ 1 ps >10 ⁶ :1 @ 5 ps >5x10 ⁷ :1 @ 10-20 ps >5x10 ⁷ :1 @ ASE		
Spatial mode	TEM ₀₀		
Output polarization	horizontal		
Dimensions, mm	1200x900x200		1200x600x200
Water cooling	the package includes closed-loop water chiller		
* - the contrast ratio >10 ³ :1 is possible with an additional Pockels cell. In this case the output pulse repetition rate can be adjusted from single-shot to the repetition rate of the amplifier pump laser.			
** - depends on customer's seed oscillator. Please contact us for details.			



Regulus RAPOP dimensions in mm



Regulus RAPOP autocorrelation trace



Regulus RAPOP contrast graph