

## Amplifiers



### Teahupoo Ti:Sapphire Regenerative Amplifiers

- 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



Teahupoo RAPOP Ti:Sapphire regenerative amplifier

#### Product overview

The Teahupoo family of amplifiers comprise a femtosecond seed oscillator (Trestles Opus 3 or fiber Buccaneer SHG), stretcher, Faraday isolator, Pockels cell with control and synchronization unit, regenerative amplifier, pulsed amplifier pump laser and compressor. All elements are gathered into a single box, 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 Hz).

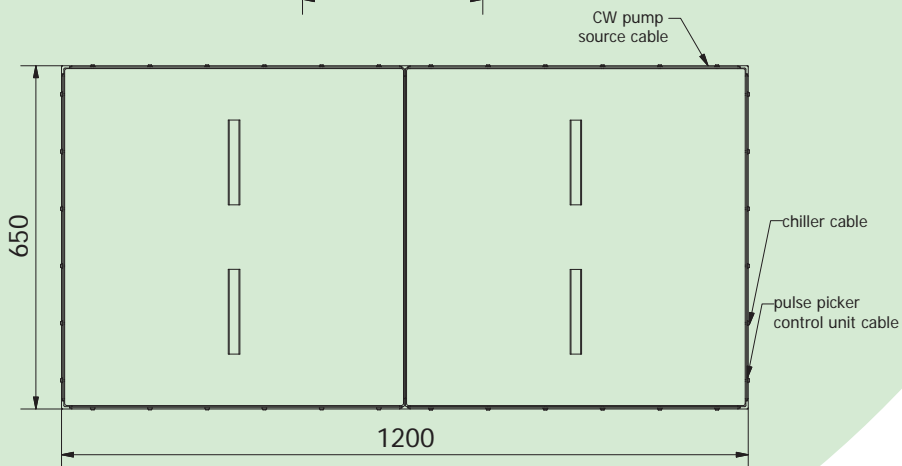
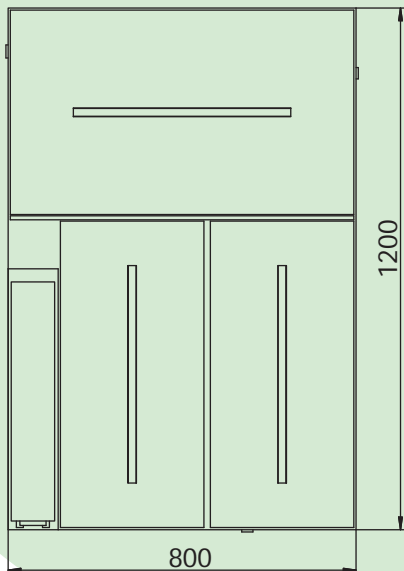
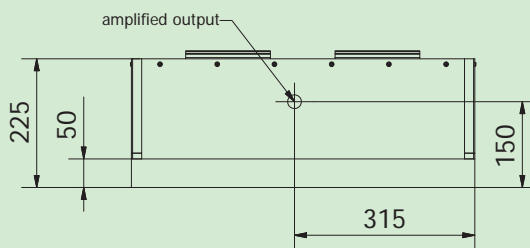
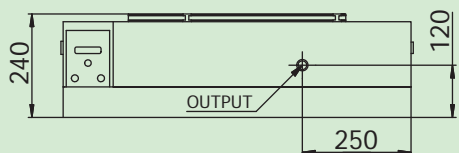
The Teahupoo amplifier family is an ideal source for femtosecond micromachining systems, terahertz imaging, OPA pumping, remote sensing and ultrafast spectroscopy.

#### Teahupoo technical specifications

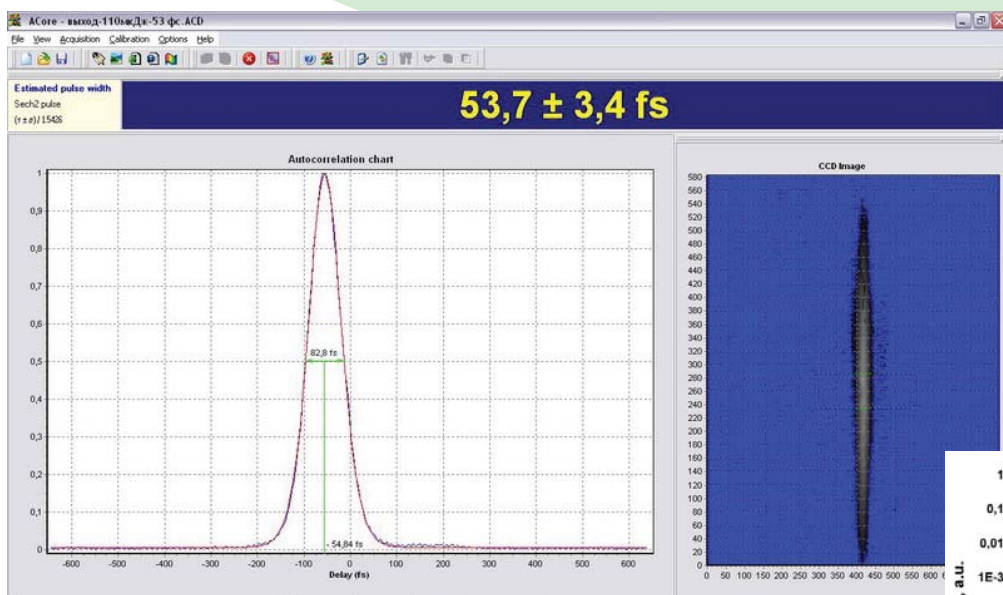
	RAPOP	RAPOF	RAP
Seed oscillator	Trestles Opus 3	Buccaneer SHG (fiber)	No
Output pulse energy, mJ	>1@1 kHz or >0.15@1 kHz (depends on used pump laser) >0.6@3 kHz or >0.15@3 kHz (depends on used pump laser) >0.1@5 kHz >0.05@10 kHz		
Pulse duration, fs	<50	<120	**
Central wavelength (fixed), nm	800±15	780±15	**
M <sup>2</sup>	<1.3		
Beam diameter (1/e <sup>2</sup> ), mm	8		
Stability, % rms	<1.5		
Contrast	>200:1 @ 10 ns* >10 <sup>3</sup> :1 @ 1 ps >10 <sup>6</sup> :1 @ 5 ps >5x10 <sup>7</sup> :1 @ 10-20 ps >5x10 <sup>7</sup> :1 @ ASE		
Spatial mode	TEM00		
Output polarization	horizontal		
Dimensions, mm	1200x800x240	900x650x200	
Water cooling	the package includes closed-loop water chiller		

\* - the contrast ratio >10<sup>3</sup>: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.

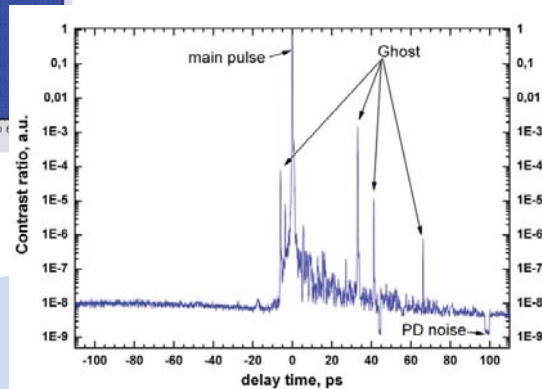
\*\* - depends on customer's seed oscillator. Please contact us for details.



Teahupoo RAPOP dimensions in mm



Teahupoo RAPOP autocorrelation trace



Teahupoo RAPOP contrast graph