

# CRONUS | 3P

NEW

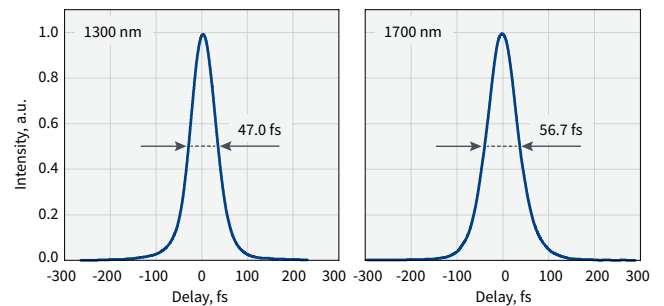
## Laser Source for Advanced Nonlinear Microscopy

### FEATURES

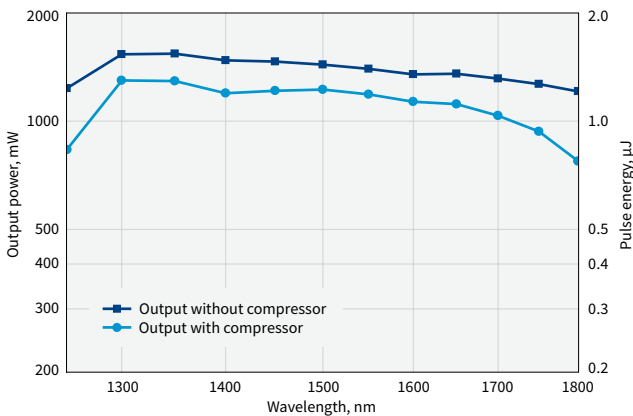
- High pulse energy, high repetition rate, and high average power
- 1250 – 1800 nm tuning range
- Down to 50 fs pulse duration
- Automated GDD control
- Industrial-grade design
- High output stability



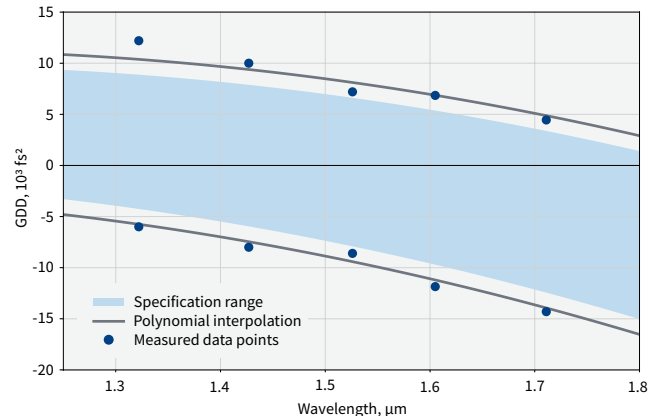
CRONUS-3P is an OPA-based laser source developed specifically for advanced nonlinear microscopy. It provides  $\mu\text{J}$ -level sub-65 fs pulses at repetition rates of up to 2 MHz and tunable from 1.25 to 1.8  $\mu\text{m}$ , thus covering the biological transparency windows at 1.3  $\mu\text{m}$  and 1.7  $\mu\text{m}$  for three-photon microscopy. In addition, CRONUS-3P has integrated group delay dispersion (GDD) control, ensuring optimal pulse duration at the sample, and industrial-grade design to guarantee high short- and long-term output stability.



Typical pulse duration at 1300 nm and 1700 nm



Output power and pulse energy vs wavelength.  
Pump: 40 W, 1 MHz.



GDD control range

## SPECIFICATIONS

Model	<b>CRONUS-3P</b>	
Tuning range	1250 – 1800 nm	
Repetition rate <sup>1)</sup>	Single-shot to 2 MHz	
	<b>1300 nm</b>	<b>1700 nm</b>
Pulse duration	< 50 fs	< 65 fs
Output power	> 1200 mW @ 1 MHz > 800 mW @ 2 MHz	> 750 mW @ 1 MHz > 500 mW @ 2 MHz
GDD control range <sup>2)</sup>	-4000 to +9000 fs <sup>2</sup>	-12000 to +3500 fs <sup>2</sup>
Beam diameter <sup>3)</sup>	2 – 3 mm	
Beam quality (M <sup>2</sup> )	< 1.4	
Beam ellipticity	> 0.8	
Beam divergence	< 1 mrad	
Long-term power stability, 24 h <sup>4)</sup>	< 1%	
Pulse-to-pulse energy stability, 1 min <sup>4)</sup>	< 1%	

### OUTPUT WITHOUT COMPRESSOR

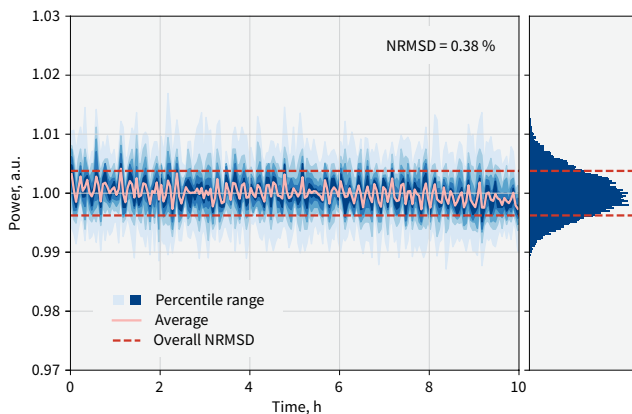
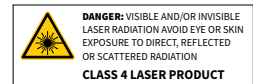
Output power	> 1500 mW @ 1 MHz > 1000 mW @ 2 MHz	> 1050 mW @ 1 MHz > 700 mW @ 2 MHz
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<sup>1)</sup> Lower repetition rate and higher pulse energy options available.

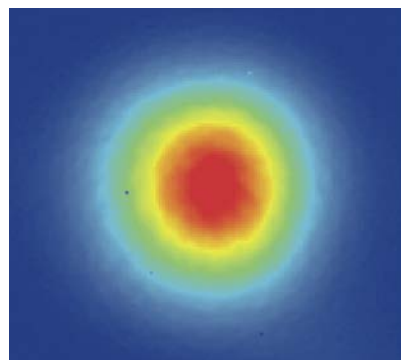
<sup>2)</sup> Continuously controlled dispersion that can be added before the microscope, i.e., -3000 fs<sup>2</sup> compensates a microscope with +3000 fs<sup>2</sup>.

<sup>3)</sup> FWHM, measured at compressor output.

<sup>4)</sup> Expressed as NRMSD (normalized root mean squared deviation).

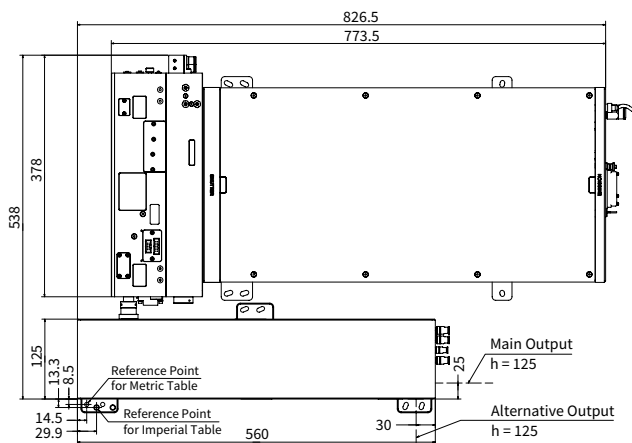


Long-term power stability, measured at 1700 nm over 10 h



Beam profile at 1300 nm, 2.5 mm diameter (FWHM)

## DRAWINGS



CRONUS-3P drawing