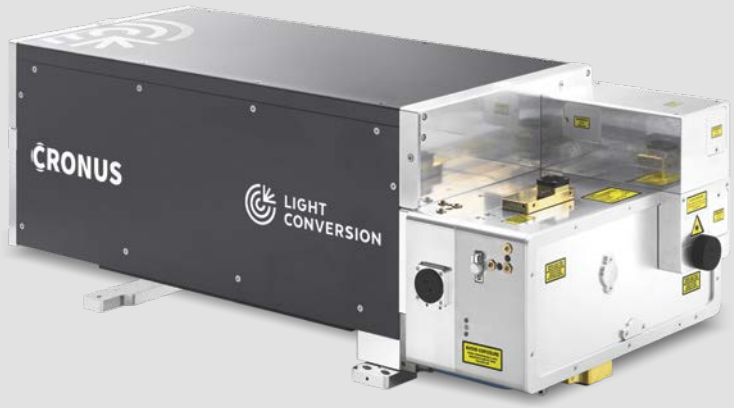
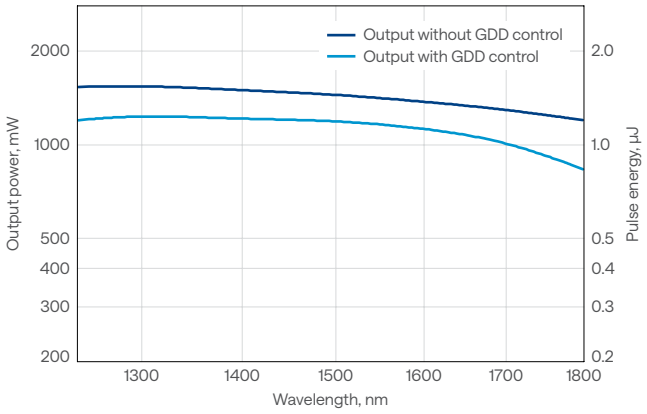
CRONUS | 3P

Femtosecond Laser for Advanced Nonlinear Microscopy

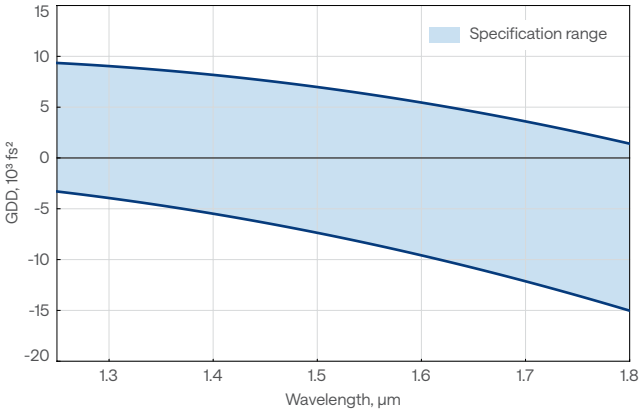
- High pulse energy for deep imaging
- 1250 – 1800 nm tuning range for 3P imaging
- Down to 50 fs pulse duration for high peak power
- Automated wavelength and GDD control for optimal signal
- Maintenance-free single-box solution



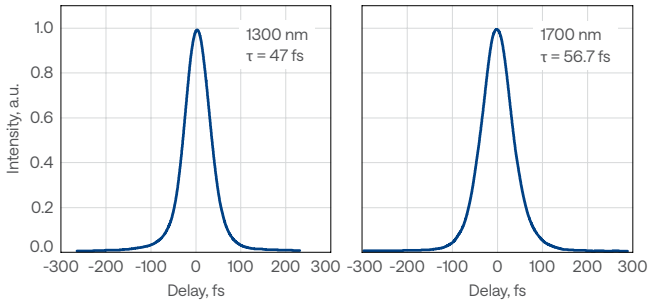
CRONUS-3P output power and pulse energy vs wavelength, at 1 MHz



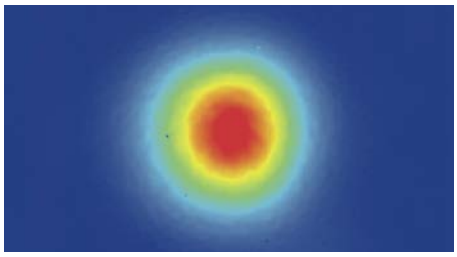
CRONUS-3P GDD control range



CRONUS-3P typical pulse duration at 1300 nm and 1700 nm



CRONUS-3P beam profile at 1300 nm



Specifications

Model	CRONUS-3P		CRONUS-3P with power control	
Tuning range	1250 – 1800 nm			
Repetition rate [1]	Single-shot – 1 MHz or 2 MHz			
	1300 nm	1700 nm	1300 nm	1700 nm
Pulse duration	< 50 fs	< 65 fs	< 50 fs	< 65 fs
Output power	> 1100 mW @ 1 MHz > 800 mW @ 2 MHz	> 800 mW @ 1 MHz > 500 mW @ 2 MHz	> 1000 mW @ 1 MHz > 700 mW @ 2 MHz	> 700 mW @ 1 MHz > 400 mW @ 2 MHz
GDD control range [2]	−4500 to +500 fs²	−12 000 to +3500 fs²	−4500 to +500 fs²	−12 000 to +3500 fs²
Beam diameter [3]	2 – 4 mm			
Beam quality, M^2	< 1.2			
Beam ellipticity	> 0.8			
Beam divergence	< 1 mrad			
Beam pointing stability	< 100 µrad			
Long-term power stability, 24 h [4]	< 1%			
Pulse-to-pulse energy stability, 1 min [4]	< 1%			

ADDITIONAL OUTPUTS

Auxiliary 1030 nm amplifier output	1030 ± 10 nm, up to 40 W, up to 2 MHz, < 250 fs
Optional 680 – 920 nm amplifier output	680 – 920 nm, > 1500 mW @ 1 MHz or > 1000 mW @ 2 MHz (@ 920 nm), < 290 fs (compressible to < 50 fs) [5]
Optional 1030 nm oscillator output	1030 ± 10 nm, up to 500 mW, ≈ 65 MHz, ≈ 200 fs

ENVIRONMENTAL REQUIREMENTS & DIMENSIONS

Refer to lightcon.com

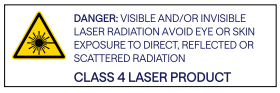
[1] *Lower repetition rate with a higher pulse energy option available.*

[2] *Continuous dispersion control; −4000 fs² compensates a microscope with +4000 fs².*

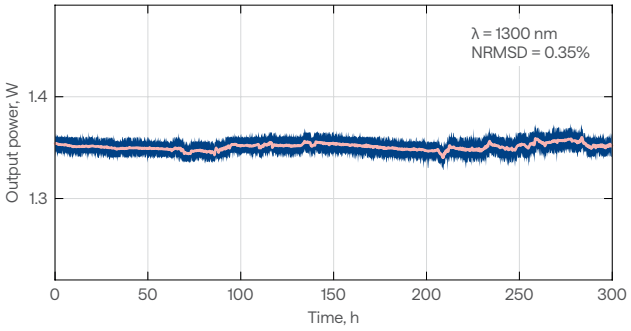
[3] *1/e², measured at compressor output.*

[4] *Expressed as normalized root mean squared deviation (NRMSD).*

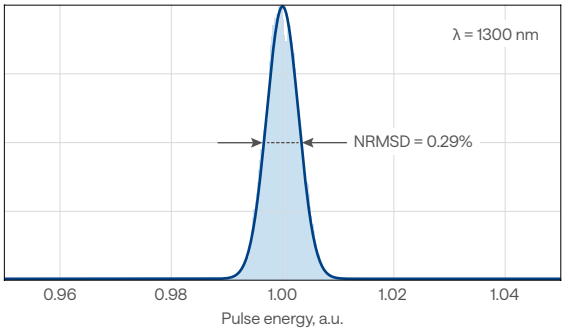
[5] *With external compressor without GDD control, > 70% transmission at 920 nm.*



CRONUS-3P typical long-term power stability at 1300 nm

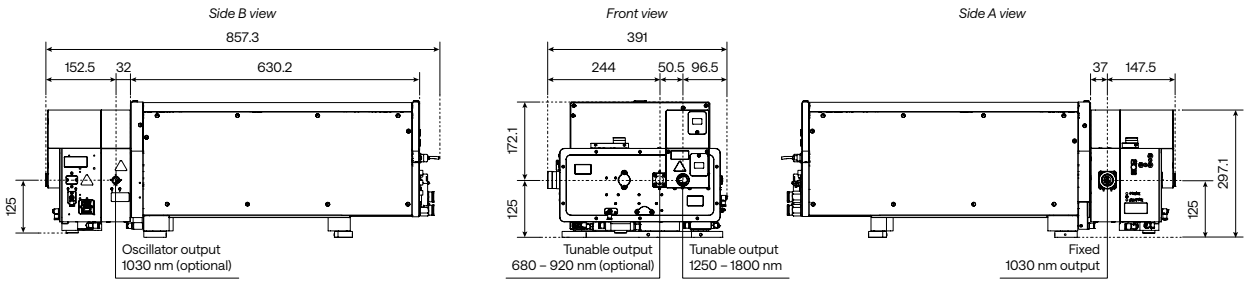


CRONUS-3P typical pulse-to-pulse energy distribution at 1300 nm



Drawings

CRONUS-3P



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