

High-Repetition-Rate Wavelength-Tunable Femtosecond Laser

Watt-level output at high repetition rates for fast imaging

Two tunable and one fixed output for simultaneous multibeam excitation

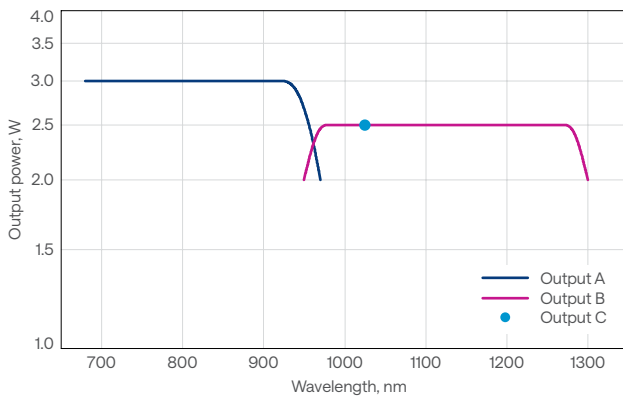
Automated GDD control for shortest pulses at the sample

Feedback-based output power and wavelength stabilization

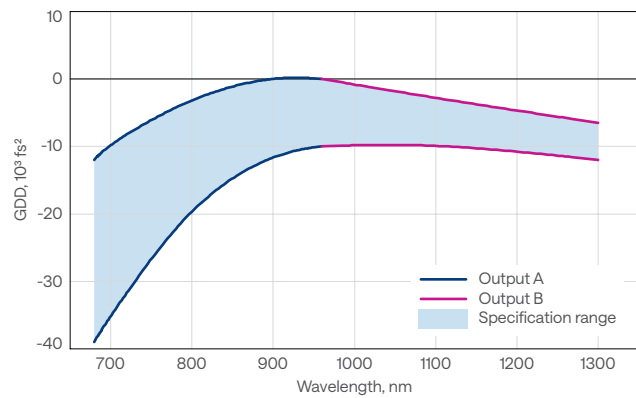
Beam steering & power locking



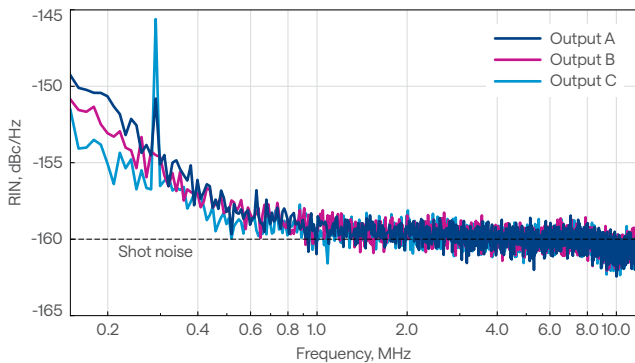
CRONUS-2P tuning curve



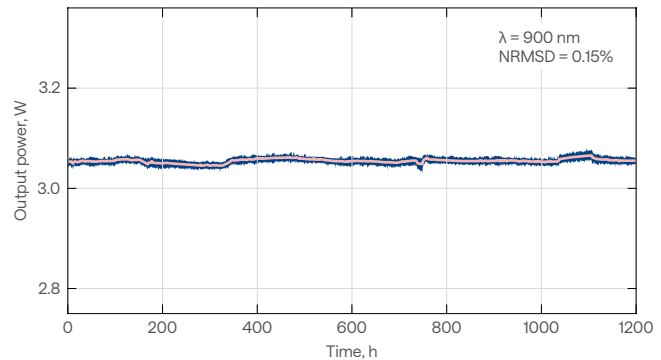
CRONUS-2P GDD control range



CRONUS-2P relative intensity noise (RIN)



CRONUS-2P typical output power stability at 900 nm



Specifications

Model	CRONUS-2P		
	Output A	Output B	Output C
Tuning range ¹⁾	680 – 960 nm	940 – 1300 nm	1025 ± 10 nm (fixed)
Output power ^{2) 3)}	> 3 W @ 920 nm	> 2.5 W @ 1100 nm	> 2.5 W
Pulse duration ^{4) 5)}	< 160 fs		
Repetition rate	77 ± 1 MHz		
Beam quality, M^2 ^{3) 4)}	< 1.2		
Polarization	Linear, horizontal		
Beam divergence, full angle	< 1 mrad		< 1.5 mrad
Beam diameter, $1/e^2$ ⁴⁾	3.0 ± 0.4 mm	3.2 ± 0.4 mm	2.8 ± 0.4 mm
Beam ellipticity ⁴⁾	> 0.8		
Beam astigmatism ⁴⁾	< 20%		
Beam pointing stability ⁶⁾	< 200 μrad		n/a
Long-term power stability, 24 h ^{4) 7)}	< 1%		
GDD control range	-10 000 to -35 000 fs ² @ 700 nm -3000 to -20 000 fs ² @ 800 nm 0 to -10 000 fs ² @ 920 nm	0 to -10 000 fs ² @ 960 nm -3000 to -10 000 fs ² @ 1100 nm -8000 to -12 000 fs ² @ 1300 nm	n/a

OPTIONAL POWER CONTROL

Output power ⁸⁾	> 2 W @ 920 nm	> 2 W @ 1100 nm	> 1.5 W
Rise/fall time ⁹⁾	< 300 ns		
Contrast ratio	1000 : 1		
GDD control range	0 to -6500 fs ² @ 920 nm	0 to -10 000 fs ² @ 1100 nm	n/a

OPTIONAL WAVELENGTH EXTENSIONS (UV – VIS)

Second harmonic tuning range	340 – 480 nm ¹⁰⁾	480 – 650 nm ¹⁰⁾	n/a
Conversion efficiency at peak	> 30%		

ENVIRONMENTAL REQUIREMENTS & DIMENSIONS

Refer to lightcon.com

¹⁾ Configurations with either dual-output A or dual-output B are also available.

²⁾ Simultaneous mode: > 1 W @ 920 nm, > 1 W @ 1100 nm, and > 2.5 W @ 1025 nm.

³⁾ Power control using AOM is applicable, specifications below.

⁴⁾ Specified at 920 nm, 1100 nm, and 1025 nm, respectively.

⁵⁾ IR pulse duration determined assuming sech² shape.

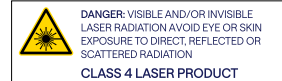
⁶⁾ Beam pointing deviation over the entire tuning and GDD control range.

⁷⁾ Expressed as normalized root mean squared deviation (NRMSD); with less than ±1 °C temperature change after 1 h warm up.

⁸⁾ Simultaneous mode: > 0.7 W @ 920 nm, > 0.7 W @ 1100 nm, and > 1.5 W @ 1025 nm.

⁹⁾ Specified from 5% to 95%.

¹⁰⁾ Multiple second harmonic configurations available. For more information contact sales@lightcon.com.



Drawings

CRONUS-2P

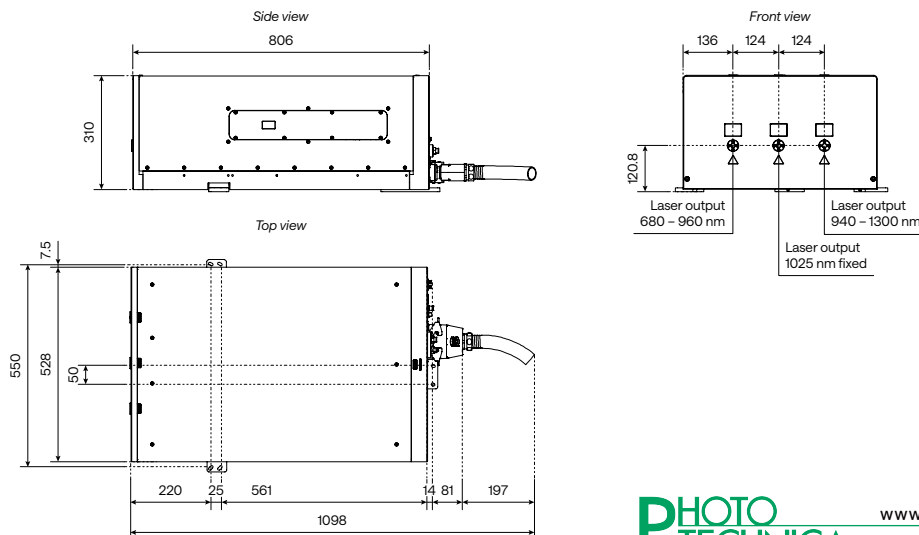


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