

# New wave “all-in-one” laser technology

## DISCOVER OUR FULLY PROGRAMMABLE PICOSECOND TUNABLE LASER

The programmable picosecond laser is entirely computer controlled. All laser parameters such as wavelength, wavelength sweep, picosecond pulse width and power can be dynamically adjusted within microseconds while the laser is in operation.



### Key Features

- Fully programmable picosecond tunable laser
- User defined wavelength, wavelength sweep, pulse width and power
- Transportable – no optical table required
- Always aligned
- Highly reliable - consistent performance
- Ready to Go – “Plug and play”
- Linear sweep in K-space – faster processing for OCT

### Technical Uses

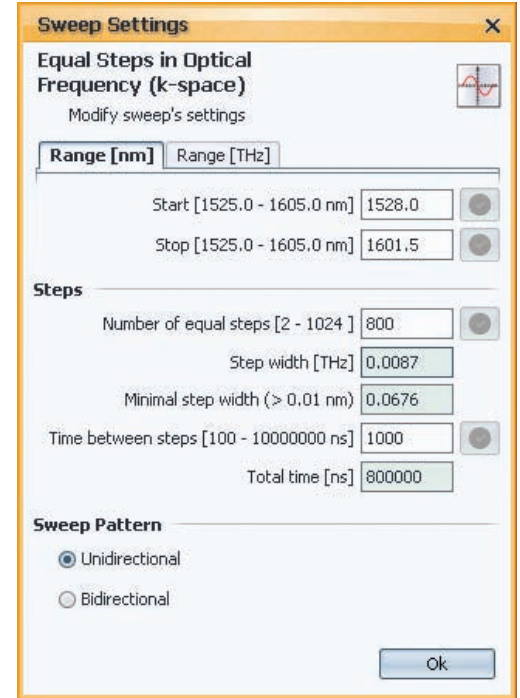
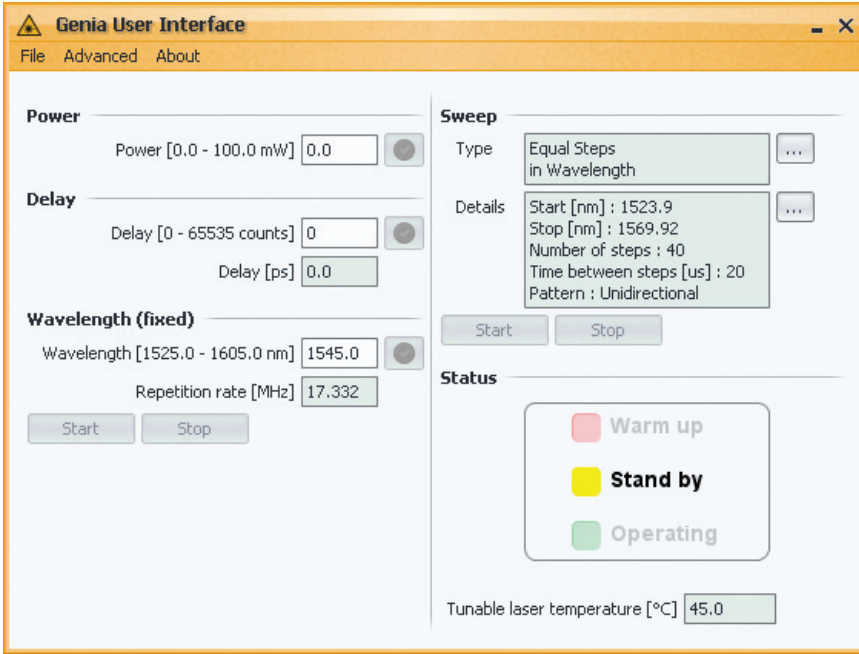
- Optical coherence tomography (OCT) imaging
- Time resolved measurements (ex. fluorescence spectroscopy)
- Nonlinear imaging
- Ablation
- Non-linear optics

### Applications

- Dermatology
- Cardiology
- Dentistry
- Pharmacology
- Fundamental research
- Quantum optics

# PROGRAMMABLE LASER

## Interface preview



### FEATURING:

- Intuitive graphical user interface
- Easily configurable parameters (Power, Wavelength, Wavelength Sweep, Delay)
- Clearly visible laser status

### FEATURING:

- Sweep settings that can be entered in optical frequency (k-space). Electron volts (eV), or wavenumber ( $\text{cm}^{-1}$ )
- Possibility to change the number of steps and the time interval between them
- Choice of unidirectional ( $\lambda_1 \lambda_2 \lambda_3 \dots \lambda_1 \lambda_2 \lambda_3$ ) or bidirectional ( $\lambda_1 \lambda_2 \lambda_3 \dots \lambda_3 \lambda_2 \lambda_1$ ) sweep patterns
- Delayed trigger output available as an option

### Front view



Front panel view with laser control lock, emergency laser shutdown button, laser status indication and laser output connector - FC/APC Polarized

### Back view



Back panel view with computer Interface - USB connector, interlock connector (remote emergency shutdown), external signaling - SMA connectors, power switch, AC power input and fan output

## Specification table\*

Models	WA (wavelength agile)	PA (pulse width agile)	WPA (wavelength and pulse width agile)	Comments and scope
<b>Main characteristics</b>	Fixed pulse width and tunable in wavelength	Fixed wavelength and adjustable in pulse width	Tunable and adjustable	
<b>Pulse width</b>	20 to 500 psec Factory pre-set	20 to 500 psec Adjustable		WA : specify pulse width PA & WPA : fully programmable
<b>Wavelength tuning</b>	$\lambda$ : tunable / sweep mode	$\lambda$ : factory pre-set	$\lambda$ : tunable / sweep mode	PA : specify wavelength WA & WPA : fully programmable, 10 pm min step
<b>Wavelength sweep (sweep mode)</b>	Up to 100 k $\lambda$ /s (WA01) Up to 10 M $\lambda$ /s (WA02)	N/A	Up to 100 k $\lambda$ /s (WPA 01) Up to 10 M $\lambda$ /s (WPA02)	Sweep mode fully programmable, up to 1024 points, 10 pm min step
<b>Pulse repetition rate</b>	10 to 50 MHz			Harmonic mode-locking and cavity dumping is optional. (DC-250 MHz)
<b>Operating bands</b>	1030-1130 nm / 1250-1360 nm / 1525-1605 nm Near-IR: 752 – 785 nm / 815 – 865 nm			Other wavelengths available upon request.
<b>Average power</b>	> 2 mW over band up to 20 W			Hi Power option includes built-in all fiber power amp.
<b>Mode quality M<sup>2</sup></b>	Single mode PM fiber output			
<b>Polarization</b>	PER: >15 dB			Linearly polarized

\* - Contact Genia Photonics for specific configurations and parameters.

## Options

Option code	Option name	Description
WC	Wavelength Change Trigger	Provides an electrical trigger signal coincident with each wavelength change
DL	Delayed Trigger	Provides an electrical trigger with each optical pulse that is delayed in time. The delay is user configurable.

## Ordering information\*

Product code	Sub product code	Sweep code	Central wavelength code	Output power code	Options
PL	WA	00 (no sweep)	XXXX	01 (1mW)	WC
	PA	01 (100 k $\lambda$ /sec. sweep)		02 (10mW)	DL
	WPA	02 (10 M $\lambda$ /sec. sweep)		03 (50mW)	
				04 (100mW apply only to 1080 and 1565)	
				05 (1W)	
				00 (custom)	

### Create your product code:

Product (2 letters)	Sub product (2 to 3 letters)	Sweep (2 digits)	Central Wavelength (4 digits)	Output Power (2 digits)	Option (2 letters per option)
PL					

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光技術をサポートする

**株式会社オプトサイエンス**

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