



PROSPECTIVE

FEMTOSECOND LASERS

FSX-SERIES

FIXED & TUNABLE WAVELENGTHS • **TURN-KEY** • **ULTRA LOW-NOISE**

765 - 940 nm / 1030 nm / 1120 - 1570 nm

24/7 OPERATION

EASY TO USE & COMPACT

HIGH POWER

SYNCHRONIZED PULSES

ULTRA-LOW RIN & PHASE NOISE



FIXED	DUAL	TUNE	TRIPLE
Single wavelength 780 / 920 / 1030 nm	First wavelength: 1030 nm	First wavelength: 1030 nm	First wavelength: 1030 nm
Second wavelength: —	Second wavelength: 765 - 940 nm (fixed in range)	Second wavelength: 765 - 940 nm (tunable in range)	Second wavelength: 765 - 940 nm (tunable in range)
Third wavelength: —	Third wavelength: —	Third wavelength: —	Third wavelength: 1120 - 1570 nm (tunable in range)

The FSX-series is a **versatile, turn-key and compact femtosecond laser** perfectly matched for a variety of applications, ranging from biophotonics to material science, quantum computing and basic R&D.

With its multiple **ultra low-noise, wavelength tunable synchronized laser** outputs, it also enables applications like coherent Raman imaging (CARS, SRS) or multi-spectral excitation 2-photon imaging.

The FSX can be equipped with various options like built-in **dispersion compensation, fast power modulation, hollow-core fiber delivery** and non-linear frequency conversion modules.

It can also drive **multiple experiments at once**, thus saving costs and space.

BROAD RANGE OF APPLICATIONS

2P polymerization

Supercontinuum generation

Terahertz generation

2P/SHG/THG microscopy

Quantum optics

Amplifier seeding

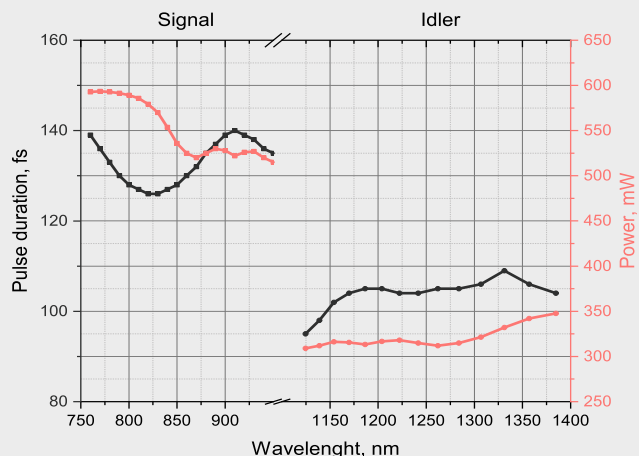
FLIM microscopy

Spectroscopy

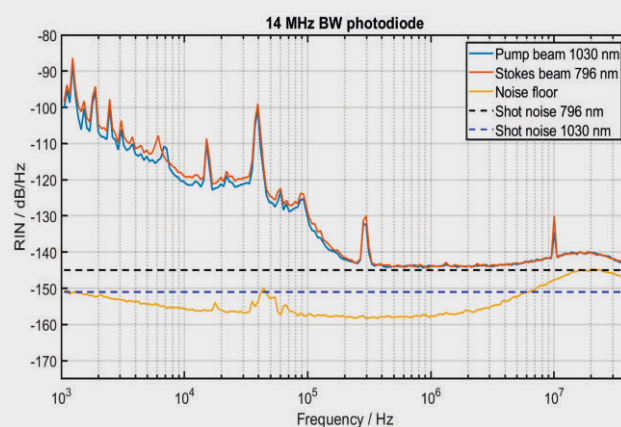
Neuroscience & Optogenetics

Coherent Raman Imaging (CARS/SRS)

POWER AND PULSE DURATION VS. WAVELENGTH



RIN: RELATIVE INTENSITY NOISE



SPECIFICATIONS

	FIXED	DUAL	TUNE	TRIPLE
Single wavelength: 780 / 920 / 1030 nm	✓	-	-	-
First wavelength: 1030 nm	-	✓	✓	✓
Second wavelength: 765 - 940 nm (fixed in range)	-	✓	-	-
Second wavelength: 765 - 940 nm (tunable)	-	-	✓	✓
Third wavelength: 1120 - 1570 nm (tunable)	-	-	-	✓
Pulse duration	<140 fs			
Average output power per wavelength	>10 W	>1 W @ 1030 nm >500 mW @ 2 nd λ	>1 W @ 1030 nm >500 mW over range	>1 W @ 1030 nm >500 mW @ 2 nd λ >300 mW @ 3 rd λ
Pulse energy	>100 nJ	>10 nJ @ 1 st λ >5 nJ @ 2 nd λ	>10 nJ @ 1 st λ >5 nJ @ 2 nd λ	>10 nJ @ 1 st λ >5 nJ @ 2 nd λ >3 nJ @ 3 rd λ
Pulse repetition rate	100 MHz *on request 40 - 250 MHz			
Beam quality, PER	M ² <1.15, TEM ₀₀ >23 dB			
Pointing stability	30 μrad rms (12 h) const. temperature, <5 μrad / °C @ 18 - 27 °C			
Laser output	Collimated free space / Hollow core fiber output			

Mechanical

Size laser head
560 x 350 x 125 mm³

Weight laser head
10 kg

Size laser controller
500 x 300 x 200 mm³

Weight laser controller
10 kg

Environmental

Warm-up time
<10 min

Operation temperature
18 °C - 27 °C

Storage temperature
-10 °C - 65 °C

Electrical

Power supply
90 - 264 VAC, 47 - 63 Hz

Power consumption
<500 W

Options / Warranty

Built-in AOM for power control

Frequency conversion modules
UV, blue, green & red

Python API

Dispersion pre-compensation
0 ... -40'000 fs²

Warranty up to
5 years in total

Water cooling

Extended wavelength range
into **MIR**

Narrow linewidth operation
<20cm⁻¹

Picosecond pulse duration

OEM form factor available

CARS / SRS imaging

Built-in AOM on stokes
wavelength 1030nm

>10 MHz modulation
bandwidth

CONTACTS

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TPEF (2P) -
Zebrafish head

Zebrafish eye

CARS -
Zebrafish eye

Spheroid

Neuronal
network

Olfactory
neuronal bundle

Primary cells

Drosophila
brain

Zebrafish