OPO-X ps
VIS to IR, picosecond Generation

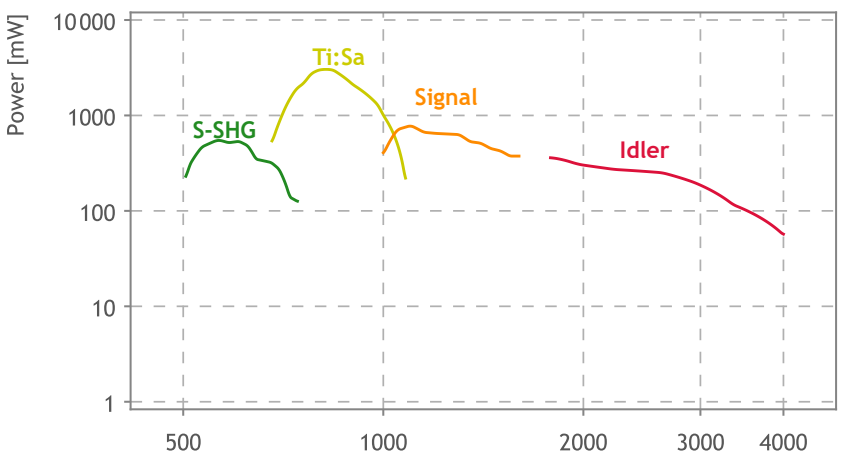
Overview

The OPO-X ps is a synchronously pumped, tunable OPO with high conversion efficiency into the IR-range generating output from 1000 nm to 4 µm. It is driven by mode-locked picosecond Ti:Sa lasers and its design enables independent wavelength tuning of Ti:Sa laser and the OPO. Intracavity second-harmonic generation (SHG) within the OPO enables efficient conversion into the VIS-range. It provides 2 ps pulses, along shot-noise-limited performance.

The OPO-X is ideal for nonlinear and time-resolved spectroscopy, multiphoton microscopy and pump-probe experiments. If the Ti:Sa pump laser is convertible between picosecond and femtosecond operation, this flexibility is also available for the OPO-X.

Example Configuration

Typical Tuning Curve



At a Glance

- Extends range of ps-Ti:Sa lasers from 505 nm to 4 µm
- Independent Ti:Sa and OPO wavelength tuning
- Intracavity OPO SHG for efficient conv. into VIS-range
- 2 ps pulse width, convertible to femtosecond
- Shot-noise-limited performance
- Perfectly synchronized output pulses
- Integrated spectrometer
- Fully computer-controlled with automated wavelength tuning

Applications

- Nonlinear and time-resolved spectroscopy
- Multiphoton microscopy
- Pump-probe experiments

OPO-X ps
Specifications

	OPO-X ps Signal SHG	OPO-X ps Signal	OPO-X ps Idler
Wavelength range	505 nm … 740 nm	1000 nm … 1600 nm	1750 nm … 4000 nm
Power	400 mW at 600 nm	520 mW at 1100 nm	150 mW at 2000 nm
Bandwidth (FWHM)	typ. 12 cm^{-1}		
Pulse width (FWHM)	typ. 1.6 ps		
Time-Bandwidth product	0.6		
Repetition rate	80 MHz (other on request)		
Output polarization	Vertical	Horizontal	
Beam quality (M^2)	1.2		
Power stability (RMS)*	0.5%		
Spectral stability (RMS)*	0.01%		
Shot-Noise limited**	-162 dBc/Hz, >1 MHz		

* At the specified wavelength for power measurement, expressed as normalized root mean square deviation (NRMSD), with power lock enabled, under stable environmental conditions.
** -162 dBc - limit of the measurement setup used

Example configuration pumped with Ti:Sa Laser with 2.8 W at 800 nm, 2 ps

APE Angewandte Physik und Elektronik GmbH

Plauener Str. 163-165|Haus N|13053 Berlin|Germany
T: +49 30 986 011-30 F: +49 30 986 011-333
E: sales@ape-berlin.de www.ape-berlin.de