

A P E

HARMONI GENERATOR

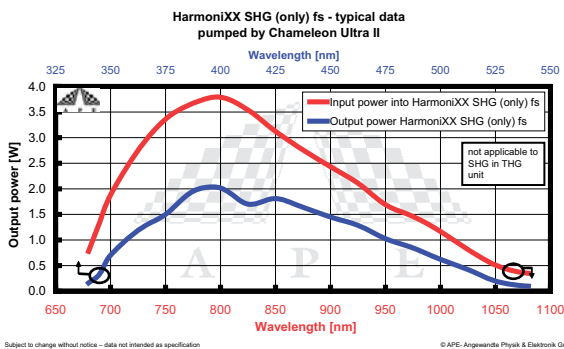
SHG / THG / FHG



The product line **HarmoniXX** is a series of frequency converters for ultrafast lasers, in particular for Ti: Sapphire lasers, but available for other wavelength ranges as well. The flexible architecture of these devices provides means for Second Harmonic Generation (SHG), Third Harmonic Generation (THG) and Fourth Harmonic Generation (FHG) as needed. The modular instrument design focuses on userfriendliness and compactness, with automated wavelength tuning available.

The **HarmoniXX** is equipped with quickly exchangeable optics and works with an extremely wide range of different pulse widths, it can be used with tens of picoseconds as well as with pulse as short as sub-twenty femtoseconds. Great care has been given to the optimization of the conversion efficiency over this large pulse width range. As result these high conversion efficiencies can now be achieved at various power levels and with minimum pulse broadening.

Unlike conventional triplers, the new **HarmoniXX** THG needs no separation and recombination of the interacting beams. This user friendly feature is due to the use of a common optical beam path of all interacting beams. It is implemented by means of a proprietary delay compensator and provides consistent spatial overlap for optimum efficiency.



- High conversion efficiency
- Easy alignment
- Adaptable to different pulse width and power levels
- Minimum pulse broadening
- Excellent pointing stability
- Flexible architecture

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acoustooptics

Your Partner in Ultrafast

VERSIONS

- SHG only
- THG (includes SHG in THG)
- FHG (2 + 2) (includes SHG in THG, THG)
- FHG (3+1) (includes SHG, THG, FHG (2+2)) no autotracker available¹⁾

SPECIFICATIONS

Wavelength ranges

Input	680 ... 1080 nm
SHG	340 ... 540 nm
THG	227 ... 360 nm
FHG (2+2) option	210 ... 230 nm
FHG (3+1) version	190 ... 210 nm

Conversion efficiencies @ 1.3 W, 800 nm, 80 MHz

Pump pulse width	~130 fs	~1.6 ps
SHG (SHG only version)	40%	15%
SHG (in THG version)	20%	10%
THG	10%	4%
FHG (2+2) option	4% (@ 880 nm, 1.15 W)	on request
FHG (3+1) version	1.5 mW	on request

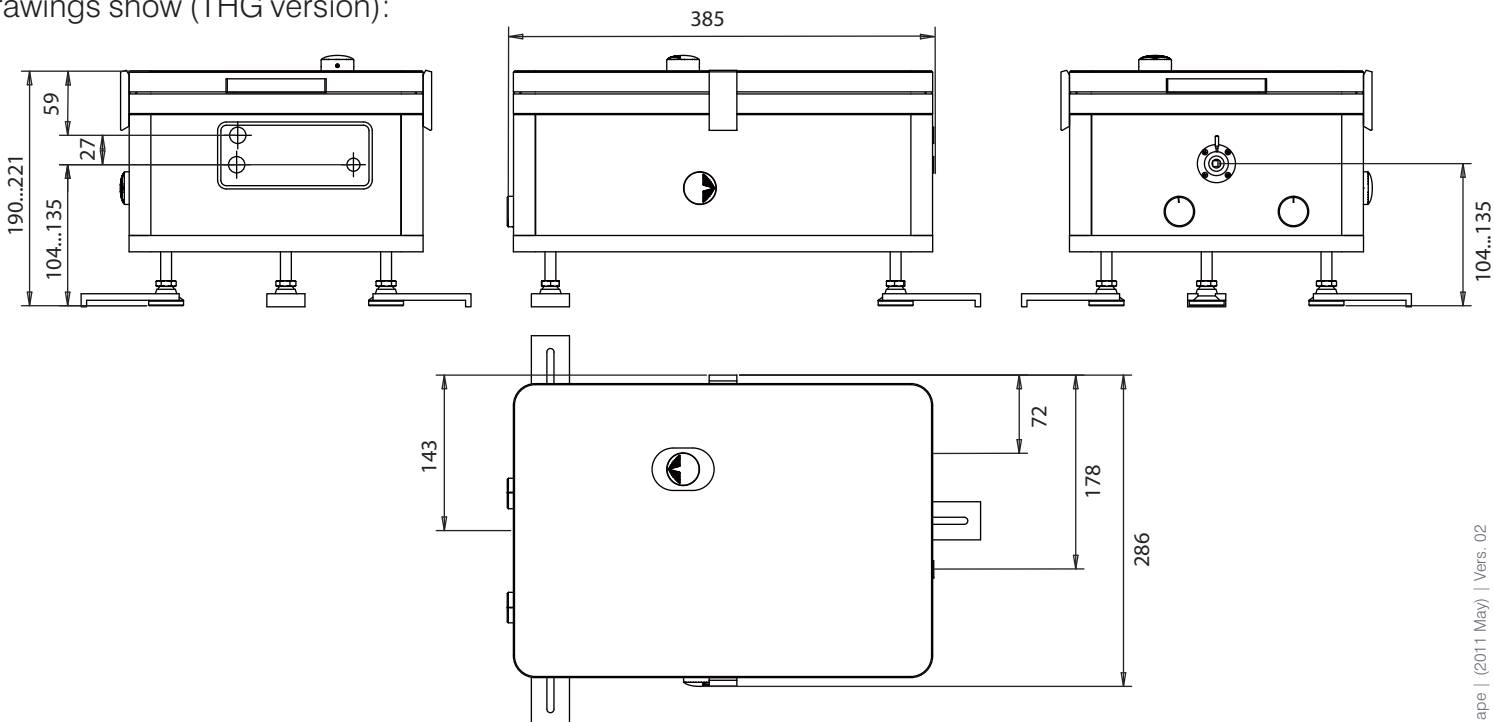
OPTIONS

- Autotracker
- Other wavelength range, e.g. 1000 ... 1600 nm

SIZE (d x h x l in mm)

SHG only and THG version	385 x 221 x 286
FHG (3+1) version:	580 x 221 x 410

Drawings show (THG version):



¹⁾ FHG (3 + 1) comes in a larger size housing than SHG, THG or FHG (2 + 2)

Distributors

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APE follows a policy of continued product improvement. Therefore, specifications are subject to change without notice.

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