HarmoniXX DFG

The **HarmoniXX DFG** unit is designed to extend APE's product line of wavelength converters into the Mid IR range. It mixes Signal and Idler output beams of synchronously pumped OPOs and is available for various pump sources.

The **DFG** output wavelength can be changed easily by tuning the OPO Signal. It covers a wide wavelength range of 4 ... > 15 µm.

The **HarmoniXX DFG** unit has an integrated wavelength separation for maximum user-friendliness. The output is very stable benefitting from the fact that the OPO output pulses are intrinsically jitter-free.

The **DFG** is available for femtosecond and picosecond OPOs of different wavelength ranges.

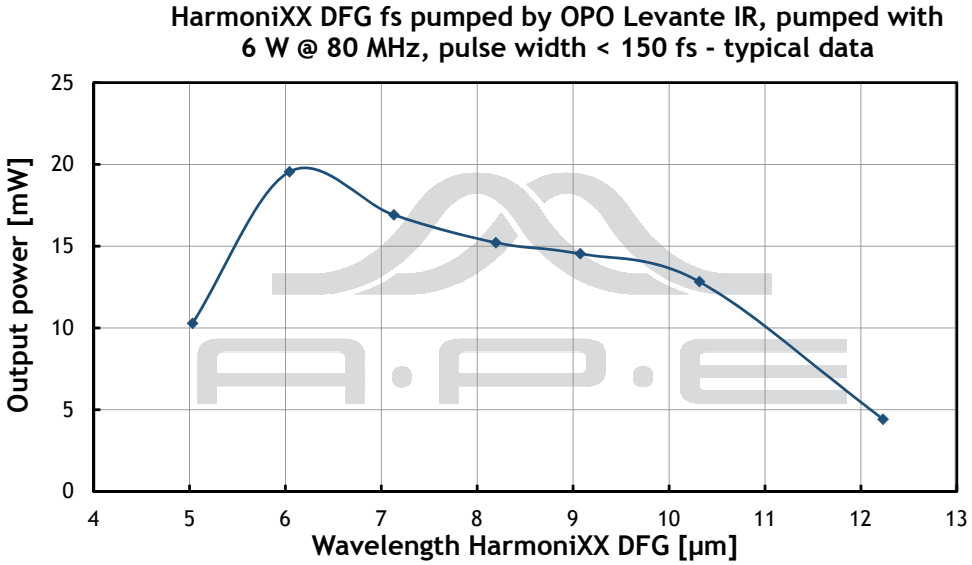
- High power and conversion efficiency
- Easy wavelength tuning
- Flexible architecture for fs / ps input

Versions and Applications

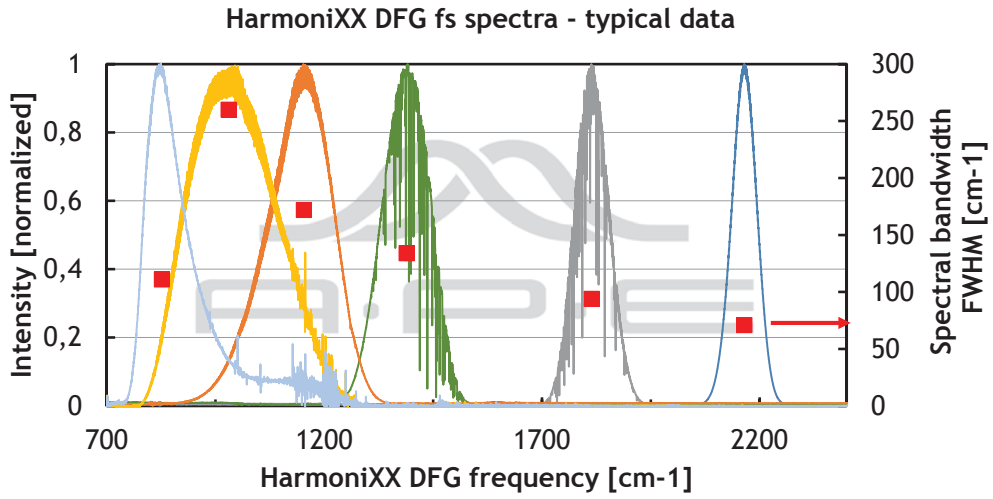
The **HarmoniXX DFG** is available in different versions, depending on the pump source and the pulse width.
The picosecond version can be pumped by pulses with 2 … 6 ps pulse width and is able to reach wavelengths from 4.8 ... 15 µm. It is optimized for high resolution measurements and pulses with narrow bandwidth. Therefore it is perfect for Sum Frequency Mixing Spectroscopy.

The femtosecond version of the **HarmoniXX DFG** delivers short pulses with broad spectral bandwidth in the MIR. The standard version can be tuned from 4 ... 11 µm. An optionally available Optics Set extends the wavelength range to 10 ... > 15 µm. The HarmoniXX DFG fs is especially suitable for applications that require high time resolution such as fs s-SNOM.

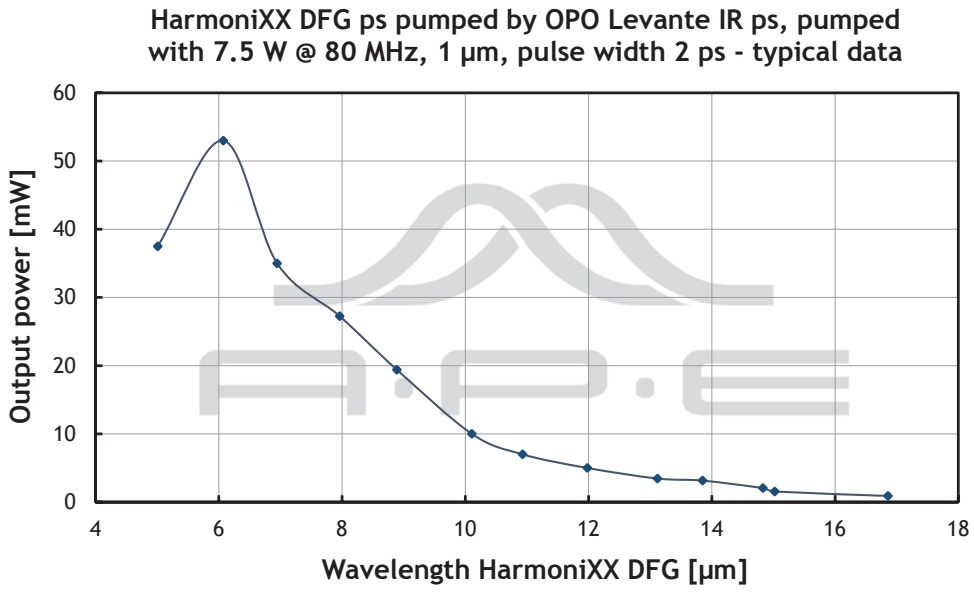
HarmoniXX DFG fs

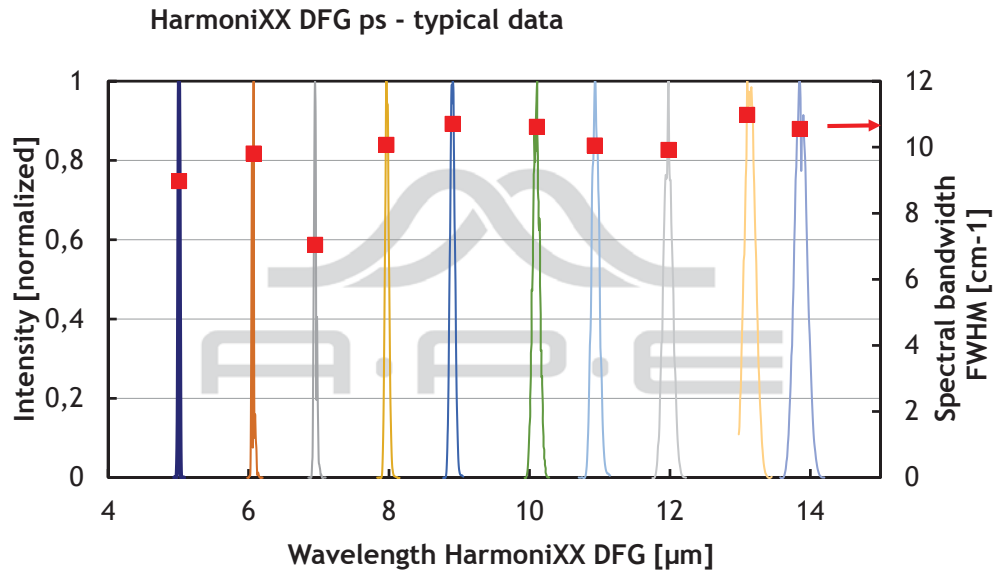


The crystal used in the **HarmoniXX DFG** fs is optimized for high output power and best bandwidth conversion.



HarmoniXX DFG ps





The narrow line width of the pump is preserved in the DFG process. With a spectral bandwidth of around 10 cm^{-1} the pulses are ideal for applications that require a high resolution, e.g. spectroscopy.

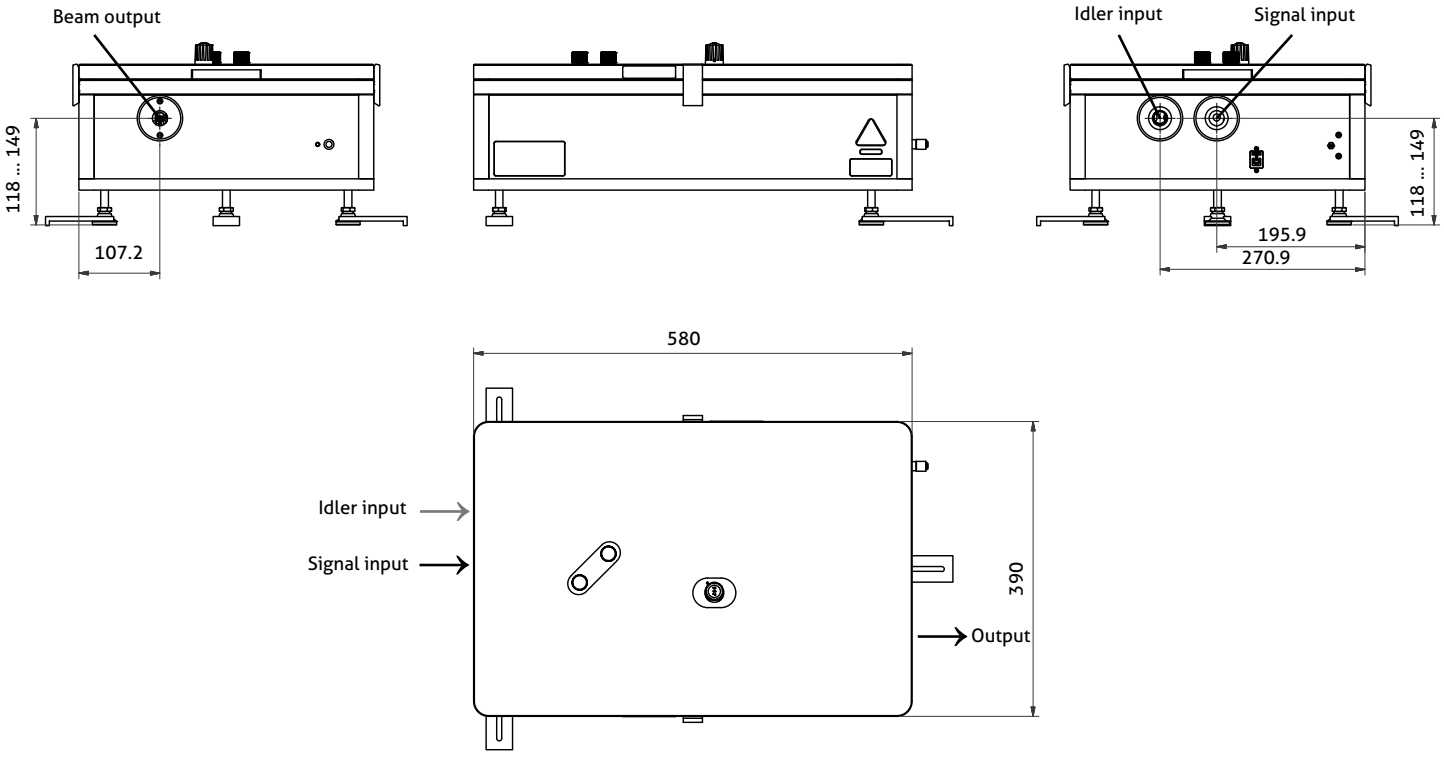
Wavelength Converter HarmoniXX DFG

Specifications

	DFG wavelength range	Pulse width
for OPO PP Auto FAN fs / OPO^{NSP}-X fs	4 … 11 µm	< 100 … 300 fs
Long wavelength Optics Set	10 … > 15 µm	< 100 … 300 fs
for OPO Levante IR fs	4 … 11 µm	< 100 … 300 fs
Long wavelength Optics Set	10 … > 15 µm	< 100 … 300 fs
for OPO Levante IR ps	4.8 … 15 µm	2 … 6 ps

Weight and dimensions:

Weight:	< 15 kg
Dimensions (see drawing; in mm)	



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