

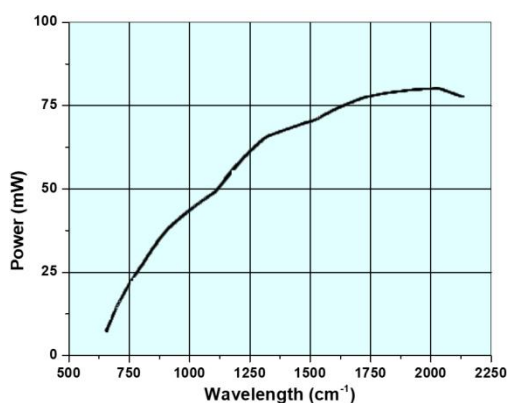
Laser Frequency Conversion Devices

Difference Frequency Generator (DFG)

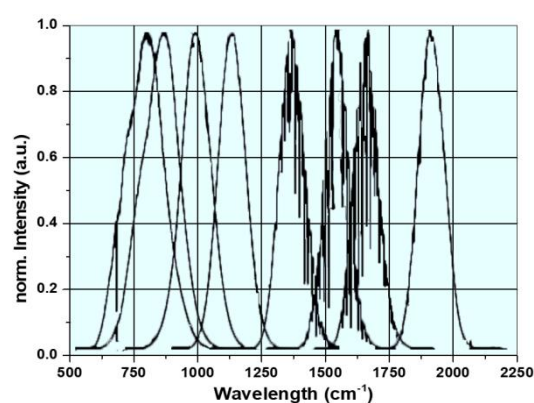
HarmoniXX DFG is a device designed to extend the wavelength of the APE product series to the mid-infrared range. It is suitable for synchronously pumping the signal and idler light of OPO, and can also be used for various pump sources. By adjusting the OPO signal, it is easy to change the DFG output wavelength, and its wavelength range is very wide (4~>15μm). DFG also has its greatest usability, because DFG has an integrated wavelength separation plate, which makes OPO output pulses essentially jitter-free, so the output of DFG is very stable. It is more suitable for femtosecond and picosecond OPO in different wavelength ranges.

Main advantages:

- ◆ High conversion efficiency
- ◆ Flexible structure, fs/ps input
- ◆ Integrated beam overlap
- ◆ Easy manual wavelength tuning



Typical DFG Power vs. Wavenumber



Typical Double Manifold Spectrum

Parameters

| HarmoniXX DFG Adaption | DFG Wavelength Range | Pulse Width |
|---------------------------------|--|------------------|
| OPO Levante IR fs | 4 ... 11 μm or 10 ... > 15 μm (long wavelength optics kit) | < 100 ... 300 fs |
| OPO Levante IR ps | 4.8 ... 15 μm | 2 ... 6 ps |
| OPO-X fs, OPO PP Auto FAN fs | 4 ... 11 μm or 10 ... > 15 μm (long wavelength optics kit) | < 100 ... 300 fs |