



RS. Raman Shifter of Laser Wavelength

- Up to 30% conversion efficiency
- Various active media with different frequency shift
- Up to 100 mJ input pulse energies
- Standard models for 800, 1030 or 1250 nm



The RS-800 Raman wavelength shifter for a Ti:S amplifier output

Product overview

The RS Raman shifters are used for downshifting of laser radiation frequency in order to generate powerful IR femtosecond pulses. The RS femtosecond Raman shifters employ a novel scheme that is based on Raman conversion of a chirped laser pulse with subsequent pulse compression. Compressed gases (hydrogen, methane, sulphur hexafluoride) and barium nitrate crystals are used as active media in various models. Raman frequency shift varies from 775 cm^{-1} for sulphur hexafluoride to 4155 cm^{-1} for hydrogen, energy conversion efficiency reaches 30%. Usage of small-volume Raman cells (less than 100 cm^3) insures safe operation. The optical scheme and size of the Raman lasers depend on pump laser pulse energy which can vary from 0.1 mJ to 100 mJ.



The RS Raman shifter family includes three standard models for traditional sources: the RS-800, the RS-1030 and the RS-1250 (800 nm, 1030 nm and 1250 nm respectively). Customized enquiries are welcome.

Technical specifications

Input source and corresponding Raman shifter model	Active medium		
	Hydrogen (gas)	Methane or deuterium (gases)	Barium nitrate (crystal)
Ti:S (titanium-sapphire; 800 nm) RS-800	1200 nm	1050 nm	870 nm
Yb-doped systems (1030 nm) RS-1030	1890 nm	1530 nm	1180 nm
Cr:F (chromium-forsterite; 1250 nm) RS-1250	2600 nm	1970 nm	1430 nm

Applications of Raman Shifter include:

- Time-Resolved Ultrafast Studies
- Conversion of Laser Radiation
- High-Energy Research
- Ultrafast Laser Diagnostics, Accessories and Components
- Other Fundamental and Applied Research



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