



Components



## Raman Shifter RS

- Conversion efficiency up to 30%
- Various active media with different frequency shift values
- Input pulse energies up to 100 mJ
- Standard models for 800, 1058 and 1250 nm

### Product description

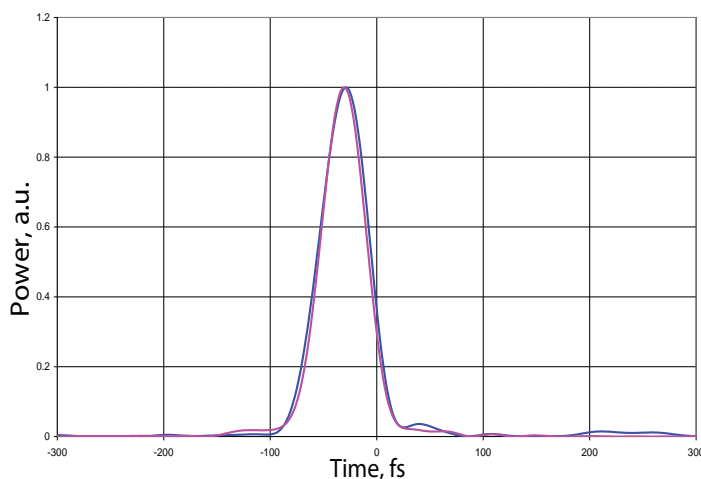
The Raman shifters are used for downshifting the laser radiation frequency in order to generate powerful IR femtosecond pulses. The RS femtosecond Raman shifters employ a novel scheme. The scheme is based on Raman conversion of a chirped laser pulse with subsequent pulse compression. Compressed gases (hydrogen, methane, sulphur hexafluoride) and barium nitrate crystal are used as active media. The Raman frequency shift varies from 775 cm<sup>-1</sup> for sulphur hexafluoride to 4155 cm<sup>-1</sup> for hydrogen. The energy conversion efficiency reaches 30%. The using small volume Raman cells (less than 100 cm<sup>3</sup>) provides the safety operation. The optical scheme and sizes of Raman lasers depend on the 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 RS-800, RS-1050 and RS-1250 (800 nm, 1050 nm and 1250 nm respectively). Customized enquiries are welcome.

### Specifications

Wavelength after conversion of different sources in various active media

RS				
Seed laser source and shifter model	Active medium	Hydrogen (gas)	Methane and deuterium (gas)	Barium nitrate (crystal)
Ti:S (800 nm) RS-800		1200 nm	1050 nm	870 nm
Yb:KYW (1058 nm) RS-1050		1890 nm	1530 nm	1180 nm
Cr:F (1250 nm) RS-1250		2600 nm	1970 nm	1430 nm



Pulse shape of the Ti:Sapphire laser pulse with duration of 48 fs at the wavelength of 800 nm (purple curve) and converted to first Stokes with duration of 52 fs at the wavelength of 1200 nm by stimulated Raman scattering in hydrogen confined in the capillary.