HPSR–HIGH ACCURACY PULSE STRETCHER FOR HIGH END ULTRAFAST LASERS

The PowerSpectrum™-HPSR allows the generation of shorter pulses with higher energy in chirped pulse amplification systems (CPA)

TeraXion's PWS-HPSRs are low loss, all-fiber, FBG based chromatic dispersion management devices.

Used for chirped pulsed amplification in high end ultrafast lasers, the PWS-HPSR stretches the pulse prior to the amplification stage.

Offering a new level of control on the group delay, it enables the amplification of larger pulse bandwidths for shorter pulse duration and larger stretching ratios for higher pulse energy.

The PWS-HPSR is also available with a gain bandwidth enhancement option. This feature allows the spectral shaping of the input pulse to expand the gain bandwidth of some amplifiers and then improve the pulse duration of the amplified pulse.

Features

- Higher accuracy on dispersion control
- Gain bandwidth enhancement option available
- 1 & 1.5 µm wavelength range
- Reflection & transmission
- Control over β_2, β_3, β_4...
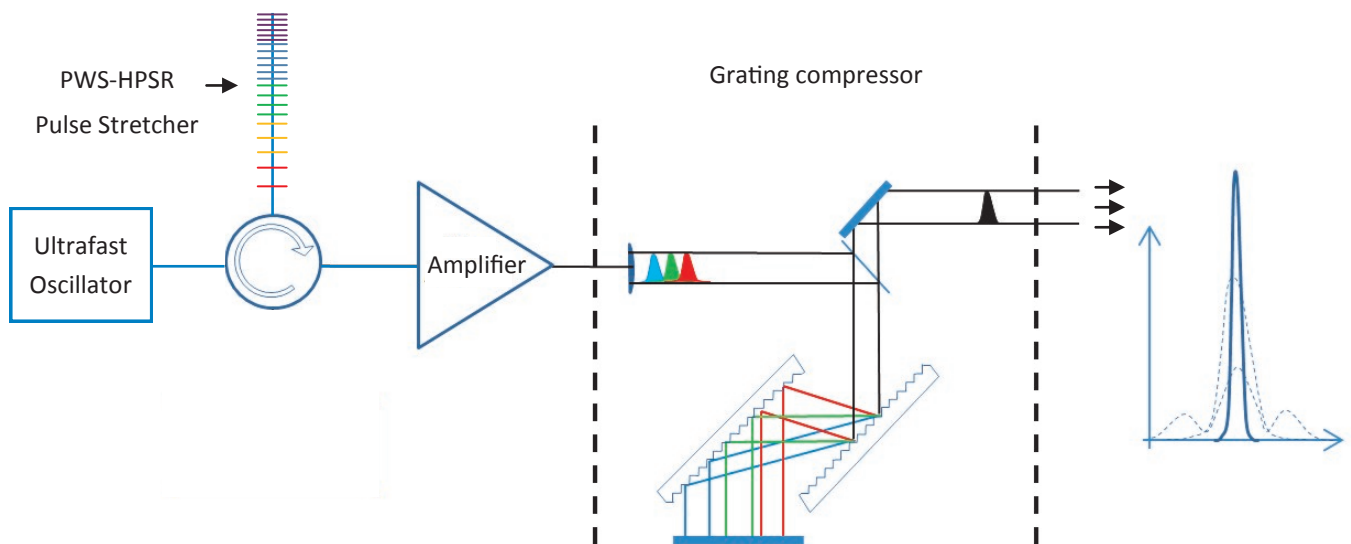- Customizable parameters

Benefits

- Generation of shorter pulses for higher peak power
- Compact and easy to use
- Alignment free
- Cost effective
- Volume fabrication
- Robust

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Parameters		Specifications		Units
Wavelength Range		1 and 1.5		µm
Reflection Bandwidth	Typical	5-50		nm
Reflectivity[1] (@ 80% of FWHM)	>	35 (PM Fiber)		%
Total Stretching		Up to 10	Up to 10	ns
Spectral Profile		Customizable		
Dispersion Rate	Typical	2.5 - 150		ps^2
Phase Error	<	0.5		RAD
PER	≥	20		dB
Compressor and Amplifier Dispersion Matching		β_2, β_3, β_4... (complete phase function)		
Fiber Type		PM		
Packaging		Rigid Loose tube; Athermal; Module with circulator		
Operating Temperature Range		20 - 50		°C

(1): Gain bandwidth enhancement option available. Please contact Teraxion's sales for further details.

Typical CPA (Chirped-Pulse Amplifier) fiber laser block diagram

For orders, questions, specific requirements or to learn more about TeraXion's products, contact us at
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