

# TPSR-T – TUNABLE PULSE STRETCHER FOR ULTRAFAST LASER

**The PowerSpectrum™ – Tunable Pulse Stretcher is a compact, robust and cost-effective solution to control pulse durations in ultrafast laser systems using a diffraction grating (Treacy) compressor.**



TeraXion's PowerSpectrum™–TPSR-T guarantees optimal peak power as well as dynamic and precise pulse control in any circumstance. It improves laser performance by compensating the misalignment of the diffraction grating compressor and the amplifier self-phase modulation (SPM).

Through its exclusive fiber Bragg grating (FBG) dispersion management, the PowerSpectrum™ – TPSR-T is designed to account for high order dispersion and any additional fiber length. Its flexible software options make it easy to integrate within any design and allow for a fully electronic calibration of laser systems, resulting in shorter cycle times, increased throughput and lower operating costs.

## Features

- Custom-designed with compressor parameters
- Electronic pulse duration tuning up to 50 ps
- High order dispersion tuning
- Custom spectral shape
- RoHS compliant

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## Benefits

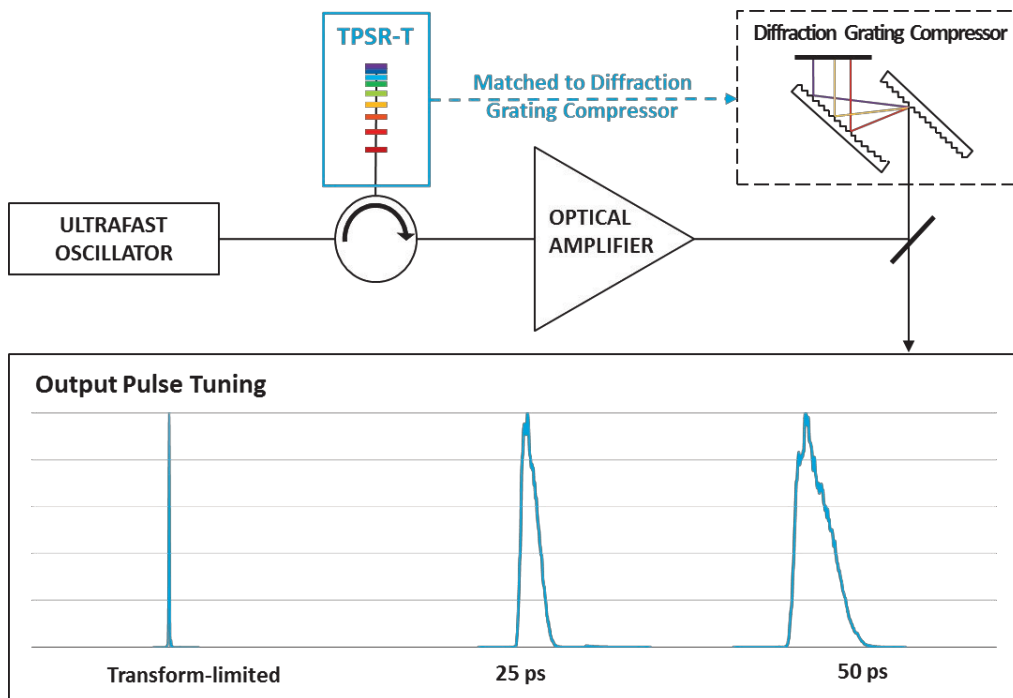
- Virtually eliminate hardware alignment servicing
- Actively compensate self-phase modulation
- Increase laser versatility

## General Specifications

Parameters	Specifications
Center Wavelength <sup>(1)</sup>	1 μm band
Minimum Input Pulse Duration	≥ 100 fs
FBG Spectral Shape <sup>(2)</sup>	Customizable
Total Stretching Window	
Single Configuration	800 ps
Double Configuration	1600 ps
Treacy Compressor Matching	Complete GD Function Matching
Pulse Tuning	From Transform-limited up to 50 ps
Dispersion Tuning	$\beta_2$ , $\beta_3$ and $\beta_4$
Fiber Type	PM
Module Dimension	14 x 22 x 130 mm
Control	USB / I <sup>2</sup> C

(1) Other wavelengths available upon request  
 (2) Amplifier gain bandwidth enhancement

## Chirped-Pulse Amplification with a Diffraction Grating Compressor



## Software Platform

Get precise control over output pulse duration and peak power in any laser configuration and environmental condition with TeraXion's user-friendly software interface.

Easily handle multiple jobs on the same laser set-up by saving pulse settings.

Integrate the TPSR within any laser electronic interface and power supply via a 5-volt input or I<sup>2</sup>C.

## Ordering information

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

[info@teraxion.com](mailto:info@teraxion.com)