

Femtosecond Pulse Compressor

Features

- ◆ 700 - 1050 nm Wavelength Range
- ◆ -12,500 to 0 fs² Adjustable Dispersion Compensation Range
- ◆ Optimized for >50 fs Input Pulse Width
- ◆ Designed for Thorlabs' Tiberius® Femtosecond Laser

Thorlabs' FSPC Femtosecond Pulse Compressor helps improve image contrast and quality when working with difficult-to-image samples. It accomplishes this by minimizing the pulse duration in the sample plane and compensating for the group delay dispersion (GDD) that occurs in all complex optical systems, such as multiphoton microscopes.

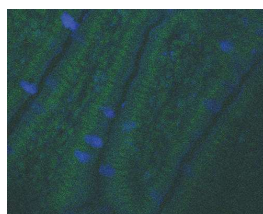
Ultrashort pulses used in multiphoton microscopy are comprised of a spectrum of wavelengths, typically several nanometers wide. As light travels from the laser through the microscope to the sample, each wavelength travels at a different velocity through the optical system, naturally broadening the pulse duration. A broadened optical pulse and therefore reduced peak intensity can decrease image contrast and quality when working with challenging samples (see images to the right). By compensating for GDD in the microscope and hence negating the pulse broadening, the FSPC ensures that the pulse arriving at the sample is as short as possible.

The FSPC features adjustable dispersion compensation up to -12,500 fs² at 800 nm. It can be installed between the femtosecond laser source and the microscope and supports a 4.25" or 4.75" beam height.

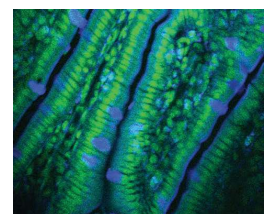


FSPC

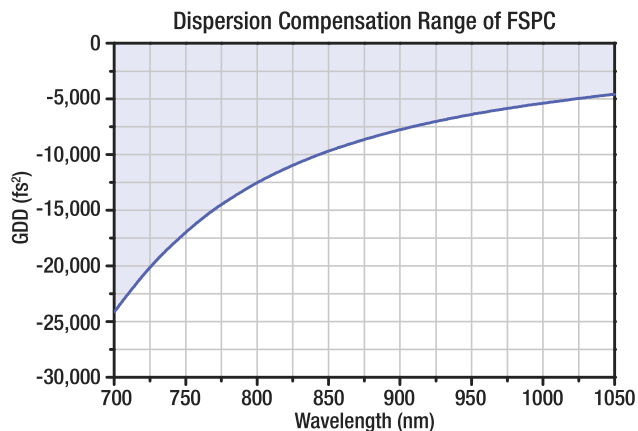
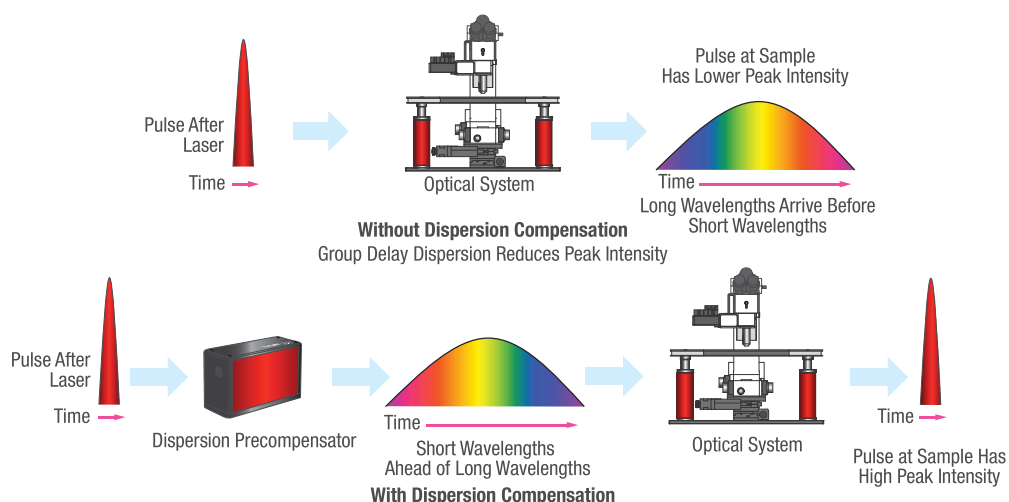
Without Dispersion Compensation
(Long Pulse at Sample)



With Dispersion Compensation
(Short Pulse at Sample)



Shorter Laser Pulses Provide Increased Contrast



Specifications

Item #	FSPC
Wavelength Range	700 - 1050 nm
Dispersion Range at 800 nm	-12,500 fs ² to 0 fs ²
Transmission at 800 nm	>85%
Input Pulse Width (Recommended)	>50 fs
Input Beam Diameter (1/e ²)	2 mm (Max)
Input/Output Polarization	P-Polarized
Polarization Distortion	<1:200
Pointing Stability	<100 μrad