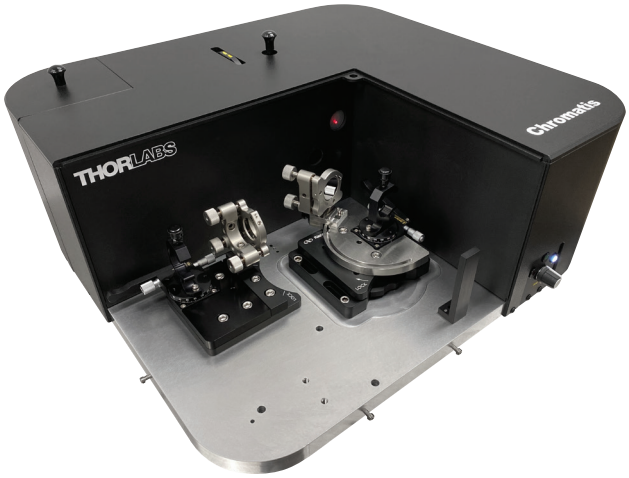
Chromatis™ Dispersion Measurement System

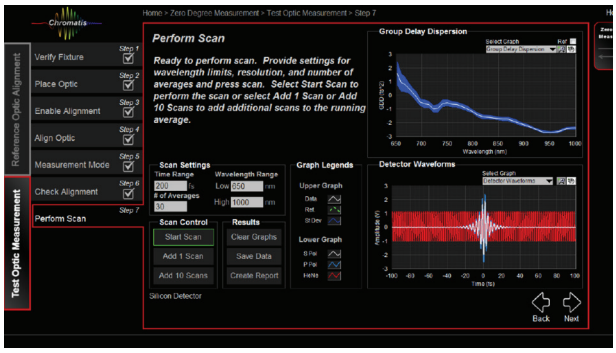


Chromatis™ Dispersion Measurement System

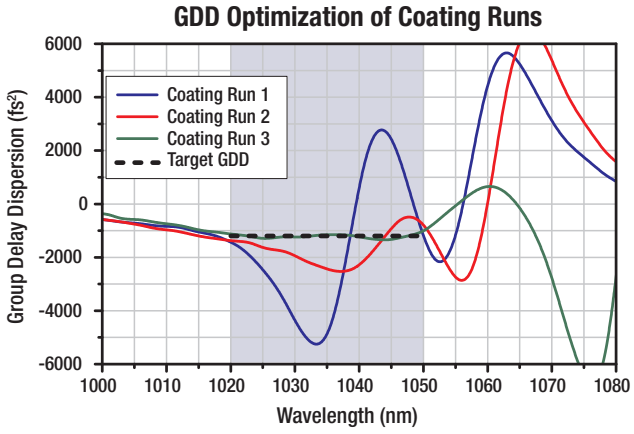
Features

- White Light Interferometer for Rapid Characterization of Dispersion in Optical Components
- Included Si Photodiode Detector: 500 - 1100 nm
- Optional InGaAs Detector: 1000 – 1650 nm
- GDD Measurement Accuracy: ±5 fs^2
- S- and P-Polarization Measured Simultaneously
- Accepts Ø1/2" and Ø1" Optics
- Standard Measurement Modes:
  - 0° Reflection
  - 0° - 70° Transmission
  - 5° - 70° Angled Reflection

Thorlabs' Chromatis™ Dispersion Measurement System characterizes the group delay dispersion (GDD) properties of reflective and transmissive optical components using time-domain white light interferometry (WLI). Featuring a fiber-coupled stabilized halogen light source with an effective wavelength range from 500 to 2100 nm, the Chromatis is ideal for characterization of ultrafast optics designed for use with Ti:Sapphire, Ytterbium fiber, and Erbium fiber lasers. The interferogram is measured in the time domain using a Si photodiode detector, which is suitable for wavelengths from 500 to 1100 nm. For measurements in the 1000 to 1650 nm range, please contact applications@thorlabs.com for information about an InGaAs detector add on.



Software Screen Showing a Detected Interferogram and Calculated Dispersion



The Chromatis dispersion measurement system can be used to aid in optimizing an optical coating. As an example, the targeted GDD (black dashed line) for this 1030 nm mirror is -1200 fs^2 over the 1020 to 1050 nm wavelength range (blue shaded area). The first two runs show significant error in the GDD.

Dispersion measurements can be carried out on 1/2"and 1" diameter optics in three standard modes, including zero-degree reflection, angled reflection, and transmission. Two precision fixtures are provided with the Chromatis optical head to accommodate these measurements, as well as reference optics for verifying the system operation. Fixtures for mirror-pair measurements or 2" optics are available as optional accessories; please contact applications@thorlabs.com for more information.

This dispersion measurement system includes software that guides the user through beam alignment, automatically finds the zero time delay position, and rapidly measures the dispersion. For ease of use, the Chromatis includes a built-in HeNe reference laser for wavelength self-calibration, as well as red and green diode lasers for spatial alignment.