

The new Hinds Instruments Exicor AT Series model 300AT is the Premier Birefringence Measurement System for the evaluation of Parallel Faced Optics at normal incident angles. The system is built on Hinds Instruments award winning Photoelastic Modulator (PEM) based Exicor Birefringence Measurement technology. This next generation birefringence measurement system incorporates years of experience with high sensitivity industrial metrology applications and provides next generation capabilities for measuring high value optics – much faster and with state-of-the-art measurement sensitivity and resolution.

The 300AT system utilizes PEMs to modulate the polarization state of a light beam and advanced detection and demodulation electronics to measure how an optic has changed the polarization state. This results in the measurement of optical retardation of one polarization state relative to another at 90°. Birefringence and Fast Axis orientation, as well as theoretical residual stress, can be evaluated with this data. The 300AT is a high speed, production workhorse designed to accommodate heavy samples up to 300mm diameter or square.

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Hinds Instruments and the Exicor AT Technology have been selected to evaluate birefringence in optical blanks for research and production by industry and academic leaders around the world for over a decade. Our systems are surpassed by none!

System Information:

Model: Exicor 300AT
System Description: Vertical beam axis measurement system with precision X,Y sample stage

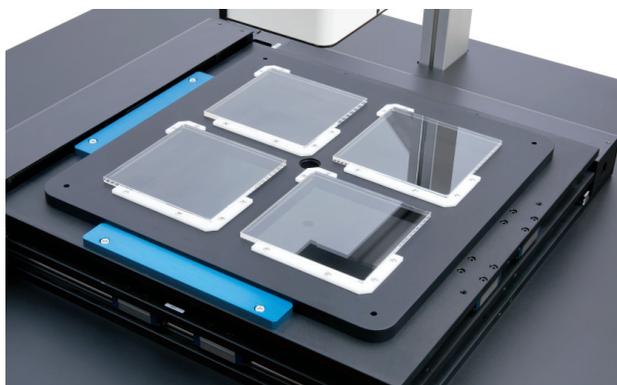
MEASUREMENT LIGHT PATH – Vertical Scan (perpendicular to stage plane)

For normal incidence evaluation of parallel faced optics. This axis utilizes 633nm Source and Detector modules fixed normal to the stage plane, capable of half wave retardation measurement (0 nm to ~300 nm).

X,Y STAGE – Sample Stage

XY Scan range: 300 mm x 300 mm
Max Sample Height: 100 mm
Max sample weight: 40 kg





STANDARD FEATURES.

- ◆ Exicor ATS Software
 - ◆ Automatic scan of parallel surface optics
 - ◆ 2D Maps of retardation and fast Axis orientation
 - ◆ Scan Statistics
 - ◆ Data collection rate: over 100 points per second (not including motion)
- ◆ Stage forward load position (increased access to sample stage for loading)
- ◆ Emergency OFF shut down buttons
- ◆ System status light tower
- ◆ Control computer (Windows 7) and monitor

BASE SPECIFICATION.

Retardation measurement range:	0 to 300+nm
Retardation Resolution / Repeatability ¹ :	0.001 nm / ±0.03 (up to 3 nm, 1% thereafter)
Retardation Accuracy:	Better than ±0.2nm expected
Angular Resolution / Repeatability ¹ :	0.01° / ±0.5°
Light Source Wavelength:	632.8nm
Measurement Spot Size:	1 mm diameter nominal
Modulation Technique/Frequency:	PEMLabs™ Photoelastic Modulator / 50/60 kHz
Demodulation Analysis Technique:	Hinds Instruments Signaloc™ Lock-in Amplifier

¹ Specification applies to the "High Resolution" Option. The "High Resolution" Option reduces the repeatability.

OPTIONS.

- ◆ SIM: Scan In Motion
 - ◆ Shorten scan times by 50% or more
 - ◆ Traversing speed up to 100 mm/s
- ◆ High Resolution: increased spatial resolution
 - ◆ Decreased measurement spot size. Illumination technique with 0.2 mm pin hole at detector face.
 - ◆ Low light level detector

