

The 450AT is the 'Heavy Lifter' of the Exicor® birefringence measurement system family of products. This model is widely used in industry to measure thick lens blanks for lithography applications as well as other large and heavy parts (up to 450mm X 450mm and 300+mm thick). This system is built with a robust frame and heavy duty motion control components that are required for precision characterization in R&D and QC lab environments. The easy access stage allows two users to work together to load and unload samples, or for power assist part handlers to approach the system from three sides. The large stage size also allows for loading multiple parts on the stage and works in conjunction with the optional Exicor Macro+ software to execute automated routines to scan each part individually. The user can begin the routine and let it run for multiple shifts, overnight or even longer (depending on the application) without having to intervene.

With two measurement range options available to choose from (High Sensitivity and Extended Range) the system is well suited to address the demanding requirements of your large samples. The optional high speed scanning package makes high spatial resolution scans (<1mm grid spacing) practical.

#### Features:

- ◆ Heavy Duty Automated XY stage
- ◆ 2D and 3D graphical representation of birefringence parameters
- ◆ 3 side easy access stage loading design
- ◆ Large and Flexible stage platform design for adding custom parts holders or process aids
- ◆ Advanced data analysis features included standard in user interface



**SPECIFICATIONS**

	<b>HIGH SENSITIVITY</b>	<b>EXTENDED RANGE</b>
<b>Retardation Range:</b>	0.005 to 120+ nm	0.005 to 300+ nm
<b>Retardation Resolution/Repeatability<sup>1,2,3:</sup></b>	0.001 nm / ± 0.008 nm	0.001 nm / ± 0.015 nm
<b>Angular Resolution / Repeatability<sup>1:</sup></b>	0.01° / ±0.05°	0.01° / ±0.07°
<b>Measurement Rate<sup>4:</sup></b>	up to 100 pps / sample size dependent	
<b>Size:</b>	1830 mm (H) x 1250 mm (W) x 1250 mm (D)	
<b>Light Source Wavelength<sup>5:</sup></b>	Various (633nm standard)	
<b>Measurement Spot Diameter<sup>6:</sup></b>	Between 1 mm and 3 mm <i>native</i> (can be as low as 50 μm)	
<b>Modulation Technique / Frequency</b>	PEMLabs™ Photoelastic Modulator / 50 kHz and 50/60 kHz	
<b>Demodulation Analysis Technique:</b>	Hinds Instruments Signaloc™ Lock-in Amplifier or Waveform Capture Card	
<b>Measurement Units:</b>	nm (retardation), ° (angle)	

<sup>1</sup> Typical performance at 5nm retardation

<sup>2</sup> High Sensitivity: Up to 0.8nm, 1% thereafter

<sup>3</sup> Extended Range: Up to 1.5nm, 1% thereafter

<sup>4</sup> Maximum data collection speed. Sample XY scan time dependent on stage movement parameters

<sup>5</sup> Custom wavelengths available

<sup>6</sup> Spot sizes of less than 1mm native require optional high resolution detector module

OPTIONS:  
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- ♦ Additional Polarization Parameters
- ♦ Hinds Scan in Motion™ (High Speed Scanning)
- ♦ Spectroscopic and RGB measurements
- ♦ Custom wavelengths (VIS, NIR)
- ♦ Manual and Automated tilt stages
- ♦ Custom samples holders
- ♦ Custom Software (UI or DLL)
- ♦ Stress Estimation Calculations