BIREFRINGENCE MEASUREMENT

EXICOR OIA

AUNION TECH
昊量光电

PRODUCT BULLETIN

THE PREMIER BIREFRINGENCE MEASUREMENT SYSTEM FOR OBLIQUE ANGLE EVALUATION OF LENSES, PARALLEL FACED, AND CURVED OPTICS!

The Hinds Instruments Exicor OIA is the Premier Birefringence Measurement System for the evaluation of Lenses, Parallel Faced Optics and Curved Optics at normal and oblique 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 is providing the industry with new capabilities in the analysis and development of next generation lithographic lenses, lens blank and high value precision optics.

The 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.

Hinds Instruments and the Exicor Oblique Incident Angle Technology have been selected to evaluate optical birefringence in research and production by the world leaders in lithographic lens blanks and finished lenses. Our systems are surpassed by none!

EXICOR®
Birefringence Measurement Systems

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SYSTEM DESCRIPTION: Three Beam Axis measurement solution with precision flat ceramic reference frame, X,Y,θ Sample Stage, Source and Detector motion axis's

Beam AXIS 1 – OIA DUV193 or OIA VIS633

For Oblique Incident Angle evaluations of lenses and parallel faced optics. This axis utilizes 193nm Source and Detector modules or 632.8nm HeNe Source and Detector modules with up to ±50° OIA rotational range, has at least ±500mm horizontal travel and a half wave retardation measurement range (0nm to ~95nm DUV, 0nm to ~300nm VIS).

Beam AXIS 2 (Optional) – 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, has at least ±500mm horizontal travel and a half wave retardation measurement range (0nm to ~300nm).

Beam AXIS 3 (Optional) – Side Scan (90° to stage plane)

For normal incidence evaluation of the side of cylindrical parallel faced optics. This axis utilizes 633nm Source and Detector modules fixed parallel to the stage plane, has a 100mm+ of vertical travel and has a half wave retardation measurement range of (0nm to ~300nm).

X,Y,θ Stage – Sample Stage

XY Scan range: 320mm x 320mm

- Accepts optics and holder of 400mm in diameter

Θ Scan range: 0° to 360°

Max sample weight: 60Kg

STANDARD FEATURES

- Exicor OIA Software
- Automatic scan of Parallel flats and Spherical lens types
- Asphere can be scanned with Manual macro program
- 2D Maps of retardation and fast Axis orientation
- Scan Statistics
- Stage Forward Load Position (free access to samples stage from above)
- UV and Laser Light Enclosure with safety Interlocks
- Emergency OFF shut down buttons
- System Status Light Tower
- User Work Station with Computer and Monitor

BASE SPECIFICATIONS

VIS Retardation measurement range:	0 to 300+nm
DUV Retardation measurement range:	0 to 90+nm
VIS Retardation Resolution / Repeatability:	0.001nm / ±0.03 (up to 3nm, 1% thereafter)
DUV Retardation Resolution / Repeatability:	0.001nm / ± 0.08 nm (up to 4nm, 2% thereafter)
Retardation Accuracy:	Better than ±0.2 nm expected
Angular Resolution / Repeatability:	0.01° / <±0.5°
VIS Light Source Wavelength:	632.8 nm
DUV Light Source Wavelength:	193 nm
Modulation Technique/ Frequency:	PEMlabs™ Photoelastic Modulator / 50/60 kHz
Demodulation Analysis Technique:	Hinds Instruments Signaloc™ Lock-in Amplifier

Aunion Tech Co.,Ltd

Room2802, F Building, No. 86 Caobao Road, Shanghai 200235, China

Tel: +86-21-51083793 Fax:+86-21-34241962

E-Mail: info@auniontech.com Website: www.auniontech.com