StrainMatic® M4/300
Quality is measurable

Imaging polarimeter systems for the automatic measurement of residual stresses in optical materials

In industrial optics, especially in the field of microlithography, highly homogeneous optical materials are used. Through the effect of stress birefringence, residual stresses influence the polarization of light, which is an undesirable effect in many applications. Therefore, constant testing of residual stress is a very important part of quality control.

The new StrainMatic® M4 series automatizes the measurement and evaluation of the stress birefringence and enables a fast and exact determination of the stress distribution in optical materials and components.

Your Benefits

Objective results

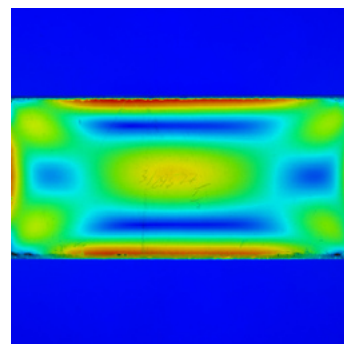Fast and easy operation
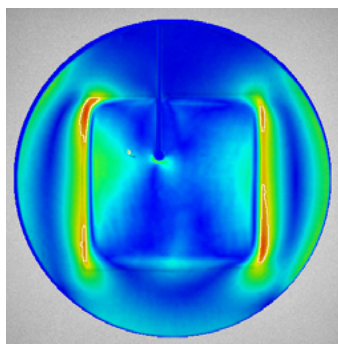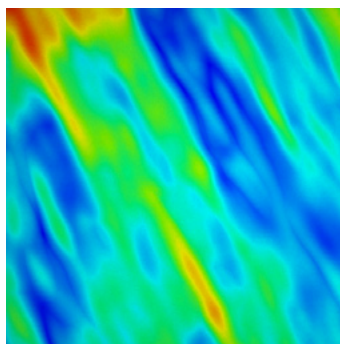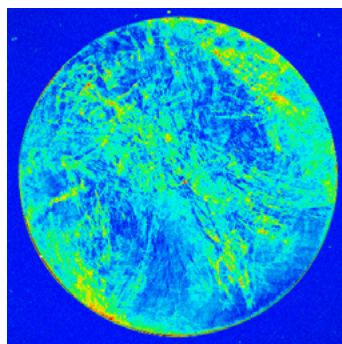
Improvement in quality by on-site measurement

Traceability by automatic filing of all parameters and results

Cost reduction by optimization of the production process

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StrainMatic® M4/300

Technical Data

operation	external PC with TFT monitor, mouse, keyb.
metering chamber	approx. 550 x 920 x 670 mm (H/W/D)
illumination	LED Array, approx. 400 x 320 mm
image acquisition	CCD camera (640 x 480 pixels) with telecentric lens (300 mm aperture)
image size	approx. 232 x 174 mm (0.36 pixel distance, 8 pixel/mm^2)
measuring area	variable rectangular, round or elliptical
measuring results	polarization angle (°) optical retardation (nm) normalized optical retardation (nm/cm) normalized stress (MPa)
measuring range	approx. -290 to +290 nm optical retardation optional -2900 to +2900 nm (HOD module)
reproducibility	typical <±0.1 nm (mean deviation)
interfaces	Ethernet, USB, VGA
power supply	230 V, 50 Hz or 115 V, 60 Hz
dimensions	approx. 2210 x 1050 x 850 mm (H/W/D)
weight	approx. 400 kg (incl. base frame)

Application Examples

Optical materials (e.g. fused silica, Al_2O_3, CaF_2, BaF_2, MgF_2)

Optical components (e.g. lenses, windows, prisms)

Tubing glass and related products (e.g. lab glass, reaction tubes)

Product website: www.ilis.de/en/strainmatic.html