

StrainMatic® M4/140

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 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

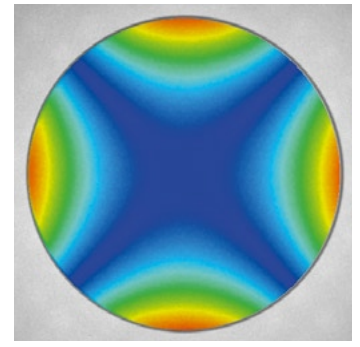
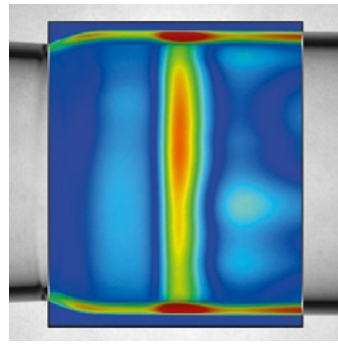
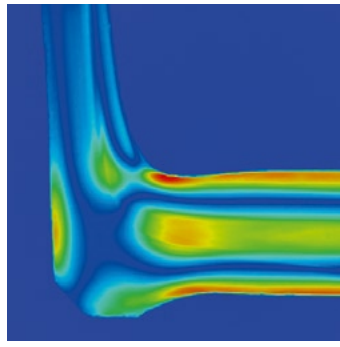
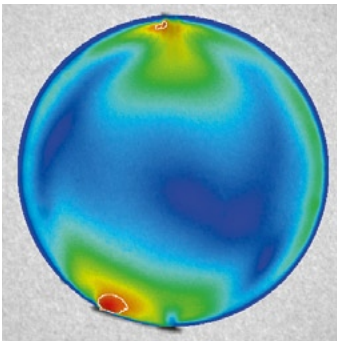
Fast and easy operation

Improvement in quality by on-site measurement

Traceability by automatic filing of all parameters and results

Cost reduction by optimization of the production process





StrainMatic[®] M4/140.14

Technical Data

Operation	integrated PC with TFT monitor, mouse, keyboard
Sample size	max. 300 x 350 x 350 mm (H/W/D), max. 2 kg
Illumination	LED array, approx. 200 x 160 mm
Image acquisition	matrix camera (1360 x 1024 pixels) with telecentric lens (140 mm aperture)
Depth of focus	approx. 50 mm
Measuring field size	approx. 112 x 84 mm
Spatial resolution	approx. 0.08 mm (pixel distance)
Measuring area	variable rectangular, circular, elliptical or polygonal
Measuring results	Polarization angle (°) optical retardation (nm) normalized retardation (nm/cm, nm/mm)
Measuring range	approx. 0 to 72 nm (standard) approx. 0 to 290 nm (uni- or multi-directional)
Repeatability (RMS)	±0.1 nm
Measuring time (typical)	< 60 seconds
Interfaces	Ethernet (1000 MBit/s), USB 2.0, DVI/VGA
Power supply	100-240 V AC, 45-65 Hz, 500 VA
Dimensions	approx. 1120 x 550 x 550 mm (H/W/D), without operating station
Weight	approx. 80 kg

Application Examples

Optical materials (e.g. fused silica, Al₂O₃, CaF₂, BaF₂, MgF₂)

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

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

Custom adaptations and special versions are possible on request. No responsibility is taken for the correctness of the information. All information is subject to change without prior notice.

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