

# StrainMatic® M4/320

## Quality is measurable

### Fast and high-resolution measurement of stress birefringence in optical materials and components

In industrial optics, especially in the field of microlithography, highly homogeneous optical materials are used. Residual stresses in the material affect the imaging properties of the manufactured components, which is undesirable in many applications. Therefore, constant testing of stress birefringence is a very important part of quality control.

The StrainMatic® M4/320 imaging polarimeter system automates the measurement and evaluation of the stress birefringence. Fully automatic stitching enables the fast and exact measurement of large-sized specimens such as lens blanks made of  $\text{SiO}_2$  und  $\text{CaF}_2$ .



### Your Benefits

Objective and reliable results

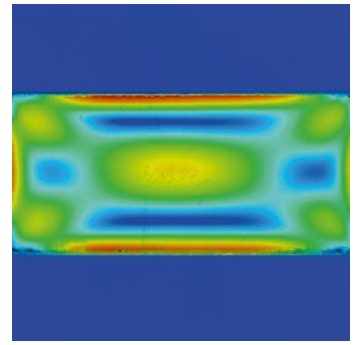
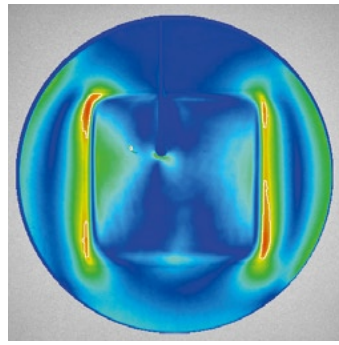
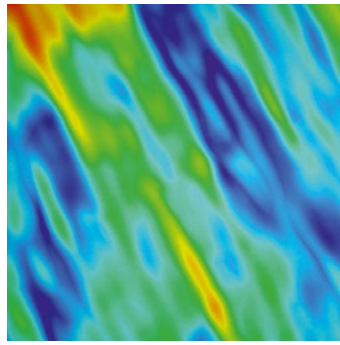
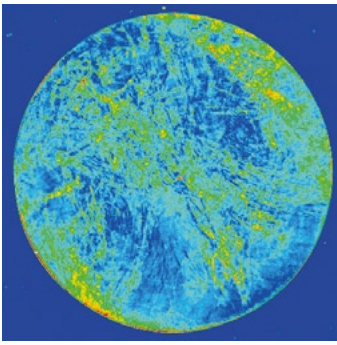
Fast and easy operation

Improvement in quality by on-site measurement

Traceability by automatic archival of all results

Cost reduction by optimizing the production process





# StrainMatic<sup>®</sup> M4/320.33

## Technical Data

<b>Operation</b>	external PC with TFT monitor, mouse, keyboard
<b>Sample size</b>	max. 300 x 500 x 500 mm (H/W/D), max. 100 kg
<b>Sample positioning</b>	sample table with telescopic slide
<b>Illumination</b>	collimated LED, approx. 590 nm
<b>Image acquisition</b>	matrix camera (2048 x 2048 pixels) with telecentric lens (320 mm aperture)
<b>Depth of focus (max.)</b>	approx. 200 mm
<b>Measuring field size (max.)</b>	approx. 320 mm diameter
<b>Spatial resolution</b>	0.16 mm (pixel distance)
<b>Measuring area</b>	variable rectangular, circular, elliptical or polygonal
<b>Measuring results</b>	Polarization angle (°) optical retardation (nm) normalized retardation (nm/cm, nm/mm)
<b>Measuring range</b>	approx. 0 to 72 nm (standard) approx. 0 to 290 nm (uni- or multi-directional)
<b>Repeatability (RMS)</b>	±0.01 nm
<b>Measuring time (typical)</b>	< 90 seconds
<b>Interfaces</b>	Ethernet (1000 MBit/s), USB 2.0, DVI/VGA
<b>Power supply</b>	100-240 V AC, 45-65 Hz, 500 VA
<b>Dimensions</b>	approx. 2200 x 1100 x 800 mm (H/W/D), without operating station
<b>Weight</b>	approx. 400 kg

## Application Examples

**Optical materials** (e.g. i-line glass, fused silica, CaF<sub>2</sub>, BaF<sub>2</sub>)

**Optical components** (e.g. optical windows, display glass)

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](http://www.ilis.de/en/strainmatic.html)  
© 2010 ilis gmbh, all rights reserved. Version 06/2010

**ilis gmbh** | Konrad-Zuse-Straße 12 | D-91052 Erlangen  
Fon +49 (9131) 9 74 77 90 | Fax +49 (9131) 9 74 77 99  
info@ilis.de | [www.ilis.de](http://www.ilis.de)

