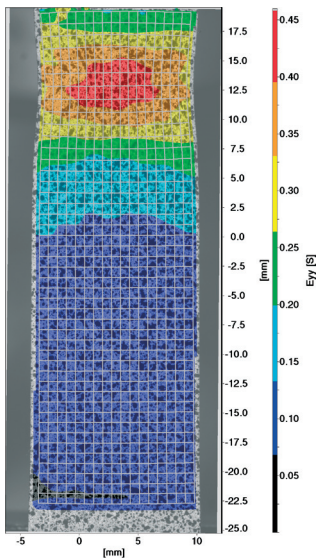


Non-contact Full Field Strain Measurement System

complete surface strain map during
standard materials testing



LaVision's **StrainMaster** system is a contactless instrument for materials testing based on the principle of **Digital Image Correlation (DIC)**. It is a compact and lightweight turnkey system for shape, deformation and strain measurement.



Advanced StrainMaster Features

- ▶ equivalent to thousands of gauges on the specimen surface
- ▶ validate finite element simulations
- ▶ suitable in standard and harsh environments
- ▶ exceptional strain range - from microstrains to 1000% strain
- ▶ simple setup and calibration procedure
- ▶ high strain rate impact through to long term fatigue testing

A completely modular design offers the possibility of using the **StrainMaster** software with existing cameras, through to complete High-Speed 3D systems for measuring shape and deformation with kilohertz data rates. Our fully integrated systems include control and synchronization of all connected hardware and complete project management of the acquired images and processed data.

Materials Testing

- ▶ tensile, compression, bending, fatigue, impact
- ▶ fundamental material characterization
- ▶ identify strain hot spots and discontinuities
- ▶ metals, plastics, composites
- ▶ biological tissues including bone, skin, and implants

LaVisionUK Ltd

2 Minton Place / Victoria Road
Bicester, Oxon / OX26 6QB / United Kingdom
E-Mail: sales@lavision.com / www.lavisionuk.com
Phone: +44-(0)-870-997-6532 / Fax: +44-(0)-870-762-6252

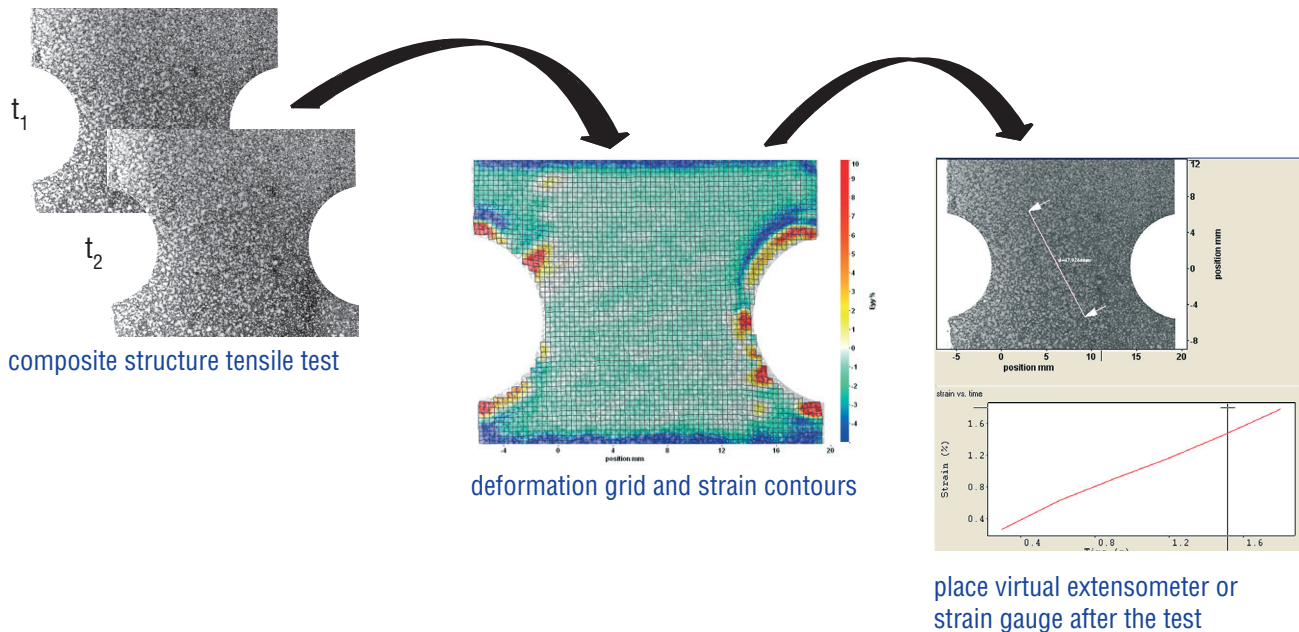
LaVision GmbH

Anna-Vandenhoeck-Ring 19
D-37081 Göttingen / Germany
E-Mail: info@lavision.com / www.lavision.com
Tel. +49-(0)551-9004-0 / Fax +49-(0)551-9004-100

LaVision Inc.

211 W. Michigan Ave. / Suite 100
Ypsilanti, MI 48197 / USA
E-mail: sales@lavisioninc.com / www.lavisioninc.com
Phone: (734) 485 - 0913 / Fax: (240) 465 - 4306

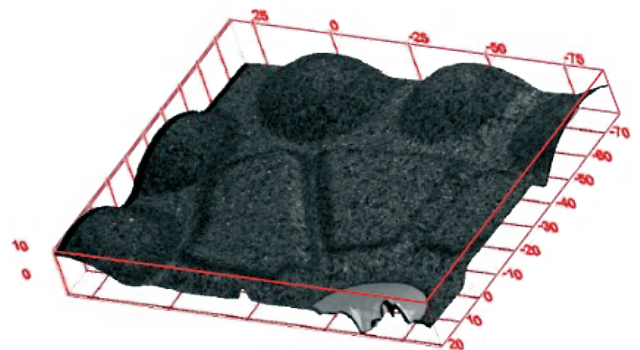
Applicable to a wide range of industries and materials, this optical technique avoids the need to connect devices to the surface which can affect the material properties. Wherever there is optical access to the specimen, and a simple pattern exists on (or can be applied to) the surface, the system will acquire full field deformation and strain data.



The cameras observe the specimen surface and the software then processes the images to measure the displacement of the surface pattern with micron accuracy. This calculation results in a full field map of material deformation and is then used to calculate strain field maps. The robust nature of the technique and flexibility to work with specimens of widely varying physical scales means that **StrainMaster** has a huge range of application areas.

Applications

- ▶ oil and gas pipeline structures at extreme temperatures
- ▶ marine structures and components
- ▶ renewable energy applications
- ▶ wood and paper processing
- ▶ carbon composites for aerospace industries
- ▶ automotive parts
- ▶ biomechanics and tissues
 - even where submerged in solution
- ▶ highly flexible or ductile materials



Data provided by LaVision are believed to be true. However, no responsibility is assumed for possible inaccuracies or omissions. All data are subject to change without notice.

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With many hardware options available to meet your requirements and vast experience in optical based measurements, we are able to design systems around your test facilities, and can include features such as custom mechanical design and specialized electronics.

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Phone: +44-(0)-870-997-6532 / Fax: +44-(0)-870-762-6252

LaVision GmbH

Anna-Vandenhoeck-Ring 19
D-37081 Göttingen / Germany
E-Mail: info@lavisoin.com / www.lavisoin.com
Tel. +49-(0)551-9004-0 / Fax +49-(0)551-9004-100

LaVision Inc.

211 W. Michigan Ave. / Suite 100
Ypsilanti, MI 48197 / USA
E-mail: sales@lavisoininc.com / www.lavisoininc.com
Phone: (734) 485 - 0913 / Fax: (240) 465 - 4306