

StrainMaster

for challenging
optical setups

Applications

- ▶ studying material behaviour at the microscale
- ▶ access areas with difficult optical access such as automotive cylinders and exhausts, and internal pipework or ducts
- ▶ large scale tests where the camera is remotely positioned and requires remote lens control

High magnification
long working distance

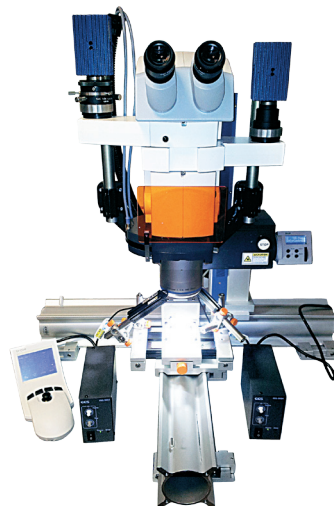
The **Zoom Lens System** is suitable for 2D DIC applications requiring small field of view at long working distances. Maximum magnification is up to 28x and maximum working distance up to 341 mm. This unit is designed on a modular basis, offering optical quality and mechanical flexibility. This interchangeable design, combined with a wide range of lens adapters and attachments, allows you to easily choose the magnification, field of view and working distance that suits your viewing needs best.

Zoom lens system

- ▶ 1108548 zoom lens system
- ▶ 3.5x magnification at 341 mm working distance
- ▶ 28x magnification at 37 mm working distance



3D Stereo with
high magnification



Where high magnification is needed for DIC tests requiring complete measurement of the surface shape, displacement and strain, 3D **StrainMaster** systems are able to work with standard **Stereo Microscopes**. Microscopes have complex optical distortions and it is necessary to have an appropriate calibration to achieve accurate measurements. For these cases we recommend the polynomial calibration, which requires no special calibration correction routines.

Stereo microscope

1108612 stereo microscope (other models available)

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Remote lens control

If cameras are located in difficult to access positions but may need adjustment, a remote focus control offers enhanced flexibility. The LaVision **Remote Lens Control** is designed for the adjustment of the focus and the aperture of camera lenses via the DaVis software. Appropriate lenses have a built-in motor and the controller interfaces to the PC via a standard PC COM-port.

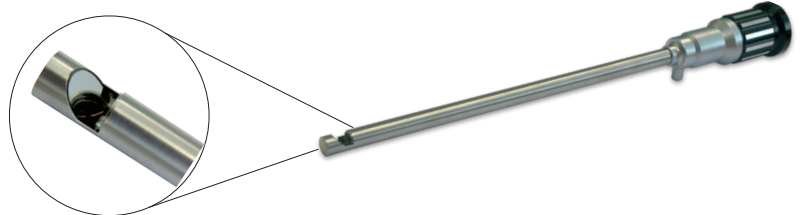


Remote focus ring

1108172 remote focus ring (focus and aperture control for appropriate lens)

Endoscopes for restricted access

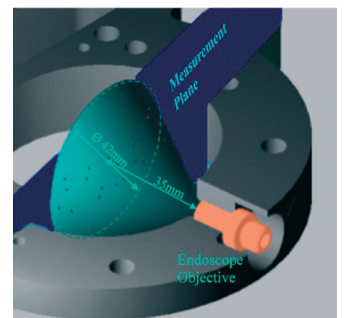
LaVision offer **Camera Endoscopes** to enable measurements and observations in enclosed areas which have minimal optical access. Our standard endoscopes have a diameter of only 8 mm which allows imaging approaches in applications with highly restricted access such as engine cylinders or industrial pipes. Upgrading to enable endoscopic viewing is straightforward as the device is coupled to the M52 camera lens thread.



Camera endoscope

1108440 endoscope kit including side port adapter

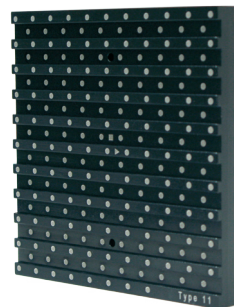
In even more extreme environments the **Hybrid Camera Endoscope** can be used. This two part design allows the objective to be mounted at positions where particularly harsh environments are expected in terms of temperature and pressure. The useable wavelength for this is up to 400 nm so special illumination is required.



Hybrid camera endoscope

1108850 hybrid camera endoscope

Calibration



In many of the cases shown in this document, the optical configuration is „non-standard“ and/or optical access is severely restricted. Therefore it is essential that the calibration is easy to do, and provides accurate results. In most cases a single view of our two-level calibration plate will be sufficient to provide high quality results meaning that calibration is quick and easy to achieve.

We look forward to working with you on your specialist applications and being able to provide suitable optical solutions for your Digital Image Correlation testing.

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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