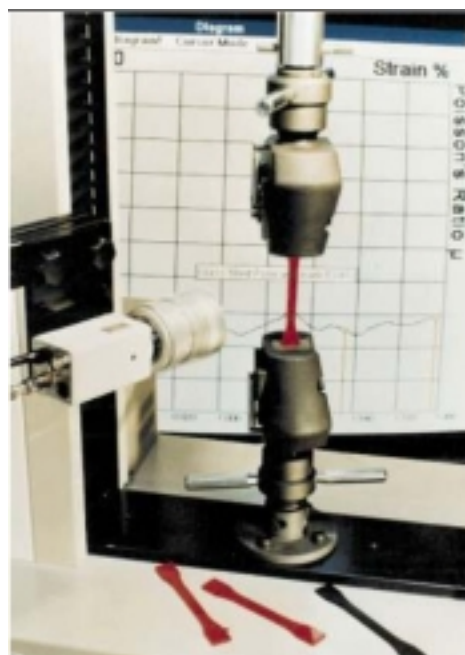


# VideoExtensometer

## ME-46



## Video Measuring Gauge

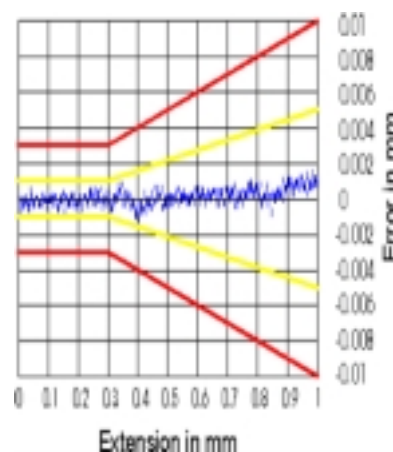
The use of **ME-46** has many advantages in comparison to conventional mechanical extensometers:

- ✓ Gauge-length - compensation
- ✓ Automatic target recognition - If the **ME-46** is connected to a PC equipped with the Application Software, the entire testing process can be observed on the monitor and the results are continuously indicated in an status-bar.
- ✓ Resolution and accuracy improvement

Accuracy of ME-46

The figures to the right indicate the result of the **ME-46** at gauge inspection related to the tolerance-classes according to DIN EN 10002 T4 class 1 (red), resp. class 0.5 (yellow). This diagram was obtained for a 150% field of view (adjustment of the camera-position for 50% strain). A high resolution is maintained independent of the absolute value of strain or compression.

RESOLUTION:	
Axial Field of View	Minimum Resolution
50 mm	0.4 μm
250 mm	2 μm
500 mm	4 μm
1000 mm	8 μm



The image, which has been digitised by a CCD (Charge Coupled Device) -camera (full-image -camera), is processed by a PC-supported video-processor in real time. This image processing aims at the determination of elongation due to mechanical strain. Not only the initial gauge-length but also the extension are measured by the same measuring-standards and that's why the strain can be directly calculated. Due to a high resolution of the device the smallest theoretically displacement comes to 1:163.840 (more than 1:17 bit) of the field of view of the camera. The evaluation of several line-scans and the calculation of the mean-value, however, can considerably increase this resolution.



## QUALITY ASSURANCE

# Specification

MODEL	ME-46
Interface	The Video-extensometer can either be connected via a digital interface (RS-232) or an analog interface (+/- 5V or +/- 10V) with the Testing Machine.
Computer control system	The PC used with our range of mechanical testing systems, i.e. IBM-compatible computer and with additional hard-and software, and printer. The TRAM QA software makes the testing, filing and analysing of data extremely versatile - refer to the separate brochure for the software.
Data generation	Real time generation of strain for stress/strain curves in the Tram-QA software.
Resolution	<b>125 000</b> . The camera-image is digitised in 640 x 480 discrete pixels whose grey-scales are resolved again in 256 shades.

Specifications are subject to change without notice.

In addition to the above described advantages, the videoextensometer has many uses and benefits, which only can be realised by optical measurement:

- ✓ Direct and non-contacting measurement of strain and therefore no influence of rupture point.
- ✓ Arbitrary choice of gauge length and operating range.
- ✓ Use in connection with temperature cabinets.
- ✓ Measurement of strain distribution, transverse strain and vertical anisotropy.
- ✓ Automatic detection and measurement of specimen necking (determination of true stress!).
- ✓ Testing of problematic materials (cables, thin foils, fibres, foams, composites, etc.).
- ✓ Entire Testing procedure can be observed on a monitor together with real time calculated values.
- ✓ No moving parts to wear out.

For realization of special customized wishes contact TRAM.



**TRAM A/S**  
Dinesensvej 20  
DK-9000 Aalborg, Denmark  
Phone: +45 98120499  
Fax: +45 98132755  
E-mail: [tram@email.dk](mailto:tram@email.dk)  
Homepage: [www.tram.dk](http://www.tram.dk)