



Hegewald & Peschke

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Product information

Video extensometer ONE1



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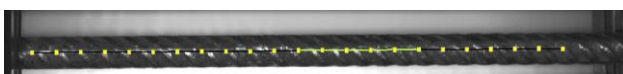


Application:

Non-contact deformation measuring device for material testing on the basis of high-resolution video technology using the surface structure or, if required, markings.

Advantages:

- Suitable for tensile, compression, bending, shear and torsion tests on all materials
- Non-contact measuring method
- With a suitable surface structure, no artificial marking is required
- Easy handling
- Robust housing for use in laboratory and industrial environments
- Indirect measurement via mirror possible
- Reliably applicable for different specimen thicknesses without modification or re-libration up to ± 15 mm
- Insensitive to interference due to the use of blue light in a small wavelength range and polarization filters
- Stable and reproducible; class 0.5 according to ISO 9513 in the mentioned field of view
- Can be used for strain measurement and strain control
- Can be used in combination with temperature chambers and high temperature furnaces up to 1400°C (without additional costs)
- Easily expandable for combined determination of longitudinal and lateral strain or as a multi-camera system for larger fields of view
- Automatic determination of the strain characteristics based on the defined initial gauge length and the range of maximum strain

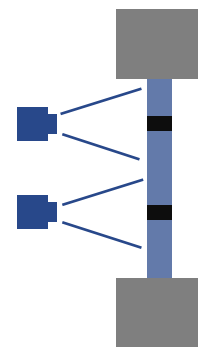


- Simultaneous evaluation of several strain ranges
 - (a) segmented evaluation of the complete free length (strain distribution possible) - advantage: specimen break always in the strain measurement range
 - (b) Evaluation of different initial measuring lengths

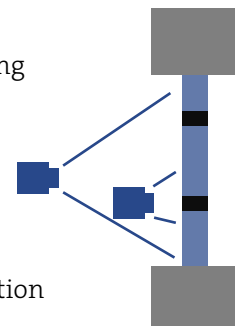
Depending on requirements, several cameras can be combined, e.g.

(1) "Splitted mode":

Evaluation of very large specimens via two cameras (one camera per measurement mark)



(2) One camera with high-resolution measuring range for evaluation of the elastic deformation and another camera with large field of view for evaluation of the elongation



Scope of delivery:

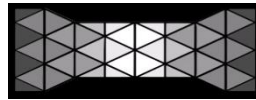
- Camera with illumination unit
- Lens
- Evaluation unit incl. two TFT screens (can be used simultaneously as test computer for the testing machine in connection with LabMaster)
- Evaluation software including license for longitudinal or lateral expansion on hardware dongle (optional: upgrade to combined license)
- Calibration plate



Options:

- Additional LED strip for a larger field of view or for better illumination (15-012-600-BG20)
- Upgrade of license from longitudinal or lateral expansion to combined longitudinal and lateral expansion (15-012-600-BG01)
- Strain control option (15-012-690)
- Specimen marking set consisting of various stamp sizes and ink pads (black + white) (15-012-600-BG21)
- Additional lens for adjusted field of view or working distance (15-012-600-BG22)

- **Option DIC (Digital Image Correlation) Area Module with Post-Processing** (15-012-600-BG02)



- Determination of local strains (spatially and directionally resolved)
- Creation of color-coded area maps can be recorded as single images and as videos to visualize strain distribution

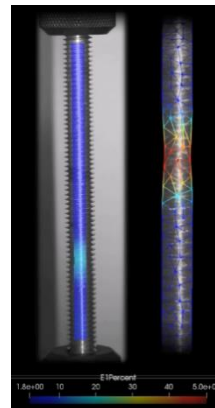


Fig. left: Tensile test on screws

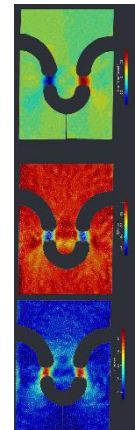


Fig. right: Evaluation of local strain of components - shear test

- Visualize and evaluate complex changes in components during the test
- Increases the amount of real-time information
- Enables post-process analysis, e.g. of carbon fibre reinforced composites
- Surface measurement for calculation of strain and displacement maps

Technical data:

Classification according to	ISO 9513: class 1*, ASTM E83: class B-2*		
Resolution	<1 µm*		
Measurement acquisition rate	>50 Hz (Reducing the visual field width increases the sampling rate)		
Digital output	Ethernet or RS232		
Objective	Select a suitable focal length according to the necessary working distance optional (semi-)telecentric lens for microstructure analysis/small specimens		
Lighting	blue LED bar light (integrated in camera case)		
Distortion reduction	The optical distortion of the lens is compensated by a system calibration		
Models	ONE1-M1 (15-012-600)	ONE1-M5 (15-012-610)	ONE1-M9 (15-012-620)
Visual field (HxW)	125 x 100 mm	260 x 200 mm	440 x 230 mm
Camera resolution	1,3 MPx	5 MPx	9 MPx

* By reducing the visual field to 50%, class 0.5 according to ISO9513 or class B-1 according to ASTM E83 can be achieved.



Accessories:

- Holder for Videoextensometer, e.g. for mounting on testing machines (recommended) or as tripod

Mountings on universal testing machines

- Suitable for all machine heights
- Optional: Accessories for multi-camera system



Mounting video extensometer ONE at inspekt solo (15-008-130) (with multi-camera system)



Mounting video extensometer ONE at inspekt duo (15-008-230)



Mounting video extensometer ONE at inspekt table (15-012-93x)



Mounting video extensometer ONE at inspekt (15-012-91x)