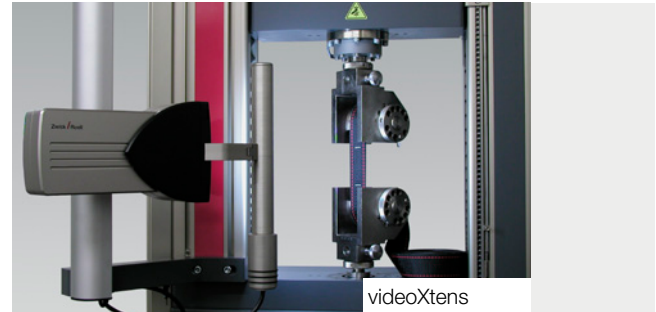
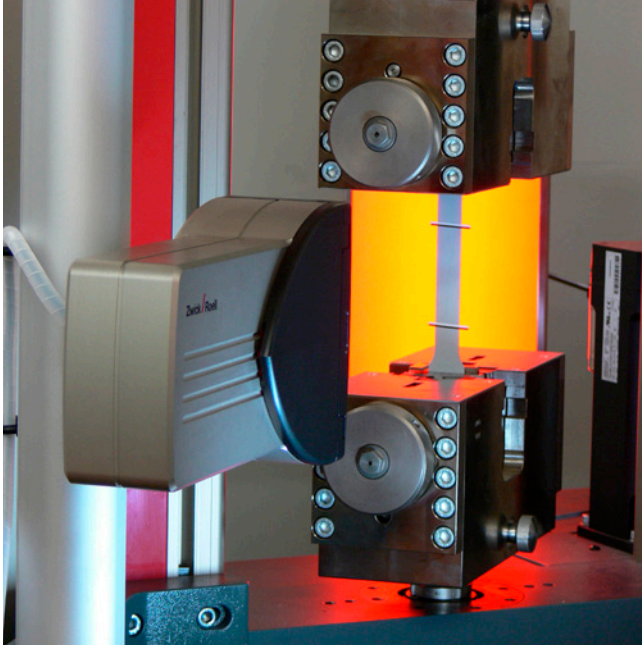


Product Information

videoXtens - High precision without contact!



Range of applications

videoXtens provides non-contact, high-resolution measurement of tensile, compression and flexure deformations on all types of plastics, metals, rubber, composites, films and foils. It is also suitable for determining transverse strain, r & n -values to ISO 10113 and ISO 10275 and offset yield in tensile tests to ISO 6892-1.

Advantages of the videoXtens

- The videoXtens does not have any influence on the material characteristic as it is a non-contact extensometer.
- It is the ideal measuring system for elongation measurements of whipping materials (safety belts, steel ropes, rubber ropes, etc.).
- Biaxial measurement: extension as well as transverse strain are possible at the same time
- Simple adjustment and alignment with respect to the test axis
- Can easily be used with a temperature chamber

High accuracy and resolution

- Accuracy class 1 according to EN ISO 9513
- The resolution and measuring accuracy are high over the entire field of view
- Test paths are variable and very large, according to the selection of the picture size or objective

Unique functionalities

- Automatic test mark recognition and acquisition of the initial gage length L_0
- Strain controlled tests are possible
- Preparation-free testing of specimens with a textured surface by pattern tracking
- Different distances from the specimen surfaces to the camera (e.g. with tensile shearing tests or components) can be compensated.
- You can follow the complete test sequence at the monitor.

Outstanding options

- Test Re-Run allows recorded image sequences to be used for subsequent recalculation of the strain values with other initial gage lengths.
- Determination of strain distribution and strain at break according to ISO 6892-1 annex H
- Measurement of transverse strain and deflection in 3- or 4-point flexure tests without the need of additional hardware
- The 2D dot matrix identifies local strains and inhomogeneities of a plane specimen surface in 2 dimensions.
- Video Capturing: Recording of the test, synchronized with the measurement curve, permitting a later viewing of the test.

Product Information

videoXtens - High precision without contact!

Description	Item no.
videoXtens Includes measurement head with digital camera, software for image acquisition and analysis, accessories case with adjustment jigs and markings. Measurement path dependent upon the field of view: Field of view 50 mm 100 mm 200 mm 500 mm Resolution 0.25 µm 0.5 µm 1 µm 2.5 µm L ₀ = 5 mm to 500 mm approx.; max. test speed: 1000 mm/min; max. measuring rate 166 Hz; weight 7.5 kg Accuracy grade 1, according to EN ISO 9513 for FOV ≤ 200 mm. True for field of view > 200 mm: The smallest measurement value in accuracy grade 1 is FOV/1000.	034106
Additional camera for existing videoXtens housing.	034026
Additional camera, including separate videoXtens housing.	034027
videoXtens Array (3 cameras) Expanded measuring head with three digital cameras, image acquisition and evaluation software, and accessories case with alignment and marking tools. The measurement displacement depends on the total field of view: Total field of view 140 mm 230 mm 340 mm Resolution 0.25 µm 0.4 µm 0.6 µm L ₀ = 5 mm to 300 mm; maximum test speed: 1,000 mm/min; max. measured-value rate 100 Hz; weight 15 kg Accuracy grade 1, according to EN ISO 9513	063466
ProLine videoXtens Same as videoXtens, only: minimum resolution is 0.5 µm, max. measuring rate is 65 Hz	013561

videoXtens variants

videoXtens

This is the basic version with one housing and one camera.



videoXtens with second camera

This variant enables measurements in wide and fine ranges with jolt free switching. One camera focusses the initial range what gives a high resolution, a great advantage especially for small initial gage lengths. The second camera observes the complete range, thus a large measurement path can be realized.



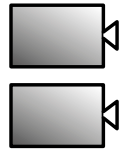
Alternatively the second camera can be used for transverse strain measurement. Or two cameras can



be used as array, with overlapping fields of view. This results in an enlarged FOV without reducing the resolution.

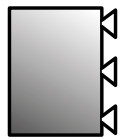
videoXtens with second camera in extra housing

The separate housings of the cameras enable an independent placement. At high measurement lengths the upper and lower measurement mark can be observed separately and a high local resolution is achieved. The minimum distance between the two cameras is 180 mm.



Array: Multi-camera measuring systems

If an application requires a large measurement range combined with very high resolution, the Array variant of the videoXtens offers a flexible solution: Here, the overlapping fields of view from several cameras are combined to form one large field of view. Markings leaving the one camera's field of view are automatically forwarded to the next camera's field of view, etc. The videoXtens Array is moved with half crosshead speed, so the test process remains in its focus and the measurement range is used to full capacity.



ProLine videoXtens

The ProLine videoXtens is developed especially for ProLine testing machines and their functionality concept.



Product Information

videoXtens - High precision without contact!

Software-Options

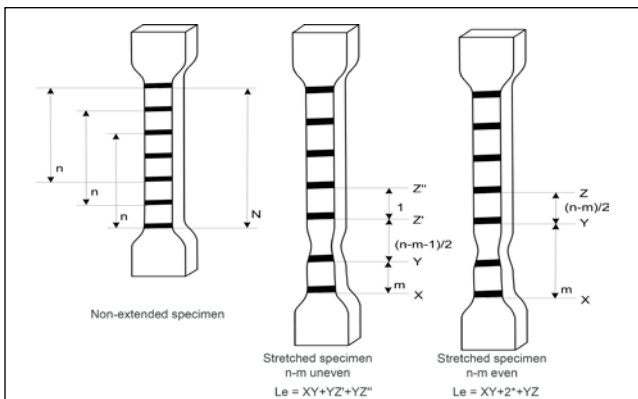
(not for ProLine videoXtens)

Test Re-Run and strain distribution (325932)

The optional Test Re-Run module allows an image series recorded during a test to be used for subsequent recalculation of the strain with a different initial gage length (if several markings are present).

This can be especially advantageous if local strains must be evaluated at different locations in component testing or if the necking of the specimen in a standard tensile test occurred outside the original initial gage length.

The option strain distribution is used to determine localized strains at several measuring locations along the gage length on the specimen. The strains are then available as channels in *testXpert*® II. Up to 16 measurement marks are recognized automatically and evaluated online during the test. In addition, a balancing of the beginning gage length can be performed in order to follow the necking-in automatically in real time (according to ISO 6892-1, annex H).



Automatic balancing of strains for a necking-in according to ISO 6892-1, annex H

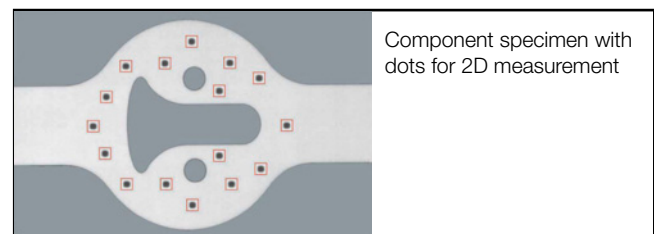
Measurement of the deflection in 3- and 4-point flexure tests (077060)

Depending on the type of test and/or the specimen properties the flexion is measured with incident light on specimen markings on the specimen or on specimens bottom edge with backlight.

Software option: 2D dot-matrix (077059)

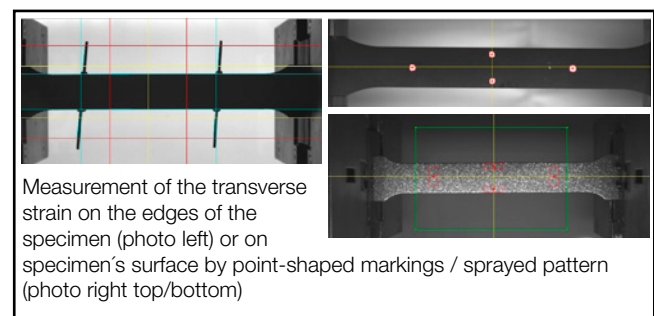
This option enables measurement in two dimensions for measurement points attached on a plane specimen surface. Thereby it is possible to identify local strains and inhomogenities of the specimen under strain. X- and Y-coordinates as well as the distances between points are available as measurement values.

Up to 100 measuring points in any desired configuration or arranged in matrix form can be dimensioned. *testXpert*® II displays up to 15 measurement channels.



Second measurement axis (013582)

This option enables simultaneously measurement of extension and transverse strain as changes in width. The measurement can be made via backlight directly at the specimen edge without additional marking (necessary for determination of the r-value) or via incident light on the specimen's surface with point-shaped markings or a sprayed pattern.



Video Capturing for videoXtens (049467)

If additionally a recording of the test is required (without subsequent recalculation) we recommend the software option *testXpert*® II Video Capturing for videoXtens. The recording is synchronized with the measurement curve, permitting a later viewing of the test.

Note: Option Test Re-Run/strain distribution, 2D dot matrix and deflection in *testXpert*® II from version 3.4

Product Information

videoXtens - High precision without contact!

Accessories				Item number
Basic package for videoXtens: The basic package includes a multilingual workstation, Windows operating system (Windows XP or Windows 7 / 32 bit can be choosed), 23" TFT- screen and manual in English or German.				various
A separate monitor is recommended in order to be able to follow the live image from the videoXtens in parallel with the testXpert® II display.				
Lighting				
LED incident light lamp 300 mm, incl. polarizing filter (not available for videoXtens Array)				063467
LED incident light lamp 500 mm, incl. polarizing filter (for videoXtens Array 2 additional polarizing filters required)				063468
Polarizing filter for further lenses in combination with LED incident light lamp				063469
Backlight 420 x 190 mm, incl. mounting unit				013593
Backlight 840 x 190 mm, incl. mounting unit (not available for videoXtens Array)				013596
Objective lenses				
	for videoXtens / ProLine videoXtens		for videoXtens Array	
Test area width	...440 mm	...630 / 640 mm	independent from test area width	
	FOV / resolution	FOV / resolution	total FOV / resolution	
Objective 8 mm	415 mm / 2.1 µm	515 mm / 2.6 µm	-	355617
Objective 12 mm	270 mm / 1.4 µm	340 mm / 1.7 µm	-	355619
Objective 16 mm	200 mm / 1.0 µm	250 mm / 1.3 µm	-	326276
Objective 25 mm	120 mm / 0.6 µm	155 mm / 0.8 µm	340 mm / 0.6 µm	355621
Objective 35 mm	84 mm / 0.4 µm ⁽¹⁾	105 mm / 0.5 µm	230 mm / 0.4 µm ⁽¹⁾	013606
Objective 50 mm	54 mm / 0.27 µm ⁽¹⁾	70 mm / 0.4 µm ⁽¹⁾	140 mm / 0.25 µm ⁽¹⁾	355623
Objective 75 mm	31 mm / 0.25 µm ⁽¹⁾	42 mm / 0.25 µm ⁽¹⁾	-	018253
	⁽¹⁾ 0.5 µm for ProLine videoXtens			
Lens correction targets to the correction of geometrical lens distortions for objectives with focal distance <= 16 mm				various
Mounting				various
Holding frames / mounting kits for 45° front-left / rear-left mounting at Allround-Line testing machines (ProLine only front-left mounting). Alternatively a stand is available for separate installation.				
Specimen marking				
Marking templates for plastics specimens				010406
Marking templates for metal specimens				010407
Measurement marks to videoXtens				353379
Specimen marking spray to apply a pattern on the specimen				057317
Measurement marks for temperature range -40 °C...+250 °C				077061
Marking pen for temperature range -40 °C...+250 °C				077062
Z-axis By mounting the videoXtens on the Z-axis, the distance to the specimen can be adjusted variable. In that way the field of view can be adapted steplessly to the test requirements. This functionality is very helpful for frequently changing test requirements as often occuring in test laboratories.				326223
Stand-Alone operation: Control of the extensometer is via its own software.				
High performance D/A converter, 4 outputs				021661
High performance AD/DA converter, 2 outputs for export of measurement channels and 4 inputs for import of external channels, e.g. for a collective presentation in Excel				032319