Product Information

videoXtens 3-300

CTA: 147687 195943

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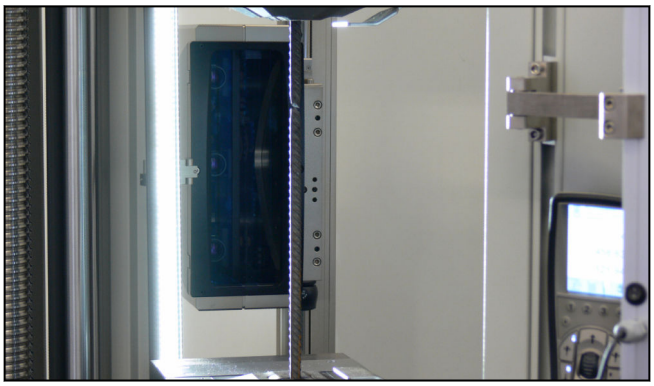

videoXtens 3-300, testing of ribbed steel

videoXtens 3-300 - innovative and unique

- videoXtens 3-300 includes three high-resolution cameras. The innovative ZwickRoell array technology combines the fields of view. This provides one large field of view with high resolution.
- Unique: Through connection to the crosshead, the gauge marks are always automatically centered in the field of view (FOV)—the measurement range is optimally utilized.
  -> even when an extreme amount of material slips out of the specimen grips, the measurement range is not restricted.

Optimal interaction and high level of accuracy of the entire testing system

- Mounting with low-vibration, stable support brackets. Easy alignment with the measurement range through the ergonomic height adjustability on the mounting.
- videoXtens and the ZwickRoell temperature chamber are optimally adapted to each other. Temperature control and air distribution in the temperature chamber are optimized in such a way that the videoXtens resolution is only minimally affected, even at temperature.

Every specimen counts

- Cost savings in specimen material: No specimen is wasted due to break outside of L_0. With the test re-run option and pattern recognition L_0 can be moved retrospectively and the test can be recalculated, whereby the break then lies within the L_0.
- Alternative: Strain distribution in the above-mentioned option automatically sets the L_0 in the range of the highest strain, if various gauge marks were set prior to the test.

Comprehensive range of functions

- Automatic gauge-mark recognition and acquisition of initial gauge-length L_0.
- Exact synchronization of all measurement channels.
- The entire test sequence can be followed on-screen.
- Video capturing: Test recording synchronized with the measured curve for retrospective viewing of the test.
- Wear-free, and therefore low-maintenance system.
- Non-contact measuring system: No influence on the material characteristics

Application examples and specific features: Testing of belts, determination of strain at break (e.g. L0: 100 mm or 200 mm)

- Because of pattern recognition, specimen markings are not required. The natural texture of the specimen is used.
- Specimens have a high whipping tendency - no destruction of the extensometer
- Transverse strains can also be measured: with the software option second measurement axis. For example for belts that widen under tensile stress, due to the fabric structure.

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Film testing to ISO 527-3

- Sensitive specimens are not influenced by knife edges since testing is non-contact.
- Pattern recognition: Through dotting or stamping, a pattern is quickly placed on the entire specimen.
- Slipping of the film specimens during the test does not restrict the measurement range and therefore does not have to be taken into account.

ISO 6892 Method B or A2 + r-value

- The additional camera for change in width measurement, including r-value determination (optional), always faces the middle of the field of view, and therefore the center of the specimen.
- More precise determination of the change in width: The width is measured on the specimen exactly where it is initially set via the measuring lines, e.g. centered between the gauge marks. Up to ten measuring lines can be defined for the change in width measurement.

Concrete-reinforcing steel testing to DIN 488, ISO 15630, e.g. Le = 100 mm

- No specimen markings required: the natural pattern on the specimen (ribs) is used to set virtual gauge marks.
- Brittle-fracturing specimens: No destruction is caused to the extensometer at break.

Type	**videoXtens 3-300**	
Item No.	**1043970**	
Field of view (FOV)		
with test area width 440 mm [AllroundLine]	320 x 110	mm
with test area width 640 / 1040 mm [AllroundLine]	300 x 90	mm
Initialgauge length		
with test area width 440 mm [AllroundLine]	5 to 250	mm
with test area width 640 / 1040 mm [AllroundLine]	5 to 240	mm
Measurement travel, max.		
with test area width 440 mm [AllroundLine]	310 - initial gauge length	mm
with test area width 640 / 1040 mm [AllroundLine]	290 - initial gauge length	mm
Resolution at room temperature	0.5	µm
Resolution to ISO 9513 in ZwickRoell temperature chamber		
at -20 to +250 °C	0.6	µm
at -40 °C	0.9	µm
at -55 °C	1.2	µm
Distance between extensometer reference plane and center of test axis:		
table-top testing machine, test-area width 440 mm	450	mm
table-top/floor-standing testing machine, test-area width 640/1040 mm	570	mm
Image rate / measured-value acquisition rate, max.	500	fps / Hz
Max. test speed	1000	mm/min
Dimensions		
Height	350	mm
Width	415	mm
Depth	140	mm
Specimen thickness	0 to 20	mm
Weight (incl. tunnel), approx.	15	kg

All data at ambient temperature.

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Type	videoXtens 3-300
Item No.	**1043970**
Accuracy class to EN ISO 9513.	1
Scope of delivery	
Measuring head with 3 digital cameras incl. 3 lenses and optical filter disc	
Software for image acquisition and evaluation	
Accessory case with alignment and marking aids	
INC module (RS module for tC)	

Accessories required

videoXtens basic package (1x required)

Use of an additional monitor is recommended to enable the live image from videoXtens to be observed parallel to the testXpert II / III display.

Description	Item number
Basic package with Windows 10 64-bit, multilingual Multilingual workstation basic package for joint installation and operation of a videoXtens and testXpert II / III. Contains PC workstation, Windows operating system, 23" TFT monitor	**1031102**

Mounting: videoXtens 3-300 on AllroundLine testing machine (1x required)

Mounting involves connection to the crosshead. This allows videoXtens to track at half crosshead speed, keeping the testing operation automatically in focus and making optimum use of the measuring range.

Description	Item number
Rigid mounting kit at 45° front left on AllroundLine table-top & floor-standing testing machines with connection to crosshead	**1031329**
Rigid mounting kit at 45° rear left on AllroundLine table-top & floor-standing testing machines with connection to crosshead Required for mounting with temperature chamber	**1031330**
Rigid mounting kit rear center on AllroundLine table-top & floor-standing testing machines with connection to crosshead	**1032777**

Illumination (1x required)

Description	Item number
LED incident light lamp, 500 mm.[1)]	**1047264**

1) When using the TEE or the tunnel an incident light lamp IS NOT required.

Optional accessories

Measuring change in width or transverse strain

Description	Item number
Hardware option: second measurement axis for videoXtens 3-300 Dedicated camera for high-accuracy determination of change in width at the specimen edge, r-value or transverse strain on the specimen surface. Incl. software Field of view (length x width): 75 x 60 mm for AllroundLine with test area width 440 mm Field of view (length x width): 90 x 70 mm for AllroundLine with test area width 640 / 1040 mm Scope of delivery: camera (installed in videoXtens housing), lens (focal length 50 mm) and mounting kit; Accuracy Class 1 Please note: backlight required for measurements on specimen edge	**1043971**

All data at ambient temperature.

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For measuring transverse strain and change in width we recommend 840 x 190mm backlight, Item No. 013596.

Testing of transverse strain/change in width

Description	Item number
Software option second measurement axis for acquisition of transverse strain/change in width. Second measurement axis for acquisition of transverse strain. If change in width is to be measured on the specimen edges, a backlight is required.	**013582**

Backlight

Backlight is used for flexure tests or for measuring change in width directly at the specimen edge.

Description	Item number
Backlight, 840 x 190 mm, incl. mounting arm, required for measurement at specimen edge	**013596**

Tunnel

Description	Item number
Bellows tunnel, large, minimizes environmental influences (e.g. air currents, variations in light). With integrated LED lighting for optimum specimen illumination. Min./max. tunnel length 70 to 320 mm.	**1047284**

Testing in temperature chamber

Can only be used with the current temperature chamber for AllroundLine testing machines form the Series portfolio Tunnel plus tunnel adapter required for tests in the ZwickRoell temperature chamber.

Description	Item number
Tunnel adapter for attaching videoXtens to ZwickRoell temperature chamber Magnetic tunnel adapter with sealing lip for attaching videoXtens to the temperature chamber glass module (viewing port).	**1047286**

Software options

Description	Item number
Test re-run with strain distribution and image-sequence storing testXpert II Version 3.4 or higher is required, for which a testXpert II Master Test Program or the option Export Editor (Item No. 374042) is needed.	**325932**
Software option 2D dot matrix, for determination of local strains and inhomogeneities of a level specimen surface in 2 axes (2D), requires testXpert II Version 3.5 or higher. Requires: Channel Editor or a Master Test Program (already includes the Channel Editor) Note: For videoXtens systems with various cameras, only one camera is used for this function.	**077059**
Flexure test software option: Measurement of deflection with 3 and 4-point flexure tests, requires testXpert II Version 3.4 or higher. If deflection is to be measured on the specimen edges, a backlight is required. Note: For videoXtens systems with various cameras, only one camera is used for this function.	**077060**
videoXtens software package; applicable with videoXtens, not with ProLine videoXtens. Includes the software options: Change in width measurement, test re-run including strain distribution, 2D dot matrix, flexure testing	**1028367**

Zwick / Roell

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SSD hard drive (1x required for Test Re-Run option in conjunction with multi-camera system)

Description	Item number
SSD hard drive, for increasing storage capacity by 960 GB. Installed in PC Workstation	**1053828**

Accessories for specimen marking

Description	Item number
Gauge marks (strips) for room temperature (+10 to +35°C), self-adhesive, 100 pieces	**353379**
Gauge marks (strips) for temperature range -55 to +250°C), self-adhesive, 100 pieces	**077061**
Gauge marks (black dot on white background) for temperature range -55 to +250°C), self-adhesive, 100 pieces	**1015510**
Marker pen for temperature range -40 to +250°C	**077062**
Stencil for marking plastic specimens	**010406**
Stencil for marking metal specimens	**010407**
Marking spray for applying a pattern to the specimen	**057317**

Sight screen / uniform specimen background

- For an uniform specimen background recommended in the case of irregular background contrasts or for thin specimens (for example width ≤ 5 mm for videoXtens, width ≤ 1 mm for laserXtens)
- Sight screen to shield eyes from incident light or laser light
- 2 colors: white at front for dark specimen and black at rear for bright specimen.
- Mounts directly in the T-slot of the extruded profle frame of the table-top or floor-standing testing machine.

Description	Item number
Sight screen / uniform specimen background, swiveling, white at front and black at rear, dimensions 420 x 190 mm	**086060**

Stand-alone operation

videoXtens can optionally be operated as a stand-alone system. Control of the extensometer is via its own software. Up to four freely configurable channels can be output simultaneously as an analog signal.

Description	Item number
High-resolution D/A converter, 4 outputs for measurement channels	**032319**
High-resolution AD/DA converter, 2 outputs for measurement channels and 4 inputs for importing external channels, e.g. for joint display in Excel	**021661**

Software option: Test Re-Run and strain distribution

The optional Test Re-Run module enables retrospective recalculation of strain using an image series recorded during a test but employing a different initial gauge-length (provided multiple marks are present). This can be particularly advantageous in component testing, for example, when it is necessary to evaluate local strain at different locations, or in standard tensile tests when specimen necking has occurred outside the original initial gauge-length.

The recalculated strain can naturally be synchronized retrospectively with the other measured values via the testXpert testing software.

The Strain Distribution option enables determination of local strains at multiple measuring locations along the specimen gauge-length. These are available as channels in testXpert. Up to 16 measuring locations are automatically recognized and evaluated during the test. This option also allows automatic real-time symmetrical adjustment of the initial gauge-length around the necking (to ISO 6892-1, Annex I).

All data at ambient temperature.

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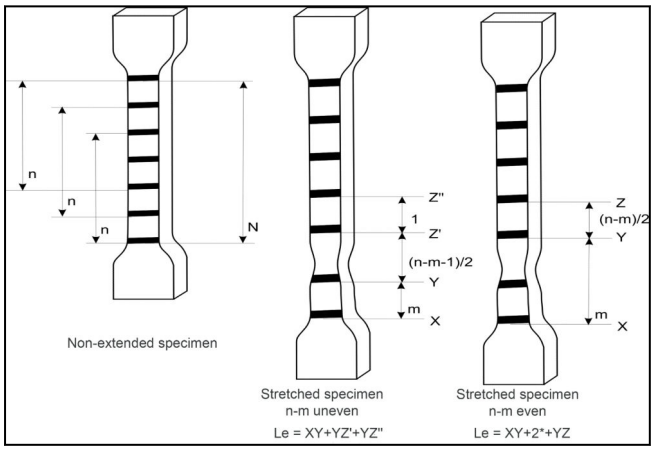
CTA: 44327



Strain Distribution option: automatic symmetrical adjustment of the initial gauge-length around the necking to ISO 6892-1, Annex I

Software option 2D dot matrix
This option allows two-dimensional measurement of dots applied to a planar specimen surface. This enables determination of local strains and specimen inhomogeneities under load. X and Y coordinates, as well as the distances between dots, are available as measured values.

Up to 100 measurement dots can be measured in any desired arrangement or in matrix form. Display in testXpert III is limited to 15 channels.

This option uses only one camera for measurement; any other cameras present are switched off beforehand.

Software option second measurement axis
With this option, biaxial measurements can be performed: In addition to the longitudinal strain, transverse strains can also be recorded—for example the change in width. Alternatively, change in width can of course also be measured alone.

Two versions are available for measurement of transverse strain:

- Direct measurement on the specimen edge without additional markings (required for the determination of the r-value). For this version a backlight is required.
- Measurement of the specimen surface with dot markings or sprayed-on pattern. For this version the specimen is illuminated with an incident light lamp.

Software option measurement of deflection in 3 and 4-point flexure tests
videoXtens can also be used for flexure tests. There are several options for measuring specimen deflection, depending on the type of test and the specimen condition and properties:

- Measurement using incident light via marks on the specimen
- Measurement using backlight on the specimen lower edge
- Measurement of deflection in the test axis or of the polynomial approximation of the curve

Maximum deflection that can be measured: with videoXtens the maximum deflection corresponds to the FOV; with videoXtens Array to 1/3 of the total FOV (in this case deflection is measured with one camera only).

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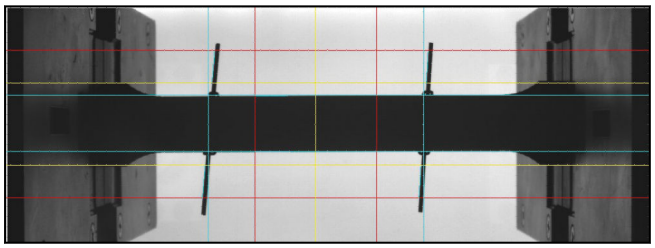
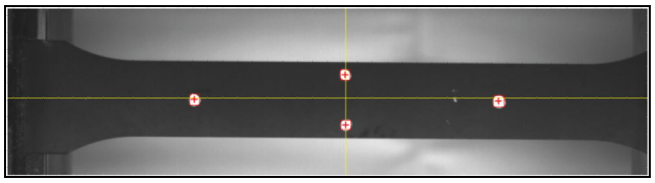
CTA: 44341



Recording change in width at specimen edges using backlight

CTA: 44317



Recording transverse strain with dot marks on the specimen surface.

All data at ambient temperature.