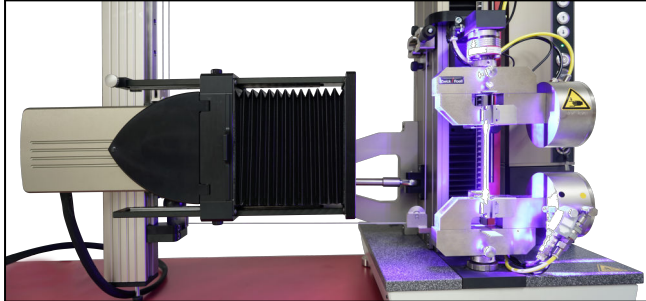


Product Information

videoXtens 1-120 P/HP

CTA: 302207 302208

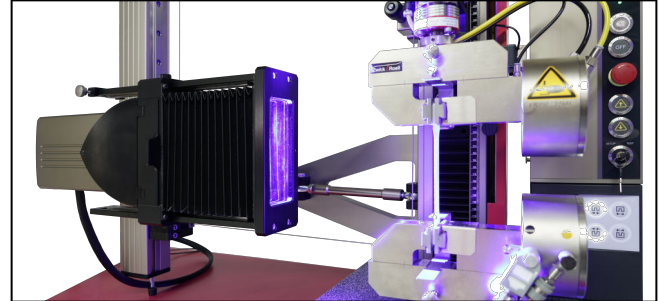


videoXtens 1-120 HP

Can be used for materials with low to medium strain, such as tensile tests on metals, plastics and geotextiles.

Advantages and features

- Efficiency gain through mark-free measurement and automatic pattern recognition of specimens with surface texture through blue contrast light technology.
- Significant time and cost savings since the time-consuming application of gauge marks is no longer necessary.
- Accuracy classes 0.5 and 1 to EN ISO 9513. ZwickRoell extensometers exceed standards requirements, and are calibrated over the entire measurement range in accordance with ISO 9513. Proven standard compliance with the first calibration point starting at 10 µm.
- Accuracy class B1 and B2 to ASTM E83 from an initial gauge length of 15 mm.
- Start testing right away: easy-to-learn, intuitive operation and the advantages of automated functions reduce training requirements and ensure measurement consistency.
- Materials with high break energy and specimens prone to whipping can be tested up to the point of break without causing damage to the extensometer.
- The videoXtens is fully integrated in testXpert. The extensometer and the materials testing machine are controlled with a single software solution.
- Resistant to environmental influences (e.g. air currents, variations in lighting): flexible tunnel minimizes signal interference.
- Robust, low-vibration mounting system with ergonomic operation. With automatic tracking, the testing operation automatically stays in focus and makes optimum use of the measuring range.



videoXtens 1-120 HP, detail

Application example for ISO 527-1 and ASTM D638 without tensile modulus determination

Specific advantages in the application

- Simple compact system for determining strain at yield stress (curve type b & c).

Application example for testing of sheet metal A50 or A80 to ISO 6892-1 and ASTM E8

Specific advantages in the application

- Meets the requirements for closed loop strain rate control to ISO 6892-1 Method A1 and ASTM E8 Method B. This results in globally reproducible test results and saves on preliminary tests.
- In addition, the system covers Methods A2 and B according to ISO 6892-1 and Methods C and A according to ASTM E8.

Application example for tensile test on geotextiles / geogrids to DIN EN ISO 10319

- Depending on the material, automatic pattern recognition or gauge mark tracking can be used.
- Modulus values can also be determined in the initial measuring range, e.g. slope at x% strain.

Measuring without gauge marks and automatic pattern recognition

Specimens with surface texture: The natural surface texture of the specimen is enhanced into a high-contrast surface pattern by blue contrast light technology and used as virtual gauge marks. A virtual gauge mark is an area on the specimen surface that is defined by the software. The pattern within this defined area is tracked during the test. This eliminates the process of manually marking the specimen and allows for mark-free measurements. **Specimens without surface texture:** markings are often created by dotting or stamping and the pattern generated is used for automatic pattern recognition. Optionally, manual gauge marks can be applied. The system is designed accordingly and includes an optical filter for measurement with gauge marks.

Product Information

videoXtens 1-120 P/HP

Technical data

Type Item No.	videoXtens 1-120 P 1108945	videoXtens 1-120 HP 1119737	
Field of view (FOV)			
With test area width 440 mm [Allround-Line] and zwickiLine	140 x 95	140 x 60	mm
With test area width 640/1040 mm [AllroundLine]	180 x 120	180 x 60	mm
Initialgauge length			
With test area width 440 mm [Allround-Line] and zwickiLine	5 ... 100	5 ... 100	mm
With test area width 640/1040 mm [AllroundLine]	5 ... 120	5 ... 120	mm
Measurement travel, max.			
With test area width 440 mm [Allround-Line] and zwickiLine	120 - initial gauge length	120 - initial gauge length	mm
With test area width 640/1040 mm [AllroundLine]	160 - initial gauge length	160 - initial gauge length	mm
Measurement travel, max. at 50 mm initial gauge length			
With test area width 440 mm [Allround-Line] and zwickiLine	70 (140% strain)	70 (140% strain)	mm
With test area width 640/1040 mm [AllroundLine]	110 (220% strain)	110 (220% strain)	mm
Measurement travel, max. at 75 mm initial gauge length			
With test area width 440 mm [Allround-Line] and zwickiLine	45 (90% strain)	45 (90% strain)	mm
With test area width 640/1040 mm [AllroundLine]	85 (110% strain)	85 (110% strain)	mm
Measurement travel, max. at 80 mm initial gauge length			
With test area width 440 mm [Allround-Line] and zwickiLine	40 (50% strain)	40 (50% strain)	mm
With test area width 640/1040 mm [AllroundLine]	80 (100% strain)	80 (100% strain)	mm
Strain rate control to ISO 6892-1			
For test speed 0.00025/s	-	From L0 25	mm
For test speed 0.00007/s	-	From L0 80	mm
Resolution at ambient temperature	0.6	0.2	µm
Resolution to ISO 9513 in the ZwickRoell temperature chamber			
At -40 ... +250 °C	-	max. 0.4	µm
At -55 °C	-	max. 0.6	µm
At +250 ... +360 °C	-	max. 0.5	µm
Frame rate / measured-value acquisition rate, max.	500	500	fps / Hz
Test speed, max.	1000	1000	mm/min

All data at ambient temperature.

Subject to change in the course of further development.

Product Information

videoXtens 1-120 P/HP

Type Item No.	videoXtens 1-120 P 1108945	videoXtens 1-120 HP 1119737
Dimensions		
Height	175	240 mm
Width	335	400 ... 650 mm
Depth	129	129 mm
Specimen thickness	0 ... 50	0 ... 50 mm
Weight, approx.	7.5	7.5 kg
Minimum version	testXpert III V1.8 and above	testXpert III V1.8 and above
Accuracy class		
To EN ISO 9513	1	0.5
Scope of delivery		
Measuring head with digital camera		
Lens (25 mm)		
Software for image acquisition and evaluation		
Accessory case with alignment and marking aids		
INC module (for tC: RS module)		

Accessories required

Basic packages (1x required)

A basic package is required for the installation of testXpert III and operation of the videoXtens. When working with testXpert III, we recommend a second monitor.

Description	ArticleNumber
Basic package Win 10 videoXtens L and videoXtens, core i7, includes PC multilingual workstation with software installation incl. in scope of delivery (testXpert III, videoXtens L, videoXtens); core i7 processor; graphics card for support of two monitors; Ethernet port for testControl II; 27" TFT monitor; Windows 10 / 64 – multilingual ¹⁾	1123961
Basic package Win 11 videoXtens L and videoXtens, core i7, includes PC multilingual workstation with software installation incl. in scope of delivery (testXpert III, videoXtens L, videoXtens); core i7 processor; graphics card for support of two monitors; Ethernet port for testControl II; 27" TFT monitor; Windows 11 / 64 – multilingual	1130955

¹⁾ Can easily be upgraded to windows 11.

Mounting (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	ArticleNumber
videoXtens mounting on AllroundLine testing machine	
Rigid mounting kit at <u>45° front left</u> on AllroundLine table-top & floor-standing testing machines with connection to crosshead	1032724
Rigid mounting kit at <u>45° rear left</u> on AllroundLine table-top & floor-standing testing machines with connection to crosshead Required for mounting with temperature chamber	1032726
videoXtens mounting on zwickiLine testing machine	
Rigid mounting kit at 90° left on zwickiLine, <u>with support on table</u> and connection to crosshead	1047180
Rigid mounting kit at 90° left on zwickiLine, <u>with support on floor</u> and connection to crosshead	1071005

Product Information

videoXtens 1-120 P/HP

Optional accessories

Measurement of change in width or transverse strain

Description	ArticleNumber
Transverse strain software option for acquisition of transverse strain/change in width. If change in width is to be measured on the specimen edges, a backlight is required.	013582

Software options

Description	ArticleNumber
Test re-run and strain distribution testXpert II Version 3.4 or higher is required, for which a testXpert II Master Test Program or the option Export Editor (Item No. 1035618) is needed.	325932
Option 2D DIC - Digital Image Correlation 2D DIC module for display and evaluation of strain conditions, fully integrated in testXpert III	1018509
2D DIC test license, at not cost for a limited time of 6 months	1055361
Software option 2D dot matrix for videoXtens For determination of local strains and inhomogeneities of a level specimen surface in two axes (2D). Up to 100 measurement dots in any desired arrangement or in matrix form, measurement of the X/Y coordinates or the distances between dots Required: Channel Editor or master test program (already includes the Channel Editor) testXpert II version 3.5 or higher. Note: Only one camera is used for this function, even for videoXtens Array systems	077059
Software option Flexure test for videoXtens in 3- and 4-point flexure test Measurement of deflection in the test axis, measurement of the curve, measurement using incident light on marks on the specimen, measurement using backlight on the specimen lower edge Required: Incident lighting for measuring with marks or backlight for measuring on the specimen edge Note: Only one camera is used for this function, even for videoXtens Array systems.	077060
videoXtens software package; applicable with videoXtens, not with ProLine videoXtens. Includes the software options: transverse strain software option, test re-run and strain distribution, 2D dot matrix, flexure test	1028367

Optical slide-in filter for videoXtens, type 1-120 P/HP

Description	ArticleNumber
Optical slide-in filter for videoXtens, type 1-120 P/HP; for glare reduction and contrast enhancement of the specimen surface when measuring with marks; for automatic gauge-mark recognition and recording of the initial-gauge length L_0	1119741

Accessories for specimen marking

Description	ArticleNumber
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

Product Information

videoXtens 1-120 P/HP

Backlight

The backlight is required for flexure tests or for measurement of the change in width directly at the specimen edge.

Description	ArticleNumber
Backlight 420 x 190 mm, incl. mounting arm, required for measurement at specimen edge	013593
Backlight 840 x 190 mm, incl. mounting arm, required for measurement at specimen edge	013596

Screen / uniform specimen background

- For a uniform specimen background, recommended for disruptive background contrasts or narrow specimens (for example ≤ 5 mm with videoXtens)
- Screen to shield eyes from incident light or laser light
- Two colors: white on front for dark specimens, black on back for light specimens
- Mounting directly into T-slot of the table-top or floor-standing testing machine profile

Description	ArticleNumber
Screen/uniform specimen background, swivelable, white on front and black on back, dimensions 420 x 190 mm	086060

Measuring plunger for determining deflection

Description	ArticleNumber
Measuring plunger for videoXtens for determining deflection, i.e. on plastics, fiber-reinforced composites, wood. Installation in ZwickRoell flexure test kit; measurement of deflection by adhering strip gauge marks; maximum height from upper edge of flexure table 99 mm; maximum measurement displacement 25 mm; temperature range -70 ... +200 °C. For this flexure test, we recommend a FOV of at least 30 mm and deactivation of the connection to the crosshead. Additional information in PI 395.	1090625

Testing in temperature chamber

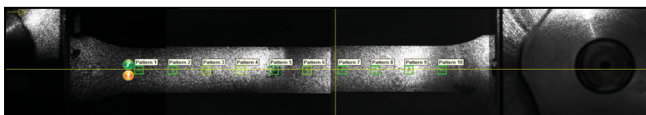
Can only be used with the current temperature chambers for AllroundLine testing machines from the series portfolio. For testing in the ZwickRoell temperature chamber a tunnel adapter is required.

Description	ArticleNumber
Tunnel adapter for connection of the videoXtens to the ZwickRoell temperature chamber Magnetic tunnel adapter with sealing lip for videoXtens for connection to the temperature chamber glass module (view window).	1047285

Software-option Test Re-Run

The optional Test Re-Run module enables subsequent 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.

CTA: 44010



Automatic symmetrical adjustment of strain around necking to ISO 6892-1, Annex I

The recalculated strain can, of course, be synchronized subsequently with the other measurement values via the testXpert testing software.

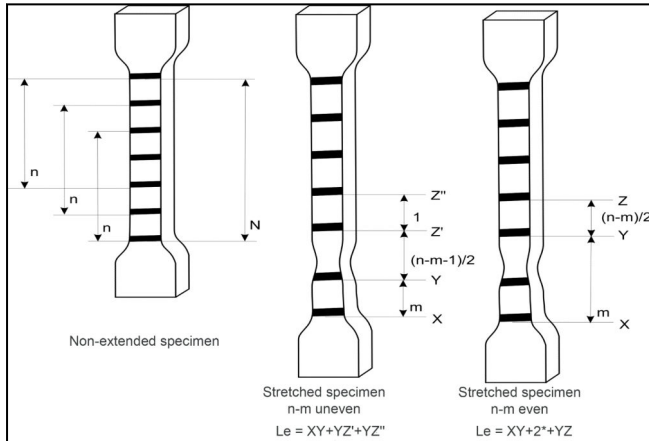
Strain distribution option

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 (as per ISO 6892-1, Annex I).

Product Information

videoXtens 1-120 P/HP

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 64 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.

Transverse strain software option

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 naturally 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:

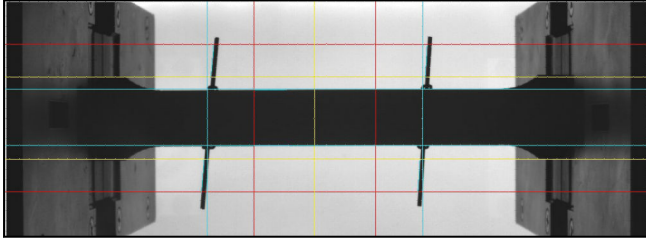
- measurement using incident light via marks on the specimen
- measurement using backlight on the specimen lower edge
- measurement of deflection in the test axis or of the polynomial approximation of the curve.

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).

Product Information

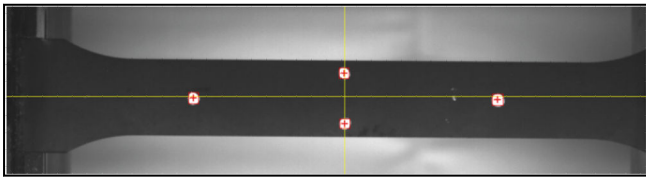
videoXtens 1-120 P/HP

CTA: 44341



Recording change in width at specimen edges using backlight

CTA: 44317



Recording transverse strain with dot marks on the specimen surface.