![Zwick Roell logo]

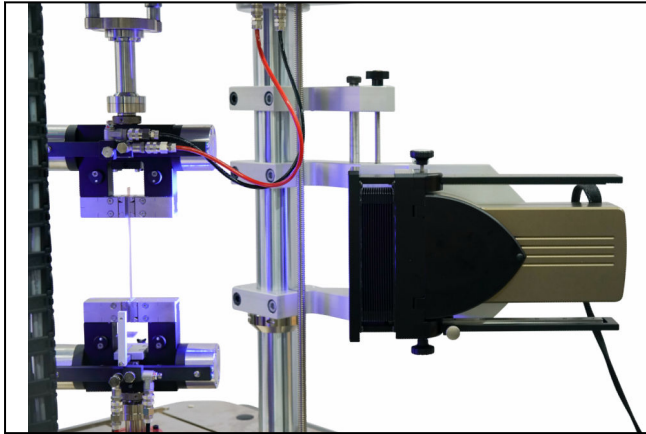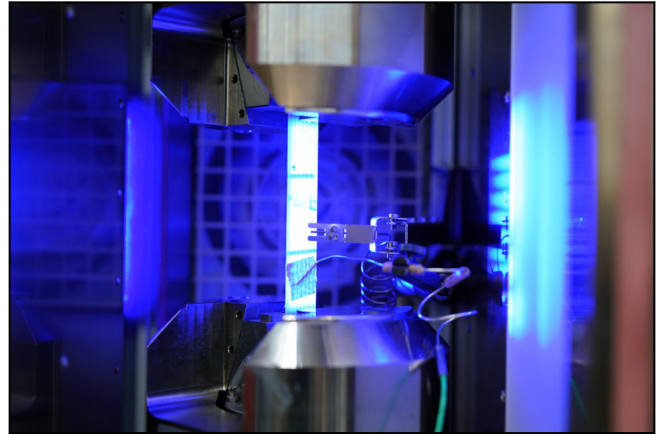# Product Information
videoXtens dynamic

videoXtens dynamic 1-90 HP mounted on an LTM for testing films

videoXtens dynamic 1-90 HP testing composites in a temperature chamber.

The videoXtens dynamic extensometer is best in class

When testing fiber-reinforced composites, plastics and metals, conventional clip-on extensometers with knife edges can pre-damage the surface and thus influence the test results. The videoXtens dynamic is a non-contact, high-resolution measuring system that was developed for tests requiring the highest level of precision, even with low strain, and supports strain controlled testing up to 30 Hz and speeds of up to 1500 mm/s.

Applications for fiber-reinforced composites

Fatigue tests on fiber-reinforced composites to ISO 13003 and ASTM D3479 according to method B with constant strain amplitude.

Applications for metals

Strain controlled low cycle fatigue tests on metals to ASTM E606. Since specimens for these tests are often machined from components, specimen sizes can vary significantly. The freely adjustable L0 value of the video-Xtens dynamic therefore provides a great advantage. Also strain controlled fatigue tests acc. to SEP 1240 with anti-buckling support is easy to perform, since there is no contact strain measurement interfering with the anti-buckling support on the specimen.

Static tests

The videoXtens dynamic can also be used to perform static tests such as determining the tensile modulus in acordance with ISO 527 or ISO 6892-1. The field of view of max. 90 mm must be observed.

Advantages and features

- **videoXtens dynamic prevents premature damage to the specimen and thus enables testing of sensitive specimen.** Strains on very soft specimens, such as films and foils, can be determined without damage because there is no influence of knife edges on the specimen surface.
- **Due to the high accuracy of the videoXtens dynamic, even applications with low strains or high frequencies can be measured reliably.** This enables the standard-compliant performance of low cycle fatigue or composite tests.
- **The videoXtens dynamic minimizes operator influence and helps to produce reliable test results.** When attaching a clip-on extensometer and setting the initial gauge length, operating errors may occur and influence the test result.
- **Significantly shorter test times due to higher test frequencies.** Test frequencies of up to 30 Hz for full strain hysteresis acquisition or up to 100 Hz for the acquisition of peak values can minimize test time.
- **One device for both dynamic and static tests reduces conversion, calibration and training efforts.** The videoXtens dynamic can be used for dynamic and static tests on specimens with widely different initial gauge lengths.
- **Can be used with all testing machines.** The videoXtens dynamic can be either fully integrated with ZwickRoell machines or it can be operated with third-party machines via an analog signal.

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Product Information
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Technical data
basing in a test distance of 410 mm

Type Item No.	videoXtens dynamic 1-90 HP 1121306	videoXtens dynamic 1-45 HP 3015232	
Typical Application	Composite, Elastomer, Foil, Wire, …	Metal (Low Cycle Fatigue)	
Field of view (FOV)	90	45	mm
Lens focal length	25	50	mm
Initial gauge length (L0)	5 … 85	5 … 40	mm
Measurement travel max.	FOV - L0	FOV - L0	mm
Specimen thickness	0 … 20	0 … 20	mm
Mark tracking speed max.	1500	1500	mm/s
Measurement frequency max.			
at ambient temperature	4000	4000	Hz
with temperature chamber	1000	1000	Hz
Resolution at ambient temperature			
with measurement frequency of 300 Hz	0.15	0.07	µm
with measurement frequency of 2000 Hz	0.49	0.43	µm
Resolution with chamber from 25 °C			
with measurement frequency of 300 Hz	0.2 + 0.02 / 10 °C	0.2 + 0.02 / 10 °C	µm
with measurement frequency of 1000 Hz	0.45 + 0.05 / 10 °C	0.45 + 0.05 / 10 °C	µm
Test frequency max.			
for strain controlled fatigue tests	30	30	Hz
for peak value measurement	100	100	Hz
for use with temperature chamber	10	10	Hz
Initital gauge length min. for ISO 527	25	20	mm
Latency	<1	<1	ms
Classification to EN ISO 9513:2012			
with measurement frequency of <2000 Hz	Class 0.5	Class 0.5	
Classification to ASTM E83-10			
with measurement frequency of <2000 Hz	Class B1	Class B1	
Other Information			
testXpert R min. version for dynamic testing	testXpert R V5.0.0	testXpert R V5.0.0	
testXpert III min. version for static testing	testXpert III V1.8	testXpert III V1.8	
Weight, incl. tunnel	10	10	kg

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Product Information
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Type	videoXtens dynamic 1-90 HP	videoXtens dynamic 1-45 HP	
Item No.	1121306	3015232	
Dimensions			
Height	250	250	mm
Width incl. tunnel	375 … 625	375 … 625	mm
Depth	91	91	mm
Tunnel length, starting at reference level	90 … 340	90 … 340	mm
Scope of delivery	Measuring head incl. lens Tunnel for minimizing negative environmental conditions (e.g. air currents) with integrated LED illumination ncXtens R software licence Accessory case with alignment and marking aids		

Accessories required
Basic PC package (required)
To operate the videoXtens dynamic with the ncXtens R software, you need a basic PC package.

If a computer is already being used to operate testXpert R and / or testXpert III, this one can be used for ncXtens R, too, and a second computer is not required.

Description	ArticleNumber
HP ELITEDESK 800 G9 Includes: Windows 10 Pro 64bit multilingual, Intel Core-I5-12500, 16 GB (2x8 GB) DDR5 main memory, 512GB SSD M.2 2280 PCIe NVMe TLC SSD, 2 TB 7200 SATA, DVD drive, extra PCI-Express port, 2 Gigabit Ethernet connections, 1x RS232 serial port, German/English keyboard, optical USB mouse	1118075

Mounting (required)
For mounting purposes, a bracket is used for connection to the machine columns:
- Mounting to the column of the test frame at 45°
- Standard mounting position rear left
- The test distance described below applies with or without ZwickRoell temperature chamber

Description	ArticleNumber
Mounting to HC10/25 and LTM1 up to 10 Test distance: 410 mm	3004847
Mounting to HC50/100 Test distance: 410 mm	3009604
Mounting to HA/HB 50 and 100 Test distance: 410 mm	3007079
Mounting to HA/HB 250 Test distance: 570 mm	3007076
Mounting to HA/HB 500 Test distance: 570 mm	3007077
Mounting with stand / Decoupled from testing machine	3015233

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Optional accessories
Marking (optional)

Description	ArticleNumber
Gauge marks (strips) for ambient temperature +10 ... + 35 °C, self-adhesive, 100 pieces	**353379**
Gauge marks (strips) for temperature range (-55 ... +250 °C, self-adhesive, 100 pieces	**077061**
Gauge marks (black dot on white background) for temperature range -55 ... +250 °C, self-adhesive, 100 pieces	**1015510**
Marker for temperature range -40 ... +250 °C	**077062**
Marking template for plastic specimens	**010406**
Marking template for metal specimens	**010407**

Additional lens (optional)

The videoXtens dynamic is already supplied with an lens as standard: the model 1-45 HP with the lens for FOV=45mm and the model 1-90 HP with the lens for FOV=90 mm.

One lens can be exchanged with the other, e.g. the lens with FOV=90 mm can be installed in the videoXtens dynamic 1-45 HP to be able to measure longer samples. For this, the objective must be purchased additionally and it must be ensured that the videoXtens dynamic has been calibrated for the respective objective.

Description	ArticleNumber
Lens FOV=45 mm for videoXtens dynamic 1-90HP Testing distance 410 mm	**1123647**
Lens FOV=90 mm for videoXtens dynamic 1-45HP Testing distance 410 mm	**1123648**

Testing with temperature chamber (optional)
A tunnel adapter is required for testing with a ZwickRoell temperature chamber:

Description	ArticleNumber
Magnetic tunnel adapter for connecting videoXtens dynamic to ZwickRoell temperature chamber glass module (viewing window).	**1047285**

Retrofitting a videoXtens dynamic to an existing testing machine
a) Retrofitting on ZwickRoell testing machines

For retrofitting to a ZwickRoell machine, a videoXtens dynamic instrument including the standard scope of delivery and the necessary accessories PC station and mounting is required. On the machine side, the minimum compatible software version testXpert Research V5.0.0 (and optional testXpert III V1.8 for static testing) as well as the testControl II electronics must be ensured.

b) Retrofitting on third-party machines

The videoXtens dynamic is connected to a third-party machine via an analog signal. An additional DA converter is required for this. The resulting increase in latency is negligible. For mounting the videoXtens dynamic to the third-party machine, we offer a stand support if required.

Description	ArticleNumber
DA converter for videoXtens dynamic	**1123649**
Mounting with stand / Decoupled from testing machine	**3015233**