

# UNIFRAME250

The UNIFRAME 250 is the perfect tool for active construction materials laboratories demanding great versatility for tests on a broad range of specimens and materials.

A high stiffness twin column load-frame (200 kN/mm) ensures precise test control especially for failure analysis on brittle materials. The machine also features two robust adjustable crossheads for maximum versatility in conducting a wide variety of tests. The upper crosshead is factory-preset at your desired height. The lower crosshead is adjustable using the dedicated push button or via the PC software.

The advanced closed-loop PID control system with extremely fast reaction times, combined with electromechanical technology, provides additional precision, crucial for critical testing (e.g on Fiber Reinforced Concrete).

The high resolution encoder and in-built load cell allows you to keep tight control of the crosshead during test performance, delivering reliable and accurate test results.

The machine is fitted with two limit switches providing full travel at both upper and lower level as well as two additional limit switches adjustable by the client in the desired position, to improve speed and convenience for test set-ups, according to specific accessories in use.

## Benefits

UTM 250 kN capacity in compression, 150 kN in tension

Full PC control (high specs all-in-one PC included)

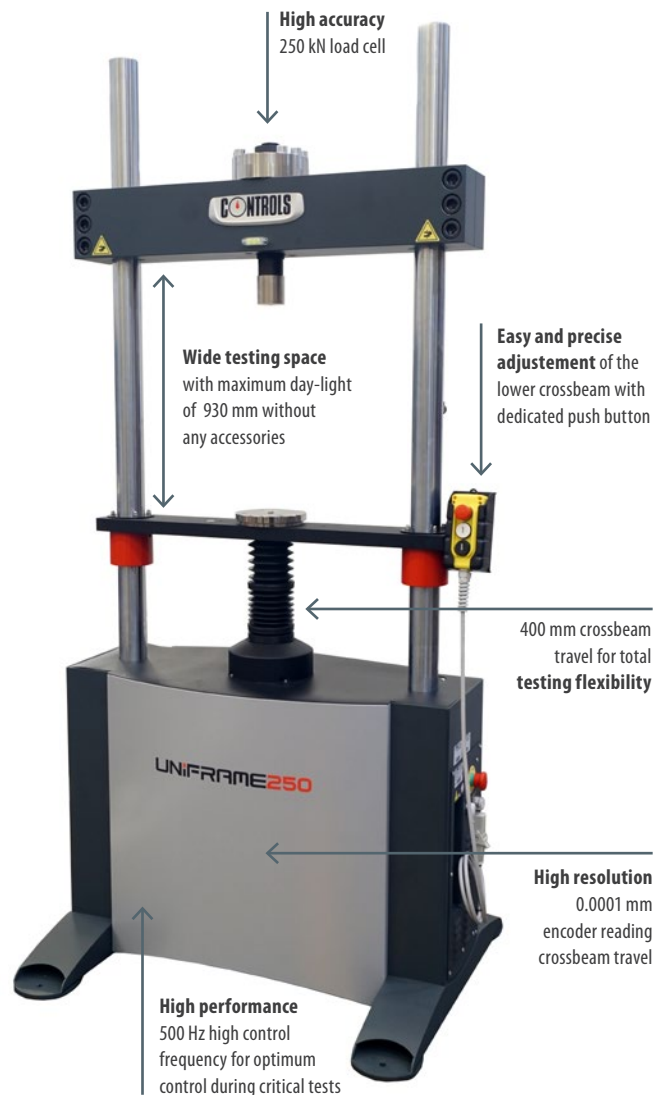
High accuracy load cell

Wide range of test applications including compression, tension, flexure, splitting and cyclic tests on different construction materials.

Despite the large testing space, the frame has a very high stiffness (200 kN/mm), making it ideal for Fiber Reinforced Concrete testing.

Various software packages and accessories are available, tailored to specific test methods (see the website for the complete list).

Totally flexible with 14 channels available allowing you to connect any desired load/displacement sensor.



## Suitable for

Tensile tests up to 150 kN to EN and ASTM

Tests under displacement and strain control on FRC concrete and Shotcrete

CBR and Marshall stability tests to EN and ASTM

Duriez tests conforming to EN and NF

SCB test to EN and ASTM

Leutner tests to EN

Compression test and Elastic Modulus determination on cement, concrete and other materials

Flexural and tensile tests on various materials

# Specifications

## Frame

- Maximum load, compression tests: 250 kN

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- Maximum load, tensile tests: 150 kN

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- Max. vertical clearance, without accessories: 930 mm

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- Distance between columns: 650 mm

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- Crosshead travel: 400 mm

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- Crosshead displacement resolution: 0.0001 mm

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- Test speed range, mm/min: 0.0001 to 175 (105 at full load)

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- Load rate range: 1 to 9999 N/sec

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- Power: 1 kW

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- Overall dimensions (H x L x D): 2100 mm x 950 mm x 800 mm

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- Weight approx.: 600 kg

## Hardware

- 131.000 points effective resolution

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- High frequency closed-loop P.I.D. control

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- Control frequency: 500 Hz

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- Sampling rate: 500 Hz

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- 4 channels for load cells (not for simultaneous use)

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- 6 channels to measure displacement values with transducers (LVDT, magnetostrictive, potentiometric)

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- 4 channels for strain measurement with strain gauges

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- High resolution encoder 0.0001 mm resolution

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- Memorization of the calibration curve enables sensors to be connected and used immediately

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- Digital linearization of the calibration curve (multi-coefficient)

## Software

The main software allows remote control of the whole system and the automatic execution of test including: fast approaching, zeroing, test execution, automatic test interruption after specimen failure or achievement of the target set by the user, numerical and graphical management of test results, etc.

Several software modules are available for any test method:

**DATAMANAGER** (included)

Software package for compression, indirect tensile, three and four points flexural tests on different types of specimen.



## Software (continued)

### E-MODULE software package (70-T2502/EM) for Elastic modulus and Poisson ratio determination:

- Free unlimited programmable load/stress cycles to fulfil any kind of test procedure
- Real time monitoring of test data, stress/time, stress/axial strain, stress/lateral strain graphs
- Automatic verification of sample positioning and sensors functionality, as per standards requirements
- Automatic calculation of Elastic Modulus and Poisson's Ratio values.



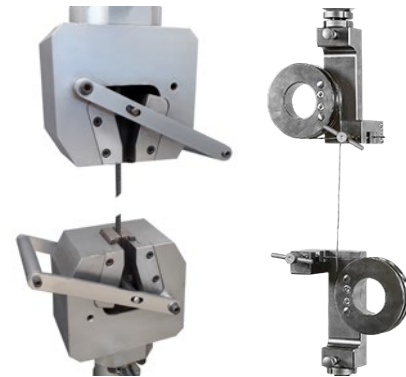
### D-CONTROL software package (70-T2502/DC) for displacement-controlled tests:

- Automatic calculation of test results according to EN 14651, 14488-3, UNI 11039-2, ASTM C1609, C947
- Five test pre-set testing procedures according to the above Standards
- Customizable test procedure allowing desired loading history
- Possibility to change in real time the test parameters: target load/displacement, control variable, test speed.

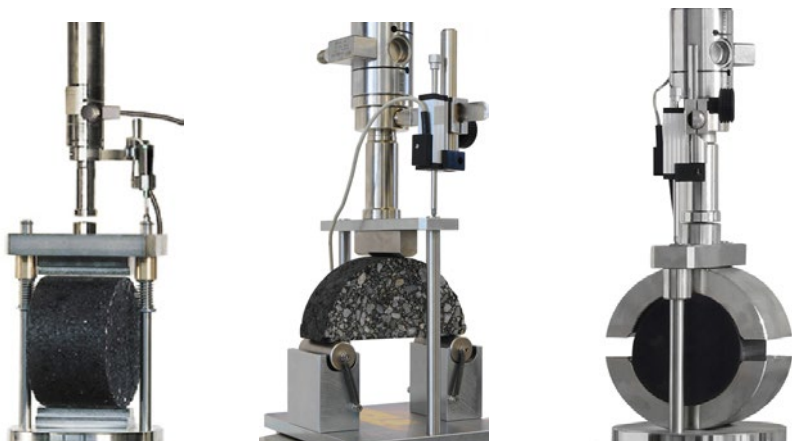


### UTS software package (70-T2502/UTS) for steel tensile testing:

- Tensile test on steel to EN ISO 6892 with control up to yield by:
  - Stress (method B)
  - Strain by using extensometer (method A1)
  - Strain by using crosshead (method A2) and control after yield by grips' separation
- Elaboration of tension test results in conformity to EN ISO 6892-1 (methods A1, A2, B) and EN 15630-1
- Custom test method for tensile test on generic specimen
- Simultaneous display of stress/elongation; stress/time; elongation/time with possibility to display multi-diagrams.



### ROAD software package (70-T2502/CMU) for CBR, Marshall, Indirect tensile, SCB, Duriez, Leutner and general purpose tests.



## Ordering information

### 70-T2502

UNIFRAME 250kN

Electromechanical Universal tester 250 kN cap. 230 V, 50-60 Hz, 1 ph.

### 70-T2504

UNIFRAME 250kN

As above but 110V/60Hz/1Ph

**Consult your local CONTROLS branch or distributor for information on the wide range of accessories available to perform many test applications of a variety of materials.**

## ▶ Contact Us

[www.controls-group.com](http://www.controls-group.com)

### Controls Group USA

2521 Technology Drive, Suite 203, Elgin, IL 60124, USA T +1 847 551 5775 E [info@controls-usa.com](mailto:info@controls-usa.com) [www.controls-usa.com](http://www.controls-usa.com)



### Controls Group

T +39 02 92184 1

F +39 02 92103 333

E [sales@controls-group.com](mailto:sales@controls-group.com)

[www.controls-group.com](http://www.controls-group.com)

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