5900 Series | Premier Testing Solutions
Make an Informed Decision

Exceptional performance packaged in innovative frames, designed with enhancements that deliver superior accuracy and reliability, improved ergonomics, and an enhanced overall experience for the operator.

5900 Series at a Glance
Which system is right for me?

Applications
How will the 5900 meet my needs?

User Interface
What is important to my operators?

Performance
How is performance defined?

Service and Support
What about after-sales support?

When performance matters, choose Instron® — the most trusted name in mechanical testing.
5900 Series at a Glance

Single Column Tabletop Systems for Low-Force Testing
- Capacities up to 2 kN
- Small footprint saves valuable laboratory space
- Commonly used for medical devices and biomaterials, textiles, elastomers, food, small components and microelectronics, wire, paper, and plastic film

Dual Column Tabletop Systems for Mid-Range Testing
- Capacities up to 50 kN
- Multi-purpose, tabletop instruments meet versatile requirements
- Commonly used for plastics, metals, rubber materials, automotive components, composites, and non-ambient temperature applications

Dual Column Floor Model Systems for High-Capacity Testing
- Capacities up to 600 kN
- Robust, heavy-duty frames for the most demanding applications
- Commonly used for high-strength metals and alloys, advanced composites, aerospace and automotive structures, bolts, fasteners, and plate steels
How Will the 5900 Meet My Needs?

Application-Based Testing Solutions

Our mission at Instron® is to be recognized as the world’s leader in mechanical testing instrumentation. Our goal is to provide our customers the best ownership experience by delivering the highest quality products, expert support, and world-class service.

With more than 75 years in the materials testing industry, Instron testing instruments are routinely found in applications and industries, such as plastics, metals, composites, elastomers, components, textiles, aerospace, automotive, and biomedical.

For the most up-to-date information on your specific application, visit Testing Solutions at www.instron.com.
What is Important to My Operators?

“I want to start testing with the least amount of steps and mouse-clicks possible, and monitor the data while the test is running.”

View Real-time Data and Results

Constantly monitor vital measurements during pretest adjustments as well as throughout the test on the 4 user-defined live displays. Additionally, real-time results are easily displayed throughout the test.

With 4 user-defined ‘Soft Key’ buttons, the operator can initiate a variety of commands, allowing for customization of the panel while minimizing the numbers of buttons on the panel.

Minimize Steps

Conducting a test directly from the productivity panel allows the operator to remain at the working test space, which reduces repetitive motion and keystrokes between the control panel and PC.

View results and calculations without returning to the computer workstation.

Pre-populate specimen dimensions prior to testing with Bluehill Software — or use an Automatic Specimen Measuring Device (ASMD) to electronically capture specimen dimensions.
Precise Positioning
Fine Position adjustment thumbwheel, with tactile feedback, with 0.004 mm resolution for precise positioning of the crosshead when performing sensitive testing.

Protect Your Specimen
Specimen Protect prevents any load from being applied to the specimen outside a set threshold — protecting your valuable specimens from damage.
How is Performance Defined?

A survey of our customers tells us that performance can be defined in numerous ways — durability, precision, flexibility, and usability. Performance is the most important criterion by which a decision to purchase a testing instrument is determined. At Instron®, performance is the foundation upon which our products are designed and built...

What does performance mean to you?

Engineered for Precision

All 5900 Series servo-control and signal conditioning electronics are designed by Instron specifically for materials testing applications.

Proprietary Load Cell Design

Instron is the only materials testing system supplier that designs and manufactures its own load cells. This allows us to control all components of force measurement — the most critical aspect of mechanical testing.

Cutting-Edge Load Cell Construction

The highest quality mechanical and electrical components ensure the maximum level of performance, producing the most accurate results. Temperature compensation, on-board calibration ID, data storage, and superior resistance to off-center loading are but a few things that set Instron-designed load cells apart from the competition.

Unparalleled Load Verification

Instron’s significant investment in primary force calibration standards is unique in the industry and ensures the highest level of force measurement accuracy. Our factory-based calibration laboratory possesses capabilities normally found only in a National Standards Laboratory.

Superior Stiffness And Alignment

All 5900 Series Load Frames are designed to provide higher stiffness and precise alignment for testing everything from medical devices to high-strength composites. Rigid mechanical design ensures the best possible conditions for repeatable test conditions and reliable results.
Stiff Frames for High-Strength Materials
Pre-loaded bearings and precision ball screws, a thick crosshead and base beam, and low-stretch drive belts contribute to better performance by producing more accurate modulus and strain values and minimizing the energy stored during a test. This is especially evident when testing high-strength materials such as aerospace composites, metal alloys, and crystalline polymers.

Precision Guidance for Alignment and Bending
When performing a uniaxial test, accurate stress and strain results can only be achieved with a system that contains robust, precise guidance columns that ensure minimal specimen bending under load.

Larger Motors for Better Reliability
Reliability is built into 5900 load frames through the use of powerful motors with reserve capacity that allows for quicker rates of acceleration when starting a test and faster turnaround times when performing a cyclic test. More of your testing occurs at the required speed.

Servo-Controlled Drive System
Along with a powerful motor, the 5900 drive system consists of a rugged steel casting with a dual-belt drive system. Unlike systems that use gear-reducers, which create backlash and lower drive system stiffness, the dual-belt system provides synchronous movement of the ball screws, eliminating crosshead tilt and aiding system alignment.
How is Performance Defined?

Flexibility to Change

Instruments used in Research and Development laboratories must adapt to continually changing environments. From the ability to quickly change load cells or reconfiguring software methods to easily adapting new fixtures, the 5900 Series offers the highest level of flexibility in a testing instrument.

Expansion Channel Module
Provides up to eight additional channels of data acquisition with signal conditioning and auto-calibration for transducers.

Piggyback Adapter
Allows you to quickly attach a low-capacity load cell without removing the primary cell. No tools needed!

T-Slot Table
Available for testing components, parts, or unusual shapes. The table mounts to the load frame base and uses standard hold-down clamps to secure the test piece.
Fast 2.5 KHz Data Sampling

Fast data sampling rates of up to 2.5 KHz capture all points of significance in fast changing test events, e.g. peaks, yields, and failure, that would otherwise be missed and incorrectly recorded by systems offering slower data acquisition intervals. This offers a true picture of your test.

Pneumatic Grips

Only the Instron® family of 2712-04x pneumatic grips feature 7 key advances for usability and safety, including pinch-guards and a specimen-centering device.

1/1000th Load Measurement Range

A wider load measurement range means one load cell is capable of meeting more, if not all, of your test needs. Less load cells also means fewer periodic service verifications. The quick mount-load cell adapter positions and holds the cell in place when securing or removing bolts, as an added convenience if a change is required.

Test Area Light

Increased lighting in the test area allows for better visibility of the specimen and grips.

Performance
Support for the Life of Your Equipment

Instron® is the largest supplier of materials testing machines in the world. Our reliable testing systems can run 24 hours a day, 7 days a week, 365 days of the year. However, if something does go wrong, or you have a question, we offer a variety of resources to ensure you receive the assistance you need as soon as you need it.

You can count on us

• Represented in more than 160 countries, speaking 40 different languages
• Worldwide support provided by 250 factory-trained, ISO 17025-accredited Service Engineers

We are only a phone call away

• Technical support hotline accessible anywhere in the world
• Preventative maintenance, calibration, emergency repair, and system refurbishment services

Resources at your fingertips • www.instron.com

• Our Testing Solutions section provides answers to your most current testing challenges
• Access to our complete online Accessories catalog

Stay at the forefront of materials science

• Utilize the expertise of our Applications Engineering Laboratory or Custom Engineered Solutions Group for the latest technological advances in materials testing
• Our state-of-the-art Calibration Laboratory guarantees that all calibrations meet the latest ASTM or ISO specifications

We build more than testing systems; we build relationships
Common Specifications

Load Measurement Accuracy: ± 0.4% of reading down to 1/100 of load cell capacity with 2525, 2530 or 2580 Series load cells; ± 0.5% of reading down to 1/500 of load cell capacity with 2580 Series load cells; ± 0.5% of reading to 1/250 of load cell capacity with 2525 or 2530 Series load cells.

Strain Accuracy: Meets or surpasses the following standards: ASTM E83, ISO 9513, and EN 10002-4

Position Accuracy: Dual Column Tabletop and Floor Models: ± 0.01 mm or 0.05% of displacement (whichever is greater); Single Column Tabletop Models: ± 0.02 mm or 0.1% displacement (whichever is greater)
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For additional country contacts visit www.instron.com/locations

Global Support that is Local to You

Instron® has a global infrastructure that is local to you and remains committed to being the leader in mechanical testing instrumentation.

www.instron.com