

5900 Series

Premier Testing Systems





The Instron® brand is widely recognized for producing some of the most accurate, responsive, and secure materials systems in the world. With seated members on international compliance boards and a global network of experienced and skilled service technicians, Instron backs each system with all the resources necessary to support it throughout its lifetime. For over **70 YEARS** we have been proud to design some of the most advanced, high-quality equipment in the materials testing industry.



1500+ employees
A highly-educated, experienced, and diverse workforce



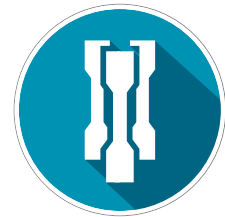
Representing **160 countries**, speaking **40+ languages**



50,000+ systems installed worldwide



70+ years of engineering and manufacturing testing systems



Diverse product range for nearly all global markets and industries

| 5900 SERIES AT A GLANCE

Low-Force Testing Systems

Single Column Tabletop

- Models Available: 500N, 1kN, 2kN Capacity
- Commonly used to perform tensile, compression, peel, and bend tests on medical devices, biomaterials, microelectronics, elastomers, plastics, films, and textiles

Mid-Range Testing Systems

Dual Column Tabletop

- Models Available: 5kN, 10kN, 30kN, 50kN Capacity
- Commonly used to perform tensile, compression, and bend tests on metals, composites, plastics, textiles, rope, and automotive components

High-Capacity Testing Systems

Dual Column Floor Model

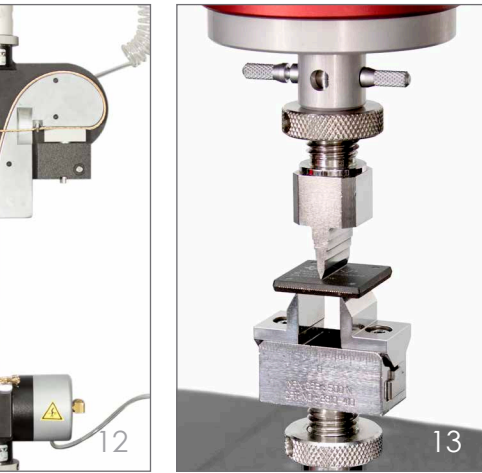
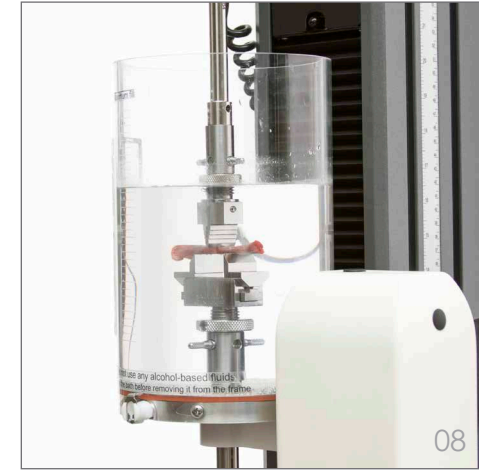
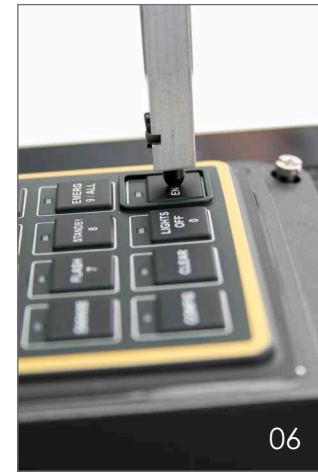
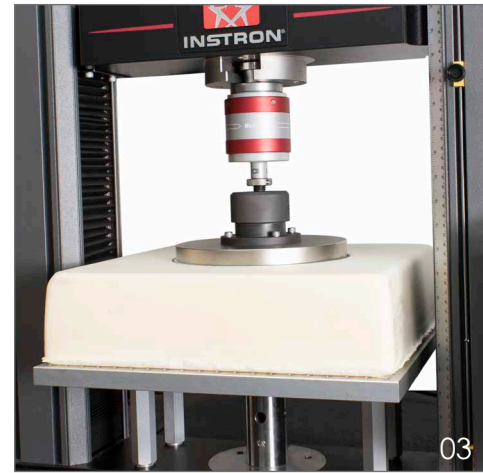
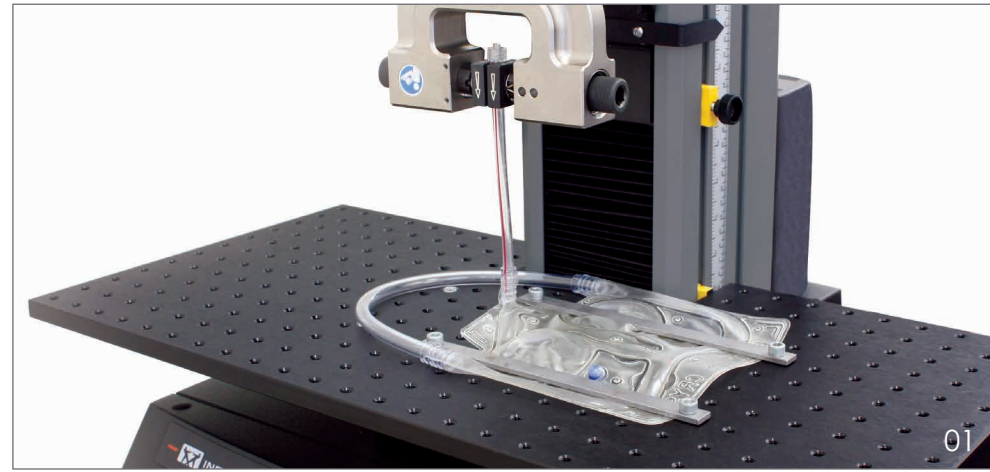
- Models Available: 100kN, 150kN, 250kN, 400kN, 600kN Capacity
- Commonly used to perform tensile, compression, and bend tests on high-strength metals and alloys, advanced composites, aerospace and automotive structures, bolts, and fasteners



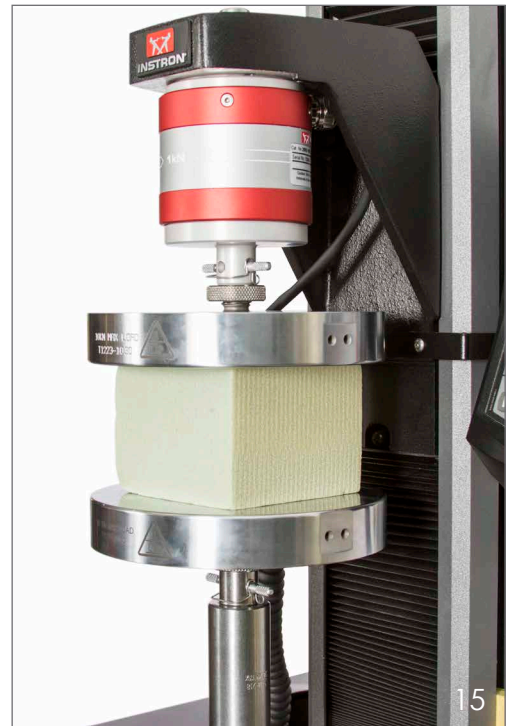
HOW WILL THE 5900 MEET MY NEEDS?

Application-Based Testing Solutions

With more than 70 years in the materials testing industry, Instron®'s systems can be found in many different applications around the globe. Manufacturers in the aerospace, automotive, and biomedical industries all routinely use Instron instruments to test the plastics, metals, composites, elastomers, microelectronics, and countless other components that are used in their manufacturing processes on a daily basis.



- 01 Component Test Plate
- 02 Environmental Chamber
- 03 Foam Compression Platens
- 04 High-Temperature Furnace
- 05 3-Point Bend Fixture
- 06 Button Click Force Fixture
- 07 AlignPRO Alignment Fixture
- 08 BioPuls Temperature Controlled Bath
- 09 Clip-On Extensometer
- 10 Syringe Test Fixture
- 11 Compression Platens with LVDT
- 12 Pneumatic Cord and Yarn Grips
- 13 Micro 3-Point Bend Fixture
- 14 Pneumatic Grips
- 15 Compression Platens



HOW WILL THE 5900 MEET MY NEEDS?

The User Experience

Bluehill® Universal

Bluehill Universal was built from the ground up for touch interaction. The new Operator Dashboard - a stunning large-format touch monitor with integrated controller - provides a comprehensive view of the test workspace with its portrait layout and meticulously-crafted visual design.

Easy-to-understand icons and workflows make it easy to simplify operator training, allowing you to start testing even faster than on previous systems.

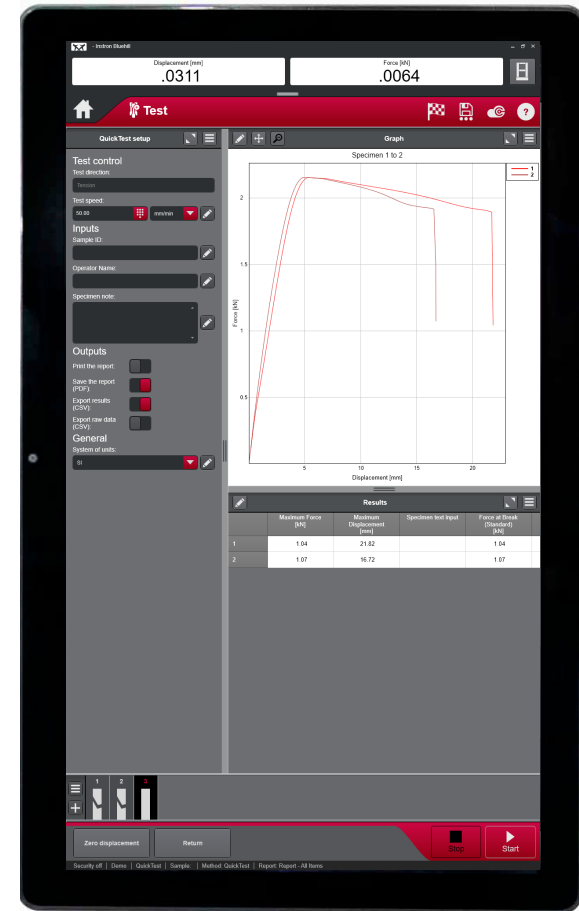
Operator Dashboard

Two Dashboard choices available:

- Industrial-rated all-in-one touch monitor and computer
- Industrial-rated touch monitor
(Requires separate computer for operation)

Mounting

- Configurable for mounting on the left or right side of the frame
- Easily adjustable vertical mounting bracket designed for ergonomic comfort
- Side-mounted dashboard eliminates need for PC and keyboard



Productivity Panel

View Real-Time Measurements and Results

Easily monitor force, displacement, and results while setting up and performing tests. Four “favorites” buttons to customize the experience to satisfy your workflow.

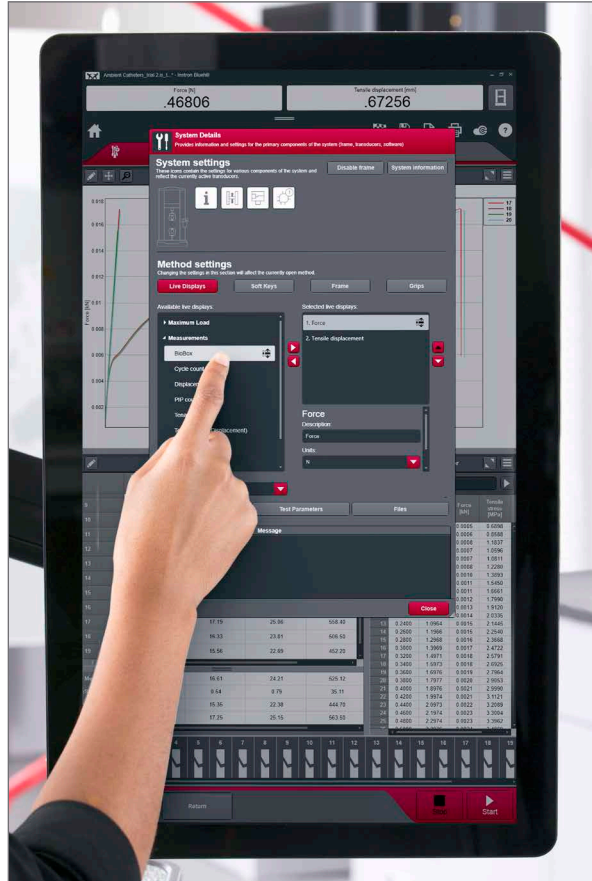
Precise Positioning

Fine position-adjustment thumbwheel for precise positioning of the crosshead when performing sensitive testing.



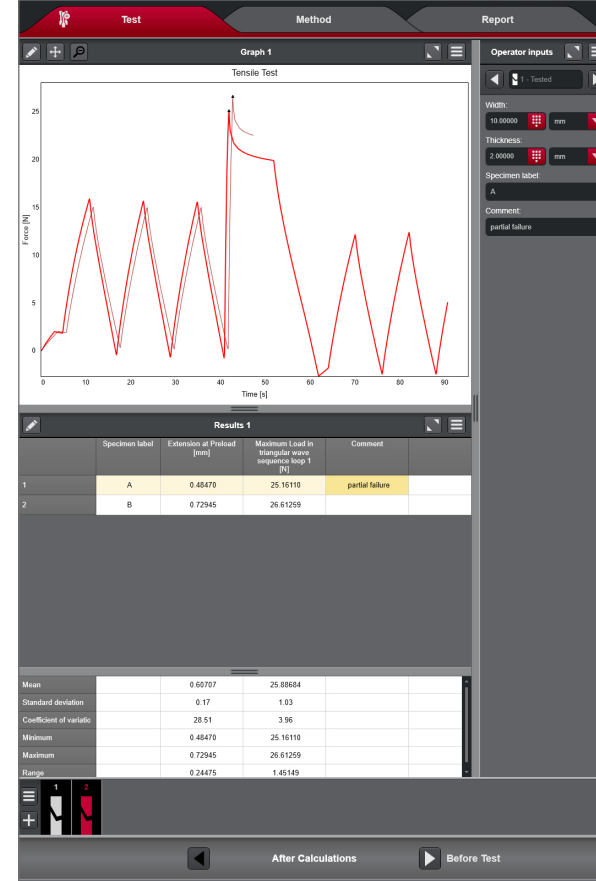
BLUEHILL® UNIVERSAL

Simpler. Smarter. Safer.



Effortless Workflows

An easy-to-use touch interface, built from the ground up with ergonomics in mind, optimizes your testing workflow.



TestProfiler

Build simple cyclic tests that include ramps, holds, and triangle waves. Conditional logic allows you to create looping patterns that help you re-create real-life scenarios with your tests.



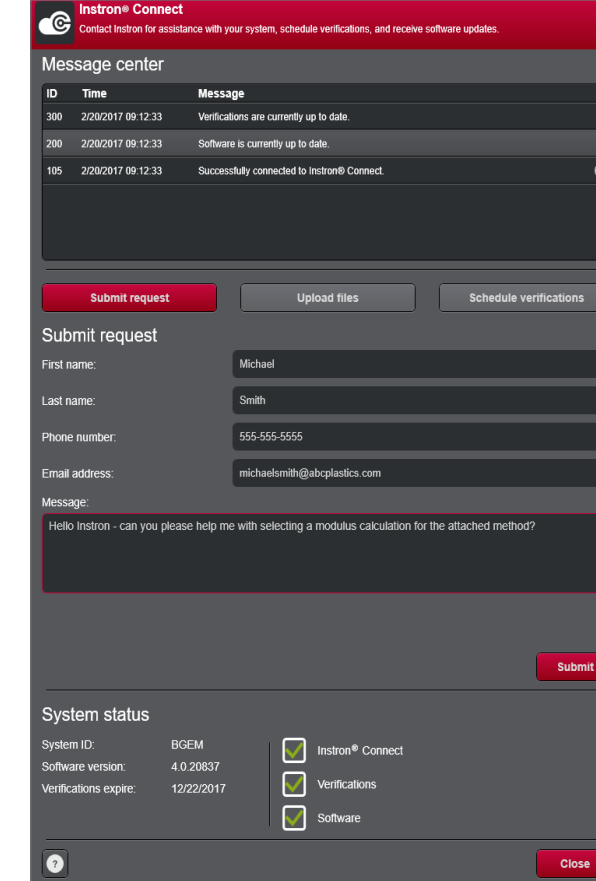
Prompted Tests

Users can be guided through the entire testing process with step-by-step instructions, ensuring that your tests remain repeatable, simple, and error-free. The prompts are customizable with your own text and images.



Pre-loaded Templates

Bluehill Universal includes an extensive library of pre-configured methods for some of the most commonly used ASTM, ISO, and EN standards. The methods are packaged in modules that are specific to your testing application.



Instron® Connect

Instron's unrivaled application expertise and best-in-class service establishes us as the leader in customer satisfaction with the best ownership experience. Instron Connect introduces a powerful communication platform that brings our support engineers even closer to your organization.



Analysis

Replay, reanalyze, or make modifications to previously-tested specimens without having to re-run tests.



Engineered for Precision

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



Built for Durability

The biggest ball screws, the largest diameter guidance columns, and the strongest drive systems are how Instron testing systems provide reliable, repeatable test results for decades.



Designed for Safety

Safety is at the core of 5900 systems. A host of safety features have been engineered into 5900 systems to assure the safety of your operators, specimens, system, and data.



Flexibility to Change

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

HOW WILL THE 5900 MEET MY NEEDS?

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.



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 systems are designed to provide high stiffness and precise alignment for testing everything from medical devices to high-strength composites. Rigid mechanical design ensures the best possible conditions for repeatable tests and reliable results.



Built for Durability

Stiff Frames for High-Strength Materials

Pre-loaded bearings, 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 allow 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

Systems that use gear-reducers create backlash and lower drive-system stiffness, whereas the dual-belt system provides synchronous movement of the ball screws, eliminating crosshead tilt and aiding system alignment.



Designed for Safety



Operator Safety

Operator safety is an integral component of all Instron test systems and has led to the creation of features such as E-stop, dual limit switches, optional debris shields, and pneumatic grip jaw-face shields to reduce pinch hazards.



Specimen Safety

Specimen Protect prevents excessive forces from being applied to the specimen during setup, protecting your critical specimens from damage.



System Safety

5900 systems automatically detect and stop at maximum load cell capacity to prevent damage to the load cell, system, or accessories.



Flexibility to Change



Torsion Add-On 2.0

The Torsion Add-On 2.0 easily mounts to any new or existing 5940 or 5960 system to enable bi-axial testing of components such as bone screws, Luer locks, electrical knobs, etc.



T-Slot Table

The T-Slot Table is 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. (Wide model shown)



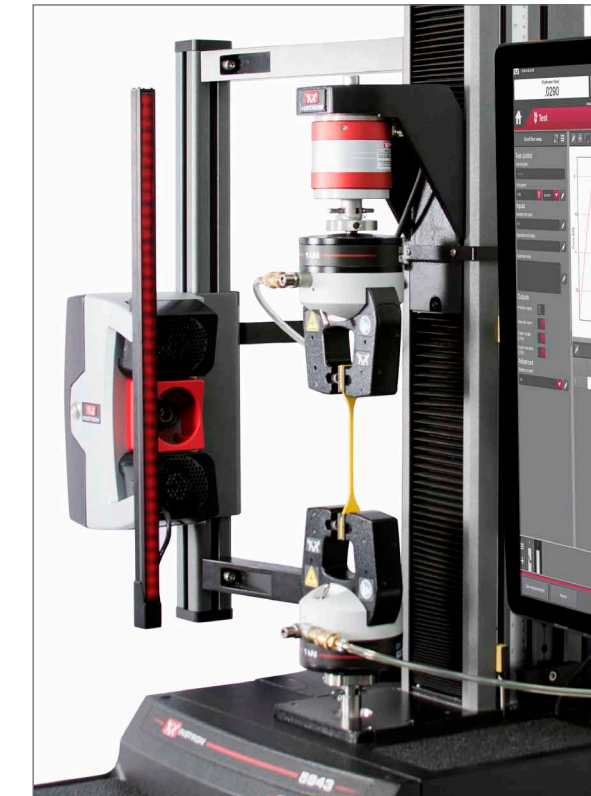
Automated XY Stage

The Automated XY Stage is designed for automated compression or tension testing of components with multiple and repetitive test points such as electronic or medical devices, syringes, pills, or keypads.



AutoX750

High accuracy automatic contacting extensometer which produces reliable and repeatable results with no manual steps. (Biaxial model shown)



AVE 2

The AVE 2 is a non-contacting video extensometer that provides accurate and repeatable strain measurements without affecting material properties.



Extra Wide & Extra Tall Systems

Standard and custom extra-wide and extra-tall models are available to suite a variety of unique applications, such as large samples and high-extension materials (Extra tall and wide model shown).

5900 SERIES SPECIFICATIONS

Model	Capacity		Minimum Speed		Maximum Speed		Crosshead Travel		Vertical Test Space ¹		Column Spacing		Footprint Dimensions (h × w ² × d)		Size Options Available	
	kN	lbf	mm/min	in/min	mm/min	in/min	mm	in	mm	in	mm	in	cm	in	Extra Height	Extra Width
Single Column Tabletop Models																
5942	0.5	112.5	0.05	0.002	2500	100	488	19.2	726	28.6	100	3.9	104 × 46 × 61	41 × 18 × 24		
5943	1	225	0.05	0.002	2500	100	885	34.8	1123	44.2	100	3.9	143 × 46 × 61	56 × 18 × 24		
5944	2	450	0.05	0.002	2500	100	885	34.8	1123	44.2	100	3.9	143 × 46 × 61	56 × 18 × 24		
Dual Column Tabletop Models																
5965	5	1125	0.001	0.00004	3000	120	1140	44.9	1256	49.4	418	16.4	163 × 78 × 73	64 × 31 × 29	•	
5966	10	2250	0.001	0.00004	1500	60	1140	44.9	1256	49.4	418	16.4	163 × 78 × 73	64 × 31 × 29	•	
5967	30	6750	0.001	0.00004	1000	40	1140	44.9	1212	47.7	418	16.4	163 × 78 × 73	64 × 31 × 29	•	•
5969	50	11250	0.001	0.00004	600	24	1140	44.9	1212	47.7	418	16.4	163 × 78 × 73	64 × 31 × 29	•	
Dual Column Floor Model																
5982	100	22480	0.0001	0.000004	1016	40	1330	52.4	1430	56.3	575	22.6	227 × 113 × 78	89 × 44 × 31	•	•
5984	150	33720	0.0001	0.000004	762	30	1330	52.4	1430	56.3	575	22.6	227 × 113 × 78	89 × 44 × 31	•	•
5985	250	56200	0.0001	0.000004	508	20	1330	52.4	1430	56.3	575	22.6	227 × 113 × 78	89 × 44 × 31	•	•
5988	400	89920	0.0001	0.000004	508	20	1850	72.8	2050	80.7	762	30.0	313 × 159 × 96	123 × 63 × 38		
5989	600	134880	0.0001	0.000004	508	20	1850	72.8	2000	78.8	762	30.0	313 × 159 × 96	123 × 63 × 38		

Notes:

1. Total vertical test space is the distance from the top surface of the base platen to the bottom surface of the moving crosshead, excluding load cell, grips, and fixtures.
2. This is the system footprint width. The Operator Dashboard monitor may add 300 mm (12 in) to the overall width of the frame.

SUPPORT FOR THE LIFE OF YOUR EQUIPMENT

Instron® is the largest supplier of materials testing systems 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
- Our on-site and laboratory calibration and verification processes are ISO 17025 accredited throughout Europe, North America, Brazil, Australia, China, Japan, Korea, Singapore, India, Thailand, and Taiwan



Enhanced technical support a “touch” away

- Instron Connect provides easy remote screen-sharing and service-request submissions to reduce support times
- Built in verification reminders in Instron Connect minimize risk for delayed certifications
- Instron Connect allows simple test method and file transfers to keep systems up to date
- Expert consultants provide tailored solutions and traditional hotline access anywhere in the world
- Additional services like preventative maintenance, calibration, training, emergency repair, and service parts ensure that you can keep systems running and get date in a timely fashion



Stay at the forefront of materials science

- Training courses available on-site or in one of our Regional Training Centers
- Utilize our Applications Engineering Lab or Custom Solutions Group for the latest technological advances in materials testing
- Our state-of-the-art Calibration Laboratory offers a comprehensive range of accredited calibration and verification services complying with ASTM, ISO, and Nadcap standards for: force, speed, strain (extensometers), displacement, impact, temperature, torque, creep, strain gauge channel, alignment, and verification of all CEAST instruments.

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



“True innovation occurs when product designers and developers show relentless curiosity towards the needs of their customers. This builds an understanding that allows them to anticipate and create a new suite of solutions that are Simpler, Smarter, and Safer.”

Yahya Gharagozlou

Group President
ITW Test & Measurement
(Instron is an ITW Company)