



Distributed in Europe
by World Precision
Instruments

MicroTester Series

Precision Benchtop Microscale
Mechanical Testing

Purpose-Built
for Microscale
Testing of Soft
Materials

Test in
Physiologically
Relevant
Conditions

Image-Based
Deformation
Measurement
for Better Micro-
Mechanical
Insights



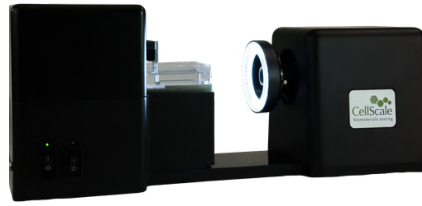
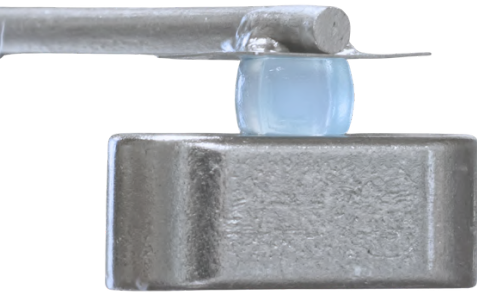
Biomaterials Testing | Hydrogels | Mechanobiology
Tissue Engineering | Organoids & Spheroids

*Capture high-quality micro-mechanical data, run post-test
analysis, and generate publication-ready
figures all on one platform*



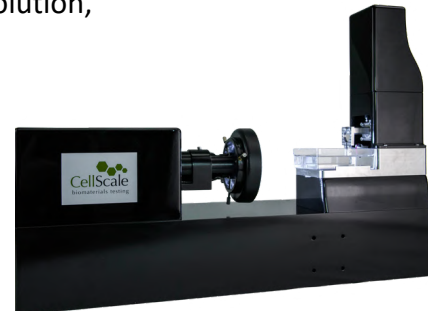
Choose Your MicroTester Model

Select your configuration based on imaging needs, resolution, specimen size, and required workflows



MicroTester LT

Compact micro mechanical tester with integrated imaging, heated media bath, and strain mapping capability



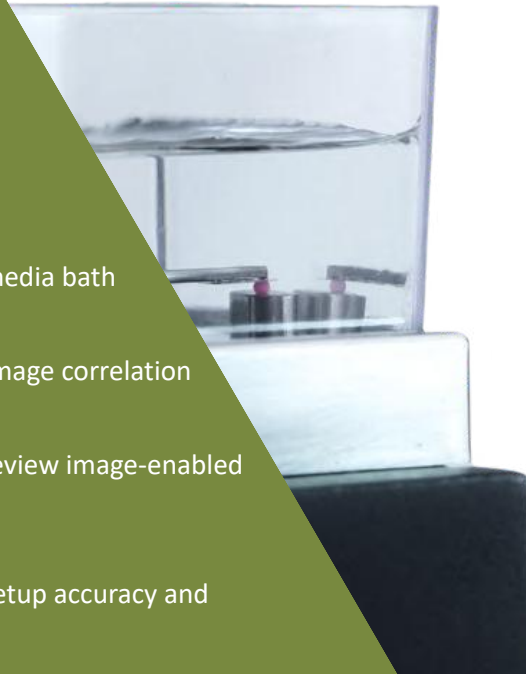
MicroTester G2

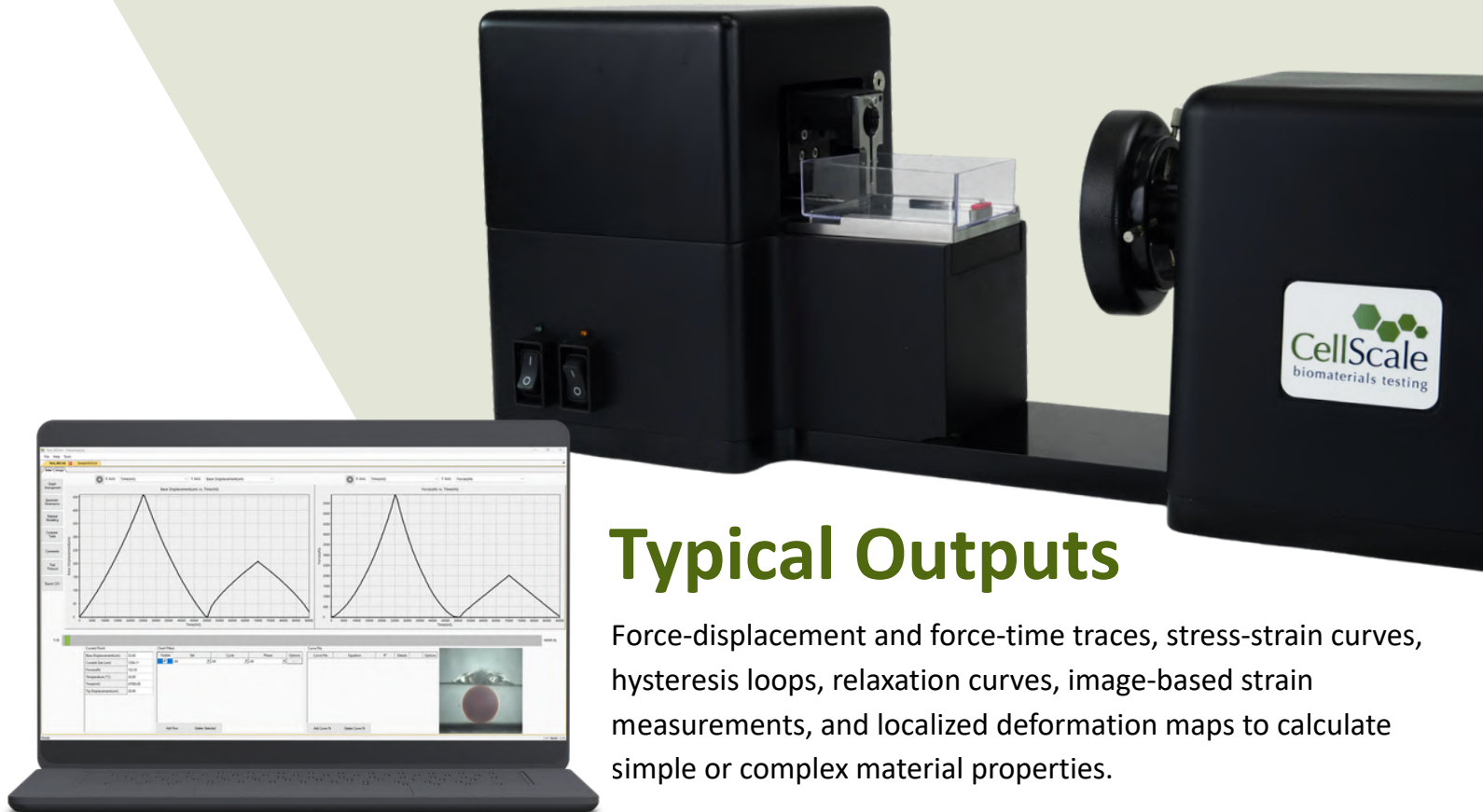
Advanced model with piezo-driven actuation, higher imaging resolution, wider sample range, and optional upgrades

Specification	LT	G2
Dimensions (cm)	52 x 17 x 21	56 x 14 x 24
Weight (kg)	6.5	9
Force Capacity (mN)	25	
Force Transducer Range (mN)	0.005 - 25	
Force Accuracy	0.3%	
Max Grip Separation (mm)	10	
Sample Thickness Range (mm)	0.25-5	0.05-10
Max Velocity (mm/s)	0.5	
Max Cycle Frequency (Hz)	0.1	0.5
Max Data Rate (Hz)	5	15
Actuator Technology	Stepper	Piezo-electric
Actuator Resolution (μm)	1	0.1
Camera Resolution (px)	1536 x 1536	2048 x 2048
Camera Field of View (mm)	0.8 - 5.5	0.4 - 11.0
Secondary Camera Option	No	Yes
Shear Axis Option	No	Yes

Configure Your Workflow

- **Microbeam Force Sensing:**
Select from interchangeable microbeams spanning ultra-low force ranges to match specimen stiffness, sensitivity requirements, and expected loading conditions
- **Fixtures:**
Configure for parallel-plate compression, 3-point tension, spherical indentation, and other low-force workflows for soft, delicate, and microscale specimens
- **Environmental Control:**
Test in hydrated and temperature-controlled conditions (up to 40°C) with included media bath
- **Integrated Imaging & Strain Mapping:**
Combine force and displacement data with non-contact strain mapping and digital image correlation
- **Software & Analysis:**
Create protocols, control tests, monitor force and displacement, run data analysis, review image-enabled datasets, and export publication-ready results
- **Advanced G2 Upgrades:**
Expand capability with optional shear testing and secondary imaging for improved setup accuracy and specialized workflows





Typical Outputs

Force-displacement and force-time traces, stress-strain curves, hysteresis loops, relaxation curves, image-based strain measurements, and localized deformation maps to calculate simple or complex material properties.

Mechanical Tests

Use the MicroTester for physiologically-relevant microscale mechanical testing and image-enabled workflows on very small, soft, and delicate specimens

Compression



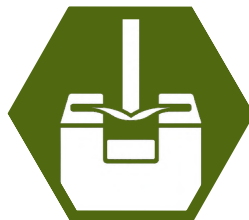
hydrogels, spheroids, organoids, microbeads, microtissues, soft constructs

Indentation



local stiffness measurement, spherical indentation on hydrogels, scaffolds, bioprints

Tension / Flexural



fibers, films, delicate strip specimens, soft engineered materials, micro-scale tensile and bending response

Shear



lateral loading, detachment force, interfacial response, soft material interfaces

Digital Image Correlation



non-contact strain measurement, strain mapping, deformation tracking, localized response analysis

Hydrated & Temperature Controlled

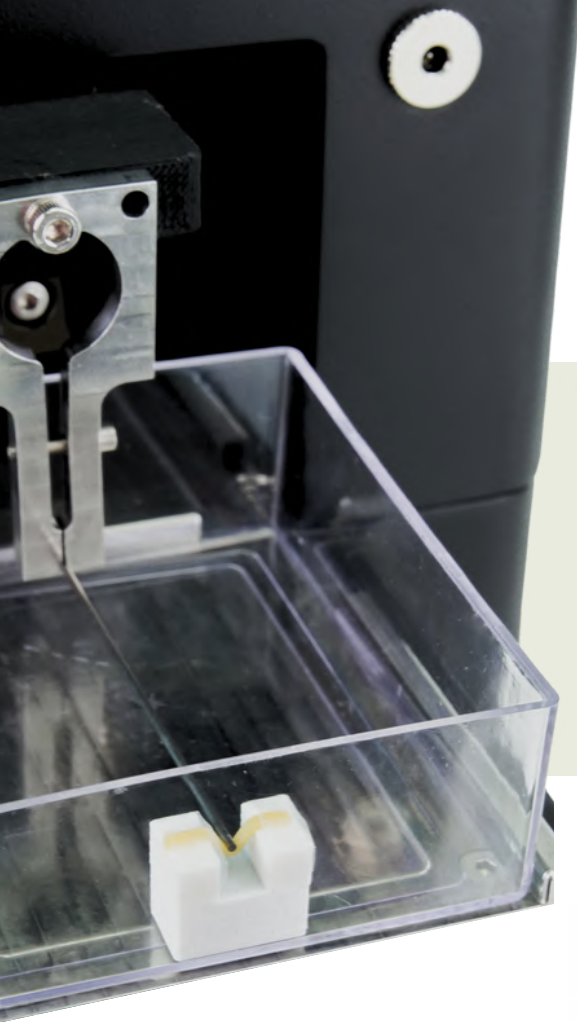


immersed testing in liquid media, soft living samples, physiologically relevant workflows

Viscoelastic & Time-Dependent



creep, stress relaxation, cyclic loading, hysteresis, recovery behaviour



MicroTester Applications

Hydrogels, Bioinks, Cell-Laden Materials

Measure stiffness, viscoelastic response, and local deformation in:

- hydrogels
- bioinks
- bioprinting constructs
- regenerative biomaterials
- living soft materials

Organoids, Spheroids, Microtissues

Characterize compression response, time-dependent behaviour, and treatment-related mechanical changes in:

- organoids
- spheroids
- microtissues
- tissue-mimetic systems
- small 3D biological models

Biomaterials, ECM-Derived Materials, Polymers

Evaluate modulus, indentation response, strain distribution, and comparative material performance in:

- biomaterials
- scaffolds & ECMs
- soft polymers
- compliant engineered constructs
- layered soft materials

Common Sample Types



Hydrogels



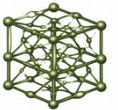
Spheroids



Organoids

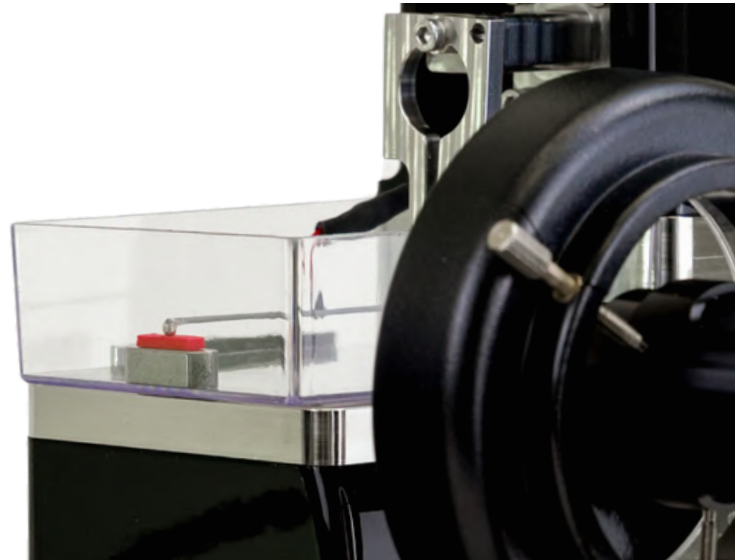


Bioinks



Scaffolds

and microgels, microcarriers, fibers, filaments, microneedles, films, ECMs, ophthalmic samples, PDMS structures, 3D printed microstructures, colloidal materials, microtissues, and many more!



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Book A Demo!

Talk with our team about sample handling, fixture selection, and recommended configurations for your specimens, protocols, and research

