

NON-CONTACT VIDEO EXTENSOMETER - QUANTUM SERIES



Non-Contact Video Extensometer – Quantum Series delivers precise, real-time strain measurement using advanced DIC technology, ensuring accuracy, safety, and versatility for a wide range of material testing applications.

APPLICATIONS

Torontech's latest video extensometer incorporates advanced Digital Image Correlation (DIC) technology, offering a non-contact method for measuring elongation, extension, deformation, and deflection (strain).

1. **What You See, You Can Measure:** As long as the test specimen remains visible, the video extensometer can effectively capture data throughout the testing process.
2. **Reanalyzable Test Data:** Test data is saved as images, allowing post-test reanalysis. Users can adjust the extensometer gauge length or location without needing to repeat tests.
3. **Simultaneous Axial and Lateral Measurements:** This extensometer measures both axial and lateral strains simultaneously without requiring multiple sensors, unlike conventional contact-based systems.
4. **Simplified Operation:** Its contactless design eliminates the need for complex attachment and removal procedures. This reduces wear and tear, extends lifespan, and enhances safety—especially in destructive or extreme-temperature tests that may pose health risks.
5. **No Slippage or Alignment Errors:** Since there's no need to attach or remove components during testing, common issues like slippage or misalignment associated with traditional contact-based extensometers are avoided. The system minimizes user error, ensuring accurate measurements.
6. **Comprehensive Data Tracking:** The extensometer tracks tests from start to finish, enabling precise software-based calculations of elongation at break.
7. **Advanced Connectivity Options:**
 - **Analog Output:** Real-time measurements can be exported to third-party devices.
 - **Digital Output:** Data can be shared via serial port or TCP/IP.
 - **Analog and Digital Input:** Signals from external devices can be for integrated analysis.

Torontech's video extensometer is a robust, efficient, and versatile tool for advanced material testing in diverse environments.

How Does It Work?

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What is Pattern

A pattern is a group of points that significantly differ in gray level from their surroundings, much like constellations are recognized by the arrangement and distribution of stars.

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How Does it Track?

The system establishes the initial pattern as a reference and determines its geometric center. It continuously compares any differences against the reference and tracks the center. If part of the pattern is missing or its deformation exceeds the confidence threshold, the system updates the reference to the latest detected pattern.

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Applications

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FEATURES

Intelligent & flexible

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TECHNICAL SPECIFICATIONS

Non-Contact Video Extensometer – Quantum Series

Model	Quantum-1-X*, X is FOV
FOV	100mm-1000mm upon request

Accuracy	FOV*≤650mm, Class 0.5 □ 0.5% □ ISO 9513
Resolution	FOV*≤650mm, better than 0.5μm
FPS	22Hz -300Hz upon request
Working Dist.	≥350mm (Customizable)
Tools included	#1:Tracking single point (Bending deflection/Displacement/Stroke) #2:Tracking two points (Conventional Extensometer) #3:Tracking entire free length / parallel length (Ensure breaking within Le) Others upon request
Light	Dual Shortwave Lights
Comm.	USB 3.0
FOV* is Field of View means the length of vertical range could be seen on video extensometer	

Non-Contact Video Extensometer – Quantum Series

Quantum-2 Series video extensometer with supper high accuracy (up to 0.2%) , it is a universal non-contact for all materials

Model	Quantum-2-X*, X is FOV
FOV	1mm-180mm upon request
Accuracy*	FOV*≤180mm, Class 0.5 □ 0.5% □ ISO 9513
Resolution	FOV*≤180mm, better than 0.2μm
FPS	22Hz -1000Hz upon request

Working Dist.	≥200mm (Customizable)
Tools included	#1:Tracking single point (Bending deflection/Displacement/Stroke) #2:Tracking two points (Conventional Extensometer) #3:Tracking entire free length / parallel length (Ensure breaking within Le) #4:Transverse Strain measurement: Width (Diameter) Measurement for area reduction (Rod)/plastic strain ratio (Sheet metal) Others upon request
Light	Dual Shortwave Lights
Comm.	USB 3.0
Accuracy*: 0.5% is a conservative value, in most cases up to 0.2% FOV* is Field of View means the length of vertical range could be seen on video extensometer	



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