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ADVANCED TESTING TECHNOLOGIES

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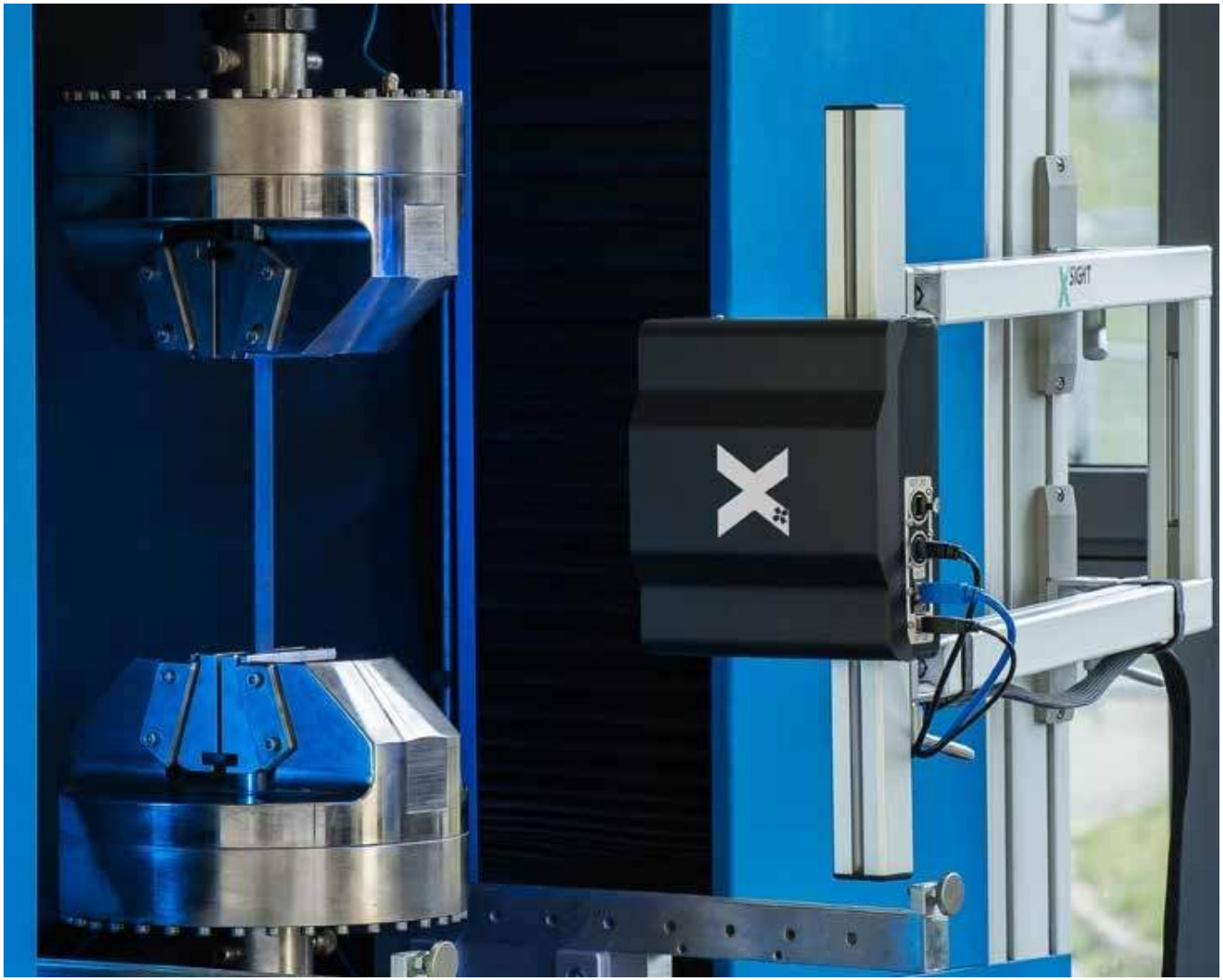
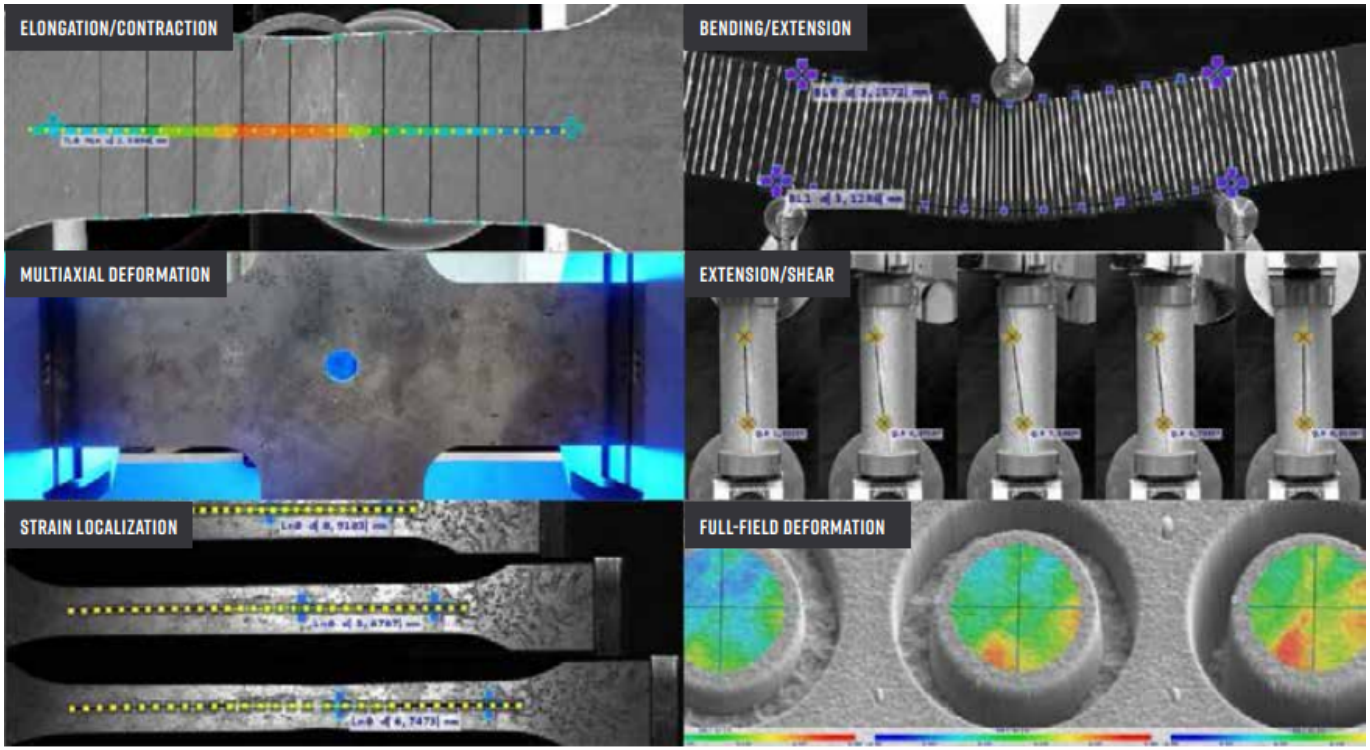
Video Extensometer
X-Sight Series

The Video Extensometer X-Sight Series is a sophisticated measuring tool that uses advanced digital image correlation (DIC) technology to precisely analyze strain and displacement in various materials. It offers multiple modules tailored for specific applications, including axial strain, transversal strain, crack length measurement, and torsional analysis. With capabilities ranging from basic planar measurements to full 3D functionality, the extensometer ensures accurate data collection in real-time, making it invaluable for material testing in research and industrial settings. Its user-friendly interface and compatibility with diverse probes enhance its versatility, enabling comprehensive analysis of complex material behaviors.


X SIGHT

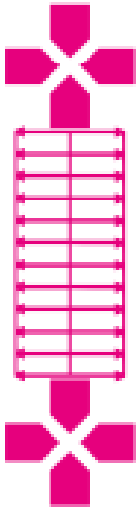


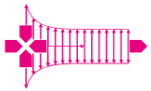
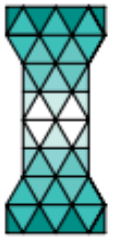
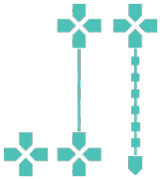
Tools and Modules

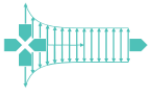
	Point A basic measuring probe for displacement determination

	**Line** An elementary measuring probe for strain and length determination.
	**ROD Line** Advanced line measurement probe with axial neck detection feature for samples with oxide or rust layer.

	**Extreme Line** Advanced probe for axial neck detection, provides an improved E-modulus reading.
	**Line Value Distribution** A series of consecutive rectangles placed on repeating patterns of measured objects of known dimensions. Allows measuring deflection and sway.
	**Bend Line** A probe designed to be used during bending tests. Measures strain over a curved shape and enables the visualization of the strain distribution in real-time.

	**Torsion Line** Enables dual position angular twist and strain measurement.
	**Trans Line** Used for multi positional transversal measurement with averaged and max/min width functions.

	**Crack Probe** Measures a crack length during static or dynamic tests.
	**DIC Area** A full-field probe for strain and displacement distribution mapping. Supports evenly triangulated mesh as well as mesh based on user-defined points.
	**AX - AXIAL STRAIN** The system allows for real-time measurement of axial strain, offering enhanced precision and reliability. In addition to basic measuring probes like the Point Probe and Line Probe, the Alpha Axial Strain Measurement module features the Extreme Line Probe, which divides the specimen’s length into multiple precisely defined gauge segments. This advanced functionality detects the necking area, providing a significant advantage over traditional single-position measurements. It helps prevent test invalidation caused by ruptures occurring outside the gauge length, ensuring more accurate and valid test results.
	**TR - Transversal Strain** This system allows for real-time measurement of transversal strain with exceptional accuracy. The Alpha Transversal Strain Measurement module includes the Trans Line Probe, featuring advanced edge detection technology. The Trans Line Probe enables single or multiple line width measurements, surpassing the limitations of conventional single-position methods. All measured lines can be averaged to provide a precise Poisson’s ratio reading, enhancing the reliability of transversal strain data and ensuring comprehensive analysis during material testing.

	**CL – Crack Length** This module is specifically designed for crack length measurement in compact tension (CT) and double cantilever beam (DCB) specimens. It includes the Line Probe function, which enables accurate measurement of crack opening. The results obtained with the Line Probe are comparable to those from conventional devices, providing reliable and precise data during crack length assessments. This module is ideal for advanced fracture mechanics testing, offering enhanced functionality for detecting and analyzing crack progression.
	**TO – Torsional** This feature allows for the measurement of angular twist on cylindrical specimens at two distinct positions. It is suitable for both static and dynamic applications, providing precise data on the specimen's rotational behavior. Ideal for torsion testing, this functionality offers valuable insights into material properties under twisting forces, enhancing the reliability of results in both research and industrial settings.
	**PP – Post Process** This module offers an exceptionally efficient tool for processing previously recorded tests, enabling subsequent playback and data export. Each real-time measurement method can have multiple offline records, with a customizable probe layout for flexible analysis. The Post-Process module is an optimal solution for testing unique or expensive specimens and components, allowing for detailed review and measurement without the need for re-testing. This feature ensures thorough analysis, making it ideal for advanced research and critical material assessments.

	**DIC AREA** This module generates a strain or displacement distribution map, maximizing data collection from each experiment. It surpasses other available technologies by offering users a more comprehensive understanding of their tests. With its easily interpretable output, this feature not only enhances experimental insights but also facilitates the presentation and sharing of results, helping users around the world to communicate their findings effectively and effortlessly.
	**LVD – Line Value Distribution** While full-field strain distribution via Digital Image Correlation (DIC) Area analysis often necessitates post-processing due to the high number of computational points, the Line Value Distribution module offers a vibrant value visualization feature that enhances feasibility during real-time measurements. This module supports most probe types segmented into line divisions, specifically designed for strain distribution in Extreme, ROD, and Bend Lines. Additionally, it provides options for Deflection or Curvature measurements for Bend Lines, allowing users to gain immediate insights into strain behavior during testing.
	ITT – Intelligent Tensile Test This advanced feature is designed for measuring specimens with an outer layer that may fragment and fall off during testing. A typical application is in tensile testing of reinforcing steel bars that have an oxide or rust layer. This functionality ensures accurate measurement of the underlying material's performance while accounting for the potential effects of the outer layer, allowing for reliable data collection even in challenging testing conditions.

	**3DPL – 3D Planar for Line-Based Probes** The 3DPL module provides basic planar stereoscopic functionality specifically designed for use with line-based probes in video extensometer. It is ideal for flat surfaces, enabling measurement without the need for sample marking. This module offers a straightforward solution for applications that require only planar measurements. **3DP – 3D Planar Functionality** The 3DP module is tailored for video extensometer applications on initially flat samples, including those with reflective surfaces. It allows for analysis without marking the samples. Accurate measurements depend on positioning the sample in a plane at the start of the test.
	**3DL – 3D for Line-Based Probes** The 3DL module enhances video extensometer functionality by removing the constraint of keeping the test sample's movement within a single plane during experimentation. It utilizes line-based probes for precise measurement, requiring the sample to be marked for accurate tracking and analysis. **3D – Full 3D Functionality** The 3D module integrates Digital Image Correlation (DIC) with stereo vision, providing advanced capabilities for measuring displacement and surface strain fields of 3D objects. This universal measurement method within DIC systems offers unmatched versatility and precision. The 3D module is the most comprehensive solution for analyzing the mechanical behavior of materials and structures in three dimensions, making it an essential tool for a wide range of applications in both research and industry.

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