

In this document, you will find the answers to the most frequently asked questions regarding the Vector product range.

If this document doesn't answer your question, please reach out to us at hello@imetrum.com

What are the advantages of Vector over traditional extensometers?

The term non-contact refers to the way Vector measures, requiring no physical contact with the test specimen. Therefore, no clip-ons, cables or sensors are placed on the specimen that requires testing.

The non-contact approach allows operators to use the same extensometer for a wide variety of different specimens and test types. Without the need to touch or alter the specimen, the extensometer does not influence the measurement, which is particularly important with delicate materials. This process is far more efficient, as it only requires simple specimen marking.

Vector builds on years of measurement experience and knowledge in the material testing and metrology fields, culminating in a precision measurement solution resilient to the many challenges of laboratory testing.

How easy is Vector to use?

Vector is up and running with four easy steps: Install; Mark; Align; and Measure, Vector can be operational in just 40 seconds.

To aid the operator, Vector is rich in user feedback, such as alignment guidance, status indication and adaptive guidance via the Vector Interface app.

What testing is Vector suitable for?

Vector is suitable for most universal test machines and can be used in applications at ambient temperature and with temperature chambers, Vector outputs measurements in real-time via analogue +/-10V BNC connection.

Vector's automatic and adaptive control reduces complexity for users and streamlines testing. Vector can be configured to work with different mark types, gauge lengths and outputs. It is well suited to both the common and unusual materials in the metal, composite and polymer industries.

Vector accommodates multiple gauge lengths within one extensometer, including outputting in both strain and extension. Vector is suitable for a range of specimen geometries, environmental conditions and UTMs. Using Vector removes the need to manage delicate contactable extensometers and can test to failure uninterrupted

How does Vector automate measurements?

Vector produces extensometry measurements automatically, which significantly reduces the operator handling, test time and likelihood of error. Each Vector has an optically calibrated region of measurement, defined by clear laser guides. Using specific pattern recognition for the

marked specimen, Vector can output precision strain measurements repeatably in less than a second without the need for precise positioning or configuration.

How should I maintain and clean my Vector?

To maintain the optimal performance of your Vector extensometer, it's crucial to keep the front face free from dust, grease and other contaminants. Here's how to properly care for it:

1. Cleaning: Use a clean microfiber cloth to gently wipe the centre window. The window is made from optical-grade cast acrylic, which is prone to scratching, so avoid using abrasive materials.
2. Removing debris: For any debris buildup, use low-pressure compressed air (like an air duster) to blow it off. Ensure the nozzle is at least 150mm away from the front face to avoid damage.
3. Handling marks or smudges: If you notice any marks or smudges, they should be gently wiped away with a microfiber cloth.

How do I identify Vector dashboard icons?

We have designed a comprehensive troubleshooting guide to help you resolve problems quickly and easily. You can find instructions and helpful tips in our Vector manual: [Manual](#)

What type of technology does Vector use?

Vector is a closed-loop vision-based system, which benefits from AI processing to produce accurate measurements from a variety of standard specimen marking methods. Through Artificial Intelligence, Vector captures, analyses and outputs measurement information to the user in a quick and automated method, with minimal operator interaction.

What is a biaxial extensometer?

"Biaxial" means measuring in two perpendicular directions simultaneously, typically one in line with the load and the other transverse, across the width of the specimen.

What benefit does a biaxial extensometer provide over uniaxial?

Measuring both transverse and axial strains allows further material information to be calculated from the way these strains behave. Biaxial extensometers are used to help calculate Poisson's ratio; the Plastic Strain Ratio, r ; and the Tensile Strain Hardening Exponent, n .

Can all Vector's measure in biaxial?

The B in the name Vector B80 denotes that it is a biaxial extensometer. U70 and U200 are uniaxial only. The B80 can also measure uniaxially, when configured, and is suited for specimens smaller than those suitable for the U70.

What biaxial measurements can Vector perform?

A biaxial Vector requires similar markings to other Vectors – either a speckle pattern or an arrangement of rings for both axial and transverse gauges. Vector outputs a single transverse measurement from these markings.