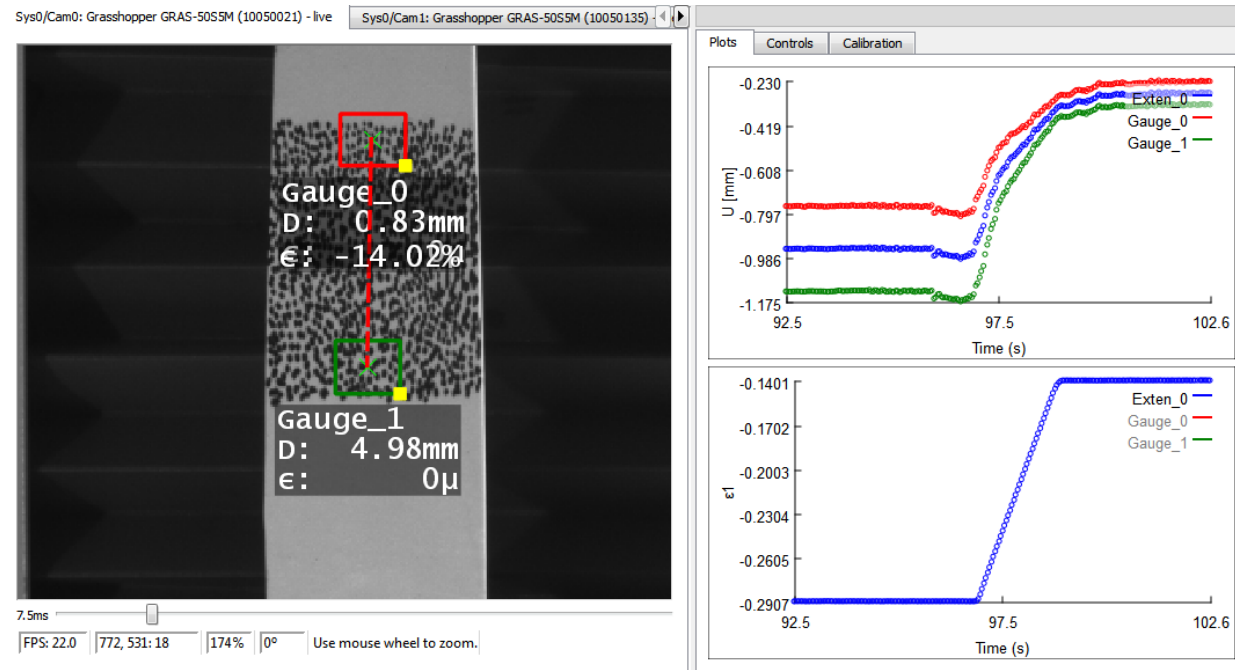


## The VIC-Gauge 3D™ Real-Time Strain Measurement



### Measurement System Feature Overview:

The VIC-Gauge 3D™ system is offered as a turnkey strain measurement solution that doubles as a video extensometer and virtual strain gauge. The system performs a three-dimensional digital image correlation (DIC) analysis on a pair of images in real-time, processes the data, and then outputs a control signal. The measurements are displayed graphically, but also as virtual gauges values that can be exported via a BNC +/-10V analog signal. The system utilizes the same robust and precise algorithms found in the Vic-3D™ system, and the same ease of use. A turnkey Vic-Gauge 3D™ system from Correlated Solutions typically includes a tripod, mounting, lighting, cameras, lenses, PC, software, technical support and software upgrades for one year, etc. Detailed features and specifications of the system are described here within.

## General Features:

- Real-time measurement of strain and displacement at one or many discrete points
- Measure strain data at points, or use virtual extensometers to connect locations
- Analog value inputs for real-time load vs. strain reporting
- Dual BNC analog outputs for non-contacting strain or displacement control of test frames, forming machines, etc.
- Each gauge measures
  - X, Y, & Z coordinates
  - X, Y, & Z displacement
  - Full strain and shear tensor
  - First and second principal strains
- Full test setup can be saved as a project for fast, consistent repeated tests

## Specifications:

- Strain Resolution: up to 0.005% (50  $\mu\epsilon$ )
- Strain Range: 0.01% to 1000% or higher possible
- In-Plane Displacement Resolution: 1/100,000 \* FOV
- Out-of-Plane Displacement Resolution: 1/50,000 \* FOV
- Data Input: up to eight analog +/- 10V BNC channels
- Real-Time Output: up to 250 Hz
- Data output: Two analog +/- 10V BNC channels

## System Components:

- Vic-Gauge 3D Real-Time Image Correlation Software
- PC with the following specifications:
  - Intel i7 Quad-core Processor
  - 16 GB RAM
  - 2 TB hard drive, AND 250GB SSD
  - 24" LCD
  - DVD-R/W
  - OpenGL® Graphics card with 3D acceleration
  - Windows 7 Professional
  - Microsoft Office 2010
- Two monochrome digital cameras (up to 250Hz)
- Lenses
- Tripod and stereo-mounting
- Light source
- Calibration targets
- Hard-sided cases for cameras, lenses, and accessories
- The system includes one year of technical support via telephone/email and software upgrades. Technical support is available Mo-Fr 9am-5pm EST.
- The system includes a one-year replacement warranty

## Optional Vic-3D analysis software capabilities:

- Images can be acquired for later full-field measurement using Vic-3D. The Vic-3D software analyzes the entire speckle pattern to produce full-field 2D and 3D contour graphs. A few of the features include:
  - 3D coordinates and displacement
  - Complete surface strains
  - Velocity, curvature, rigid motion, etc.
  - Complete animations
  - Full-field data extraction for FEA validation
- Data is available immediately in spreadsheet form including times, loads, displacements, and complete strain tensors for each point
- Software licenses: The system will come with image acquisition and analysis software preinstalled on a desktop or laptop computer. An additional license will be provided on a USB dongle. This dongle permits execution of the analysis software on any computer the user chooses.
- Data Export: Full-field data can be exported in Tecplot, ASCII as well as spreadsheet-compatible (e.g., Microsoft Excel) files. Other formats can be supported on request as part of technical support.
- Software Interoperability: On Microsoft Windows systems, Correlated Solutions software is fully integrated with Cut & Paste functionality. All graphs and plots can be copied directly into any office suite software or saved in compatible image or video formats.
- The data density is freely selectable by the user by varying the spacing between analysis points.
- Graphical display of all data as an overlay over the image taken of the test article with user-selectable transparency.
- Post-processing features such as minimum/maximum, mean and standard deviation, time-slice extraction, stress-strain curve generation, data extraction along lines, etc.
- Capability to generate compressed AVI animations of strain distributions from the image-overlay contour plots, or just the images or contour plots independently.
- Video player with adjustable frame rate, single step functionality and zooming is included for data display.
- Capable of automatic start point generation and sequence analysis. The software includes advanced predictive algorithms for both spatial as well as temporal start point generation.
- Please contact [sales@correlatedsolution.com](mailto:sales@correlatedsolution.com) for more details.