

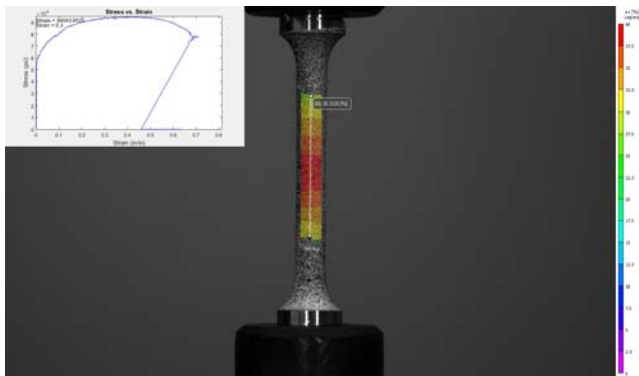
3DSTRAIN

3DStrain is Lucideon's state-of-the-art three dimensional strain measurement technique. It is highly versatile and can be applied to obtain full-field surface strains on objects of virtually any material, any complex geometry, or any size, ranging from small subscale components to large complex structures.

VISUAL AND VERSATILE

This non-contacting strain measurement service provides full-field strain data in the X-, Y- and Z-orientations on objects before, during and after loads are applied. High-resolution digital cameras track surface displacements which are recorded and processed to provide color-coded strain maps indicating areas of stress concentrations to aid in new product development and failure analysis.

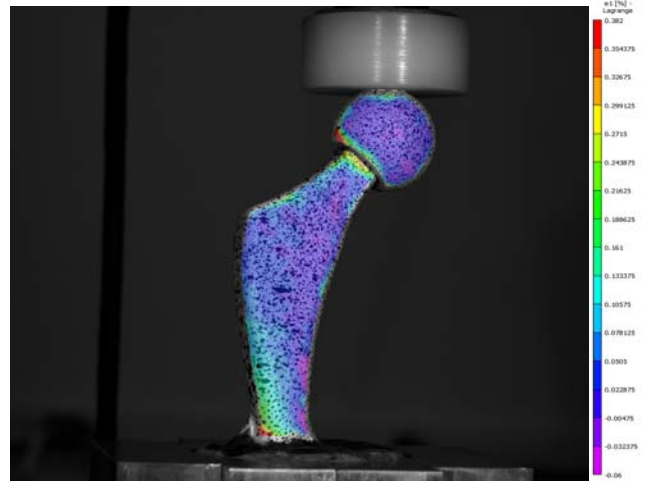
3DStrain is based on digital image correlation (DIC), which excels where conventional methods of strain measurement fail. It handles complex geometry and irregular surfaces with ease, producing dynamic three-dimensional strain maps to provide engineers and designers with valuable insights on product and material performance.



Strain map on a tensile specimen under load

APPLICATIONS

- Validate and refine Finite Element models.
- Characterize mechanical behavior of complex materials such as composites or Additive Layer Manufactured materials (ALM).
- Visualize the response of irregularly-shaped components under load, such as orthopedic implants.



Strain map on a hip stem under flexural load

FEATURES

- Quantitative: calibrated images provide 3D strain or displacement maps.
- Versatile: applicable to most any material of any geometry, under static or dynamic loads.
- Scalable: suitable for large structures down to sub-scale components.
- Non-Contacting and Non-Destructive: enables proof-testing of components without damage.
- Portable: can be applied in the lab or in the field.

RELATED SERVICES

Lucideon offers a complete suite of material analysis techniques including advanced surface analysis, 3D surface profiling, electron microprobe analysis, microstructural characterization, chemical composition, thermal analyses, mechanical and electrical testing,