

Living up to Life

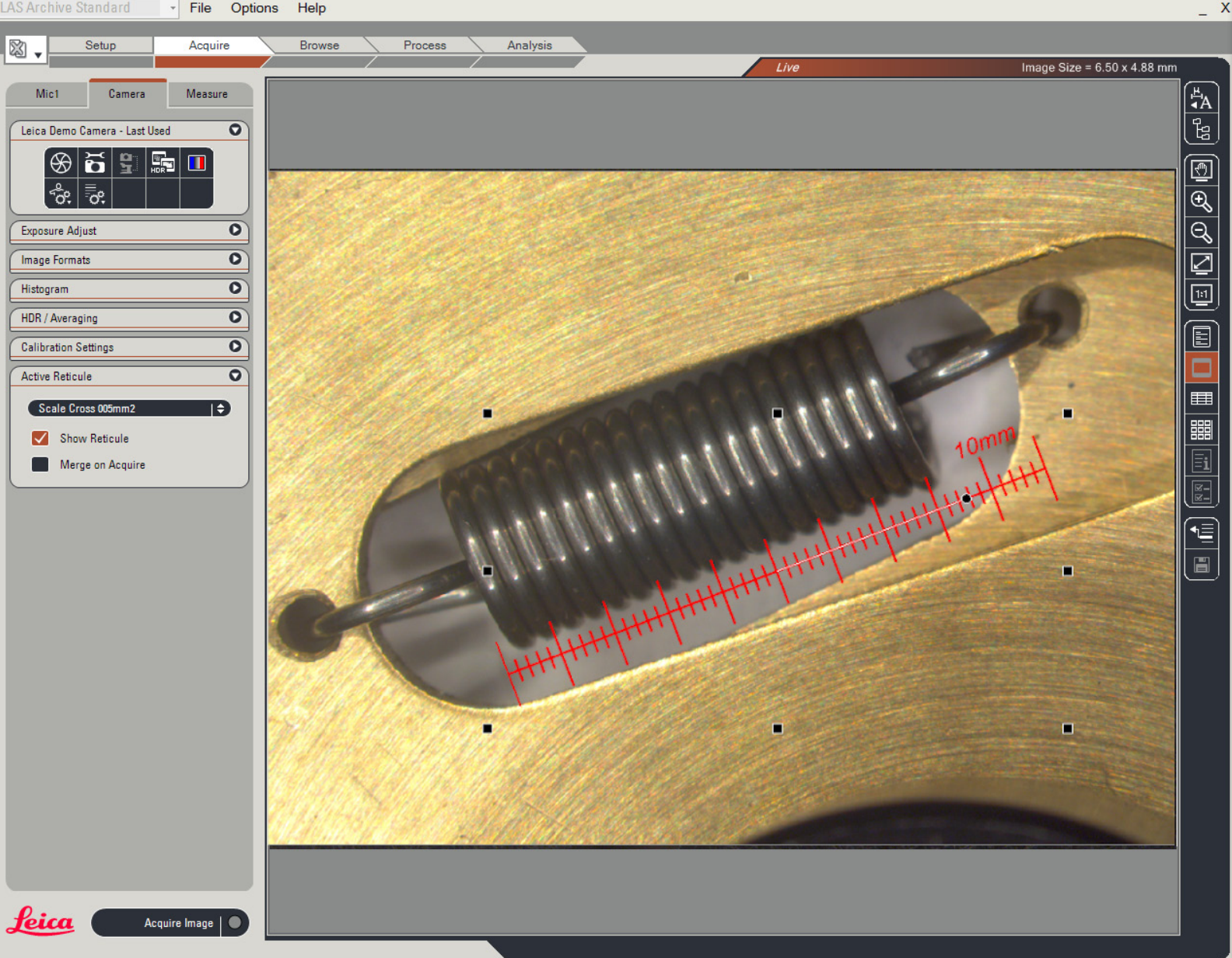
Leica
MICROSYSTEMS

Leica LAS Reticule

Display Customized Reticules on Live Images

INDUSTRY DIVISION





OVERCOME THE LIMITATIONS

Leica LAS Reticule is an optional module that is combined with a Leica microscope, digital microscope camera, and computer. Leica Application Suite Reticule overcomes the limitations of the traditional eyepiece graticule or micrometer etched with a measurement scale.

The electronic reticule adapts to the magnification of the microscope and provides a more comfortable working environment where the live microscope image is displayed on-screen. An unlimited range of reticule styles can be used, and new reticules are designed and applied quickly and easily. When an image is acquired, the reticule can be merged into the image for a permanent record.

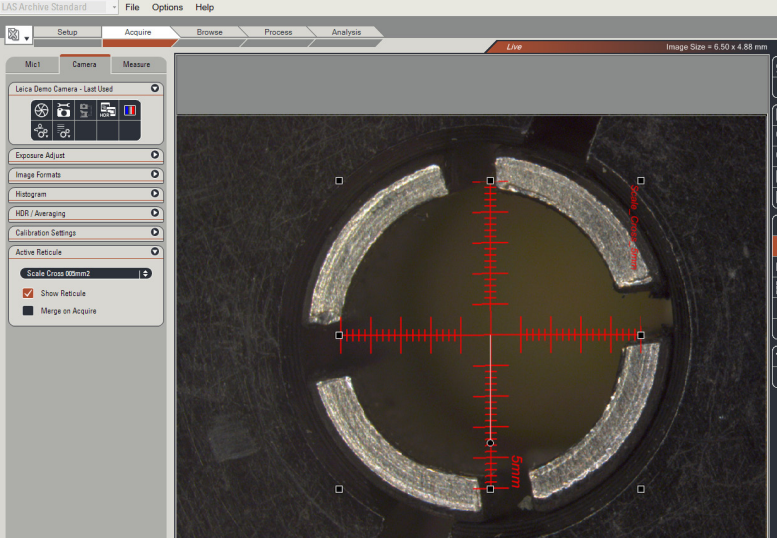
Leica Application Suite software provides the operating environment for LAS Reticule based on Windows® PCs. It is a cost-effective and highly efficient user interface, compatible across the Leica range of microscopes and cameras.

More Versatile

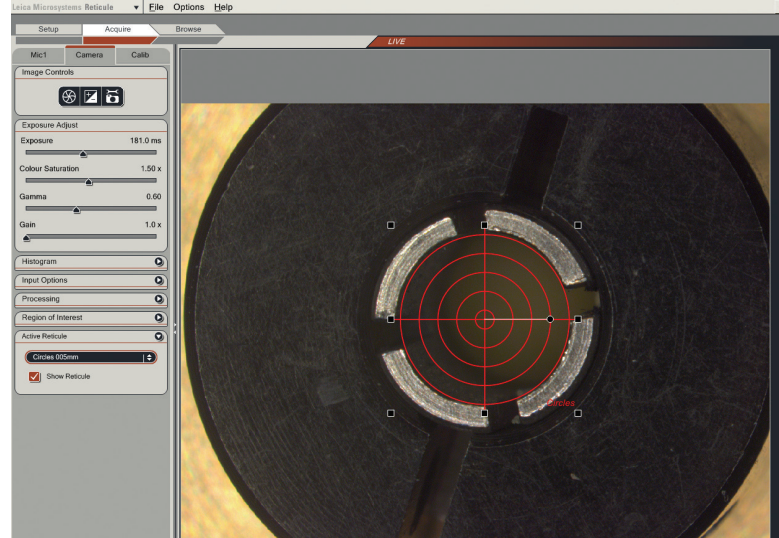
The LAS Reticule module is primarily used to display customized reticules on live images. The electronic reticule is a more versatile replacement for the glass graticule that has commonly been placed in the optical path of a microscope during routine manual inspection of industrial samples.

LAS Reticule extends these capabilities by providing:

- A live image display on which a reticule can be electronically overlaid to give direct, and continuous comparison
- The ability to perform object size comparisons or point counting measurements
- Greater flexibility due to the unlimited range of electronic reticule styles, which can be automatically adjusted to the magnification of the microscope
- A more comfortable working environment with on-screen visualization
- The capacity to move and rotate a reticule even when viewing a live image
- Easy reticule design and creation so each system can extend its applications



Reticule to estimate component symmetry and diameter.



Reticule crosshair diameter.



Reticules Resolved!

A wide range of reticules are supplied ready for use:

VISUALIZATION:

- The reticule display can be adjusted for convenient operation:
- › A list of available reticules allows the user to immediately select individual reticules.
 - › The selected reticule is superimposed on the displayed live image and scaled according to the calibration.
 - › A scalable reticule position and rotation can be adjusted within the image borders using a mouse.
 - › The reticule color can be changed to give the best contrast against the live image.

RETICULE DEFINITION

A file in the graphic definition format "SVG" defines the reticules. These can be a fixed size so they can be compared with the underlying image. Scalable reticules, of an absolute size, can be moved and rotated easily on the live image. The definition file may contain lines, shapes, and text, with user-defined properties. Even color images can be displayed in the reticule for additional versatility.

METALLURGY RETICULES

- › Reticules are supplied that can be used for inclusion rating by comparison based on the ISO4967, EN10247, and ASTM E45 standards.
- › Also, three grain sizing comparison reticules are supplied in the ranges GN 1 2 3 4, GN 3 4 5 6, and GN 5 6 7 8.

EXAMPLES OF FIXED RETICULES:

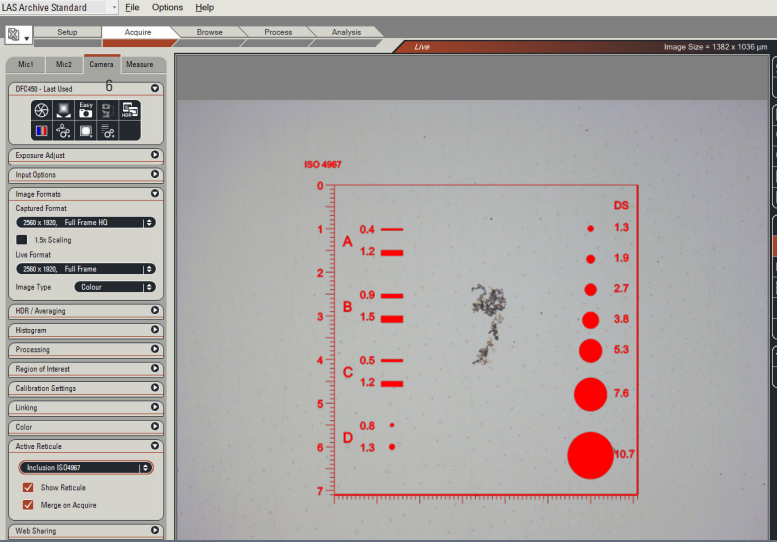
- › Point counting grid
- › Circles
- › Crosshairs
- › Squares - Muller, Whipple
- › Stereology - Mertz, Weibel

EXAMPLES OF RETICULES THAT SCALE WITH THE MICROSCOPE MAGNIFICATION:

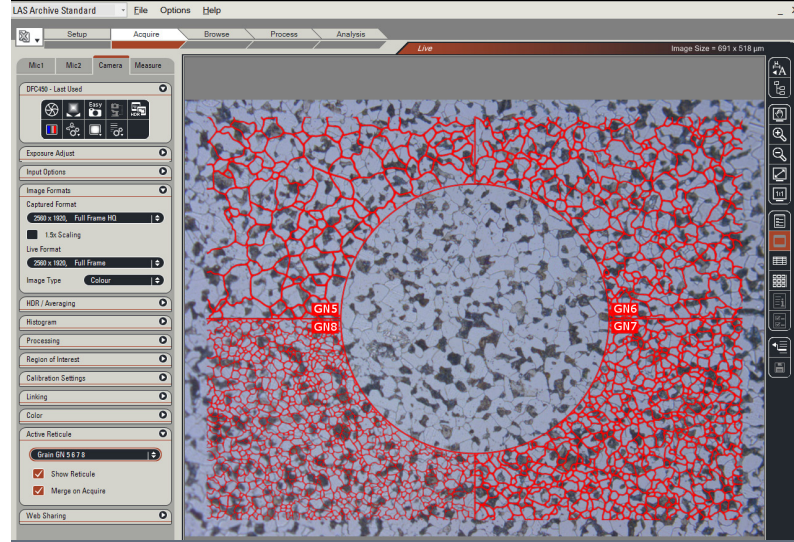
- › Circles
- › Horizontal bars
- › Horizontal scales
- › Cross scales
- › In sizes 10, 20, 50, 100, 200, 500 μm , 1, 2, 5, 10 mm

CALIBRATION OF LEICA STEREO MICROSCOPES

- Following accessory is recommended to calibrate the Leica M165 C and M205 FA for use with LAS Reticule:
- › Stage Micrometer, cat. #10310345



Electronic reticle for evaluating non-metallic inclusions according to ISO4967



Electronic reticle for grain size determination



Electronic, practical and proper

The LAS Reticule module provides application-specific electronic reticles for manual examination of specimens from the metallography, materials science, mineralogy and histology fields.

The electronic reticles enable qualitative description by means of comparative templates and quantitative evaluation according to stereological principles.

Optimum visibility is independent of live image and selected contrast method, ensured by user-definable color-coding. Through the easy handling and versatility, LAS reticule is ideal for professional use and for educational purposes.

EXAMPLE CONFIGURATIONS FOR APPLICATION IN A METALLOGRAPHY LABORATORY

› Entry-level:

Manual materials microscope Leica DM1750 M with Leica digital camera with CMOS chip for fast live image. Ideal for daily routine tasks.

› Semi-automated variants for high operational convenience:

The encoded materials microscope Leica DM4000 M with automatic calibration provides an increased protection against incorrect operation. Enhanced by a Leica digital camera with CCD chip, the system additionally delivers an extremely fast live image and a high image color fidelity.

RELATED PRODUCTS



LEICA DM2500 M

The efficient Leica DM2500 M microscope for materials analysis and quality control.



LEICA DMI 3000 M

The Leica DMI3000 M inverted, manual microscope for materials science, industrial quality inspection and assurance, and new materials research and development.



DM6000 M

The universal microscope for all common incident light methods (brightfield, darkfield, polarization, interference contrast, fluorescence contrast).



LEICA DFC450

The Leica DFC450 microscope camera contains a high quality 5 Mpixel CCD sensor for sharp, brilliant images for documentation, and analysis in life science, clinical, and industry applications.

The statement by Ernst Leitz in 1907, “with the user, for the user,” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: Living up to Life.

INDUSTRY DIVISION

The focus of Leica Microsystems' Industry Division is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the smartest and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

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