

Leica Application Suite

Integrated Software Solutions

Leica
MICROSYSTEMS

You're In Focus!

Totally Integrated Solution

Leica Application Suite (LAS) integrates Leica automated microscopes, macroscopes, digital cameras, and software into one common environment to provide an easy-to-use and consistent imaging solution with unrivalled performance. The versatility of Leica Application Suite makes it suitable for a diverse range of life science and industrial applications such as materials quality control, pathology, pharmaceutical testing, and many more. LAS accelerates the visualization, enhancement, measurement, and documentation of digital images through the richness of its image processing functions. This powerful software solution can control all functions of the Leica DM range of upright and inverted compound microscopes and motorized stereomicroscopes and macroscopes. By providing all the necessary tools for the installed applications to communicate with each other as well as with peripheral devices connected to the computer, LAS offers an intuitive solution that simplifies routine and research analysis.

Features at a glance:

- The unique user interface is designed for ultimate operator convenience for all imaging applications.
- LAS increases productivity by integrating microscopes, digital cameras, and application software to coordinate imaging tasks with intelligent control.
- Automates digital photomicrography through the electronic features of Leica microscopes.
- Provides a single application for acquiring, storing, annotating, and displaying high quality images with a thumbnail gallery.
- High modularity starts from routine applications to cutting edge research.
- LAS, based on Windows PC, provides a cost-effective and uniform environment, compatible across the Leica range of microscopes and digital FireWire cameras.

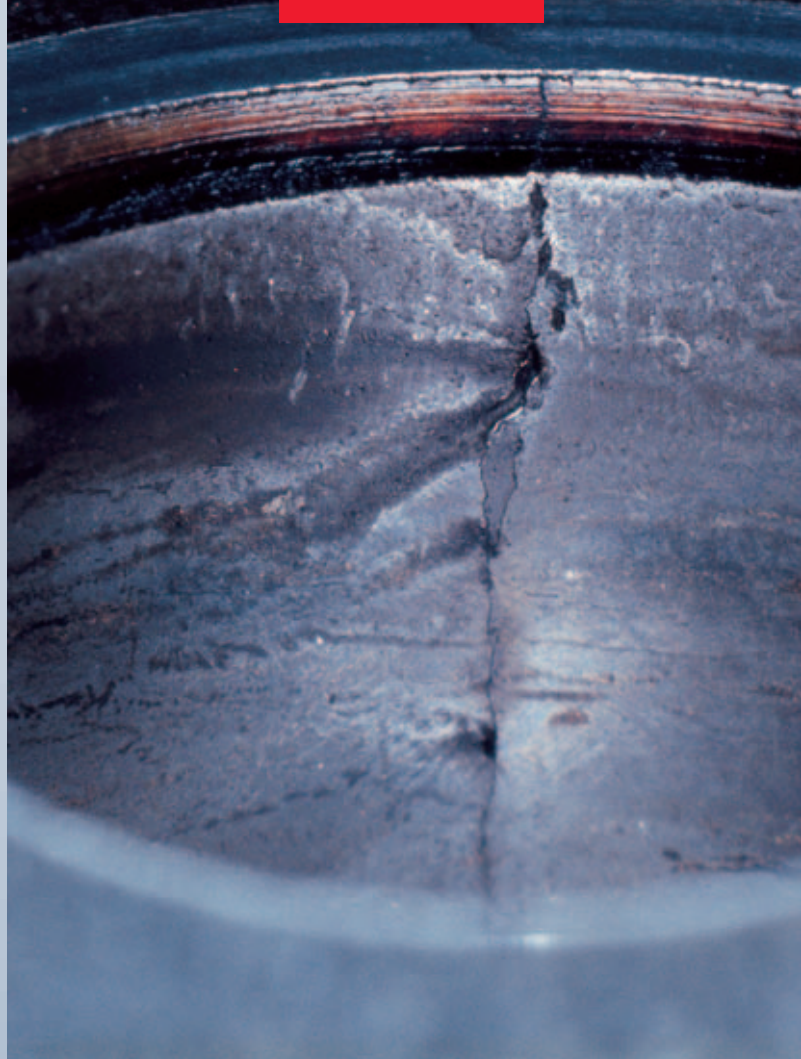
Demanding Microscopy!

The common core functionality of Leica Application Suite creates an intelligent and automated micro-imaging environment. LAS is supplied with each Leica microscope and digital camera as part of an integrated system solution and includes the basic software for configuration and control as well as for the acquisition, analysis, and processing of high quality digital images.

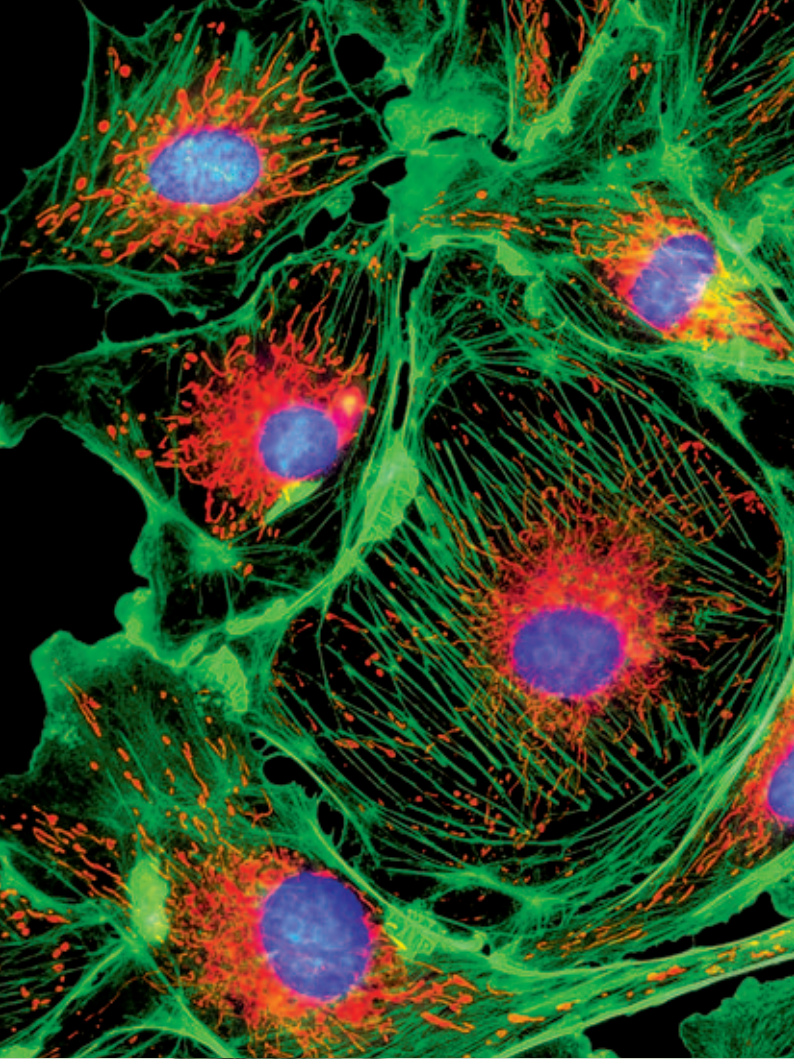
The basic LAS package includes the following features:

- Microscope and digital camera configuration and control in a fully integrated manner.
- Basic annotation tools to allow image and measurement data to be added to images.
- Auto and manual exposure adjustments to allow fully optimized imaging conditions.
- A thumbnail gallery of acquired images, which can be reviewed quickly and easily.
- Calibrations are calculated, based on data read from Leica microscopes and cameras; a scale bar indicates image size.

With LAS, scientists can spend 100% of their time concentrating on



their work and not worry about adjusting their tools.
Rouven Heeb, Design Engineer Leica SMS



LAS offers a highly precision imaging system for an
Christian Wild, Development Engineer Leica SMS

The Ultimate Imaging Environment

The intuitive workflow organization of LAS offers a unique user interface that creates the ultimate imaging environment based on user convenience.

Setup

The Setup task bar provides a straightforward method of configuring the Leica microscope and camera to be used during image acquisition. All configurations such as objective types and filter descriptions can be readily saved and recalled to ensure that imaging conditions are correctly reproduced.

Acquire

LAS enables the easy acquisition of images, which can later be added to a Gallery and stored in a defined folder. With LAS, all camera controls can be set to individual requirements from exposure, gain and gamma, to histogram black and white levels. Images can be acquired in a variety of sizes, color depths and file formats to provide even more flexibility. By setting the sharp image option and shading reference from the processing toolbar, images can be acquired at the highest detail necessary to minimize further processing. LAS also allows a region to be defined on a live image so that significant areas can be easily and quickly identified and focused. All parameters and configurations can be saved and recalled at a later date. *For more advanced acquisition options, additional modules can be added such as LAS MultiFocus, Montage, Image Overlay, MultiStep, and LAS MultiTime (with Timelapse and Movie Recording).

Browse

The Browse function provides access to all associated information for each stored image such as the time of acquisition, the bit depth, and the calibration. Images and folders can be located quickly and easily through a simple directory browser navigation system. The integrated gallery stores each image as a thumbnail to speed the process of locating and retrieving image files. Furthermore, images can be copied and pasted to other applications, or zoomed and panned for detailed inspection. *To further improve the browsing capabilities and search functions, the optional LAS Image Organizer is available.

Process

By using the Process workflow tab, images can be enhanced and refined. From brightness and saturation levels to contrast and gamma, each image can be adjusted to user requirements. Additionally, a file name, time of acquisition, and brief description can be included to provide concise information via the basic annotation tools. Even scale bars and lines can be added and customized. Annotations can either be saved with the image or merged with it so that the data is still visible when exported. * To further enhance this functionality, LAS Extended Annotation can be added to the system.

The underlying capabilities of LAS can be enhanced with a range of advanced modules and applications to form a powerful microscopy imaging environment. Each LAS module provides the flexibility to tailor a system solution to fulfill individual needs with upgrade options available for future requirements.

Imaging Modules To Suit Individual Needs



MULTIFOCUS

The LAS Multifocus module is designed to easily create extended depth of field images from a series of partially focused images by providing fully integrated control of microscopes with motorized focus. Exposure, gain, and shading can be individually set for user convenience.



MONTAGE AND 3D VIEWER

The LAS Montage module is a powerful solution for creating and visualizing extended focus images. The extensive range of methods in conjunction with preview capability make LAS Montage a premier solution for extended focus image creation.



IMAGE OVERLAY

The professional LAS Image Overlay module is designed for easy, automatic multi-channel fluorescence imaging applications, from visualization through enhancements to documentation of images.



MULTITIME (incl. TIMELAPSE & MOVIE)

The LAS MultiTime module is a highly effective solution for automatic acquisition of images at intervals from seconds to minutes. With its movie recording functionality, LAS MultiTime provides a simple method of acquiring a compressed image stream directly to the hard drive.



MULTISTEP

LAS MultiStep is a highly intelligent module that when used with a Leica microscope, motorized scanning stage, and digital camera, automatically acquires images at XY positions defined by a rectangular pattern. Mosaic images can be created, manipulated, and reduced to manageable dimensions.



IMAGE ORGANIZER

The LAS Image Organizer application saves and retrieves data effortlessly in freely defined categories. Intelligent search functions simplify the process of finding and retrieving information. With its integrated store and recall function, microscope and camera settings can be easily restored.



STORE & RECALL

The Store & Recall module allows users to benefit from full digital integration of microscope and camera. Results are completely reproducible and include light settings, contrast method, magnification, exposure time, and much more.



MULTIUSER PACKAGE

Each microscope user in the laboratory can create individual microscope profiles, which are unique for specific samples and applications. A user profile not only covers all microscope accessories, including objectives and filter cubes, but also accommodates personal settings.

Integrated Microscopy Solutions



EXTENDED ANNOTATION

The LAS Extended Annotation module allows text and graphics to be added directly to an image, including lines, arrows, shapes, times, and text. All annotations can be customized to individual requirements.



INTERACTIVE MEASUREMENT

The LAS Interactive Measurement module is designed to perform sophisticated measurements on areas of interest. Also, objects can be individually counted and classified.



STEEL EXPERT

Leica Steel Expert is a highly specialized software program for automated steel inclusion rating. This powerful software solution brings fast, reproducible, and accurate results to the process of inclusion rating for stainless steel alloys.



RETICULE

The LAS Reticule application provides electronic means of viewing live images and overlaying reticule styles to provide visual feedback as to the approximate scale of the field of view. Object size comparisons and point counting measurements are performed quickly and easily.



DIGITAL AUTOFOCUS

The Digital Autofocus module provides precise focus position for a sample. Excellent results are assured since performance with respect to speed and accuracy is optimized for each objective. Besides being highly convenient, the module is also cost effective because no additional hardware is needed.



POWER MOSAIC

LAS Power Mosaic provides the ultimate in high-resolution specimen visualization. Scan an entire specimen or select a specific region of interest and it's scanned at high speed and then combined to form a seamless mosaic image which can be easily viewed. LAS Power Mosaic Plus includes the same features as LAS Power Mosaic but adds the ability to do Z-Stacking to create an extended focus mosaic image.



ARCHIVE

The new LAS Core now incorporates a database to provide rapid and convenient access to digital images and all microscope and camera data. LAS Archive Basic and Standard are advanced versions of LAS Archive that offer additional options that build on the Core features to exactly match your needs. The archiving features allow you to combine images with text, numeric data, memo, Boolean and keyword data fields in an individual image record plus you have the option of defining hierarchical levels by which data can be grouped.

Leica Microsystems – the brand for outstanding products

Leica Microsystems operates internationally in four divisions, where we rank with the market leaders.

• Life Science Research Division

Leica Microsystems' Life Science Research Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems' customers at the leading edge of science.

• Industry Division

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result by providing the best and most innovative imaging systems for their needs to see, measure and analyze the microstructures in routine and research industrial applications, in materials science and quality control, in forensic science investigations, and educational applications.

• Biosystems Division

The Biosystems Division of Leica Microsystems brings histopathology labs and researchers the highest-quality, most comprehensive product range. From patient to pathologist, the range includes the ideal product for each histology step and high-productivity workflow solutions for the entire lab. With complete histology systems featuring innovative automation and Novocastra™ reagents, the Biosystems Division creates better patient care through rapid turnaround, diagnostic confidence and close customer collaboration.

• Surgical Division

The Leica Microsystems Surgical Division's focus is to partner with and support micro-surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

Leica Microsystems' mission is to be the world's first-choice provider of innovative solutions to our customers' needs for vision, measurement and analysis of micro-structures.

Leica, the leading brand for microscopes and scientific instruments, developed from five brand names, all with a long tradition: Wild, Leitz, Reichert, Jung and Cambridge Instruments. Yet Leica symbolizes innovation as well as tradition.

Leica Microsystems – an international company with a strong network of customer services

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