

Living up to Life

Leica

MICROSYSTEMS

Leica LAS Live Image Builder

Dynamic Software for Fast Widefield Imaging and Extended Depth of Focus

INDUSTRY DIVISION





FAST WIDE FIELD VISION FOR MICROSCOPIC ANALYSIS

LAS (Leica Application Suite) Live Image Builder is developed for users of manual microscopes, enabling them to rapidly create high-quality images that are much larger and reveal more detail than a single field of view. The software automatically detects sample movement and smoothly extends the image without the need to click buttons to capture the image. The resulting image grows dynamically giving instant feedback, which can save time.

FAST EXTENDED DEPTH OF FOCUS

Often a microscopist is faced with an image having shallow depth of field, which means that it is only partly focused. Now with LAS Live Image Builder, a single in-focus image is created in the time it takes to manually focus. The immediacy of capturing a focused widefield image is a great time saver.

The resulting calibrated images are stored in LAS where they are immediately available for documentation and analysis using a wide variety of specialized modules available in LAS.

Efficient Imaging Environment

Leica Application Suite (LAS) intelligently integrates the latest advances in automated microscopy, computing, and digital image analysis. With a wide range of imaging capabilities designed specifically for industrial and research laboratories, LAS performs routine, yet sophisticated analytical tasks rapidly, efficiently, and economically.

LAS Live Image Builder takes this capability a step further by dynamically extending the field of view and depth of focus of digital images provided by Leica microscopes and digital cameras.

The smart Leica LAS Live Image Builder software is ideal for use with manually-operated XY stages and direct focus drives. As the user moves the sample, LAS Live Image Builder assesses the image and calculates the change in position at high speed. New images are matched and blended with previous images to create a single large image from the complete field of view. In a similar way, as the sample focus range, the best focused parts of the image are retained to give a single sharp image.

LAS is a common micro-imaging environment that provides solutions to many standard and custom applications by means of optional application-specific modules. Particularly relevant for use with LAS Live Image Builder are the Interactive Measurements, Image and Particle Analysis, Annotation and Image Archiving modules. The use of a motorized stage and focus with LAS Live Image Builder can provide further utility and improved ergonomics for highly repetitive tasks.

LAS Live Image Builder Features

LAS LIVE XY IMAGE BUILDER

- › Continuously adds a live camera image
- › Matches image detail to a given position
- › Guide frame shows where image will be added
- › Frame indicates when matching degrades or fails
- › Image extends when match is found
- › Blends images for smooth edges
- › Adds refocused image for sloping samples
- › Creates color image size up to 12k x 12k pixels
- › Backtrack with undo function

LAS LIVE Z IMAGE BUILDER

- › Determine first focus position
- › Turn focus drive until final focus level is reached
- › Completely in-focus image appears
- › Compensates for magnification change and shift with focus
- › Image resized to remove edge effects

OPERATION

- › Compatible with LAS – supported current Leica microscopes, and DFC cameras, and the Leica DVM2500
- › Integrated and licensed with LAS V4 as optional modules
- › Requires XY stage and focus control
- › LAS Live Image Builder image capture starts from LAS
- › Uses the default live capture format
- › Image format, calibration, exposure and shading correction controlled with LAS
- › Operation is interactive by manual manipulation of stage and focus controls

LAS LIVE XYZ IMAGE BUILDER

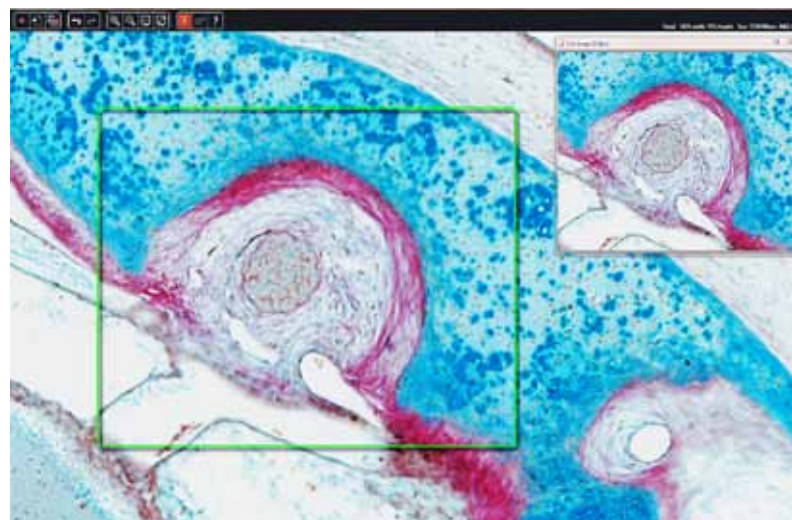
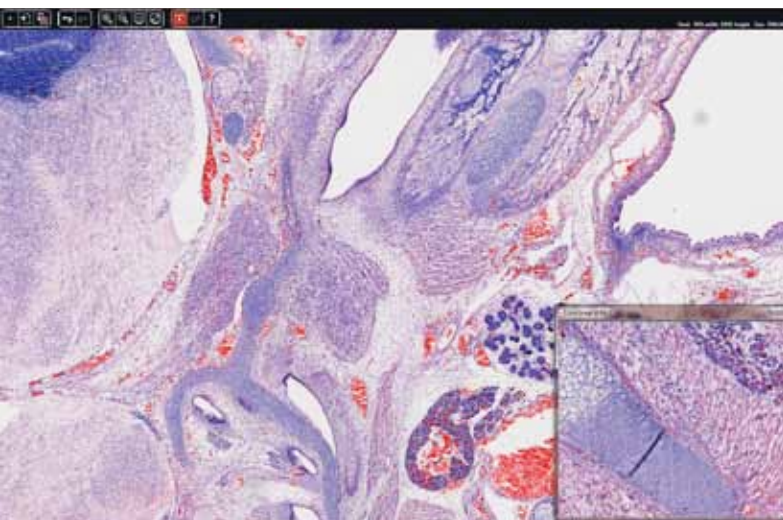
- › Combining XY and Z builder to produce a single widefield and extended focus image
- › Move the sample in XY to build up the widefield image
- › When an object beyond the depth of field enters the frame simply turn the

focus drive from the first to the final focus position

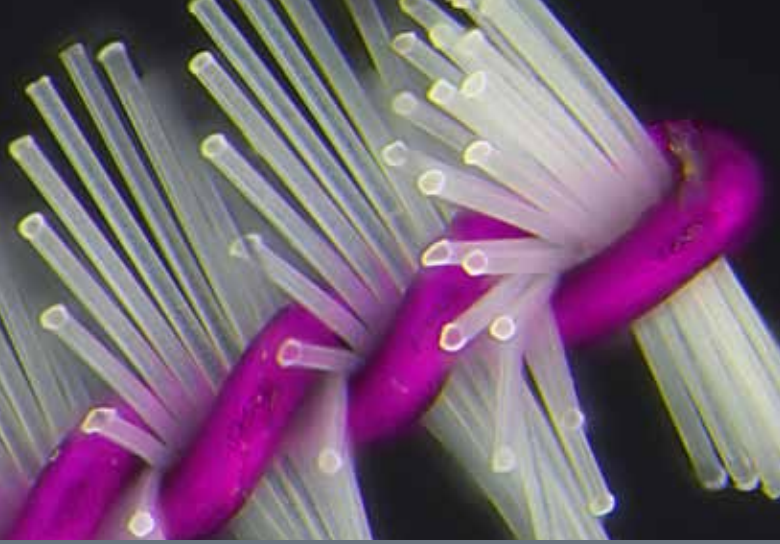
- › Automatically detects the change in movement from XY to Z and back again
- › An extended depth of focus image is automatically added to the canvas
- › Carry on moving in XY and Z as required to build the complete image

PRESENTATION OF IMAGES

- › Shows entire image - smoothly shrinking as it grows
- › Or smoothly pan and zoom at fixed size to see image in detail
- › Minimal user interface simplifies operation
- › Reference live image shown in separate sizable window
- › Pause/Restart building to allow the examination of image
- › Continually shows actual image size and percent of canvas used



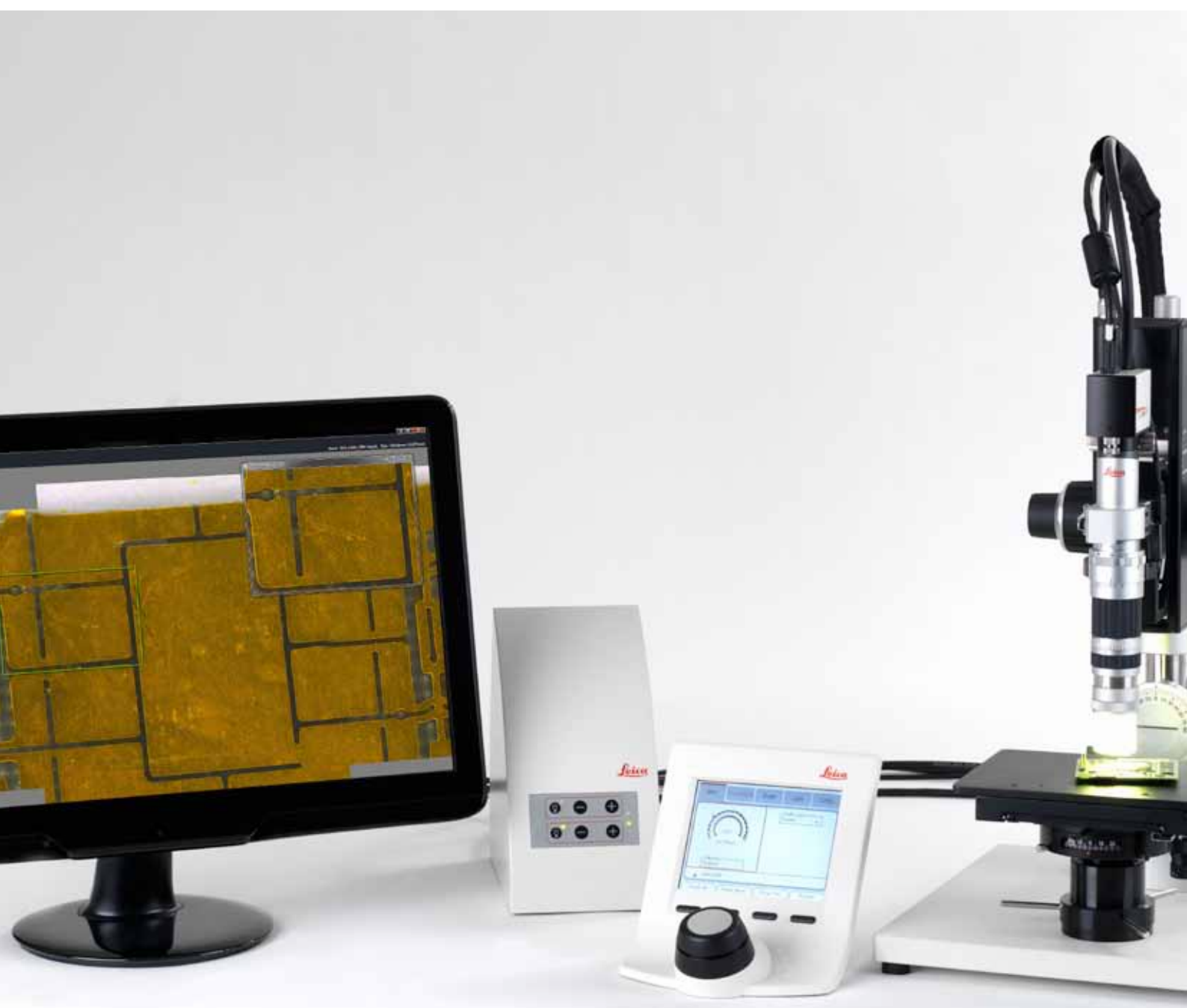




Extended focus image from Live Z Image Builder



In focus detail of shaver head



Benefits and Advantages

LAS Live Image Builder is designed to increase laboratory productivity and improve the visualisation of microscope images via smart computational microscopy software. As the hardware requirements are based on manual operation, the user stays in control while costs are minimized.

EXTENDED IMAGE AND DEPTH OF FOCUS COMBINED

LAS Live XYZ creates images that are larger than seen by the camera alone, which allows you to see the sample in a wider context to expedite interpretation.

WORKS WITH ANY MICROSCOPE

All you need is a economical manual XY stage and focus control to enable this smart software to create stunning images.

COMPATIBLE WITH LAS

Archiving, measurement, and analysis are all available on the images created providing a vast capability in a familiar, and consistent LAS software environment.

EXTENDED DEPTH OF FOCUS

With a simple turn of the focus control, Live Z Image Builder assembles images from the entire focal range into a single sharp image so you see all details at once.

DYNAMIC RESULTS

With no need for intermediate image capture, the results continuously develop in front of your eyes, giving immediate quality feedback and saving significant time as compared to methods using post-processing.

SMOOTH DISPLAYS

The images are assembled for direct viewing on the computer screen and appear to smoothly grow and sharpen, providing a relaxed operating environment.

RELATED PRODUCTS



LEICA DVM2500

The Leica DVM2500 and digital microscope solutions offer a range of configurations – from the modular starter model to the intelligent, portable, all-in-one system.



LEICA DM2500 M

Its combination of intuitive operation and the highest quality optics provides rapid, accurate results.



LEICA DFC450

This digital microscope camera with high quality 5 Megapixel CCD sensor. Captures sharp, brilliant images for documentation and analysis in life science, clinical, and industrial applications.



LEICA M165 C

This stereo-microscope offers a comprehensive range of ergonomic accessories, LED based illuminations, and application-specific software.

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 best 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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Active worldwide	Tel.	Fax
Australia · North Ryde	+61 2 8870 3500	2 9878 1055
Austria · Vienna	+43 1 486 80 50 0	1 486 80 50 30
Belgium · Diegem	+32 2 790 98 50	2 790 98 68
Canada · Concord/Ontario	+1 800 248 0123	847 236 3009
Denmark · Ballerup	+45 4454 0101	4454 0111
France · Nanterre Cedex	+33 811 000 664	1 56 05 23 23
Germany · Wetzlar	+49 64 41 29 40 00	64 41 29 41 55
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Japan · Tokyo	+81 3 5421 2800	3 5421 2896
Korea · Seoul	+82 2 514 65 43	2 514 65 48
Netherlands · Rijswijk	+31 70 4132 100	70 4132 109
People's Rep. of China · Hong Kong	+852 2564 6699	2564 4163
· Shanghai	+86 21 6387 6606	21 6387 6698
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Sweden · Kista	+46 8 625 45 45	8 625 45 10
Switzerland · Heerbrugg	+41 71 726 34 34	71 726 34 44
United Kingdom · Milton Keynes	+44 800 298 2344	1908 246312
USA · Buffalo Grove/Illinois	+1 800 248 0123	847 405 0164