

Leica DVM2000 – 5000

**Digital Microscopes – New Level of Portability and Speed
for Industrial Quality Control**

Living up to Life

Leica
MICROSYSTEMS

Digital Microscopy – The New Benchmark for Optical Profiling

Which microscope is right for you?

Digital microscopy offers clear advantages for a wide variety of quality inspections. Fracture analysis, analysis of inclined or vertical surfaces, and onsite inspections of large parts such as turbine rotors are just a few examples in which the strengths of digital microscopy make the biggest difference. However, there are also applications where a traditional solution with stereomicroscopes is best. Leica Microsystems' sales team has comprehensive application knowledge and can provide onsite consultation. Drawing from one of the most extensive product lines of industrial microscopes, we can create the optimal configuration for your needs based on tried-and-tested Leica Microsystems quality.

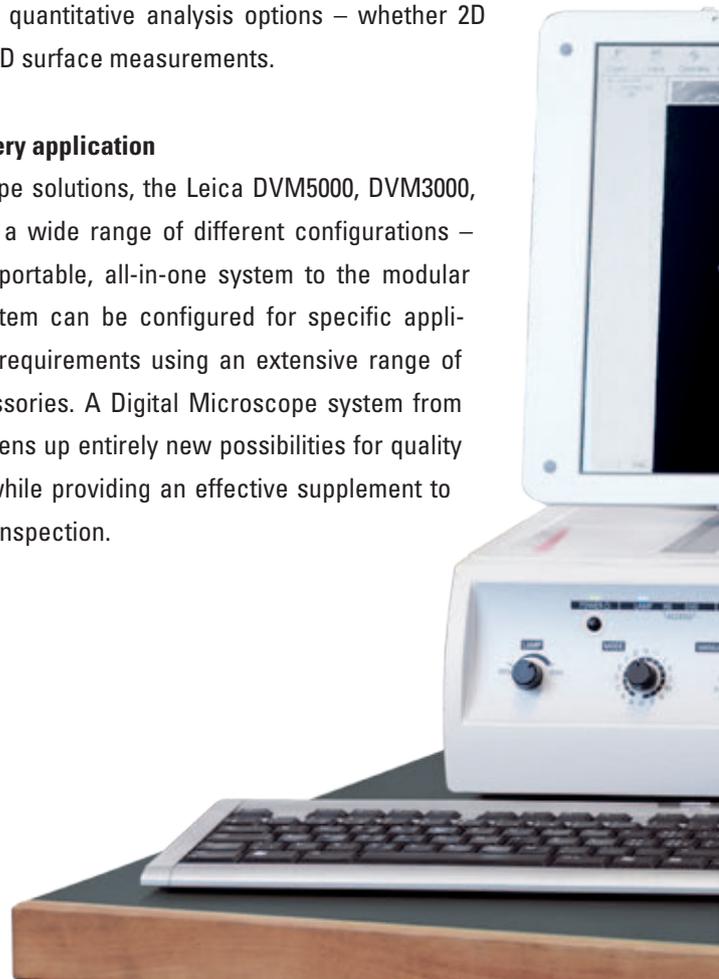
Portable, fast, and reliable

Digital technologies have revolutionized both our work and everyday lives in many respects, and there is no end to these innovations in sight. In particular, industrial quality control – which places the most stringent requirements on macroscopic and microscopic imaging and image processing – benefits from innovative, reliable digital technology. The new generation of Digital Microscopes from Leica Microsystems opens new horizons in terms of mobility and speed. For many applications, they offer an ideal supplement to traditional inspection and analysis.

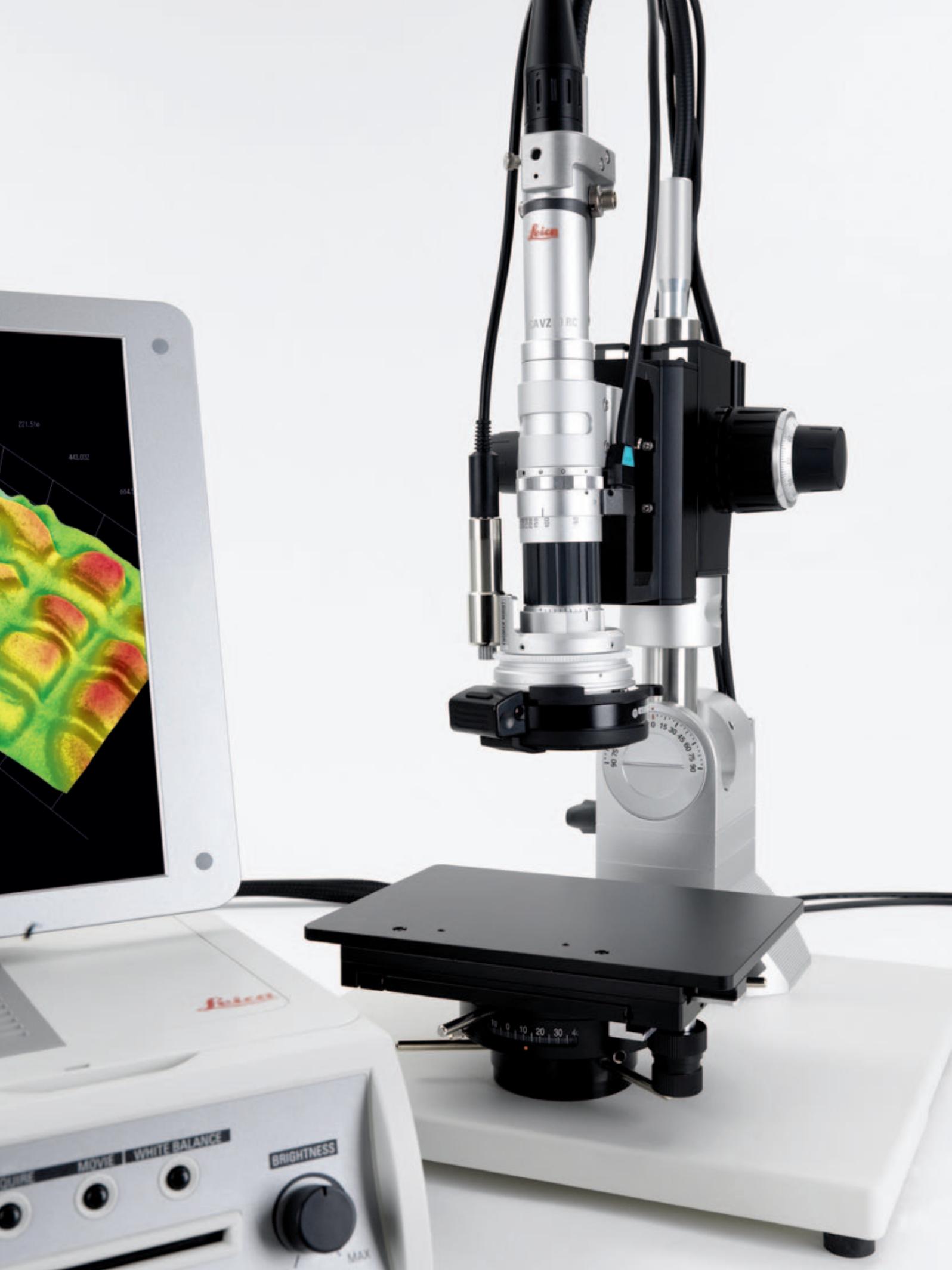
The microscopic image is displayed directly on a high-resolution monitor. This means that the user does not have to look through an eyepiece. The streamlined zoom optics reach extremely difficult-to-access surfaces, which allows non-destructive inspection of even the largest stationary parts that can be examined using traditional microscope techniques only with great effort. Leica Digital Microscopes not only feature outstanding, high-quality optics, they also offer a wide variety of quantitative analysis options – whether 2D analyses or advanced 3D surface measurements.

Modular system fits every application

Three Digital Microscope solutions, the Leica DVM5000, DVM3000, and DVM2000, provide a wide range of different configurations – from the “intelligent,” portable, all-in-one system to the modular basic model. Each system can be configured for specific applications and individual requirements using an extensive range of components and accessories. A Digital Microscope system from Leica Microsystems opens up entirely new possibilities for quality control of products – while providing an effective supplement to traditional microscope inspection.







Leica DVM5000 – The Portable All-in-One-System

Compact, highly integrated, and exceptionally mobile

The Leica DVM5000 is a highly integrated system that features outstanding performance capacity and speed. Within a very short time, the Leica DVM5000 provides the desired results – even complex 3D models are available in mere seconds.

Ready to use in every situation

For quality control, usually a sample is brought to the microscope for inspection and analysis. However, some products cannot be transported and do not allow a sample to be taken for microscopic analysis; only nondestructive inspection is possible. The Leica DVM5000 is specifically designed for such situations. Here, you can bring the microscope to the sample.

The Digital Microscope, including the optics, monitor and computer, can convert into a compact, portable system with just a few hand movements. It can be used to inspect stationary samples, such as production machines or airplanes, at any time. The Leica DVM5000 also provides benefits when quality assurance must be carried out at multiple locations. For example, the system can accompany an engineer during audits, so that he or she can always use the same familiar technology.

Optimized digital imaging

All Leica Digital Microscopes are equipped with a 2.11-megapixel digital camera, which is perfectly matched to the microscope's optics. Combined with high-resolution optical zoom, this highly sensitive CCD camera generates digital images of all samples with optimum results. It provides the best possible information yield – without enlarging the data volume and file size of individual images.

Megapixels are not everything

Digital cameras are often evaluated according to the number of megapixels. Many believe that the more pixels, the better. However, in microscopy, the camera with the most megapixels is not necessarily the best for a particular application. Rather, the application and optical performance of the microscope determine which camera is best suited for providing optimal results during image acquisition. Long before the advent of digital photography, American researcher Harry Nyquist proved that cameras in the double-digit megapixel range do not provide more image information, but fill the hardware with excess data more quickly.

DVM5000 – Making the Impossible Possible

Tried-and-tested features – 16-bit technology and zoom encoding

Leica Microsystems has long used state-of-the-art 16-bit individual color detection to utilize the entire dynamic image range. Encoded zoom magnifications are also included in the user-friendly standard equipment of many Leica Microsystems' microscopes, enabling faster work with significantly higher measuring accuracy.

Viewed from every side

When it comes to examining the tiniest structures on inclined or vertical sample surfaces, conventional microscopes reach their limits. For Leica Digital Microscopes however, viewing even previously inaccessible sample areas are not a problem. The extremely flexible tilting stand, combined with revolving x/y-stage, enables reliable inspection and analysis of soldered joints on electronic components, for example.

Panoramic view

In addition to these benefits, the 360° rotating head offers an all-around view that provides entirely new ways of looking at samples. As an added benefit, rotating the view creates a 3D impression of the sample. In this way, Leica Digital Microscopes open up new perspectives – in the truest sense of the word – and possibilities for viewing and analysis.

Extremely easy to use

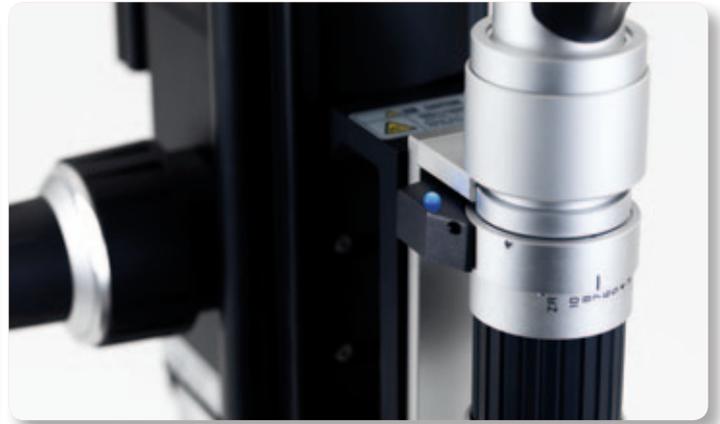
In terms of ease of use, both the Leica DVM5000 and the DVM3000 provide a valuable advantage. The microscopes can be intuitively and ergonomically controlled via the Leica SmartTouch™ control module. All system-related data is shown on the display and can be reconfigured by simply touching the screen.





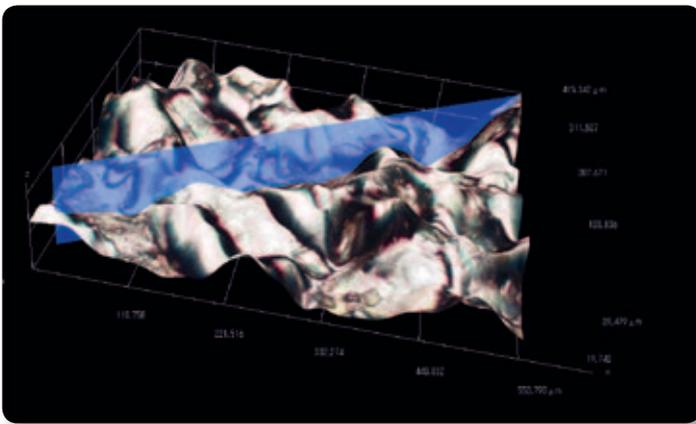
High Dynamic Range (HDR) provides outstanding images

- 16-bit individual color detection provides highly dynamic images
- No under- or over-exposed image areas
- Clearly displays difficult surfaces such as metal sections



Encoding makes measurement extremely easy

- All zoom systems feature encoded magnifications
- Magnification is easily read out and allocated to the image
- Eliminates sources of error during evaluation



3D profiling in all variants

- 3D profiles of height, width, and surface irregularities
- Display as texture, color depth encoding or grid model
- Height difference and volume measurements
- Combined 2D and 3D profiling



Mosaic – Capture every detail

- Simultaneously analyze the smallest details and document large surfaces
- Intelligent algorithm generates perfect mosaic images
- No encoded or motorized stage required

Leica DVM3000 basic unit

- 2.11-megapixel camera with 24 frames/second transmission rate for optimum information yield and high-quality imaging
- Durable metal halide lamp with daylight-like color temperature
- Digital microscopy via analog monitor or FireWire B-IEEE1394.b interface

Zoom systems

- Wide zoom range – from macro to micro
- Wide variety of application-specific auxiliary lenses and adapters
- Diffusers minimize bothersome surface reflections
- Adapters with variable illumination settings to detect scratches on a sample
- Coaxial illumination with integrated oblique illumination generates a relief contrast

SmartTouch™ control unit

- Intuitive, easy-to-operate system with ergonomic Leica SmartTouch™ module
- Displays all system-related data, can be configured by simply touching the screen
- User interface available in seven languages

The Leica DVM3000 features outstanding flexibility. It includes all the elements needed for digital microscopy: zoom optics with encoded magnifications, high-performance digital camera, integrated metal halide lamp, and standard interfaces for computer and monitor to enable all sample-related data to be sent to the computer for subsequent evaluation.

Its “open” design makes the Leica DVM3000 a compact, versatile Digital Microscope for a wide variety of applications.

For quality evaluation, users can take advantage of the full range of available application software: from simple imaging to 2D measurements to highly specific roughness measurements in 3D with subsequent documentation using conventional Microsoft® Office programs.



Leica DVM3000 – Flexible in Every Respect



360° – a clear view all around

- Motorized 360° rotating optics head
- Real-time view of the sample from all sides
- Viewing angle from 25° to 55°
- Adjustable direction and speed



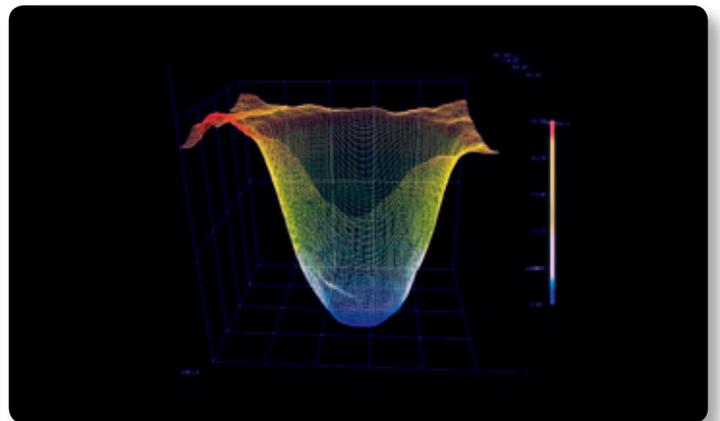
Metal halide lamp – naturally economical

- Optimum light efficiency
- Cost-effective due to long service life – up to 5,000 operating hours
- Warm, daylight-like color temperature for natural reproduction of the sample on the monitor



Flexible system fits into any workspace

- Streamlined optics make the system extremely portable
- Can reach even difficult-to-access sample areas
- Contact adapters hold samples at the correct focal distance



3D models in seconds

- Software visualizes desired 3D models within a few seconds
- Further analyses, such as profile measurement or roughness measurement, with just a few mouse clicks

Leica DVM2000 with digital camera

- 2.11-megapixel CCD camera for the best reproduction of color and detail
- Fast live image with 16 frames / second in full frame using the latest FireWire-B technology
- Standard C-mount interface for use on any Leica Microsystems microscope
- Compact design – ideal for limited space conditions and mobile use

LED illumination

- Compact LED illumination can be integrated for minimum space requirements
- Very long LED lifetime enables long service intervals and reduces costs
- Daylight-like color temperature for natural reproduction on the screen

Modular design principle

- Optimally match components and accessories to the specific requirements of an application
- Large selection of stands for use in the laboratory, production facility or onsite
- Scalable – from a small-scale, economical solution to an advanced, high-performance system

With the Leica DVM2000, Leica Microsystems offers the ideal entry-level digital microscope. This modular system is composed of zoom optics, digital camera, and software and is based on standard components. However, the Leica DVM2000 also provides plenty of options from a comprehensive range of products and accessories to configure the ideal digital solution for your needs. Also, Leica Application Suite (LAS) offers a wide variety of software modules for different analyses and evaluations.

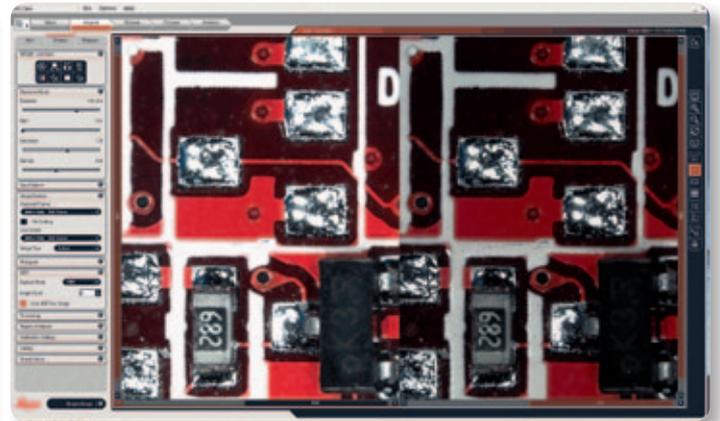


Leica DVM2000 – Digital Microscopy Focused on the Basics



CCD camera – perfectly matched to the microscope

- Optimized for Leica Digital Microscopes
- Image resolution ideally suited to subsequent data processing
- Fast live image with up to 29 frames / second in binning mode
- FireWire-B and C-mount interface for flexible combination with other Leica Microsystems' microscopes



HDR module – No detail remains hidden

- High Dynamic Range (HDR) function of Leica Application Suite (LAS)
- Precise visualization of even the tiniest details in highly dynamic images
- Eliminates bothersome surface reflections



LAS – Measurement without limits

- Leica Application Suite (LAS) measurement module for wide variety of evaluations
- From simple point-to-point measurements to intelligent image recognition algorithms
- Automatic image analysis for determining phase proportions, grain sizes, particles, and much more



LED – See everything in the best light

- State-of-the-art illumination technology
- Extremely high-performance and durable – and therefore economical
- Compact design
- Choose from two LED illuminators

Leica DVM Accessories for Every Application



Rotary Head Adapter (20x to 160x)
for 360° Views on Leica VZ75



Low Magnification Adapter (0.3x)
on Leica VZ75



L-Angled Side View Adapter for VZ75
or VZ75 (C)



Diffusing Adapter for VZ75 or VZ75 (C)
for Polished or Bright Surfaces



High Magnification Variable Lighting
Angle Adapter for VZ80 or VZ80 (C)



Non Contact Adapter; Snap-on Type
for VZ80 (C) / VZ80 R(C)



Contact Adapter for VZ80 (C) / VZ80 R(C);
Ensures the Correct Distance to the
Sample for Handheld Measurements



Straight View Co-Axial Lighting Adapter,
Snap-on-Type for Leica VZ80 (C) / VZ80
R(C); Polished or shiny sample inspection
Working Distance: 21 mm



Lift-off Adapter; Snap-on Type
for Leica VZ80 (C) / VZ80 R(C);
Working Distance: 3 mm



Low Magnification (0.4x) Rotary Head Adapter. Snap-on Type for VZ80 R(C)



Polarizing Adapter for VZ100 (C)



Ring Light for VZ10



Diffusing Adapter for Rotary Head Adapter; for Polished and Bright Surfaces



Variable Lighting Angle Adapter; Snap-on Type for VZ80 (C) / VZ80 R(C)



Adapter for High Magnification (2x); Variable Illumination



Optical Rotary Adapter for VZ100 (C)



High Magnification Straight View Adapter; Snap-on Type for VZ80 (C) / VZ80 R(C)



Variable Angle Rotary Head Adapter; Snap-on Type for VZ80 R(C)

Leica Digital Microscope

- Portable, fast, easy to use
- Digital Microscopes from the provider of system solutions
- All-in-One systems



PC-Based

Leica DVM3000

- Modular, PC-based system
- Powerful metal halide illumination
- PC-based 3D measurement and analysis

3D-Profile

Leica DVM5000

- Compact system for mobile applications
- 3D imaging and surface measurements
- Leica SmartTiling™ – enhances the field of view with a simple x/y stage



Leica DVM2000

- Fast C-Mount Camera: Leica DVM2000
- Modular system based on standard components
- Powerful Leica Application Suite (LAS) software

2D Measurements



“With the user, for the user”

Leica Microsystems

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

• Life Science Division

The Leica Microsystems Life Science 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. 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.

• Biosystems Division

The Leica Microsystems Biosystems Division 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, Leica Microsystems creates better patient care through rapid turnaround, diagnostic confidence, and close customer collaboration.

• Medical Division

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

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.**

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and representatives in more than 100 countries

In accordance with the ISO 9001 certificate, Leica Microsystems (Switzerland) Ltd, Industry Division, has at its disposal a management system that meets the requirements of the international standard for quality management. In addition, production meets the requirements of the international standard ISO 14001 for environmental management.